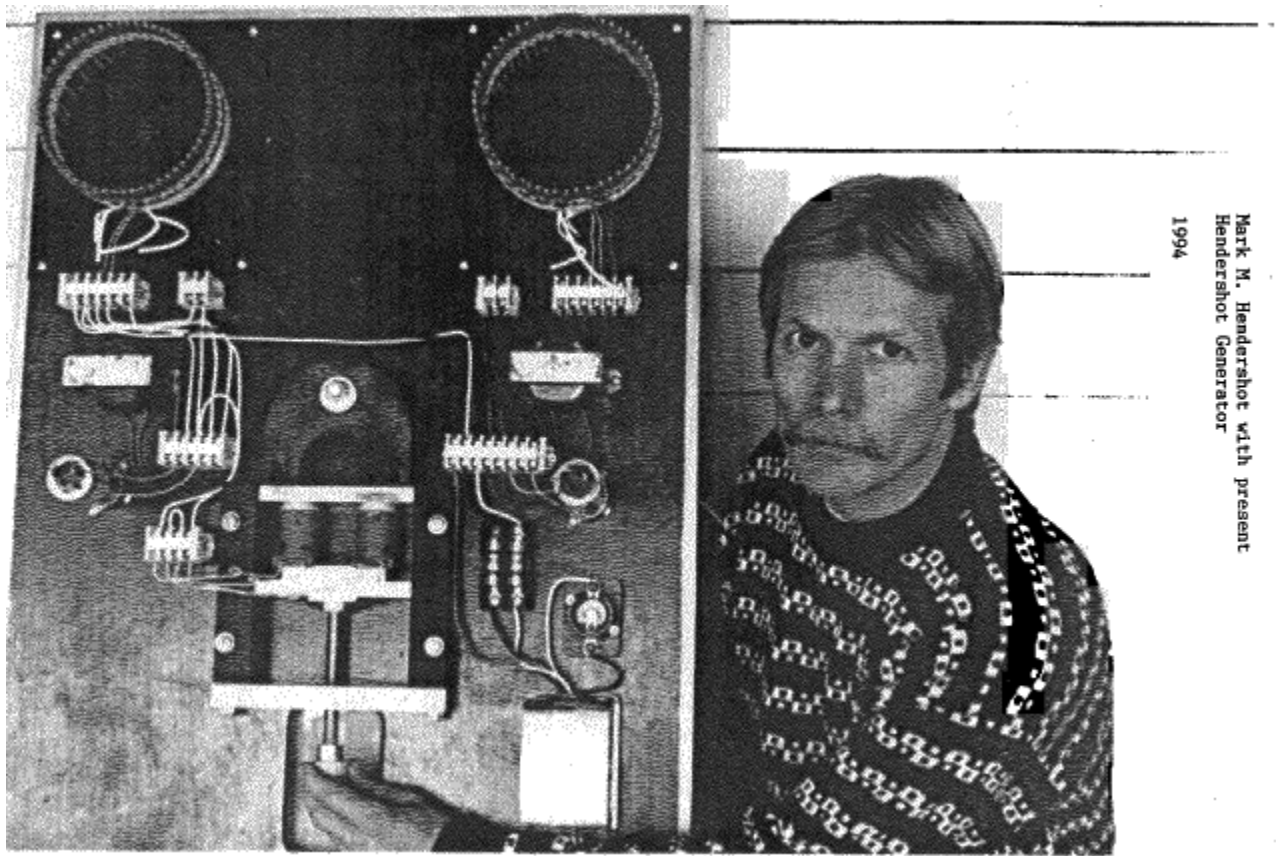


## The Hendershot Generator

A man by the name of **Lester Hendershot** claimed to have produced useable electric power from this device in the range of 200 to 300 watts in circa 1930

For a time his Son **Mark M. Hendershot** was working on trying to duplicate his father but I think he has ceased this and has been unsuccessful to my knowledge and unable to produce results his father obtained..



FROM MARK M. HENDERSHOT,

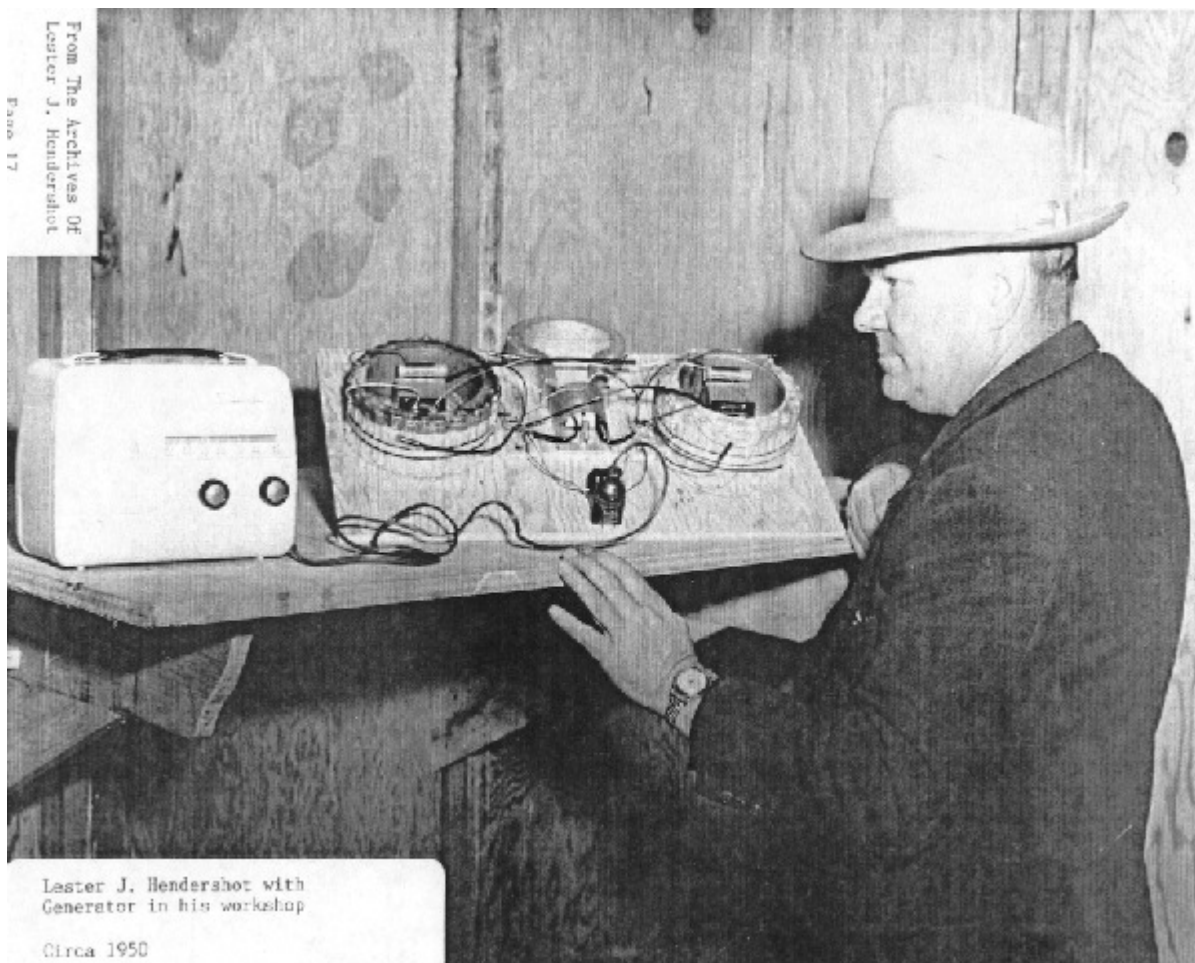
As a child, I witnessed my Father's machine in operation and adjusted the model he built with success. Enclosed you will find some letters from various parties who contacted my Father, as well as photos taken during operation of the machine (note the light emitting from the bulb in the photos).

