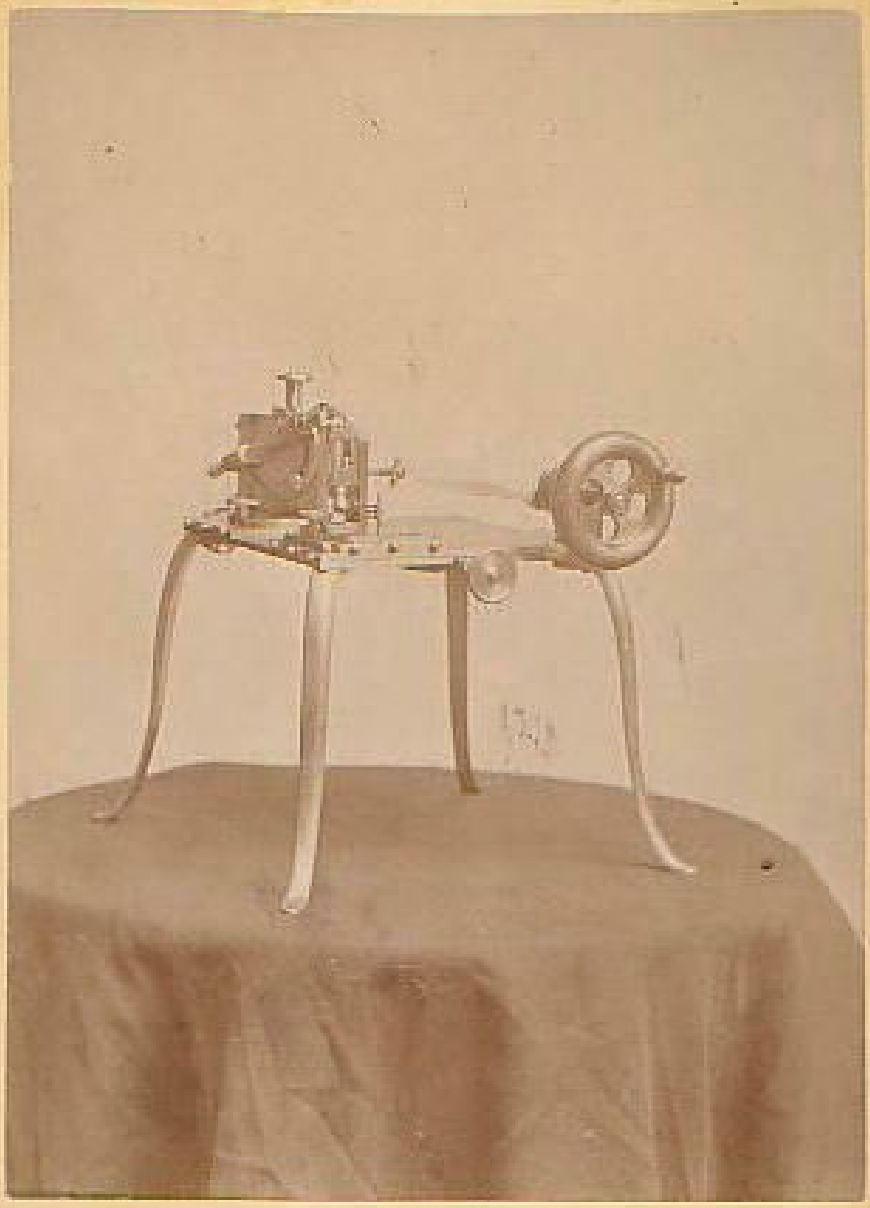
Diamonds and Diamond Cutting.



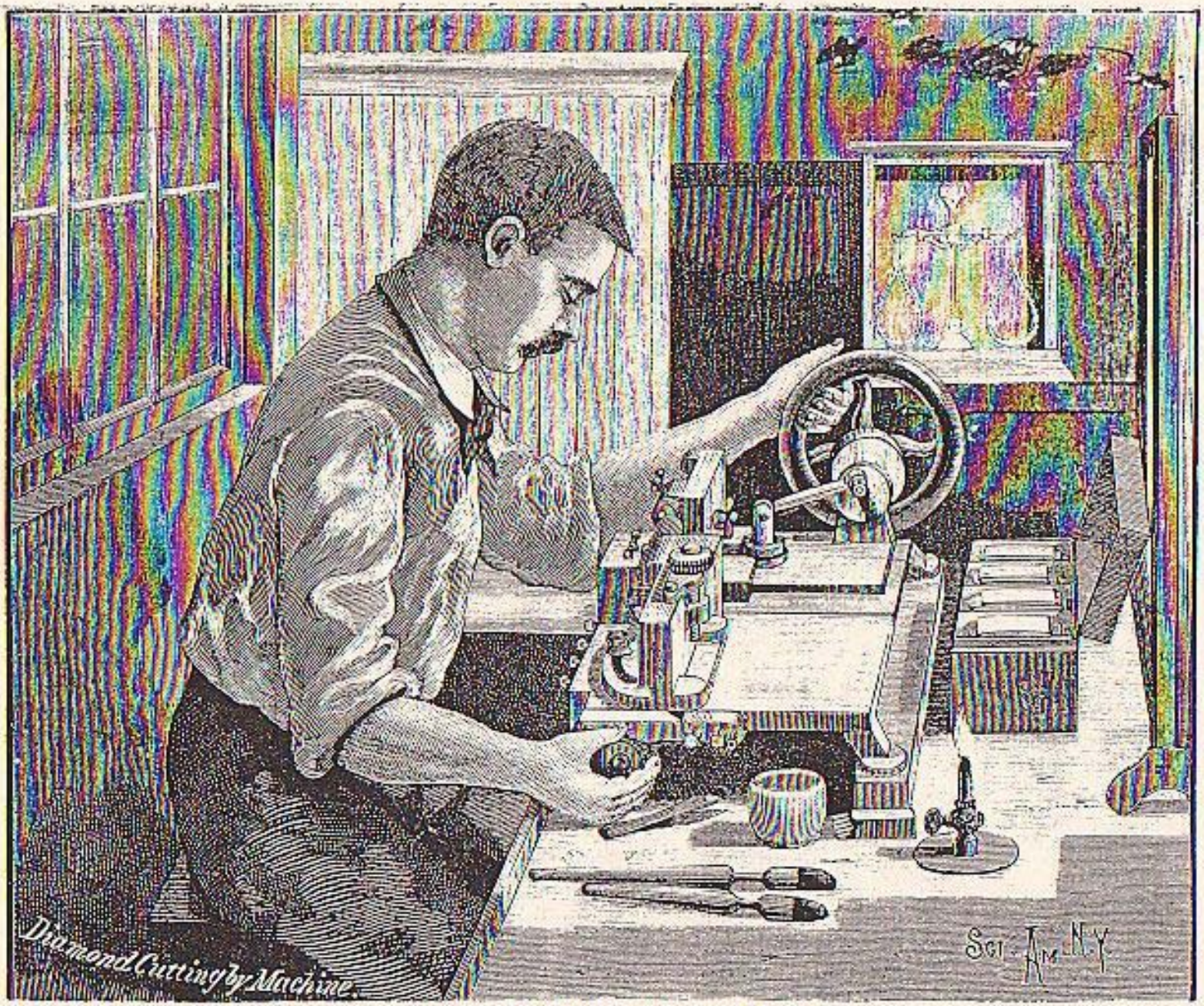
Cabinet Portrait.

A. N. HARDY, 22 WINTER ST.

Model of Diamond
Cutting Machine.
in Patent office at Washington DC

Charles M. Field

487 ~~1~~ Lebanon St. Melrose Mass.



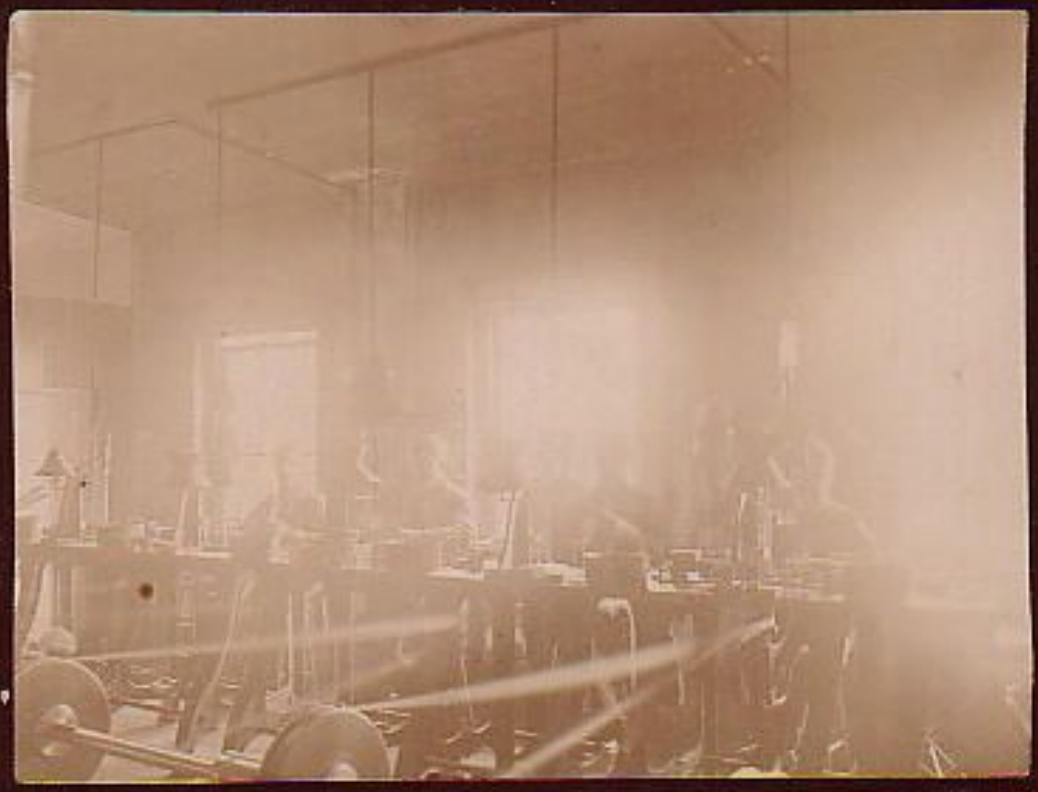
THE FIELD DIAMOND CUTTING MACHINE.

DIAMOND CUTTING BY HAND AND MACHINE.

Cabinet Picture of Henry D. Morse
the Pioneer of the Diamond Cutting
and Polishing business in the United States,
Started in Boston Mass the year 1860,

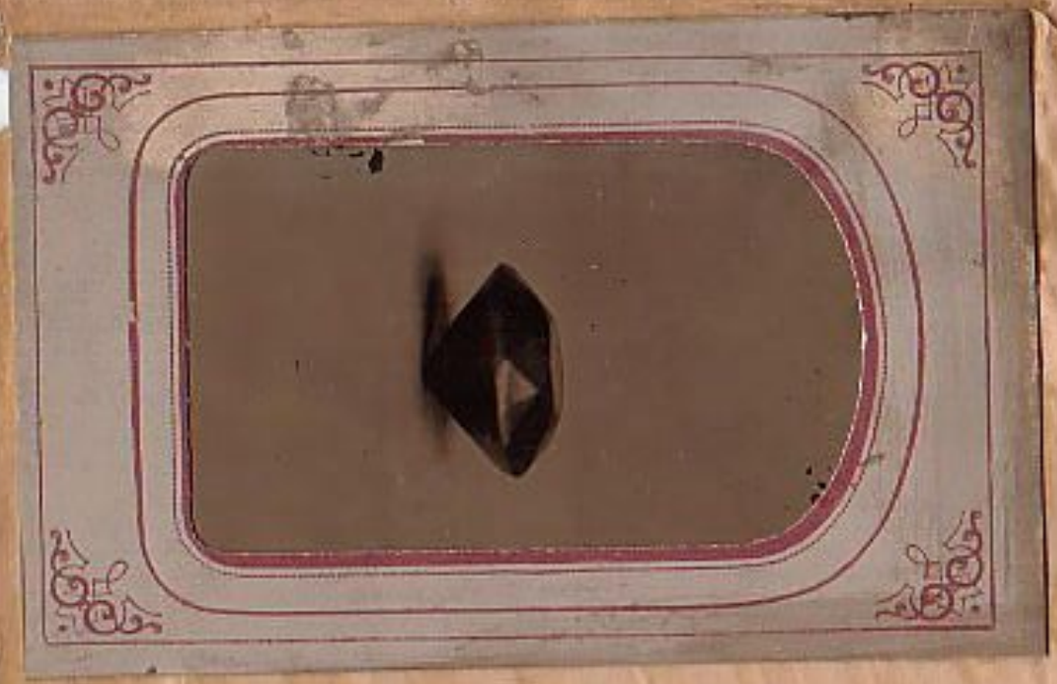
Was the first to teach American
help the business, Born in Boston
in 1826. Died Jan. 2d. 1888
Was the acknowledged authority on
Diamonds and Precious Stones,

Henry D Morse



Diamond Workshop.

Diamond Workmen.

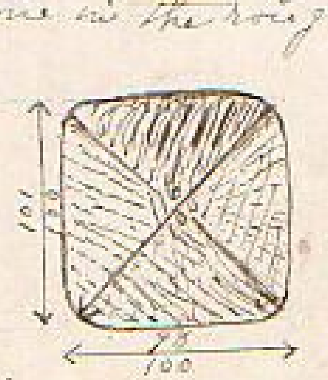


C. M. Field
Melrose Mass.

1. Rough Diamond
Lemon color

Rough Weight 124 15/16 Kts
L & M. K. owners, N. York,
Cutting commenced
Sept. 29th 1883.
Finished Jan. 11th 1884.
Polished by C. M. Field

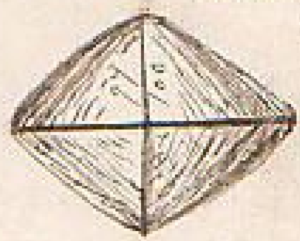
Plan view of the
stone in the rough.



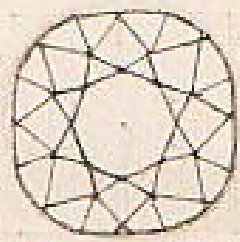
Tope made 35°
Around " 38° }

Nett weight when
finished 77 carats.

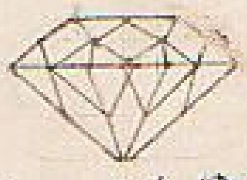
Side view of stone in
the rough.



Front view of stone all
Polished.



Side view of stone all
Polished



Purchased by Tiffany & Co.
New York

A Monster Diamond.

The cutting of a diamond believed to be the largest ever cut in this country has just been completed at the establishment of Mr. Henry D. Morse in this city, the process having occupied something more than three months. The stone was found in South Africa, and was imported by Messrs. L. & M. Kahn of New York, its weight in the rough state being nearly 125 karats. The work of cutting it was begun on September 23, and from that day until the 11th inst. the stone was constantly on the wheel, excepting on Sundays and holidays, Mr. C. M. Field, the foreman of the establishment, conducting the process, under the supervision of Mr. Morse. The gem as perfected is very brilliant and beautiful, though it is not perfect in color, a marked yellowish tinge pervading it. In the quality of clearness, however, the stone is almost perfection, the only blemish being so slight as to be perceived with difficulty by the naked eye. As cut it weighs 77 karats. It is set in a rounded cushion shape with fifty-six facets, its size being nearly a full inch across, and its depth a little more than ⅝ inch. The cutting is mathematically correct, each facet being a perfect figure, while all the angles are so nicely related to each other as to secure a most brilliant effect. The table and culet are perfect octagons, and some idea of the immensity of the stone may be gathered from the fact that the former measures nearly half an inch from side to side, while the latter is as large as quite a respectable sized diamond. In artificial light the stone is extremely brilliant, and the play of prismatic colors is beautiful. The yellowish tinge disappears in artificial light. The value of this stone, which is nearly two-thirds as large as the celebrated Kohinoor diamond, the weight of which is 102½ karats, cannot be stated, diamonds of such unusual size having no absolute value. As the writer once heard a speculator in precious stones say, "A big diamond is worth just what the seller will sell for and the buyer is willing to pay."

THE BOSTON HERALD, FRIDAY, DECEMBER 8, 1933

Diamonds Are Mounting in Price; Now Is the Time to Invest in Them

"A kiss on the hand is nice, but a diamond bracelet lasts forever," said a certain blonde lady a few years ago. Today her sentiment is being echoed by a great many others, both blonde and brunette, and by no few gentlemen as well. For, despite the rise in the price of gilders, Holland money, in which all diamond prices are quoted, the sales of diamonds are mounting steadily, and have been for the last three months.

"The price of, and purchase of, diamonds is rising," said Sidney De Young, grandson of the first diamond cutter in America, son of a leading Boston diamond wholesaler, and now prominent in the diamond trade himself.

"Diamonds are a good investment right now, since they are rising steadily in price. Every new quotation from Amsterdam is higher. Yet, due to the lean years we have just gone through, diamond merchants have in stock many fine stones which were bought at lower prices, and which they can sell below the present market price, at a profit.

"We buy gems from estates, and transact some buying in of separate stones from private collections, when we are sure that the person wishing to sell is dependable. We learned a lot, as did many of our customers, during the depression. Let me give you an example.

'Consider Mrs. X. She had been wealthy. Her husband adored her, gave her presents (many of them from Cartier's) and attempted to provide for her comfort after his death. He invested a great deal of wealth in stocks and bonds, and real estate. He did die before she did. The depression and business reverses (she held some Kruger stock) depleted all her holdings. Her real estate, instead of being an asset, is an expense to her. But her jewels—those presents that were bought so carelessly—have kept her alive.

"No matter what happens to the money systems of a world in turmoil, or to its business, or busines promises—there is always some kind of a ready market for gems. You may not, probably will not, always get exactly what you paid. But you can get something. And you can get cash. That fact, I believe, is behind the increased purchase of gems in the last months.

"Rubies are more precious than diamonds just now. Genuine rubies, of good size, and nearly perfect, are tremendously valuable. Emeralds are always a good investment, and so are pearls.

"In these latter years of prosperity, banking, and the belief that if you put money into something for safe keeping, you should not only be able to store it safely, but to get a return on it, is undergoing revision. The people that didn't bank their money, or trust promises to pay—governmental and otherwise—are still solvent. No better, but no worse. No great Indian potentate (and there is tremendous wealth in India), will consider not having his wealth divided into three kinds of holdings—one-third land, one-third silver and gold and one-third jewels.

"In Germany during the war and just after, inflation burst fortunes into thin air everywhere. Those people who could get their jewels sold somewhere outside Germany, kept the wealth those jewels represented. Russian emigres lived on their jewels.

"The English syndicate which controls 95 per cent. of the diamond mines of South Africa has recently made a contract of agreement with the African government, which owns the other 5 per cent., and was threatening them with selling diamonds at a lower price, that no diamonds will be sold below the price asked for the rough stones in England. That strengthens the diamond monopoly and guarantees good prices. The Brazilian diamonds are negligible in the sense of being able to upset the diamond market.

"Old time gamblers used to put their money into diamonds. So do gangsters today. They need something, in the form of concentrated wealth, that can be carried about safely, and on which they can get ready cash, to almost the value of the stone, without delay.

"Why shouldn't the rest of us wake up?"

From the New York Industrial Monthly October 1873.

Gem-Cutting Machinery.

A MANUFACTURER of Boston, Mass., has patented some improvements in machinery for cutting diamonds or other gems, which consist—

1. Of a primary bed-plate made adjustable with respect to a tail-stock or carriage holding the stone to be cut, and bearing an adjustable tool-carrier or stock, which is driven backward and forward on the main bed by suitable means.

2. In the peculiar construction of the tool-carrier, whereby a universal freedom of motion is obtained.

3. In the peculiar construction of the tail-stock or carriage, which holds the stone while being cut, to adapt the machine to cut gems of different sizes, or to adjust the position of the gem or cutting-tool, in order to obtain a universal variable motion of the gem or tool, so that any face may be cut upon said gem.

From the Lewiston Journal

Lewiston Maine

Mr. Charles M. Field of Boston, son of Isaac C. Field of this city, has invented a machine for cutting diamonds—the first machine of the kind invented,—which has already proved a great success, and is likely to complete revolution in the business of diamond cutting, which has hitherto been engrossed by Amsterdam and Rotterdam. Mr. Field is about to leave for Europe, to introduce his invention there. A diamond cut by Mr. Field with his machine, is on exhibition in Boston, and attracts great attention not only from the fact that it is the first one ever cut in the world by machinery, but also because it is cut with such unsurpassed skill.

From the Boston Journal Sept. 14th 1876

The Mechanic Exhibition.

To those of our citizens who were privileged to visit the Centennial Exhibition, and who now seek to refresh their recollections of that marvelous display of industry and art, in the halls of the Mechanic Fair, the latter doubtless appears dwarfed and insignificant; but for the masses whose experience in public exhibitions of this character has been limited to the enterprises of former years under the auspices of the Charitable Mechanic Association, the present undertaking so far transcends the Expositions of Faneuil and Quincy Halls as they were eclipsed by the International Exhibition of 1876. Although it must necessarily suffer when compared with the Exhibition in Fairmount Park only in extent and variety, it is an admirable illustration of the mechanical industries which have won for Massachusetts fame and prosperity second to no State in the Union, and offers a wide field for the intelligent observer of the constant advancement in the arts and sciences. Among the latest novelties introduced is

THE DIAMOND CUTTING MACHINE,

Invented by Charles M. Field of this city, and exhibited by the Morse Diamond Cutting Company. The machine is operated by a lady, who fashions the rough diamond into the form by which the brilliancy of the gems are produced, while the inventor in person, working at a revolving wheel, polishes the stones. The process is exceedingly simple and interesting, and attracts the universal attention of visitors. In the connection the company exhibit a case containing rough and finished diamonds, and specimens of emeralds in their native bed.

From Boston Sunday Herald Oct 29th 1876

A queer incident happened yesterday near the diamond-cutting machine, which illustrates the faith of the average Yankee in the ability of New England to produce anything mineral, vegetable or otherwise. An old lady visitor, after duly inspecting the machine, approached the operator, and queried, "Say, mister, where do they get them diamonds?" "In South Africa," replied the gentleman addressed. "South Abington! My gracious alive, do tell! I've lived in East Abington all my life and never seen any of 'em before!" This machine attracts considerable curiosity among the country visitors, and many of them inquire if "samples" are given away. The fair positively closes one week from next Saturday, and can in no event be continued beyond that date. No reduction in the admission price will be made, but all the attractions will be retained until the final day. During the coming week the evenings will be enlivened by music, as follows: Monday evening, by Boston Cadet Band; Tuesday evening, by Reeves's Brigade Band; Wednesday evening, by Germania Band; Thursday evening, by Reeves' American Band of Providence; Friday evening, by Grandaire Baldwin's "Old Folks;" Saturday evening, by Centennial Jubilee Singers.

be raised.

AFRICAN DIAMONDS.

A Picturesque Story of Rapid-Growth in Wealth.

The story of the rise and development of the South African diamond fields is, in its way, scarcely less picturesque than the romantic history of the discovery of gold in California and Australia, or of that wild tale of the rise of the silver city on the flanks of a bleak mountain in Nevada. In 1867, says the London Standard, nobody suspected the existence of diamonds in the country now known to be so "diamondiferous," to use the barbarous adjective coined by the colonists. Of gold they were aware, and there were bright dreams of the wealth which lay in copper and the gay plumes plucked from ostrich tails. No doubt, they have since then heard that on an old map, dated 1750, the chartographer had written "Here be diamonds." There were also vague traditions of the Kaffres having employed shining pebbles to bore holes in other stones; but it is certain that until a certain Schalk van Niekerk saw the children of Farmer Jacobs playing with a lot of "mass-crystal," which seemed [illegible] too bright and too heavy to be applied to such frivolous purposes, nobody [illegible] of the legend. [illegible], when the Jacobs crystal sold for [illegible] there was—except Mr. Gregory's [illegible] essay in the Geological Magazine—no more scepticism on the subject. A "rush" ensued to the banks of the Vaal river, and there for nearly two years some very fair finds were made by the adventurers who elected to grub among dirt in the hope of coming upon such gems as the [illegible]-carat stone which history has associated with the name of Mr. Stewart. Barkly was the capital of this district. But in 1871, under the foot of an old thorn tree on the now famous Kimberley Kopje, or Mt. Kimberley, as it was called after the then secretary for the colonies, was found a stone which soon transferred the diamond diggers from the Vaal to the New Rush, De Beers, Du Toits Pan and Bultfontein, which ever since have continued the centres of this lucrative branch of commerce. The New Rush is now a tolerably [illegible], or, rather, as the mines are all worked by companies and capitalists, it is no longer a "Rush" at all. It is the present city of Kimberley, and out of the "pans" and "pipes" of the [illegible] rock on which it is built something like two and a half millions of gems are yearly exhumed. The Jacobs, the Duvenhages, the Bultfonteins and the Niekerks—names once familiar to the early adventurers—are now anachronisms. They would scarcely recognize their early homes. The four original mines have become extensive townships; while Vooruitzigt, a farm which [illegible] years ago could have been bought for a shilling an acre, was sold to the colonial government for £100,000, though it was only a small portion of the original Bultfontein. As for the latter spot, as it contains the township of [illegible] and half the town of Kimberley, it cannot [illegible] while [illegible] comprises the [illegible] and town of Du Toits Pan, and has, moreover, the satisfaction of being in close proximity to the suburban district of [illegible], where most of the professional men and the [illegible] of the buyers of diamonds and dealers in dry goods have their [illegible] villas.

When Mr. Trollope visited Kimberley [illegible] years ago he declared that the atmosphere consisted mainly of "dust and flies." The climate will still bear improvement, and the best friends of the diamond fields must admit that, if they are rich, they are not pretty. The town is still very dry and very dusty. Yet at over 4000 feet above the sea the air is healthy enough, and in the last decade everything has wonderfully changed for the better. The hotels are good, and society is pleasant, as colonial society usually is.

The solitaire diamond [illegible] worn by Mrs. W. K. Vanderbilt cost $[illegible].

The income of the great Kimberley diamond mines in South Africa is $20,000,000 a year, and it is estimated that fully $10,000,000 worth of gems are stolen annually by the natives who work the mines.

The display of American made jewelry at Tiffany & Co.'s store in New York attracts thousands each day. The diamond necklaces, which are valued as high as $150,000 and [illegible], and the [illegible] exquisitely enameled [illegible] ornamental jewelry, are marvels in their [illegible] and most creditable to the firm.

THE DIAMOND SWINDLER.

Death of the Man Who Made a Fortune by Salting a Western Valley with Jewels.

A Louisville letter to the New York Sun says: Philip Arnold died in his beautiful home in Elizabethtown, this State, on Saturday last of pneumonia. Seven or eight years ago his diamond mine speculation made his name as well known throughout the world as was ever that of John Law or any other shrewd schemer who successfully imposed on credulous speculators. Arnold was born in Hardin county about fifty years ago, and was bred there, being apprenticed to a hatter. He ran away before his term of service expired, and enlisted as a soldier in the Mexican war. After peace was declared he went to California, and remained there until 1871, when he appeared in Elizabethtown and opened a large account in the local bank. It was said that he had discovered an immense diamond field in California, and had come home to enjoy, among old friends, the fruits of his good fortune. Speedily, however, on the heels of this rumor, came the allegations of J. B. Cooper, a San Francisco bookkeeper, who made affidavit that the diamond field was a gigantic swindle, that Arnold had planned and persuaded him to help carry out.

Arnold sailed for Europe with some $40,000, and bribed two sailors to go among the London jewellers and buy what diamonds they could in the rough. He got together in this way $37,000 worth of these stones, something like a bushel in quantity, and sailed back again to California. Some months afterward a number of wealthy San Francisco speculators, among whom were William Ralston and William M. Lent, were told that Arnold and a friend of his named Slack, also an Elizabethtown boy, had stumbled upon a valley in which diamonds, sapphires and gems of various kinds and values were to be picked up with only the trouble of stooping for them. The lucky finders had a bagful of the jewels in their possession, that they claimed to have gathered in the valley, and they were displayed in such profusion that one of the speculators said that they covered one end of a billiard table an inch deep.

Arnold took his

[illegible] TO NEW YORK,

and a company, with a capital of $10,000,000, was organized to work the mine. Nearly one hundred thousand dollars worth of stock was subscribed, and Henry Janin, an expert, was engaged to explore the valley and report upon the prospect. Arnold led the expedition that was fitted out for the purpose. They started from Denver, Col., on May 28, 1872, and after travelling nine days, Arnold told them they were on the spot. They afterward ascertained that they were only 30 miles from the point of departure. But the valley more than fulfilled their wildest anticipations. They spent seven days there, and gathered in that time 1000 karats of diamonds and 6000 carats of other precious stones. Janin's report was an enthusiastic one. There had already been paid $150,000 to Arnold, and, on Janin's report, $[illegible] worth of the stock was sold, of which Arnold got $[illegible].

Information of the alleged discovery soon reached England, and the London Times demonstrated the geological impossibility of their being so many jewels of such various kinds in one locality, and further exposed the swindle by making known the fact that persons from California had attracted attention the year before in London by buying up all rough diamonds to be found in the city. The managers of the company then sent Clarence King, United States geologist, to visit the valley. He soon ascertained that the ground had been plainly "salted." Holes had been poked with a common stick into the clay, the jewels dumped into them, and then stopped up again.

A few weeks after the exposure several California capitalists sued Arnold and Slack in the Kentucky courts for the recovery of $[illegible]. The suit was compromised by the payment of $[illegible]. No criminal action was ever begun [illegible] either of the men.

Arnold established a bank in Elizabethtown, and [illegible] and J. R. Holdsworth, who also had a bank there, there had been much rivalry and bad feeling. A [illegible]

the financial standing of Arnold's bank, he [illegible] him for $[illegible] damages. [illegible], one of Holdsworth's clerks, took an active part in the controversy, and Arnold cowhided him in the street. They met again in a barroom on Aug. [illegible], last, and Arnold knocked Holdsworth down. Holdsworth ran to the bank, got a shotgun, and fired at Arnold as he came from the barroom. Arnold returned the fire with his pistol, shooting five times. None of his shots hit Holdsworth, but one of them struck John Anderson, a farmer, passing entirely through his stomach. The second time Holdsworth fired, the entire load lodged in Arnold's right breast and shoulder. He never thoroughly recovered from the effects of the wound, although it was not the immediate cause of his death. None of the persons engaged in the melee were prosecuted.

Mr. Arnold's bank was one of the most [illegible] in Kentucky. He was very [illegible]

PRECIOUS STONES!

A Superb Selection of Diamonds, Rubies, Emeralds, etc.

There is no branch of trade in existence requiring more skill and probity than that of dealing in diamonds, and the buyer is nowhere else more dependent on the character of the house he deals with. Everybody admires diamonds, and there are but few people but have longing desires to possess one of these beautiful gems. And yet, perhaps, only a proportion of all the people who love and admire these precious stones, know that the diamond in the rough is a vastly different thing from the same gem cut, polished and set in finger ring, necklace, bosom pin or ear-ring. Half its life, brilliancy and beauty lies buried in the rough stone, until released by the diamond cutter's art. After that, and only then, we get the wonderful sparkle and beautiful play of colors that are the delight of everybody who sees them. Diamond cutting and polishing is very difficult, and for a long time the secret was known only to a very limited circle of workmen in Europe. Knowledge of the art has, however, spread more with [illegible] years, and now in different parts of the world there are to be found good cutters. Here in Boston a great deal of first-class work, inferior to none elsewhere in the world, is done. There are a number of firms here, but none can turn out work superior to that which comes from the establishment of Mr. Henry D. Morse, No. 436 Washington street. Mr. Morse is thoroughly proficient in all the details of the difficult business, having been engaged in it for a number of years.

His establishment is one of the most complete in the city. He employs a number of men, and has polishing wheels run by power. He employs only trained and experienced men, and has gained a standard reputation for the carefulness and thoroughness of the work done at his establishment. He has a superb selection of diamonds of his own cutting in solitaire ear-rings, lace pins, etc. Also fine rubies, sapphires, emeralds and pearls at wholesale and retail. He imports largely diamonds in the rough, and sends out from his establishment some of the handsomest gems in the market. His collection of rough diamonds of all sizes, from the point of a pin to a small egg, is very attractive and interesting.

—Mr. Henry D. Morse has just completed the cutting of a seventy-seven carat diamond, the largest stone ever cut in Boston, which is a perfect example of the lapidary's art. The gem is almost square in shape, of the palest yellow tint, and so [illegible] cut that its extraordinary brilliancy is increased a hundred fold. A more splendid success has rarely attended the famous diamond cutters of Europe, and it is hoped this lovely gem may be seen by all who are judges of the difficult and laborious work which Mr. Morse has accomplished with so much credit to himself and to Boston.

The [illegible]

John Ruskin, who presumes to know all about woman's nature, asks if any woman was ever made better by owning diamonds. Moreover, he asks the question [illegible], in a way that dares [illegible] to say yes. I dare to say that I know a woman who has been "made better" by a pair of solitaire diamond ear-rings. Her health was delicate, and her face had long been like a white [illegible]. On Christmas morning she was feeling [illegible] feeble, and had concluded that she could not be any means fulfil her engagement to dine on that day. Finding a pair of superb new solitaire ear-rings flashing among the various gems in her jewel case made a new woman of her, and she wore the brightest smiles that greeted the Christmas turkey to which she paid respects. So I lost faith in Ruskin, and believe that solitaire diamonds do more to make women "better" than any "elixir of gold" yet known to medical science.—[Atlanta Constitution.

—The famous diamond mines of Golconda, on the Ganges, are now deserted. Two centuries ago, 60,000 persons of both sexes and all ages found employment in them.

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON.

OUR REGULAR BOSTON LETTER.

Hasty Pen Pictures of Leading Merchants and Manufacturers, together with a Synopsis of What They are Doing.

SOMETHING ABOUT DIAMONDS.

The Largest and Most Influential Importing House in Boston,—H. D. Morse.

For ages past the diamond has been held high in the estimation of those who love jewelry, and the splendor of the finer stones has certainly justified the preference. Aside from its value as an article of adornment, the diamond also has been looked upon as a desirable form of investment, from the fact that its value fluctuates but little from year to year. The business of importing diamonds is a very interesting and important one, and is generally so regarded. The chief house in Boston, in the business of importing and cutting of diamonds is that of the Morse Diamond Cutting Co., of No. 486 Washington street, who have intimate relationships with the diamond producing parts of the world, and the firm are able to secure from time to time a large proportion of the largest and finest stones that are found. There has been much written about diamonds and nothing said which would be a guide to the purchaser. "Buyers generally have the impression," said Mr. Morse, "that the color, perfection and weight are guides, and having an eye for color, and with an eye-glass to detect the imperfections, if the weight is guaranteed, they have the whole thing, and flatter themselves that they can buy as well as any one, and can go from one dealer to another, judge of the comparative value of the different diamonds which they have seen, where a dealer who has had many years' experience cannot judge accurately without the closest scrutiny and most careful comparisons, and will even then (in this present demoralization in the diamond market) differ widely with others of equal experience in regard to values. It is not surprising that so many poor diamonds are sold, when it is known that nine-tenths of all the diamonds imported are of that quality, and the one-tenth of fine ones are sold to first-class dealers only. Beware of the dealer who talks too much about the weight of his diamonds, as the quality is sure to be deficient. A first-class dealer who has fine goods rarely speaks of the weight unless asked, as he depends upon the size and beauty for the recommendation, not the weight. It is the custom for buyers to go from one dealer to another asking the price per kt. of diamonds of certain weights; it would be just as reasonable to buy a horse by the pound." Mr. Morse said further that a buyer might naturally ask are not diamonds sold by the karat? "I would answer yes, in lots at wholesale they are; the diamond cutters buy a parcel of rough diamonds of mixed sizes and qualities by the karat, and they are generally sold in lots of assorted sizes and qualities when finished, the price per karat depending upon the net weight when finished, some lots yielding 60 per cent., others 40 only, but the prices of the individual stones would depend upon size, color, brilliancy and perfection, which takes an expert to determine the relative values. Most of the Dutch cutters and polishers are trained to leave the diamonds as heavy as possible, having no regard for their beauty, and as they invariably work by the piece, the more they finish within a given time the more money they make, consequently the work is slighted, the stones thick, clumsy and ill shapen, the beauty being sacri-

Continued,

is the character of nine-tenths of all the diamonds imported into this country. To make a parcel of rough diamonds (of good shapes and good materials) fine, the yield would not be much over 40 per cent.; if clumsily made, the yield would be 60 per cent., which would make a difference in the actual cost of about 50 per cent., making the fine ones worth one-half more than the others. The greatest brilliancy the diamond is capable of receiving by the skill of the polisher is the desideratum, and places the gem at its highest point of value. Since diamond cutting has been made an American enterprise, particular attention has been given to perfection of cutting, and the American workmen are taught to polish every facet at the proper angle to bring out the greatest brilliancy, without regard to loss of weight; and it is appreciated by those who are the best judges, as a great number of stones cut in Europe are being remodelled constantly by our American workmen, which is a high compliment to American skill. It is certainly desirable to all who aspire to own a diamond to have a brilliant one; brilliancy being more desirable than perfection,

although flaws which are plainly to be seen with the naked eye are objectionable, and the value is diminished, according to the extent and the location of the imperfections; a small speck or flaw which can be seen only with a magnifying power does not depreciate a stone (which is otherwise beautiful) but very little. Many buyers look for perfection and overlook many other important qualities; perfection is rarely to be found in anything, the eye should be a sufficient test of the perfection of a diamond, a common eye glass might reveal an imperfection which the eye could not detect, so would a microscope reveal imperfections which could not be seen with the eye glass, if so the stone is imperfect. If such tests are to be applied, perfect diamonds can hardly be found. The beauty of the diamond does not depend upon its perfection, it is not necessary to see it through a microscope to admire it, if it satisfies the eye that ought to be sufficient. Those who know the least about diamonds are the most particular about perfection, and overlook the more important qualities. A mistake is made by many persons who, in trying to make a "great bargain," seek some loan office, pawn office or itinerant diamond broker, and there buy diamonds of an inferior quality which make a great show for a little money, and dealers of this class, having so many calls for diamonds, are obliged to buy of importers to supply the demand, and represent to their customers that they are all pledged for money loaned. The safest way to obtain diamonds of fine quality is to go to reliable, first-class dealers who are experts, and trust to them for the selection and price, as they have a reputation at stake, and are bound to use their customers fairly." We are under obligations to Mr. Morse for the above facts, and regret for want of space to bring them to a close. As before said, he is a large importer of diamonds, fine rubies, sapphires, emeralds, etc., and a manufacturer of diamond jewelry. In the stock are at all times to be found goods of wonderful beauty and value, ranging in price from $5 up to $25,000. The firm are, and for many years have been, admittedly at the head of the trade in this country, and they bid fair long to remain so. Mr. H. D. Morse is the ruling spirit, having been in the trade these thirty-five years. He understands thoroughly the art of cutting, and as a judge of diamonds has no superior.

MILLIONS IN DIAMONDS.

A Golconda of Precious Stones in a Jeweller's Vaults.

The mineral [illegible] expert connected with the biggest jewelry shop in New York city permitted a newspaper man the other day to look over a portion of the firm's stock of precious stones. The exhibit put to shame the mines of Golconda and the crown jewels of all Europe. There was a rich pearl necklace, valued at [illegible] [illegible] a large pearl in the centre surrounded by diamonds and pear-shaped pearls. A fine pair of pear-shaped pearl ear-rings at $7000 were noted.

"On these costly gems," said the mineralogist, "there is not, proportionately, such a large profit. The per carat [illegible]

He then showed the [illegible] magnificent diamonds. First there was a solitaire ring, selling at [illegible], and a bracelet worth [illegible]. Then came a $50,000 diamond necklace of 22 stones of graded sizes, each stone worth from $1000 to $2000. This was positively resplendent and superb. Then was exhibited the "Tiffany yellow diamond," [illegible]

[illegible]

In jewelry there are many new designs. [illegible] The violets are made up of sapphires, and are very dainty. The pinks are formed of rubies, being very natural, and ranging from [illegible]. White jessamines, with delicate diamond leaves, bring [illegible], and white violets, with diamond centres, [illegible] of different alloys of gold and platinum.

TIFFANY DIAMONDS.

Mr. Tiffany has two large diamonds which have often been referred to, says the New York Tribune. They are both mentioned in Miss [illegible]'s book on "Precious Stones in Nature, Art and Literature." The larger one, which is known as the Tiffany diamond, [illegible] than the Regent, although the latter is larger, being 136 14-16 carats. Mr. Tiffany puts no price on this—would not sell it, in fact—unless, perhaps, he could obtain one far more valuable. In an old inventory dated 1791 the Regent was estimated at £12,000,000. And then it is historic, while the Tiffany was carried straight from the Kimberley mines to the Paris house of Tiffany & Co., without any romance whatever attaching to it.

Another diamond in the Tiffany collection, [illegible] These two diamonds were shown the other day to a Tribune reporter, and also a splendid gem of [illegible] carats, cut by the firm. Altogether, the house shows 22 diamonds, which they believe to be larger than any others in the country. The Tiffany stone is square, measuring 1 1-8 inches across, and is [illegible]

Injurious Occupations.

There is said to be dust everywhere, but what constitutes dust is a variable material. Many occupations, the working of three no less than the working of metals, develop dust and seriously affect the lungs. Iron often settles there. A workman who had polished [illegible] and his lungs were found to be hardened, and to have actually 1 per cent. of iron in their formation. Grinding, particularly needle grinding, is very fatal; these grinders die at the average age of 35. The grinding of other metal products is unhealthy, but to a less terrible degree, and grinders are proverbially neglectful of proper precautions. [illegible]

A Washington dispatch says: "Mrs. Astor of New York wore diamonds and pearls at a dinner at the White House on Monday night, and, afterward, at the Mexican minister's, which were worth nearly or quite one million of dollars. She was attended by two detectives, dressed as gentlemen, and a policeman kept guard before the door of her rooms at Wormley's, day and night." It is a very sad case, and we pity old Astor more than we can say.

A Large Diamond.—By the latest advices from the Cape, another "paragon of nature" has been discovered at the Kimberley Mines, South Africa. On the 29th of March last a digger was fortunate enough to find a diamond measuring 1½ inches in length and 1¼ inches in diameter, weighing no less than 302 carats. This is by far the largest gem yet discovered in South Africa, or, in fact, elsewhere, if we except the "Pitt" and "Mattam" (of a flask shape) in their uncut shape, and some diamonds of apocryphal history. It is a perfect octahedron in shape, and of the usual "Cape" or "off" color. Some years ago its value would have been simply enormous. At the present, however, it is reported that £5000 has been refused for it in its uncut state.

THE "VICTORIA" DIAMOND.

The accompanying diagram represents the exact size and shape of the large diamond found recently in the Kimberley Fields. It is taken from a photograph which has just reached us from a private correspondent. The stone, which has been named the "Victoria," weighs 302¼ carats; it is said to be the largest ever found in the Fields, but not the most valuable, for although a perfect stone in form, being octahedron, in colour it is slightly yellow, and therefore not worth so much as a pure white diamond. £3000 has been quoted as the market price.—*Pall Mall Gazette.*

The "Victoria" Diamond.

MINNIE PALMER'S DIAMONDS.

The History of the Celebrated Cleveland Gem.

A Diamond, That Weighs Forty-two Carats.

Glances at Some Magnificent Jewels.

"That is the box in which they are kept; you see it is really a small fireproof iron safe. Then there is a sole leather case in which the safe is kept." The speaker was Miss Minnie Palmer's representative, and he and the writer were seated about a table in a pleasant private parlor of the Albion House, upon which lay a glittering mass of magnificent jewels. The contents of the small iron safe were scattered all over the table in small trays, some five or six of them having been removed from their place of safekeeping. Each tray was fitted up to contain certain articles. One had places for 16 rings, another for 8 bracelets, another for the necklace and pendant and the famous "big diamond," and the "Cleveland gem"; another for diamond ornaments for the hair, another for brooches and lace pins, and one (the lower tray) held a beautiful silver scent bottle exquisitely carved, that was presented to Miss Palmer by the members of her company at the close of the phenomenally long run of "My Sweetheart" in London a year or so ago. A lovely silver pocketbook of a similar design occupied a pocket in the same tray; this was presented by the manager's wife at the same time the scent bottle was given. The most beautiful article in the tray, however, was an exquisitely painted head of the Magdalen on porcelain, said to have been done by Titian. The medallion has been in the possession of a well-known old English family of rank for generations, and originally was surrounded by a single row of fine turquoises. A later owner added a row of beautiful pearls, and still another a row of brilliant rubies, and it was in this—its present—condition Miss Palmer became the possessor of the painting. Now there are in all 121 stones, all of perfect cut and color.

Among the more prominent of the many beautiful ornaments displayed were two splendid single stones—one of 8, the other of 5 carats; then there was a large sapphire, guarded by two diamonds; a turquoise ring had two rows of these fine stones, with a row of 6-carat diamonds between, all of the finest water. Among the lace pins was a

Very Large, Oval-Shaped Turquoise,

with two large diamonds hanging on either side; another contained a ruby and four stones of probably 2 carats each. Among the bracelets were three that were particularly valuable and beautiful. One held a diamond, a sapphire and a ruby, perfectly matched in size and cutting and each weighing 7 carats. Another bracelet had a solitaire in the centre that weighs over 8 carats, and six 1-carat stones on either side. The third was a broad band of Etruscan gold, with three rows of beautiful pink pearls embedded in the surface around the entire bracelet. One of the finest ornaments in the collection was a diamond butterfly containing [illegible] stones, varying in size from a quarter of a karat to [illegible] carats. The eyes were formed of emeralds, and the body was a single large [illegible] red ruby. This butterfly Miss Palmer wears as a pin or an ornament for the hair. A huge pair of diamond solitaire earrings, and a pair of pear shaped turquoise and diamonds [illegible] several other very handsome sets of earrings. One [illegible] of two rows of diamonds [illegible] and the magnificent pendant in the form of a star and crescent. The [illegible] contains seven stones, the smallest weighing [illegible] and the largest 15 carats. The stone that forms the star is a diamond with a [illegible]

Continued.

and weighs 28 carats. Until the Cleveland stone was heard of, this diamond was the largest and most valuable that had ever been brought to America. It was found in the same mine in South Africa as the Cleveland gem, and eventually found its way to the same diamond merchant in New York, who later on came in possession of the more famous stone. The stones in the pendant, necklace and clasp number nearly 100, and all of the most beautiful color, shape and cutting. The stone, however, that is the most remarkable of all is the much talked about, much written of Cleveland gem. This stone was owned by a syndicate of gentlemen who were afraid to undertake its cutting, but finally Dessau, the noted New York diamond merchant, got hold of it and had the stone cut under his direction in New York. It was about the time of President Cleveland's election to the first office in the land, and it was agreed if the stone turned out in the cutting to be what its owners anticipated, to call it the "Cleveland Gem." The diamond is of a [illegible] square shape, splendidly cut and

Weighs Exactly 42 Carats.

The amount paid for it by Miss Palmer was $40,000, and she has, since becoming its owner, several times had offers for the stone far surpassing the sum she paid for it. It was sent to the recent exhibition in New Orleans by Miss Palmer, and secured the gold medal for being "the largest, finest and most beautiful stone ever seen in America." This magnificent gem is oddly, but beautifully, set in the heart of a rose made of [illegible] gold. By a [illegible] the rose is apparently an ordinary [illegible] but upon touching a tiny gold chain the heart of the rose revolves, and in its place sparkles the Cleveland diamond.

After viewing all the above-mentioned jewels, the writer expressed some curiosity at the fact of Miss Palmer having collected such a very valuable number of precious stones, and manifested some little surprise to find so many diamonds did not overburden their owner with considerable [illegible].

"Well, they are a source of great anxiety," said Miss Palmer's manager, "but they are well insured—we carry [illegible] them all the time, and then we always have a detective with us. As to the accumulation of so many diamonds, it is the same old story—'the more one has the more one wants.' It began by Miss Palmer first having a number of them presented to her during her English engagement—you know how all foreigners give valuable presents—and then after that she put some $20,000 in jewels herself, and now you see what the result has been. They are a responsibility of course. Look at Patti, for instance, she is in terror for the safety of hers one-half the time, but, after all, what is so perfectly beautiful as a fine brilliant diamond?"

With that profound question the heap of glittering jewelry was replaced in the various trays, and they in turn in the little iron safe, and then Miss Palmer's diamonds were taken over to the theatre, where she was about dressing for the second act in which she wears such a number of her valuable and already celebrated jewels.

MISS DAVENPORT'S DIAMONDS.

The Thief Who Stole Them Arrested and the Jewels Recovered.

Kansas City, Mo., Feb. 4, 1887. Charles W. Talbot, the Memphis hotel clerk who ran off with Fanny Davenport's diamonds and some of the hotel's funds, was arrested here today by a Pinkerton detective. The diamonds and most of the money were recovered. Talbot says his mistress' demands for money led him to commit the theft.

Now that Fanny Davenport has recovered her diamonds, it is to be supposed that she has got all the advertisement out of that little dodge that she expected.

CURRENT NOTES.

—A carat and a half diamond was lately discovered in a California gravel pit.

Mrs. Mackay is reported to have acquired a brilliant sapphire from a needy Russian Prince for the trifle of $15,000.

Continued

ABOUT DIAMONDS.

Bogus Gems, and Others That Are Real.

Hints to Purchasers of Costly Jewels.

The Woes of the Legitimate Dealers.

In [illegible] diamonds were a badge of [illegible]. Their possession indicated either wealth or [illegible] of the [illegible] thereof. As [illegible] was rated a gem of [illegible], and [illegible] owner was the envy of his [illegible]. All is changed now. Diamonds are [illegible] cheap and [illegible], and [illegible] as [illegible] as jewels of [illegible] "off-color" diamonds and [illegible] are [illegible] in the [illegible]. It is safe to say that at no period has the market been so flooded with diamonds of a worthless and inferior quality, having absolutely no commercial or intrinsic value, and forming the staple of the many so-called bargains (?) secured by inexperienced buyers. The fascinating beauty of the gem, depending upon its unrivalled brilliancy, was, unquestionably, the original cause of its [illegible] admiration, and [illegible] it is in universal admiration. However [illegible], there is no substance, natural or [illegible], that can sustain any comparison with it in this respect. The vivid and various refractions of the opal, the refreshing tint of the emerald, the singular and beautiful light that streams from the asteria, the rich [illegible] combined with the high lustre that distinguish the ruby, the sapphire and the [illegible], beautiful as they appear upon near inspection, are almost entirely lost to the distant beholder; while the diamond, on the contrary, whether blazing on the crown of state, or diffusing its starry radiance from the breast of titled merit, or wreathing itself with the hair, and entering arbitrarily into contest with the living lustre of those eyes which "rain influence" on all beholders, proclaims, or did proclaim, in the times gone by, to the most distant of a surrounding crowd, the person of the monarch, the noble or the beauty.

ANYTHING THAT GLITTERS

has an attraction for the people. There is a glitter about the short road to wealth, and hence one sees in every-day life the scramble over the cross-roads to opulence and position; there is a glitter about the diamond which no other jewel or gem possesses, and hence the prevailing [illegible] desire for its possession. Diamonds were once a rarity, except upon stately occasions, but now the jewels, or their counterparts, dazzle the eyes of the frequenters of barrooms, horse [illegible] or [illegible], or the [illegible] on the city streets. "A real gem of the first water" ought to be [illegible] highly prized [illegible] than at any period of the world's history, though its real commercial value is [illegible], for, like the one fair apple in the peck measure, its worth is enhanced by its surroundings. Fine diamonds, as sold by regular merchants, have a determined and universal value, and [illegible]

[illegible]

jewels of "off color," or inferior brilliancy, and, taking these into consideration, it can be truthfully said that "the real gem" is not as plentiful as one's eyes would make him believe. Paris has been represented as being "literally ablaze with diamonds." Undoubtedly there are thousands and thousands of precious and costly gems in the possession of the residents of that city, but, when it is considered that no people in the world have acquired greater proficiency in imitating diamonds than the French, the strongest possible [illegible] are [illegible] that many diamonds of the [illegible] are worn. Did you ever notice in a jewelry store a clock, strikingly elegant in its outside finish, which could be bought at a [illegible] low figure? If purchased, the chances are ten to one that it would be valueless as a time-keeper. In an imitation of a diamond, the setting is most always of the purest gold, of elegant finish, to catch the inexperienced eye, but, like the clock with its beautiful casing, it will not stand "the test of time." To such a degree of perfection has

THE IMITATION OF DIAMONDS

been carried that the judgment of the experienced must be called into play to decide whether a gem is "paste" or real. Indeed, it is stated, upon authority which is unquestioned, that people of wealth often lock up their real gems [illegible] from the [illegible] of prying [illegible], and wear "paste" [illegible], without anybody being the wiser. In their case the knowledge that they own the "real articles," or have means sufficient to purchase them, places them above suspicion; yet the same ornaments, worn by a clerk with a salary of [illegible] per year, would be condemned as worthless at first sight. Again, if by chance or luck the penniless clerk should come into possession of a real diamond, it is quite likely that it would be called "paste" by nine-tenths of his acquaintances. The dealers who sell only diamonds of the first quality have much to contend with. They find that people don't want to know the truth. A physician might be called to prescribe for a patient. On examination, he finds that there is nothing the matter with the patient, except in his or her imagination. His reputation as a physician is at stake, however. If he bluntly told the truth he would be derided at once, so he prescribes a harmless remedy, the patient recovers, and the doctor comes out with colors flying."

"So it is," said one of the oldest and most honorable diamond dealers in this city, "with the trade in diamonds. The more falsehoods that are told the buyers about the jewels, the better they like them. The American people are naturally gamblers. They prefer a chance game to legitimate business. If they want to buy diamonds they prefer to take the risk of dealing with hawkers or brokers in streets and alleys, and swallow with avidity all that is told them. They think too much of weight, and not enough of color or brilliancy; but what is weight compared with either of those desiderata?"

"Do you not meet with many people who consider their judgment infallible in the selection of diamonds?"

"Indeed, we do, and they are the hardest customers to deal with. The possession of diamonds does not make one a judge of their beauty or value. A woman may own a score of silk dresses, but what does she know about silk? To judge a diamond correctly requires long practice and experience, so it does seem a little absurd for a person to come in and tell us where we can get the best diamonds, and, in short, endeavor to instruct us in a business which we have made a special study."

There are not probably more than three direct importing diamond houses in Boston, though there are undoubtedly many [illegible] which claim to sell "direct importations." If one wishes to purchase "a gem of the first water," it is far better to go to a dealer whose honesty is known to be unquestioned, and trust to his judgment and experience, than to attempt to impress your own ideas upon him, or to take a chance with luck.

THE DIAMOND IS PURE CRYSTALLIZED CARBON.

Its hardness equals 10, the highest number of the scale; but the external coat is harder than the internal portion, and may be raised at [illegible] [illegible]

[illegible]

But, in spite of the innumerable methods of determining the quality and value of diamonds, it is a very simple matter for a person to be imposed upon. Only

THE MOST PRACTICED EYE

will [illegible], or accurately determine the [illegible] of color. Old diamonds, which have been handed down from generation to generation, are usually of the "first water," but their cutting, as a rule, is not equal to the finest cutting nowadays. Of late years great progress has been made in cutting diamonds, and, in selecting the gems,

[illegible] must be paid to their "cut" as well as their color, weight and brilliancy. While there are many bogus diamonds worn nowadays, it is nevertheless a fact that there are more of the genuine order in use than ever before, because the masses are growing richer and the supply is greater than at earlier periods. In [illegible], some children playing upon the banks of the Orange river in South Africa picked up a diamond of [illegible] carats, and great excitement was occasioned by fabulous reports of the rich finds in the [illegible] fields. [illegible]

[illegible]

is quite remarkable. Many visitors abroad would consider their tour of inspection half undone if they did not inspect the diamonds in the possession of some of the crowned heads of Europe, including the famous Kohinoor or "Mountain of Light," the crown jewels of England.

In selecting diamonds, it will be well for the purchaser to heed the hints and suggestions given above, taking special pains to seek a dealer whose knowledge of their intrinsic value of the gems makes his advice worth heeding, provided, of course, that his integrity is above reproach. It is well to remember that diamonds, when well set, always appear larger than when they are loose, and that this circumstance gives great advantage to the seller. If a person desires a good diamond, he should make up his mind to pay liberally for it, and, if his good sense is exercised, he need not be swindled.

A DIAMOND ROBBERY.

The Morse Diamond-Cutting Company Defrauded out of $3000.

On Wednesday last the Morse Diamond-Cutting Company of Boston was defrauded of $3000 worth of diamonds by a stranger pretending that he wished to purchase. Late Saturday night a notorious sneak thief, "Eddy" McLean, alias Hamilton, was arrested in New York on suspicion and is held at police headquarters to await the arrival of H. D. Morse, who expects to identify the prisoner as the thief. McLean was arrested and bailed one month ago on a charge of robbing Levy & Picard of New York city of diamonds valued at $1400.

The thief, who was an expert sleight-of-hand operator, expressed a desire to look at specimens of the various styles of cutting, and Mr. Morse showed him quite a large quantity of stones. These stones were done up in papers, and were all small, varying from three-eighths carat down to brilliants. They were abstracted from the tray when Mr. Morse's back was turned, and the loss was not discovered for four or five hours after the departure of the affable stranger. The thief made no purchase. Mr. Morse went to New York Sunday night to identify the thief.

A dispatch received from New York this afternoon says Mr. Morse has identified the prisoner as the man who called at the store previous to the robbery. McLean told his counsel that he could prove that he had not been out of New York in over two weeks. He will be taken to Boston to-morrow.

Continued.

DIAMOND CUT DIAMOND.

A Visit to an Interesting Boston Industry.

Boston Traveller Jan 22d 1887

American Ingenuity vs. European Methods.

How This Gem is Prepared and Polished.

While making some inquiries among Boston jewellers recently, a Traveller reporter received disinterested testimony from several sources to the excellence of the diamond cutting that was done in Boston. This clue followed up led to a visit to the office of the Henry D. Morse Diamond Cutting Company, and permission was given by the genial president, Mr. Henry D. Morse, for an inspection of the factory. Mr. Morse, by the way, was the pioneer American diamond cutter, and the application of American ingenuity in conjunction with a thorough study of the scientific principles of diamond cutting has caused the growth of the enterprise to its present proportions, and the adoption of improved machinery has now placed the work in advance of anything done in Europe.

Arrived at the factory the reporter was introduced to the foreman, Mr. Charles M. Field, who has been in the employ of the company for over 12 years. Mr. Field was engaged in handling several glassy-white pebbles, looking like particles of clear gum arabic—these were diamonds in the rough.

THE CRYSTALS OF THE DIAMOND,

unlike those of any other substance, are curved in their outlines—this added to the similarity.

The diamond is cut in shape, not unlike that of an old fashioned haystack, the part that rests upon the ground is called the table, and this is the face that is exposed when the gem is set. The apex of the stack corresponds to the part of the stone which is inside when set; while the part of the stack from which the rain drops—the eave, so to speak—corresponds to the line about which the setting is fastened. This is called the girdle.

Every stone is cut in shape more or less approximating a resemblance to this, all of course being flatter than the usual run of haystacks. The European cut gems are generally much deeper than those cut in Boston. This arises from the curious endeavor to keep the weight of the stone as great as possible—about as sensible a proceeding as to buy a racing horse, not for speed but for weight.

THE VALUE OF THE DIAMOND

is dependent upon its color and brilliancy; and it is a Mede-Persianic canon of American cutting that everything shall be sacrificed to brilliancy. Since the investigations of Mr. Morse resulted in the discovery of the angle of refraction of the diamond which most contributed to brilliancy, all stones are cut upon this principle.

