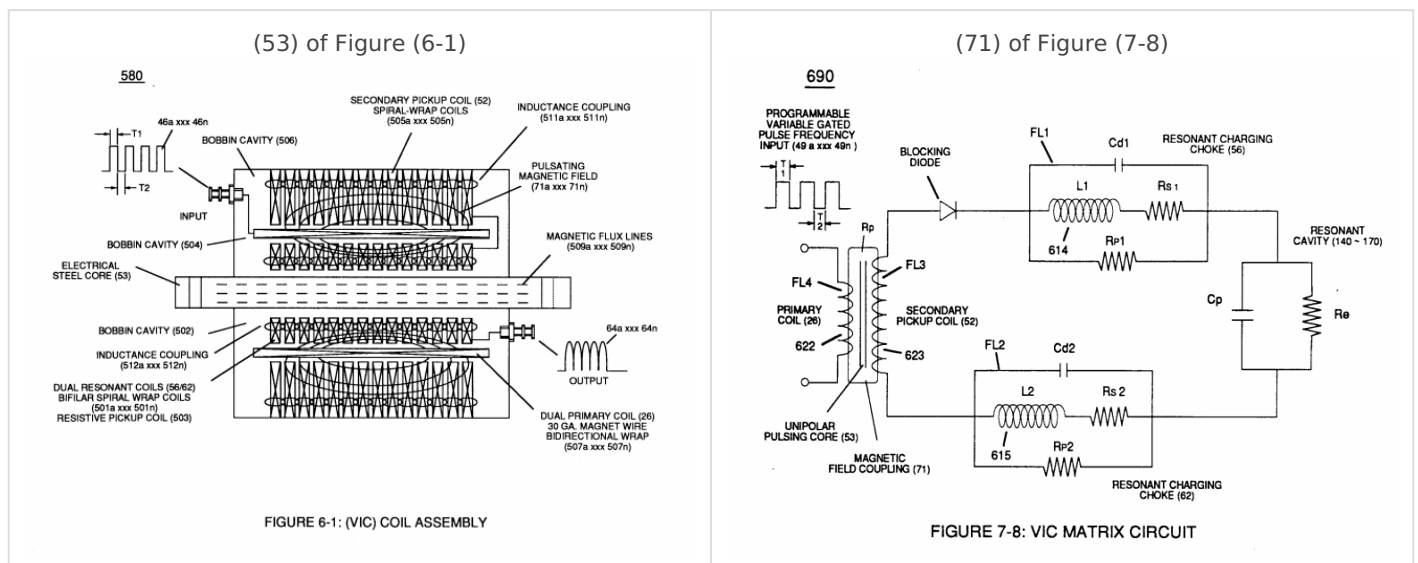


# Transformer Action

**Inductance Core** (53) of Figure (6-1) composed of "**Grain Oriented**" Electrical Steel laminations step up applied **Voltage** (49) when **Magnetic Field Coupling** (71) of Figure (7-8) cross over to **Secondary Pickup Coil**-winding (52) which has more turns of wire than **Primary Coil**-winding (26) by way of "**Eddy**" currents that induce magnetic flux lines of forces (71a xxx 71n) emanating away from magnetic core material (53) and caused by **Primary Coil** (26) being electrically energized during pulsing operations (T1a xx T1n), as illustrated in (690) of Figure (7-8).

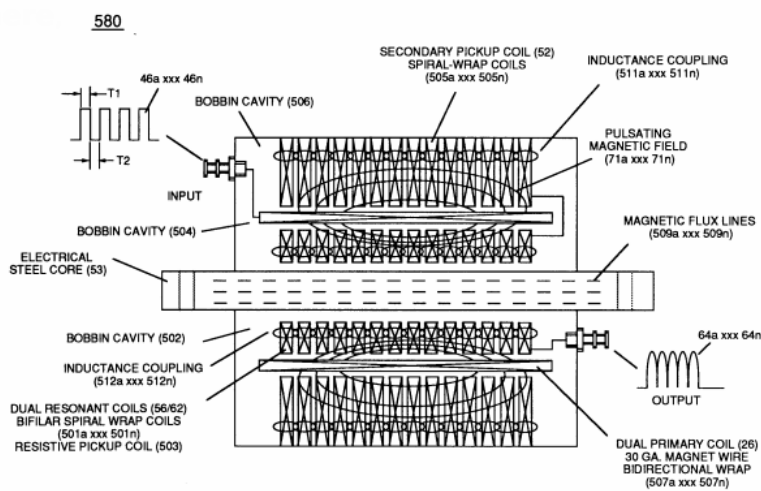


**Magnetic Induction** (71a - 71n) is determined by **Inductance Permeability** ( $\mu L$ ) of core material (53) along with VIC circuit geometry ability to step up **Voltage Potential** ( $V_o - V_n$ ) by way of "**Transformer Action**", and is expressed in the following equations:

(Eq 25)

$$\frac{E_p}{E_s} = \frac{N_p}{N_s} \quad \text{and} \quad \frac{E_p}{E_s} = \frac{I_s}{I_p}$$

W



(26),

(Es) is Voltage induced in Secondary Coil (52),

(Np) is the number of turns of wire that make up **Primary Coil-Wrap** (504) of Figure (6-1),

(Ns) is the **number of turns** of wire that make up **Secondary Coil-Wrap** (505) of Figure (6-1),

(Is) is the established current flow (**under load**) in **Secondary Coil-Winding** (52) ,

(Ip) is the amount of current flow in the **Primary Coil-Winding** (26) when electrically "energized" during pulsing operations (49a xxx 49n - T3 - 49a xxx 49a).

The turns ratio of the **VIC Transformer** (26/52) is determined by the following equation:

(Eq 26)

$$T = \frac{Ns}{Np}$$

**Where,**

(Ns) is the number of turns of wire for each bobbin cavity (505) of Figure (6-1) as to (710) of Figure (7-10) that are electrically connected in series arrangement (505a xxx 505n) to form **Secondary Coil-Wrap** (52),

(505) of Figure (6-1)

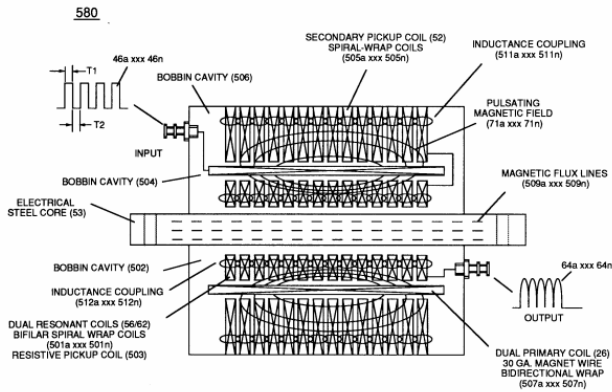


FIGURE 6-1: (VIC) COIL ASSEMBLY

(710) of Figure (7-10)

710

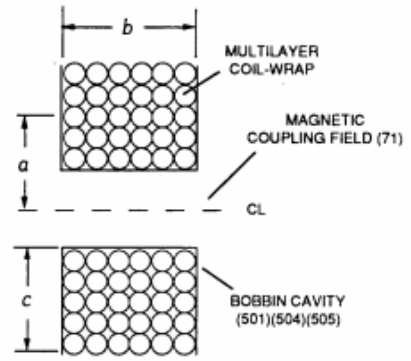


FIGURE 7-10: VOLTAGE STEPPING COILS

(Np) is the number of turns of the **Primary Coil** (26) wire-wrapped about spool cavity (504)

(Eq 20)

$$L = \frac{0.8 (N \times A)^2}{6A + 9B + 10C} \quad \text{Bobbin Cavity}$$

... each bobbin

cavity adhering to equation (Eq 20), as illustrated in (710) of Figure (7-10).

(505) of Figure (6-1)

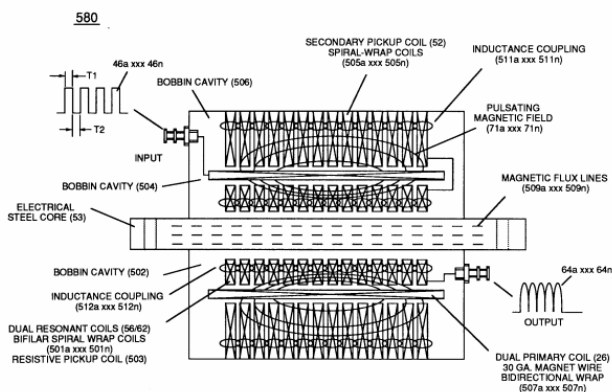


FIGURE 6-1: (VIC) COIL ASSEMBLY

(710) of Figure (7-10)

710

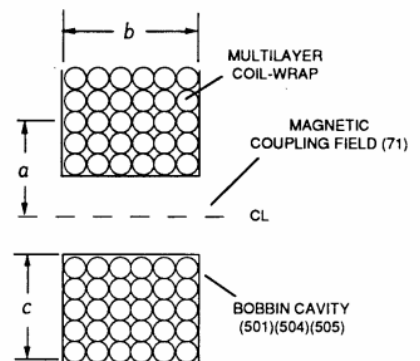


FIGURE 7-10: VOLTAGE STEPPING COILS

The **impedance ratio** of VIC transformer is determined by:

(Eq 27)

$$Z = T^2$$

Where,

(1'2) is the sum of the magnetic field strength (FL4) of the **primary coil** (26) and the **induced magnetic field** (FL3) of the **Secondary Pickup Coil** (52) during each pulse cycle (T1) in direct relationship to repetitive pulse cycling (T1a xxx T1n) and both magnetic fields (FL3/FL4) interacting, and is expressed in the following equation:

(Eq 28)

$$M = \frac{La}{4}$$

Where,

(M) is the mutual inductance expressed in the same units .as (La),

(La) is the total inductance of **Primary coil** (26) and Secondary coil (52) with fields aiding **Coupling Inductance** (Rp) between the **Primary coil** (26) and **Secondary Coil** (52) is further extrapolated in the following equation:

(Eq 29)

$$L_t = \frac{1}{\frac{1}{L_1 + M} + \frac{1}{L_2 + M}} \quad \text{Transformer}$$

Where,

(Lt) is the total inductance,

(L1) and L2) are the inductances of each individual transformer coils (26)(52),

(M) is the mutual inductance of each transformer coil (26/52) being in parallel relationship with fields aiding **Coupling Inductance** (Rp1) and (Rp2) in (690) of Figure (7-8) is further expressed in the following equation:

(Eq 30)

$$L_{tcc} = L1 + L2 + 2M \quad \text{Choke Coils}$$

Where,

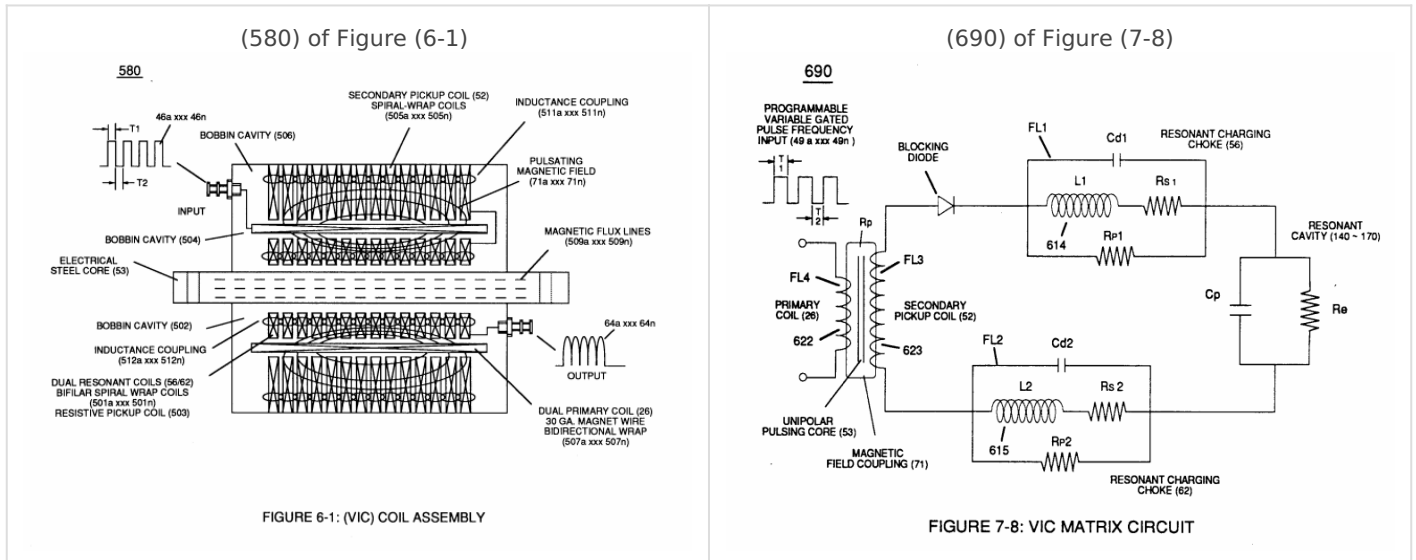
(Lt cc) is the total inductance of **Choke Coils** (FL1 - FL2),

(L1) and (L2) are the inductances of each individual choke coil (56)(62) in series with **Secondary Coil (52) Electrical Voltage**

**Potential** (700) of Figure (7-9) and being exposed to the same **Voltage Transformer** (26 - 53 - 52) magnetic field (Rp) with aiding fields,

(M) is the mutual inductance of choke coils (L1/L2) since **Transformer Magnetic Field** (Rp) is the excitation **External Magnetic Field** (Rp1/Rp2) by way of **Unipolar Pulsing Core** (53).