I am working on a model now and hope to have it working properly for the International Tesla Symposium in 1995. I have had some results with my model but not at the level of my Father. I am hoping that the proceeds derived from the sale of this packet will allow me to purchase the test instruments to do the proper testing to tune the coils and capacitor to a level that will achieve results equal to those of my Father.

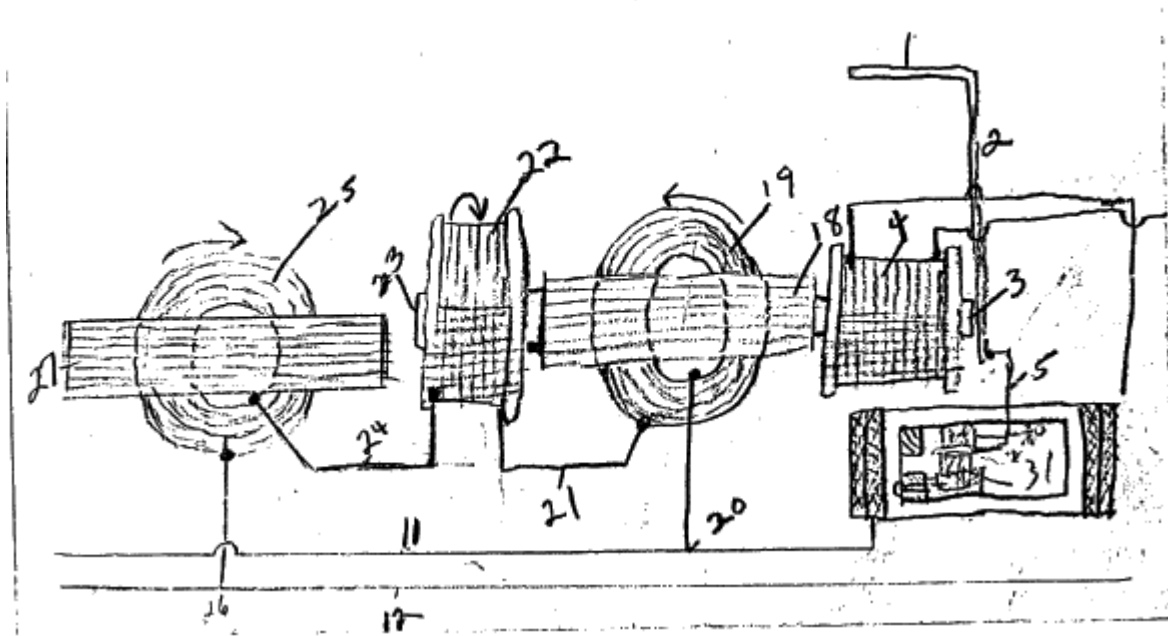
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Yours Truly,



A couple of constructors did report successful reproduction of this invention although I am unable to confirm it.



I have heard from others that have been unsuccessful and the information is reproduced for your enlightenment and possible experimentation, if so let me know how you get on. so that others may share in your discoveries as well.

The following article is taken from the articles from the Archives of Lester J Hendershot and is reproduced in the spirit that Mark Hendershot has indicated in his letter above.

**Tesla Bookshop** I believe.

My invention relates to the production of electric current and has for its object to generate current for power & lighting purposes., and any other uses that it is desired to make of it.

I'm not sure But I believe this relates to an earlier invention and also the diagrams are missing..

the second one shown later in this web page is more important check it out for yourself.

Referring to the drawings, in which like parts are similarly designated

**Fig 1** is the diagrammatic view of one construction.

**Fig.2** is similar view of another construction.

Referring to Fig. 1: I use a shall collector 1, preferably a small metallic plate horizontally disposed and having a downwardly extending flexible strip 2 of magnetic material terminating opposite a core 3 of a first coil to be attached thereby.

The strip 2 has soldered to it one end of a copper wire 5, which may or may not extend to the collector proper 8, whose other end end is soldered to the middle of the inner winding, or layer of second coil 6.

This coil is composed of turns of no. insulated copper wire, Is provided with a permanently magnetic core 7, and Is preferably parallel to the first coil.

The core 7 and its windings 6 lie In the center of a honeycomb coil 3 that has two windings, each composed of turns of no. wire, the windings being cross wound.

The ends of the winding 6 are each connected by connecting wires 9 & 10 respectively, to an end of one of the crossed windings of the honey-comb coil 8 and the other ends of the windings are then connected to the power lines or terminals 11 & 12 respectively,

The ends of the first coil 4 are respectively connected to two coils 13 and 14 wound in opposite directions, each consisting of turns of no. and provided with soft iron cores 15 and 16 respectively. The coils 4, 13, and 14 are; connected in series in a preferably permanently closed circuit with a resistance 17 included between the coils 13 & 14, and in the structure that I have made, this resistance is small of about Meg. Ohms.

The coils 13,14 are substantially parallel to the honey-comb coil, one on each side of the longitudinal vertical central plane of the apparatus. The core 3 is soldered to a set of small transformer plates 18 and forms an extension of these plates.

These plates have openings In their center for the reception of a fine wire coil 19, composed of turns of no. wire. There is no core through coil 19. The inner end of coil 19 is connected to one line terminal 11 at 20, and, the outer end is connected by wire 21 to the third coil 22 of turns of no. wire, whose core 23 has metallic connection with transformer plates 18. The core 23 may be omitted.

The end of the outer turn of coil 22 is connected by wire 24 to the inner turn of a second fine wire coil 25 like coil 19 but wound in the opposite direction, and the opposite direction, and the of this coil is connected at 26 to the other power line terminal 12.

The fine wire coil 25 is placed In the interior of laminated transformer plates 27, identical with the plates 18 and the coil has preferably no metallic core, and the transformer plates 27 are separate from those 18. The direction of the winding of the coils is indicated by arrows,

A lamp or small motor connected across the ends of the power lines or terminals 11 & 12 will operate continuously when the longitudinal axis of device is directed north and south, and will cease to produce power when deviated from the north & south direction.