The processes by which the diamond is reduced from the appearance of a glassy pebble is are most interesting. Each pebble is examined as to its possibilities by the foreman, and the course in regard to it is decided with reference to flaws, color, and size. After this has been resolved upon two stones are fixed in a bed of cement with the faces which are to be worked upon exposed. These are then fixed in a machine which is a marvel of adjustability; in appearance it is not unlike an iron lathe, except that the motion is not a revolving one, but the

[illegible] THE STONES RUB ACROSS EACH OTHER,

making a squeaking noise, and gradually, by the guidance of the action on the part of the workman, a face is worn on each gem.

The face looks about like a piece of rather rough ground glass, but after cutting the polishing processes, something entirely separate, are commenced. The method of cutting a stone is as follows. Returning to our haystack simile, the stack is made eight sided; this gives the "table" of the stone an octagonal circumference. [illegible]

the eight faces start again to the apex of the stack, which is flattened off in the diamond, and this face is called the collet. After this the angles are cut off, to scatter the light rays as they come from the stone, and so that the stone may appear sparkling from every point of view. Now the stone is ready for polishing. Owing to the

APPLICATION OF THIS MACHINE

to the process greater accuracy of cutting is obtained than could be reached by the manual process employed by European workmen. This machine is the most curious object in the whole factory. It won a gold medal in one of the exhibitions, and is the invention of Mr. Field himself. In this connection another important invention—that of Mr. Henry D. Morse—should be mentioned; it is one used for testing the accuracy of the cuttings. It projects the angles of the smallest stone upon a dial which registers its size accurately, and anything not mathematically correct is rejected.

The polishing of the gems is a very pretty process. It is done upon cast-iron wheels which revolve at about 2000 revolutions per minute, upon which diamond dust that was the result of the attritive process described above is placed. One of the workmen was engaged in grinding or

SHARPENING ONE OF THE WHEELS.

It is done by rubbing pieces of ordinary grindstone from the circumference to the centre of the wheel and the result is like the picking of a millstone. This diamond powder gives the wheel a hold upon the gem and in the resulting friction the gem is gradually polished. Curious to say, the diamond has a grain which must be discovered by the workman or the stone cannot be successfully operated upon. Only about four stones can be attended to at a time by one workman, so close is the attention required. Should one of the stones be planed down too much the whole gem must be gone over again, to say nothing of the loss of the stone in size. The workmen are a more than ordinarily intelligent looking class of men, which, considering the high class of the American mechanic, is saying considerable.

The superiority of the American cutting may be seen from this—all the Morse cut diamonds are so cut that all the light entering above the girdles is refracted in such a way that it comes out again above the girdle while if attention is paid to the weight of the stone, and it is made deeper,

THE INCOMING RAYS ARE LOST

by striking out below the girdles, and are thus lost to the eye. The Morse system of cutting loses nothing from the apparent size of the stone, as the circumference remains the same as in the case of the European stone, the only difference being a greater brilliancy of the former and the absence in it of large planes reflecting no "fire."

Mr. Field keeps an interesting memento of the large diamond with the cutting of which he was entrusted some years. It is of copper, made by the electroplating process, and there is also a similar one of the stone in the rough. The finished stone was rather larger in circumference than a man's thumb nail. The cutting and polishing reduced the stone from a weight of 125 to 77 carats. This is the largest stone ever cut in America, and it was recently pronounced by European connoisseurs in New York to be the most accurately-cut stone in America.

A [illegible]

—Diamonds valued at $4400, on which no duty had been paid, were discovered in a package in the New York Post Office the other day. They were directed to a jewelry firm in that city. They were confiscated.

—The sales of diamonds in New York are estimated to foot up $50,000,000 a year. Two of the largest firms are said to keep a stock of $1,000,000 each. The importations are chiefly from London. The demand is rapidly increasing.

HENRY D. MORSE,

Dealer in

Diamonds and Precious Stones,

456 Wash'n St. [illegible]

Boston.

GLASS DIAMONDS.

"A queer story was told yesterday by a well known society man to a New York Sun writer. He said: "A lady, who had grown tired of the setting of her diamond ring, called at Tiffany's this week, and described the setting she would like. The attendant casually examined the ring, and greatly astonished the lady when he remarked: 'Madam, this is not a diamond, it's glass.' The lady replied that it couldn't be possible, the ring was her engagement ring, and added: 'My ear-rings were given me at the same time by my husband.' The attendant asked her to permit him to examine the ear-rings, and these also were discovered to be glass of very fine quality. The lady told the young man that the ring and the ear-rings were bought at Tiffany's, and the books proved that she was correct; and that the young man whose wife she was on the day he gave them to her had paid a mighty good price for them. The mystery deepened, but all that the clerk could say was that the diamonds had been cut of Tiffany's place for a number of years. The lady returned to her home. She then recalled that she had dismissed her butler several weeks before, and questioning the servants about him she learned that he had frequently mentioned that he was a jeweller in France or Germany. The lady concluded that he had removed her diamonds, and Inspector Byrnes is looking for that jeweller-butler."

—The costliest diamond necklace ever owned in this country was worn by the late Mrs. Mary Jane Morgan of New York. She had a passion for diamonds, and this necklace cost her $200,000. She paid $48,000 for one stone to add to it. When she died the largest of the stones were sold singly, and then the necklace was sold for $90,000.

—A San Francisco jewelry storekeeper, who is known as the "Diamond King," edified the Philadelphians the other day by promenading the corridor of the Continental Hotel, thus gorgeously arrayed, according to the Times: On his scarf shone a pigeon-blood ruby, surrounded with diamonds. On his left little finger sparkled a large solitaire blue diamond. From his watch chain dangled a Masonic mark studded with large diamonds, and on the left side of his vest, just peeping out from under the lapel of his coat, was a massive gold medal, with a fringe of diamonds running all around it.

—A diamond estimated to be worth $[illegible] to $300 was found lately near Ga[illegible] ville, Ga.

Continued

An American lady who attended a court reception at St. Petersburg writes: "We approached the Empress through 3000 officials. First through superb state departments, each blazing with a thousand wax tapers and gorgeous with priceless hangings, malachite pillars, works of art and tropical flowers and ferns. At last we entered the throne room, and there, surrounded by a sea of splendor, stood the Empress, herself a moving mass of diamonds. She was the most dazzling sight of all. On her head was a crown once worn by the great Elizabeth. She was enough of herself to take the breath out of a body, but, surrounded as she was by grand duchesses, each one ablaze with jewels worth a kingdom, she was the most wonderful sight I ever witnessed in my life. I did not know [illegible]."

A DAZZLING STORY.

Boston the Great Diamond Cutting Mart of the Country.

Interesting Accounts of the Brilliant Gems.

Holland Dutchmen Outwitted by a Yankee.

It was something of a revelation to find out, by the way of Washington, the other day, that Boston is the great diamond cutting city of America. It is [illegible] that the industry has [illegible] sought protection at the hands of Congress, [illegible]

[illegible]

THE PIONEER DIAMOND CUTTER OF AMERICA.

The history of the inception and successful prosecution of the business of diamond cutting in this country is a striking illustration of Yankee ingenuity and perseverance. [illegible]

[illegible]

THE PROCESS OF DIAMOND CUTTING.

[illegible]

The process of cutting diamonds of large size is always attended with risk, and is necessarily a costly operation. The Regent cost for cutting $25,000, and occupied two years' time. The Star of the South occupied only 10 days, and the Koh-i-noor only 38 working days. This great feat in diamond cutting was performed with the aid of steam power. The cost of cutting is said to have been $40,000—reduced, however, to some extent by the sale of the fragments.

MR. MORSE AS AN INVENTOR.

Beside being the pioneer of diamond cutting in the United States, Mr. Morse has invented a cutting and polishing machine which is acknowledged to surpass anything of its kind in the world. The labor, tediousness and [illegible] of the old manual process just described struck Mr. Morse as liable to be remedied by the aid of machinery, and he immediately set to work, with the aid of his foreman, Mr. Charles M. Field, to invent a machine which would cut diamonds by a less laborious and [illegible] process. His efforts in this direction met with [illegible] from his old [illegible], and Mr. Morse persevered, and, while prosecuting his researches and experiments, he also made a discovery which, in connection with the machine, has gone to form a third perfect [illegible]. By determining the angle of facets to be cut, so as to bring out the greatest brilliancy of the stone, the [illegible] of the workman was all that was to be relied upon in this [illegible] operation [illegible] the least deviation entailed a loss of brilliancy, and a consequent loss of value. By dint of repeated experiments, and after considerable study, Mr. Morse determined upon the exact angle of facets which would be most universally applicable in the cutting of the stone. Having decided this, he next invented an instrument which should unerringly produce this angle of light without the deviation of a hair's breadth, so that the workmen need no longer trust to guesswork to obtain the greatest amount of brilliancy that the stone possessed. Having arrived thus far on the road of discovery, he next proceeded to perfect the machines. He had observed that all large stones in Amsterdam, which from their size could not be cut by hand, were placed upon the heavy wheel, thereby entailing a loss of the powder, which must be protected to turn, as well as to [illegible] machine which [illegible] a stone of any size from half a carat up to 100 carats. For the last process, that of finishing and polishing, he at once determined to discard the heavy wooden table used by the Dutch, and to substitute a smaller metal one, so fixing the diamond upon it that, even with the heavy power used, it remained steadier in its position than on the larger and more ponderous contrivance. While engaged in perfecting these appliances, chance threw in Mr. Morse's way an itinerant vender of porcelain, who had once been employed as a workman in the diamond ateliers of Amsterdam. The sight of the rough gems and the apparatus recalled to the mind of the Jew the scenes of his youth, and awakened a desire to resume his former occupation, and he offered to do the work of a diamond cutter. But, as the process was carefully considered, it was discovered that the Jew could only cut the facets of the diamond, and the art of the subsequent polishing he did not understand. It seemed strange that an artisan who possessed the rare ability to tell at a glance how large a gem the stone would cut, how to avoid internal imperfections, and how to take advantage of the cleavage planes, could not polish the facets after he had cut them. But such was the fact, for the two processes of cutting and polishing are widely different, and require separate instruction.

THE ARTIFICIAL PRODUCTION OF DIAMONDS.

A few years ago the diamond dealers of the world were somewhat exercised by the announcement that a process had been discovered for the artificial production of diamonds. An examination revealed the fact that the announcement was an absolute truth. But why is not the industry carried on? will be asked. The answer, which is a simple one, is that the cost of producing artificial gems is greater than obtaining them in their natural state; and, until this great obstacle of expense is overcome, the diamond miners need have no fear of their business being ruined. Mr. James Mactear of the St. Rollox chemical works in London, has informed the Glasgow Philosophical Society that, after experiments since 1869, he has succeeded in obtaining crystallized forms of carbon which Profs. Tyndall and Smith, and Mr. Maskelyne of the British Museum, say are diamonds. The sons of the late Dr. Gannal, in looking over the documents left by their father, came across the draft of a paper which he had presented to the French Academy of Sciences in 1828 on the subject of the artificial production of the diamond. It would seem that, in making some experiments with sulphuret of carbon, the idea occurred to Dr. Gannal that the carbon might be separated from it in crystalline form. He therefore took a certain quantity of the sulphuret, poured a little water on the top of it, and then carefully introduced some stick phosphorus. The latter immediately dissolved, with the formation of three separate layers, the phosphorus at the bottom, sulphuret of sulphur in the middle and water at the top. After a time he

Continued.

noticed that a sort of film was formed between the two latter layers, and that, when exposed to sunlight, it was iridescent. After the experiment had been in progress three months, a sudden fall in temperature froze the water, split the glass, and the contents were thus lost. He again began his experiments, but as each one required six months to carry out, and as the numerous accidents to which they were liable continued to interfere, he finally abandoned his efforts. However, in the course of his experiments, he had been able to procure some minute crystals, which he submitted to an eminent jeweller, who tested them by the microscope and other means, and decided that they had the true fire, water and hardness of the diamond. Moreover, on being subjected to the blowpipe, they left no ash. He concludes his memoir as follows: "I believe that I can now announce that the greatest step is made toward the solution of the problem of making diamonds in all respects similar to those nature has disseminated in India and Brazil." The completion of this discovery will do great honor to modern chemistry. The MM. Gannal call attention to the fact that there is no analogy whatever between the products obtained by their father and the so-called diamonds of M. Despretz of Lebour, the latter being nothing more than silicates.

HOW THE SOUTH AFRICAN FIELDS WERE FOUND.

The Kimberley mines, in Kimberley, South Africa, are the most extensive of any recently discovered diamond grounds. They are found as deep down as 450 feet below the natural surface of the ground, and are confined to an area of about nine acres. The original discovery of this enormous wealth was singular, and came about in this wise. In 1867 a certain John O'Riley, trader and hunter, reached the junction of a couple of rivers, and put up for the night with a Dutch farmer named Van Niekerk. The children were playing on the earth floor with some pebbles they

had found long before in the river. One of these pebbles attracted O'Riley's attention. He said, picking it up, "That might be a diamond." Niekerk laughed, and said that it was no diamond—if it was, there were plenty of them around there. However, O'Riley was not to be laughed out of his idea, and said that, if Niekerk had no objections, he would take it down to Cape Town and see what it was, and, if it proved to be a diamond, he would give him half the proceeds. On the way down, a long journey, he stopped at Colesberg, at the hotel, and showed the pebble, scratching with it a pane of glass. His friends laughingly scratched glass with a gun flint, telling O'Riley not to make a fool of himself, and threw the pebble out of the window. However, O'Riley persevered, and got it to Dr. Atherstone, near the coast, who announced that it was, in truth, a diamond of 21¾ carats, and it was sold for $2500. O'Riley divided fairly with Niekerk. The latter remembered that he had seen an immense stone in the hands of a witch doctor, who used it in his incantations. He found the fetich man, gave him 500 sheep, horses, and nearly all his possessions, and sold it the same day to an experienced diamond buyer for $56,000! This was the famous "Star of South Africa." It weighed 83¼ carats in the rough, and was found to be a gem quite the rival of any Indian stone in purity and brilliancy. From this beginning grew the famous diamond industry of South Africa, all within the radius of a single mile, from which nearly all the diamonds of the world are now supplied.

Seven hundred and twenty-one diamonds make the Empress of Japan a happy woman. Her oriental majesty is a connoisseur of precious stones and chewing gum. She is a Yankee girl.

The Buffalo Fire.

BUFFALO, March 21. [illegible] The safe was unlocked this morning, and its contents, including $30,000 or $40,000 worth of diamonds, were found in good shape.

CROWN DIAMONDS FOR SALE.

An ingenious Paris jeweller offers to supply persons who wish to become possessors of some of the famous crown diamonds, which are to be offered for sale May 12, with ornaments studded with those historic brilliants. He intends to buy several lots of the diamonds at his own risk, and will then design them, mounted in stars, bracelets, ear-rings, necklaces, brooches or aigrettes, among subscribers who choose to make application to him before the sale. The idea is not bad, and shows shrewdness on the part of the tradesman who conceived it.

Portland Daily Advertiser
Mch 10th 1887

MAINE GEMS.

Discoveries in the Androscoggin Valley.

Notes upon Some of the Gem-bearing Minerals.

[Thomas F. Lamb.]

One of the choicest gems of the State of Maine is the tourmaline. Even in the seventeenth century it received attention in Europe. Its well marked characteristics were, however, overlooked, and it was therefore termed by some Brazilian emerald. Dr. Franklin was interested in it in 1759. Its many attractive features drew the attention of lovers of nature and science to it. Its resplendent colors, so varied, so intermixed, accompanied by its attractive and repulsive powers toward substances of little weight, when exposed to the rays of the sun, or to heat, made it show not only great beauty but almost evidences of life. The English philosophers confirmed the received opinion of its wonderful electric power, but its identity and true description are hardly a century old.

There are only a few places even at this time, in the United States where colored tourmalines are found. The best are in Maine. Mount Mica, situated in Paris, Maine, was discovered in 1820 by Elijah Hamlin and Ezekiel Holmes. You have all, no doubt, read the fascinating description given by Dr. Hamlin in his book, written in 1873, of the many tourmalines removed from that locality and of the seasons when the deposit was regarded as completely exhausted only to be again revived. Last summer the company formed by these gentlemen were quite successful in unearthing many specimens, among which was one of rare beauty and size. I had the pleasure of seeing it this winter. It was of a beautiful emerald green color and as large, I should say, across the crown after it was cut, as a nickel five cent piece, weighing 34¼ carat. It was the finest I have ever seen from any locality and was valued at one thousand dollars.

In 1868 the attention of Dr. A. C. Hamlin, of Bangor, and Samuel Carter, Esq., of Paris, was called to the Merrow locality at Auburn by Dr. Hill. As Dr. Hamlin had a deep interest in matters of science and had had fair success in obtaining tourmalines at Mount Mica, he and Mr. Carter soon visited this locality. The prospect to them seemed very flattering, as there was every indication of a rich yield of the precious stones. Tourmalines appeared on the surface of the ledge, which projected a little distance from a gently sloping hill and far below its summit. The surface of the rock and adjoining earth were strewn with mica containing transparent tourmalines and large masses of pink lepidolite. They picked up specimens of rich green tourmalines. Indeed all the specimens they procured were of a rich green color. Their high hopes and anticipations were soon followed by disappointment on finding that there was merely a thin coating containing the tourmalines upon the outside of the ledge. Discouraged and dissatisfied with the outlook, they sauntered forth to prospect in the adjacent lots, and by chance they were led to what is now known by geologists as Mount Apatite. There they found quite good indications of tourmalines, yet with their former experience it did not seem to warrant a great outlay of time and money. So it was abandoned and became neglected for a while.

In 1882 I visited it and found it situated in Auburn about three miles from the county buildings in a westerly direction. Mr. Hatch, who owned the locality and lived only a few rods from it, gave me a very cordial welcome (he is a very genial man) and accompanied me to the summit of the hill. Once there I could not help being attracted by the grandeur and beauty of the place as I viewed the surrounding country. When I came to examine the

From Portland Herald Sept. 3d 1887.

[illegible]E GREAT AFRICAN DIAMOND.

How It Was Found, and How Carried to London.

An Amsterdam correspondent of the Manufacturing Jeweller tells the story of the immense African diamond—weighing [illegible] karats in the rough—which is in process of being cut by Mr. Jacques Holz, one of the largest diamond cutters of that city. This stone is said to have a somewhat curious history, and, though its exact birthplace is only a matter of conjecture, it is known that it was found by somebody in one of the four mines of Kimberley, in the Cape Colony, South Africa. It is said that in June or July of last year one of the surveillance officers of the Central Mining Company, in the Kimberley mine, found the stone, and being exempt from search, carried it through the searching house unperceived, and sold it to four irregular dealers for $15,000. Before leaving the province the new owners had a night of drinking and gambling, which ended in two of them becoming its owners instead of four. The two owners escaped the secret police and reached Capetown, where they found a dealer who readily paid them $25,000 for the stone. There is an export duty on diamonds shipped from the Cape colony of [illegible] per cent.; but it appears that this stone was smuggled out of the colony by a passenger on the mail steamer and brought to London, where its presentation at Hatton Garden created a great sensation. A former resident at the Cape [illegible] managed to form a company of eight persons, who bought the stone between them for [illegible] each, on condition that the [illegible] of sellers should receive a [illegible] share of the [illegible] profits. The [illegible] value of the stone has been estimated at London at about [illegible]. According to the rules of valuation of the famous [illegible] diamond, its value would be [illegible]. The correspondent says that the art of diamond polishing existing in Amsterdam for more than three centuries has been brought to such perfection that it is expected that this stone, weighing in the rough [illegible] karats (and said to be whiter and purer than any of its historical predecessors), will lose in working much less than its famous predecessors; that it will be more rapidly finished, and it has every chance of remaining the largest and finest diamond of the whole world. "To enter into comparisons," he says, "the Great Mogul, now in the Persian treasury, weighed in the rough 787 karats, but through the incapacity of the Venetian workman, the stone lost in cutting [illegible] karats. Shah Jehan, instead of paying for the work, made the workman pay him a fine of [illegible] rupees, and would have taken more if he had it. As it is, this stone is yet the largest of all known, weighing now [illegible] karats. The next in size is the Orloff, forming the top of the imperial Russian sceptre, and weighs [illegible] karats. This stone formed one eye of a Brahmin idol, and was stolen by a French soldier who fell in love with the beautiful eyes of the Indian goddess. Next in weight follows the Regent, one of the French crown diamonds. In the rough state it weighed [illegible] karats; it took two years to cut it, and [illegible] worth of diamond powder was used in its polishing. Its present weight is 136 7-8 karats. Next we come to the Koh-i-noor, the property of Her Majesty the Queen of Great Britain. The stone was first cut in India, holding [illegible] karats, but it missed all the fire that such a magnificent gem ought to possess. Hence the Queen had it recut in the brilliant form by the eminent cutter Voorzanger, especially ordered to London for the purpose. The cutting was performed in a masterly manner, and though losing [illegible] karats in working, the stone was trebled in value. The Star of the South has also been polished here in Amsterdam at the mills of the late Mr. Coster. It is in the shape of an oval brilliant, and now weighs 125 [illegible]-16 karats."

SCIENCE AND PROGRESS.

Account of the Largest Brilliant in the World.

Victoria, the Great White Diamond, or the Imperial, as it has been more recently called, is described in detail with illustrations, in a late number of Science by George F. Kunz of New York city. As this is the largest brilliant in the world, the following items and illustrations are here reproduced from Mr. Kunz's communication for the benefit of our readers.

[illegible] diamond and was sold to the Nizam of [illegible] for [illegible]. The cutting of the large stone was done at Amsterdam, and it required twelve months. In its finished condition the stone weighs 180 carats, and is a beautiful steel blue diamond, acknowledged as the largest brilliant in the world.

It is 39.5 mm. (1 9-16 inches) long, 30 mm. (1 11-64 inches) wide, and 23 mm. (15-16 of an inch) thick, being exceeded in size by one diamond only, the Orloff, belonging to the Russian crown, which weighs 194¾ carats, but is a large deep rose, and not a brilliant. The Victoria exceeds the Regent in weight by 44 [illegible] carats. The Kohinoor weighs only 106 1-16 carats.

The three figures in the cut give the front, back, and side features of the stone. It will be observed that the form is not entirely oval, and that on one side of the girdle there is quite a flat place, a natural [illegible] surface, necessary, in cutting, to preserve the large weight of the stone. It is, however, a perfect 58 facet brilliant. The stone [illegible] is held by a London syndicate for $[illegible].

THAT DIAMOND SWINDLER.

Further Details of the Attempt to Swindle by False Orders.

The attempt to swindle Mr. J. A. [illegible] out of a diamond last Wednesday was more ingenious than the story published that evening made it appear. The following story shows that the swindler hoped to get one of Palmer, Bachelder & Co.'s letter heads, which would have, of course, made the request appear more business-like, and not so likely to excite suspicion. He called at the store of Messrs. Palmer, Bachelder & Co., on Tremont street, Wednesday forenoon, and asked a member of the firm if he would sell him a sheet of paper and an envelope. He was answered "that they had only paper with the printed heading of the firm's business and address." "Oh, that will do just as well," was his reply. "But we prefer to confine the use of such paper to our own correspondence," was the answer given him. Finding some blank notepaper on his desk, however, the member of the firm did give the man two sheets and two envelopes. Shortly after, and during the absence of the party who furnished the paper, one of the firm of Messrs. Morse and Foss, diamond dealers on Tremont street, and also a [illegible] from John A. [illegible] of Tremont street, called on Messrs. Palmer, Bachelder & Co., saying they had received from a messenger boy an order to send up certain described diamonds for inspection; but, being rather an unusual occurrence, they suspected it was not all right, and, instead of delivering the goods to the messenger, called themselves. One of the orders was written on paper matching perfectly that given the swindler by Messrs. Palmer, Bachelder & Co. Undoubtedly the rascal expected, when he made application, that he would have paper with their address printed upon it given him; but the caution which long experience has taught our Boston dealers to exercise prevented Messrs. Morse & Foss and Mr. [illegible] from being swindled. Chief Inspector Hanscom desires to find the messenger boy who did the errand for the would-be swindler, in order to get a good description of him.

THE HARDEST THING KNOWN

Within five years the study of the diamond has developed some of the eccentricities of this most precious of nature's formations, says the New York Times of June [illegible]. One of the most extraordinary of these eccentricities was brought out recently by an expert [illegible] at Tiffany's great establishment in this city. In a recent lot of rough [illegible] purchased by the Tiffany's was a fine specimen of "bort," and Mr. George F. Kunz, the [illegible] [illegible] employed by the house [illegible] determined to test its hardness on the polishing wheel. "Round bort" is a [illegible] form of diamond, called by the French "[illegible] diamond," and is harder than any other kind of diamond known to exist. The specimen to be experimented with had been cut into the usual form of the brilliant, and its "[illegible]" face was placed on the polishing wheel. For [illegible] days it was kept on the wheel, which revolves 2800 times per minute. The point at which the diamond came into contact with the revolving surface was about 15 inches from its axis. It was calculated that the diamond passed over a surface amounting in the aggregate to 75,000 miles. Notwithstanding that the pressure placed on this diamond was gradually increased from 2½ pounds (the usual weight) to 40 pounds, the gem refused to take a polish sufficient to give it a commercial value. On the contrary, it [illegible] and badly damaged the wheel, throwing constant scintillations in all directions. In a paper prepared by Mr. Kunz on the subject of peculiar specimens of rough diamonds, he refers to this "hard round bort." "This," he says, "[illegible] called the 'rolled diamond,' but this is a [illegible], since the diamond cannot be rolled. There is nothing in nature hard enough to abrade it except the diamond itself, and this is never found in sufficient quantities."

They have a novel method in St. Paul of determining the genuineness of diamonds. A man was offered one at a bargain, and, being a little suspicious that the sparkler was not a genuine diamond, thought he would put it to a test. So he put it on an anvil and struck it a smart blow with a hammer. He has bought it now, for he had to, but he will not wear the pieces.

Continued

brow of the hill, I was more attracted still, as it gave evidence of containing gems. At this time not much work was done, but I soon returned with the firm purpose of bringing to light the treasures if any existed there. When we came to blast we found albite, mica and quartz, not what we really anticipated but quite a proof that there was something better there. We also found lepidolite in both wall and soil, but nothing of any value.

In 1883 Mr. N. H. Perry, of South Paris, commenced operations on the south side of the hill. The ledge was covered with two or three feet of earth, in which he found, near the ledge, pockets of tourmalines where the rock had become decomposed. Finding that the ledge was perforated with cavities in which tourmalines and other minerals were deposited, he procured a lease of a strip of land two rods wide and four rods long for a term of four months. He blasted and the explosions revealed pockets from which he secured for the first month a rich harvest of tourmalines. They were found colorless, light pink, bluish pink and light green, and at times all these colors were found in one crystal. They were somewhat lighter in color than Mount Mica tourmalines, yet of a more brilliant polish. Many were more or less fractured yet even these were valuable cabinet specimens. At the expiration of twenty-five days he found that the mineral-bearing rock (the albite) had disappeared, which so disheartened him that he left the field. At that time I was prospecting other parts of the hill, and even blasted, but found only enough to keep up a little excitement.

In 1884 I went there again and met with better success on the westerly side of the hill. Near the surface I found some beautiful green tourmalines radiated on plates of mica. About six feet below the surface of the ledge I found embedded in cookite, lepidolite and albite (the most of them in cookite), green tourmalines. Some were of unrivalled brilliancy and equal in hardness and value to an emerald. The soft green of these was very pleasing to the eye, and they lost their lustre neither in sun nor in shade, nor in artificial light. These were not perfect crystals but in sections, having no termination like other tourmalines. I did not procure many, but they were without exception fine in quality.

The next season, 1885, I went to this locality in company with Mr. Perry. We removed from his old pit about half of his waste in order to get to the ledge. After making a few blasts and not finding anything to revive his lost faith, he was not long in deciding to give it up.

In 1886 I went in company with Mr. Hatch and we directed our attention to Mr. Perry's abandoned pit. We removed his waste and commenced at the bottom which was ten feet below the surface. One blast opened a pocket containing thirty crystals of tourmalines. We continued to blast, following up the mineral vein which we had discovered until we opened seven or eight pockets, all of which contained tourmalines. They were not perfect but somewhat broken, giving evidence that they had been disturbed since their formation. The pockets were lined with quartz crystals and these sometimes had small lepidolite crystals on them. Muscovite coated with lepidolite protruded from the sides of the pockets. We found none of the deep green color but they were light green and pink. The light green took a darker shade after it was cut. No gem has such a vast range of colors as the tourmaline. It really has the colors of all other gems. The greens are rather heightened in color by artificial light, while the blues remain the same. I found a little blue in the same locality in which I found the deep green.

The composition of the tourmaline is very complex. There are certain elements characteristic of it, namely: boracic acid, silica and alumina. In all tourmalines there is an alkaline base, sometimes potash, sometimes soda, sometimes lithia, or a mixture of all. There is found in it also magnesia, lime, oxide of iron and oxide of manganese. The crystals are in form of longish three and six-sided prisms terminated by three sided

Continued

Between the layers of ledge, which dipped to the south, we found a substance, which appeared to be sand. Amongst this sand or disintegrated rock we found crystals of tourmalines. The largest one procured last summer came from that sand. It is an interesting fact that in searching for tourmalines, many beautiful specimens of other minerals were revealed to us of which I must not fail to speak.

Quartz occurs in crystals which are smoky in color and from one inch to ten inches in length. Some of these are capped or coated with a white opaque coating, and at times penetrated by the colored tourmalines and sometimes coated with fine crystals of apatite. As found here the apatite was very fine in color. It occurs in light pink, purple, light blue, blue green and green colors and the lustre and transparency are so perfect as to make it resemble at times the tourmaline found with it. It cannot be used for gems as its softness renders it unfit for that purpose.

Albite occurs here in abundance in plates piled together, forming irregular and triangular spaces. In these spaces and on the sides of the crystals are found implanted nearly all the minerals described. The other associated minerals are orthoclase, beryl, garnet, cassiterite, autunite, muscovite, leucopyrite, cookite, biotite, amblygonite, zircon and a mixture of orthoclase and quartz forming a graphic granite.

I visited the amethyst locality on Deer hill, in the town of Stow, Oxford County, in 1885, in company with Mr. Edgar D. Andrews, who first discovered it some years before. The hill was nearly covered with a growth of wood and the ledge cropped out in many places. At the place where we proposed to work, the ledge was covered with soil to the depth of 18 inches. After removing a portion, we made a few blasts and opened several small pockets containing small quartz crystals. Not disheartened or willing to relinquish the search, we removed more of the soil, in order to make another blast, and in doing so Mr. Andrews broke through into a pocket. After extricating himself we investigated and found it to be a cavity nearly four feet long, about one foot wide and twenty inches deep. It was half full of clay or decomposed feldspar and water. In this clay we found twenty-two distinct crystals of amethyst. When first taken out they were of a fine, deep purple shade and very clear. Thinking we had something very rich we carefully packed them up and took them to the house, but on looking at them the next day I found that they had lost most of their color and were badly fractured. The amethyst also occurs here loose in the soil and some very fine crystals have been thus obtained. Mr. Andrews found a group that he sold to Dr. French, of Lovell, who values them very highly. The amethyst is colored by oxide of manganese, or by iron and soda. It was named by the ancients who believed that wine drunk from goblets made from this mineral would not intoxicate, and this idea is expressed in its name.

The topaz locality of Stoneham is situated on Harnden hill within half a mile of Stow and two miles from Deer hill. The topaz was first found by Mr. E. D. Andrews, who in blasting opened a pocket containing peculiar shaped crystals, and not knowing what they were, sent for Mr. N. H. Perry of Paris. He, after investigation, was not fully satisfied what they were. Some were then sent to Mr. G. F. Kunz, of New York, who immediately recognized them as topaz. I had a crystal of it in my possession and it was shown to Mr. T. Sterry Hunt, of Canada, who also called it topaz. All the crystals that this pocket contained were bought by Mr. Kunz. This locality is the first in New England that has furnished good, clear, distinct crystals of topaz, and thus far it has produced the best crystals found in the United States. These crystals were colorless or faintly tinted with green or blue. This is the only pocket that has been opened up to the present time. Large crystals were found in the cleavelandite, some measuring six inches in diameter and from these crystals pieces have been obtained clear enough for cutting.

Continued

Beryl occurs here in large crystals and at times in contact with the larger topaz which it strikingly resembles. Triplite occurs here, scattered through the rock in masses, staining the topaz, quartz, cleavelandite and associated minerals, its color being a light chocolate and clove brown, usually with a black coating of oxide of manganese. Montmorillonite occurs in masses that vary in color from a very delicate pink to a dark pink, filling the cavities in the cleavelandite. Columbite is scattered all through the cleavelandite, either on crystals of the latter in cavities, or else between the plates of this mineral. Autunite occurs in minute scales on the cleavelandite. Quartz occurs in abundance, usually of a milky color. Apatite, in small doubly terminated crystals, occurs in the cavities, often white in the centre and blue or green at each end of the pyramid. Fluorite fills small cavities in the cleavelandite. Muscovite occurs in large masses and in hexagonal crystals that are from two to six inches across and transparent through the prism. Damourite, a curved mica, occurs in large shells two inches across, saucer-like in shape. Herderite occurs here, and for some time the miners in working for topaz threw it away in their waste, not knowing what it was. In time it was recognized by some geologist and this being the only locality in the United States where the mineral is found, it was readily sold at fabulous prices. So high were these prices that it paid the miners well for looking their waste all over again. For this mineral alone workers must have received the net value of five hundred dollars.

In addition to the topaz and other minerals there is found at Stoneham beryl, of exceptional beauty, in different parts of the town. It is of a rich sea green color. The materials in the crystals are the finest that have been found in any American locality. Beryl are also found at Lovell and Albany, the adjoining towns. For the last two years nearly two thousand dollars worth have been taken from these places, most of which have been sold for gem material, some crystals selling as high as one hundred dollars.

I can hardly do justice to the mineral resources of Maine in these few pages, which I have devoted only to a few localities. Many others I have visited, from which I have procured fine cabinet specimens. There are other gem localities in Maine. Two, Norway and Rumford, I have not visited. I am confident there are yet to be discovered beneath the rough exterior of some of the seemingly unproductive localities of Maine, treasures much exceeding in value those already procured. There is evidence enough that weighs in favor of this opinion.

ARTIFICIAL GEMS.

Artificial precious stones, the Popular Science Monthly states, have become an important article of trade. The products of some of the shops would almost deceive an expert, but the test of hardness is still infallible. The beautiful "French paste," from which imitation diamonds are made, is a kind of glass with a mixture of oxide of lead. The more of the latter the brighter the stone, but also the softer, and this is a serious defect. The imitation stones are now so perfectly made, and are so satisfactory to those who are not very particular, that their influence begins to be felt in the market for real stones. By careful selection of the ingredients, and skill and manipulation, the forms, color, fire and water of the ancient stones are, to the eyes of the layman, fairly reproduced. There are a few delicacies of color that cannot be perfectly given, for they depend on some undiscoverable peculiarity of molecular arrangement and not on chemical composition; but the persons who buy the stones know nothing of that. Yet [illegible], a French chemist, has nearly reproduced these peculiarities, including the dichroism of the sapphire, with a combination of which the base is phosphate of lime. Two other French chemists—Fremy and [illegible]—have produced rubies and sapphires having the same composition with the genuine stones and nearly equal hardness.

From Melrose Journal, Jan. 5, 188[illegible]

(Written for the Melrose Journal.)

ABOUT GEMS.

From the earliest times, precious stones have been regarded as having an intrinsic value that has made them among the most desirable of possessions. In the Book of Job, the oldest composition that has come down to us, we are told that "the price of wisdom is above rubies." Solomon, also, says of the virtuous woman that "her price is far above rubies" and at the present day a fine ruby still remains the most precious form of personal property in the eyes of merchant as well as of the rare and beautiful.

It would be interesting to trace the references to gems in the literature of all ages. They have been especial favorites of the poets and there is hardly a precious stone that may not be found set in some beautiful passage of Shakespeare, or in some memorable text of Scripture.

For instance, how appropriate is the comparison, in King Lear, of the tears of a beautiful woman to "pearls from diamonds dropped."

Othello says of Desdemona

"If heaven would make me such another world
Of one entire and perfect chrysolite,
I'd not have sold her for it,"

and in his remorse speaks of himself as

"One whose hand,
Like the base Indian, threw a pearl away
Richer than all his tribe—"

We read, too, that "the kingdom of heaven is like unto a merchant man seeking goodly pearls: who when he had found one pearl of great price, he went and sold all that he had, and bought it."

What are the qualities that have caused precious stones to be so highly prized by "all sorts and conditions of men?" These qualities may be summed up in two, namely, durability and beauty, either quality alone would not account for their value. Those gems which combine the two in the greatest degree hold the highest rank.

The diamond stands easily at the head of all gems on account of its superior hardness, which renders it the most durable substance known, and its unrivalled brilliancy, when properly cut. Its hardness is such that it can be cut only by another diamond and polished only with its own dust. Friction with any other substance produces no impression on it. It is consumed by intense heat and can be fractured by a hard blow but if it escapes these accidents, it will remain literally "a joy forever."

In its rough state, in which its form is that of a regular eight-sided crystal, it has very little brilliancy. This quality is developed by the process of cutting and polishing and is produced by a proper adjustment of the angles according to laws which have been discovered by careful study and experiment. The qualities which distinguish a fine diamond and establish its value are brilliancy, purity of material, and perfection or freedom from flaws, of these brilliancy is the most essential. Emerson showed his usual insight when he said

"I hold it of little matter
Whether your jewel be of pure water,
A rose diamond, or a white,
But whether it *dazzle me with light*."

Purity of material, or "water" is the second essential, those stones which are absolutely white or which have a slight tinge of blue being the most highly prized. Stones from the mines of India or Brazil, technically known as "Old mine" diamonds, frequently have a bluish tinge and sometimes command extraordinary prices. They are however quite rare, as most of the diamonds of commerce come from the mines of South Africa which have produced many gems of great purity and beauty. During the last ten years many very large diamonds have been found in the African mines, but nearly all of them have been more or less "off color." One of the largest of these, weighing one hundred and twenty five karats, was brought to this country last year and was cut and polished in Boston. It is probably the largest ever cut in this country and is a gem of great brilliancy. An idea of its size may be formed from the fact that its diameter in the rough state was exactly one inch.

If the diamond is the king of gems, the ruby may claim the title of queen. A ruby of great brilliancy and of the shade of red known as "pigeon's blood" commands a higher price than any other gem. Such a ruby weighing three or four karats can be readily sold for a thousand dollars a karat while a fine diamond of the same weight would not be worth more than a third as much. Next to the ruby in value stands the emerald, when brilliant and of a rich, dark shade of green. The sapphire, which, with the ruby, belongs to the "corundum" family, is a favorite gem but its beautiful blue color can be seen to advantage only by daylight and should be brought out by contrast with diamonds.

A collection of gems should include also the cat's eye, a curious stone marked by a movable line of light, from which it derives its name: the opal with its beautiful play of prismatic colors: the pearl, which though not a stone but the product of the oyster is highly prized for its lustre and purity: and the turquoise, admired for its beautiful shade of blue, like that of a cloudless sky. Perhaps the believer in "luck" will wish to add the moonstone, which though of little commercial value, is thought by some to bring good fortune to the wearer.

Much has been written about the superstitions attached to gems, and, even in this practical age, many persons are unwilling to wear or even to own an opal for fear that it will bring misfortune and most young ladies, remembering perhaps the old saying, that "yellow's forsaken and green's forsworn," would regard the gift of an emerald ring as an omen of ill. Probably however the correct view of the matter is that one is "lucky" to possess a fine gem of any kind and can safely trust that the pleasure to be derived from it will more than offset the danger of any misfortune that it would be likely to bring.

If there are "sermons in stones," perhaps our readers can find a Christmas sermon in the gems. Not being a preacher, we will leave the gems to suggest their own

Sanborn & Field, 339 Washington Street, Boston, sell diamonds, watches, and jewelry, and warrant their goods first class.

WE would call the attention of our readers to the advertisement of Messrs. Sanborn & Field, dealers in diamonds watches, etc. Mr. Sanborn has long been engaged in selling diamonds and jewelry. Mr. Field has been for the past twelve years a superintendent of diamond cutting and polishing, knows all the points which go to make up a fine and brilliant stone, and therefore is well qualified from experience to select diamonds for all the beauty they contain.

From Boston Journal Nov. 21st 1887.

—The enormous amount of six and a half tons of diamonds is said to have been extracted from four South African mines during the last few years. They were valued at $200,000,000. The other great diamond field of the world, India, is also a British possession.

OUR DIAMOND INDUSTRY.

A New Factory Established in Boston.

The Manipulation of the Precious Stones.

Peculiarities of the Trade. Style and Prices.

Just about two years ago a sketch of "Diamond cutting in America" was given in the HERALD. The enterprise of a Boston firm of jewelers gave rise to that article. Since its publication, however, some changes have been made, and now Boston has two diamond-cutting establishments, the latest being that of H. Cabanne & Co., under the name of the Netherland-American Diamond Manufacturing Company, with a factory and office here, and a branch office in New York. Mr. Cabanne was for several years with Mr. Morse, and came from Holland for the express work of polishing diamonds, as what he is reputed to be a first-class workman, and, it is claimed, the result of producing the work for which our Boston diamond manufacturers have acquired a world-wide reputation. When we speak of manufacturing diamonds, the term no doubt has a strange sound, and people are apt to inquire: Are not diamonds natural products? Yes and no. The crystal carbon is a natural product, but the diamond brilliant into which it is formed is the work of skill and art, the result of an intimate knowledge of everything pertaining to the crystals worked, and the laws governing the refraction of light by means of polished surfaces. Indeed, no mere novice would ever hope to accomplish more than the commonest manipulations of the work in diamond-making, without serving a patient apprenticeship to the business, and being educated in one particular branch of it by a system of close observation and experience as well as natural ability for the work. Diamond manufacturing has three branches—splitting, cutting and polishing. The rough diamonds very often present a large proportion of imperfections—cracks, flaws, cavities and dead spots—and have to pass through the hands of the splitter before the work of reducing them to shape is commenced.

The Cleavage or Splitting of Diamonds

is a work requiring the highest skill and ability. As the diamond is the only substance known that is hard enough to cut diamond, advantage is taken of this circumstance by the splitter. Pieces of diamond which have been split off from crystals having flaws, &c., are used in the work. Their edges are more or less regular, from the fact that the lines of the stones they are taken from—and which they usually meet at an acute angle—are more or less uneven and ridged. The edge used, while it is sharp as that of a razor, is somewhat uneven, or like a saw, which favors it for the work of cutting. This sharp piece of carbon is put on to the end of a turned stick, and held taut in position by means of a cement made of resin and carbonate of lime. A very uncommanding crystal is next selected, and the skilful workman sets it in cement in the top of another stick. The exact place where it is desired to make the cleavage is next selected, and the sharp-edged crystal is rubbed against the stone in line with the grain, until a small notch is made. A thinner-edged crystal is next taken and the notch deepened. A third and thinner cutter is then used, which leaves the original shallow notch deep and wedge-shaped. It seems that a diamond is often worked upon a crystal in a line of the cleavage and at right angles to the grain, and can be made to easily cut into a stone as hard as itself. These cutting appliances are called "sharps" by the workers. The notch with the scratched crystal to be split is next placed upright in a support before and in front of the cutting-box. Then a sharp-bladed knife or blade is taken, the edge placed in the notch of the stone, where it is held in position by the thumb and forefinger of the left hand. Then the splitter takes up a small bar of steel—larger at the ends than in the middle—and strikes a quick, sharp blow upon the back of the blade, and usually makes a clean line fracture through the stone. The knives or blades used must be of peculiar make and temper. The steel must be at once hard and tough. The best are made in London and Hamburg. Of late years good blades have been produced in America. Sometimes an old razor blade is found that combines the necessary qualities for a splitting knife. The peculiar form of the hammer arises from the fact that it has been found that a truer blow can always be given by a man by those whose hands are at right angles to their bodies. When the carbon is split it is found that the sawing workmen has struck close on to the line of discoloration, and that one of the parts is cleaned up, ready of being

Made into a Perfect Brilliant.

He next sets to work to remove the flaw or discoloration from the remaining stone, and to do it may have to make up or more cleavages, being enabled to split at right angles from the first cleavage, but in the same grain direction, and thus work around the flaw or work it out. The cleavage is usually straight in a stone, but sometimes it is irregular and bifurcated at one end. Where such bifurcation occurs, that portion which ranks within the forks is very many degrees harder than the other portions of the stone, and is used to set in handles as glaziers' diamonds. In all cases cutters the natural edges or angles alone are used. Where wavy or irregular, the stone is polished out. If a large stone has never so small a discoloration or flaw in it, it will pay better to split it and remove the flaw, making two smaller stones, than to finish it into one large one. In other words, the two small perfect stones will bring a higher price when cut and polished than the larger imperfect one would, and the cost of sawing and polishing would be no greater. Then, again, in the work of splitting, some smaller or stones will be made which can be cut and polished into rose diamonds, and what is not good for this purpose can be otherwise utilized. When it is seen (as was known the writer) at the establishment of Messrs. Cabanne & Co.) what engraving-looking stones can be utilized by the skill and art of the splitter, and put into shape to be worked up into marketable diamonds, it will not be wondered that the work of a man of this class is so well paid and highly prized. Of the amount of stones given to the splitter he is expected to return about three-quarters in available shapes. The other quarter, which goes by the name of sort, can in part be utilized by cameo-cutters and stone engravers, while what remains is reduced to a powder to be used in the work of polishing. The various branches of diamond manufacturing are paid by the piece. The splitter gets $2 a carat for all that pass through his hands, and can handle from 100 to 150 carats a week. Nearly every manipulation of the diamond, save that of splitting, can be carried on in all kinds of weather; but the work of splitting requires a peculiar condition of the atmosphere, neither too dark nor too light, but clear and pleasant. Artificial light is far better to work by than a hazy atmosphere. Cutting and polishing, on the contrary, are not affected by the state of the weather, and can be carried on by artificial as well as natural light.

The Work of Cutting Diamonds

follows that of cleaving. The crystals are set into the ends of sticks or handles, but at one time, by means of the cement named, and then, as the cutter's work in each hand, and fixing them on opposite sides of an emery wheel, proceeds to form them into shape by rubbing one against the other. The same mode in this present is the case—sprinkling of a shaft or axle that has dried up for want of oil. The powder produced by this attrition falls into the box, which, as we have said, is provided with the polish, thereof and upon the cutter's hand. The box is wider than that of the splitter, and he is counted a poor cutter who allows his cement to mix with his dust. But the splitter, on the other hand, is not expected to be so careful, and his dust has to be burnt or heated to get rid of the cement, before being fit for use. The cutter's box has a small receptacle for his diamonds on the top, and he has to return them, to be placed in the safe every evening. The splitter, however, has a movable gear attachment in his box, with drawers and other cabinet features, which can be taken up at the end of the day's work and put into safe keeping. The work of cutting, like that of splitting, is essentially an art. A good cutter knows how to get the greatest results from the smallest possible expenditure of muscular power. It is no easy employment, however, but gives ample play to the muscles of the arms, shoulders and back, and would be altogether too laborious for females to perform. The cutter must know in what direction the effort of cutting can be best performed, and by careful examination of diamond against diamond he notices completely every spot which otherwise be a point of difficult work. It is said that machine work on diamonds is more rapid than hand work, but far more wasteful. It may be of interest to know that large crystals are only aggregations of smaller crystals, or more properly, that large crystals can be reduced to powder, and that each grain of powder is a small crystal like the parent. This is true of the diamond as of others. Diamond dust is only an aggregation of minute octahedrons, the sharp edges of which give them their cutting powers as polishers. Hand cutting of the crystals leaves the surfaces rough, like ground glass, and a powerful glass will enable us to see that the cause of this roughness is the breaking off from the crystal the small octahedrons which unit to it at angles from the surface. The plates removed by hand in cutting are finer than by the machine, whose greater force and less pliable mechanism is apt to cause in addition to a rougher surface, numerous nicks in the facets which have to be ground or polished out. Now, when it is understood that

All Brilliants Must Have Proper Proportions,

and that if the complementary facets or facets are wrongful the refraction of light will be excessive and untrue, it will be seen that an accident or error made in the first cutting is often the ruin of the whole. Therefore, though machine cutting is more rapid, it is claimed that it is far more costly in the end. For cutting the principal is $1.25 a carat, and a expert cutter can make from $20 to $25 a week, as his work. He is expected to return in cut stones about 75 per cent. of the weight he receives, and the balance in diamond powder. The amount lost in polishing is inconsiderable, so that, with the wastes already mentioned, it will be seen that rough diamonds usually return about 50 per cent. of their weight in polished, marketable stones. After the cutter shapes the stone he passes it over to the polishers. It is here taken charge of, first by the cutter, who places it upon the jack of an arrangement instrument, the size of which is of little moment, and the part surrounding the axis of subject, upon which it is mounted at a proper angle to take advantage of after manipulations to make several facets upon it before reversing. From the base of the cup is a copper wire stem, which in turn is screwed into the end of an instrument called a "tang," which, as before described, is a cross bar such as a hammer and a pincushion, the tang forming the graphic axis of the three bars. The stone is then placed upon a horizontal, circular-revolving wheel of soft iron, on which some diamond powder, mixed with oil, is spread, the diamond stone resting upon it in the proper angle to have several facets polished. By lowering the wire another and another facet is brought on to the wheel, and the work of polishing is thus carried on. Diamonds are usually and collected into the following and four forms. The brilliant has a crown or table, consisting of a large central eight-sided facet and a series of lesser facets around it, sloping off to the rim or girdle. The lower part, or collet, is of pyramidal shape, and consists of a series of facets, with a smaller series near the head of the crown. The outline of the brilliant is usually nearly equal to its breadth, though this rule has its variations. In America, where "cement" is the order, broad and shallow diamonds are most salable, because they look larger in proportion to their weight. If the facets of such proportions are properly cut they are very brilliant, but if not, and a true relative angularity of parallelism between the facets be not observed, there is no effect in the gem. There are lots of so-called cuts of diamonds, and a very handy dictionary upon

The Skill of the Polisher

to have the complementary facets which give them an extensive outline to ear and durable, so that the rapid fuel can be reproduced without the perversion which every follower the work of the unskilled polisher. How the polisher gets rule to go by? Nothing more than the eye, which, however, has been educated to the work, so as to appreciate angles in mathematical correctness. The surface of the four diamond consists of a central equilateral facet of small side, eight triangles, one corresponding to each side of the table, eight parallelograms, and then a series of sixteen triangles. The collet side consists of a minute central octagon, surrounded by eight trapeziums, each of which is supposed to be a right angle into one irregular pentagon and two triangles. Sometimes, however, the rose has facets only on its upper surface. As before announced, a good polisher is indispensable, because he gives the true finish to the stone. A perfect brilliant can often have taken by a good polisher and polished into shape without assistance from the cutter, except, perhaps, a little rubbing around where the girdle is to be made. In polishing there is the use of abrasive against the grain of the stone, as in that direction nothing can be attempted except the wearing away of the polishing disk. The work must be done on or more to the grain as in sharpening a pen-knife with a knife. A polisher will complete one of an ordinary stone, and his ruling salary for the work is $2.50 per stock.

The business is divided, like all others, into two specialties. Before the abolition in South Africa, the workers of the trade were the most dangerous workingmen, except in cutlery in Sheffield and steel-works from lack of plenty of work. It is a popular notion that they were the most independent of the industrial guilds in Europe, as well as the most exclusive, but such was not altogether the fact. They were somewhat independent in being united, and exclusive because the supply of the material on which they worked was limited. It would, therefore, be unwise for them to multiply workmen in an already over-crowded profession. But

Continued

Continued!

The Wonderful Discoveries in South Africa.

by giving to the world an immense number of stones, changed the whole condition of the workers in a manner quite peculiar with the general effect produced on the diamond trade of the world. We are in the habit, in this country, of looking upon diamonds as something beyond a marketable commodity represented by the laws of supply and demand. In Europe, however, diamonds have been for many years an article of common trade like precious metals and the articles made from them. Before the African fields were discovered, rough diamonds could be disposed of to banking houses the same as bullion and the polished articles. After that discovery, however, the price of rough stones went down so considerably, that the banks would no longer advance money upon them. This action reduced the dealers mostly to the polished gems, and while it threatened bankruptcy to the trade at large, induced a frantic rush to the diamond manufacturers to have the rough stones put into shape. The workers, taking advantage of certain opportunities growing out of such a state of things, struck for an advance of wages in 1871, to the extent of 30 per cent., and, between that year and 1873, actually succeeded, by a series of strikes, in advancing 100 per cent. upon the wages received before the new discoveries mentioned. It may seem strange, but yet this apparently very unreasonable and extraordinary advance in prices by the diamond workers, by keeping up the price of cut stones, actually saved the dealers everywhere from embarrassment and bankruptcy. In this case, at least, strikes may be said to have operated to the benefit of all parties concerned in the production and traffic of an article, without at the same time operating sensibly against the consuming classes.

Good Cutting is Essential to the Best Diamonds.

A dull, off-color stone may be made to look to great advantage beside a clear and good-color stone, if better cut. The trade fully appreciate this, and will always, other things being equal, pay a higher price for well-cut stones, even to an extent of 25 per cent. advance on small stones. A large number of the stray brilliants that are to be met with in jewelers' windows, labeled and priced, are not well cut, or first-class in any respect. These come from no one knows exactly where, and are absorbed by the people from time to time. In Paris a poor quality of stones have been produced by the ingenious cheat of attaching a pillar of ordinary quartz or alrose crystal to a genuine diamond table. Such gems, when set, could not be detected save by an expert. It is a rule of the trade that the best gems are kept in paper, while the poorest are enhanced in settings in order to sell them. Of course, second-hand jewels may be of the finest quality, for the ultimate use of all jewels is that they shall be worn for adornment. First-class jewelers keep only the best quality of diamonds. In the matter of adornment, it may be said that, while the clear white diamonds are the best for day wear, under artificial light the straw-color or yellow diamonds give a richer and more brilliant and pleasing effect. For this reason—and also, perhaps, that they are much cheaper—these off-color diamonds are used by ladies for evening, ball and opera effects, the large accumulation of such stones by the South African discovery enabling all to obtain a supply. And the remark is to be made that it is computed that the production of diamonds in South Africa has already largely exceeded the great totals obtained from the fields of Brazil and Borneo. The production in Africa has heretofore been most largely of the yellow or off-color variety of stones, but of late the percentage of white stones is rapidly increasing. In size, the African fields give a considerable yield of large stones, the largest reported being 125 carats in the rough. One of the stones from that locality has been seen by one of the Cohenno firm which weighed 30½ karats when cut. The famous Koh-i-noor, as recut, is about 123 karats.

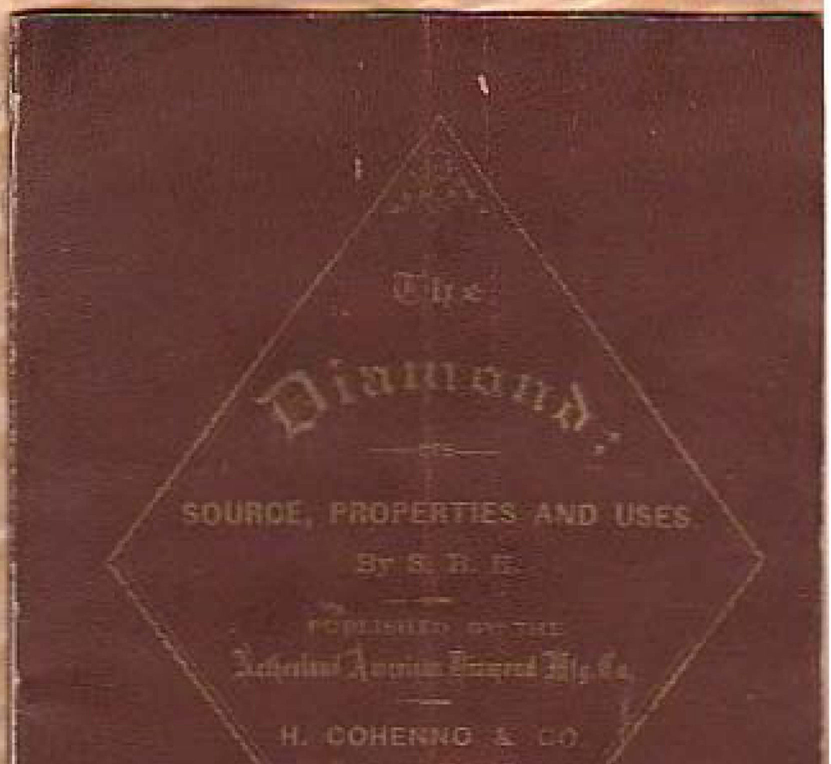
The Great Market for Rough Diamonds

is London. The great manufacturing centre of the gems is Amsterdam, while the great distributing centre for the cut and polished gems is Paris. The prices for rough diamonds range from about $5 a carat upwards. On the polished stones the range is somewhat higher, it being all the way from $15 a carat for [illegible] up to $300 for choicest stones. The rate of advance in price, according to size, is somewhat uniform, being about 10 per cent. per carat. In other words, if a certain quality of stone sold for $100 a carat, a two-carat stone of same quality would be held at $220. The very choicest and most high-priced stones are those of a steel-blue tint or color. Far-

Mch 18th 1887 Continued.

have their rarity as well as their peculiar high-toned color has something to do with their cost. Although diamonds are the hardest of known substances in the world, even they are of different degrees of hardness. The Borneo, or old mine India stones, are considerably harder than the South African diamonds, but—and this seems strange—the latter are much the heaviest. An African stone that would weigh a carat would be no larger in size than an India stone that would weigh but ¾ carat, and this rule seems to hold good in all comparisons of specific gravity between the two kinds of stones—the African being some 25 per cent. the heaviest, bulk for bulk.

In regard to national taste for the precious gems, it is said by diamond dealers that the American educated taste in that respect is generally better than the European. This might seem to be a source of pride, if it were not offset by the circumstance that our market is a sort of common sewer for poor European stones—but, while they are diamonds, and being offered at popular prices, to the great number who do not realize the difference, they are a source of happiness; and is not happiness the chief end of life? The Cohenno Company and the workers employed by them are all experienced diamond cutters, etc., and they feel confident that they can turn out stones that will equal the best workmanship of their native Netherland factories. They are, however, protectionists, and believe that American industry in diamonds should be encouraged by a higher than a 10 per cent. ad valorem duty.



The Melrose Journal.

WILLIAM J. WILLIAMS, . . . Editor.

SATURDAY, APR. 2, 1887.

HENRY WARD BEECHER AND PRECIOUS STONES.

The Great Preacher's Love for and Belief in the Moonstone.

A few years since while coming from New York in the winter time on the splendid Steamer Bristol, we were driven by a gale into New London harbor. Among the passengers were Mr. John A. Remick and his amiable and vivacious wife. We learned there that they were close friends of Rev. Henry Ward Beecher, and as Mr. Remick was a dealer in diamonds and jewels in the Boston Museum building, he had a good customer in the great Brooklyn preacher, who was exceedingly fond of poetical precious stones.

Happening in to see Mr. Remick the other day and knowing that Mr. Beecher had no more sincere mourner than he, we listened for an hour to stories of this distinguished man which have never been made public.

"There," said Mr. Remick, opening his safe and taking from among his diamonds and rubies a well-worn package, "is an autograph letter which you may copy if you wish."

It must be remembered that Mr. Beecher was a great admirer of the moonstone and had a strong belief in the talismanic qualities ascribed to it. Only about a month before his death he sent to Mr. Remick for a large quantity of them to give away as presents to his friends.

The following two letters we are permitted to copy. Never before have they been printed.

Feb. [illegible], 188[illegible].

JOHN A. REMICK,

Dear Sir—

Please find check for amount of the opal ring and the moonstone ring. They suited the respective parties exactly.

The opal goes to my son's mother-in-law, who [illegible] the world while slander on mothers-in-law. I think old maids and mothers-in-law are in general the very Saints of the Earth. I hoped to see you after the lecture, and to have a shake of the hand with Mrs. Remick. But you neither of you regarded the ceremony as "any great shakes," and decamped hastily.

Yours in the bonds of [illegible], opals, &c.,

HENRY WARD BEECHER.

BROOKLYN, N. Y. March [illegible], 188[illegible].