**VIC Coil Assembly** (580) of Figure (6-1) as to (690) of Figure (7-8) in reference to **Schematic Circuit** (620) of Figure (7-1) is constructed in such a way as to rotate and position **Inductor Coils** (26 - 52 - 56 - 62) to be of the same electromagnetic polarity orientation, indicator mark (e)



... thus, allowing **Inductance Fields** (FL1 - FL2 - FL3 - FL4) to be aiding one another during the same sequence of pulse-time (T1) ... thereby, allowing **Inductance Charging Effect** (660) of Figure (7-5) and **Resonant Voltage Effect** (670) of Figure (7-6) to interact with the dielectric properties of water (Re) to cause and inhibit electron flow (IF) since "electrons" magnetic field (547) of Figure (5-9) locks onto the electromagnetic fields of each energized choke coils (FL1/FL2) during **Voltage Excitation** (Vo -Vn) which, now, brings on and allows "**Electron Bounce Phenomenon**" (700) of Figure (7-9) to take place.

## Inductance Charging Effect (660) of Figure (7-5)

660

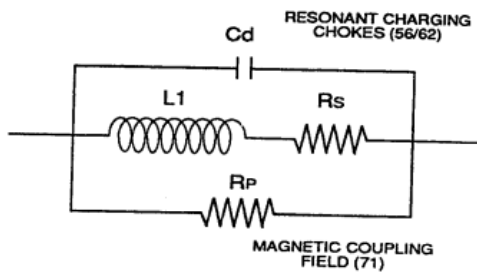


FIGURE 7-5: INDUCTANCE CHARGING EFFECT

## Resonant Voltage Effect (670) of Figure (7-6)

670

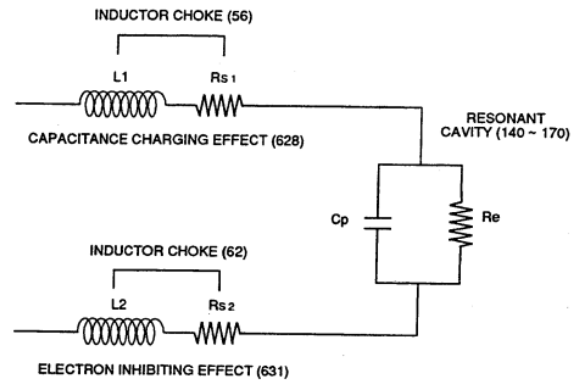


FIGURE 7-6: RESONANT VOLTAGE EFFECT

(547) of Figure (5-9)

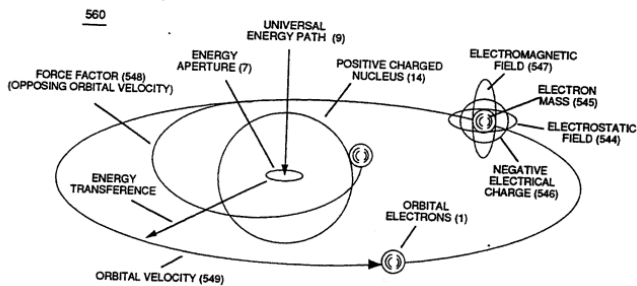


FIGURE 5-9: ATOMIC ENERGY EQUILIBRIUM

## (700) of Figure (7-9)

700

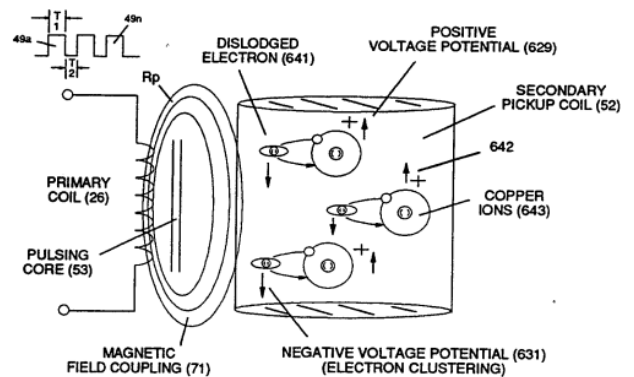


FIGURE 7-9: ELECTRON BOUNCE PHENOMENON (EbP)

(See Appendix B Note 1)

**Note 1)** The **Electron Inhibiting Effect** (631) of Figure (7-6) to cause "**Electron Clustering**" (Grouping/collecting negative charged particles at a given point) (700) of Figure (7-9) to produce "**Negative Voltage Potential**" ( B- ) at one side of **Water Gap** (Cp) of Figure (7-8) is accomplished by low electrical power input (Tab 38) when **Choke-Coil** (62) of Figure (7-1) magnetic field (FL2) (690) of Figure (7-8) during pulse on-time (49) impede "**Electron-Flow**" since electron mass is composed of electromagnetic matter which interacts with magnetic field strength (FL2).

