# FREE-ENERGY:
NIKOLA TESLA SECRETS FOR EVERYBODY

by Vladimir Utkin   u.v@bk.ru

FIRST SECRET
All of Tesla's secrets are based on
ELECTROMAGNETIC FEEDBACK

EXPLANATION: An ordinary energy system comprises a generator and motor (common view), and can be completed with an electric current feedback as shown here in electrical circuit (a)
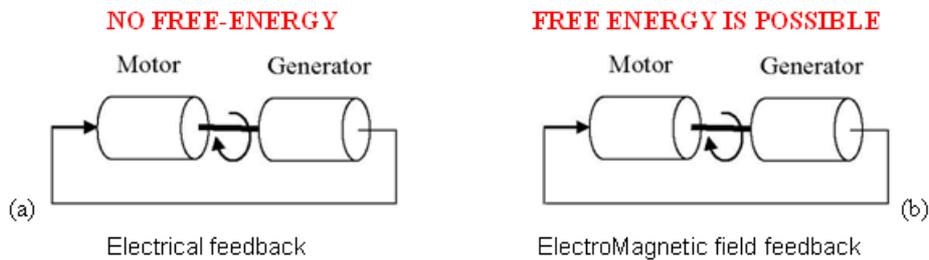
In case (a), the system once started, will slow down and stop because of friction, resistance and so on. Nikola Tesla arranged a feedback loop for the electromagnetic field: case (b), and he said:

ELECTROMAGNETIC FIELD FEEDBACK DESTROYS THE INTERACTION SYMMETRY

This means that an action no longer has an equal and opposite reaction

In case (b), once started, the system will accelerate in spite of friction, resistance and so on (provided that the phase of the electromagnetic feedback is positive and is sufficiently large). In order for an electromagnetic field to exist in a motor, there must be some energy input, and Tesla said:

ENERGY GENERATION BY IT'S OWN APPLICATION

QUESTION: How can you produce positive electromagnetic field feedback?

AN ANSWER: The simplest and well-known example is Michael Faraday's unipolar motor, as modified by Nikola Tesla:
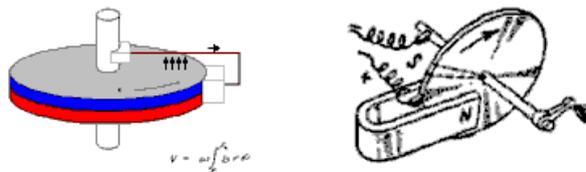

An ordinary unipolar motor consists of a magnetised disk, and a voltage applied between the axis and a point on the circumference of the disc as shown in (a) above. But an ordinary unipolar motor can also consists of an external magnet and a metal disc with a voltage applied between the axis and a peripheral point on the disc as in (b) above. Tesla decided to modify this version of the unipolar motor. He cut the metal disc into helical sections as shown here:
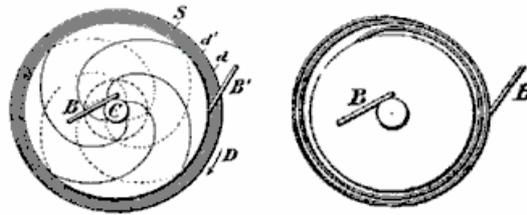
In this case, the consumption of current produces an additional magnetic field along the axis of the disc. When the current-carrying wires are tilted in one direction, their magnetic field augments the main external magnetic field. When the wires are tilted in the other direction, their magnetic field reduces the main external magnetic field. So, the current flow can increase or reduce the external magnetic field of the unipolar motor.

<p align="center"><strong style="color:red">Amplification is not possible without applying power</p>

If it is possible to arrange a magnetic field feedback loop for mechanical devices, then it is probably possible to arrange it for solid-state devices like coils and capacitors. The others parts of this article are devoted to devices which use coils and capacitors. All of the examples in this article are only intended to help your understanding of the principles involved. Understanding would be made easier if we pay attention to the ferromagnetic shielding of the second coil in the transformer invented by Nikola Tesla:
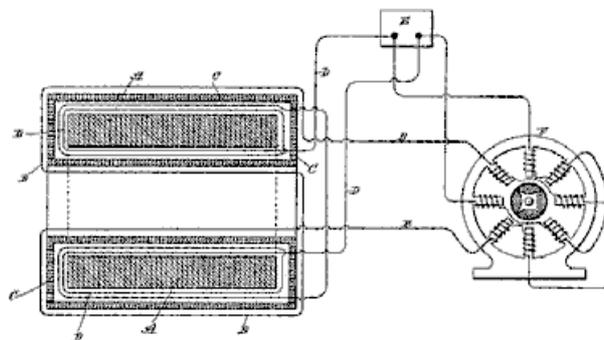
In this case, the ferromagnetic shield separates the first and second coils in the transformer from each other, and that shield can be used as magnetic field feedback loop. This fact will be useful for understanding the final part of this article. It is also helpful to consider the properties of the electrostatic field.

<p align="center"><strong style="color:red">ELECTROSTATICS</p>
<p align="center">(scalar field and the longitudinal electromagnetic waves)</p>

Comment: Mr. Tesla said, "there is radiant energy, perpendicular to the surface of any charged conductor, produced by a scalar electromagnetic field, thus giving rise to longitudinal electromagnetic waves".
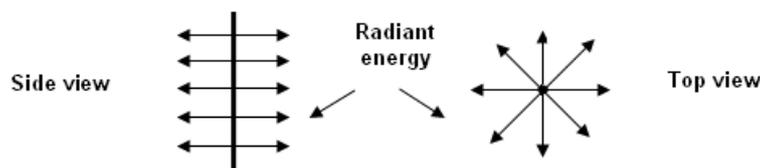
At first glance, this contradicts the age-old experience in studying the electromagnetic field (according to modern concepts, any electromagnetic field has components which are perpendicular to the direction of the propagated electromagnetic wave), also, Maxwell's equations describe an electromagnetic field as a vector. However, the first impression is erroneous, and no contradiction exists.

Definitions of Physics: Any conductor has both inductance and capacitance, that is, the ability to accumulate charge on it's surface. A charge on the surface of a conductor creates an electric field (electrostatic field). The potential (voltage) at any point of the electric field is a scalar quantity!!! (That is, it is a scalar electric field ...).

If the electric charge of the conductor varies with time, then the electrostatic field will also vary with time, resulting in the appearance of the magnetic field component:
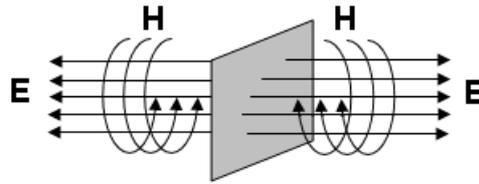
Thus, the electromagnetic wave is formed (with the longitudinal component of E ...).

REMARK: In order to understand how a longitudinal wave interacts with conductive bodies, one needs to read the section of electrostatics entitled "Electrification by Influence". Particularly interesting are Maxwell's equations where they mention the displacement current.

Now we come to the first secret:

SECRET 1

**The power source in Nikola Tesla's free energy device, the amplifying transformer, is a**

**SELF-POWERED L-C CIRCUIT**

EXPLANATIONS:

An ordinary LC circuit – with decay
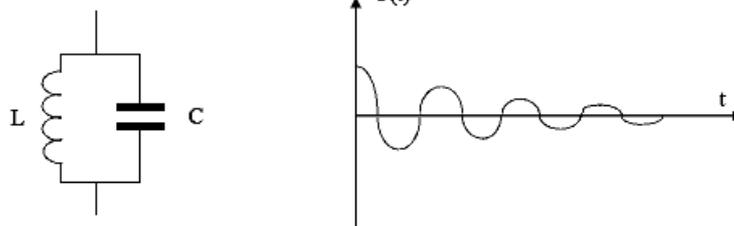
Nikola Tesla   LC circuit – with amplification
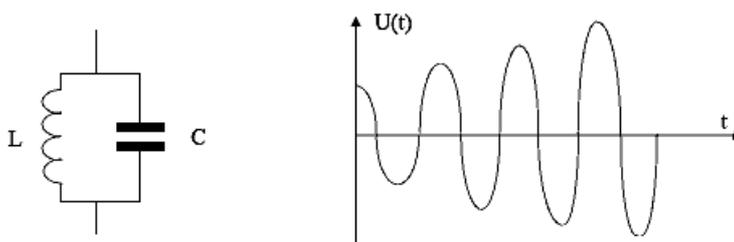
AN EXAMPLE OF UNLIMITED VOLTAGE RISE
**(Based on batteries and a switch)**
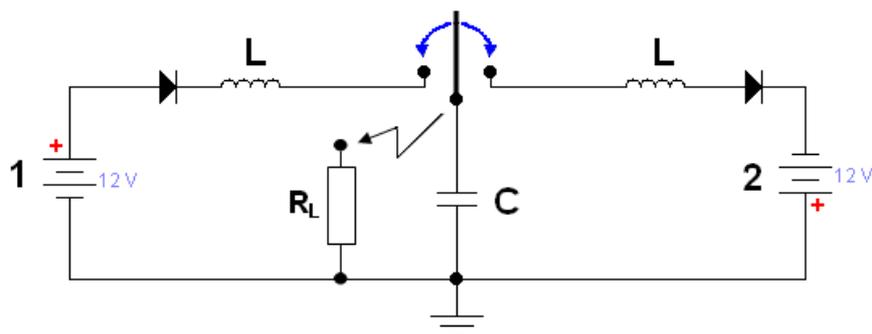
EXPLANATION: Batteries 1 and 2 are connected to the capacitor C alternately, through the inductances L.

Voltage on capacitor C and the voltage from the batteries are increasing. As a result, there can be unlimited voltage rise. When the voltage on the capacitor reaches the desired level, it is connected to the load.

COMMENT: Two diodes were used to avoid synchronisation requirements. Manual or relay switching can be used. One implementation used a spark gap to connect the output load but a switch is an alternative method.

TIMELINE FOR THE PROCESS:
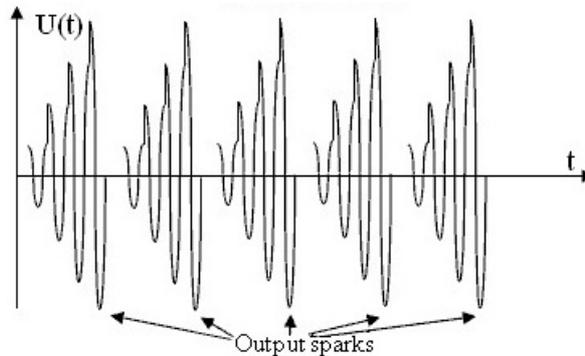
The schematics can be simplified, and only one battery used (load is connected in the same way).
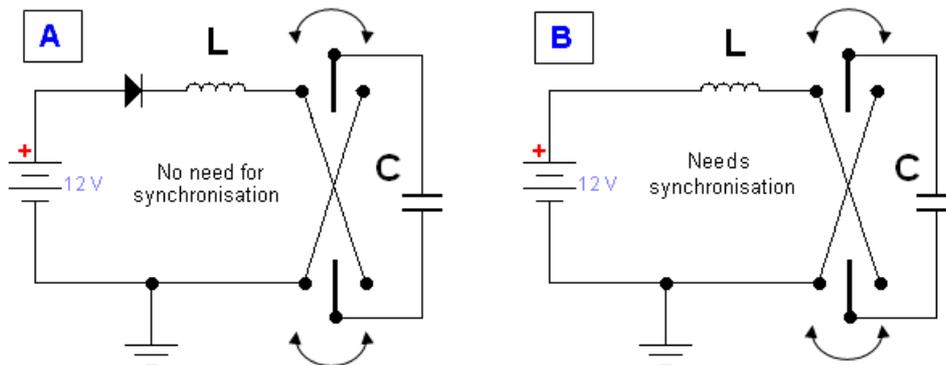
COMMENT: Maybe Alfred Hubbard used an idea shown as option B, in some versions of his transformer
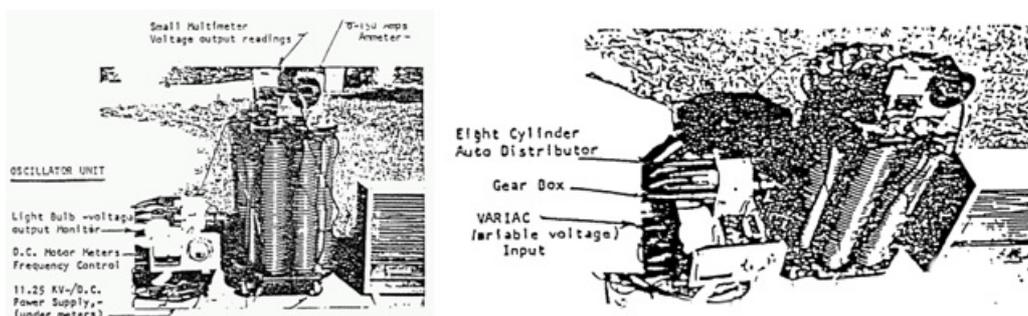
COMMENT: If you want to get a self-powered circuit, you have to arrange some kind of energy feedback to the batteries. But, is this an actual FE technology? I am not sure….

QUESTION: Is this the only way to do it? No, of course not - there are different ways of doing it. For example, you can use fields inside and outside of some LC circuits. How can we do that?

For more secrets read the following parts…

HOW DO WE GET THIS RESULT?

AN ANSWER: You need to charge the capacitor using the electric component of the electromagnetic field of the

inductor (using the displacement current of Maxwell's equations)
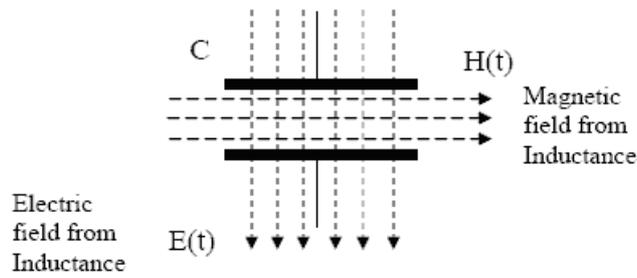
EXPLANATION When the electric field in capacitor C is decaying, due to feeding electrical current into an inductor (not shown), the external electric field generated by the inductor tries to charge this capacitor with the inductor's displacement current. As a result, the capacitor draws energy in from the surrounding electromagnetic field, and the capacitor's voltage rises cycle by cycle.

IMPLEMENTATION A – a central capacitor is used:
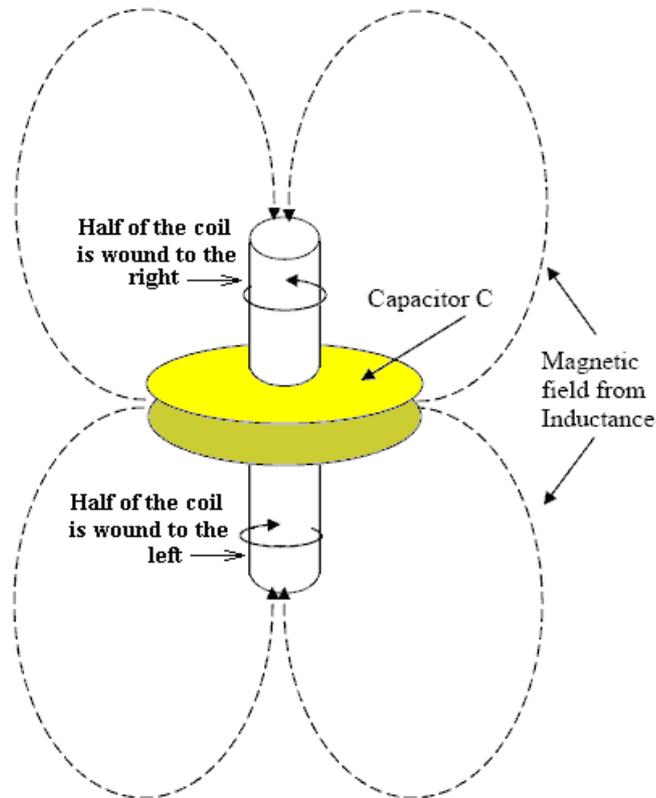
IMPLEMENTATION B – no capacitors are used:
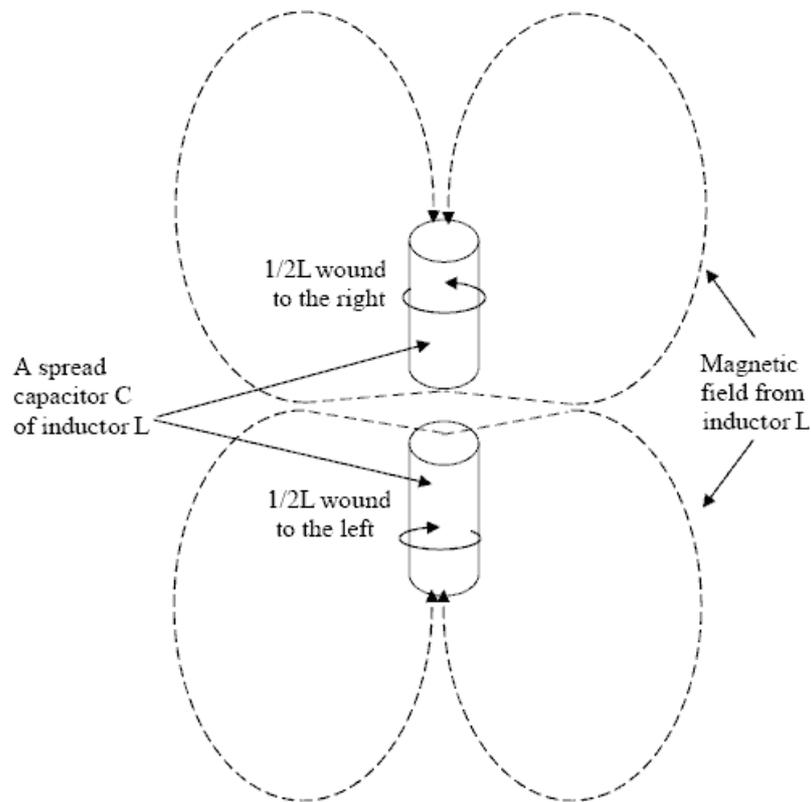
In this case instead of using a capacitor, the capacitance between the two sections of inductor L provides the necessary capacitance.

HOW DO WE START THE PROCESS?
In implementation A, you must charge the capacitor and connect it to the inductor to start the process.
In implementation B, you must use an additional pulsing or "kicking" coil, which starts the process by providing a pulse in either the electrical field or the magnetic field (shown later on).

HOW DO WE STOP THE PROCESS?
The process of pumping energy can continue uninterrupted for an unlimited length of time and so the question arises; how do you stop the device if you should want to?. This can be done by connecting a spark gap across the coil L and the resulting sparking will be sufficient to stop the process.

THE "KICKING" PROCESS WITH AN ELECTRIC FIELD
Use an additional special "kicking" coil, which can generate short powerful magnetic pulses, and install an amplifying Tesla coil along the electrical vector of the electromagnetic field of this coil.
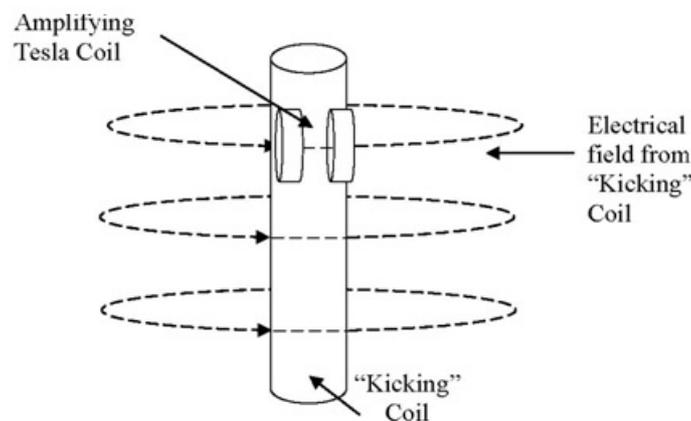

The electrical field of the driving pulse or "kicking" coil will charge the spread capacitors of the inductor, and the process will be started. Use pulses as short as possible in "kicking" coil, because the displacement current depends on the speed of the changes in the magnetic field.

THE "KICKING" PROCESS WITH A MAGNETIC FIELD
It is not possible to "kick" the process by displacement of the amplifying Tesla coil in the uniform changing magnetic field of the "kicking" coil, because the output voltage on the ends of the Tesla amplifying coil will be equal to zero in this

case. So, you must use a non-uniform magnetic field. For that you must install a "kicking" coil, not in the centre of the amplifying Tesla coil, but positioned away from the centre
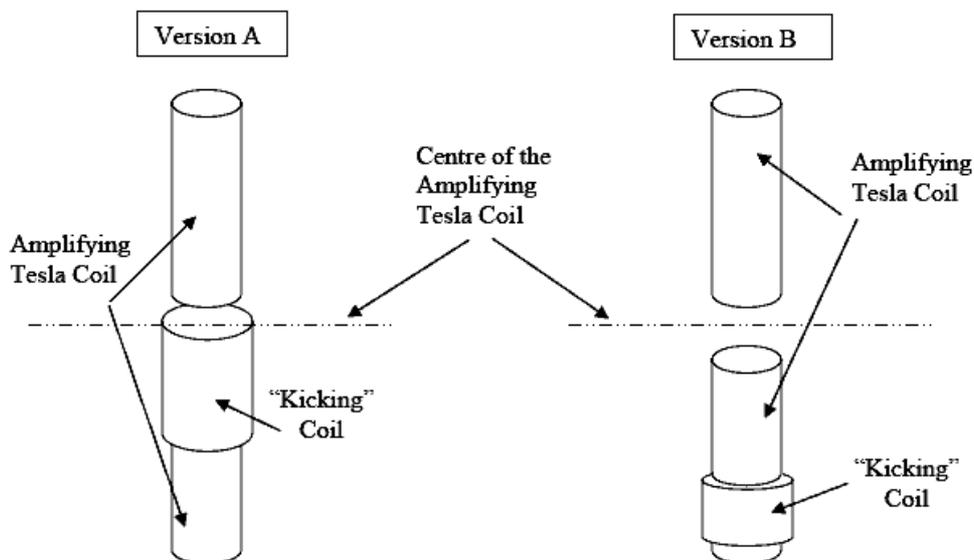
## IS THAT ALL TRUE, AND THE BEST TECHNIQUE TO USE?
No, it is not! Nikola Tesla found more subtle and more powerful method – his bi-filar pancake coil!

BI-FILAR PANCAKE COIL – MAY BE THE BEST METHOD
The voltage between adjacent turns in an ordinary coil is very low, and so their ability to generate additional energy is not good. Consequently, you need to raise the voltage between adjacent turns in an inductor.

Method: divide the inductor into separate parts, and position the turns of the first part in between the turns of the second part, and then connect end of the first coil to the beginning of the second coil. When you do that, the voltage between adjacent turns will be the same as the voltage between the ends of the whole coil !!!

Next step – rearrange the position of the magnetic and electric fields in the way needed for applying amplifying energy (as described above). The method for doing this is – the flat pancake coil where the magnetic and electric fields are arranged in exactly the way needed for amplifying energy.
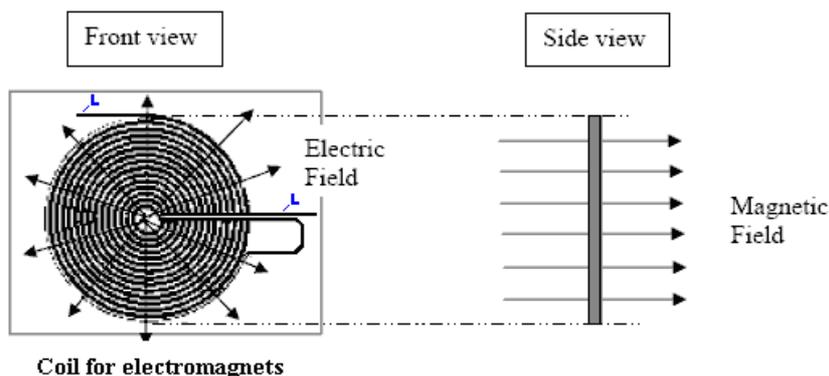

Now, it is clear why Tesla always said that his bi-filar pancake coil was an energy-amplifying coil !!!

REMARK: for the best charging of the natural self-capacitance of the coil, you have to use electric pulses which are as short as possible, because the displacement current as shown in Maxwell's equation, depends to a major degree on the speed of the change in the magnetic field.

THE DUAL-LAYER CYLINDRICAL BI-FILAR COIL
Instead of the standard side-by-side cylindrical bi-filar coil, the coil winding may also be arranged in two separate layers, one on top of the other:

Side view		Top view

Beginning

First layer of turns

Second layer of turns

End   End
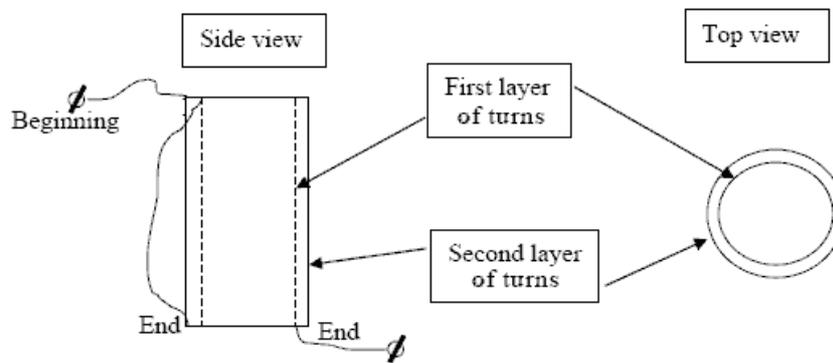
THE ELECTRO – RADIANT EFFECT
**(Inductance in an electrostatic field)**

EXPLANATION

The primary coil in Tesla's transformer is the first plate of the capacitor. The secondary coil - is the second plate of the capacitor. When you charge a capacitor C from your source of energy, you charge a wire of the primary coil also. As a result, a wire of the secondary coil is charging also (as a return from ambient space).

In order to start the process, you have to remove charge from the primary coil (by arranging a jump in potential in ambient space). When this is done, a huge displacement current occurs – as a result of that potential jump. Inductance catches this magnetic flux, and you have energy amplification.

If this process is operating, then you generate a magnetic field in ambient space.

COMMENT: The capacitance of the wire of the primary coil is very low, and so it takes very little energy to charge it, and a very short spark to discharge it (without removing charge from the capacitor C).

COMMENT: Notice that the spark gap **must be** connected to the ground as, in my opinion, this is a very important feature of this process, **but Mr Tesla did not show grounding**. Perhaps this needs to be a separate grounding point.

REMARK: In my opinion, this technology was also used in Gray's device and in Smith's devices and in both cases **the spark gap was connected to the ground**.

ALSO: Pay attention to the words used in Gray's patent "…. for inductive load".

And, pay attention to Smith's words "I can see this magnetic field, if I use a magnetometer".

The secondary coil – the second plate of the capacitor

The primary coil – the first plate of the capacitor

NO CURRENT CHARGE REMOVAL ONLY

Very short spark – for charge removal from the primary coil
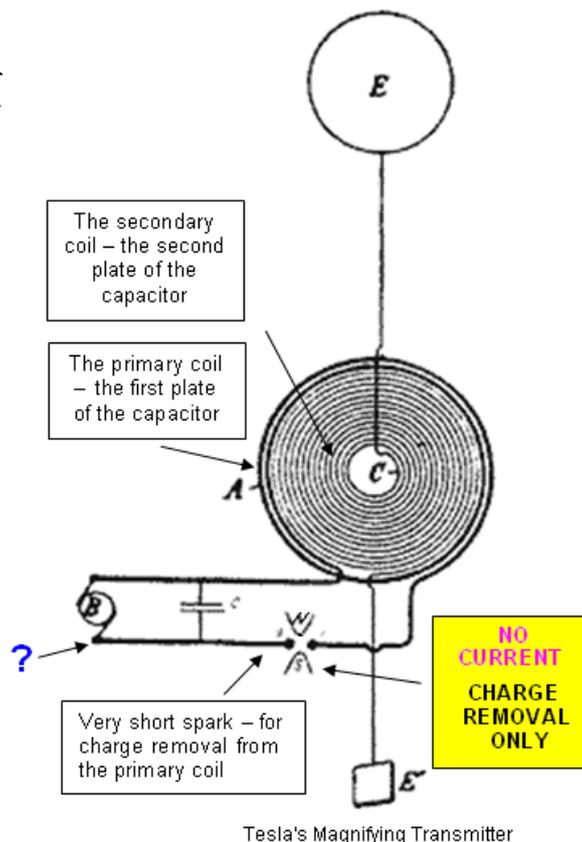
Tesla's Magnifying Transmitter

MODERN IMPLEMENTATIONS
in self-powered L-C circuits

EXAMPLE 1
Using a bi-filar coil as the primary coil in a resonant Tesla transformer
By Don Smith
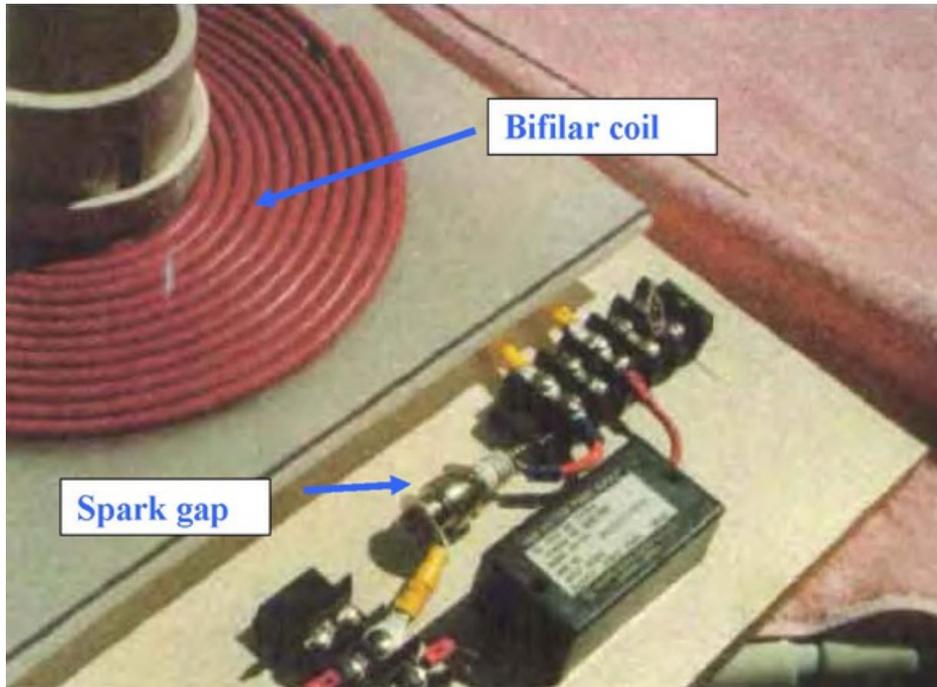
Explanation: The bi-filar primary coil is used as primary for energy amplification, and is pulsed through the spark gap.

Tesla's Magnifying Transmitter
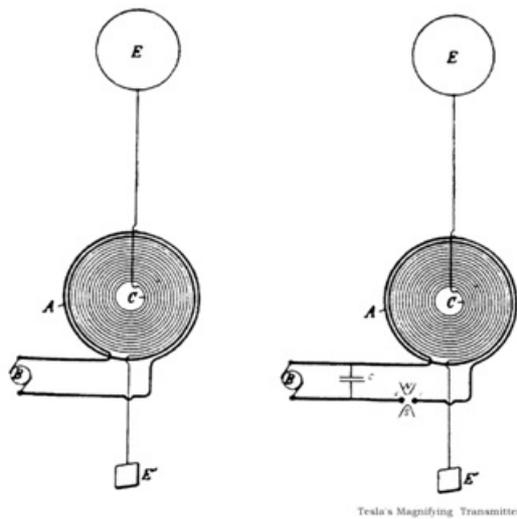
EXAMPLE 2
By Mislavskij
Is comprised of two capacitor plates sandwiching a ferrite ring core with a coil wound on it:
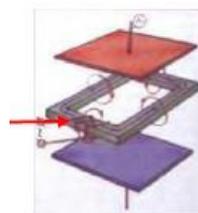
EXPLANATION
When a capacitor is charging (or discharging), this "displacement" current flow generates a magnetic field in the vacuum in a circular form (Maxwell's equations). If a coil is wound on a ferrite toroid placed between the plates of the capacitor, then a voltage is generated in the turns of that coil:
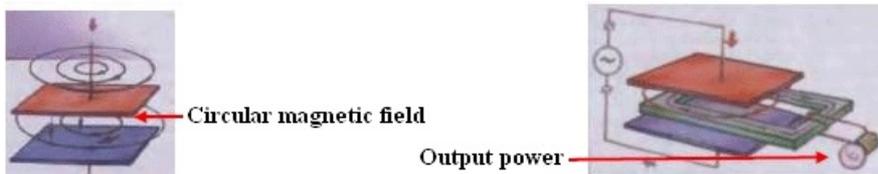
Also, if an alternating current is applied to the coil wound on the ferrite toroid, then voltage is generated on the capacitor plates.