My dear Sir—

As to that moonstone, though it is not so large as a mountain, so it will require less faith to say, Be thou removed and cast into my pocket!

I leave for a three weeks Southern trip, on next Monday. It will be a good thing for luck if [illegible] before then. Can you send by mail?

I could render myself a cheerful martyr like St. Stephen, provided I might pick out the stone wherewith to be stoned.

Yours,

HENRY WARD BEECHER.

Mr. Beecher never indulged his taste for diamonds; he wore one, a canary solitaire, weighing three carats, valued at $500, mounted by Remick; his mania was for colored stones, such as hyacinth, sapphire, aqua marine, opals; one evening in Boston after a long lecture he went to his room at the hotel, and there under a gas-light refreshed and delighted himself with 200 opals from Mr. Remick, their iridescence and beauty surrounding him with an atmosphere of peacefulness after two hours of weary talk.

Now, said Mr. Remick, I will tell you a story of Mr. Beecher's generosity.

When the famous actors, Henry Irving and Ellen Terry were in New York they attended on Sunday Plymouth Church. After the service they lingered in the aisle to obtain an introduction to Mr. Beecher. This was accomplished and they were cordially invited to dine with Mr. Beecher at his son's house. At the table Miss Terry was struck with admiration at sight of an aqua marine stone set in a ring on the minister's little finger. It was a stone of surpassing beauty, a delicate sapphire, reminding one of the ocean blue seen on a midsummer's day sparkling on the bosom of the waves off Nahant or Beverly Farms. Miss Terry raved and gushed over it. It was handed her across the table, she kissed it with delight. "Well," said the preacher, "if you think so much as that of it you may keep it."

Miss Terry was in ecstacies, she exclaimed, "Why, Mrs. Beecher, does he mean it?" and so the aqua marine, valued at about $100, changed hands.

Mr. Remick among the mementos of his friend has a picture of him taken when only 35 years of age. The form is not so stout but the features are lighted with that same intellect which made him radiant to the last.

The following item bears a similar testimony to the above:—

BEECHER'S LOVE OF JEWELS.—Beecher was very fond of jewelry of every sort. He used to often go into the store of Thomas Kirkpatrick and rummage over his whole stock for hours at a time. Kirkpatrick is equally fond of precious stones, and though he knew that Beecher was not likely to buy anything, he delighted in bringing out everything he thought the old man would admire. Sometimes Mr. Beecher would select some rare stone or odd setting and put it in his pocket, saying as he would go away: "Now, Tom, when you want your money just worry me—worry me." "Tom," as everybody called him, usually forgot to charge it, and seldom "worried" him.—*Correspondence Nashville American.*

—Diamond Merchant (to applicant for position)—"What references have you, sir?" Applicant—"The surgeons at Bellevue Hospital." Merchant—"What do they know of your qualifications for my line of trade?" Applicant—"They amputated my legs and supervised the construction of new ones, which can be unbuckled and locked in the safe during business hours." Merchant—"Remove your limbs and enter upon your duties."—*Jewelers' Weekly.*

—Nearly $1,500,000 was realized from the sale of the French crown jewels. The historical pieces, which were reserved for the Louvre Museum, are said to be worth nearly double that sum.

BOGUS CROWN JEWELS.

A Job Put Up on Buyers by French Officials.

The sale of the crown jewels was largely fraud [illegible], writes Adolph [illegible] from Paris in the Chicago Tribune. That is to say, they were not, in many cases, the crown jewels at all. A syndicate of Paris jewellers got into a conspiracy with some of the government officers in charge of the sale and had a great number of ordinary gems taken from their stores, mixed in and sold with the crown jewels. Thus they brought far more than their ordinary value. This job was, of course, facilitated by the breaking up of the crown jewels, selling the stones separately, and melting down the gold. The detectives stated that the spurious jewels thus sold brought more than 1,100,000, which was nearly double what they would have sold for on their own merits. Some of these false jewels have been traced and their purchasers ascertained. A few of them went to America. But the majority of them could not be distinguished from the real crown jewels [illegible]. The result is that many purchasers will [illegible] always be in doubt whether their gems came from the royal [illegible] of France or from a [illegible] jew [illegible].

This is the first count in the indictment. Another is that many of the real crown jewels were taken away after they [illegible] from the shops put in their places. Several of the most famous gems were thus purloined, they being stones that were especially precious to the house of Orleans. It is said by the detective that good reason exists for believing that these gems have already come into the hands of members of that house. If so, the princes must enjoy the ownership of them in private. They would scarcely dare to let it be known that they had stolen goods in their possession. A third item in the report is that some [illegible] gems were sold in the collection. This last came out very emphatically only a few days after the sale. A leading jeweller of Paris called on the government officers who conducted the sale. "Gentlemen," said he, "you see this stone? You identify it as one of the crown jewels? You perceive from your records that it was knocked down to me for [illegible]? Very well. But it is paste!" They examined it and found his words true. Who had [illegible] the real gem and put this in its place could not be ascertained. But to keep the matter up they returned to the jeweller his [illegible]. "It would," they remarked [illegible], "be very unfortunate should this transaction become generally known, for the government would speedily be besieged by a host of owners of paste gems, all clamoring for the return of money alleged to have been paid for them as crown jewels."

The Japanese Princess who was given a reception at the White House in Washington a few days ago is said to have been fairly ablaze with diamonds. They sparkled in her coronet and in the coils of her black hair. They formed stars of glittering light around the black velvet band which encircled her neck, and they rose and fell in flashes of lustre with the heaving of her breast and shone in masses upon her waist. Her dress was of Parisian manufacture.

After the concert in Taunton last evening Madame Joch's jewel bag and other parcels were accidentally left on the depot platform at 10.30 P. M. A special engine was sent back after them from Mansfield, which made the run of 12 miles in 12 minutes, and returned there with the missing articles in time for Joch and her party to connect with the train for Boston. The jewels were valued at $5000.

Boston Herald Jan. 3d 1888.

PIONEER DIAMOND CUTTER DEAD.

Mr. Henry D. Morse Passes Away at His Home at Jamaica Plain.

Mr. Henry D. Morse, the pioneer of the diamond cutting industry in this country, and a well known citizen of Boston, died at his residence, corner of Pond and Myrtle streets, Jamaica Plain, Sunday, from paralysis. He was [illegible] taken ill the day before, and his sudden death was a great shock to the community.

Mr. Morse was born in Boston 61 years ago, and he had always resided and done business here. His father, Hazen Morse, was a bank-note engraver, and his son Henry early learned the trade of engraving on gold and silver ware. He engaged in business for himself before he was of age, and later worked less than two years with Clark & Currier, manufacturing jewellers, to learn their trade. He then began business as a diamond jeweller on Exchange street and at the corner of Summer and Washington streets. About 1850 he engaged in the retail jewelry business, under the firm name of Crosby, Hunnewell & Morse, on Washington street, on the present site of the [illegible] building. The business was later continued under the firm name of Crosby & Morse. Boston was later destined to become the great diamond cutting city in the United States, and Mr. Morse became identified with the history of its inception and its successful prosecution. For many years the headquarters of the diamond cutting trade was in Holland. [illegible] ... in the United States. This was in the early part of 1860. Mr. Morse became associated with Mr. Fray, and with the former's skill and the latter's money, the business of diamond cutting was a reality in America before the year was ended. The undertaking was a bold one, and the importers and dealers in precious stones all over the country looked upon the experimental industry with equal [illegible] and alarm. The business was thus inaugurated under the name of the Morse Diamond Cutting Company, Mr. Morse superintending all the work. It was necessary to employ Dutch experts at first in the work of cutting and polishing, and whenever they were required, they [illegible] ... found in Manchester, nearly opposite Richmond, Va. Lapidaries who worked at it in the rough expressed the opinion that it would be almost impossible to obtain a first-water stone of any size whatever from the original gem, but that it would be better to cut it into small fragmentary crystals. Mr. Morse was intrusted with the work of cutting it, and, by skilful and adroit manipulation, and study of the laws of light and geometrical relations, he produced one of the most brilliant 12-carat diamonds. It was owned by Hon. John Morrissey when he died, and subsequently it came into the possession of the late Alvin Adams of the Adams Express Company.

Besides being the pioneer of diamond cutting Mr. Morse invented a cutting and polishing machine which has been acknowledged to surpass anything of its kind in the world. [illegible] ... The firm of Crosby, Morse & Foss, jewellers and diamond cutters, was formed in [illegible], and in 1875 the firm dissolved and Mr. Morse established himself in the Washington building as a dealer in diamonds and gems and diamond cutter. He removed to the corner of Summer and Washington streets in 1877. Last year Mr. Morse engaged in business again with his old partner, Mr. C. D. Foss, doing business at 120 Tremont street under the firm name of H. D. Morse & C. D. Foss. Although Mr. Morse was one of the best known business men of Boston, he never held public office. He was an enthusiastic sportsman, and an amateur painter of no mean ability. He leaves a widow and two daughters, one of whom is Mrs. Dr. Walter Channing of this city.

Boston Journal Jan. 3d, 1888

OBITUARY.

Mr. Henry D. Morse, a well-known citizen of Boston, died of paralysis Monday. He was particularly known as a diamond cutter and dealer, but his versatility was so remarkable that it has been made prominent in several other ways. He was noted as a good amateur painter and an ardent sportsman, and though never in public [illegible] was possessed of many acquaintances and friends, and was highly respected. In his business he had few equals, being one of the best judges of precious stones in the country, and having had the especial distinction of cutting the first diamonds ever cut in this country. This latter event of his life led to a complete revolutionizing of the trade in America. Mr. Morse was born in Boston 61 years ago, his father being Hazen Morse, the bank note engraver. Early in life Henry Morse learned the art of engraving on gold and silver, and before he had reached his majority he was carrying on a business of his own. Later he worked with Clark & Currier, manufacturing jewelers, and having learned that trade started again for himself. About 1850 he took up the retail jewelry business as a member of the firm of Crosby, Hunnewell & Morse, and afterwards continued the business under the partnership of Crosby & Morse. The firm of Crosby, Morse & Foss, jewelers and diamond cutters, was formed in 1862, existing for 13 years and then dissolving, Mr. Morse establishing himself alone and so continuing until last year, when one of his former partners, Mr. C. D. Foss, associated with him and settled the establishment at 120 Tremont street. Mr. Morse's decease came after an illness of only two days' duration. He has had his residence in Jamaica Plain for some time. A widow and two daughters, one of whom is Mrs. Dr. Walter Channing of this city, survive him.

Boston Transcript Jan. 3d, 1888.

Mr. Henry D. Morse, whose death occurred at his residence at Jamaica Plain yesterday, after a short illness, of paralysis, was widely known and much respected by all who knew him. Mr. Morse was sixty-one years old. Although his life was passed in mercantile pursuits, he was an artist and genius by nature. In early life he followed the pursuit of ornamental engraving on the precious metals, and his work was equal to the finest English masters; after which he conducted the manufacture of diamond mounting, using only fine gold at his factory. For a few years he was associated with others in the general jewelry business, which was distasteful to him, after which, and till the time of his death, he most successfully transacted the diamond business, and especially the cutting and polishing the rough crystals. As a judge of gems he had no superior, and had been an authority to all the trade on all matters pertaining to precious stones. As an artist, in many ways, and especially in landscape and animal painting, Mr. Morse excelled. As a sportsman and expert shot on the wing he was widely known. As a lover of Nature, and familiar with her in her varied forms, was where Mr. Morse passed his happiest hours. He was genial, thoroughly honest and true; the father and centre of a happy family, who, with thousands of friends, mourn his loss. H.

Boston Herald Jan. 4th 1888.

MR. FIELD WAS THE INVENTOR.

To the Editor of the Herald: In your obituary notice of the late Henry D. Morse you stated that Mr. Morse invented a cutting and polishing machine. I would not detract [illegible] from Mr. Morse's fame, but wish to state that Mr. Charles M. Field, [illegible] of the firm of Sanborn & Field, diamond dealers, [illegible] Washington street, was the inventor of the [illegible] machine. F. P. W.

Boston, Jan. 3, 1888.

Journal Jan. 4

Funeral of Henry D. Morse.

The funeral of Henry D. Morse, so well known in the jewelry trade, took place this afternoon at his late residence on Pond street, Jamaica Plain. Rev. C. F. Dole, pastor of the Unitarian Church, officiated. The casket was of black cloth, with a simple silver plate. Upon it were bunches of violets and wreaths of ivy.

Among the prominent jewelers present were Geo. H. Richards, Jr., M. P. Kennard, W. H. Kennard, Frank [illegible], Charles H. [illegible], Luther Brooks, Benjamin A. [illegible], S. W. Bailey, Sylvester Crosby, C. M. Field, D. M. Foss, Henry Guild and Mr. Morse's former employes in the diamond cutting business.

CURIOUS DIAMONDS

Of Many Different Colors—A Ruby Worth $50,000.

"A curious diamond in the possession of Tiffany & Co.," said an expert to a New York Times writer, "weighs 6 3-32 carats. The original weight was 10¼ carats, four carats having been lost in cutting. This stone has 18 facets, of which four, of the top and the table, are white, and four are a distinct black; on the back four facets are white, and the other four and the culet are black. The stone, which is of Brazilian origin, was found to be exceedingly hard, and was originally an octahedron. When found the entire stone was a jet black, and it was cut with the intention of producing a black stone. After the table had been put on one of the points, and the four edges of the octahedron had been removed to make four facets, it was found that the black color was only a superficial coating, and that the inside of the crystal was entirely white, with the exception of a carbon inclusion. It shows no more play of color than a black stone, but gives very decided brilliant crystalline reflections. The curious effect of five white and four black reflections, and the appearance of a clearly defined Greek cross in black outline, when viewed by transmitted light, make the stone a remarkable freak of nature. Among other curiously marked diamonds resembling the above, are two presented to the Jardin des Plantes by Halphen. These stones are colorless and round, and a distinct three-leaved clover in black occupies the entire dimensions in each stone. Another in the Duke of Leuchtenberg's collection, now in the Bavarian state cabinet at Munich, has three leaves united by a circle. All these three are of Indian origin.

"A curious diamond, also in the possession of Tiffany & Co., is a red brilliant that at first glance appears brown, while through it a [illegible] light breaks in every direction. [illegible] it is a red diamond with a brown [illegible] the red predominating as the stone is turned [illegible] in different directions. One-half of the stone is filled with hundreds of irregular shaped cavities, either empty or filled with a transparent fluid, or, as in nearly all cases, with carbon, which in some instances is so porous or so fractured as to admit the light through it. These inclusions appear to affect the color sufficiently to produce the brown appearance."

"Are there many jewels more valuable than diamonds?" was asked.

"A perfect ruby," Mr. Kunz replied, "of a weight of nine carats would be worth $50,000, while a diamond of similar weight and quality would be worth not more than $5000. Tiffany & Co. have owned the finest ruby ever exhibited on this continent. It weighs nine carats, and is worth the amount named."

THREE GREAT BRILLIANTS.

The greatest diamond yet discovered, of 249 carats, writes a London correspondent, is not, he stated, "the finest and largest stone ever found at the Cape." That pre-eminence is the attribute of the rough diamond sent home in 1884, weighing 457 carats, [illegible]. It was cut into a brilliant named the "Imperial," of 180 carats, besides a fragment producing a brilliant of 19 carats, sold to the King of Portugal for [illegible]. The three great brilliants of the world are the Imperial, the Regent and the Koh-i-Noor, weighing 180, 136 and 106 carats. The Imperial has not been advertised, hence the frequent errors in the press giving precedence to the Regent; but its supremacy will come under public notice at the French exhibition, where a place has been secured for it in the place d'honneur, Main avenue.

Sept. 2nd 1893.

GEMS WITH HISTORIES.

Curious Treasures Gathered by an Unknown Collector.

A Broadway bric-a-brac dealer a day or two ago opened an exhibition and began the private sale of rare and historical jewels and antiques, part of the estate of a collector.

"I am not at liberty," said the dealer to a New York Times reporter, "to mention the collector's name. During the past 35 years he has been around the globe gathering gems for his cabinet. The aggregate value of this exhibit is $1,000,000, but that amount is considerably below what was actually paid. Many of the specimens are priceless, or would be but for the circumstance that the owner has met with reverses and is forced to sell. They are priceless because they are matchless."

There are 145 specimens in the collection. The highest priced piece of jewelry is a pigeon blood ruby ring in Indian mounting. The ring was worn by a rajah, and the ruby is said to be unsurpassed. A peculiarity about the gem is that when held at a peculiar angle a clearly defined white star can be seen.

Just $7,000 will buy an oriental pearl and diamond necklace. It contains 60 pearls and as many diamonds. The collector spent 20 years gathering the pearls.

A silk tapestry, once at the Vatican and given in 1878 by Pope Gregory XIII. in the name of Christendom to Admiral Marc Antonio Colonna, is one of the [illegible] of curiosities [illegible]. It was purchased directly from the Colonna family into which Bonanza King Mackay's daughter married. The [illegible] is [illegible].

Another [illegible] curio is the Gonzaga diamond given by Napoleon III. to the Empress Eugenie, and worn by her on [illegible] of her marriage. The Emperor paid $[illegible] for this stone. It is mounted in the centre of a pendant, and can also be used as a hair ornament. The price is $[illegible].

Mme. [illegible]'s famous three-stone ring, to be sold for $[illegible], [illegible] from a [illegible], and so much from association as on account of the central diamond, which is rose color, pure and perfect. Three rings, each set with three stones, all sapphires of different color, excepting an Oriental emerald, make, when placed side by side, a veritable symphony of tints. There is a Ceylon cat's-eye and diamond ring marked $750, one glance of which would make an Angora or Maltese feline envious.

Some of the other notable things in the collection are: A silver flagon, set with stones and pearls, made in the 15th century in honor of Matthew Corvinus, King of Hungary; swords of Francis I. and II., with carved ivory sheaths; Thibet [illegible] ring; canary and steel-blue diamond ring; diamond ring given by Shah of Persia to Sir Edward Dixon; ruby garnet ring from Burmah, with Burmese mounting; the famous opal pendant "Burning of Troy," to Louis XVI. medallion, given by Napoleon I. to Empress Josephine, and sold by her [illegible]; Persian belt, exhumed at [illegible]; ring taken from an idol in a temple in [illegible]; antique astrologer's [illegible], with setting [illegible] the 12 signs of the zodiac; a ring that belonged to an Assyrian King; enameled watches; a Greek toe ring; Etruscan [illegible], mounted by Castellani at Rome; [illegible] collar of [illegible] gold and [illegible], too precious for any [illegible].

Boston Herald
February [illegible] 189[illegible]

A LARGE DIAMOND.

A LARGE DIAMOND.—Crosby, Morse & Foss have just finished cutting a large African diamond, the finest ever cut in this country. It is of a citron yellow color, is of great brilliancy, and perfect in form and cutting, and is entirely free from flaws. It was cut in their work-shop on a new diamond-cutting machine, the first ever invented, which enables them to cut and sell diamonds at a less price than by the old process of cutting by hand. The weight of the diamond before cutting was [illegible] karats. Its present weight is over [illegible] karats. According to the old method of calculating the value of diamonds by [illegible] the square of the weight by the value of [illegible] karat, the value of the diamond [illegible]. The diamond is on exhibition at the store of Crosby, Morse & Foss.

THEIR GEMS.

Mrs. Baldwin Sherman, New York, has $100,000 worth of diamonds.

Mrs. Paran Stevens has many thousands of dollars invested in diamonds.

The finest collection of pearls in the United States is owned by Mrs. Marshall O. Roberts.

Mrs. A. J. Drexel, of Philadelphia, has a fortune in precious gems, diamonds being her favorite.

At a recent costume fete in New York Mrs. Cornelius Vanderbilt wore diamonds valued at $500,000.

Mrs. Hicks-Lord is credited with $250,000 worth of diamonds, and on fancy dress occasions has worn $150,000 worth at one time.

Mrs. J. B. Hagan, wife of the California millionaire, has a ruby given by Louis, of Bavaria, to Lola Montez, valued at $10,000.

Mrs. Hetty Green, who does not care a rap for a diamond, except for the cash it represents, has over $150,000 worth locked up in safe deposits.

The finest single sapphire in this country is owned by Mrs. William Astor, and her necklace of emeralds and diamonds is among the costliest jewels in America.

Mrs. Stanford's wonderful jewels are valued at $1,000,000. Her necklace, the finest in the United States, is worth $74,000. It consists of large blue tint stones.

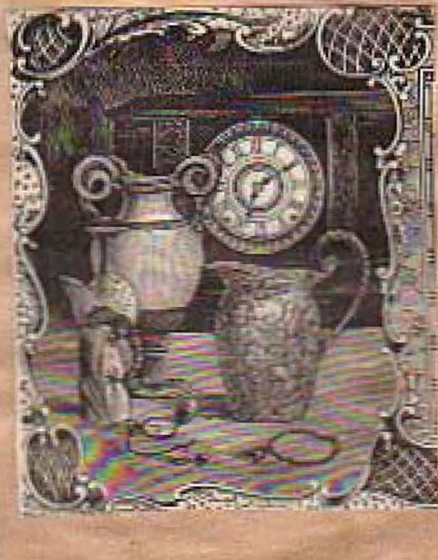
The "Buffalo gem," owned by a lady in Buffalo, is said to be the largest diamond in the United States. It was bought in Amsterdam for $20,000 and weighed ninety-five carats before cutting.

Mrs. Hicks-Lord has a superb necklace that is said to have cost $100,000, but from the standpoint of the experts that of Mrs. Stanford, costing $74,000, is the more desirable on account of the rarer quality of some of the gems.

Three American women, Mrs. Mackay, Mrs. John Jacob Astor and Mrs. Stanford, are each believed to own more fine diamonds than belong to any of the royal families in Europe, with the exception of Great Britain and Russia.

It is well known among dealers that Minnie Palmer has been making large investments in diamonds, and she probably has $250,000 worth of them. The "Cleveland stone," of which she is now the owner, weighs 42½ carats, and cost $40,000.

The most valuable jewels ever worn by one American woman at one time were worn on a fancy dress occasion by the late Mrs. John Jacob Astor. They were valued at $800,000. Ten mounted policemen were employed that night to guard Mrs. Astor to and from the ball.



Tiffany's Great Diamond Bought.

NEW YORK, Aug. 18.—It is said that the big diamond which is the star attraction of the Tiffany exhibit at the World's fair has been bought by Mrs. Charles T. Yerkes, wife of the Chicago street railway king, who will soon take up his abode in this city. The price paid for the diamond is quoted at $100,000. It is said that Mrs. Yerkes will wear it in a stomacher that is now being made for her by Tiffany. The diamond is the size of a small walnut and to the inexperienced eye it seems to have a beautiful touch of barely perceptible yellow in it.

List of Patents

Issued from the United States Patent Office for the week ending April 4, 1876, each bearing that date, for the New England States, reported by Teschemacher & Stearns, solicitors of patents, No. 13 Exchange street, Boston:

C. F. Remy, Springfield, Mass., screw threads.
[illegible] Lathrop & F. H. Allen, Norwich, Conn., [illegible].
T. N. Martin, Winthrop, Mass., [illegible].
C. O. [illegible], Augusta, Me., bracket supports for [illegible] boards.
H. Arnold, East Greenwich, R. I., type-writing machine.
[illegible] Bancroft, Lynn, Mass., machine for winding spiral springs.
W. [illegible], Mansfield, Mass., burglar-alarm.
F. E. Collins, Boston, Mass., fog signal.
T. Fairbanks, St. Johnsbury, Vt., weighing scale.
T. Fairbanks, St. Johnsbury, Vt., weighing scale beam.
J. W. Field, North Brookfield, Mass., cutting and [illegible].
H. C. Hart, Unionville, Conn., shutter workers.
[illegible] Hillman, Cambridge, Mass., [illegible].
[illegible], Cambridgeport, Mass., [illegible].
J. F. [illegible], Providence, R. I., manufacture of [illegible] plates for [illegible].
A. H. Ordway, Groveland, Mass., [illegible] for harness.
[illegible], Boston, Mass., [illegible].
[illegible], [illegible], Me., [illegible].
[illegible], Newburyport, Mass., [illegible].
[illegible]
[illegible] and [illegible], [illegible], Conn., [illegible].
[illegible], Somerset, Mass., [illegible].
[illegible]
[illegible]
[illegible]
[illegible], [illegible], R. I., [illegible] machine.
[illegible], West Fitchburg, Mass., [illegible].
[illegible], New Haven, Conn., [illegible].
[illegible], Meriden, Conn., [illegible].
H. [illegible] and J. A. Trant, New Britain, Conn., [illegible].
[illegible] and C. E. Sawyer, Fall River, Mass., [illegible].
L. H. Sawyer, Boston, Mass., [illegible].
H. Thompson, Worcester, Mass., [illegible].
C. A. White, Hartford, Conn., [illegible].
J. Wilder, West Rupert, Vt., [illegible].
[illegible] J. H. Woodbury, Lynn, Mass., [illegible].
[illegible] Field, [illegible], Mass., [illegible] machine.

THEY HAVE GEMS GALORE.

Some Rich American Women Who Have Fortunes in Diamonds.

At the recent "Venetian Fete" in this city, Mrs. Cornelius Vanderbilt wore diamonds valued at $200,000, writes a New York correspondent. This suggests an inquiry as to the probable value of the diamonds worn by the women of America, and the particular women who wear them. In hunting this kind of information one meets George McClure, the diamond expert of this city, who died in 1885. In his lifetime McClure handled more diamonds than any other man in the United States, and his judgment in regard to precious stones was widely sought. He was with Tiffany's for many years, and made many trips to Europe and across the continent on this line in the diamond traffic. Not long before his death [illegible] told me that he first became interested in diamonds by reading, when a boy, what is known in the history of France as the "diamond necklace scandal," in which Marie Antoinette was involved. This necklace was valued at [illegible].

Dealers estimate that there are now in the United States $1,[illegible] worth of diamonds, although, when we look up the output of all the diamond fields the estimate seems large. There are two firms in New York who have handled $5,000,000 worth of diamonds and precious stones every year for the past four years. Diamonds are worn more and more each year, and Mrs. [illegible] observation in regard to their universal popularity in America is not far wrong.

There is no collection of diamonds in this country equal to those owned by Mrs. Leland Stanford, wife of the California millionaire. Mrs. Stanford's wonderful jewels are valued at $2,000,000. Her necklace, the finest in the United States, is worth $74,000. It consists of large [illegible] stones. Several years ago she bought the collection of jewels of ex-Queen Isabella of Spain, the total investment amounting to [illegible]. Many of her finest stones were purchased through dealers in New York and Paris, and she has enough of them to fill a [illegible].

Mrs. Hicks-Lord has a superb necklace that is said to have cost $100,000, but from the standpoint of the experts, that of Mrs. Stanford's, costing $74,000, is the more desirable on account of the rarer quality of some of the gems. Mrs. Hicks-Lord is credited with $250,000 worth of diamonds, and on fancy dress occasions has worn $150,000 worth at one time.

Mrs. Paran Stevens has many thousand dollars invested in diamonds.

Mrs. Hetty Green, who does not care a rap for a diamond except for the cash it represents, has over $150,000 worth locked up in safe deposit [illegible].

Mrs. J. B. Haggin, wife of the California millionaire, has a ruby given by Louis of Bavaria to Lola Montez, valued at $10,000.

Conspicuous among the costly collection of jewels in New York are those of Mrs. Christopher Myer, widow of the aged rubber manufacturer. Mrs. Myers has a large fortune invested in diamonds, sapphires, pearls and turquoises. She is a young and handsome woman, and at many of the elegant receptions in New York is resplendent in her jewels.

Miss Isabella Singer, daughter of the American sewing machine man, who married Duc de Cazes, received many thousand dollars worth of diamonds and pearls from the bridegroom and his mother. The gift of the former was a diamond tiara and pearl necklace, and the latter a diamond necklace, all of great value.

It is well known among dealers that Minnie Palmer has large investments in diamonds, and, making allowance for the enthusiasm of the "advance agent," she probably has $[illegible]-000 worth of them. The "Cleveland stone," of which she is now the owner, weighs 42½ carats and cost $[illegible].

The most valuable jewels ever worn by an [illegible] woman at one time were worn on a fancy dress occasion by the late Mrs. John Jacob Astor. They were valued at $800,000. Ten mounted [illegible] were employed that night to guard Mrs. Astor to and from the ball. Among her collection was a pair of solitaire ear-rings, pure white stones, as large as a thumb nail, worth the value of a Broadway house and lot.

Mrs. A. J. Drexel of Philadelphia has a fortune in precious gems, diamonds being her [illegible].

Mrs. Thomas A. Scott, Philadelphia, and Mrs. Clarence [illegible] of the same city, have each a fortune in diamonds, including many gems of rare value.

A unique and costly necklace, owned by Mrs. Robert Johnson of San Francisco, is among the [illegible] in diamond jewelry. It is formed of [illegible] stones, [illegible] the exact [illegible] of a snake. The [illegible] are set in gold, the plates of which [illegible] each other, render the necklace perfectly flexible, and when around the throat [illegible] to a snake is very striking.

Continued

There are three American women—Mrs. Mackay, Mrs. John Jacob Astor and Mrs. Stanford—either of whom is believed to own more fine diamonds than belong to any of the royal families in Europe, with the exception of those of Great Britain and Russia.

Miss Belle Wilson, daughter of the wealthy New York banker, who was married Nov. 27 to Michael Henry Herbert of the British legation, received many costly diamonds as wedding gifts. Lady Herbert, the groom's mother, gave her a valuable diamond star. Her mother gave her a diamond tiara and necklace, beside which she received a diamond and ruby pendant, a diamond and sapphire bracelet, a diamond ring and a diamond pin, all worth a fortune.

Miss Cora [illegible] of St. Louis has a rare and costly set of pink topazes, the only ones in the United States.

Mrs. August Belmont and her daughter-in-law have jewels that are of exceptional value. Mrs. Belmont has the finest collection of sapphires in the country.

Mrs. Henry Clews, wife of the New York banker, has a fortune in diamonds.

A rare collection of diamonds is owned by Mrs. Arnot, wife of the [illegible], of Elmira, N. Y. She has one diamond for which her husband paid $11,000. She has a pin containing a hundred stones and a star containing [illegible].

The widow of ex-Gov. Morgan of New York has a 75-carat stone that cost $25,000. This ranks as one of the finest, if not the finest, diamonds owned in the United States.

The "[illegible] gem," owned by a lady in Buffalo, is said to be the largest diamond in the United States. It was bought by Ambassador [illegible] $30,000, and weighed 95 carats before cutting.

Mrs. Pierre Lorillard is the possessor of many brilliant and costly jewels.

Mrs. Robert [illegible], wife of the [illegible] manufacturer, has a big fortune invested in diamonds.

Mrs. Harwood Cutting of New York has jewels of great value.

The finest single sapphire in this country is owned by Mrs. William Astor, and her necklace of emeralds and diamonds is among the costliest in America.

The finest collection of pearls in the United States is owned by Mrs. Marshall O. Roberts.

Mrs. Baldwin [illegible] of New York has $[illegible] worth of diamonds.

Mrs. Gen. Myers of New Orleans has a rare collection of jewels of various kinds.

LOST FOREVER?

New York's Finest Looking for a Boston Lady's Diamonds.

One of the cleverest and boldest swindles that has been worked for some time was played on a well-known Boston lady during a recent visit she made to New York. She had in her possession two beautiful and very valuable diamonds, the gift of her mother just before the latter's death. She showed them to the friends she was visiting, and they prevailed upon her to have the stones set up as ear rings.

As she was desirous of having the best work, and as Tiffany would do it within a few dollars of the lowest figures obtained, she went back to that house and said she had concluded to have the stones set up there.

She passed them to the gentleman behind the counter, and was about leaving the shop when he called to her, saying:

"I beg your pardon, madame, but these are not the diamonds you showed me when you were here this morning."

"They certainly are," she replied. "I have no others about me."

"There's a mistake somewhere," he continued, "for these are paste diamonds."

"You must be mistaken, sir; I am positive they are the ones I originally had with me."

"Where have you been since you left here?"

"Oh, to half a dozen different stores, to get their prices."

"Well, at some one of these places they gave you back two imitation diamonds and kept the genuine ones themselves."

The lady was speechless with astonishment for a time, but after recovering her composure she inquired as to the best way to proceed to find her lost jewels.

She was told to report the matter to the Captain of that police precinct, and he would probably do what he could to apprehend the thieves.

Acting upon this suggestion she laid the whole case before the police authorities, and they promised to do their utmost to bring the swindlers to justice.

She remained in New York two weeks, hoping to hear of some trace of the missing gems, but not a word respecting their whereabouts ever reached her, and she came back to Boston and gave them up as lost forever.

THE CUTTER OR SNYDER.

Melrose Reporter
Jan. 7th 1888,

MILLIONS IN DIAMONDS.

Extraordinary Window Displays Guarded by Sharp Detectives.

"Diamonds! Did you ever see anything like this display!" These words were spoken by an admirer of the sparkling gems to a gentleman who was showing him the beautiful things to be seen on Broadway. They had been looking in the windows of dealers in precious stones, whose stores are near the postoffice, and where they are spread out in the most tempting way to catch the eye of passers by.

"Since I see you are a lover of diamonds I would suggest that we walk up as far as the hotel where you are going to stop, and we can, I believe, see more diamonds than can be seen in the shop windows of any other street in the world," was the answer. Then they started up Broadway on a diamond inspection.

"I have lived in New York nearly all my life," continued the last speaker, "and the fact is I never before saw so many of these gems at one time as are to be seen in the store windows here this winter. I was remarking this fact to one of the largest dealers here only a few evenings ago, when he said in explanation that the success of the experts of Europe in imitating the genuine stones has to a great extent rendered even the finest quality of diamonds unpopular. They can be bought there now fully one-third cheaper than they could ten years ago. In the meantime the love for them in this country has grown greater year by year, and as our wealthy class is continually getting larger the demand for diamonds is steadily on the increase.

"Our dealers find it profitable business to bring them over from Europe. You would be surprised, too, if you knew the thousands and thousands of dollars' worth of these gems that are smuggled over here. There are men—and women, too, for that matter—whose business it is to smuggle diamonds into the United States, and they realize an enormous profit by their nefarious trade."

They were walking leisurely up town and stopped to gaze into the window of each jewelry store as they passed. When they had got as far as Twenty-first street the display had grown to be really marvelous. There were diamonds whose sizes ranged from the smallness of the head of a pin to thirty-seven carat weight, and in colors they were from the deepest orange to the most brilliant steel blue. There was a necklace valued at $50,000 and brooches at $10,000. One pair of solitaire stones were noted which were made for ear pendants. They were pure white and weighed thirty-four carats each. A diamond crown, which consisted of several stars composed of the purest stones, and which was labeled as having once belonged to the Empress Eugenie, was conspicuously displayed in a window, and attracted a great deal of attention. It was surrounded by hundreds of other precious stones, and the value of the display in that window alone was estimated at more than $500,000. The eye of a clerk inside the store was constantly on the window, while a

Continued,

The employment of detectives to guard the outside of windows at this season of the year, when the finest display is made by the diamond dealers, and when the streets are filled with strangers and many thieves, is very common. This precaution is always taken now, since a few years ago a window was smashed in and diamonds of great value were stolen.—New York Evening Sun.

A SINGULAR STONE.

An account of a strange lapidarian freak comes all the way from Kimberley, South Africa. Workmen in the diamond mines at that place discovered a stone, dark brown in color and about the size of a pigeon's egg, which, viewed in a dark place with a candle or other light behind it, exhibits a perfect profile picture of a man from the waist up. Turning the pebble partially around, the image of the man vanishes and the features of a woman's face, clear cut and partly concealed by heavy tresses, comes into view. The British Museum offers $[illegible] for the curiosity.—Chicago Tribune.

VIEW OF THE DIAMOND WORLD

Present Centre of the Great Source of Supply.

$7,000,000 Worth Imported in Eight Months.

Diamond Cutters Demanding Higher Prices.

[FROM OUR SPECIAL CORRESPONDENT.]

NEW YORK, Dec. 31, 1887. Americans take about one-third of the diamonds of the world now, and these are, as a rule, the finest. The crowned heads of Europe possess the greatest rarities in precious stones so far discovered, but, with the rise of wealth and population, our demand for diamonds has increased. During the month of August, 1887, the value of imported stones was $1,100,858, and in 1886, for the same month, it was $1,283,848. During the eight months of the diamond season ending with August, 1887, the value of the whole importation of unset precious stones was $7,902,377, as against $6,154,925 for the same months ending August, 1886, an increase of $1,878,393 in value of cut stones, not set, for the past year.

A clear idea of the diamond world is by no means general, and a summary of its present bounds and state may be interesting. Especially so, because there is the prospect of a gigantic monopoly in [illegible] no very remote time. Unless new fields are discovered, as yet unknown, the diamond output will come almost wholly from one source, in the hands of one organization, who will be able to set the prices as it will. From 1850 to 1870, the price of diamonds advanced at the rate of about 10 per cent. per annum. Then came the discovery of the great Cape mines, which caused prices to [illegible] and arrested the steady increase of the diamond value. These mines of the Cape of Good Hope, South Africa, are now the source and chief of all the diamond supply of the world, and it is said that they are [illegible] [illegible] miles [illegible] [illegible] [illegible]. They are situated [illegible] of Hopetown [illegible] [illegible] about 450 feet above the [illegible] [illegible] miles [illegible] [illegible] Kimberley covering [illegible] [illegible] feet deep. Already [illegible] [illegible] [illegible] [illegible] [illegible] carats of diamonds have been taken from these mines, and though these figures are large, they are [illegible] [illegible] [illegible] [illegible] they mean.

continued

Over [illegible] Tons of Diamonds.

The value of these 6½ tons of Aladdin-like possessions in the rough is £48,000,000, and cut, $500,000,000—or nearly a quarter of a billion or half of a billion of dollars respectively. From one-fifth to one-quarter of the entire yield of these mines is stolen by the miners, in spite of all efforts to prevent it. The great Victoria diamond from the African mines is one whose ownership is involved in obscurity, and whoever made a lifetime fortune out of it [illegible] one pebble is unknown.

These enormous [illegible] of the diamond supply were worked [illegible] individual claims—[illegible] of them—each 31 feet square, with [illegible] [illegible] feet wide between. They have [illegible] 20 large companies and private firms, with a gross capital of about $50,000,000. And it is proposed to [illegible] these into one gigantic monopoly. Already the price and [illegible] play of shutting down on the production is urged. It is feared it will be one of the most [illegible] of all monopolies, so [illegible] as the control of fabulous riches [illegible] concerned. The tales of the Arabian Nights will be [illegible]. To-day the other diamond mines are, compared with these, [illegible] [illegible] rivals. The mines supplying [illegible], which, by the way, is itself simply a diamond market and not a mine, as some suppose, are to-day nearly closed, and India supplies few stones. Brazil, since 1860, has furnished [illegible] mine, the Minas Geraes, about $20,000,000 worth of diamonds. Her entire yield from first to last is estimated at $[illegible]. Borneo sends out about 3000 carats a year.

Other mines of comparatively insignificant production are those of New South Wales, the Ural mountains, California, North Carolina, Georgia and Virginia, those last being [illegible] [illegible] [illegible] [illegible], although Virginia has a boast of one diamond of 11½ carats weight. The value of all the diamonds in the world up to date is probably $1,000,000,000. In South Africa the mines are worked only [illegible] months in the year, the other [illegible] being the winter season. They are worked by 10,000 natives and 1500 European overseers, at a cost of about $4,000,000 a year. The diamond trade of the world is carried on by about 8000 dealers, with a total stock of $3[illegible]. It gives work to

About 4500 Cutters and Polishers.

These are principally in Amsterdam, Antwerp, Paris, the Jura and [illegible], and increasingly, in America.

That American diamond cutting has become of importance may be judged from recent variations in the import of rough gems. The year 1887 has shown a falling off in the value of rough stones, owing to a rise in prices of American lapidaries. In consequence of this, although in August, 1886, the value of the rough stones imported was $22,128, their value when cut was as high as $[illegible], while in 1887, although uncut stones to the amount of $41,784 were imported, their final value was only $213,020. The importers who cut them here had hoped that the price would go down, and so limited purchases to actual requirement; the value in the rough state being no indication of the final value of the stone. The American lapidaries' work is considered to be as good as the foreign. The largest diamond in America is the Tiffany diamond of 125 carats, whose nominal price is $100,000. It is yellow, though, and it probably is exceeded in value by other diamonds of considerably less size. The yellow diamond ranks at the bottom of the scale of value, although some specimens are of exquisite beauty.

There is no fixed value for diamonds by carat. Not weight, but color, brilliancy, cut, size and general freedom from flaw are the qualities they are estimated by. Of two diamonds, each weighing the same, and both flawless also, the one may be worth only $800 and the other $12,000. The white diamond is, of course, the most precious, but when, in the colored stones, the tints are bold and decided, of red, rose, green or blue, these follow the white closely in value, and are rated high. Next to these, and still highly, rank the [illegible], [illegible], brown, black and yellow diamond.

Portland Express Jan 6th 1885

JEWELS IN MAINE.

GEMS OF MUCH VALUE FOUND IN HER HILLS.

THE TOURMALINE, BERYL, RUBY, GARNET, AND EMERALD DISCOVERED.

Sixty Thousand Dollars Realized From the Minerals of Mt. Mica.

Upon the Grand Trunk railroad, about forty-six miles northwest of Portland, is the town of Paris, the shire town and one of the most flourishing villages in Oxford county. In the southwest part of this town is a long range of desolate hills called Streaked Mountain, from the rugged and denuded appearance of its sides. To the average visitor to this little town, this range of mountains appears to be but a stretch of barren waste, unfit for cultivation or any practical use; except perhaps, for pasturage. In late years several enterprising men have made the surprising discovery that these wild hills, with their broad sides covered with acres of stubble field, are the hiding places of minerals and gems of unknown value.

The average reader of the EXPRESS while looking into a jeweller's show case and feasting his eyes upon the dazzling display of diamonds, rubies, emeralds, garnets and other gems, finds his thoughts wandering to the far off climes of Australia, Brazil, Ceylon and India, conjuring up pictures of the dusky natives, in scant attire, eagerly hunting for these gems. He little thinks that right here in our State, within two hours ride of Portland, is the home of jewels that have adorned a monarch's crown.

In the year 1820, two students, Elijah L. Hamlin and Ezekiel Holmes who afterwards became eminent citizens of Maine, were out on the hills all day hunting for specimens of rocks to aid them in the study of geology. They were descending the western declivity of the mountain and had stopped for a few moments to admire the beautiful sunset, when suddenly young Hamlin rushed forward as his eye caught the vivid gleam of green coming from a small speck lying in the dirt, under the roots of an upturned tree. He picked up the small crystal and carried it home. This proved to be a fine specimen of a tourmaline, a stone when absolutely pure and clear is of great value.

Continued

The unexpected discovery made by these youthful geologists created a profound sensation and attracted many persons to the scene. The place where these stones were found was called Mount Mica. The land at that time was owned by a man named Bowker of Paris. Many geologists and prospectors visited the locality but met with little success. It was not until many years later, when the land was purchased by a syndicate, known as the Mount Mica Mining Company, that any definite idea was gained of the variety and value of minerals and gems hidden in its depths. The most valuable product was found to be the tourmaline. It is a small crystal and is found generally in the form of a three sided prism, and has many different tints, the most valuable ones being of a bright green, blue or pink color. The best specimens of the green greatly resemble the emerald, and in fact are sometimes sold as such. They are usually found imbedded in the quartz or feldspar and are sometimes three or four inches in length and about an inch in diameter. The solitary red tourmaline is usually very short and not over a quarter of an inch in diameter. The pink ones are the most valuable and find a ready sale in European markets. It is a fact that in foreign countries these gems are regarded as second only to the diamond, but in our own country they are not so highly appreciated. It is estimated that the value of the tourmalines taken from Mt. Mica since 1820 amount to between fifty and sixty thousand dollars. One specimen on exhibition in the British museum in London is valued at one thousand pounds, sterling, or about $5000 in our money. Another one was sold in this country a few years ago for $1,000. Among other gems that have been found there are the beryl, ruby, garnet, emerald and amethyst.

On the outskirts of Auburn, about three miles northwest of the county buildings, is a large hill, presumably belonging to the same range of mountains as Mt Mica and of the same formation. This is called Mt. Apatite, from the abundance of apatite found there, and through a singular circumstance it became known that the same gems and minerals were to be found here. One afternoon in the year 1862, a simple minded boy, named Lane, was wandering among the hills, and picked up a small piece of crystal which he thought was glass. He held it up in his hand and was amazed at the sparkling green light emanating from it, as the bright rays of the setting sun flashed upon the gem. He put it in his pocket and carried it about with him for a long time. One day a visiting clergyman Dr. Luther Hills, was visiting at the boy's home and was shown the "fancy piece of rock" which the boy had found. He pronounced it a genuine tourmaline. The clergyman wrote to two of his friends, Dr. A. C. Hamlin of Bangor and Samuel Carter of Paris, who were interested in minerals, of the discovery made at Mt. Apatite by the boy. These gentleman pronounced it a

Continued

tourmaline and desired to institute a search. At first their efforts were not rewarded with success, but in the past few years, although the mine has not been worked to any extent, over two thousand dollars worth of minerals have been taken out. Mr. Thomas P. Lamb, of this city, and a Mr. Hatch of Auburn, who owns the hill, interested themselves in the mining scheme and have worked there more or less for two summers. They have had two fairly successful seasons, and Mr. Lamb has secured one of the finest collections of minerals and gems to be found in New England. He has many varieties of the tourmaline, from the small crystal just as it was taken from the "pockets," to the finely cut and polished gem as it appears all ready for the market. Fine specimens of garnets, emeralds, etc., are also to be found in his cabinets.

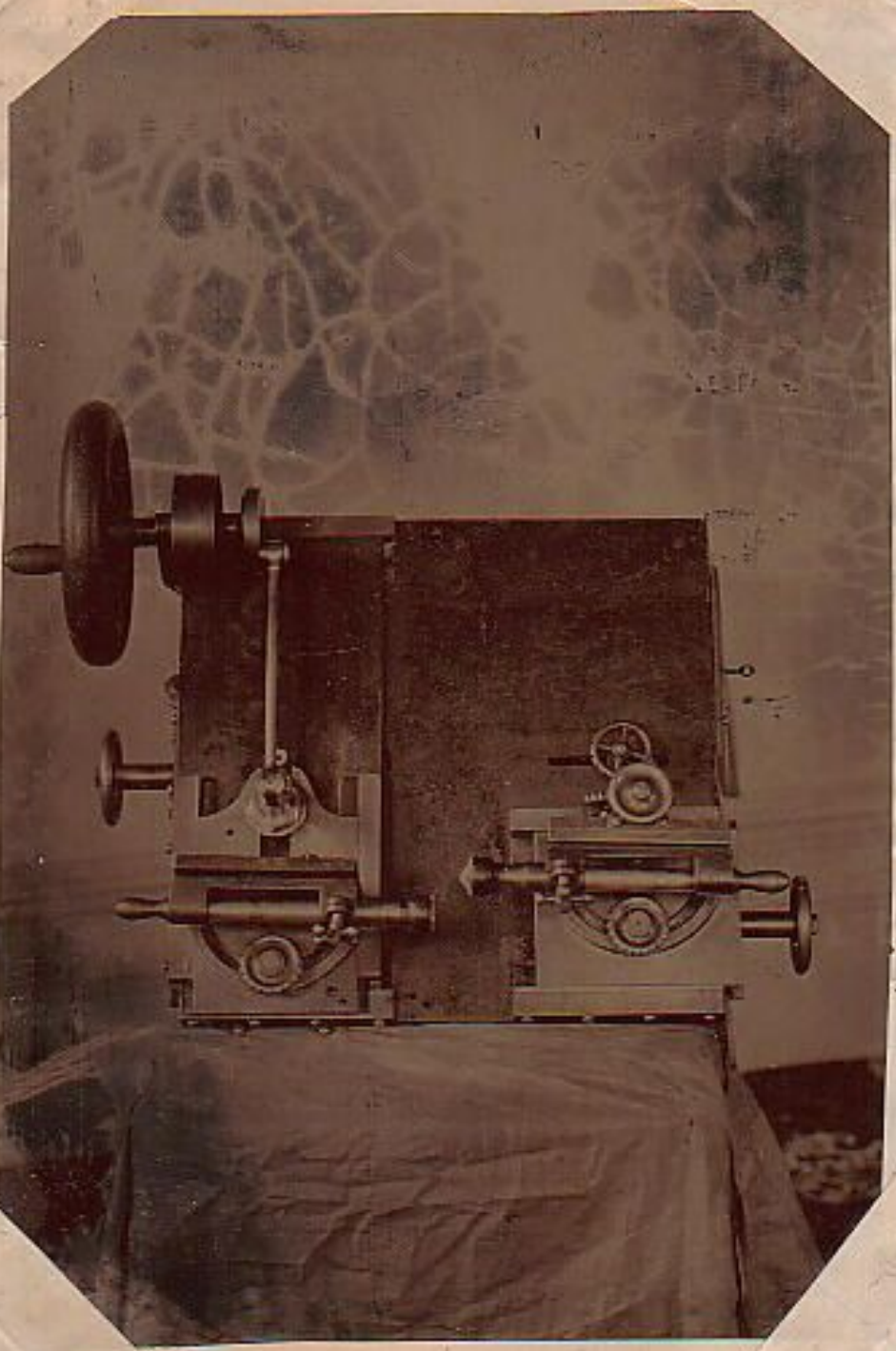
These two gentlemen have dug into the mountain only about twenty feet, but it is

their intention next summer to tunnel into the centre. Emeralds have also been found in the State of Maine. Prof. Cleaveland, an eminent geologist, claims that emeralds of an extremely vivid and beautiful green hue were found in blasting a canal through a ledge of graphic granite at Topsham. The topaz is found in Stoneham, a small village situated on Harnden Hill, within a half mile of Stowe and two miles distant from Deer Hill. They were discovered by Mr. E. D. Andrews, who while engaged in blasting, opened a pocket that contained peculiar shaped crystals. He showed one of them to a friend who sent it to Tiffany's in New York. Their expert, Mr. George F. Kunz, pronounced it a genuine topaz and bought the whole contents of the pocket discovered by Mr. Andrews. In Stoneham beryls of exceptional beauty have also been found.

The above named localities are the most noted places in this State where gems and minerals have been unearthed and some of them have achieved a world-wide reputation—notably the tourmalines. It is a singular fact that the latter is found in but two places in the United States, Maine and North Carolina. In the latter place very few have been found and are insignificant in beauty and value as compared to the Mt. Mica gems. Of the precious stones with which our State abounds, pages could be written, but these facts are merely cited for the benefit of those who are interested in the natural advantages that our State possesses, with the hope that they will appreciate the opportunities offered and make an effort to unearth the treasures concealed beneath the rugged surface of the Pine Tree State.

The Nizam of Hyderabad recently bought in Madras a magnificent diamond for 140,000 rupees, which is known as the Garden-Gur diamond. The stone weighed before cutting 67½ carats and after cutting 24½ carats. It is described as being the best, purest and most brilliant stone known to connoisseurs, and will be worn by his highness in his puggaree or

View of the first Diamond Cutting Machine ever made in the United States.



Chas. M. Field Inventor and Builder.

—A Cingalese gem digger is reported to have unearthed at Galle the largest cat's eye of which there is any record, it weighing nearly seven pounds. The finder had been very poor, but a few months ago his digging was rewarded by finding a cat's eye which he sold for $5000. Soon after he dug up another, for which he realized $12,000, and then his luck reached a climax when he unearthed this large stone, which is described as of perfect lustre. He has been offered £20,000 by a syndicate, but refused, as he declares he can cut the gem into 49 stones, each of which will bring £1000. His findings in six months will reach $150,000 at a low estimate.

THE WORLD'S COSTLIEST GEMS.

The largest perfect diamond in the world is now the Imperial, that was exhibited at the Paris exposition last year, and which is valued at $1,000,000, says the Ladies' Home Journal. This is the most valuable stone in the world, and is owned by a syndicate. The biggest and best ruby in existence is owned in London, and is valued at $50,000. It has no parallel, even in the crown jewels, and it is related that the Duchess of Edinburgh carried it all the way to St. Petersburg for the Czar to have a look at it. The largest and most beautiful cat's-eye in the world weighs 170 carats, is owned in London, and is insured for 50,000 rupees. The finest private collection of pearls in the world is owned by Mme. Dosne, sister-in-law of M. Thiers. The biggest emerald in the world weighs 2980 carats, and is in the Imperial jewel office in Vienna. The largest and costliest cat's-eye in the world is owned by a Moor man of Ceylon, who dug it up himself from the mines. He has been offered as high as $90,000 for it, but declines to part with it at that figure, saying that, if he liked, he could cut it up into 40 small pieces, and sell each piece for about $5000, aggregating pretty nearly $200,000.

JEWELS OF MRS. HICKS-LORD.

The beautiful Mrs. Hicks-Lord owns not less than $550,000 worth of precious stones, and the fame of her gorgeous necklace, worth $250,000, all of perfectly cut and flawless diamonds, is known in every European court, says the New York Herald. Nor is she sparing in her display of this regal circlet. Moreover, she owns four other necklaces and the most valuable pair of solitaire earrings in the United States. On certain occasions she wears these superb stones arranged in different ways. So betimes they flash at you in the form of some flower, or a beautiful spray of leaves, being fastened to the bodice.

A large number of the women who own extensive collections of costly jewels lock their treasures up in bank or safe deposit vaults, wearing duplicates in paste, Rhine-stones or other imitations. Not Mrs. Hicks-Lord wears the genuine. She detests the imitations, and says "they may do all right for French actresses." And what woman who loves to inquire about these things has not heard of Mrs. Hicks-Lord's fan, with its 16 raised folds studded with diamonds, so often worn in her hair? This fan has no peer in this country, and is excelled nowhere in the world. The bouquet holder, with its mouth ablaze with beautiful gems, has also put her friends in rapture, as does also her white point d'Alençon fan, worn en chatelaine from a chain of diamonds and pearls.

Diamonds and Other Gems.

It is stated that "of the 10,000 diamond cutters at Amsterdam, 7000 are now out of work, as the principal diamond cutting establishments have ceased their operations in consequence of the enormous rise in the price of raw diamonds." The statement is evidently fallacious, as the "enormous rise" would indicate increased demands, which would be followed by activity in Amsterdam, and hence may be attributed to interested parties. Moreover, it can hardly be sustained in the face of the enormous and unprecedented production of the South African mines during the last ten years, the export sometimes approximating, according to Post Office statistics, to a ton of rough stones annually, ten or twenty per cent. of which may be gems, and quite enough to well stock the market. Added to this tendency of overproduction to keep down the price is the proclivity of gem buyers to seek the rarer varieties of colored stones as now more desirable. These have augmented in far greater ratio than diamonds, including also pearls. In fact, as the scale of prices of fine colored gems has advanced, that of diamonds has dropped. It was once said that a good harvest in America meant so many shillings a carat to the Cape, and wars and panics on the Continental exchanges sent down the barometer in the diamond market with sensitive rapidity.

Nevertheless, the European syndicate that was formed, with an almost fabulous capital, to control the African diamond market and stay an impending precipitation in prices, it is reported, has met with a large measure of success and thus far has enriched its members. As to the future, this will depe[nd] upon the product of that little territory [of] about nine miles square in the vicinity of Kimberly upon the Cape of Good Hope.

Most persons have an idea that the deeper the stone is the more valuable. This is a great mistake, for a great deal of the value lies in the skilful manipulation of the gem—reducing it to the proper proportions and enhancing its beauty by a careful and exact finish. There are very many poorly cut gems in existence which, if reduced to proper proportions by skilful cutting, would be [illegible] valuable than they now are. Good cutting is quite as essential as good quality in diamonds.

VALUABLE BOOK.

A $4000 Diamond and Sapphire Bracelet in a Volume of Moody's Sermons—J. Pierpont Morgan Has to Pay $400 Duties.

[Special Dispatch to the Boston Journal.]

NEW YORK, March 26. It was announced today that J. Pierpont Morgan had been called before the Collector to help explain a question about a customs seizure. The trouble was all over a diamond and sapphire bracelet which was sent to this country from Italy from a friend of Mr. Morgan as a wedding present to Mr. Morgan's daughter, who is soon to be married.

On Friday of last week Deputy Collector John Wilson found in the mails a package from Italy addressed to J. Pierpont Morgan. The Deputy Collector, thinking that the contents of the package might be subject to duty, opened it and found a fine copy of Dwight L. Moody's "Sermons on the Higher Life." In looking through the book it was found that in the centre there had been a small space cut out of the leaves, and in this space was a little package, carefully done up in tissue paper.

The Deputy Collector opened the package, and in it he found a diamond and sapphire bracelet which, when appraised, was valued at $4000. He thought that the person who had sent it did so in ignorance of the custom laws and there was no intention of defrauding the Government. Collector Kilbreth told Mr. Morgan to put his statement in writing, and it would be forwarded to the Treasury Department in Washington.

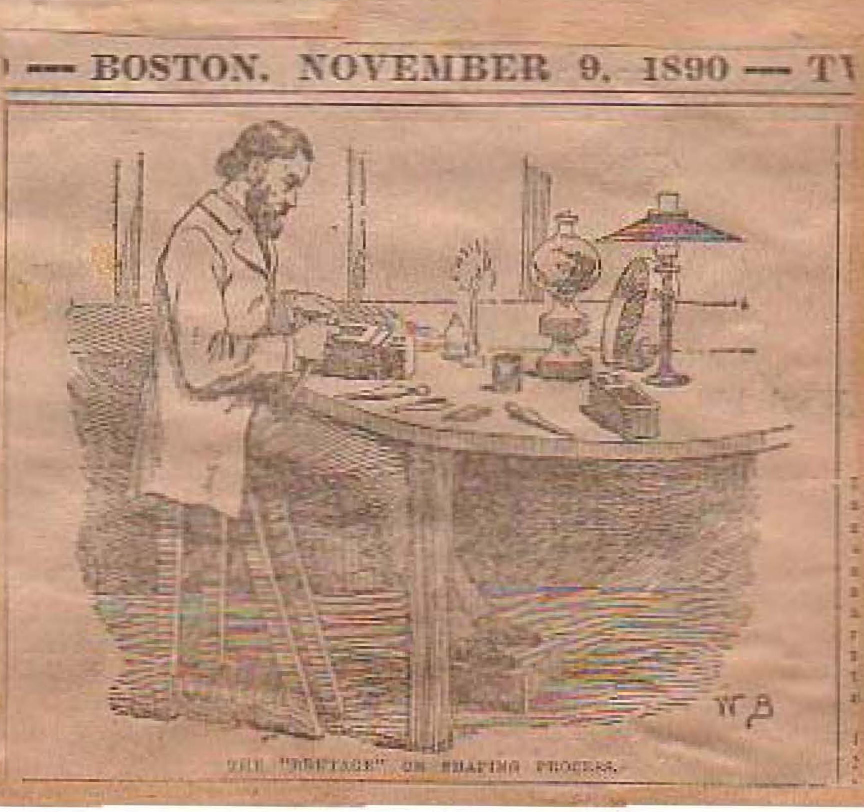
The Collector received instructions to release the bracelet on the payment of $400 duties. Mr. Morgan was informed of the decision, and the bracelet was given to him. He refused to make any comments about the affair.

One of the easiest and most trustworthy modes of determining whether a supposed diamond is genuine or false is as follows: Pierce a hole in a card with a needle or pin, and then look at it, using the stone as a lens. If the supposed diamond is genuine you will see but one hole, if false two will appear. With an imitation stone you may also see the lines on the skin of your finger; with the true gem you cannot.

—All visitors to the Mechanics' Fair must have noticed the magnificent specimens of jewelry in diamonds and other precious stones made to the exhibit by the well known fashionable jewelry firm of Crosby, Morse & Foss, of 240 Washington Street. It is pleasant to see that the judges think as highly of these wares as the general public, for they awarded firm in question two highest prizes,—a gold medal for their diamond cutting machine, and a silver medal for their display of silver ware, jewelry and diamonds.

