Introducing the
Worlds
Greatest tool
for the
Inventor

http://www2.murray.net.au/users/egel

B
C
A
x

B
C
A
x

This tool is your imagination.

Nikola Tesla the great electrical inventor often saw his inventions in his mind before he had them constructed.

Now its your turn.   http://www2.murray.net.au/users/egel

Before you are three spheres marked A B C each having a pulsating magnetic field of differing frequency and not harmonic of each other.

The spheres are free to travel in any direction in a horizontal plane, that is they cannot flip over.

Sphere X can have it magnetic frequency altered where the others cannot although at start up it has none and is attracted to sphere A

Questions

What happens to each sphere when the power is first applied
would if differ if it was a pulsating dc or alternating ac

What would happen if the bottom half of sphere X is changed to be exactly to same magnetic frequency as sphere A and top half of X changed to the exact opposite of sphere C

If the spheres A.B.C. are planets and sphere X is a magnetic powered space ship could it work to provide transport between planets.
What would need to be done to overcome problems that could be encountered.

A New theory of Planetary Motion
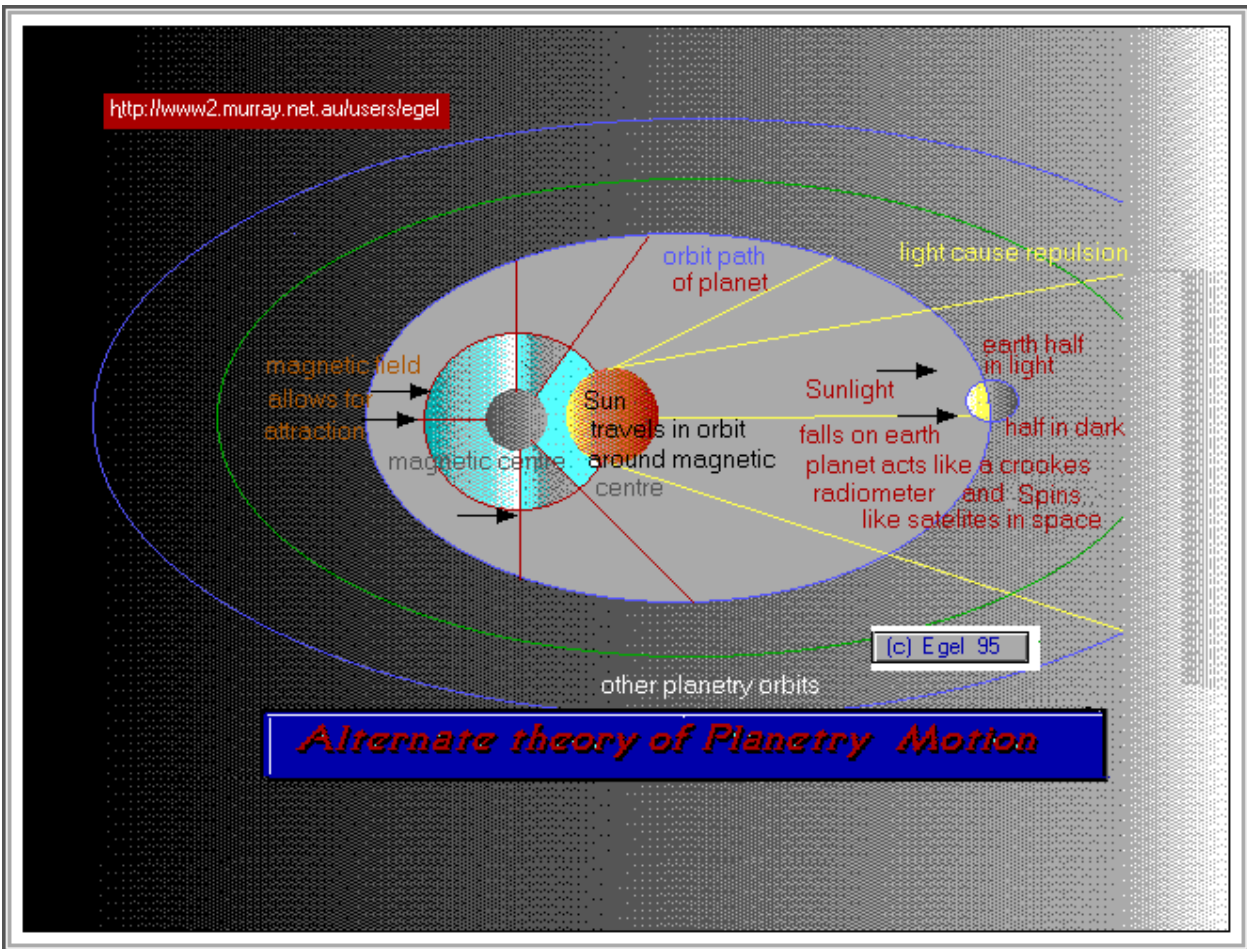
Before I explain this theory, we need to make some things clear. The rules you may be able to confirm in your public or science library. The assumptions I make, I don't think you will be able to.

First Rule - Light rays tend to repel. You want an example take crookes tube or it's better know name, a radio meter. Put this bulb with its four spinning vanes one side of each painted black and the other painted white into bright sunlight and watch it spin. The better the light source the faster the vanes will spin. Admittedly the vanes are in a vacuum. Now take a man made satellite in space, with a much bigger vacuum surrounding it, one side in light the other in darkness and what happens. Yes that right it spins when the sunlight is exposed to it. How about working on something a little bigger the Earth perhaps A big bulb in space one side lit with light and the one side in darkness and sitting in one big mother of a vacuum. What do you think would happen this time. What does the earth do in every twenty four hour period. In science classes we were taught the earth had only one magnetic field going north south. Could they have been wrong, are there more than one.? Thing about this for a while. Get a normal magnetic compass and let it line up to magnetic north and south. If there were a weaker magnetic field of differing polarity would the compass indicate a presence, probably not especially if it was only a tandy ceramic ,but the field would exist just the same and be overridden by the more powerful one in the vicinity. A rule we were taught that at school science, magnetic lines of force do not cross : Therefore if this is true, there could be pockets of self contained magnetic fields of differing magnetic polarity and strength accuring naturally here on earth. yet undiscovered. Now to take this one step further, could there be a large magnetic field out there in space undiscovered or are the populus not yet informed about.

Second Rule - Light repells magnetic fields. If there was? What would be the result of the sun in contact with this field? Would the light and magnetic forces balance each other out. Could the sun actually move around a magnetic field in orbit and not be a static body as generally assumed. As you are probably aware no independent body in space is really at rest. If the sun moved in this real circular orbit at the same speed it takes earth to orbit the sun, could this be the reason for the elliptical orbits the planets take. At the differing times in the orbit the magnetic field would have a greater influence on the planet pulling it towards this magnetic field. Whilst at other times the sun would have a greater influence and tend to repel the planet away, the combination of these two forces would balance out to give an appearance of an elliptical planetary orbit. Pure conjecture or is it? You decide for yourself.

Solar Condensor - Pure Water each day
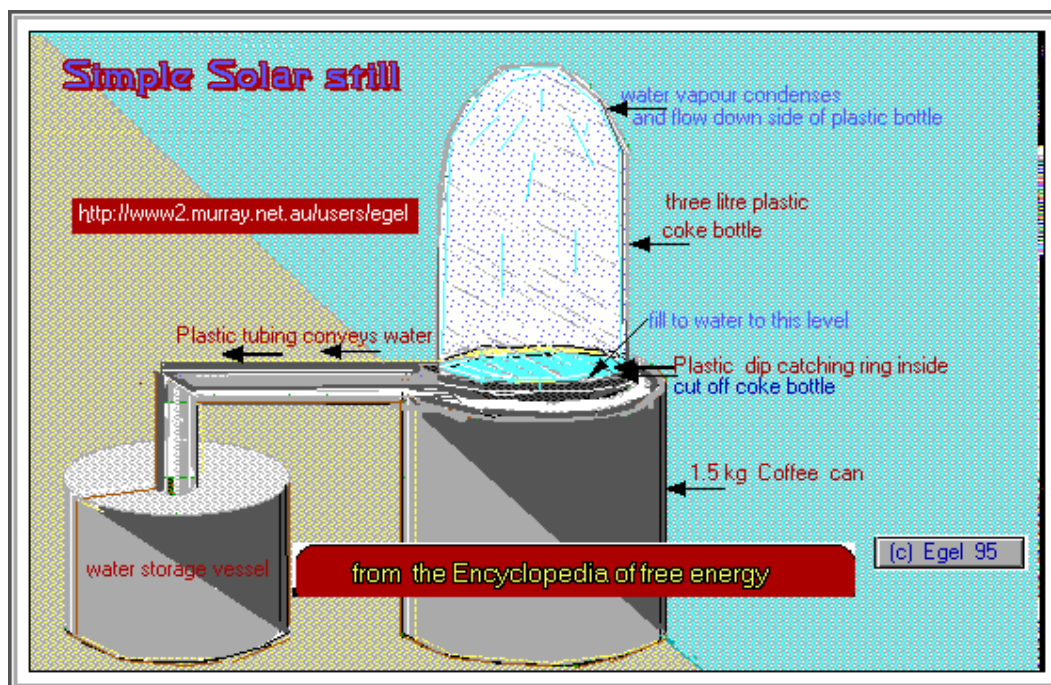
This is a very simple solar condensor that will give a small amount of pure water each day. This unit is suitable for supply water to lead Acid batteries, but gives too little for a survival situation.

The unit consists of three main parts

One three litre or a two litre plastic coke bottle.

One 1.5 kg coffee can or larger.

One plastic bottle to collect the distilled water in.

Some plastic drip irrigation hose [small size]. assorted drip irrigation threaded connectors [smallest you can get].

Assembling the unit

First thing to do is to cut a large diameter hole in top of can lid. The bigger the better.

Use a nibber to do this, Paint the coffee can with a good rust proofing paint and then let stand for some time.

When dry give several washes to remove paint residue.

With the Plastic three litre coke bottle remove top of bottle with a sharp knife ,just below the start of the dome.

Make a circular plastic plate from a 1/2 inch plastic board [a plastic chopping board is ideal] to fit inside the tin lid diameter.

In the circular plastic plate cut a hole to match the one in the tin lid. [this is so water vapour can rise].

A coping saw may be able to do this] I used a lathe to make this part.

Also make a circular groove just inside next to where the wall of the plastic bottle will sit so that water can collect there when water has condensed. Drill a hole in side of plastic plate to link with the groove.

Insert a plastic screw thread connector in drill hole ,glue if necessary but preferably just screw into the plastic plate.

Fix the modified coke bottle to the circular plastic plate and fix to the top of coffee can lid.

How to use

Fill the coffee can with water right up to the top, place lid on can with the coke bottle fixed to it.

Connect a flexible plastic micro irrigation hose to the screw thread on plastic plate and put the other end into a collection bottle at a lower level.

Place unit in bright sunlight and wait make sure all parts are secure as any strong wind will blow the plastic parts away from the unit.

Operation

The water in tin can is heated and rises up towards plastic bottle where it condenses and run downs the inside of plastic coke bottle towards the groove where it collects and flows through the threaded connector and plastic hose into the collector bottle.

Single Pole Generator
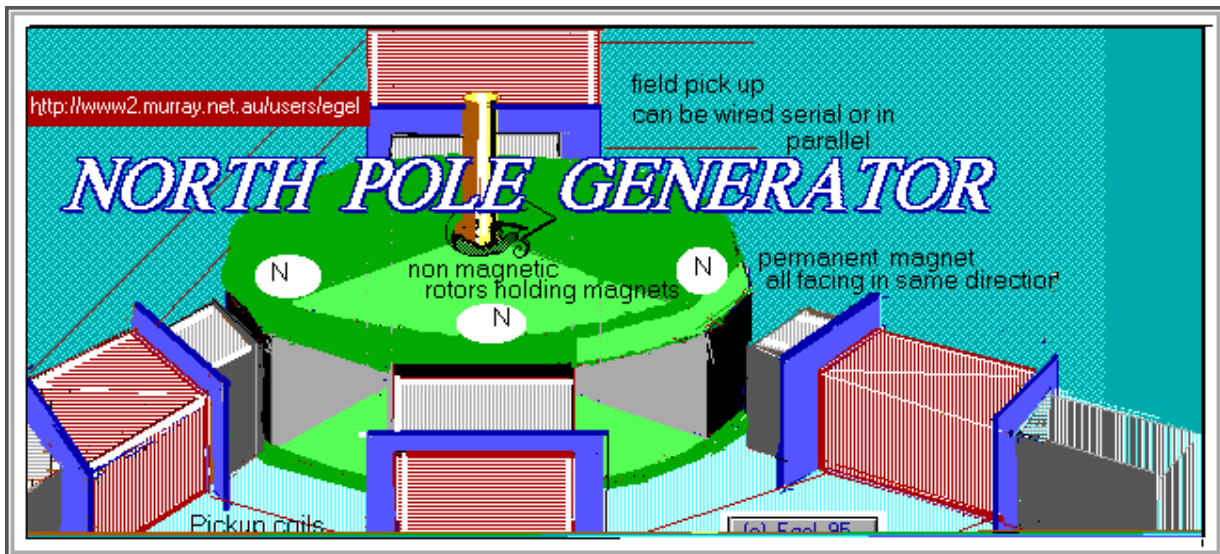
North Pole Generator Having a permanent magnet for the armature is relatively new idea and means no slip rings or commuter is needed to take the current and voltage off as in the case of using it as a generator To make a permanent magnet armature motor with one south and one north pole would mean a way would needed to be found to reverse the current and voltage flow to the field coils so that it could match the speed of the rotor at start up and in turn repel and attract the poles of the permanent magnet armature. Maybe a Hall field effect device to sense the magnetic pole type could be used to control the switching if you really wanted to go this way. Taking the centre armature permanent magnet idea one step further however and relying only on the magnetic repulsion effect, the following simply would only be needed to be done. You will need four strong bar magnets and place them at ninty degrees to one another, all with the same poles facing outwards With any permanent magnet design it is important the spacing between magnets is equal. Mount the four laminated bar and stator winding fields with the same winding configuration pattern facing the same direction and with one end facing outwards. The stator fields could also be mounted top down or bottom up instead of the flat position as displayed, as long as the electromagnet pole faces are the same direction in relation to the permanent magnet armature. The permanent magnets are mounted sandwich like, in the case of the flat bar fields as illustrated in design, between two non magnetic materials with a shaft mounted in the centre. Other ways would need to be done for other positions. To use as a generator spin the sandwich wheel by some means and pulsating power will be produced in the field winding subject to pole facing, rotor speed and magnetic strength and field windings. To use as a motor, a cross arm conductor mounted in the rotor centre and making contact intermittently with a fixed conductor to pulse power, this means really just opening and closing a current flow as no current reversal is required, as we are only interested in producing a repelling magnetic effect when magnet and field coils are in alignment with each other.

Please keep in mind All the air gaps between poles and stator pole face should be kept to the closet spacing you can get. The stators should be made of steel laminate pieces. The coils should be wound with the best insulated wire you can get. With this design you are not limited to four permanent magnets and field coils but you could use more or less, as long as field coils and magnets matched each other and the conductor arm can supply the correct pulse sequence.

You may like to check out a variation of this design by New Zealander Robert Adams who has made something like this but uses it as a combination motor and generator at the same time. With Power being returned to batteries running unit. He has a manual available Giving design details and performance data achieved so far Many claim to have built this creation and got it to work satisfactory using this information.

Airdam - Water from the air
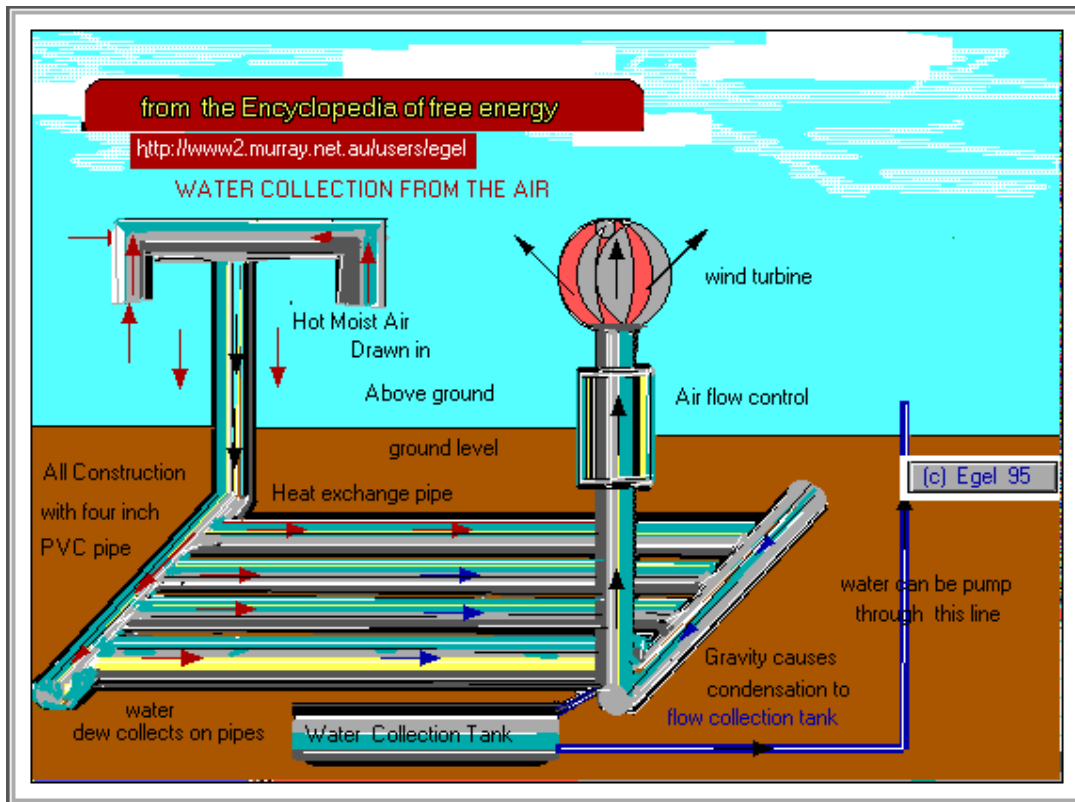
Air Wells based on invention Apparatus for extracting water

Inventor Calce G Courney Route 7 Alexandria Minn 56305

Us Patent App no 215967

Yes it is true you can get water from the Air. Simple technology that can save lives in times of drought.

Air wells have been operating since Neolithic times in one form or another.

Why would you need one of these, if you already have a good water supply.

As our normal water supplies become more polluted and more chemicals are added, we may yet get to see, many more of these devices provide families with their water needs. Already people that now buy bottled water is on the increase.

The Parts

All the pipes are of P.V.C

The device consists of a ten foot by 3 inch diameter inlet pipe buried nine feet in the ground with one foot above it.

Both the inlet and outlet pipes should be protected from soil and bugs with screening.

The outlet pipe is buried to a depth of eleven feet and one foot above ground, with an air restrictor valve and wind turbine to pull the hot moist air through the system. The restrictor valve works in a similar way to the following experiment.

Blow air from your fully opened mouth onto you hand it will be warm.

Blow air from your mouth shaped as if you were to kiss someone it will be cool.

There are at least four heat exchange pipes and are a minimum of twenty feet long by 1.5 inch diameter. These heat exchange pipes and connection ends are slanted to allow the dew drops formed to run down into a collection tank which can be pump out by conventional means.

Method of operation

Hot moist air is drawn into the air intake pipe,, one foot above ground level seems to be the best position to capture the most moist air.

When the temperature inside the buried heat exchange pipes is below the dew point of the air flowing through them, droplets of moisture of water will form and migrate to the collection tank.

How much water is dependant on the amount of moisture in the air and the soil temperature and thermal properties. Moist soils tend to work to work the best however.
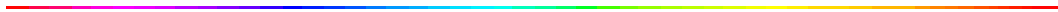
Method and Apparatus for increasing Electrical Power
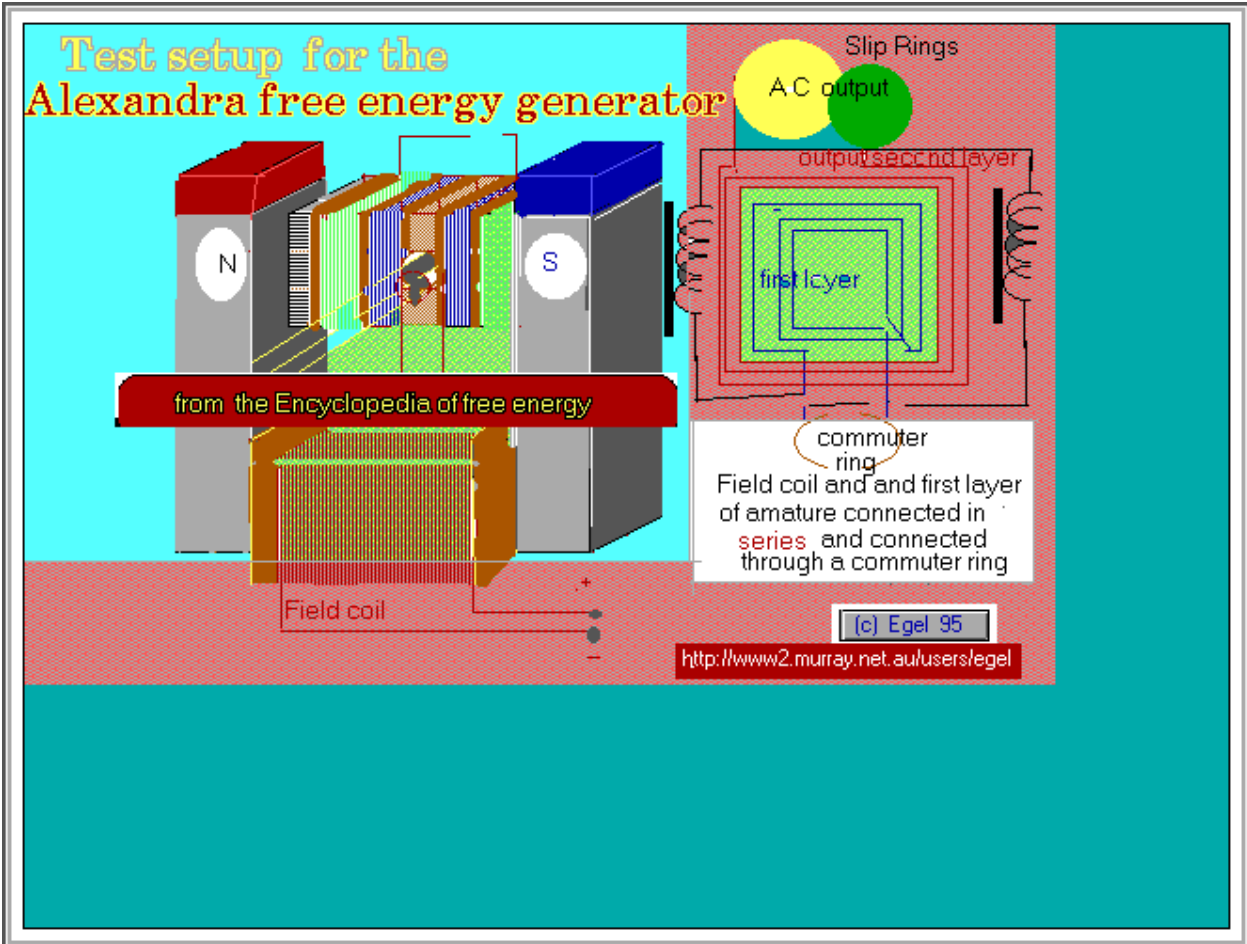
Method and Apparatus for increasing Electrical power Inventor Robert W. Alexander patent 3,913,004 Dated October 14 1975. This is an interesting patent in that it actually claims to produce more power than it uses. The Patent Abstract A form of rotating machine arranged in such a way as to convert a substantially constant input voltage into a substantially constant output voltage :,involving generally a rotor that revolves at substantially constant speed within a stator which comprises a transformer coil subjected to and having a primary motorised transformer winding and a secondary transformer generator winding, whereby transformed and generated power are synchronously combined as increased output power.

The illustration is not an accurate design of his design but meant to convey an experimental setup. Robert's design employed a four pole generator of which the petrol motor had been removed. He kept the stator field setup He unwound the armature coils and replaced them with two windings each windings occupied the same slots of the armature. He connected the ends of the first primary windings to a four pole commuter and brushes setup. I believe this could have been a series connection setup but am not sure. and the secondary coil winding to slip rings. This transformer had a ratio of 3 to 1 in the secondary favour. The armature primary field and the stator coils were connected to a 48 volt power source (four batteries) When power was applied the unit acted like a Dc motor The commuter action reversing the armature poles and the alternating current being induced in the secondary winding along with the magnetism produced from the stator coils.

Atmospheric Potential Gradient Motor
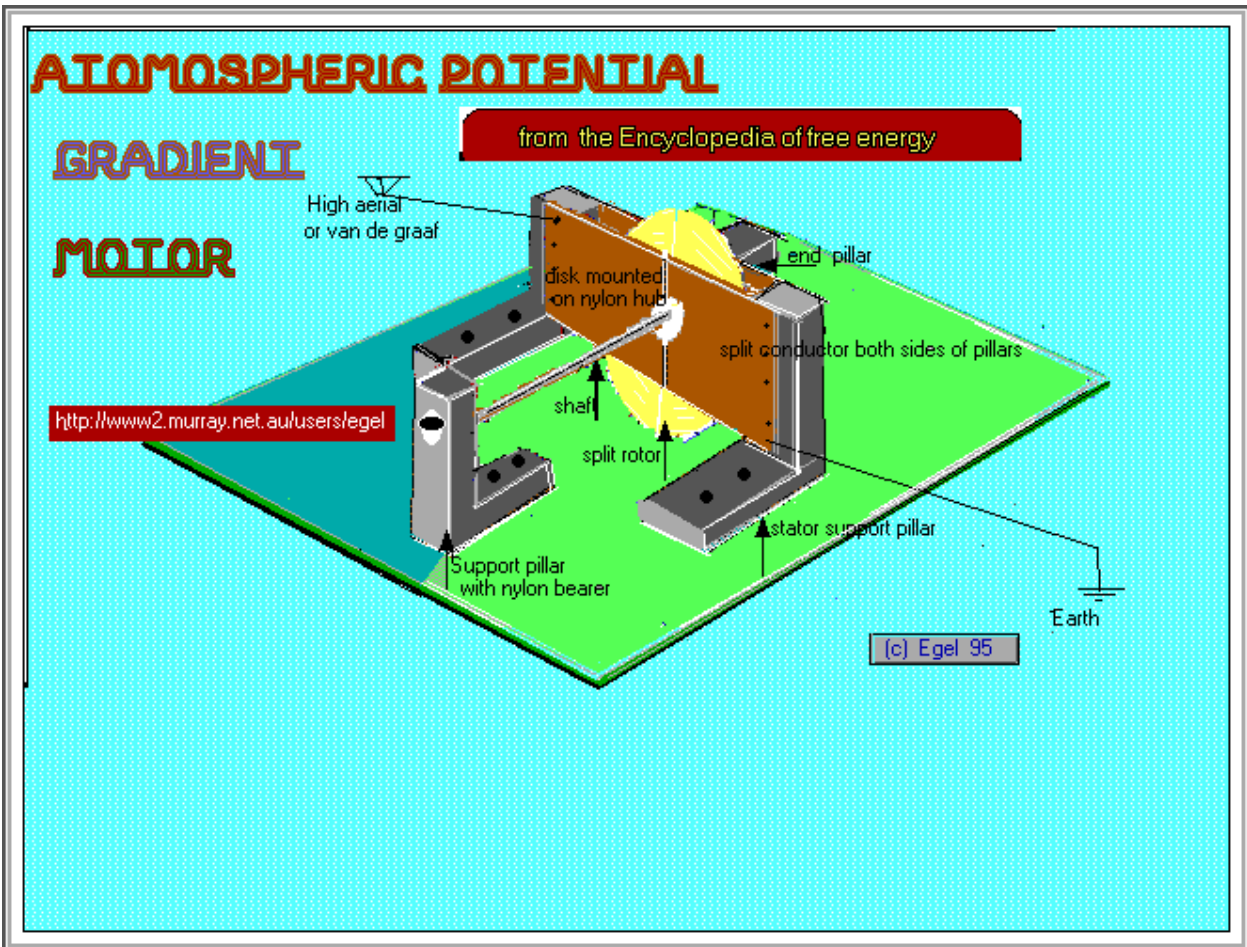
A simple motor using electrostatic energy gathered from the air or from a electrostatic machine.

The device consists of one split armature of two semi circular metal disks mounted on a smaller insulated disk mounted to a common axle. On the arm supports are bolted four metal face plates one to left ,one to right in the front and two in the rear of the rotor. The face plates cover the entire disk surface with a gap through the centre where they are not joined and where the axle comes through.

The Face plates on the left hand are connected to an aerial as long as possible to gather sufficient static electricity. A small piece of wire is soldered to the face plate and the other end makes contact with the rotor plate. The right hand side is similar except it is connected to good earth.

How it works

The unit works by the aerial gathering a static charge from the air and transferring it to the left face plates and then to the rotor face. As both metals now have the same charge a repelling effect takes place and the other side of the rotor with an opposite charge is attracted to this position.

As soon as the rotor face come into contact with the solder wire it acquires the same charge and the process is repeated. A high aerial or good electrostatic machine is a must along with a good earth.

The unit is built from Plastic and aluminium.
The axle supports should not be tight as to prevent the rotation of the axle.

det 1
base plate
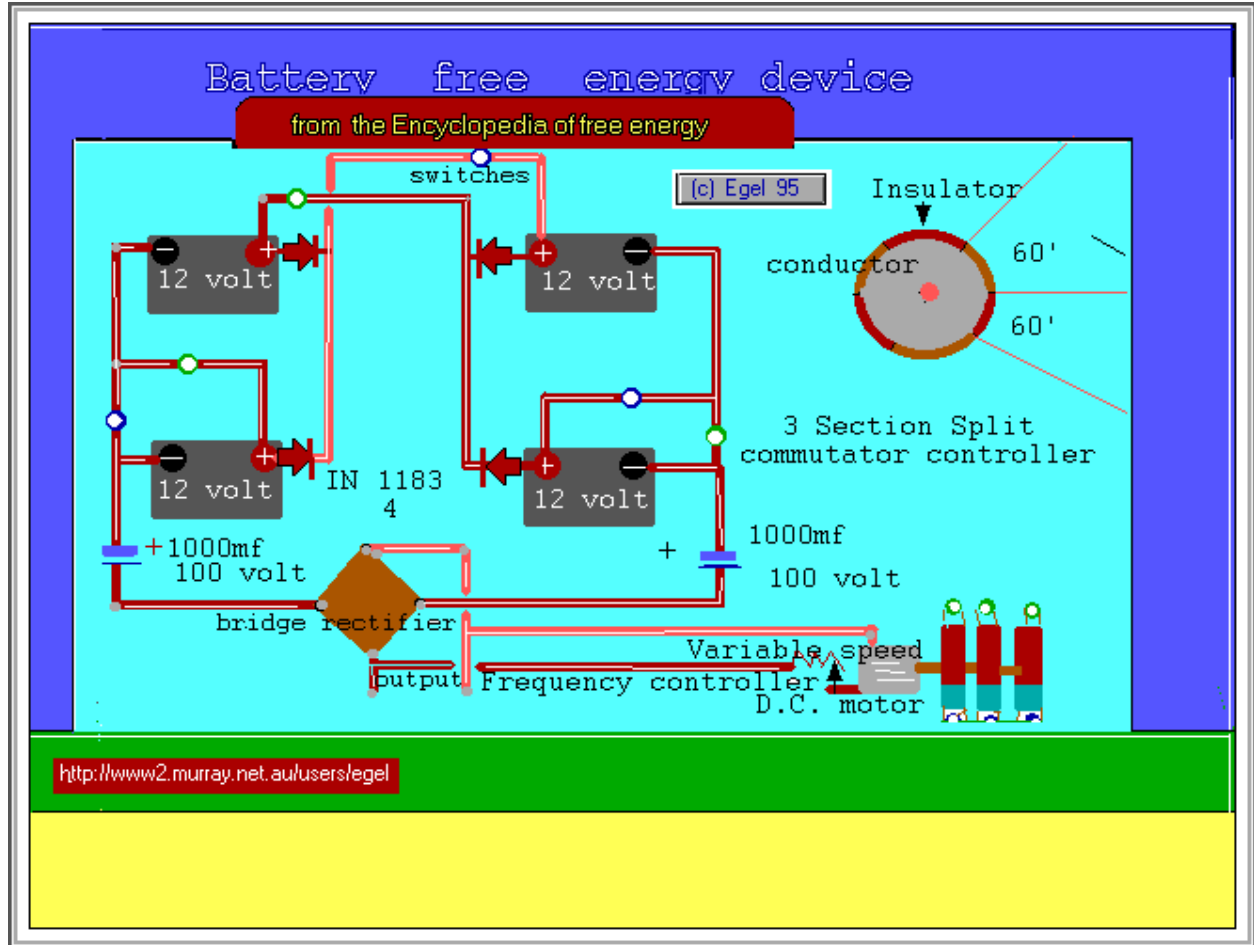1 reg plastic

4""
3.5""

base plate
thickness 1/4 to 1/2"

1.5"   .5"

3"

3"

1""   .75"

1.75"

1.25"

det 3
rotor support
#28 drill
2 req metal

.50" .25"

.25"

1.5"

8-32 tap

1.75"

det 2 Stator support
2 required metal

.75"

.25"

.25"

#28 dir

2.25"

.75"

2.75"

.5"   1.25"

Det 10 rotor shaft
1 req metal

25 dia   3"

det 7
1/16" rod
insert in holes in det 5
and solder into place

det 8
.005 wire
1.25" long 2 pcs

solder to front stator
plates as shown and
trim to length at
assembly

det 6 hub 1 req

376

188

4-40
tap

.5"   .5"
.75"   .25"

conical depression
to fit
end of det 10

det 9 8-32 nylon screws 2 req

font plate only

#28 drill

1 7/8"

.25"

3/8"

solder

7/16

1 1/8"

1 5/8"

2.25"

Det 4
stator plates
4 Req

.5"   1"

5/32 r

1 1/16

43 drill   det 5 rotor plates

solder

Metal two required

Battery Free Energy Device

There are a number variations on this theme. Some are all electronic and have electronic all switching [power transistors] driven by a variable electronic sine wave generator. In reality they are the following design as illustrated.

A twelve volt lead acid battery will usually deliver a voltage of between 12 and 13.5 volts, therefore to charge this battery a voltage greater than this would be needed.

To achieve this four batteries are used, in one half of the switching cycle two batteries are connected in series to give 24 volts and fed to the other two connected in parallel as 12 volts. In the other half cycle the batteries previously charged as twelve volts are now a parallel connection of twenty four volts and are now charging the other two as twelve volts.

On the diagram the green circles represent switches that are activated by motorised activator and are in either on or off mode together. The blue circles represent the other set of switches and are off when the green ones are on. The arrows represent power diodes and that help direct the power flow. The key to making this device work seems to be the frequency of the switching operation.

This is achieved by a variable speed electrical motor driving a set of insulated disks with metal contacts fixed to wheels The wheels themselves making intermittent contact with outer part of the switch [see diagram] when rotated. A power rectifier and a full wave bridge convert the pulsating current to a dc supply. Apparently the right resonance switching triggers something in the chemical and electrical characteristics to give better charging than expected and resulting in claims of over unity power from some constructers

The Hendershot Electrical Generator
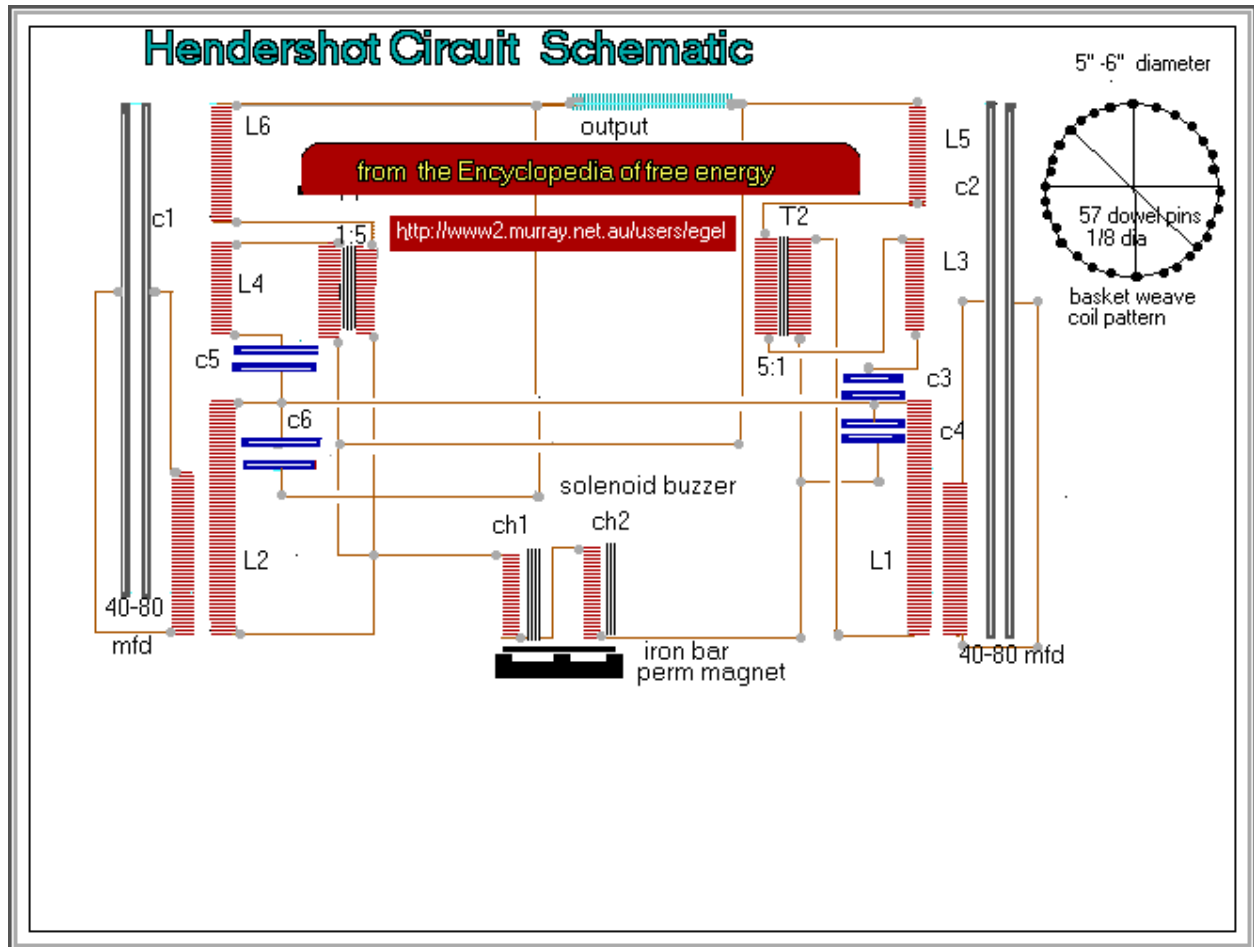
During the 1920's an Inventor in the United States called Lester Hendershot produced a device which claimed produced useful power of a about 300 watts.

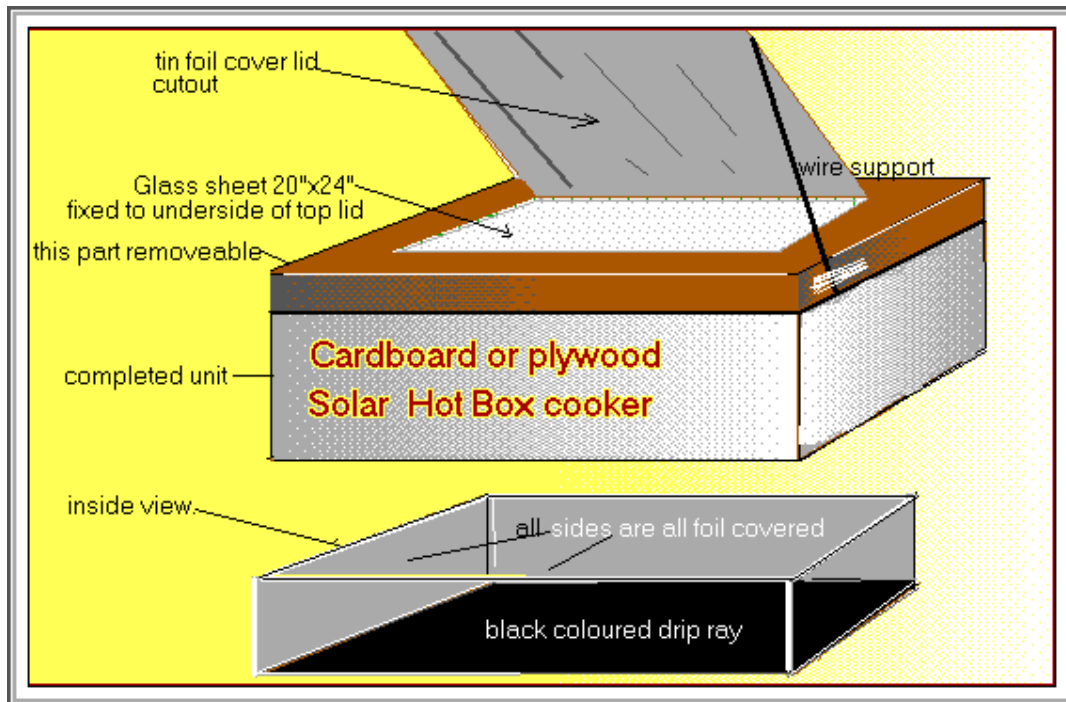The device proved however to be erratic in operation.

The inventor claimed he was tapping the space energy field.

The Hendershot generator consists of a special arrangement of two basket weave coils with each of them being of three coils themselves. Each basket weave coils were placed around a stainless steel cylinder upon which before a full capacitor al foils had been wrapped.

The unit also consisted of two transformers of 5:1 transformers, magnetic clapper unit, from which the unit was triggered and additional capacitors.

For those who are interested in the full construction details, his son Mark Hendershot who is trying to continue the work, has available a full set of construction plans of the generator and details of his father's life work.

Construction of solar box cooker

tin foil cover lid
cutout

Glass sheet 20"x24"
fixed to underside of top lid

this part removeable

wire support

completed unit

**Cardboard or plywood
Solar Hot Box cooker**

inside view

all sides are all foil covered

black coloured drip ray

Advice on how to build one

Materials needed

5 large pieces of cardboard (see#2 TIPS AND STRATEGIES);at least two should be 4 and one half feet across;Flatten cartons from bicycles,appliances or furniture are excellent (see step 1A,alternated reflector regarding cardboard)

50 feet regular aluminium foil 12 inches wide.

1pint white glue.

window glass 20" by 24"

* 8 feet wood molding:window screen moulding is best(see section on alternate Reflector)

one tube clear silicone caulk

4 feet slash cord or similar heavy string

Insulation 2 inch stack of newspapers

Black metal tray approx 17 inches by 21 inches (see step 4 cooker completion)

Masking tape.

Tools needed

Box cutter or sharp knife

Pan or bowl to mix glue.

brush or small roller to spread glue.

Straight edge (eg yardstick) plus blunt tools pliers handle or large screwdriver) for scoring cardboard.

Saw

3/16" drill

Caulk gun

Tools for holding cardboard while glue dries(eg clamps,clothes pin bricks masking tape etc.)

Scissors

Tips and Strategies

1. Cut all patterns with scissors on solid lines;dotted lines show where cardboard will be folded. Place patterns and hold in place using masking tape.
2. **R**egular cardboard is easier to work with than double strength cardboard and is satisfactory for most parts of the box.Double strength cardboard is useful for the reflector and lid and may avoid need for reinforcement.
3. Use full strength glue for fastening cardboard pieces together;dilute half glue;and water) for glueing foil to cardboard.
4. Score cardboard (using straight edge and blunt instrument)prior to folding .Score on the side toward which the fold is to be made in order to avoid tearing the cardboard.All folds are UP,towards the side on which pattern was placed .Except narrows flaps on the inner box ,which are scored on the reverse side and folded in opposite direction.
5. Place pattern on cardboard to take advantage of folds pre-existing on cardboard,otherwise place patterns on cardboard so that the new folds are as far way from pre-existing folds as possible.
6. When working on the floor don't kneel on the cardboard you are going to use;it makes dents.kneel on a scrap of cardboard it protects the knees.
7. Start with the lid;there are several step; requiring glue to dry in between ,go to another part of the box while it is drying.
8. A second piece of glass is useful in marginal weather (where there is wind or intermittent clouds,place on top of lid to avoid heat loss.

Step 1 - Construction of the lid

After cutting and scoring cardboard fold tabs at corners outside the side flaps and glue, securing with clamps and or tape.

Allow time for glue to dry before proceeding.

Invert top and adhere glass to underside of top using silicone caulk. Make a bead of caulk about 1/2 inch in from the edge. Press flat with something heavy until dry. Fill in the space between the glass and sides of top with strips of cardboard about 2 inches wide (measure to fit exactly) and glue in place.

After caulk is dry on underside, invert top and put a bead of caulk around glass window where it is framed by the cardboard.

Step 1A. - Construction of the Reflector

Pattern is design to provide a reflector from the same piece of cardboard from which the lid is made.

Simply cut along the three dotted lines in the center of the pattern and score on the reverse s(top of lid) of the fourth side providing a large flap which will serve as the reflector.

An ALTERNATE REFLECTOR (which provides a larger reflecting surface and protects the window better when cooker is not in use) can be made by cutting a separate piece of cardboard (double strength cardboard is useful here) to fit the full size of the lid. In this case the larger flap provided by following the pattern will be cut off along the fourth side and removed. This is a piece can be later used to improvise a drip pan(see section on cooker completion)

Which ever reflector is used .completely foil the side facing towards the glass .If the alternate reflector ,score three inches from the edge of the back side and glue to lid.

If regular strength cardboard has been used, it is suggested that the reinforcement sticks be glued to the three unsupported edges of the reflector.

Prop mechanisms for the reflector.

[**A**] Punch holes through side of the lid and reflector. Tie stick in each location so that in each location so that it can be slid up and down to adjust the reflector.

or

[**B**] Glue blocks of wood about 3/8" thick 6 inches to 8 inches long, with holes drilled in side to lid and reflector .Use heavy wire(such as from coat hanger) for support

Construct an inner box to fit inside larger box on all side of this inner box glue the al foil to each inner side.

ADD black metal pan to bottom of inner .It is essential to have a black drip pan in the bottom of the cooking chamber.

If a metal pan is not available it is satisfactory to improvise a pan by covering one side do a piece of cardboard with foil cutout and then painting the foil black

GETTING BOX READY TO COOK

After the box is complete, but before cooking allow box to dry several hours in hot sun so that no chemical odours from glue or caulk are absorbed by food.

Make sure there is a black drip pan in the bottom of the box and that any cooking pots have black or dark lids.

Finishing touches

Line the underside of the lid with foil in order to cover all spaces between glass and cardboard.

Cover all corners with two inch paper tape such as sheet rock tape or brown paper bags cut into two inch strips using full strength glue.

This helps protect the corners. Don't use pre adhesive tape, such as masking tape or duct tape ,as it fails to hold up against repeated exposure to sunlight.

Make short feet for your cooker of 2 inch squares of wood, plywood or several layers of cardboard to protect the bottom of cooker.
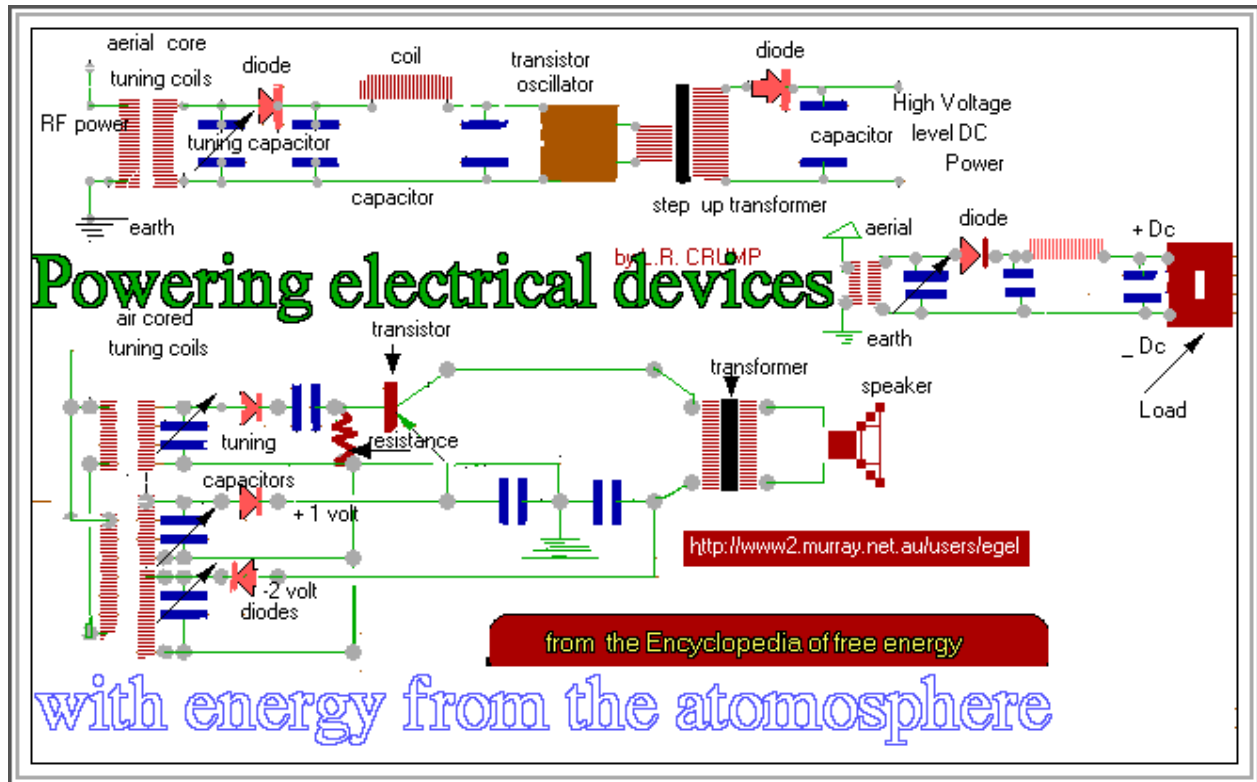
Cover cooker with wallpaper, cloth, contact paper or exterior paint. Two coats of exterior paint are especially helpful in making your cooker more waterproof.

A solar water heating system based on the hot has been also constructed to provide hot water.