If an inductor and a capacitor are combined in an L-C circuit, then there are two cases inside such an L-C circuit:
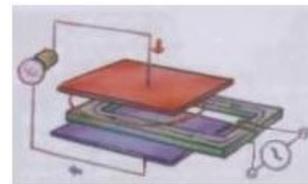
a) energy amplification   and   b) energy destruction

The situation depends on how the coils and capacitor are connected together
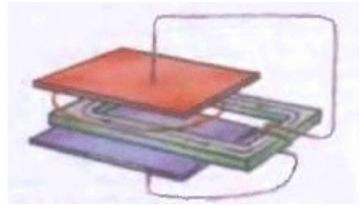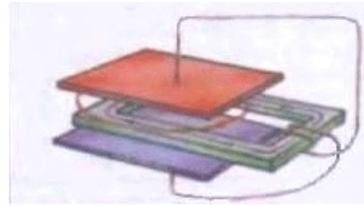
Energy Generation   Energy Destruction

COMMENT: **If the direction of the turns in the coil wound on the ferrite core is reversed, then the wires connecting the coil to the capacitor plates need to be swapped over as well.**

The first experiments with a ferrite core inside a capacitor were made in 1992 by Mislavskij (a 7th-year pupil of the Moscow school), and so it is known as "Mislavskij's transformer"


Prototype Transformer:

THE SAME APPROACH?
By Don Smith

In this arrangement, the capacitor is charged by sparks and powerful displacement current is produced. The transformer with the ferromagnetic core is collecting this current.

DON SMITH DEVICE - 2006

Glass plate
Aluminum plate
Load/Output
Copper plate
Spark Gap
MetGlas Cobalt Transformer
12 volt battery
Control Circuit
12 volt ignition coil

THE SPARK AGITATES THE AMBIANT MAGNETIC FIELD- RADIATING ELECTRONS OVER TO THE TRANSFORMER WHERE THEY ARE CONVERTED INTO USEFUL ELECTRICITY. AMPERAGE IS PROVIDED BY A PROPER EARTH GROUND.
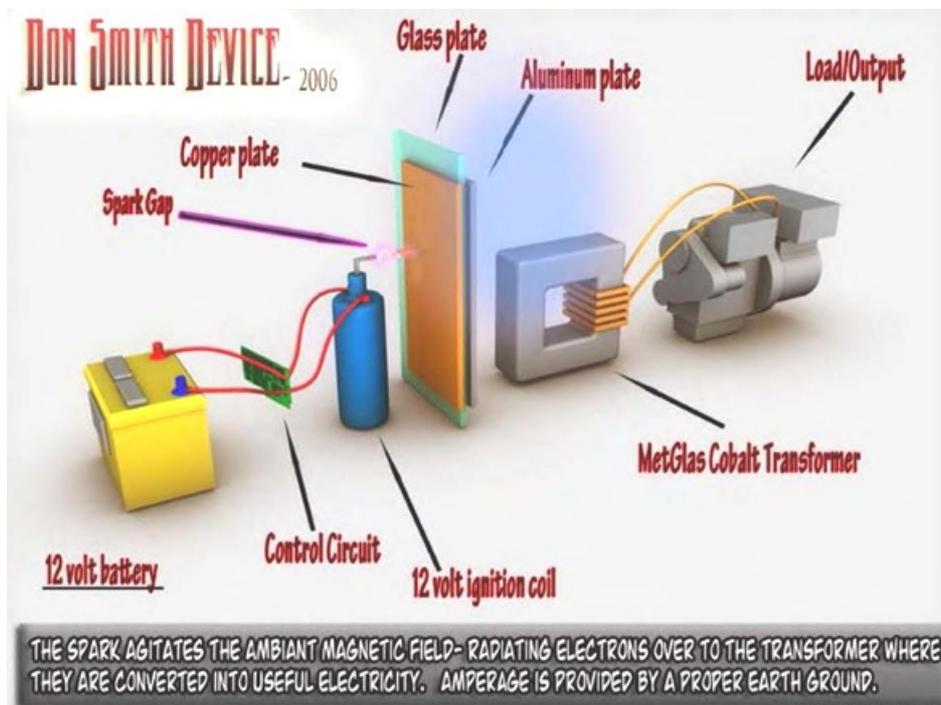
COMMENT: This schematic diagram is very rough, and lacking in details. It will not perform correctly without back-electromagnetic force suppression of some kind (see below).

SECRET 1.1
**Back-EMF suppression in a resonating Tesla coil**

The primary and secondary coils, and the ground connection in this Tesla coil are arranged in special manner:
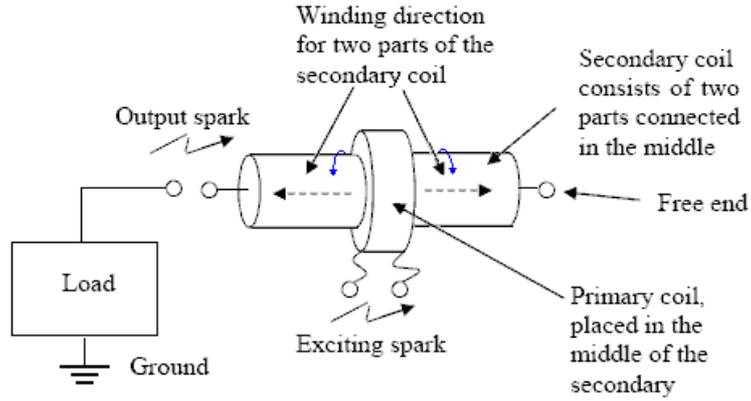
Explanation: The exciting (driving) current and the load current in an electromagnetic field, are perpendicular to each other as shown here:
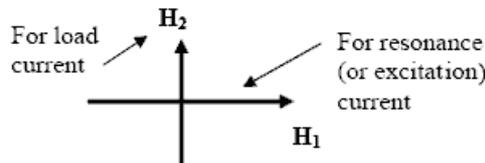
COMMENT: In order to get an energy gain, the frequency of excitation of the primary coil must be the resonant frequency of the secondary coil.
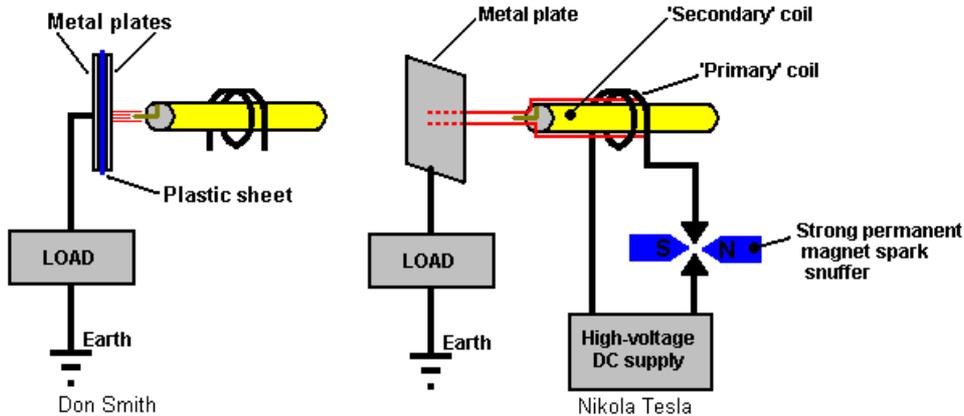
COMMENT: Excitation with just a single spark is possible.

COMMENT: In Mr. Tesla's terminology, this is pumping charges or charge funneling, the charge is coming from the ground (which is a source of energy).

POTENTIAL (VOLTAGE) DISTRIBUTION ON THE COIL

Prototype Coil

Before the ground spark

For one moment

U(X)

X

A

No spark

Load

Added by ground spark

For one moment

U(X)

X

B

Output spark

Load
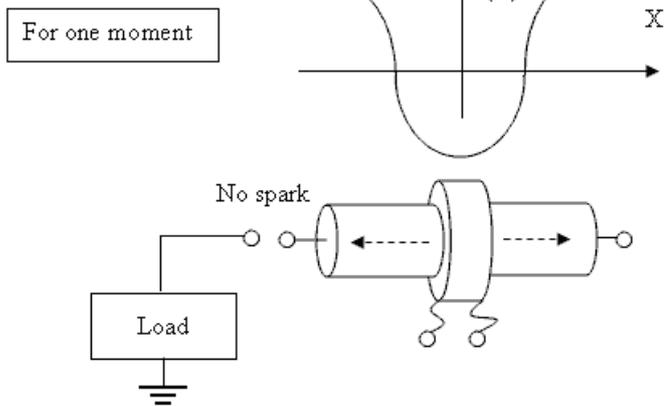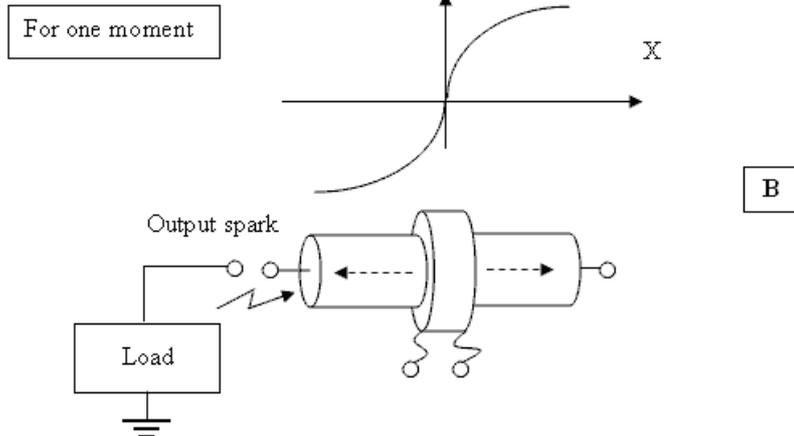
EXPLANATION: The task of the oscillating circuit is to create a local electromagnetic field with a large electrical component. In theory, it would only be necessary to charge up the high voltage capacitor just once and then a lossless circuit would maintain the oscillations indefinitely without needing any further power input. In reality, there are some losses and so some additional power input is needed.

THESE OSCILLATIONS ACT AS A "BAIT", ATTRACTING CHARGE INFLOW FROM THE LOCAL ENVIRONMENT. Almost no energy is needed in order to create and maintain such a "bait"...

The next step is to move to this "bait" to one side of the circuit, close to the source of the charges which is the Ground. At this small separation, breakdown occurs and the inherent parasitic capacitance of the circuit will be instantly recharged with energy flowing into the circuit from outside.

At the ends of the circuit there will be a voltage difference, and so there will be spurious oscillations. The direction of this electromagnetic field is perpendicular to the original field of the "bait" and so it does not destroy it. This effect is due to the fact that the coil consists of two opposing halves. The parasitic oscillations gradually die out, and they do not destroy the "bait" field.

The process is repeated spark by spark for every spark which occurs. Consequently, the more often sparks occur, the greater the efficiency of the process will be. The energy in the "bait" experiences almost no dissipation, providing a much greater power output than the power needed to keep the device operating.

TESLA SCHEMATICS

**COMMENT:** Don Smith named this technology "Bird on the wire". The bird is safe on the wire until a spark occurs.
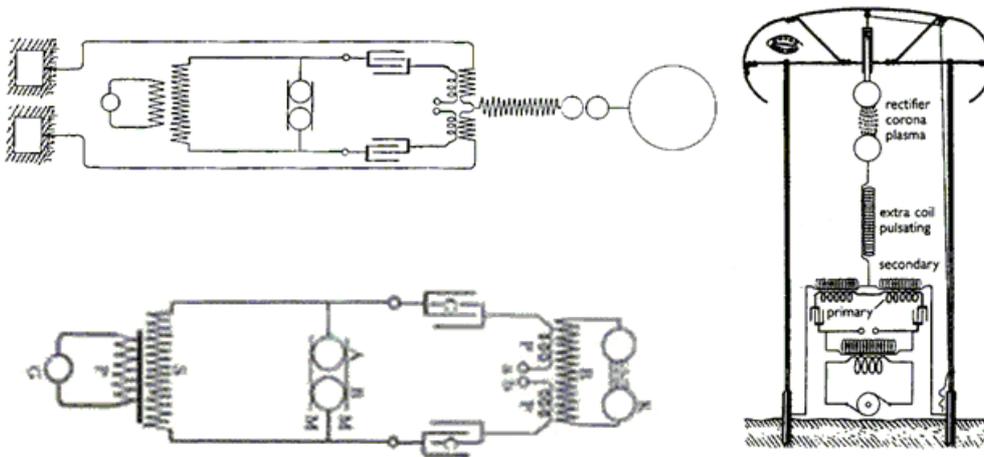
COMMENT: Mr. Tesla named this technology a "charge funnel" or "charge pump"

THE PRINCIPLE OF THE TECHNOLOGY

1. This Free-Energy device generates an AC electrical potential in ambient space ("bait" for electrons),
2. Electrons flowing through the load, flow in from the environment, attracted by this "bait" (pumped in)

NOT A SINGLE ELECTRON USED FOR EXCITING AMBIENT SPACE NEEDS TO FLOW THROUGH THE LOAD
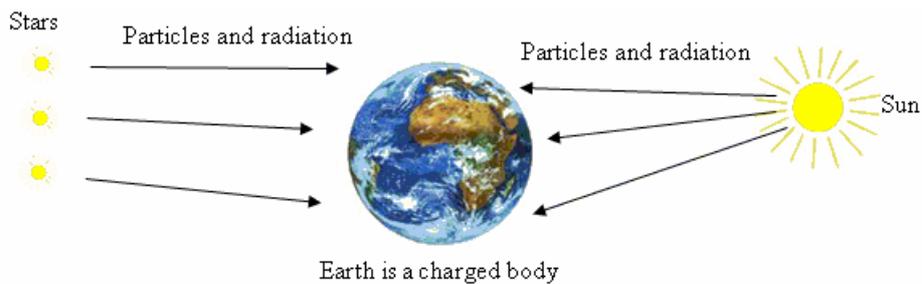

1. Potential (Voltage) – from FE device
2. Electrons (Current) – from external body   ⟹ **Free Energy**

POSSIBLE DESIGN FOR THE "CHARGE PUMP" or "CHARGE FUNNEL"

By Edwin Gray
Probable Schematic for Edwin Gray's Cold Electricity Circuit
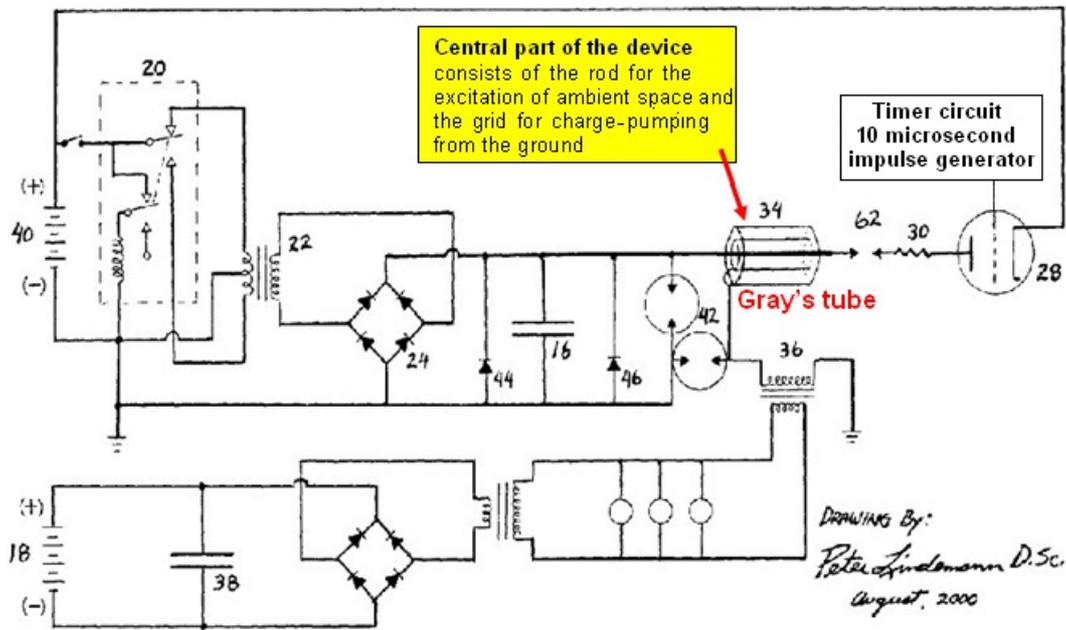
EXPLANATION: This schematic is a simplification of Gray's patent, produced by Dr. Peter Lindemann for greater clarification in his book
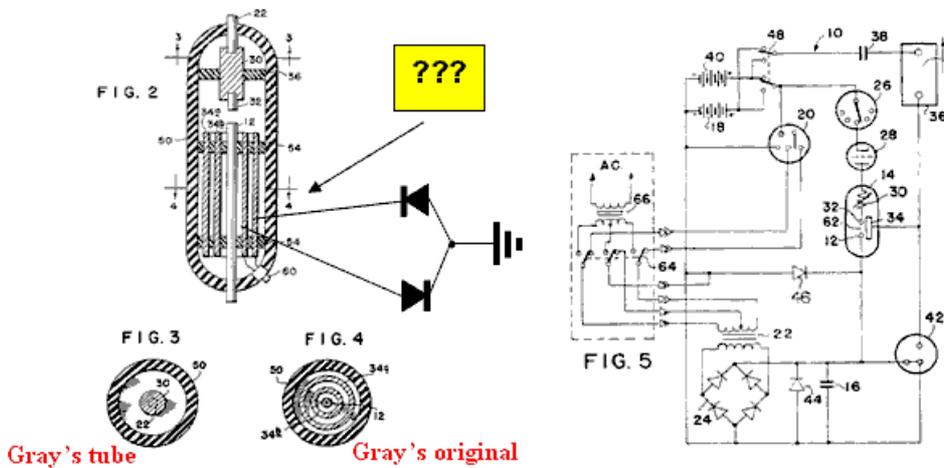

A POSSIBLE DESIGN FOR THE "CHARGE PUMP" or "CHARGE FUNNEL"
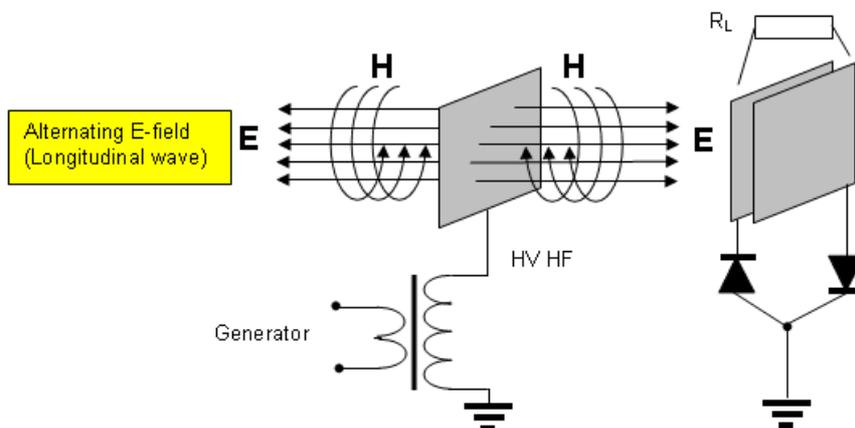
EXPLANATION: The charging system is unable to "see" the field inside a charging capacitor.

COMMON VIEW OF RESONANCE: Resonance is not destroyed if you short-circuit or open a "pumping"

capacitor.
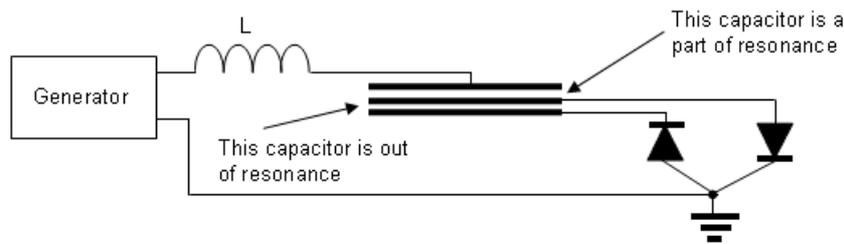
COMMENT: You can add an ordinary, very large capacitor in parallel with the "pumping" capacitor for more impressive results.

Don Smith illustration
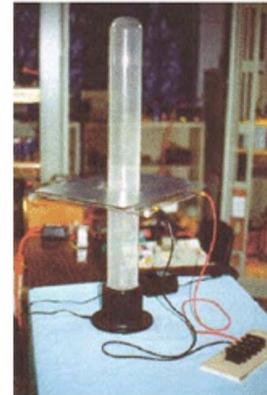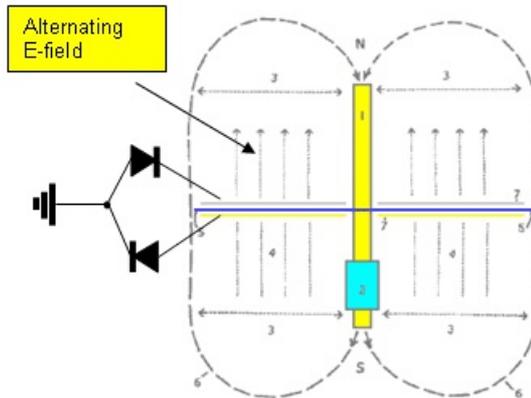
COMMENTS: You have to use an alternating E-field, in order to charge the capacitor. But, Smith marked the North and South poles in his drawing. I think that this is true for only one instant. Diodes are not shown in his drawings, which indicates that his device as shown, is, to my mind, not complete.

<p align="center">**THE EXTERNAL APPEARANCE OF ED GRAY'S TUBE**</p>

EXPLANATION: Gray's tube with it's two internal grids is seen in the middle. Two diodes are underneath the acrylic sheet (???). A Leiden Jar is located on the left (???) The HF HV coil is behind Gray's tube (???)
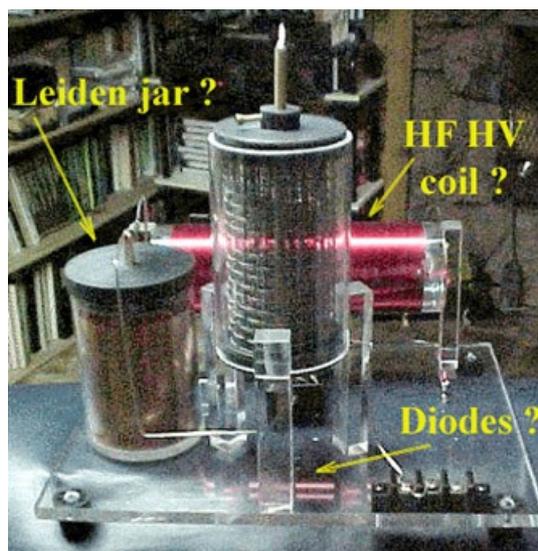
<p align="center">**A POSSIBLE DESIGN FOR THE "CHARGE PUMP" or "CHARGE FUNNEL"**
THE TESTATIKA by Paul Bauman</p>

EXPLANATION: The central electrode in the jars (capacitors) is for the excitation of ambient space; the two external cylinders are the plates of the charging capacitors.

Wiring diagram with Van de Graaf for HV
August 30, 2006

CH2 on scope   CH1 on scope
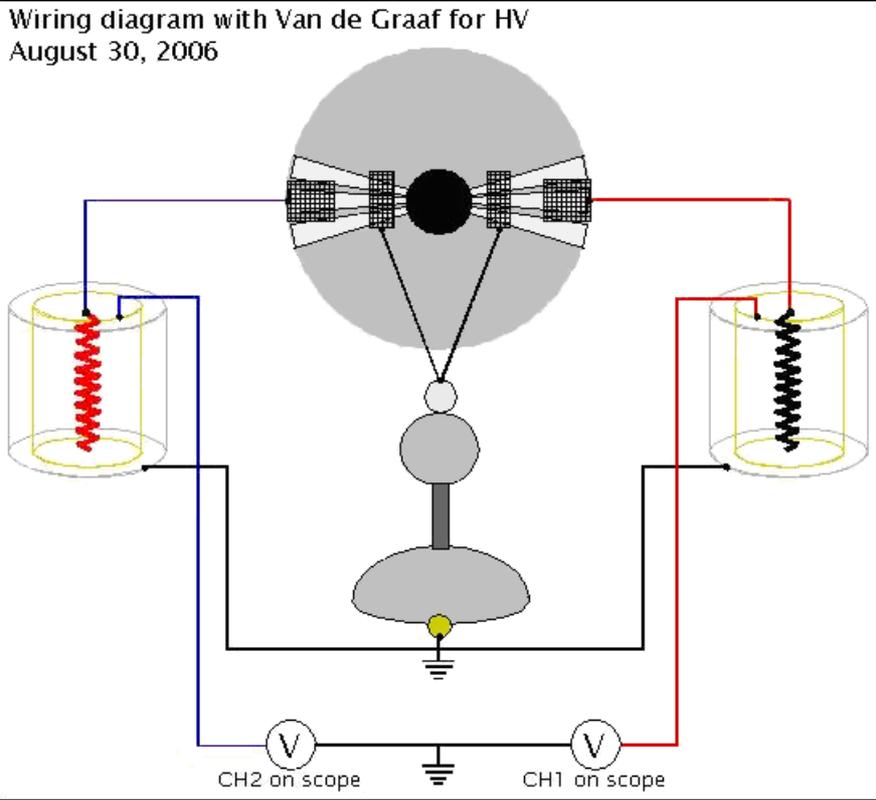
EXPLANATION: The charging mechanism is unable to "see" the field inside the charging capacitors.
**COMMENT:** For more details read the section on asymmetrical capacitors.

A POSSIBLE DESIGN FOR THE "CHARGE PUMP" or "CHARGE FUNNEL"

**COMMENT:**   This is based on Tesla's schematics
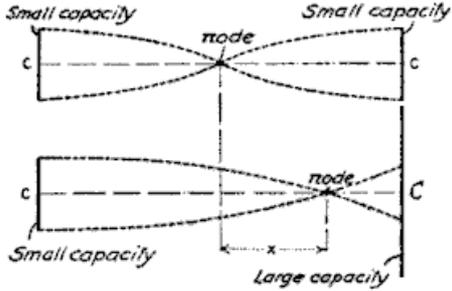
COMMENT: First, you need to arrange a "voltage killer" barrier on one side of the Tesla coil. This is to create a "BLIND" charging system which can't "see" the charge on the capacitor (see below for more detail on "blindness").

COMMENTS: Huge capacitor means: as much ordinary capacitance as possible.   Effectiveness depends on voltage and coil frequency, and current in the node.   Effectiveness depends also on the frequency at which the excitation spark occurs. It is very similar to Don Smith's devices.
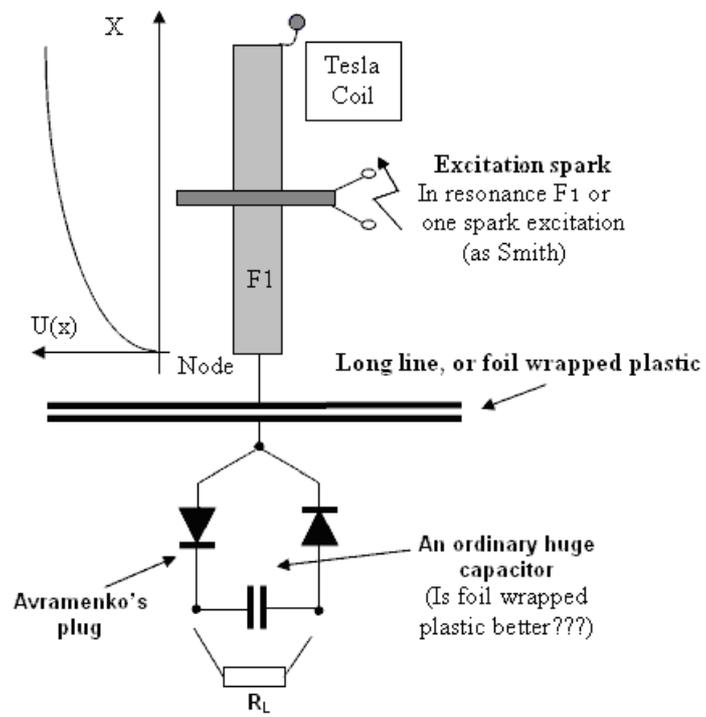
COMMENT: For more details read part devoted to Avramenko's plug…

**POSSIBLE DESIGN FOR THE "CHARGE PUMP" or "CHARGE FUNNEL"**

X

Tesla Coil

Exciting spark
In resonance F1 or one spark exciting (as Smith)

F1

U(x)

Voltage killer – node arranger
Foil wrapped plastic

Node

R_L

Don Smith illustration

ALTERNATING IMPACT ENERGY TRANSFER ANALOGY

ENERGY TRANSFER BY SWINGING STEEL BALLS

ELECTRICAL ENERGY TRANSFER BY INDUCTION
PULSED (IMPACTED) ELECTRONS

IMPACT ENERGY CURRENT

OFF – ON GROUNDING SWITCH

POINT A

POINT B

ENERGY CURRENT

(A) ELECTRONS (B)

PULSED-INDUCED-IMPACTED ELECTRONS OUTPUT

INPUT ENERGY FROM "A"

IN ALTERNATING ELECTRICAL ENERGY SYSTEMS, ONLY THE POTENTIAL-IMPACT LEVEL REPLICATES IT'S SELF AT POINT "B". ELECTRONS DO NOT TRAVEL FROM POINT "A" TO POINT "B".

EXPLANATION: The charging system is unable to "see" the field inside the charging capacitor

COMMENT: For more details read part devoted to Avramenko's plug…

**COMMENT:**   An ordinary piece of wire can be used in some versions of this device, read below….

ENERGY REGENERATION BY
L/4 COIL

COMMENT: This system is based on wireless energy transmission through the ground

Elevated Capacity

Elevated Capacity

Elevated capacity

Elevated capacity

Transmitter
Alternator
Primary

High potential adjustable resonant secondary circuit

Ground

Resonant adjustable Receiving circuit

Inductance

Ground

Alternator   Receiver

Transmitter
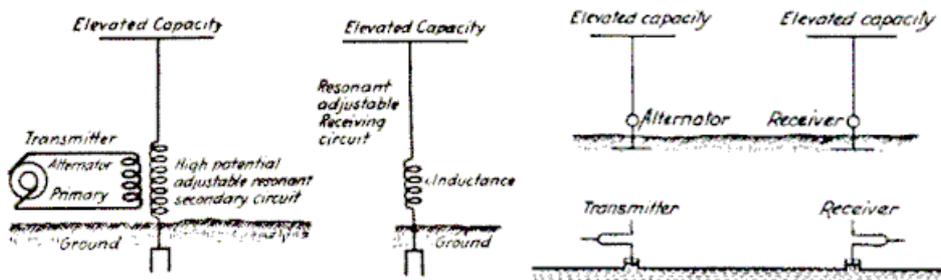
Receiver

COMMENT: Energy radiated to ambient space lowers the efficiency of this process
COMMENT: The Receiver and Transmitter coils must have the same resonant frequency
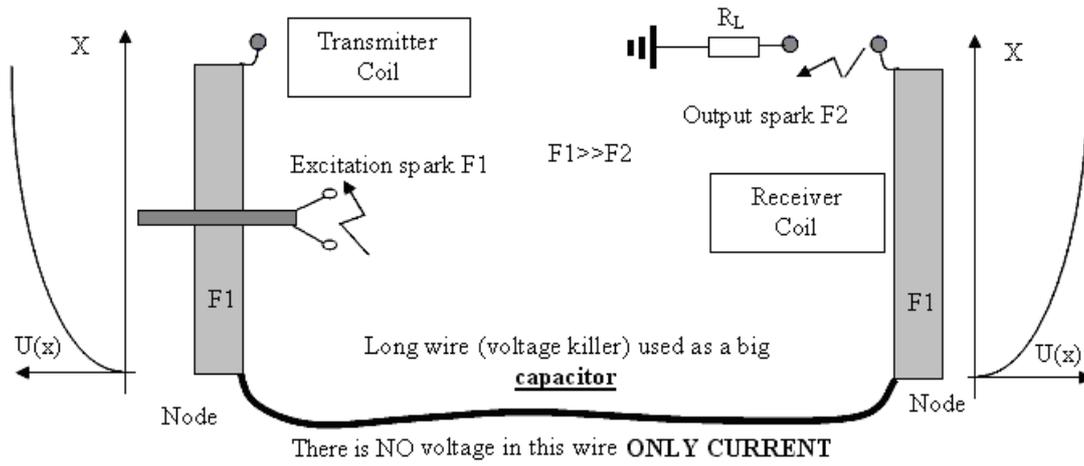
COMMENT: Possible alternative arrangement:
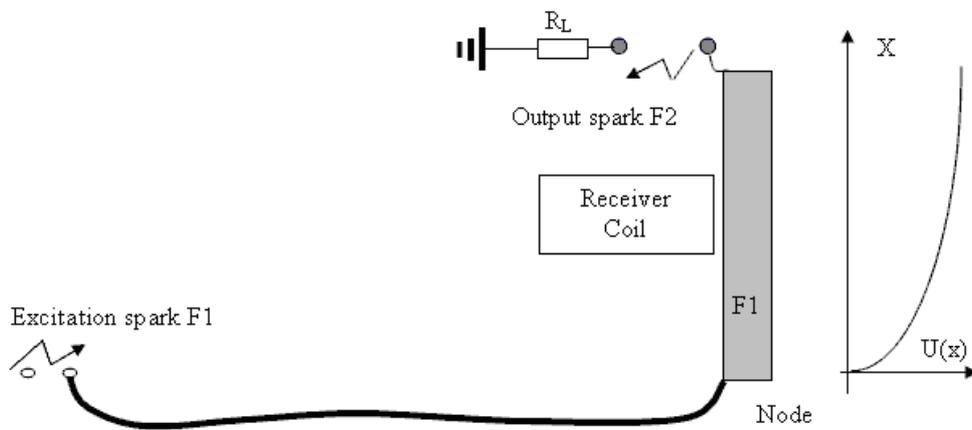
COMMENT: A metal sheet can be used instead of a long wire

The "COLD" and "HOT" ends of a Tesla Coil
by Donald Smith

COMMENT: If the excitation coil L2 is positioned in the centre of coil L2, then the Tesla Coil will have a "cold" end and a "hot" end. **A spark gap can only be connected to the "hot" end**. You cannot get a good spark if the spark gap is connected to the "cold" end.