Commercial Bulletin
Nov. 1/90

— BOSTON, NOVEMBER 9, 1890 — T



THE "BRUTAGE" OR SHAPING PROCESS.

SCIENTIFIC AMERICAN

Vol. LXV.—No. 3.
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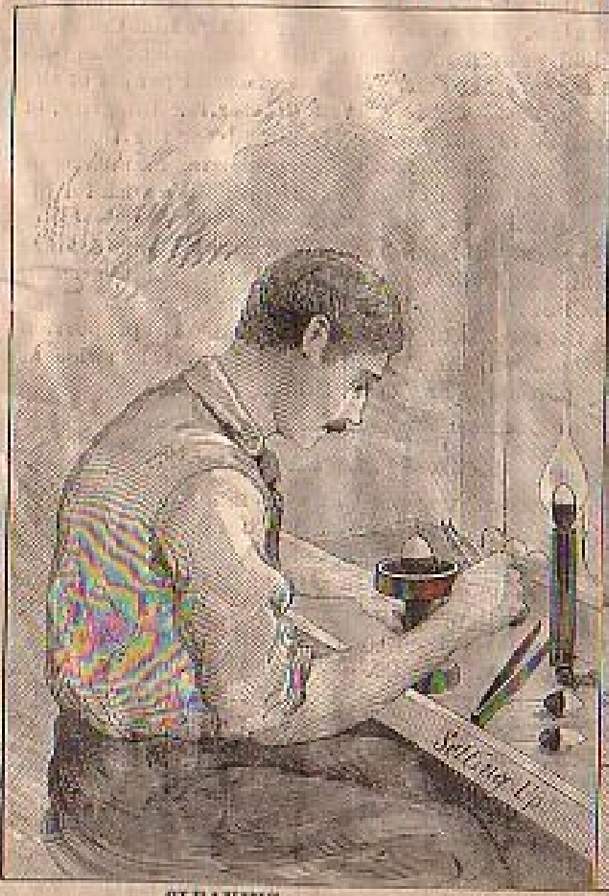
NEW YORK, JULY 18, 1891.

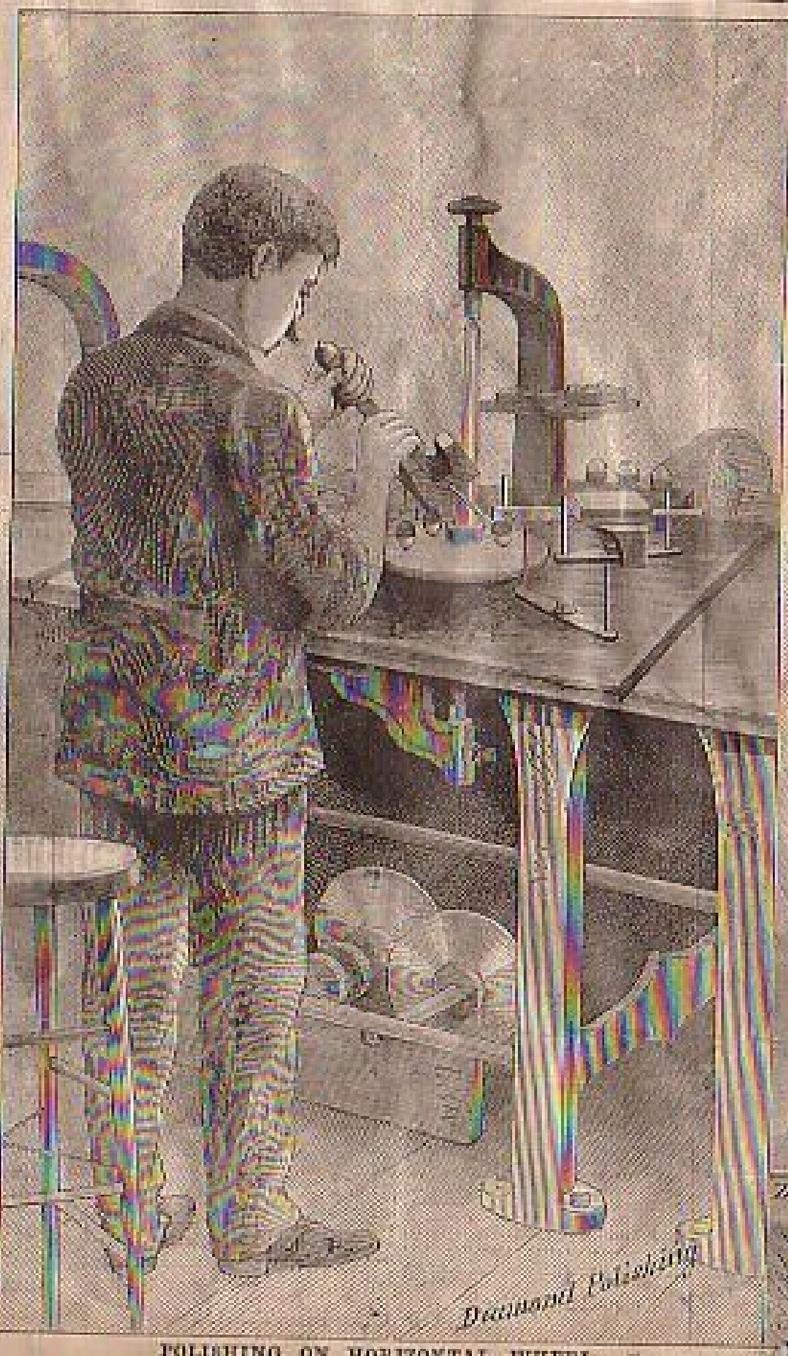
[$3.00 A YEAR.
WEEKLY.

DIAMOND CUTTING BY HAND AND MACHINE.

Modern diamond cutting is an art which for many generations was practically confined to one city, Amsterdam. In India the natives cut the gems, but they did not follow the rules of shape which have found acceptance with the Caucasian nations. Some twenty years ago the industry was introduced in this country. This was at about the time of the discovery of the South African diamond fields. Mr. I. Herrmann, a jeweler of this city, succeeded in finding among the Dutch who had immigrated to this country a number of diamond workers who from force of circumstances had abandoned their trade and had adopted other occupations.



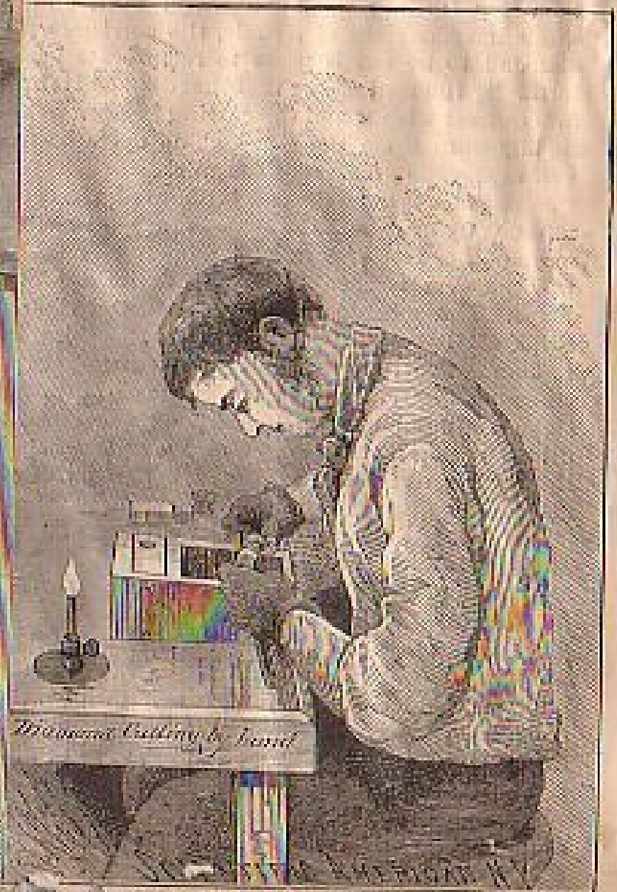
CLEAVING.



POLISHING ON HORIZONTAL WHEEL.

consists approximately of two truncated pyramids placed base to base. The line dividing the two pyramids is called the girdle. The upper portion is the crown, with a flat face called the table on top. Below the girdle is the collet. If properly cut, this shape brings out the fullest possible brilliancy of the gem. So important is this quality, that it was deemed advisable to recut the Kohinoor diamond to develop its brilliancy, although many karats were lost in the operation.

Cleaving consists in splitting off pieces of a diamond. By inspection striations can be detected in the rough gem by which its cleavage plane is determined. The stone to be thus

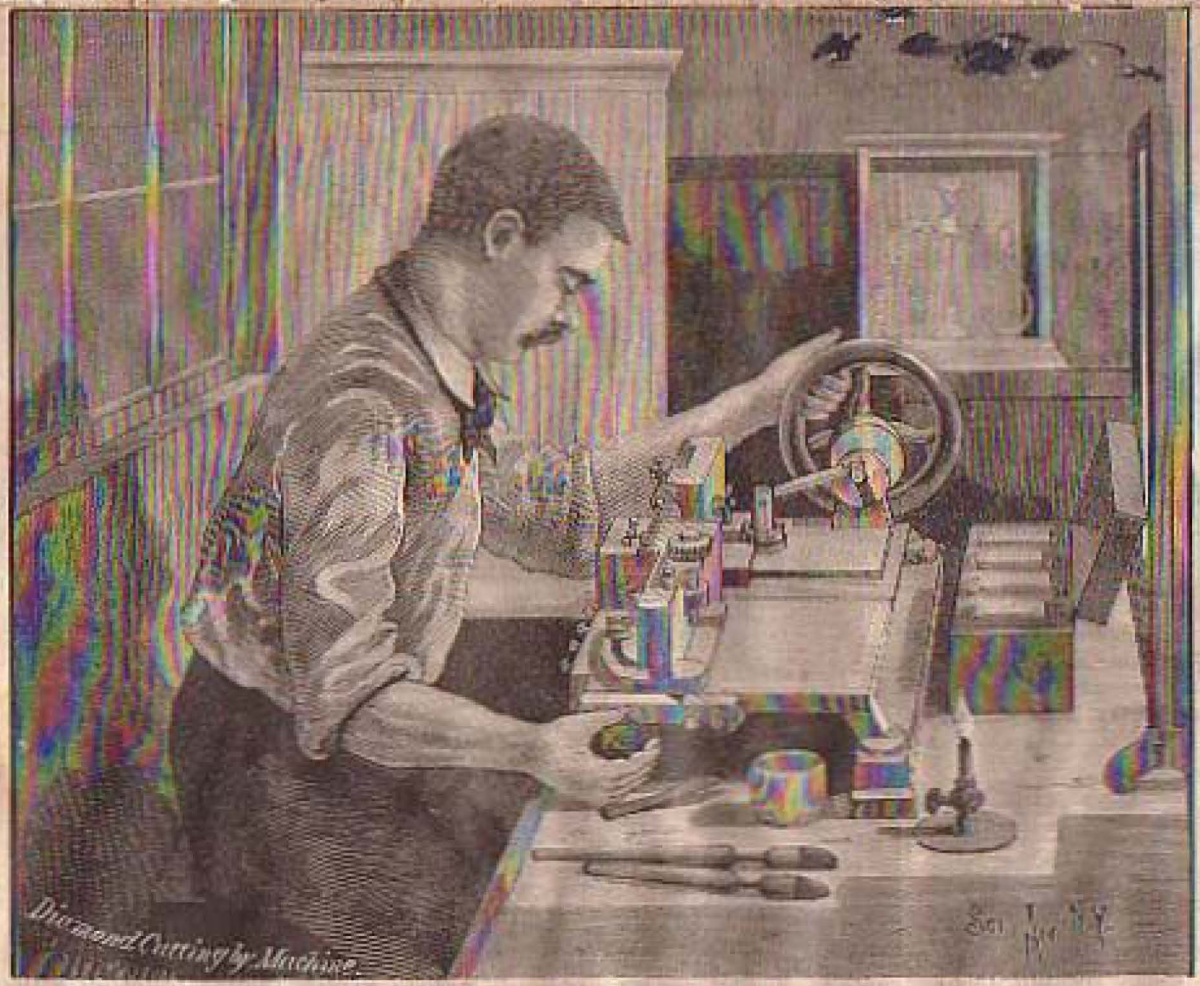


HAND CUTTING.

He opened a shop in this city, where much work was done.

The industry spread more or less, and is now firmly established in several places in the United States. The jewelry firm of Tiffany & Co., of this city, among others, have in operation a shop in which diamonds are cut and polished from the rough, and are recut when the original cutting as performed in Amsterdam or elsewhere has not left them of satisfactory brilliance. The work is in charge of the foreman, Mr. Geo. H. Hampton, to whom we are indebted for attentions shown in connection with this article.

The operations of shaping a diamond are three, and may be four, in number: cleaving, cutting, setting and polishing. Each operation is a trade by itself, and very few ever learn to do more than one or two of the four steps. Cleaving is often dispensed with; the other three are necessary. The favorite shape into which every stone of any value is worked is the brilliant. This



THE FIELD DIAMOND CUTTING MACHINE.

DIAMOND CUTTING BY HAND AND MACHINE.

treated is mounted in cement upon the end of a wooden handle. Upon a second handle a sharp-edged fragment such as has been cleaved from another diamond is mounted. The diamond has a little notch made in it by the cleaver pressing and rubbing against it the edge of the fragment. This marks the place for starting the cleavage. A cutting box is used in making this notch. This is shown in the illustration in use for regular cutting. It is a small metal box from whose edge two brass pins or studs rise, against which the spindle-shaped handles are pressed in the cutting operation. The cleaver holds a handle in each hand, pressing them firmly against the pins and edges of the box. The ends carrying the diamonds project over the box. He then scratches or cuts a notch at the desired place. Next, placing the handle carrying the diamond to be cleaved on its end upon the table, he holds a blunt-edged knife of steel firmly upon the notch and gives the back of the knife a

DO YOU WEAR DIAMONDS?

Whether You Do or Not, You Will Be Interested in This.

The Way the Precious Gems Are Cut, Split, Shaped and Polished—The Principal Forms—Value of Gems and How Determined—The Kohinoor—Artificial Diamonds.

[FROM OUR REGULAR CORRESPONDENT.]

PARIS, Oct. 28, 1890. I have been looking into the diamond cutting establishments of this great city.

This is an art that Louis de Berquem of Bruges discovered toward the close of the fifteenth century, and he gave to his invention all the full extent and improvement of which it is capable.

He and his companions turned out good pupils, and diamond cutting became a prosperous [illegible], at Antwerp especially.

To-day that city has fifteen diamond cutting factories, with perhaps 1000 lapidaries and as many apprentices.

Louis de Berquem also took his art to Amsterdam. That town was then the leading market in Europe for precious stones, as it now is the centre of the world for diamond cutting. It is estimated that there are more than 10,000 persons employed there in one way or another, in this industry, and since the discovery of the Cape mines hundreds of millions of francs have been earned by them.

France has some clever lapidaries, but there has always been great difficulty in creating works in Paris because the primary material is wanting. The first attempt to establish diamond cutting here was made by Cardinal Mazarin, after him by Colbert, and later on by Calonne, and all the governments

THE SPLITTING OR "CLEAVAGE."

since have encouraged establishments of this kind, but there has always been the same difficulty as to material. Still there are several diamond cutting works now in Paris, not to mention some established in the provinces.

Precious stones or gems are certain mineral substances whose beauty of color, transparency, brilliancy, hardness or durability make them much sought after as articles of luxury and adornment, and diamonds have greater value than any others.

Now what is a diamond?

Why, only a bit of pure crystallized carbon, which differs from coal mainly by the arrangement of its particles.

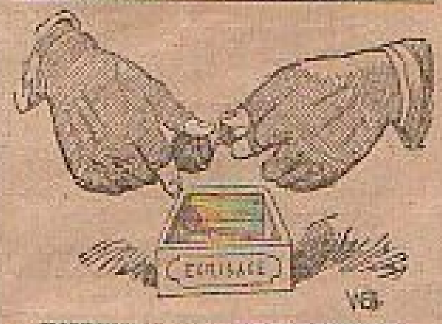
Amorphous diamonds—the term is given to minerals whose crystallization is confused, and, in general, to all substances the shape of which is hard to determine—are seldom met with, unless it be a variety of Brazilian pebble called "carbonado" or black diamond, and also a few stones to which the name of "boort" or "concretionné" has been applied. These varieties possess the hardness of the diamond, and are used for drilling rocks, polishing precious stones, etc.

Apart from these exceptions, the diamond is always found crystallized, and it is owing to the fact of its crystals being very distinct, with sides and edges well preserved and permitting of its crystalline forms being distinguished, that it maintains its great durability.

This durability or hardness is the common characteristic of all precious stones, but the diamond is the

[illegible] After it the next hardest is the ruby, then comes the sapphire and eastern emerald, which, however, are only varieties of corindon. This hardness of the diamond would render it very valuable for industrial works were it less rare, and were it not for its high price. Their hardness varies within certain limits.

All lapidaries know that Brazilian dia-



HOLDING OF HANDS FOR BRUTAGE.

monds are harder than those from the Cape of Good Hope, and they will also tell you that these latter stones have their differences of hardness.

Generally speaking, it may be said that brilliancy and the most beautiful reflections correspond to a similar amount of hardness, for undoubtedly a diamond of the finest water is also the hardest kind. A diamond is brittle, that is to say, it can be crushed, and this is the great inconvenience in connection with its employment in rock drilling. Density is a way of testing the identity of a diamond. When cut it is often confounded with the white topaz of Brazil, with the white sapphire, and especially with the zircon, but as these stones weigh heavier than does the diamond, this feature serves to discover the difference.

That, however, is not the way skilled lapidaries tell diamonds, for even in the dark they can distinguish one from another stone. They have only to rub the two crystals one against the other close to the ear, and the strident noise which the diamond produces permits of its being easily recognized.

A diamond enjoys the property of emitting light in darkness for a certain time—in other words it is phosphorescent, and it has optical properties on which relies the theory of good cutting. When a luminous ray strikes a diaphanous or transparent body, this ray, passing through the body, is turned aside from its course, and becomes broken, or in other words, is refracted and forms a certain angle with its first direction, which varies according to the nature of the body. If the indication of the refraction of a crystal, or any other transparent body, is known, it is easy to calculate the direction or course the luminous ray will follow which strikes it at a fixed angle. Now the art of the lapidary consists in giving a stone all the brilliancy and dazzle of which it is susceptible, that is to say, he must cut it in such a way that it will retain within itself the greatest amount of light possible. It is by carefully combining the direction of the facets that he manages to imprison in the crystal the luminous rays that

THE POLISHING.

have penetrated it before rejecting them outside, and this phenomenon is designated under the name of total reflection.

The angle of total reflection for a crystal is less great according as its index of refraction is the more considerable. A diamond being the most refracting of all substances, it will not be difficult to understand that the lapidary can arrange his facets in such fashion as to cause them to undergo this total reflection a considerable number of times; hence the surprising brilliancy of cut diamonds, and

The Diamond That Is Well Cut

is illumined with the most beautiful, the most lively colors.

The operation of cutting diamonds comprises three phases: splitting, shaping and polishing. All crystals possess the property of easily cracking in certain directions; in the diamond there are three principal and very distinct directions, without counting several secondary ones, and cleavers or splitters call these the "threads" of the stone.

A good workman always knows where to find a thread, and this is the way he proceeds: The diamond to be cleaved is fixed in a convenient position at the end of a short stick by means of cement; then to another baton, and, by the same process, is fastened a sharp diamond. Taking in his right hand the baton bearing the sharp point, and in his left the one that holds the diamond to be cleaven, he rests them at the middle on a box which is firmly screwed down to his table, thus forming a sort of lever, and then he rubs the two, one against the other, until the sharp stone has made a notch in the other. He uses three blades, one after the other, in this way, the first to make a groove, the second to regularize it, and the third to finish it off in a neat and distinct manner. Then holding with his left hand the baton on which is the stone to be split and at the same time a steel knife, the edge of which is fixed in the "thread," he gives a good stroke or blow on the back of this knife with a small iron bar, and the diamond is separated just where it was intended to be beforehand. This "cleavage," as it is called, is not always necessary; still, lapidaries have recourse to it when they wish to take from the crystal its defective particles, or to give it a convenient shape for after operations.

Cleaved diamonds, or those still in their crude shape that have no need of undergoing this operation, pass to the "brutage," that is to say, to receive shape or form, and which in the trade is called "ebauche." Two crystals are firmly fixed on a piece of wood, and then they are rubbed against each other until they both assume the required form. This operation goes on over a box called an "egrisoir," because it receives the diamond powder which is termed "egrisee" in French, and which is produced by the reciprocal wearing away of the two gems.

The diamonds are now out of "brutage," but they are still without brilliancy, so it is necessary to polish them, and this is how the process is carried out: A mixture of lead and tin is poured into a leather mould, and the stone is placed on top of this metal cement, which "coquille," as it is called, is then squeezed into a kind of steel pincers and placed by the polisher on a wheel or steel millstone having rotative movement, but in such a manner that the side of the diamond alone touches it. The speed of this wheel is about 2200 turns in a minute, and it is covered with diamond dust. When one face has been polished the next face is proceeded with, and so on. The man who does this work must be very skilful and have a good deal of taste and mathematical precision; he must know how to find the thread of the stone, as otherwise it would only make a hollow furrow on the mill wheel.

Diamonds have different shapes or forms, but the two principal ones are known as

The "Rose" and the "Brilliant."

The former applies to small flat gems, and there are "rose" diamonds so light that 1000 of them do not weigh more than a single carat.

A "brilliant" must be a stone of a certain thickness; it comprises a main exterior known as the "table," and a lower part called the "culasse," and 64 lozenges or triangular facets must be cut between these two faces. The 32 upper facets constitute the "crown," the other 32 form the "pavilion." Little brilliants have a "table" and a "culasse," but they bear fewer facets than the brilliant properly so called. There are other forms for brilliants, as for instance the "recoupe" or "double table," which also has 32 upper facets and 32 below; the "non-recoupe," or "simple taille," which presents only 13 facets above and 9 beneath—this form is used for cutting diamonds of small size that are to be set around other stones of larger dimensions, or for modest bartures; the "pierre-jeannes," or brilliants one side of which is polished, the other being cut in the shape of a prism; the "demi-brilliant," flat beneath and having a "table" or "crown" above, really a "recoupe" split in two equal parts; the "pierre à portrait," or brilliant formed of two parallel faces joined by a thin crown which is faceted; and the "briolette." This diamond, which was formerly shaped only in India, has neither table nor bottom, but has the shape of a small pear covered with facets all over its surface. The "briolettes" of India are pierced by a very small hole, but Amsterdam lapidaries never pierce them. The "pendeloque" has the form of half a pear, with a "table" and a

"[illegible]," and is covered with facets on the [illegible] side.

The "rose" is flat in its lower part. It has 24 facets on the remainder of its contour, and the point of its pyramidal dome is formed by the meeting of six of these triangular faces. Six more triangles, applied base to base to the others, have their apex in the contour of the under "table," and the six spaces left by them are each cut into two faces. The rose proper or "rose of Holland" has only 24 facets; the "rose half Holland" has 18 instead of 24; the "rose of Brabant" has only 12; and the "rose of Antwerp" has but six facets.

The brilliancy of a diamond is so characteristic that German mineralogists have termed it "adamantine brilliancy." Usually they are colorless, as well as transparent and vitreous, but it occasionally occurs that they have a blue, green, yellow, pink or dark tint, and there are some which are completely black. Moreover they are often rendered less valuable by reason of dark or red points and spots, and irregular crystallization.

Green Diamonds

present this peculiar feature that they become brown when submitted to a strong calcination. Cape diamonds generally have a yellowish tint, and this, to a certain extent, diminishes their value. Efforts have been made to take away this coloration, but thus far unsuccessfully, though a way has been found out of masking the regrettable tint by treating it on the theory of complementary colors. Daylight which appears to be white is really composed of several rays of divers colors, and among these there are three called primitive. They are red, blue and yellow, and cannot be compounded. Hence white light is only composed of the three colors just mentioned. Now, Cape diamonds being yellow, it is only necessary to cover their surface with a transparent violet color, which, combining with the yellow of the crystal, gives a white light, and this artifice has sometimes been used by rascally dealers to get rid of goods of little value and at very high prices.

The diamond cannot be attacked by any chemical substance whatever, but it is combustible, as it is almost pure carbon.

This fact has induced many persons to try and crystallize carbon so as to obtain a precious product of it, and they have partly succeeded, but while these artificial diamonds possess a brilliancy and transparency worthy of comparison with those of the real thing—they are microscopic, very small and always [illegible]. [illegible] they would resemble real diamonds if [illegible] they be made larger and [illegible]. As now manufactured, they are not of the smallest value to commerce. There cannot be any serious doubt as to the possibility of producing diamonds artificially, but up to the present no really practical means have been found of making them respond to the necessities of trade in the two continents.

The Value of Diamonds

does not generally undergo abrupt fluctuations except under extraordinary circumstances. In 1868 when the mines of Bahia were discovered there was a panic, and their

value went down in a remarkable manner. [illegible], however, their value has never [illegible] to go on increasing regularly.

Diamonds are sold by weight, and the unity of weight is the carat, so called from the name of a bean with which natives of the East Indies used formerly to weigh their gold. The carat is divided into one-half, one-fourth, one-eighth, one-sixteenth, one-thirty-second, and one-sixty-fourth part of a carat, and a jeweler's scales contain from [illegible] carats down to the lowest of the preceding fractions. When a merchant weighs a diamond he holds the scales in his hand, and if he is skilful in his business he is never out by so much as one-sixty-fourth part of a carat. But the carat has not the same value in all countries; its value in France, in milligrams, is 205,500; in Brazil, 205,750; in [illegible], 205,409; in Holland, 205,044; and in [illegible], 205,393.

[illegible] diamonds are sold in "lots" or "parcels," according to commercial expression; they are classed according to size, and bring from $14 to $20 per carat. They lose about half their weight by being cut, and the value of a rough stone is calculated by the probable weight after cutting, taking care to consider possible defects of all kinds.

Cut diamonds are also sold by weight in lots, and in parcels, and are classed according to size. Small diamonds weighing half a carat at most are worth each about $50 the carat. A brilliant of one carat is worth from [illegible] to $100; a brilliant of 1½ carats is worth from $160 to $180; one of 2 carats is from $260 to $340; one of 2½ carats from [illegible] to $400; and finally a brilliant of 3 carats from $540 to $600. Nothing precise can be said as to the value of a diamond, especially when it attains a weight outside ordinary limits; however, the following rule has been adopted as a basis: The value of two diamonds of the same quality are between themselves as is the squares of their weight, that is to say, that a diamond the weight of which is double that of another is not worth [illegible] quite four times as much; but this

When All Things Are Equal,

for immediately a diamond is tinted its value becomes greatly lessened.

If we estimate the value of a cut stone of fine water and without defect at $90 the carat, its value would be obtained by multiplying the square of the weight by 90. For instance, a diamond of 10 carats is worth 10+10+90=$9000, while a diamond weighing 100 carats will bring 100+100+90=$900,000. However, this rule is law only for stones weighing 100 carats and under. Above that limit it is necessary to arrange the equation by another factor, and this is altogether arbitrary. The regent, the best of all of the French crown diamonds that were dispersed two or three years ago, is estimated as being worth in the neighborhood of $2,500,000; but if weighed and valued by ordinary calculation it would sell for only about $720,000.

The only natural diamonds that are sold not to be cut or pulverized are those known as glazier's diamonds. They are very small stones, have convex faces and bended edges, the apexes of which are distinctly visible. These diamonds can cut glass, but diamonds, the edges of which are rectilinear, will only scratch it. Glazier's diamonds are sold at from $12 to $16 the carat. Certain diamonds, which in a natural, crude state are in a spheroidal form, and which do not possess any "cleavage," cannot be cut and are pulverized to make diamond dust. There are also [illegible] diamonds that are completely opaque, and are of steel gray or slightly reddish black, and these are called carbonic diamonds, carbon or carbonado. Besides diamond dust, tools are made out of them, with the aid of which rocks, against which the finest tempered steel has had the edge taken off, are split and polished. As for black diamonds, worth from $4 to $5 per carat, they are used with success in the mechanical perforation of rocks, the boring of mine pits and galleries, the splitting of coals and stones, repairing and dressing of hard stones, bored in cylinders, etc.; the sawing and piercing of marble, porphyry, granite, porcelain, glass, and a whole lot of other substances, and for steel engraving.

There are very few large diamonds in the world, not 20 of eminence, and certainly not 200 of any note. The Braganza of Brazil weighs as nearly as may be 12 ounces, but experts pronounce it to be not a diamond at all, simply a white topaz of more than usual size and brilliancy.

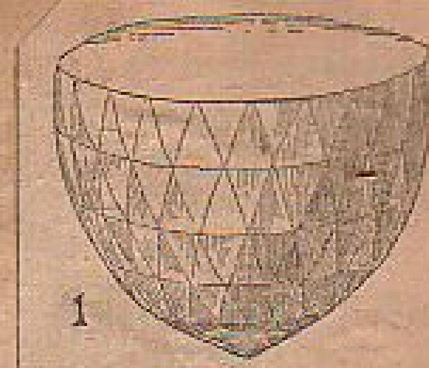
The Largest Diamond in the World,

as to the genuineness of which there is no shadow of doubt, is that of the rajah of Mattan, which is about a third larger than the Kohinoor, and for which many years ago the rajah was offered a couple of war brigs fully equipped, and $500,000. The tempting bid was refused, on the ground that the stone was lucky, and bound up with the fortunes of the rajah's dynasty.

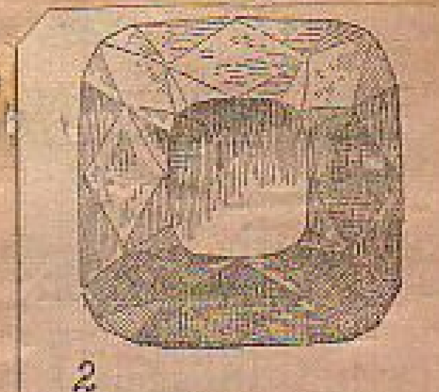
The Kohinoor has a less fortunate reputation. It was first discovered in the 17th century by a peasant near Golconda, and was taken from him by a rajah, from whom it was again extorted by Aurungzebe. Nadir Shah, who took it away from Delhi with other plunder amounting in all to something like $800,000,000, was soon after assassinated, and Shahrookh Mirza, its next owner, resigned it under anything but gentle compulsion to Shah Dooran, the founder of the Afghan dynasty. Dooranee, and after him his son and successor, Tymoor, kept it safely. Shah Zaman, to whom it came by succession, was tortured by his brother Dost Mahomed, who knew Zaman had hidden the gem somewhere, and wanted it for himself. Zaman stood the torture, and confided the secret of the stone's hiding place to his brother Shoojah. Shoojah, escaping with it, fell into the hands of Runjeet, who, by the persuasive powers of slow starvation, prevailed on the unlucky young prince to give up the precious gem. From Runjeet Singh's successor the English took it in 1849, together with the other jewels that did not belong to them. The Hindoos firmly believe the Kohinoor to be most unlucky, and that it will bring certain ruin upon those into whose hands it comes. The Mogul dynasty, they remind us, degenerated from the day it passed into the possession of Aurungzebe. The diamond brought with it the same ill fate to the race of Runjeet Singh. The wily old Punjabee, thinking to avert the evil spell from his house, bequeathed the "mountain of light" to the temple of Juggernath, but his successors refused to surrender it. Within a few years after it came into the possession of her majesty the Sepoy revolt broke out, and more evils connected with it are said by the natives of India to be still in store for the English.

All diamonds seem to carry misfortune. The Sancy has had a checkered history, and at least two of its possessors—notably Charles the Rash of Burgundy, in whose carcass it was taken by a soldier at Nancy—have met a violent death while it was actually about them, while the Pitt diamond (the Regent) cost the house of Orleans its throne, and the First Napoleon the battle of Waterloo.

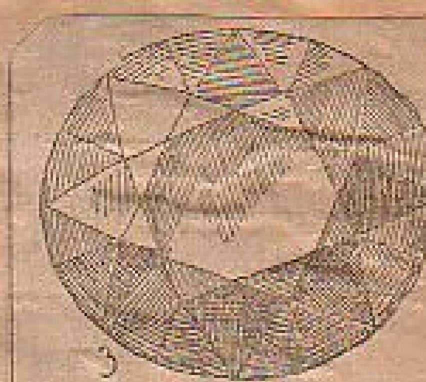
HENRY HAYNIE.



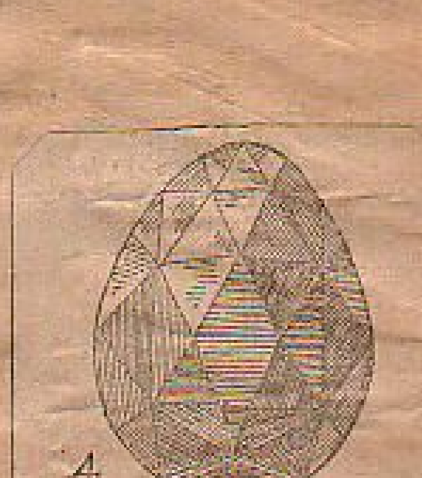
THE GRAND MOGUL.



THE REGENT.



THE KOHINOOR.



THE SANCY.

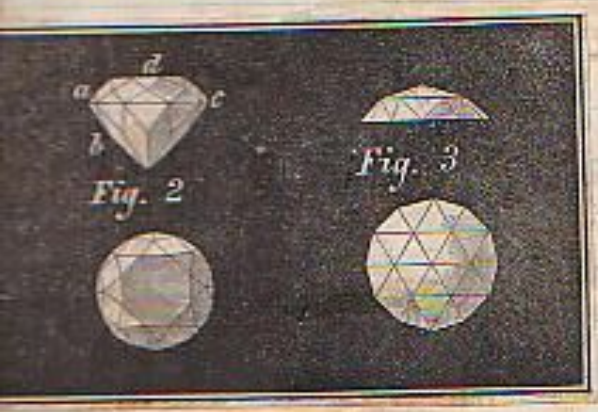


Fig. 4

From Boston Transcript Feb. 5th 1895.

DIAMOND CUTTING IN AMERICA. An important decision between rival claimants to the original invention of the first and only machine for cutting diamonds ever offered at the United States Patent Office has recently been rendered in favor of Mr. Charles M. Field, a skilful and experienced machinist residing in this city. The suit, which has been long and closely contested, has been conducted in behalf of Mr. Field by F. Curtis, the well-known patent solicitor of this city, assisted by eminent counsel at Washington. The result of the suit has been a victory of great importance, since it vests in the Field machine, which is owned jointly by Mr. Field and Messrs. Crosby, Morse & Foss, the sole and entire control of the art of cutting diamonds by machinery in this country and Europe. This machine, which is a notable example of mechanical skill and invention, attracted general attention at the late fair of the Massachusetts Charitable Mechanic Association, and besides receiving very flattering indorsements of its value, the first prize, a gold medal, was awarded to its exhibitors. In connection with this decision it will be a matter of interest to the public to learn that the business of cutting and polishing diamonds on an extensive scale is now carried on in this city by Messrs. Crosby, Morse & Foss, who are successfully using the machine invented by Mr. Field. This business was established by the above-named firm in 1860, when, at much expense and with many misgivings, they obtained from Holland, which had held almost entire control of the art, the requisite machinery and a number of experienced workmen. From that time to the present they have successfully carried on the business without rivalry, except on the part of a company which was organized in New York about three years since. This company went out of existence a short time since, although the business is still carried on there to a small extent; but previous to its dissolution one of the partners laid claim to Mr. Field's invention, and it was this claim which was the foundation of the present suit, resulting in the success of the Boston machine. [Post.

DIAMONDS OF THE WORLD.

There are perhaps eight thousand dealers in diamonds in the world, who carry in their stock stones worth perhaps $150,000,000. The remainder are in the hands of individuals.

It is estimated that during the last twenty-five years the American people have paid duty on at least $180,000,000 worth of diamonds and other precious stones. In 1873 alone they imported $15,203,[illegible] worth, but in 1894 there was a falling off, owing to hard times, and the total was only $4,[illegible].

This does not include uncut diamonds, of which we imported more than $1,000,000 worth in 1892, $800,000 worth in 1893, and $[illegible] worth in 1894. During the last twenty-five years we have imported $7,-[illegible] worth of uncut diamonds. In 1889 we imported only $129,000 worth of uncut diamonds, and in 1880 only $250,000 worth. The large increase of late has been due to the fact that a number of American jewelers have opened diamond-cutting establishments. There are now fifteen establishments in the United States which employ from one to twenty men.

There are 4000 manufacturers in Europe, and about 200 in the United States, who employ between 7000 and 8000 persons as cutters and polishers. Perhaps 28,000 people are employed in the diamond mines throughout the world. We read that in past centuries 60,000 people were working in some single Indian mines at one time, and perhaps that statement is not exaggerated, since by the aid of modern machinery one miner can now accomplish as much as twenty who used the primitive methods. The total value of all the diamonds in the world undoubtedly exceeds $1,000,000,000.

During the past quarter-century ten tons of diamonds, selling for more than $500,000,000 uncut, and $600,000,000 after cutting, have been added to the world's wealth—an amount more than twice as great as the value of diamonds known to exist before. [Exchange.

1895

What a "First-Water" Diamond Is.

(From the Chicago Record.)

The expression "first water," when applied to a diamond, denotes that it is free from all traces of color, blemish, flaw or other imperfection, and that its brilliancy is perfect. It is, however, frequently applied to stones not quite perfect, but the best that the dealer has, and they may be of only second quality. It is almost impossible to value a diamond by its weight only. Color, brilliancy, cutting and the general perfection of the stone have all to be taken into account. Of two stones, both flawless and of the same weight, one may be worth $60 and the other $12,000. Exceptional stones often bring unusual prices, while "off-color" stones sell for from $60 to $100 a carat, regardless of size. The poor qualities have depreciated so much in value that some are worth only from one-tenth to one-fourth what they were worth twenty years ago. This is specially true of large stones of the second or third quality.

A "rough diamond" was recently found in South Africa, which bears so striking a likeness to Lord Salisbury, that its owner, Mr. Streeter, the well-known jeweler, has named it after him. Salisbury diamond is 80 carats in weight, and an inch and a half in length, and the contour of one of its sides is said to recall the profile of the Prime Minister with singular fidelity, considering that it is a product of nature and not of art. Mr. Streeter intends to keep the stone unpolished, in order that its resemblance to Lord Salisbury may be preserved. If someone could find a similar gem to resemble Lord Rosebery, there might be an exemplification of "diamond cut diamond."

5834
Diamonds and Colored

From The Jewelers' Weekly

THE story of the progress of the diamond from the mine to the [illegible]rer is an interesting one. It is [illegible]rally known that all the small [illegible] in the mining district of [illegible] Africa are controlled by the [illegible] Consolidated Mines. This [illegible] devotes its attention to the [illegible] of the rough stones. Each [illegible] the entire production of rough [illegible]ered together and shipped by [illegible] London. Before the goods [illegible] forwarded they are appraised [illegible] committee of the De Beers [illegible], among which are the [illegible]tatives of the London pur[illegible] syndicate. Arrived in Lon[illegible] shipment is deposited with [illegible], which surrenders it only [illegible] payment, practically, before [illegible].

[illegible] to an arrangement [illegible] the De Beers Company, [illegible] is at present sold to [illegible] purchasing syndicate, [illegible] whom are large sharehold[illegible] De Beers Company. Upon [illegible] of the goods by this syndi[illegible] are spread out upon tables [illegible] according to their dif[illegible] qualities and sizes, constitut[illegible] series of distinct lots.

[illegible] mass of stuff, consisting of [illegible] all qualities of stones, [illegible] from the smallest to the [illegible] some of the latter weighing [illegible] 150 or 200 carats, is placed [illegible] committee of the syndicate [illegible] appraised. This committee [illegible] the valuation and fixes [illegible] prices, which being de[illegible], the sales are made to [illegible] and cutters, either for cash [illegible] very short time, the utmost [illegible] thirty days.

[illegible] diamond shipments usually [illegible] London once a week, gen[illegible] Mondays. Aware of this [illegible] Amsterdam and Antwerp [illegible] numbering anywhere from [illegible] hundred, take the train [illegible] on Sunday nights. [illegible] presented by these dia[illegible] dealers is a very lively one, [illegible]ntly the crowd is so [illegible] the railroad company [illegible]essary to add extra cars. [illegible] the travelers reach Lon[illegible] on Monday morning.

The neighborhoods of Holborn Viaduct and Hatton Garden are thronged upon these occasions by men anxious to get a first glimpse of the new shipments. Generally appointments are made in advance with importers through the agency of brokers, who usually accompany the cutters, and when a sale is accomplished receive a commission of one per cent. from the seller and one per cent. from the buyer.

The purchases having been made, the goods are transported to the cutting establishments of Amsterdam or Antwerp. In these two cities upward of 20,000 men are employed in this industry.

After the stones have been cut and polished they are offered for sale to buyers from all parts of the world who congregate there for the purpose of purchasing, these transactions being carried on by brokers, who again receive a commision of two per cent., one from the seller and one from the buyer.

It is estimated that the yearly production of diamonds amounts to about $30,000,000, of which the American market consumes from 40 to 50 per cent. It is a well-known fact that this country demands the best quality of stones and the highest grade of workmanship.

The first operation the rough diamond undergoes is called splitting or cleaving. This is necessary in order to derive the best results for commercial purposes. The process consists first in determining the proper plan and direction for dividing the stone into parts, a proceeding that requires judgment and long experience. The rough stone is imbedded in cement and a dull edged diamond is rubbed across its surface, so as to leave an indentation that determines the line of cleavage. The operation is then repeated with a diamond having a slightly sharper edge, and finally with one as keen as a razor. A marked depression is thus made into which a sharp steel knife is inserted. A quick, light and decisive blow divides the stone into two parts.

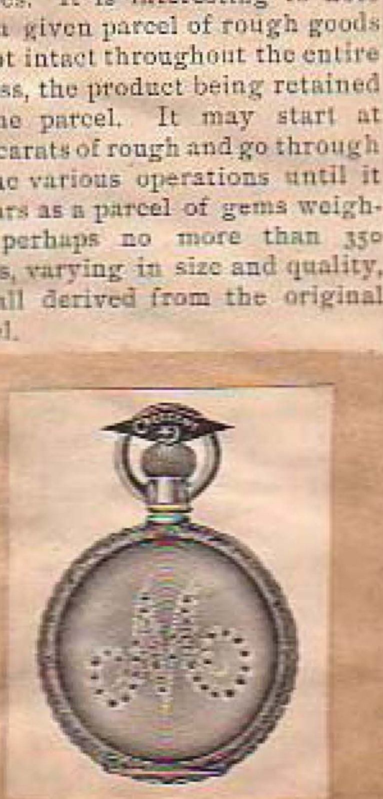
The next process is known as that of cutting, an operation during which the stone is given its general shape.

The stone is then ready for the polisher. He must first determine the location of the "table" and the "culet," whereupon his assistant, technically known as "setter," prepares the stone. He inserts it in a conical mass of molten lead, allowing a particular section to remain exposed. As soon as the lead has hardened the polisher places the stone upon his wheel, which rotates at the rate of 2,300 revolutions per minute.

As a rule he has four stones on the wheel at one time, the stones being held in place by weights. Each setter has from five to six polishers to supply, and as each polisher has at least four diamonds in work at a time the setter has fully twenty different stones to keep in settings. It is his duty not only to set each stone to the best advantage, but also to return it to the proper polisher. As the position of each diamond is changed in the setting from twenty-five to thirty times, an idea of the number of operations required before the stone is properly faceted may be acquired. Having arrived at a certain stage the stone is sent back to the cutter to remove sharp edges or irregularities that may have arisen during the process of polishing. At his hands, also, the stone receives its perfectly rounded form, after which it is returned to the polisher, who gives it its finishing touches. It is interesting to note that a given parcel of rough goods is kept intact throughout the entire process, the product being retained as one parcel. It may start at 1,000 carats of rough and go through all the various operations until it appears as a parcel of gems weighing perhaps no more than 350 carats, varying in size and quality, but all derived from the original parcel.

STOLEN DIAMONDS IN AFRICA.

Over [illegible] worth of diamonds are stolen every year from the South African diamond mines.



IN THE DIAMOND MARKET.

Price of the Gems Said to Be Steadily Advancing.

Two Reasons for the Increased Cost—Diamonds on the Instalment Plan—How Dealers Read Character—Cutting of "Knotty" Stones—Regal Surroundings of a Drummer.

"What's the value of diamonds as compared with prices a year ago?" was asked of one of Boston's leading dealers in the precious stones.

"They are nearly one-third dearer," was the reply, "and if the indications can be relied upon, they are going still higher. I have been in the trade for a good many years and have handled three or four bushels of the 'sparks' but during all my experience I have never known a time when diamonds were in greater favor than now. It seems as if everybody had a penchant for them. Why, I know a hundred young men in town whose salaries are not above $16 a week who wear stones averaging in cost all the way from $50 to $100. The greatest fad is in finger rings, with a heavy crown setting. Very few pins are sold in comparison, as the present style of wearing the necktie precludes their use."

"How do moderate salaried young men manage to purchase these gems?"

"O, that is easy enough to explain. There are a number of establishments throughout the city which do a big business in selling the stones on instalments, the same as the furniture houses. The plan is to get one-quarter of the value in cash and the balance in driblets at the first of each month."

"Don't you run a great risk in losing a part of your stock in transactions of this kind?"

"Of course, there is more or less chance about it, but long dealing with the public has given us the ability to read human character with almost unerring correctness. Talk about your phrenologists defining the humps on the cranium, why they are not in it with us. If I had all the science of the late Prof. Fowler, it would be of no practical benefit to me, as the humps on my customers' heads could not be got at. No, sir, I have to

Read Character in the Face."

"Any particular part of it more than another?"

"Well, I should say so. When a party comes into my store to purchase a diamond on instalments the first thing I do, after setting out the tray, is to give him a good, long look in the eyes. There is where the secret of his character is to be found. There is no looking up the eyes. If I find that he does not figure or try to escape me, I immediately begin to enter into negotiations with him; but, on the other hand, if I see that he cannot meet my gaze steadily, I indulge in a little parley, and finally inform him that it does not pay to sell except for cash. You can also read character, to a limited extent, in the carriage of the person. An honest man comes into your store and proceeds immediately to the salesman, and informs him as to the nature of his business, while the cheat and swindler enters like a cat and looks from salesman to salesman, as if settling upon the one who possesses the greatest amount of credulity. But, while he is sizing up my attendants, I have taken no measure, and he never for a moment escapes my eye while he is within reaching distance of any part of the stock. I never allow my salesmen to make bargains with parties who wish to buy on instalments. That is a part of the business to which I give my especial attention. If I meet with loss, no one is to blame except myself."

"Where do you purchase the bulk of your stock?"

"In New York. That is the great diamond centre of the United States, and the money representation of the gems carried by some of the wholesale houses there reaches up among the millions."

"Do many of the finest stones come to this country?"

"No, sir; we get only the second pickings of the best cut stones. Europe is filled with rich old cranks who devote their entire time to hunting about the diamond establishments and seizing upon the handsomest products which the trade shows. Then, again, the royal families, and the lords, the dukes, the barons and all the rest of the nobility have orders with the diamond merchants

To Get Them Matched Stones

at any cost, and the prices they are willing to pay would stagger even the Astors and the Vanderbilts. So you see there is very little inducement for the dealers to try and make a market for the best of their gems on this side of the Atlantic. A great deal of talk has been made over the rose diamond of Minnie Palmer, but I can assure you there are collections in some of the old English and European families, the poorest specimen among them being worth four times what Miss Palmer paid for hers. And yet it is known in London that an old mine stone of 15 carats has been placed on sale and a thousand titled Englishmen would make a mad rush for it, ready to pay any sum asked."

"How is the value of a diamond in the rough determined?"

"By experience the same as the head buyer in the silk department of a big dry goods house tests the quality of the fabrics purchased. All the leading establishments in Amsterdam have their expert diamond testers. They become very proficient in their business, and many of them can give the value of a stone unaided by a glass. The first considerations are shape and clearness. The trained eye of these experts can also discover a flaw in a rough stone, which, of course, greatly detracts from its value."

"How long does it take to cut a diamond?"

"A three-carat stone can be put in shape for the polisher in about half a day."

"And how long to polish it?"

"The same size stone would require two days. This is a very important branch of the business, and to become proficient in it requires long practice, a very steady hand and good judgment, as a stone can be easily depreciated in value by a poor workman, sometimes

A Knot Is Discovered

in the gem during the polishing process. These are little substances as much harder than the diamond itself as you can imagine. They are to the stone the same as a knot in a pine board. When a diamond with these characteristics is discovered, it has the same effect on the polisher that the striking of a nail has upon a carpenter when sawing a board. It takes months and months to polish a knotty stone, and I have known a year's work to be put in on one of them. Of course, not of constant labor, but to be picked up at odd times when there was nothing else to do. The polisher has also to guard against chipping the stone, for it should be understood a diamond has a grain the same as a piece of wood, and the most carelessness might result in knocking off a third of its weight. While disasters of this kind are not infrequent they are seldom the result of inexperience or laxity on the part of the workman. When a polisher takes a stone one of the first things he does is to find out the direction of its grain, so as not to cut against it, for if he did a corner would fly off, and with it all the profit of the dealer. The substance used in polishing a stone is diamond dust, mixed with oil. The dust is obtained from the little box into which it falls when the cutter is at work. This powder as you may see is very valuable, as without it there would be no possibility of bringing out the beauties of the gem."

"What is the condition of the stone when it leaves the hands of the cutter?"

"It has simply been given its shape. When the diamond is taken from the mine it is of irregular form and closely resembles the little white quartz pebbles so plentiful on the sea beach. When rounding off a table is cut on top, which is the small flat surface seen on the top of the finished stone. Radiating from this are four large facets. When the polisher receives the stone he encloses it in lead, allowing only the portion he desires the wheel to touch to be exposed. Now the finest and best work in the art of diamond polishing is the putting on of the small facets on the four large ones already referred to. This requires great skill and the workmen who are very prominent in this branch of the trade are well paid and are

Princes Among Their Fellows."

"Where is the best diamond cutting and polishing done?"

"In this country. But understand me, there are no better workmen here than in Amsterdam or some of the other European cities. The difference lies in the fact that the Hollander wants the stone kept as large as possible, not laying so much stress on its beauty as its size, while here we will sacrifice a half carat in order to bring out all the latent beauties of the gem. We have a number of really expert diamond workers in this country, who are native born. The natural aptitude of our artisans soon places them in advance of their foreign teachers. I have known a gem of great value to be sent here from abroad to be cut and polished, as its owner believed a better job would be done. This is a flattering recognition of the skill of the American workman."

"Is there an apparent scarcity of diamonds in the market?"

"There certainly is."

"How do you account for it?"

"There are two reasons—one that all the diamond fields of Africa are in the hands of powerful London and Paris syndicates. When they wish to advance prices, they limit the supply, and, in answer to a well-known law of trade, values are enhanced. I believe it is the intention of these trusts to send up prices still higher. Another element that has operated in the diamond market the past few years is the great demand for stones in China. At one time the wearing of diamonds in that country was entirely confined to the nobility. It was a mark of distinction. However, under the influence of broader and more liberal ideas, all Chinamen, of whatever social or political condition, may now array themselves in as many diamonds as their wealth can provide and their inclination dictate.

"I must tell you about one agent of a leading Amsterdam house, as it will cause the travelling men of this country to wish they were all representatives of the same concern. When he starts off on a trip he has a retinue of assistants equal to that of the Prince of Wales. A whole palace car is placed at his disposal, and his life on the road is not a whit less regal than that enjoyed by a crowned head. He has in his charge a fabulous amount of wealth, which is as closely and carefully guarded as the treasury of the United States. It's a great business, this dealing in diamonds," remarked the Boston man, as he left the writer to wait on a customer.

AMERICAN DIAMONDS.

A Few Choice Specimens Found Here, One of Which Was Owned by the Late John Morrissey.

Diamonds have been found occasionally at different places in the United States, but never in sufficient quantities to render systematic mining profitable. The largest authenticated diamond ever found in this country was picked up by a laborer engaged in grading the streets of Manchester, Va. Its original weight was about twenty-four carats, and after cutting, a twelve-carat stone resulted. On this stone, called by Capt. Dewey, its owner, the Onimgor, John Morrissey once loaned $8,000, but Mr. Kunz, the diamond expert, appraised its value at less than a thousand dollars, as it is poorly colored and imperfect.

Next to this stone comes a sixteen-carat diamond found in 1881 at Waukesha, Wis. A stone over four carats came from Dysartville, N. C., in 1891, and one weighing just a little less was found in Dane County, Wis., in 1883. In Georgia and North Carolina, itacolumite or flexible sandstone is found. This stone, so elastic that a slab of it can readily be bent into a curve by the fingers, is found associated with diamonds in Brazil, and this fact led to a search for the gems in these Southern States. Quite a number of small stones were consequently found there, mostly in the gold washings of Hall County, Ga.

In California's gold diggings, diamonds have also been found in some numbers. About seventy stones have been obtained from one locality at Cherokee Flat, the largest weighing about 2½ carats, and the colors varying from rose through various shades of yellow to pure white. The largest price ever paid for a California diamond in the rough was some $60. There are twenty diamond-cutting establishments now in this country, handling during each year about $1,250,000 worth of stones.

"The Hope diamond, which the trustees of Lord Francis Hope's estate are desirous of selling, is valued at $130,000. It is rather an ugly stone, the size of a hen's egg, and blue in color, and is supposed to be the blue diamond which Louis XIV. bought in 1668. This diamond was lost in 1110.

From the Boston Advertiser
Saturday Jan. 12th 1884.

A LARGE DIAMOND.

A large diamond, whose arrival in New York aroused so much interest a few months ago has been cut in this city, and in a day or two will be returned to New York. It is said to be the largest diamond cut in this country, weighing 125 karats in the rough and 77 now that it is cut. The celebrated Koh-i-noor diamond weighs 106 karats. The New York stone is a full inch across, and about two-thirds of an inch thick. It is cut with 58 facets, and presents a wonderfully brilliant and scintillating appearance. It was found in South Africa, and is owned by a New York importing firm. It has taken three months for the cutting, which has been done at the establishment of Mr. Henry D. Morse of this city. The polishing was superintended with great skill and care by Mr. C. M. Field, Mr. Morse's foreman.

From the Boston Evening Transcript Jan. 12th 1884.

The Largest Diamond

The largest cut in America has just been finished by Mr. Henry D. Morse of 356 Washington street, this city, for New York parties. It is of the South African species, and when put into Mr. Morse's hands rough its weight was 125 carats. His estimate of loss in cutting brought the jewel down to sixty-two carats, but by skilful handling in the process under his personal care the stone has been made to weigh seventy-seven carats. Though not a white diamond, the artistic cutting of the facets gives it a high degree of luminosity. It is double the weight of the largest finished stone ever cut on this continent, and is but twenty-eight carats smaller than the famous Koh-i-noor. It has been given a high polish by Mr. C. M. Field, Mr. Morse's foreman, whose patience in the tedious finishing process is highly creditable to him. The perfection which the art has reached in this country is principally due to the study and judgment of Mr. Morse.

From the Boston Courier,
Oct. 6th. 1878. Special Exhibition
Mechanic's Fair, 12th Exhibition

Perhaps the most striking display in the advance of American Industry is to be found in the diamond cutting and polishing machines exhibited by Mr. Morse, a native of Boston. Until that gentleman made this discovery, the trade which his invention bids fair to monopolize was confined almost exclusively to Holland. To the towns of Bruges and Amsterdam these cubes of carbon presenting the hardest mineral surface in the world were sent to be cut and polished by hand. The labor, tediousness, and inaccuracy of this manual process at once struck Mr. Morse as matters to be remedied by the aid of machinery and he immediately set to work with the aid of his foreman, Mr. Field, to invent a machine which would cut diamonds by a less laborious and cheaper process. His efforts in this direction met with ridicule from his old foreman a man thoroughly wedded to the *laudator temporis acti*, still Mr. Morse persevered and whilst prosecuting his researches and experiments he also made a discovery which in conjunction with the machine has gone to form a most perfect combination. In determining the angle of light to be reflected so as to bring out the greatest brilliancy of the stone the eye of the workman was all that was to be relied upon in this manual system: the least deviation entailed a loss of brilliancy and consequent loss of value. By dint of repeated experiments and after considerable study Mr. Morse determined upon the exact angle of light which would be almost universally applicable in the cutting of a stone. Having decided this he next invented an instrument which should unerringly produce this ray of light without the deviation of a hair's breadth, so that the workman need no longer trust to chance to obtain the greatest amount of brilliancy that the stone possessed. Having arrived thus far upon the road of discovery he next proceeded to perfect his machines. He had observed that all large stones in Amsterdam which from their size could not be cut by hand were placed upon the heavy wheel thereby incurring a loss of the powder which last he proposed to save as well as to supply a machine which would cut a stone of any size from a ¼ carat up to 50 carats.

For the last process, viz. that of finishing and polishing, he at once determined to discard the ungainly, heavily clamped wooden table used by the Dutch and to substitute a metal one, smaller in size, so fixing the diamond upon it that even with the heavy power used it remained steadier in its position than on the larger and more cumbrous invention. Both of these machines are in operation in Section C in the body of the building where a just appreciation of their value can be easily obtained. Let us now see what advances Mr. Morse has made in this branch.

First—By his system of cutting he brings out the true brilliancy of the stone to its fullest extent.

Second—He saves the arduous and painful task of cutting diamonds by manual labor through the application of a machine which cuts the sizes of stones above mentioned without any physical exertion.

Third—That portion taken off the stone is utilized for the purposes of finishing and polishing [illegible] being wasted.

Fourth—He is enabled to increase the value of stones by recutting, thus bringing out their true brilliancy in cases where they have not been properly cutted in the first instance, at a trifling loss of weight.

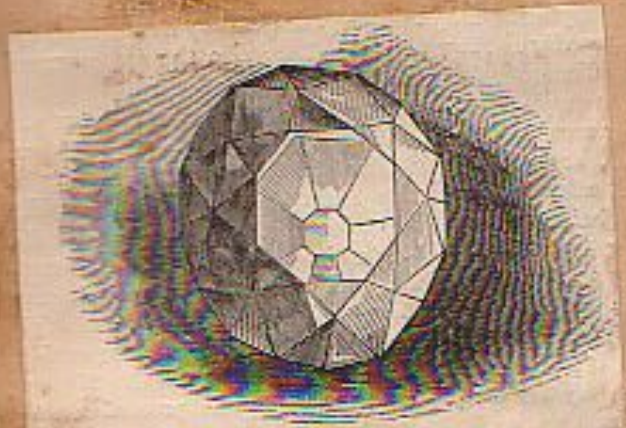
Now when we come to consider that at the present moment the percentage of pure brilliants in the market is represented by one in ten, it is obvious how valuable such an invention must eventually become.

2 carats. 3 carats. 4 carats. 5 carats. 10 carats.

BRILLIANTS.

ORIGINAL CUTTING OF THE KOH-I-NOOR.

PLAN OF FIRST CUTTING.



THE KOH-I-NOOR, RECUT.

Diamonds so small that 1,500 go to the carat, have been cut in holland.

ROMAN TIGERCLAW.

KNIFE EDGE TIFFANY.

plenty of choice. Only 10 cents a line.

Cutting the Cleveland Gem.

If the dynamiters had destroyed the huge diamond called the Koh-i-noor, which is kept in the Tower of London, the eyes of the gem-dealers of the world would have turned at once to the Cleveland gem, now owned by S. Dessau, of No. 4 Maiden lane, as is the largest in the United States and Minnie Palmer's offer of $40,000 was refused. The cutting of this stone was begun on the day following election and was completed at 6 o'clock on Saturday last, making continuous work for eighty-one days. It was placed in the care of John Wiener, who first roughly shaped it by smoothing the corners. He inserted a ball of solder to an iron handle and sunk the diamond in the solder, leaving a little side bare. This was rested on an iron wheel, which made 2,000 revolutions a minute, and diamond-dust mixed with oil was applied. The wearing away and polishing of one facet took from four hours to a day, and the stone was cut with 128 facets, which accounts for the long time required. It weighs 476¼ carats. The Koh-i-noor weighs about 190 carats, but is not of perfect shape. The local gem will be shown to Gov. Cleveland this week and then goes to the New Orleans Exposition.