That is to say, the motor will stop or the lamp will cease to glow. To overcome this objection for some purposes, and In order to permit the structure to operate In any direction which its axis is placed, I have modified the structure of coil 8 and the parts within it; all other parts-remaining same.

The extension '2 of plate 1 is connected by wire 5 to a small pivoted soft iron plate 28 within a short coil 29 of turns of no. wire, between brass end plates 30 and is held in a soft iron yoke 31 by a screw 32 that passes through one pole end of a ring magnet 33.

The screw 32 serves to hold the yoke 31 to the magnet pole end and at the same time holds the toll 29 in the yoke 31. The plate 28 is pivoted In one of the brass end plates 30. The coil 8a is a single wire cross wound coil having, 1 turns of No. wire. One end of this coil is connected by wire 9 to one end of the coil 29, and the other end to the line wire 11. Surrounding this coil 8a is a second coil 8b of the same size wire and the same No. of turns. The other end of coil 29 is connected by wire 10 to one end of the second and outer honey-comb coil 8b whose other end is connected to the other power line terminal 12.

It will be noted in both constructions shown the coil 4 extends across one side of the coil 3 or the two coils 8a and 8b and also across the coil 6 or 29.

That coils 6 or 29. lie within the coils 8 or the 8a & 8b, and the axis of coils 4 & 29

.That coils 6 and 29 must be substantially parallel.

Also the axis of coils 13 and 14 are substantially parallel to the honey-comb coils 8, 8a and 8b.

I claim. In an electrical apparatus, a collector, a coil having a core one end of which is in attracting relation to a portion of said collector, a honey-comb coil having: two windings connected to power terminals, a second coil in the honeycomb coil each end of which is connected to one of the windings of the Honeycomb, means to send electricity from the collector to said second coil, a pair of oppositely wound coils parallel to the honey-comb coil & constructed in series with the first coil, a fine wire coil, transformer iron, surrounding fine wire coil, a third coil, a second fine wire coil, transformer iron surrounding the same, said third coil and fine wire coils connected in series across the line.

2. In an electrical apparatus, a collector having an extension, a coil having a core one end of which is in attracting relation to said extension, a honeycomb coil having two windings perpendicular to the coil and its one end connected to lower terminals, a second coil within the honey-comb coil, each of which is connected to the opposite end of one of the honey-comb windings, a permanent magnet is or in inductive relation to said second coil, means to send current from the collector to the second coil, a pair of oppositely wound coils, said first coil connected in series between said pair of oppositely wound coils, a fine wire coil, transformer iron surrounding said coil leaving a continuation that forms the core of the first coil, a third coil between which and the first coil said transformer iron, and fine wire coil is arranged a second fine wire coil wound in an opposite direction to the first fine wire coil, transformer iron surrounding the second fine wire coil, solid fine wire coils being connected in series through the third coil across the power terminals, and the fine wire coils arranged in rectangular relation to the first & third coils.

3. In an electrical apparatus, a collector, a coil having a core one end of which is in attracting relation to a portion of said collector, a honey-comb coil having- two windings connected to power terminals, a second coil in the honeycomb coil each end of which is connected to one of the windings of the honeycomb coil, means to send electricity from the collector to the second coil, a pair of oppositely wound coils parallel to the honey-comb coil and connected in series with the first coil, a resistance between said oppositely wound coils, a fine wire coil, transformer iron surrounding the fine wire coil, a third coil, a second fine wire coil, transformer iron surrounding the same, said third coil and fine wire coils connected in series across the line.

4. In an electrical apparatus, a collector, a coil having a core one end of which, is an attracting relation to a portion of said collector, a honey-comb coil having two windings each, connected at one end to power terminals, a second coil in the honeycomb traverse thereto and parallel to the first coil and connected to the other ends of the honey-comb windings, a permanent magnet in inductive relation to said second coil means to send current from the collector to said second coil, a pair of oppositely wound coils parallel to the honeycomb coil, a resistance between the oppositely wound coils, said coils and resistance included in series in a closed circuit between the ends of the first coil, a fine wire coil, laminated transformer iron surrounding said fine wire coil but not passing there through and having an extension that forms the core of the first coil, a third coil between which and the first coil said transformer iron and fine wire coil is arranged, the first & third coils is being wound in the same direction, a second fine wire coil wound in opposite direction to the first fine wire coil, laminated transformer iron surrounding the second fine wire coil but not passing there through said coil connected between the two fine wire coils in series across the power terminals.

5 In an electrical apparatus, a collector, a coil having a core one end of which is in an attracting relation to a portion of said collector, a honeycomb coil having two windings each connected to a power terminal, a ring magnet in the honey comb coil, a second coil in the magnet and connected in series between the windings of the honey comb coil, a pivoted oscillation member within the second coil, means to conductively connect said collector and member, a pair of oppositely wound coils adjacent the honey-comb coil and connected in series with said first coil, a fine wire coil, transformer iron surrounding the fine wire coil, a third coil, a second fine wire coil, transformer iron surrounding the last coil, said third coil and fine wire coils connected in series across

the power terminals.

6 In an electrical apparatus, a collector, a coil having a core in attracting relation to said collector, a honey-comb coil having two windings each connected to a power terminal, a ring magnet in the honey-comb coil, a second coil in the magnet whose axis is at right angles to the axis of the honeycomb coil, a pivoted oscillating member within the second coil, means to conductively connect the collector and member, a pair of oppositely wound coils adjacent the honeycomb coils parallel thereto and connected in series with the first coil, a fine wire coil, transformer iron surrounding the fine wire coil, a third coil, a second fine wire coil, transformer iron surrounding the last coil, said third coil connected in series between the fine wire coils across the power terminals.

7. In an electrical apparatus, a collector substantially horizontally disposed and having a substantially vertical extension, a coil having a core in attracting relation to said extension, a honey-comb coil having two cross wound windings each of which is connected at one end to power terminals, a ring magnet within the honey-comb coil, a yoke shaped extension connected to one of the ends of said magnet, a second coil held in said extension parallel to the first coil, a soft iron member pivoted in the second coil, means to electrically connect said extension and member while permitting independent movements thereof, a fine wire coil laminated transformer iron surrounding the fine wire coil and having an extension that forms the core of the first coil, the third coil arranged at right angles to the first coil, a second fine wire coil wound in a direction opposite to the winding of the first fine wire coil and parallel thereto, laminated transformer surrounding the last coil, said third coil arranged between the fine wire coils in series and the series connected across the line terminals.

### **Assembly of the famous Hendershot basket weave power capture unit**

Two additional capacitors are required for the hand wound capacitor used in center of the basket weave coils and are also, made from Pyramids TM 58 or a suitable substitute type trimmed to size. Coils are identical in construction so only one will be described.