A simple diagram is presented below.
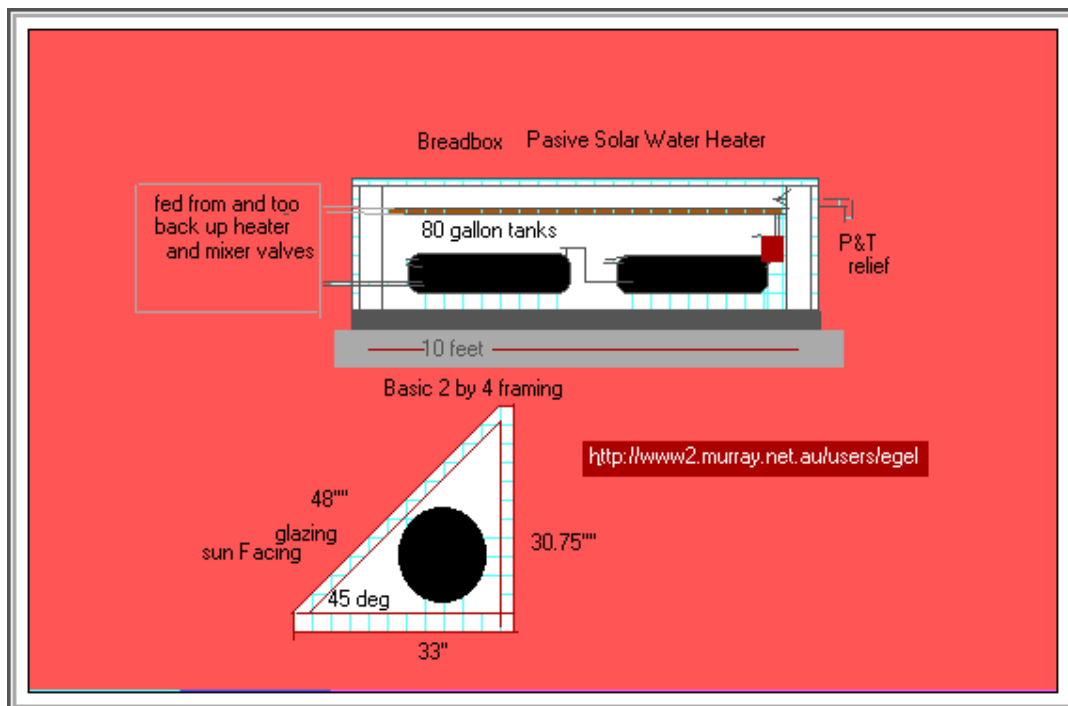
Crystal Set Power

Powering Electrical Devices with Energy Abstracted from the Atmosphere

by L.R.Crump U.S. patent 2,813,242

In the early days of radio when valves were the norm and very expensive, many people were unable to afford them. A simple device called a crystal set was the norm. It consisted of only a few components, many made by the people themselves. A coil usually hand wound by trial and error. A tuning capacitor A diode which allowed current to travel in one direction , this was usually a piece of galena crystal with a movable piece of wire this was moved about on the crystal until a signal was obtained.

I have also seen the blue Gilette razor blade and a lead pencil used in the same manner.

Later a crystal diode was introduced which made things considerably easier and the final component a head piece or head phones. The headphones are the most interesting piece as far as energy is concerned as current is supplied from the rest of the device needed to make then work. This invention makes use of this current to power other devices.
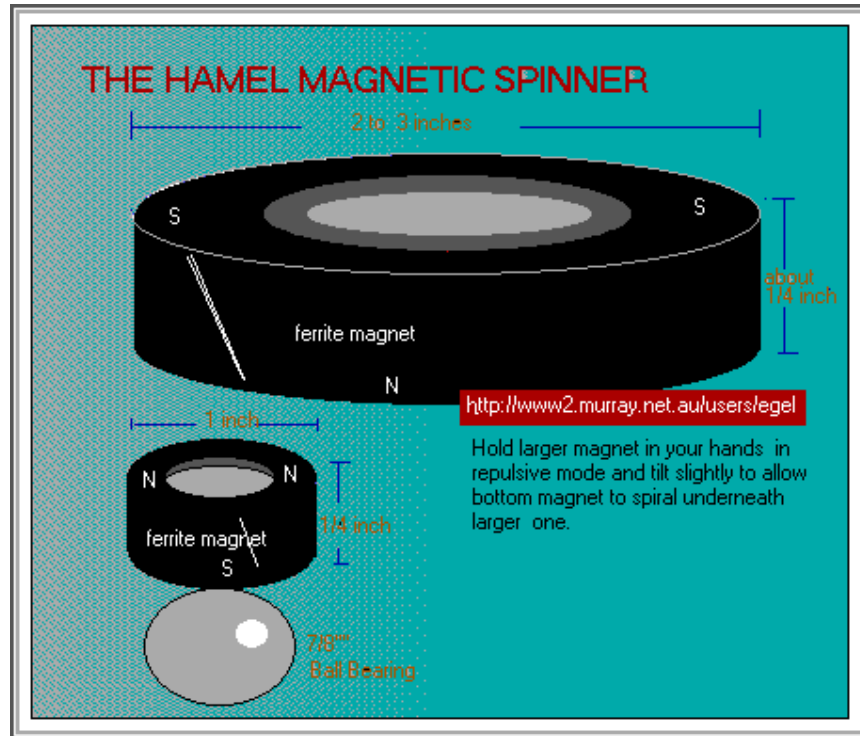
Coil and capacitor are tuned to frequency of a radio transmitter from which the diode rectifies the signal and delivers a D.C. pulsating current , a full wave rectifier would give a better output.

To deliver an increase in power several tuned circuits could be coupled together. Results obtained from a 5 Kilowatt standard broadcast station from five miles away using only an indoor antenna to pick up the power signal. 2.5 to 3 volts at 0.5 to 1 milliwatt. A longer outdoor aerial would give better results

Please note that the newer coils using ferrite rods give a stronger signal and the coil can be substituted by one made by your self, A few turns are only needed to receive the stronger short wave stations such as radio Australia. Of course you would use your own short wave station in your country.

I have found that insulated steel wire coil gives better results than copper. The diode should also a geranium type in preference to others types.

The Hamel Magnetic Spinner

THE HAMEL MAGNETIC SPINNER

2 to 3 inches

S   S

about 1/4 inch

ferrite magnet

N

1 inch

http://www2.murray.net.au/users/egel

N   N

1/4 inch

ferrite magnet

S

Hold larger magnet in your hands in repulsive mode and tilt slightly to allow bottom magnet to spiral underneath larger one.

7/8"" Ball Bearing

At this time in Canada there is man by the name of David Hamel who claims to have been contacted by aliens who showed him how to produce a flying saucer using the power of magnetic repulsion to power this craft.

David Hamel claims to have made a design using about $3000 dollars of tandy one inch magnets which when flew created a bright light as it ascended towards the heaven.
At the same time electrical equipment in the area failed to function.

For more information on this man I suggest you check out the Project Magnet site on my helpful sites list. There you can access information about a video and book by Pierre Sinclair describing David Hamel life story and activities

The experiment

The drawing is an experiment that has excited some free energy personnel although David Hamel does not claim it to be a free energy device but a demonstration of a greater principle.

But never the less the experiment is interesting to perform and is cheap to do so.

Parts Needed

2 to 3 inch circular ceramic magnet with just over 7/8 inch hole in the centre

1 tandy 1 inch circular magnet or thereabouts

one steel ball bearing 7/8 inch in diagram

a hard surface kitchen top is excellent.

METHOD

Place the ball bearing on the hard surface and then place the one inch magnet on top of the ball bearing if it tilts over don't worry as when you bring the larger magnet with your hand towards the one inch magnet it will come back up.

The magnet should be in an opposing mode that is north against north or south against south…

Move the larger magnet into position with your hands and hold it one inch or so above the smaller magnet.

The smaller magnet will find it own position from then on you will need to tilt the larger magnet with your hands slightly to promote a spiral forward motion under the bigger magnet.

Keep the magnets far enough apart so that so do not become attached to one another.

With some practice you should be able to keep the ball bearing and magnet spinning for several minutes.

Dennis Lee - Phase Change Cycle
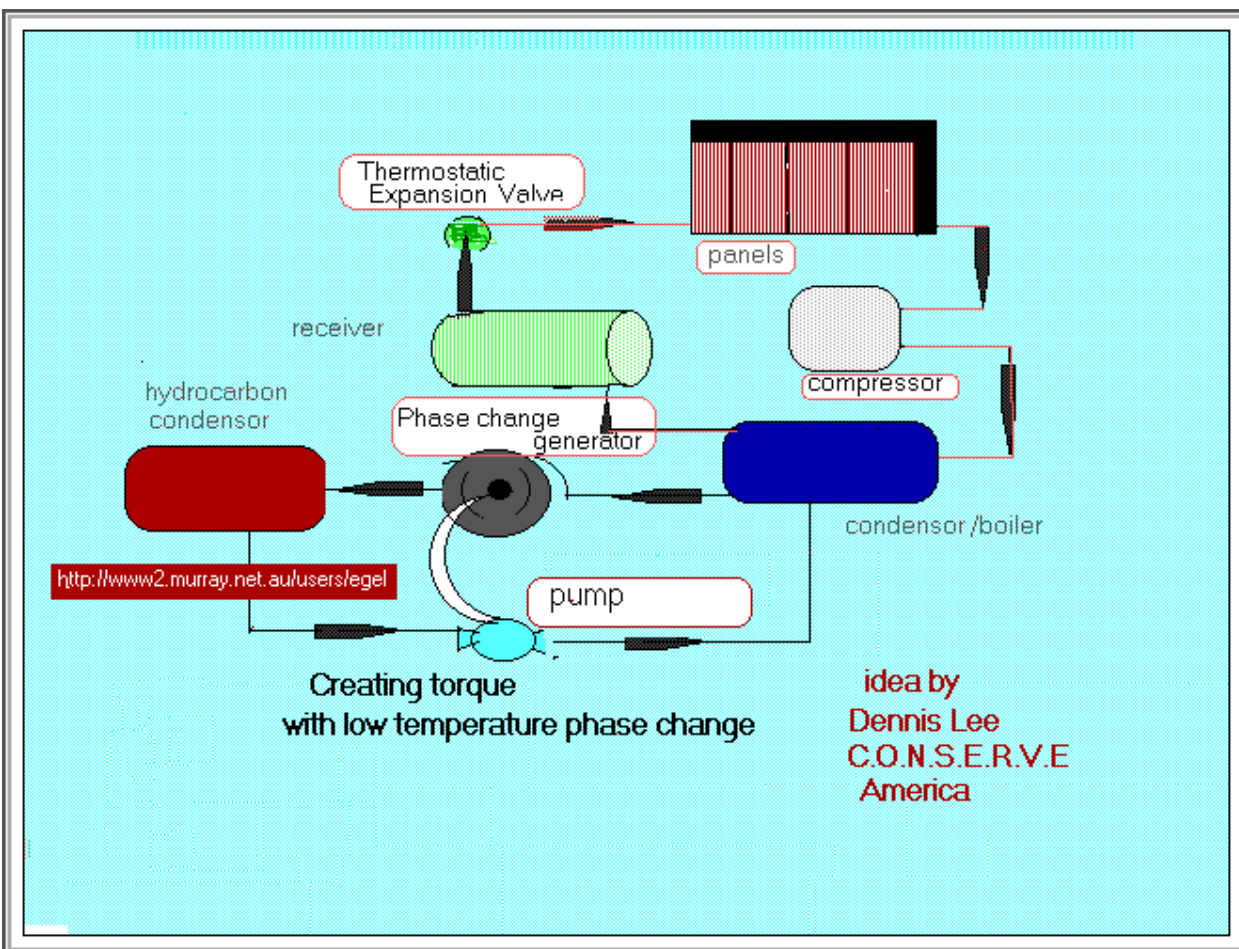
Today water is super heated to 1000 degrees under high pressure to generate our electricity. What happens if we used something with a much lower boiling point. Some thing that boils at below 40 degrees f below zero degrees perhaps not many places can get that low, meaning we have a reliable heat source.

As strange as it seems this has been accomplished by man named Dennis Lee and a talented team from the United States.

This man has been blocked in several ways one way was to send him to trial for fraud this apparently had some TV coverage ,a charge he claims he beat it by the way. Remember these devices have been built and tested and unfortunately confiscated by authorities and never returned.

This article is reproduced from the package Dennis Lee provides as an information package. Just think we could have no more oil wars or oil pollution. His address is in the inventors section. His package contains three NTSC standard videos and a book and if not satisfied he will refund your money. Apparently only two people have requested this to be done and I was not one of them.

His book contained no copyright warning so this extract is reproduced from his book to inform others that may not heard of him and in so give you the chance to be of assistance to him and to see what he is capable of. By the way I have no connection with this man and have nothing to gain from him

Free Energy from Air a Layman's explanation

Lets see how this technology meets the criteria for practicality. What we are calling practical is a unit that takes energy from the air 24 hours per day or night. 365 days and nights a year.

To produce up to 50,000 kilowatts of free electricity per year at the retail cost of about $12,000 including a hot box thermal storage system for backup power. In addition to producing free electricity it does it harmlessly with no pollution, toxic waste or damage to the environment.

The first thing you need to know about a heat pump works "is the first law of thermal dynamics".

It says that a hotter substance will give its heat to a cooler substance until the two equalize in temperature. A heat pump uses a very cold liquid like freon and exposes it to the environment in flat plate collectors. These liquids are so cold they boil at 40 degrees F below zero. This means that because of the first law of thermal dynamics, anything in the environment that touches this liquid in those flat plate collectors, is going to give up it heat to that liquid. Is there anything in the environment that you can think of that is colder than 40 degrees f below zero? Sun? Rain? Wind? It may get pretty cold, but even the snow has heat to give up to the refrigerant. If snow is 32 degree F above zero and the refrigerant boils at 40 degree f below that means there is 72 degree worth of heat that can be removed from the snow. There is a limitless supply of molecules outside warm enough to continually boil the refrigerant. So just by exposing refrigerant to the air through evaporative plates, we can cause the refrigerant to boil any time.

The second thing you need to know is that when a substance phase changes or chances state from liquid to gas for instance ... it Absorbs a tremendous amount of energy. It becomes a sponge for energy. For instant it requires a lot of energy to boil water from ground temperature which is about 55 degree f to 212 degree F. But believe it or not it takes six times as much energy to get it one more degree over the boiling point than it took to increase it that 150 f. So changing liquids to gases absorbs a tremendous amount of energy. While the refrigerant is absorbing a tremendous amount of energy and the molecules are going crazy because it is boiling, the temperature doesn't rise much and the gas is not yet hot. That is because the gas in a vacuum, expanding through a huge flat plate collector without any pressure. Compressing that energy into a smaller would increase the pressure make it hot, and change it's boiling point. Then we could transfer the heat and use it to provide energy for us. A compressor now becomes the key.

All this gas running freely through the evaporators is directed down into a compressor where a piston in the compressor draws like a syringe and fills up with energized gas. Then all the gas in the full length of the piston chamber is squeezed into a very small area causing each molecule to be squeezed tightly together and thereby increasing the temperature of the gas. The gas comes into the piston chamber at maybe 50 degree f and comes out after being compressed at 250 degree f.

The process lets the environment energize and expand the gas and then uses a compressor to make it 250 degree hot. The compressor does not put the heat into the gas ,it merely squeezes it out, like squeezing a sopping wet sponge.250 degree F gas is now hot enough to use to heat water or air and actually transfer the heat produced.
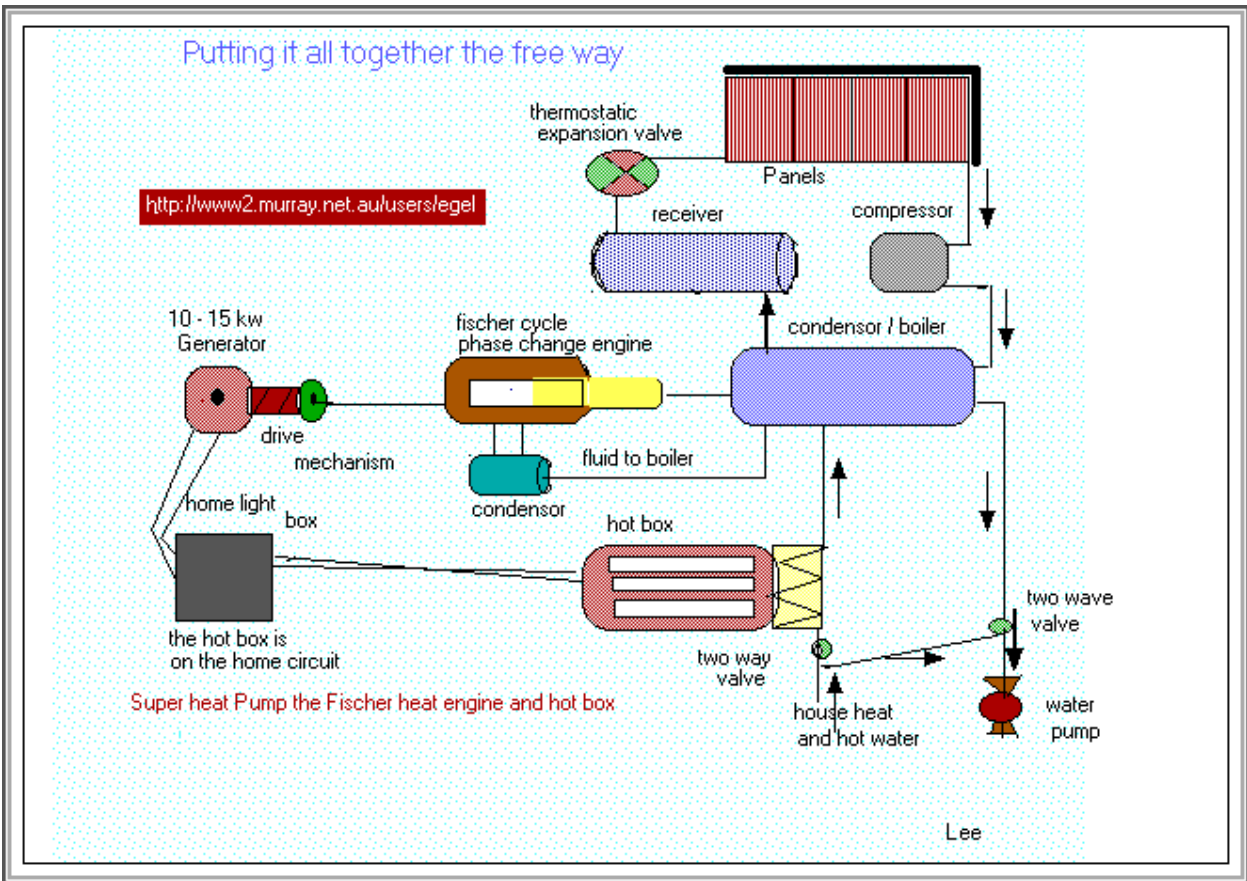
Now how is electricity made? Your electric supplier uses water which boils at 212 degree f and heats it up to 1,000 degree F or more in a pressurized boiler gas (steam).

The pressure is released as the steam escapes past a turbine blade. If we were to take our 250 degree f hot gas coming out of our compressor we could use it to boil another low temperature substance which would become gas and turn blades that rotate a shaft, just like the electric company.

But instead of heating up water that boils at 212 degree f in a pressurized vessel, why not use our hot gas to excite a substance that typically boils at 40 degrees f below zero.

Now that 250 degree f gas would get that second fluid pretty excited. This would build up a lot pressure on our gas and when escaped through turbine blades [or air motor] would rotate a shaft that would power a generator to produce electricity.

The difference between what we are doing to make electricity and what the electricity company is doing, is that we are doing it at much lower temperatures and of course we are doing it with energy from the air whereas they are burning coal or oil to heat that water to 1000 degree F.

Their process of burning things to obtain high temperatures pollutes the environment whilst this process we call low temperature phase change burns nothing and provides safe, clean cost free energy.

The massive flat plate evaporator measures 8 foot by 3 foot Two thin sheets of aluminum are silk screened with a vein pattern and heated and pressed together under 200 tons of pressure and they bond together as one piece except in the places where the dye of the silk screen made the vein pattern.
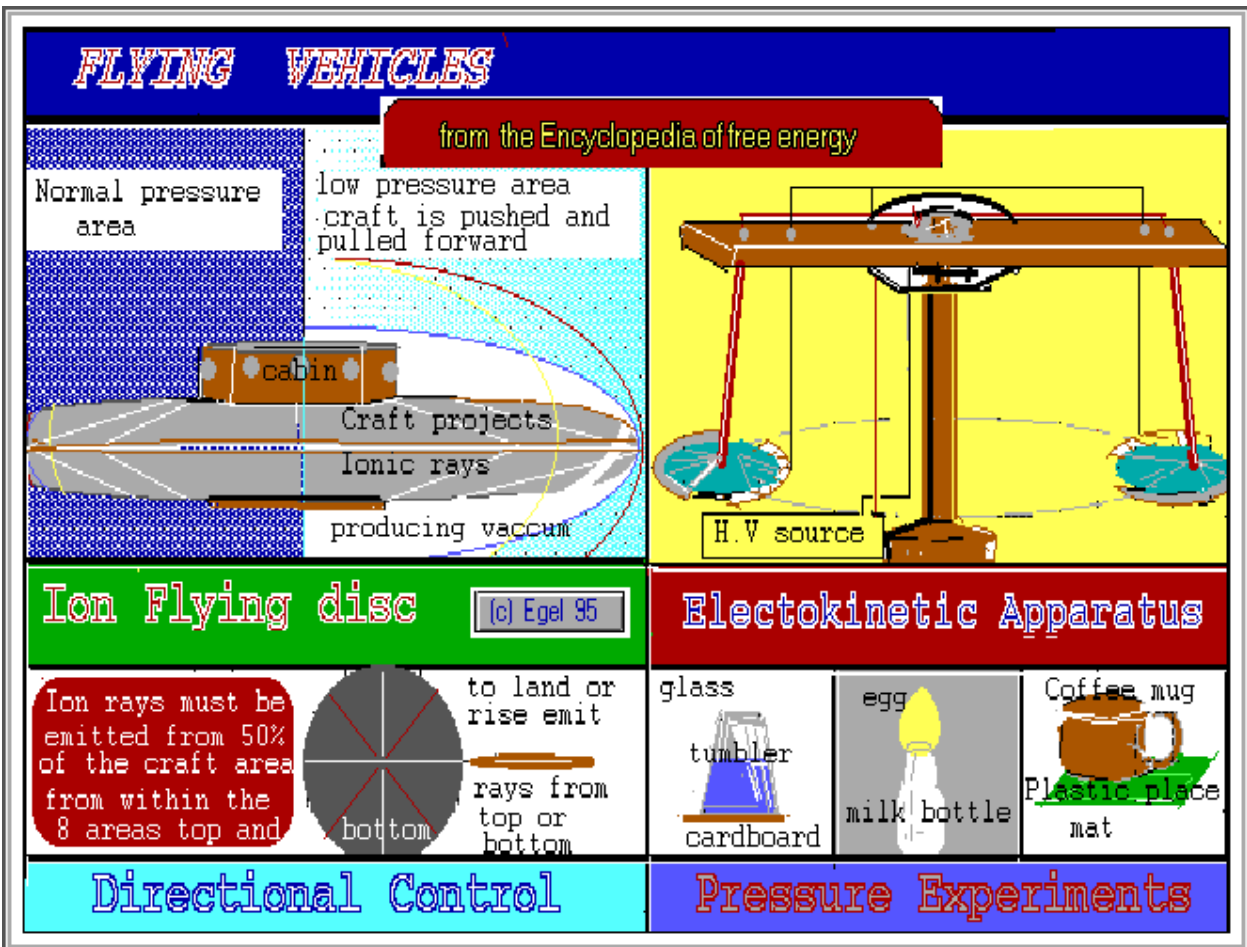
The veins actually poke out as the oxygen from the metal is pressed out of the aluminum.

The result is a 8' by 3' flat collector with a network of veins to put freon into and let boil through the other side. A surface area of 400 square feet can be mounted in a 7 foot diameter.

End of extract.

Flying Vehicles with Ionising Rays

FLYING VEHICLES

from the Encyclopedia of free energy

Normal pressure area

low pressure area craft is pushed and pulled forward

cabin

Craft projects Ionic rays producing vaccum

H.V source

Ion Flying disc [c] Egel 95

Electokinetic Apparatus

Ion rays must be emitted from 50% of the craft area from within the 8 areas top and bottom

to land or rise emit rays from top or bottom

glass tumbler cardboard

egg milk bottle

Coffee mug Plastic place mat

Directional Control

Pressure Experiments

Flying vehicles

What is described is a means of propulsion for such a flying disk. The entire outer skin of craft is covered with means of producing Cathode ionizing rays. When an ionizing ray is produces it breaks down a layer of air to form a vacuum and then is re absorbed into the air. This could be a means of propelling a craft through the air.

The reports of these craft seem to indicate they prefer flying in a straight line for any given direction This could be achieved by the following means. For directional control the vehicles skin is divided into sixteen sections eight above on top and eight below.

Please note more less sections could be used in **the guidance of the flying vehicle**.

To move the craft in any direction half of these sections must be switched to on and producing ionizing rays and the others to off leaving this area to a be normal air pressure. To move in any direction set the vacuum producing sections so that mid section top and bottom is in the direction you wish to go. The air in front of craft for this direction is then turned into a vacuum and the normal air pressure behind craft pushes it into the low pressure area and because the ionizing rays continues the craft continues to move in forward direction. To go up the entire top surface is turned to vacuum producing rays and the bottom is turn off. the craft entire craft moves upwards. To go down reverse the above process.

To power the craft an ionizing cathode ray generator could be employed as described in the ION CATHODE GENERATOR This vehicle could not have portholes as the changing air pressures could cause them to break so TV cameras would needed to be mounted around the edge of craft to aid in navigation.

The Ionizing field would produce a very bright light and would be very dangerous to anyone standing near when in operation and could only be safely approached, when all of cathode emitting units were turned to off. The fields would not effect the crew as the rays are projected outwards and the radiation danger would probably be less than the normal environment. Those claiming to have seen a UFO have often reported bright lights and some have had strange radiation burns on their bodies giving witness to their stories.

Pressure Experiments. The following experiments are included to show to you the power of a vacuum and air pressure that surrounds us. Glass Tumbler Place some water in a glass tumbler ,surprisingly it does not need to full as some suggest. Place a piece of cardboard or playing card over the top of glass and with a hand holding card in place. Tip card and glass tumbler over quickly and remove you hand and the air pressure from the outside and the vacuum inside will hold the card and water in place without pouring onto the ground if done properly.
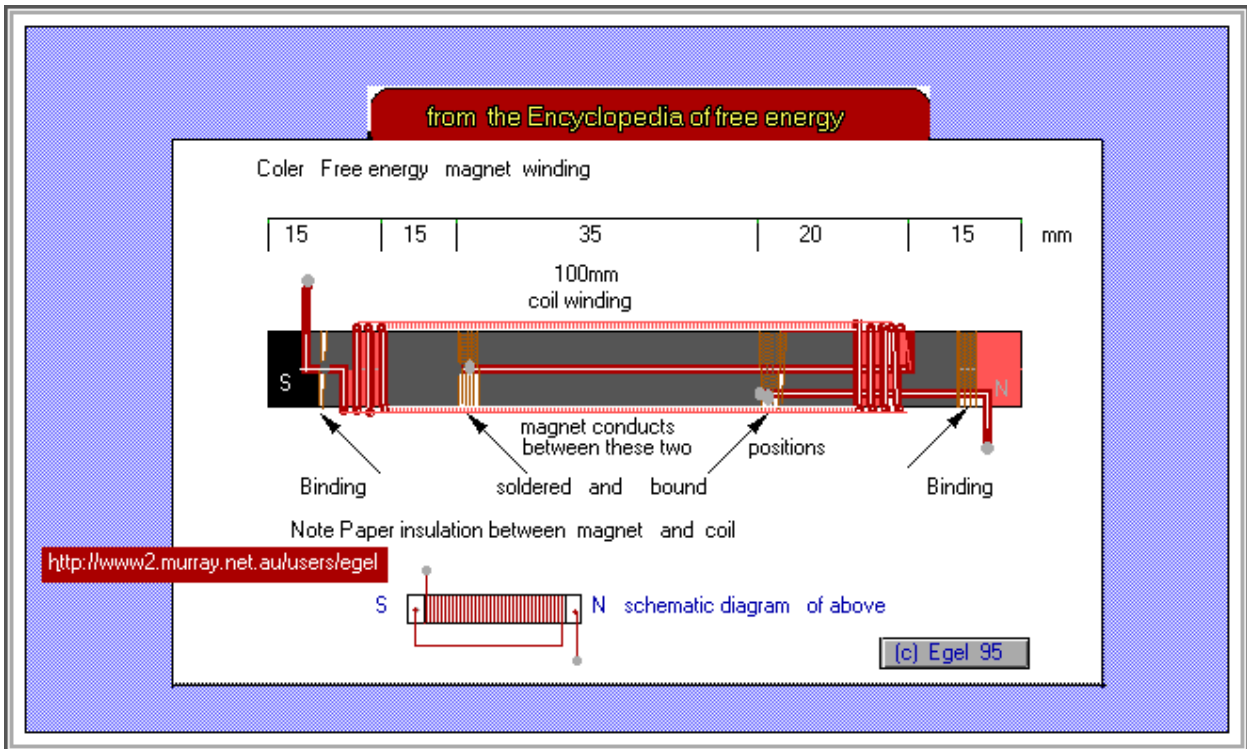
Egg in Milk Bottle If you can get a milk bottle you can perform this experiment. and a not too big fresh egg and piece of paper and a lighter. Put a slight splash of water around the top of the milk bottle to allow slight lubrication. Light a piece of paper and drop into milk bottle wait until the paper has nearly burn out and place egg on the neck of the bottle. When the air inside of bottle has cooled it creates a slight vacuum in milk bottle and the outside pressure forces the egg inside bottle. If you soak the egg in vinegar it will remove the outer shell and may make it easier to perform the experiment. Now that you have got the egg in the bottle how do you get it out? The only way I have seen is to put the bottle in your mouth and with lips around entire bottle give a strong blow and then put the egg into inside of neck of bottle. Keep blowing until egg starts to move through neck to outside. There is another way however pour hot water into the bottle pour the egg into the neck and wait for the air inside the bottle to heat up and wait for the air pressure to build up and push the egg out. You could probably do the above experiment like this with a small blown up balloon and a glass jar. The balloon would certainly be easier to remove than the egg.

This I have seen this happen by accident. A hot coffee cup that has just been finished with and still hot is turned upside down on plastic place mat. What happens when the coffee cup cools there is a partial vacuum created inside the cup and the place mat is drawn into the cup and a seal is formed around the lip of the cup. When the cup is picked up later the place mat goes with it too.

Electrokinetic Apparatus Invented by T.T. Brown Filed July 3 1957 number 2,949,550

This device consisted of two disk shaped devices mounted on a freely revolving platform which carries two high voltage charges one positive and one negative supplied by a high voltage source. The disks themselves are made of a dialectic centre, upon which are placed two conductors on the rims, one being made positive and the other one being made negative. Both saucers have electrical connections the same, that is both of the back conductors on each disk are positive and the front conductors are negative. The two conductors on any single disk should be far enough apart to prevent voltage sparking crossover between the two conductors on the said disk. Upon applying the high voltage to both disks the apparatus began to revolve around the centre post gradually gathering speed.
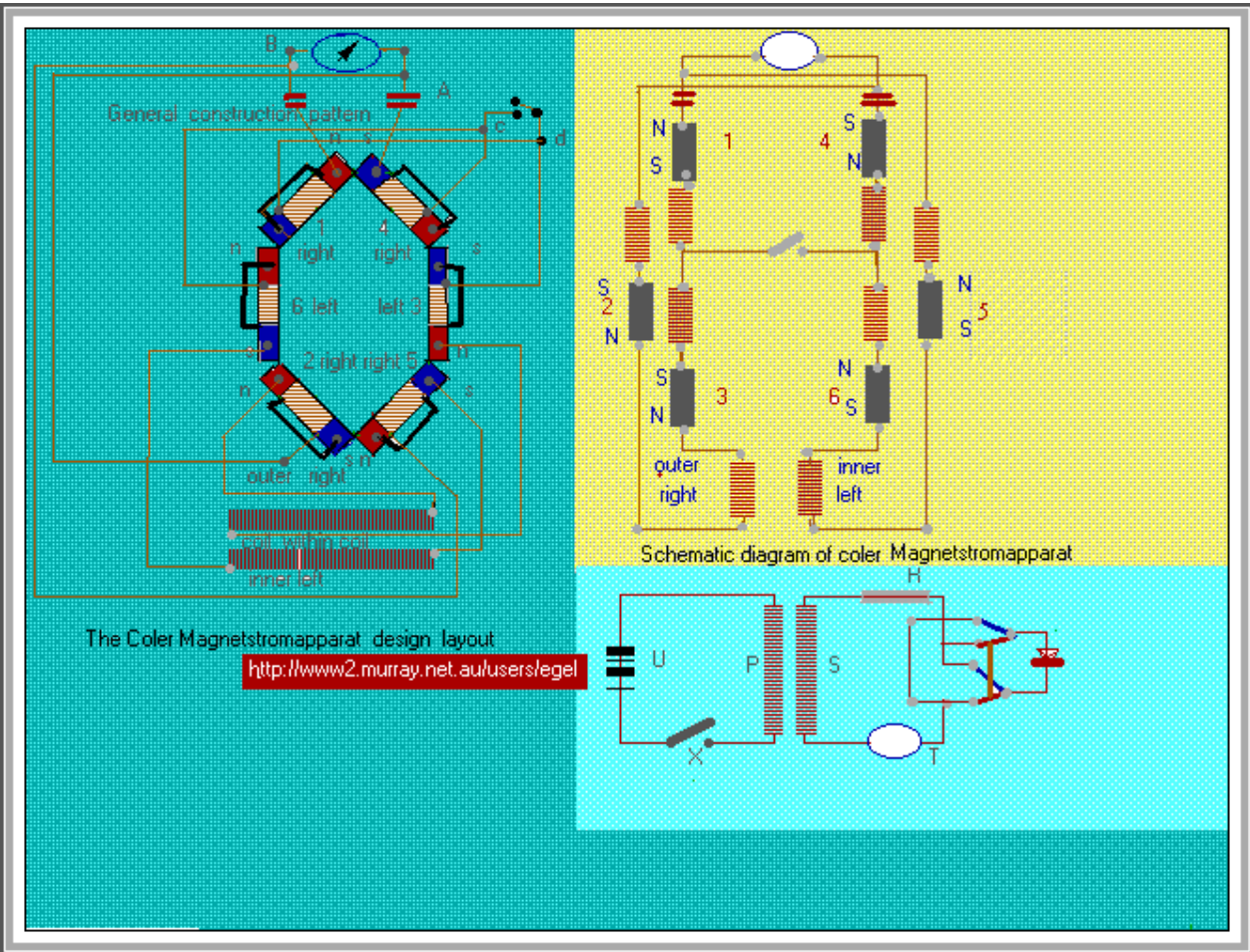
Captain Hans Coler device

Coler Free energy magnet winding

| 15 | 15 | 35 | 20 | 15 | mm |

100mm
coil winding

S

N

magnet conducts
between these two   positions

Binding   soldered and   bound   Binding

Note Paper insulation between magnet and coil

http://www2.murray.net.au/users/egel

S   N   schematic diagram of above

(c) Egel 95

This device called the magnetromapparat as invented in 1933.

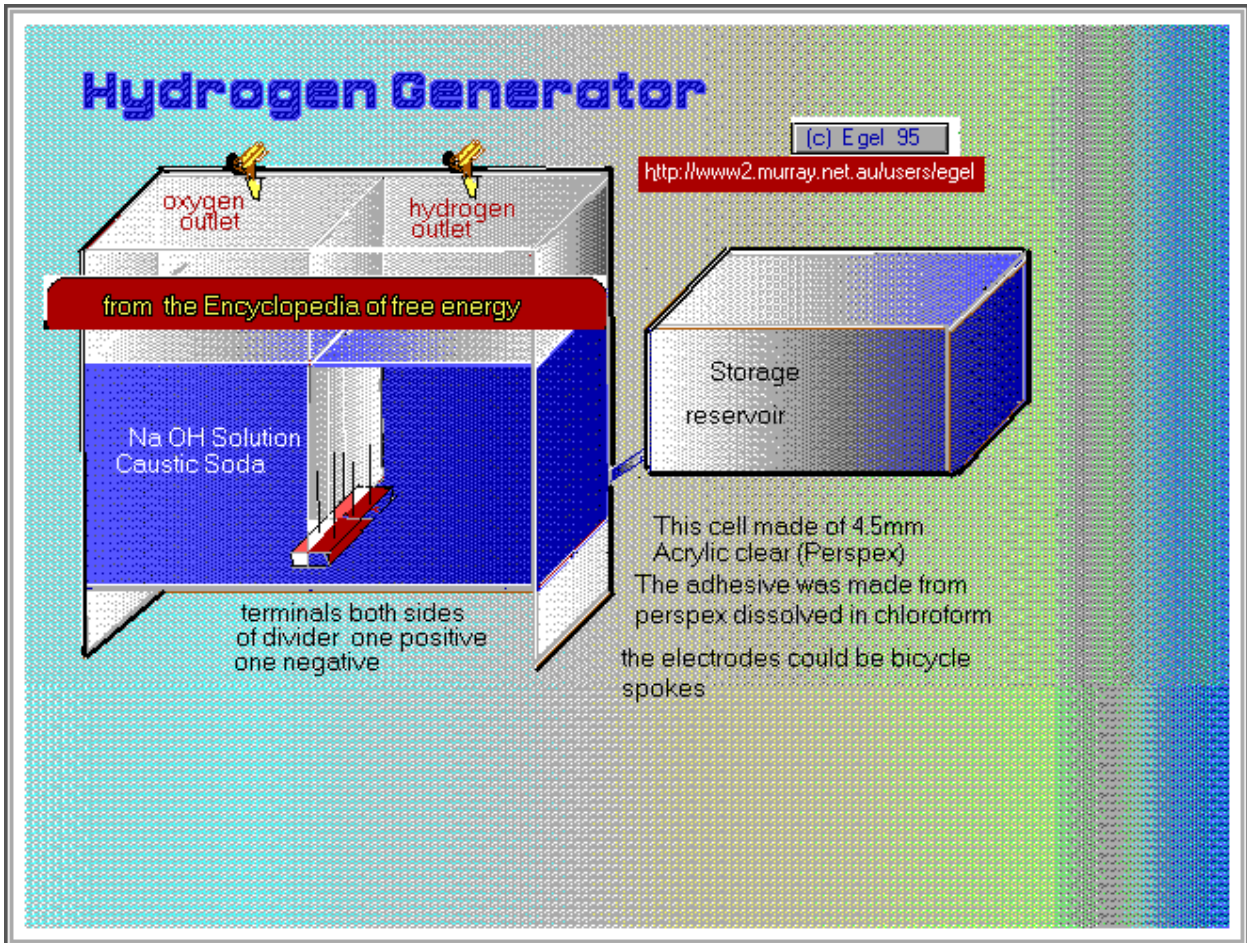It needed no outside power sources to function.

Since an official interest was noted from the heads of the German navy at the time who felt an investigation was necessary and an official report was produced.

Experts examined the device and could find no fraud. It was judged Coler was an honest experimenter but no expert opinion was forth coming to how the unit operated.

General construction pattern

The Coler Magnetstromapparat design layout

http://www2.murray.net.au/users/egel

Schematic diagram of coler Magnetstromapparat

The device consisted of permanent magnets of steel, copper coils and capacitors in a special holding arrangement. The device incorporated six steel magnets in a six sided arrangement where the magnets were connected in series with the coils of about .33 ohm resistance to form part of the circuit. That is a conducting path was made through the magnet core. The design also incorporated two small capacitors, a switch and a pair of sliding solenoid coils, one fitting inside the other. as shown in illustration. To allow the device to power up the following was done. The switch was left open. The magnet and coil combination were moved slightly apart using a mechanical arrangement of cranks and sliders that allowed each magno-coil combination to be altered equally, There was a wait of several minutes between changes. The sliding coils were also set to different positions relative to one another. These changes were made often until a precise point was reach as indicated on the voltmeter. The switch was then closed. There were still more changes more slowly this time until the best result was achieved. Several tests gave the 450 millivolt for period of some hours other times 60 millivolts was all they could get. The best voltage obtained was about 12 volts and remained there indefinitely until the unit was shut down. I believe that this device has some similarities to the Hendershot design. Coler was also said to have created a device called the stromerzeuger. This consisted of a arrangement of steel magnets, flat coils and copper plates on open arms mounted in a parallel combination with one another and fed power from a tranformer from the centre… The output is said to have lit a blank of lights of which the output exceeded the input power level. He was said to have built a 10 watt unit in 1925 and a 70 watt unit in 1933. Other units followed until the end of the war where work seems to have come to halt.

Hydrogen Fuel Generator

Hydrogen Generator

(c) Egel 95

http://www2.murray.net.au/users/egel

oxygen outlet

hydrogen outlet

from the Encyclopedia of free energy

Storage reservoir

Na OH Solution Caustic Soda

This cell made of 4.5mm Acrylic clear (Perspex)
The adhesive was made from perspex dissolved in chloroform
the electrodes could be bicycle spokes

terminals both sides of divider one positive one negative

When the word hydrogen is mentioned, most people have visions of a pre world war two air ship going up in flames over the United States. Most people think they saw explosions in the newsreel footage but what really happened, was it just burnt to pieces and burnt upwards as well.

In the news services there have been claims of inventors making hydrogen from water economically. We shall see in time, if it can be bought forth by them. An automobile suitably modified could be made to run on hydrogen and that hydrogen could be made from the one thing that is in abundance now, sea water, if it could be done more efficiently than today. Getting hydrogen and oxygen is just a simple matter of putting two electrodes in water, keeping them apart and turning on a direct current power source of in excess of 2.5 volts. You should now see two electrode giving off bubbles the faster one is the hydrogen and the other is oxygen. Water that has a 30% caustic soda content could improve the generation.

If you don't want to chance it. my informant suggested using washing soda instead.

WARNING But be careful when dealing with caustic soda, it can leave a very nasty burn if splashed on your skin, Wash it off immediately upon contact Use safety protection gear rubber gloves and goggles you just can't be too careful when dealing with this substance.

The colour illustration is something along the same lines as above , with some important differences.

Two set of electrodes are mounted next to a perspex sheet one side for the hydrogen and the other for oxygen.

The electrodes should be set at a height that the gases do not intermingle. By doing this there is formed two collection cells in the device.

The water solution is able to pass underneath to both sides, and is filled from an opened topped reservoir set higher than the level used in the reaction chambers ,this is important in control of the gas pressure build up and prevention of an explosion.

When electrical power is turned on gas flows from each set of electrodes and into the top of their individual cells.

When gas builds up the water levels will drop and water is forced back into water reservoir. The levels will return to normal when gas is removed form the holding cells Gas can be extracted from taps at top of each cells.

The electrodes could old carbon rods from spent batteries or iron nails or bicycle spokes. The more in each set of electrodes and closer the better will result in better gas production. The power source could be the brine battery as described in this book as long as voltage is more then 3 volts.

A slight alteration could be to use a variable dc power pulse and find by experimentation the best resonance frequency for the gas production.

The cells are made from about 4.5mm acrylic clear perspex and can be any size but roughly the same shape as in the illustration. The glue can be made by dissolving some of the perspex in chloroform.

Other parts taps ect you should be able to obtain from a good scientific supply house. If you have proper tanks to store your gases they can be recombined in a fuel cell such as those used by NASA to give electricity and pure water at a later date.

Ionic Electrical Generator
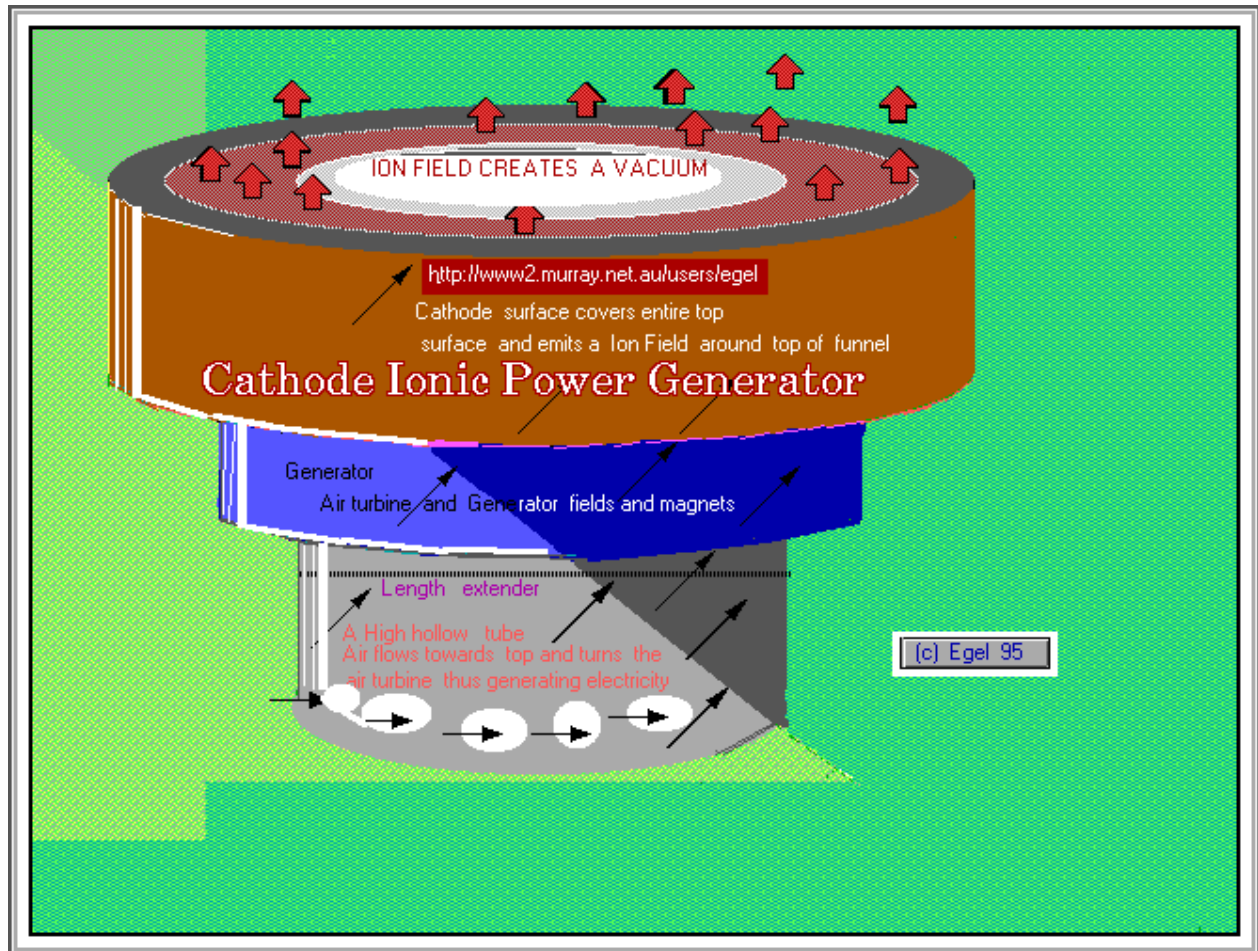
Here we have a new idea to generate electricity The forms we now have are Hydro electricity is clean but the water storage dams needed eventually silt up and beside they usually destroy our wilderness that are needed by our city residents to unwind. Nuclear Power has been with us for some time but has proved to have dangerous results and the waste storage is still a problem waiting to be solved. Solar and wind generators are not a twenty hour four proposition with out the costly storage devices. Coal based generators are only adding to our Green house gas problems. The idea here is generate electricity by means of the air pressure that surrounds all of us. The method has none of the problems associated with those methods described above and is renewable as well. Every one of us is familiar with the concept of the chimney. In this design Air is drawn from below into the chimney and up to the top where it is decomposed by Ionizing rays and then re absorbed into the atmosphere. Where air has been Ionized it creates a vaccum and draws more air into it from below. This causes an air flow that could be utilized to turn a electrical turbine. In a design say with a dome of twenty metres surrounded with ionizing equipment on top and a air tube of 4 metres diameter through the centre, a turbine inserted in the middle would be subject to forces in excess of 120 tons To put things into perspective that is say equal to 1 square meter of water falling from height of over 120 metres. Of course the whole generator would have to be constructed in such a way than the Ionic rays would not present a health hazard to those nearby, although this should not be much of a challenge. The atmospheric ionization on one side gives rise to enormous pressure on the other. The electrical power is extracted by air turbines when these two pressure areas try to normalize. This is a imaginative idea that needs to be looked at seriously. Thanks to identity known only as the captain for this idea wherever you are.

Kromrey Converter
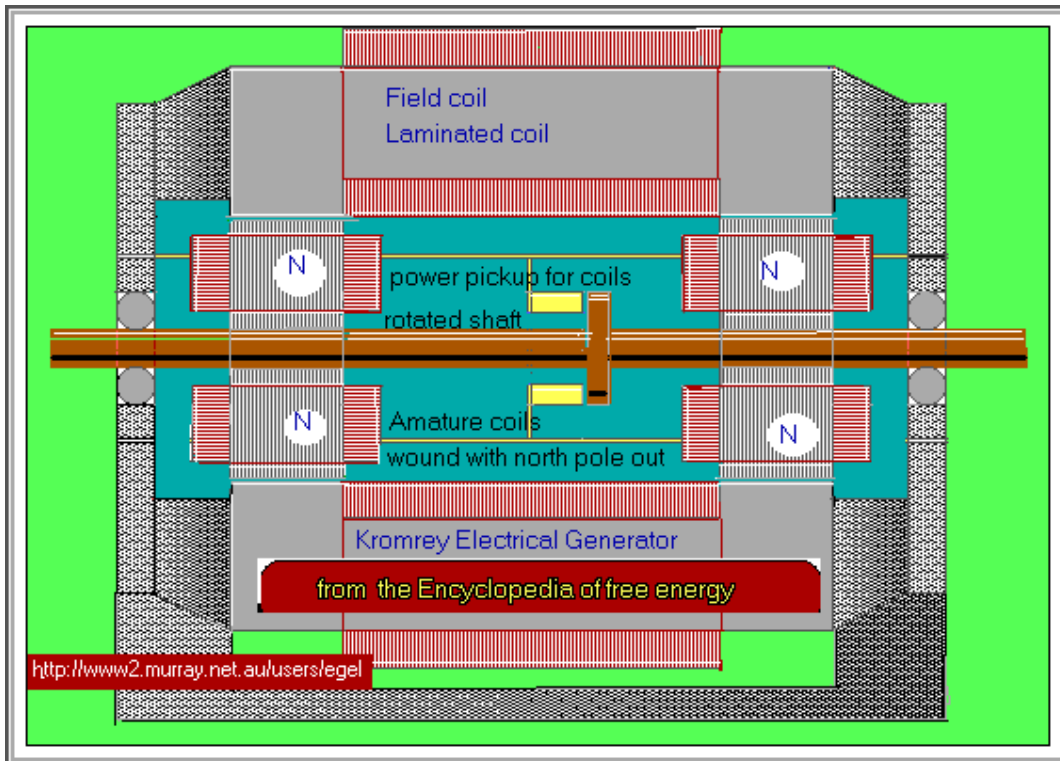
Komrey Converter 3,374,376 Electrical Generator Raymond Kromrey 15 Rue du Mt.Blanc Geneva Switzerland filed jan 9 1964 ser. no 336,769 also known as Swiss French gravity field converter system.