Tesla Coil Geometry *

Electron-Volts

Current-Amperes

< —

< —

Correct Method of Measurement
Use the inverse square law with an Electrostatic Volt Meter to measure from a safe distance, they are frequency nonspecific.

← Volts

L - 2

L - 1

Amperes ↔

Correct Method of Measurement
Use the inverse square law with Hal-Effect devices to measure from a safe distance, they are normally frequency nonspecific. The magnetic field they measure converts directly to Amperage.

Volts dominate if the L-1 Coil is far right
Volts and Amperes about equal if L-1 Coil centered

This End Has Greater Voltage
Distributive Capacitance at Maximum
Capacitance-Coulombs-Voltage
Voltage has Electrons spinning to Left

This End Has Greater Amperage
Distributive Inductance at Maximum
Induction-Henrys-Amperage
Amperage has Electrons spinning to Right

Volts represent the more negative and Amperes the less negative. Therefore the electrical charge of more negative must seek the less negative to regain ambient.

* Contains proprietary information related to Patent Procedure
  Geometry - properties of lines, surfaces and solids

Donald L. Smith
2 November, 1995

COMMENT: This is very important for practical applications, so read Don Smith's documents for more details.

Derivation of Magnetic and Electrical Power

Analogous Relationships:

1. Potential Power is present in a bar magnet as shown.

BLOCH WALL (Space)
(Area of Electron Spin Seperation)

More Negative

S   N

Least Negative

Domain has:
Left hand spin.
(= Source of Volts)

Domain has:
Right hand spin
(= Source of Amperes)
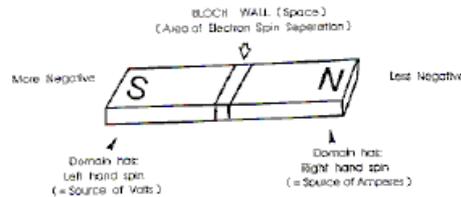
2. The Source of these Electrons being from the Solar Plasma, are none ionic and occupy all Free Space. They are commonly obtained from Earth and Air Groundings. They exist in Doublet Pairs, one being more negative than the other. The more negative one has a Left Hand Spin. The less negative one has a Right Hand Spin.

3. Resonate Electrical Coil Systems (Tesla) are Analogous to the System observed in the Bar Magnet (above). The Bloch Wall Area is located at the base of the L - 2 Coil. The Left Spin portion (Voltage Only) part of the Coil predominates. The Right hand spin portion (Magnetic-Amperage) portion is mostly absent.

COMMENT: It is easy understand the "Hot" and "Cold" ends, if one end of Tesla Coil is grounded…

### The Grounded Tesla coil – a hidden form of energy

EXPLANATION: We can look at the Tesla coil as a piece of metal. Every piece of metal can be charged. If Tesla coil is grounded, it has an extra charge delivered from the ground, and has an extra energy also. But, it can be find out only in electrostatics interactions, not in electromagnetic one.
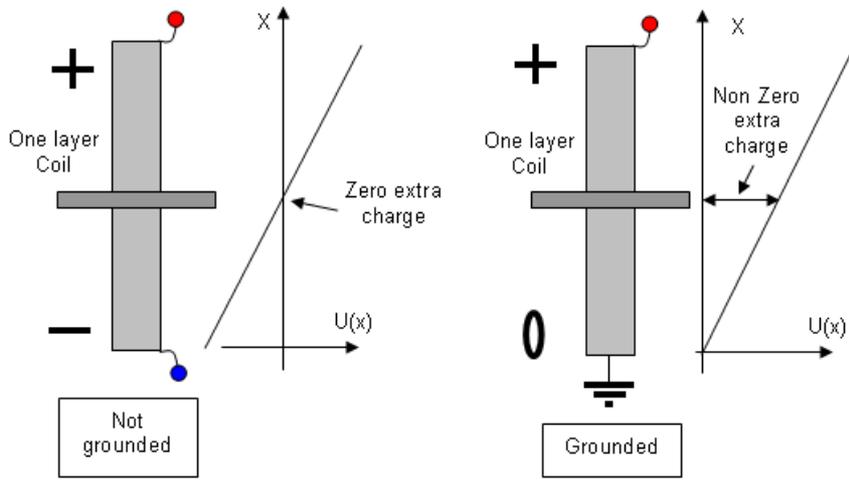
Comment: This diagram shows only one instant, after half a cycle, the polarities will be swapped over.

Question: How can we use this fact?

Answer: We have to arrange an electrostatic interaction:
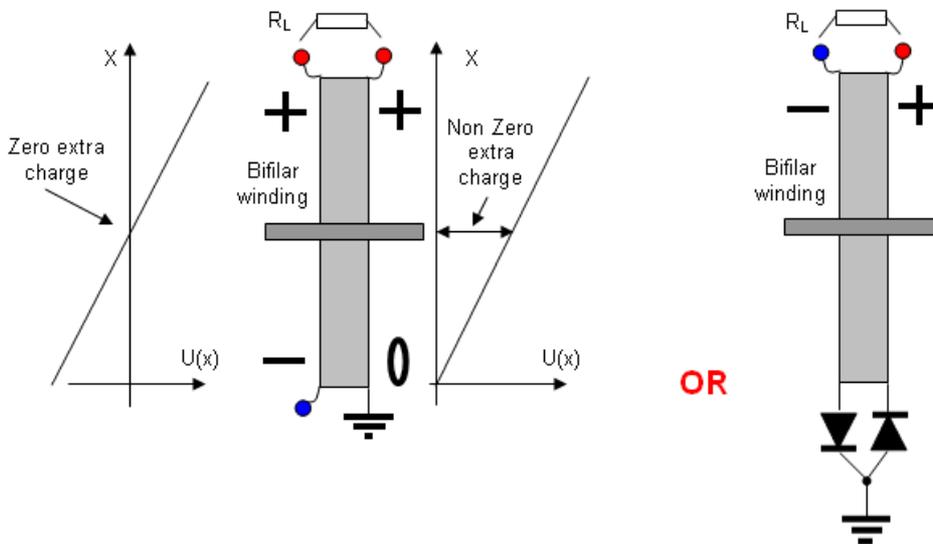
Comments:

Extra capacitors can be used for charging them.

This looks like Smith's plasma globe device. Maybe, he used this technology.

This can be used in charge pump technology for excitation by an alternating electrical field, read the section on the charge pump or charge funnel.

The wiring can be different to that shown above.

Examples of grounded bifilar (multi-strand) coils
From Tariel Kapanadze in his 100 KW device

from Steven Mark in big TPU

from Donald Smith
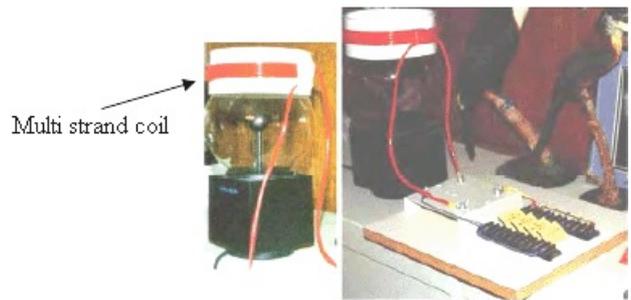
Globe device for energy generation

Possible simulation of the L/4 wave "Cold" and "Hot" ends

+ ●   X   X ● −   X − + X

U(x)   +   U(x)   =   U(x)   U(x)

One layer Coil   Node   One layer Coil   Node   **Two layer Coil**   Nodes

Huge voltage   **Resonance**

− ●   ● +   X

X

≠ ◁   ≠

Optional

U(x)   U(x)

Node

Huge current   **Two layer Coil**   Core inside is optional

MODERN OPTIONS
In back EMF suppression
Version 1
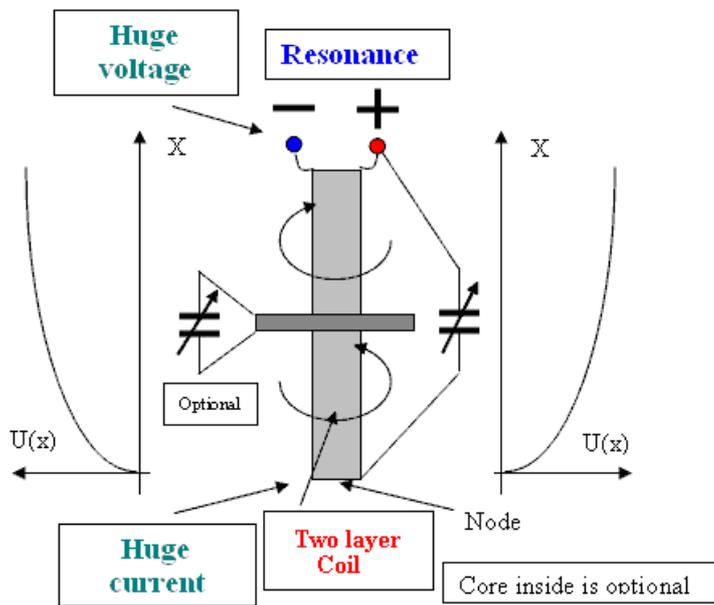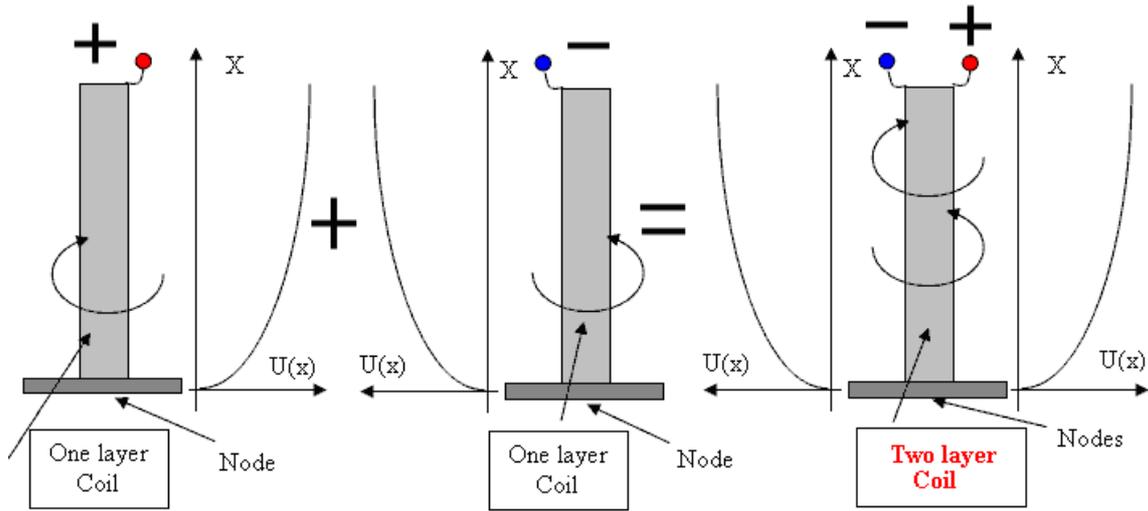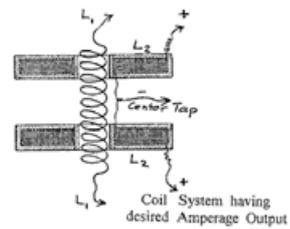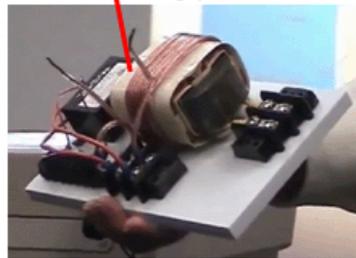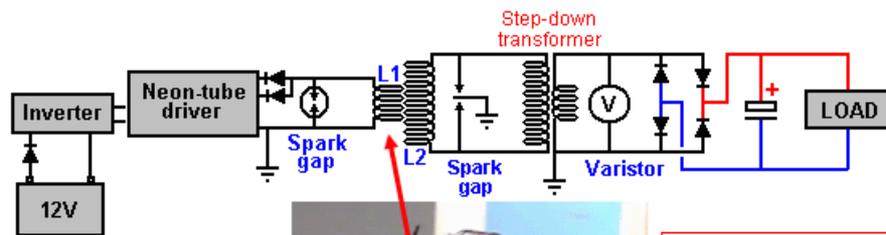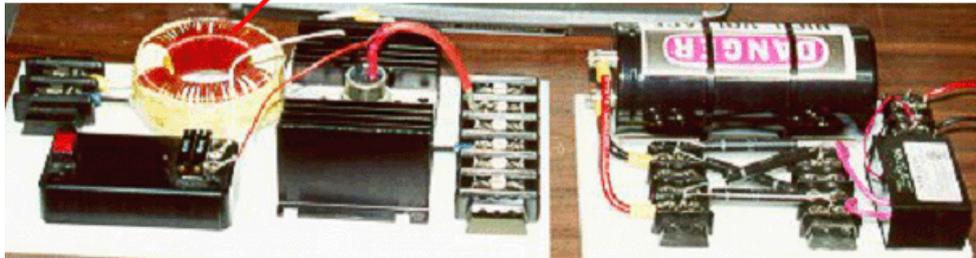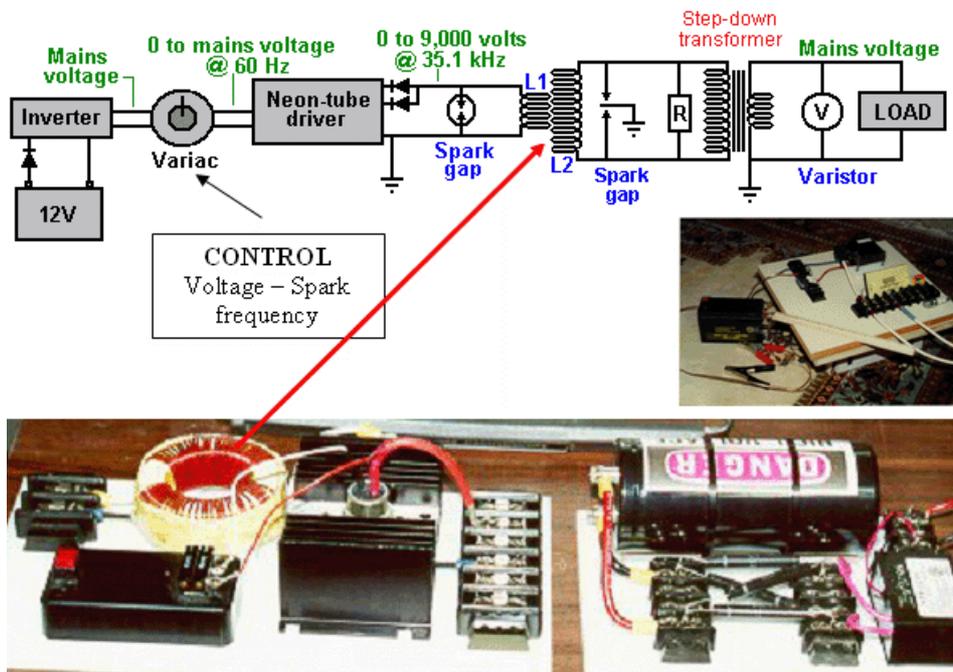
SYMMETRICAL VERSION
By Don Smith

L₁

L₂

Center Tap

L₂

L₁

Coil System having
desired Amperage Output

Explanation:

Both of the two out of phase outputs were used and both connected to the step-down transformer.

1. Between sparks:
There is no current in the step-down transformer and so the two ends of L2 are at the same voltage.

2. During a spark:
Parasitic capacitors (not shown) of L2 (it's up and down parts) are discharged to the ground, and current is produced in the step-down transformer. One end of L2 is at ground potential. But, the magnetic field of this current in L2 is perpendicular to the resonating field and so has no influence on it. As a result of this, you have power in the load, but the resonance is not destroyed.

COMMENTS: In my opinion, these schematics have errors in the excitation section. Find those errors.

Excitation by a single spark is possible.

In the terminology of Mr. Tesla, this is a 'charge pump' or 'charge funnel'.

The charges are coming from the Ground which is the source of the energy.

There are more secrets in the following parts.

SECRET 1.1
Back EMF suppression in a resonance coil

Primary and secondary coils are placed on a rod core. All of the coils are arranged in special manner. The primary coil is placed in the middle of the core. The secondary coil is in two parts which are positioned at the ends of the rod. All of the coils are wound in the same direction.
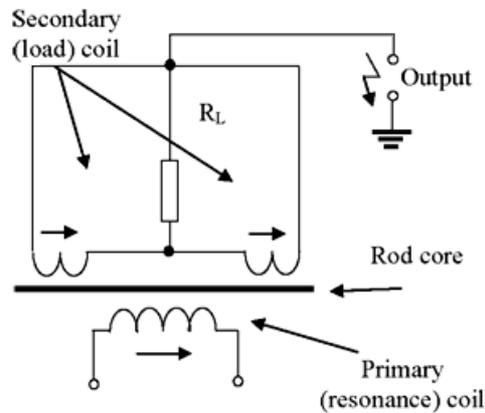
Explanation:
The electromagnetic fields produced by the resonant (excitation) current and the load current are perpendicular to each other:
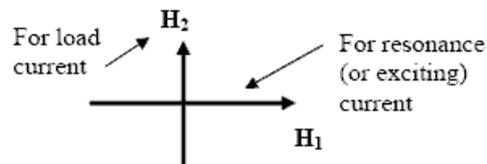
So, although you have power in the load, resonance is not destroyed by that output power.

COMMENTS: The load must be chosen so as to get the maximum amount of power flowing into it. Very low loads and very high loads will both have close to zero energy flowing in them.

The secondary coil is shunting the primary coil, and so it has a current flowing in it even id no loads are connected.

The secondary coil can be adjusted for resonance too.

The "rod" material can be air, or other materials.

SECRET 1.1
Back EMF suppression in a resonance coil
Version 3
(long line usage – bifilar usage)

EXPLANATION: It is very much like Version 1, but here, the two coils are combined into a single coil.

REMARK There is no current in the load without spark
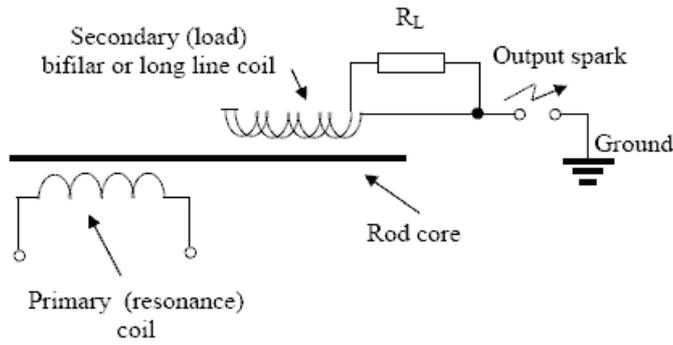
IT IS IMPOSSIBLE!
(Without back EMF suppression)
By Don Smith
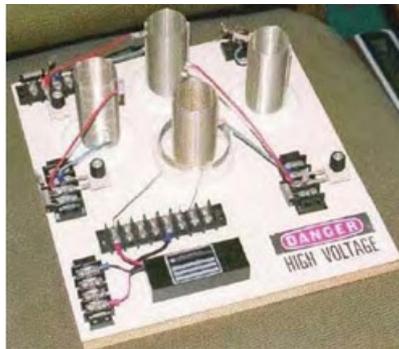
Multi-coil system for energy multiplication

COMMENT: You decide how you think it was made. Maybe short-circuited coils will be useful…

Read the following parts to discover more secrets…

IMODERN OPTIONS?
For Back EMF suppression
Version 3
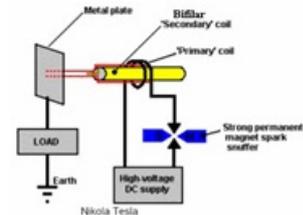
BI-FILAR USAGE
By Tariel Kapanadze
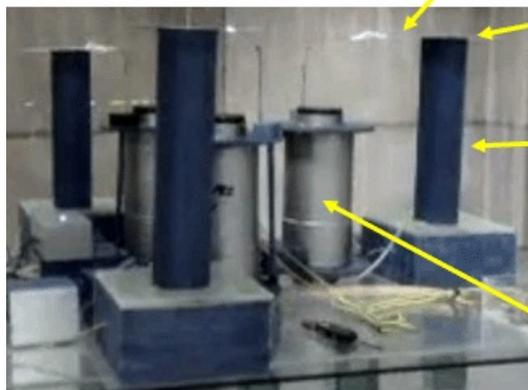
Possible schematics of the device
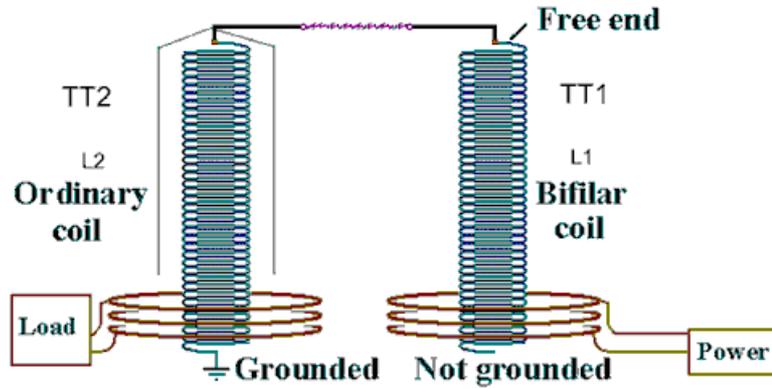
BI-FILAR USAGE
By Timothy Trapp

COMMENT: See Trapp's sites for more details

POSSIBLE CORE CONFIGURATION
For back EMF suppression

BI-FILAR WINDING
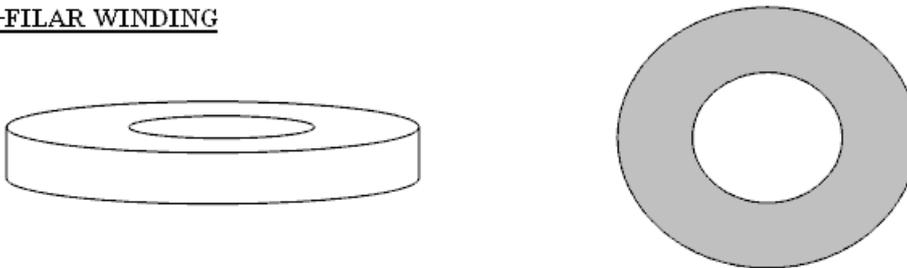
COMMENTS: An ordinary excitation winding is wound all of the way around a toroidal core. A bi-filar output winding is wound around the whole of a toroidal core. Remember about the "Hot" and "Cold" ends of a bi-filar coil.

ORDINARY WINDING
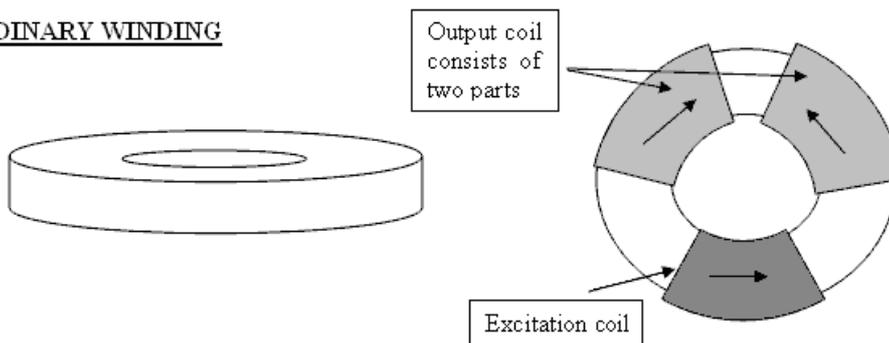
COMMENT: Remember about the "Hot" and "Cold" ends of the output coil

Output coil
consists of
two parts

E - TYPE CORE

Excitation coil
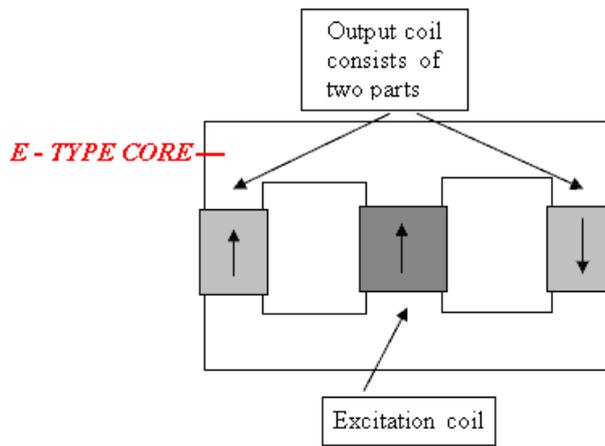
THE BASIS OF BACK EMF SUPPRESSION
(Tesla patent)

(No Model.)   2 Sheets—Sheet 1.

N. TESLA.

REGULATOR FOR DYNAMO ELECTRIC MACHINES.

No. 336,961.   Patented Mar. 2, 1886.

Fig. 1.

Fig. 2.

Fig. 3.

Inventor
Nikola Tesla
for Lemuel W. Serrell
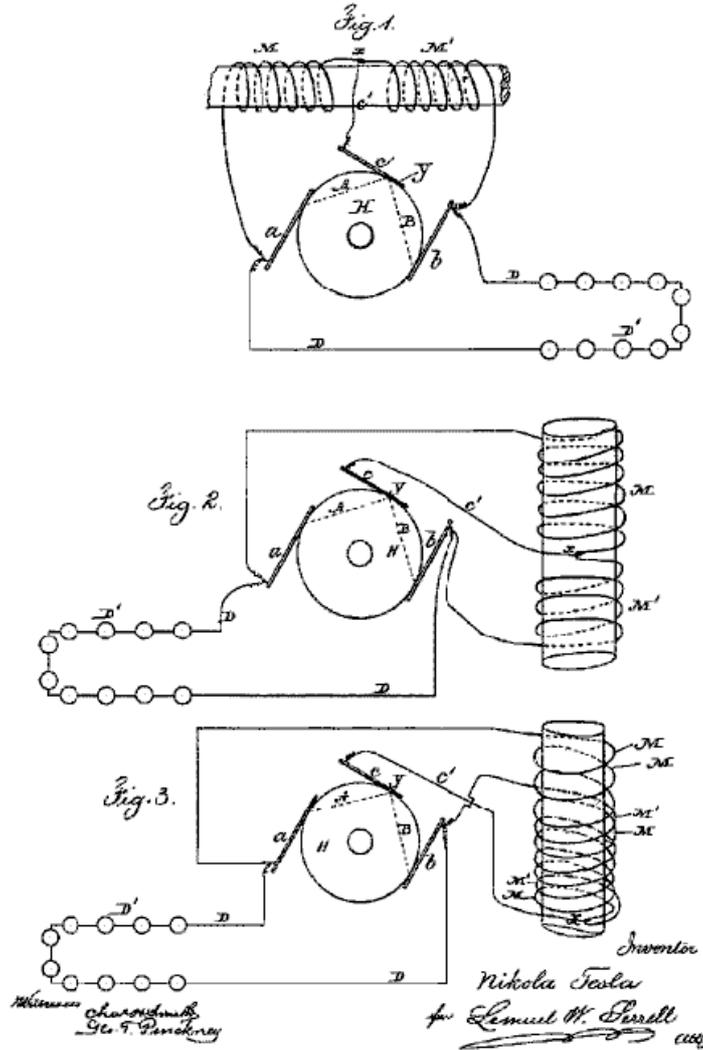
SECRET 1.2
The Spark-Exciting Generator ("SEG")
(Charge delivering to LC circuit)

Isolation Transformer   Tesla Coil System
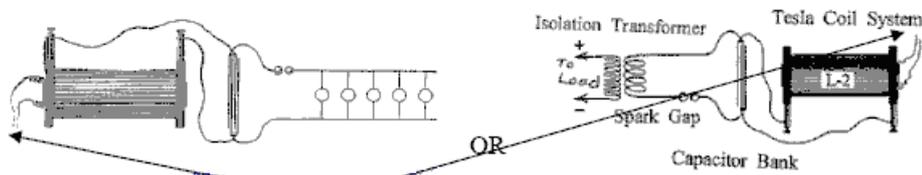
REMARK The frequency of sparks is equal to the resonance frequency of the Tesla coil, and the moment of exciting corresponds to the maximum voltage on the Tesla coil.

Line dependent on the voltage

$U(t)$

$U(t)$

Square dependent on the energy

$E(t)$

For the best result

Tunable Coil System
Insertable Movable L-1
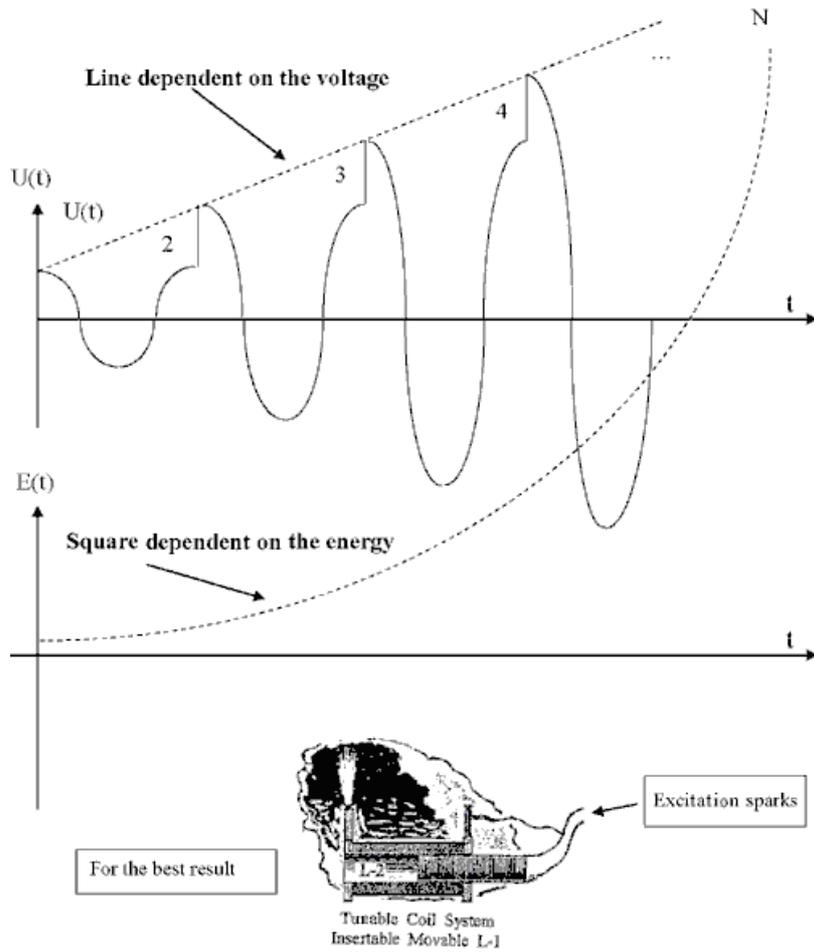
Excitation sparks

EXPLANATION:

The spark delivers charge to the L-C circuit

The charge Q on a capacitor C with voltage U is: $Q = U \times C$ or $U = Q / C$

Where Q is a charge delivered by one spark.

During the excitation of the L-C circuit by the sparks, the capacitance C is constant.
After N excitations, the voltage U_n on C will be $U_n = N \times Q / C$ And, energy E_n will be raised as N^2.
In other words, If the L-C circuit is excited by charges, we have energy amplification.

POSSIBLE MODIFICATION

HV transformer
(Insulated from ground)
or Tesla coil

Unipolar
Excitation spark

Output
spark

Resonant
Tesla coil

Load

L   C

Parasitic
capacitance
Tesla coil or
capacitor
bank

Ground
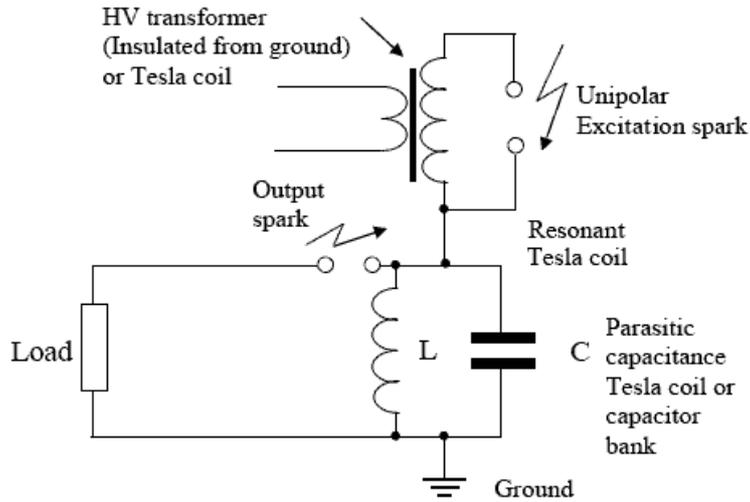
COMMENT: You need to understand that a feedback loop in the electromagnetic field is a changing voltage level in the L-C circuit capacitor, a high-voltage transformer is connected to collect the excess energy.