The coil is cylindrical, 5-15/16 diameter (See Fig 2). It is

wound like a basket around fifty seven 1/8 in. diameter wood dowel pins three inches long. The dowel pins are evenly spaced on the circumference of the circle. All coils are wound in the same direction, weaving in and out between dowel pins mounted in the same type base to hold them rigid. Starting at the base, L3 is 64 turns on No. 24 gauge copper enamel or Formvar wound. L1 and L2 is Belden thermoplastic hookup wire No. 20 gauge, a foot spool is required for each coil L1 and L2. The 25 feet will end up with 12 turns each wound in the same fashion. Hendershot always used L1 red and L2 yellow for easy identification.

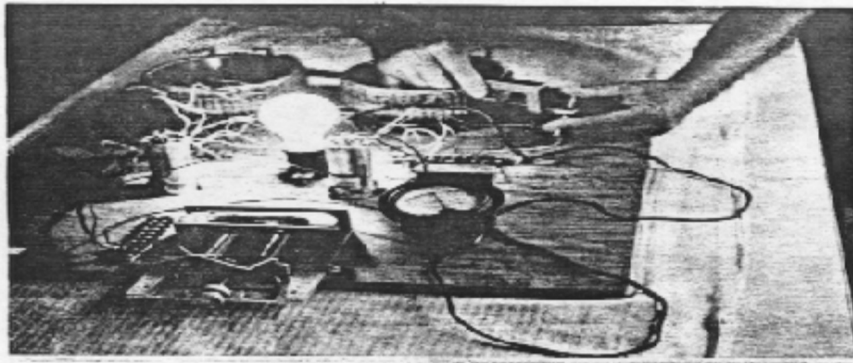
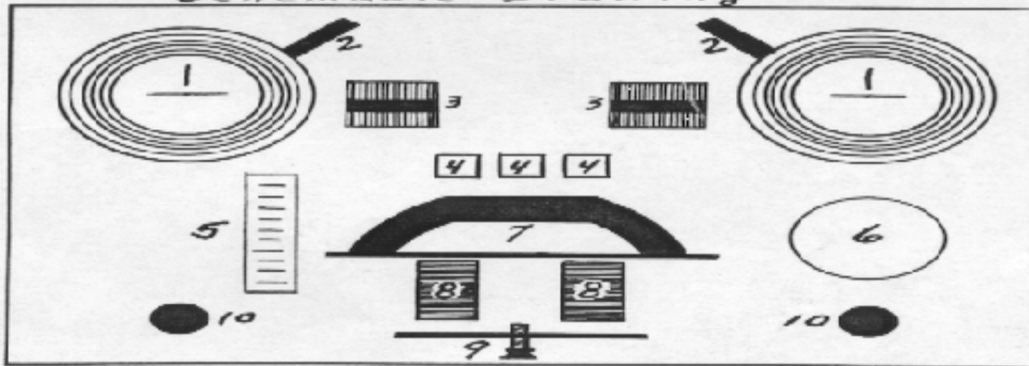


Photo Taken During Actual Operation of the MagnaTronic Generator by Lester J. Hendershot

Schematic Drawing

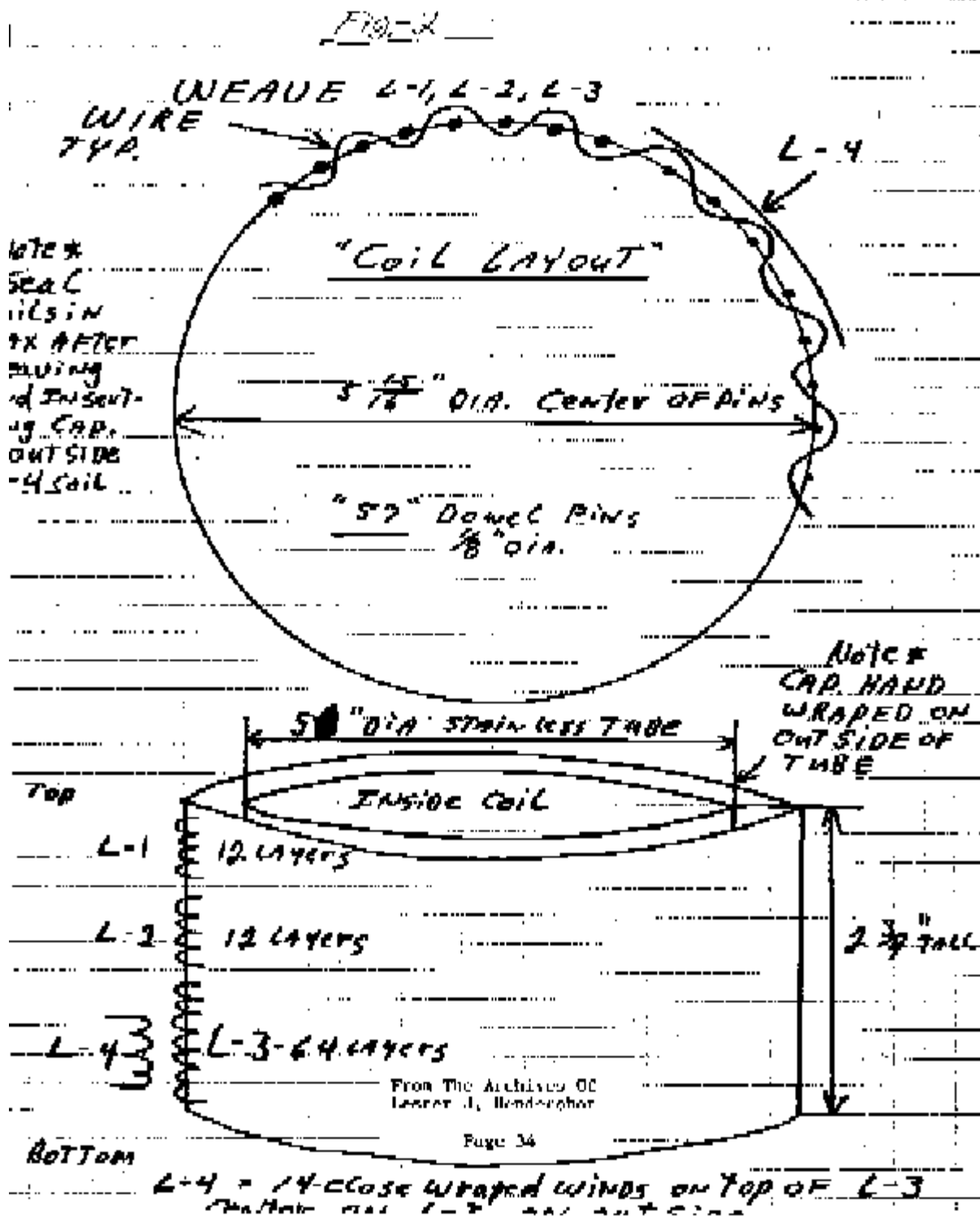


- 1. Hendershot Coil
- 2. Resonance Tuner
- 3. Step-up Transformer
- 4. Lead Connector
- 5. Winna Bank