This invention relates to an electrical generator. With the aid of two bar shaped rotatable arms acting as the armature. This armature carries a winding of two series connected coils resulting in all outer armature poles being of the same [all north or all south]. The stator is made up of a yoke shaped laminated electro magnets positioned on the bottom and top.

The inventor in his patent application claims the following

An electrical generator comprising of a fixed stator and a rotor coaxial with said stator, drive means for rotating said rotor about its axis, said stator being provided with a pair of elongated bar magnets extending parallel to said axis on opposite sides thereof and terminating in transverse extremities, oppositely poled extremities of said magnets confronting each other and defining magnet means having two axially spaced pole pairs disposed in a common axial plane and forming a pair of diametrically extending air gaps for establishing a magnetic flux path including two axially spaced parallel magnetic fields across said air gaps traversing said axis substantially at right angles, said rotor being provided with two axially spaced parallel elongated ferromagnetic elements slightly shorter than the space of said confronting extremities and extending perpendicularly to said axis at locations coplanar with said pole pairs for concurrent periodic alignment of said elements with said fields in said air gaps upon rotation of said rotor, and an output circuit on said rotor including winding means on each of said elements and collector means in series with said winding means, each of said pole pairs and the corresponding elements having confronting arcuate faces centre on said axis, the sum of the arcs spanned by said faces being substantially equal to 90 degrees in plane of rotation.

End of claim

Liquid Piston Pump
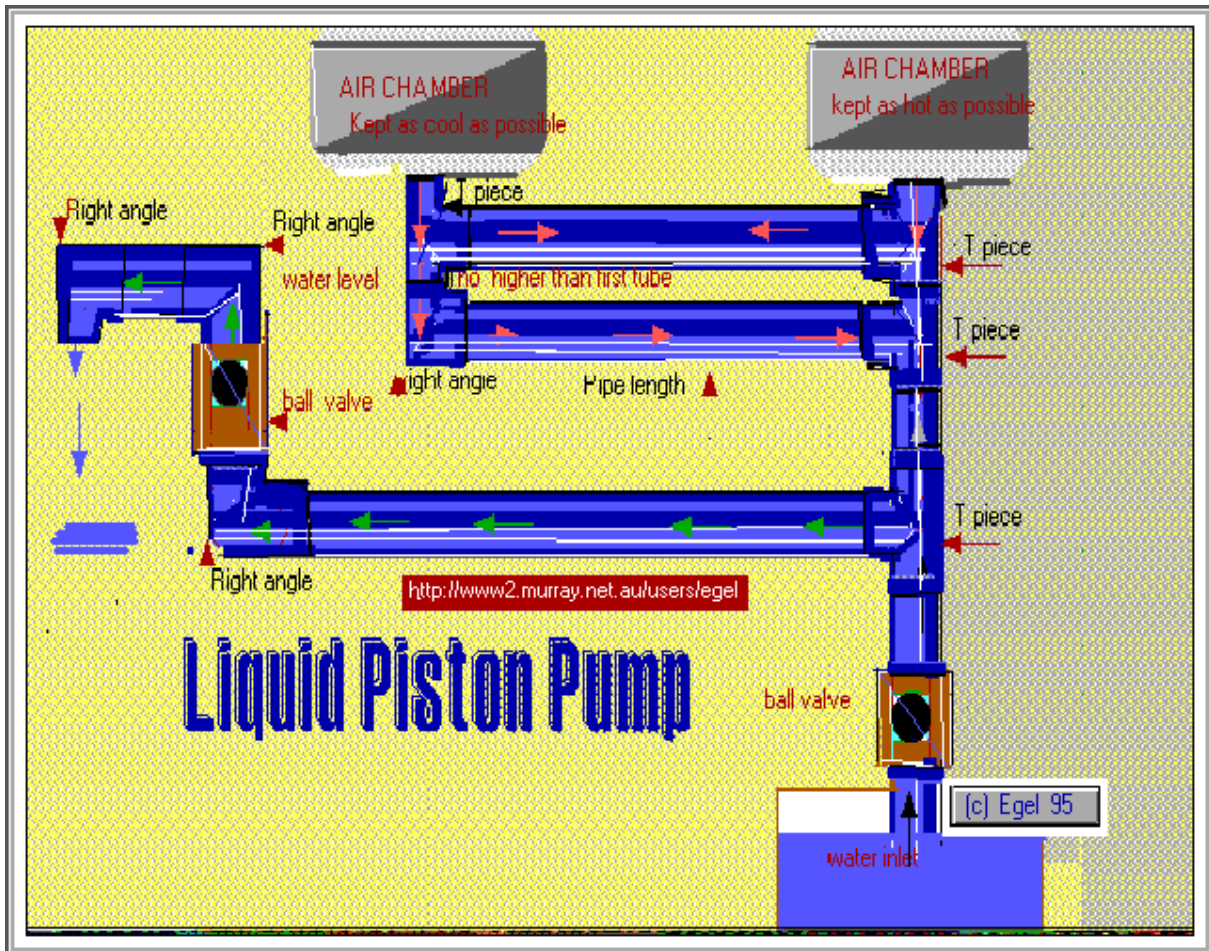
The idea is credited to a Scottish inventor called Robert Stirling in 1816.

The idea is that a fixed quantity of air is pushed between two chambers one hot and one cold.

The resulting changes in air temperature and pressure can then be used to perform work. I have seen this little pump in many forms In the late sixty's I saw one on a television science program one made entirely of glass with ball bearings for the valves and heat from a from a spotlight to power the device.

Another I have seen was made from metal piping and heat supplied from a lit gas jet to power the device.

The one in the illustration can be made from cheap plastic irrigation water piping fittings and values from a cheap plastic hand liquid pump. The one thing common to all models is that all joints be air tight.

The items you will need as in illustration or to make it a little easier you could use small irrigation or garden water fittings that come with threaded ends. It is then just a case of screwing them together.

The flat valves could be pieces out of the liquid pump Two three or two litre empty plastic coke bottles with their tops .

These will be the air chambers one for hot one for cold Construction The alignment is of as in the illustration.

The illustration is pretty clear I believe and just to add to it, the following information may be of assistance to you Remove the tops from the coke bottles and drill a quarter inch hole in center of each top Cement with plastic putty or whatever you have available the tops in one side of a T Piece make sure that it cannot move and is air tight. You will need two of these, and when the unit is finished the plastic bottle will be screw into the glued plastic tops.

Connect other pieces as in diagram.

You may use what ever you can for valves but they should be light round and flat or even a glass marble fitted into a rounded drill hole in flat piece of plastic inserted or glued into a irrigation connection piece and most important they must only allow water to flow in one direction and block it from flowing backwards.

The other type of valve could be the same drilled hole but with a piece of flat rounded plastic resting on top of it placed on such a way that it cannot move sideways but can move freely upwards and downward.

Priming the pump Place suction inlet into source of water and pour water into top of unit until level with second level piece under the plastic bottle tops.

Water should now be flowing out of the outlet pipe when correct level is reached Place plastic bottles in position, one bottle should be exposed to sunlight and the other kept as cool as possible.

Improvements that could be worth trying are Put some black paint inside a plastic bottle and roll around until the inside surface is covered with the black paint. This will be the bottle exposed to the solar heat.

The other could have a large tin can collar with a small hole in bottom of the can to allow the thread of plastic bottle to exit and be joined to rest of connections.

This should have a water tight seal to prevent leakage. When properly sealed, add water to collar and natural evaportion will keep thre plastic bootle cooled. Or alternately use more connections so that the bottles could be stood right way up and the cooling bottle put into can from the top. How it works:

The invention alternatively pulls up water through the bottom value and then pushes it through the top valve. When the air heats up in the hot air bottle pressure expands thus forcing the water in tube out. When the air is cooled down it contracts creating a vaccum that pulls water up through the bottom and so on. The unit should keep working until heat source is removed.

You may need to experiment to make this unit work more efficiently.

Possible use Although this is only a demo unit a bigger one could be built and used in a hydroponic garden for water cycling or for the cooling unit in the solar desalination unit described elsewhere.

Liquid Piston Pump - Electo-Magnet Pump
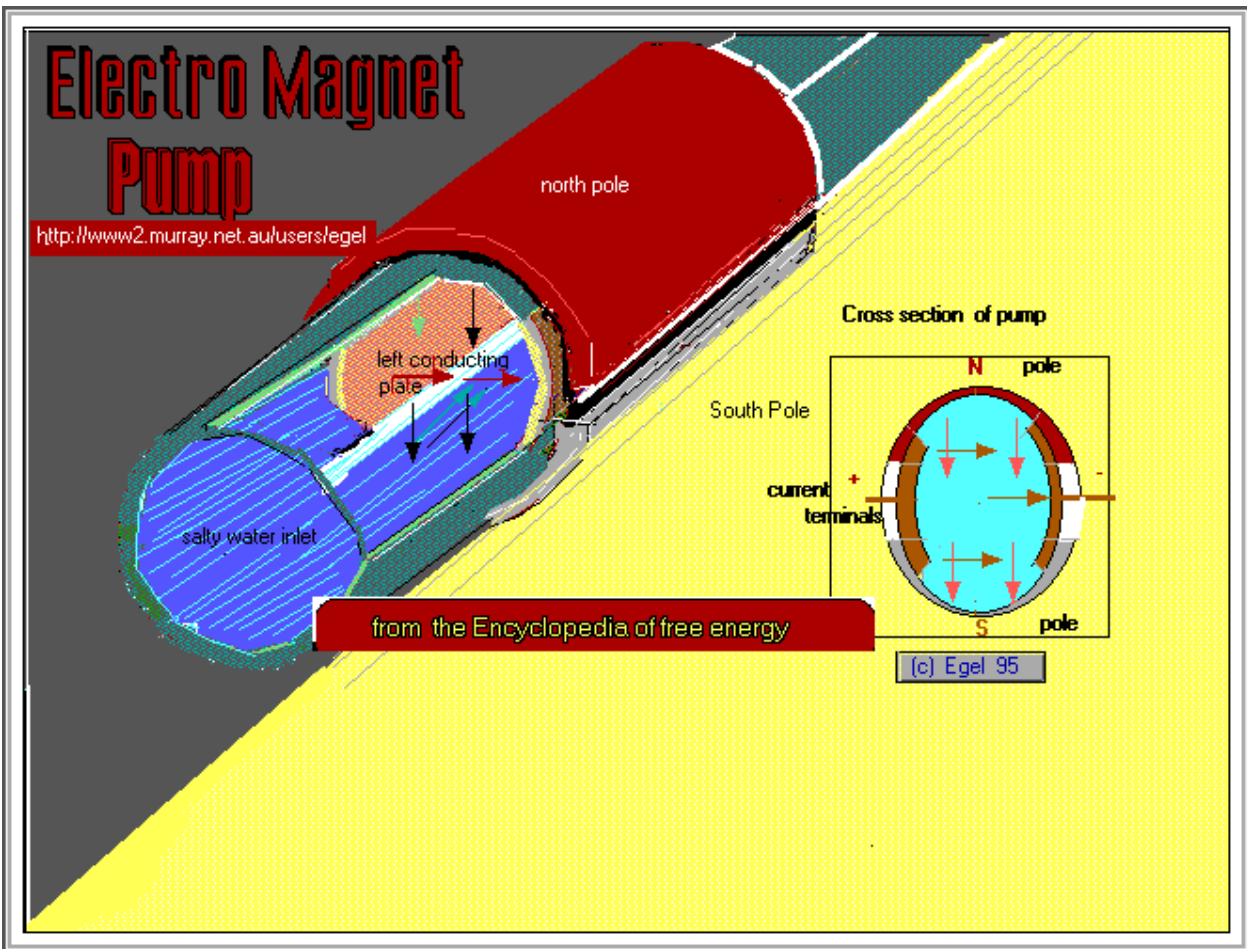
This is a device which makes the use of Fleming's right hand rule which if drawn would represent in all directions in a three dimension space that is [up,down] [left,right] [front,back].

Take one line to represent the direction of the magnetic field another to represent the flow of the current and the final one to represent the direction of motion.

This holds true from all combinations of magnets, current and direction in any form of motor.

A motor usually consists of a stationary magnetic field called the stator and in the middle a rotating magnetic field called the armature fed by a direct current alternated by commuter. In this design there is no moving core except the motion of the liquid salty water.

Construction Please remember this only an Experimental Idea Obtain a P.V.C. pipe and cut to length desired. Drill two holes directly opposite one another each side of the pvc and insert brass nuts and bolts These will be the means by which electrical current will flow from one contact through the water and to the other contact. Seal around bolt holes so that they cannot leak water. Take two leads from these points. Now mount two magnets permanent or electro magnets over top of the contacts and fix into position. If you wish to use permanent magnets go to a local vehicle wrecker and obtain a windscreen wiper motor.

Disassemble the motor usually with a hack saw and remove the armature section. You should know have easy access to the curved magnets inside.

These will fit ideally around the pvc tubing of the correct size and could be held in place with electrical insulation tape. Set up tube and fill with salty water connect up the field coils if not a permanent magnet and pass a current through the contacts.

With the correct voltage, current and water conductivity. This you will need to determine by experimentation.

Water should then flow in one direction or the other. With greater magnetic strength and wider current flow across the direction of water flow, this could conceivable be used as a device to propel an aquatic vehicle across water. Nuclear power stations already imploy something similar in the reactors.

Water at max flow rate

Diamagnetic field generator

if we only use a water flow we produce a diamagnetic field without a magnetic field

copper tubing wound in coil

if we allow a large electrical current to flow

from each end a magnetic field results

from the Encyclopedia of free energy

http://www2.murray.net.au/users/egel
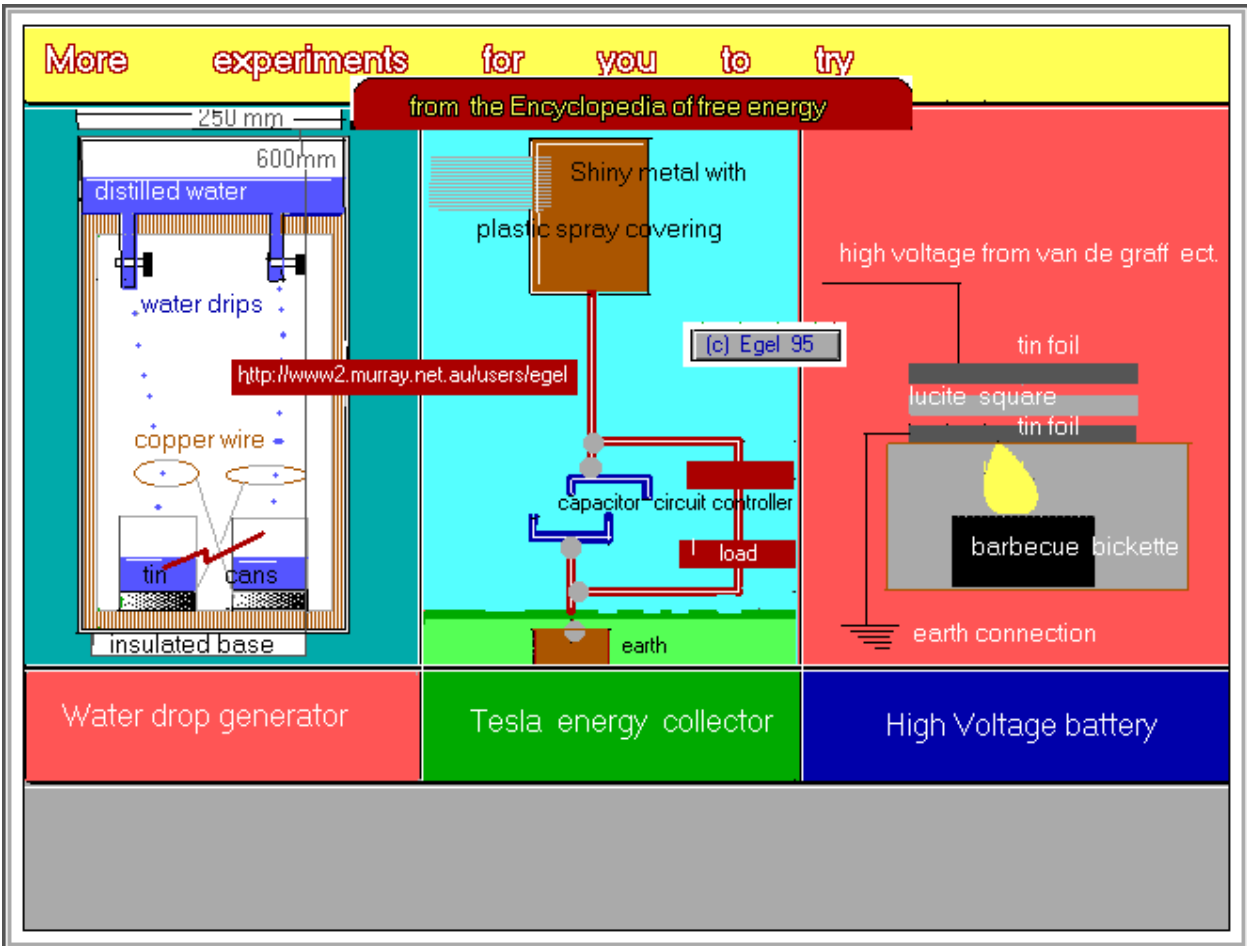
Repeat Oersted generator experiment by connecting a coil of wire in circuit with an ammeter.
Move coil back and forward through the diamagnetic field created by flowing water.
NO MAGNETISM BUT THERE IS A CURRENT FLOW

Lord Kelvin Water drop experiment

Lord Kelvin Water drop experiment also see modified Lord Kelvin device 1892 Lord Kelvin performed the following experiment. In it he was able to demonstrate, that he was able to produce static electricity charges from the dripping water.

In the experiment, he suspended a metal tank filled with distilled water approx 250mm in width and 600mm from the base. Underneath this tank he inserted two taps to control the flow of the dripping water.

Below each tap were two metal cans that collected the water and were insulated from the base .

A copper loop was connected to the opposing cans.

The theory is as the water drops through the air towards the collection can they obtain a small static charge from the air by means of friction.

As each droplet is different, one becomes positive and the other negative. Over a period of time the charges built up to flash point. A neon bulb could be connected in series with one of the wire loops to enable flash to be better indicated.

A Forgotten Experiment

At the beginning of the century the University of Vienna performed the following exercise.

A jet of water under the pressure of 5 times atomsphereic (73psi) is forced down a pipe with the bottom diameter of 0.2 to .3 mm

Apparently the higher the pressure the better the result. although this may not be the case

At about 30 to 40 cm in direct line with the pressurized jet there was a metal container insulated with paraffin wax on the outside and covering the lip.

It was important to have the can insulated from the ground. A wire led from the can to the electoscope to indicate when an elctrostatic was present.

Another piece of paraffin wax in a block form was postioned at angle a short distance from then thin water flow.

When the water flowed the meter registered a charge of 10 thousand volts

A Swedish research group performed an experiment with simularities to the Lord Kelvin experiment as perviously mentioned above.

They tried the Vienna experiment and added a second jet at about 60 cm from the first. The result was a double charge. They crossed it with loops as described with Lord Kelvin experiment. They also found the loop had to be in a horizontal plane and in a particular height to be found by experimentation for it to work successfully. They noticed as soon as the static field reach a certain intensity the water stream split and rose back upwards even with 73 pound per square inch pressure behind it.

A simple experiment to try for yourself

Go to the bathroom and turn a tap only slowly. Get a plastic comb and rub it with a woolen article. Bring the comb in contract with the water stream. When both are close together but not touching you should be able to bend the water flow.

Alvin M. Marks of the United States of America has invented an electrical generator unit the size of a large ball that uses no magnetic fields ,no moving parts. The unit required a jet of water vapour and a electrostatic field. He was hoping to build a unit in the 10,000 watt range.

This inventor has used similar principles in building a anti car pollution device.

Second illustration

We all can remember seeing solar panels on spacecraft and now on watches and calculators.

Nicola Tesla had an idea for collection of free energy too.

Nicola Tesla's panel consisted of a shiny metal panel with a transparent coating which now days could be the clear plastic you can get from a spray cans.

This Panel had advantage over the others in that it would be used at night as well as the day.

The bigger the shiny metal surface area and the higher up the better the output.

The metal plate was to connect one end of capacitor and the other side to a good earth connection.

To get the power output the condensor would be switched into a load at intervals to transfer the power stored in the capacitor.

At any given height above the ground there is an electrical plus potential the higher up the more stronger and a negative one at ground level.

The capacitor that was to be used was to had have a considerable electrostatic capacity and a very good dialectic preferable mica.

When asked what he felt the potential of his ideal would be , he thought it would be a thousands of times more powerful than the crookes radiometer.

Unfortunately for Tesla and us he ran out of funds and the device was never constructed or tested.

Third illustration

This is the only design of a device of it kind , I have see that gives a high electro static charge on demand and has some thing similar to the make up of electrets used in microphones.

The instructions given me to are below

If you have a high voltage source available such as a Van De Graff or wimhurst machine you can make one.

If requires you to get a square of Lucite. I suspect that is also called perspex here in Australia but am not sure maybe someone can enlighten me.

About 5 inches in square should be sufficient.

You will then need to get two pieces of aluminium foil the same size and place one piece below and above the lucite.

Connect the top foil to high voltage static generator source connect the bottom to a good earth connection

Now place it on a stand that will enable you to put a heat source under the sandwich and heat the lucite to a soft form

A good heat source is a barbecue bickete or bunsen burner.

Switch on the electro static generator

Set alight to the brickette and melt the lucite square. Leave the electro static generator on until brickette has burnt out and lucite has cooled to solid mass again.

When cooled disconnect the leads and test unit by shorting out the foil covering, there should be a spark. The beauty of this device is you can continue to do this, and when you finish playing with it, be sure to wrap the entire battery in tin foil, to preserve the charge in the same sort of manner as you do with a magnet, when you provide a magnetic pathway between the two poles to keep the magnetism strong.
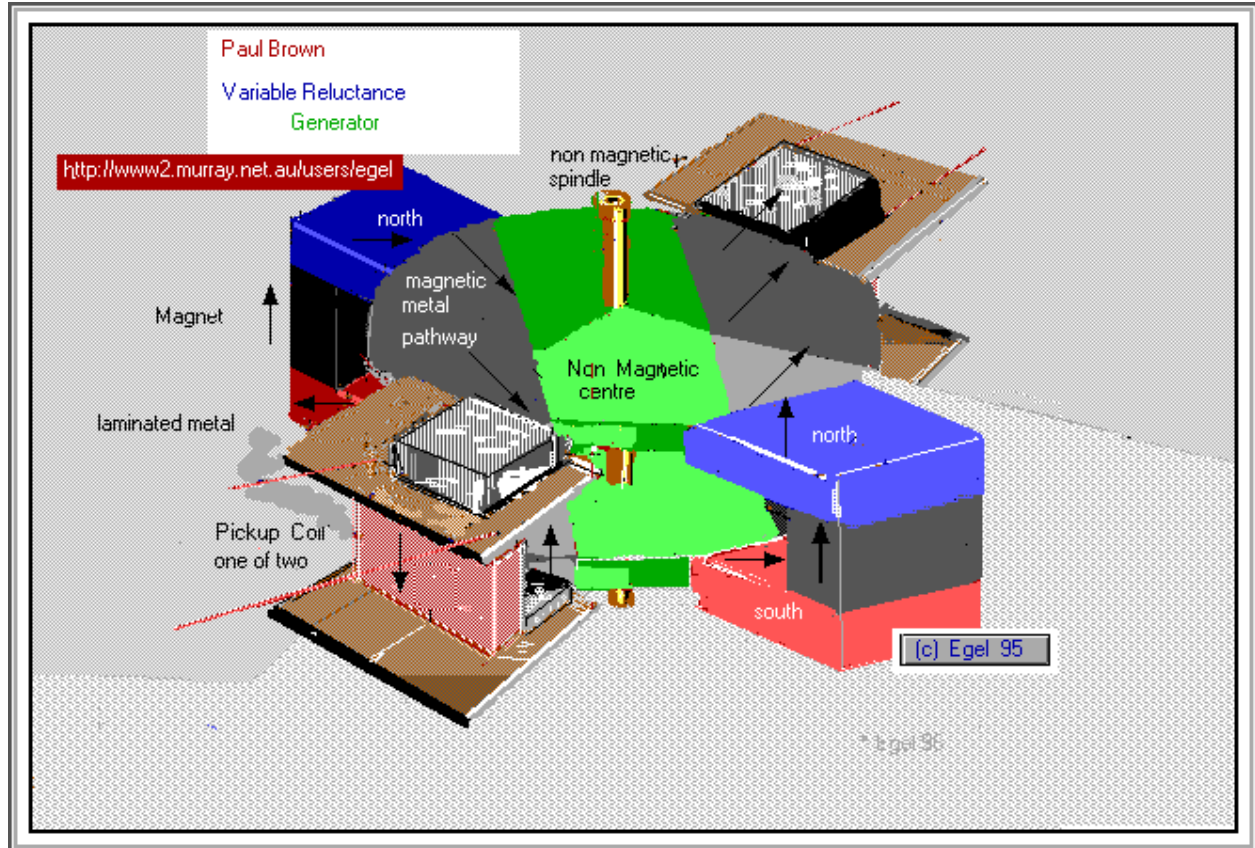
I have never actually made this so you may need to experiment

Question

Is this why some plastic packaging material seems to have a static charge or is very clingy, Is there something in the manufacturing process that promotes the forming of a charge.

Paul Brown Variable reluctance generator

American Inventor Patent number and address unknown If any one can help let me know so he can get the credit He deserves.

I believe he has built several units but not sure how successful they were.

The normal way to generate electrical current is to pass a conductive wire through a magnetic field. In this unit there is no need to move a heavy coil of wire and metal armature thus removing some of the power loss. In this application two permanent magnets or electro magnets are placed opposite each other at 180 degrees.

At ninty degrees to the magnets are mounted two field pick up coils.

In the centre is a disk that has two metal magnetic influenced outer sections and a non magnetic influenced centre section.

The disk is rotated at speed and when the metal sections are in a position to provide a magnetic pathway from the permanent magnets to the field pickup coils and back again this will result in a electric current being induced in the coils.

By having the disk magnetic metal sections cutting in and out of the magnetic pathway will give an A.C. current/voltage output. Slightly changing the wiring setup could also give you a pulsating D.C. output.

The two disks could be made by using a fibre glass mould to give a disk shape and allowing the outer sections not to be filled and when mould has been set, put compacted metal filings in these sections and then given a final layer of fibre glass to seal metal section.

If you have a metal workshop you may be able to make better disks by using an aluminium core and magnetic outer metal pieces and use allen bolts to hold it together.

The unit should be built with laminated steel pole pieces to prevent magnetic strength losses and where there is a reversal of the magnetic force.

There is also a need for small air gaps, the best insulated wire and sufficient length for the correct magnetic strength.

You will need to construct it on a non magnetic frame to prevent magnetic losses.

Also select a suitable prime mover to drive the unit. Whether a D.C. Motor, Hydro Wheel or windmill.

Using this setup means no relative motion between coils and the magnetic field and the disk will accelerate into the permanent magnet poles and slows down on the way out and therefore should result in a steady speed.

The voltage is directly related to the change rate of the magnetic field and speed of the rotor. Amperage is related to how long the pole faces are in position with each other.

Peregrin Magnetic motor
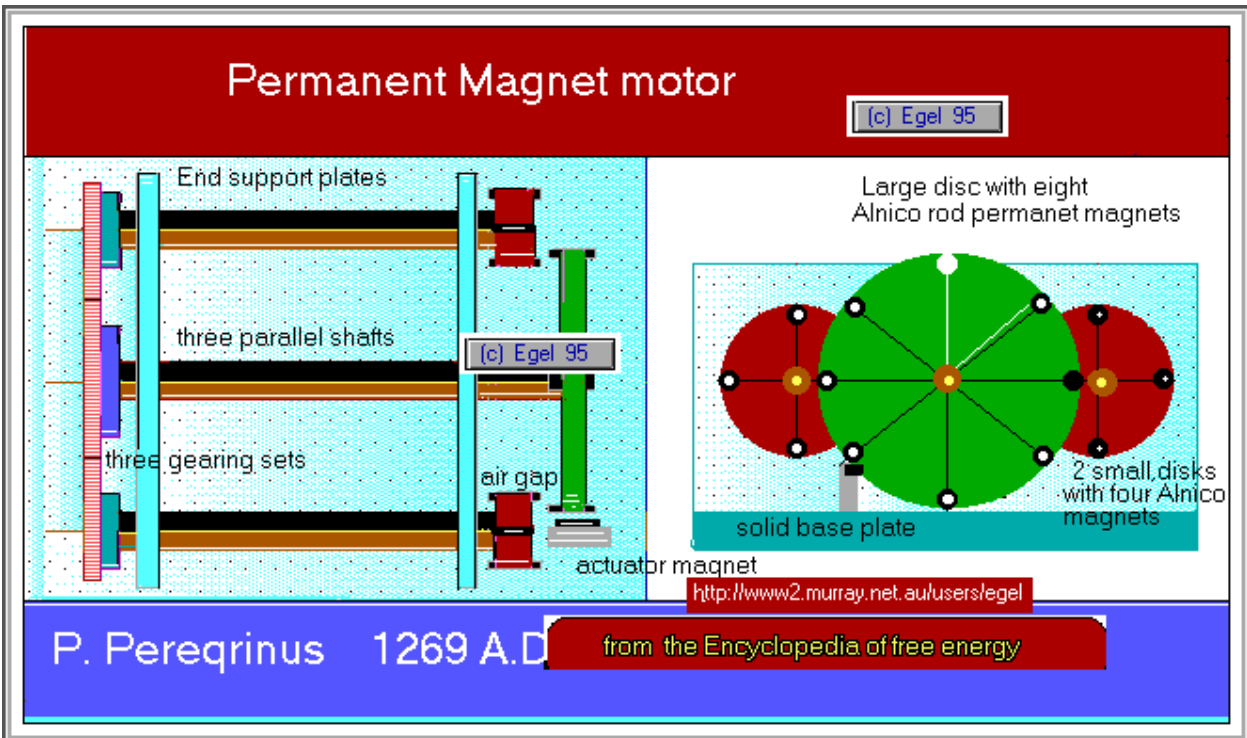
A Christian monk by the name of Peter Peregrinus of circa 1269 is credited with the design of this type of motor

He used portions of loadstone and nails driven into wooden flat disks to give the gearing ratios on the disks.

His original work was translated from the latin. This idea has remained hidden for centuries until a modified form was created by A Californian Mr Lee Bowman. Unfortunately he has now passed on.

His device is as illustrated consists of three parallel shafts mounted on bearings fixed to a base plate. The disks were made from lucite I suspect this is another name for perspex.

The gearing of the disks is a two to one ratio, with the centre having the larger gearing.

The outer gearing is of the same size.

The centre disk has mounted on it eight aluminum nickel magnets of equal spacing and four magnets on each of the other two smaller disks.

The magnets revolve parallel to each other with a gap of .005 spacing.

A cylindrical magnet is placed at a positional angle in the bottom corner of the base plate so that it can be used to cause, the rotation of the disk by unbalancing the magnetic forces of the unit.

Several witnesses claimed to have seen the device working but was later dismantled due to a lack of interest.

Permanent Magnet Cam Motor
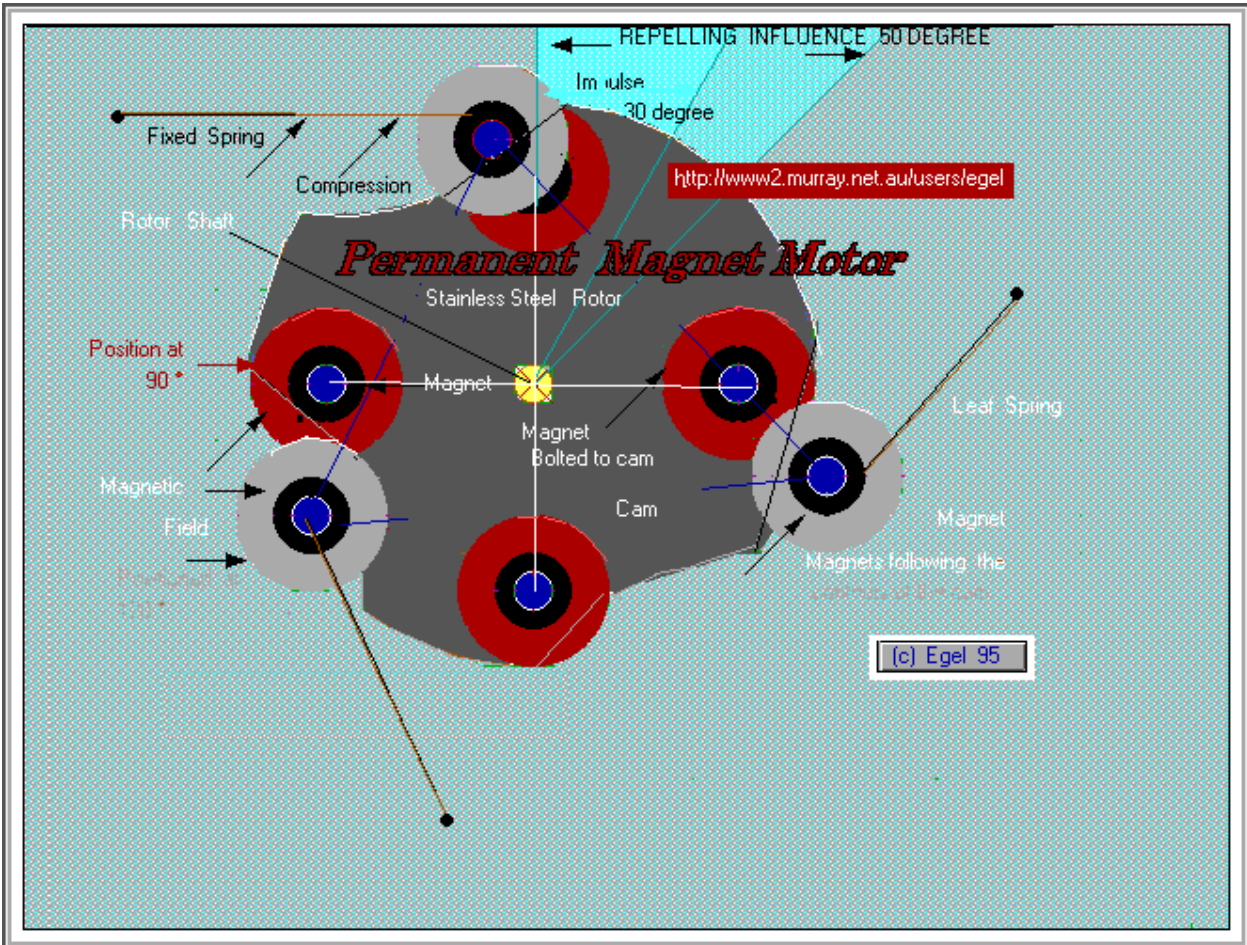
Not much is known about this design I came across in some papers I had laying around.

This motor consists of four magnets on a rotating cam of three magnets placed on spring arms at every 120 degrees on the outside mounting positions.

The overall cam diameter should be seven inches.

By positioning the outer magnets in these positions a repelling force is put into effect every 30 degrees. The repelling action will last for approx 50 degrees.

The 20 degree difference should over come the drag and hopefully keep the cam rotating continuously. The strength of the magnets will have a large effect in the amount of power achieved.

A slight improvement may occur if more than three magnets say five or even seven or placed on outer springs. This may take some experimenting to work let me know of your success.

Pulsating Wind Generator
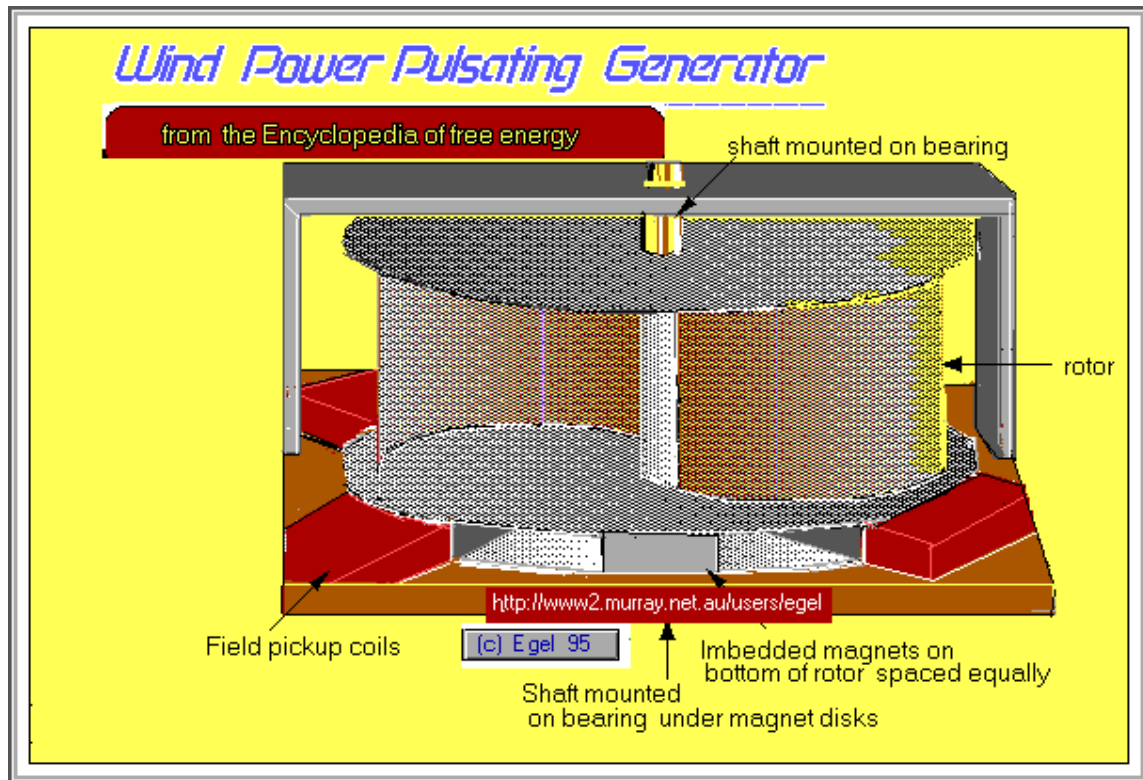
This is a version that uses a [S] shaped rotor, a configuration I have not seen before. Using a S shaped rotor and a belt driven generator results in speed to low for normal electrical generation. This is different in the sense that it uses no belt drive. The materials are Aluminium Sheeting which can be obtaining from newspaper printers as they cannot reuse it again and it could cost as little as 60 cents a sheet. Two 3/8 inch screwed rods to the length of sail height and the extra length required for the connection nuts one inch screwed rod [the length as above] A couple of one inch diameter ball bearing races and retainers. A selection of nuts and bolts or rivets Three pieces large card board 1/4" or thicker the better. A large base plate this can be metal or wood but must be able to be secured so that the wind does not blow assembly over. A collection of permanent bar magnets or electro magnets.

Construction

With the aluminium sheeting cut six circles to the diameters you wish each will need a one inch hole in centre of each circle. drill also two 3/8 holes on the outer diameter on the same radius from the centre, these will be used by the 3/8 inch screwed thread in supporting the outer portions of the sail wings.

You will need to make three of the following

Cut a sheet of cardboard to the exact diameter of the aluminium circles.

The cardboard is used to add strength to the sandwich construction without adding too much extra weight.

Make a sandwich with the cardboard in the center and two aluminium circles on the outside. Drill holes on outer diameter of circles and bolt together the construction together. Weather proof the cardboard with paint and weather proofing compound.

Please note plywood could also be used in placed of cardboard but will add extra weight to the unit.

You should now have three thick disks sandwiches.

One will be used for the top and the other two will be for the bottom under sail and the other to mount the magnets.

Work out the size you wish the curved sails to be and cut aluminium sheeting to size ,also leave two inch tabs on the top ,bottom and the two sides.

The tabs are then drilled ready for rivets

Bend all tabs 90 degrees and place a sheet in a {C} curve shape on the top plate and then rivet to the top sandwich disk

Do this with the other sheet but in opposite direction so that you end up with a [S] shape rotor.

Insert one inch rod to top sandwich, bolt into position and rivet centre side tabs together around the 1" centre rod.

Insert the two 3/8 inch rods into sandwich wing outer support holes bend over outer wing tabs and rivet together.

Do the above to the bottom plate and bolt into position.

On the remaining sandwich cylinder place your permanent magnets on the outer diameter, equally space them, all can be facing the same directions or alternate them.

You could also use bar electromagnets but a couple slip rings would be need to be included in the design.

Fix magnets in position.

Fix bottom plate to rest of assembly with one inch nuts

Then put 1 inch rotor ends in bearing race on bottom of support plate and make top support for upper bearing support and then fix it to bottom support.

Field magnets maybe transformer [I] shaped pieces wound with copper wire and mounted as you wish. You will need to experiment with coil windings and core types to get desired voltages and currents.

Fix field pickup coils [bar type] into position on the support base and line up with rotor assembly magnets.

You may try any configuration you wish so that you get pulsating dc or ac, remember only one end of each field magnet pole is used, the other faces away.

Make sure unit is secure so that any wind gust will not flip the device over.

Rotary Mechanical Heating Device
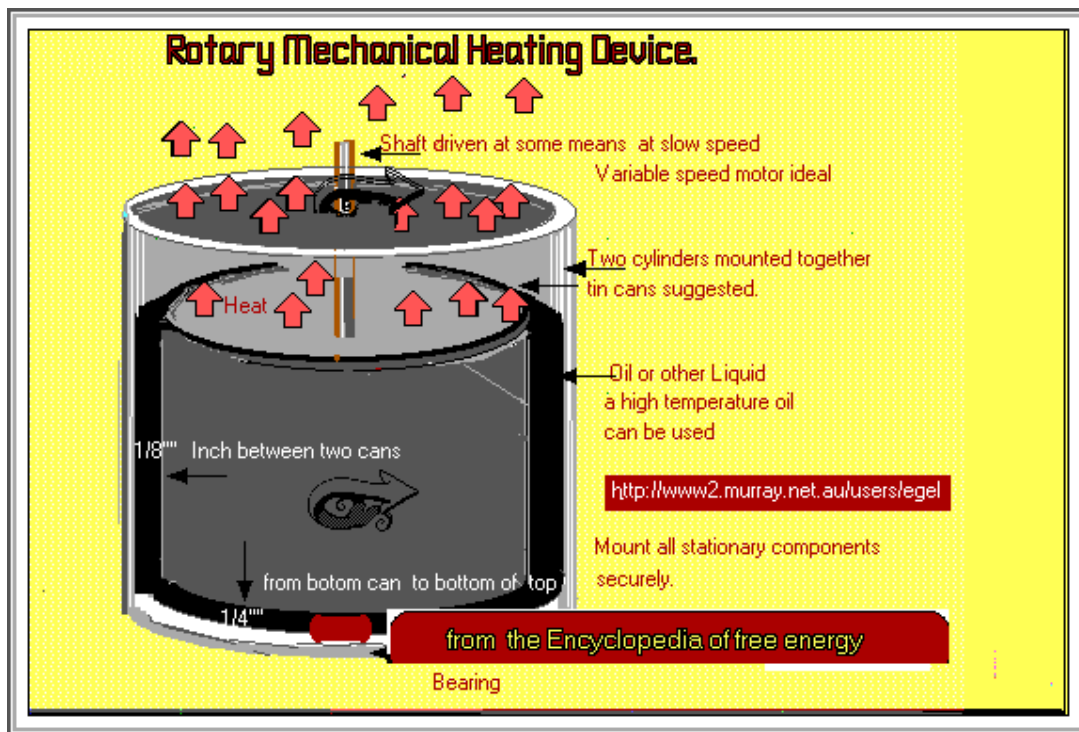
Invented by Eugene Frenette. Several of these units have been built. There are several ways to build a simple model, with the rotor and the static parts having the same configuration. They may be a cone, cylinder or normal cup shape as in a tin cans.

It is recommended that the experimenter start with two tin cans. The tin cans should fit one in to the other with about 1/8 inch clearance around the sides and 1/4 inch clearance between the bottoms of the two cans.. High temperature oil is put between the two tin containers, don't overfill with the oil.

One small unit produced about 110 degrees Fahrenheit in 60 degree room. the outer diameter of the vessel was no more than four inches.

Another unit 30 inch in diameter and using a 1/2 to 3/4 horse power at slow revolution. The temperature could easily have risen to between 200 and 300 degrees Fahrenheit. The device heated 16 rooms for about $30.00 a month. The liquid molecules are set into greater motion due to the rolling friction between the stationary and rotating cups.

A good conductor such as steel should be used to conduct the heat. If you can get the liquid at the right thermal vibration the heating action will be intensified. Keep the design simple and operate at very slow speed. Further improvement would be to have both vessel rotating in opposite directions
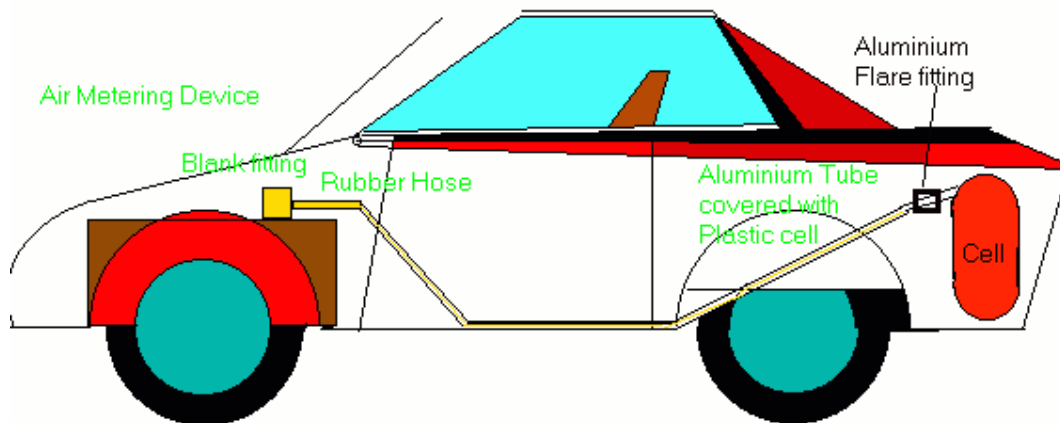
Running Cars on Orgone Energy

The car experiments were carried out on

Please take note the photographs show a test unit made of glass and stainless steel to give you some idea of what the units look like ,Later and better units have been made totally out of stainless steel (food grade only). A plastic unit was constructed but was discontinued due to possible dangers invovled. This danger was found to have been avoided when units were constructed in rigid stainless steel.

It can not be overstated that if the tube or outer canister is shorted to the car body or the water on rainy days shorts this tube the car will stop

Air Metering Device

Blank fitting

Rubber Hose

Aluminium Flare fitting

Aluminium Tube covered with Plastic cell

Cell

This is only a brief overview and description of the JOE device.

It seems to have some things in common with the Stanley Meyers concepts but does not need the complex electronics that Stan is said to have used, and also it seems that the Joe's unit can be built by anyone with access to food grade stainless steel and some home workshop tools.

A magnetic disk with diagrams and full construction details of all the different units constructed is available from SOLARIS

The ability to run cars without fuel of any type has been claimed to have been done and demonstrated here in Australia in the last two years.

Originally when I heard of the device it seemed too good be be true but must admit I less skeptical after seeing the details.
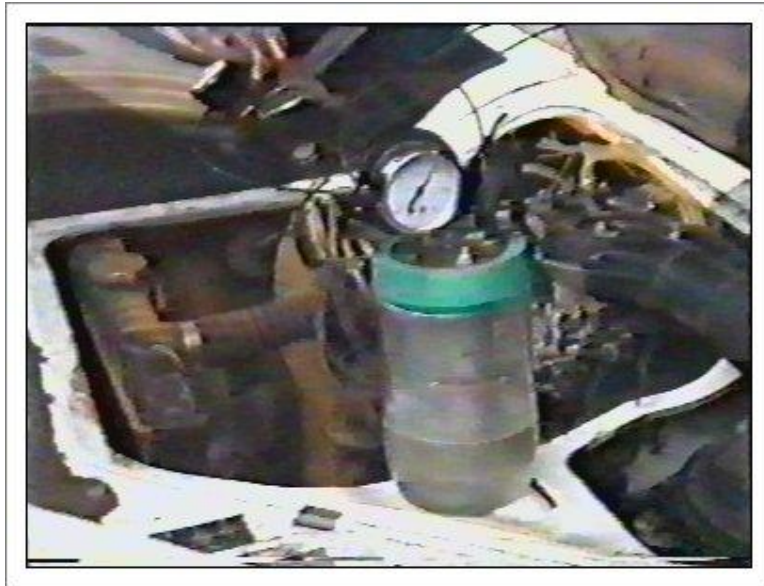
The test unit mounted in the car the normal fuel line was removed notice the reading on the vacuum gauge

The person that discovered this information has been harassed and threatened by some idiots and maybe vested interests.

They also stole all of thise 'Wizards' gear out of his shed. It only goes to show, it is gutless idiots that do this type of stuff. They must want us all to die from pollution and poisoning.

The inventors name has not been released to me apart from being called Joe.

I will call him the 'WIZARD'.

This persons work is along the same lines a William Reich.

Aluminium delivery
pipe to manifold

Keep this away from
spark plugs & leads
Altenator battery & starter motor
Best place is the boot but the
aluminium delivery tube must
be fully insulated (ie covered with
plastic)
The cell will discharge if the tube is
grounded.
The device is like a tuned circuit
amplifier and wave guide all
in one.