First District Court.

THE ART OF CUTTING DIAMONDS.

"Full Many a Gem of Purest Ray Serene" Is Prepared for the Salesman's Tray.

THE LARGEST DIAMOND IN THE WORLD.

Necklace of Fabulous Value and the Rare Ability to Drill Through Stones for Stringing Purposes — Various Ages of a Brilliant—Different Colors and Shades.

Since the beginning of history we have had marvelous stories of the influence of diamonds, especially of large size, on not alone the destinies of individuals, but of nations. The history of any fine diamond is replete with murder, dishonor, crime and horrors of all descriptions. There seems to be a certain fascination in a diamond, apart from its monetary value, that exerts its influence alike upon the educated and the savage.

Most of the diamonds of the present day come from the Kimberly mines, in South Africa, and the Jagersfontaine mines, also in South Africa. Although not a short distance apart the diamonds of the Kimberly mines are not near the fine stones that are found in the Jagersfontaine. From the island of Borneo, Brazil and India come a few fine, but not of the first quality.

The three great diamond markets of the world to-day are London, Paris and Amsterdam. While some cutting and polishing of diamonds is done in London

MAKING THE SETTING.

and Paris, the greater portion of such work for the world is done in Amsterdam. It is only recently that any attempt has been made in this country to cut precious stones, but with a leading firm of this city have started in this work, and to-day are perfectly independent of any outside help in cutting, polishing or setting in the best advantage any stone which they may have a call, or which they desire to keep in stock. The designs for the settings are made by their own artists, and they are now doing as fine work as can be done anywhere with the most complete factory and the most skilful workmen in the world.

THROUGH TIFFANY'S.

Accompanied by Mr. Paulding Farnham, a member of the firm and the general manager of the jewelry department, I went over their factory to see the method of cutting, setting and polishing diamonds.

Everything in connection with diamonds is done in the most careful manner. Every stone is weighed, its weight recorded, and after it is cut and polished weighed again. Every workman who does any work either on the stone or in relation to it has his name entered on the record. So thoroughly and systematically are these records kept that any stone in the whole establishment can be instantly and easily traced. In this way any customers of the house in sending stones to be recut or reset have an absolute guarantee that the same stones are returned to them.

After the preliminary steps of weighing and recording a rough drawing is sent to the cutter. He carefully examines the stone to determine the grain and best method of procedure, taking every advantage of the shape to produce as much material as possible in a fine brilliant.

SETTING THE DIAMOND.

When he finds the grain he looks for the points of the stone. In some stones there are two points, in others three, and never more than four. Now, knowing the grain and the points, that determines him in placing the table, or upper face of the stone. The grain must always run into the table to facilitate the polishing of the facets. The purpose of the table is to admit light and to act as a mirror in reflecting light in the facets of the pavilion (the back of the stone below the girdle), and which light is again reflected as many times as there are facets in the crown or the top of the stone above the girdle. Naturally the facets determine the brilliancy of the stone. The cutting and polishing must always be done against the grain of the stone or there is danger of chipping and so ruining a valuable brilliant.

The shape determined, the cutter puts the stone into a cement of resin and sandstone on the end of a stick shaped very much like a miniature wooden pin used in bowling. The stick has the same fat body, just large enough for the hand to comfortably grasp, with a narrow neck and branching out into a head about one-half the size of the body. On this head goes the cement and the stone, and when the cement hardens it holds the diamond absolutely stationary. Two sticks, each with a diamond, are used, as the cutting is done by rubbing one stone against the other. To help him in cutting and save the diamond dust, which is afterward used in polishing, the cutter has an iron box eight inches long, four inches high at the back, two inches in height at the front and three inches wide.

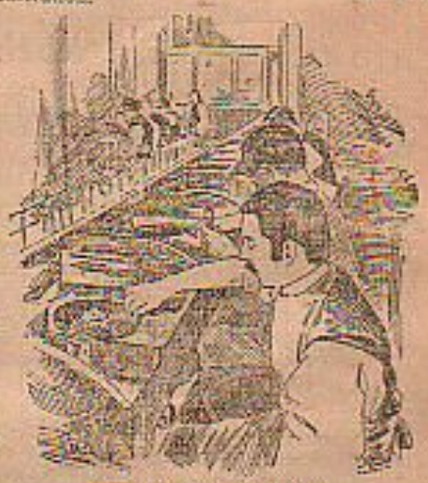
The slant to the box gives the cutter opportunity to move the sticks in any direction. In order that his hands may be steady and exert all their force keeping the stones together, two

GRINDING STONES IN BOCTOM.

brass uprights about one inch high are inserted in the slanting edges of the box, about three inches from the front. The top surface of the box is divided into two compartments—one at the back, about three inches wide by one and a half inches long, with a sliding top to hold the diamonds to be cut; the other five inches long and the width of the box, with a movable fine sieve about half down to catch the dust coming from rubbing the two stones together. This dust, after going through a fine sieve, is received in a small drawer which comes out through the front of the box. The cutting is the most important and hardest part of the preparation of the stone. From the constant rubbing the fingers become disfigured and knotted, and to save them in the heavy blocking of a stone a small machine has been invented. Only two of these machines are in use, and the only one in this country is at Tiffany's. The machine works on the same principle of rubbing two stones together as the sticks, but cannot do such fine work as is done by hand.

IN THE POLISHER'S HANDS.

The polisher takes charge of the stone after it has passed through the hands of the cutter, and judges his work from the condition of the stone when received. To polish the stone with mathematical exactness, as has to be done to get the best effect, the operator has a wheel—or "lapp," as it is technically called—made of an alloy of iron and lead or copper. This lapp makes 2,500 revolutions a minute, and has to run with the least possible friction and be perfectly balanced. In order to get the least friction either end of the spindle of the lapp rests on a small piece of lamp wick saturated with lubricating oil. The polisher has a little cup shaped piece of lead, with a copper rod shank—called a "dupp"—that he fills with a mixture of lead and pewter, in which he puts the diamond. The shank of the dupp is then put in the end of the clamp seen under his hand in the illustration.



POLISHING THE ROUGH STONES.

This clamp insures the diamond being held in a steady position, and by weighting it any amount of pressure can be brought to bear on the diamond. On this lapp is used the diamond dust made by the cutting, and so practically but little of the valuable stone is wasted. The greatest care is taken to prevent the dupp getting heated and this is done by repeatedly dipping it in the small tub of water that stands in front of the polisher on the table. If the dupp should get heated the metal holding the diamond would soften and the stone get turned, either fracturing it or cutting it unevenly. In polishing the girdle of the diamond is never reduced, as this determines its size and consequently its value to a certain extent. Never more than four stones are put on the lapp at one time as the polisher has to be on the alert to prevent the dupp heating from the rapid revolution of the lapp. In the case of very fine work two stones on the lapp at one time give the polisher all he can attend to. The shank of the dupp is made of copper so that it may be bent and thus present a different facet to the lapp without removing the diamond from the dupp.

TO THE DESIGNER.

The stone, after the polisher has finished with it, is given to the designer's department, and the design made of which it is to be a part. The diamond, with the design and a quantity of gold, is given to one of the gold workers. This gold is then made into the required shape, and the gold finisher proceeds to dress and polish it until it is ready for the diamond.

Now comes a most important part of the work in making a perfect piece of jewelry, and that is the setting of the stone into the gold. The setting must be done so that the beads of the gold only lap sufficiently to secure the stone and not to take away any of its brilliancy. The gold setting for the stone is put on the end of a cone shaped stick in shellac, and is thus held perfectly steady while the diamond is being fitted in its future resting place. The diamond is carefully put into the hole intended for it and the beads bent over just enough to hold it. The upper part of a stone is always larger than the bottom, so when the top is held firmly the stone is secure. Set in this way the greatest possible extent of surface is exposed to the light and so the greatest brilliancy secured.

Then the completed piece of jewelry is sent to the finisher and the piece made ready for the salesroom.

Sapphires and rubies are cut like diamonds, by the use of the sticks, but polished in a copper lapp, instead of one made of gun metal. Ruby powder is used in place of diamond dust in the polishing. The same number of facets in crown and pavilion are cut on diamonds, sapphires and rubies. Emeralds are very often cut with the old fashioned step cut with diamond pavilion and using a polishing copper lapp and ruby powder.

FINE STONES.

No one has ever succeeded in discovering the causes that produced a diamond. No one has ever produced a diamond, although the diamond has been analyzed and every one knows that it is pure carbon. In the same mine will be found diamonds of almost every shade of color as well as the perfectly white stones. Speaking of these colored diamonds, now so fashionable and in such demand for ring, Mr. Farnham said yesterday:—

"While no one knows positively what caused the carbon to crystallize into a diamond, it is thought that the first crystallization is absolutely white. Then by the action of nature in alternate heat and cold the diamond was sent through the whole gamut of color, the darker it is the harder it gets. Some black diamonds have been on the wheel for years without making any visible impression on them. The stones are found in all colors. I will show you," and taking from the safe little square packages of tissue paper Mr. Farnham unrolled them, and with forceps laid on a piece of white paper first a perfectly white diamond, and then in succession a blue-white, a pink, a green, a tan, a straw, a marigold, an olive, a brown, a cinnamon, a very rich dark brown and a black.

COLORS AND SHADES.

"Now the shades of some of those stones," continued he, "are so delicate that one not accustomed to them would be unable to tell them apart. Take the straw and the marigold. Separately you can hardly see the difference. Put them down together and the difference in color is instantly perceptible. For these stones we have equally as many colors of gold. The color in the gold is controlled by the alloy used. The different shapes of these stones is peculiarly interesting. All colored stones are cut in fancy shapes. There is a briolet, there a pear shape, there a square, a hexigon, a cone, a cube, with one of the ends drawn out into a point. The elliptical or the double rose cut are very fashionable and much used in fancy rings. We are to-day making up as many and as beautiful fancy rings as were ever made in the time of Louis XVI., the time of the rage for fancy rings.

A BEAUTIFUL NECKLACE.

"I have a necklace made of briolet shape diamonds, with drilled points, that I want you to see," said Mr. Farnham, ringing a hand bell. On being told what was wanted a messenger brought in a blue box, inside of which around a circular platform was the necklace.

"That is as fine a piece of work as can be done in Europe. The mounting of each diamond only covers the extreme point of the diamond. The hole is so small that a piece of sewing silk will just go through it. The hole is drilled with diamond dust and a small piece of tempered steel. It is very laborious work, and only two men in the world to-day can drill diamonds. Their names are not even known, and a few firms control their work. If we wanted a diamond drilled we could not do it ourselves but would be compelled to send to Europe to the firms controlling the drillers. The original cost of drilling in years gone by was much less expensive than the work done to-day. Those stones have probably been drilled for over a hundred years.

"The kind of work? Why, the mounting is called enamelled and gold tracery and is really as fine a piece of work as can be done anywhere. I have been all over Europe in all the museums and seen all the private collections, and you would not find a more beautiful piece of work in any of them, not even excepting the celebrated Hermitage at St. Petersburg, Russia.

LARGER THAN THE KOHINOOR.

"Another thing that may be of interest to you is the cleaving of diamonds. After the cutter determines the table and girdle of a stone he probably sees that he can cut off quite a piece and not injure the size of the stone at all. This cleaving is polished up and used as a covering for miniatures, and is called portrait brilliants. We have them here all the way from the size of a small French pea to that of a ten cent piece.

"We have a large stone here," concluded Mr. Farnham, "called the Tiffany yellow double decked brilliant, weighing 125½ carats. It is the finest and largest yellow diamond known in the world. It is nearly twenty carats larger than the celebrated Kohinoor. Yes, of course it is for sale, but it is pretty expensive—over $100,000.

Flawless Diamonds.

A diamond is valuable according to the glorious beauty of its perfection. It feeds your eyes with much pleasure in beholding and is a treasure of intrinsic value to its possessor.

Gems that are flawless and brilliant in color have a constant value, and as a personal security they are unequaled.

It has been quite noticeable during the last 12 months that diamond jewelry has been selected largely as "wedding gifts."

This is practical giving. Flawless stones never grow out of date, and are always worth the money originally invested.

DIAMOND FINDS IN AMERICA.

Brilliants Discovered, but Not in Paying Quantities.

Just Enough Revealed to Make Diamond Swindles Possible — Gems Found in California, Wisconsin and the South—How a Bostonian Broke up the Diamond-Cutting Monopoly.

(FROM OUR SPECIAL CORRESPONDENT.)

WASHINGTON, D. C., March 23, 1894. At long intervals the chief of the mining division of the United States geological survey receives letters from people in the South or West telling him that an American diamond field has been discovered. Dr. Day turns the correspondence over to the expert in precious stones of the bureau—George F. Kunz of New York—and he investigates the claims. Not that he has any faith in the statement that there is a diamond field in the United States, but because he knows from past experience it is quite possible that stray diamonds have been discovered, and it is altogether likely that they are of value. But Mr. Kunz does not make any trumpeted announcement of the result of his investigation.

The chief use that has been made of the discovery of diamonds in America has been to swindle the credulous by all sorts of confidence games. Twelve or 15 years ago some sharpers "salted" a piece of country in the wilds of Arizona and organized a stock company to work it for diamonds. The swindle was planned on a large scale, and several thousand dollars' worth of rough diamonds were scattered about for the benefit of the California experts who were sent to the spot by the syndicate which was organized. These experts were deceived into making a favorable report, and a company was organized and many thousands of dollars invested in its stock before the fraud was exposed.

Three winters ago a find of diamonds was reported in Idaho, and there was a rush of fortune hunters to Boise City. The find proved to be quartz. No one is known to have gained anything by this deception, and it may have been innocent.

Still later some swindlers salted some property in Georgia. They did not make a very heavy investment. They put in only two diamonds, and one of these was sent to Mr. Kunz for examination. He promptly informed the senders that the diamond was never found in Georgia; that it was a Brazilian diamond which had undoubtedly been brought to Georgia for dishonest purposes. The Georgia swindle was not a success, thanks to Mr. Kunz's remarkable knowledge of the minute differences between precious stones. There is probably no other expert in the world who has so quick or certain a perception of the value of precious stones and particularly of the diamond.

Mr. Kunz has called the attention of the geological survey to the discovery of two diamonds in the United States in 1853. One of them was found in the village of Oregon, Wis., and the other near King's mountain, North Carolina. There were two small diamonds found in Butte county, California, during the winter of 1892-93. These diamonds, like most of the diamonds which have been found in the United States, were

(Boston Sunday Herald, March 25, 1894)

PICKED UP BY CHANCE.

The Wisconsin diamond was found by Charles Devine while he was husking corn in a rough stony field which had been under the plough for 40 years. It was in a bank of clayey earth containing a great many quartz pebbles. This was the second discovery of diamonds in the neighborhood of Oregon, Wis., but Mr. Kunz, from his knowledge of the district, reported that it was altogether unlikely that there was any diamond bed in the vicinity. The North Carolina case had many more precedents. Diamonds have been found in that state in the search for gold since 1800. In the Butte county district of California they have been known since 1853. The first authentic report of the discovery of diamonds in California dates from 1850. This was during the early gold-seeking days. A New England clergyman saw a small crystal which he identified as a diamond in the hands of a miner. Most of the American diamonds have been discovered during the hunt for gold in one locality or another.

Diamonds occur in the United States in two regions. One extends along the southern base of the Alleghany mountains from Virginia to Georgia; the other on the western side of the Sierra Nevada and Cascade ranges in northern California and southern Oregon. The mineralogical conditions in these two remote regions are very similar, and the discoveries made in them are much alike. The formation in the diamond-bearing localities of the United States are very like those of Brazil and India, and very unlike those of South Africa, where the great diamond fields of the world lie. It was this likeness of conditions in California to those in Brazil which brought a warning in 1854 from a man named Attwood, who was familiar with the Brazilian diamond fields, that it was likely that diamonds were to be found in California, and that there was danger that they would be allowed to escape with the worthless quartz by the gold miners, ignorant of their value. Since Attwood's warning diamonds have been found in five counties of California.

The mineralogical indications failed in another quarter, however. Dr. H. C. Lewis read a paper before the British Association at Birmingham in September, 1886, in which he said that he had found in Kentucky peridotite similar to that which occurs in the Kimberley diamond mine in South Africa, and that he was convinced that a search would reveal the presence of diamonds in that state. Mr. Kunz expressed the opinion that the peridotite alone was not a sure indication of the presence of diamonds. Nevertheless, he and another representative of the geological survey went into Elliott county, Ky., in 1886, and spent two days searching in the neighborhood of the discovery of peridotite. No diamonds were found. It was proposed by those interested in the search to equip persons who lived in the neighborhood with rough diamonds set in rings so that they would know a rough diamond if they ever saw it. Probably a great part of the population of Elliott county went about with

ITS NOSE CLOSE TO THE SOIL

for many months searching for diamonds; but up to the present time no diamonds have been discovered there. The only diamond found in Kentucky, so far as known, was a vagrant gem found by C. O. Helm on the farm of Henry Burris, near the Cabin Fork creek, in Russell county. While walking through an old field, Mr. Helm saw a small bright stone in the gravel. He picked it up and carried it home. On examination it proved to be a diamond weighing only seven-sixteenths of a carat, and a little off color. This find was made in 1888.

In 1885 it was reported that a number of diamonds had been found along the Sagamon river, near Springfield, Ill., but Springfield was so near the region of diamond experts that the report was disproved very quickly. No genuine diamonds have ever been discovered in that section of country.

It is known that diamonds were found in North Carolina as early as 1800. But the only detailed case of record is that of a discovery made in 1886 on the Alfred Bright farm at Dysartville. A boy, the son of Grayson Christie, was drawing water at the spring on the

Continued

farm, when his attention was attracted by the brightness of a stone in the spring. He picked it up and took it home. It was so very bright that Mr. Christie and the neighbors thought it might be a diamond, and they sent it to Tiffany in New York. Mr. Kunz examined it and it proved to be a diamond, quite perfect and transparent, but of a grayish-yellow tint. Its value was between $100 and $150. In June following this find, Mr. Kunz was in North Carolina and he took occasion to investigate the field of the Christie boy's discovery. He took up the sediment at the bottom of the spring and examined it carefully, but found no trace of the usual mineral associates of the diamond. He concluded, therefore, that the gem had been washed down from distant higher ground in a stream. Mr. Kunz, while in the neighborhood, also took the opportunity to examine some other stones exhibited as diamonds, found at Brackettstown. He found that they were a smoky-colored quartz of great brilliancy of the same character as some quartz which was found some time before by Capt. Mills at Brindletown, and confidently asserted to be fine diamonds. Mr. Kunz also found that the swindler had made his way into North Carolina; the rough diamonds from South Africa were being exhibited as North Carolina diamonds, undoubtedly with a view to impose on possible investors.

In the same year that saw this investigation,

A GREAT EXCITEMENT

was created by a man named J. S. Lemar, who, while digging for coal near Ponca, Neb., discovered what he thought to be a diamond. It proved to be a worthless quartz.

In April, 1887, Lewis M. Parker, a tenant on the farm of Daniel Light, 13 miles north of Atlanta, Ga., found a stone on the farm. It came into the hands of W. W. Scott of Atlanta, who sent it to Mr. Kunz for examination. It would have been cut into a brilliant of about 2 carats. It was rather yellow. At the time of this investigation, L. O. Brown of Atlanta told Mr. Kunz that a colored man had called on him with a very fine diamond of poor color, which he said he had found in his garden not far from Atlanta. There was great excitement over these Georgia discoveries, and promises were made that there would be extensive investigations of the diamond bearing qualities of the section. A like excitement always resulted whenever diamonds were found in other localities. But, no other discoveries being made immediately, the excitement quickly died out, and nothing more has been heard of the diamond mines of Georgia.

The first discovery of diamonds in Minnesota was made in 1887 by G. H. Hall of Minneapolis, who was prospecting for gold on Plum creek, Rock Elm township, Pierce county. With Mr. Hall were C. A. Hawn and W. W. Nichols. While they were sluicing for gold one of the workmen saw a bright stone in the gravel taken from the bank of the stream a few feet below the water level. It proved on examination to be a diamond. Further search brought to light several other diamonds. Some months after this, in panning for gold several miles up the same stream, Mr. Hall found an imperfect diamond. In the following summer, while sluicing for gold, the same party found four diamonds in three weeks. One came from the surface of a gravel bed, and three from a pit 30 rods distant, at a depth of five or six feet below water level. Besides several small diamonds were found in the sluices in the same locality. Mr. Nichols sent some of these stones to Mr. Kunz, and with them specimens of the gold bearing gravel in which they were found. The stones, with one exception, were valueless. The sands were found to be similar to the gold bearing sands of North Carolina and Georgia.

Several small diamonds have been found from time to time in the placer diggings of Idaho. The first known discoveries were in 1884. The newspapers of the country at that time were full of the excitement of the possibility of a new South Africa. For two years exaggerated reports of diamond finds were made. Then the fever died out, not to be renewed until the winter of 1890-91, when there was a

RUSH TO "DIAMOND BASIN,"

on Snake river, on the report that rich diamond discoveries had been made there. These discoveries proved to be worthless quartz.

For the amount of excitement it has caused, the actual production of diamonds in the United States is utterly

Continued

ridiculous. From 1883 to 1890, inclusive, the geological survey reports just three years in which there have been diamond discoveries of any money value. In 1884 the production of diamonds in the United States was $900; in 1888, it was $60; in 1889, it was $125. Last year was the first since 1888 in which the discoveries of diamonds could be ranked as productions.

In the past 25 years, says Mr. Kunz, 10 tons of diamonds have been added to the world's wealth. These diamonds sold for more than $300,000,000 before cutting, and more than $800,000,000 after cutting. The estimated wealth of the world in diamonds in 1870 was less than $400,000,000. Of this enormous production in the last quarter of a century the DeBeers company of South Africa controlled more than nine-tenths. The DeBeers company mined and sold in 1893 more than $15,250,000 worth of diamonds. The company's profits for the year amounted to about $7,500,000. The cost of producing the diamonds has been reduced nearly 60 per cent. by improved methods of mining. The diamond industry keeps busy 18,000 people at the principal diamond centres of the world. Of these, 7000 to 8000 are workers in the mines. The others are diamond cutters and diamond traders. At Amsterdam alone there are 52 large and 20 small factories for cutting diamonds, employing about 7000 people. There are diamond cutting mills in Antwerp, St. Claude, Paris, London, Geneva, Berlin, Hanau, Idar and Oberstein.

But, if the United States adds nothing to the world's wealth in the production of diamonds, it adds much to the value of the diamonds produced. The diamond cutters of the United States are ranked among the first diamond cutters in the world, and Mr. Kunz credits an American, now dead, with revolutionizing the diamond cutting industry of the world. This pioneer was Henry D. Morse of Boston, who died Jan. 2, 1888. Morse was originally an engraver. Afterward he became a jeweller. In 1869 the finder of the Dewey diamond (discovered not far from Richmond, Va.) sent the uncut gem to Mr. Morse, who made a careful study of its geometric relations, and by extreme skilfulness and adroit manipulation, succeeded in producing from a rough stone of 15 11-32 a gem of 11 15-32 carats. The fame of this achievement spread, and two years later—when the South African diamond fields were beginning to attract the attention of the trade—E. S. Pray of Boston brought to this country a package of rough diamonds, and entrusted them to Mr. Morse. The outcome of this experiment was the establishment of

A DIAMOND CUTTING HOUSE.

Dutch workmen were employed at first under Mr. Morse's supervision. The art of diamond cutting had long been kept a secret by the Dutch. Mr. Morse quietly gained a knowledge of Dutch methods, and, establishing a shop in the suburbs of Boston, secretly trained a number of apprentices. One day the Dutch workmen struck. Mr. Morse turned them out, and put his American workmen in their places. Later Mr. Morse taught the art to women, and they became workers in this industry, not only in America, but in France, Switzerland and other European countries. But the initiation of Americans into the mysteries of diamond cutting was not the most that Mr. Morse did for the trade. He set a high standard for his workmen. He taught them to cut the gems with mathematical precision, instead of haphazard, as was the custom abroad. The fame of the American cutting became so great that many fine diamonds were sent to this country to be recut. The example of Mr. Morse led to the improvement of foreign methods, and elevated the cutting of diamonds from a mechanical trade to an art.

America can also claim credit for the first diamond cutting machine, which was invented by C. M. Field in Mr. Morse's shop in 1872. It has made it possible to cut the stones more rapidly and with more precision.

But with all the improvements in the methods of producing the diamond, the reduction in the cost of mining it, it has a fixed value which changes but little from year to year. And the consumption seems to increase with the production. The United States imported diamonds of the value of $14,820,462 in 1891—more than has ever been imported into this country before.

THE DIAMOND DIGGER.

THE DIAMOND CUTTER.

THE DIAMOND WEARER.

From The Scientific American Supp.

THE MAKING OF DIAMONDS.

By VAUGHAN CORNISH, M.Sc., F.C.S.

THE reproduction of the diamond by M. Moissan has put the coping stone to the work of mineralogical synthesis. For some years past it has been thought that the solution of this problem was merely a matter of time and patience; but it is no little satisfaction to be able to say at last that the thing has been done, for it is indeed a striking illustration of the power over stubborn matter which is won by the patient student of science. In the light of what has now been accomplished, it may not be without interest to refer to what was written in this journal on the subject of the production of diamonds previously to the work of M. Moissan. In *Knowledge* for May, 1891, at the conclusion of an article on "The Artificial Production of Rubies," the matter was referred to as follows:

"The great problem in the artificial production of gems is the preparation of the diamond. . . . In the case of other minerals the successful production has generally only been achieved after a minute study of the mode of natural occurrence, and this has afforded guidance as to the best means of imitating the natural process of formation. It is only of recent years that the diamond has been found in its original matrix, so that materials have been wanting on which to base experimental methods. The chemical nature of the body, a combustible substance, is so different from that of the ruby and most other gems, which are oxides or oxidized materials, that the methods to be employed for its production will probably involve the application of different principles. There is no reason, however, to regard the problem as insoluble. When sufficient guiding data have been obtained, skill will not be wanting to imitate in the laboratory the conditions under which nature has worked in the formation of this most beautiful product of the mineral world."

What some of these determining conditions might be was indicated in a subsequent paper on "The Diamond Mines of South Africa," which appeared in *Knowledge* for October, 1891. "To the mineralogist the chief interest of the South African mines lies in the fact that the 'blue rock' or kimberlite appears to be the original matrix of the diamond. . . . It is worthy of note that a black shale forms one of the surrounding rocks and pieces of this shale have been found baked and otherwise altered in the blue rock. The suggestion has been thrown out that the diamonds were formed by the alteration of the carbonaceous matter of the shale *under the influence of a moderately high temperature and great pressure*. Such indications are useful as affording suggestions to the experimentalist, to whom, in spite of previous failures, we must look to tell us definitely how the diamond is formed."

If the diamond be highly heated in the presence of oxygen it takes fire, as is well known, and burns with the formation of carbonic acid. If it be heated not in contact with oxygen it swells up and blackens, reverting to the ordinary charred form of carbon. But the action of heat upon bodies is in many cases very different when they are subjected to high pressure, a principle established by Sir James Hall more than one hundred years ago in his celebrated research on the conversion of chalk into marble, one of the achievements of experimental geology, described in *Knowledge* for July, 1891.

As will be seen, M. Moissan invoked the aid of pressure to modify the action of heat in his experiments and produced diamonds from charcoal, a substance of the same nature as the "shale" which occurs in the Kimberley rock. The formation of crystals is, as a rule, best brought about either by sublimation or by cooling a solution. Carbon, however, cannot be distilled or sublimed, and is insoluble in all ordinary solvents, such as water or aqueous solutions of acids and alkalies, or in liquids such as alcohol, ether or benzene. On the other hand, molten metals can take up or dissolve carbon to a not inconsiderable extent, as happens, for instance, in the well-known process of iron smelting. The molten iron in the blast furnace dissolves some of the carbonaceous fuel, a part of which, when the iron is allowed to cool and solidify, crystallizes out in plates of graphite.

This is an example of the production of a crystalline form of carbon from a non-crystalline variety, and it is, at the same time, an instance of the artificial formation of a mineral.

M. Moissan, in his experiments, employed iron as a solvent for carbon, which was in the form of charcoal; but he modified the action of heat and the solvent by subjecting the carbon-saturated iron to considerable pressure. It may be noted here that M. Moissan finds the principal constituent in the ash of the native diamond to be oxide of iron. It is known also that native diamonds often contain liquefied gases in cavities of the crystal, and that they are sometimes liable to spontaneous disruption, owing to a state of strain which is probably due to their having been formed under high pressure.

In an earlier series of experments, iron melted by means of an electric furnace, and raised to a white heat, was allowed to saturate itself with carbon in the form of strongly compressed sugar charcoal. The crucible in which the operation was conducted was then plunged into cold water, which cools the outer portion of metal so as to form an outer layer of solid iron. While this outer coating is still red-hot the crucible is withdrawn from the water, and the cooling proceeds more slowly. To realize what goes on within the jacket of solid iron, we must remember that the still liquid interior is molten iron, containing a large excess of dissolved carbon, and that iron expands in the process of solidifying. Hence, during the process of solidification within the jacket or crust of chilled metal, great pressure is exerted. The process of solidification, therefore, goes on slowly and under great pressure, and examination of the resulting product showed that, under these changed conditions, a part only of the surplus carbon had crystallized out as graphite, and that in the residue left after dissolving away all the iron by means of boiling hydrochloric acid and other solvents there was a certain quantity of a denser form of carbon (having a specific gravity of 3 to 3·5), and hard enough to scratch a ruby; and that among these heavier portions of the residue were transparent particles, having a greasy or waxy luster and marked with parallel striæ and triangular depressions.

These transparent particles burned when heated to 1,050° C. in oxygen gas and, as it appeared, with the formation of carbonic acid; but the particles were too small to allow of a quantitative experiment. Similar results were obtained by the slightly modified method of rapidly cooling an ingot of molten iron saturated with carbon from a temperature of 2,000° C. In a few cases small fragments were obtained, "qu'ils ressemblent aux petites fragments de diamant transparents que nous avons rencontres dans la 'terre bleu' du Cap" (*Comptes Rendus*, February 6, 1894). The result may be summed up by saying that, up to the date of the experiments described in the above quoted paper, M. Moissan appears to have succeeded in reproducing that transparent variety of carbon of which native diamonds are composed. The specimens could hardly be called diamonds, although they showed certain characters of the native diamond—*e. g.*, a waxy luster, and parallel striæ and triangular depressions on the surface.

Since the experiments above described, a happy modification of the method employed has given results of a far superior kind, perfect diamonds being formed, having the distinctive physical peculiarities of the native stone and of sufficient size for M. Moissan to prove by quantitative chemical experiments upon some of the specimens that they burned with the formation of pure carbonic acid. In the course of experiments made in former years by other experimenters using other methods, transparent crystalline bodies were obtained which were thought to be diamonds, until their failure to satisfy the carbonic acid test showed that the crystalline particles were not composed of carbon.

Moissan's modified method is as follows: Iron is saturated with carbon at the white heat of an electric furnace and under pressure. The crucible containing the molten iron is then quickly lowered to the bottom of a bath of melted lead.

This insures quicker cooling than when the iron is plunged in water, owing to the fact, first, that the white-hot iron does not really come into contact with the water; and secondly, that the lead is a good conductor and carries away the heat rapidly. It seems that the two liquid metals behave toward one another much as oil and water, and the molten iron collects in spherical globules which rise to the surface of the molten lead, the difference in the specific gravity of molten iron and of molten lead being, of course, very considerable. The surface of the drops of liquid iron which float upon the surface of the lead quickly solidifies, the smaller drops with a diameter of one to two centimeters first, the larger drops after a lapse of a longer time, and the solid little balls of iron are left to float on the molten lead, where they cool down. The interior of the balls is of course liquid long after the formation of the solid crust.

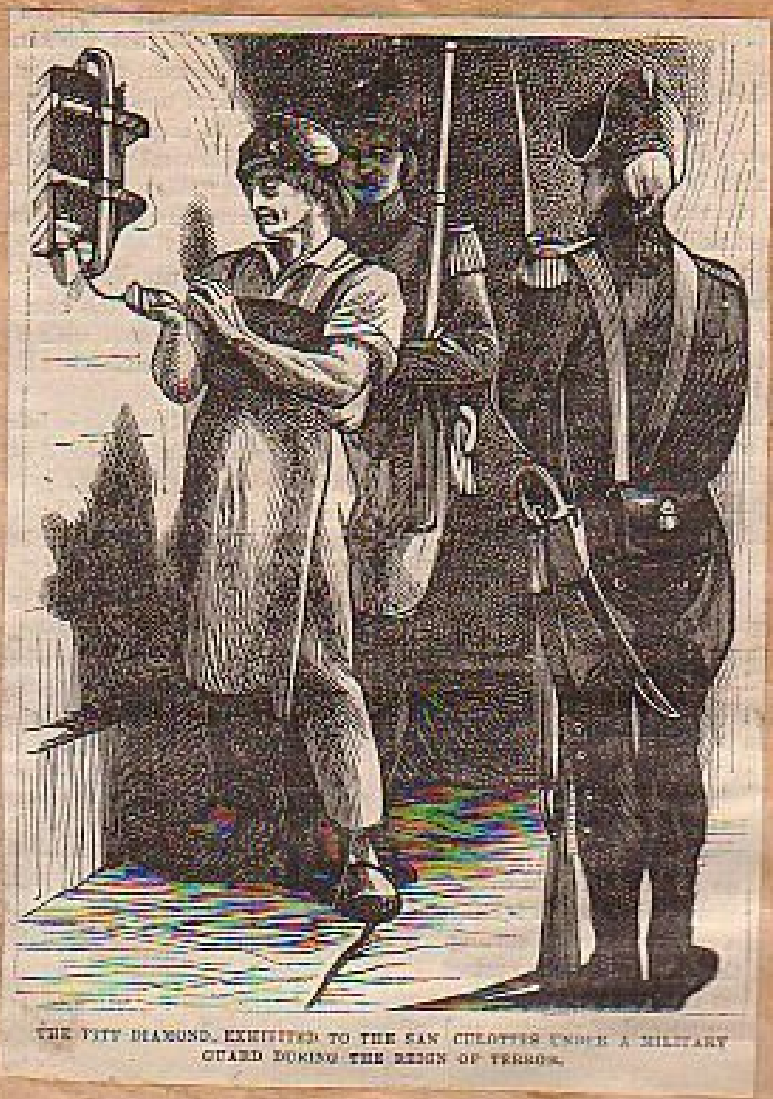
Continued

The tendency of the central parts to solidify is resisted by the solid crust, owing to the fact before mentioned, that iron expands in the act of solidification. Meanwhile a part of the carbon crystallizes out from its solution in the liquid iron. After a time, as the cooling goes on, the lead also solidifies, and the little iron balls are left embedded in the ingot of lead. Then begins the process of getting at the small quantity of the carbonaceous material which it is desired to examine. The lead which adheres to the iron is dissolved away with nitric acid; the iron itself is dissolved by hydrochloric acid, and further treatment with suitable solvents leaves the sought-for residue, a small quantity of material left after the tedious process of removing by slow chemical means the relatively large mass of metal.

Transparent diamonds are found in the residue having well-defined crystalline faces, striated and marked in the well known way, and the edges generally curved; they have the high refracting power, the specific gravity and the hardness of the native stone. The peculiar form known as the hemihedral predominates among these crystals as in those of native diamonds, and their formation under pressure is found to give rise to the phenomena of anomalous polarization of the light which passes through them, as well as occasionally to spontaneous disruption; characters which, as has been mentioned, are sometimes noticed in the native stone. The diamonds are of course small; one with a diameter of half a millimeter appears to be reckoned a fine specimen.

Further practice in working the process will probably enable larger specimens to be obtained, as has been the case with the production of rubies, which are now produced of a size sufficient to be used in the jeweling of watches.

However this may be, the production of diamond is now an acknowledged fact, achieved by the patient skill of the same worker who, seven years ago, successfully overcame the great experimental difficulties which had rendered fruitless the many former attempts to isolate the chemical element fluorine.—*Knowledge.*



THE FITY DIAMOND, EXHIBITED TO THE SAN CHEATERS UNDER A MILITARY GUARD DURING THE REIGN OF TERROR.

cted.

DIAMOND RUINED BY SHOCK.

Gem Valued at $1400 "Feathered" by Dropping on a Marble Floor.

NEW YORK, Jan. 18.—A diamond weighing 0.5-8 carats and valued at $1400 was destroyed yesterday afternoon at the Hoffman House. The gem was the property of J. J. Roche, a diamond dealer.

Mr. Roche was exhibiting the diamond to Captain Peacock, the clerk of the hotel, and several other friends. Through some mishap the diamond slipped out of a sheet of soft white paper and fell on the marble flooring. It struck on the girdle, and the shock sent "feathers" through it, thus rendering it unsalable.

While diamonds are known to be the hardest of gems, they are liable to be destroyed through shock. Mr. Roche says that slivers or feathers will be sent through a diamond should it fall and strike on its outside centre circular girdle. According to him, a diamond may fall 99 times out of 1000 without hitting its girdle.

"I am not superstitious," he remarked, "but a few days ago I began wearing for the first time an opal pin. My theatrical, political and sporting friends warned me against wearing the opal. Well, all I can say is that I am out $1400 unless a lapidary can save me part of the big stone."

Boston Post
Jan 19th 1897

For the Companion.

A SOUTH AFRICAN CRIME.

"You black rascal, I gave you out enough wood to last you two more days! You've been selling it for snuff. If I find you at such games, the only wood you will get will be about your back."

"You lie, boss!" replied the giant Kafir, in a deep, guttural voice. "You lie!" he repeated, with a smile which showed that he meant no offence, but simply used the one English form of denial that he knew.

This Kafir was employed as a digger in one of the South African diamond mines, where all the native laborers are called "boys." Besides their wages, they receive wood for cooking purposes. Now wood is very scarce and costly there, hence the "bosses," who are usually "Englishmen," are apt to suspect the boys of making away fraudulently with the expensive fire-wood.

The man who accused this particular Kafir was the managing partner of a firm of four Englishmen, who supposed themselves to be "gentlemen," and were commonly regarded as such by their neighbors at the diggings. They had come out some months earlier to seek their fortunes in diamond-mining, but the sequel proved them willing to gain money by almost any means, honest or otherwise, as the case might be.

Up to this time they had suffered that persistent run of luck which is almost worse than no luck at all. They had put nearly all their capital in one "hole," from which their boys seldom brought them a diamond till the owners were on the point of giving up in despair. Encouraged by a find at last, the Englishmen would put in more money, only to experience another long succession of profitless days, followed at the last moment by a find that induced them to venture for a month longer.

So "the luck" had gone till nearly their whole capital had melted away, and they had come to speak of "the hole" as the "sepulchre." Probably their Kafirs had been secreting and stealing the diamonds as fast as they found them, shrewdly giving the bosses just enough to keep them investing their money for the benefit of their boys.

As the manager continued to accuse and threaten this particular Kafir violently, and as the Kafir continued to answer smilingly, "You lie, boss, you lie!" the three other partners of this firm of "gentlemen" came to the sound of the discussion.

"Get back to your work!" roared the managing partner. As the boy ran away the manager said, petulantly:

"I say, you fellows! I wish we hadn't arranged to go on with this beggarly sepulchre for another month. Here's half the time gone, and the same old game. All the eggs in one basket and no luck. I wish we had put our last pile in the wood-cutting business, as the doctor suggested."

"Not too late yet," said the doctor, who was one of the quartette.

"No, why should it be? Wood-cutting appears to pay those five fellows uncommonly well. I'll bet they're making sixty pounds a week. I wish some new chums would come along and buy us out, and let us have a turn at the wood trade."

Within a range of forty miles not a stick of wood was to be found—nothing but the bare and scorched *veldt*, or plain. Hence fuel had to be transported from afar with great labor, and it was in this transportation that the manager and the doctor wished to engage. With them the two others did not agree.

"Oh, bother the wood!" said Merwyn. "Get the stuff and make it go as far as possible—that's all I want to do in the wood trade."

"There's more in the wood trade than appears," said the doctor. "We ought to look into it. I'd like to try it, anyway."

"What do you mean by there being more in it than appears?" said Merwyn.

"Well, I've thought about that Wood Supplying Association for a long time. I've never been able to make out clearly what they really do for their money. My belief is that wood-cutting is not their only occupation."

"Gammon! Why?"

"Where do they get their diamonds?" said the doctor, laying his finger to the side of his nose and looking profound.

"Do you suppose they have found diggings that they keep to themselves?"

"I don't know. That's one possible explanation. But diamonds they certainly get somewhere. They were the first men I met after I came here. I suppose they took me for a [illegible], as my garments still had a twang of Pall Mall. One of them was anxious to supply me with specimens [illegible]

"Buy them for speculation," said Merwyn.

"No, they do not buy. I've inquired. They never buy a stone on this Kopje. So I say again, Where do they get the diamonds? Well, if things don't change for the better with us soon, I'll renew my acquaintance with those wood dealers, and give them the chance to choose between opposition or taking us into partnership."

With this the conference ended, and the partners strolled away to their respective posts for watching their Kafirs. As overlookers their duties were principally three: First, to keep the boys at work; second, to prevent the boys secreting "finds" instead of bringing them to the managing partner; third, to sort the diamonds brought in.

The wood firm whose doings were thus discussed had been the object of much speculation before this. But all attempts to become familiar with that close society had failed. The camp continued to wonder that five men, evidently broken-down "swells," should prefer the steady wood trade to digging in the diggers' lucky-bag, with the chance of a find that would set them up again in their former style of life.

Many men of the camp had volunteered to work for the firm, and others had suggested that they would like a trip with the wood contractors "just for a change, you know." But not one of them got either engagement or invitation.

The wood-dealing firm had been at first an ordinary hunting party, who called in at the camp in the course of their wanderings. About four months later they reappeared with wagons, and set in at once to carry out plans which were evidently carefully prepared.

Day in and day out, after their discussion about the wood firm, the four diggers worked at their unresponsive claim, steadily getting nearer to bankruptcy, and steadily postponing its announcement in hopes of a change of luck. Indeed the claim was a very provoking one. Every month it yielded some trifling diamond, just enough to keep them from abandoning the wretched speculation, but never enough to yield a sum that would enable them to cry quits and supply themselves for some other venture.

When the month ended the usual miserable find turned up and found its way to the Diamond Keeper down the street, just in time to provide the means of struggling on. It was particularly painful to the manager to have to pass a fair proportion of the finds' value over to that strictly business-like wood firm, whose representative insisted on cash in advance of delivery.

During the previous week the diggers had not bought much wood, because their boys had absconded in such numbers that few were left to supply with fuel.

Why were the boys running away more frequently than usual? The doctor especially pondered this problem, but he was too inexperienced to hit upon the true reason just yet. The head boy's story that the absconders were homesick did not appear to be good enough. Certainly the Kafirs were better fed and warmed at the mines than they were likely to be at home. It did not occur to the doctor that they might make home more comfortable with the proceeds of stolen diamonds.

One fine day about this time a visiting wagon-train from beyond the Transvaal brought an unfortunate native into camp. He had been picked up about four days off, starving and suffering from a bullet wound in the shoulder. Of this wound he would give no account.

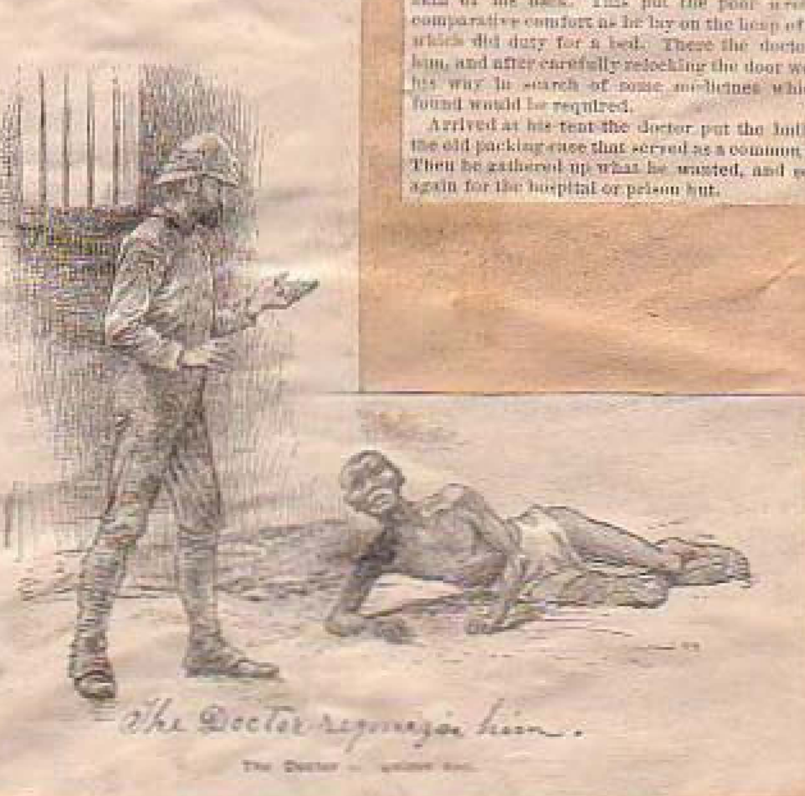
When he found out in which direction the party was journeying, he had fought hard to get away, half-delirious though he was. When eventually safely landed in the hospital hut, the poor wretch sought the darkest corner, and effaced himself as much as possible, as though fearful of some impending punishment.

In the course of the day the only doctor on the field—he of the diamond firm—heard of the wounded Kafir, and strolled down to the hospital hut, which was also the prison, in front of which many a boy had been flogged for not giving up finds to their masters. Having opened the heavily padlocked door, the doctor peered round for his patient.

No sooner did the Kafir catch sight of the visitor than he started up with a howl of fright, and made a determined rush for the door, where his weakness brought him down insensible.

In a moment the doctor, in his strictest professional capacity, was by the Kafir's side. Before the wounded man had recovered his consciousness, the bullet had been cut out from close under the skin of his back. This put the poor wretch in comparative comfort as he lay on the heap of sacks which did duty for a bed. There the doctor left him, and after carefully relocking the door went on his way in search of some medicines which he found would be required.

Arrived at his tent the doctor put the bullet on the old packing-case that served as a common table. Then he gathered up what he wanted, and set out again for the hospital or prison hut.



The Doctor recognizes him.

The Doctor [illegible] him.

the Kafir did not attempt to escape, his terrified aspect showed that he expected retribution.

"!" thought the doctor. "Perhaps he the usual Boer treatment, and thinks that uncommonly slow in putting him to the or no—perhaps it is the place that frightens he ever worked on these claims he must n diamond-stealers flogged outside that now I understand!"

ctor peered into the Kafir's terrified face. y Jove, I do know him! If he's not one of war boys I'm a Dutchman. I suppose he e to have him flogged for desertion."

doctor did not resent the man's flight, he t all his skill to the wound. Soon the de up his mind that he was not suspected bbery which had really been the motive ertion. He had taken diamonds from the d sold them. His late employers were too enced to be aware that a "boy" seldom d without a diamond smuggled away in e knot of his waist-cloth.

r law" forbade the possession of diamonds black man, and cruelly punished every d infraction of this rule.

y the Kafir was affected to remorse by the which the doctor seemed to bestow, he was afraid of being searched, and t safer to yield his booty voluntarily. At he tore to pieces a hard knot in his skin and let fall a noble diamond that flashed a rse right across the dark clay floor of the

ment the doctor grasped the situation, ed up the sparkling beauty so strangely to its owners. Then, feeling rather more shake the thief's hand than give him his deserts, he put him back kindly on the d hurried off to share the good news with

nd them in solemn conclave, minutely ng some object that they passed from one ther.

Got a stone worth looking at at last?" e doctor, jumping at conclusions. "Then changing with a rush! See, here's a beauty. Let me see yours!"

n exchange for the gem he gave them, he d the bullet he had left on the table.

does this interest you?" asked the doctor, g the bullet.

ver to find it here," said Merwyn.

put it on the table," said the doctor, and the story.

strange," said Merwyn. "The rifle that bullet is an old friend of mine. I'd swear ammunition anywhere. Bad times made y shooting gear, and the man who bought carries that sort of ball is Thompson wood firm. Bless him for the lucky shot ght back that sparkler."

's the case, the shot may turn out more " added the doctor, after a few moments' ght, "that is, if you chaps are not too ."

y for anything," said Merwyn.

let me have the stone, the bullet and three ars, and when I return I think I shall have g that will put us all in a fair way of the home-visiting lists again."

d you mean?"

mind. Let me alone. Work the stone as and trust to me for a proper investment."

was not long in doubt. The stone was ver, and the next morning the doctor was

later any one who pleased might jump ed "sepulchre." Its owners had some- other joined the wood-cutters, and to all deserted diamond digging for steady

affairs rolled on for upward of a year, came and Kafirs absconded spasmodi- of old.

a day came when the auctioneer had a no less than the entire plant of the wood firm. This was knocked down at to some speculative strangers jointly of the retiring firm; and the new lot set the business if possible.

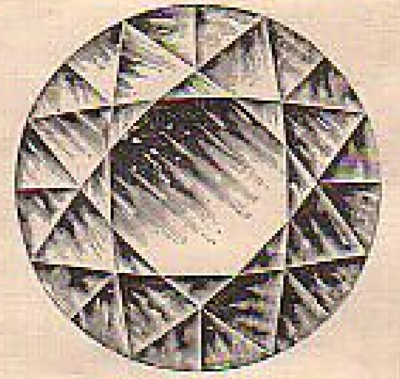
d so with a vengeance, for in less than s the entire staff were in jail with a of being lynched by claim-holders

In plain words the firm's real "business" had been discovered. It consisted of waylaying absconding Kafirs, and relieving them of the diamonds they had stolen, in the certainty that they would not dare to complain. How many "boys" the knaves had found it necessary to murder was not to be ascertained.

The trial was a singular one. No charge against the prisoners could be sustained in law. They had certainly robbed black thieves of stolen diamonds, but the gems had never been seen by their true owners. Hence none of these could swear to their property. No Kafir could be found to appear against the "wood company." Therefore the rascally "gentlemen" laughed defiantly at those who arrested them.

But though they escaped from court, they did not so easily get away from the vigilance committee organized by the camp. A handsome coat of tar and feathers was given to each rogue, and all were finally fairly kicked out of the company of honest men. But the original set had long escaped to England, where they thought they would go scot free. Fortunately the story was well circulated there, and every man concerned ultimately suffered exposure and disgrace.

W. B. CHURCHWARD.



Looks Good, Doesn't It?

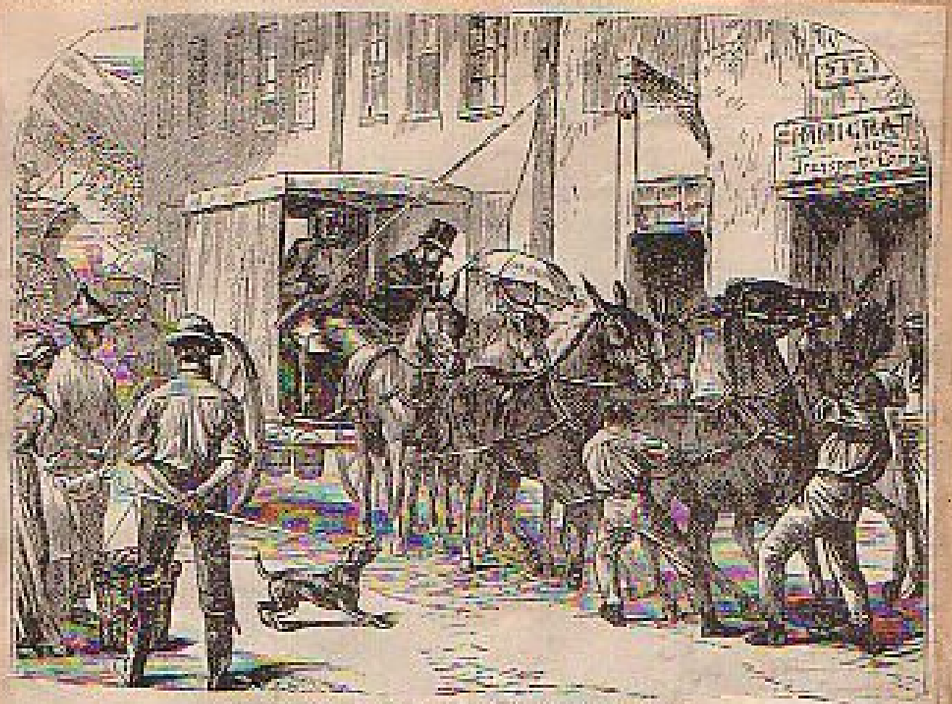
A Connoisseur

Sale of the Stanford Diamonds.

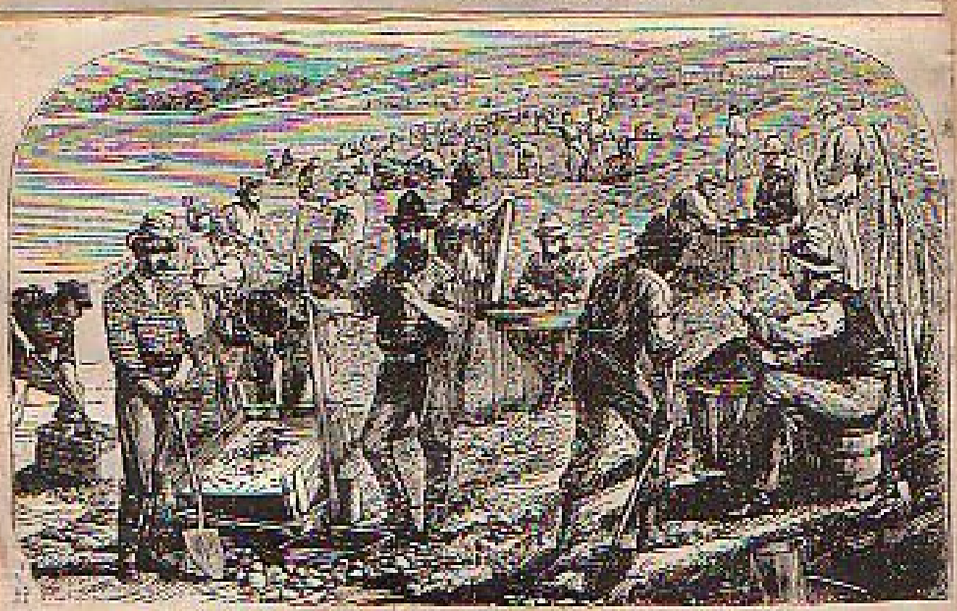
THE jewels which Mrs. Leland Stanford, of San Francisco, will dispose of in Paris, have always figured prominently among the possessions of the late California millionaire. There are few choicer collections of gems, even among the royal families of the Old World, and their value has been variously estimated at from $1,000,000 to $2,000,000. Mr. Stanford bought four sets of diamonds for his wife when the valuables of Queen Isabella of Spain were sold in Paris, and paid upward of $500,000 for the four. One set is of the stones known as "blue diamonds," as they emit violet rays by day; another has pink rays in its stones; the third set is of yellow diamonds, as yellow as topaz, and the fourth is of flawless white stones. Each set has a tiara or a necklace, pendant, brooch, earrings, from four to six bracelets, and some finger rings, all of the same style of make, and of corresponding stones. In addition to these, Mrs. Stanford has some genuine black diamonds, cut pearlshaped, and numerous other diamond ornaments in a variety of styles.

One necklace, not belonging to any of the sets above named, is valued at $100,000, and its pendants at $30,000. This was manufactured to order by Tiffany & Co. and consists of large colored diamonds intermixed with small white diamonds, rubies, sapphires and emeralds, all of the purest water. A band of large yellow diamonds encircles the throat, each set in smaller white stones. Below this band is placed a floriated design in small white diamonds and colored stones extending in deep points. Between each of these points is suspended an immense yellow diamond set in white diamonds and attached to the upper part of the necklace by a ruby, emerald or sapphire. There are five of these pendants, the central one being the largest and having once figured in the collection of the Duke of Brunswick. This jewel is accompanied by a comb, a brooch, and a pair of earrings to match, and the necklace itself takes to pieces, and can be converted into pins, hair ornaments, etc., while the upper row of diamonds can be worn as a necklace, without the pendants and the pointed floriated band.

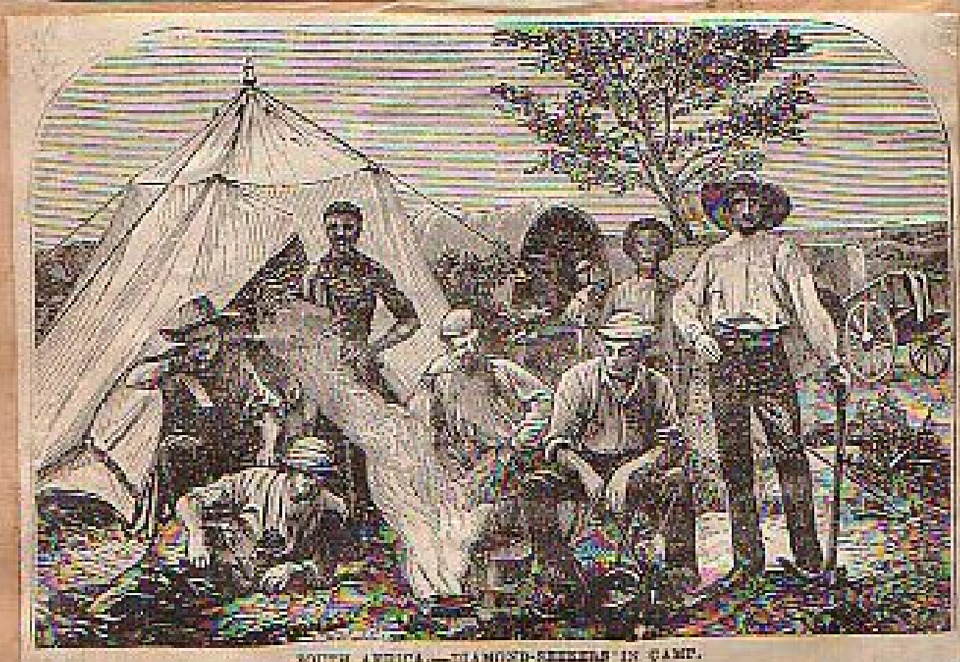
Mrs. Stanford has also over 60 diamond finger rings, which she keeps on a string of black tape. To accommodate all these jewels she has a case of steel, with cast iron handles and burglar-proof locks. The case has a separate drawer for each set of diamonds, and is, of course, nearly all the time deposited in bank.



LEAVING CAPE TOWN FOR DIAMOND FIELDS IN 1871.



DIGGING AND WASHING IN SOUTH AFRICAN DIAMOND FIELDS IN 1870.



SOUTH AFRICA.—DIAMOND-SEEKERS IN CAMP.