WITHOUT SYNCHRONISATION

HV transformer
(Insulated from ground)
or Tesla coil

Unipolar
Excitation spark

Output
spark

Load

C

Capacitors
bank

Step-down transformer

Ground
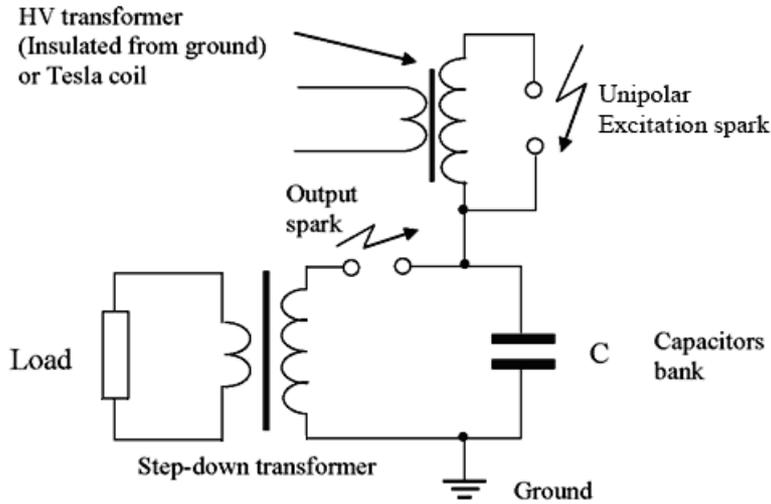
The Spark-Exciting Generator
From Don Smith

POWER SOURCE MODULE   HIGH VOLTAGE INDUCTION   AIR CORE
                       TRANSFORMER MODULE   INDUCTION COIL
                                                 MODULE

12   Free
      end

HIGH VOLTAGE OUTLET CIRCUIT

11

Output
spark

1

2

4

7

9

3

5

8

14

R_L

6

• LARGER MODULES GO TO 10 MILLION PLUS.

CAPACITOR

15
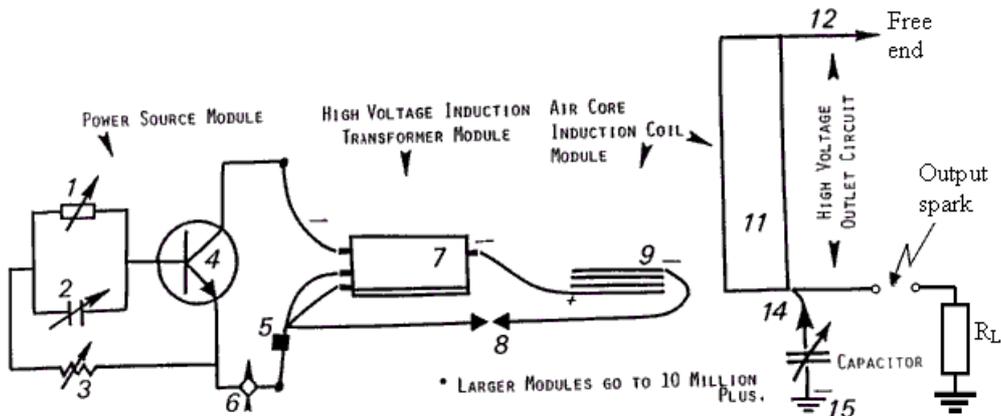
PARTS: 1. COIL, VARIABLE. 2. CAPACITOR, VARIABLE. 3. RESISTOR, VARIABLE. 4. TRANSISTOR, R.F.. 5. BATTERY, RECHARGEABLE. 6. OFF-ON SWITCH, VARIABLE. 7. HIGH VOLTAGE TRANSFORMER. 8. FEED BACK WITH SPARK GAP. 9. REACTOR, INDUCTION COIL. 10. FEED BACK WITH SPARK GAP. 11. REACTANT COIL. 12. OUTPUT FOR # 11. 13. INPUT FOR ELEVEN. 14. GROUNDING FOR ELEVEN.

Time line for SEG
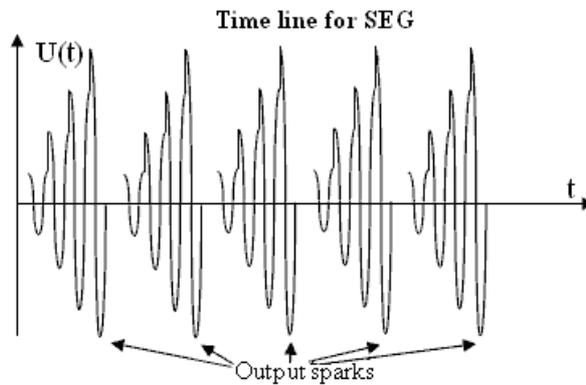
MAINTAIN RESONANCE AND GET FREE-ENERGY !!

EXPLANATION: It appears that we need to charge the capacitor circuit to an energy level which is greater than that of the source energy itself. At first glance, this appears to be an impossible task, but the problem is actually solved quite simply.

The charging system is screened, or "blinded", to use the terminology of Mr. Tesla, so that it cannot "see" the presence of the charge in the capacitor. To accomplish this, one end of a capacitor is connected to the ground and the other end is connected to the high-energy coil, the second end of which is free. After connecting to this higher energy level from the energising coil, electrons from the ground can charge a capacitor to a very high level.

In this case, the charging system does not "see" what charge is already in a capacitor. Each pulse is treated as if it were the first pulse ever generated. Thus, the capacitor can reach a higher energy level than of the source itself.

After the accumulation of the energy, it is discharged to the load through the discharge spark gap. After that, the process is repeated again and again indefinitely ...

COMMENT: The frequency of the excitation sparks, must match the resonant frequency of the output coil. (capacitors 2 and 14 are used to achieve this goal). This is multi-spark excitation.

COMMENT: Charges are pumping from the ground to 11-15 circuit, this device extracts charge from ambient space. Because of this, it will not work properly without a ground connection. If you need Mains frequency, or don't want use an output spark, then read the following parts…

Asymmetrical transformers can be used (read the following parts)

POSSIBLE SEG ARRANGEMENT
(From Russian forum)
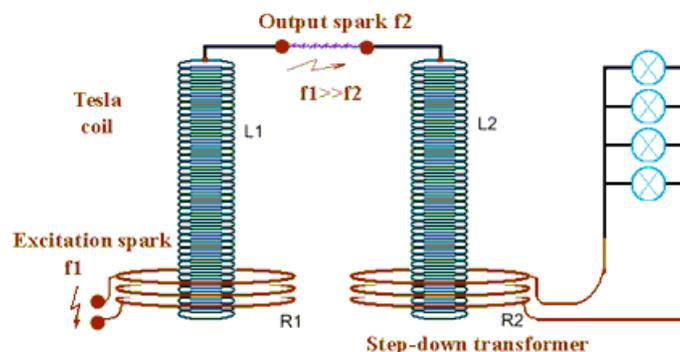
COMMENT: The L1 Tesla coil shown above, is energised by spark f1. Resonant, step-down transformer L2 is connected to the L1 Tesla coil by output spark f2. The frequency of f1 is much higher than that of f2.

SEG WITHOUT SYNCHRONISATION
From Don Smith
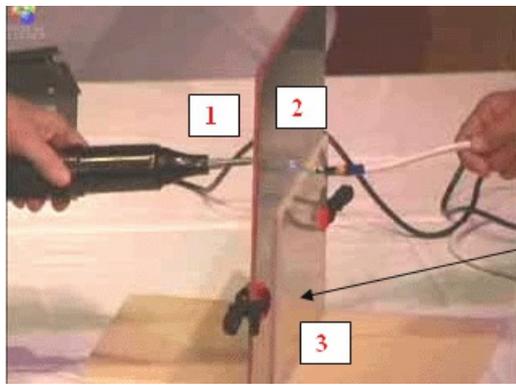
**REMARK:** It must be adjusted by dimensions, materials (???)
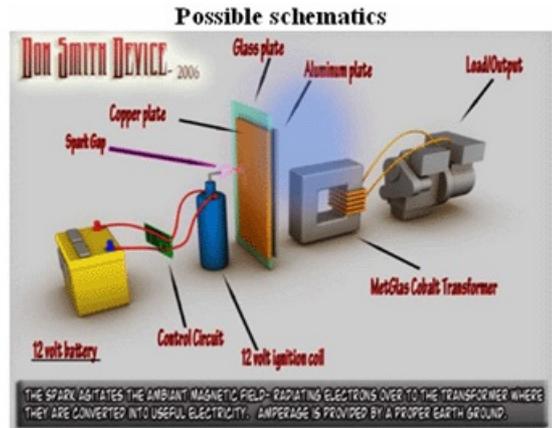
EXPLANATION

REMINDER: An ordinary capacitor is a device for separating charges on it's plates, <u>the total charge inside an ordinary capacitor is zero</u> (read the textbooks).
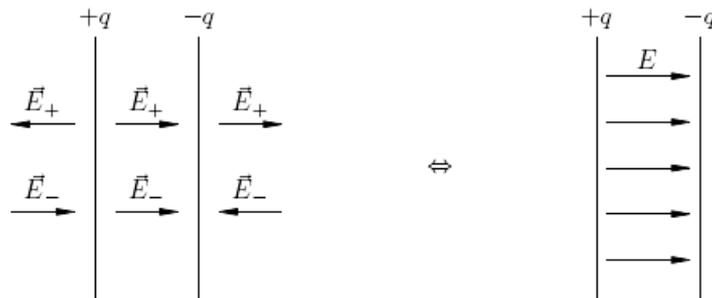

There is an electrical field only inside the capacitor. The electrical field outside the capacitor is zero (**because the fields cancel each other**).

So far, connecting one plate to the ground we will get no current flowing in this circuit:
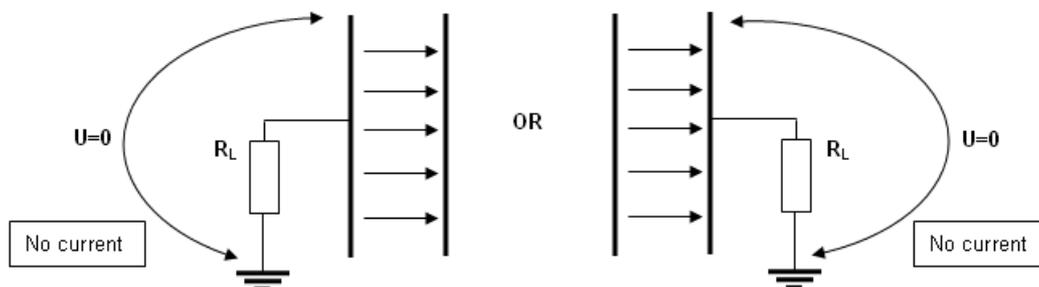
REMINDER: A separated capacitor is a device for accumulating charges on it's plates. <u>The total charge on a separated capacitor is NOT zero</u> (read the textbooks). So far, by connecting one plate of the separated

capacitor to the ground we will get a current flowing in this circuit (because there is an external field).
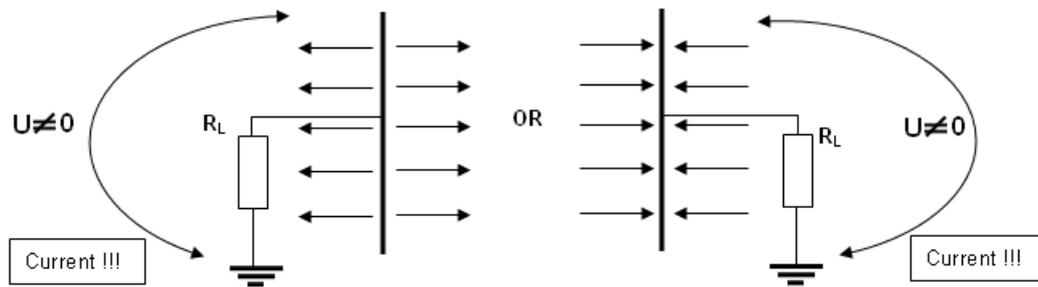
REMARK: We get the same situation, if only one plate of an ordinary capacitor is charged. So far, connecting an **uncharged plate** of an ordinary capacitor to the ground we get a current flowing in this circuit also (because you have an external field).
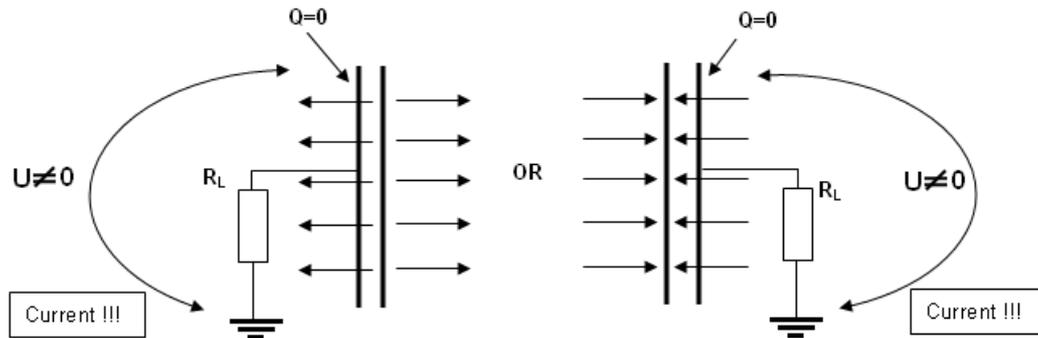
Alternately charging a capacitor's plates
Avramenko's plug – is it a free energy device?

The principle: Each plate of a capacitor charges as a separated capacitor. Charging takes place in an alternating fashion, first one plate and then the other plate.
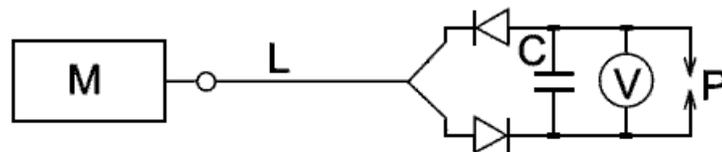
The result: The capacitor is charged to a voltage which is greater than that which the charging system delivers.

Explanation: The external field of an ordinary charged capacitor is equal to or near zero, as noted above. So, if you charge plates as a separated capacitor (upload or download charge), the charging system will not "see" the field which already exists inside the capacitor, and will charge the plates as if the field inside the capacitor is absent.
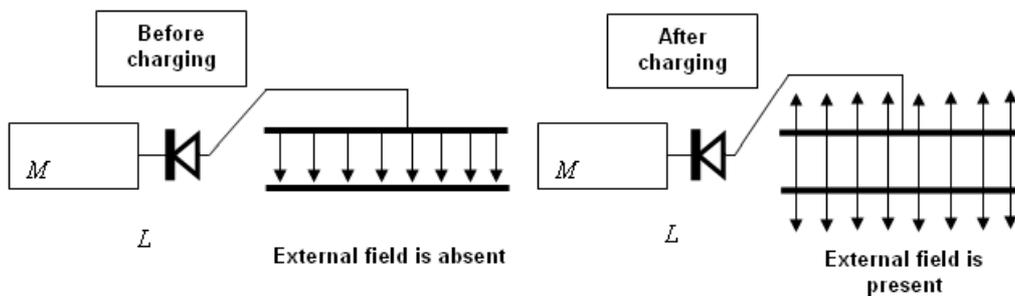
Once a plate has been charged, begin to charge another plate.

Before charging	After charging
External field is present	External field is absent
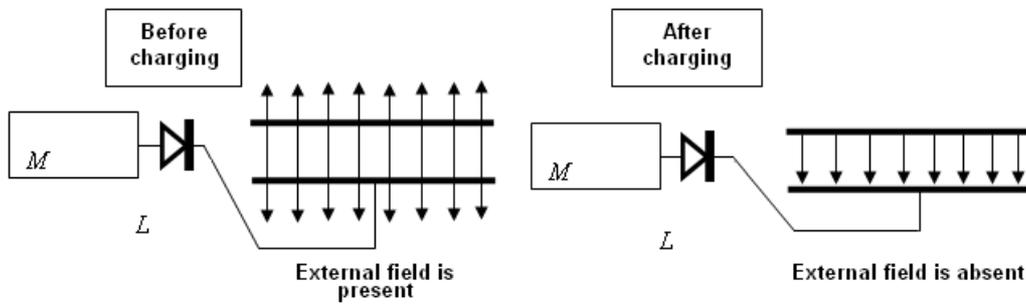
After the second plate of the capacitor has been charged, the external field becomes zero again. The charging system cannot "see" the field inside the capacitor once again and the process repeats again several times, raising the voltage until the spark gap connected to the output load discharges it.

REMARK: You will recall that an ordinary capacitor is a device for charge separation. The charging process of a capacitor causes electrons from on one plate to be "pumped" to another plate. After that, there is an excess of electrons on one plate, while the other one has deficit, and that creates a potential difference between them (read the textbooks). The total amount of charge inside the capacitor does not change. Thus **the task of the charging system is to move charge temporarily from one plate to another**.

<div align="center">

The simplest Free-Energy device (???)

</div>

REMARK: The capacitance of an ordinary capacitor is much greater than the capacitance of a separated plate capacitor (if it's plates are close to each other).
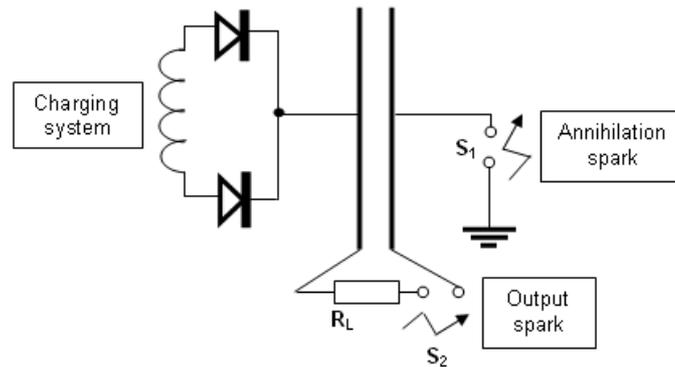
COMMENT: The time between S1 and S2 is very short.
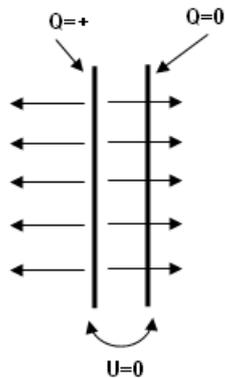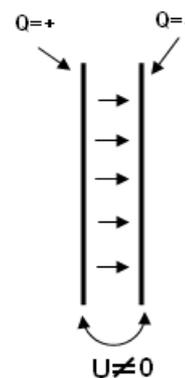
REMARK: This is an illustration of energy-dependence in a coordinated system.

REMARK: This is an illustration of the so-called Zero-Point Energy.

<div align="center">

ASYMMETRICAL CAPACITOR
(Current amplification???)

</div>
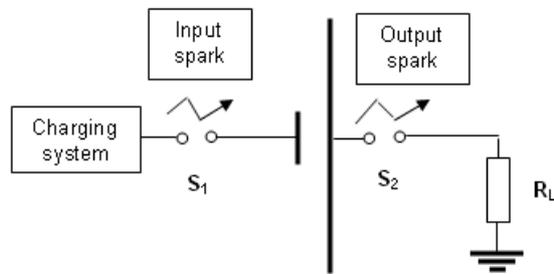
COMMENT: The capacitance (size) of the plate on the right is much greater than that of the plate on the left.
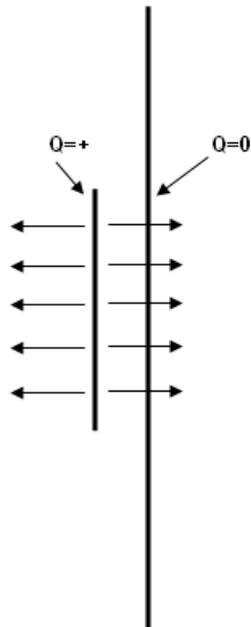
**FIELD AFTER S1**   **FIELD AFTER S2**
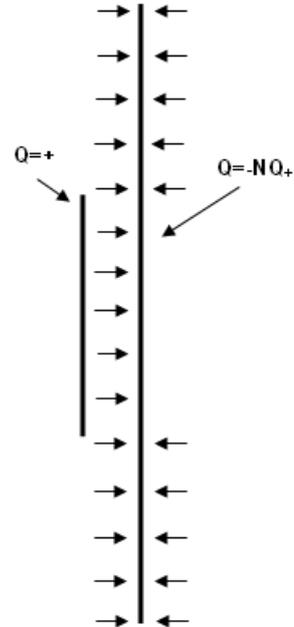
COMMENT: Charges from the ground will run on to the right hand plate **UNTIL** the moment when the external field drops to zero caused by the second spark ("S2"). It takes more charges flowing from the ground to annihilate the external field at the instant of the second spark, because the capacitance of the plate on the right is far greater. 'More charge' means 'more current', so you have achieved current amplification through this arrangement.

COMMENT: The field at the terminals of the plate on the right is not zero after both sparks have occurred, this is because a field remains due to the additional charges which have flowed in ('pumped') from the ground.

THE SIMPLEST ASYMMETRICAL CAPACITORS

The most simple asymmetrical capacitors are the Leyden jar and the coaxial cable (also invented by Mr. Tesla).
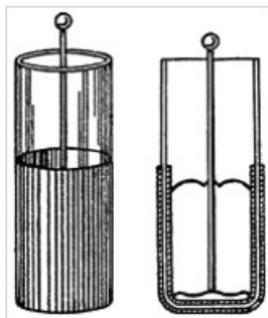
Apart from the fact that the area (capacitance) of the plates of these capacitors is different, and they therefore are asymmetrical, they have another property:
The electrostatic field of the external electrode of these devices does not affect the internal electrode.

Field from the external electrode

Field inside is absent
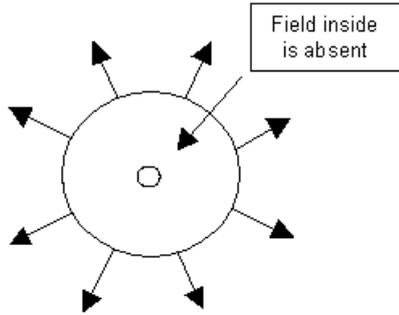
**Field from internal electrode**

Field inside is present
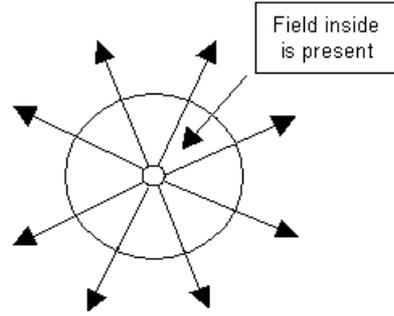
EXPLANATION: This is caused by the fact that the electrostatic field is absent inside the metal bodies (see textbooks).

REMARK: This is true provided that the plates are charged separately.

CAPACITOR - TRIODE

(The third electrode in an asymmetrical capacitor)

Field from input electrode

Output electrode

Input electrode

Control electrode

R_L
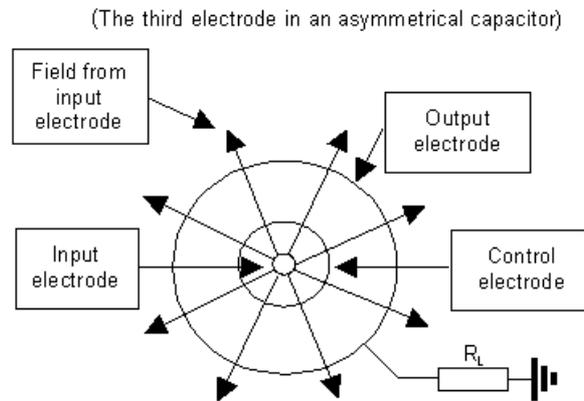
REMARK: Dr. Harold Aspden has pointed out the possibility of Energy Amplification when using this device.

THE PRINCIPLE OF THE "BLINDNESS" CHARGING SYSTEM IN THE SEG

Generator

OUTPUT VOLTAGE HERE

NO OUTPUT VOLTAGE

Generator
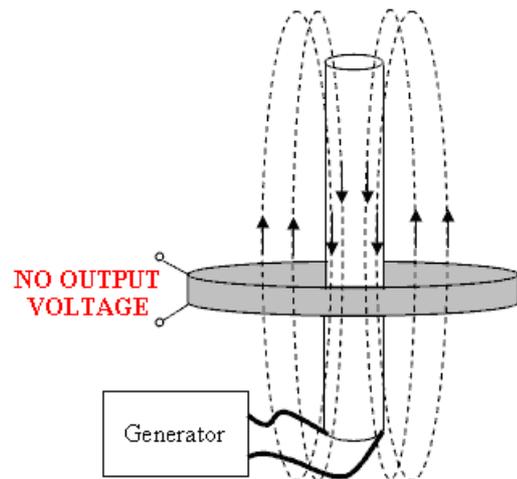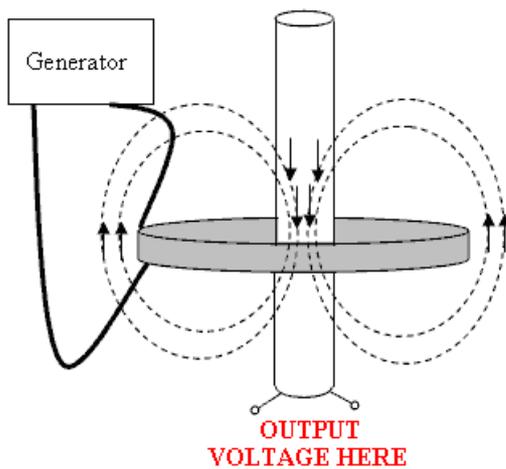
EXPLANATION: A "short" coil is not able to see oscillations in "long" coil, because the total number of magnetic lines from "long" coil through "short" coil is close to zero (one half is in one direction and one half is in opposite direction).

COMMENT: This a private case of asymmetrical transformer, for more details read part devoted to asymmetrical transformers.
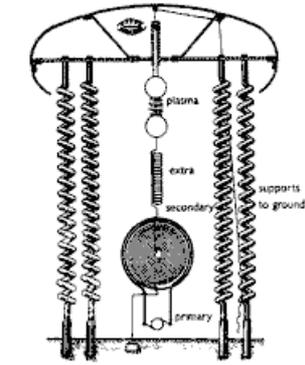
Fig. 6 Oscillating electrostatically charged dome.
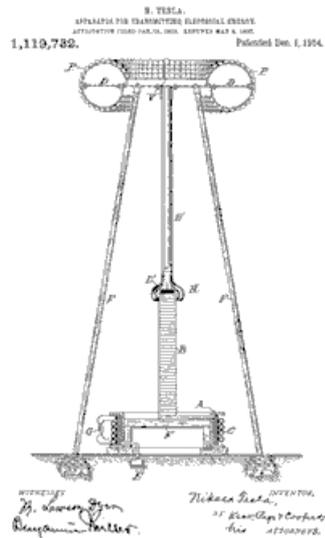
COMMENTS ABOUT THE SEG:
All Back EMF schematics can be used in SEG

R_L

Resonance coil is secondary coil

Free end

Version 1

Primary coil, placed in the middle of the secondary

Excitation spark

Ground

Resonance coil is secondary coil

R_L

Version 2

Rod core

Excitation spark

Primary (excitation) coil

Secondary (resonance) bifilar or long line coil

R_L

Version 3

Ground

Rod core

Primary (excitation coil)
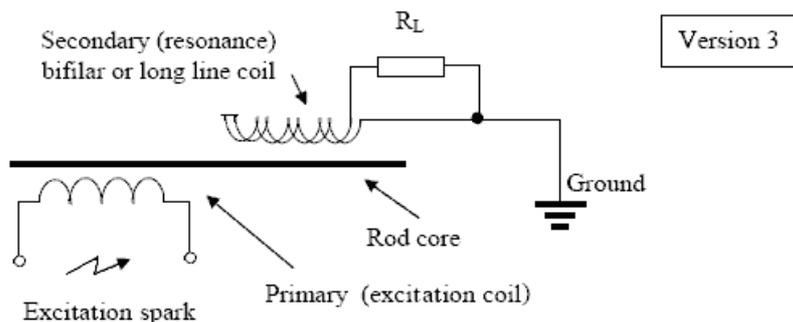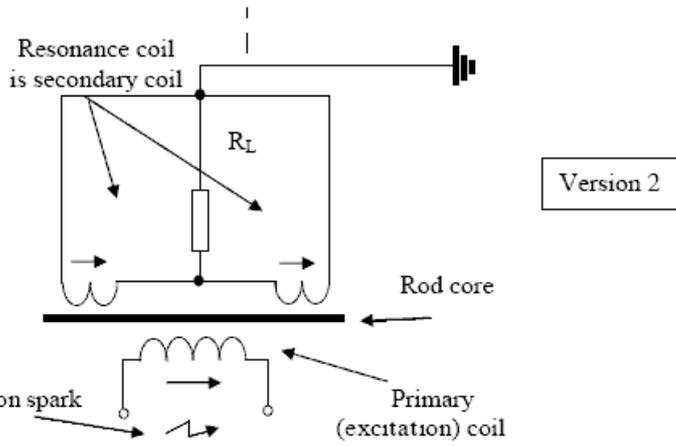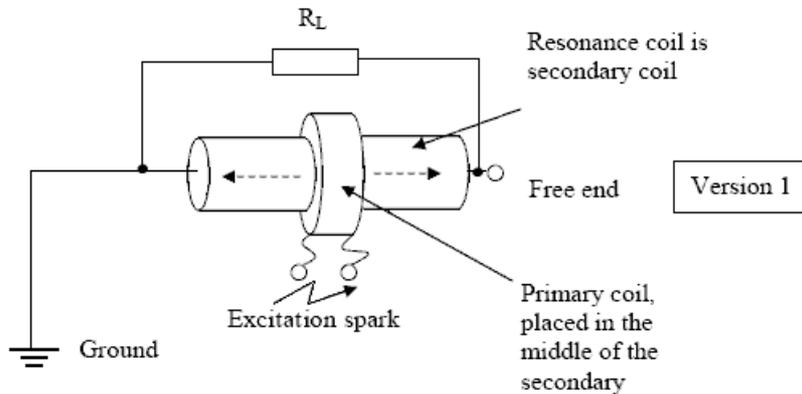
Excitation spark

COMMENT: No current will be produced in the load unless there is a ground connection in any of these circuits. Is excitation possible with just a single spark (???)

FOR MORE ASYMMETRY IN SEG ?
FOR ONE SPARK EXCITING IN SEG ?
By Don Smith

Version 1

Prototype coil

Version 2

Version 3
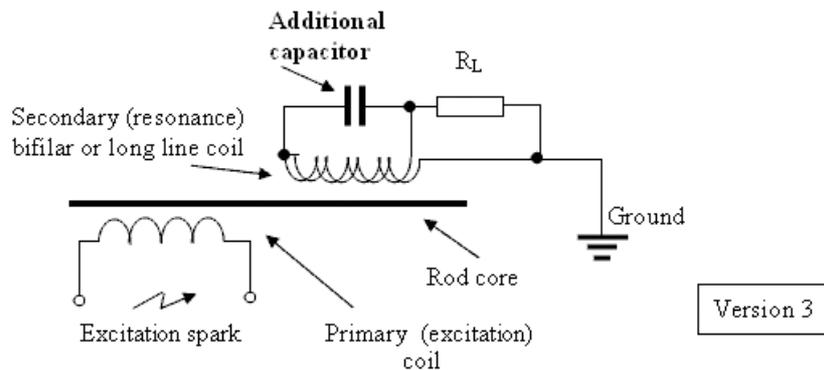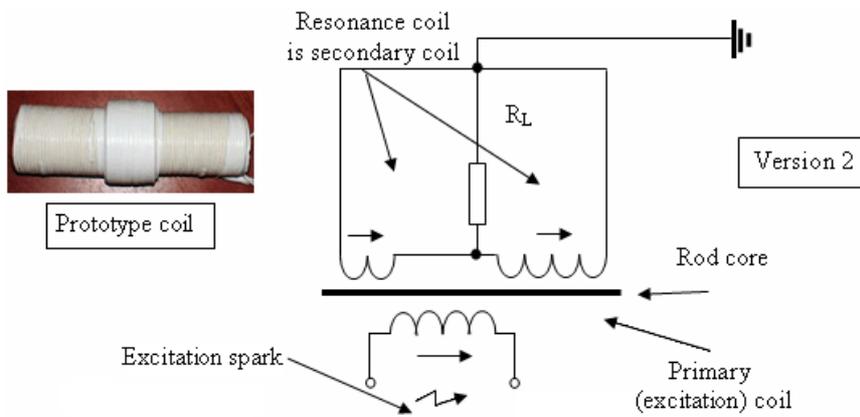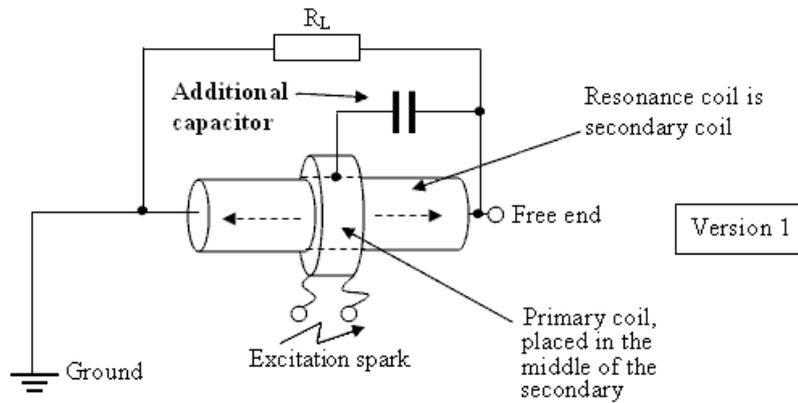
COMMENT: This arrangement becomes more asymmetrical after excitation.