Polished

4 inch 316 tube

3 mm min

Charged water →

INSULATORS
@120 deg

Billet 316
Machined s/s

3 inch 316
2 inch 316
1 inch 316

Polished

316s/s bolt
Jammed in one inch tube
Bolt to Chassis

all tubes Polished on the inside
without chemicals
use hard Yakka and Vinegar

http://geocities.com/ResearchTriangle/Lab/1135

BASICS of the invention:

When a automotive engine runs on a fuel, the incoming air's characteristic frequency changes because it interacts with the fuel. As the fuel travels along the manifold with the air it starts to spread (ATOMISATION) this give a greater contact area with the air.

The unit under test on the work bench notice the negative terminal at bottom of jar and the twin positve leads in the top of open glass jar and connected to stainless cylinders.

When the mix is in the chamber and the spark plug fires the air returns to its low frequency, releasing energy.

Some of the gases in the air have to react with the fuel to lower the fuels energy state. This is the pollution bit.

What if we could increase the frequency and the energy of the incoming air without fuel. That would mean NO pollution in the end process.

Another view of glass test unit mounted in automobile

This is what the 'Wizard' has done. The device is simple in principle, but without the right knowledge of the materials required and the correct characteristics of each material it will not work. The cell consists of stainless steel tubes 1,2,3,4 inches in diameter a outer casing again Stainless steel 5 inches in diameter no welding can be done any where on the unit.

The ends should be dome type and presses on to the outer case when complete. The top has a 3/4 inch hole tapped in it to allow a aluminium delivery tube to be screwed in. The bottom has a hole drilled in it to allow a electrode to pass through the case without electrical contact.
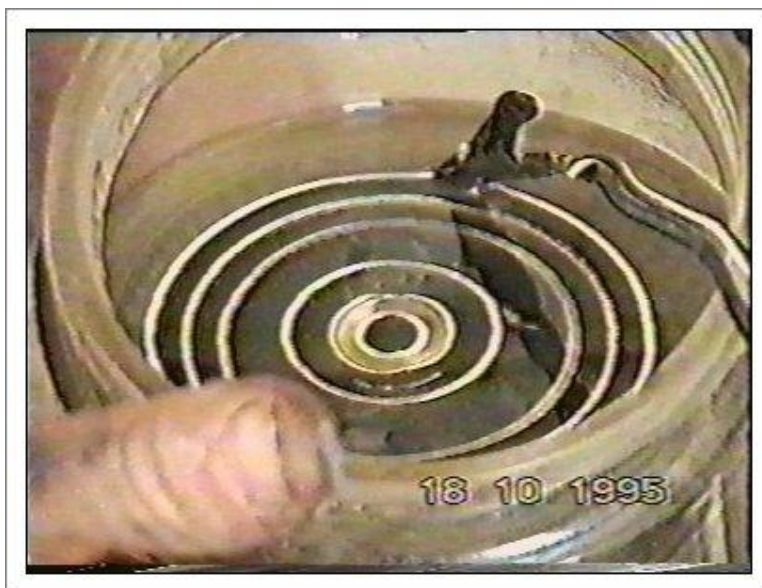

Close up view of the glass unit prior to being charged

All insides of the tubes should be as polished as possible without the use of chemical or abrasive or steel brushes.(elbow grease and vinegar) The inner tubes are insulated from each other and the 1 inch one is connected to the bolt through the bottom.

The delivery tube and outer case must be isolated from the rest of the car. The deliver tube runs towards the carby or throttle body. At about 4 inches from the air metering device(carby or throttle)the aluminium stops and a piece of rubber hose connects to BLANK fitting on the device without hose clamps.

The cell is filled with specially charged water and the timing is adjusted over a couple of days . At the end the fuel is cut off all together and the motor will be running with a advance between 25 and 80 degrees. Castiron engines are the hardest to do.
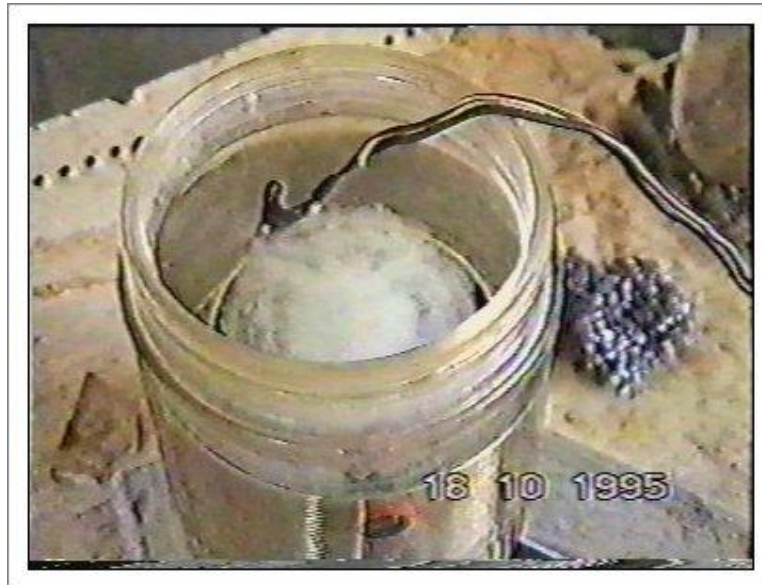
This photo taken just a current is beig applied notice the gas bubbles being formed, a few seconds later the entire glass is filled with a white mass of bubbling foam

Aluminium is the easiest to do. Some aluminium engines one take a day of driving to completely cut over. The exhaust is ice cold, the radiator has ice on it and it has twice the power of a petrol engine.

I believe it may be worthwhile to remove the water from the block and replace it with Auto Transmission Fluid as it freezes at a much lower temperature.

I would expect that the water pump vanes would need to be clipped or drilled to decrease efficiency and drag in the oil. The bolt on the bottom is connected to the chassis. This may seem too simple but if done correctly it works.

I am currently working on my VN commodore and my other project is a turbocharged intercooled 13B rotary. I do not know what is going to happen with the turbocharged engine.

If I can make it work there will not be a engine that couldn't be converted including diesel's (replace injectors with spark plugs and electronic timing unit about $440).Imagine ever truck and car in Australia using no fuel creating no pollution.

A wonderful place, however the government and fuel companies will do every thing that they can to stop us the people. I thought that they are our servants.(I wish)

This cell functions as a tree does, it is a biocapacitor or a self charging capacitor like the "ARK of Covenent" to stop the charging you must enclose the capacitor in Aluminium.

Added Benefits: Your car will not rust the paint will not oxidise the oil will last many times longer the energy around the car will keep you healthy and heal your ills.

WATER

The water used must be as clean as possible and alive (none treated water) once it is energised via a special process the water can be used in the cell.

All the impurities will be removed with this process that uses low voltage electricity.

There has been some other written work on this subject however I believe that none of the money raised by the sale of this information has been given to 'Wizard' to help recover from his losses.

They do give him credit but he should get something for his trouble. This idea alone could be worth Billions world wide. The 'Wizard' has many other wonderful inventions however the world may not be ready for them yet.

Stainless Steel Specifications

As Joes devices uses a special grade of stainless steel it may be of interest to intending builders of the device to know the differences and types.

Stainless Steel

Stainless steel is primarily when corrosion or oxidation are a problem. The function that they perform cannot be duplicated by other materials for their cost. Over 50 years ago, it was discovered that a minimum of 12% chromium would impart corrosion and oxidation resistance to steel. Hence the definition "Stainless Steels", are those ferrous alloys that contain a minimum of 12% chromium for corrosion resistance. This development was the start of a family of alloys which has enabled the advancement and growth of chemical processing and power generating systems upon which our technological society is based. Subsequently several important sub-categories of stainless steels have been developed. The sub-categories are austenitic, martensitic, ferritic, duplex, precipitation hardening and super alloys.

Austenitic Grades
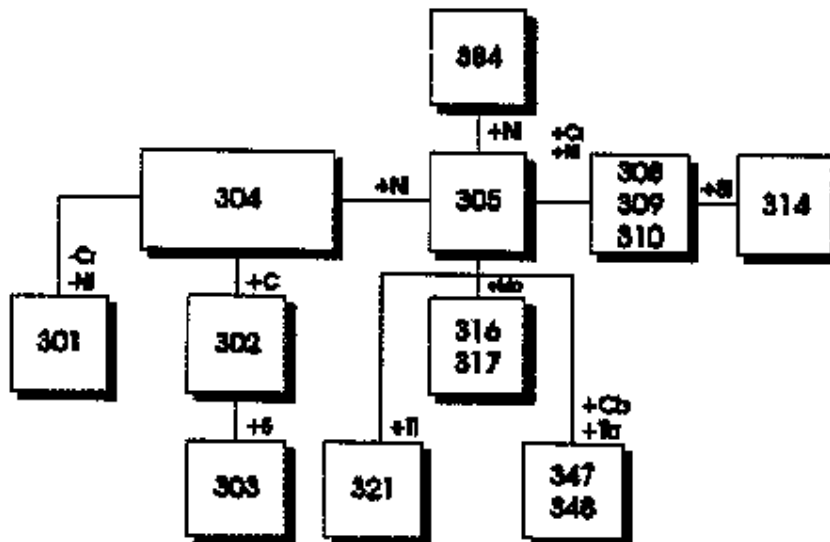
Austenitic grades are those alloys which are commonly in use for stainless applications. The austenitic grades are not magnetic. The most common austenitic alloys are iron-chromium-nickel steels and are widely known as the 300 series. The austenitic stainless steels, because of their high chromium and nickel content, are the most corrosion resistant of the stainless group providing unusually fine mechanical properties. They cannot be hardened by heat treatment, but can be hardened significantly by cold-working.

Straight Grades

The straight grades of austenitic stainless steel contain a maximum of 8% carbon. There is a misconception that straight grades contain a minimum of 3% carbon, but the spec does not require this. As long as the material meets the physical requirements of straight grade, there is no minimum carbon requirement.

"L" Grades

The "L" grades are used to provide extra corrosion resistance after welding. The letter "L" after a stainless steel type indicates low carbon (as in 304L). The carbon is kept to .03% or under to avoid carbide precipitation. Carbon in steel when heated to temperatures in what is called the critical range (800 degrees F to 1600 degrees F) precipitates out, combines with the chromium and gathers on the grain boundaries. This deprives the steel of the chromium in solution and promotes corrosion adjacent to the grain boundaries. By controlling the amount of carbon, this is minimized. For weldability, the "L" grades are used. You may ask why all stainless steels are not produced as "L" grades. There are a couple of reasons:

"L" grades are more expensive

Carbon, at high temperatures imparts great physical strength

Frequently the mills are buying their raw material in "L" grades, but specifying the physical properties of the straight grade to retain straight grade strength. A case of having your cake and heating it too. This results in the material being dual certified 304/304L; 316/316L, etc.

"H" Grades

The "H" grades contain a minimum of 4% carbon and a maximum of 10% carbon and are designated by the letter "H" after the alloy. People ask for "H" grades primarily when the material will be used at extreme temperatures as the higher carbon helps the material retain strength at extreme temperatures.

You may hear the phrase "solution annealing". This means only that the carbides which may have precipitated (or moved) to the grain boundaries are put back into solution (dispersed) into the matrix of the metal by the annealing process. "L" grades are used where annealing after welding is impractical, such as in the field where pipe and fittings are being welded.

Type 304 The most common of austenitic grades, containing approximately 18% chromium and 8% nickel. It is used for chemical processing equipment, for food, dairy, and beverage industries, for heat exchangers, and for the milder chemicals.

Type 316 Contains 16% to 18% chromium and 11% to 14% nickel. It also has molybdenum added to the nickel and chrome of the 304. The molybdenum is used to control pit type attack. Type 316 is used in chemical processing, the pulp and paper industry, for food and beverage processing and dispensing and in the more corrosive environments. The molybdenum must be a minimum of 2%. Type 317 Contains a higher percentage of molybdenum than 316 for highly corrosive environments. It must have a minimum of 3% "moly". It is often used in stacks which contain scrubbers.

Type 317L Restricts maximum carbon content to 0.030% max. and silicon to 0.75% max. for extra corrosion resistance.

Type 317LM Requires molybdenum content of 4.00% min

Type 317LMN Requires molybdenum content of 4.00% min and nitrogen of .15% min Type 321

Type 347 These types have been developed for corrosive resistance for repeated intermittent exposure to temperature above 800 degrees F. Type 321 is made by the addition of titanium and Type 347 is made by the addition of tantalum/columbium. These grades are primarily used in the aircraft industry.

Martensitic Grades
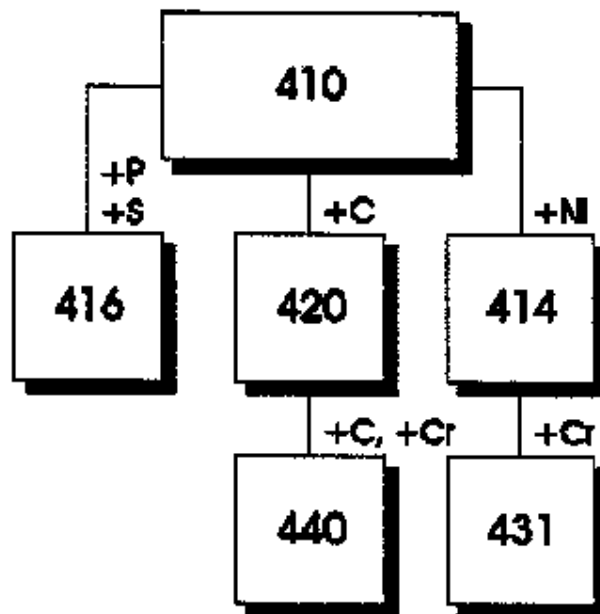
Martensitic grades were developed in order to provide a group of stainless alloys that would be corrosion resistant and hardenable by heat treating. The martensitic grades are straight chromium steels containing no nickel. They are magnetic and can be hardened by heat treating. The martensitic grades are mainly used where hardness, strength, and wear resistance are required. Type 410 Basic martensitic grade, containing the lowest alloy content of the three basic stainless steels (304, 430, and 410). Low cost, general purpose, heat treatable stainless steel. Used widely where corrosion is not severe (air, water, some chemicals, and food acids. Typical applications include highly stressed parts needing the combination of strength and corrosion resistance such as fasteners.

Type 410S Contains lower carbon than Type 410, offers improved weldability but lower hardenability. Type 410S is a general purpose corrosion and heat resisting chromium steel recommended for corrosion resisting applications.

Type 414 Has nickel added (2%) for improved corrosion resistance. Typical applications include springs and cuttlery.

Type 416 Contains added phosphorus and sulfer for improved machinability. Typical applications include screw machine parts.

Type 420 Contains increased carbon to improve mechanical properties. Typical applications include surgical instruments.

Type 431 Contains increased chromium for greater corrosion resistance and good mechanical properties. Typical applications include high strength parts such as valves and pumps. Type 440 Further increases chromium and carbon to improve toughness and corrosion resistance. Typical applications include instruments.

Ferritic Grades
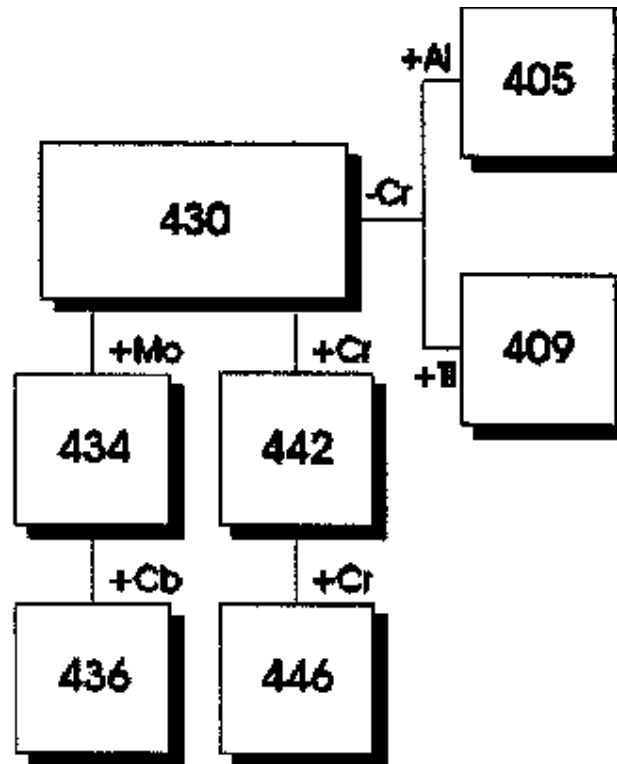
Ferritic grades have been developed to provide a group of stainless steel to resist corrosion and oxidation, while being highly resistant to stress corrosion cracking. These steels are magnetic but cannot be hardened or strengthened by heat treatment. They can be cold worked and softened by annealing. As a group, they are more corrosive resistant than the martensitic grades, but generally inferior to the austenitic grades. Like martensitic grades, these are straight chromium steels with no nickel. They are used for decorative trim, sinks, and automotive applications, particularly exhaust systems.

Type 430 The basic ferritic grade, with a little less corrosion resistance than Type 304. This type combines high resistance to such corrosives as nitric acid, sulfur gases, and many organic and food acids.

Type 405 Has lower chromium and added aluminum to prevent hardening when cooled from high temperatures. Typical applications include heat exchangers.

Type 409 Contains the lowest chromium content of all stainless steels and is also the least expensive.

Originally designed for muffler stock and also used for exterior parts in non-critical corrosive environments.

Type 434 Has molybdenum added for improved corrosion resistance. Typical applications include automotive trim and fasteners.

Type 436 Type 436 has columbium added for corrosion and heat resistance. Typical applications include deep-drawn parts.

Type 442 Has increased chromium to improve scaling resistance. Typical applications include furnace and heater parts.

Type 446 Containes even more chromium added to further improve corrosion and scaling resistance at high temperatures. Especially good for oxidation resistance in sulfuric atmospheres.

Duplex Grades

Duplex grades are the newest of the stainless steels. This material is a combination of austenitic and ferritic material. This material has higher strength and superior resistance to stress corrosion cracking.

An example of this material is type 2205. It is available on order from the mills.

Precipitation Hardening Grades

Precipitation hardening grades, as a class, offer the designer a unique combination of fabricability, strength, ease of heat treatment, and corrosion resistance not found in any other class of material.

These grades include l7Cr-4Ni (17-4PH) and l5Cr-SNi (15-5PH).

The austenitic precipitation hardenable alloys have, to a large extent, been replaced by the more sophisticated and higher strength superalloys.

The martensitic precipitation-hardenable stainless steels are really the work horse of the family.

While designed primarily as a material to be used for bar, rods, wire, forgings, etc., martensitic precipitation-hardenable alloys are beginning to find more use in the flat rolled form.

While the semiaustenitic precipitation-hardenable stainless steels were primarily designed as a sheet and strip product, they have found many applications in other product forms.

Developed primarily as aerospace materials, many of these steels are gaining commercial acceptance as truly cost-effective materials in many applications.
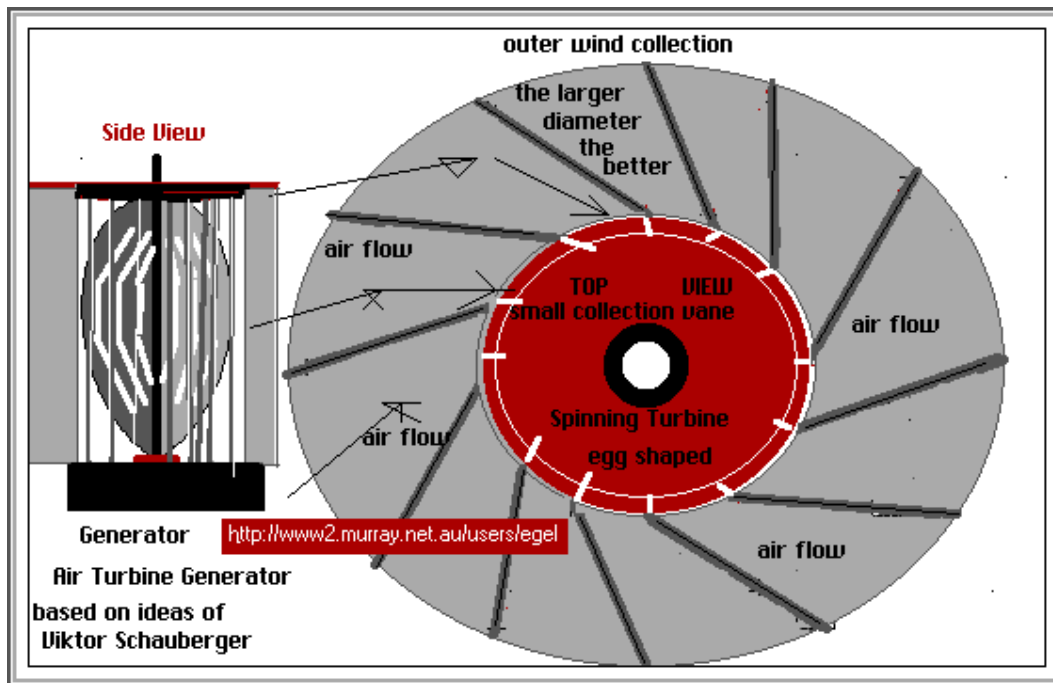
Superalloy Grades

Superalloys are used when 316 or 317 are inadequate to withstand attack.

They contain very large amounts of nickel and/or chrome and molybdenum.

They are usually much more expensive than the usual 300 series alloys and can be more difficult to find.

These alloys include Alloy 20 and Hastelloy.

Schauberger inspired turbine

Viktor was a man that studied nature carefully to create inventions that did not go against Nature but to work with it to produce useful energy. Although this is not one of Viktor ideas I got the idea from reading the book Living Energies.

Today researchers are trying to make windmills that will produce electricity and more of it by making bigger wind vanes. Unfortunately the bigger they get the more damage they suffer when rotating and have speed controls to prevent destruction.

Nature when it wants to produce large amounts of energy gathers it from a large area and compresses it in to a small area, for example cyclones and tornadoes.

This is what my idea is based on. Wind is collected from any direction by means of stationary vanes curved slightly and reducing in size from a large starting collection point and directed to a small area directing compressed air in a cyclonic motion towards a spinning egg shaped turbine that turns a electrical generator DC or AC.

The direction the vanes are curved will determine the direction of the turbine and will then allow wind flow to be collected from any direction. The vanes need to curved so that air flow is directed towards the centre flow and not out through another wind input area.

The egg shape was chosen because it has unusual properties and allows the fast moving air to gradually slow down as it approaches the bottom of the egg turbine and so not cause any damage to equipment.

Please note the stationary collecting vanes can be any size the bigger the better but securely anchored to prevent movement by wind gusts.

The centre turbine must be free to rotate in any direction.

The blades on the turbine need only to extend from the hub a small distance but must follow a spiral path from the top to the bottom of central hub. This idea could be used with the newer DC brushless generators to produce really efficient operation and possibility with reduce wear.

Simple Battery made with Salt
Scrap metal battery

terminals

water level

brine drainage

side view

Plastic or Glass casing

insulated copper   connected aluminium

terminal one

this end copper insulated from terminal bar

water flow mid way between

Top View

Brine Battery

water level and covered plate

enriched brine drainage

from bottom cell

metal plates exposed halfway to brine

using copper and aluminium plates half submersed in brine

(c) Egel 95

brine outlet

this end aluminium insulated from terminal bar

terminal two

Cu connection terminal rod

insulated Au from terminal bar

top view

from the Encyclopedia of free energy

Salt dissolved in water with two strips of different metals can be used to make a battery.

The reaction that causes this flow of electricity dissolves one of the metals and then plates it on the other electrode.

The metals that could be used are copper, iron, tin, zinc and aluminium A scrap battery could be made using any two these metals by placing the differing metals in alternate rows.

Suspend the metals from insulated supports into the brine solutions. It is recommended that copper be one of the metals used in your battery.

Use salt to water in the ratio 10:1 that is 5 pounds of water by weight to 1/2 pound of salt.

Attach a wire to each electrode and wire either as series connection or parallel connection.

Each metal pair combination will give approx .5 of volt, the current level will depend on the plate area.

Unit employing the electro gravitational desalination of saline water U.S. patent no 3,474,014.

The invention is owned by General Marine Technology Corporation the address is unknown maybe someone can help me.

They seem to encourage experimenters to build their own units but would get upset if built for commercial profit

In this application several combinations of copper tubing and aluminium rods cells are placed standing upright.

Each cell is separated from one another and has an inlet some where near the bottom of the copper tube length

A area is provided to collect the increase brine concentration at bottom of each tube cell.

A water outlet is provided on opposite side of cell in the copper tube near the top and fed to the bottom of the next one.

Above this is an electrical connection between the copper tube and aluminum provided by a 10 ohm resistor and clear of the brine.

For a hundred gallons a day unit the following are required, a scaled down unit would produced less fresh water and current.

copper tubing 1" diameter X.03 wall by 64 inches long

660 required 3,520 feet in total.

Aluminium rod of same length 1/2 inch diameter use P.V.C. tubing to provide connections between cells

A means needs to be provided to remove the brine from bottom of each tube cell at periodic times when there is a build up of high concentration of salt crystals.

This means opening tubes at the bottom for a fraction of a second while the unit is still running to remove the salt build up.

There are 30 rows of cells and 23 cells to the row

Water flows from the bottom to top in each cell one after the other.

If you want to replace the 10 ohm resistors connect each cell in series so that extra voltage is added from each cell

The electrical circuit must be completed for this unit to work and why not a motor.

From information obtained the average total of 996 watts would be available so this should be enough to drive a small water pump of 1/4 to 1/3 hp to supply filtered sea water or bore water to the unit.

The aluminium rod is fixed inside copper tube with 1/4" space all around to allow the water freedom to flow out of the bottom and the top and inside between the copper tube and aluminium rod.

Brine is fed very slowing from the bottom of the copper tubing, and an electro galvanic response takes place where in simple terms the salt ions are send to the bottom outlet zone.

Meanwhile because there is a flow of water the lesser dense salty brine is carried out to the top and fed to bottom section of another cell and so on until water becomes pure.

Power supply is directly related to the desalination activity and from time to time the aluminium rods will become coated with hydroxides these can be removed by use of a vibrator on each aluminium rod to shake the hydroxides loose.

Care should be exercised during the vibration exercise as there is the danger of an electrical short or an electrocution.

The minimum flow rate should not be less than 10% of the optimum flow rates in units over 10 gallons.

This unit functions not only as a water desalinator but as power source as well.

Babylon battery

In the early history of what is now as Iraq then know as Babylon there is evidence that they knew how to make batteries.

Researchers found a small clay pot with two differnt metal pieces in it and could not work out what it did.

Until one of them poured some vingar in it and connected leads to a multimeter and found it gave a current.

These people certainly knew how to make wine and some must have turned to vinegar and they also knew how to work metals in their weapons.

It is suggested it was kept secret by the early citizens of Iraq and those in the know, who used it to electroplate items to look like gold and then they passed them off as the real thing to early tourists. A real good money earner for the time.

Solar Desalination Device
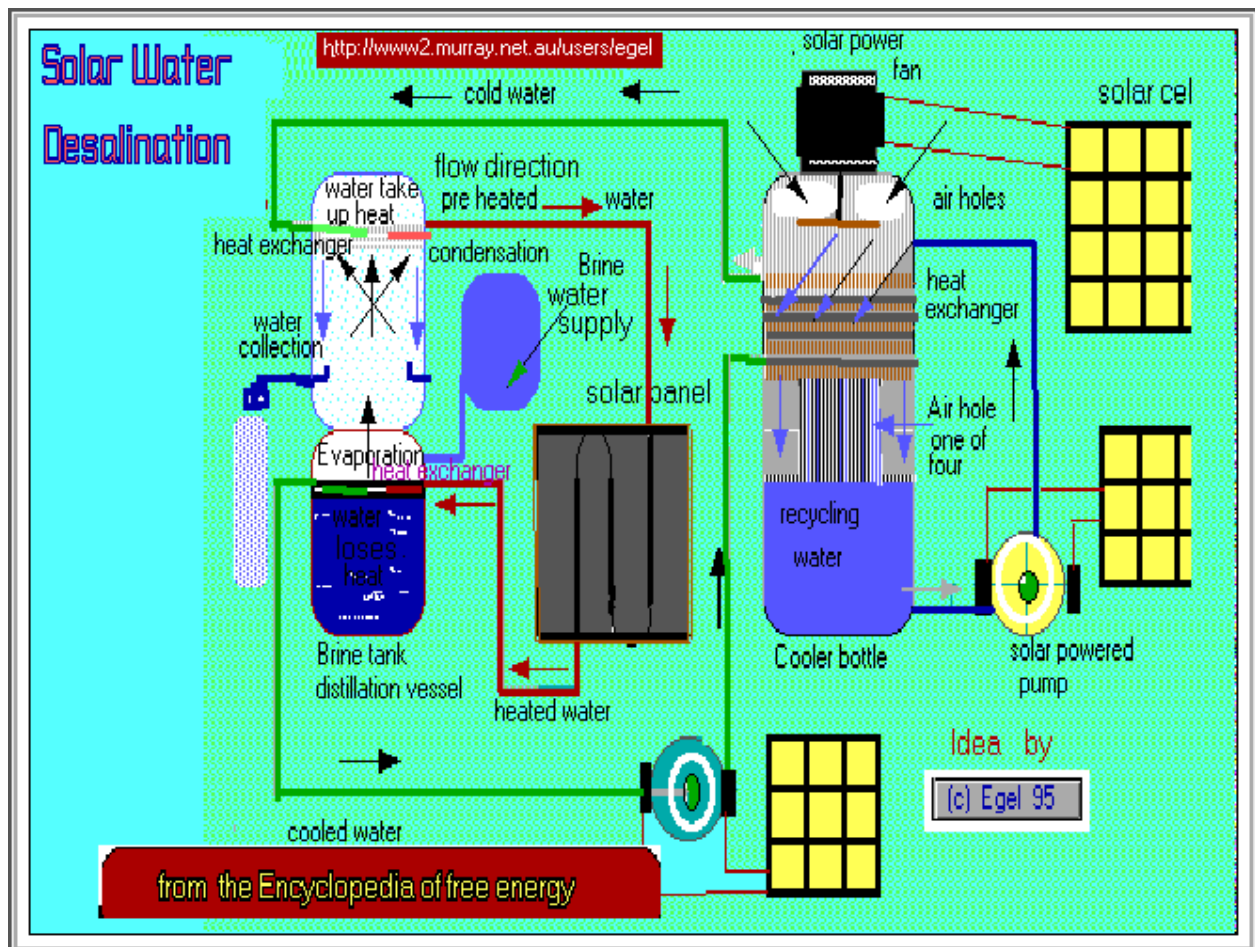
This a improved version of the solar still described elsewhere

This is a device that could be made as a small unit or a much bigger one depending on the parts you can acquire.

I believe most of the parts solar cell and pumps can be obtained from various sources

The metal heat exchange units could be made of small copper tubing and wound around any handy cylinder for small units. The connections between each heater exchanger and unit could be plastic hosing.

If the unit was to be of a permanent nature the cooling section of connection hosing could be buried deeply in the ground to enhance the cooling effect.

You could also use black plastic or black metal connection hosing in the heat section above ground to add additional heat from the enviroment to the flowing fluid.

I need not describe the solar panel as there are many in production or you could build a simple unit with black metal, piping and a glass cover.

This unit has two basic cycles heating and cooling.

The Cooling Bottle Cycle

It would help the unit to operate if kept in the shade. At the top of the bottle or can is mounted a solar driven fan which forces incoming air down. There should be enough space on top or side for adequate air to be drawn in and air slots underneath the coils to help remove the built up heat.

Underneath this, is a series of water jets forcing water pumped from a collection tank below and forced down over a heat exchanger.

The heat exchanger is a coil of copper tubing carrying a fluid which could be water. Fan forced air and water is passed over the tubing and removes the heat from the tubing.

Remaining cooling water is dripped into collection tank which is kept at a constant level by automatic level and then is pumped back to the top jets.

The Heating cycle is supplied by solar panels.

Distillation

The distillation unit is also made up of two parts

The top half contains an upper heat exchanger which will take heat from the water vapour and cause it to condense water droplets along side of walls and then the water drips into a collection groove and fed via gravity to a collection storage container.

The bottom half consist of a storage unit for the salty water and a heat exchanger mounted just below the top of the salty water. The salty water is kept at a constant level by a supply reservoir and an auto level feed. This bottom heat exchanger gives heat to the brine water.

Operation of the unit

Basically there is flow of fluid from the hot and cooler sections transferring heat to and from via the heat exchanger sections.

This flow is controlled by a constant speed solar operated pump pushing fluid through the sections. Fluid is fed from the cooler section into the top heat exchanger of the distillation container where it takes heat from the water vapour and condenses water droplets on the side of the walls.

The Fluid slightly heated is then fed to a solar panel where it is heated further and then flows to the bottom heat exchanger to heat the salty water by releasing heat from the working fluid.

The water is heated and water vapour rises to the top. The heat exchange fluid now at a lower temperature is now fed to the cooler unit where the remaining fluid heat is extracted and the cooled fluid is now fed back to the top heat exchanger of distillation unit to begin the cycle all over again.

Solar Ponds
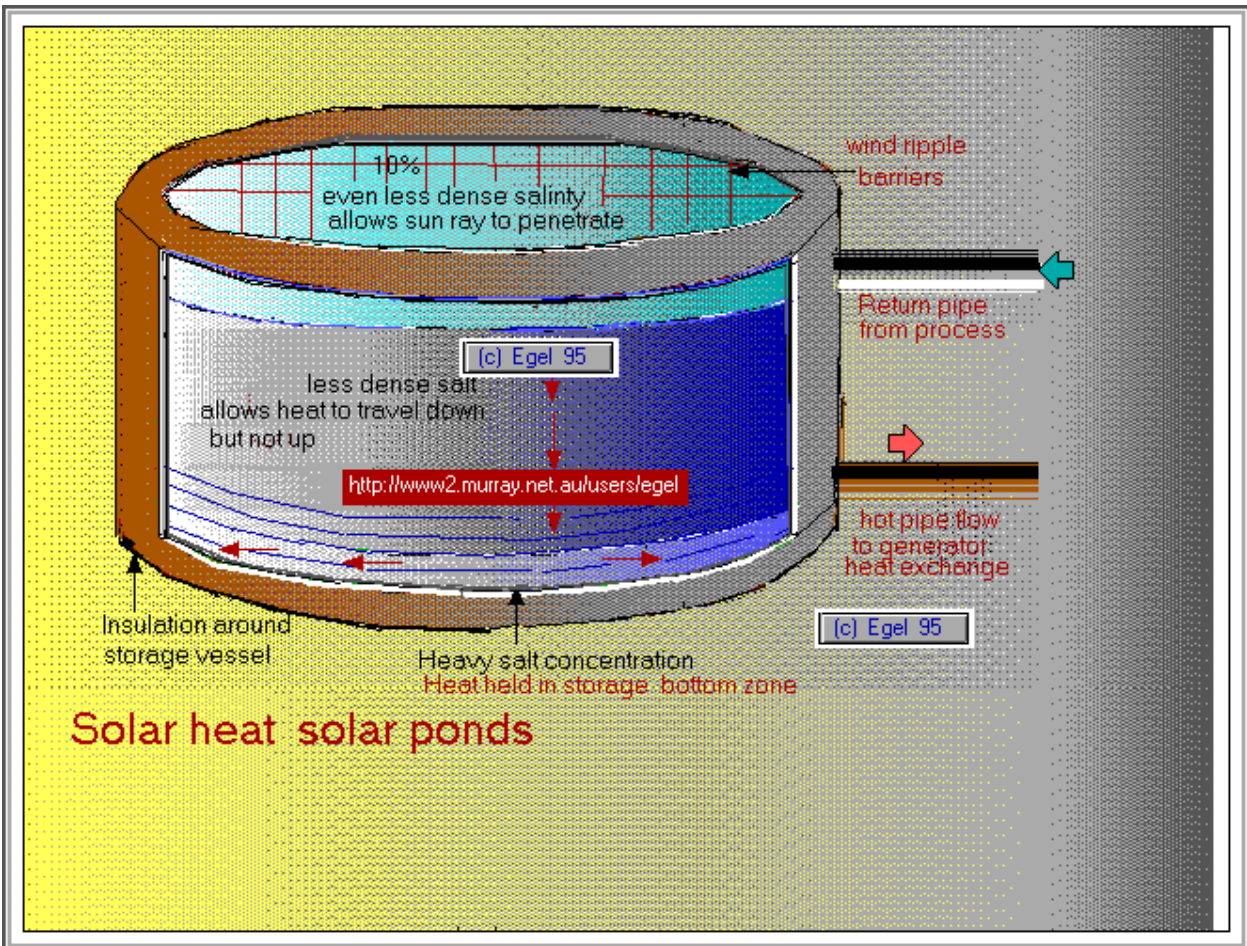
Those large areas of the planet covered by salt ponds may be yet be of some use after all. Work today is being carried on in Israel where they have the best location for work of this kind, that being the Dead Sea where they have built a power station using heat stored in this sea.

There are also other areas in the United States of America and even in Australia. Areas In rural Australia which are being destroyed by a salt may yet be made useful for energy production.

These Ponds to be useful must have three differing zones of salt concentration not easy to obtain which work together to trap and store heat originating from the sun.

The surface zone the lightest in salinity allows the heat to travel down but not upwards and also acts as buffer to the second zone. The second zone prevents heat from returning to the surface.

The third zone with the greater concentration of salinity acts as thermal storage and readily absorbing the solar heat rays`.

The weather pattern in the area has a great bearing on the effect of this heat storage pond where evaporation and wind patterns can completely destroy any heat storage capability.
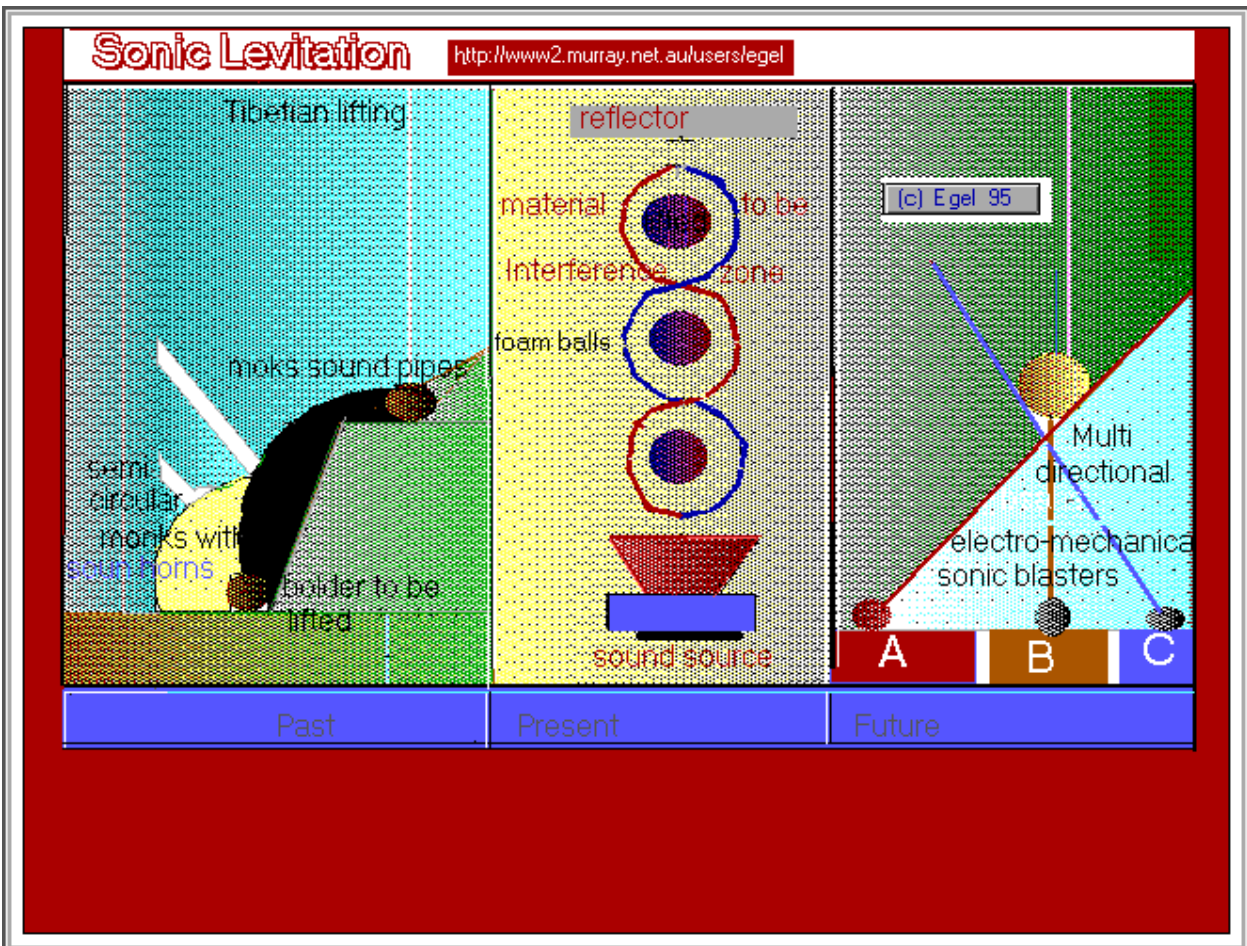
The wind can cause the three zones to mix therefore destroying the heat thermal storage properties of the pond. Floating wind barriers have been introduced to reduce the ripple effect of the wind across many lake surfaces. Some solar ponds can have a temperature of 100 degree c in the lower zone, whilst having a considerable lower one on the top zone…

Brine is pumped from the pond at the correct level and passed through a heat exchanger and maybe a temperature phase changer and is put towards a number uses from power generation to desalination plants. Water from the top of lake could be used in the process for cooling as there is a temperature difference between the zones.

Although a large surface is required for the collection of the solar energy, I have noticed an effect when I was storing gherkins in large wooden barrels containing salt water. When the gherkins were removed and the brine was left to stand after a period of time in the sun there was always a cold top layer and a warmer bottom layer whenever I inserted my hand to drain them.

I am sure this idea using a large wooden barrel or insulated container bottom and sides and connected to solar panel with water flowing to bottom layer could be used as a heat storage unit. This could also be improved by having a glass top to direct sunlight into bottom layer.

Sonic Levitation

Tibetian lifting   reflector   (c) Egel 95

material ... to be

Interference ... zone

foam balls

moks sound pipes

Multi directional.

semi circular monks with ... horns   ...ulder to be lifted   electro-mechanica sonic blasters

sound source   A   B   C

Past   Present   Future

Put an egg in a glass and watch it sink. How can you get it to come to the top without touching it? Answer Easy if you know how By adding salt to the water and waiting for it to dissolve will make the egg rise. The surrounding area around the egg has changed and the gravity effect has been altered. Maybe by the addition of sound waves to an area sounding an object and to the object the effects of gravity can be changed also time will tell.

THE PAST Lifting heavy weights has always been difficult. But if the following story is true, there may have been in the distant past an easier way This is story that has been passed to me and I have two versions two different Locations but the details seem to be similar. It seems an Oxford MD had a Tibetan student friend who invited him to Tibet and whilst there he witnessed the following He was taken to a monastery where a building operation was underway. At the scene he noticed that at 250 metres above ground level there was a cliff with a cave. He saw monks were busily building a wall on a small area in front of the said cave. At ground Level there laid a smooth flat stone with a large indentation in it one meter across by 15 centimeters deep. A block of stone about 1 by 1.5 meters was placed into this area At a distance of 63 metres from the container 19 musical instruments including (ragdonds) were placed together in a 90 degree arc. * I believe ragdongs are long wind blown pipes that produce a low frequency tone *. All Distances had been carefully measured. The instruments

consisted of 13 drums and 6 trumpets, Eight of the drums were 1 meter wide and 1.5 meters long. Four were medium sized 0.7 by 1 metre There was also a small one 0.2 by 0.3m The drums were made from 3mm thick sheet metal and weight 150kg with one end open. The operators stood behind their instruments when playing them. The small drum was used to signal a control to start. This resulted in the monks singing a mantra and the instruments making a loud low droning noise and drum noise. It seems for about four minutes nothing happened. When the tempo was increased the stone began to sway and then levitated towards the cave opening Three minutes later it landed on the platform at the cave opening. In one hour so the story goes they lifted 5 to 6 stones into position. For this story to be true the stones would have needed to have flown in a 500m long parabolic curve and a height of 250 metres. The drums and trumpets were placed in an equal order and each trumpet was separated by drums.

THE PRESENT - Just before World War 2 a man in Florida built his dream home. A Coral Castle for him and his future wife in Europe. Unfortunately this arrangement was to her dislike and the marriage never occurred. All That Remains today is a tourist attraction called Coral Keys with several unanswered questions. In that castle are building blocks that large modern cranes have difficulty in lifting even today. Yet he used a small wheel barrow and a loan of a pickup vehicle He never disclosed his secret, although some have suggested he used electromagnetic means. In research establishments today experiments have conducted using sound waves produced electronically to lift small rocks and little foam balls. The device consists of a speaker mounted at the base and a reflector at top to create sound wells in which the balls floated. see middle illustration.

THE FUTURE - We may see sound playing a more important role in our lives as once the laser beam was an invention waiting for use in the early sixties to widespread use today it enjoys. We may yet see sound used in demolition and construction work. Researchers need to find a way to produce a low frequency tone at high power levels to be able to lift heavy loads. In lifting this weight you must be able to direct where it will go. My idea is to construct three units using high air compression with pipes cut to a fundamental frequency as the actual frequency may result in pipes of extreme length. By having three beams allows one to create a shifting sound well in which the load could sit and moved in a 360 degree circle at any given height depending on unit placement. Unfortunately the right frequency has yet to be found.

An interesting experiment when factories were being built in Sydney Australia. There was an unusual occurrence that used to happen every after noon between one o'clock and three o'clock every day for all the factories. A load droning sound would emit from all these factories and of course this use to cause some headaches and some amusement. After much searching it was found that the gutter down pipes would become heated during the morning when exposed to the sun and would then be subjected to cooling air. This caused air eddy currents within the pipes which would then cause the pipes to resonate. The solution was found to be in detuning the pipes. You can get the same effect by getting a metre or there about of a length of metal tubing place some wire mesh about quarter the way from the bottom inside the tube . Now heat the bottom of the metal tube until it has warmed up, about five minutes on a propane gas should be about right. (a candle could probably be used as well) Now by holding it upright expose tubing to normal air temperature and a load droning sound will be heard.

Tate Power from the air
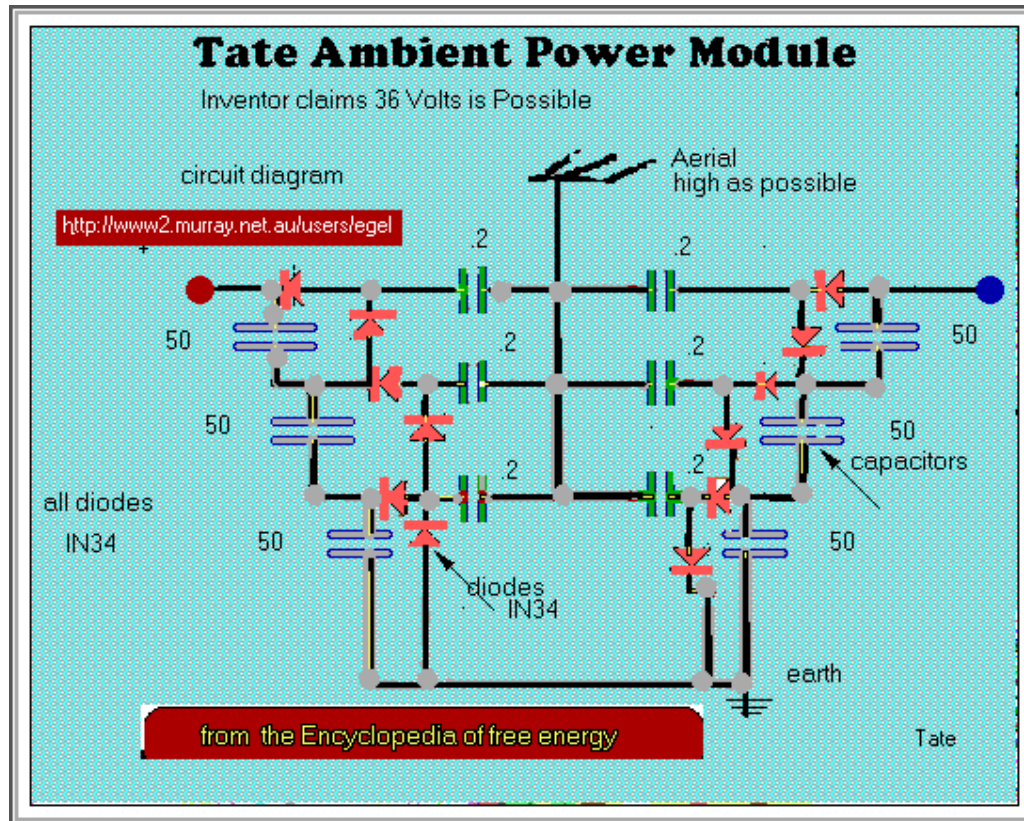
Tate Ambient Power Module. Joseph Tate Last Known Address 760 Waldo Point Sausalito Ca (4965) 415 331 8150 332 9918 U.S. Patent 4,628,299

This design converts radio frequency energy to power that can be usefully applied in power devices such as clocks, radios and smoke detectors.

This design makes use of a doubler, splitter and rectifier.

The device has been known to give 36 volt/9 watts.

This device does away for the need for batteries by extracting energy from natural and man made radio waves.

The device uses a coil made of the following design 479 turns of #22 wire on a 3" plastic tube, the coil should be loosely wound as a close wound coil tends to reduce power collection. One end should be connected to unit at antenna connection point and the other to an antenna of your choice.

Other coil types could be used in your experiments such as sliding induction coils that is inside one another and find the best position by moving them in different positions.

Other coil types can be found by referencing any good book on radio fundamentals. Check out the Tesla type coils as well.

Power could be also enhanced by placing a tin foil pyramid under the coil as this seems to also improve power.

The power produced also seems to improve near bridges, ships and any thing containing a great deal of metal.

A high antenna wire seems to improve the running of unit although a 7 foot whip antenna worked reasonably well too.

A interesting side line is the inventor claims to be able to detect earthquakes by the rise and fall of energy levels.