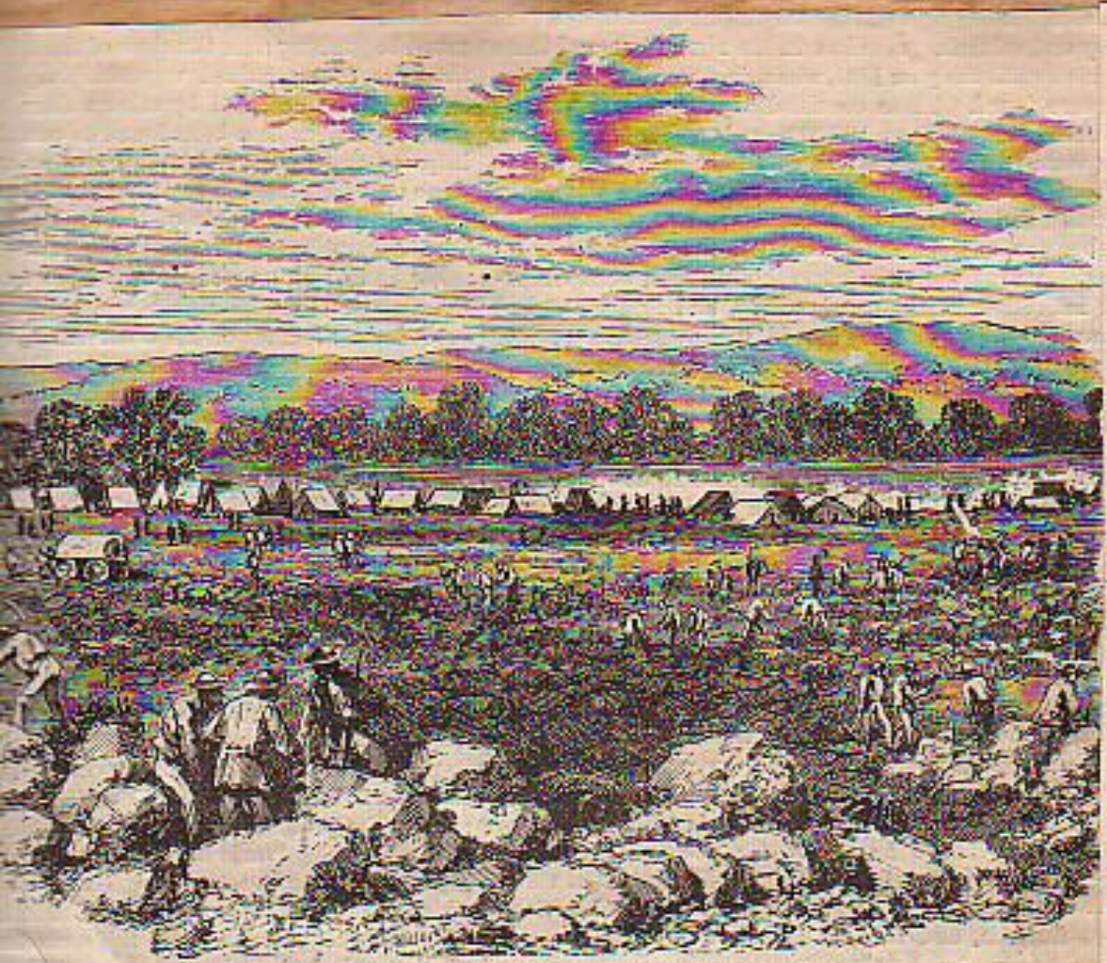
Jeweler's Weekly

Most Extensive Diamond Mines.

The most extensive diamond mines in the world are those of Kimberley, South Africa. In and around these immense mines are over [illegible] of tramways and 75 miles of elevated or "aerial" railways. There are daily employed in the works 2,500 horses, mules and oxen, besides [illegible] engines, with capacity equal to 9,000 horse power. The expenditure for labor, fuel, etc., was over $10,000,000 during 1894. The gross capital of the various companies which now work the different "diggin's" is $90,000,000. Over 20,000 natives, besides 2,500 European overseers and bosses, are now in the employ of the Consolidated Mining Company, a gigantic trust which now works the four great Kimberley mines.

"During the last twenty-five years the American people have paid duty on at least $[illegible] 000 worth of diamonds and other precious stones. In 1893 alone they imported $15,203,563 worth, but in 1894 there was a falling off owing to hard times, and the total was only $4,856,985. This does not include uncut diamonds, of which we imported more than a million dollars' worth in 1894, $800,000 worth in 1893, and $566,267 in 1892. During the last twenty-two years we have imported $7,087,817 worth of uncut diamonds. In 1880 we imported only $129,000 worth of uncut diamonds, and in 1889 only $250,000 worth. The large increase of late has been due to the fact that a number of American jewelers have opened diamond cutting establishments. The pioneer diamond cutter in the United States was Mr. [illegible] D. Morse, of Boston, Mass., who in early life learned the engraver's art, and later became a jeweler. In 1869 the Dewey diamond, weighing 25 carats, which was found near Richmond, Va., was delivered to him for treatment, and he produced from the rough stone a gem weighing 7 carats, which permanently established his reputation as a cutter and polisher. There are now [illegible] teen establishments in the United States which employ from one to twenty men. There are 4,000 manufacturers in Europe and about [illegible] the United States, who employ between [illegible] and 8,000 persons as cutters and polishers. Perhaps 28,000 people are employed in the diamond mines throughout the world. We read that in past centuries 60,000 people were working in the single Indian mines at one time, and perhaps the statement is not exaggerated, since by the aid of modern machinery one miner can now accomplish as much as twenty who used the primitive methods."

The De Beers Diamond Mining Company, [illegible] that diamonds worth £3,239,389 were mined and sold during the past year by that company. The expenditures amounted to £1,695,293 and the profits to £1,544,096.



DIAMOND FIELDS ON THE VAAL RIVER, SOUTH AFRICA, DISCOVERED IN 1870.

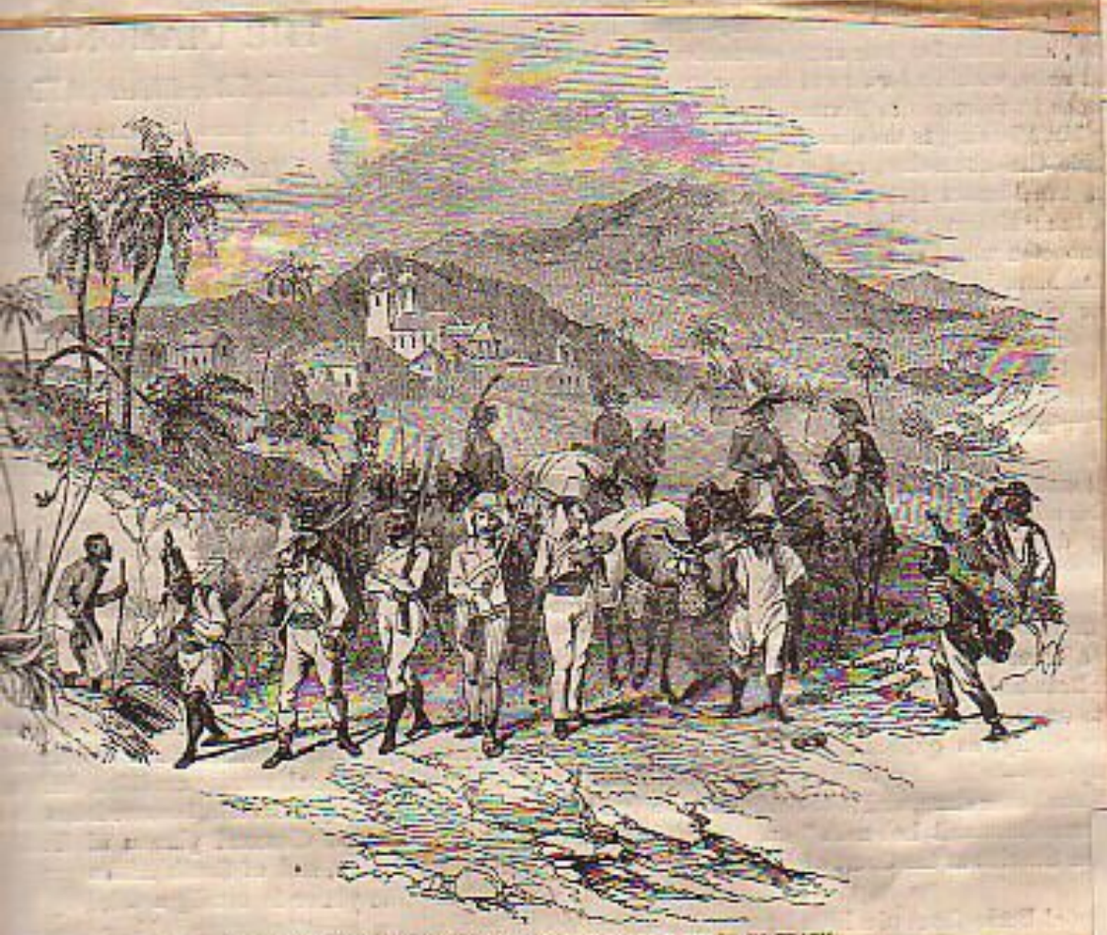
Descent Into a Diamond Mine.

AN African diamond mine is about as dark, dirty, and repulsive looking a place as an ordinary coal mine, and not by any means such "a ball of dazzling light" as is pictured in the popular imagination. At the mouth of the shaft, which is inclined and not perpendicular, there is the "cage," which, to the stranger, looks as much like a wooden coffin as anything in the world. Into this box you get as best you can, and you are then launched into darkness with an awful and perplexing speed. After you have been dropped some 700 feet you are brought to a full stop, possibly somewhat to your satisfaction. The sensation of the descent as you lie in the coffin is not at all exhilarating.

Arrived at the bottom, or perhaps only at the first level, the visitor will probably be bewildered and confounded with the noise, the smoke, the unwholesome vapor, the lurid gleams of hundreds of candles, and the uncouth and unnatural appearance of the naked native laborers, who flit about like so many gnomes. He will see dirty trucks, into which dirty, dusky, perspiring, greasy niggers shovel dirty earth, which is hauled to the surface as is coal from a mine.

It is unlikely that the visitor will see anything to even remind him of precious gems: of diamonds not one coal i he discover if he tried. The precious gems are encased in the lumps of dirty earth he sees sent to the surface to be exposed to the light of day after being embedded for ages in these caverns of darkness. The spectacle is somewhat disappointing, and removes many of the romantic illusions regarding the appearance of a diamond mine.

The brilliant gems that adorn the fairest of the human race are won from the dirt and darkness and amid dangers to life and limb which would dismay a timorous mortal. As is now so well understood, the dirt which is locally known as "blue ground," from its peculiar dark blue color, is brought from the mine to the surface, and in it the real search for the diamond takes place. This ground is pulverised by the action of the atmosphere, and by machinery, washed and sorted so carefully that it is a great wonder if even the tiniest little gem escapes notice.



MILITARY ESCORT CONVOYING DIAMONDS TO THE COAST IN BRAZIL.

"What do you estimate to be the total value of all the diamonds in the world?"

"It undoubtedly exceeds the sum of $1,000,000,000. There are perhaps 8,000 dealers in diamonds in the world, who carry in their stock stones worth perhaps $350,000,000. The remainder are in the hands of private individuals.

-1931-

Frederick A. Horn

FREDERICK ANTHONY HORN, president and treasurer of E. B. Horn, Boston jewelers for ninety-two years, died in November after an illness of five weeks. Mr. Horn was a grandson of the founder, who started the business at Hanover street, next to the American House. He was fifty-eight years of age and is survived by his wife and a brother, Edward B. Horn, a Boston attorney.

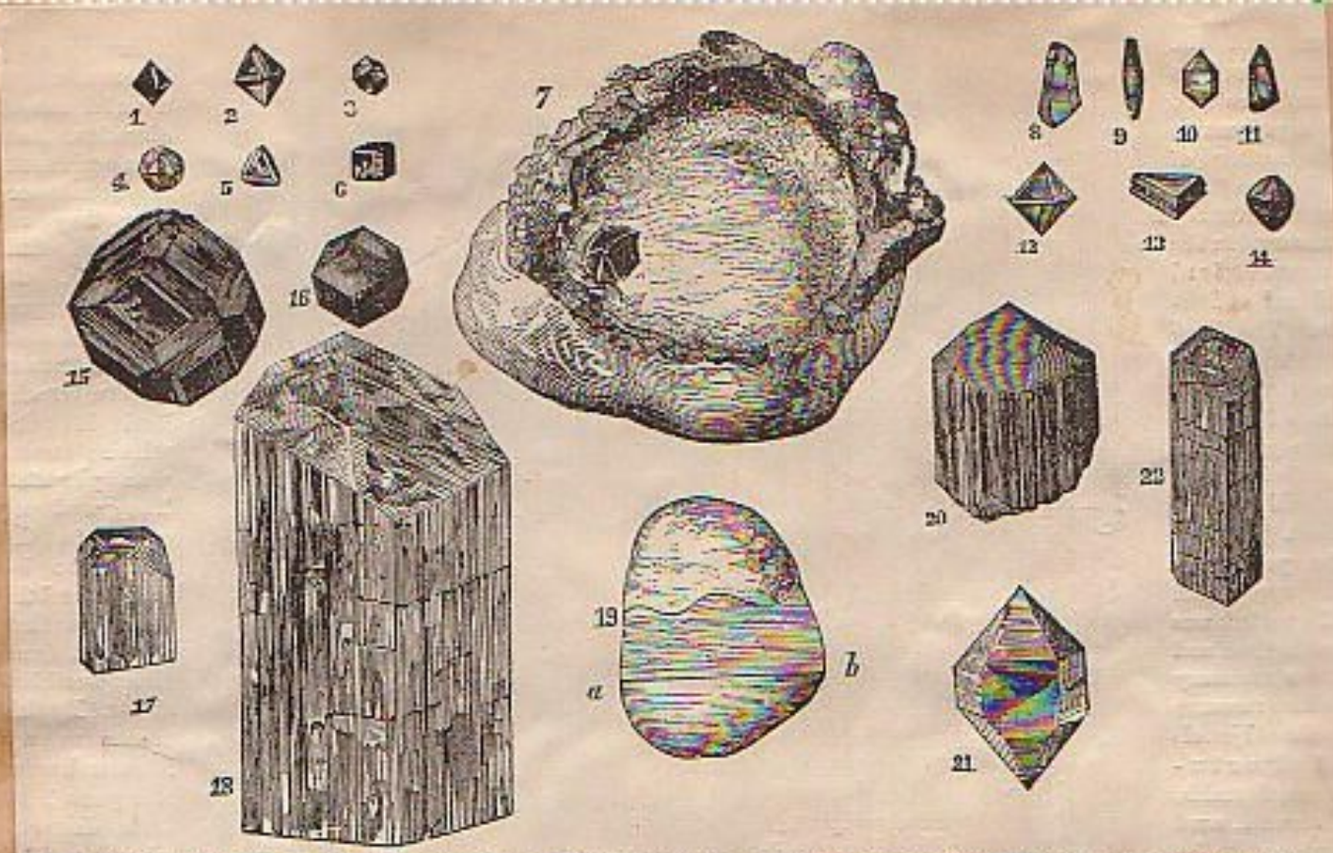


Fig. 1. Octahedron Diamond. Fig. 2. Octahedron having six planes on the edges. Fig. 3. Dodecahedron with rhombic faces. Figs. 4, 5, and 6 are rarer forms. Fig. 7. A conglomerated mass of Quartz Pebbles, two crystals of Diamond, and various grains of Gold; the whole cemented together by oxide of iron. Figs. 8 to 11. Crystals of Corundum. Figs. 12 to 14. Crystals of Spinel-ruby. Figs. 15 to 16. Crystals of Garnet. Figs. 17, 18 and 19. Rhombic prisms of Topaz. Fig. 20. Tourmaline. Fig. 21. Crystal of Transparent Quartz, or "Rock Crystal." Fig. 22. Beryl

CAPE DIAMONDS IN THE ROUGH.

AFRICA'S FINEST DIAMOND.

A 83-karat diamond, the finest ever found in Africa, was discovered at Jagersfontein in the Transvaal, on the day after Christmas. When cut it is expected that it will be worth $1,000,000.

Jan. 19th 1896.

GEMS, REAL AND FALSE.

"It doesn't require an expert to tell whether a diamond is genuine or not," said a jeweller to a St. Louis Globe writer. "The test is very simple, and can be made in any place and in a moment. All you need is a piece of paper and a lead pencil. With the latter make a small dot on the paper, then look at it through the diamond. If you can see but one dot you can depend upon it that the stone is genuine, but if the mark is scattered, or shows more than one, you will be perfectly safe in refusing to pay 10 cents for a stone that may be offered you at $500. A blue stone may be tested by a bath in alcohol. Many yellow stones are made blue by an application of analine, and this is overcome by the alcohol.

A DELIGHTFUL TRINKET.

The Blue Hope Diamond Originally the Famous Tavernier.

Suddenly, in 1830, the small world of diamond worshippers was startled by the appearance in the market of a unique stone, says a writer in Wide Awake for April. A deep blue diamond, 44¼ carats, which Mr. Daniel Eliason had for sale, and about which he could give no details. It sprang suddenly upon the world without a history, unless, indeed, it be the same as that mentioned by Mano some 18 years before—and yet it was a cut and polished brilliant. Its form was irregular, for it had one very flat side. Mr. Henry Philip Hope bought it for $90,000, and it henceforward became known as the "Hope Blue."

As a notable gem in a famous private collection the Hope Blue enjoyed for years a quiet distinction. It was set round about with pearls and white diamonds to enhance its azure, and had a beautiful pearl-and-diamond pendant. Altogether, it was a neat and distinctive trinket; price $150,000. Little or nothing was thought about it until the death of the Duke of Brunswick, the mad diamond miner, who used to sleep surrounded with meerschaum pistols which were warranted to go with such fatal facility that it is a marvel they did not shoot his grace in mistake for a burglar. In 1874 the Brunswick diamonds came to the hammer, and among them a blue stone of 44 carats weight. Mr. Streeter, than whom there exists no better authority on diamonds, had this stone and the Hope Blue put into his hands together. He found that they were identical in color and quality; that the lines of cleavage matched as nearly as could be determined after the cutting, while the united weights, plus the calculated loss from recutting, amounted to the weight of the French Blue. He immediately drew the very natural conclusion that both these stones were once united and formed the Blue Diamond brought from India by Tavernier. He, it will be remembered, called it of a "lovely violet," and as only very few other blue diamonds are known to be in existence, and they are all of a pale blue shade, we must admit that the weight of evidence leans strongly in favor of Mr. Streeter's reasoning.

Cutting, Polishing, Engraving and grinding Apparatus Shown by George F. Kunz before the Lowell Institute in Huntington Hall Boston, in a lecture delivered Thursday Evening March 21st. 1895.

Field Diamond Machine in Center,

Jewellers Weekly 1895

Something About Diamonds.

There are perhaps 8,000 dealers in diamonds in the world, who carry in their stock stones worth perhaps $350,000,000. The remainder are in the hands of private individuals.

There is always something fascinating about the subject of diamonds and rich and poor like to read about precious stones. It is estimated that during the last twenty five years the American people have paid duty on at least $180,000,000 worth of diamonds and other precious stones. In 1893 alone they imported $15,203,563 worth, but in 1894 there was a falling off, owing to hard times, and the total was only $4,856,985.

This does not include uncut diamonds of which we imported more than 1,000,000 worth in 1892, $800,000 worth in 1893 and $566,267 worth in 1894. During the last twenty-two years we have imported $7,087,117 worth of uncut diamonds. In 1880 we imported only $129,000 worth of uncut diamonds and in 1889 only $250,000 worth. The large increase of late has been due to the fact that a number of American jewelers have opened diamond cutting establishments. There are now fifteen establishments in the United States which employ from one to twenty men.

There are 4,000 manufacturers in Europe and about 200 in the United States, who employ between 7,000 and 8,000 persons as cutters and polishers. Perhaps 28,000 people are employed in the diamond mines throughout the world. We read that in past centuries 60,000 people were working in some single Indian mines at one time, and perhaps that statement is not exaggerated, since by the aid of modern machinery one miner can now accomplish as much as twenty who used the primitive methods. The total value of all the diamonds in the world undoubtedly exceeds $1,000,000,000.

During the last quarter century ten tons of diamonds, selling for more than $300,000,000 uncut and $600,000,000 after cutting, have been added to the world's wealth—an amount more than twice as great as the value of diamonds known to exist before. This vast value is in the most concentrated portable and ornamental form, and more convertable than anything except gold and silver. It's accumulation has built up cities like Kimberley, maintained important industries in Amsterdam and and other centers.

System for Identification of Ge Exact as Fingerprint Method in Criminology

By ANN LOW

M. Mallaval, a distinguished French scientist, states, according to a recent Associated Press dispatch that every diamond has a separate and distinct individuality. He has perfected a device whereby he is able to throw an enlarged picture of a diamond upon a screen and show its individual characteristics. The violet ray brings out the different colorings and their arrangements in each stone. Experts say that his method will prove important in the identification of the diamonds in the trade, and also in police work in the recognition of stolen stones.

The dispatch says "when famous stones, such as the "Rose Diamond" stolen from the Chantilly Chateau, come into question, some experts can be found to identify or describe it, because there are few or none like it, but there has heretofore been no system of positive identification."

FAMOUS GREAT ROSE DIAMOND STOLEN

This great Rose diamond, called the Grande Conde, a lovely heart shaped stone, an inch in height and 3-4 of an inch in length, was stolen last fall from the chateau of the Duc D'Aumale, called the Chantilly Chateau, which has been made a national museum of gems whence they took the stone. On Dec. 21, following, a little chambermaid bit into an apple which had rolled from a suitcase in a room which she had been cleaning. Her teeth came together on a hard substance. She thought she had bit on a piece of glass, but it did look shiny so that she gave it to the proprietor of the hotel. He called the police. Secret service men surrounded the building and captured two of the thieves.

The desire to increase one's personal charm by adornment is older than history. Probably way back in the world's dawning we began this custom by decking ourselves out in shells, stones, dried berries and feathers. Savage peoples in distant lands do so in this age and date. And curious and hideous to our eyes are many of the ornaments they wear suspended from the cartilage of the ears, noses and upper lips.

We wonder how the diamond came to be the stone usually selected for the engagement ring, and we are told that the custom may have originated somewhat in error. The word meaning "to love" in Latin is "amare." The diamond derived its name from a Greek word "adamas," which means "hard." And the diamond is the hardest substance known. The words "amare" and "adamas," as you may easily see, became confused and the diamond became the votive offering upon the shrine of Venus.

LEADS ALL GEMS

In speaking of a jewel, beloved of feminine hearts, we ordinarily mean a precious stone cut, finished and ready for wearing; and, like Abou-ben-Adhem of old, the diamond leads all the rest. Usually colorless, it is sometimes tinted by mineral oxids. South African diamonds are said to shine with a bluish light. Diamonds from other localities emit bright blue, apricot, red, orange or yellowish green. Small sized diamonds may be found in meteorites.

Diamonds are a natural form of carbon, as is the lead in the pencil with which you write, and the black diamonds, or coal, which you burn in your furnace.

A big red diamond of 18 carats has been found of late in the Lichtenburg diamond district. Recently a diamond merchant in London has had on exhibition in his shop window a blue dia-

been cut into nine stones,
presented in 1908 to King
to be placed among the
jewels.

The largest of these,
shaped brilliant, weighing [illegible]
is mounted in a removable
sceptre. It is known as
The second largest stone,
weighs 309 3-16 carats and
in the crown of England.

The Koh-i-noor is possibly
famous diamond in the
weighed about 186 1-16 carats
Indian cutting, and about [illegible]
ter it was recut. It is the priv
erty of the English royal
name means "mountain of
in its long and notorious
acquired an evil reputation.
be counted upon to bring
der and sudden death to
In 1304 the Sultan Ala-ed-din
ed it from the Rajah of
whose family it had been
not to say an heirloom, for
The Sultan thereby started
and innocent stone on its
path. In 1849 the East India
presented it to Queen Victoria
seems to have reformed the
ing in this case that environ
stronger than blood—or sparkle.


LEOPOLD II
ROYOUS BELGES

1873

SPARKLING DIAMONDS.

Gems in Orange Free State Are Transported Under Military Escort.

When a diamond is found weighing more than 100 karats, the news is usually heralded with much ado. It is not to be wondered at, therefore, if the finding of the "Excelsior" created considerable excitement. It weighed in the rough 971 carats and was found near Jagers Fountain, in the Orange Free State. When examined, it was found to be a white stone of the first water, but had a small flaw in the center. The inspector of the mine, a Swede named Jorgenson, was the lucky finder. The proprietors of the mine, Breitmayer & Bernheimer, had the stone tested and valued by experts, who agreed that the value was $5,000,000. It is a fact that two offers of $3,000,000 and $4,250,000 respectively have been refused by the proprietors. Upon its transfer to the coast great precautions were taken for its protection. A squadron of cavalry escorted it to the railway station. In Cape Town it was placed aboard the British gunboat H. M. S. Antelope, which brought the precious gem to London, where it now rests in the fire and burglar proof vaults of the Bank of England.

The next largest diamond in the world is the one owned by the Rajah of Matan, on the Island of Borneo; this one weighs 367 carats. The handsomest of all the large diamonds known is, however, the one in the French collection of crown jewels, known as the "Regent," which weighs 136¾ carats. Louis XV. paid 3,000,000 francs for it, but now it is valued at 10,000,000 francs, or $2,000,000.

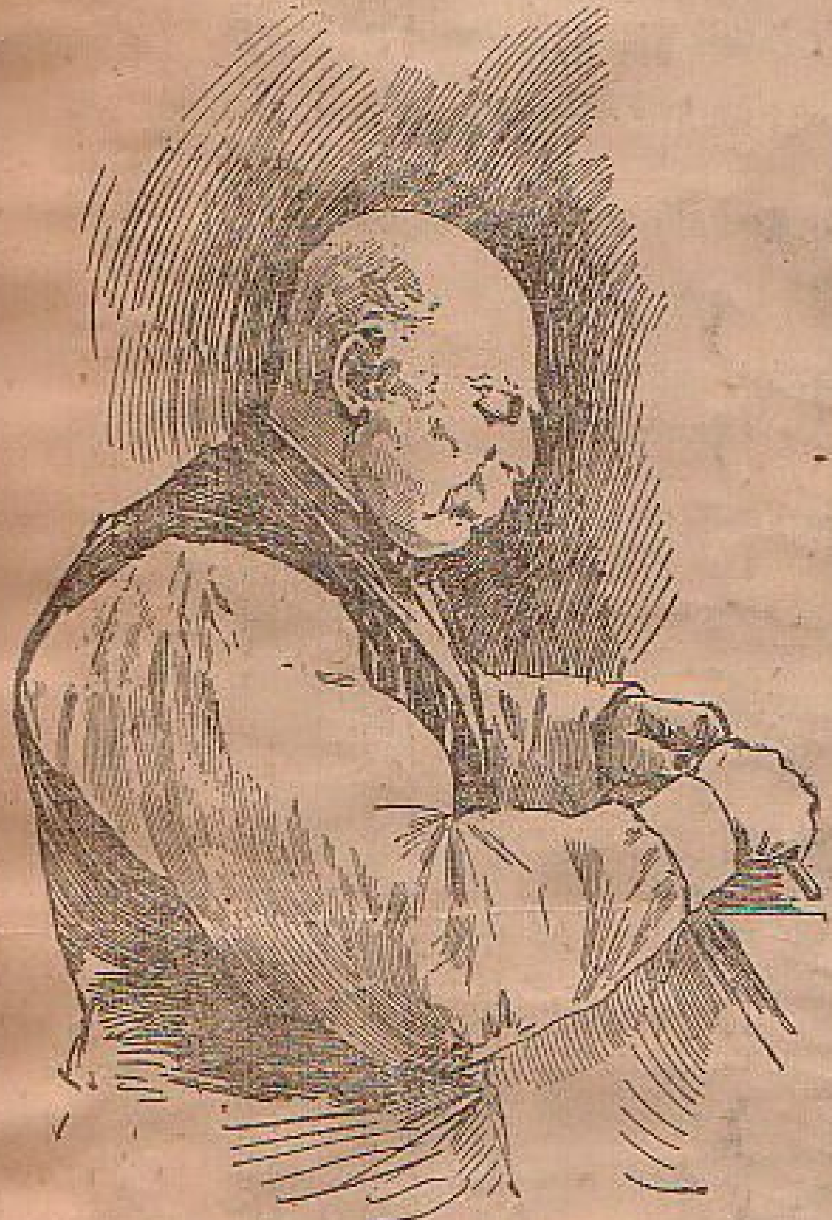
How much the "Excelsior" will lose in cutting can only be decided by most eminent experts. As a rule the larger diamonds lose fully one-half of their weight in this operation. Naturally the cutting, which is done with a view of having as few large pieces as possible outside the large gem, must be carried on with the greatest care. This business is carried on mainly in Amsterdam and Antwerp. In Amsterdam there are at present five large concerns of diamond cutters, with 872 diamond mills, or cutting wheels, and 3,000 hands, besides a large number of less important concerns.

Dec. 26—1894

N DAILY GLOBE—WEDNESDAY, DECEMBEI

OLDEST DIAMOND SPLITTER.

There Is Only One Man in This Country Besides Josiah J. Van Buren Who Knows How to Cut a Diamond in Pieces.



JOSIAH J. VAN BUREN.

Van Buren,

Thirty years ago in the whole United States there was but one man who could split, cut and polish a diamond.

That man is today the oldest diamond splitter in Boston, and, for that matter, in this country. His name is Josiah J. Van Buren, better known as J. Van Buren, and his residence—he has no regular workshop—is 73 Waverly st, Roxbury.

He is a native of Holland, and in Amsterdam he learned his trade, serving a three years' apprenticeship with one of the largest diamond manufacturers in Europe.

His father, at that time, was in the wholesale dry goods business in Amsterdam, and young Van Buren, having expressed his determination to try his fortune in the new world, was entrusted by his father with establishing a branch house as an importer of dry goods in New York.

Before going to New York, however, he came to Boston, arriving here direct from Liverpool, March 2?, 18??. A few months later he had opened a dry goods house on Maiden lane, New York, as importing agent for his father and for an uncle, also a wholesale dry goods dealer in Liverpool.

Meanwhile he formed the acquaintance of a fellow countryman who was engaged in the manufacture of glass-cutting diamonds, but who had no knowledge whatever of the trade of a diamond splitter.

Van Buren showed him how he could make four and sometimes five cutters out of a stone from which he had been getting but one, and thereupon agreed for a salary of $100 a week to do the work, with the understanding, also, that he should be allowed to devote a certain time to the dry goods business.

Henceforth Mr Van Buren's reputation, not alone as a diamond splitter, but a diamond expert as well, was made, and, an offer coming to him from Baltimore, he gave up the dry goods business altogether, and devoted his whole time to his trade.

From Baltimore he came to Boston and worked for Henry D. Morse, diamond dealer, who sent him ... as purchasing agent. He ... for Herman Levy of New ... while there split a 1?-karat diamond, which was afterward ... eardrops and sold for $...

"That," said Mr Van Buren, ... largest diamond I ever split ... a beauty. The one imperfection ... it, which I divided up ... ting, was in the heart, but ... pert could have detected it."

In 18?? he married in Boston ... years later removed to Fall ... he engaged again in the dry ... ness, but the death of his ... two years afterward, together ... business, induced him to return ... ton, where he has been ever ...

His chief occupation for the ... years has been that of a ... er, rather than a workman ... bench, though he has done ... accounts himself today the ... diamond splitter, cutter and ... the United States.

Speaking of the growth ... mond industry in this country ... the last ?0 years, he declares ... has kept pace with the ... country, but that many ... valuable diamonds owned ... here were purchased in Europe ...

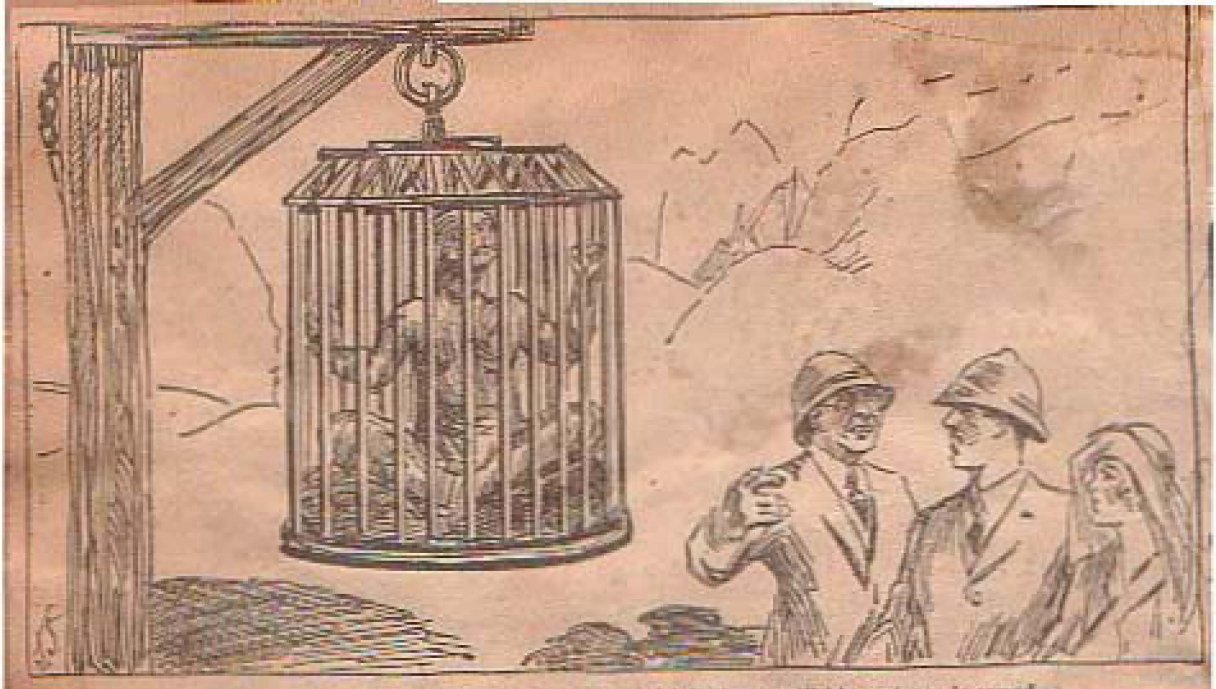
"There are as good diamonds ..." he continued, "in our America ... as anywhere else, but it ... fad, I suppose, with some ... theirs abroad. That, perhaps ... reason why we have so very ... on this side, for of course ... thinks of splitting a perfect ... The splitting is done simply ... the imperfections.

"I am not sure that there ... more than one other diamond ... in this country, but you ... quantity of cutters and ...

"Up to 187? we had simply ... ian mine diamonds, but the ... Cape, or African, diamonds ... the markets today are ... they are equally as fine."

Mr Van Buren bears his ... markably well, and, though ... appear to be more than ... He is slightly above the ... very compact, weighs some ... 200 pounds, is smooth shaven ... a heavy gray mustache ... what bald.

He has four children, ... two girls, the latter, Mari... na, well known in musical ...



The diamond thief is suspended in a cage and left there until his sentence is served.

strict.

"For instance, the owners of a certain mine have bought all the land for miles around it, and on this the native workers live. No stranger is allowed inside this ring of land, unless he first undergoes a strict search of his person and his belongings. The natives are allowed to roam around this piece of land as much as they please, but may not go outside of it under any circumstances. They wear no garments except a band of cloth around the waist. A worker must change this cloth every day for a new one which is given to him by the storekeeper. Before he enters the mine in the morning he must take a bath; and another at night after finishing work.

"The reason for this," said Mr. Mooney, "is that they may not attempt to hide any diamonds on their persons. They are constantly warned against stealing, which is the worst of all possible offenses. But now and then some man is caught trying to smuggle out a diamond or two for himself, and then his hard luck begins.

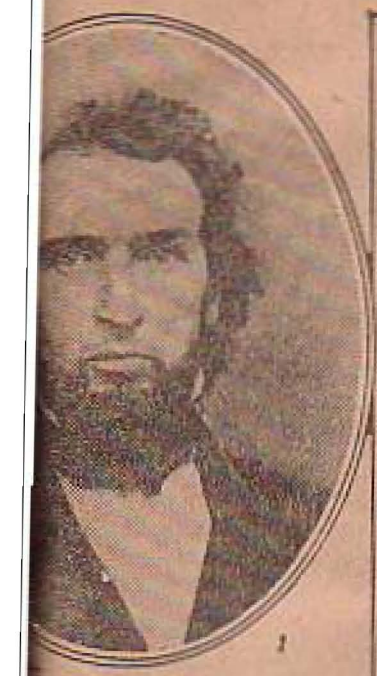
"The offender has no trial of any kind, nor is he given a chance to defend himself. He is taken away at once to the outside of the village, and there his punishment begins. First, one of the guards reads out the charge to him, so that he clearly understands what he is being punished for. After this, two more of the guards bring up a big wooden cage, about four feet high and two feet wide. In this the prisoner is locked, and he is then given a loaf of bread, which is his meal for that day. That's all he gets. He does not even have water to wash it down.

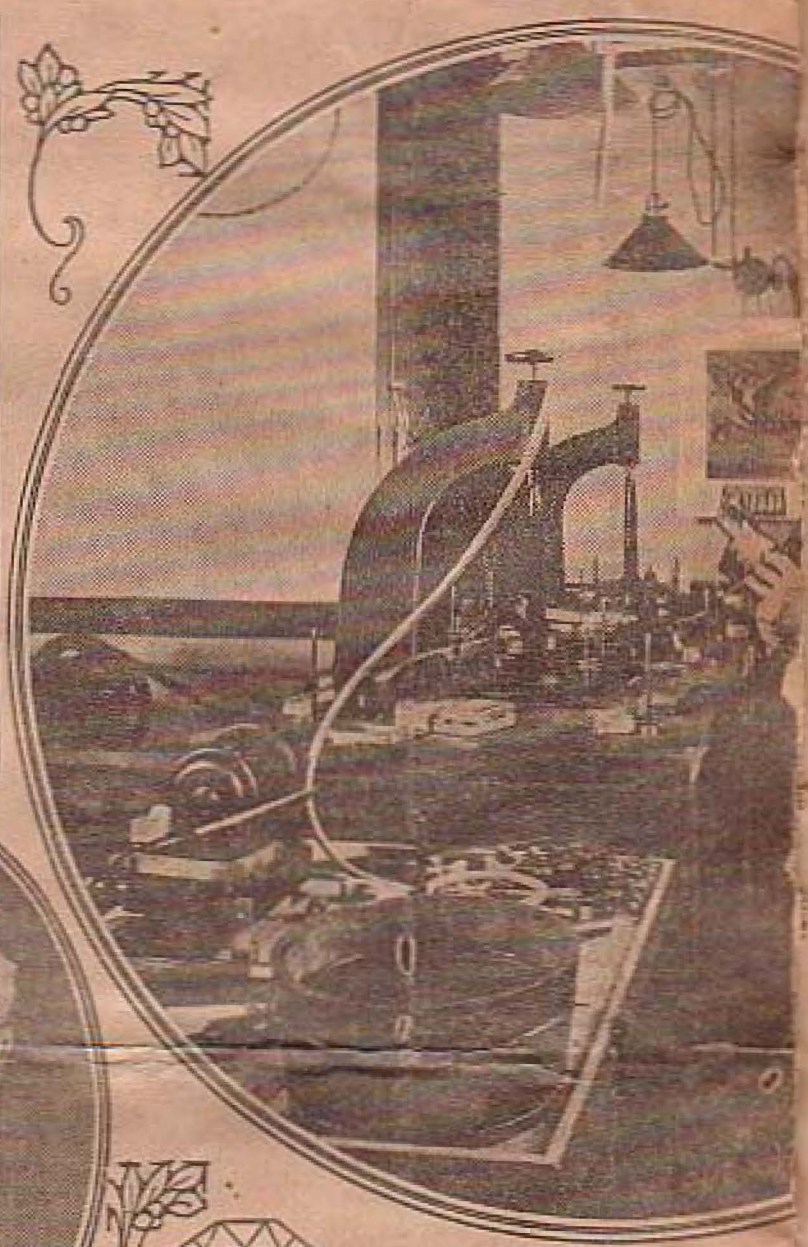
"A rope is then attached to the top of the cage, and the whole thing, man and all, is hoisted up in the air. There the prisoner stays for 60 days, if it is his first offense.

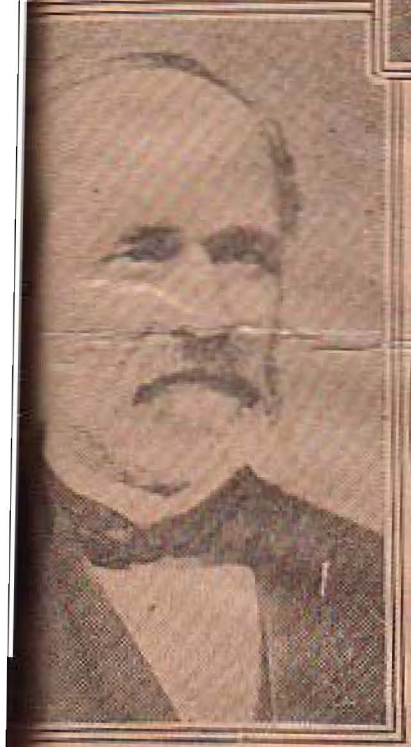
If he has been caught before then he will stay aloft in his cage anywhere from 60 days to a year, day in and day out, night in and night out.

"In the hot sun of midday he will almost roast. Once a day he is let down by the guards and given something to eat and drink, for after the first day he can have water. After he has been fed he is again hoisted up in the air till next day. Prisoners are never let out of the cage from the time they are put in till their time is up.

oston A Brilliant Solitaire In







ILLUSTRATIONS.

1—Edwin B. Horn.
2—John A. Remick.
3—Russell and Sims at Work Polishing Diamonds. Sims, in Background with Bald Head.
4—W. A. Smith.
5—The Famous Henry D. Morse.
6—John L. Richards.
7—Charles P. Pike, of Brooks & Pike.
8—C. A. W. Crosby.
9—Luther F. Brooks, of Brooks & Pi

For the description of the Men and their business, see the following Leafs.

The Diamond World

4

5

8

9

popularity, just now, according to Mr. Kingsley, with pearls, emeralds and rubies next in the order named. Sapphires, emeralds, cat's eyes, amethysts and garnets, cut en cabochon, are handled by this house, and odd necklaces of crystal and of quartz.

C. A. W. Crosby

"Charlie" Crosby, as he was known in the trade, was a jeweler who always made diamonds an important part of his business. He started in 1852 nearly opposite Franklin street, on Washington, under the old Marlborough Hotel. From there he removed to the location that is now the corner entrance to Jordan Marsh's, at the corner of Avon and Washington streets. When the Jordan interests leased the corner, in 1880, he removed to the opposite corner and was still on the street floor. At his death, in 1894, he was succeeded by his son, John D. Crosby, an enthusiastic yachtsman and a very competent diamond man. John D. died in 1913. Thereupon, the business was carried on by the Crosby estate till 1919, when it was taken over by some of the employees. It is one flight up, now, in the Crosby Building, and is called The Birmingham Company. The founder of this old house was in great demand, in his day, for the appraisal of stones.

John A. Remick

John A. Remick is the grand old man of all the old time diamond dealers of The Hub, for he is with us today. He is hale and hearty at ninety-two and bearing hardness of bearing, seems no older than eighty. President Eliot and Hon. Thomas N. Hart are his particular friends.

Mr. Remick was unique in the manner in which he carried on business. For thirty-five years he kept a dingy, dusty little store under the old Boston Museum. It was his boast that there was no jewelry in his stock—merely loose gems. These could be taken out of the safes, shown to patrons from the original papers, mounted to suit the customer's taste. He was the first man in Boston to make a business of appraising precious stones!

Henry Ward Beecher was a customer and a warm personal friend, as were Joe Jefferson, James T. Fields, William Warren, Annie Clarke, William Seymour, Jack Mason, Celia Thaxter, Professor T. Sterry Hunt and William Morris Hunt.

When the Museum was torn down in 1903, Mr. Remick asked what the rent would be in the new building. Ten thousand dollars was the reply. As he had been paying $1500, he decided to retire. He has enjoyed home comforts at 360 Marlborough street since, with trips to Florida when the weather gets cold.

Moses S. Page

Mr. Page was born at Haverhill, N. H., in 1838, on July 3. He used to say they began celebrating on his birthday throughout the Nation.

After a little business experience in New Hampshire, he came to Boston in 1856 with $20 in his pocket. He walked on Washington street all the way to Roxbury looking for a job. He got one, at last; but in '58 started with a partner at 1 Salem street, corner of Endicott, as Felch & Page.

Mr. Felch withdrew and Mr. Page leased the entire flat-iron-shaped building. In this way, the shrewd and far-seeing young Page got his own store rent for a reasonable sum.

The business was diamonds and jewelry, but money was loaned on valuable collateral as well. Mr. Page kept in the same store all the remainder of his life. He died in 1917, possessed of great wealth, and was succeeded by his youngest son, Harold, who had grown up in the trade.

Harold finally sold out to one Ransome, who had been a life-long business associate of the elder Page. Thereupon, the son started a wholesale diamond and jewelry business in the Jewelers' Building, on the fourth floor, where he is today. His elder brother, Edward S., formerly a lawyer, joined issues with him, and the style is M. S. Page & Co.

Moses Page was an extremely energetic would be better if it contained more real like Moses S. Page.

John B. Humphrey

John Humphrey, if not announced as such, would never have been taken as a diamond man. Yet, after Mr. Morse passed on, Humphrey was the best known cutter in Boston. It was quite by accident that he entered the trade.

This large, rather clumsy, frank-visaged, mirthful-looking man was a stair builder by trade, whom Henry D. Morse employed at experimental work on machinery used in the cutting and polishing of gems. Humphrey, in an incredibly short time, learned the lapidary's art. He started a shop, with a partner, at 50 Bromfield street. The firm was Humphrey & Guild.

Later, Mr. Humphrey had a place alone on the fifth floor of the old Washington Building. And when W. A. Smith passed on, in 1896, Humphrey took over the store.

Mr. Humphrey, too, has left us, but the business is still carried on in his name, in the new Washington Building. His sister, the famous singer, Mrs. E. Humphrey Allen, is living, and his widow, now Mrs. Emerson, is with us today.

William A. Thompson

"Bill" Thompson was a tall, serious, well-built, handsome man, whose career is enviable. He was born in Nova Scotia in 1846, but was brought to Medford, Mass., when he was 6. He lived in that town the rest of his days.

A natural born artist, and later an honored amateur in water colors, Bill Thompson served his apprenticeship as a manufacturing jeweler with Clarkson & Brooks, at 210 Washington street. When the firm was changed to L. F. Brooks & Co., Thompson was made foreman, a position he held for ten years. He then started a business as a manufacturing jeweler in high grade goods at 383 Washington street. The firm name was Thompson & White.

When Mr. White withdrew, Thompson caused the dream of years to become true. He not only made special articles of gold, but had an office that was really an art parlor. A particularly fine stock of gems could be selected from and a beautiful and artistic design, drawn in the presence of the customer by the head of the concern, could be shown at the same time. Bill Thompson, with his artistic tendencies, became a success. He prospered, and although long since dead, the house is in the Jewelers' Building and bears his honored name today.

D. C. Percival & Co.

There have been four David C. Percivals and two of them are living. But the D. C. whose energy and integrity built up the huge wholesale business that bears his name was a Cape Cod boy who left his home at Sandwich at the tender age of eleven and entered the manufacturing jewelry house of Sackett, Davis & Potter at Boston. It was here that the lad began his highly successful career.

In 1864, Mr. Percival, who had traveled for a long time for Sackett & Davis, as the firm became known, started a store for himself. He was twenty-five. For partners, he took Daniel Morris and Henry T. Salisbury. They had one small safe and Mr. Percival said years later, "We had hard work to fill even that."

After the Boston fire of '72, Salisbury withdrew and the style was changed from David C. Percival, Jr. & Co., to Percival & Morris. In 1887, it was dissolved. Mr. Percival, however, continued at 382 Washington street, as D. C. Percival & Co. For a short time Dean Southwick was in the firm.

Next, Mr. Percival was alone and the business grew with leaps and bounds. In 1895, a son, D. C. Jr., was taken in along with Frederick H. Pope. They stayed at 382 till 1898, when they removed to their present quarters on the second floor of the Jewelers' Building.

The pushing but kindly founder died at the age of seventy-five at his home in Commonwealth avenue in 1913. He was fond of yachting and owned the cutter

Continued on Following Page

Boston a Brilliant Solitaire

Continued from Preceding Page

Hondina for a great many years. His widow is living, as are his daughter, Mrs. Parker, and the two sons, D. C. and Lawrence F. The latter (Commodore Percival) is one of the best known amateur racing skippers in the United States.

Diamonds have ever been a principal department in the concern, one of the largest wholesale establishments in Boston.

Smith Patterson Co.

Smith & Patterson is the firm name of a very large wholesale and retail jewelry and diamond house. They occupy several floors having immense area at the corner of Arch and Summer streets.

The founder was M. N. Smith, who came to Boston a green country boy, from Tunbridge, Vt. He worked first for M. C. Hood in the small-ware business. Being sent out on the road, he just sort of drifted into jewelry. He started for himself in 1876 as M. N. Smith. In 1882, it became Smith & Patterson, about '87, Smith, Patterson & Co., about 1901, it was incorporated as Smith Patterson Co.

Marcel N. Smith is still living and is president of the company. Nelson H., his son, is treasurer. Diamonds and kindred goods always take a large place in their stock.

Hodgson, Kennard & Co., Inc.

This well known house at 25 State street was founded on Sept. 1, 1866, by Edgar W. Hodgson, upstairs at 7 Temple place. The style was E. W. Hodgson. He removed to the street level in 1869, at 61 Temple place.

In 1879 he removed to 50 Devonshire street, and in 1906 to the present location. At about this time the house became incorporated with Arthur W. Kennard and James H. Parks entering. Mr. Kennard is a son of the senior member of the old house of Bigelow & Kennard.

While at 50 Devonshire street Mr. Hodgson established a diamond cutting shop in connection with his business.

Diamonds, and all the other fine gems, are ever an important department here. And under the personal supervision of that genial little veteran, James H. Parks, who is vice president, the business done in that line is enormous. Mr. Parks, though born in the "North Country" of England, came here at a tender age and learned diamond cutting as "one of Henry D. Morse's boys."

The Thomas Long Co., Inc.

This prosperous and wide-awake house was founded in 1870 by Thomas Long. The location was Avon street, and the business was the manufacturing of jet jewelry. From that they expanded to the making and wholesaling of all kinds of jewelry.

In time, a retail store was started, where they are today, at 39-41 Summer street, but from there they were away for a time, at 25 Kingston street and at 77 Summer street, only to return for a long period to 39-41 Summer street. They occupy the entire building, now, with their immense diamond, jewelry and silverware business, but have outgrown the place. Still larger quarters are needed and they will remove to a building nearly opposite 39-41 after the holidays.

The house is incorporated, with Messrs. Charles W. Davidson, president; Frank F. Davidson, treasurer, and George Moses, secretary.

Homer's

Somewhere around 1850, Mr. J. Homer, a former employe of A. Stowell's, started a jewelry and optical business at 428 Washington street, the location of the present-day Filene store. In 1881, the house removed to its present well known address, 45 Winter street, the end near Tremont.

The business has ever been the selling of optical goods and novelty jewelry and silverware, but diamonds and precious stones have for a long time been an important feature.

In 1923, the concern became a stock company under the title of George E. Homer, Inc. Mr. George E. Homer—a brother of the founder—is president and is an indefatigable worker, a most courteous gentleman and a high example to the younger members of a honored trade.

This energetic man exhibited for twenty years at the Mechanics' Fairs and has always some new ideas sprouting in his fertile brain for novelties in silverware and souvenirs. He originated the pails of miniature earthen bean-pots, with perforated, silver-plated covers, that come in a box at 50 cents the pair. Each bean-pot is marked: "Boston Baked Beans," and the contents, needless to say, are intended to be salt and pepper.

During the Spanish War, George Homer sold 3000 gross of especially designed war spoons. Though largely dealers in diamonds and fancy stones, Homer's is a foremost house in the handling of novelty and souvenir silverware.

Arthur H. Pray

Mr. Pray is no longer selling diamonds, nor is he cutting them. He learned the practical part of the business from the great Henry D. Morse, but for some years, now, his activities have been limited to the management of estates of which he is trustee. He is in Boston now, though usually at this time of year he is resting in California.

Arthur Pray was a cousin of the Mr. Pray whose wealth enabled Henry D. Morse to climb so high. Arthur was sent to South Africa by the Morse company in 1876, where he stayed six months at the mines. On his return he started for himself as a dealer in diamonds and remained in the business until his retirement a few years ago. He was a cutter, in his day, and had a place in Bromfield street. Later he shared an office at the corner of Franklin and Washington streets with J. V. Hertel and J. S. Blake. Mr. Pray is in fine health at sixty-six and is the same agreeable man to meet.

George H. Richards, Jr.

Mr. Richards did an enormous business, wholesale and retail. The line was diamonds, jewelry and silverware. He was at the zenith of his career during the '80's and into the '90's. In those days he was supposed to be worth a large sum of money.

After his sudden death, his son, Herbert, and his brother, Charles, ran the establishment for a while. Its end, we cannot recall. This store was directly over Collins & Fairbanks' hat store on Washington street.

Morrill Bros.

Charles F., Alvin T. Morrill and Irving Smith formed this once well known firm of wholesale diamond dealers and jewelers. They flourished in the eighties and nineties right over the entrance of the Marlborough Building, the site of the new Washington Building of today.

Charles F. Morrill is living and is in the real estate business over in Charlestown. Of Alvin we do not know, but Irving Smith has passed away.

Harrington & Freeman

This firm has always kept the store in which they started in 1879. Mr. Freeman has been dead for twenty-five years, but

Luther T. Harrington left us only last June, at the age of seventy-seven. This house is in Court street, near Cornhill, and it has always carried a fine stock of diamonds.

Luther Harrington, who ran the store so many years, was a life member of the Winthrop Yacht Club. He joined it when it was called the Great Head Yacht Club many years ago. He was an enthusiastic racing man, and was extremely conscientious in all his business affairs and sports, as well. He had a most amiable disposition and was loved by all the old-timers in the trade. Luther E., his son, now runs the store for the estate.

Frederick M. Harris

And now we come to one of the real old stand-bys of Boston's diamond trade. The tall, spare, sandy-complexioned and very lovable Fred Harris seems to be the same Fred whom we knew forty years ago.

This off-hand, careless appearing old expert was born at Stoughton in 1848, but was travelling under the direction of Colonel James M. Longstreet in 1871, for Sackett & Davis of Boston and Providence. He kept this job till '79, when he entered the employ of Morrill Bros. Next, he travelled for Smith & Knapp, of Maiden Lane, two years more with Morrill Bros. again, then he became associated with John B. Humphrey, where he stayed for a long time.

He started the firm of Charles F. Guild & Co., and in 1894 became a member of Harris & Lawton. In 1908 it was Harris & Lawton, Inc.

Fred (no one in the business ever thinks of saying Frederick) has been a life-long devotee of the rod. The catching of brook trout has ever been his fad. He has one son dealing in diamonds and one in the dairy business. The sons, it is said, have the same fishing instinct as their dad.

Harris & Lawton changed ownership last year, with Fred Harris's son and a cousin of Mr. Lawton's taking up the work. But the elder Harris is there every day and is in constant demand by his old clientèle. They keep in the Jewelers' Building, on the sixth floor.

Luther F. Brooks

While not a diamond dealer, Mr. Brooks was all his life engaged in a closely allied pursuit. He manufactured the highest grade mountings for precious stones.

Luther Brooks served his time in the shops of Henry D. Morse; then, with a partner, started manufacturing. The style was Clarkson & Brooks. When Clarkson withdrew, it was Luther F. Brooks for a while, but as Mr. Brooks was on the road the bulk of his time a managing partner became necessary. He got a most capable one—the foreman, Mr. Charles P. Pike. The house remained as Brooks & Pike until the death of Mr. Brooks around 1898. Two of the workmen bought the business out (Adams & Singleton) and they kept it going until a very recent date.

Mr. Brooks was of striking appearance. He suggested a composite of Kentucky colonel and artist from Bohemian walks of life. The broad-brimmed hat, moustache and imperial, and the loosely flowing tie, the carelessly stooping shoulders stamped him for what he was. He was a veteran of the Civil War and an artist of wonderful ability.

Kind-hearted and lovable we always found him. His partner, Mr. Pike, says: "Mr. Brooks had one of the finest characters of any man I have ever known."

"Colonel" Brooks, as he was often called, was fond of fishing, and also delighted in spending an hour each evening, in the company of W. A. Smith, looking on at the games of billiards at Clark's Hotel, Parker's or Young's.

Charles P. Pike

Mr. Pike is with us today. His 76 years have silvered the jet black hair and mustache and a slight deafness hampers him to a trifling extent. Apart from that, he is the same tall, straight, spare, alert, clear-headed man who worked so diligently that he was enabled to retire when he was 56 years old.

Precision, extreme neatness and a wonderful facility in expressing himself well are endowments of this very able man. He is a natural born artist and designer and was a master mechanic at his trade. Few professional seamen are his equal at winning races in a pleasure yacht, and he has been a life-long devotee of the rod and gun. He is so gifted at whistling that it is a treat to listen to him. With apparently no effort he can trill like a bird.

"Charlie," as Mr. Brooks affectionately called him, was born in Friend street, but lived a great many years at Jeffries Point. He was commodore of the Jeffries Yacht Club while living there.

Mr. Pike served seven years in the shop of Ripley, Crosby & Peabody in the old Washington Building. The pay was $1 a week with an increase of a dollar a week each year. After becoming a journeyman he worked for Thomas Clarkson and then for Mr. Brooks, who made him a partner after the first year.

About thirty years ago Mr. Pike bought a fine home at Winthrop, where he has his own private wharf and landing stage at the rear. His hobby is to sail, fish and shoot in the company of his bosom friend, Mr. Ambrose A. Martin, a retired builder of pilot boats and yachts.

Russell & Sime

It is said there are today but four diamond-cutting shops in New England, and that they are in Boston. One of the best-known of these is that operated by Russell & Sime.

"Eddie" Russell as he is called by the trade, was born at Brooklyn, N. Y., in 1862. He came to Boston and became "one of Henry D. Morse's boys." In '82 he was cutting for Randel, Baremore & Billings in Maiden Lane. In '89 for Tiffany, where he stayed eleven years. While with them, he demonstrated at the Chicago World's Fair.

The year 1900 saw him back at Boston where he opened a shop for H. W. Hodgson (now Hodgson, Kennard & Co., Inc.), he being a stockholder in the concern. In 1909 Mr. Russell sold his stock and formed a partnership with Mr. Allan D. Sime. They are on the sixth floor of the Jewelers' Building, where, besides cutting, repairing and polishing they keep a fine stock of diamonds for sale. The partners do the actual work themselves.

They recut a five-karat stone, ten years ago, giving it eighty-four facets, bringing out more brilliancy and resulting in an apparently whiter stone. This job was for Mr. Whittemore, of the E. H. Horn Company.

Allan Sime was born in Cambridge in '65. He learned cutting at the John B. Humphrey shop, starting when a lad of sixteen. He worked for a long time at Tiffany's before joining with Mr. Russell in 1909.

Josiah J. Van Buren

We have reached the last of a long string of old-time diamond men whom we can remember off hand. But this man was by no means least. Thirty-five years ago, in the whole United States, there was but one man who could split a diamond! He could cut and polish as well. He was Josiah J. Van Buren, who lived out at Roxbury, on Waverly street.

"Siah" was a Hollander who learned his trade in Amsterdam with one of the largest concerns in Europe. His father was a wholesale dry goods man and the son landed at Boston on his way to New York. At Gotham, he was to conduct a branch of his father's European house.

While in the metropolis Van Buren met a fellow countryman who was trying to get established in making shakers' collars. The expert Josiah convinced him that by splitting he could get four or five cutters where he was getting one, and agreed for $100 a week to do the work. But he must have a certain amount of time to look out for the dry-goods house.

Van Buren's reputation, in America, as a diamond expert, was made.

He accepted a fine offer to go to Baltimore, stayed there for a while, then went to Boston to work for Mr. Morse. The latter sent him to Europe as a buyer and he served in a like capacity for Herman Levy of New York. For Mr. Levy he split a

93-karat diamond that was made up as a pair of ear-drops and sold for a fabulous sum.

That was the largest stone that 'Siah ever split, and he said it was a beauty. It had one imperfection in the heart which the cunning and the skill of this artist divided nicely in the cleavage.

In 1865, Van Buren was married at Boston and five years later he removed to Fall River where he engaged in the dry-goods trade and also did some business as an auctioneer. His wife's death caused him to return to Boston, where he lived the remainder of his days. He had two girls and two boys. The girls were musical and one was famous on the concert stage.