EXPLANATION
Symmetry is destroyed by a spark

If the impedances of Ra and Rc are the same at the frequency produced by signal generator F1, then the resulting voltage at points **A** and **B** will also be identical which means that there will be zero output.
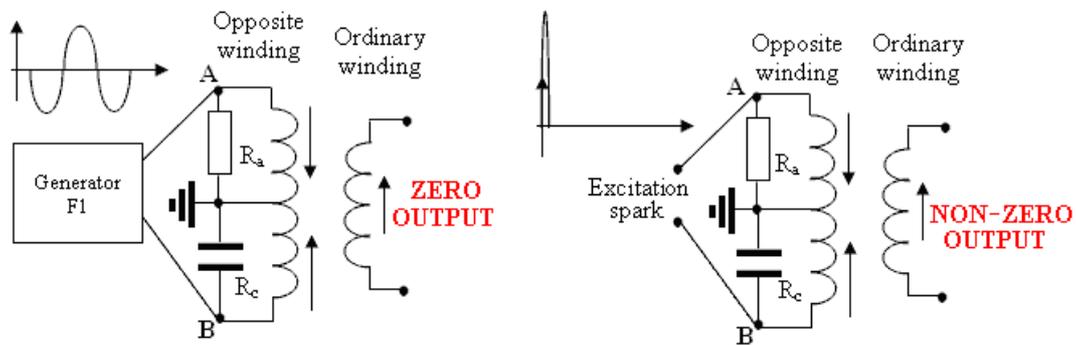
If the circuit is excited by the very sharp, positive-only, DC voltage spike produced by a spark, then the impedances of Ra and Rc are not the same and there is a non-zero output.

Here is a possible alternative. Please note that the position of the output coil must be adjusted, it's best position depending on value of resistor Rc and the frequency being produced by signal generator F1.
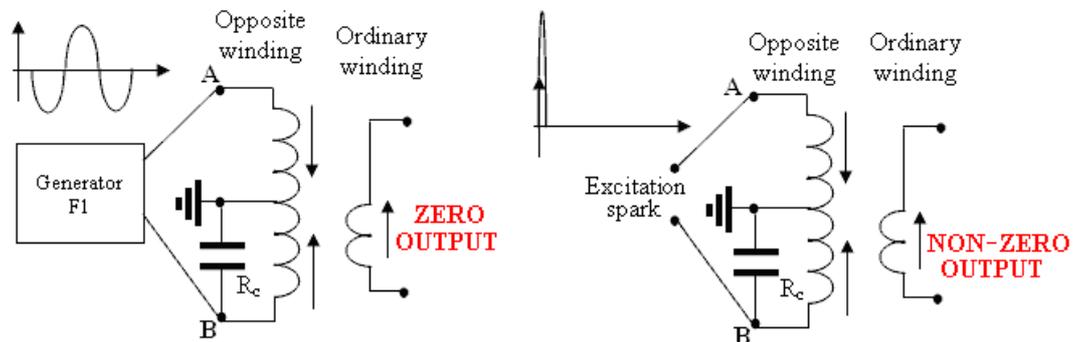
Here is another possible arrangement. Here, the position of the output coil depends on L1 and L2:

A NOMOGRAPH

INDUCTANCE L

Millihenries

2000
1000
500
200
100
50
20
10
5
2
1
0.5
0.3
0.2
0.1
0.05
0.02
0.01
0.005
0.002

Millihenries

REACTANCE X$_L$ or X$_C$

Ohms

10,000,000
5,000,000
2,000,000
1,000,000
500,000
200,000
100,000
50,000
20,000
10,000
5000
2000
1000
500
200
100
50
20
10
5
2
1
0.5
0.2
0.1
0.05
0.02
0.01

Ohms

CAPACITANCE C

Picofarads

0.02
0.05
0.1
0.2
0.5
1
2
5
10
20
50
100
200
500

Nanofarads

1
2
5
10
20
50
100
200
500

Microfarads

1
2
5
10
20
50
100
200
500
1000
2000
5000
10,000
20,000

FREQUENCY f

Kilohertz

1000
500
400
300
200
150
100
50
40
30
20
15
10
9
8
7
6
5
4
3
2
1.5
1

Kilohertz

Using a nomograph: Draw a straight line from your chosen 30 kHz frequency (purple line) through your chosen 100 nanofarad capacitor value and carry the line on as far as the (blue) inductance line as shown above.

You can now read the reactance off the red line, which looks like 51 ohms to me. This means that when the circuit is running at a frequency of 30 kHz, then the current flow through your 100 nF capacitor will be the same as through a 51 ohm resistor. Reading off the blue "Inductance" line that same current flow at that frequency would occur with a coil which has an inductance of 0.28 millihenries.

MODERN OPTIONS IN SEG
Back EMF suppression in resonance coil
Version 3
By Don Smith

Multi line coil
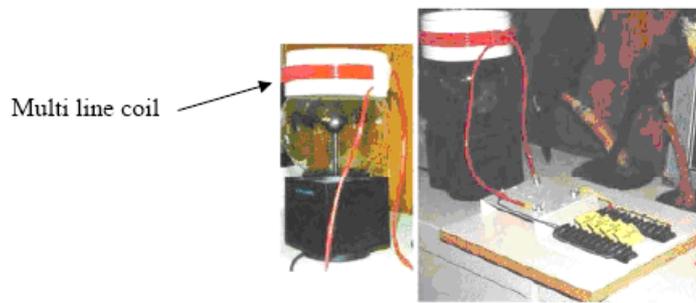
Globe device for energy generation

COMMENT: Please note that a long wire is used and <u>one-spark excitation, where additional capacitors are used to create non-symmetry</u> (???)

Version???
By Don Smith

Multi coil system for energy multiplication

Version???
By Tariel Kapanadze


KAPANADZE PROCESS
The process requires only 4 steps:
STEP 1

An L-C (coil-capacitor) circuit is pulsed and it's resonant frequency determined (possibly by feeding it power through a spark gap and adjusting a nearby coil for maximum power collection).

STEP 2

The SEG process causes the energy level in the L-C circuit to rise. Power is fed via a spark gap which produces a very sharp square wave signal which contains every frequency in it. The L-C circuit automatically resonates at it's own frequency in the same way that a bell always produces the same musical frequency when struck, no matter how it is struck.
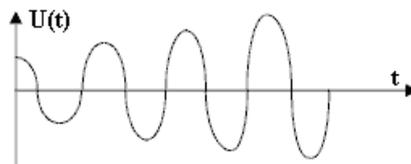
STEP 3

The output waveform from the L-C circuit is then manipulated to provide an output which oscillates at the frequency on the local mains supply (50 Hz or 60 Hz typically).
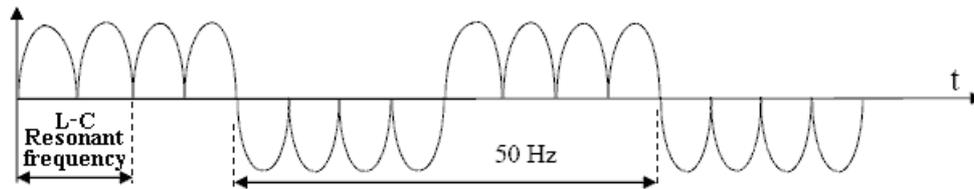
STEP 4

Finally, the oscillations are smoothed by filtering to provide mains-frequency output power.
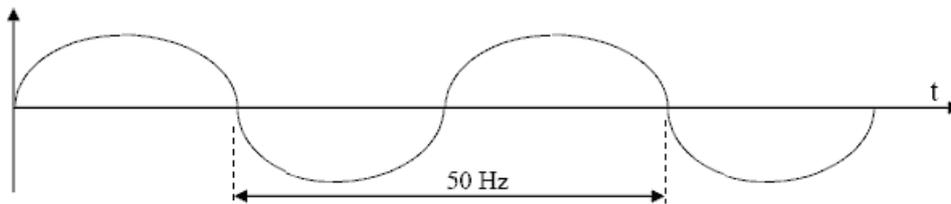
COMMENT: All of these processes are described in Kapanadze's patents and so, no state or private confidential information is shown here. Kapanadze's process is the SEG process.

COMMENT: As I see it, the main difference between the designs of Don Smith and Tariel Kapanadze is the inverter or modulator in the output circuit. At mains frequency you need a huge transformer core in a powerful inverter.

Read the following parts to discover more secrets…

MODERN OPTION
Lowering the L-C frequency to mains frequency (Modulation)
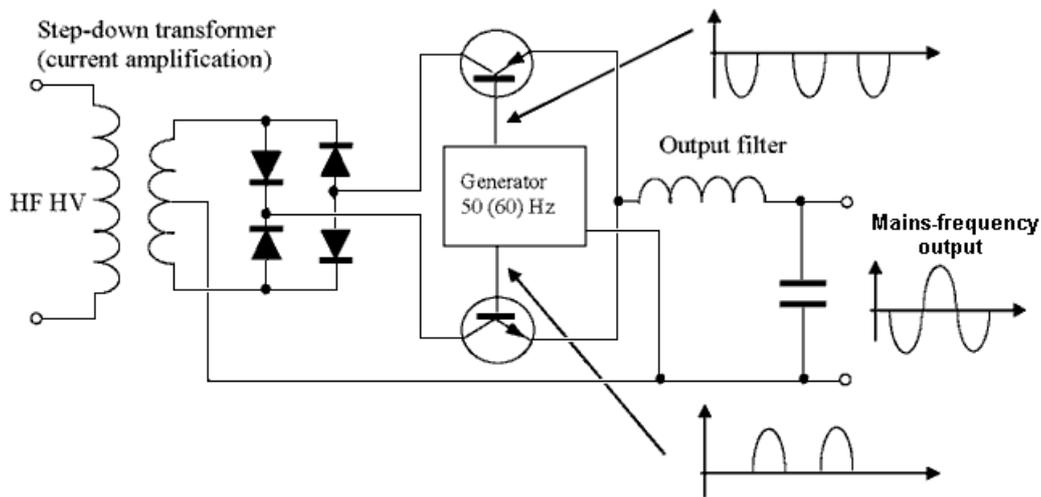
COMMENTS: It is possible to use square waves instead of sine waves to ease the loading on the transistors. This is very similar to the output sections of Tariel Kapanadze's patents. This method does not require a powerful transformer with a huge core in order to provide 50 Hz or 60 Hz.

Don Smith's option (guessed at by Patrick Kelly)
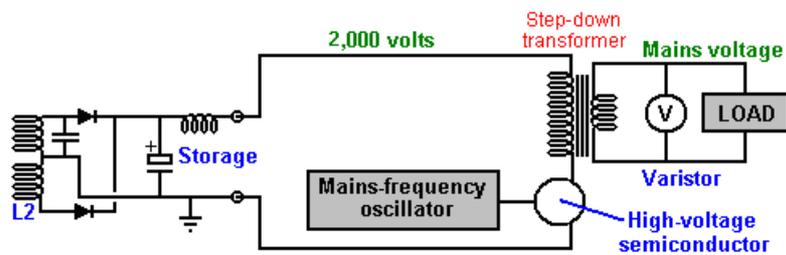
COMMENT: There is no high-frequency high-voltage step-down transformer, but a step-down transformer is used for mains frequency which means that it will need a huge core.

FOR BOTH SCHEMATICS:
You must choose the load in order to get the maximum power output. Very low, and very high loads will give almost no energy in the load (because the current flowing in the output circuit is restricted by the current flowing in the resonant circuit).

ILLUSTRATIONS FOR FREQUENCY LOWERING
From Tariel Kapanadze
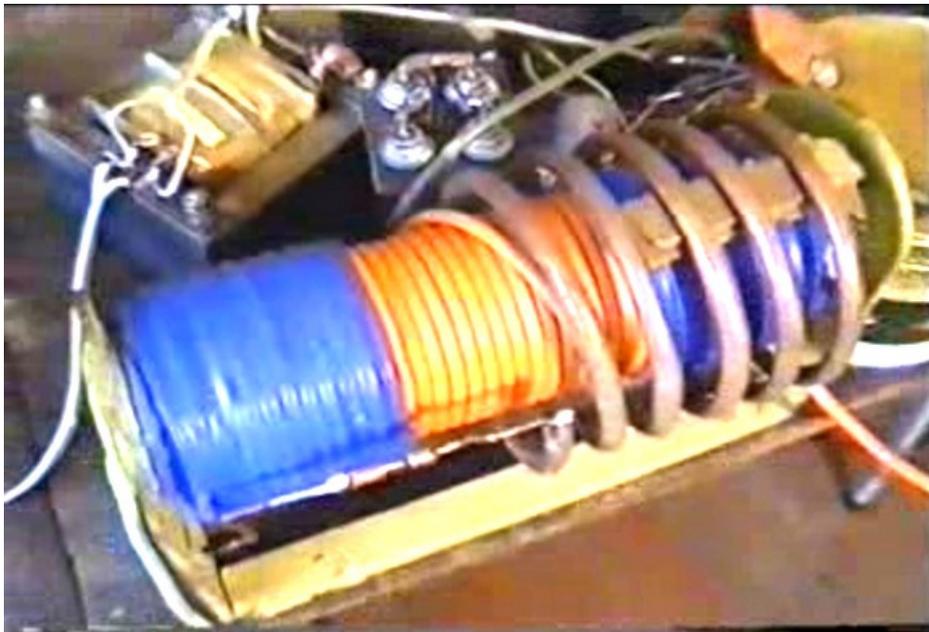
ENERGY GAIN
(REMARKS on 1.1 and 1.2 SECRETS)

We must consider two options:
1. Back-EMF suppression . . . . (1.1).
2. Excitation by a spark . . . . (1.2).

THESE OPTIONS ARE DIFFERENT

However, in both cases, an increase of energy occurs due to the charges being pumped in from the ground. In the terminology of Mr. Tesla – "a charge funnel" or in modern terminology "a charge pump".

1. In the first case, the problem for the oscillating circuit is to "create" an electromagnetic field which has a high intensity electrical component in ambient space. (Ideally, it is only necessary for the high-voltage capacitor be fully charged once. After that, if the circuit is lossless, then oscillation will be maintained indefinitely without the need for any further

input power).

THIS IS A "BAIT" TO ATTRACT CHARGES FROM THE AMBIENT SPACE.

Only a tiny amount of energy is needed to create such a "bait"...

Next, move the "bait" to one side of the circuit, the side which is the source of the charges (Ground). The separation between the "bait" and the charges is now so small that breakdown occurs. The inherent parasitic capacitance of the circuit will be instantly charged, creating a voltage difference at the opposite ends of the circuit, which in turn causes spurious oscillations. The energy contained in these oscillations is the energy gain which we want to capture and use. This energy powers the load. This very useful electromagnetic field containing our excess power oscillates in a direction which is perpendicular to the direction of oscillation of the "bait" field and because of this very important difference, the output power oscillations do not destroy it. This vital factor happens because the coil is wound with two opposing halves. The parasitic oscillations gradually die out, passing all of their energy to the load.

This energy-gaining process is repeated, spark by spark. The more often a spark occurs, the higher the excess power output will be. That is, the higher the spark frequency (caused by a higher voltage across the spark gap), the higher the power output and the greater the efficiency of the process. Hardly any additional "bait" energy is ever required.

2. In the second case we must charge the capacitor circuit to an energy level higher than that of the source energy itself. At first glance, this appears to be an impossible task, but the problem is solved quite easily.

The charging system is screened, or "blinded", to use the terminology of Mr. Tesla, so that it cannot "see" the presence of the charge in the capacitor. To accomplish this, one end of a capacitor is connected to the ground and the other end is connected to the high-energy coil, the second end of which is free. After connecting to this higher energy level from the energising coil, electrons from the ground can charge a capacitor to a very high level.

In this case, the charging system does not "see" what charge is already in a capacitor. Each pulse is treated as if it were the first pulse ever generated. Thus, the capacitor can reach a higher energy level than that of the source itself.

After the accumulation of the energy, it is discharged to the load through the discharge spark gap. After that, the process is repeated again and again indefinitely ...

THIS PROCESS DOES NOT REQUIRE THE SUPPRESSION OF BACK-EMF

3. It should be noted, that option 1 and option 2 above could be combined.

<div align="center">

SECRET 2
SWITCHABLE INDUCTANCE

</div>

The inductance is comprised of two coils which are positioned close to each other. Their connections are shown in front.
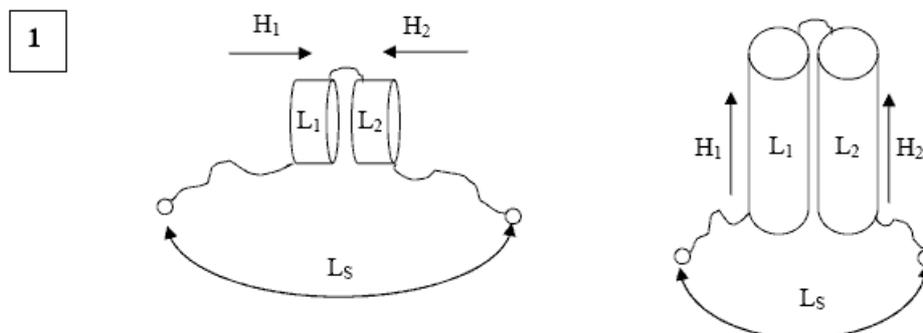

CONSTRUCTION: When constructing this arrangement there are many different options due to the various types of core which can be used for the coils:

**1.** Air-core
2. A ferromagnetic bar core

3. A ferromagnetic toroidal core
4. A transformer style ferromagnetic core.
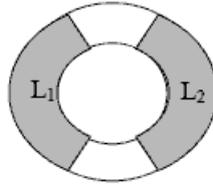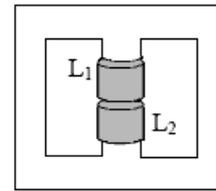
PROPERTIES: (tested many times with a variety of cores)
The value of the total inductance LS does not change if you short one of the inductors L1 or L2
(This may have been tested for the first time by Mr. Tesla back in the 19th century).

APPLICATION TECHNIQUE:
This energy generation is based on the asymmetrical process:
1. Feed the total inductance LS with a current I
2. Then short-circuit one of the inductors (say, L1)
3. Drain the energy from inductor L2 into a capacitor
4. After draining L2, then remove the short-circuit from L1, short-circuit L2 and then drain the energy from L1 into a capacitor

QUESTION: Is it possible, using this method, to get twice the energy amount due to the asymmetry of the process, and if not, then what is wrong?

AN ANSWER : We need to start winding coils and performing tests.

EXAMPLES OF COILS ACTUALLY CONSTRUCTED
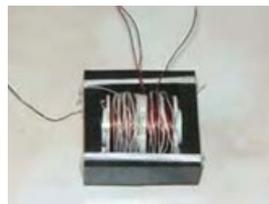
A coil was wound on a transformer ferromagnetic core (the size is not important) with permeability 2500 (not important) which was designed as a power-supply transformer. Each half-coil was 200 turns (not important), of 0.33 mm diameter wire (not important). The total inductance LS is about 2 mH (not important).

A coil was wound on a toroidal ferromagnetic core with permeability 1000 (not important). Each half-coil was 200 turns (not important), of 0.33 mm diameter wire (not important). The total inductance LS is about 4 mH (not important).

An ordinary laminated iron core transformer intended for 50-60 Hz power supply use (size is not important) was wound with a coil placed on each of it's two halves. The total inductance LS is about 100 mH (not important).

THE OBJECTIVE OF THE TESTS
To make tests to confirm the properties of the coils, and then make measurements of the LS inductance both with coil L2 short-circuited and coil L2 not short-circuited, and then compare the results.

COMMENT: All of the tests can be done with just the toroidal coil as the other coils have been shown to have the same properties. You can repeat these tests and confirm this for yourself.

OPTION 1
These simple inductance measurements can be carried out with the help of an ordinary RLC (Resistance / Inductance / Capacitance) meter, such as the one shown here:

The measurements taken:
The total coil inductance LS was measured without short-circuited coils, the figure was recorded. The L2 coil was then short-circuited and the inductance LS measured again and the result recorded. Then, the results of the two measurements were compared.

The result: The inductance LS was unchanged (to an accuracy of about a one percent).

OPTION 2
A special set-up was used, consisting of an analogue oscilloscope, a digital voltmeter and a signal generator, to measure a voltage on the inductance LS without L2 being short-circuited and then with L2 short-circuited.

After the measurements were made, all of the results were compared.

Schematic of the set-up:
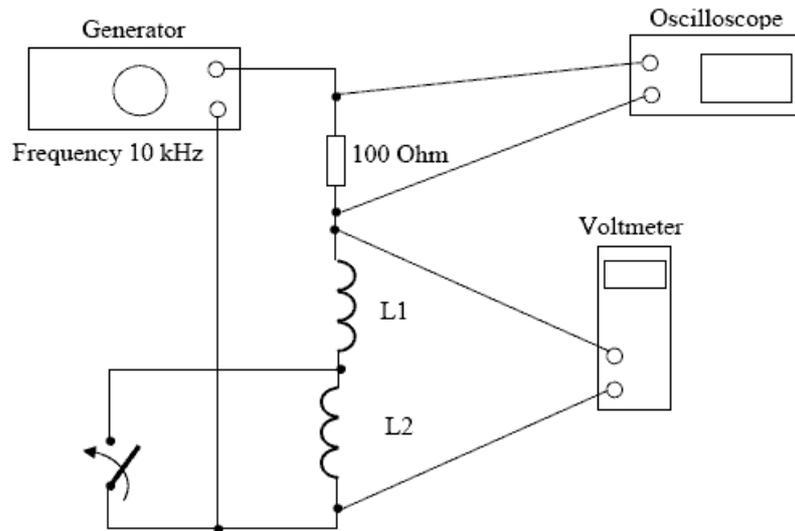
The order in which the measurements were taken.
The voltage on the resistor was measured using the oscilloscope and the voltage on the inductor was measured using the voltmeter. Readings were taken before and after short-circuiting L2.

The result: The voltages remained unchanged (to an accuracy of about one percent).

Additional measurements
Before the above measurements were taken, the voltages across L1 and L2 were measured. The voltage on both halves was a half of the voltage on the total inductor LS.

COMMENT: The frequency of about 10 kHz was chosen because the coil did not have parasitic resonances at this frequency or at low frequencies. All measurements were repeated using a coil with a ferromagnetic E-shaped transformer core. All of the results were the same.

OPTION 3
Capacitor recharge.
The objective was to match voltages on a capacitor, both before and after it being recharged by interaction with an inductor which could be connected into the circuit via a switch.
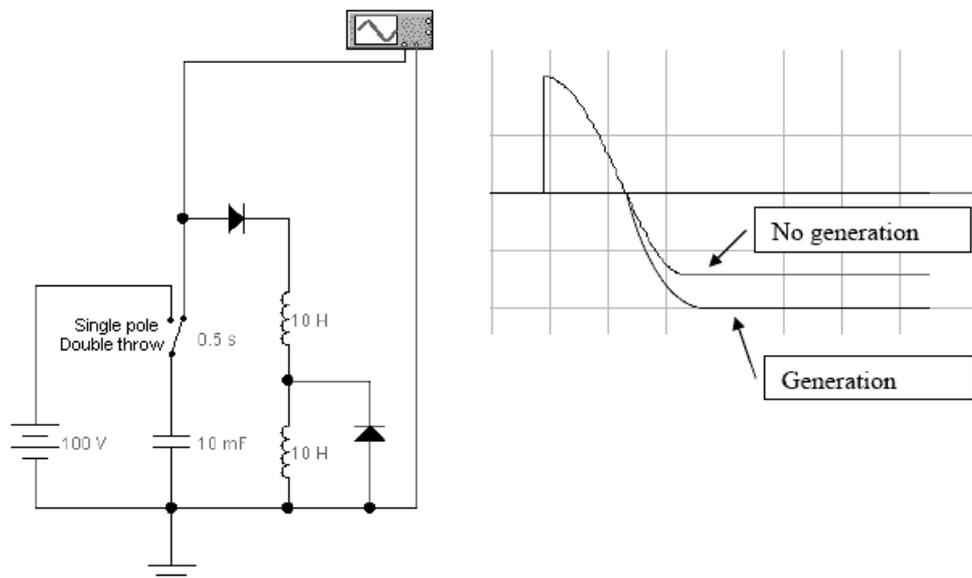
The experiment conditions
A capacitor is charged from a battery and is connected to the inductor through the first diode (included to give

protection against oscillations). At the moment of feedback, half of the inductor is shunted by the second diode (due to it's polarity), while the inductance must remain unchanged. If after recharging the capacitor the capacitor voltage is the same (but with reversed polarity), then generation will have taken place (because a half of the energy remains in the shunted half of the inductor).

In theory, it is impossible, for an ordinary inductor consisting of two coils to do this.

The result :
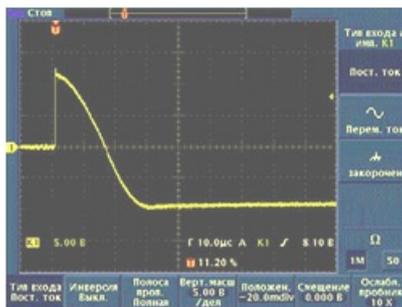
The result confirms the prediction – the remaining energy is more than the capacitor gives to the coil (with an accuracy of 20%).

Test components:
Capacitor 47 nano Farads, inductor LS is about 2 mH , Shotky silicon diodes BAT42, voltage used: 12 V.

THE RESULT VERIFICATION FOR OPTION 3
For verification of these results and in order to improve the accuracy, all measurements were repeated using alternative components.

Test components: Capacitor: 1.5 nano Farads; total inductance: 1.6 mH, germanium diodes: (Russian) D311, charging voltage: 5V.

The result: Confirmation of the previous measurements (a) shown below
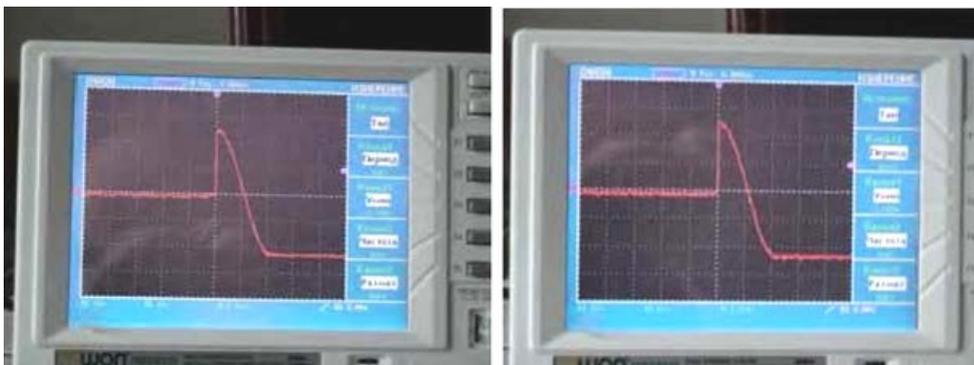
(a)   **(b)**

The recharging accuracy was improved to 10 percent. Also, a check measurement was made **without the second diode**. The result was essentially the same as the measurement which used the shunting diode. The missing 10 percent of the voltage can be explained as losses due to the spread capacitor's inductance and in it's resistance.

CONTINUED TESTING
The shunting diode was reversed and the test performed again:
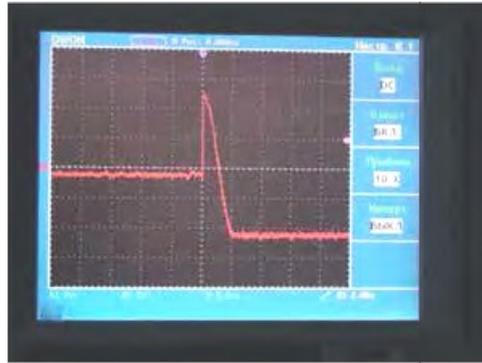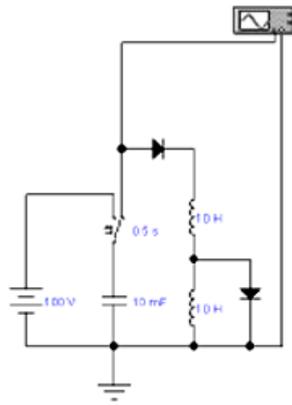
The result: It seems that the charge is spot on…

Further testing

An oscilloscope was connected to the coil instead of to the capacitor, in order to avoid influence of the first diode so the oscillations viewed were based on the inductance of the spread capacitors.
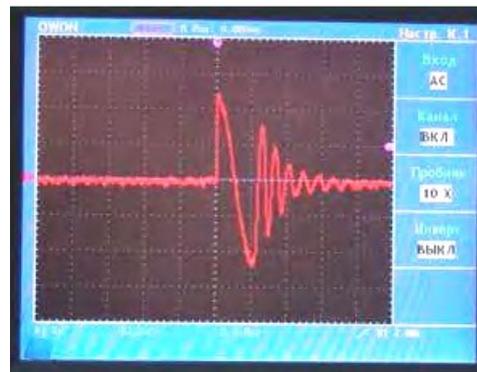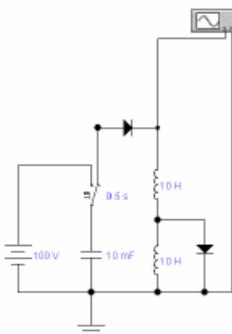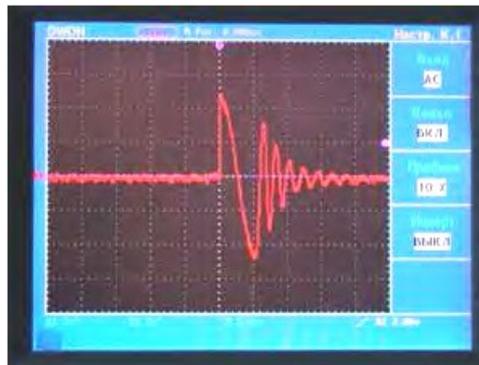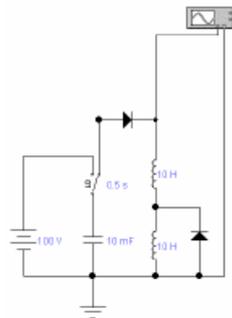

The result: The accuracy of capacitor recharging was improved to 5 percent (due to the removal of the influence of the first diode). After the main capacitor was switched off (by the diode), you can see oscillations caused by the spread capacitance of the inductors. Based on the frequency of the oscillations which were 4 to 5 times higher than that of the main capacitor, one can estimate the spread capacitance as being 16 to 25 times lower than the main capacitor.

Still further testing

Testing of the oscillation circuit shunting, with the two cases combined (and without the first diode):
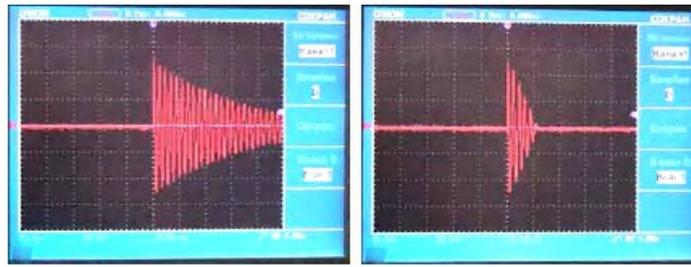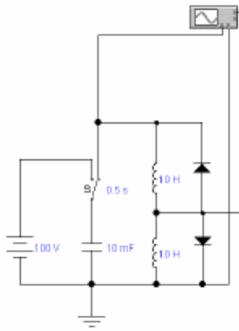
The result: A contour (oscillation circuit) is not destroyed, but it is shunted a lot. One can explain it by considering the moments when both diodes are conducting and so, shunt the circuit. As an addition, the voltage on the down diode is shown (the time scale is stretched). The negative voltage is close to maximum.
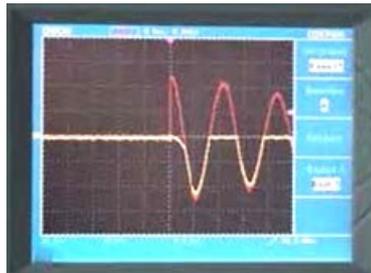
Still further testing

Charging a capacitor by shunting current in oscillation mode.
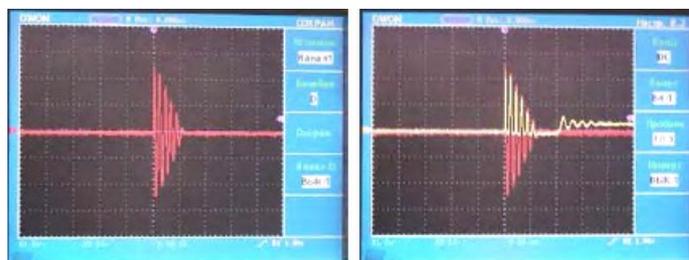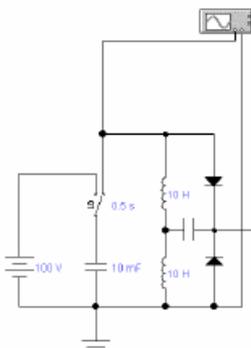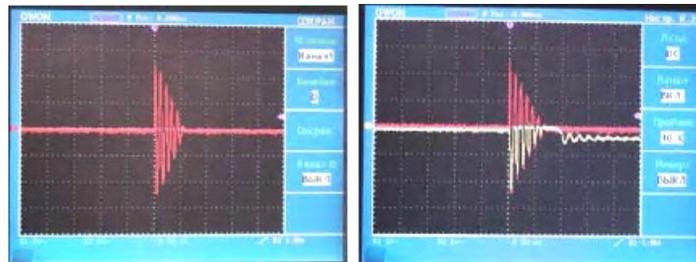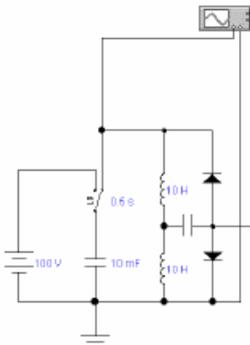
Conditions: The addition of a charging capacitor of 47 nano Farads.