Tesla High Frequency Electrical Generator
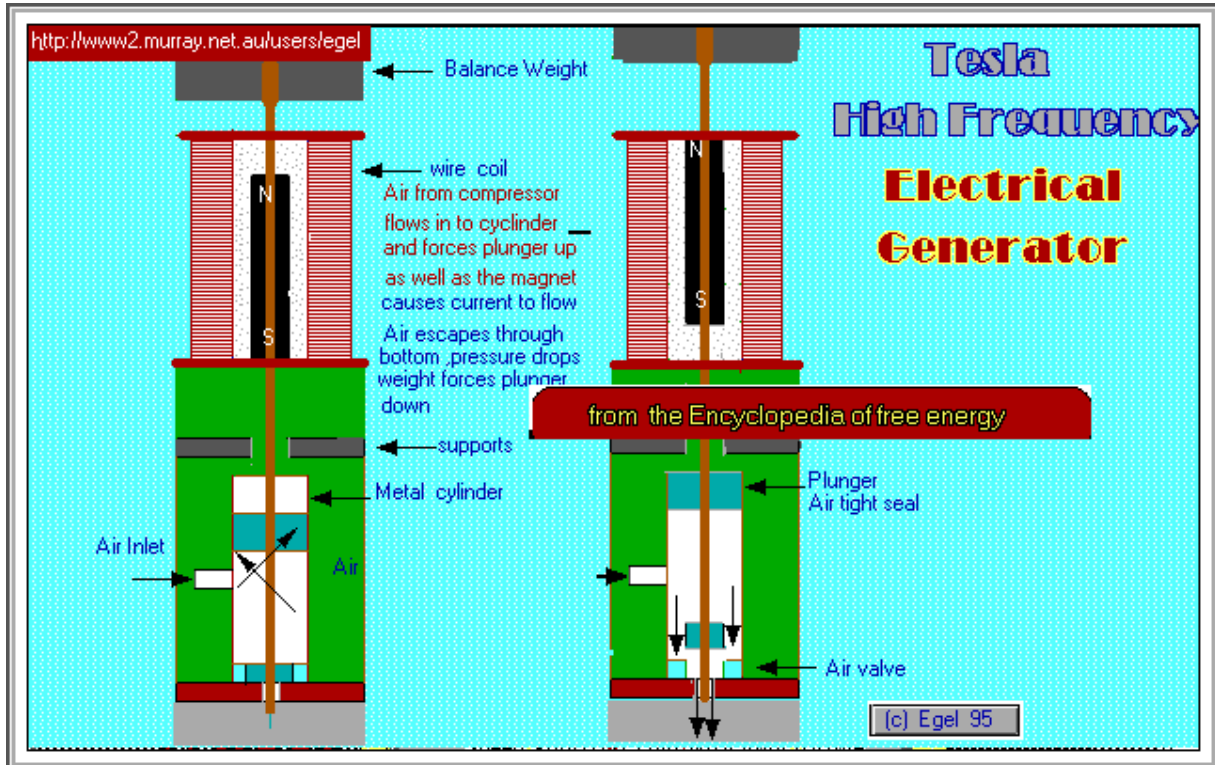
In the early years when Nicola Tesla had his laboratory in New York, he made a simple vibration device powered by air. It was simple in construction and having no valves , one air inlet and only one moving part.

Although power required is hazy, it was suggested he used only 1/25 horsepower to run it.

When he had the unit connected to a metal pillar in his building and when he had it running some time, there was resonance build up enough in the surrounding buildings to cause them to shake and nearly be destroyed.

They would have happened to, if he had not stopped the unit by hitting it with a large hammer nearby to stop the resonance.

Although I have not seen the unit, I believe it could have worked in principle like the unit illustrated.

The design shown is my idea of how it could have been modified later by Tesla to generate electrical energy of high alternating frequency for transfer of electrical energy without wires.

It could be made of metal [preferably] but maybe with modern plastic fittings as well if heat build up is not a problem encountered.

The unit might have been constructed thus:

A single cylinder closed off at one end with a drill hole small enough to hold a single piston rod.

On the bottom of the shaft is a piece of plastic that seals bottom hole in position when shaft is in down position.

Next up is an air delivery position.

Further up the piston is a piece of circular metal that makes a air tight seal.

Rubber seals or oil possibly be used to ensure a complete air tight fit.

Above this is a set of magnets that move through a coil of wire.

The weight above is designed to help move the assembly down when air pressure drops.

Secure top of unit so that rod can only travel up and down without side ways movement.

A Slight Variation

The piston arrangement could be different in that no hole needs to be drilled in the bottom of cylinder.

Use a cup or tin can for outer cylinder and fed with air in from side.

Place a small cylinder inside can so that rod shaft has somewhere to rest securely and is able to move only up and down.

Make a cover that fits over top of can and is air tight when rested there when fitted to shaft. Make a inlet for the air to be side delivered into unit.

The rest of assembly is as above.

The distance the rod needs to travel need not be large as it is the higher frequencies we are interested in.

You will need to experiment with coil windings, magnetic strength and air pressure to get your desired electrical output.

Theory of Operation

Air Pressure is delivered through side outlet

The air pressure in the cylinder builds up and lifts assembly upwards generating electricity in one direction in the coil.

When the air pressure drops due to the bottom hole in the cylinder or through the top with cup unit ,the top weight forces unit downwards and generates electricity in opposite direction.

The whole process repeats until air supply is removed. I would suggest that the Tesla unit be mounted on rubber backing to prevent vibration transfer to surrounding areas. The ideas put forward are not protected by patent as far as I know.

The Air Bladder Water Pump
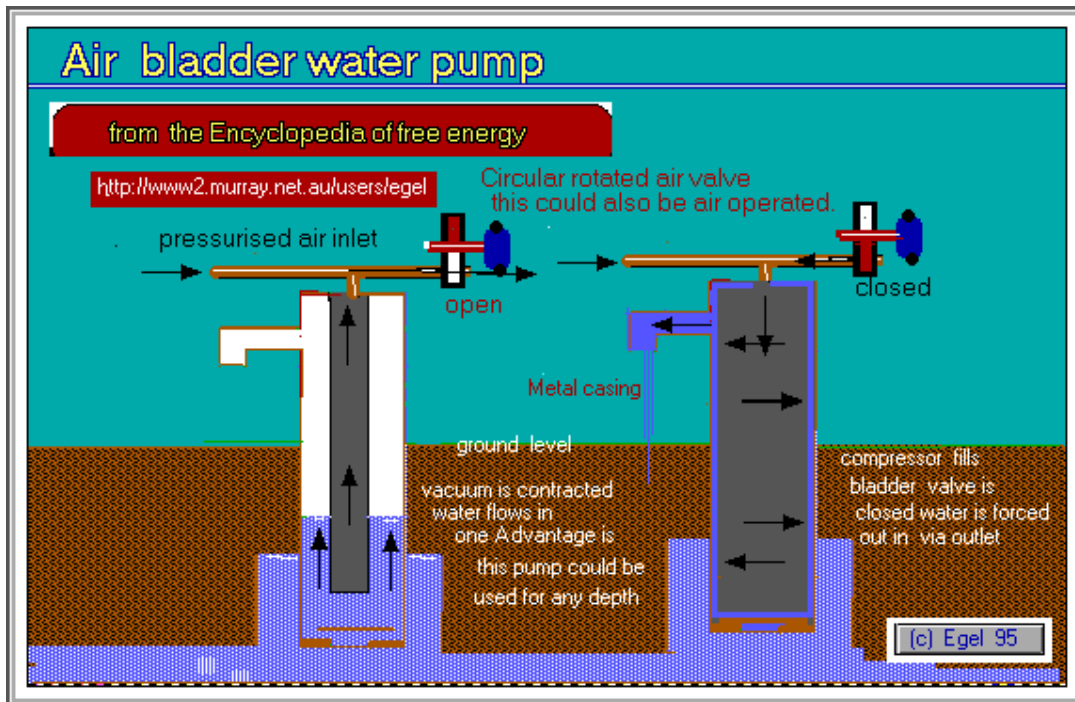
Another simple device based on the premise that no two objects can occupy the same space. As you can see from the illustration the parts consist of a pvc pipe any length any diameter. A rubber bladder that when inflated exceeds the inner diameter of the pvc piping. This is more than you will need, but this gives a good margin to play with. A top cap that will hold bladder in place and holds the T bar air supply.

A simple valve in bottom of pvc piping, this need not be anything special.

A simple one could be a light piece of rubber cut in a circular shape and placed over an end cap with a reasonable size hole drilled in it. It could also be connected to bottom of badder and bottom of the end cap tubing, with a hinge so that it could be operated when the bladder expands and contracts.

A water outlet on the side of the PVC tubing and a reliable air pressure source. An air pipe of tubing made in a T shape this will be the means the air is supplied to rubber bladder.

The pipe section of tubing entering bladder would need to be of a smaller diameter that the rest . At the opposite end to air inlet a means would be needed to open and close air pressure supply.

This could be a simple rotary valve or electrical device operating by the unit itself.

A much simpler solution could just be an air tap operated by hand when water is needed.

Experimental Version

A experimental version could be made by using a smaller diameter Pvc tubing a t piece inserted in middle to make an outlet and a bicycle tube. A bottom valve made as described previously.

Place the complete bicycle tube bent in half in the pvc piping so that air valve is at the top.

Place the pipe pump in a water source and then using a bicycle hand pump inflate tube. You will need to find a way to deflate the tube.

This will not need to be a problem if you use a continuous source of air and the t bar air inlet as previously described.

If you are using a continuous source of air pressure such as an air compressor remove the rubber in valve stem of inner tube so that air can flow in both directions without hinderance.

Theory of Operation

Air at beginning is directed into rubber bladder by turning the air outlet tap to off position.

The increasing pressure of bladder causes the bottom valve to be forced shut.

The bladder continues to inflate and water is forced up the pipe until it exits out the outlet. When all water is expired.
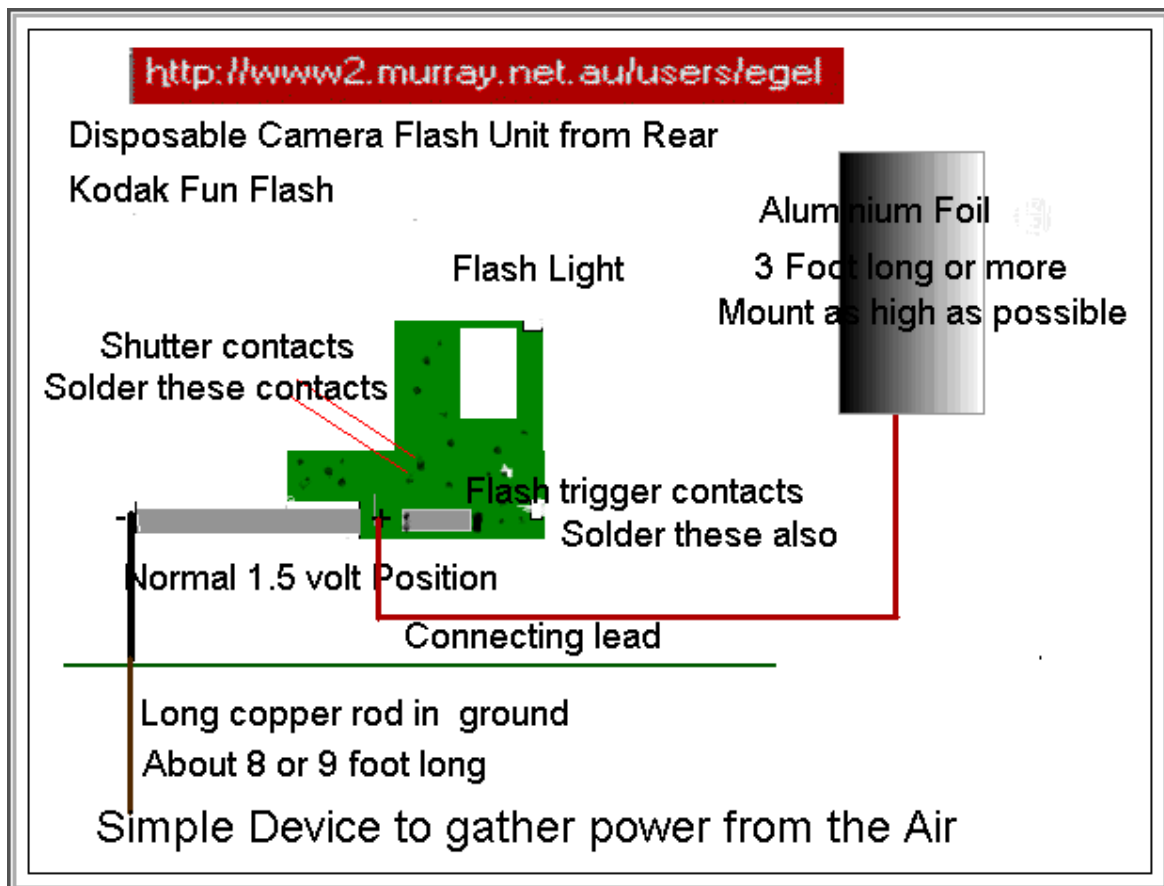
The air outlet tap is opened so that air escapes and pressure in bladder is decreased and the Bernouli effect takes place to cause the badder to be compress. This causes the bottom valve to be opened allowing more water to enter tube.

The compressing of the bladder may also assist in drawing water into the piping if the water outlet is not too large or has a non return valve in it [although it is not necessary to this design.]

I believe this device should work to any depth if air pressure can be maintained greater than water pressure depth.

The Free Energy Flasher

http://www2.murray.net.au/users/egel

Disposable Camera Flash Unit from Rear
Kodak Fun Flash

Flash Light

Aluminium Foil
3 Foot long or more
Mount as high as possible

Shutter contacts
Solder these contacts

Flash trigger contacts
Solder these also

Normal 1.5 volt Position

Connecting lead

Long copper rod in ground
About 8 or 9 foot long

Simple Device to gather power from the Air

I haven't yet finished building this device but my contact in Houston Texas assures me it will work

The details sent me are thus:

Try this...get one of those cheap one shot use disposable cameras, tear it apart, carefully...find the wires that go to the shutter switch and short then out, connect them together so that they are constantly 'on'

(The one I tried a Kodak Fun Flash came apart quite easily it does not need a lot of force.)

Then take out the batteries....put a long rod into the ground...8 or 9 feet long...then connect that copper rod to the (-) negative side of where the batteries hooked up to the camera's strobe...

Make a piece of metal, alumimun foil, large and as long as you can, 3 feet long at least, attach it to a wooden pole, just don't let it get grounded okay...then attach (+) lead that went to the batteries to it.

Note : A high single length of wire aerial may also serve the same purpose as the al foil , it may be also wise to use something other than wood as your support as this will become conductive to the ground when the wood becomes wet, use maybe plastic or rubber spacers to attach the foil to mast .

Put the camera's strobe unit into something that will water proof it out side **{** maybe silicon or a clear plastic jar or box...}.**

It will take about a day for it to charge up and maybe the second day you will get a couple of flashes from it...during a storm, it will flash more often... dont just sit around and wait for it to flash...

Just do what ever you normally do...sooner or later you will see it flash...getting power from the air and earth charging the capacitor and then firing the camera flash strobe

Water the copper ground rod after you put it into the ground.

This demonstration unit should cost you next to nothing to build. (The Kodak disposable camera in Australia cost $27.00 the rest can be anything you have lying around.)

(**webmasters note ** It occurs to me that if you that if you don't solder the flash shutter but only solder the trigger contacts it may be possible to fire your unit to flash at your time of choosing , after the large capacitor has received enough charge **)**

** Please note anything between the asterisks are my comments and are not part of the construction details received by me.from my contact

By the way the capacitor when charged has a nasty shock in store for anybody not handling it carefully **)

The Swiss M/I Converter
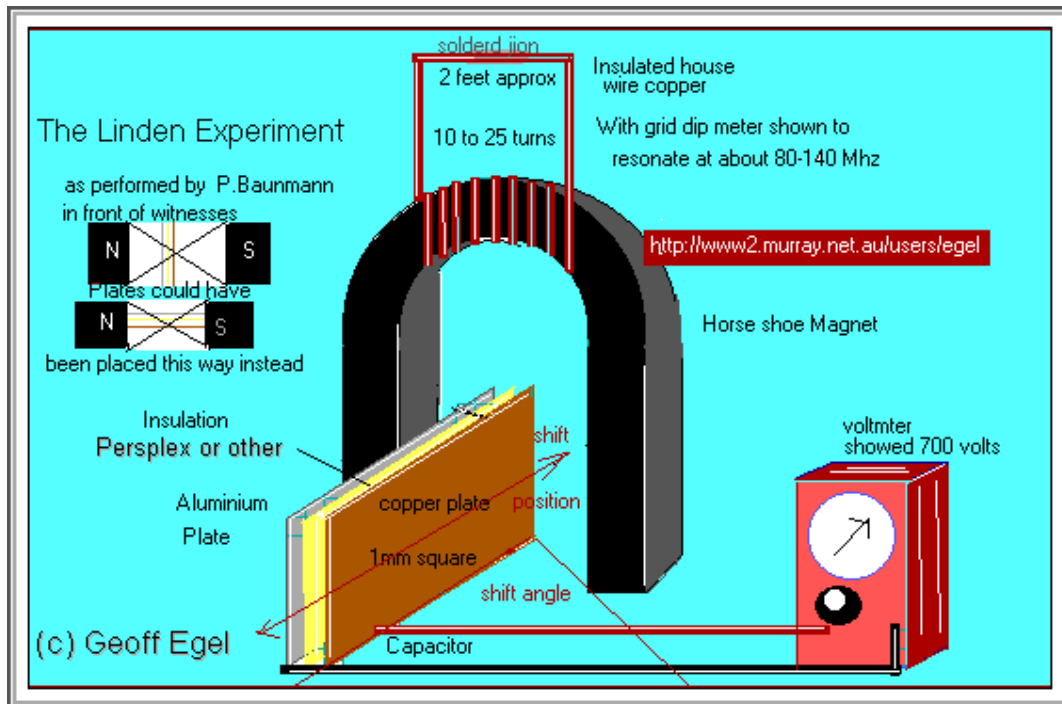
This machine exists today in a commune near Bern Switzerland and could have the answers to our energy needs.

The Unit is started by hand by revolving the two disks in opposite directions and continues to move without further input.

This device has only two moving parts namely the bearing races at the centre of the disk.
The disk are made of acyclic plastic upon which are placed flat a series of fifty blade type steel or aluminium sections equally spaced around the middle sections of each disk.

The speed of the revolving disks is about 50 to 60 rpm limited to this by magnetic impulses from the magnetic section on the rim.

To those that have seen this powerhouse in operation it is certain that useable power is being extracted from the environment and some is being used to run the machine.

This is an energy system which relies on the self moving wimhurst electro static generator for the high voltage and somehow the members of this commune have found a way to extract, amplify and convert this energy to powerful useful levels.

The Swiss M/I converter is based on a modified Wimhurst electrostatic machine.

My people have seen the swiss m/I converter in operation but to do date no one has been able to understand or successfully reproduced the results as claim by the Swiss commune group Methernith in Linden .

But to one fortunate individual had a visit to Paul B. Who is claimed to have had said that if they could understand the above following experiment they would be close to understanding how the device was able to work.(as illustrated above)

It consists of two plates of metal one aluminium the other copper separated by a insulator of some unknown material could be paper or plastic(unknown).

It also included a horse shoe magnet wrapped with a coil of wire and both ends soldered together.

Paul B placed this capacitor made of the differing metals between the poles of a horse shoe magnet and then asked a witnesses to connect the plates to two probes of a voltmeter to each plate and to their surprise found a voltage of seven hundred volts which occasionally dropped in value…

I have communicated with some people how have performed the above experiment with little result however.

WHAT I THINK HAPPENED ALTHOUGH I DON'T KNOW FOR SURE

PB may have conditioned the insulator of perspex of other similiar insulator by the following means without revealing what he had had done.

It is known that if you heat perspex until soft to touch and becomes tacky and you then subject the heated mass to a high voltage field via means of metal plates on each side of perspex mass and leave it there until the perspex is cool.

Removing the applied high voltage charge an electrostatic high voltage charge may still be continously taken from those metal plates something like this also happens with the electrostatic microphones in modern tape recorders…

What part the magnet and the coil and differing face metal plates plays in additional to the electrostatic charge is yet to be determined by yours truly.

Looking at other parts of the machine the pickup fields that don't touch the spinning disks are also made up of perforated Aluminium separated with a perspex insulated and withcopper behind it.

I would like to know if any one has performed the above experiment and got a successful result.

BASED OF THE WIMHURST MACHINE

The theory of operation of a wimhurst machine is.
The disks are of plastic, glass, hard rubber or in one case I saw old phonograph records.

The contra rotating disk causes air molecules to become electrically activated by the fictional movement of the air both disks causes.

This rotating action causes the disks to become continually charged and an electrostatic charge builds up, causing a flash over.

To stop this flash over, a series of foil sections are attached to the centre portion of each disk and equally spaced and back to back with foil sections on the outer sides.

To remove the charge, collection arms are arranged to collect the charge and transfers the charge to a storage capacitor.

At 45 degrees to these collection points is a neutralising bar that extends to full length of the disk and has brushes at both ends.

A neutralising brush equals the charges on the metal foil position at both positions on both sides.

The neutralising bar on opposite side disk is at ninety degrees to the one for the other side.

WHATS IN THE BIG CAN
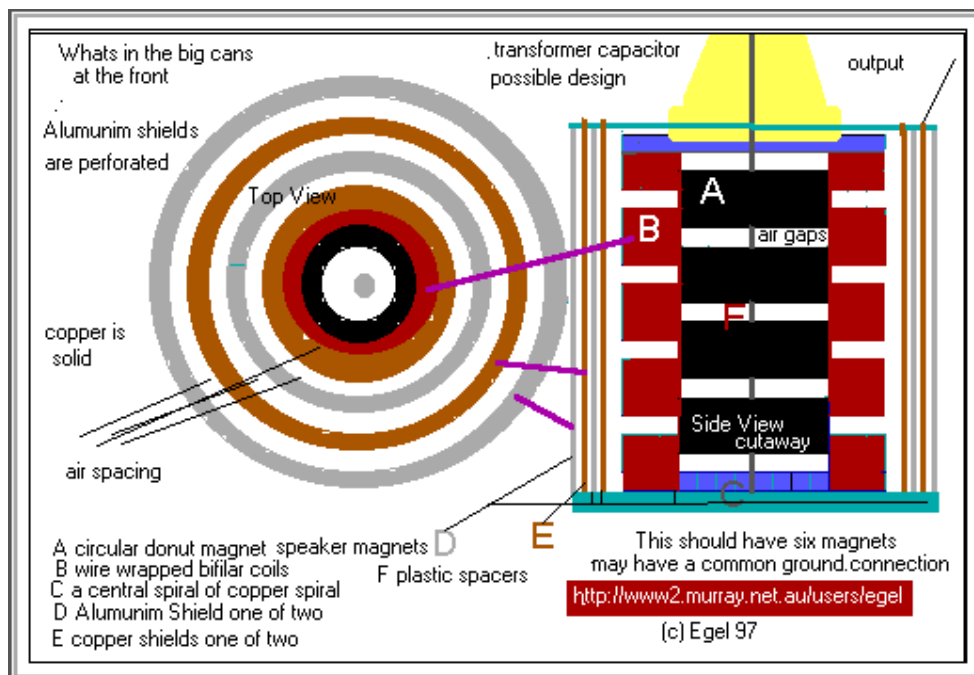
For many the cans in front of the Testakica have proved to be a bit of a mystery.

From information I have obtained the general opinion is that the above diagram is close to explaining what in the twin cans. It seems to a combination of two copper cylinders interlaid with two perforated alumina screens.

In the middle are six or more doughnut magnets upon which are wrapped coils some think they could be bifilar in nature.

Between each magnet there is an air gap made possible by the plastic spacers between each of them.

In the middle of the magnets there is a single spiral of copper or aluminium metal.

It is possible although not confirmed that there is a common ground at the bottom of each can connecting all these elements.

Don't quote me on this but it reminds me of an automotive transformed connected in reverse and shielded with copper and aluminium shielding.

I not sure what roles the magnets provide but Tesla used a magnet field in his designs to give a dc voltage output like modern day rectifiers in some of his AC circuits.

The magnets may also work similiar to work carried out by Captain Hans Coler.
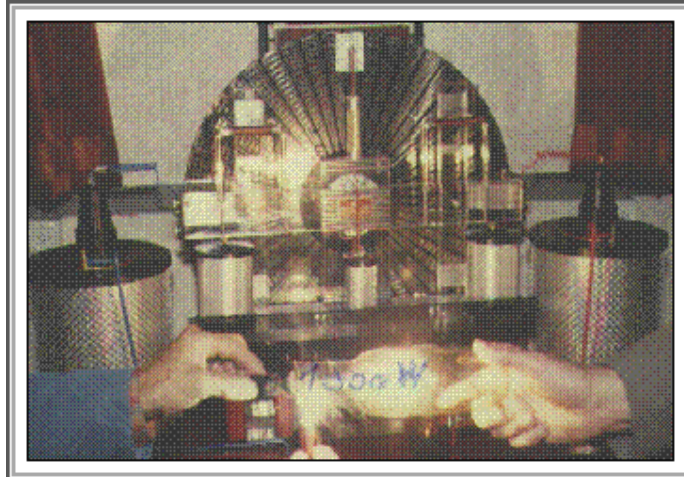
Some facts know about this machine.

Constant Power output 230 volts at 13 amperes for a 3kw rating pulsed DC

Dimensions 110cm wide 45 cm deep 60cm high 43.23 wide 17.68 deep weight approximately 20kg/ or 44 lbs X23.58

Self propulsion by way of the esf flow principle of motorised brushes to revolve the twin disks. the machine is started by hand revolving the disk after this no additional input power is required.

Once unit is functioning it is not able to be moved with the machine coming to a stop. The temperature in the area of the machine tends to become cooler. P.B. seems to be in the area next to or by the machine when first started.

Additional Information

There also seem to be a four inch single disk version that gave out 300 watts but I know only a little of this machine at the moment.

From the weird science on the other sites section you can download several small mpeg videos of the machine in operation. I have a 25 minute video of the Swiss ML in operation in the Australian Pal format.

I am continually searching for addition information about this device and if there is anyone who has additional information on it's construction and operation I would be most grateful as I have already built a wimhurst machine, I would now like to construct a ML machine. If you have any information on this device and you send it to me it will be kept confidential if you so wish. I have some circuit diagrams and will put them on this page if I can get them get scanned successfully.

Experiments to try
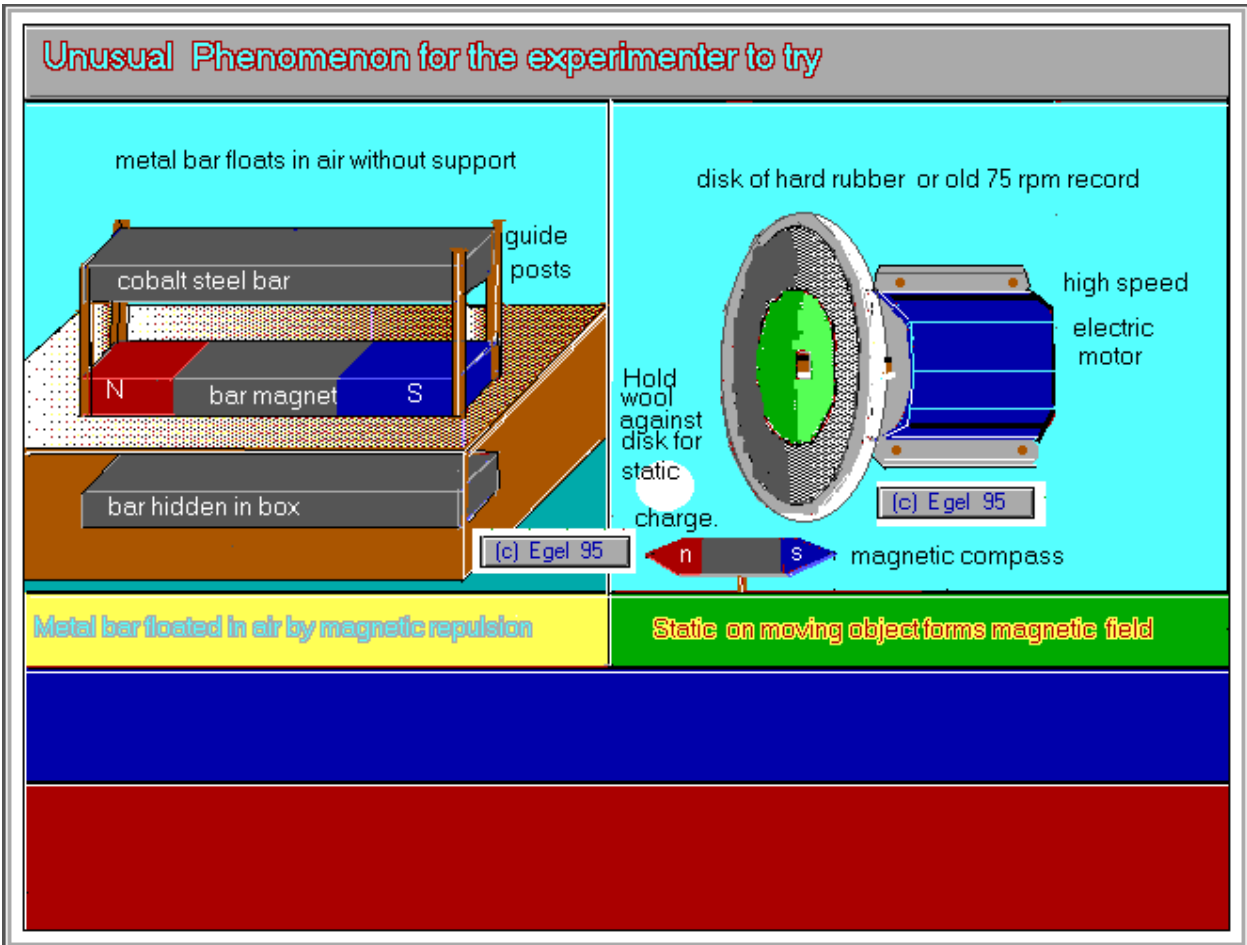
The floating iron bar. I came across this in an experimenters book. Not really an energy device but interesting and maybe it will teach something to us about magnetic fields. Just the same I am assuming that readers are familiar with the notion of two magnets with the same poles facing each other, tend to repel each other.

This device is interesting in that claims it will repel and levitate an iron bar. I think it was originally made as a magic trick. to construct this device you will need the following two metal bars of the same size [cobalt steel prefered as it can be magnetised more strongly than others.

A bar magnet of the same size and length a hollow wooden box. Construction Mount a metal bar in the inside of a wooden box Just above it on the top of box fix the magnet into position so that it will not move Around the magnet place some guides so that the other cobalt metal bar can float upwards but not sideways. The floating bar is actually supported by the lines of the magnet force repelling similar magnetic poles

Simple Levitation
Using small electrical thermatic motor
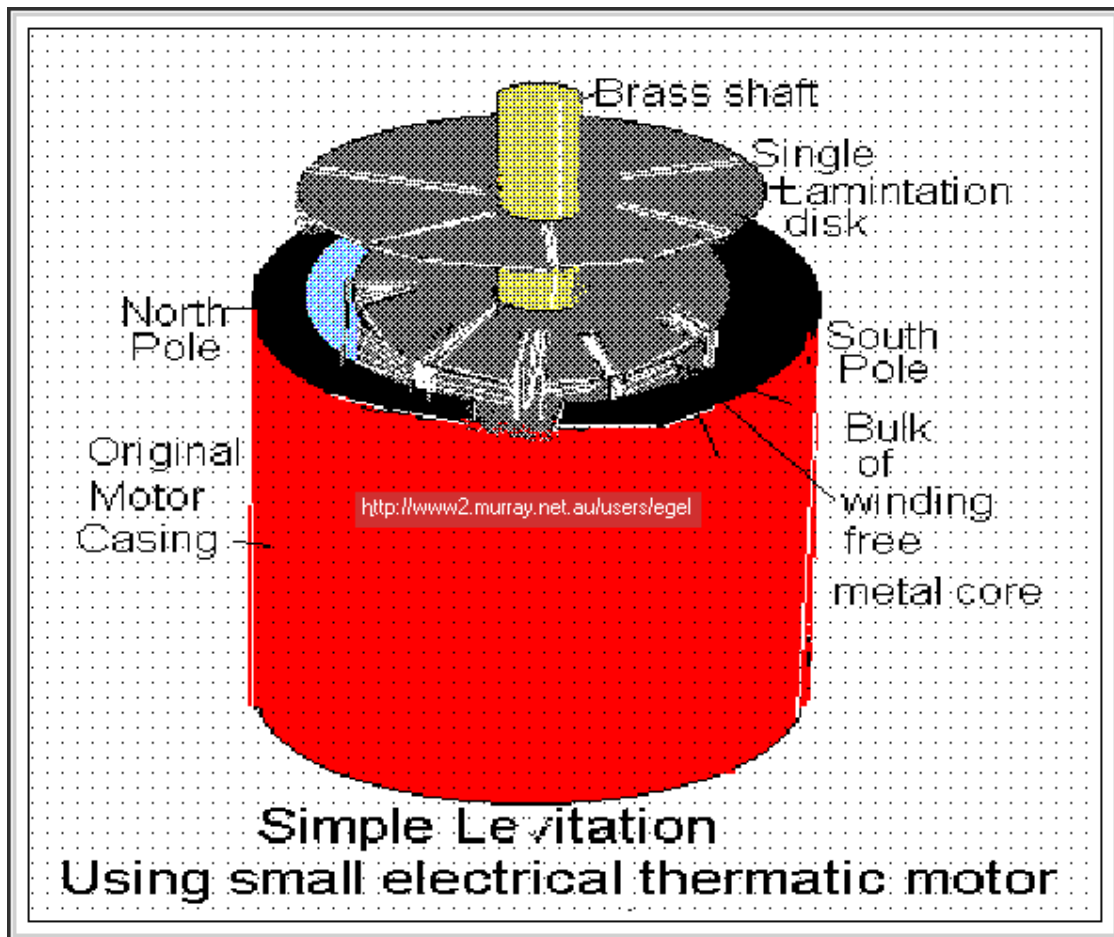
I made something similar by accident when working on a small 12 dc motor windscreen wiper motor with permanent magnet field poles. [curved ceramic magnets]

Experiment

First remove the armature and take all wire winding off it. Remove the circular laminated armature core sections one by one. Make a new shaft out brass rod, aluminium may work as well, as long as it not influenced by a magnetic field. Fit all laminated core pieces back onto the brass shaft. They do not need to be secured tight except that they cannot drop off the bottom. They should be close together and the former wiring winding slots can be in any position. Keep one laminate core piece apart one. The two curved magnets from stator are placed round the sides of armature core and moved so that magnetic gaps on both sides are the same. The top laminated core piece should be level with top of curved magnets when placed upright with the shaft facing upwards Four inches of the shaft should be above the magnets top most position when rested flat. This part of the shaft should be a smaller diameter to allow easy movement of the remaining laminate piece up and down. or you can drill out the centre of laminated piece to the correct diameter. The bottom of the shaft should not protruded pass bottom magnet level, so the two magnet curved bottoms can rest flat on the base. Slide the last remaining laminated armature piece on to the top of shaft carefully and watch it float in the air held in place by the shaft.

Henry A. Rowland a noted American physicist of the 1940's made the unusual discovery that a moving electrostatic charged object influences a magnetic compass.

The experiment here consists of a disk of hard rubber or an old phonograph record connected to shaft of an electric motor.

The disk is given an electrostatic charge by rubbing it with a piece of woolen cloth.

The disk is then spun and a magnetic compass is bought in close to the spinning disk.

The compass is deflected and the faster the spin the greater the deflection. It appears that a magnetic field is not only set up by a current moving through a wire but by a moving electrostatic field as well.

If static electricity can produce a magnetic field can it also be repelled by one.

Can this magnetic field be used to generate a flowing electric current.

The Van De Graff Electrostatic Generator
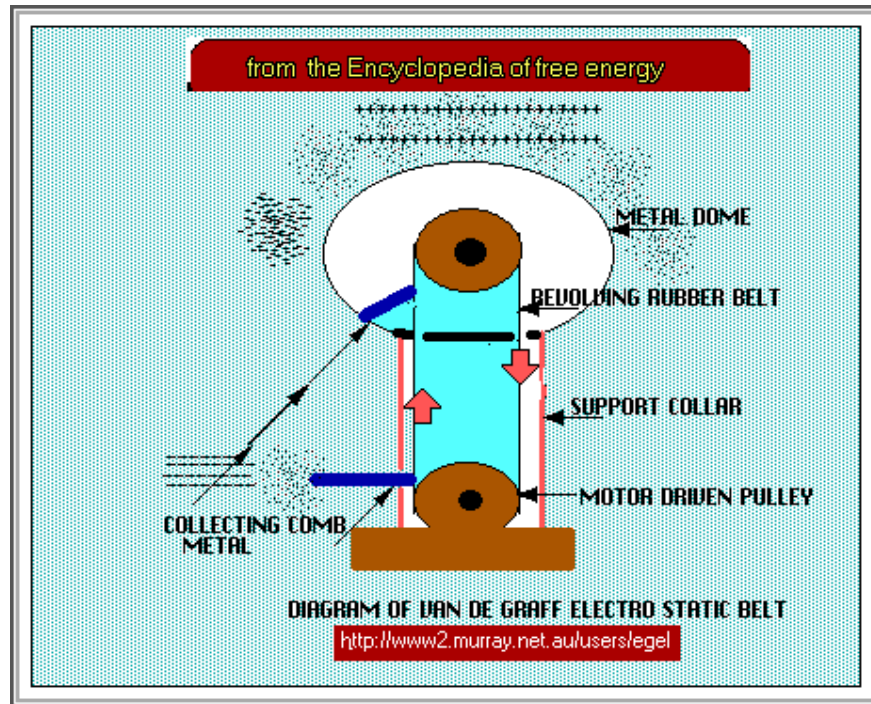
In many physics and atomic experiments carried out today in the big labs there was found to be a need for good reliable high voltage static generator. Since world war 2 this need has been met by a device call the Van De Graff It main components consist of a metal dome ,an insulated top pulley ,to which a rubber belt revolves and on this belt is a metal comb which carries a charge to the metal dome.

A support collar insulated from the drive wheel and motor , most units I have seen are made from P.V.C.tubing Inside the collar a rubber belt is revolved at a reasonable speed by the drive motor in bigger units the belt may be enclosed in gas tight container for higher voltages.

As close as possible to the bottom of belt another metal comb is rested upon the belt. When the belt is rotated a charge is carried from the bottom plate to the dome via the top metal plate. After the belt is rotated for some time a charge will build up on the top dome ,care should be exercised when discharging, as a nasty shock could result.

Shown in illustration is simple machine which could be built from a tin can ,gum rubber band, and brass combs made from suitable brass sheets ,pvc piping and a suitable drive motor..

To see if a charge is building up on the tin can (dome) place a thread of cotton on top and if it levitates your machine has worked.

A good party trick is to fully insulate a party guest from the ground [preferably a female with long hair] and then get her to touch the dome, her hair should stand on end. Make sure you discharge unit before party guest makes contact with the ground again.

Victor Schauberger and the Spiral Flow (Implosion)
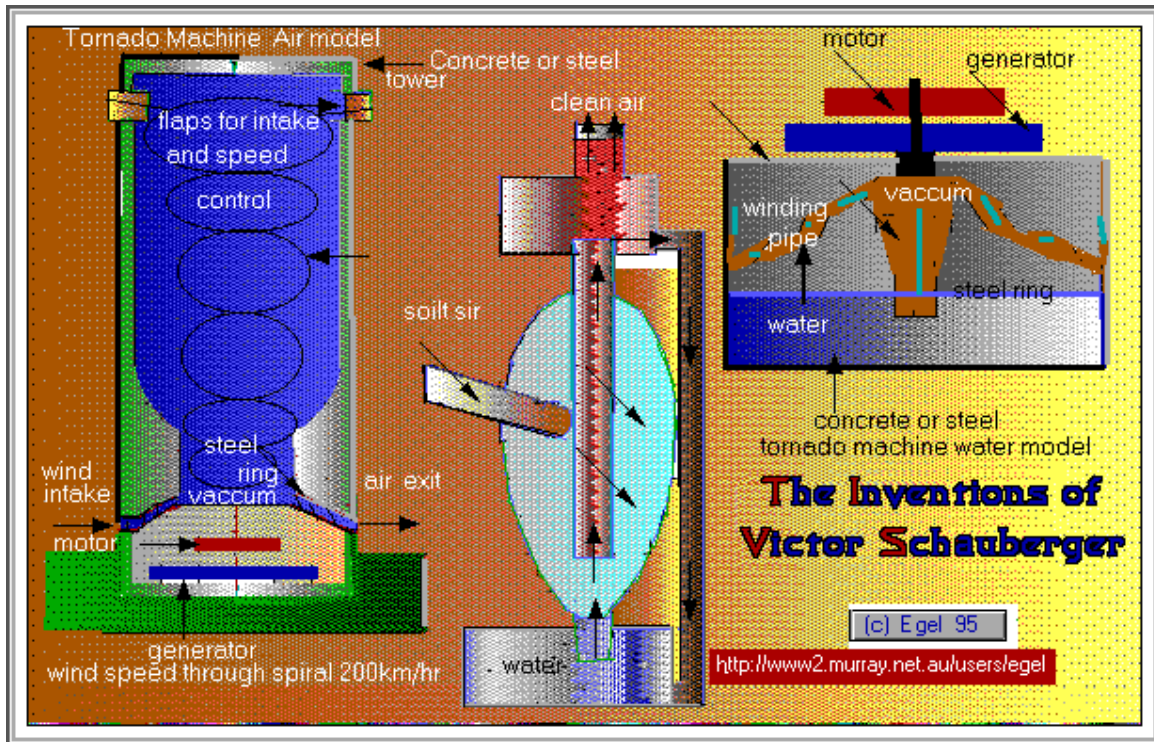
If you think about it for a while, you can I am sure you can think of many ways that nature uses a spiral pattern. To the conical windings of sea shells, the spiral patterns of stellar galaxies and even to ourselves with our RNA and DNA structures in our bodies.

All the storms that ravage our planet from time to time are spiral in pattern, be they hurricanes, twisters or whirly winds that can be seen in rural Australia.

In the northern tropics of Australia the sea takes up the readily available solar energy.

Whirling sea current starts a circular uplift of heated vapour and in no time a cyclone with the full fury of powerfull forces coming from within to maintain the storm and then some energy left over to cause massive damage as well as residents of Darwin Australia knew when Cyclone Tracy nearly destroyed it.

You must be familiar with the water flow out of bath tub down the drain plug spiralling in different directions depending on which part of this planet you are on.

You may have even emptied liquid from a bottle by shaking it to form a vortex and noticed it emptied quicker than if you had not…

It takes only a small amount of energy to get the vortex going but with the aid of gravity the mini cyclone continues until the bottle is emptied.

An unknown American inventor built and patented a water ram pump from information involving the spiral flow which he claims to have gleamed from a visit to the Egyptian Pyramid.

There may yet be a truth in the old laundry detergent advertisement of a white tornado in a bottle admittedly a big one.

Mankind only real attempt to utilise the spiral is in weapons of destruction by using a rifled barrel in arms ordinance to give flight stability and distance accuracy.

A man by the name of Victor Schauberger a pre world war one timber worker saw great potential in the spiral flow.

Victor being a keen observer of nature in the forest often noticed things that others did not. He often saw lights at night in the rushing streams of his native Bavaria and was puzzled as to what they could be. Until he reasoned that they were the rocks being in impacted with one another.

When he told others they did not believe him until he took from a shelf some rocks and placed them into a bucket of tap water. He took the bucket and the rocks into a dark place and reproduced what he had seen in the forest to astonished witnesses.

The Timber department where he was working had an economy drive and needed a means on how to improve their transportation of logs from the forest which up to then had been carried out by teams of oxen.

Victor suggested using the forest streams to transport the logs and estimated a saving of ninety percent.

The engineering experts were negative and pointed out that the logs they were cutting were oak and beech not know for their ability to float.

But the forester knew that on the cold Bavarian nights his idea would work. Some how over coming the opposition of the experts he convinced the owner to give him a chance to prove his idea.

He built water shutes and put in wooden slats to spiral the water flow in a manner similar to a rifle bore. When logs were inserted into shutes the logs spun around their axis and moved like bullets without touching sides of the shutes.

The idea proved very successful.

During World War two Victor Schauberger was interned in a nazi concentration camp and was forced to work on a flying disk project using his ideas. It is not known by this author if the project was completed or if the saucers actually flew.

After World War two Victor migrated to the United States on promises by various agencies to help him develop his ideas. Those promises later proved to be hollow.

At one time he was committed to mental institution but by the timely interventions of trusted friends he was released with his sanity intact. Victor returned to Europe in 1958 and died soon after.

This man may have died but some of his ideas remain. He suggested that we look at the cooling cycle and not always be focused on the waste heat produced from our devices.

The explosive force we now use to provide energy such as in the automotive combustion cycle, for example tends to be harmful to the environment, Whilst the implosion equivalent may not if it can be found. We should be working with the laws of natural forces instead of using wasted energy to oppose them.

The Water tornado machine as illustrated

This is a machine Victor may have constructed to generate electricity. A small electric motor drives a conical center piece which has a large water inlet.

As the device spins a centrifugal force raises the water level and forces the water out through two spiral arms.

The arms nearly reach to the outer limits of containment vessel and a recoil action is produced when the water sprayed out comes into contact with a wavy or rippled steel ring.

The water then flows back to collection area by means of gravity.

The centrifugal force in the spiral arms creates a reduction in pressure on bottom part and this leads to great efficiency.

The two arms were said to look like a wild animals harmonic spiral horns thick at the base and coming to a thin point at each end.

When the machine was running the generator was then switched on line.

Clean Air Machine

This another spiral device but uses the shape of an oval egg.

Soilt air is introduced from the side and combined with water that the reduced pressure draws from the bottom via a tube . The spiral flow in the tube cleans the air with water which flows back to the base. Clean air then exits from the top.

The Wind Tornado machine with a Mega watt

James Yen working for the Amerian company Grumman Aerospace estimates a turbine of only six feet in diameter could give a mega watt where as normally a conventional one of two hundred feet would be needed

The concrete silo as illustrated has an open top and is open to one side. A electric motor could be switched on to begin the whirlwind and once the swirling action had begun could be reduced in speed or taken off line.

An air flow enters from the top of the tower and the air is forced to whirl because of the way the tower is constructed. When the air flow is whirling a reduction in air pressure is caused Air coming from the bottom is drawn into the vaccum and in doing so drives a air turbine generator.

Experiments with wind tunnels seem to confirm this idea will perform as expected.

We may let get to see a spiral action in generation of our power needs if scientific establishment is ready to seriously look at it.

Vortex Heating and Cooling
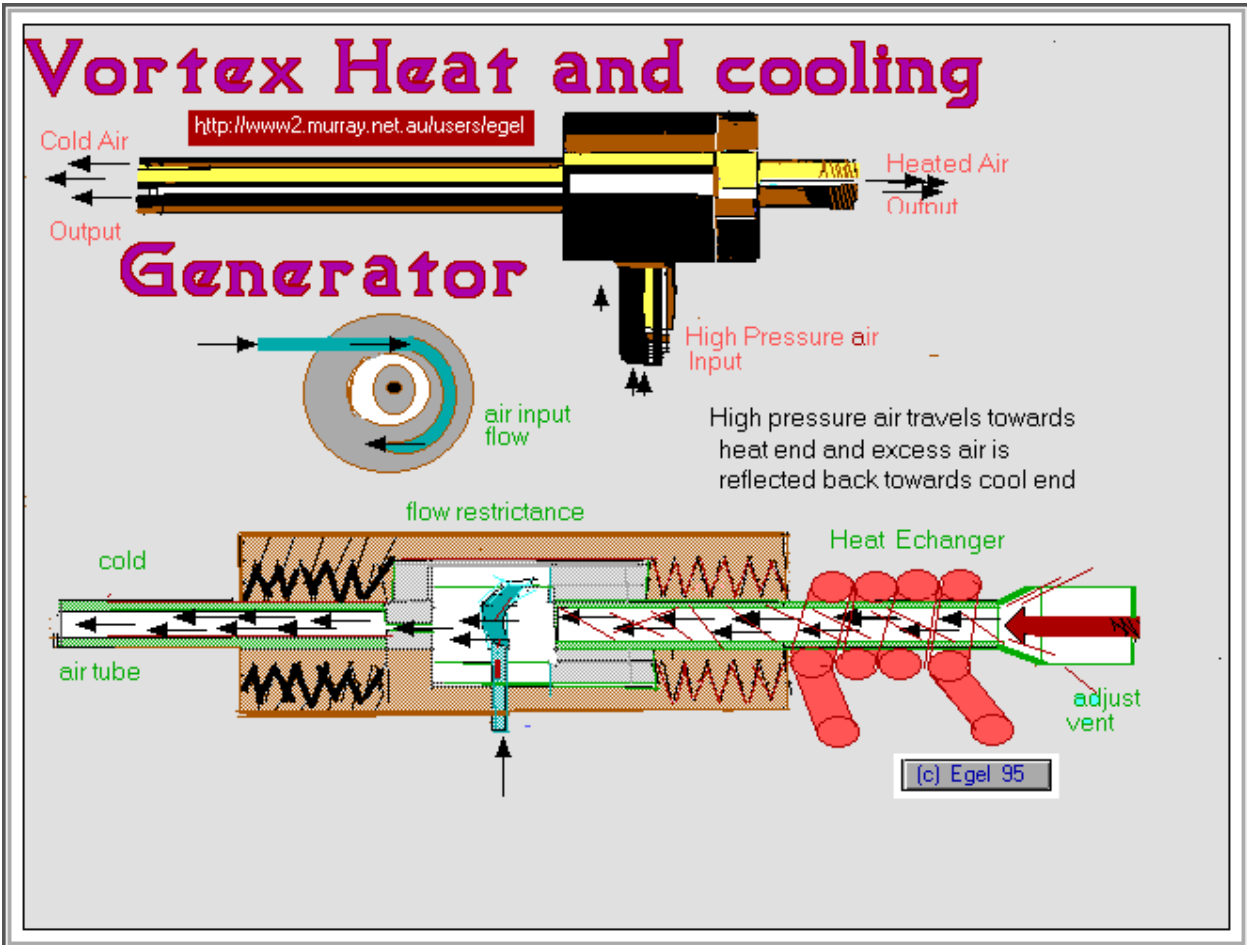
A device using high pressure air to create to both heat and cool If you take a normal air compressor air outlet nozzle and hold it between you fingers and try to restrict the air flow you will notice the pressurised air become hot and you will not be able to stand to hold it for long.

In this device air is forced through the centre potion of this gun and air flow is restricted in one end by adjustable screw at one end producing extreme heat whilst at the other end cool air is produced.

The placement of the air flow in the centre is critical and some practice and experimentation may be needed to get this device to work.

This device has been incorporated in air conditioning system but found not to be efficient compared to other methods at present.

An interesting device never the less.