The aging Van Buren now engaged in the selling of diamonds and all other kinds of precious stones. He had no store, but carried many thousands of dollars worth of goods in great wallets such as all travelling men in the business use. These are invariably made to fit inside vest pockets.

We may best remember Van Buren as a curb-stone dealer, in his later years, but all will have to admit that no diamond man in Boston had a more striking personality. He was not unlike President Taft in build, was dignified and commanding in appearance and always wore dark clothes and a tall, silk hat. His raiment, however, seldom looked spic and span. The "stove-pipe" always suggested the idea that it had been rubbed the wrong way, the suit of clothes and the overcoat, with its velvet collar, seldom surrendered to the tailor's goose and the wrinkled vest that covered the owner's rotundity was forever gathering ashes from a short, black "butt" which 'Siah puffed through a battered and stained meerschaum holder.

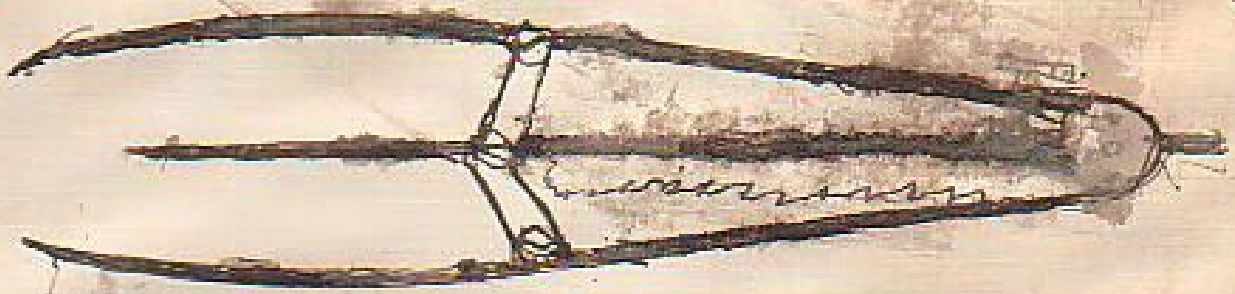
In speech and in walk, this foremost diamond expert of his day was very rapid. In short, he was a strong man both mentally and physically and he enjoyed using his energy.

Morse Diamond Boys

"Morse's Boys"

Here are some of the names of men who learned diamond-cutting under the great Henry D. Morse: Jake De Young, now living and in business on the seventh floor of the new Washington Building; Charles M. Field, living at Melrose; James H. Parks, vice president of Hodgson, Kennard & Co., Inc.; George H. Hampton, at Tiffany's; William White, David Lindsey, William Clark, George Melville, Charles Bowen, Richard Foedick and Edward Cox.

In closing, it might be well to state that another Boston man contributed an invention that has lightened the lapidary's work. One Passmore got up a machine that will cut semi-precious stones. He went to New York, started the cutting house of Passmore & Zeh and, later, the American Gem Cutting Company.



Field Diamond Safety Tweezers.-

Acknowledge by all diamond merchants using them to be the best for displaying or holding a stone no danger of injuring or dropping them when properly Secured.

Why Diamonds Ought to

The Koh-i-noor. The Pasha of Egypt. The Star of the South. The Regent. The Pigo

The Most Celebrated Diamonds in the World, Natural Size.

JOHANNESBURG, So. Africa, Feb. 26.

DIAMONDS are enormously expensive, they ought to be much cheaper—and there is a very good prospect that they will be much cheaper before long.

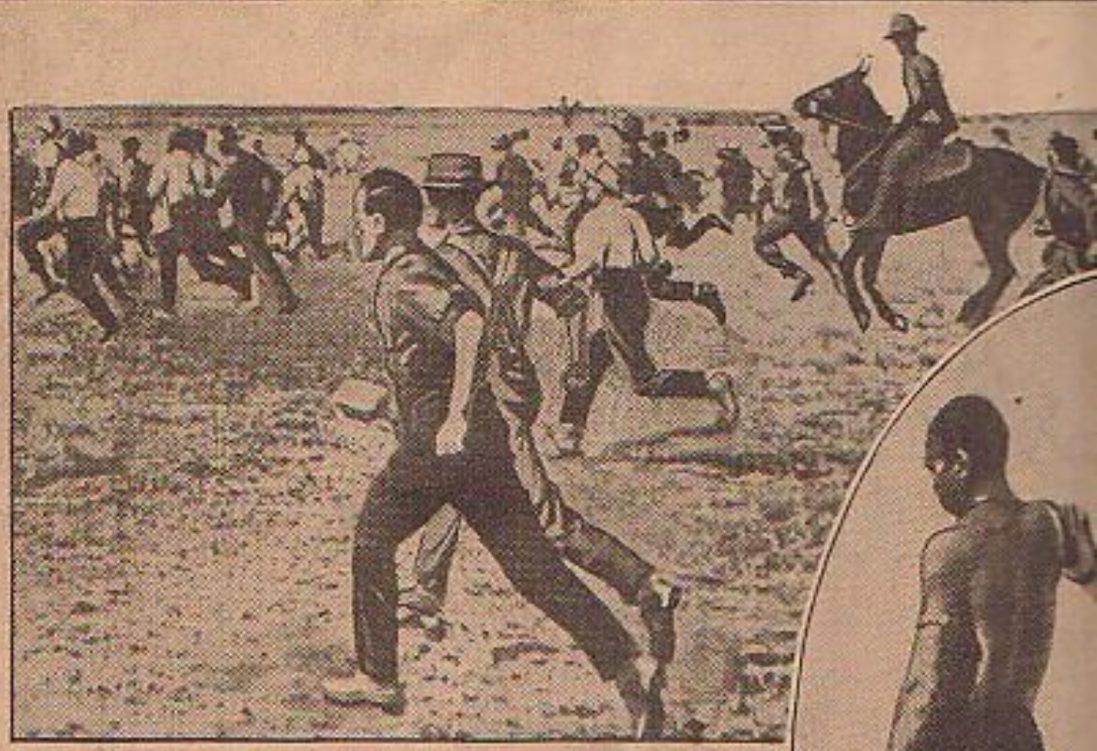
It is not because diamonds are scarce that they are so expensive. There are plenty of diamonds, but they are not allowed to come on the market in large quantities. A little group of monopolists have gained control of the diamond industry, have marked the prices up and, holding back the abundant supply, they feed out to the market only enough stones to keep the prices up.

But recently several entirely new sources of diamond supply have been discovered, and it is doubtful if the diamond monopolists can get control of these new sources of diamonds, which the public hopes will soon flood the market and break the present exorbitant prices of these sparkling jewels.

Most of the diamonds that are now on the market come from the diamond mines in South Africa. The Diamond Syndicate of London controls 95 per cent of the diamonds taken out of these mines. In the last few months diamonds have been found on land not belonging to the syndicate along the streams and rivers and the surrounding country, in the neighborhood of Durban, in Natal and Cape Town, in South Africa. Thirty thousand men, women and children have rushed into these new diamond fields and are digging for gems which are worth all the way from $100 to $1,000 in the rough state in which they unearth them.

And still more recently a new field of diamond deposits forty miles long has been discovered and will be opened to working this week. Twenty thousand eager miners are on the spot waiting the Government signal to stake out their claims.

The newly discovered diamond district is Government land belonging to the Union of South Africa, and natives and settlers are allowed to stake their claims, as in the old days of the gold rushes in California and more recently in Alaska. A special force of 200 police has been mobilized at the Granfontein alluvial field near Lichtenburg, where the eager crowds are assembling from all parts of the Union.



Photograph of the Rush to the Diamond Fields in South Africa to Stake Out Claims.

All the prospectors will be started from a specified point at Friday noon under Government supervision, and the fleetest of foot will be able to peg out the choicest claims. The distance to be covered by the runners, many of whom are professionals hired for the occasion, will be as much as three miles in some instances. One of the professional runners has been promised $2,000 if he pegs a particularly favored spot.

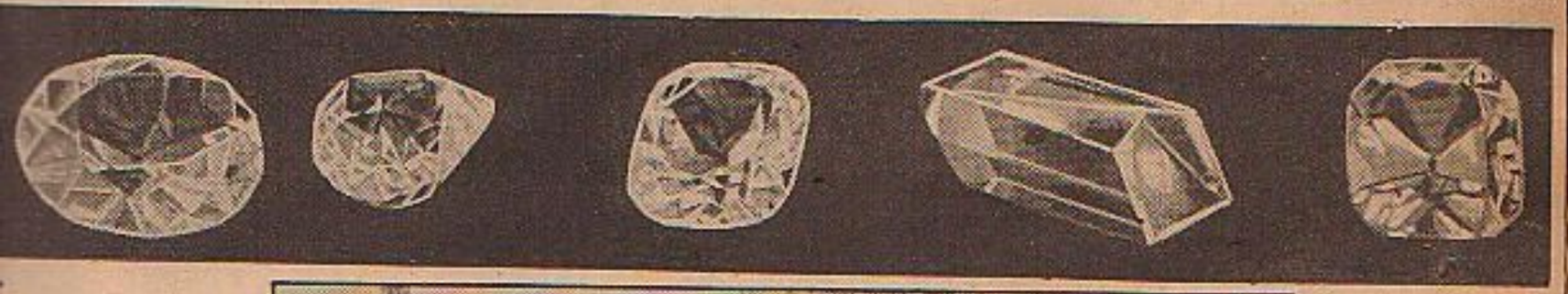
Apart from the reputed richness of the newly discovered diamond field Granfontein bids fair to become the world's record rush for diggers, seizing the last opportunity before the enactment of new legislation prohibiting the present method of pegging claims.

Of course the thing to do, the diamond monopolists concluded, was to buy up these alluvial diamonds, as they are called, and keep them off the market. Agents of the Diamond Syndicate were scattered through the region to open offices and begin to buy in all the diamonds that were offered. But so many thousands of diamonds have been found that the buyers for the syndicate are in despair of cornering this new output, and an appeal has been made to the Government of South Africa to close down the diamond fields.

Native Diamond-Mi
Toes of a Kaffir M

to be Much Cheaper Soon

The Pigott. The Sancy. The Polar Star. The Shah of Persia. The Blue Diamond.



Scene in One of the Great South African Diamond Mines Where the Natives Are Examining the Earth From the Mine for Sparklers.

iamond-Mine Policeman Searching the f a Kaffir Miner for Hidden Diamonds.

nment e dia-

Nobody realized how serious the situation was for the diamond monopolists until Mr. Solomon B. Joel, one of the managing directors of the famous De Beers Mines, made this statement in London recently:

"Something must be done to alter the present situation. The alluvial diggers are actually producing more than the miners. If this continues a collapse in the diamond industry, which provides the South African Government with $15,000,000 of income every year, is sure to come."

Everything will be done by the Diamond Syndicate to try to secure these new alluvial diamonds and keep them off the market. But it is predicted that the supply of alluvial stones will continue to pour in until the buying capacity of the monopolists has been exhausted.

And at almost the same time that the alluvial diamonds were discovered recently in South Africa the news of another great diamond field reached the ears of an interested world. Several thousand acres of diamond-bearing land is reported to have been discovered in South America.

The mining of diamonds is not a complicated or very expensive process, and it does not require highly paid, skilled labor. In the South African mines native Kaffir laborers do most of the work.

The diamonds are found in a blue clay which is brought up out of the mines and spread out on what is called a "weathering floor."

There are often 10,000,000 carloads of blue clay lying out in the sun about Kimberley containing perhaps $25,000,000 worth of diamonds. However, it is no easy matter for the private citizen to help himself to this vast treasure. The weathering fields are watched day and night by armed guards.

From the weathering floors the blue clay is carried to the washing machines, where more cleansing, crushing and sorting goes on. Out of every 100 loads of clay about one load of diamond-bearing gravel is taken. All the gravel obtained in this way is passed through what is known as a pulsator. This is a sort of hopper from which the gravel drops, a small amount at a time, upon a table which has a thick coating of grease under several inches of running water.

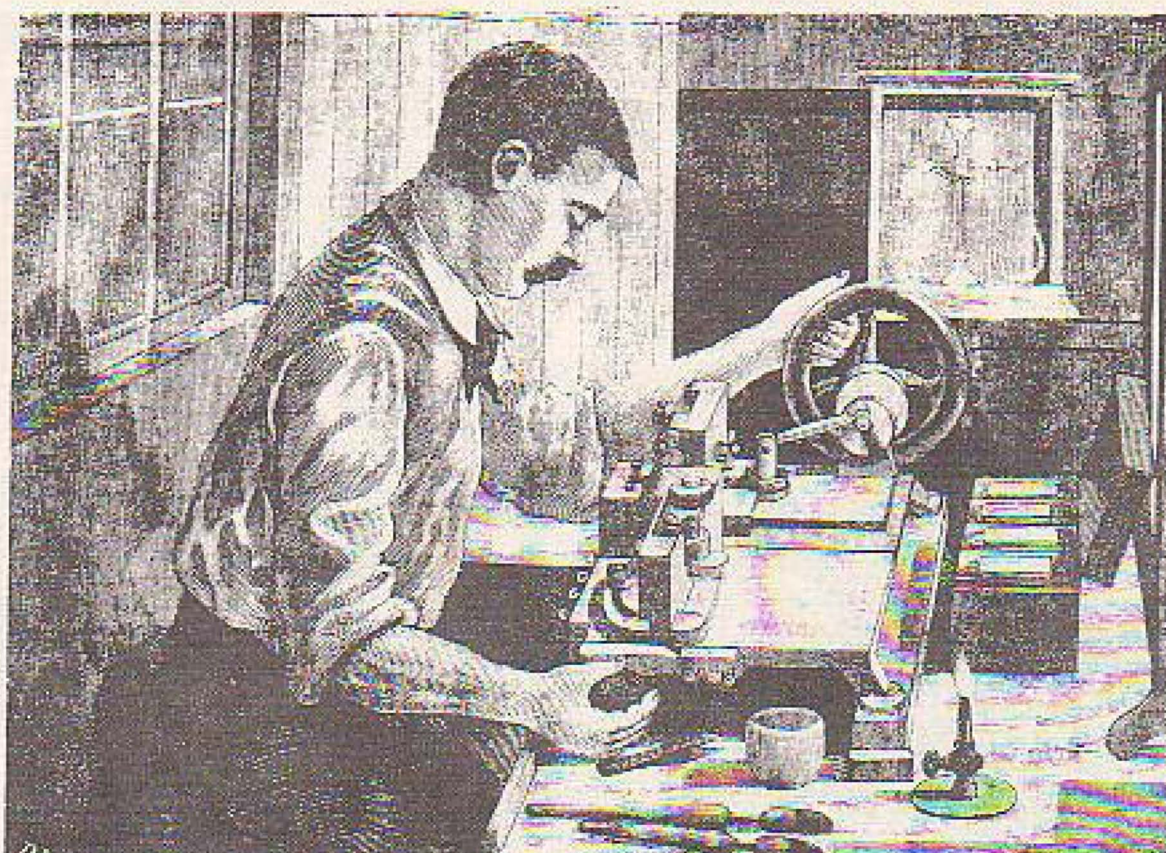
The diamonds being the heavier, drop through the water into the grease, while the gravel is carried away by the flow of water. The gem-laden grease is put into perforated steel buckets and sunk in boiling water. The melted grease floats to the surface and may be poured off, leaving the diamonds.

There is, therefore, no very complicated or expensive machinery, or high cost labor, involved in diamond mining. If the alluvial diamonds from South Africa or the output of the new South American fields get past the clutches of the London Diamond Syndicate, which controls the supply of the prices of diamonds all over the world—the monopoly will be broken and a diamond which now costs $2,000, may perhaps be purchased for $300 or $400, as it used to be. The poor, struggling young man's engagement ring for his bride-to-be will not be such a distressing problem.

(25)

HENRY D. MORSE,
Dealer in
Diamonds and Precious Stones,
156 Washn St Cor Summer
Boston.

Henry D. Morse (1826-1888) was the first man to train American workers to cut diamonds. Before that, all diamond cutting had been done in Holland or in America by Dutch immigrants. Morse could be considered the father of the American diamond cutting trade. Prior to setting up his own business he took leave from his home town of Boston to learn cutting in Holland. Later, he cut in Boston with some Dutch people. Two of his co-workers were Simon and Jacob DeYoung, Mr. Sydney DeYoung's grandfather and father respectively. Mr. Morse started his business in Boston in 1861 with several Dutch workers but slowly began to train American born workers. His shop foreman for twelve years, Mr. Charles M. Field, acquired a patent in Boston on April 4, 1876, for the first diamond cutting machine in the world (shown below with Mr. Field). This machine was introduced to Europe very shortly after.



(26)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Geologic Division
8426 Federal Building
Salt Lake City, Utah 84111

March 9, 1970

Earle H. Barlow, Jewelers
26 West Street
Boston, Massachusetts

Dear Sirs:

For some time I have tried to locate the papers of Henry D. Morse, pioneer diamond cutter of the United States. Replies to my several inquiries to some of his family, The Bostonian Society, and to other sources indicate that your firm is the successor to the old Morse firm, possibly through the firm of Charles Foss. If so, I am hopeful you may still have some of the old ledgers, account books, or correspondence of the Morse firm. If not, is there any record of the disposition of such records, or do you have any suggestions where I can make further inquiry regarding them?

If such records are yet to be found, they could help fill a gap in the history of the founding and development of the diamond cutting industry in this country. It seems almost ironic that, in spite of Morse's pioneer work and outstanding reputation, there is practically no public record of his firm's transactions. Any assistance you can give me in finding such records will be greatly appreciated.

Sincerely yours,

Lowell S. Hilpert
Research Geologist

Dear Mr. Hilpert:

Your letter (sent to Boston)has reached me here in Florida(where I spend my winters)having retired some time ago.

In answer to your question - I do have the nearly complete records-books-dorps-gages -etc. of the Henry D. Morse Diamond Cutting Works in Roxbury, Mass. Also his Day Book and Press. There is also a picture of Mr. Morse which was in the office of Morse & Foss when I first came(from Fifth Ave.N.Y.) to work for Charles W. Foss. in 1919. I purchased his business in 1940 and retired in 1961

Mr. Morse's grandchildren(The Channing family) of Wellesley ans Sherborn, Mass. have been customers and friends for a long time(in fact most of them have passed on)(time flies).

At one time Mr. Henry M. Channing had thought that it would be suitable to try Old Strubridge Village after all it belongs here in New England.

Would you like to write me again and let me know what your plans would be regarding it and what you would do with it is of importance to me. At the present time it is stored in New England.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

~~FEDERAL CENTER, DENVER, COLORADO 80225~~

8426 Federal Bldg.,
Salt Lake City, Utah 84111

May 27, 1970

Mr. Earle H. Barlow
216 Normandy Avenue
P. O. Box 2085
New Smyrna Beach, Florida 32069

Dear Mr. Barlow:

Since writing you in late March I have been advised that any information you desire regarding policies on the acquisition of private collections by the Library of Congress and the Smithsonian Institution can be obtained from the following individuals:

Dr. Philip W. Bishop, Chairman
Department of Crafts and Manufactures
Museum of History and Technology
Smithsonian Institution
Washington, D. C. 20560

Dr. Roy P. Basler, Chief
Manuscript Division
Library of Congress
Washington, D. C. 20540

Some time when convenient, I would be pleased to hear from you whether the Morse materials include any business correspondence or journal entries that pertain to the 1870-72 period of his firm's operations. Also, if you could send me an inventory of the items in the collection, I might be able to give you more references on museums that might be interested in the collection.

Sincerely yours,

Lowell S. Hilpert

Lowell S. Hilpert
Research Geologist

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Rocky Mountain Mineral Resources Branch
8426 Federal Building
Salt Lake City, Utah 84111

March 31, 1970

Mr. Earle H. Barlow
216 Normandy Avenue
P. O. Box 2085
New Smyrna Beach, Florida 32069

Dear Mr. Barlow:

Your letter of March 23 regarding the Henry D. Morse materials came to me as a pleasant surprise. Presumably my letter of March 9, addressed to 26 West Street, Boston, was forwarded to you.

My immediate concern is to develop an account of Morse's part in the establishment of the diamond cutting industry in the United States which I hope to include as background material for an official report on the natural occurrence of diamonds in this country. I also hope to develop information on the better known native stones, such as the Dewey diamond, which Morse cut, and possibly trace some of the information that might remain about some of the stones that were used in the notorious diamond swindle of 1872. Some of the latter were sent to Morse for cutting by Samuel L. M. Barlow (a prominent New York attorney) in early November 1871. Some had been cut prior to November 24 and the rest probably were cut before mid-December of that year. Do Morse's books identify such transactions? What is the nature of the books? Do they contain journal entries, are they account books, or do any of them contain correspondence? Are they inclusive for the life of the firm, or do they pertain to some specific periods?

He said Sam L M Barlow was a customer of HDM Summered at [illegible] in Gloucester Mass. also had a Villa in Europe

Morse's materials will likely be of interest to a number of archivists, particularly in the Boston area and, possibly, at the national level. They do not seem to be items that the U. S. Geological Survey could justify acquiring, but seem to be more suitable for such institutions as the Congressional Library, the National Museum, and the Smithsonian Institution. Answers to some of my questions would help in making any specific referrals to these designated national institutions. In any event, I will be pleased to hear from you and will be glad to assist in any referrals you may desire.

Sincerely yours,

Lowell S. Hilpert

Lowell S. Hilpert
Research Geologist

Henry M. Channing • South Street • Sherborn, Massachusetts

(Natick) OLympic 3-4523
Bus. OLympic 3-0294

June 12, 1962

Earle H. Barlow, Esq.
31 West Street
Boston, Massachusetts

Dear Mr. Barlow:

It was rather nostalgic to have your formal notification of June 1 to the effect that Morse, Foss and Barlow have finally vacated the old quarters at 120 Tremont Street. It was a surprise to me to read that you had arrived at the retiring point where you have no excuse for not dropping in on me at Little Pond, where I am nearly all the time, day and night. I shall look for you.

Also, should you have any memorabilia relating to my grandfather, Henry D. Morse, I shall appreciate it, - even to the diamond cutting tools, which I would offer to a museum.

Recently, my daughter, who lives in Southampton, Long Island, saw a picture by Mr. Morse of a deer, which used to hand in our hall in Manchester. It was acquired by Mrs. Markoe who gave it to the beautiful Art Museum which she gave to the Town of Southampton.

Some time ago, I suggested to Old Sturbridge Village that they establish a memorial for the manufacture of jewelry and the work of engraving, such as was done by Henry Morse and by his father, Hazen Morse, in the early part of the last century. So far, I have heard nothing from them and am on the point of sending them an addition to my letter.

I hope that your retirement does not mean that your health has deserted you.

Very sincerely,

Hy Channing

HMC:B

Henry M. Channing - South Street - Sherborn, Massachusetts

(Natick) OLympic 3-4523
Bos. OLympic 5-0294

May 27, 1960

Mr. Earle H. Barlow
120 Tremont Street
Boston, Massachusetts

Dear Mr. Barlow:

You have been named one of the appraisers of the estate of my sister, Barbara Channing Gregg, who died recently; and the real reason for naming you was that you seemed to be the appropriate person to examine and value the ring my sister had, which contained the four diamonds cut by Mr. Morse for his wife and daughters.

I will take this ring in to you at the first opportunity.

Very truly yours,

HMC:B

Henry M. Channing · South Street · Sherborn, Massachusetts

(Natick) OLympic 3-4233
Bos. OLympic 5-0294

June 14, 1960

Mr. Earle H. Barlow
120 Tremont Street
Boston, Massachusetts

Dear Mr. Barlow:

Many thanks for your prompt action in the appraisal of the Morse diamond ring which belonged to my sister Barbara Gregg.

Will you please ship it, insured, to my sister:

Mrs. Robert W. Rivers
200 Miramar Avenue
Santa Barbara, California

sending along receipt for her signature - form of which I enclose.

Sincerely yours,

Henry

HMC:B
Enc.

WELLESLEY HILLS
MAY 11
10 AM
1949
MASS.

UNITED STATES POSTAGE
3 CENTS 3

Mr. Earl H. Barber.
120 Tremont St.
Boston,
Mass.

THE RANCH
201 GREAT PLAIN AVENUE
WELLESLEY 81, MASSACHUSETTS

WELLESLEY 0057 M

Dear Mr. Barber.

My ring safely arrived & thanks for the repairs and also for being kind to my sister-in-law Miss Margery Gregg, who knew nothing about my more antecedents & the jewelry cleverness of my grandfather & Mr. Foss.

I mean to get my ring into you every year. Once somewhat

years ago I ~~fell~~, not hurting my self at all, but the ring was cut from my finger & fell from my finger! that was probably when the stamp was redeemed! Now I can feel safe to enjoy it.

Thank you for everything.

sincerely yours

Barbara Channing Trogg.

Mon. 9th May. 1949.

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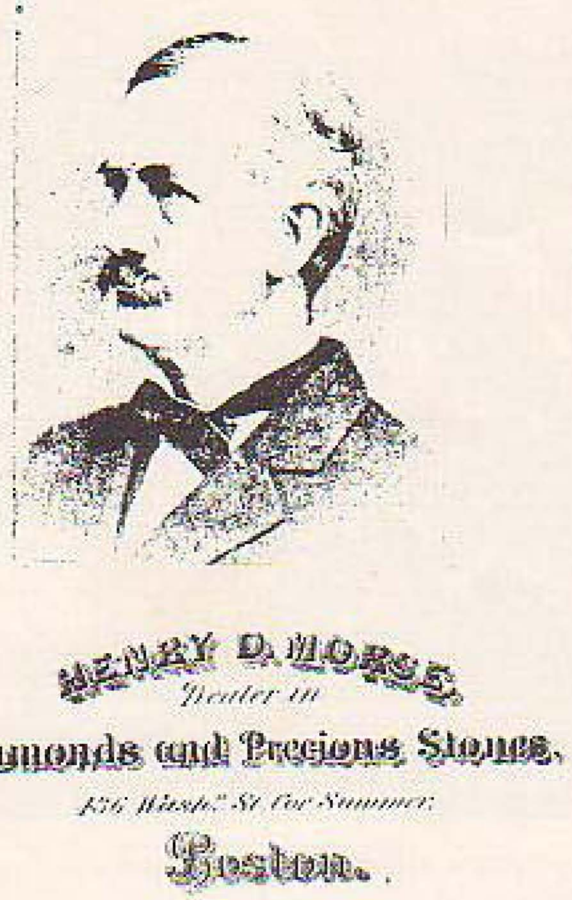
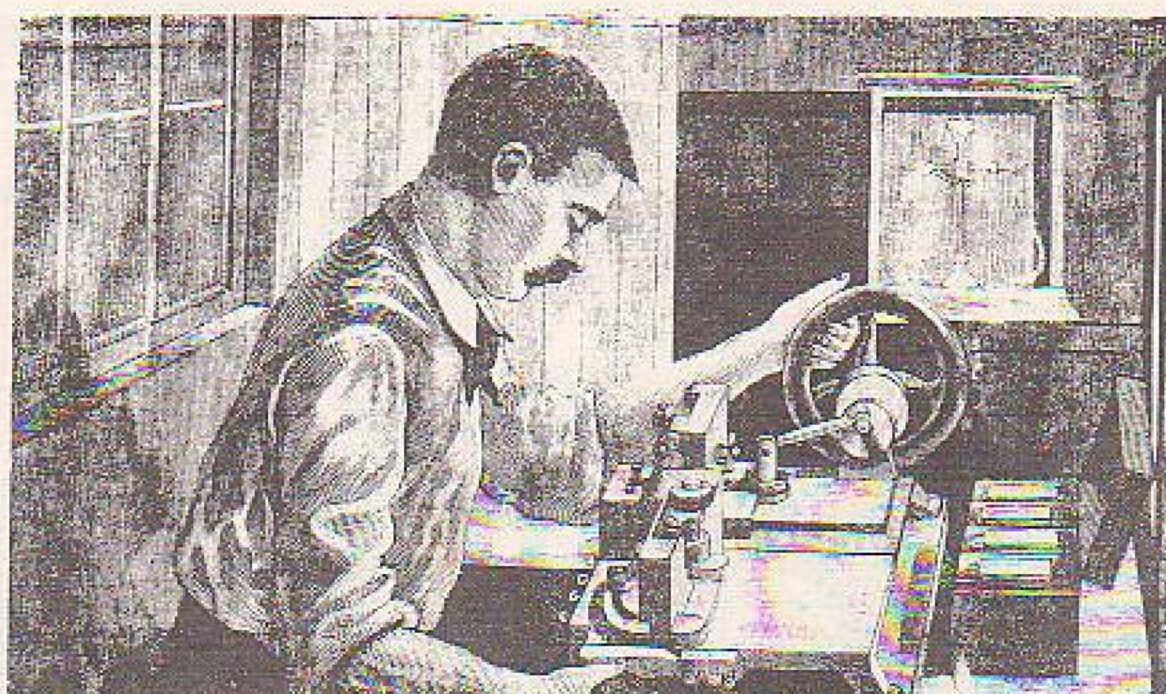


Henry D. Morse (1826-1888) was the first man to train American workers to cut diamonds. Before that, all diamond cutting had been done in Holland or in America by Dutch immigrants. Morse could be considered the father of the American diamond cutting trade. Prior to setting up his own business he took leave from his home town of Boston to learn cutting in Holland. Later, he cut in Boston with some Dutch people. Two of his co-workers were Simon and Jacob DeYoung, Mr. Sydney DeYoung's grandfather and father respectively. Mr. Morse started his business in Boston in 1861 with several Dutch workers but slowly began to train American born workers. His shop foreman for twelve years, Mr. Charles M. Field, acquired a patent in Boston on April 4, 1876, for the first diamond cutting machine in the world (shown below with Mr. Field). This machine was introduced to Europe very shortly after.



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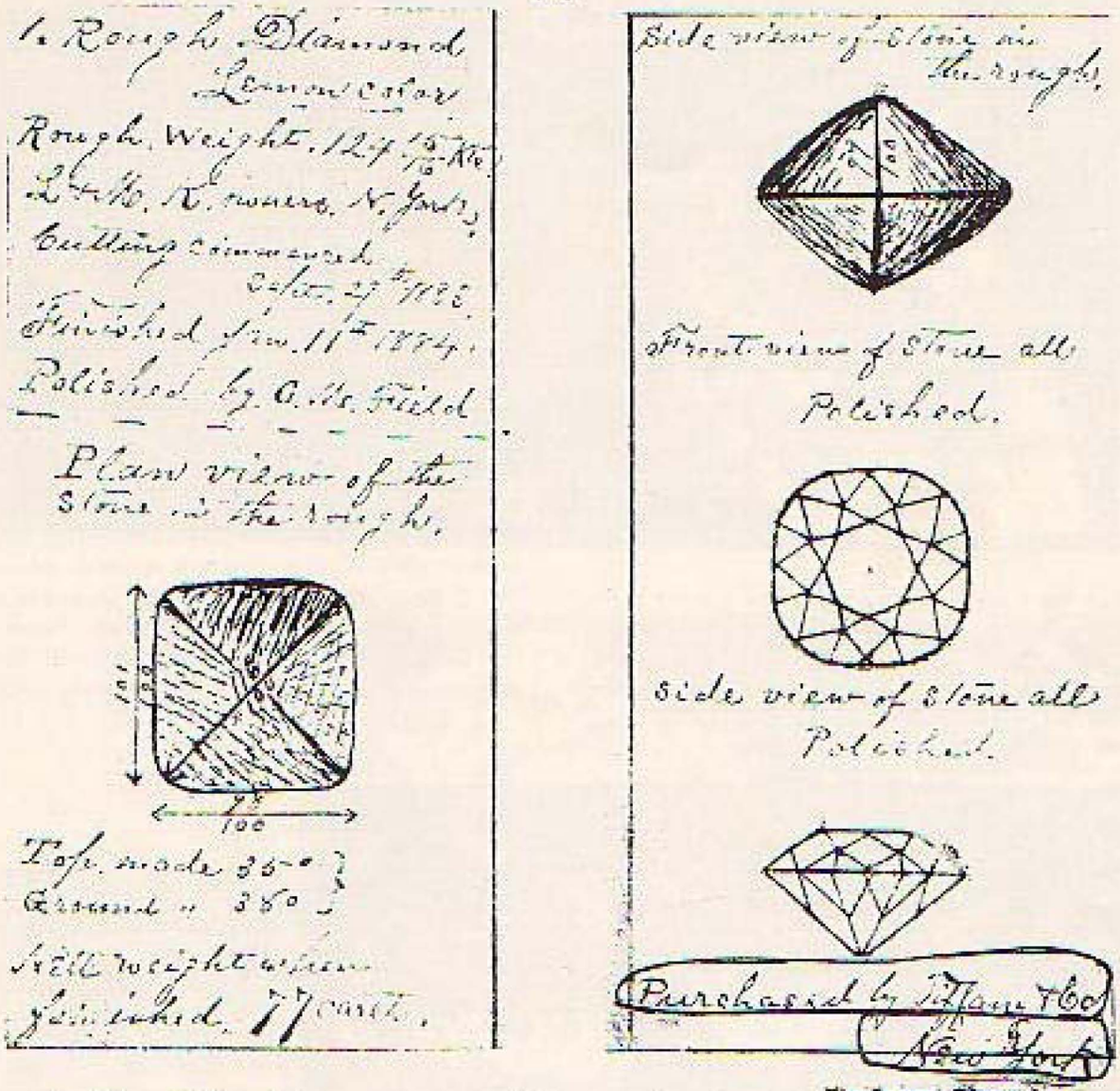


The Largest Diamond.

ever cut in America has just been finished by Mr. Henry D. Morse of 486 Washington street, this city, for New York parties. It is of the South African species, and when put into Mr. Morse's hands rough its weight was 125 carats. His estimate of loss in cutting brought the jewel down to sixty-two carats, but by skilful handling in the process under his personal care the stone has been made to weigh seventy-seven carats. Though not a white diamond, the artistic cutting of the facets gives it a high degree of luminosity. It is double the weight of the largest finished stone ever cut on this continent, and is but twenty-eight carats smaller than the famous Kohinoor. It has been given a high polish by Mr. C. M. Field, Mr. Morse's foreman, whose patience in the tedious finishing process is highly creditable to him. The perfection which the art has reached in this country is principally due to the study care and judgment of Mr. Morse.

The Henry D. Morse Company was constantly concerned with the development of their firm by the use of new instruments and ideas. Morse and Field worked together to devise a method for cutting diamonds at new angles to produce a more brilliant stone. Some thirty years later, Mr. Marcel Tolkowsky carried on with their work to come up with the American cut or Ideal cut by producing, by formula, the exact proportions necessary. The Morse Company was interested in appropriating a large stone to prove their ability to cut outside of Amsterdam. The DeYoungs were instrumental in arranging for the Morse Company to receive a rough diamond of 125 carats. Mr. C. Field of the Morse Company did the cutting, and the stone was very successful in bringing much notoriety to the firm and to the idea of American diamond cutting. Copied above are the sketches and notes of the original workings of Mr. Field which are contained in our library. The diamond was completed at 77 carats and was the largest diamond cut in America up to that time and for several years thereafter.

HENRY D. MORSE & CHAS. M. FOSS,

DEALERS IN

DIAMONDS

AND OTHER GEMS

PHILLIPS BUILDING,
Rooms 18 and 19.

120 TREMONT ST.

BOSTON.

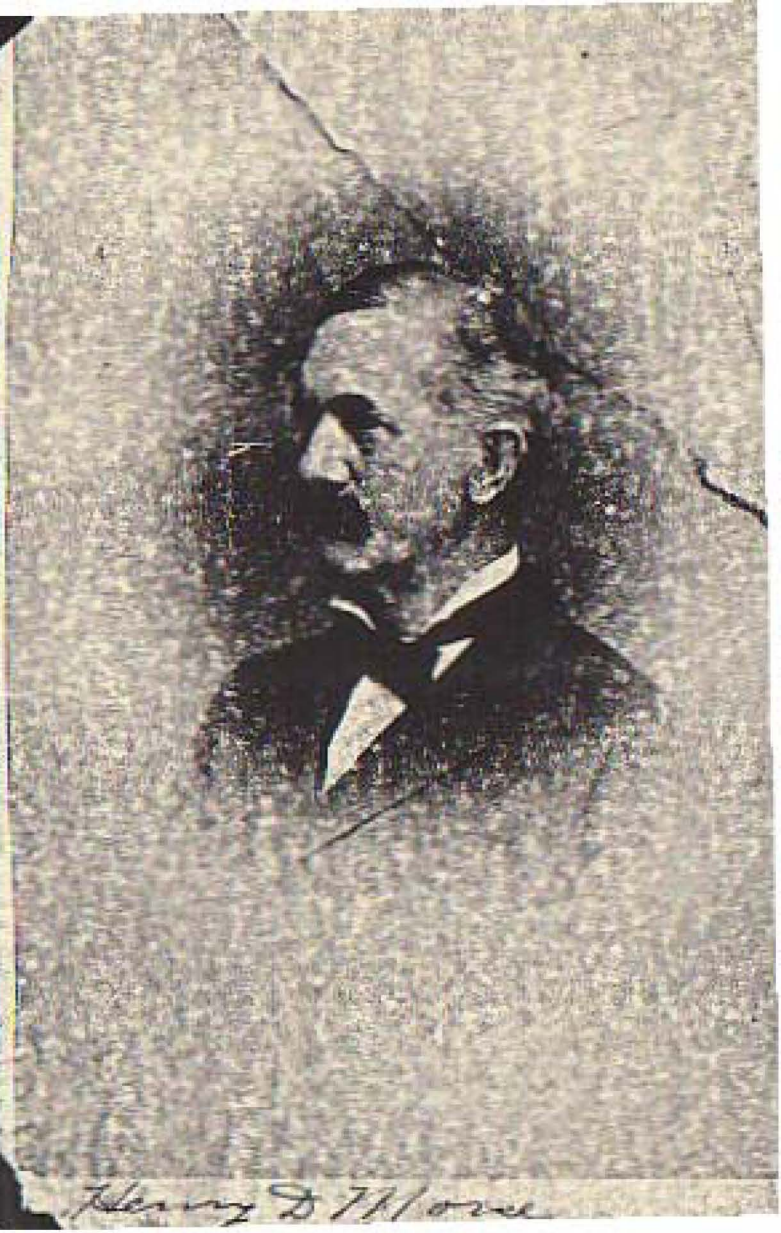
Henry Morse whose advanced ideas of Diamond Cutting in 1870 influenced the change in cutting proportions from the Dutch to the American cut-- and are todays proportions for Diamond Cutting

Henry Morse's Diamond Cutting Shop.

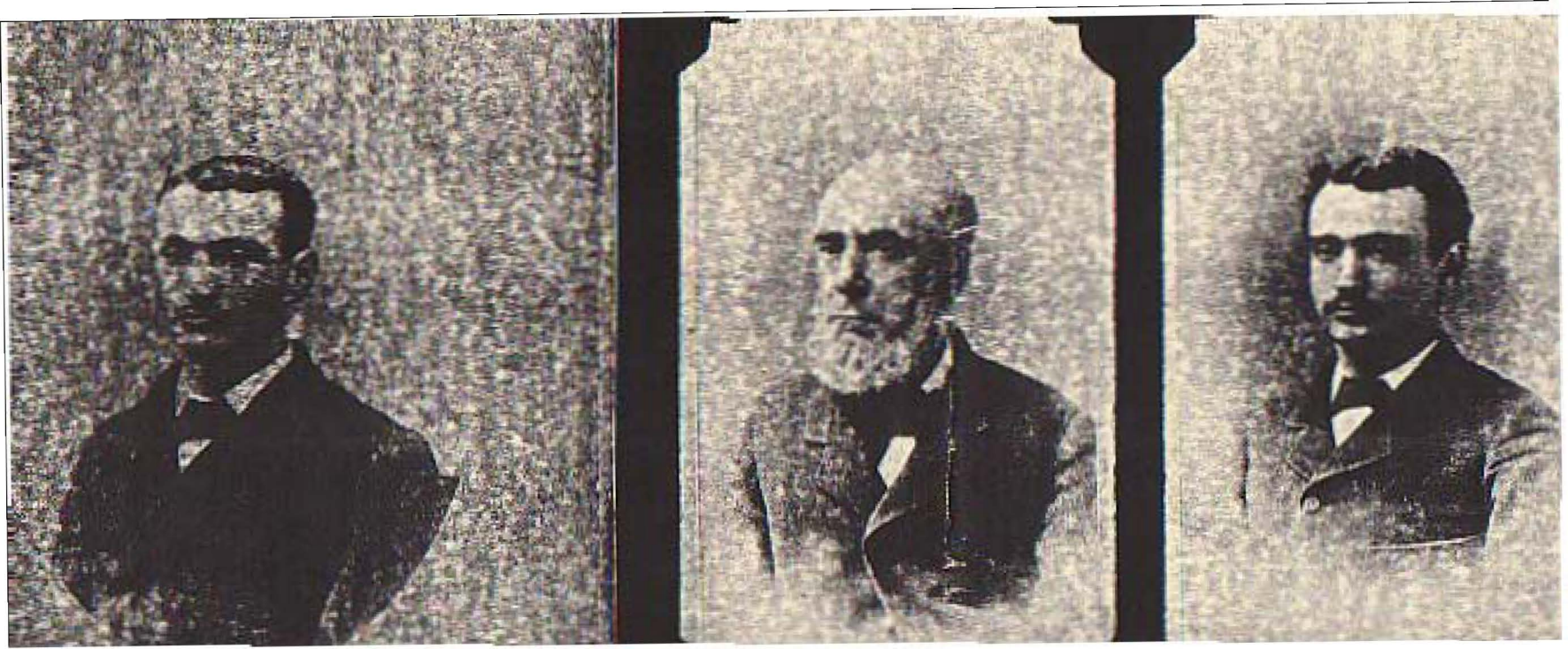
The first diamond cutting establishment in this country.

Warren

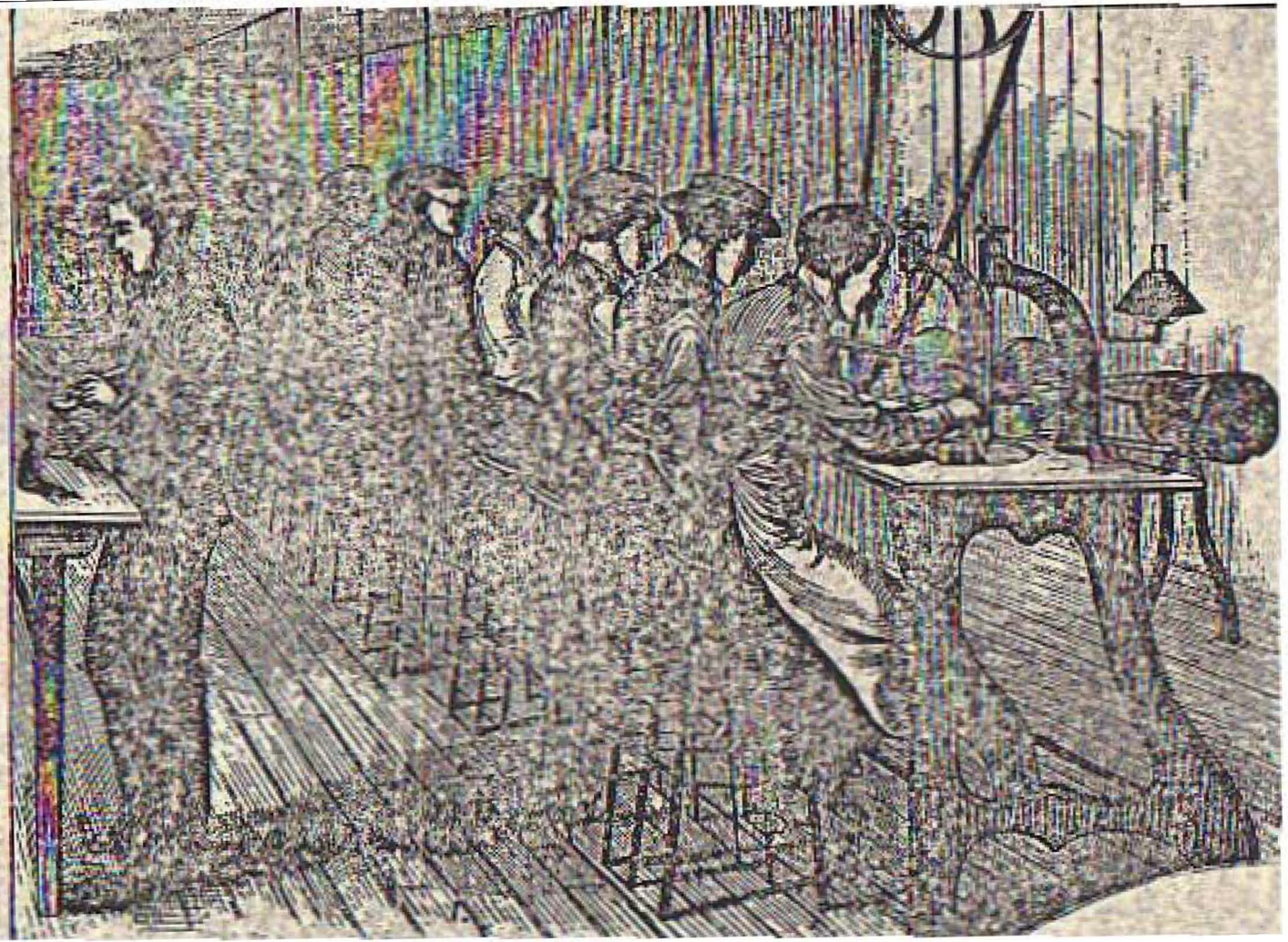
41 WINTER ST., BOSTON



Henry D. Thoreau



Henry D. Morse, a Boston jeweler, was convinced that he could cut a better diamond. He formed the first American diamond-cutting firm in 1860 and did just that. His exacting designs, stressing proportion, revolutionized taste in gem cuts. His technological ingenuity transformed the industry. Among the old-world craftsmen first employed by Morse were Simon and Jacob De Young, the former pictured here as an apprentice.



Boston

In consideration of an agreement of the Morse Diamond cutting Co. to instruct me in the art of Diamond Polishing, I hereby agree to give to them my services for a term of five years from date, working diligently and faithfully nine hours per day, excepting Legal Holidays, and two weeks during the Summer months for a vacation, They agreeing to pay me four dollars per week for the first year, five for the second, six for the third, seven for the fourth, and eight for the fifth year, they also further agree to reward me, (provided, I carry out this agreement in full to the end of the fifth year) in a sum which shall be equal to one dollar per karat for every karat of diamonds which I shall polish in a workmanlike manner, after first polishing enough at $2.25 the karat to equal the amt paid in cash as above agreed upon, and it is also agreed that no part of the above reward can be drawn or claimed under any circumstances before the expiration of the five years above mentioned, nor will the reward or any part of it be paid unless this agreement on my part be fulfilled.

H. Morse Co
Workers Contract
1878

Boston

In consideration of an agreement of the Morse Diamond cutting Co., to instruct me in the art of Diamond Polishing, I hereby, agree to give to them my services for a term of five years from date, working diligently and faithfully nine hours per day, excepting legal Holidays, and two weeks during the summer months for a vacation, They agreeing to pay me four dollars per week for the first year, five for the second, six for the third, seven for the fourth , and eight for the fifth year, they also further agree to reward me, provided I carry out this agreement in full to the en d of the fifth year) in a sum which shall be agreed to one dollar per karat for every darat of diamonds which I shall polish in a workmanlike manner, after first polishing enough at $2.25 per karat to equal the amount paid in cash as above agreed upon, and it is also agreed that no part of the above record can be drawn or claimed under any circumstance before the expiration of the five years above mentioned, not will the reward or any part of it be paid unless this agreement on my part be fulfilled.

Boston Mar 16th 1878.

Mr Harrington

Dear Sir

Your rec'd with ck rec'd also acct &c. Mr Peck says that B.C. & Holts acc does not balance on his books — The book he will send on Monday, he has been busy on his stock and had not time to send it —

Mr Perry says he will procure those two books and send them to you — I don't think I can [illegible] any [illegible] at present [illegible] money in stock —

Yours truly,

Henry D. Morse.

March 1. 1878.

Schedule of Property of Morse Diamond Company.

Cut Diamonds about 775 Kts	75.000.
Rough Dia. & Bort	1.000.
Machinery, Safes & furn. in N.Y.	2,500.
Colored Stones, settings &c	1.500.
Accounts Receivable	10.000.
Cash	2.000.
	92.000.
Less amount due Kidder, Peabody & Co.	18.000
	74.000

Subject to interest of H. D. Morse.

Henry D. Morse.

New Diamond Cutting Works in New York.

The organization of a diamond cutting and polishing establishment at 29 and 31 Gold St., and of an annex at 33 to 43 Gold St., by Stern Brothers & Co., marks

quires judgment and long experience. The rough stone is imbedded in cement and a dull-edged diamond is rubbed across its surface, so as to leave an indentation that determines the line to cleavage. The operation is then repeated with a diamond having a slightly sharper edge, and finally with one as keen as a

particular section to remain exposed. As soon as the lead has hardened, the pol-

cutting industry of this country. The object of the new enterprise is to establish on this side of the water an extensive and thoroughly equipped factory on a larger scale than ever attempted before in this country, for handling rough and

ONE OF THE CLEAVERS.

passing it through all its various stages until it appears as a finished article ready for the market. The establishment is provided with steam power and is as complete in every sense as any to be found in Amsterdam or elsewhere.

The first operation the rough diamond undergoes is called splitting or cleaving. This is necessary in order to derive the best results for commercial purposes. The process consists first in determining the proper plan and direction for dividing the stone into parts, a proceeding that re-razor. A marked depression is thus made, into which a sharp steel knife is inserted. A quick and light blow divides the same into two parts. The accompanying illustration shows the cleaver about to deliver the blow.

The next process is known as that of cutting—an operation during which the stone is given its general form. In this department the new factory contains a feature of peculiar interest. It possesses a machine never before used in America and only recently adopted by a few of the largest establishments in Europe. Instead of following the old method of rubbing two stones together by hand, the stone undergoing treatment is inserted in the chuck of a lathe revolving at a high rate of speed, and is placed in contact with another diamond that is likewise fastened in an adjustable chuck held in the hand of the operator. In the course of this operation the stone receives its form and outline. This process, which is also illustrated, secures a much better result than could be obtained by the old method. The powder which results from the stones rubbing against each other is used later in polishing.

The stone is then ready for the polisher. He must first determine the character he will give the diamond, and select the method of working on it. To prepare the stone, he has an assistant, technically known as a setter. The latter, having received instructions, inserts the stone in a conical mass of molten lead, allowing a

ONE OF THE CUTTERS.

isher places the stone upon his wheel, which rotates at the rate of 2,300 revolutions per minute. The illustration shows

ONE OF THE SETTERS

the polisher at work. He is in the act of examining one of the four stones which are constantly kept in contact with the wheel. Each setter has from five to six polishers to supply, and as each polisher has at least four diamonds in work at a time, the setter has fully twenty different stones to keep in settings. It is his duty not only to set each stone to the best advantage, but also to return it to the proper polisher. As the position of each diamond is changed in the setting from twenty-five to thirty times, an idea of the number of operations required before the stone is properly faceted may be acquired. Having arrived at a certain stage, the stone is sent back to the cutter to remove sharp edges or irregularities that may have arisen during the process of polishing. At his hands, also, the stone receives its perfectly rounded form,

A Company Lease Mexican Pearl Fisheries.

SINALOA, MEX., Jan. 28.—The California Pearl Fishing Co. have leased from the Mexican Government for sixteen years the pearl fisheries comprised between the mouth of the Colorado River and Cape San Lucas, on the east coast of Lower California, and between the port of Mazatlan and the Barra de Suchiate, on the Pacific coast of the mainland, with the exception of the Ensenada de Chamela fisheries.

The consideration is the payment by the company of $10 per ton of pearl oysters obtained in the first three years, and $12 per ton during the remaining thirteen years.

One Thief Smashed the Window while the Other Held up the Clerk.

SACRAMENTO, Cal., Feb. 1.—A daring robbery occurred here last evening. A clerk in H. Wachhorst's jewelry store heard one of the plate glass windows crash, and on looking up saw a man in the door covering him with a pistol. At the same instant he saw another man reach into the show window and grab two trays of fine diamonds, when both men dashed off up the street.

The proprietor of the store was at supper up-stairs and the clerk dared not leave the window exposed, as it contained several thousand dollars worth of jewelry, watches, etc. Max Amberg, across the street, saw ing him. The men ran around a corner and 150 feet more brought them to a dark alley in the rear of Chinatown, into which they ran. They both wore false beards and it would be difficult to identify them. The diamonds stolen are valued at from $5,000 to $8,000, being the largest and finest in the store.

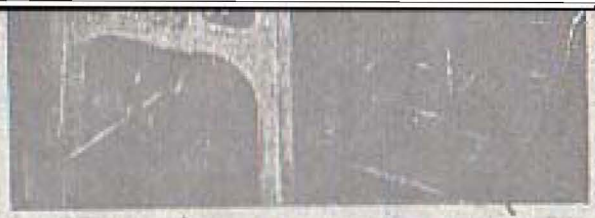
A Philadelphia Jeweler Held, Charged with Receiving Stolen Jewelry.

PHILADELPHIA, Pa., Feb. 6.—George W. Habicht, 132 S. 8th St., has been held in $2,000 bail on the charge of purchasing jewelry known to have been stolen. The alleged thief was George Goodman, who was placed under similar bonds.

Habicht was informed upon by William H. Garson, an employe, and John Bartlett, a fellow jeweler, at 8th and South Sts. Testimony was offered to the effect that the jewelry, part of which was the proceeds of a robbery from the residence of Director of Public Safety Berth, had been melted down, and consequently could not be identified.

Kansas City.

The stock of the Hart Jewelry Co. is being sold at public auction at 915 Main St. The company will move to a large store building [illegible] Main St.



ONE OF THE POLISHERS.

after which it is returned to the polisher, who gives it its finishing touches. It is interesting to note that a given parcel of rough goods is kept intact throughout the entire process, the product being retained as one parcel. It may start at 1,000 karats of rough goods and go through all the various operations until it appears as a parcel of gems weighing perhaps no more than 350 karats, varying in size and quality, but all derived from the original parcel. All the various departments of the establishment are in active operation, and in the near future, it is expected, will employ over 100 men. The present force includes both foreign and American workmen. The foreigners are all Hollanders of long experience in Amsterdam establishments. It has been necessary to secure the very best class of artisans, as the American market demands the finest quality of workmanship. The establishment is now fairly under way, and all indications point to a successful execution of the plan of establishing on an extensive scale the cutting and polishing of diamonds in this city.—*Jewelers' Weekly*, January 18, 1883.

the window broken and ran into the street shouting, "Stop thief!" One of the men turned and took a shot at him, barely miss-

Frank F. Lewis, a silversmith of Lebo, Kan., was one of the bandits who robbed Mrs. Jennie Fisher's bank in Waverly, Kan., Jan. 27. During the raid a citizen was killed and Lewis is now in jail charged with murder and robbery.

Harry B. Carswell has severed his connection with Cady & Olmstead and Kersey L. Mills, who has long been with the firm has taken his position as head of the watch-repairing department. Mr. Carswell will probably open a jewelry store in Kansas City.

The Jaccard Watch & Jewelry Co. have leased the whole second floor of the building 101 Walnut St., and have opened offices and an engraving room. New engraving presses have been bought and a dozen people are now employed. The insurance has been satisfactorily adjusted and the company are now looking for a location for a retail store, when business will at once be resumed. Superintendent Pelletier of the insurance patrol is clearing away the debris from the scene of the fire and is finding considerable salvage.

CUPID FIN DE SIECLE.

'TIS sung in ancient minstrelsy
How conquering Love of old
Bound heart to heart enduringly
With chains of shining gold.

Still poetsing the Love god's praise
And tell his power; but pshaw!
All know that in these latter days
His chains are made of straw.

—*Vogue.*

May 1981

Two important organizations in the American diamond trade celebrate . . .

50 Years of Progress

HISTORICALLY speaking 1981 is an important year to the American diamond industry because it marks the 50th anniversary of two important organizations. For both the Diamond Dealers Club and the Diamond Manufacturers and Importers Assn. of America were founded in 1931.

A third organization which celebrates its 40th anniversary this year because it was founded in 1941 is the Diamond Trade Assn. which is essentially a trading club also. Its original membership was made up of refugees who found their way to America at the time that Hitler marched into the Low Countries of Europe.

The threat of foreign competition as posed by the disappearance of a tariff on diamonds as of Jan. 1, 1981, brought the three organizations together in 1980 in an unprecedented show of unity. It resulted in a campaign to convince the American jeweler of the advantages of buying from Americans. (See MODERN JEWELER, editorial "The American Advantage," September 1980, page 51)

At that time Ira Wexner, counsel for the importers and manufacturers association said, "Since most rough diamonds come from the same source, it is unsurpassed quality, workmanship and variety of diamonds available in the U.S. that has drawn foreign buyers from Europe and the Far East to America."

He said that indicative of the growth of America's diamond industry since World War II is that one-third of all rough diamonds sold worldwide in 1979 came to the U.S. for cutting. Moreover, U.S. Department of Commerce figures indicate that in 1979 the American diamond industry exported over $600 million in polished diamonds to such overseas distribution centers as Belgium, Israel and the Far East.

Actually, the foreign threat as visualized has not materialized. But it has given the American diamond industry cause and an opportunity to evaluate the breadth of its merchandise and service and the depth of its skill and know-how—advantages it has to offer not only the American jeweler, but also the rest of the world.

Actually diamond cutting as a trade was existent in the United States in the late 19th century. A Bostonian named Henry D. Morse is credited with being the father of the American diamond industry. He was an outstanding man in that he approached diamond cutting from a scientific standpoint. He invented a girdling machine about 1885. The best American cutters of the time were usually trained by him.

Morse had a strong artistic sense. In fact, he considered diamond cutting to be an art rather than a trade. He gave great impetus to cutting both at home and abroad. It is said that the American diamond industry owes its tradition of fine craftsmanship to him.

By 1890 there were some 12 shops known to exist in the U.S. They employed about 120 men who earned from $20 to $50 a week. In 1892 two enterprising gentlemen named Jack Kryn and Henry Wonters decided to import labor from Europe to the U.S. It wasn't easy because immigration laws at the time were extremely restrictive—particularly in regard to labor.

But about a hundred cutters were brought to the U.S. as artists. They set up shop in Brooklyn. Soon many others were to follow and the American industry expanded rapidly. By 1907 there were estimated to be 300 cutters in the U.S. earning from $45 to $65 for a five and a half day, 44-hour week.

The 20th century was bringing many changes. Electricity was introduced as a driving power and a mechanical device replaced the lead dop. A new spindleless polishing table was fast gaining popularity. The method was a welcome substitute for the antiquated pock-wood bearings which had been used for centuries.

At the beginning of World War I American cutters closed their doors because the Diamond Trading Co. suspended sales of rough and banking regulations restricted normal business. But after six months the diamond business revived and began to boom.

Tremendous demand for diamonds caused prices to rise. Wages skyrocketed reaching $125 to $200 for a 40-hour week. Many European cutters moved to the U.S. causing America to become for the first time an important diamond cutting center.

The immediate postwar years were prosperous. Then in late 1920 a new crisis developed and employment dropped sharply. By 1923 the industry resumed but smaller shops became the rule even though a few large shops continued. All in all, the size of the industry was greatly reduced.

At the time of the Wall Street crash in 1929 there were about 45 shops in existence. Many thought the industry would never survive. In 1934 out of 260 union members only 16 were employed. By 1935 some

(Continued on page D-57)

maybe wrong because we also treat by radiation. Radiation is entirely different because it changes color. Radiation cannot be tested or seen with a loupe. But the expert can easily detect laser treatment. Radiation has to be seen with a spectroscope.

MJ: Then you really think it is a new area that the jeweler needs to be aware of? The G.I.A. says that it should be revealed if a stone is laser treated.

VERSTANDIG: You mean the FTC. The FTC came out with a ruling that a laser-treated stone or a laser-drilled stone should be revealed. As a protection for the retailer to fail to do so is not an unfair trade practice.