The result: A capacitor is charging without shunting the circuit. The final voltage on it is 0.8 V, and rises an falls of the voltage depend on the value of the capacitor.

THE OVERALL RESULTS OF THE TESTS (OPTIONS 1, 2 and 3)

The symmetry of interaction in systems with electromagnetic field feedback (as with switched

inductance) appears to be violated, and this implies that this arrangement could be used to generate energy.

COMMENT: You need to choose the load in order to get the maximum power output. **Very low, and very high loads, will send almost no energy to the load**.

ILLUSTRATION FOR SWITCHABLE INDUCTANCE
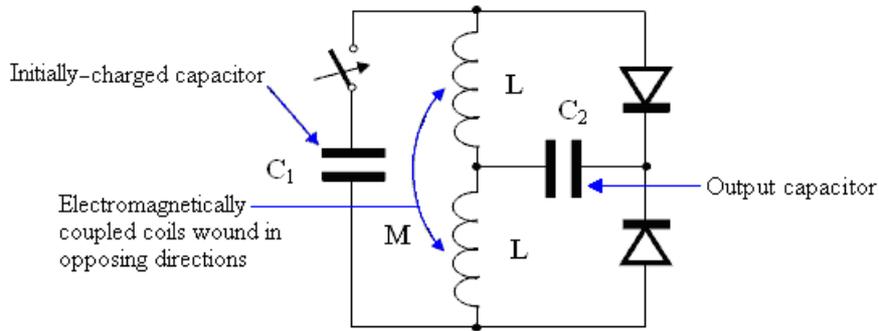
EXPLANATION: The circuit has two kinds of currents: the main current and the shunting current.
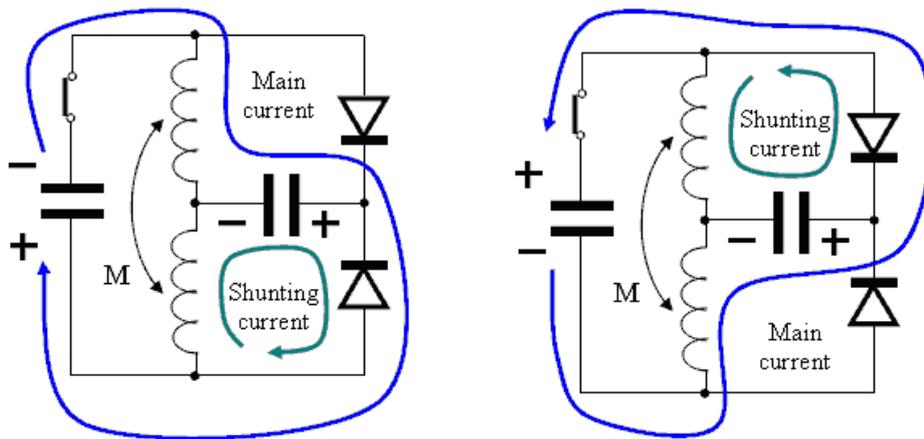

The main and the shunting currents run through the same output capacitor in one direction, if the output capacitor is discharged.
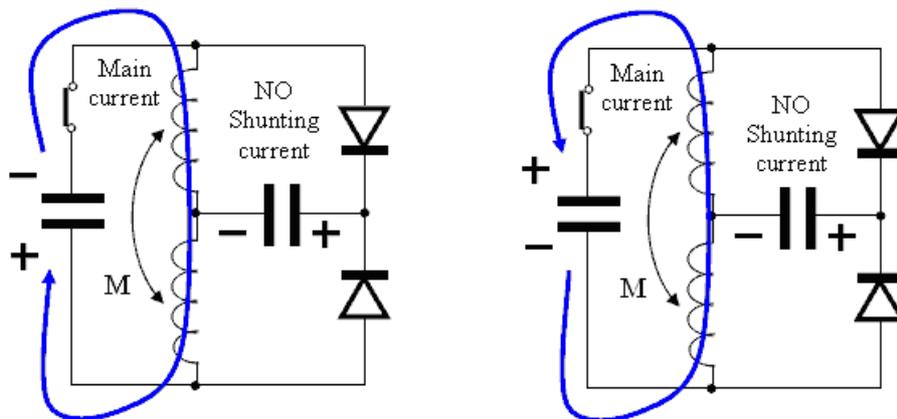
There is no shunting current, if the output capacitor is charged.

ILLUSTRATION FOR SWITCHABLE INDUCTANCE
From Don Smith
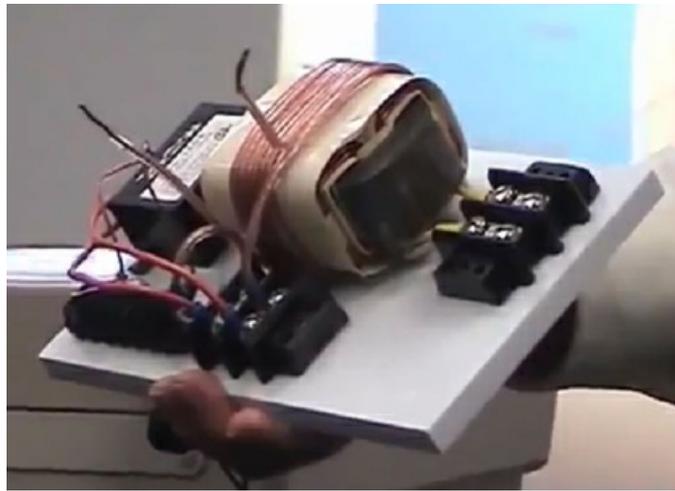
EXPLANATION: As Don Smith said, two detector receivers were combined, and one FE device was constructed.
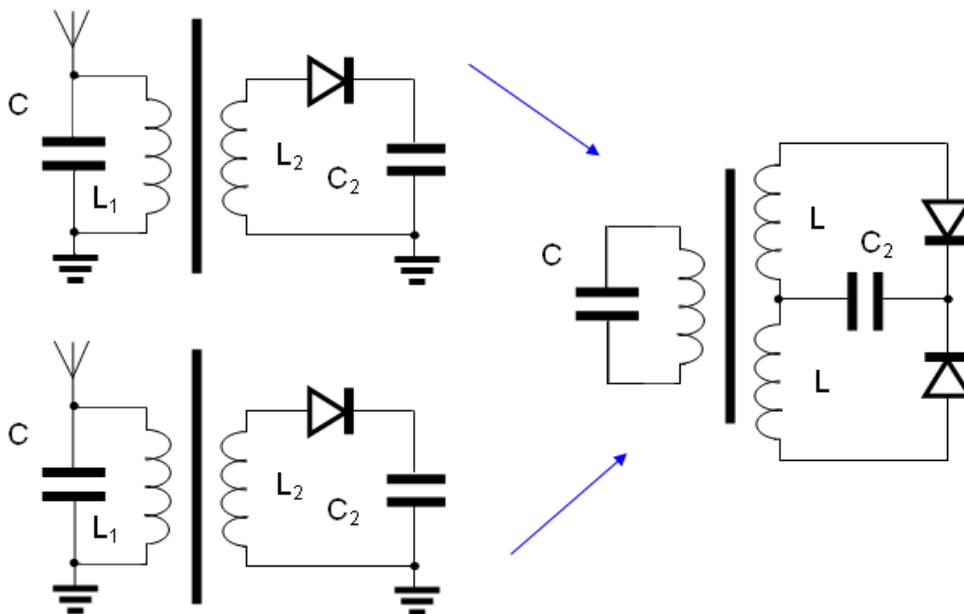
COMMENT: Don Smith produced this explanation as a PDF file; maybe you'll be able to find it on the internet.
COMMENT: The resistance of the load must be chosen so as to get the maximum possible power in it.
COMMENT: The "board" does not contain an output circuit, because a couple of spark gaps and one step-down transformer can be used instead of diodes and a capacitor (this was pointe

MECHANICAL (INERTIAL) ANALOGUE OF SWITCHABLE INDUCTANCE
From Tariel Kapanadze

Version 1

Rotation direction for the first half - period

Rotation direction Output generator for both half - periods

Electrical output generator

Controlling mechanism

Transmission to the generator

Spring (helix)

Pendulum 1 (Metallic disk)

Pendulum 2 (Metallic disk)

Rotation direction for the second half - period

Spring (helix)

Version 2

Transmission

Controlling mechanism

EXPLANATION: When one pendulum is stopping the other is accelerating. The controlling mechanism connects the pendulums to the output generator one after the other and so maintains the oscillations.

CONNECTING EXTRA MASS TO A MECHANICAL OSCILLATOR

EXPLANATION: Mechanical energy can be stored in any spring by compressing it or stretching it (1). It corresponds to two positions in a mechanical oscillator (2), when only potential energy takes place in an oscillating process

1   F ⟶ ⟵ F

No force

F ⟵ ⟶ F

2   Potential energy

Kinetic energy

Potential energy
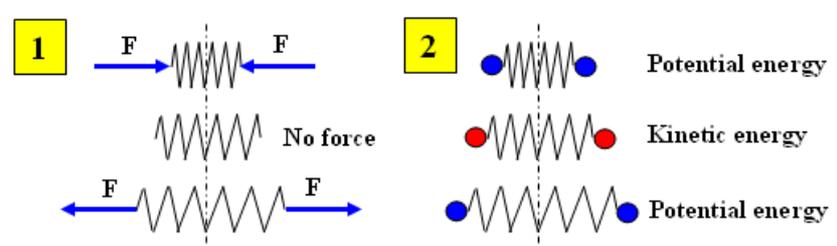
EXPLANATION: If extra mass is connecting periodically to one side or the other, of a mechanical oscillator, it will be shifting without any energy loss during the oscillation process.
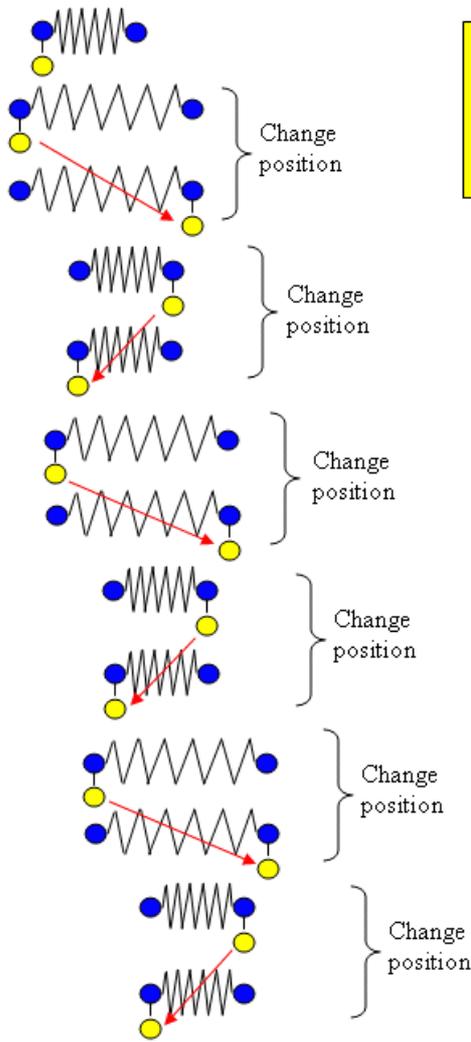
Change position

Change position

Change position

Change position

Change position

Change position

And so on ...

COMMENT A grounded Tesla coil is an analogue of a spring with one side fixed
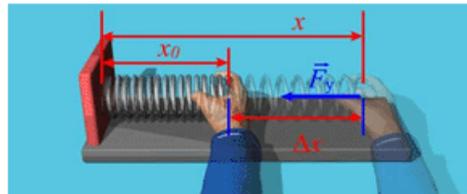
$E_p = k(dx)^2/2$ – Potential energy of deformed spring (helix)

THE PRINCIPLE OF AMPLIFICATION OF MECHANICAL ENERGY

EXPLANATION: The principle is based on an asymmetrical flywheel (1) consisting of a small mass and a large mass. These masses are balanced across the centre of rotation, that is, are located at a distance proportional to their weights, from the center of rotation. This helps to avoid vibration when they are rotating (the same principle used when balancing a car wheel).
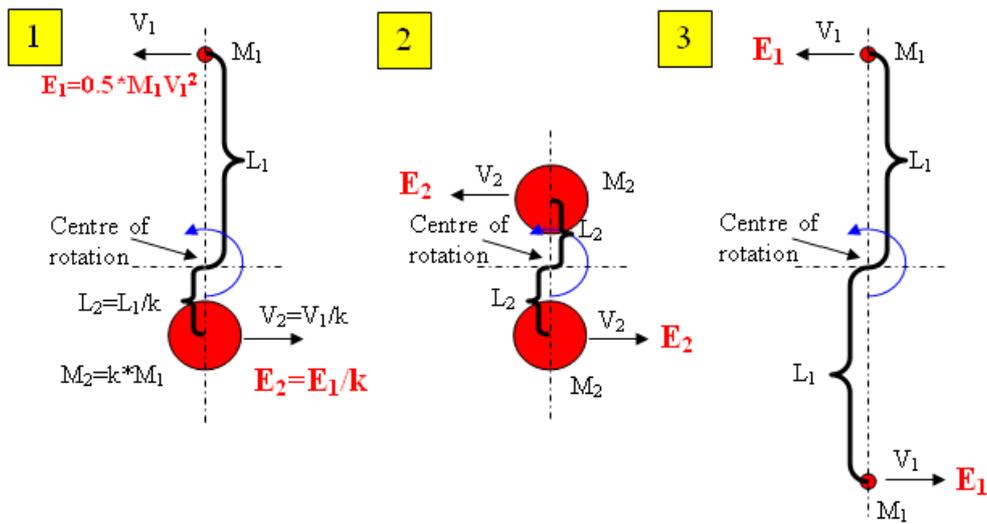
The inertial moment of such a flywheel (1) is analogous to the inertial moments of flywheels (2) and (3), consisting only of large or small masses. However, from the point of view of kinetic energy, all of these examples, (1), (2) and (3) are different. This is because the kinetic energy of every mass depends on the direction and speed at which it moves (if is released during rotation). The highest common kinetic energy is in the masses of flywheel (3), as less energy is contained in flywheel (1) and the smallest kinetic energy is in flywheel (2). In order to get an increase in energy one needs to achieve a set-up which is based on a spring (for energy transformation from kinetic energy to potential energy and back again) and a lever of Archimedes (for changing the point where the force is applied).
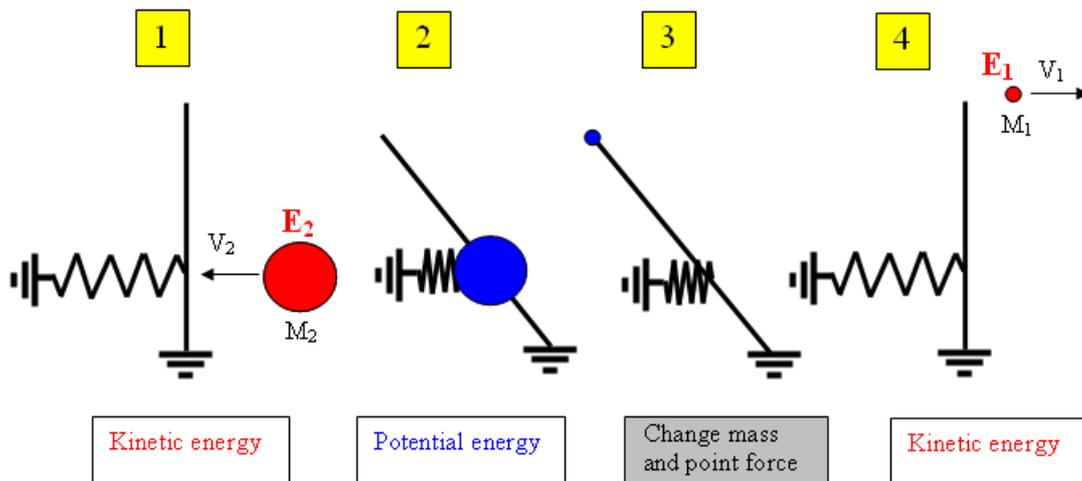
Comments:
1. The simplified schematic diagrams shown here are for explanation purposes only.
2. In an actual device, you can use a spring in rotation mode (as Tariel Kapanadze did).
3. You can use disks and rings as flywheel masses (as Tariel Kapanadze did).
4. Altering one mass to another is actually achieved by connecting them in various ways.
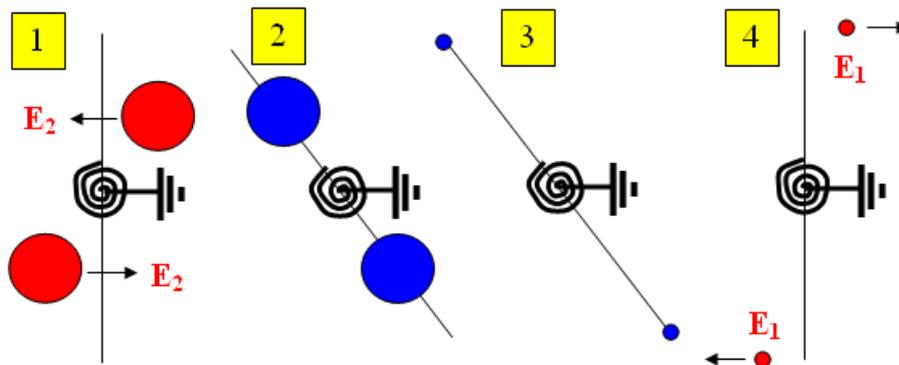

Comment: Any asymmetrical mechanical oscillator behaves as indicated above, when the potential energy of a compressed spring is transformed into the kinetic energy of moving masses.
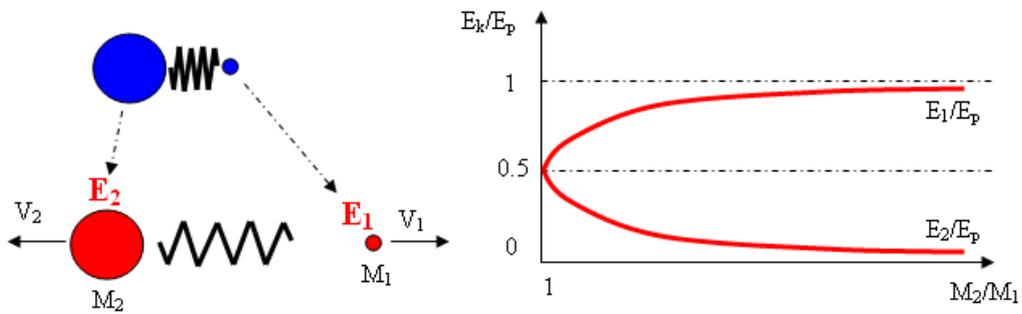
The potential energy of the spring is distributed unequally between the small and large masses. A small mass acquires more energy relative to it's size than a large mass does. The sum of the kinetic energies of both masses is equal to the potential energy of the spring.

Comment: This is based on Tesla's asymmetrical schematic:
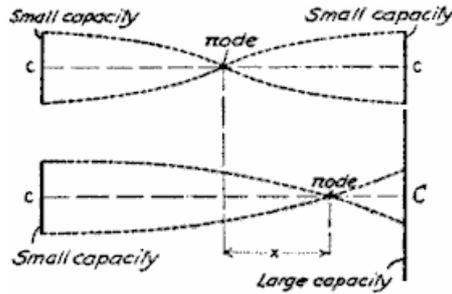
FLYWHEEL – A HIDDEN FORM OF ENERGY
### (Clarifications on mechanical energy amplification)

EXPLANATION: If you don't want to lose mechanical energy when doing work, then this work must be done by an imaging force. This force is absent in an inertial coordinate system, but it is present in a non-inertial coordinate system. When in a rotational coordinate system this force is called 'centrifugal' force.
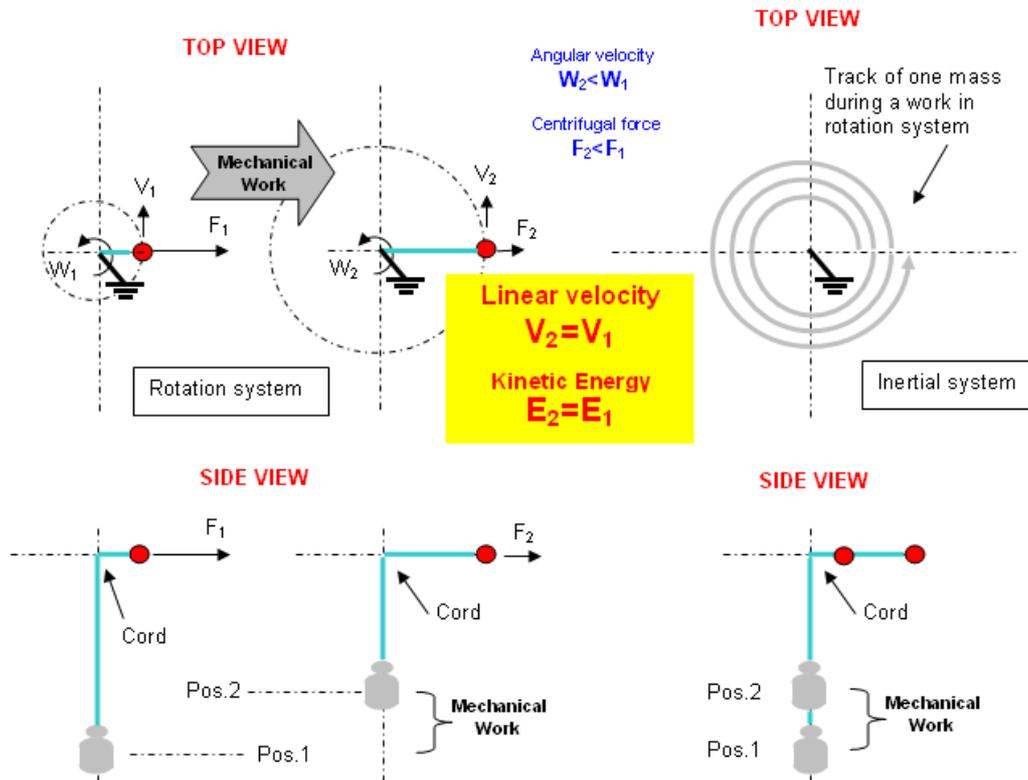
Comment: After the work is done, the centrifugal force is low and if you want to continue producing mechanical work, you have to use **the other** coordinate system where centrifugal force is high again. This is possible because linear velocity does not change. You have to provide **the other** support point

only (and a cord) in order to produce mechanical energy again.

Comment: If you want to make this mechanical work continuous, then the end of the first track must also be the beginning of the second track. You have to change coordinate system periodically.
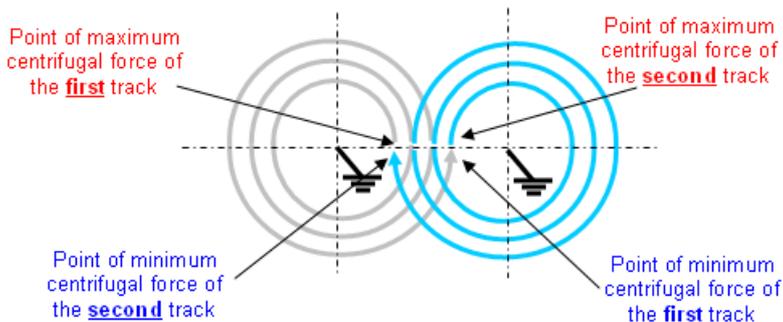

Comment: In a real situation, you have to compensate for energy loss due to friction and so a part of the excess energy must be used to maintain the process.

ILLUSTRATION FOR SWITCHABLE INDUCTANCE
From Alfred Hubbard
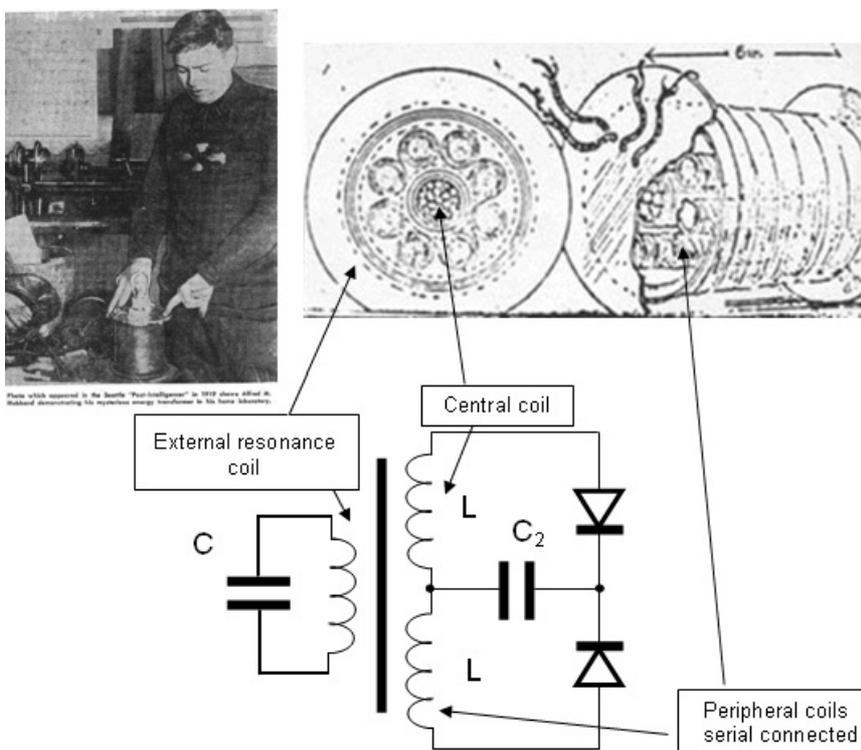
EXPLANATION: The center coil and all of the peripheral coils can "grasp" the same flux coming from the resonance coil. All other details are the same as in Smith's version.

COMMENTS: In other words, you can use rods as the coil core, instead of a closed ferromagnetic core. But, this is not the only option in Hubbard's device. He may have had another one, based on a different principle, perhaps the principle of energy amplification in an LC circuit as described earlier, but with switchable inductance being used.
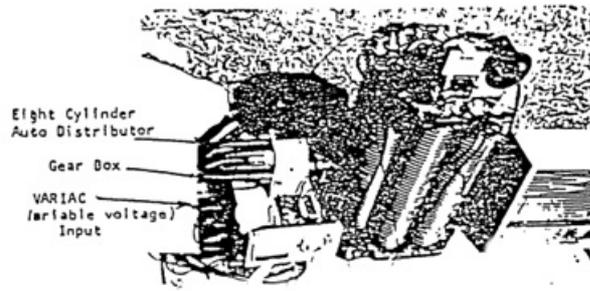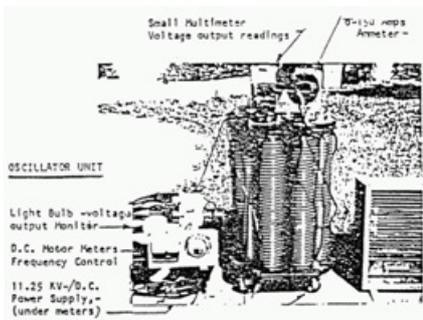
MODERN OPTIONS?
In switchable inductance

Version 1

A coil has more inductance when some of it's parts are short-circuited:
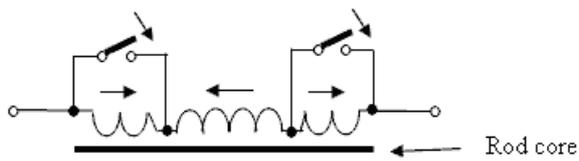
EXPLANATION: The central section of the coil and it's two end sections are wound in opposite directions.

COMMENT: The coil shown in the picture above has twice the inductance, when it's end sections are short-circuited (measurements made with the Chinese-built RLC test meter shown here:


Hubbard's version
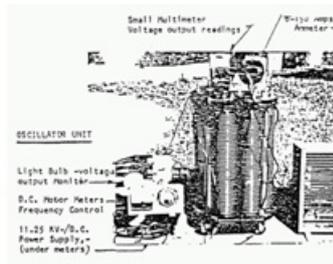
Version 2
By Don Smith
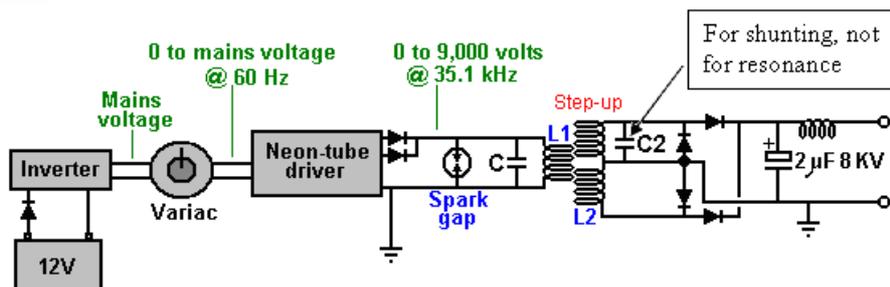
But, this looks like resonance in an asymmetrical transformer ?????

Version 3

Switchable inductance,
or symmetry destroyed
by spark ?
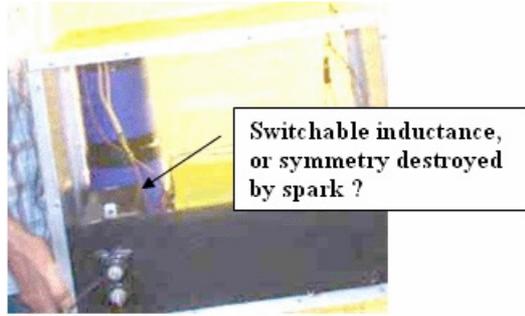
No description …???

Read on for further details….

THE BASIS OF SWITCHABLE INDUCTANCES
(Tesla patent)

(No Model.)   2 Sheets—Sheet 1.

N. TESLA.

REGULATOR FOR DYNAMO ELECTRIC MACHINES.

No. 336,961.   Patented Mar. 2, 1886.

Fig. 1.

Fig. 2.

Fig. 3.