Wally Minto Temperature change Wheel

Temperature Change Wheel

http://www2.murray.net.au/users/egel

by

Wally Minto

gas vapour   gas proof bottles
condenses and gives top heavy weight
forcing wheel to turn

Speed approx 1 rpm with high torque

gas is heated causing to flow to top
opposite gas bottle thus lessing weight

heat from

Solar Source

Heated water must be 3 degree difference
from top
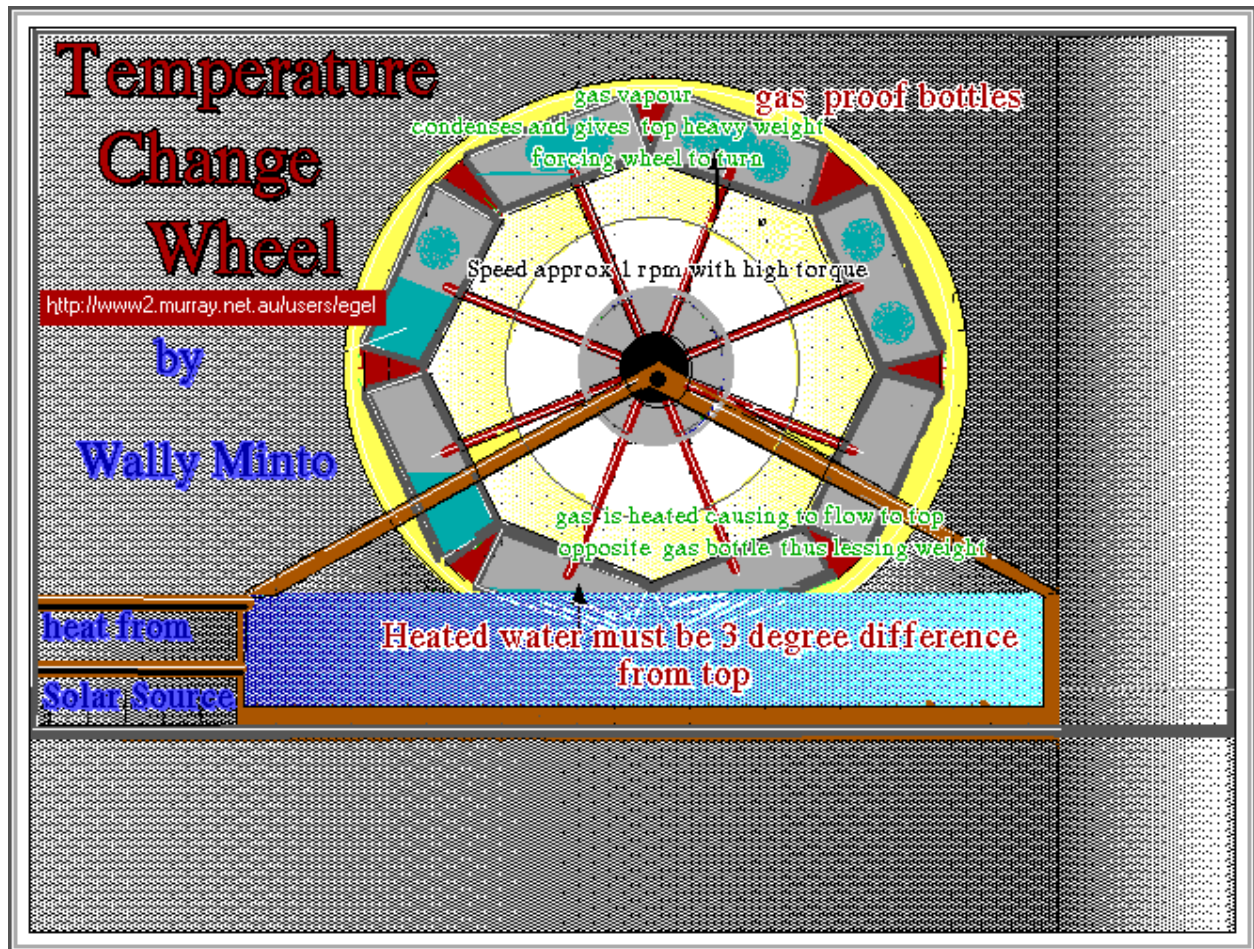
In 1975 Wally Minto donated a design to the world. His unpatented wheel worked on a change of temperature as low as 3.5 degrees.

Apparently if you handy with a welder you can build one too. You will need a selection of gasproof tanks of the same size and then weld them into a wheel shape.
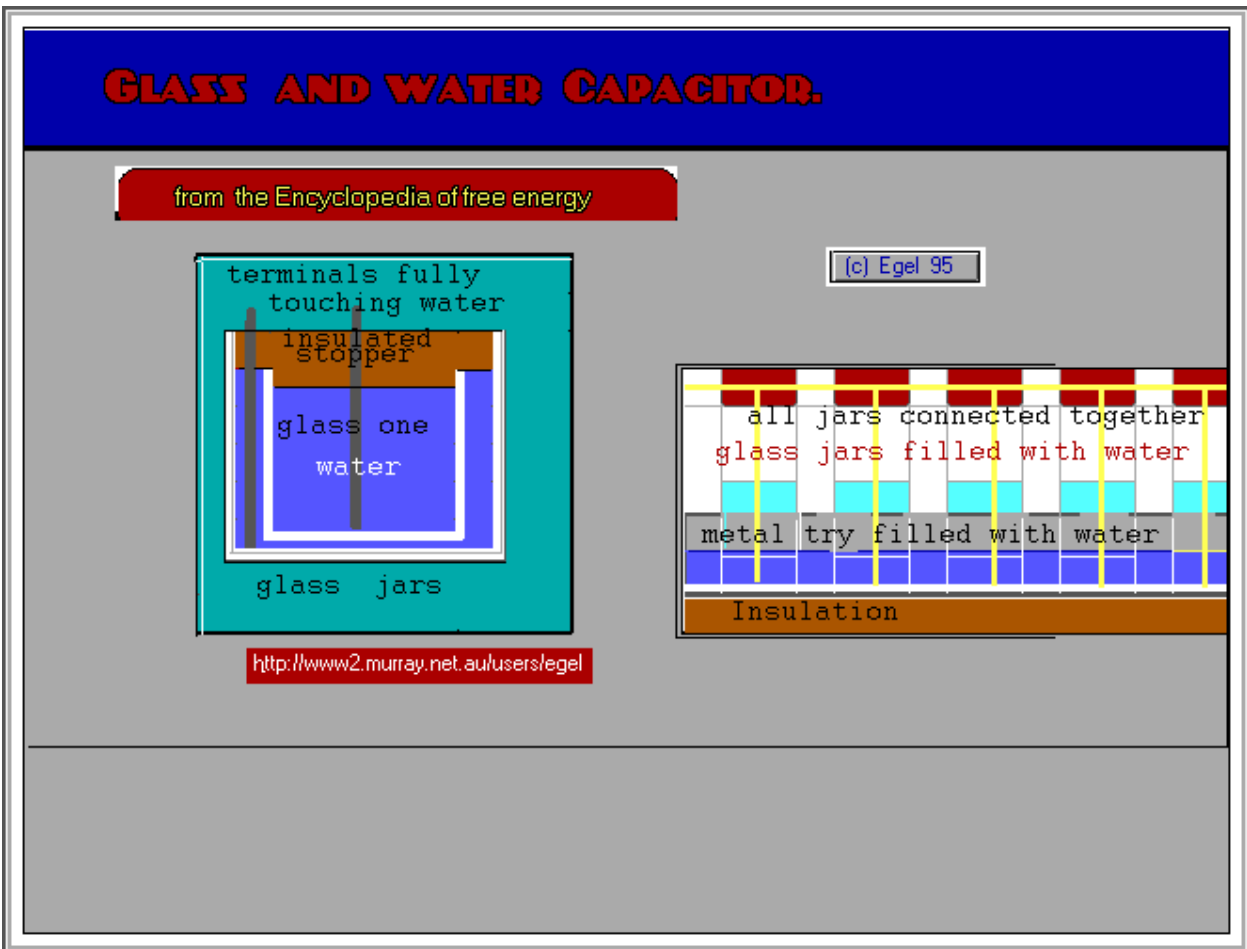
Each tank opposing each other should have a hollow tube connecting them together.
Each tank should also have a low boiling point gas in them as well.

Arrange on a axle so that only one or two tanks will me immersed in heated water (solar Perhaps).

Operation - The bottom gas tank is immersed in a tough of water solar heated or otherwise.

The gas in the bottom is heated and the gas becomes lighter and flows to opposite tank where it cools down where it becomes heavier again. The heavier gas tank is then drawn down by gravity and the process begins again. The temp wheel rotates at slow speed but has high torque so step up gearing may give a higher speed output. For winter operation, a large heat collector buried under ground will supply the 3 and 1/2 degrees required to make it work during the winter. In fact a bigger heat collector buried for winter use would be better along with a summer collector. This Minto's motor will generate lots of power. If you need water or electricity this is the unit that could supply it.

Water and Glass Capacitor

GLASS AND WATER CAPACITOR.

from the Encyclopedia of free energy

terminals fully
touching water

insulated
stopper

glass one

water

glass jars

http://www2.murray.net.au/users/egel

(c) Egel 95

all jars connected together
glass jars filled with water

metal try filled with water

Insulation

If you have ever over charged an electrolytic capacitor and then shorted the leads out you can see the wallop this little package can deliver in a short space of time. Some of the big ones left to themselves can build up a charge big enough to kill people. These usually carry a warning to discharge them properly before use. A question though if there is no free energy where did this power come from ?

The main purpose of a capacitor is to store electrical energy and their beginnings can be traced back to the Leyden jar when the only electricity was static energy produced by rubbing amber with wool. The leyden jar was a glass jar with tin foil coating layers on both sides of jar Nicola Tesla described capacitors as the electrical equivalent of dynamite.

The capacitor can be made of many materials some of which are listed below. it usually consist of two conducting plates sandwiched around an insulator. The thickness and type of insulator and the size of the plates determines the electrical charge it can hold.

Some typical materials used in construction Electrolytics and bipolar electrolytics use a chemical substance to help store the energy Resin dipped electrolytics which use a tanatalum dielectric Polystyrene, Plastic Film Capacitors, Ceramics oil, oil paper, aluminium, glass I have seen one constructed using a book with tin foil plates alternately connected to each other on each page , for a tuning capacitor in a crystal set.
The tuning was affected by putting pressure on the book covers and squeezing tight. Most of the above are hard for the experimenter to construct, however there is one almost anyone can make and comes in two variants.

Acquire two jars nearly the same height but different in diameter Place one jar inside the another. Have a brass rod to both sections and then fill both jars with water. Leave the water levels down on jars so that water cannot flow into one another. If you want to improve the appearance, you could make a top of cork or, plastic to hold both jars together and bolt the brass rod through the top, both brass rods need to insulated from one another. Use both rods as capacitor connections.

The other variant is even easier get a collection of jars or bottles fill each with water each jar must have a common electrical connection to each others water. Place all of them on a on metal tray and fill tray with water Place a connection on tray, both wires now form the leads to your condenser.

Experiment with water by adding salt to water to improve conductivity. I think that we are yet to know everything about water and we may be surprised what else we can do with it.

Making a normal capacitor if you wish to make a normal capacitor here are some ideas how to achieve it. You will need some aluminium foil the type sold on cardboard rolls the more foil used the better the charge it will store. You will also need some wax proof paper you will also need any type of polymer resin as long as it is sticky. Any paint shop should be able to sell you some. First place a length of the wax paper down and coat with the resin next comes a layer of tin foil. Then another layer of resin coated wax paper.

Then the final layer of aluminium foil. By the way it may be wise to have the wax paper wider than the tin foil. Roll all the layers together tightly to form a cylinder and using former core may be a good idea to wrap layers upon. May sure there is way you can make electrical wiring connections to both foil layers and apart from this no other electrical contact is to be made between foil layers there you have it.

The biblical capacitor In the Christian Holy bible there is a description of the ark of the covenant that Moses and the Jewish people built that some say was nothing more than one really powerful self charging capacitor. Certain instructions with the metals and silk screens seem to confirm it.

There were also instructions to those that were to carry and manage and look after to the arks which seem like to me a Faraday Cage Protection scheme. There is also a report in the bible that one unprotected individual touched the ark and was killed while trying to stop it from falling. If you wish to check this you can find it in the Old Testament book of Exodus chapter 25 verse 1 to chapter 29 I heard a report that a American citizen had also built one but found it to dangerous to have around and thus dismantled it.

Water drop electrostatic generator

Modified Lord Kelvin Electrostatic Generator
from the Encyclopedia of free energy
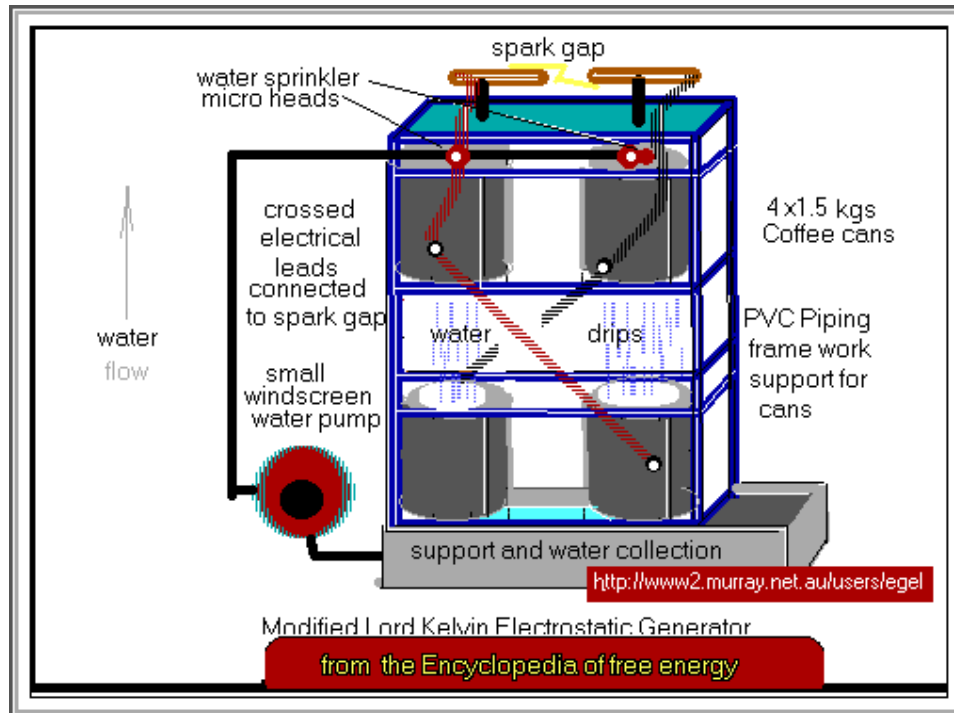
In the late 19 th century and early 20 th century there was performed a nearly forgotten experiment that generated static electricity by lord Kelvin.

This it a modified form that will give better results.

The frame work is made of PVC tubing that holds 4 x 1.5kg empty coffee tin cans or anything made of metal. The top of the upper two tins will contain small plastic micro garden sprinklers popularly used and very cheap.

Both of the bottoms of the uppermost cans have about a two inch centre hole to allow water to drip into can below…

The two bottom cans have there tops completely removed and small holes punched in the bottom of each can to allow water to drip into a common collection tray.

Water is pumped through the plastic tube from the collection tray via a small car windscreen water pump and sent to the two sprinklers mounted in the lids and then the water drips through the can until it reaches the collection tray.

Distance between top and bottom can should be such that water drips and is not a continuous flow. Wire leads are connected to di-anglar cans and then to a spark gap terminal.

When water is flowing a spark should be generated every twenty seconds experimentation will be needed to adjust the spark gap for better results.

Fig.1

RAYMOND KROMREY
INVENTOR.

BY

Karl G. Ross
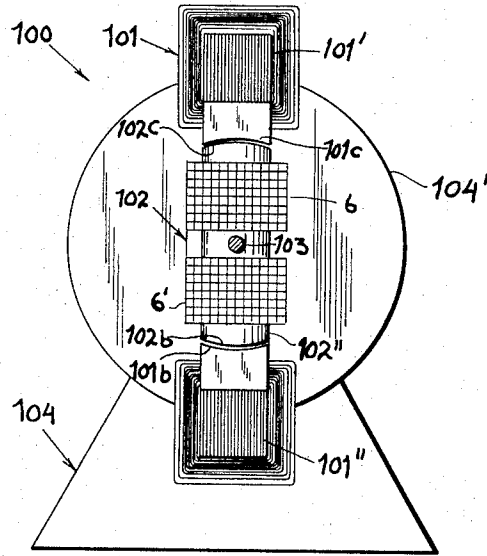
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Fig.1A
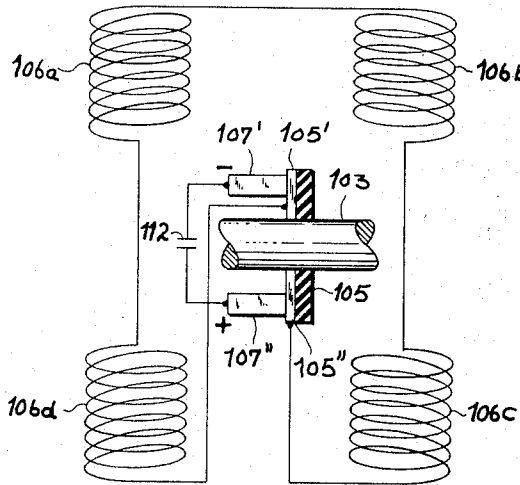
Fig. 4
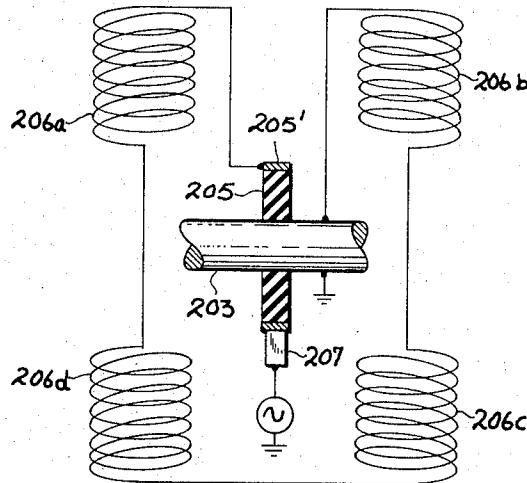
Fig.5

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Fig.2

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Fig. 3
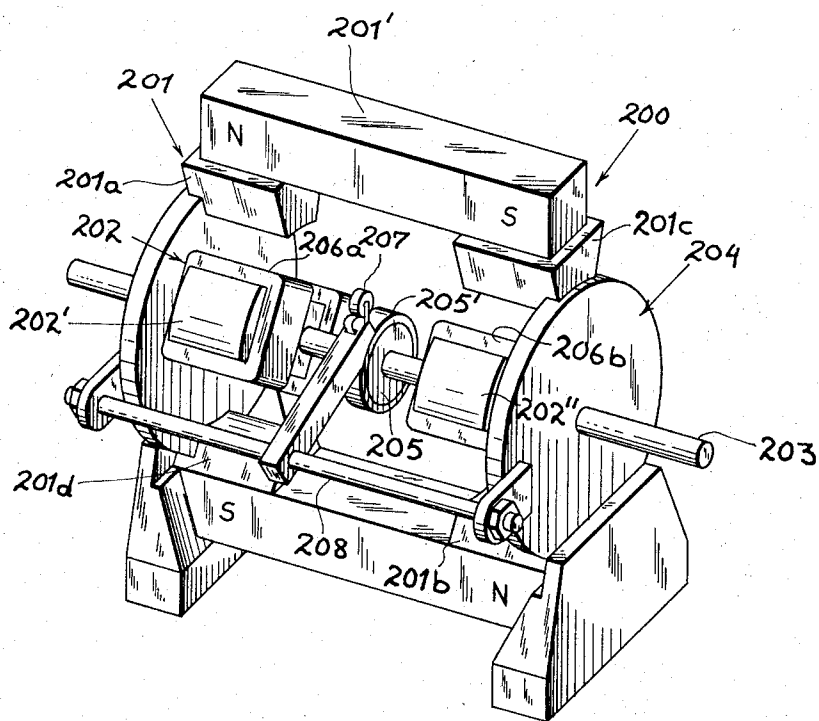
RAYMOND KROMREY
        INVENTOR.
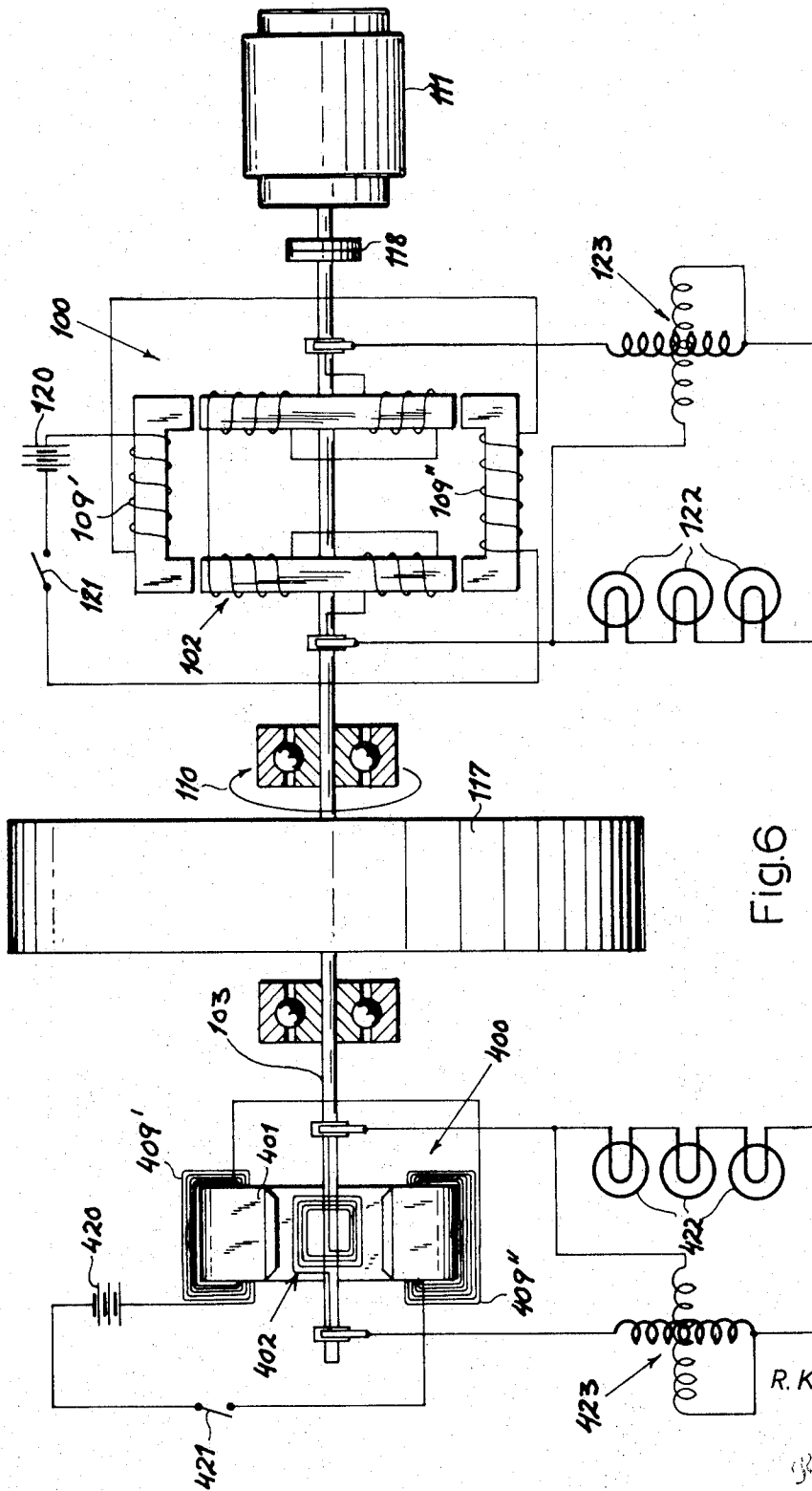
BY   Karl G. Ross

        AGENT

Fig.6

INVENTOR.
R. KROMREY

Karl F. Ross

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1

2

My present invention relates to an electric generator serving to convert magnetic force into electric energy with the aid of two relatively rotatable members, i.e. a stator and a rotor, one of these members being provided with electromagnetic or permanent-magnetic means adapted to induce a voltage in a winding forming part of an output circuit on the other member.

Conventional generators of this type utilize a winding whose conductors form loops in different axial planes whereby, upon relative rotation of the two members, diametrically opposite portions of each loop pass twice per revolution through the field of each pole pair of the magnetic inductor member (usually the stator). If the loops are open-circuited, no current flows in the winding and no reaction torque is developed so that the rotor will be free to turn at the maximum speed of its driving unit. As soon as the output circuit including the winding is short-circuited or connected across a load, the resulting current flow tends to retard the motion of the rotor to an extent dependent upon the magnitude of the current, it being therefore necessary to provide compensating speed-regulating devices if it is desired to maintain a substantially constant terminal voltage. Moreover, the variable reaction torque subjects the rotor and its transmission to considerable mechanical stresses which, in the case of widely fluctuating load currents, may lead to objectionable strains.

It is, therefore, the general object of my present and new invention to provide an electric generator which obviates the aforedescribed disadvantages.

A more particular object of my invention is to provide a generator of such construction that its reaction torque and, therefore, its rotor speed in response to a given driving torque varies but little upon changeover from open circuit to current delivery or vice versa.

It is also an object of this invention to provide an electric generator whose terminal voltage varies at a considerably lesser rate than its rotor speed so as to be less affected than conventional generators by fluctuations of its driving rate.

I have found, in accordance with this invention, that the foregoing objects can be realized by the relative rotation of an elongated ferromagnetic element, such as a bar-shaped soft-iron armature, and a pair of pole pieces defining an air gap wherein a magnetic field is set up under the influence of a suitable source of coercive force. The armature carries a winding, advantageously in the form of two series-connected coils embracing opposite extremities thereof, which is included in an output circuit adapted to be connected to a load. As the armature rotates within the stationary air gap (or, conversely, the pole pieces swing about the stationary armature), the magnetic circuit is intermittently completed and the armature experiences periodic remagnetizations with successive reversals of polarity.

When the output circuit is open, the mechanical energy applied to the driven rotor member is converted, to the extent that it is not needed to overcome frictional resistance, into work of magnetization which in turn is dissipated as heat; in actual practice, however, the resultant rise in the temperature of the armature will be hardly noticeable, particularly if the armature is part of the continuously air-cooled rotor assembly. When the output circuit is closed, part of this work is translated into electrical energy as the current flow through the winding opposes the magnetizing action of the field and increases the apparent magnetic reluctance of the armature. This explains why, in a system embodying my invention, the speed of the generator remains substantially unchanged when the output circuit is either opened or closed.

As the armature approaches its position of alignment with the gap, the constant magnetic field existing thereacross tends to accelerate the rotation of the armature relative to the pole pieces, thereby aiding the applied driving torque; the opposite action, i.e. a retarding effect, occurs after the armature passes through its aligned position. As the rotor attains a certain speed, however, the flywheel effect of its mass overcomes these fluctuations in the total applied torque so that a smooth rotation ensues.

In a practical embodiment, according to a more specific feature of my invention, the magnetic-flux path includes two axially spaced magnetic fields traversing the rotor axis substantially at right angles, these fields being generated by respective pole pairs co-operating with two axially spaced armatures of the character described. It will generally be convenient to arrange the two armatures in a common axial plane, the two field-producing pole pairs being similarly coplanar. The armatures are preferably of the laminated type to minimize the flow of eddy currents therein; thus, they may consist in essence of highly permeable (e.g. soft-iron) foils whose principal dimension is perpendicular to the rotor axis, the foils being held together by rivets or other suitable fastening means.

If the ferromagnetic elements are part of the rotor, the output circuit will include the usual current-collecting means, such as slip rings or commutator segments, according to whether alternating or direct current is desired. The source of coercive force in the stator includes, advantageously, a pair of oppositely disposed yoke-shaped magnets, of the permanent or the electrically energized type, whose extremities constitute the aforementioned pole pieces. If electromagnets are used in the magnetic circuit, they may be energized by an external source or by direct current from the output circuit of the generator itself.

I have found that the terminal voltage of the output circuit of a generator according to the invention does not vary proportionately to the rotor speed, as might be expected, but drops at a considerably slower rate with decreasing speed of rotation; thus, in a particular unit tested, this voltage fell only to about half its original value upon a cutting of the rotor speed to one-third. This nonlinear relationship between terminal voltage and driving rate enables the maintenance of a substantially constant load current and, therefore, electric output over a wide speed range, at least under certain load conditions, inasmuch as the inductive reactance of the winding is proportional to frequency (and consequently to rotor speed) so as to drop off more rapidly than the terminal voltage, in the event of a speed reduction, with a resulting improvement in the power factor of the load circuit.

If the magnetic circuit includes but a single pole pair per air gap, the flux induced in the relatively rotating armature will change its direction twice per revolution so that each revolution produces one complete cycle of 360 electrical degrees. In general, the number of electrical degrees per revolution will equal 360 times the number of pole pairs, it being apparent that this number ought to be odd since with even numbers it would not be possible to have poles alternating in polarity along the path of the armature and also to have the north and south poles of each pair at diametrically opposite locations. In any case it is important to dimension the confronting arcuate faces of the pole pairs in such manner as to avoid bridging of adjoining poles by the armature, hence it behooves to make the sum of the arcs spanned

by these faces (in the plane of rotation) equal to considerably less than 360° electrical.

The invention will be described hereinafter with greater detail, reference being made to the accompanying drawing in which:

FIGS. 1 and 1A illustrate a first embodiment of my invention in axial section and in a cross-sectional view taken on line IA—IA of FIG. 1, respectively;

FIGS. 2 and 3 are perspective views illustrating two further embodiments;

FIGS. 4 and 5 diagrammatically illustrate two output circuits for a generator according to the invention, designed respectively for direct and alternating current; and

FIG. 6 is a somewhat diagrammatic illustration of an arrangement for comparing the outputs of a conventional generator and a generator according to the invention.

The generator 100 shown in FIGS. 1 and 1A comprises a stator member 101 and a rotor member 102, the latter comprising a pair of laminated armatures 102′, 102″ carried on a shaft 103 which is rotatably journaled in end plates 104′, 104″ of a generator housing 104 of nonmagnetic material (e.g. aluminum) rigid with the stator. Shaft 103 is coupled with a source of driving power indicated diagrammatically by an arrow 110.

The stator 101 includes a pair of yoke-shaped laminated electromagnets 101′, 101″ whose extremities form two pairs of coplanar pole pieces respectively designated 101a, 101b (north) and 101c, 101d (south). The pole pieces have concave faces confronting complementarily convex faces 102a, 102d of armature 102′ and 102b, 102c of armature 102″. These faces, whose concavities are all centered on the axis of shaft 103, extend over arcs of approximately 20 to 25° each in the plane of rotation (FIG. 1A) so that the sum of these arcs adds up to about 90° geometrical and electrical.

The magnets 101′, 101″ of the stator are surrounded by respective energizing windings 109′, 109″ which are connected across a suitable source of constant direct current, not shown. Similar windings, each composed of two series-connected coils 106a, 106d and 106b, 106c, surround the rotor armatures 102′ and 102″, respectively. These coils form part of an output circuit which further includes a pair of brushes 107′, 107″ that are carried by arms 108′, 108″ on housing 104 with mutual insulation; brushes 107′, 107″ co-operate with a pair of commutator segments 105′, 105″ (see also FIG. 4) which are supported by a disk 105 of insulating material on shaft 103. By virtue of the series connection of coils 106a–106d between the segments 105′ and 105″, as illustrated in FIG. 4, the alternating voltage induced in these coils gives rise to a rectified output voltage at brushes 107′ and 107″; the unidirectional current delivered by these brushes to a load (not shown) may be smoothed, in a manner known per se, by conventional filter means represented diagrammatically by a condenser 112 in FIG. 4.

In FIG. 2 I have shown a modified generator 200 whose housing 204 supports a stator 201 consisting essentially of two permanent bar magnets 201′ and 201″ extending parallel to the drive shaft 203 on opposite sides thereof, each of these magnets being rigid with a respective pair of pole shoes 201a, 201c and 201b, 201d. Rotor 202 comprises a pair of laminated armatures 202′, 202″, similar to those of the preceding embodiment, whose output coils 206a, 206b, 206c, 206d are serially connected between a slip ring 205′, supported on shaft 203 through the intermediary of an insulating disk 205, and another terminal here represented by the grounded shaft 203 itself. Slip ring 205′ is contacted by a brush 207 on a holder 208, the output of this brush being an alternating current of a frequency determined by the rotor speed.

In FIG. 3 I have shown a generator 300 basically similar to generator 100 of FIGS. 1 and 1A, its shaft

303 carrying a pair of laminated soft-iron armatures 302′, 302″ rotatable in the air gaps of a pair of electromagnets 301′, 301″ bearing energizing windings 309′ and 309″. The commutator 305 again co-operates with a pair of brushes of which only one, designated 307, is visible in the figure. This brush, carried on an arm 308, is electrically connected to a brush 313 engaging a slip ring 314 on an extremity of shaft 303 which also carries two further slip rings 315′, 315″ in conductive contact with ring 314 but insulated from the shaft. Two further brushes 316′, 316″ contact the rings 315′, 315″ and are respectively connected to windings 309′ and 309″, respectively, the other ends of these windings being connected to an analogous system of brushes and slip rings on the opposite shaft extremity whereby the two commutator brushes are effectively bridged across the windings 309′ and 309″ in parallel. In this embodiment, therefore, the stator magnets are energized from the generator output itself, it being understood that the magnets 301′ and 301″ (made, for example, of steel rather than soft iron) will have a residual coercive force sufficient to induce an intial output voltage as is known per se. Naturally, the circuits leading from the brushes 307 to the windings 309′, 309″ may include filter means as described in connection with FIG. 4.

In FIG. 6 I have shown a test circuit designed to compare the outputs of a generator according to the invention, such as the unit 100 of FIGS. 1 and 1A, with a conventional generator 400 of the type having a looped armature 402 rotatable in a gap of a stator magnet 401 with energizing winding 409′, 409″. The two generators are interconnected by a common shaft 103 carrying a flywheel 117, this shaft being coupled via a clutch 118 to a drive motor 111 whereby the rotors 402 and 102 of both generators are rotatable in unison as indicated by arrow 110. Two batteries 120 and 420, in series with switches 121 and 421, are representative of means for supplying direct current to the stator windings 109′, 109″ and 409′, 409″ of the two generators.

The rectified output of generator 100 is delivered to a load 122, here shown as three series-connected incandescent lamps with a combined consumption of 500 watts, generator 400 working into an identical load 422. Two wattmeters 123 and 423 have their voltage and current windings respectively connected in shunt and in series with the associated loads 122 and 422 to measure the electric power delivered by each generator.

Upon engagement of the clutch 118, shaft 103 with its flywheel 117 is brought to an initial driving speed of 1200 r.p.m. whereupon the switch 421 in the energizing circuit of conventional generator 400 is closed. The lamps 422 light immediately and the corresponding wattmeter 423 shows an initial output of 500 watts; this output, however, drops instantly as the flywheel 117 is decelerated by the braking effect of the magnetic field upon armature 402.

Next, the procedure is repeated but with switch 421 open and switch 121 closed to energize the generator 100. The lamps 122 light up and the wattmeter 123 shows an output of 500 watts which remains constant for an indefinite period, there being no appreciable deceleration of flywheel 117. When the clutch 118 is released and the rotor speed gradually decreases, the output of generator 100 is still substantially 500 watts at a speed of 900 r.p.m. and remains as high as 360 watts when the speed drops further to 600 r.p.m.

In a similar test with a generator of the permanent-magnet type, such as the one shown at 200 in FIG. 2, a substantially constant output was observed over a range of 1600 to 640 r.p.m.

Modifications of the specific arrangements described and illustrated will, of course, be apparent to persons skilled in the art and are deemed to be embraced in the spirit and scope of my invention as defined in the appended claim.

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I claim:

1. An electric generator comprising a fixed stator and a rotor coaxial with said stator; drive means for rotating said rotor about its axis, said stator being provided with a pair of elongated bar magnets extending parallel to said axis on opposite sides thereof and terminating in transverse extremities, oppositely poled extremities of said magnets confronting each other and defining magnet means having two axially spaced pole pairs disposed in a common axial plane and forming a pair of diametrically extending air gaps for establishing a magnetic-flux path including two axially spaced parallel magnetic fields across said air gaps traversing said axis substantially at right angles, said rotor being provided with two axially spaced parallel elongated ferromagnetic elements slightly shorter than the spacing of said confronting extremities and extending perpendicularly to said axis at locations coplanar with said pole pairs for concurrent periodic alignment of said elements with said fields in said air gaps upon rotation of said rotor; and an output circuit on said rotor including winding means on each of said elements and collector means in series with said winding means, each of said pole pairs and the corresponding elements having confronting arcuate faces centered on said axis, the sum

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of the arcs spanned by said faces being substantially equal to 90° in the plane of rotation.

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ABSTRACT OF THE DISCLOSURE

Electrogravitational method of desalination of salt water using two dissimilar metal electrodes connected externally which form a galvanic couple creating current flow through the system. Portions of salts that are attracted to the electrodes establish concentrated areas of higher density that settle to the bottom of container whereby the solution removed from the botom is of a greater concentration than the water thereabove.

This process removes the saline materials from saline water for the purpose of making the water potable and useful for agriculture without ill effect.

The novelty of this invention is that it requires no application of energy from any source external to the process; that it incorporates no critical or strategic materials and that it is completely self-contained.

Existing desalination processes require the application of heat energy or electrical energy from an independent source to make the process operational, whether for direct separation of saline material from water by electrolytic means using applied electricity, distillation of steam or evaporated water, operation of pumps and other equipment necessary to such processes.

This invention produces its own electrical energy as well as making it possible to recover more than eighty percent (80%) of the volume of saline water injected into the process, as desalinated water.

Minerals such as aluminum and alloys of aluminum and other minerals react with saline materials that are dissolved and suspended in saline water. These chemical reactions cause the saline materials to combine with the minerals placed in the water for that purpose. The chemical reactions cause a change in the energy levels of various atoms in the reacting molecules.

When non-reacting minerals such as copper, alloys of copper or other minerals are placed at a distance from the reacting minerals with an unobstructed quantity of saline water between the reacting and non-reacting materials, an electro-static field is caused to exist.

The mineral in contact with the saline water and reacting with the saline water is termed the cathode. The mineral in contact with the saline water and considered non-reacting with the saline water is termed the anode. When the cathode and anode are placed at a distance from each other with an unobstructed quantity of saline water in contact with the surface of each, and when an electrically conductive material is placed so that it continually is in contact with both cathode and anode, but not in contact with the saline water, an electric current is caused to exist. The rate of chemical reaction, production of electrical energy and rate of separation of the saline materials and their removal from the saline water are proportional.

Saline water tested by this process was obtained from the Pacific Ocean having a content of dissolved and suspended solids 44,000 milligrams per litre of water of which 6400 milligrams of the same solids were CaCO₃ (calcium carbonate). After processing per this process,

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wherein the reaction rate was controlled to accomplish a separation of saline materials of approximately seventy percent (70%) of the amount contained in the saline water, analysis of the processed water showed that the total of solid materials remaining dissolved and suspended in the water measured 10,660 milligrams solids per litre of water. Of these solids 1,530 milligrams were CaCO₃ (calcium carbonate). The control was subsequently adjusted to cause more separation and removal of saline materials; the resulting analyses showing the processed water to contain 650 milligrams per litre of water of solid matter, of which 320 milligrams were CaCO₃.

The reacted materials do not adhere to the cathode but disengage as their density increases and fall to the bottom of the vessel in which they are contained. Non-reacting materials suspended in the water being processed become charged in the electrical field between the cathode and anode. Each particle will then be attracted to the next as their respective negative and positive poles come into opposition. Ultimately the accumulated density exceeds their former buoyancy as a result of the coalescence by attraction and these materials deposit at the bottom of the vessel in which they are contained.

The electric current produced as by a by-product of the desalination process chemical reactions was measured to have an average value of 0.000022 ampere per square inch of cathode surface in contact with the saline water being processed. For each combination of cathode and anode the electromotive force was measured to be 0.5 volt. The rate of separation and removal of saline materials from the water, termed desalination, has been calculated. The calculations are based on the amount of material separated and removed from the water, the observed change in measurement of electric current and the amount of water processed. The rate of desalination of one cubic inch of saline water in contact with the surfaces of one cathode and one anode of one square inch area, where the cathode and anode are in mutual contact with an electrically conductive material not in contact with the water, is two minutes for water having a content of 650 parts of solid material in suspension and solution per million parts of water after processing from an original state wherein 44,000 parts of solid material in suspension and solution per million parts of water were measured before processing.

By analysis 31,675 parts of cathode materials were reacted and removed from the cathode for each million parts of water processed, where the processed water contained 650 parts of solid material in suspension and solution for each million parts of water.

The material separated and removed from the water by the desalination process described herein, are removed from the bottom of the vessels in which they are deposited, and made available for processing into chemicals, metals, chemical products, metal products and all other uses to which they are applicable. Many of the materials released by the chemical reactions of the process are released as gases, such as hydrogen, oxygen, chlorine and others.

These gases partially combine in the water, small portions of chlorine gas dissolving in the water. Hydrogen and chlorine combine to form hydrochloric acid that in turn reacts with calcium carbonate resulting in free hydrogen gas and precipitant calcium chloride. The hydrogen gas expands out of the water to atmosphere.

The chlorine gas is released when the sodium chloride molecule is disrupted by the electrochemical reactions of this process. As the chlorine atoms are recombined as described in the foregoing so does the sodium atom combine with the carbon atom of the disrupted calcium carbonate molecule resulting in precipitant sodium carbonate and sodium hydroxide.

For a clearer understanding of the invention, specific examples of the invention are given below. These examples are merely illustrative and are not to be understood as limiting the scope and underlying principles of the invention.

EXAMPLE I

A tubular container of copper was constructed into which a cylindrical rod of aluminum was suspended coaxially. The aluminum cathode was connected to the copper anode with an electrical conductor.

The entire assembly was oriented with the axes of the cylindrical parts perpendicular to the earth's surface. Saline water was introduced into the anode container. The saline water had a content of dissolved and solid saline matter of 35,500 parts per million parts of water.

The distance by which the surfaces of the anode container and cathode rod were separated was 0.75 inch. The water was permitted to remain in the container one (1) hour. After one (1) hour the water was removed and tested. The remaining dissolved and suspended solid material was measured at 28,900 parts per million parts of water.

EXAMPLE II

Four tubular copper anode containers were connected in such a manner as to permit saline water to be introduced a distance from the bottom of one tube, then permitted to flow out of the top of that tube into the next tube where the inlet was in the identical location of the first, and so on for all four tubes. The distance from the bottom of the containers to the inlets was sufficient not to impede the deposition of the precipitants nor cause the incoming water to be mixed with the precipitants.

Tubular aluminum cathode elements were then suspended into the anode container. The cathodes were connected together by an electrically conductive material. The anodes were connected together by an electrically conductive material. The anodes were then connected to one side of a meter calibrated to be read in milliamperes. The cathodes were connected to an electrical resistance of 10 ohms. The electrical resistance was connected to the other side of the ammeter.

The axes of the anode containers and the cathodes were coaxial and oriented to be perpendicular with the earth's surface. The total capacity of the system was measured at 2.7 gallons of water. At the bottom of each container a means was provided for the removal of precipitants.

Saline water was introduced and permitted to flow continually through the system at a rate of 2.7 gallons per day. This produced .05 amperes of electrical current at an electromotive force of .5 volts continually. The water was tested. The total dissolved and suspended solid saline materials were 36,300 parts per million parts of water before introduction into the process and 370 parts per million parts of water after ejection from the process. The cathode reduction rate was calculated at .0013 ounces avoirdupois of aluminum lost for each 100 gallons of water desalinated. The precipitants were removed as a dense brine that measured 104,000 parts per million parts water of suspended solids for each 2.7 gallons processed.

The present invention in its broader aspects is not limited to the specific minerals, mechanizations and examples described, but also includes within the scope of the accompanying claims any departures made from such minerals, mechanizations and examples which do not sacrifice their chief advantages.

What is claimed is:

1. The process of desalination of salt water which comprises flowing such water between spaced-apart, substantially vertically arranged dissimilar metal electrodes in a cell-like means, the electrodes being connected by an electrical conductor outwardly of the water, whereby an electrical current flows between them, attracting, by such flow of current, portions of the salts to each electrode, whereby to cause an increase in density in the water adjacent to each electrode, permitting settlement downward from adjacent the electrodes to the bottom of the cell-like means, and removing from the bottom a brine of greater concentration than that of the water thereabove.

2. The process as defined in claim 1 together with the subsequent steps of flowing the upper portions of such water between electrodes of further cell-like means, and repeating therein the remainder of the steps so set forth, whereby to effect progressive desalination.

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[54] **METHOD AND APPARATUS FOR INCREASING ELECTRICAL POWER**

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[51]   **Int. Cl.²**.. H02M 7/64
[58]   **Field of Search** 310/113, 165; 321/28, 29, 321/30, 31, 48, 49, 50

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Primary Examiner—William M. Shoop

[57]   **ABSTRACT**

A form of rotating machine arranged in such a way as to convert a substantially constant input voltage into a substantially constant output voltage; involving generally a rotor that revolves at substantially constant speed within a stator and which comprises a transformer core subjected to and having a primary motor-transformer winding and a secondary transformer-generator winding; whereby transformed and generated power are synchronously combined as increased output power.
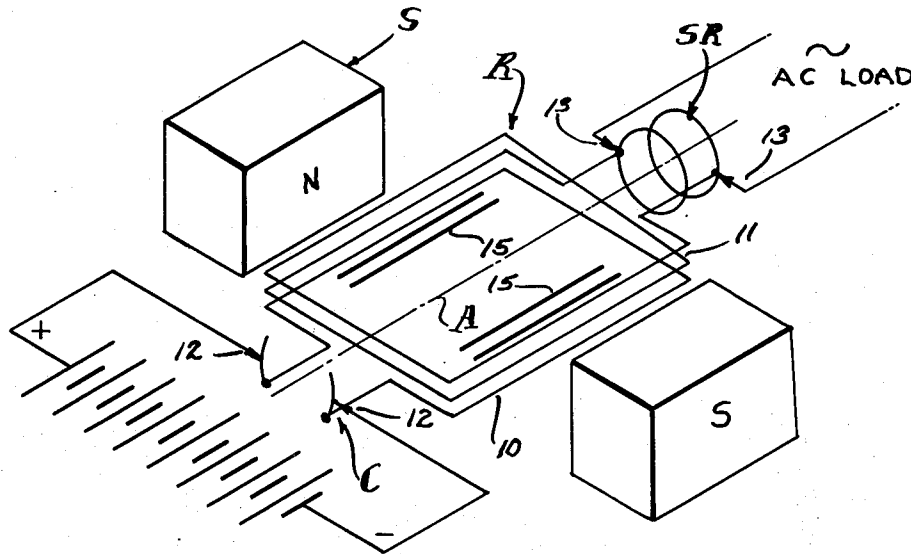
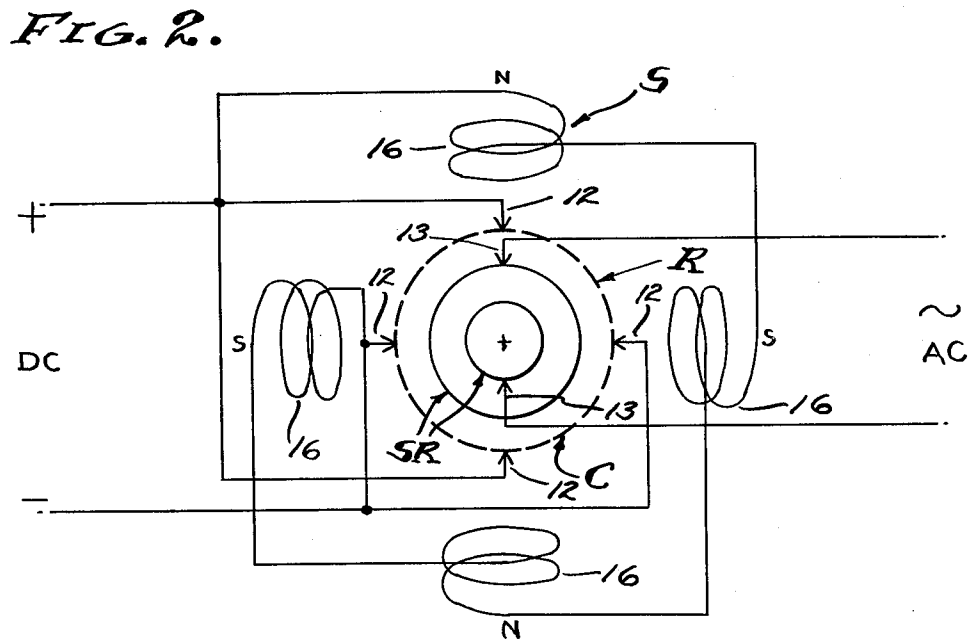**27 Claims, 3 Drawing Figures**
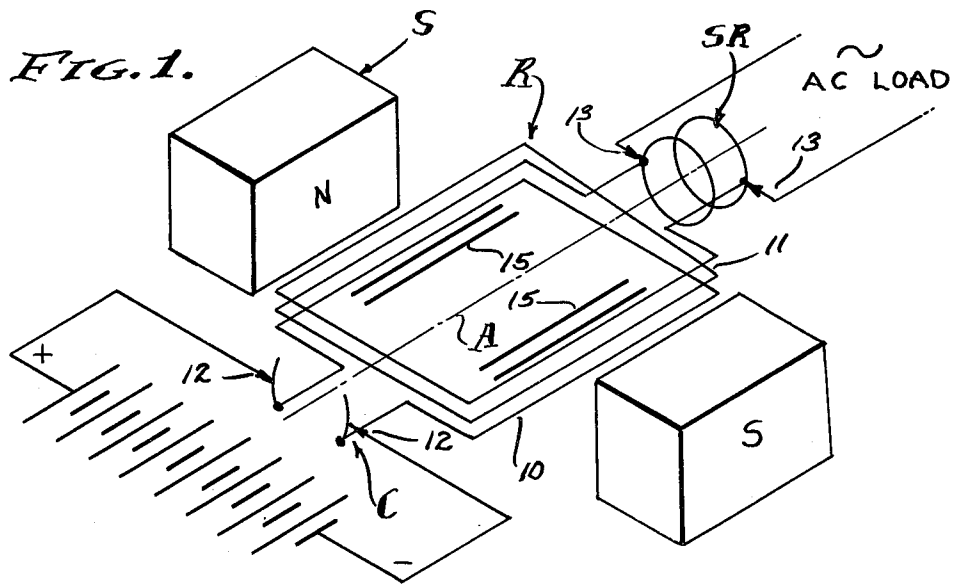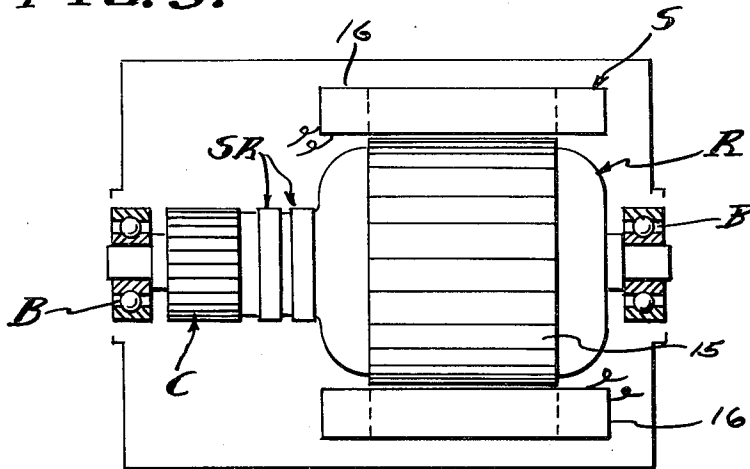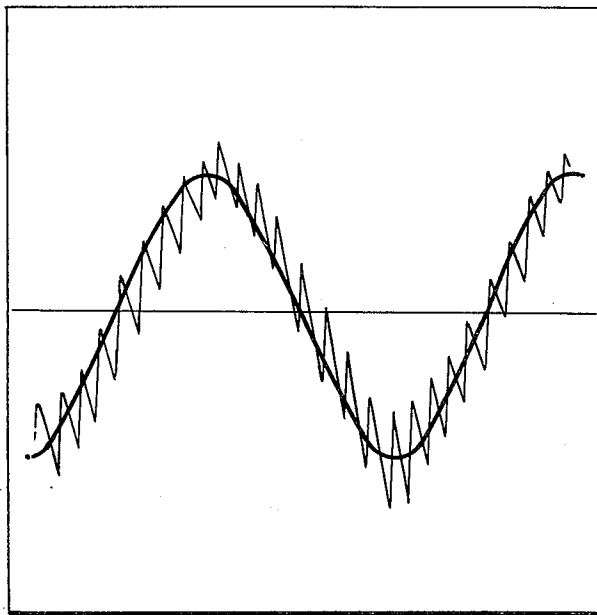
FIG.1.