You see, we do not have enough material. Diamonds are scarce. They are a product of nature and eventually they will peter out. Many mines have had to be closed because there was not enough production to be profitable. It is even forecast that within 60 years certain mines will be dried up completely. We must make available whatever material we have for jewelry because the jewelry is here to stay. It's why we're lucky to find this laser process. Actually, the retailer is the one who is gaining an advantage.

MJ: We were talking about the goods that are available in America as separate from the rest of the world.

VERSTANDIG: New York and Puerto Rico, the major U.S. cutting centers, polish stones from 20 pointers up. I don't say you won't find smaller stones, but it's rare. Usually we polish from 20 pointers up to large stones. Remarkably—and I say this humbly but with pride . . . we have become the finest cutting center in the world. The presence of foreign buyers from the world over testifies to this. People even send stones from Europe to be cut here. Our cutters have the knowledge and technical know-how, and experience to perform better.

Now while we may only count roughly 2,000 cutters between the two centers, I daresay that our cutting capacity in dollars and cents surpass by 50 per cent the cutting capacity of the rest of the world.

MJ: You make good points for your industry and the organization you head. Thank you for sharing your thoughts with our readers. #

50 Years

(Continued from page D-6)

activities were renewed but still on a limited scale.

It was in 1931 in severe economic times that 30 diamond manufacturers in America decided to unite and fight for the good and safety of themselves and the diamond industry in order to survive the evils of the depression. A charter was drawn up and signed by Al Abrams as president, Jonas Walvish as secretary and Simon Barend as treasurer.

Chaotic labor conditions prevailed throughout the diamond cutting centers of the world. The UDMA formulated methods and regulations to compete and survive. In cooperation with the Diamond Workers Protective Union of America an agreement was made to keep the American industry active throughout the bad depression years. Safeguards were formulated against continuous losses of merchandise by irresponsible merchants and brokers. It resulted in members being the least affected in cases of loss. In fact, with the help of the city detective bureau many of the culprits were apprehended. Through the efforts of the association's attorney the memorandum law became a protection against loss by crime.

In 1935 the association engaged the services of a young and energetic attorney, Louis Frankel, whose keen business and law ability is credited with lifting the association from a local, somewhat obscure organization to a nationally recognized trade authority.

Smuggling was rampant at the time. Frankel in cooperation with the Treasury Department brought about a number of arrests and convictions of smugglers of diamonds.

Another endeavor was the elimination of "switch" operations. "Switching" was an involved procedure in diamond transport involving the illegal use of currency. Unofficial rates of exchange permitted importation of goods into the U.S. at prices lower than the market. By introducing new controls the association was able to eliminate much of this unhealthy and unstablizing type of business.

The association at other times has also fought lowering the duty on diamonds and the repeal of the ex-

cise tax, which was considered detrimental to the industry.

In a few years the original membership of 30 doubled and as economic conditions improved, the association grew stronger financially and became an accepted medium for information concerning the diamond industry.

Then came World War II with labor shortages and government regulations of rough. With Amsterdam and Antwerp eliminated, it was necessary to enlarge American production. With government assistance the apprentice system was expanded to the point that within a few years the number of diamond cutters jumped from 800 to over 2,500.

By the end of 1943 several hundred diamond polishing shops were operating in the New York City area and the workers numbered over 5,000. The association did a great deal to help its members negotiate with the cutters' unions.

A lack of rough came to be one of the problems of the industry. Louis Frankel made a trip to London where he gained the assurance of the Diamond Trading Company that rough would be made available. In fact, the DTC assured him that it placed the utmost importance to the cutting industry in the United States and that the industry would receive as liberal treatment as possible.

The general result of this contact was far-reaching because to this day the Diamond Manufacturers Assn. is recognized as the official spokesman for the diamond industry in America.

Originally the association was composed of diamond manufacturers—that is cutters or facetors. In 1949 leading diamond importers, recognizing the worth of the association, petitioned for membership. The constitution was rewritten to admit them and the name changed to Diamond Manufacturers and Importers Assn. of America Inc. The membership includes firms of good reputation engaged in both manufacturing and importing to the number of over 200 today.

Also founded in 1931 and celebrating its 50th Anniversary this year is the Diamond Dealers Club. Previous to 1931 the diamond business was located essentially in lower Manhattan on Nassau Street and Maiden Lane. Except for a few offices that diamond merchants had, the most of the trading was done on the narrow sidewalks of narrow streets in the presence of heavy traffic on the corner of John and Nassau Streets.

Not only were the crowds large but there was little or no security and the diamond people were continually harassed by the police.

So early in April, 1931, 13 diamond merchants met in the office of Kalmus and Silverstein at 95 Nassau St. to form a diamond club. The moving spirit was Harry Sigman, father of Jack Sigman, who later served for many years as president of the Diamond Dealers Club.

These 13 became the incorporators of the Diamond Dealers Club Inc., a not-for-profit membership corporation organized under the laws of the state of New York with Attorney Albert J. Lubin as the club's executive director. Lubin drew up the by-laws and called the first meeting of diamond merchants in the premises of the new club at 80 Nassau St., a fourth-floor walk-up.

The club prospered, the membership rose to 200. Larger quarters were needed so the quarters were moved to 95 Nassau St. Because of the influx of workers and expansion of the trade during World War II, in 1941 the club built quarters and moved to 36 W. 47th, ninth floor. At that time 47th street was absolutely devoid of any diamond or jewelry business. In 1956 more space was needed as the membership had grown to 1,000. The building at 30 W. 47th St. was erected and the ninth floor joined to the ninth floor of 36 W. 47th St. The tenth floor of 36 W. 47th St. was leased for Diamond Club offices.

The membership of the Diamond Dealers Club is now approximately 2,000. The quarters are crowded and the Club has obtained the building formerly occupied by Korvettes on the southeast corner of 47th St. and Fifth Avenue where a building is to be built that will house the club.

There are presently 250 applications for membership pending, each applicant having deposited an initiation fee of $5,000. The dues are $349 a year including benevolent dues. By contrast the first annual budget in 1931 was $2,000. ≡

Advance Proofs of the Story of

"The Jewelry Business in Boston"

By A. B. HOAG
of the Keystone Staff

The First of a Series of Articles Describing the Growth of the Jewelry Business in Important Trade Centers to Be Featured in Connection with the 50th Anniversary of *The Keystone* . . . National Business Magazine of the Jewelry Industry

Watch for the Complete Story in . . . .

The KEYSTONE—February 1932

"50 Years of Service to the Jewelry Trade"

The Jewelry Business

The First of a Series Outlining the Growth of the Jewelry Business in Various Trade Centers

"Eddie" Russell (in the foreground) and Allan D. Sime cutting diamonds in the early days

1886—A group of the "Morse Boys." Standing (left to right) Jacob De Young, Charles M. Field, James H. Parks. Sitting—William Clark, George Hampton, David Lindsay and Amos Fosdick. This picture was taken on the roof of the old Washington building where Morse's diamond cutting workshops were located

By A. B. HOAG

THEY call Boston the home of the bean and the cod. It could be more justly called the home of the watch, the electric clock and the diamond, for here were made the first watches with interchangeable parts, here was developed the synchronous motor timepiece, and here the first diamonds cut in America were shaped into sparkling gems that outshone the best the Old World had produced.

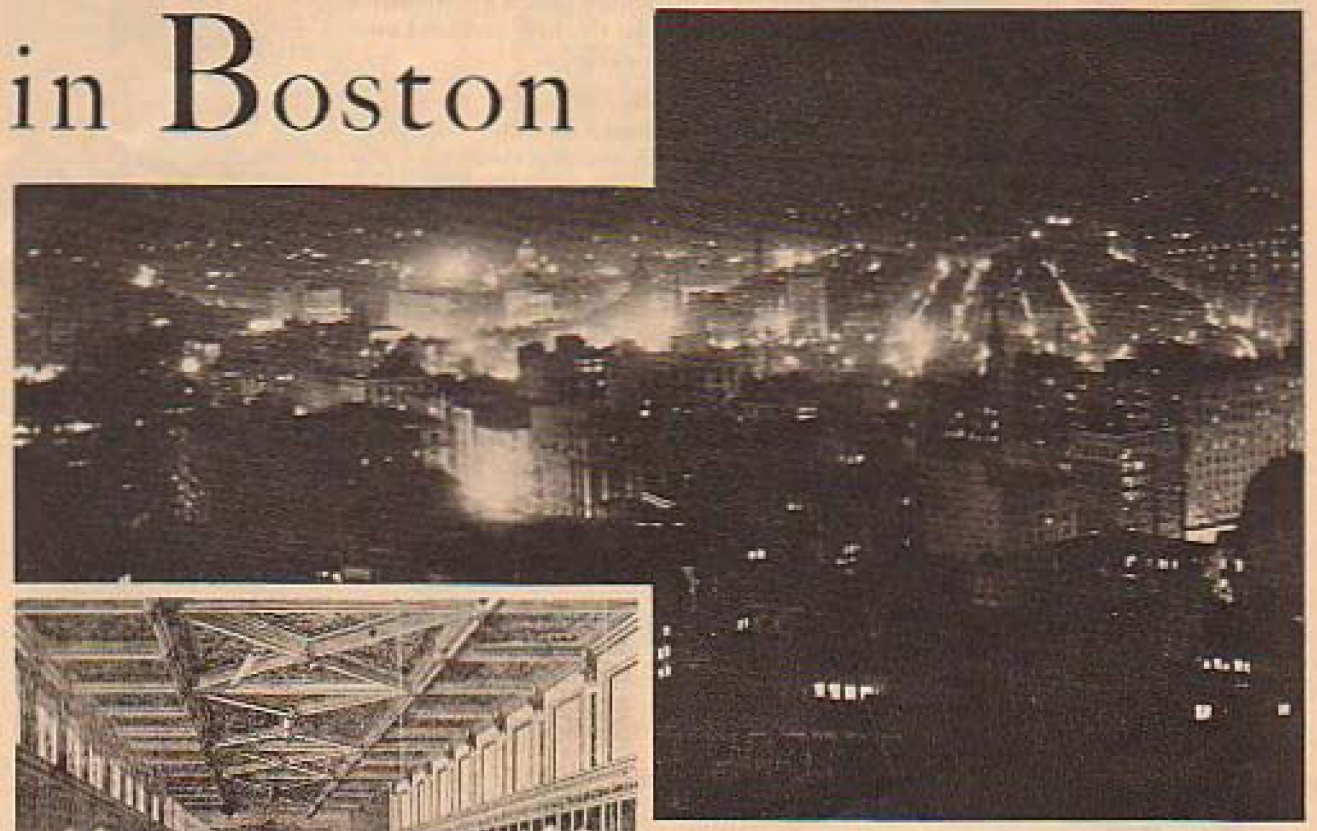
Yet machine-made watches, the new vogue in clocks and domestic cut diamonds do not exhaust Boston's list of achievements in jewelrydom. Farther back there was Paul Revere and other important if less famous silversmiths. And more recently there are the host of retail, wholesale and manufacturing houses that have been reared on a foundation of integrity, perspicacity, Yankee ingenuity and appreciation of the beautiful. Of these and their forebears there is much that is interesting, and perhaps instructive, to relate—of how these firms were founded, of the kind of men behind them whose vision and energy brought success and, in short, how the jewelry trade has grown in Boston within the span of one lifetime.

But first a sketch of the scene. Boston is the business "capital" of New England. Outside salesmen for the majority of the Boston wholesale houses cover the six states, and usually a section of New York as well. Boston is less of a jewelry manufacturing center than the Providence-Attleboro area. It is mercantile rather than industrial. The value of jewelry manufactured in Boston in 1930 was $1,065,175, while the total for Massachusetts was $21,976,448. However, the Hub City's trade position is such that from the myriad of cities and towns in Maine, New Hampshire, Vermont and Massachusetts, and to some extent Rhode Island and Connecticut, come customers of both wholesale and retail houses. It is a rich territory and a rather compact one, both industrial and agricultural. There is reason to believe that it has been less seriously hit by the depression than most sections of the country. And in New England they laugh at stories that the section is "running down."

ESTABLISHING WATCHMAKING IN AMERICA

ALONG about the middle of the past century occurred two events of great importance to the jewelry trade in the United States. These were the completion of the first watches with interchangeable

in Boston



A night view of Boston as it appears today

1850—The store of Jones, Ball and Poor at Summer and Washington streets—a predecessor of the Shreve, Crump & Low Store of today

parts and the cutting of the first diamonds in America.

Credit for the watches is difficult to ascribe. Aaron L. Dennison is called "the father of American watchmaking." Edward Howard is said to have produced the first machine-made watch. Of course neither made the first watches in America for, between 1809 and 1817, a Luther Goddard of Shrewsbury, Massachusetts, made (in distinction to manufactured) about 500 watches of the verge pattern. In 1812 a watch factory was established in Worcester and, in 1838, watches were marketed by James and Henry Pitkin in Hartford, Connecticut, which Henry G. Abbott, in his work "The Watch Factories of America" asserts were the first machine-made watches.

Apparently, however, Dennison and Howard were the first to envision watches with interchangeable parts, constructed on the principle which Henry Ford later applied to automobile manufacture. The two were associated for a time, but they later separated, and each became the progenitor of a great industry, one the Waltham Watch Company, and the other the E. Howard Clock Company.

Aaron Dennison had been educated in watchmaking. He was a dealer in watches and had visited the Springfield, Massachusetts, armory where he was impressed by the interchangeable system in use in the ordnance there. He had an idea the same system could be applied to watches. He broached the subject to Mr. Howard who was manufacturing clocks at Roxbury and received abundant help. In 1850 the first watch model, which corresponded to the full 18-size of today, was completed. It was an 8-day watch, but this feature was quickly abandoned. The firm was then known as "The American Horologe Company" and consisted of A. L. Dennison, E. Howard and Samuel Curtis.

MARKETING THE FIRST WATCHES

THE first watches were placed on the market in 1853, and sold for $40. The first hundred watches bore the name "The Warren Manufacturing Co." The name "Samuel Curtis" appeared on the next six or seven hundred and then the style was again changed to the Boston Watch Company. All this time the factory was in Roxbury, which was considered an unsuitable place for watchmaking. As a consequence, a factory was built in Waltham on the bank of the Charles river, at the present location of the company, this building being ready for occupancy in 1854.

Soon the company came on hard times. It was purchased by Royal E. Robbins and the firm of Tracy & Baker. When the latter dropped out Mr. Robbins

Fred. H. Carpenter,
with Field, Flint & Paterson, Boston, Mass.

Charles W. Finley,
with A. Paul & Co., Boston, Mass.

Edward Everett Hardy,
with D. C. Percival & Co., Boston, Mass.

F. M. Smith,
with Smith & Patterson, Boston, Mass.

E. H. Martin,
with Smith & Patterson, Boston, Mass.

carried on with James Appleton. A reorganization followed, business looked up, and in 1860 a 5% dividend was declared. This is said to be the first dividend ever declared on American watchmaking.

The company's growth thereafter was rapid. A factory in Nashua was purchased and the machinery moved to Waltham, and with it came three men distinguished in the craft: N. P. Stratton, C. H. Moseley and C. Vander Woerd. Late in the nineteenth century a gold case factory was established in New York. Waltham watches became known throughout the civilized world. The railroads of India adopted Walthams, and the whole system of marketing timepieces changed.

Just as the company rose to the emergency during the Civil War and speeded up production to supply the soldiers with watches, so during the World War the Waltham Watch Company turned to making time fuses. After the latter war it reached a record of 600,000 watches annually, keeping 2800 employes, most of them highly skilled, busy. Much of the growth was under the presidency of Ezra C. Fitch, who headed the concern for forty years until the reorganization in 1923 when he was succeeded by Frederic C. Dumaine. Conover Fitch is now vice-president.

EDWARD Howard, of whom we have spoken, was born in Hingham, in 1813, and apprenticed as a boy to Aaron Willard, a leading clockmaker of that period. In 1842, in company with David P. Davis, another apprentice, he started a watch and clock manufacturing business in Roxbury. In 1850 came the partnership with Dennison. A small factory was built opposite Mr. Howard's shop and some English and Swiss watchmakers were put to work. However, Mr. Dennison's machinery did not prove a success, and one of Mr. Howard's men was detailed to help him. It was in 1850 that the first Howard watch was made. This famous "No. 1" is still kept on exhibition in the Mechanics building and will run perfectly whenever wound.

With the building of the Waltham factory, Dennison dropped out of the picture, but the Howard & Davis Company continued, being succeeded by the Howard Clock & Watch Company, and then by the Howard Watch & Clock Company.

In 1900 the E. Howard Clock Company succeeded ot the business but in 1905 the watch manufacturing was segregated and became known as the E. Howard Watch Works, with factory in Waltham. The E. Howard Clock Company remained at the Roxbury plant while the watch works were acquired by the Keystone Watch Case Company. In April 1930 the watch and clock works were again united as the E. Howard Clock Company, and the factories in Waltham and Roxbury again came under the same management.

Edward A. Bigelow is closely identified with the recent growth of the company. A native of Elizabeth, New Jersey, the early years of his business life were spent in New York, where he was associated with the Ladd Watch Case Company, original manufacturers of filled watch cases. Afterwards Mr. Bigelow came to Boston as New England Manager for the Courvoisier

Daniel Stevens,
with D. C. Percival & Co., Boston, Mass.

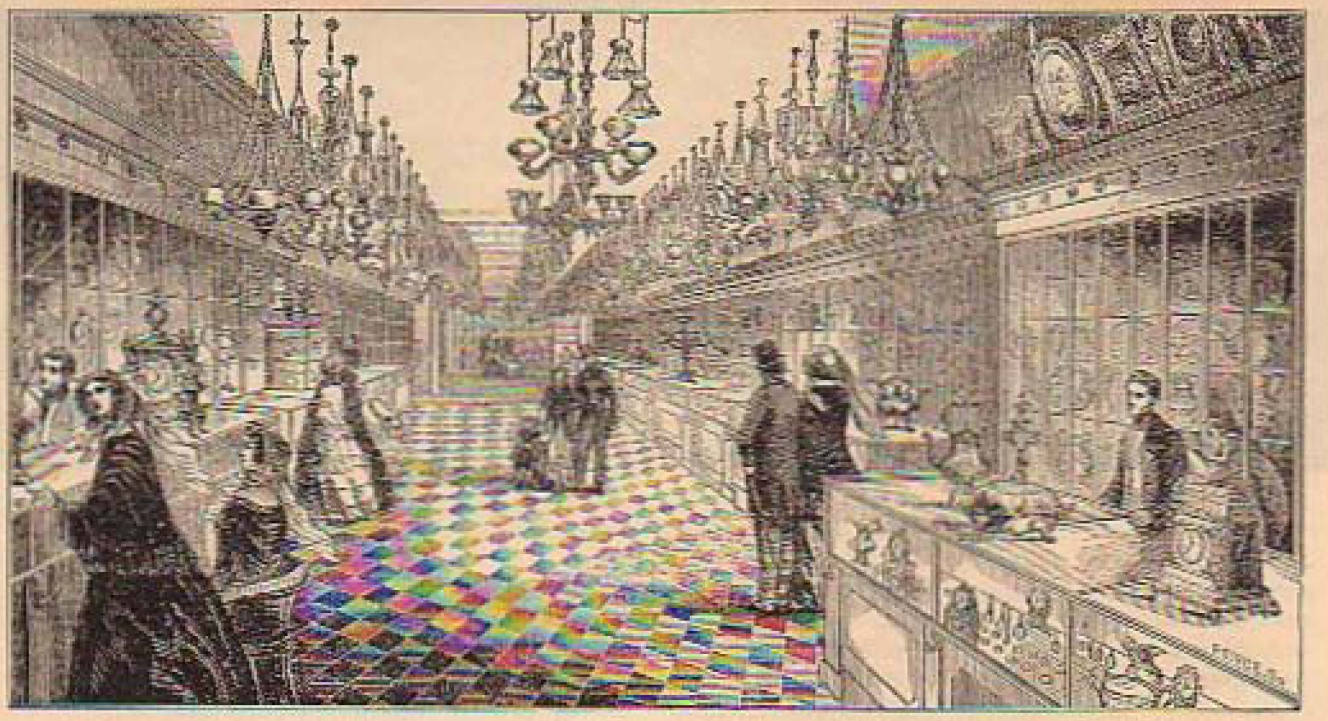
Carl D. Smith,
with Smith & Patterson, Boston, Mass.

HOW MANY DO YOU REMEMBER?

These pictures of popular Hub City travelling salesmen are taken from copies of THE KEYSTONE for the early months of 1888

A. E. Whitney,
of Whitney Bros., Boston, Mass.

J. R. Allen,
with Smith & Patterson, Boston.



The ornate design of the old jewelry store was in full keeping with the merchandise sold — merchandise which ranged from the usual jewelry items to umbrellas, canes, pretentious gas fixtures and picture frames. This view of the Stanwood store in Boston dates back to 1850

& Wilcox Manufacturing Company. When the E. Howard Clock Company was organized in 1900 he was elected treasurer and managing director. He is now vice-president.

Raymond S. Wilder is president of the present firm and Chester L. Harris is treasurer. The other directors are Charles W. Porter, William T. Bartel and Francis B. Sears. Besides manufacturing clocks and watches, the company makes a great many small parts for precision instruments. Tower and public building clocks throughout the country bear the E. Howard name.

To go back for a moment to Mr. Dennison. When watches began to be manufactured in quantities in this country, there came a demand for the boxes in which they were packed. Mr. Dennison designed machinery for their construction, and began their manufacture. Later his brother took over the work. From these activities developed the Dennison Manufacturing Company, manufacturers of jewelry cases, tags, crepe paper and a vast number of specialties, a third world-known industry.

HOW THE ELECTRIC CLOCK WAS DEVELOPED

WE have claimed the electric clock for Boston, but more exactly it was developed in Ashland, twenty-three miles from Boston, and still more exactly in a tiny laboratory designed from a deserted hencoop on the farm of Henry E. Warren. Mr. Warren has been inventing things all his life, his bent leading him to the Massachusetts Institute of Technology. He very early envisioned the electric clock, but in its development he had to devise certain gear-making machinery, and this set him off on another path for a time. Later, however, Mr. Warren went back to the clock idea, and determined to harness the peculiar properties of alternating current, using a synchronous motor. He struggled through great difficulty in finding a motor which would both start and run true, but he finally produced a crude affair, that was then connected to the hands of a clock.

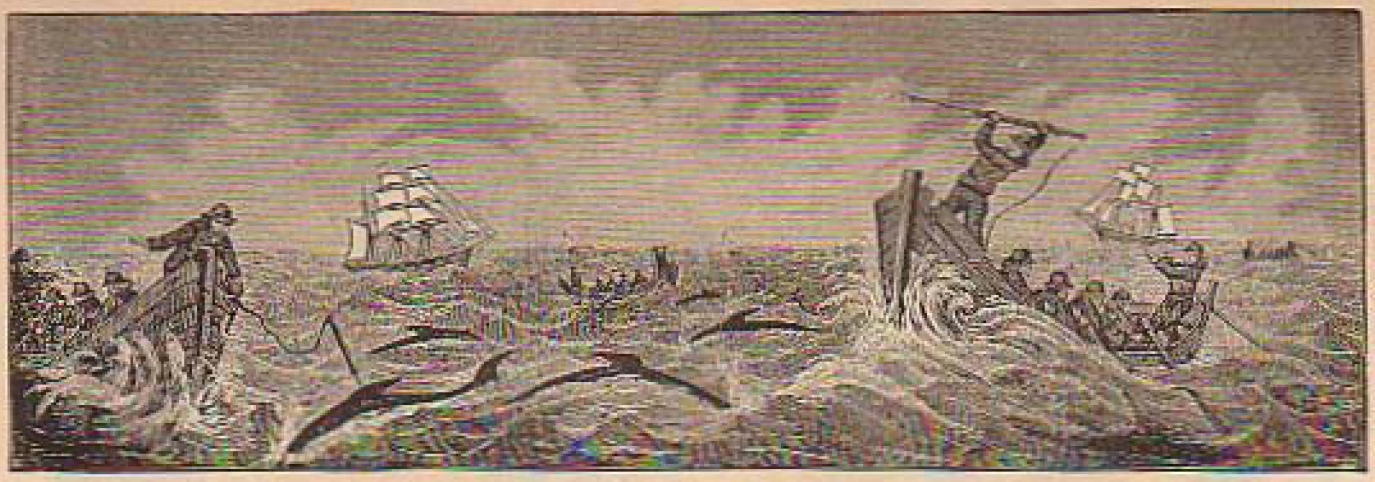
As a timekeeper the device was a failure, for it varied ten or fifteen minutes a day, but as a check on the accuracy of current alternations, it was a success. One day, after verifying his observations, Mr. Warren telephoned the Edison Power Station in Boston and tactfully informed them that the frequency was in error approximately half a cycle. A somewhat surprised Edison operator demurred, but the unusual message did bring about a general rechecking of meters at the station.

CHECKING POWER STATION FREQUENCIES

MR. WARREN then realized that frequency accuracy was the next essential and set about developing a regulating instrument. He built one that was tested out at the L Street power station. Its principal function was to indicate directly on a single dial the exact amount of error in the integrated frequency so that the switch board operators might see whether or not the average speed of the turbines was correct. The instruments previously used showed only the instantaneous frequency and proved to be inaccurate as much as 1%, while Mr. Warren's master clock had a dependable precision of 1/500 of 1%.

Frequency control spread to all sections of the country so that, today, time service regulated by master clocks is available in about ten million homes. Warren Telechron Master Clocks are in use in more than 600 power houses. Several dozen manufacturers are now producing electric clocks, and the power companies which were first disposed to despise the small profit accruing from their use, are finding that the little current consumed by each clock provides, in the aggregate, a substantial amount.

The Telechron electric clock was perfected in 1916,



"Taking William F. Nye's Watch and Clock Oils in Mid-Ocean" was the caption of this wood engraving which appeared in THE KEYSTONE for July, 1900

and manufatturing operations were started in an old stone building in Ashland. Since that time the factory and offices have been expanded several times to reach the present area of over 80,000 square feet, and further expansions are now in view. The Warren Telechron Company has made the remarkable record of doubling its output every year, a condition which even applied to its 1930 gain over the prosperous year of 1929. The factory was running full time in October, November and December of 1930.

FIRST DIAMOND CUTTING IN AMERICA

THE story of diamond cutting in America is an interesting example of Yankee ingenuity and perseverance. It goes back to B. S. Pray, who, around 1850, was engaged in the African trade, and to Henry D. Morse, a man of considerable inventive and artistic genius. With Pray's financial backing, Morse brought a number of Dutch cutters from Holland and set them to work in a shop on Central Place. Simon De Young was among these artisans.

These Dutch diamond cutters conducted their work in great secrecy, refusing to take as apprentices any but Dutch boys. This irked Mr. Morse, who carefully observed their work. Then, without any announcement he undertook to instruct a group of boys and girls in the art of cutting in a Roxbury shop. When the Dutch workers struck over some dispute, they were astonished to find their places immediately taken by skilled American workers. This marked an end to a foreign monopoly on cutting.

The Morse Diamond Cutting Company was started in 1860. Besides inventing a sort of double lathe which enables two diamonds to cut each other by attrition produced by rapidly revolving machinery, Mr. Morse invented the Morse gauge, an instrument for regulating all the angles to be cut on a stone. Both are in general use today.

After much study, Morse discovered that the proper proportion for a diamond's profile is one-third above the girdle and two-thirds below. The most desirable number of facets, including the apex (culet) and table, is fifty-eight. The superiority of Morse's cutting is due to the fact that all the light entering above the girdle is refracted so that it comes out again above the girdle.

The European style of cutting, however, was aimed at producing stones of the greatest weight, with the result that much of the brilliance was lost.

"Mister Morse's boys," as those who were trained to take the place of the Dutch cutters came to be known, deserve special mention. There were Jacob De Young, now in business in the Washington building with S. Sydney De Young, his partner, James H. Parks, now vice-president of Hodgson, Kennard & Company, Inc. and Edward Russell, who left Morse in 1882 to cut for Randel, Baremore & Billings in New York City. In 1889 Mr. Russell was with Tiffany where he stayed eleven years. In 1900 he returned to Boston, where he opened a shop for E. W. Hodgson (now Hodgson, Kennard & Company), becoming a stockholder in that concern. Finally, in 1909, he formed a partnership with Allan Sime, a native of Cambridge, who learned cutting at the Humphrey shop, and who had also worked at Tiffany's. As Russell & Sime, they are located in the Jewelers' building. A few years ago they cut for Mr. Whittemore of the E. B. Horn Company, a five carat stone, giving it eighty-four facets and producing an apparently whiter stone.

Other "Morse boys" include George H. Hampton, who also went to Tiffany's; William White, David Lindsey, William Clark, George Melville, Charles Brown, Richard Fosdick and Edward Cox.

THE FOUNDING OF D. C. PERCIVAL & COMPANY

JUST as Mr. Morse's establishment was a training school for many in the jewelry business, so was the old firm of D. C. Percival & Company. The concern was established in 1864 by David C. Percival at 208 Washington street, being probably the oldest Boston wholesale house still in existence. Mr. Percival was born in Sandwich, Massachusetts, receiving his training with the old wholesale house of Sackett, Davis & Company. Not only was he a man of considerable business genius, but the high standards on which he insisted have continued to his descendants.

Other wholesale houses of those early days included Floyd, Pratt & Rounds and Morrill Brothers. Both have since gone out of business, although Commodore Morrill still survives.

Mr. Percival had as partners Daniel Morris and

Henry T. Salisbury. They had one small safe, and as Mr. Percival used to observe, had difficulty in keeping even that filled. The great fire of 1872 burned through the Percival store, but Mr. Percival himself hired a decrepit one-horse dray and transported most of the stock to his home on Columbus avenue. It was well that he did this for many insurance companies failed after the fire.

About this time Salisbury withdrew, and the style was changed to Percival & Morris. In 1887 the company was dissolved, Mr. Percival continuing at 392 Washington street as D. C. Percival & Company. The business grew rapidly. D. C. Percival, Jr. entered the firm in 1892 and is now president. When the Jewelers' building was erected, Mr. Percival agreed to take the whole second floor and later the wall between this and the Washington building was cut through to enlarge the quarters. The founder died in 1913, leaving the business to his sons David C. and Lawrence F. (now treasurer). Edward E. Hardy has marked a half century with the firm, as has William E. Crocker.

Recalling the old days, Mr. Hardy says that more retailers then came to Boston to buy their stocks and fewer outside salesmen were employed by wholesale houses. Retailers today probably receive five times as many visits from salesmen as they did fifty years ago.

Another concern with a long history is that of Paul-McCourt Company, Inc., successors to A. Paul & Company. This company was founded in 1872 by Andrew Paul. About 1895 Paul took into partnership Charles W. Finlay, who had been with him since 1872. Alfred Paul succeeded Mr. Finlay. Mr. Paul died in 1928. The business was continued under several managements until July 1, 1931, when J. E. McCourt became president and treasurer. Mr. McCourt was with the Star Watch Case Company for twenty-six years and has been prominently identified with the wholesale trade since 1891.

Still another old name is that of Norling & Bloom Company, founded in 1865 and considered to be the oldest manufacturing jewelry business in New England. Arthur S. Kelley, who is president and treasurer had been with D. C. Percival & Company from 1896 to 1913 when he purchased the Norling & Bloom business. Being more interested in precious stones, he has devoted his greatest efforts to developing the diamond business, but has also given attention to the manufacture of platinum goods.

Another of the D. C. Percival & Company "boys" is Henry R. Arnold, who started with them as a boy in 1889. Later, he entered business for himself in the Washington building traveling and selling personally all over New England. He is a past vice-president of the National Wholesalers' Association, one of the first members of the National Publicity Committee, and was a leading spirit in the formation of the Massachusetts and Rhode Island Retail Jewelers' Association.

Another old firm is that of F. E. Harwood, Inc., 387 Washington street, successors to Harwood Brothers. Charles and Willard Harwood started business in 1859 at 247 Washington street, later moving to 26 Bromfield street, and then to 386 Washington street. Charles Harwood died in 1902 and Willard Harwood in 1910 and, in 1911, the business was taken over by two sons, F. E. and H. A. Harwood.

Sanger & Company, wholesale jewelers of the Washington building, was developed by Eugene Sanger who had been with Harwood Brothers for forty years; H. F. Weiler, who had served twenty years with them and Thomas Wilson, a Harwood man of eight years' standing. These three veterans banded together as Sanger & Company in 1922, and have made steady progress.

Out of another old wholesale house—Morrill Brothers—came the firm of E. H. Saxton Company. Charles F., Alvin T. Morrill and Irving Smith formed this once well-known firm which flourished in the 80's and 90's in the Marlborough building where the Washington building now stands. Charles F. Morrill, commodore of the East Boston yacht club, we have already mentioned as still living. The Morrill business was purchased in 1905 by Mr. Saxton, who had been associated with it foe a number of years.

Continuing the list of the old-timers, we come to Kettell, Blake & Read, Inc., a wholesale house specializing in Waltham watches, clocks and Masonic emblems. J. V. Kettell founded this business in 1858, occupying at the corner of Washington and Milk streets half a store with the Waltham Watch Company, where it was continued until 1872. After two years on West street, the business was moved to 376 Washington street, where it continued until its removal to the Washington building. In 1878 James S. Blake, who had been with Crosby, Morse & Foss (thus making him another of the "Morse boys"), went with Mr. Kettell and became a partner in 1883. Mr. Kettell died in 1895 and his interest was bought by Mr. Blake, who carried on the business until his death in 1928. Mr. Elmer C. Read became associated with the concern in 1897 and entered into partnership in 1916. The business was incorporated in 1925, and Mr. Read is now sole owner.

The Ripley Howland Manufacturing Company goes back to 1867, when Ripley Howland & Company was formed by the merging of Howland & Bates and Ripley & Crosby. Following the death of Mr. Howland in 1882, the present corporation was formed by the surviving partners, Mr. Ripley, Mr. Crosby and Mr. Bates, who continued until the death of Mr. Ripley and the withdrawal of Mr. Bates in 1906. The concern was then taken over by H. B. Burnham and C. G. Perry who continued until 1929 when Mr. Burnham died. It is now headed by C. G. Perry, president, and F. W. Hawkes, vice-president.

This firm is widely known for the rings and diamond mountings it produces. It is now located in the Province building.

The house of Nelson H. Brown, wholesale dealers in clocks, was established at 75 Hawley street in 1877. Mr. Brown had previously been employed by Harwood Brothers. When he died in 1891, Mrs. Brown assumed the management and still continues in charge. Reginald Brown, a son, entered the business in 1898. The concern is now at 70 Franklin street.

The firm of Harkins & Murphy, dealers in jewelers' supplies, although comparatively young, carries on a considerable business. It was formed in 1914 by Joseph V. Harkins, J. M. Kirby and Redmond J. Murphy. Mr. Kirby left in 1915 to establish his own business.

Fifty-five years ago a young lad who had come to Boston four years previously from Tunbridge, Vermont,

might be encountered in Boston dry goods stores carrying a bag. He was calling on the trade with a line of jewelry, and the bag was his office and store. It was a very important bag, for from it grew one of the largest wholesale jewelry businesses in Boston and one of the leading retail stores in New England.

The man was Marcel N. Smith, president of Smith Patterson Company, who can count over half a century of active guidance of a rapidly developing business.

Mr. Smith's first real office was desk room at 546 Washington street. Later he moved to 46 Summer street, to share an office with Henry W. Patterson who was engaged in wholesaling jewelry to the provinces. In 1885 the two men joined forces and soon moved to the present site at 52-56 Washington street at the corner of Arch.

Both a wholesale and retail business was done, extreme care being taken to see that trade discounts were given only to those entitled to receive them. By 1905 the business had grown to such an extent that larger quarters were needed, and the wholesale business, with Carl D. Smith, brother of Marcel, in charge, was moved to the second floor. The main floor was lowered to the street level and renovated for the retail store, and the basement prepared for the Art Room (now the Colonial Room).

The Canadian business started by Mr. Patterson was also growing all this time, and in addition to the wholesale trade a factory was started. Mr. Patterson died in 1926, the business in Montreal (Smith Patterson Company of Canada, Ltd.) being continued by Frank Patterson, a nephew. Nelson H. Smith, is vice-president of this company.

The wholesale business under Carl D. Smith prospered until three years ago when he died and the work of liquidating this branch was given to Howard A. Martin, who for thirty years, had ably served the firm.

The wholesale business was, however, not gone. Mr. Martin, together with Walter Forbes, an employe of twenty-five years standing, formed the Martin-Forbes Company, designated as successors to the Smith Patterson wholesale department, keeping all the valuable franchises of the former, most of the old employes, the old quarters and, above all, the same high business principles. The Martin-Forbes company has also retained five men on the road, and has kept the old clientele, specializing in quality jewelry.

Four other former representatives of the Smith Patterson Company set up a business at 387 Washington street, known as the United Jewelry company and dealing in domestic and imported jewelry and novelties. They are A. V. Johnson, A. F. Reed, C. H. Ramsdell and C. L. Quimby.

Meantime the retail store of the Smith Patterson Company has continued to grow. M. N. Smith, his years resting but lightly on him, remains in active charge as president. Nelson H. Smith is vice-president and treasurer. James Kingman, who for years has been a leader in the trade, is secretary and second vice-president. Aubrey G. Gilmore is clerk of the corporation and J. Victor Day, assistant treasurer.

M. S. Page & Company, still another old firm, was founded as a retail business in 1858 by Moses S. Page, a native of Haverhill, New Hampshire, who came to Boston in 1856 at eighteen years of age with but $20 in his pocket. Two years later he had started with a partner at 1 Salem street as Felch & Page. Mr. Felch withdrew, and Mr. Page leased the entire flatiron shaped building, thus insuring a reasonable rent on his store. Mr. Page died in 1917, his younger son, Harold, succeeding to the business. Harold finally sold out to one Ransome, who had been a life-long business associate of the elder Page and started a wholesale diamond and jewelry business in the Jewelers' building where he is today. His brother Edward S., formerly a lawyer, is with him.

Moses Page was an extremely energetic man who had a great many irons in the fire. He often made considerable money by attending auctions and through other outside pursuits. W. A. Smith used to say that "Mose" Page could figure in his head faster than the average man could with a pencil.

Charles May & Company, dealers in jewelers' supplies was founded in 1886 by Charles May at 386 Washington street. He later moved to Bromfield street and, in 1912, occupied space in the Jewelers' building. The firm was incorporated at the time of its last move and seven years later Charles retired. William May, the present president, came to the firm in 1898. W. Stanley Campbell is treasurer.

Ben Wyman, stone dealer and lapidary in the Jewelers' building, is credited with having sold more opals than anyone in the world. He was formerly with Treibs Brothers in New York, becoming their Providence representative. He started out for himself in Providence in 1906, moving to Boston in 1913.

Among the larger wholesale firms is that of I. Alberts Sons, Inc., which was founded in 1897 by Isaac Alberts. Mr. Isaac died in 1913. Mrs. Annie Alberts then took charge and, in 1914, the firm was incorporated. The following are the sons: Nathan, who joined the firm in 1912; Emanuel V., in 1914; Harold, in 1919, and Sydney in 1927. Mrs. Alberts is president and treasurer. The firm has spacious offices in the Jewelers' building.

And now we come to two other well-known names in the Boston diamond trade—Harris and Lawton. Frederick M. Harris, one of the old time diamond experts, was born at Stoughton in 1848. In 1871 he was travelling for Col. James M. Longstreet and later for Sackett

Continued—The story of the Jewelry Business in Boston as it will appear in THE KEYSTONE for February, 1932, contains several more pages which cannot be included here for lack of space. Also, there will be a number of additional illustrations of widespread interest to jewelers old and new.

Pioneers in the Boston Diamond Trade

A Backward Glance at Some of the Men Who Were Prominent in the Industry Years Ago, and a Word About Conditions at That Time. Some of the Celebrities Who Were Frequent Customers

ONE man once gave as his definition of what the size of a city should be: "Not too large to have a first citizen." Most of our big American cities today have outgrown the possibility of using this definition. There is more than one 'leading citizen' in Boston, but if you divided the city up into departments—say the wool trade, the leather trade, the printing trade and so on—you would find a leading citizen in each department. And when you came to the jewelry

JOHN A. REMICK, GRAND OLD MAN OF DIAMOND DEALERS

trade, you would find that John A. Remick was the 'leading citizen' in that particular branch. Mr. Remick has held that position for many long years. He has been out of the business now for something over a score of years, but he still retains an interest in jewelry. He is no longer a young man—he is 92 now—but he is young in his enthusiasm and his interest in anything that has to do with the work that he did for so long.

Mr. Remick now lives in his pleasant house on Marlborough St. He is a great grandfather. When the writer went to talk with him on his early experiences in the trade, he was most cordial and agreeable. He is a short man, with a charming smile and pleasant air. His face is lined—not with care, for we doubt if he ever had many cares—but with age. He is a bit deaf, but, despite that, is as hale and cheery as when he sold diamonds to Ellen Terry or talked with Joe Jefferson.

Mr. Remick was born in Newburyport, and when he first came to Boston he worked on Long Wharf. Then he rented a little store in the old Museum building and started in trading in Waltham watches which, as he remarked, sold like hot cakes. One day as he was working in his store, Daniel F. Wickham, an old time New York diamond merchant, with a store in Maiden Lane, came in and said to him:

"Why don't you sell diamonds and other precious stones?"

After saying this, Mr. Wickham produced some stones from a wallet and left them with Mr. Remick, saying that he would trust him with them. Mr. Remick sold the stones immediately and decided that he would go into the jewelry business and give up his watches.

His store was at first located at one end of the Museum building, away from the door. But it was moved to a place in close proximity to the entrance, and the crowds passing in and out of the famous theatre could not help but see his windows. His safe stood just inside the window, and he always had a few rough stones in sight. His store was small. He had no clerks but conducted the entire business himself. It was hard work but Mr. Remick loved the stones and was interested in all his customers. Business in those days was far more of a personal matter, with the storekeeper coming into contact with all prospective buyers and not hidden in a sanctum sanctorum that only the anointed could approach. Opposite his battered desk chair stood another equally battered one, but comfortable and made for a guest. Here customers would come and sit down for a chat with Mr. Remick—to talk over politics, or to discuss the stone market or to buy any new stones that he might have. It was a genial sort of business, conducted as one man to another, not through the medium of clerks. Mr. Remick dealt only in uncut stones, but he advised people on how to cut them and where to have the cutting done.

The crowds filed into the Museum past his window, so that anything that he put there would probably be seen. Mr. Remick was in the habit of issuing cards that told of his business, for advertising in those days was not on the scale that it is today. One of his first cards announced that his was "the only place in New England where the entire business is dealing in precious stones." When he went to Europe, as he often did in the latter part of his business career, he shut up his store and put up a sign: "Gone to Europe to purchase Precious Stones. Back on or about September First." When he opened his store once more, there was sure to be a crowd of people waiting to see his latest supply of gems that were on sale. And the crowd that filed into his shop was as distinguished a company as one would meet with anywhere.

First of all, there was Henry Ward Beecher. The eminent man was devoted to colors, and particularly to colors in precious stones. He bought opals, when he could afford them, and kept them in a bottle, delighting in the variety of colors and shades they showed. Mr. Remick tells an interesting story of a ring that Henry Ward Beecher bought of him. It was a beautiful

HENRY D. NORSE

opal, placed in a simple setting. Mr. Beecher, as he always did, never wore the ring when in the pulpit but had it, with others, in his pocket. At one time, Ellen Terry met Mr. Beecher and he invited her to lunch with him and his wife. Just before luncheon, Mr. Beecher put the opal ring on his finger and Miss Terry exclaimed at its beauty. Mr. Beecher said that he would be delighted to have her have it, and gave it to her immediately. Some years afterwards, when Miss Terry was in Boston, Mr. Remick, who had heard the story, asked her about the ring. She thought a moment and said:

"I gave it to Sir Henry Irving when he was knighted." Mr. Remick says that after Sir Henry's death he asked the heirs about the ring but never found any trace of it.

Henry Wadsworth Longfellow was another distinguished customer who used to come in to purchase as well as to chat and admire. Mr. Longfellow, according to Mr. Remick, was particularly fond of amethysts. He loved the deep royal purple color.

Joseph Jefferson, James T. Fields, William Warren, Annie Clark, William Seymour,

Jack Mason, Celia Thaxter, and William Morris Hunt were all very good friends of Mr. Remick's as well as customers.

There are many things connected with a business of the kind that Mr. Remick's was that come to light only when you can get such a man in a reminiscent mood. For instance, Mr. Remick told of the introduction

SIMON DE YOUNG

of the moonstone into Boston. He found that it was not considered a lucky stone and sent cards out all over the State announcing that he had found it was a lucky stone and that he had some of them for sale. He met with opposition to opals, which were considered most unlucky. He couldn't understand why and was talking the matter over with William Morris Hunt one day. Hunt declared that it was a foolish idea, and an eminent geologist, Bayard Taylor, concurred in Hunt's opinion. Taylor found a translation of some Arabic legend which read something like this: "Long years ago there lived a man who had a ring, opal the stone which flashed and gleamed, and brought good luck to those who wore such a ring." This is a very poor reproduction of the verse which was delicately and delightfully worded. Mr. Remick had this printed on a card and sent around to some of his customers and he put the card in his window. This attracted considerable attention and one day a young girl, who, as Mr. Remick said, "wanted to be married the worst way," was in his office. He had known her for some time, thought her extremely delightful, and, as they were old friends, she asked him for some lucky stone. He presented her with an opal and within the year she was married.

From somewhere in the neighborhood of 1870 until 1903 Mr. Remick kept his store in the old Museum building. Everyone knew him and he had customers all over New England. Almost every year, for at

MISS CARRIE A. BURNHAM

least three months, he went away to Europe in quest of rough stones to bring back. In 1903, plans were gotten under way to tear down the building, and Mr. Remick was approached by the new owners. They offered him space under the proposed plans, the same space, to all intents and purposes, that he had long had in the Museum building. But when the matter of price was spoken of, the new owners indicated a figure something over three times what he had been paying. Mr. Remick decided that his business career might as well be closed in 1903 as any other year (he was then almost 70), so he refused the offer and decided to retire. Certainly, if anyone ever deserved a rest, Mr. Remick did, for single handed for over 30 years he had conducted a most profitable but exacting trade. Thus Boston's earliest and best known specialist in precious gems ended a long career of service.

There is no more fitting way to close this short summary of a splendid career than to quote what Charles W. Eliot once said to Mr. Remick, his friend and contemporary. They were crossing the ocean together once, and the famous educator turned to his companion and said: "The summit of any man's ambition is to attain the respect and esteem of his neighbors. You certainly have that."

John A. Remick is still the "first citizen" of the diamond world.

Across the stage of memory there move figures—one visualizes them in the bloom of youth and ambition—figures still dear to those whose hair is tinged with silver or gray. Such names as Benjamin S. Pray, Charles G. Brown, James H. Parks, George

BENJAMIN S. PRAY

P. Hampton, David J. Lindsay, Miss Carrie A. Burnham, John Tillson, George S. Melville, William Clarke and Simon de Young naturally occur to the mind. Most of them are here today, leaders in the diamond industry.

Early in 1860, Morse and Pray started

JOHN TILLSON

GEORGE S. MELVILLE

the Morse Diamond Cutting Co., the first establishment of its kind in America. The workshop was in Central place, a lane that made in from Washington St., between the Jordan Marsh building and the Shuman corner. "Billy" Parks had a famous tavern, then, in the same lane. The actual cutting and polishing had to be done by Hollanders,

at first. Simon DeYoung, Van Volen, Colsano and Keiser were their names, and Keiser is said to have been the leading man. Descendants of this early group of Dutchmen are in the business in Boston today.

But Keiser refused to teach American apprentices, so Mr. Morse, who was constantly building, rebuilding and perfecting his iron and steel machinery, and who had become singularly expert at cutting and polishing as well, started a shop out in Roxbury. In it he had 23 young women and men. Charles M. Field, who was foreman of the Roxbury place, is 96 now and lives at Melrose. Others of "Mr. Morse's boys" are living.

The firm was next known as Crosby, Morse & Foss, but in 1875 it was dissolved and Mr. Morse opened a place on the fourth or fifth floor of the old Washington building, 383 Washington St. A year before his death he took an old partner again at 120 Tremont St. The style was H. D. Morse & C. M. Foss.

Besides inventing a sort of double lathe, which enables two diamonds to cut each other by attrition produced by rapidly revolving machinery, Mr. Morse invented the Morse gauge, an instrument for regulating all the angles to be cut on a stone. Both of these are in general use today, the lathe superseding almost entirely the old practice of cementing the diamond to be cut into the end of a stick and rubbing it with another diamond of inferior quality, called bort, that is fastened into a stick in the same way.

After much study, Mr. Morse discovered that the proper proportion for a diamond's profile is one-third above the girdle and two-thirds below. The most desirable number of facets, including the apex (culet) and table, is 58. The acknowledged superiority of his cutting is due to the fact that all the light entering above the girdle is refracted so that it comes out again above the girdle. If he had stuck to the deep, old-style cut the incoming rays would have been lost. The Morse system, with its round outline of girdle and perfect profile proportion, loses nothing from its apparent weight.

The European cutters finally adopted the Boston cut. The finest brilliants are still fashioned that way, but individual stones of large size, have been turned out with 84 and 76 facets and with admirable results. Then, too, there is the latest fad, the Baguette, or step cut, and the emerald cut stone. The Baguette has a polished girdle whose outline is rectangular, or square. In either of these novelty cuttings the brilliance, life and fire are lacking. Apparently Henry D. Morse got all the quality it was possible to get out of a diamond. His system, the Morse cut, seems to be established for all times.

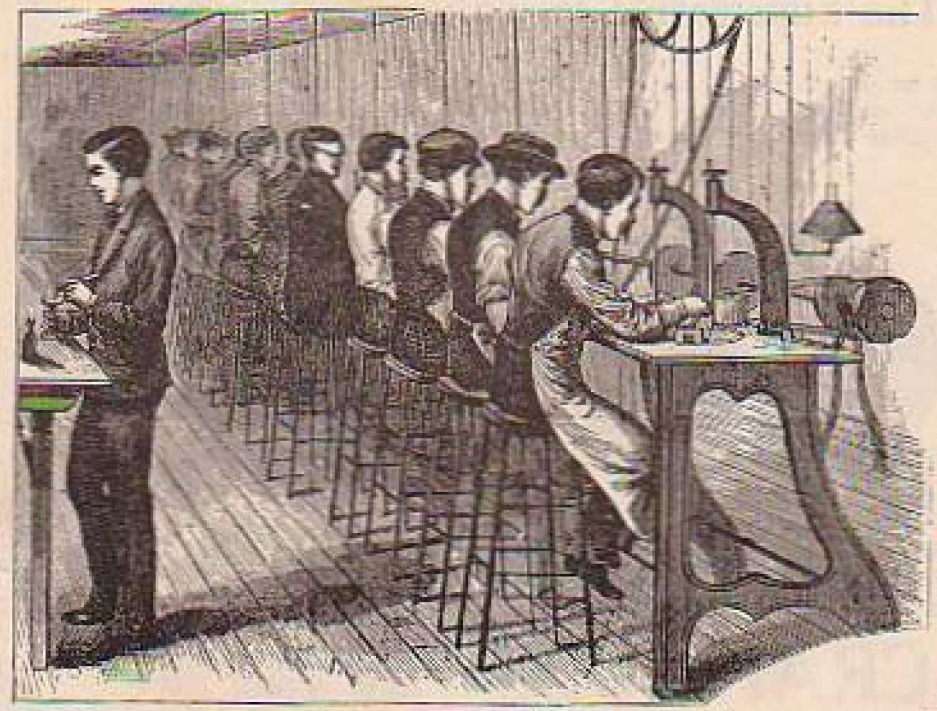
The old style of Dutch cutting, where little or no attention was paid to proportion, brilliance or shape, suffered a loss of 40 per cent from the weight of the stone in the rough. The Morse method loses 53 to 58 per cent, but the value of the gem is enhanced 25 per cent.

W. A. Smith, along with Mr. Morse, will be remembered as one of the pioneers in the diamond trade. He sold out his jewelry and diamond store at 16 Bromfield square in the 70s and removed to an office just over the entrance steps to the old Studio building, 110 Tremont St. Here he embarked as a specialist in diamonds and precious stones. At this location, and at the old Washington building, 383 Washington St., he imported, sold and designed the mounting of fine gems until 1896.

Mr. Smith was the youngest of a large family. He was born on the shores of Fresh Pond, in what was then Belmont, but is now a part of Cambridge. His early days were spent at the carpenter's trade and at market gardening. His first business venture was with a partner down in Boston's market district. They dealt in butter, cheese and eggs.

The partnership became distasteful. After several months, he was glad to withdraw with the loss of the $700 he had put in. Ill health ensued and a consequent inability to work. With nearly the last dollar in his possession he bought a damaged watch. He took it to his modest rooms, at the corner of Grove and Revere Sts., Beacon Hill, and—made it go! The little mahogany shelf, on which he taught himself watch repairing, is in existence now. This was his beginning in the jewelry and diamond trade.

More and still more watches were bought, repaired and sold by the semi-invalid. He



DIAMOND POLISHERS AT WORK IN THE OLD FACTORY OF HENRY MORSE

FIVE OF THE ORIGINAL DIAMOND CUTTERS IN THE MORSE FACTORY
Left to Right: George Hampton, William Clark, James H. Parks, David Lindsay, Jacob de Young.

prospered and his perseverance was noticed by one Jasper Kelly, who kept in Beattie square. As Smith grew well, Kelly became infirm and in a short time nearly helpless. It was rheumatism, or some kindred ill. Kelly put Smith in his store and he finally bought it. Mr. Smith amassed a fortune in the little, low-studded place.

During his long years in the diamond business, Mr. Smith counted many noted people as his customers and friends. The Rev. Henry Ward Beecher always called when in town, his niece, the wife of the Rev. Mr. Allen, was a customer, as were Governor Gaston, Speaker Noyes, Speaker Barrett, City Treasurer Turner, Montrose G. Allen, William Sohier, Karl Zerrahn, Payson Tucker, Marcellus Eldredge, Frank Jones, Mrs. Thomas Barnes, Mrs. Thomas Mack, Billy Parks, Frank Mayo, the actor, Harry W. French, the traveler and lecturer, Chief Watts, Andy Houghton, Inspector Skelton, R. A. Atkinson, Leopold and Godfrey Morse, Gordon McKay, Mrs. Effie Canning, who wrote "Rock-a-Bye Baby" and hundreds of well-known people of that day.

Mr. Smith designed and furnished the stones for the high diamond scarf-pin that was presented to Professor Bartholomew of the Equine Paradox. This was in the form of a horseshoe with the whip at the bottom. The Equine Paradox (educated horses) was playing at the old Windsor Theater at the time.

The so-called Record Diamond was furnished by Mr. Smith. This was a large stone offered by the *Boston Evening Record* to the most popular hotel clerk in the city. The readers voted by writing their favorite's name on a coupon that could be cut from each copy of the paper for a given length of time. Fred Jones, of the Falmouth, was the winner.

During the early '80's, the house of W. A. Smith probably handled more diamonds, wholesale and retail, than any other in Boston. Its founder prided himself on the fullness and variety of his stock, and reasonable prices and a square deal was his motto then and throughout the 44 years that he was in the diamond trade.

Mr. Smith was a retiring, home-loving man, but was fond of the opera and of high-class dramatic art. In his younger days, however, he was very expert as a fancy skater. He used to skate in company with Professor Agassiz on Fresh Pond. Like many other jewelers, he knew the lure of rod and gun.

Mr. Pike is with us today. His 76 years have silvered the jet black hair and mustache and a slight deafness hampers him to a trifling extent. Apart from that, he is the same tall, straight, spare, alert, clear-headed man who worked so diligently that he was enabled to retire when he was 50 years old.

Precision, extreme neatness and a wonderful facility in expressing himself well are endowments of this very able man. He is a natural born artist and designer and was a master mechanic at his trade. Few professional seamen are his equal at winning races in a pleasure yacht, and he has been a life-long devotee of the rod and gun. He is so gifted at whistling that it is a treat to listen to him. With apparently no effort he can trill like a bird.

"Charlie," as Mr. Brooks affectionately called him, was born on Friend St., but lived a great many years at Jeffries Point. He was commodore of the Jeffries Yacht Club while living there.

Mr. Pike served seven years in the shop of Ripley, Crosby & Peabody in the old Washington building. The pay was $1 a week with an increase of a dollar a week each year. After becoming a journeyman he worked for Thomas Clarkson and then for Mr. Brooms, who made him a partner after the first year.

About 30 years ago Mr. Pike bought a fine home at Winthrop, where he has his own private wharf and landing stage at the rear. His hobby is to sail, fish and shoot in the

CHARLES G. BROOKS

company of his bosom friend, Ambrose A. Martin, a retired builder of pilot boats and yachts.

It is said there are today but four diamond-cutting shops in New England, and that they are in Boston. One of the best known of these is that operated by Russell & Sims.

"Eddie" Russell, as he is called by the trade, was born at Brooklyn, N. Y., in 1862. He came to Boston and became "one of the Henry D. Morse's boys." In '82, he was cutting for Randel, Baremore & Billings in Maiden Lane. In '89 for Tiffany, where he stayed 11 years. While with them, he demonstrated at the Chicago World's Fair.

The year 1900 saw him back at Boston where he opened a shop for E. W. Hodgson (now Hogdson, Kennard & Co., Inc.), he being a stockholder in the concern. In 1909 Mr. Russell sold his stock and formed a partnership with Allen D. Sims. They are on the sixth floor of the Jeweler's building, where, besides cutting, repairing and polishing they keep a fine stock of diamonds for sale. The partners do the actual work themselves.

Here are some of the names of men who learned diamond-cutting under the great Henry D. Morse: Jake DeYoung, now living and in business on the seventh floor of the new Washington building; Charles M. Field, living at Melrose; James H. Parks, vice-president of Hodgson, Kennard & Co., Inc.; George H. Hampton, at Tiffany's; William White, David Lindsey, William Clark, George Melville, Charles Brown, Richard Fosdick and Edward Cox.

In closing, it might be well to state that another Boston man contributed an invention that has lightened the lapidary's work. Otis Passmore got up a machine that will cut semi-precious stones. He went to New York, started the cutting houses of Passmore & Zell, and, later, the American Gem Cutting Company.

When the Jeweler Gives His Son a Job

MOST every jeweler who is married, usually in time has a son or daughter who grows to manhood or womanhood. After the high school then comes college and after the college what? That is a question that has caused a lot of trouble—not only for the jeweler but for other people in business as well. In this instance we are interested solely in the jeweler. Children who have grown to adult manhood or womanhood very often want to follow in the footsteps of their father. This is more apt to be the case of the boy although there are many instances where the daughter desires to enter the business. Some of these young people soon fit in well and become valuable assets to the father's business. But there are many other instances where the opposite situation has developed.

This is very often the case where the father is associated with an active and aggressive partner. Many youngsters just out of college and particularly if they have taken a course in business administration, develop a keen sense of their own importance and ability. They find many things being done by the old firm that does not exactly measure up to the theories they were taught in college. And no matter whether these old ways have been successful money getters or not, the youngster often starts in to readjust things to his own liking—if any authority has been given him at all. And right here is where the clash comes and many times it has resulted in the breaking up of an old and successfully established business. The father usually sides with the boy and the partner almost invariably takes the opposite position. And then the trouble begins. Once friction of this kind is started, it is like fire or a contagion that spreads with great rapidity. It is difficult to combat even if it gets a little momentum. No house can stand that is divided against itself.

Where a partnership exists it is far better to keep the sons or daughters out of the store—unless they are exceptional youngsters or else take them in on the same basis as any other employe. No favors should be granted and advancement made only on merit.

It is a sad thing to see a fine old business split up simply because friction has started from the officiousness of a son or daughter who has an idea he or she is going to revolutionize things. A jeweler, especially if he has a partner, should consider carefully every possible situation, before he admits a near relative into his store.—Detroit Correspondent.

Diamonds
and
Diamond cutting.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