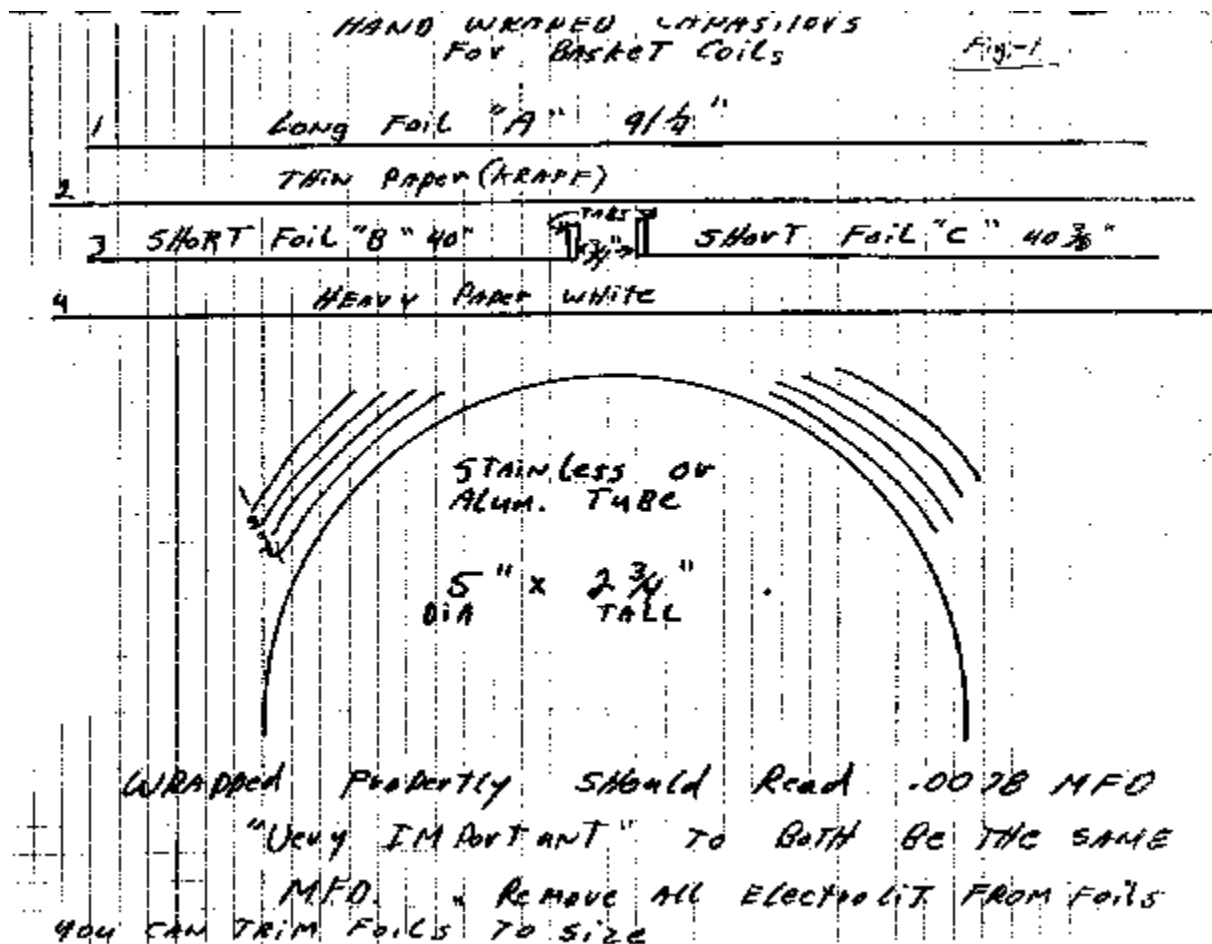
- 6. Voltage Meter
- 7. Horseshoe Magnet
- 8. Electro Magnet
- 9. Adjustment Key
- 10. Capacitor

From The Archives Of  
Lester J. Hendershot

L4 is made from No.18 gauge copper enamel coated or Formvar magnet wire. 14 turns close wound over the outside diameter of L3 in the center of L3 Plastic electrical tape is wrapped around L3 to form a smooth surface for winding, after winding the 14 turns. wrap additional tape to hold L4 in place.



The hand wrapped capacitors are the most difficult to build and are the critical key item to success or failure in producing results. The foil from two capacitors, Pyramid electrolytic TM 58, must be removed from the can that encloses the foil by cutting the top or bottom off with a hack saw or other cutting device. The coiled foil is removed from two capacitors and spread out on a flat table. A TM 58 capacitor should measure, including foil and paper, 91-1/8 in. long and 2-3/4 in wide. Wipe off excess electrolytic solution so that it is dry. One side of the paper holding the foil will be full length, the opposite side will be split with terminal connections appearing at each end of the split portion. The capacitors that were used in the early experiments had a gap between the split foil of 3/4 of an inch. You may use a substitute capacitor and trim foil to size.



Prepare two cylinders of metal with dimensions of 5 in. in diameter by 7-3/4 in. wide. A stainless steel sheet metal .032 thick was used in Hendershot's cylinders, open at both ends. Before wrapping begins, insulate the cylinders with pure craft paper (see Fig.1 & 3). Ordinary brown wrapping paper is unsatisfactory as it contains impurities. Wax paper might be used as a substitute.

It is interesting to note that Hendershot originally used one pound coffee cans for the capacitor cylinders but found that after a period of time the electrolyte left in the capacitor paper would leave perforations in the metal, rendering the cylinder useless. This is why he made the later cylinders of stainless steel.