FIG. 2.

FIG. 3.

FIG. 4.

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METHOD AND APPARATUS FOR INCREASING ELECTRICAL POWER

BACKGROUND

Electrical power is frequently changed in voltage, phase, frequency, and the current from alternating to direct or from direct to alternating. Voltage conversion in A.C. circuits is usually by means of transformers; and in D.C. circuits is usually by means of motor-generators. Phase conversion is also accomplished by either transformers or motor-generators; and frequency conversion is most simply done by motor-generators. Motor-generators have various classifications of use, as follows: (1) D.C. to D.C. used to charge batteries and to boost voltage; (2) A.C. to A.C. used for frequency and phase conversion; (3) A.C. to D.C. used for all types of service, such as battery charging, generator and motor field excitation, railways, electrolysis, and speed control etc.; and (4) D.C. to A.C. used to limited extent for special applications. To these ends combination motor-generators have been built, such as dynamotors stepping up D.C. voltage for radio equipment and amplidynes for reproducing a weak signal at a higher power level. When a particular variable frequency A.C. is required of a motor-generator set and the power supply is D.C., the equipment will include a D.C. motor for variable speed and a separate alternator driven thereby. Such equipment is special in nature and characterized by separation of the motor and generator and by polyphase (usually three-phase) generator windings and with auto transformers having suitable taps for obtaining the required voltages; and a D.C. speed controller for the motor. The phase output of such equipment is selective and its single phase capacity necessarily restricted (66%) as compared with its three-phase capacity, in which case transmission efficiency for single phase is poor. When a higher level power output is desired, the amplidyne is employed with field windings and brushes equipped for the purpose, and in some instances to give a constant current output from a constant voltage input, for example in inverted rotary converter provided to convert D.C. to A.C. However, the present invention is concerned with method and apparatus for increasing electrical power and provides a dynamo-electric converter that operates from an electrical energy supply to most efficiently produce A.C. for a useful load. The method involves simultaneous motor-transformer-generator steps and the preferred embodiment of the apparatus involves a dynamo-electric converter (DEC) in the form of a rotary machine combined in a single rotor revolving within a stator, the rotor being comprised of a transformer core subjected to both a primary motor-transformer winding and a secondary transformer-generator winding, and the stator being comprised of magnetic field poles.

Synchronous converters have been combined in single rotor machines to produce D.C. from A.C., but that effect is quite different from the effect of the present invention when A.C. is to be produced from D.C. in a single rotor having primary and secondary armature windings as distinguished from armature windings common to both A.C. and D.C. circuits. With the present invention, both a transforming and a generating effect are conducted in the rotor, and all of which is inherently synchronized and delivered through the A.C. outlet leads. A.C. motors and D.C. generators have been

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combined in one machine, that is in one rotor, and referred to as synchronous converters. However, synchronous converters are lacking in their ability to change D.C. into A.C. when operating from the former as a prime mover to simultaneously drive a generator, and more specifically to synchronously drive an alternator.

SUMMARY OF INVENTION

This method involves the placement of a primary winding in a field to both motor the same and to have a transformer effect with respect to a secondary winding also in a field to have a generator effect. In its preferred embodiment, this dynamo-electric converter is comprised of primary and secondary windings combined in a rotor commutated to alternate a D.C. energy supply in and thereby motivate the rotor within a stator field. The primary winding is advantageously of fewer turns than the secondary and by means of electromotive force drives the secondary windings of more turns to cut the magnetic lines of force for the generation of electrical energy at a higher voltage level than the D.C. supply. This D.C. operated motor is shunt wound with the stator field poles fully energized by the D.C. energy supply, or is provided with permanent magnet field poles, to efficiently motivate the rotor and efficiently generate electrical energy in the secondary windings. The A.C. output of the secondary windings is inherently synchronized with the transformer function of the primary windings combined in the common slots of the single rotor; and by adding the transformer and generator voltages and amperages the wattage is correspondingly increased at the output.

DRAWINGS

The various objects and features of this invention will be fully understood from the following detailed description of the typical preferred form and application thereof, throughout which description reference is made to the accompanying drawings, in which:

FIG. 1 is a diagrammatic schematic view of the dynamo-electric converter components comprising the present invention;

FIG. 2 is a diagram of a typical commutator brush, slip ring brush and field pole arrangement that is utilized;

FIG. 3 is a longitudinal section through a machine embodying the stator and rotor on bearings with the frame and brushes removed;

FIG. 4 is a typical duplicate of an osciloscope diagram showing the power output of the dynamo-electric converter.

PREFERRED EMBODIMENT

The dynamo-electric converter is diagrammatically illustrated in the drawings and involves, generally, a rotor R carried upon spaced bearings B so as to rotate on an axis A concentric within a stator S. The rotor R comprises the armature while the stator S comprises the field, there being a commutator C associated with primary windings 10 on the rotor and slip rings SR associated with secondary windings 11 on the rotor. Brushes 12 and 13 are slideably engaged with the commutator and slip rings respectively, by conventional means, to conduct D.C. through the commutator C and to conduct A.C. through the slip rings SR. The brushes 12 and interconnected primary windings 10 comprise

a motor while the brushes 13 and interconnected secondary windings 11 comprise a generator or alternator.

In practice, the field windings 16 can be separately energized or connected in parallel with the brushes 12 or shunted with respect to the primary motor winding 10. Motorization of the armature rotor R, or motoring thereof, causes continued polarity reversals on a cycle basis as determined by the speed of rotation, and this of course results in magnetic reversals in the rotor core 15 and a consequent induction in the secondary windings 11. A feature of this invention is the combining and cooperative relationship of the primary and secondary windings which occupy common slots in and embrace a common portion of the core 15 of the rotor R, thereby to have a transformer function as well as a generator function as the lines of magnetic force are cut by the secondary windings. The stator S has field poles of opposite magnetic polarity, excited independently from the armature, or as permanent magnets, and preferably shunted across the D.C. input. As shown, there are four equally spaced field poles in a circumferentially disposed series.

In practice, the primary D.C. motor windings are of fewer turns in the rotor slots than the secondary A.C. generator windings. For example the primary motor windings 10 are flat wound between north to south poles of the field while the secondary generator windings are flat wound in the same or common slots of the rotor armature. In a typical unit having a four brush commutator with 20 bars and having a 20 slot armature, the primary windings 10 are comprised of a number of turns of conductor to efficiently draw 48 volts D.C. at 25 amperes or 1200 Watts to rotate at 1750 RPM; while the secondary windings 11 are comprised of a number of turns of conductor to efficiently deliver 60 cycle (by transforming and generating) 110 volts A.C. at 32 amperes or 3520 Watts; the volt meter used to read these values upon an actual reduction to practice being calibrated to read the root-mean-square (rms) value of the pure sine wave, which is 70.7% of the peak voltage.

The reduction to practice hereinabove referred to as a "typical unit" was constructed of a machine originally designed as a self exciting 60 cycle 110 volt 2.5 KVA generator to be shaft driven by a separate prime mover. Firstly, the said prime mover was eliminated. The exciter windings were intended to excite the field at 45 volts D.C. delivered through the commutator, while the generator windings were intended to independently deliver 110–120 volts A.C. through the slip rings. The winding ratio between the exciter and generator windings was approximately one to three, and these are the values which determined the values employed in the present reduction to practice. However, it is to be understood that other values can be employed by design, for operation at the desired input and output voltages and amperages. It is also to be understood that the example reduction to practice disclosed herein is not necessarily the optimum design, in that other input-output power balances are contemplated, such as a D.C. battery input voltage substantially equal to the A.C. power voltage. In any case, an unexpected increase in power is realized by practicing this invention.

This dynamo electric converter inherently operates at a substantially constant angular velocity with the result that the alternating cycles of the output are substantially constant. Also, the D.C. input voltage can be maintained at a substantially constant level with the result that the A.C. output voltage is also substantially constant. As shown, the output is single phase A.C. in which case the effective power in Watts delivered is the product of current, voltage and power factor. Since the voltage is substantially constant, the current varies with load applied to the output as it is affected by the power factor. It will be seen therefore, that the apparent power represented by voltage times amperage is drawn directly from the D.C. input and applied to the primary motor winding 10 to motivate the rotor R for the functions hereinabove described. It will also be seen therefore, that the D.C. input is commutated into A.C. and transformed by induction from windings 10 into windings 11. And it will also be seen therefore, that the A.C. generated by motorization of the motor is synchronously imposed upon the windings 11, and all to the end that the two alternating currents are complementary and one added to the other. It will be observed that the output wattage is approximately triple the input wattage, by virtue of the synchronous superimposing of transformed input voltage and generated voltage while utilizing the former to operate the rotor in order to generate the latter. A feature of this invention is the separation of the primary and secondary circuits and the consequent isolation of the inverted input D.C. from the outlet A.C. and the utilization of input energy comensurate with output load according to amperage required for the operations to which this DEC machine is applied.

In carrying out this invention, the dynamo electric machine is conventional in design and the primary and secondary windings 10–11 are wound into the common slots of the armature as they are in self exciting generators. However, the primary windings 10 are motor-transformer windings and function totally as such. Similarly, the secondary windings 11 are wound into the armature slots together with the primary windings 10 and are powered with current that is alternated by virtue of the commutation and rotation of the armature, and consequently there is a transformer action between the primary windings 10 and secondary windings 11; and this transformer function is supplemented by generation of a superimposed current by virtue of the secondary windings 11 cutting the magnetic lines of force provided by the surrounding stator field. Consequently, there is a multiplying of power synchronously applied through the slip rings SR to the output brushes 13, and this increased output power is measurable as hereinabove described and double or almost triple that of the input power.

METHOD

Referring now to this method of increasing electrical power, input alternating current is applied to a primary winding to both motor and alternately magnetize a core. The said primary winding is immersed in a field and consequently is caused to motor and simultaneously to perform the first stage of transforming. A second stage of transforming is then performed by a secondary winding associated with said core to function as both a transformer and a generator winding, and the output current is drawn therefrom at an increased power value as compared with the input power; since the current induced by transformer action is superimposed upon the current generated in cutting the mag-

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netic lines of force by motoring the secondary winding through said field. The direct application of A.C. power to the primary winding is contemplated, however the present and preferred embodiment employs commutation of D.C. power which is thereby inverted to A.C. power in the process of motoring said windings and the core means in which they are carried together with the secondary winding. The net result is three fold, in that there is a motoring function, a transforming function, and a generating function; all of which are inherently synchronized to increase the output power with respect to the input power.

From the foregoing it will be seen that this method, and the dynamo-electric converter termed a DEC, synchronously superimposes transformed electrical energy and mechanically generated electrical energy when inverting D.C. to A.C. as is shown by observing the osciliscope diagram duplicated in FIG. 3 of the drawings. The D.C. motor section of the rotor-stator unit will operate at its designed speed well within a small tolerance, by applying known engineering principles; and consequently the A.C. generator-alternator section thereof will operate at a substantially uniform frequency of, for example, 60 cycles per second. Thus, the output voltage potential is kept to a maximum while current is drawn as required, within the capacity of the unit design.

Having described only a typical preferred form and application of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any modifications or variations that may appear to those skilled in the art:

I claim:

1. A dynamo-electric converter for inverting direct current voltage to alternating current voltage and including; a magnetic field having poles of opposite polarity, an armature coaxial with the field and having a core with means to receive windings, coaxial bearing means between the field and the armature, a primary motor-transformer winding in said means of the armature core and a commutator connected therewith, direct current input brushes engageable with the said commutator, a secondary transformer-generator winding in said means of the armature core and slip rings connected therewith, and alternating current output brushes engageable with the said slip rings, whereby direct current input power is both transformed and regenerated as alternating output power.

2. The dynamo-electric converter as set forth in claim 1, wherein the magnetic field is a stator comprised of said poles of opposite polarity, and wherein the armature is a rotor supported upon said bearing means coaxially within said field.

3. The dynamo-electric converter as set forth in claim 1, wherein the means to receive windings is a pair of slots in the armature core, said primary and secondary windings being carried in the slots and subjected to the magnetic capabilities of the core.

4. The dynamo-electric converter as set forth in claim 1, wherein the means to receive windings is a multiplicity of slots disposed in a circumferential series about the armature core, said primary and secondary windings being circumferentially progressive windings respectively and carried in common slots respectively and subjected to the magnetic capabilities of the core.

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5. The dynamo-electric converter as set forth in claim 1, wherein the magnetic field poles are permanent magnets.

6. The dynamo-electric converter as set forth in claim 1, wherein the magnetic field poles are electro magnets energized separately from the said primary motor winding.

7. The dynamo-electric converter as set forth in claim 1, wherein the field poles are electro magnets energized in parallel with the direct current input brushes engageable with the commutator.

8. The dynamo-electric converter as set forth in claim 1, wherein the magnetic field is a stator comprised of said poles of opposite polarity, wherein the armature is a rotor supported on said bearing means coaxially within said field, and wherein the means to receive windings is a pair of slots in the armature core, said primary and secondary windings being carried in the slots and subjected to the magnetic capabilities of the core.

9. The dynamo-electric converter as set forth in claim 1, wherein the magnetic field is a stator comprised of permanent magnet poles of opposite polarity, wherein the armature is a rotor supported on said bearing means coaxially within said field, and wherein the means to receive windings is a pair of slots in the armature core, said primary and secondary windings being carried in the slots and subjected to the magnetic capabilities of the core.

10. The dynamo-electric converter as set forth in claim 1, wherein the magnetic field is a stator comprised of permanent magnet poles of opposite polarity, wherein the armature is a rotor supported on said bearing means coaxially within said field, and wherein the means to receive windings is a multiplicity of slots disposed in a circumferential series about the armature core, said primary and secondary windings being circumferentially progressive windings and carried in common slots respectively and subjected to the magnetic capabilities of the core.

11. The dynamo-electric converter is set forth in claim 1, wherein the magnetic field poles are electro magnets of opposite polarity energized in parallel with the direct current input brushes engageable with the commutator, wherein the means to receive windings is a multiplicity of slots disposed in a circumferential series about the armature core, said primary and secondary windings being circumferentially progressive windings respectively and carried in common slots respectively and subjected to the magnetic capabilities of the core.

12. A method for increasing electrical power and comprised of; placing a primary winding within the flux of a magnetic field and applying alternating current therethrough while motoring the same to revolve, simultaneously revolving a secondary winding with the primary winding and through a flux of a magnetic field, and simultaneously transforming the first mentioned alternating current from the primary winding and into the secondary winding while synchronously generating alternating current in the secondary winding.

13. The method of increasing electrical power as set forth in claim 12 wherein the magnetic field is held stationary and the primary and secondary windings revolved together.

14. The method of increasing electrical power as set forth in claim 12 wherein the primary and secondary

windings are related to a common armature synchronously inducing into and generating electrical power through the secondary winding.

15. The method of increasing electrical power as set forth in claim 12 wherein the first mentioned alternating current is commutated from direct current to alternating current by revolvement of said primary winding.

16. The method of increasing electrical power as set forth in claim 12 wherein the magnetic field is held stationary and the primary and secondary windings revolved together and related to a common armature synchronously inducing into and generating electrical power through the secondary winding.

17. The method of increasing electrical power as set forth in claim 12 wherein the first mentioned alternating current is commutated from direct current to alternating current by revolvement of said primary winding and the primary and secondary windings related to a common armature synchronously inducing into and generating electrical power through the secondary winding.

18. The method of increasing electrical power as set forth in claim 12 wherein the first mentioned alternating current is commutated from direct current to alternating current by revolvement of said primary winding and wherein the magnetic field is held stationary and the primary and secondary windings revolved together and related to a common armature synchronously inducing into and generating electrical power through the secondary winding.

19. A dynamo-electric machine including; a first means applying a first alternating current into a primary motor-transformer winding, and a second means inducing a second alternating current into a secondary transformer-generator winding, said secondary winding being carried by said second means to operate through a flux of a field and thereby generating a third alternating current, whereby said second and third alternating currents are synchronously superimposed one upon the other.

20. The dynamo-electric machine as set forth in claim 19 wherein the field is stationary and the primary and secondary windings are rotary.

21. The dynamo-electric machine as set forth in claim 19 wherein the field is stationary and the primary and secondary windings are rotary with commutator bars synchronously applying a direct current to motor-

ize the armature and to apply said first alternating current thereto.

22. The dynamo-electric machine as set forth in claim 19 wherein the transformer means comprises magnetic core means common to the primary and secondary windings.

23. The dynamo-electric machine as set forth in claim 19, wherein the field is stationary and the primary and secondary windings are rotary with commutator bars synchronously applying a direct current to motorize the armature and to apply said first alternating current thereto, and wherein the transformer means comprises magnetic core means common to the primary and secondary windings.

24. A rotary dynamo-electric machine including: means applying alternating current through a primary motor-transformer winding carried by an armature core carrying a secondary transformer-generator winding, a field, and bearing means for rotation of the armature core relative to the field, whereby the alternating current applied to the primary winding motors the armature and is transformed and an alternating current generated and superimposed thereon through the secondary winding for increased output power.

25. The rotary dynamo-electric machine as set forth in claim 24 wherein the primary and secondary windings are each comprised of a number of turns of conductor to transform the first mentioned applied alternating current to the voltage of the alternating current generated through the secondary winding.

26. The rotary dynamo-electric motor as set forth in claim 24 wherein the first mentioned applied alternating current is of different voltage than the increased output power and wherein the primary and secondary windings are each comprised of a number of turns of conductor to transform the first mentioned applied alternating current to the voltage of the alternating current generated through the secondary winding.

27. The rotary dynamo-electric machine as set forth in claim 24 wherein the first mentioned applied alternating current is of lower voltage than the increased output power and wherein the primary and secondary windings are each comprised of a number of turns of conductor to transform the first mentioned applied alternating current to the voltage of the alternating current generated through the secondary winding.

* * * * *

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[54] SEISMIC WARNING SYSTEM USING RF ENERGY MONITOR

[75] Inventors: Joseph B. Tate, Sausalito; David E. Brown, Mill Valley, both of Calif.

[73] Assignee: David Pressman, San Francisco, Calif. ; a part interest

[21] Appl. No.: 695,632

[22] Filed: Jan. 28, 1985

[51] Int. Cl.⁴ G08B 21/00
[52] U.S. Cl. 340/540; 340/600; 340/690
[58] Field of Search 340/540, 600, 690

[56] References Cited

U.S. PATENT DOCUMENTS

4,214,238 7/1980 Adams et al. 340/540
4,364,033 12/1982 Tsay 340/540

Primary Examiner—Glen R. Swann, III
Attorney, Agent, or Firm—David Pressman

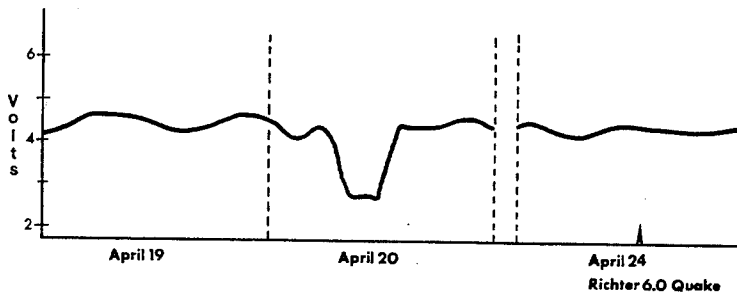[57]   ABSTRACT

The ambient broadband radio frequency field strength from broadcast stations is monitored (FIG. 4) by periodic sampling (50, 52). A warning indication is provided if the field strength drops significantly. Drops in such field strength have been correlated empirically with the occurrence of seismic activity, usually several days later. Thus the indication serves as an early warning of an impending earthquake. In one preferred embodiment, a broadband, horizontal, very long monopole antenna (40) was connected to a rectifying and smoothing circuit (FIG. 3) to provide a dc output proportional to the ambient rf field. This voltage is digitized (50), and using a suitably-programmed computer (52), the digital version of the field strength signal is sampled once per minute (78). A cumulative or running average of the minute samples is calculated (80) and held. Once per hour the latest running average is stored (84) and a standard deviation (SD) of the last 24 hourly stored running averages is calculated (88). If the SD exceeds a predetermined value, 0.3 in one embodiment, an alarm is triggered (92). The use of the SD eliminates the effect of day-to-day changes in the amounts of the variations of the ambient field strength, due to changes in tides and other factors. Once per day the samples are written (96) to a permanent storage file and a continuous plot of the field strength is also made (14). Preferably the alarm is triggered only if another detector also provides an indication (FIG. 6), thereby to eliminate the effect of machine error.

20 Claims, 6 Drawing Figures

Ambient RF Level vs Time from Before to Occurrence of Quake
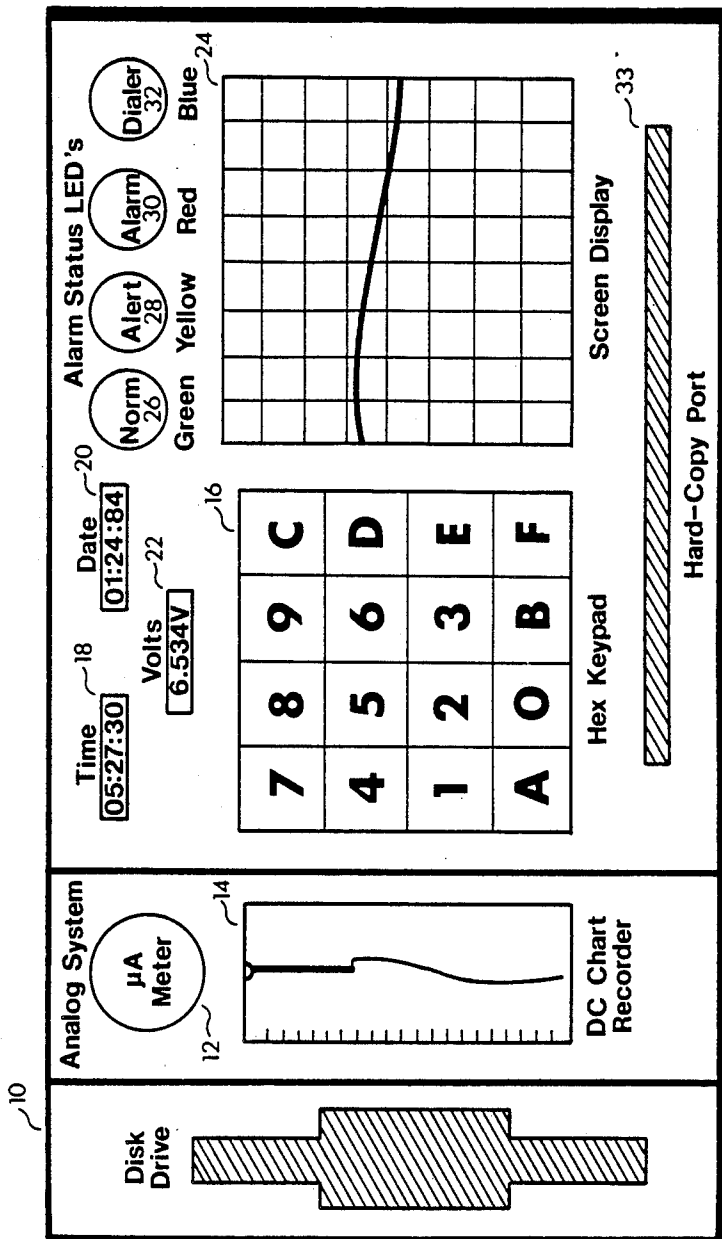
FIG 1

Ambient RF Level vs Time from
Before to Occurrence of Quake

April 19   April 20   April 24
Richter 6.0 Quake

Volts
6
4
2

FIG 2

FIG 3

FIG 4

FIG 5

Set normal operation indicators ~112

Test for >0.3 SD detection ~100

>0.3 SD detected ? ~102 — no

yes

Trigger alert indicator ~104

Is backup present ? ~106 — no

yes

Request backup confirmation ~108

Confirmation rec'd ? ~110 — no

yes

Trigger alarm indicator ~114

Initiate auto-dial sequence ~116

Test for reset ~118

Has reset occured ? ~120 — yes / no

FIG 6

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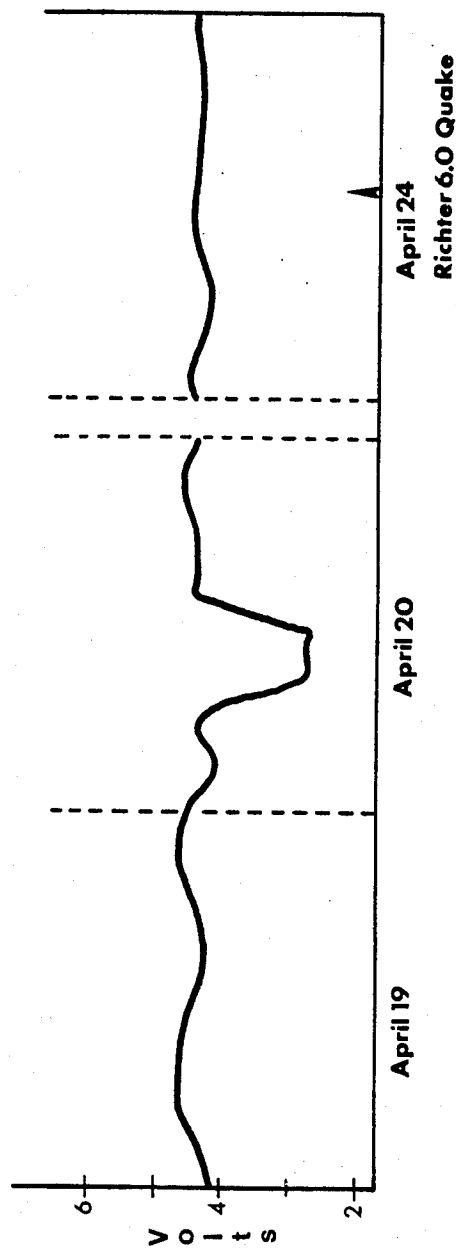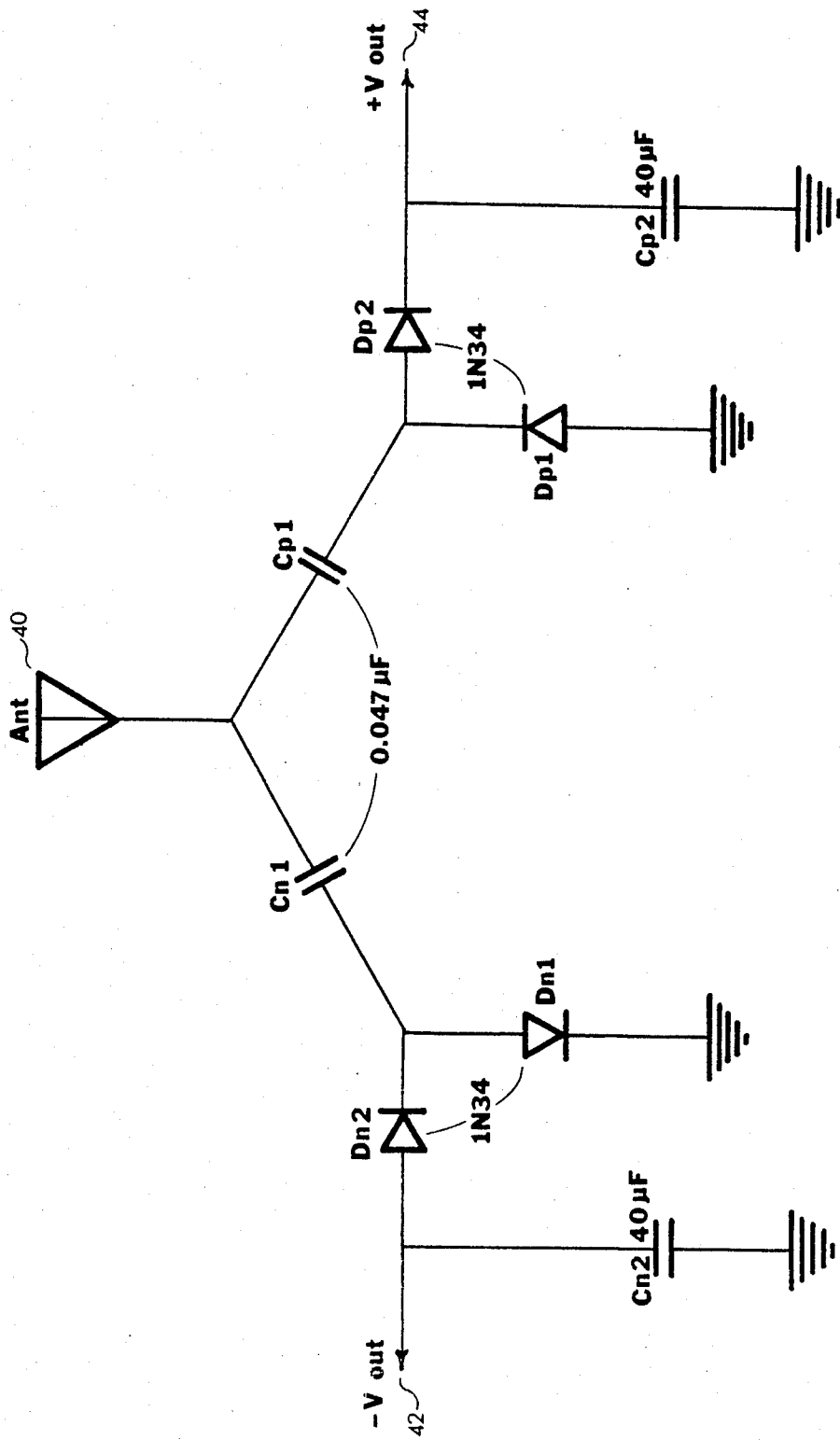
SEISMIC WARNING SYSTEM USING RF ENERGY MONITOR

BACKGROUND—FIELD OF INVENTION

This invention relates to the prediction of the fugure occurrence of seismic activity, particularly to the advance notification of earthquakes through the monitoring of ambient radio frequency (rf) energy.

BACKGROUND—DESCRIPTION OF PRIOR ART

Heretofore, insofar as we are aware, seismology, the science of earthquakes, has not been able to make any near-term predictions of earthquakes.

While scientists have known that certain animals may have had some sort of advance knowledge of quakes, due to the fact that they exhibited peculiar behavior before quakes, and not at other times, this behavior has not been consistent and reliable enough to be of practical use.

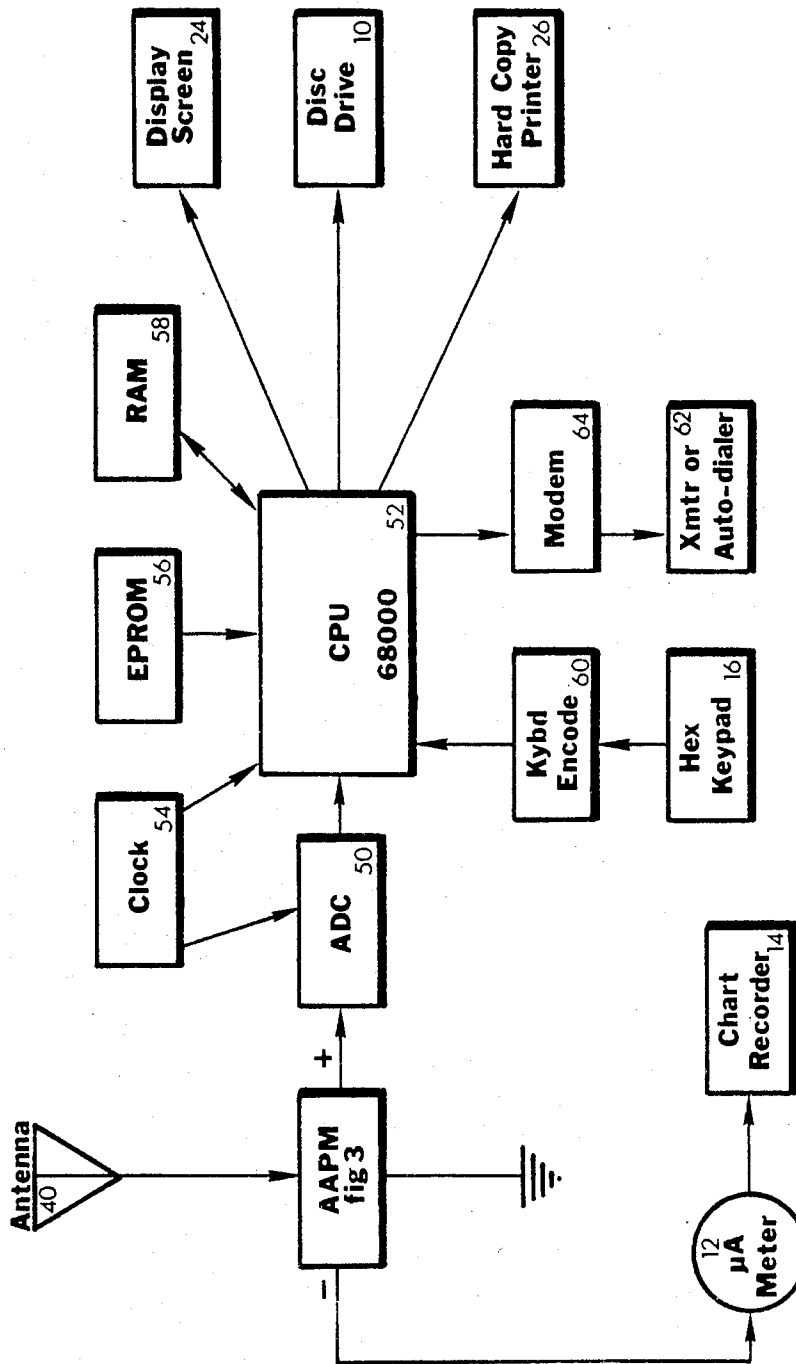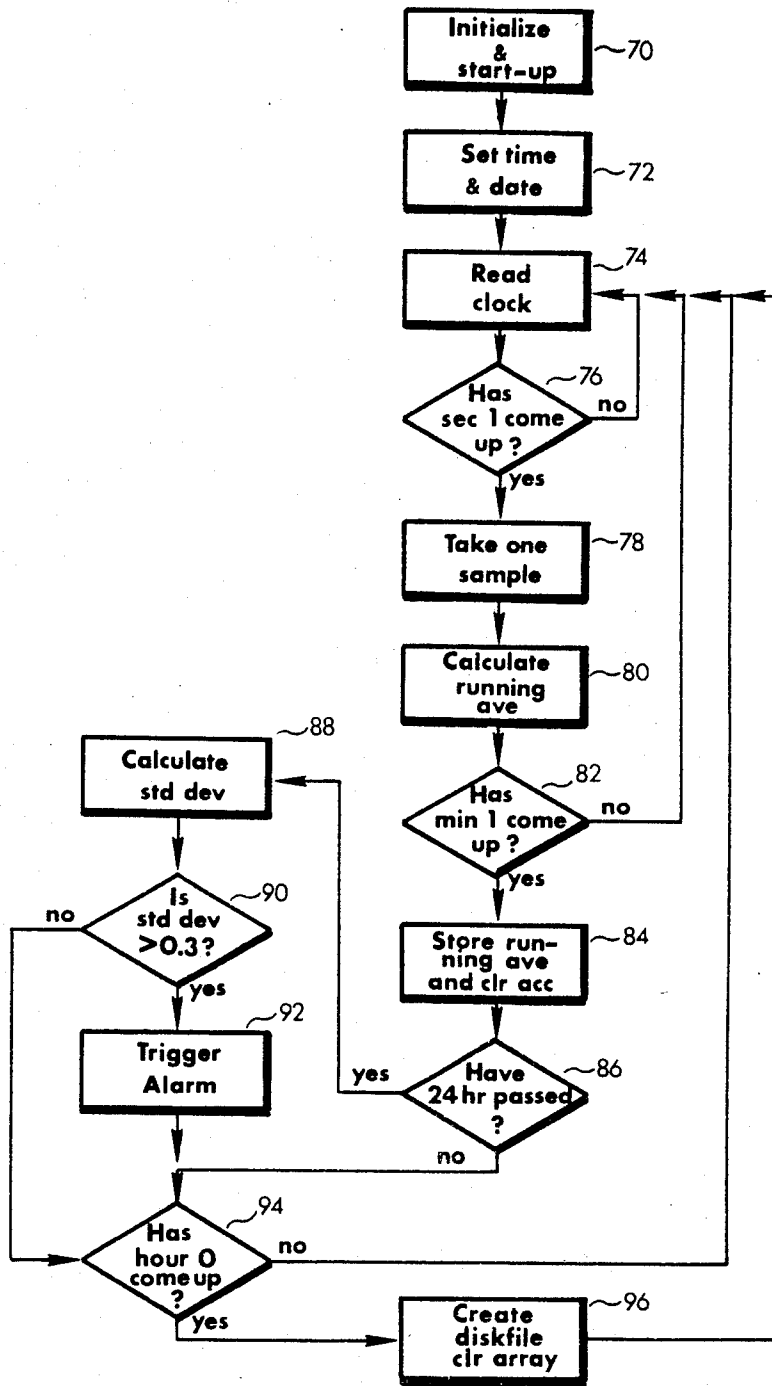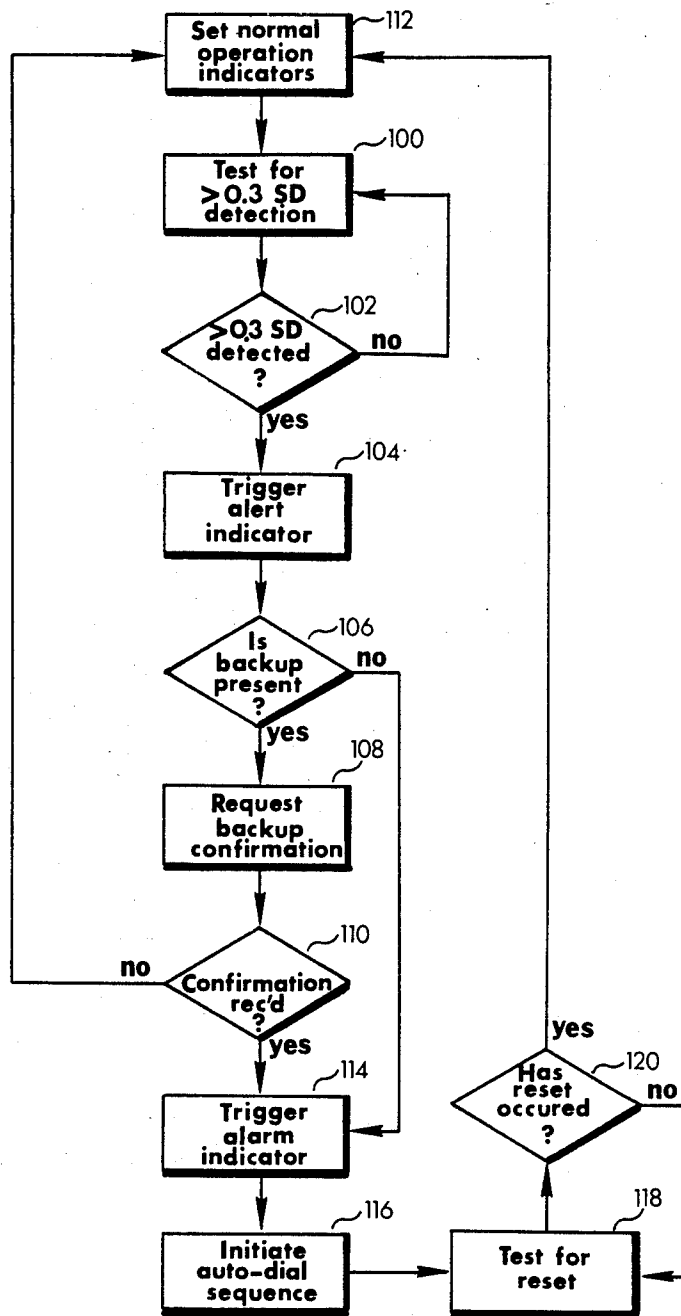Also, while scientists have also been able to predict thunderstorms in advance by monitoring the ambient electrostatic field (see, e.g., U.S. Pat. No. 3,611,365 to Husbyorg and Scuka, 1968; 3,790,884 to Kohl, 1974; and 4,095,221 to Slocum, 1978), they have not been aware of any corresponding system for earthquake prediction.

Scientists have been able actually to detect earthquakes during their occurrence by monitoring air pressure variations (e.g., as described in U.S. Pat. No. 4,126,203 to Miller, 1978) and by monitoring the earth's physical movement by seismographs but, again, science has not been aware of any system for short-term advance detection or prediction of quakes.

Due to the devastating effects of quakes to property, life, and limb, public and governmental authorities would derive great benefit from any system which could provide short-time advance notification of great earthquakes. As it is now, except for aftershocks, which seismologists know will occur after any large quake, all great and small quakes occur without warning. Because people in the vicinity of such quakes are unprepared, they often are in places of great vulnerability, such as beside or inside collapsible buildings, so that severe and human injury usually occurs during a quake. Also, property itself is left vulnerable, e.g., by leaving automobiles in or near collapsible buildings, leaving gas and electricity connected such that disruption of these facilities causes fires, and leaving other valuable property in vulnerable areas. If advance notification of a large quake could be provided to the public and civil authorities, people and valuable property could be evacuated and protected, thereby preventing deaths, injuries, and greatly reducing property damage. Further, advance notification of quakes would eliminate the severe psychological trauma which often affects large segments of the populace due to the surprise occurrence of quakes.

OBJECTS AND ADVANTAGES

Accordingly several objects and advantages of the invention are to provide a reliable and effective method of earthquake prediction, to provide a method of preventing death, injuries, and reducing property damage in earthquakes, and to provide a method of reducing the psychological trauma which often accompanies quakes due to their surprise occurrence. Additional objects are to provide such a system which is easy to use, economi-

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cal, reliable, and portable. Further objects will become apparent from a consideration of the ensuing description, taken in conjunction with the accompanying drawings.

BACKGROUND—THEORY OF INVENTION

The following is a discussion of the background theory of the invention. While we believe it to be technically accurate, we do not wish to be limited by this theory since the operability of the invention has been empirically verified, as will be apparent from the later discussion.

We have recently worked work with the reception and utilization of broadband radio-frequency reception, e.g., for low-power utilization applications, as discussed in the copending application Ser. No. 06/539,223 of Joseph B. Tate, filed Oct. 6, 1983. While doing this work, we have noted that the antenna's output voltage fluctuated with time due to certain, known causes.

First, we noted that the higher we placed an antenna above the ground, the the greater the output signal it provided. We have observed this by raising the physical height of an antenna and observing an increase in power output, and also by observing variations in the output of a fixed antenna near a body of ocean water as a function of the tides: the antenna's output was greatest at low tide and lowest at high tide. We believe that the the change in water level, which serves as a ground plane, effectively lowers or raises the height of the antenna above the ground.

We also noted that the antenna's output was affected by solar flares to a limited extent; these caused the antenna to produce a higher output voltage during their occurrence. We believe this phenomena is caused by an increase in the level of ambient ionization due to the flares.

Further, we noted that the antenna's output dropped at certain irregular times; at first we would not attribute any cause to these drops. However investigation enabled us to correlate these drops with the subsequent occurrence of seismic activity. We found that the magnitude of the drop was proportional to the size of the subsequent earthquake.

Certain phenomena have been discovered to precede earthquakes. These include an anomalous uplift of the ground, changes in the electrical conductivity of rock, changes in the isotopic composition of deep well water, changes in the nature of small earthquake activity (e.g., bunching of small foreshocks), anomalous ground tilt or strain changes, changes in physical properties, such as porosity, electrical conductivity, and elastic velocity in the hypocentral region. Earthquake, McGraw-Hill Encyclopedia of Science And Technology, 1960; Earth by F. Press, W. H. Freeman & Co., 1974.

Phenomena associated with rocks have attracted much recent attention. Wm. Brace of the Mass. Inst. of Technology has found that when rocks were squeezed or compressed, just before they fractured, they tended to develop hairline cracks, swell or dilate (dilatancy), become more porous and electrically conductive, and transmitted high frequency seismic-like waves more slowly. Two of Brace's former students, Amos Nur of Stanford University and Christopher Scholz of Lamont-Doherty furthered Brace's work, connecting the dilatancy theory with seismic P-wave velocity shifts and rock resistivity changes as a precursor for earthquakes. See. e.g., Brace, Orange, and Madden, J. Geo-

phys Res., 70(22), 5669, 1965; A. Nur, Bull. Seis. Soc. of Amer., V 62, Nr. 5, pp. 1217–1222, 1972 Oct.; Earthquake by B. Walker, Time-Life Books, 1982.

Based upon the above background, we have developed a theory as to the cause of this drop in antenna output as a precursor or predictor of earthquakes. We believe that before a quake occurrs, the pressure within underground rock bodies temporarily increases greatly, causing the rocks to dilate and become conductive, in accordance with the works of Brace, Nur, and Scholz. This increase in conductivity effectively raises the ground plane, thereby causing the antenna's output to decrease temporarily.

Thus before the occurrence of a quake, the underground pressure increases greatly temporarily, causing underground rock bodies to swell and become more conductive, thereby raising the ground plane, which in turn causes the voltaic output of nearby antennas to drop.

We accordingly constructed an apparatus to automatically monitor antenna output and provide a suitable indication if the output level dropped significantly. The indication was calibrated empirically after much experimentation so as to filter ouo the effects of solar- and tide-caused variations. We did this by arranging the apparatus so that an output indication was provided only if the antenna output dropped a predetermined degree beyond its average level; we utilized statistical filtering techniques to accomplish this.

DRAWINGS

FIG. 1 shows the front panel of a Seismic Early Warning (SEW) apparatus according to the invention.

FIG. 2 is a plot of voltage (representing ambient rf level) v. time as measured by the apparatus of FIG. 1.

FIG. 3 is a schematic diagram of an ambient power module circuit (used in the SEW apparatus) for producing a DC output voltage proportional to the ambient rf energy

FIG. 4 is a block diagram of a computer in the apparatus of FIG. 1.

FIG. 5 is a flowchart which depicts the operation of the the SEW system.

FIG. 6 is a flowchart which depicts the operation of an optional alarm trigger system useable with the SEW apparatus.

FIG. 1—SEISMIC EARLY WARNING APPARATUS

In accordance with the invention, a seismic early warning apparatus is provided as shown in FIG. 1. The apparatus consists of a housing containing a general purpose computer (not shown), a disc drive 10, an analog system comprising a microampere meter 12 arranged to monitor direct current (which is proportional to the ambient rf energy), and a direct current strip chart recorder 14 arranged to provide a continuous indication of the current antenna output, which will be called the ambient power level. A hexidecimal keypad 16 is provided to enter data, such as time, for entering programs and changes and for operating the system according to preset codes. The time, date, and voltaic level of the antenna's output are continuously indicated by digital readouts 18, 20, and 22, respectively. A screen display 24 is provided to display graphic and alphanumeric information of the current status of the apparatus and previous data records.

Lastly the apparatus includes four status indicating lamps, which preferably are LEDs (light-emitting diodes) as follows: A green LED 26 indicates that the system is on and functioning normally. A yellow LED 28 indicates that the system has detected an event, namely the occurrence of a drop in ambient power below the preset level, which would be the prediction of an impending earthquake. A red LED 30 is provided as backup confirmation of the occurrence of the event; LED 30 is illuminated when a duplicate receiving system also detects an event. A blue LED 32 indicates initiation of operation of an automatic telephone dialer within the system, which has been preprogrammed to dial a predetermined number and provide a warning in the event of an occurrence of an alarm condition. Lastly the apparatus includes a hard copy output port 33 for providing printed graphic and numeric outputs of all system data.

FIG. 2—AMBIENT RF LEVEL V. TIME BEFORE QUAKE

FIG. 2 illustrates a reproduction of an actual plot of a voltage as a function of time, which voltage was proportional to the ambient RF (radio frequency) level, from the period from before to after a relatively large earthquake. This plot, which is typical of many we have observed before a quake, was made by deriving the voltage with a 30-meter, long-wire monopole antenna (not shown) which was mounted horizontally and which extended over San Francisco (Richardson) Bay easterly from Sausalito, California, 9 meters above sea level. The antenna thus intercepted and converted to an RF voltage the ambient RF energy, mainly from local (San Francisco area) AM radio stations. We rectified and filtered the output of the antenna using one-half of the circuit of FIG. 3 (described below) to provide a DC voltage which was plotted on a conventional ink-on-paper plotter. Note that on the section of the chart for Apr. 19 (1984), which begins at time 0:00 (midnight) and ends at 24:00, the voltage or ambient RF power level at the antenna increased and fell and then increased slightly in the 24-hour period. This wavelike variation typically occurs on a daily basis and is caused by tides: the peaks occurring at low tide when the effective ground plane provided by the water drops and the troughs occurring at high tide when the ground plane rises.