Inventor

Nikola Tesla

fr. Lemuel W. Serrell

atty
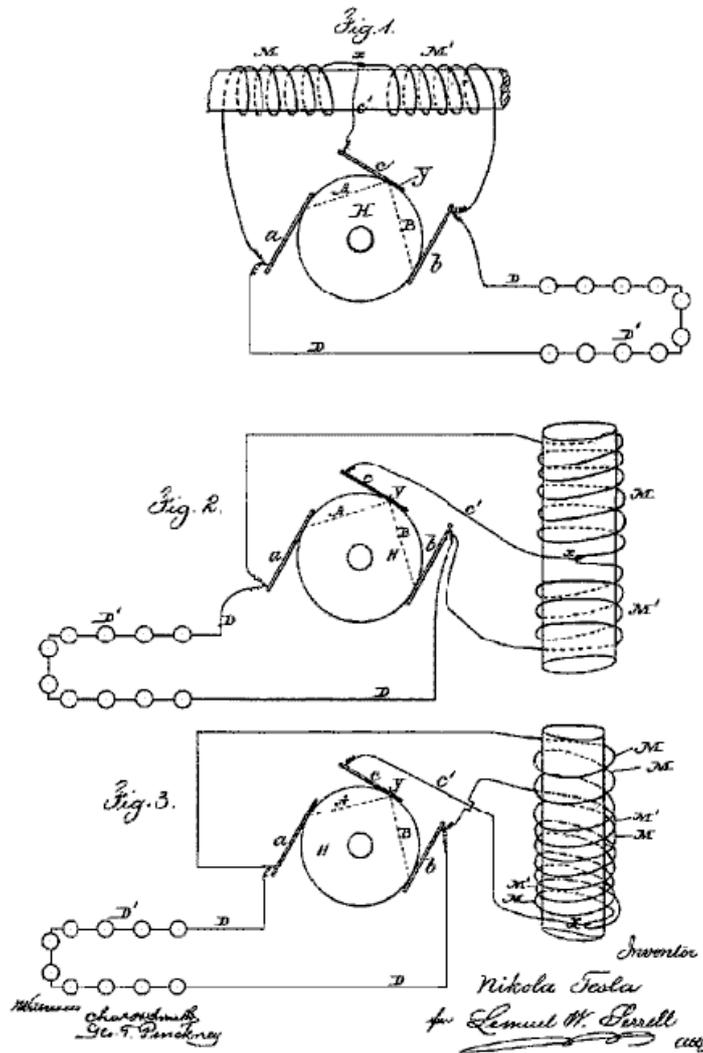
SECRET 3

THE ASYMMETRICAL TRANSFORMER
With a magnetic field feedback loop (evolution of the 2nd secret)

LENZ LAW IS VIOLATED IN AN ASYMMETRICAL TRANSFORMER
(Therefore it is not possible to use it as an ordinary transformer)

An asymmetrical transformer can have two coils: L2 and LS. Coil L2 is wound on one side of the toroidal core while LS is wound so that it encloses both the toroid and the coil L2 as shown here:
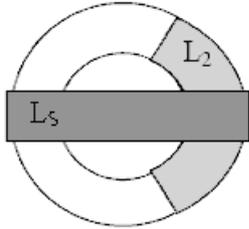
Optionally, this arrangement can be implemented with a wide range of styles of transformer core:
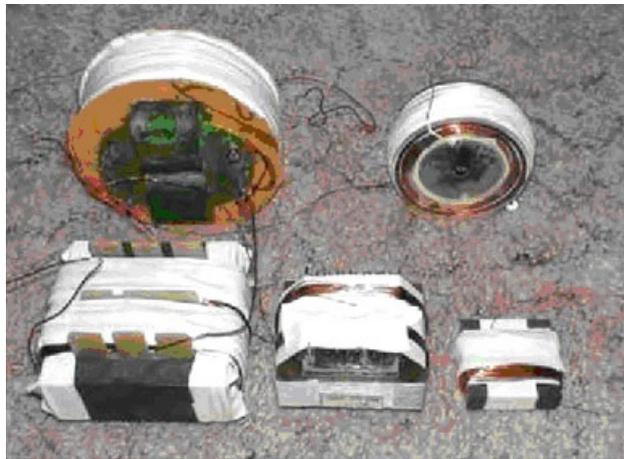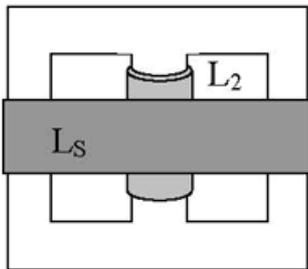
One option is to use the above (switched inductor) arrangement and add one more coil:
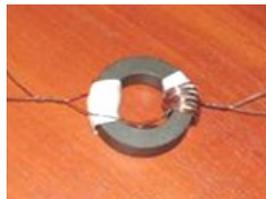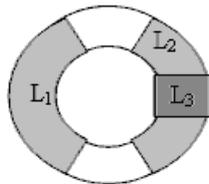
Now that you understand the operational principles of this system, you can use any configuration which you need. For example:
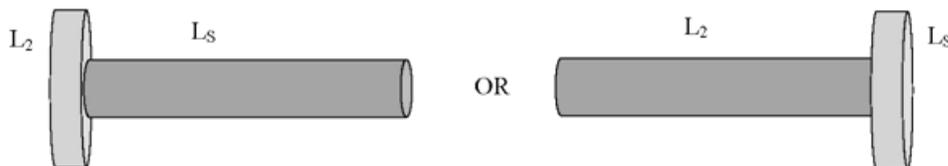

**ILLUSTRATION FOR AN ASYMMETRICAL TRANSFORMER OF SOME KIND**
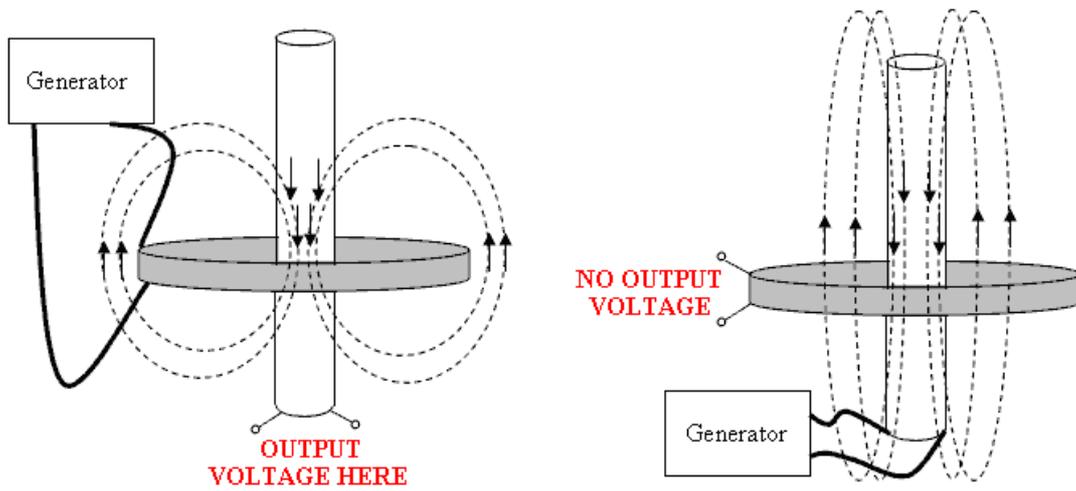
**THE MECHANICAL EQUIVALENT OF AN ASYMMETRICAL TRANSFORMER**

This example shows an ordinary transformer, wound on an E-core plus an external excitation magnet:

The magnet orientation may be different
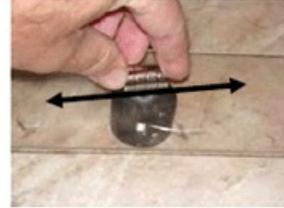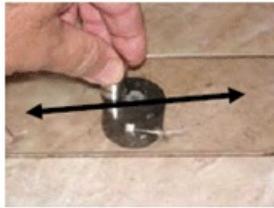
The magnet orientation may be different
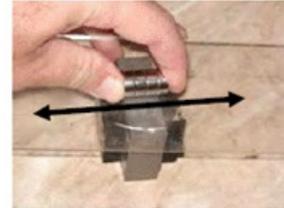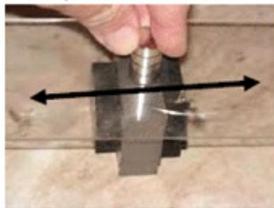
In other words: L2 is still used, but instead of LS the exciting magnet is used.

The result:
1. The voltage developed across coil L2 depends on the number of turns in L2, **but the short-circuit current through L2 does NOT depend on the number of turns in coil L2.**

2. You need to choose the load connected to L2 in order to get the maximum power output. **Very low, and very high loads, will give almost no power output.**

RESONANCE IN AN ASYMMETRICAL TRANSFORMER
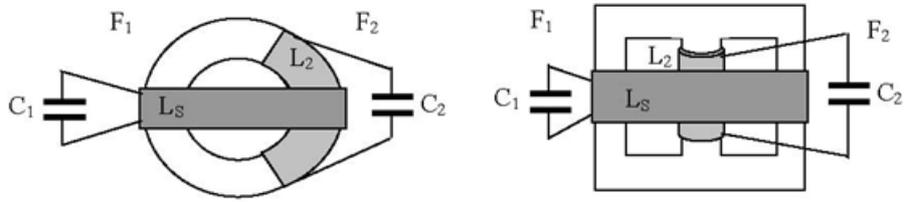
The first coil is used as a transmitter of energy, and the second coil as a receiver of energy.

It is very like radio broadcasting, where the receiver is located far away from the transmitter, and has no feedback. The first coil works in parallel resonance and the second coil in serial resonance (although the two schematic diagrams look alike).

EQUIVALENT SCHEMATICS
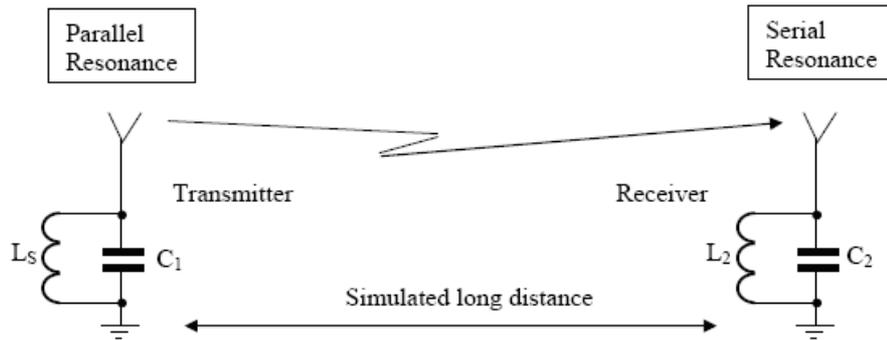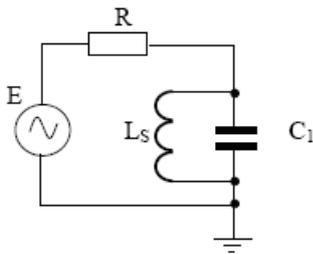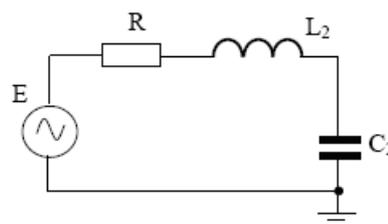
CONSEQUENTLY: You can get much more voltage on L2 than on LS

An experiment:
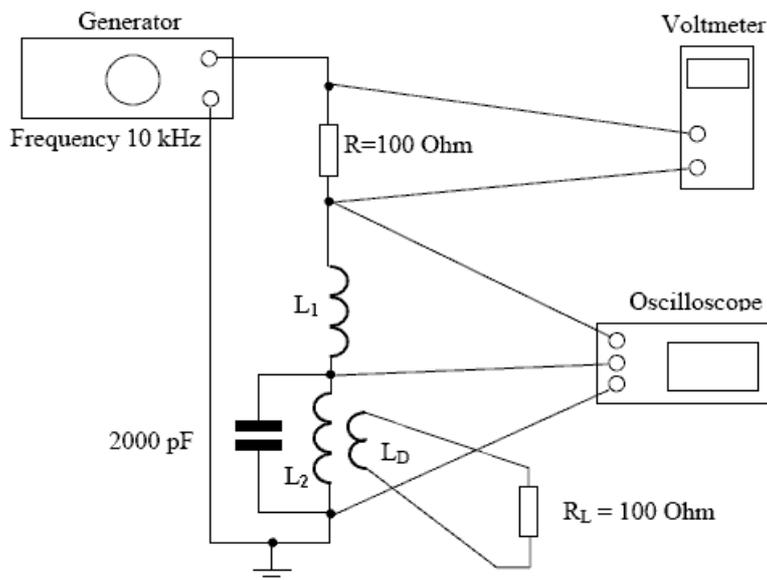
Conditions:
The resonance frequency is about 10 kHz. The total inductance LS is 2.2 mH, the L2 inductance (same as the L1 inductance) is 100 mH, the ratio LS:L2 is 1:45 with an E-shape core, permeability is 2500.

The result:

At the resonance frequency, there can be a voltage which is 50 times more on any parts (L1 or L2) matched with the total coil LS, and voltage changes on R are no more 15 percent.

The phase shift in voltage is about 90 degrees between LS and L2.
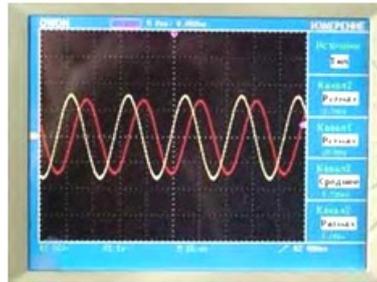
(The amplitudes were equalised)

**Further**

An additional step-down coil LD was wound around L2, turns ratio 50:1 (matched with L2), and the load resistor RL = 100 Ohms was connected to it.

The result

Changes in current consumption (estimated by measuring the voltage across R) are no more 15 percent.

MODERN OPTIONS IN USAGE OF AN
Asymmetrical transformer
By Don Smith

The schematic is like this:
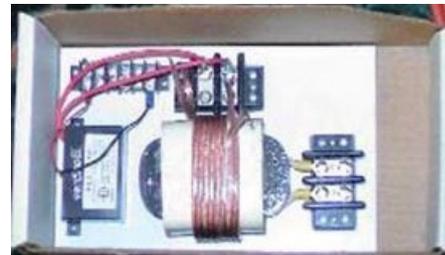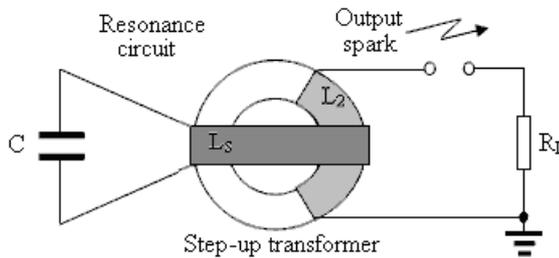
COMMENTS: Between sparks, L2 has a voltage on it's ends. If RL is connected directly to L2 then there will be no output current without resonance and there will be no output current without a spark.

MORE ACCURATE:
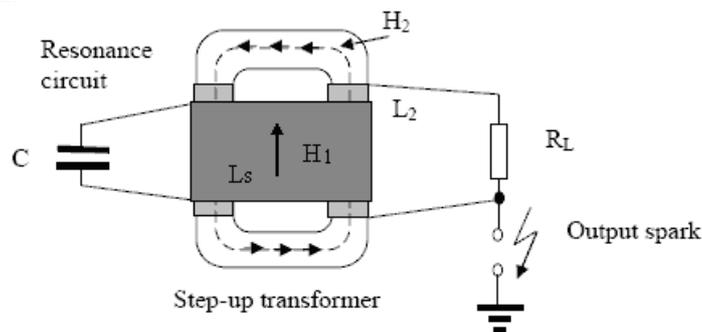
COMMENTS: L2 has no voltage on it's ends (without a spark). This is ordinary back-EMF suppression, invented by Nikola Tesla.

Resonance circuit — C, L_S, L_2, H_1, H_2, R_L, Output spark — Step-up transformer
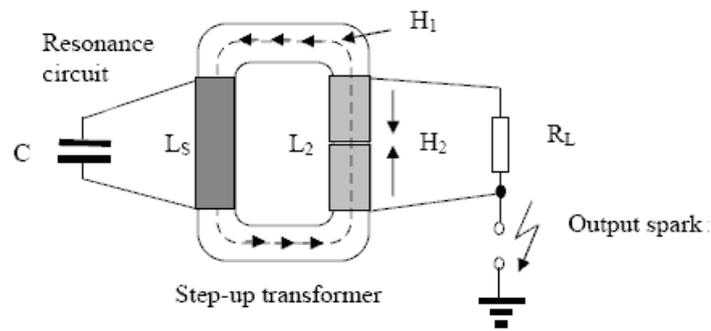
COMMENT: L2 has no voltage on it's ends (without a spark).

<div align="center">

Secret 3.1
THE ASYMMETRICAL TRANSFORMER BASED
ON THE SHORT-CIRCUITED COIL

INTRODUCTION
</div>

Remark: Voltage distribution on the shorted coil depends on the position of the exciting coil.

<div align="center">

DESCRIPTION
</div>

CASE 1   The excitation coil is centered:

Result: We have the full period of the voltage distribution on the short-circuited coil

U(X)

X

L/2

No orthogonality
in this part

Short-circuited
ordinary coil

Excitation
ordinary coil
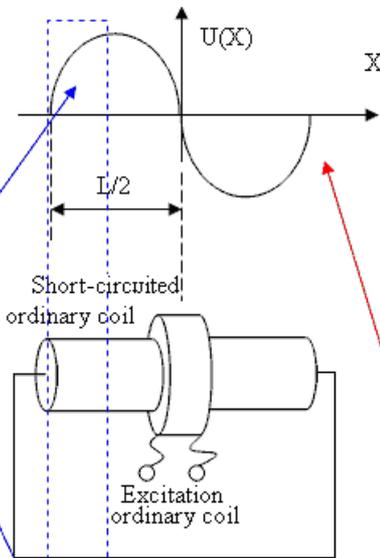
Voltage distributions
are orthogonal

CASE 2 Excitation coil is on one side
**Result** We have half period of the voltage distribution on the short-circuited coil

HALF PERIOD

2

U(X)

X

L/4

Short-circuited
ordinary coil

Excitation
Ordinary coil
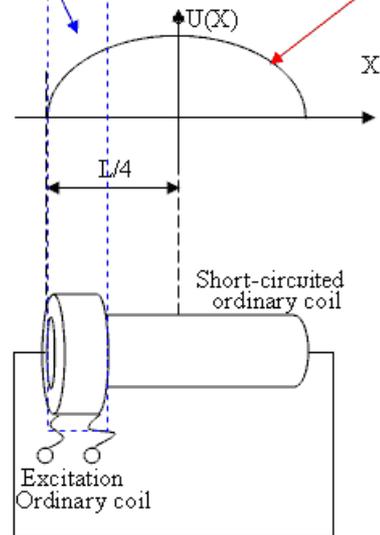
CONSTRUCTION OF THE ASYMMETRICAL TRANSFORMER
based on the short-circuited coil

CASE 1 The short-circuited coil is wound in one direction

Output coil

Short-circuited
coil

Core inside is
optional

Input coil

Shunt
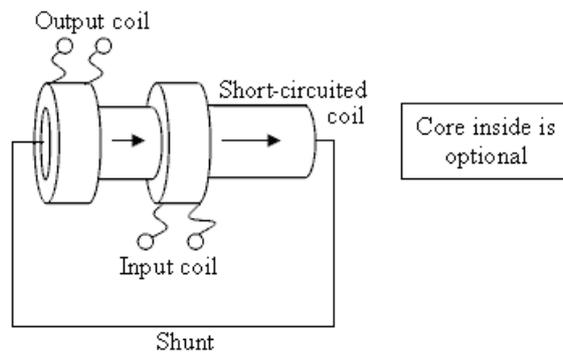
Result: The output does not influence the input in any way.

Explanation: The signal from the output coil generates zero voltage difference on the input coil.

Remark: The position of the coils should be adjusted in order to give the best result.

CASE 2 The short-circuited coil is wound in opposite directions from the centre outwards, and only half of the coil is short-circuited:
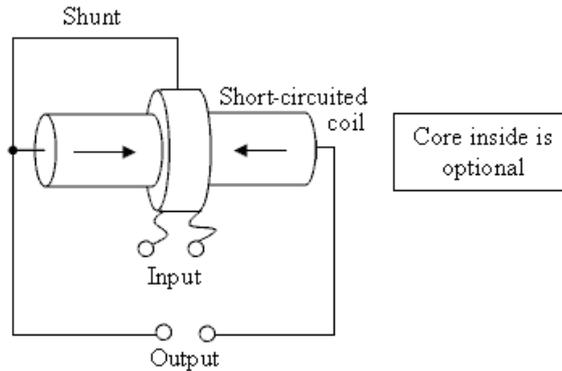
Result: The output has no influence on the input coil

Explanation: The signal from the output coil generates zero voltage difference on the input coil.

Remark: The position of the input coil needs to be adjusted to get the best result.

Remark: The coil's position depends on permeability of the core. More permeability means more alike with distribution pointed at the beginning.

Best Position: To find the best coil position, connect the signal generator to the output, and then find the coil position which shows zero at the input terminals. Alternatively, use an RLC meter connected to the input terminals and then find the coil position which gives no change in reading when the output terminals are short-circuited **(for both case 1 and case 2)**.

Comment: The length of the wire, the total length of the coil, and the diameter of the coil are not important. The number of turns in the input and output coils plays the same role as in an ordinary transformer, **for both case 1 and case 2**.

MODERN APPLICATIONS FOR SHORT-CIRCUITED COILS
By Don Smith

CASE 1

ELECTRICAL ENERGY GENERATING SYSTEM
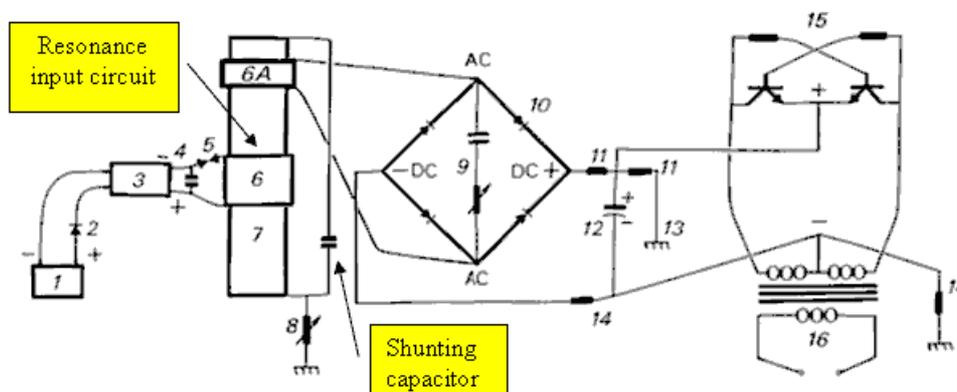
Patent Pending 08 / 100,074

1. Gelcel, 6 or 12 Volt.
2. Diode, Poss. use a Varactor.
3. High Voltage Module, Constituting the L-1 and L-2 Coils.
4. Capacitor, TDK 10.9 PF., 30 KV.
5. Spark Gap, Small Engine Spark Plug, Gap = .0025 in
6. Induction Transfer Coil L-3. , 6A = L-5
7. Induction Receiving Coil L-4.
8. Voltage Control Shunt.
9. Frequency Adjustor, prevents derating by Diode Bridge

10. Diode Bridge, 200 Nanosecond, R.F., > 100 KV .
11. Voltage Divider Circuit, corrects voltage for next stage.
12. Capacitor, electrolytic, smooths out DC + ripple effect.
13. Earth Ground.
14. Voltage Divider Curcit, corrects voltage for Transformer
15. Inverter Circuit, DC + in and 60 CPS to Transformer
16. Output from Transformer to Load (Work).

20 Dec., 1994

CASE 2

ELECTRICAL ENERGY GENERATING SYSTEM

Patent Pending 08 / 100,074

Resonance input circuit

Shunt

1. Gelcel, 6 or 12 Volt.
2. Diode, Poss. use a Varactor.
3. High Voltage Module, Constituting the L-1 and L-2 Coils.
4. Capacitor, TDK 10.9 Pf., 30 kV.
5. Spark Gap, Small Engine Spark Plug, Gap = .0025 in.
6. Induction Transfer Coil L-3.
7. Induction Receiving Coil L-4.
8. Voltage Control Shunt.
9. Frequency Adjustor, Prevents derating by Diode Bridge.

10. Diode Bridge, 200 Nanosecond, R.F., > 100 kV.
11. Voltage Divider Circuit, corrects voltage for next stage.
12. Capacitor, electrolytic, smooths out DC + ripple effect.
13. Earth Ground.
14. Voltage Divider Circuit, corrects voltage for Transformer.
15. Inverter Circuit, DC + in and 60 CPS to Transformer.
16. Output from Transformer to Load (Work).
17. Center Tap.

17 JANUARY, 1997

REMARK: The position of the coils must be adjusted until the output has zero influence on the input.

REMEMBER: None of the (input) energy used for exciting ambient space should appear in the load.

AN EXAMPLE OF CASE 2

By Don Smith
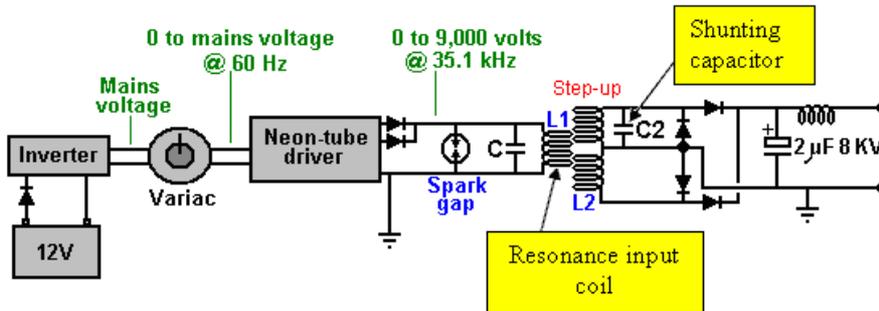
COMMENTS: The output coil can be adjusted to resonate with the input coil, but this is not important for understanding the principle. Excitation with just one spark is possible (not in resonance), but the frequency of the sparks influences the output power directly.

Shunting capacitor

HF HV
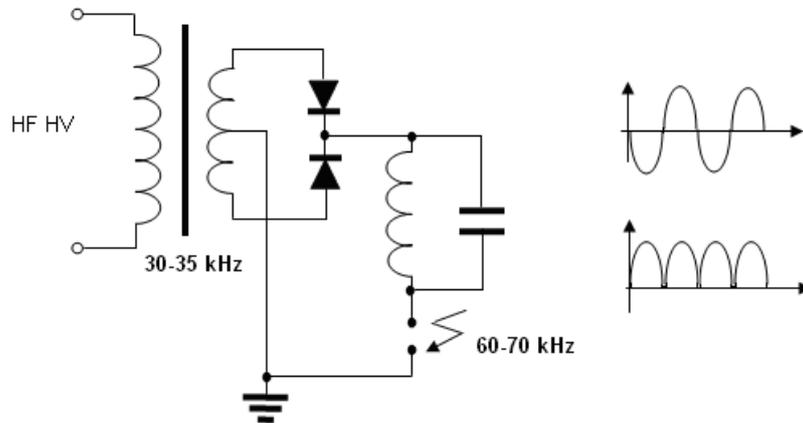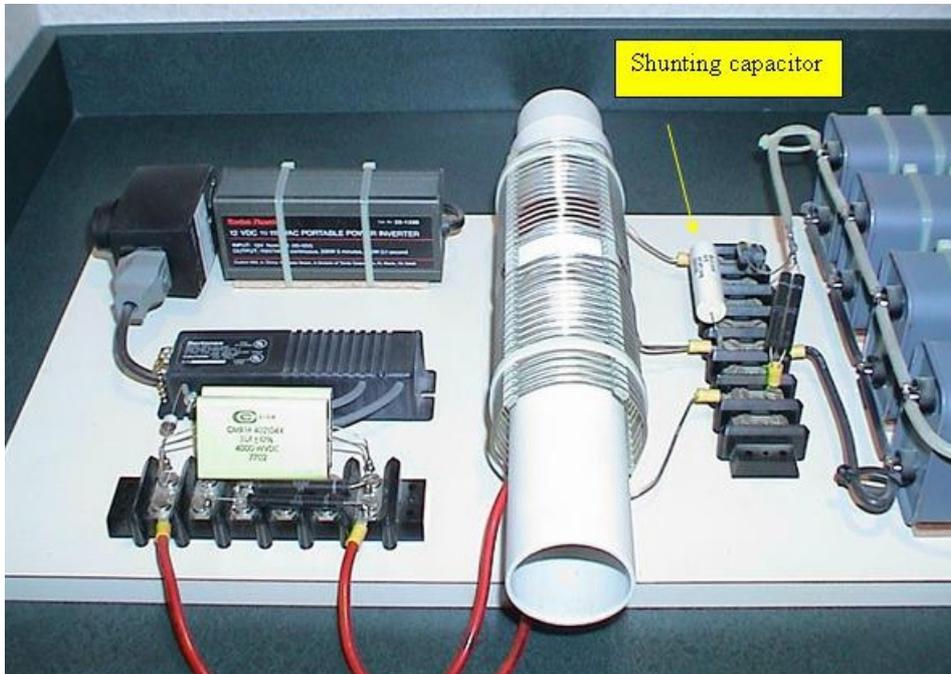
30-35 kHz

60-70 kHz

COMMENTS: The resonant frequency of the circuit is about 60-70 kHz, but dimmer is for 30-35 kHz. Voltage/frequency technology was used for adjusting the excitation frequency. Two parameters have to be adjusted: the position of the slider and the excitation frequency.

MODERN APPLICATION FOR SHORT-CIRCUITED COILS
By William Barbat

US Patent Application number 2007/0007844

Self-Sustaining Electric-Power Generator Utilizing Electrons of Low Inertial Mass to Magnify Inductive Energy

Fig. 3
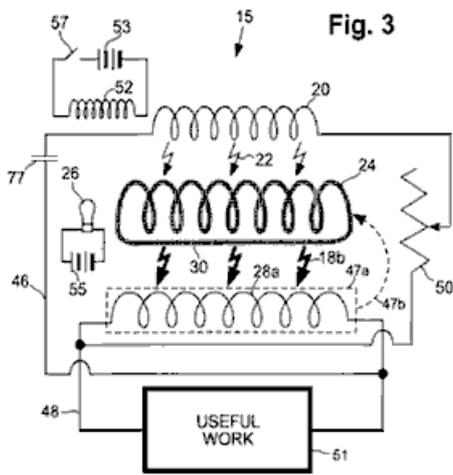
Fig. 6
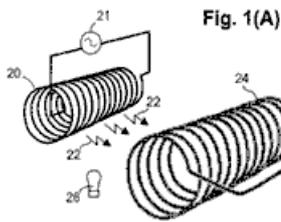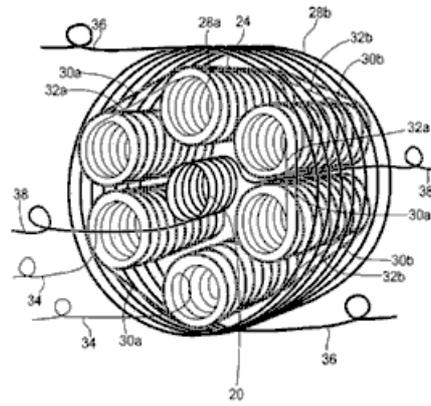
Fig. 1(A)
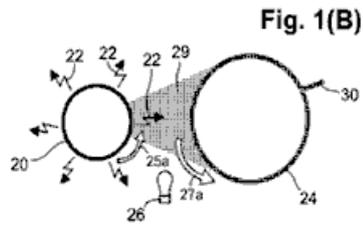
Fig. 1(B)
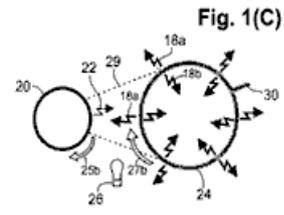
Fig. 1(C)
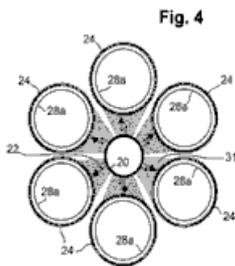
Fig. 4
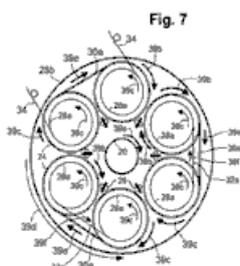
Fig. 7

COMMENT: In order to understand this device, you have to read Barbat's patent application US 2007/0007844 A1: available here

COMMENT: I would like to point out that externally, it looks very much like Alfred Hubbard's device.

AN EXAMPLE OF CASE 1
By Tariel Kapanadze
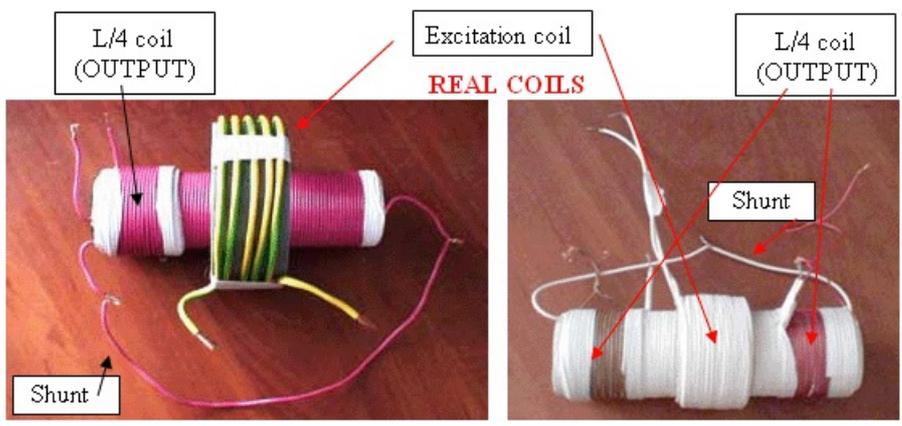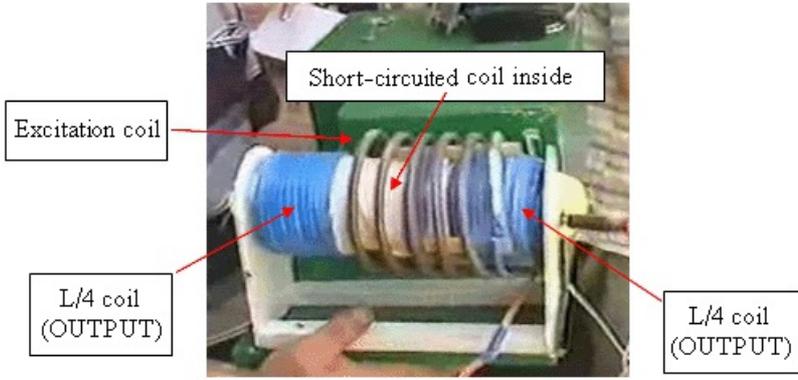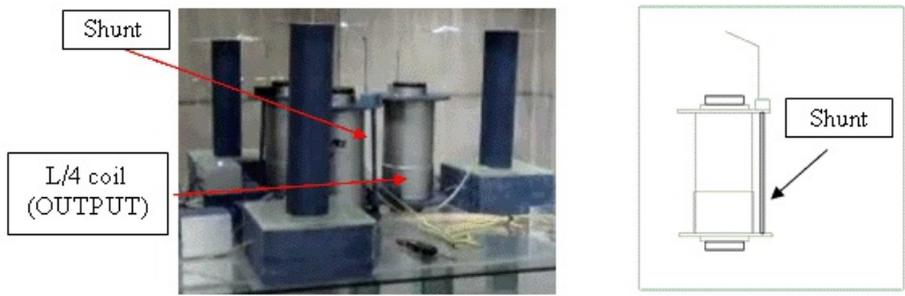
COMMENT: Adjust the positions of the coils to get the best result.

AN EXAMPLE OF CASE 1

By Steven Mark

TPU

REMARK: An idea – an asymmetrical transformer based on the shorted-circuited coil:
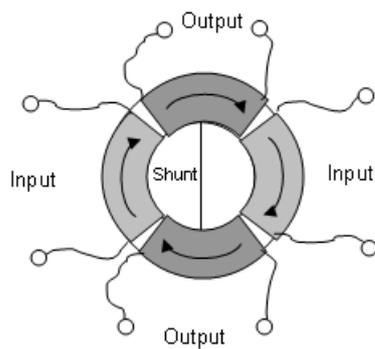
The positions of the coils must be properly adjusted, in order to have no transmission feedback from the output to the input. To understand this better, read the part which is devoted to switchable inductance.