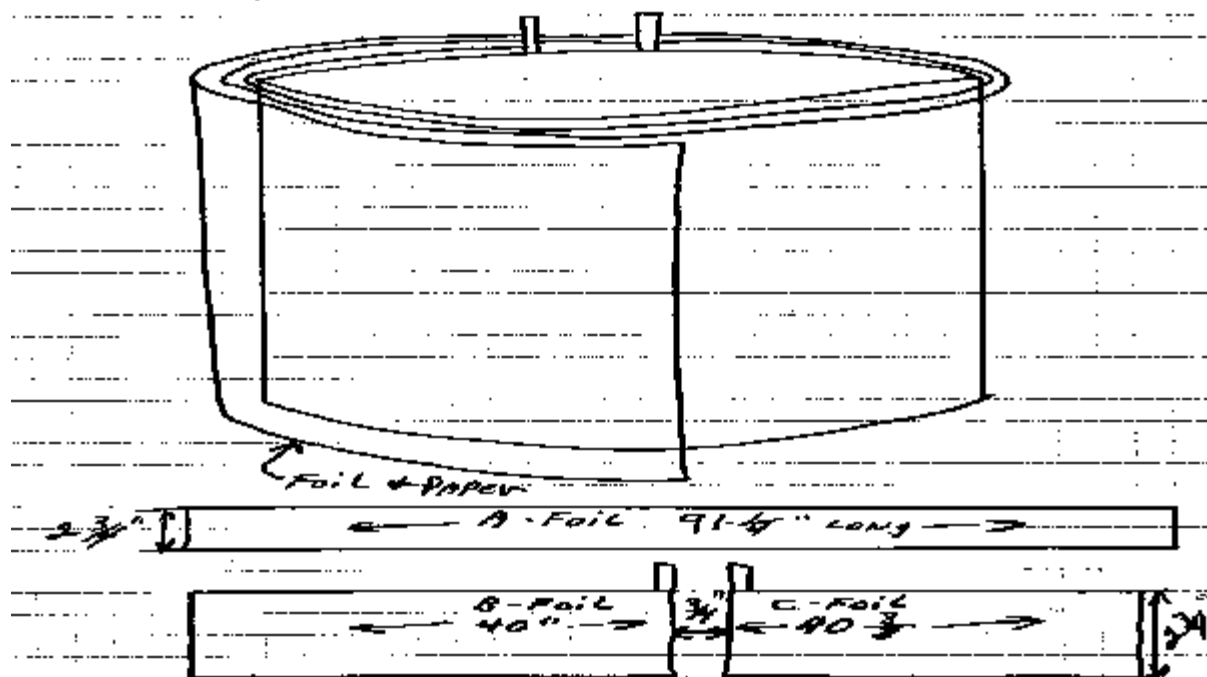
after insulating the cylinders wrap the capacitor foil and paper around each other of the cylinder.

As shown on the drawings included .

Secure the wrapped capacitor with a string or tape so that it will not unravel.

Fig. 3

Cap. Foil TABS. For Hooking  
Wires TO E-H



Both units should look the same

Each of the completed hand wound capacitors cylinders are placed inside the basket weave coils.

After centering pour melted paraffin into the outsider diameter of the cylinder and inside diameter of the coils.

The melted paraffin will run into the turns of the wire sealing the complete units.

If correct tension were applied while wrapping the capacitor paper and foil , the measured capacity should be .0078 MFD.

Note: At one time Hendershot's papers said 1.3 MFD.

It is very difficult to obtain the correct capacity and this process may, have to be repeated many times to arrive at the right value for each unit. Short circuits of the capacitor will render the results useless and of course make it impossible to measure the resultant capacitance value. For accuracy the capacitors should be measured with a reliable capacitor bridge. Hendershot was able to accomplish this feat intuitively.

(See figure 4) If all conditions for the circuit are met with the

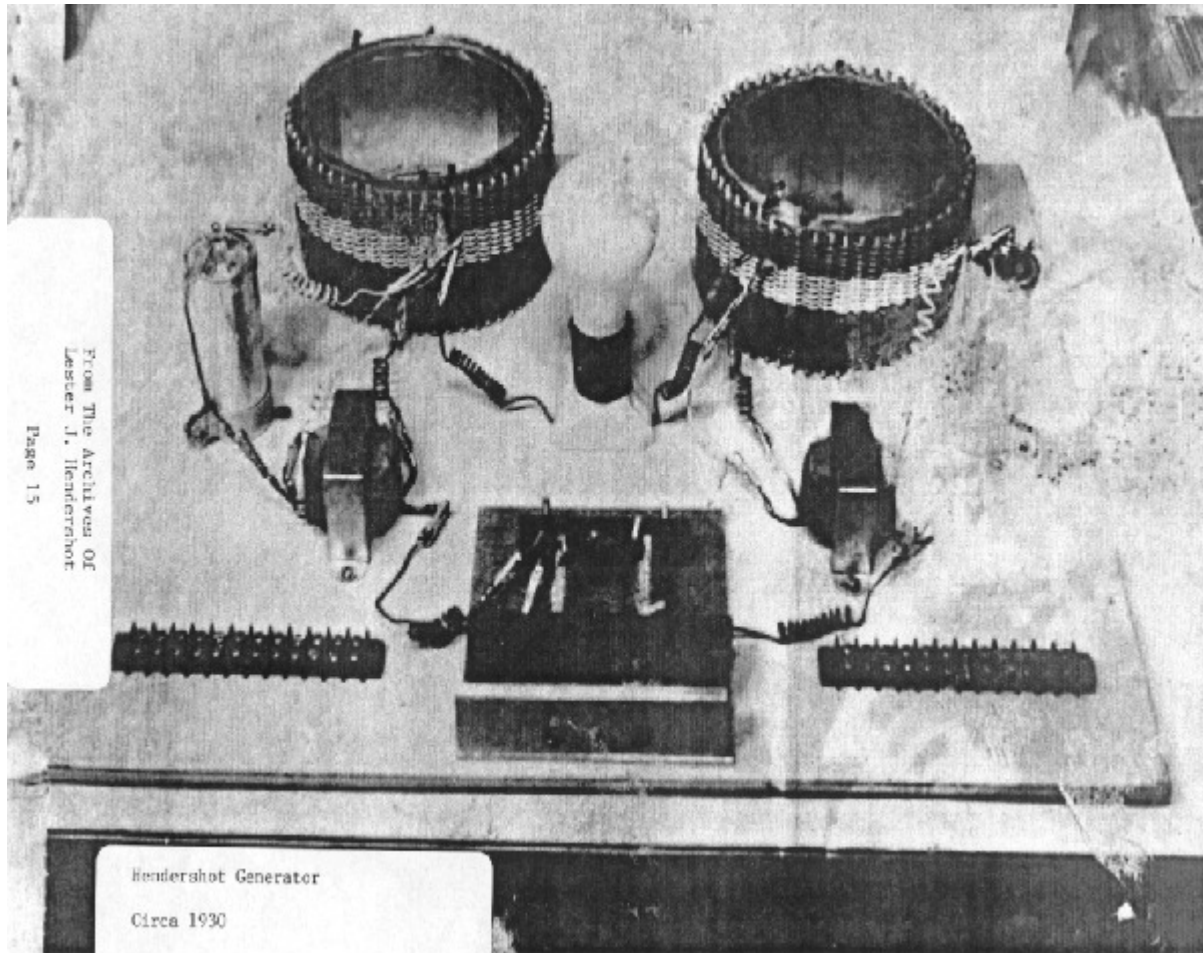
proper component values and if the wiring is made according to the schematic diagram, the unit- should function and produce 300to 500 watts of energy.