On Apr. 20, from about 8:00 to about 12:00, a sharp and constant-level dip in the ambient rf power occurred, as indicated. The magnitude of this pronounced dip is far greater than the normal tide-caused variations, as is its beginning and ending slope.

Thereafter, from Apr. 20 to Apr. 23, the plot (not shown) continued unremarkably, albeit with a slight variation from normal.

The same occurred on Apr. 24, with the plot actually being generally similar to a normal day. However at 13:15 on Apr. 24, as indicated, a large, Richter magnitude 6.0 quake occured near Hollister, Calif., about 340 km away from the antenna. No change in the plot occurred at this time.

Correlation of this quake with the plot's marked dip of Apr. 20 was made by the repeated observation of dozens of similar dips and subsequent quakes. Pronounced dips were always followed by a quake several days later. Thus we have empirically established causal and theoretical connections between pronounced dips

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of the type shown and the occurrence of subsequent seismic activity.

FIG. 3—AMBIENT POWER MODULE

The circuit of FIG. 3 is used to convert the ambient RF energy to a direct voltage which can be used and handled by data processing equipment. Designated an ambient power module (APM), it is connected to an antenna 40, preferably a broadband monopole antenna of the type described in the preceeding section. The distal end of the antenna is free and its proximal end is connected to the circuit via two capacitors Cp1 and Cn1, each being in series with the signal line for coupling and each having a value of 0.047 microfarad. Taking the left or negative side of the circuit first, it comprises two rectifiers (diodes) Dn1 and Dn2 (1N34 type) and a filter capacitor Cn2 (40 microfarads). Rectifier Dn1 is connected in parallel to the signal path and rectifier Dn2 is connected in series, in the wellknown voltage multiplier arrangement. Capacitor Cn2 is connected in parallel across the output of the APM to smooth the rectified output. The right or positive side of the circuit is similar, except for the polarity of the diodes.

In operation, an RF voltage is developed across antenna 40; this voltage is voltage multiplied by the two rectifiers on each side of the circuit. The resultant direct voltages are smoothed or filtered by capacitors Cn1 and Cp2 and are supplied to output terminals 42 and 44. A positive version of this direct voltage is plotted in FIG. 2, as described above.

FIG. 4—BLOCK DIAGRAM OF COMPUTER

A computer for performing the monitoring and alarm functions of the invention and which is provided within the apparatus of FIG. 1 is shown in FIG. 4. The computer receives the positive voltage from the APM (FIG. 3) and processes this, providing an alarm if the voltage dips a predetermined amount from its recent average value.

The computer comprises an analog to digital converter (ADC) 50 which is arranged to convert the positive DC voltage from the AAPM to digital form, preferably in the form of a parallel signal at the output of ADC 50. The digitized voltage from ADC 50 is supplied to a central processing unit 52, which is a type 68000 microprocessor or computer on a chip. CPU 52 and ADC 50 are clocked by a clock 54 in conventional fashion.

CPU 52 operates on instructions from a program contained in an electricallyprogrammed read only memory (EPROM), the program being listed later. CPU 52 temporarily stores data in a read and write memory (RAM) 58. CPU 52 also supplies output data to display screen 24, disc drive 10, and hard-copy printer 26', each of which was already described in conjunction with FIG. 1.

CPU 52 can receive input data manually from hexidecimal keypad 16 (see FIG. 1) via a keyboard encoder 60.

CPU 52 can supply an alarm output to a radio transmitter or automatic telephone dialer 62 via a modem (modulator-demodulator) 64 for connecting the CPU to a phone (not shown).

As also indicated in FIG. 4, the negative output of the AAPM of FIG. 3 is connected to ammeter 12 and chart recorder 14.

FIG. 5—FLOWCHART OF SEISMIC EARLY WARNING SYSTEM

In operation, the system of FIG. 4 operates under control of the program in EPROM 56 in accordance with the flowchart of FIG. 5 as follows:

Startup: Blocks 70 and 72: An initialization and start-up sequence is first initiated when the machine is turned on, as indicated by block 70; this sets all registers and counters to zero. The time and data are then set manually (using EPROM 56), as indicated by block 72.

Clock Reading: Blocks 74 and 76: Next, under automatic program control, the machine reads the elapsed time on its clock display register, as indicated by block 74. If the "seconds" register does not indicate the number one (#1), the machine continues to read the clock, as indicated by the "no" output of decision block 76.

Minute Sample: Block 78: When second #1 appears, as it will once per minute, the decision in block 76 will be "yes", so that the machine will take one sample of the rectified, smoothed, and digitized version of the antenna's output, i.e., the output of ADC 50 of FIG. 4, as indicated in block 78. This sample will be taken once per minute, i.e., whenever second #1 is displayed.

Running Average: Block 80: Next, as indicated by block 80, a running average of the samples taken in block 78 is calculated. This is done by accumulating the samples to keep a running total of their values, counting the number of samples accumulated, and dividing the running total by the latest number of samples each time a new sample is taken.

Store Hourly Average: Blocks 82 and 84: Next, as indicated in block 82, a test is made to see if the time display register indicates that minute number one (#1) has come up. If not, the decision is "no" and the clock is read again (block 74). If the decision is "yes", as it will be once per hour, the running average in the accumulator will be stored (block 84) and the accumulator will be cleared or reset to zero.

One Day Test: Block 86 ("No" decision) and Block 94: Next the machine makes a test to see if 24 hours have passed. If not, the machine will not be able to make any valid statistical determinations. Thus it must run at least 24 hours before being operative. Assuming the decision in block 86 is negative (24 hours have not yet elapsed) another test is made (block 94) to see if hour zero is indicated, which will occur once per day. If hour zero is not indicated, (decision in block 94 is negative), the clock will be read again (block 74) in the usual loop.

Calculate SD: Block 86 ("Yes") and Block 88: If a full day has elapsed, so that valid statistics can be calculated ("yes" from block 86), the standard deviation (SD) of the last 24 hourly averages is calculated, as indicated in block 88. This is done once per hour. The calculation is made using the usual SD formula

$$SDDEV = SQR([sum(x-X)^2]/n)$$

where SDDEV = SD; SQR = the square root; sum = the sum of; x = the individual hourly averages; X = the mean of the hourly averages; and n = the number of individual hourly averages. Essentially the SD is calculated by taking the mean of all of the hourly averages, taking the difference or deviation of each hourly average from the mean, squaring each deviation, taking the mean of the squared deviations, and then taking the square root of the mean of the squared deviations.

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Evaluate SD: Block 90: The SD is then evaluated to see if it is greater than 0.3. This value has been empirically determined to be the level at which a the present apparatus will provide a reasonably positive indication that an earthquake will occur, while neglecting the effects of non-seismic-caused variations. If the SD is less than 0.3, (a "no" output from block 90), this indicates that the last hourly average was not greatly different from the average of the last 24 hourly samples, so that no alarm need be indicated. I.e., the antenna's output did not drop significantly to indicate an impending earthquake. Thereupon the program moves to block 94, where a test is made for the existence of hour zero, as described. If, however the SD exceds 0.3 ("yes" output of block 90), this indicates that the antenna's output has dropped significantly so as to affect the last hourly average, thereby to indicate an impending earthquake.

Alarm: Block 92: In response to the Yes output of block 92, an alarm is triggered (block 94). The alarm may be a bell, the dialing of a telephone to a location where personnel are present if the apparatus is placed at a remote or non-manned location, or the initiation of the further program of the Flowchart of FIG. 6, the alarm trigger sequence. To eliminate the possibility of equipment failure and to provide confirmation from another apparatus at another location, we prefer to provide an alarm only upon confirmation from another apparatus, as discussed in the description of FIG. 6 below.

Make Record: Block 94 ("Yes") and Block 96: If hour zero is being displayed when the operation of block 94 is performed, which occurs once per day at midnight, the operation of block 96 will be performed, i.e., the data in the registers will be stored to disc to create a permanent record and the registers will be cleared to create new data for the next day. However the previous 24 hourly averages are still stored at all times so that a valid SD can be calculated and tested every hour. After the operation of block 96, the clock is read again in accordance with the regular program (block 74).

FIG. 6—ALARM TRIGGER FLOWCHART

The sequence of FIG. 6 is performed when the alarm is triggered in block 92 of FIG. 5 as an optional, but preferred backup confirmation of an impending earthquake. The operations in the backup confirmation system will be described briefly.

Beginning with blocks 100 and 102, the system is continually tested (hourly) for the occurrence of a SD of the hourly averages of greater than 0.3. If the SD is greater than 0.3, the alert indicator (28 of FIG. 1) is triggered (block 104) and the program initiates a test (block 106) to see if a backup apparatus (not shown) is present. If so (yes output of block 106) the backup apparatus is also checked (blocks 108 and 110). If the backup

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does not indicate an excess SD, the indicators are reset to normal (block 112), but if backup confirmation is received, the alarm indicator (30 of FIG. 1) is triggered per block 114 and a preprogrammed telephone number is dialed and indicator 32 is lit (block 116).

After the alarm condition is manually checked and the system is reset, the output of block 120 will be a "yes" and the system will be reset to normal (block 112). If a valid alarm condition is indicated and confirmed, civil authorities will have time (usually several days) to notify the populace, evacuate the area, or take any other needed precautions, depending on the size of the impending quake as indicated by the size of the standard deviation.

PROGRAMS:

The attached computer programs will perform the calculations and operations above described. These programs are written in the BASIC programming language. Program "RECVOLT.AL" runs continuously and writes the information to disc every 24 hours. Program "GRASTAT.*" is manually run; it reads data from the disc and plots it on the screen or printer, as desired.

While the above description contains many specifications, these should not be construed as limitations on the scope of the invention, but merely as an exemplification of one preferred embodiment thereof. Many other variations are possible. For example, the programming language can be changed, or the calculations and operations can be performed with hard-wired conventional circuitry in lieu of a programmed computer. More than two corroboration receivers can be used, and these can be placed at various locations. In lieu of testing the antenna's output reception of the area's AM stations, a special, decicated transmitter with a special, dedicated frequency and a specially-tuned matching receiver can be used to avoid depedence on stations which are not under the control of the earthquake prediction system and its personnel. The transmitter and the receiver should be spaced apart geographically, preferably by at least several km, so that the ground plane conduction phenemon can operate. Also the transmitted signal can be a specially-coded or modulated signal, or it can be an auxiliary signal of a regular transmitter, e.g., a SSB or SCA signal, together with a matching receiver. In lieu of a test for an excess SD, the apparatus can be arranged to test for a predetermined drop in the value of the antenna output from its immediately previous value or its average value over a predetermined period, such as an hour or day, or for a drop having greater than a predetermined slope. Accordingly the full scope of the invention should be determined by the appended claims and their legal equivalents, and not by the examples given.

"RECVOLT.AL"

```
5 ? "}"
6 H0=0:U=1:G=1
7 DIM P$(100),A$(1):A$=" "
100 DIM B$(3)
110 DIM Z$(15)
115 DIM HAR(24):DIM HA(24):DIM HAL(25)
117 FOR I=1 TO 25:HAL(I)=0:NEXT I
120 POSITION 5,5:? "RECORDING VOLTMETER":POSITION 5,7:? "COPYRIGHT 1984":POSITIO
N 5,9:? "JOE TATE"
125 FOR D=1 TO 1000:NEXT D:? "}"
150 ? "DO YOU WANT TO SEE A FILE?"
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160 INPUT B$
170 IF B$="YES" THEN GOTO 12040
180 IF B$="NO" THEN GOTO 200
200 N=1:J=0:AVG=0:A=0:K=0
205 DIM D$(3),M$(8),DATE$(15),X$(3)
220 FOR R=1 TO 24:HA(R)=0:NEXT R
280 ? ")":POKE 752,1
420 ? "IF DATE IS CORRECT PRESS C"
425 ? "PRESS N FOR NEXT MONTH"
430 READ M$:K=K+1:IF K>13 THEN K=1
432 IF M$<>"RES" THEN 435
433 RESTORE :GOTO 430
435 POSITION 6,12:? M$
440 INPUT X$
445 IF X$="C" THEN 450
448 IF X$="N" THEN 430
449 GOTO 435
450 ? ")"
455 ? "ENTER TODAY'S DATE"
458 INPUT D
459 D$=STR$(D)
460 ? M$;" ";D$
505 ? "DO YOU WANT TO SET THE TIME?";:INPUT X$
510 IF X$="YES" THEN 520
515 GOTO 1050
520 ? ")"
525 ? "HOURS";:INPUT H
530 ? "MINUTES";:INPUT M
535 ? "SECONDS";:INPUT S
540 ? "HIT START TO BEGIN THE TIME"
545 IF PEEK(53279)<>6 THEN 545
550 ? ")"
1010 REM *****PUT CURRENTTIME IN HARWARE REGISTER*****
1011 GRAPHICS 2
1015 POKE 18,0:POKE 19,0:POKE 20,0
1020 T=H*60^3+M*60^2+S*60
1025 POKE 18,INT(T/(256*256))
1030 T=T-(256*256)*(INT(T/(256*256)))
1035 POKE 19,INT(T/256)
1040 T=T-256*(INT(T/256))
1045 POKE 20,INT(T)
1050 ? ")"
1055 TIME=PEEK(20)+PEEK(19)*256+PEEK(18)*256*256
1065 IF TIME>5184000 THEN 1265
1070 TIME=INT(TIME/60+0.5)
1075 SEC=TIME-60*(INT(TIME/60))
1076 R=PEEK(53279):IF R=5 THEN SOUND 0,0,0,0:SOUND 1,0,0,0:U=1
1077 POKE 752,1:IF R=3 THEN G=2:GOTO 12040
1079 IF U=1 THEN POSITION 3,3:? #6;"E.T. ";HO;" HRS.   "
1080 POSITION 14,8:? #6;SEC;":S.  "
1082 IF SEC=7 AND G=1 THEN GOSUB 15200:GOTO 14020
1083 IF SEC=8 AND G=0 AND HOURS<>0 THEN GOSUB 13000:GOSUB 13100:FOR D=1 TO 7500:
NEXT D:GOSUB 15200
1085 IF SEC>1 THEN N=1
1086 IF SEC=1 AND N=1 THEN 2020
1095 TIME=INT((TIME-SEC)/60)
1200 MIN=TIME-60*(INT(TIME/60))
1205 HOURS=INT((TIME-MIN)/60)
1210 IF SEC>=60 THEN 1220
1213 IF MIN=1 AND SEC=1 AND HO>24 THEN GOTO 15000
1215 GOTO 1230
1220 MIN=INT(SEC/60)+MIN
1225 SEC=SEC-60*(INT(SEC/60))
1230 IF MIN>=60 THEN 1240
1240 HOURS=INT(MIN/60)+HOURS
1245 MIN=MIN-60*(INT(MIN/60))
1252 IF HOURS>23 THEN HOURS=0
1255 GOTO 1055
1260 ? INT(HOURS+0.5);":";INT(MIN+0.5);":";INT(SEC+0.5):GOTO 1055
1262 ? "LINE1262"
1265 TIME=PEEK(18)*256*256+PEEK(19)*256+PEEK(20)
1270 TIME=TIME-5184000*(INT(TIME/5184000))
1275 POKE 18,INT(TIME/(256*256))
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1280 TIME=TIME-(256*256)*INT(TIME/(256*256))
1285 POKE 19,INT(TIME/256)
1290 TIME=TIME-256*(INT(TIME*256))
1295 IF HOURS>23 THEN H=0:M=0:S=0:GOTO 1015
1300 GOTO 1055
2020 REM *****SAMPLE ROUTINE*****
2022 N=2
2025 LET X=PEEK(625)
2030 IF X>40 THEN POSITION 1,14:? "VOLTAGE BELOW RANGE(LESS THAN 1.8V)"
2035 IF X<3 THEN POSITION 1,10:? "VOLTAGE ABOVE RANGE(ABOVE 7V)"
2040 IF X>26<40 THEN LET V=(40-X)*0.01+1.85
2045 IF X>22<26 THEN LET V=(26-X)*0.062+2
2050 IF X>20<22 THEN LET V=(22-X)*0.125+2.25
2055 IF X>16<20 THEN LET V=(20-X)*0.125+2.5
2060 IF X>13<16 THEN LET V=(16-X)*0.166+3
2065 IF X>11<13 THEN LET V=(13-X)*0.225+3.5
2070 IF X>10<11 THEN LET V=(11-X)*0.4+3.95
2075 IF X>5<10 THEN LET V=(10-X)*0.15+3.25
2080 IF X>8<10 THEN LET V=(10-X)*0.325+4.35
2085 IF X>6<8 THEN LET V=(8-X)*0.5+5.1
2090 IF X>3<6 THEN LET V=(6-X)*0.33+5.9
2095 POKE 77,0
3000 GOSUB 15200
3500 J=J+1
3510 AVG=(A+V)/J
3512 LET A=A+V
3520 ? "SAMPLE #";J;"  RUN AVG ";AVG;M$;D$
3600 HA(HOURS)=AVG
3610 IF MIN<>0 THEN 1055
3612 HAL(25)=AVG
3613 FOR I=1 TO 24:HAL(I)=HAL(I+1):NEXT I
3615 IF MIN=0 THEN A=0:HO=HO+1
3625 J=0
4020 IF HOURS<>0 THEN 1055
4048 REM ****
4050 REM ** CREATE FILENAME-DISKWRITE****************
4052 REM ****
4053 FOR Q=0 TO 23:HAR(Q)=HA(Q):NEXT Q
4055 DATE$(LEN(DATE$)+1)=M$
4056 DATE$(LEN(DATE$)+1)=D$
4060 OPEN #1,8,0,DATE$
4065 FOR Q=0 TO 23
4070 HAR=HAR(Q)
4072 PRINT #1,HAR:NEXT Q
4075 CLOSE #1
4080 DATE$=""
5000 REM *******DATE ROLLOVER*******
5010 IF K=4 OR K=6 OR K=9 OR K=11 THEN DMAX=30:GOTO 5025
5015 IF K=2 THEN DMAX=28:GOTO 5025
5020 DMAX=31
5025 D=VAL(D$)
5030 D=D+1
5035 IF D>DMAX THEN D=1:READ M$:K=K+1
5040 D$=STR$(D)
5050 GOTO 1055
10000 DATA D:JAN.,D:FEB.,D:MAR.,D:APR.,D:MAY.,D:JUN.,D:JUL.,D:AUG.,D:SEP.,D:OCT.
,D:NOV.,D:DEC.
10010 DATA RES
12000 REM READ OUT ROUTINE*******
12010 ? "DO YOU WANT TO READ FILE?"
12020 INPUT B$
12030 IF B$="YES" THEN G=2:GOTO 12040
12040 ? ")":GRAPHICS 0:? "ENTER FILE SPEC PLEASE"
12050 INPUT Z$
12055 GOSUB 13000
12056 PLOT 29,75
12057 ? Z$
12060 OPEN #1,4,0,Z$
12070 FOR Q=0 TO 23
12075 FOR X=29 TO 149 STEP 5
12080 LET HAR(Q)=HAR
12085 IF X=149 THEN 12130
12090 INPUT #1,HAR
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12098 LET Y=75-14*(HAR-2):Y=INT(Y)
12100 IF HAR<2 THEN Y=79
12120 DRAWTO X,Y:NEXT X:NEXT Q
12130 CLOSE #1
12140 ? "DO YOU WANT TO SEE ANOTHER FILE?"
12150 INPUT B$
12160 IF B$="YES" THEN 12040
12170 IF B$="NO" THEN ? "}":? "FINISHED"
12175 FOR D=1 TO 200:NEXT D:? "}":GRAPHICS 2:POSITION 3,1:? #6;"SDDEV ";SDDEV:PO
SITION 15,1:? #6;"   "
12177 GOTO 1055
13000 TRAP 13000:? "}":GRAPHICS 7
13010 COLOR 1
13015 PLOT 16,0
13020 DRAWTO 16,79:DRAWTO 159,79
13030 IF G=2 THEN ? "HOUR 0       6      12      18      24"
13035 IF G=0 THEN ? "HOUR   ";HOURS-24;"      ";HOURS-18;"      ";HOURS-12;"      ";
HOURS-6;"      ";HOURS:? "TODAY"
13036 G=1
13040 PLOT 32,4:DRAWTO 36,12:DRAWTO 40,4
13045 PLOT 51,4:DRAWTO 49,6:DRAWTO 49,10:DRAWTO 51,12:DRAWTO 54,12:DRAWTO 57,10:
DRAWTO 57,6:DRAWTO 54,4
13046 DRAWTO 51,4
13050 PLOT 67,4:DRAWTO 67,12:DRAWTO 73,12
13055 PLOT 80,4:DRAWTO 83,4:PLOT 84,4:DRAWTO 84,12
13060 PLOT 96,9:DRAWTO 96,10:DRAWTO 98,12:DRAWTO 101,12:DRAWTO 103,10:DRAWTO 103
,9:DRAWTO 96,6:DRAWTO 96,5
13065 DRAWTO 99,4:DRAWTO 101,4:DRAWTO 103,5:DRAWTO 103,6
13070 PLOT 14,5:DRAWTO 18,5
13072 PLOT 14,19:DRAWTO 18,19
13074 PLOT 14,33:DRAWTO 18,33
13076 PLOT 14,47:DRAWTO 18,47
13078 PLOT 14,61:DRAWTO 18,61
13080 PLOT 14,75:DRAWTO 18,75
13082 PLOT 9,74:DRAWTO 10,73:DRAWTO 11,73:DRAWTO 12,74:DRAWTO 9,77:DRAWTO 12,77
13084 PLOT 9,45:DRAWTO 9,47:DRAWTO 12,47:PLOT 11,45:DRAWTO 11,49
13086 PLOT 12,18:DRAWTO 11,17:DRAWTO 10,17:DRAWTO 9,18:DRAWTO 9,21:DRAWTO 10,22:
DRAWTO 11,22:DRAWTO 12,21
13088 DRAWTO 11,20:DRAWTO 10,20
13089 TRAP 40000
13090 RETURN
13100 FOR Q=1 TO 24:LET X=29+5*(Q-1):LET HAL=HAL(Q)
13110 LET Y=75-14*(HAL-2):Y=INT(Y)
13120 IF HAL<2 THEN Y=79
13122 IF X=29 THEN PLOT X,Y
13125 IF X>29 THEN DRAWTO X,Y
13127 FOR D=1 TO 20:NEXT D:NEXT Q
13130 RETURN
14020 G=0:FOR S=1 TO 7:IF PEEK(53279)=3 THEN 12040
14021 IF S=1 THEN 14120
14022 IF S=2 THEN 14150
14023 IF S=3 THEN 14160
14024 IF S=4 THEN 14170
14025 IF S=5 THEN 14180
14026 IF S=6 THEN 14190
14027 IF S=7 THEN POSITION 1,5:? #6;"                    ":GOTO 1055
14035 LM=LEN(P$)
14040 POSITION 1,5:? #6;"                    "
14060 TRAP 100:FOR I=1 TO 19:POSITION 20-I,5:? #6;P$(1,I):FOR D=1 TO 8:NEXT D:NE
XT I
14070 TRAP 80:FOR I=2 TO LM-19:POSITION 0,5:? #6;P$(I,19+I):FOR D=1 TO 8:NEXT D:
NEXT I
14080 FOR I=0 TO 5:POSITION 0,5:? #6;P$((LM-18)+I,LM);A$:FOR D=1 TO 8:NEXT D:NEX
T I
14090 POSITION 0,5:? #6;A$:GOTO 14200
14100 FOR I=19-LM TO 1 STEP -1:POSITION I,5:? #6;P$(1,LM);A$:FOR D=1 TO 8:NEXT D
:NEXT I
14110 FOR I=1 TO LM:POSITION 0,5:? #6;P$(I,LM):FOR D=1 TO 8:NEXT D:NEXT I:GOTO 1
4090
14120 P$="THIS ATARI COMPUTER IS BEING USED AS A RECORDING VOLTMETER":GOTO 14035
14150 P$="VOLTAGE TO BE MEASURED AND RECORDED IS BROUGHT IN THROUGH THE JOYSTICK
 PORT":GOTO 14035
14160 P$="AN ANTENNA ON THE ROOF OF THE BUILDING PROVIDES A SOURCE OF FLUCTUATIN
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G VOLTAGE":GOTO 14035
14170 P$="A RECORD OF THE VARIATIONS IS SENT TO THE DISK DRIVE":GOTO 14035
14180 P$="THIS ALLOWS YOU TO SEE GRAPHS OF HOURLY VOLTAGE CHANGES FOR PREVIOUS D
AYS":GOTO 14035
14190 P$="TO SEE PREVIOUS RECORDS PRESS OPTION UNTIL SCREEN CHANGES":GOTO 14035
14200 NEXT S
15000 REM ---CALC MEAN & STD DEV---
15005 SUM=0:SDDEV=0:DFF=0
15010 FOR I=1 TO 24
15020 SUM=SUM+HAL(I):NEXT I
15030 MEAN=SUM/24
15040 FOR I=1 TO 24
15050 DFF=DFF+(HAL(I)-MEAN)^2:NEXT I
15060 SDDEV=SQR(DFF/(23))
15065 POSITION 3,1:? #6;"SDDEV ";SDDEV:POSITION 15,1:? #6;"       "
15070 IF SDDEV>0.5 THEN GOSUB 15100
15080 GOTO 1055
15100 REM -----ALARM TONE-----
15105 POSITION 1,3:? #6;"A.T. ";HOURS;" ";M$;D$:U=0
15110 FOR TONE=1 TO 30
15120 SOUND 0,120,10,10
15125 SOUND 1,85,10,10
15130 FOR D=1 TO 20:NEXT D
15140 SOUND 0,0,0,0
15145 SOUND 1,0,0,0
15150 FOR D=1 TO 10:NEXT D
15160 NEXT TONE
15165 SOUND 0,120,10,10
15166 SOUND 1,85,10,10
15170 RETURN
15200 GRAPHICS 2:POSITION 3,1:? #6;"SDDEV ";SDDEV:POSITION 15,1:? #6;"         "
15210 POSITION 3,3:? #6;"E.T. ";HO;" HRS.   "
15215 POSITION 5,7:? #6;V;" VOLTS  "
15220 POSITION 1,8:? #6;HOURS;"HRS ";MIN;"M. "
15225 ? "SAMPLE #";J;" RUN AVG ";AVG;M$;D$
15230 RETURN
```

                                   "GRASTAT.*"

```
90 DIM HAR(24)
95 DIM Z$(10)
100 GRAPHICS 0:CLOSE #1:OPEN #1,4,0,"K:":POKE 752,1:SETCOLOR 2,0,0
110 DIM SA(300)
120 REM GENERAL INSTRUCTIONS
130 POSITION 15,6:? "STATISTICS":POSITION 18,10:? "FOR":POSITION 11,14:? "NON-ST
ATISTICIANS"
140 FOR K=1 TO 300:SA(K)=0:NEXT K
150 ? ")":POSITION 14,3:? "THIS PROGRAM":POSITION 13,4:? "CALCULATES THE":POSITI
ON 12,5:? "FOLLOWING VALUES"
160 POSITION 9,6:? "FROM THE DATA YOU INPUT:"
170 POSITION 14,9:? "1. MEAN":POSITION 14,11:? "2. STANDARD":POSITION 17,12:? "D
EVIATION"
180 POSITION 14,14:? "4. RANGE"
190 POSITION 9,20:? "PRESS 'C' TO CONTINUE"
200 GET #1,A:IF A<>67 THEN 200
210 REM REQUEST INSTRUCTIONS
220 SUM=0:MEAN=0:DFF=0:SDDEV=0:RG=0
230 ? ")":POSITION 5,12:? "Do you need instructions (y/n)?"
240 GOSUB 1350
250 IF A=89 THEN GOSUB 830
260 REM DATA ENTRY
265 CLOSE #1
270 ? ")":POSITION 9,11:? "Enter Filedate    ":INPUT Z$:N=24
280 IF N>300 OR N<1 THEN FOR I=28 TO 38:POSITION I,11:? CHR$(32):NEXT I:GOTO 270
290 FOR Q=1 TO 2
300 OPEN #1,4,0,Z$
310 FOR I=1 TO 24
320 LET HAR(I)=HAR
330 INPUT #1;HAR
331 NEXT I:CLOSE #1:NEXT Q
335 FOR I=1 TO 24:SA(I)=HAR(I):NEXT I
336 SA(I)=SA
340 FOR J=22 TO 38:POSITION J,12:? CHR$(32):NEXT J
341 OPEN #1,4,0,"K:"
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```
350 REM ERROR CORRECTION REQUEST
360 ? ")":POSITION 3,12:? "Wish to make any corrections (y/n)?"
370 GOSUB 1350
380 IF A=89 THEN GOTO 1120
390 REM CALCULATION OF MEAN AND STD. DEVIATION
400 ? ")":POSITION 15,12:? "PLEASE WAIT":POSITION 6,14:? "STATISTICS BEING CALCU
LATED"
410 FOR I=1 TO N
420 SUM=SUM+SA(I):NEXT I
430 MEAN=SUM/N
440 FOR I=1 TO N
450 DFF=DFF+(SA(I)-MEAN)^2:NEXT I
460 SDDEV=SQR(DFF/(N-1))
470 REM SORTING THE DATA
480 FL=0
490 FOR I=1 TO N-1
500 IF SA(I)<=SA(I+1) THEN 550
510 Q=SA(I)
520 SA(I)=SA(I+1)
530 SA(I+1)=Q
540 FL=1
550 NEXT I
560 IF FL=1 THEN 480
570 REM CALCULATION OF RANGE
580 RG=SA(N)-SA(1)
590 LR=SA(1):HR=SA(N)
600 REM CALCULATION OF MEDIAN
610 IF N/2<>INT(N/2) THEN 650
620 IF SA(N/2)=SA(N/2+1) THEN MDD=SA(N/2)
630 IF SA(N/2)<>SA(N/2+1) THEN MDD=(SA(N/2)+SA(N/2+1))/2
640 GOTO 670
650 MDD=SA(INT(N/2+1))
660 REM PRINT RESULT TO SCREEN
670 ? ")":POSITION 10,2:? "CALCULATION RESULTS":POSITION 9,4:? "*****   ";Z$;" **
***"
680 POSITION 4,6:? "SAMPLE SIZE:":POSITION 26,6:? N
690 POSITION 4,8:? "MEAN(X BAR)":POSITION 26,8:? INT(MEAN*10000+0.5)/10000
700 POSITION 4,10:? "STD. DEVIATION":POSITION 26,10:? INT(SDDEV*10000+0.5)/10000
710 POSITION 4,12:? "MEDIAN":POSITION 26,12:? MDD
720 POSITION 4,14:? "RANGE":POSITION 26,14:? RG
730 POSITION 4,16:? "LOWEST SAMPLE VALUE":POSITION 26,16:? LR
740 POSITION 4,18:? "HIGHEST SAMPLE VALUE":POSITION 26,18:? HR
750 POSITION 13,22:? "PRESS ANY KEY"
760 GET #1,A
770 REM REQUEST TO CONTINUE OR END
775 GOSUB 1400
780 ? ")":POSITION 4,12:? "Wish to process more data (y/n)?"
790 GOSUB 1350
800 IF A=78 THEN GRAPHICS 0:END
810 FOR I=1 TO N:SA(I)=0:NEXT I:GOTO 220
820 REM INSTRUCTION SUBROUTINE
830 ? ")":POSITION 5,5:? "The maximum number of enties is   300, while the mini
mum number is 2."
840 POSITION 5,9:? "The mean is the arithmatic average of the numbers you enter.
"
850 POSITION 5,13:? "THE STANDARD DEVIATION is a measure of how widely your numb
ers spread    from the average."
860 POSITION 10,21:? "Press a key for more."
870 GET #1,A
880 ? ")":POSITION 6,3:? "Since the values you enter tend to form a bell curve(N
ormal Dist.), the Std. Deviation"
890 POSITION 17,5:? " is a measure of the    area under the bell curve."
900 POSITION 3,9:? "No of Std.Dev.(+/-)":POSITION 3,10:? "--------------------
-"
910 POSITION 29,9:? "% Area":POSITION 29,10:? "-------"
920 POSITION 4,12:? "(+/-) 1 Std. Dev.":POSITION 31,12:? "68.3"
930 POSITION 4,14:? "(+/-) 2 Std. Dev.":POSITION 31,14:? "95.5"
940 POSITION 4,16:? "(+/-) 3 Std. Dev.":POSITION 31,16:? "99.7"
950 POSITION 4,18:? "(+/-) 4 Std. Dev.":POSITION 31,18:? "99.9"
960 POSITION 10,21:? "Press a key for more"
970 GET #1,A
980 ? ")":POSITION 4,5:? "The MEDIAN is the value at the    mid-point of your d
ata."
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990 POSITION 4,10:? "The RANGE is the difference between your lowest data value"
1000 POSITION 25,11:? "and the highest. The range is a quick-and-dirty"
1010 ? "estimate of the spread. The standard  deviation is more reliable tha the
     spread."
1020 POSITION 10,20:? "Press 'S' to start"
1030 GET #1,A:IF A<>83 THEN 1030
1040 RETURN
1050 REM DISPLAY CORRECTION OPTIONS
1060 ? ")":POSITION 1,23:? "C=CHANGE DATA   N=NEXT TABLE     Q=QUIT":RETURN
1070 GET #1,A:IF A<>67 AND A<>78 AND A<>81 THEN 1070
1080 IF A=78 THEN 1280
1090 IF A=81 THEN 390
1100 ? ")"
1110 REM ERROR CORRECTION SUBROUTINE
1120 ? ")":POSITION 3,12:? "Remember incorrect sample # (y/n)?"
1130 GOSUB 1350
1140 IF A=78 THEN 1230
1150 ? ")":POSITION 7,9:? "What is the sample #";:INPUT EN
1160 IF EN>N OR EN<1 OR EN<>INT(EN) THEN 1150
1170 POSITION 7,11:? "Sample ";EN:POSITION 22,11:? "Value ";SA(EN)
1180 POSITION 7,13:? "Enter your new value":POSITION 7,14:INPUT C:SA(EN)=C:HAR(E
N)=C
1190 POSITION 7,19:? "Any more changes (y/n)?"
1200 GOSUB 1350
1210 IF A=89 THEN 1120
1220 GOTO 400
1230 GOSUB 1060:POSITION 5,2:? "These are the first ten values:"
1240 POSITION 11,5:? "ENTRY":POSITION 22,5:? " VALUE"
1250 FOR K=1 TO 10
1260 POSITION 12,K+7:? K:POSITION 24,K+7:? SA(K):NEXT K
1270 GOTO 1070
1280 POSITION 5,2:? "These are the next ten values:      ":IF K<=300 THEN GOSUB 1
340
1290 CT=8:FOR K=K TO K+9
1300 IF K>300 THEN K=K+9:NEXT K:GOTO 400
1310 POSITION 12,CT:? K:POSITION 24,CT:? SA(K)
1320 CT=CT+1:NEXT K
1330 GOTO 1070
1340 FOR J=1 TO 10:POSITION 12,J+7:? "    ":POSITION 24,J+7:? "             ";:
NEXT J:RETURN
1350 GET #1,A:IF A<>89 AND A<>78 THEN 1350
1360 RETURN
1400 ? "DO YOU WISH TO PRINT RESULTS?"
1410 GET #1,A:IF A<>89 AND A<>78 THEN 1410
1420 IF A=78 THEN RETURN
1430 LPRINT :LPRINT :LPRINT "24 HOUR VOLTAGE STATISTICS FOR ";Z$:LPRINT
1440 LPRINT "SAMPLE SIZE...............";N:LPRINT
1445 LPRINT "MEAN(X BAR)...............";INT(MEAN*10000+0.5)/10000:LPRINT
1450 LPRINT "STD.DEVIATION.............";INT(SDDEV*10000+0.5)/10000:LPRINT
1455 LPRINT "MEDIAN....................";MDD:LPRINT
1460 LPRINT "RANGE.....................";RG;:LPRINT
1465 LPRINT "LOWEST SAMPLE VALUE.......";LR:LPRINT
1470 LPRINT "HIGEST SAMPLE VALUE.......";HR:LPRINT
1480 ? "DO YOU WANT TO PRINT GRAPHICS?"
1490 GET #1,A:IF A<>89 AND A<>78 THEN 1490
1495 IF A=78 THEN RETURN
1500 GOTO 11960
11960 DIM B$(3)
11990 DIM D$(3),M$(8),DATE$(15),X$(3)
12000 REM ****READ OUT ROUTINE*******
12055 GOSUB 13000
12057 CLOSE #1
12060 X=58
12062 U=HAR(1)
12065 FOR I=1 TO 23:HAR(I)=HAR(I+1):NEXT I
12066 HAR(24)=U
12070 FOR I=1 TO 24
12080 LET HAR=HAR(I)
12098 LET Y=150-28*(HAR-2):Y=INT(Y)
12100 IF HAR<2 THEN Y=150
12115 IF X=58 THEN PLOT 58,Y
12120 IF X>58 THEN DRAWTO X,Y
12122 X=X+10
12125 NEXT I
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```
12130 CLOSE #1
12132 GOSUB 14000:GOTO 13990
12140 ? "DO YOU WANT TO SEE ANOTHER FILE?"
12150 INPUT B$
12160 IF B$="YES" THEN 12040
12170 IF B$="NO" THEN ? ")":? "FINISHED"
12175 FOR D=1 TO 1000:NEXT D:GOTO 12000
13000 ? ")":GRAPHICS 8+16
13010 COLOR 1
13015 PLOT 32,0
13020 DRAWTO 32,158:DRAWTO 318,158
13040 PLOT 64,8:DRAWTO 72,24:DRAWTO 80,8
13045 PLOT 102,8:DRAWTO 98,12:DRAWTO 98,20:DRAWTO 102,24:DRAWTO 108,24:DRAWTO 11
4,20:DRAWTO 114,12:DRAWTO 108,8
13046 DRAWTO 102,8
13050 PLOT 134,8:DRAWTO 134,24:DRAWTO 146,24
13055 PLOT 160,8:DRAWTO 176,8:PLOT 168,8:DRAWTO 168,24
13060 PLOT 192,18:DRAWTO 192,20:DRAWTO 196,24:DRAWTO 202,24:DRAWTO 206,20:DRAWTO
 206,18:DRAWTO 192,12:DRAWTO 192,10
13065 DRAWTO 198,8:DRAWTO 202,8:DRAWTO 206,10:DRAWTO 206,12
13070 PLOT 28,10:DRAWTO 36,10
13072 PLOT 28,38:DRAWTO 36,38
13074 PLOT 28,66:DRAWTO 36,66
13076 PLOT 28,94:DRAWTO 36,94
13078 PLOT 28,122:DRAWTO 36,122
13080 PLOT 28,150:DRAWTO 36,150
13082 PLOT 18,148:DRAWTO 20,146:DRAWTO 22,146:DRAWTO 24,148:DRAWTO 18,154:DRAWTO
 24,154
13084 PLOT 18,90:DRAWTO 18,94:DRAWTO 24,94:PLOT 22,90:DRAWTO 22,98
13086 PLOT 24,36:DRAWTO 22,34:DRAWTO 20,34:DRAWTO 18,36:DRAWTO 18,42:DRAWTO 20,4
4:DRAWTO 22,44:DRAWTO 24,42
13088 DRAWTO 22,40:DRAWTO 20,40
13090 PLOT 16,165:DRAWTO 16,169:PLOT 16,167:DRAWTO 19,167:PLOT 19,165:DRAWTO 19,
169:PLOT 24,165
13092 DRAWTO 23,166:DRAWTO 23,168:DRAWTO 24,169:DRAWTO 25,169:DRAWTO 26,168:DRAW
TO 26,166:DRAWTO 25,165
13094 DRAWTO 24,165
13096 PLOT 29,165:DRAWTO 29,168:DRAWTO 30,169:DRAWTO 31,169:DRAWTO 32,168:DRAWTO
 32,165
13098 PLOT 36,165:DRAWTO 36,169:PLOT 37,166:DRAWTO 38,165:DRAWTO 39,165
13100 PLOT 45,165:DRAWTO 43,165:DRAWTO 42,166:DRAWTO 43,167:DRAWTO 44,167:DRAWTO
 45,168:DRAWTO 44,169
13102 DRAWTO 42,169
13104 PLOT 57,165:DRAWTO 56,166:DRAWTO 56,168:DRAWTO 57,169:DRAWTO 58,169:DRAWTO
 59,168:DRAWTO 59,166
13106 DRAWTO 58,165:DRAWTO 57,165
13108 PLOT 107,165:DRAWTO 105,165:DRAWTO 104,166:DRAWTO 104,168:DRAWTO 105,169:D
RAWTO 106,169:DRAWTO 107,168
13110 DRAWTO 106,167:DRAWTO 105,167
13112 PLOT 163,165:DRAWTO 163,169
13114 PLOT 166,166:DRAWTO 167,165:DRAWTO 168,165:DRAWTO 169,166:DRAWTO 166,169:D
RAWTO 169,169
13116 PLOT 220,165:DRAWTO 220,169
13118 PLOT 224,165:DRAWTO 223,166:DRAWTO 224,167:DRAWTO 223,168:DRAWTO 224,169:D
RAWTO 225,169:DRAWTO 226,168
13120 DRAWTO 225,167:DRAWTO 226,166:DRAWTO 225,165
13122 PLOT 275,166:DRAWTO 276,165:DRAWTO 277,165:DRAWTO 278,166:DRAWTO 275,169:D
RAWTO 278,169
13124 PLOT 281,165:DRAWTO 281,167:DRAWTO 284,167:PLOT 283,165:DRAWTO 283,169
13500 RETURN
13990 GOSUB 15000
14000 TRAP 14030:RESTORE :READ N:DIM P$(N)
14020 FOR I=0 TO N-1
14030 READ J
14040 POKE ADR(P$)+I,J
14050 NEXT I
14065 READ I
14067 RETURN
14069 REM
14990 REM
14991 REM *** DUMP PICTURE ON SCREEN
14992 REM
14993 REM ***
```

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14994 REM
14995 REM ***
14996 REM
14997 REM ***
14998 REM
14999 REM
15000 X=USR(ADR(P$),INV)
15010 IF X THEN GRAPHICS 0:PRINT "DUMP ERROR -":END
15020 RETURN
15030 REM
19990 REM
19991 REM
19992 REM
19993 REM
19994 REM
19995 REM
19996 REM
19997 REM
20000 DATA 566
20010 DATA 169,96,133,7,32,7,0,186,202,189,0,1,56,233,6,133
20020 DATA 204,232,189,0,1,233,0,133,205,160,195,177,204,201,240,144
20030 DATA 123,165,204,24,105,97,133,206,165,205,105,0,133,207,160,0
20040 DATA 177,206,200,17,206,240,101,136,177,206,24,101,204,133,208,200
20050 DATA 177,206,101,205,133,209,140,2,6,160,1,177,208,24,101,204
20060 DATA 145,208,200,177,208,41,15,101,205,145,208,172,2,6,200,208
20070 DATA 207,193,0,203,0,209,0,225,0,230,0,248,0,255,0,68
20080 DATA 1,91,1,114,1,119,1,129,1,145,1,149,1,155,1,193
20090 DATA 1,205,1,211,1,217,1,10,2,42,2,0,0,170,240,5
20100 DATA 104,104,202,208,251,169,132,133,212,134,213,96,104,201,1,208
20110 DATA 236,104,141,7,6,104,13,7,6,240,4,169,0,240,2,169
20120 DATA 255,141,3,6,186,142,0,6,169,0,133,212,133,213,141,5
20130 DATA 6,32,122,241,162,48,169,3,157,66,3,173,43,242,157,68
20140 DATA 3,173,44,242,157,69,3,169,8,157,74,3,169,0,157,75
20150 DATA 3,32,17,242,169,10,32,230,241,166,88,164,89,134,204,132
20160 DATA 205,169,28,141,7,6,160,0,185,48,242,201,255,240,6,32
20170 DATA 230,241,200,208,243,160,0,165,204,72,165,205,72,162,0,177
20180 DATA 204,157,9,6,165,204,24,105,40,133,204,144,2,230,205,232
20190 DATA 224,8,144,235,138,72,152,72,169,8,141,8,6,162,0,138
20200 DATA 30,9,6,106,232,224,8,144,247,77,3,6,174,7,6,202
20210 DATA 208,2,41,7,32,162,241,206,8,6,208,225,104,168,104,170
20220 DATA 104,133,205,104,133,204,200,192,40,144,172,32,132,241,165,204
20230 DATA 24,105,24,133,204,165,205,105,1,133,205,206,7,6,208,134
20240 DATA 169,15,32,230,241,169,155,32,230,241,162,48,169,12,157,66
20250 DATA 3,76,17,242,173,5,6,240,21,72,169,0,141,5,6,169
20260 DATA 28,32,230,241,104,32,230,241,173,6,6,32,230,241,169,10
20270 DATA 208,68,9,128,174,5,6,240,52,205,6,6,208,8,238,5
20280 DATA 6,208,50,206,5,6,72,173,5,6,201,3,176,13,173,6
20290 DATA 6,32,230,241,206,5,6,208,245,240,17,169,28,32,230,241
20300 DATA 173,5,6,32,230,241,173,6,6,32,230,241,104,141,6,6
20310 DATA 169,1,141,5,6,96,140,2,6,141,4,6,162,48,169,11
20320 DATA 157,66,3,169,1,157,72,3,169,0,157,73,3,157,75,3
20330 DATA 169,4,157,68,3,169,6,157,69,3,32,17,242,172,2,6
20340 DATA 96,32,86,228,162,48,189,67,3,16,245,133,212,174,0,6
20350 DATA 154,162,48,169,12,157,66,3,76,86,228,45,242,80,58,155
20360 DATA 8,27,16,0,74,255,63093
25000 LPRINT :LPRINT :LPRINT "          ";Z$
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We claim:

1. A method for providing an early warning of the future occurrence of an earthquake, comprising the following steps:
   (a) measuring the field strength of at least one broadcast radio frequency signal at a location separated from the place of transmission of said signal, and
   (b) providing a humanly-sensible indication if the strength of said signal decreases beyond a predetermined amount from a previous value thereof.

2. The method of claim 1 wherein said measuring is done on a broadband basis so as to measure the strength of a plurality of radio signals.

3. The method of claim 1 wherein said measuring is performed by rectifying and filtering said radio frequency to provide a direct current voltage and wherein said indication is provided in response to a predetermined drop in the value of said voltage.

4. The method of claim 1 wherein said indication is provided if the strength of said signal decreases a predetermined amount from an average value thereof.

5. The method of claim 4 wherein the value of said signal is periodically sampled for a predetermined period, a standard deviation of the resultant samples is calculated, and said indication is provided if said standard deviation exceeds a predetermined value.

6. The method of claim 4 wherein said signal is sampled once per minute, the resultant minute samples are averaged each hour, and the resultant hourly averages are tested to determine if the latest hourly average has

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deviated from previous hourly averages beyond a predetermined amount.

7. The method of claim 1 wherein said indication is provided only if at least wo separated receivers detect said predetermined drop in the strength of said signal.

8. The method of claim 1 wherein a visible record of said signal's field strength is plotted as it is measured.

9. The method of claim 1 wherein the strength of a plurality of broadcast signals are measured by rectifying and filtering said signals to provide a direct current voltage, said direct current voltage is periodically sampled, the resultant samples are averaged periodically to provide periodic averages, the standard deviation of said periodic averages is calculated, and said indication is provided if the value of said standard deviation exceeds a predetermined value.

10. A system for providing an early warning of the future occurrence of an earthquake, comprising:
(a) means for measuring the field strength of a least one broadcast radiofrequency signal, said means being arranged to measure said field strength at a location separated from the place of transmission of said signal, and
(b) means responsive to the measured strength of said signal for providing a humanly-sensible indication if said measured field strength decreases beyond a predetermined amount from an average value thereof.

11. The system of claim 10 wherein said means for measuring comprises a broadband receiver for measuring the strength of a plurality of radio signals.

12. The system of claim 10 wherein said means for measuring comprises means for rectifying and filtering said radio frequency signal to provide a direct current voltage and wherein means for providing said indication is arranged to do so in response to a predetermined drop in the value of said voltage.

13. The system of claim 11 wherein said means for providing said indication is arranged to do so if the strength of said signal decreases a predetermined amount from an average value thereof.

14. The system of claim 13 wherein said means for

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measuring comprises means for periodically sampling the value of said radio signal for a predetermined period, and wherein said means for providing said indication is arranged to calculate the standard deviation of the resultant samples and to provide said indication if said standard deviation exceeds a predetermined value.

15. The system of claim 13 wherein said means for periodically sampling said signal is arranged to take a sample once per minute and to average the resultant minute samples each hour, and wherein said means for providing said indication is arranged to do so by testing the resultant hourly averages to determine if the latest hourly average has deviated from previous hourly averages beyond a predetermined amount.

16. The system of claim 10 wherein said means for providing said indication is arranged to do so only in response to the detection of a predetermined drop in the strength of said signal by two separated receivers.

17. The system of claim 10 further including means for making a visible record of said signal's field strength as it is measured.

18. The system of claim 10 wherein said means for measuring includes means for measuring the strength of a plurality of broadcast signals by rectifying and filtering said signals to provide a direct current voltage, means for periodically sampling said direct current voltage, means for averaging the resultant samples periodically to provide periodic averages, and wherein said means for providing said indication includes means for calculating the standard deviation of said periodic averages, and providing said indication if the value of said standard deviation exceeds a predetermined value.

19. The system of claim 10 wherein said means for measuring and providing said indication comprises a broadband receiver arranged to provide a direct current output voltage, an analog to digital converter, and a programmed computer arranged to receive the outpt of said converter.

20. The system of claim 19 further including means for periodically storing received field strength values and providing a visible plot of the continuous value of said field strength.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 4,628,299

DATED : 1986 Dec 9

INVENTOR(S) : J. B. Tate and D. E. Brown

It is certified that error appears in the above–identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 1, line 6, change "fugure" to --future--.

Col. 3, line 24, change "ouo" to --out--.

Col. 8, line 25, change "specifications" to --"specificities--.

Col 8, near bottom, delete handwriting at top of program listing reading "8299 Issue of 12-9".

Signed and Sealed this

Tenth Day of March, 1987

Attest:

DONALD J. QUIGG

Attesting Officer   *Commissioner of Patents and Trademarks*