**Capacitance Charging Effect** (628) prevents amp influxing away from **Water Gap** (Cp) in a similar manner

... producing "**Electrical Stress**" ( $SS' - RR'$ ) ( $B+/B-$ ) across **Water Gap** ( $C_p$ ) since *both* **Choke-Coils** (56/62) conduct voltage potential (*Negative or Positive*) during pulsing operations.

#### Electron Inhibiting Effect (631) of Figure (7-6)

670

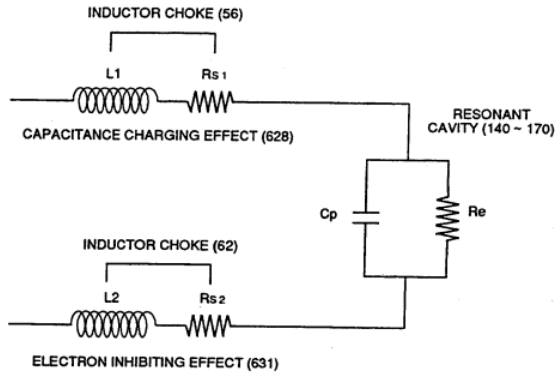


FIGURE 7-6: RESONANT VOLTAGE EFFECT

"**Electron Clustering**" (Grouping/collecting negative charged particles at a given point) (700) of Figure (7-9)

700

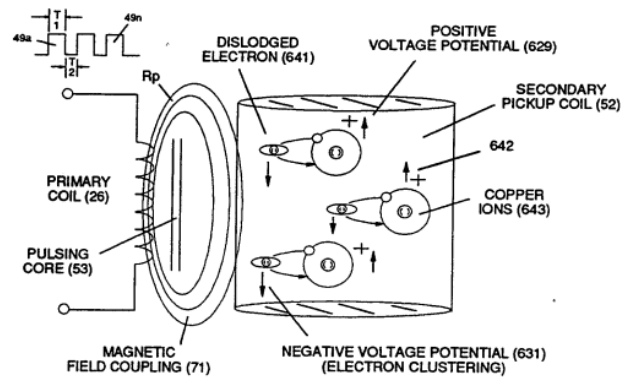


FIGURE 7-9: ELECTRON BOUNCE PHENOMENON (EbP)

"**Negative Voltage Potential**" ( $B-$ ) at one side of Water Gap ( $C_p$ ) of Figure (7-8) & magnetic field (FL2) (690) of Figure (7-8)

690

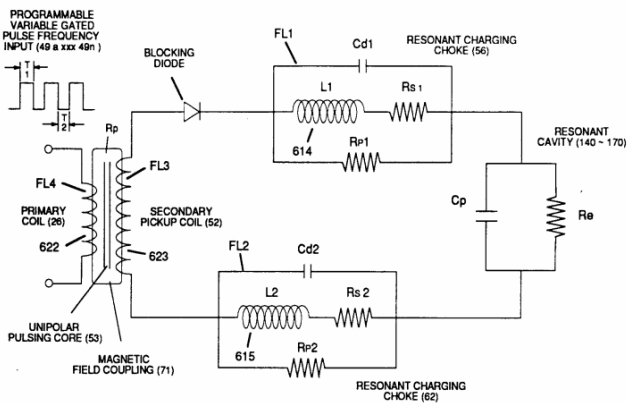


FIGURE 7-8: VIC MATRIX CIRCUIT

**Choke-Coil** (62) of Figure (7-1)

620

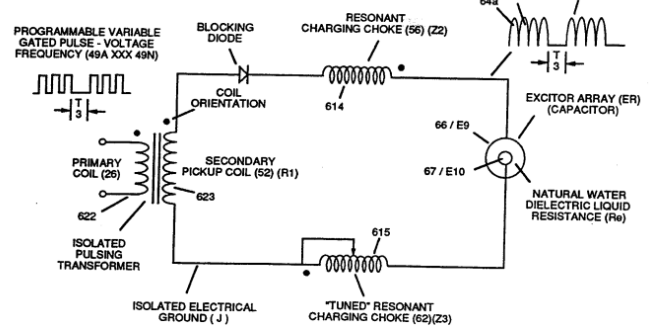


FIGURE 7-1: VIC IMPEDANCE NETWORK

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