The only limiting factor to the amount of power that can be extracted is the

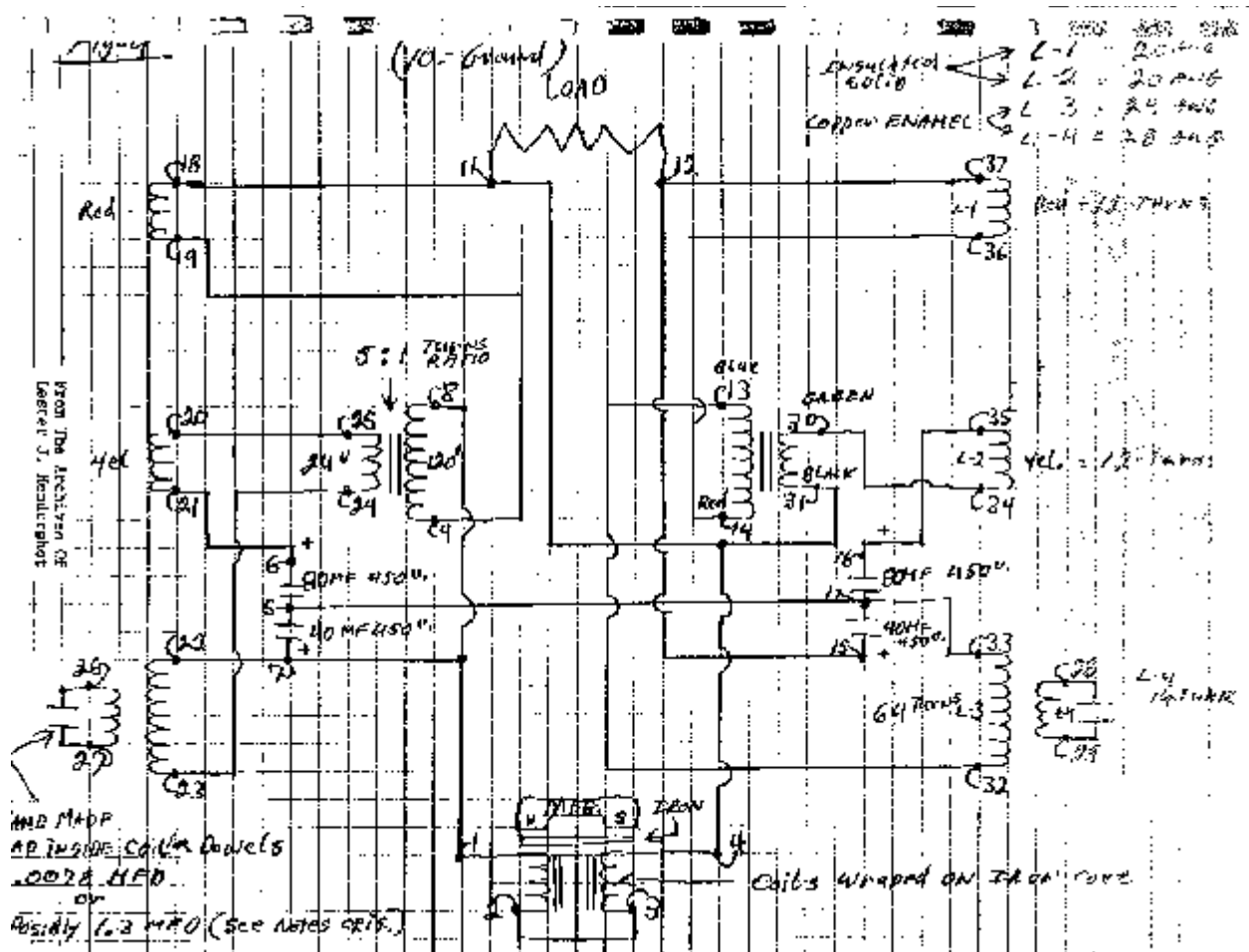
wire size used in the coils and transformers. Hendershot on many occasions when applying excessive out-out loads, would burn up the unit by the over heating of the wiring. Some variations can be made in the circuit

wiring but what changes can be made remain unknown at this time.

After a unit was wired either by Hendershot or other experimenter she would sit down at the device with a length of insulated wire bared at each end and begin making connections to various terminals of the unit until the solenoid-magnet combination would buzz and the output load, if it was a standard 110 volt Light bulb, would glow. He then would adjust the air gap between the magnet and solenoid coils until full brilliance was achieved and the buzzer produced a steady tone. This procedure would take from a few minutes to several hours.



On one occasion he adjusted the unit for 10 to 15 minutes and only achieved a flash of light from the output. Several hours later he found it necessary to rebuild the capacitors before any further tests could be made. Either the unit would work immediately or not at all, depending on the unknown characteristics of the phenomena.

