Φ-MACHINE

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Editorial: The author is developing Frolov's idea, which is known as Φ-machine.

To make load balanced the first version of Φ-machine has two serially connected secondary windings. However, in the consequent experiments I have ascertained that there is no need to load both windings since one of them can be shorted out. Certainly, there should be placed an air gap between the core of primary coils and ring core of secondary coils. There could be used another material in this gap, which magnetic permeability is much less than the permeability of the cores. It is explicated by the fact that the back induction magnetic field of the secondary coils is maximal in those parts of the core, which have maximal magnetic permeability.

If there was no gap then the magnetic field maximum of back induction would have been in the central core (of the primary coil), and it would have resulted in bad operation of the machine.

Principle of Φ-machine operation is rather easy to explain. The alternating magnetic field of the primary coil comes to the secondary core ***through the gap*** and causes electro motive force (e.m.f.) in the secondary coils. If there is load then every coil makes contra e.m.f. which coincides in its direction with the e.m.f. of the opposite coil.

The **first version** of the Φ-machine works rather good but I have made few experiments. (Fig.1)

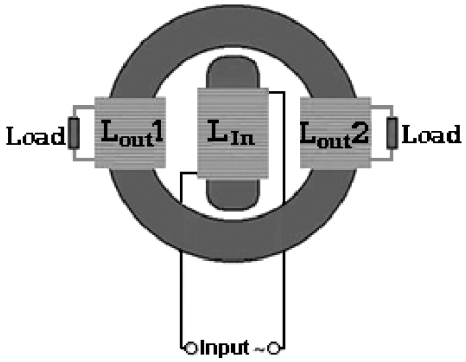

Fig. 1
I Version

The **second version** of the Φ-machine is more interesting and productive. (Fig.2) To increase output I connected a capacitor to the primary winding. (Thus I obtained an oscillatory circuit). *Editorial: Sure, it is necessary.*

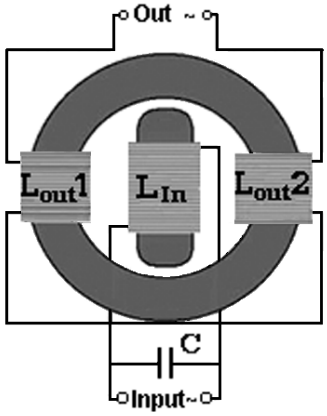

Fig.2
II Version

If we adjust the system for resonance then we get amazing results:

Oscillation period (T) is 15.8 microseconds

U of the primary winding (without load)	30 Volt
A resistor is connected to $Lout_2$	330 Ohm:
U_{Lout_2} ($R_{Lout_1} = \infty$ Ohm)	13.0 Volt
U_{Lout_2} (R_{Lout_1} =0 Ohm)	27.5 Volt
U_{Lout_2} (R_{Lout_1} =330 Ohm)	14.5 Volt

Another interesting experimental observations:

Oscillation period (T) is 12.7 microseconds

1.	U_{Lin}	27 Volt
	$U_{Lout_1} + U_{Lout_2}$ ($R_H = \infty$ Ohm)	25 Volt
2.	$U_{Lout_1} + U_{Lout_2}$	17 Volt
	$U_{Lout_1} + U_{Lout_2}$ (R_H =20 Ohm)	7.2 Volt
3.	U_{Lin}	30 Volt
	$U_{Lout_1} + U_{Lout_2}$ (R_H =0.2 Ohm)	0.16 Volt

Comparing the first and the second cases of U_{Lin} we can make a conclusion that ***Φ-machine output depends on load! The more power, the more efficiency!***

The following experiments were also made by the author:

1. The experiment with **Avramenko's plug**
2. T-transformer (half of the Φ-machine)
3. III-type Φ-machine
4. Vortex transfer of energy (like Tesla's one)
5. High-frequency plasma