EXPLANATION:

The first layer (shunted coil wound around the whole core)   The second layer (coils for input and output)


No orthogonally in this part

VOLTAGE DISTRIBUTION
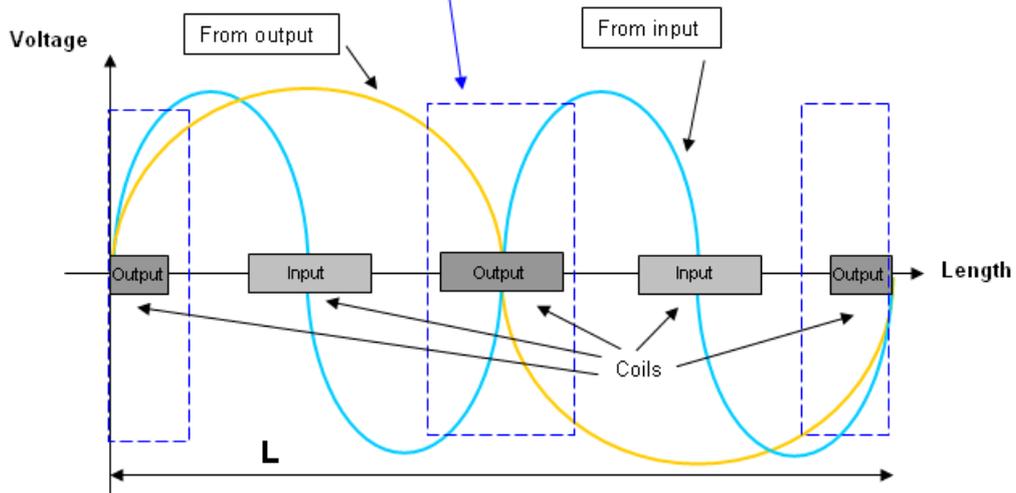
THE BASIS OF THE TPU

(Tesla Patent)

(No Model.)

N. TESLA.

2 Sheets—Sheet 2.

SYSTEM OF ELECTRICAL DISTRIBUTION.

No. 381,970.

Patented May 1, 1888.

Fig. 3.

WITNESSES:
H. H. Duncan.
Robt. F. Gaylord
Rus

INVENTOR.
Nikola Tesla.
BY
Duncan, Curtis & Page
his ATTORNEYS.
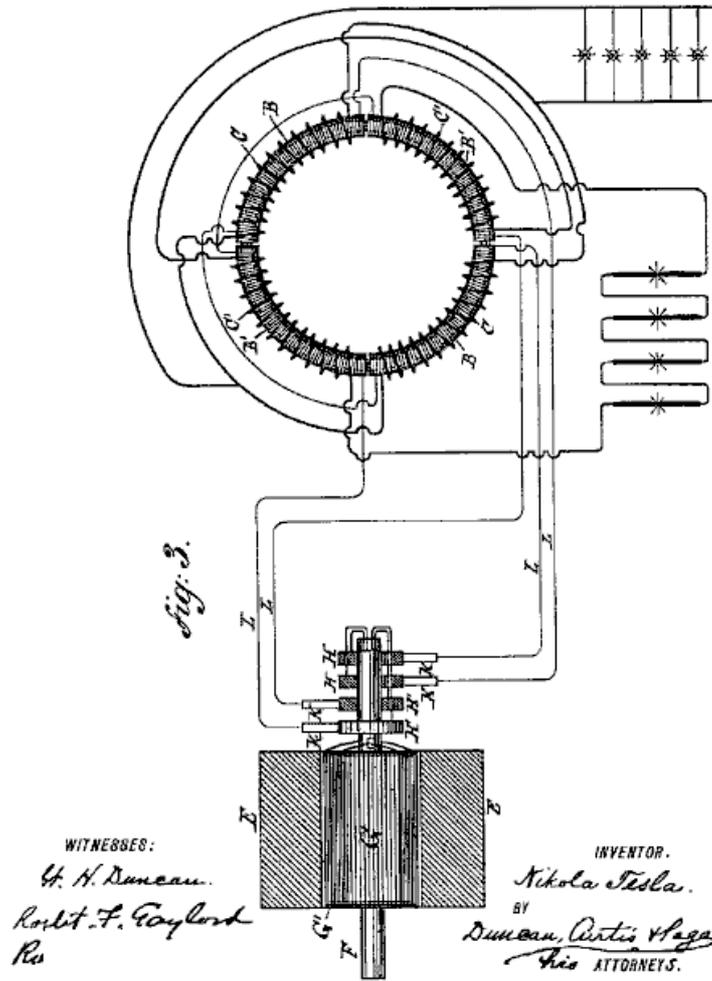
REMEMBER:
The position of the coils must be adjusted. The easiest way to do this is to add or remove turns at the ends of the coils.

ACTUAL TPU

Asymmetrical transformer CASE 2

L/2 shunted coil

Input

Shunt

Output
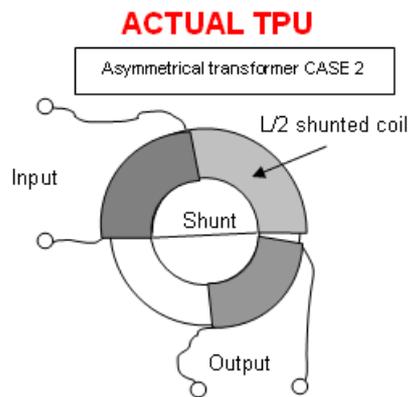
**AN EXAMPLE OF CASE 2**
By Tariel Kapanadze
Mechanical device

?????
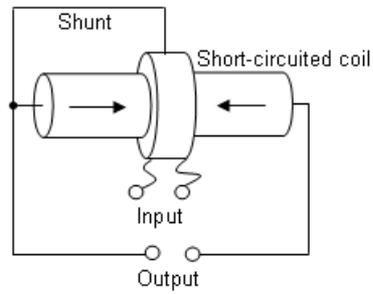
MODERN USE OF SHORT-CIRCUITED COILS
**by Cherepanov Valera ('SR193' in Russian forum)**
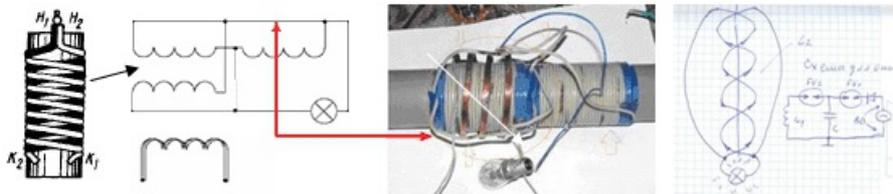
COMMENT: This arrangement does not have an OU effect, but it can be used for back-EMF suppression in resonance (spark excited) mode to get a laser effect (very exciting summation effects).


COMMENT: This was copied from this device of Tariel Kapanadze (???).

Don Smith
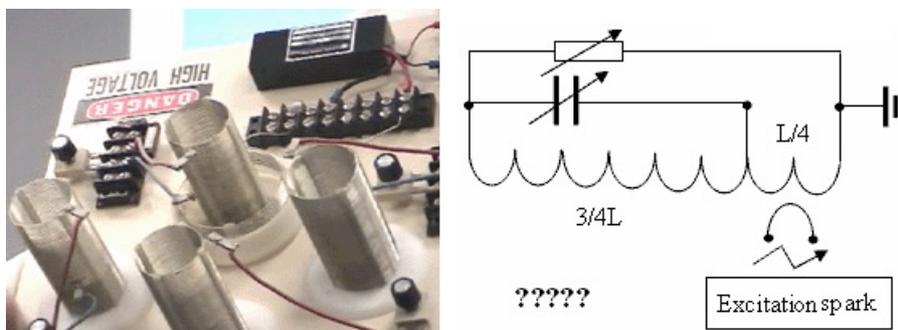
COMMENT: Mr. Tesla said: "The optimum relation for the main and additional coil is 3/4L and L/4". Is that ratio used here?

COMMENT: If you don't understand this schematic, look at simplest version of the coil.

FOR RESONANCE

Shunt

Resonance capacitor

3/4L   L/4

Excitation spark

Position of the coil must be adjusted

FOR ACCUMULATION

Shunt

Huge capacitor

3/4L   L/4

Excitation spark

Position of the coil must be adjusted

It can be used like this....
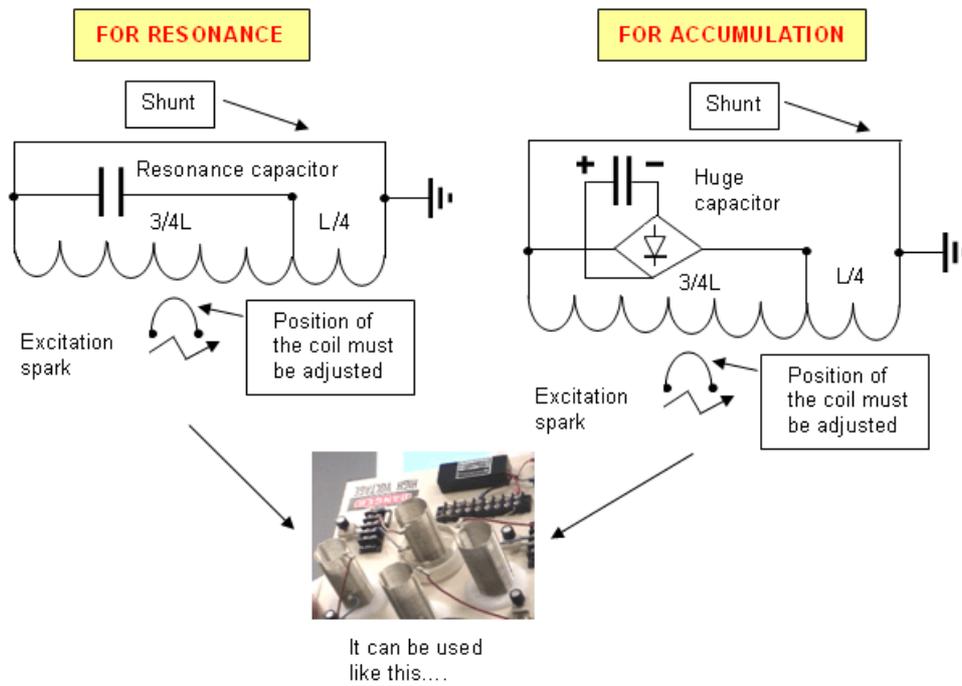
COMMENT: This is an instance of case 1 where the output coil was removed, and some of the turns of the short-circuited coil were used instead.

THE ASYMMETRICAL TRANSFORMER (BASED ON A SHORT-CIRCUITED COIL) COMBINED WITH A STEP-DOWN TRANSFORMER?
By Don Smith
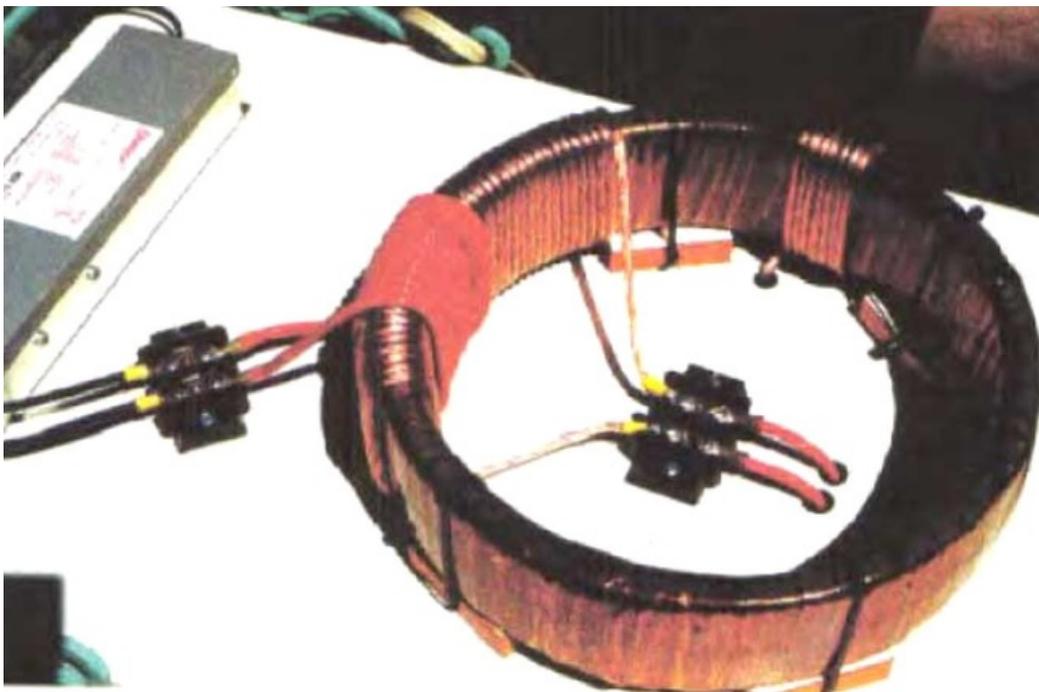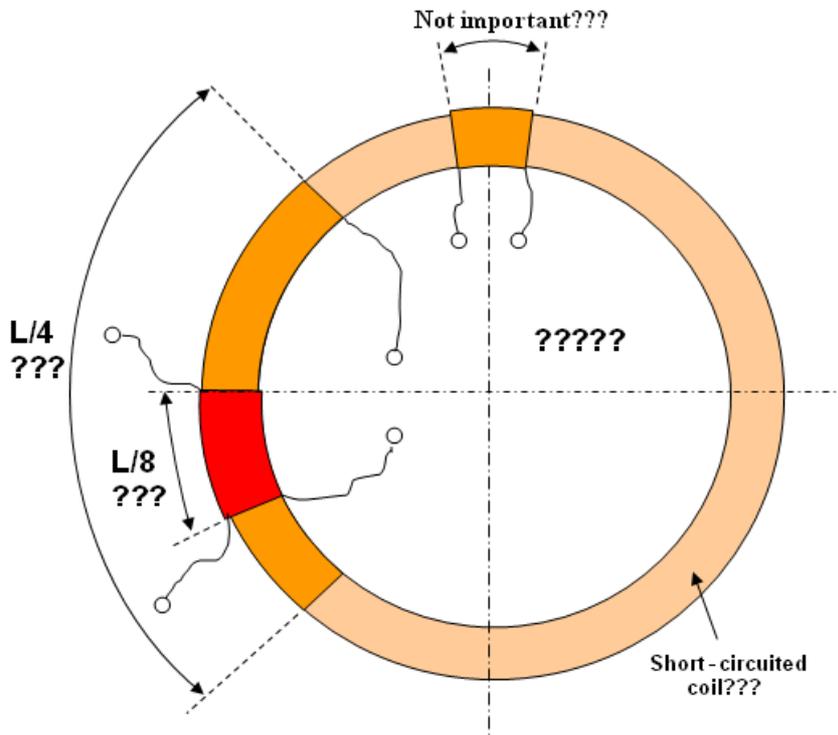
THE RELATIONSHIPS of Don Smith's TPU size and position are important.

REMARK: Those relationships are used to produce an asymmetrical transformer

MECHANICAL ANALOGUE OF THE
ASYMMETRICAL TRANSFORMER
CASE 2
By Don Smith
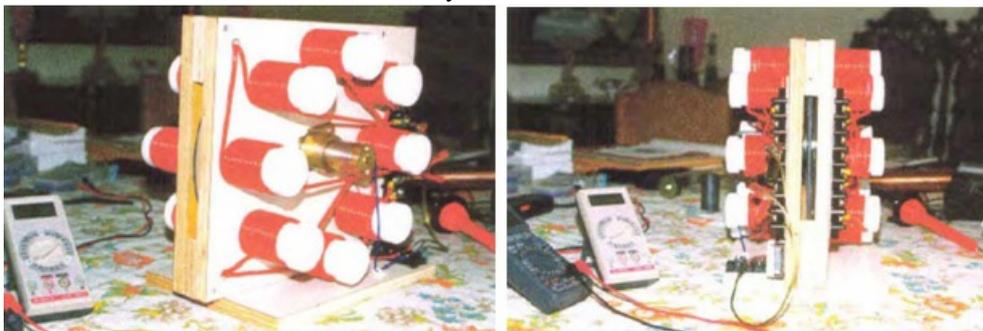
Schematic:
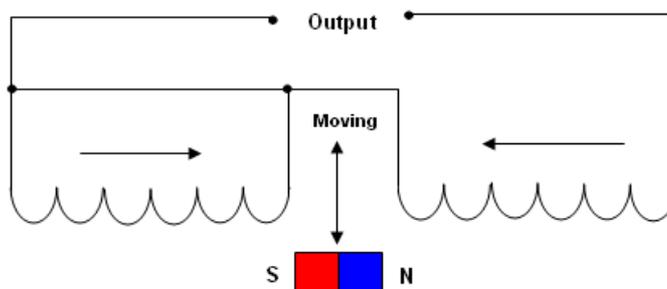
REMEMBER: Any asymmetrical transformer must be adjusted.

REMARK: Don Smith placed magnets inside the coils, but that is not important for understanding the process as his device does not match the schematic.

SOME REMARKS ON ASYMMETRICAL IN-FRONT CONNECTION
(Useful remarks)

Some turns were added on one half of the coil, and some turns were removed from the other half. An additional magnetic field H3 was created, with inductance - LD.
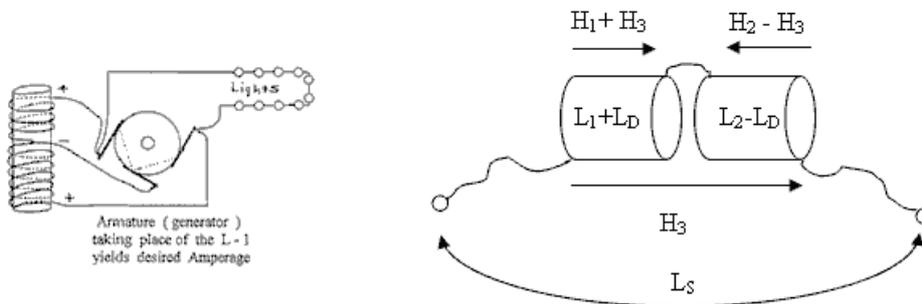
RESULT: A large part of the total inductance acts as an inductor, and a small part acts as a capacitor. **This is a well known fact (read books)**. The total voltage on the coil is less than on it's halves.
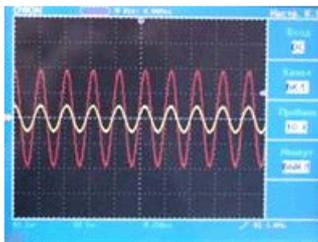

Yellow – The voltage on the total coil

Red – The voltage on the large section of that coil

RESULT: The voltage on it's halves is 4 times the voltage on the total coil

The measurements were made in the frequency band 10 kHz to 100 kHz.

Here is the result of a capacitor discharging into this coil:
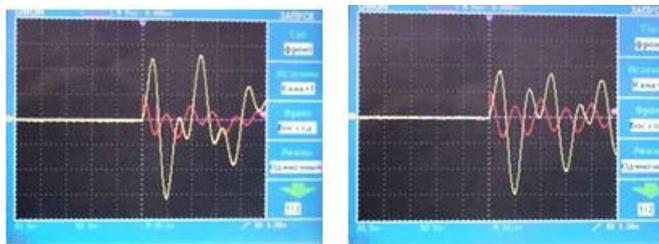

SECRET 4
CURRENT AMPLIFICATION

If a lot of asymmetric transformers are placed with a common flux flow through them, they will have no influence on this flux flow, as any one asymmetric transformer does not have any influence on the flux flow. If the secondary L2 transformer coils are then connected in parallel, this produces current amplification.


An asymmetric Transformer with the second coil

An asymmetric Transformer with the second coil

An asymmetric Transformer with the second coil
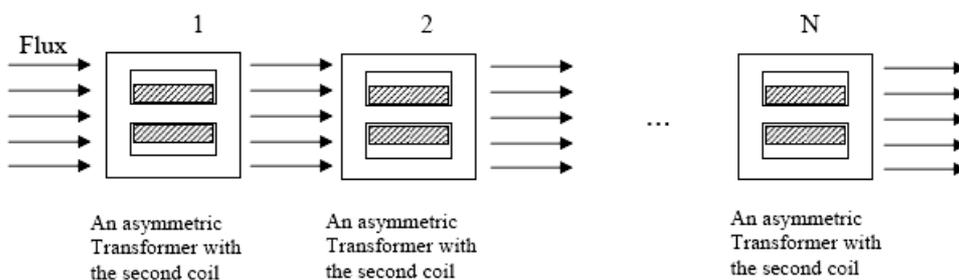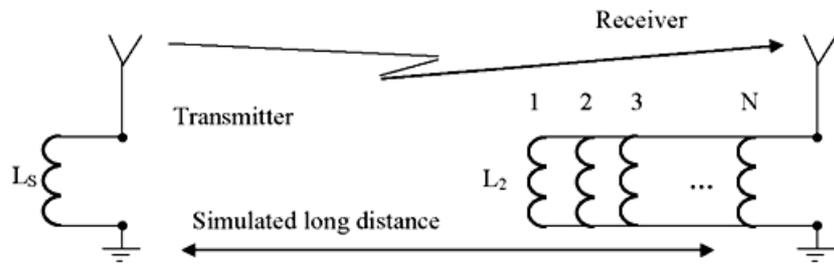
AS A RESULT

You have an asymmetric transformer arranged in a stack:
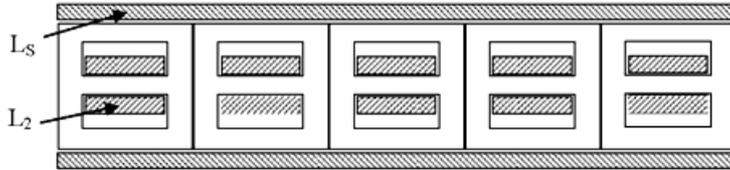
For flat (uniform) field inside of LS, it can be arranged with additional turns at it's ends.
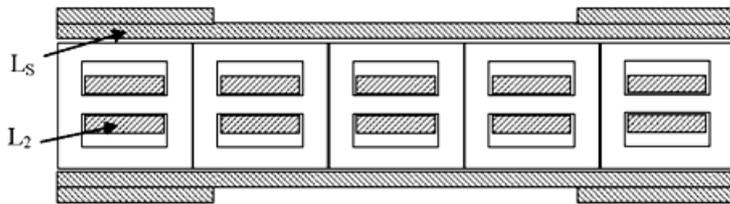

EXAMPLES OF COILS WHICH WERE ACTUALLY CONSTRUCTED
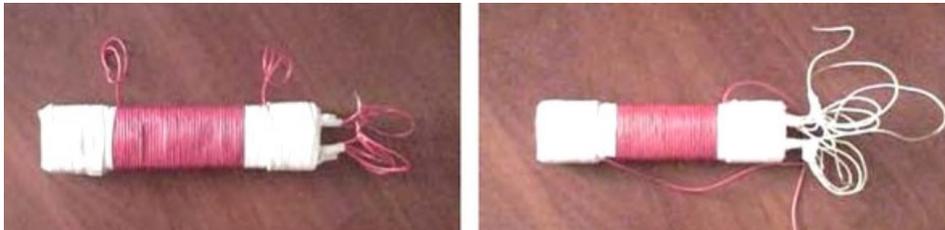
The coils are constructed from 5 sections, made from E-type ferrite core with a permeability of 2500, and wound using plastic-covered wire. The central sections L2 have 25 turns, and edge sections have 36 turns (to equalise the voltage on them). All sections are connected in parallel. The coil LS has magnetic field-flattening at it's ends, and a single-layer winding LS was used, the number of turns depending on the diameter of the wire used.

The current amplification for these particular coils is 4 times.
Changing LS inductance is 3% (if L2 is short-circuited)

SECRET 5
The power source in Nikola Tesla car "Red arrow" is
FERROMAGNETIC RESONANCE
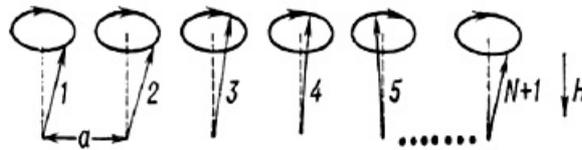
COMMENT: To understand electromagnetic feedback, you must consider the action to be like that of domains which have a group behaviour, or alternatively, spin waves (like a row of standing dominos falling over where each one is toppled by the previous one hitting it).

THE BASIS OF FERROMAGNETIC RESONANCE

When a ferromagnetic material is placed in a magnetic field, it can absorb external electromagnetic radiation in a direction perpendicular to the direction of the magnetic field, which will cause ferromagnetic resonance at the correct frequency.
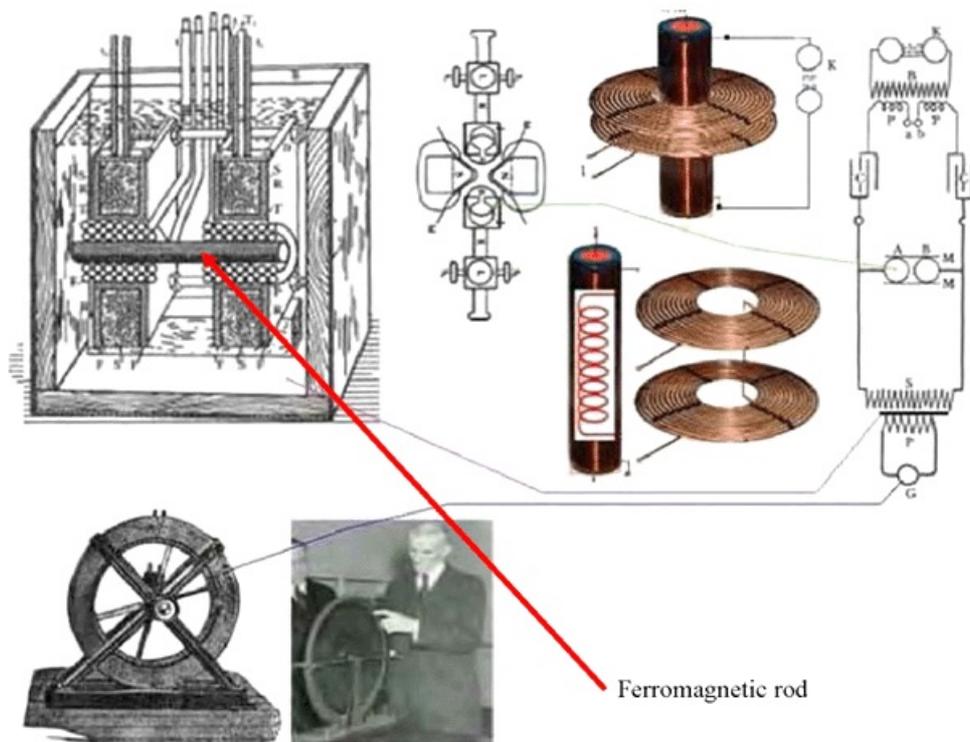
Ferromagnetic rod

This is an energy-amplifying transformer invented by Mr. Tesla.

QUESTION: What use is a ferromagnetic rod in Free-Energy devices?

AN ANSWER: It can change magnetisation of the material along magnetic field direction without the need for a powerful external force.

QUESTION: Is it true that the resonant frequencies for ferromagnetics are in the tens of Gigahertz range?

AN ANSWER: Yes, it is true, and the frequency of ferromagnetic resonance depends on the external magnetic field (high field = high frequency). But with ferromagnetics it is possible to get resonance without applying any external magnetic field, this is the so-called "natural ferromagnetic resonance". In this case, the magnetic field is defined by the local magnetisation of the sample. Here, the absorption frequencies occur in a wide band, due to the large variations possible in the conditions of magnetisation, and so you must use a wide band of frequencies to get ferromagnetic resonance.

A POSSIBLE PROCESS FOR ACQUIRING FREE-ENERGY

1. Subjecting a ferromagnetic to a short electromagnetic pulse even without an external magnetic field, causes the acquisition of spin precession (domains will have group behaviour, and so ferromagnetics can easily be magnetised).

2. Magnetisation of ferromagnetics can be by an external magnetic field.

3. Energy acquisition can be as a result of strong sample magnetisation caused by an external magnetic field of lesser strength.

COMMENT: You must use synchronisation for processes of irradiation and magnetisation of the sample.

USEFUL COMMENT: A ferromagnetic shield will not destroy the inductance of any coil placed inside it, provided that the ends of that coil are positioned on one side of the coil.


But, this coil can magnetise the ferromagnetic shield.
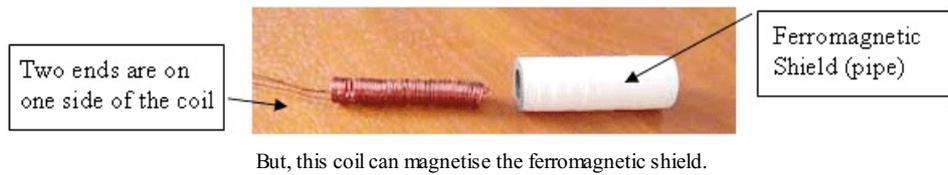
SECRET 5 CONTINUATION …
### TWO PERPENDICULAR COILS ON A COMMON AXIS
(Standing waves, spin waves, domino effect, laser effect, open resonator, etc…)

EXPLANATION: Standing waves can be excited not only in Tesla's "horseshoe" magnet, but also in Tesla's ferromagnetic transformer (excited by sparks…
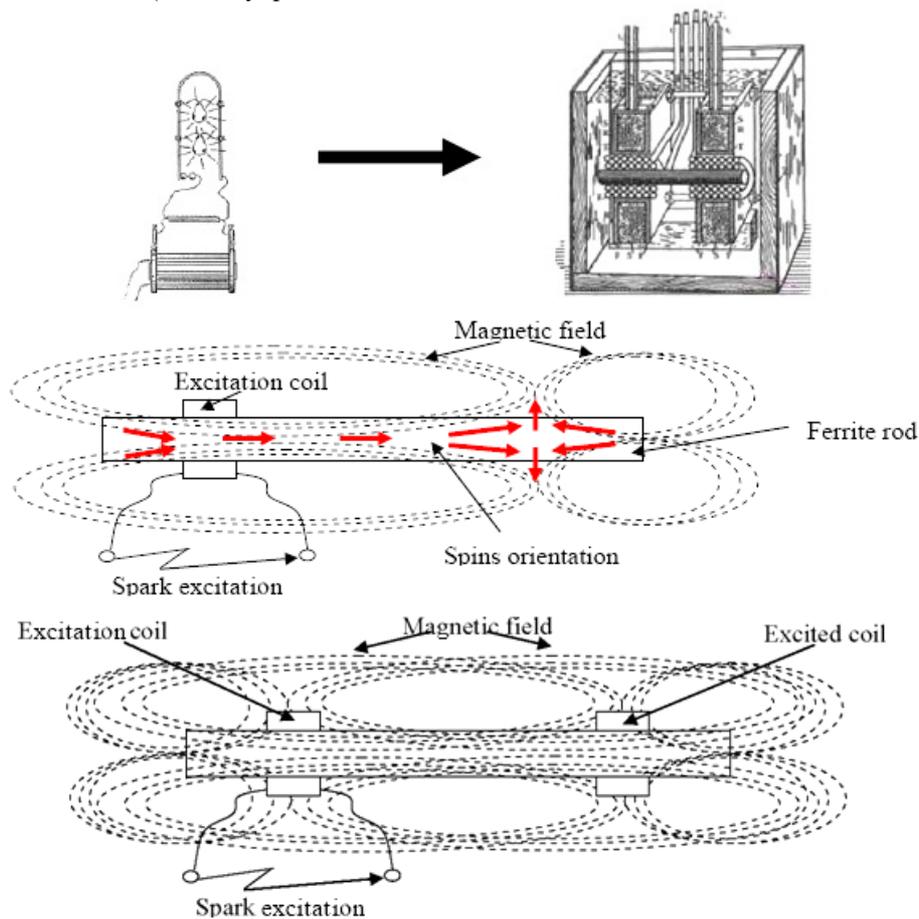
COMMENT: Excitation can be arranged in different ways, by coils connection. The frequencies of oscillations in a coil depends on the number of turns in it (a big variation is possible due to this factor).

ACTUAL COILS

COMMENT: The positions of the coils on the rods depends on whatever ferromagnetic material is being used, and on it's size. The optimum arrangement has to be determined through experimentation.

A transformer can have two pairs of coils: exciting (tubes), resonance or load (inside) – see Tesla's picture.

TOROIDAL VERSION OF AN ASYMMETRIC STACKED TRANSFORMER

An inductor L2 is placed on the central ring between the short-circuits of the core, and the coil LS (not shown) is wound around all three rings, covering the whole of the toroid - this is an ordinary toroidal coil.
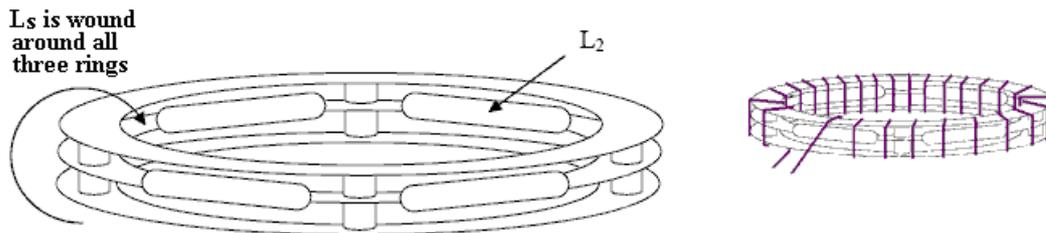
The number of short-circuits depends on your requirements, and influences on the current amplification.

THAT'S ALL - GOOD LUCK …

CONCLUSIONS

1. The Energy-Conservation Law is a result (not reason) of symmetrical interaction.

2. The simplest way to destroy symmetrical interaction is by using electromagnetic field feedback.

3. All asymmetrical systems are outside the area covered by the Energy-Conservation Law.

THE ENERGY CONSERVATION LAW CANNOT BE VIOLATED
(The field covered by this law is only symmetrical interactions)