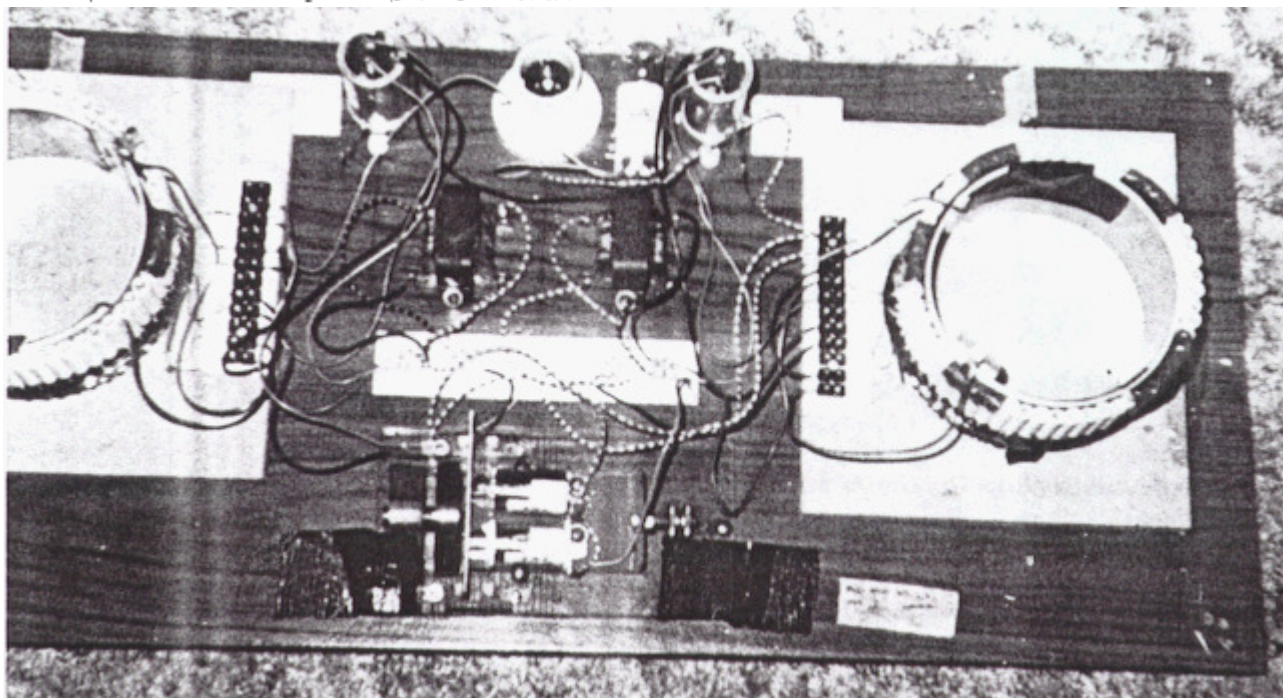
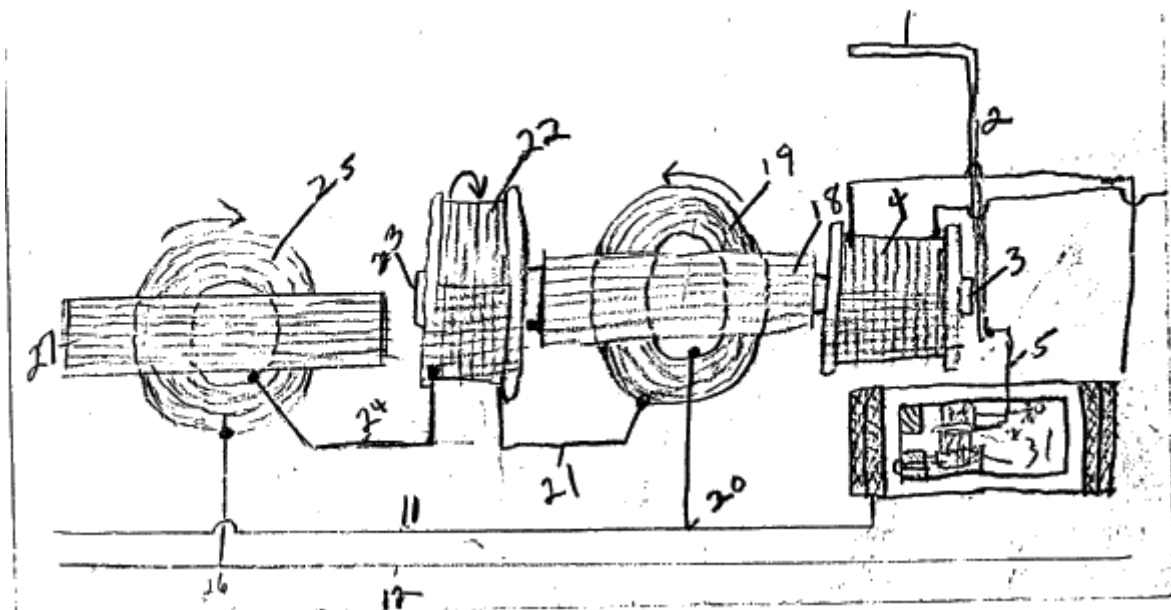


## MATERIAL LIST

- 2 Dual 40-80 MFD Electrolytic Capacitors 400 Volt Non-Polarized
- 2 5:1 Ratio 24 Volt to 120 Volt Transformers (Vertical Oscillator Type)
- Red, Black, Blue, Green Coded Wires
- 250' #20 AWG Insulated Solid Copper Wire
- 100' #28 Enamel Copper Wire
- 500' #24 Enamel Copper Wire
- 114 311 x 11811 Wood Dowels
- 1 Horseshoe or U Shaped Magnet
- 2 Plates for Dowel Pin Mounting
- 1 Screw Type Adjusting Mechanism
- 1 1-1/211 x 1180 x 611 Flat Iron Bar (Approx.)
- 2 Iron Solenoid Cores

Miscellaneous parts, screws, bolts, wire, etc.

An Australian Constructors setup



The circuit diagram for the Hendershot Generator.

FROM MARK M. HENDERSHOT,

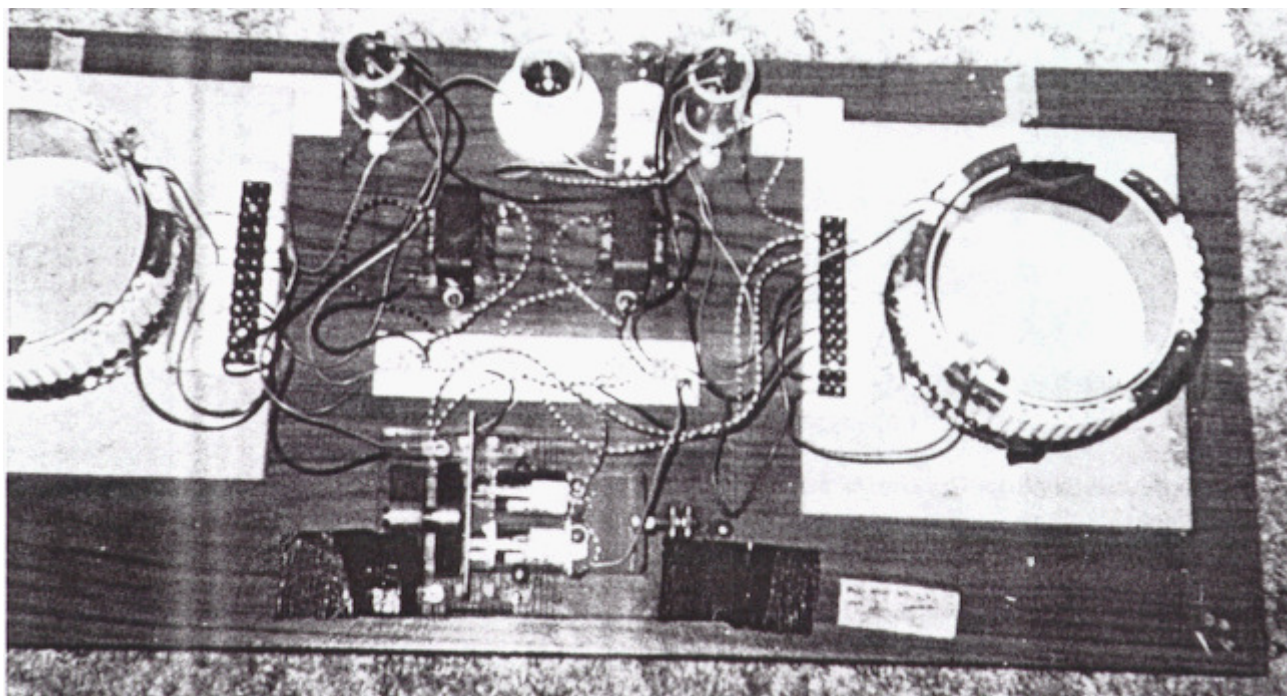
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It is my sincere belief that once again the theory and working proof can be presented to a world which may now be ready. May we all work in parallel and perhaps, in cooperation to realize the dream once held by a man who believed when the world did not.

Yours Truly,



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Yours Truly,

A handwritten signature in black ink, appearing to read "Mark M. Hendershot". The signature is fluid and cursive, with a large, sweeping flourish at the end.