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EDITOR
STEFAN MARINOV
INSTITUTE FOR FUNDAMENTAL PHYSICS
GRAZ AUSTRIA

THE SELF-ACCELERATING GENERATOR VENETIN COLIU

Stefan Marinov
Institute for Fundamental Physics
Morellenfeldgasse 16
A-8010 Graz, Austria

A simple self-accelerating electromagnetic generator is presented which needs less power for its rotation when electrical energy is extracted from it with respect to the case when energy is not extracted. The reason for this violation of the energy conservation law is the retardation of the current induced in a coil due to the inductivity of the latter which leads to the result that the magnetic action of the induced current, instead to oppose the driving torque (as is the case in all conventional generators), supports it. The self-acceleration is further increased because of the hysteresis effects in the iron of the moving and stationary pole shoes. This miraculous effect, called by me anti-Lenz effect, is *opposite* to the Lenz effect which can be observed in every conventional generator and which is considered as the basis of the energy conservation law in electromagnetism.

1. INTRODUCTION

In 1986 I invented the generator MAMIN COLIU (MArinov's Motional-transformer INductor COupled with a LIghtly rotating Unit)[1] which did not demonstrate an electromagnetic braking effect when electrical energy was extracted from it, i.e., the driving mechanical power remained the same at open and closed generator's circuit. All my endeavours to publish the description of this non-braking generator in the scientific journals failed under the motivation that this machine violates the energy conservation law (what it really did!), and I was impelled to present the report in two paid advertisments[2,3]. There was no reaction all over the world to this big discovery. Because of the lack of money, I was not able to build the MAMIN COLIU machine with a closed energetic circle (as a *perpetuum mobile*), although I built six different models[4].

In this paper I present a recently constructed generator called VENETIN COLIU (or NICOLINO VENETO) which demonstrates a more amazing effect: when electrical energy is extracted from it, the mechanical power needed for its rotation diminishes, i.e., this is a self-accelerating generator.

The VENETIN COLIU machine is discovered, developed and explained by the Italians Manuele Cavalli and Bruno Vianello from Treviso (a town in the northern Italian province Veneto) and by me. My book[5] is dedicated to this generator where the history of its discovery and the several models built by us are presented. At the present time the energetic circle is still not closed (i.e., the machine still does not run as a *perpetuum mobile*), but since the self-accelerating effect is pretty big, the solution of this problem is in our financial possibilities. In this paper a brief report on this machine is presented.

Fig. 1 presents an over-all view of the machine VENETIN COLIU which consists of ten

Bosch ignition coils which produce the electric tension activating the high voltage used for ignition of the sparks in the cars' cylinders (production number 1237011030) mounted on a common axle and driven by a d.c. motor put at the top. Fig. 2 presents the tenth ignition coil open. The schematic drawing of this extremely simple generator is presented in Fig. 3.

1-1' is a support of soft iron,
2-2' is a ring permanent magnet,
3-3' is the coil in which alternating tension is induced,
4-4' are the fixed pole shoes of soft iron,
5-5' are the moving pole shoes of soft iron,
6 is the axle of the rotating pole shoes of soft iron, too.

When the moving pole shoes 5-5' of the rotating "star" are not in front of the fixed pole shoes 4-4' of the stationary "crown", a considerable part of the lines of magnetic flux generated by the permanent ring magnet 2-2' closes through air without crossing the cross-section of the coil 3-3'. When the moving pole shoes are in front of the fixed ones, some part of the lines of magnetic flux follows the way 2(N)-4-5-6-1-2(S) and crosses the plane of the coil 3-3'. Thus when the moving pole shoes approach the fixed ones, the magnetic flux through the coil increases; when the former are in front of the latter the flux is maximum; and when these separate the flux decreases.

Consequently an electric tension will be induced in the coil's windings. If the coil is short-circuited, according to the Lenz rule, the induced current will have such a direction that the magnetic flux generated by it must be opposite to the change of the initial flux. Thus when the moving pole shoes approach the fixed ones, the coil will become a magnet with a north pole up and south pole down. This will lead to the result that with respect to the situation when there is no current in the coil less lines of magnetic flux will follow the way 2(N)-4-5-6-1-2(S), as certain lines will be short-circuited by the magnetic flux of the coil. Consequently, at short-circuited coil, the fixed pole shoes will attract the moving ones with less force than in the case where the coil should be open.

On the opposite, when the moving pole shoes go away from the fixed ones, the latter will attract the former, at closed coil, with larger force than in the case where the coil should be open.

Thus if the coil is short-circuited, the rotation of the machine will be braked when induced electric power will be produced.

This is the picture of a conventional generator, and this effect can be observed at low velocities also in VENETIN COLIU (I call this the normal Lenz effect).

With the increase of the rotational velocity, at a certain critical velocity, the input power driving the motor remains the same at open and closed coil (zero Lenz effect). And at high velocities the input mechanical power decreases at closed coil (anti-Lenz effect).

2. THEORETICAL BACKGROUND

The explanation of the "anti-Lenz behaviour" of VENETIN COLIU is childishly simple:

Any current I flowing in a closed circuit (closed wire) produces a magnetic flux over the cross-section of the circuit such that

$$\Phi = LI, \tag{1}$$

where L is a constant of proportionality called the self-inductance (or, briefly, inductance) of the circuit.

The electric tension induced in a circuit whose current changes can be found proceeding from the fundamental Newton-Lorentz equation[1] (p. 86)

$$\mathbf{E}_{glob} = -\,\mathrm{grad}\phi - \partial\mathbf{A}/\partial t + \mathbf{v}\times\mathrm{rot}\mathbf{A}, \tag{2}$$

where $\mathbf{E}_{glob}$ is the global electric intensity, i.e., the force acting on a unit electric charge (a test charge) which crosses with a velocity $\mathbf{v}$ the reference point where the electric and magnetic potentials generated by the surrounding system of electric charges are ϕ and $\mathbf{A}$.

Taking in (2) $\phi = 0$, $\mathbf{v} = 0$, we obtain for the tension induced in the circuit by integrating along the closed circuit and by using Stokes theorem

$$U_{ind} = \oint \mathbf{E}_{glob}.d\mathbf{l} = -\oint(\partial\mathbf{A}/\partial t).d\mathbf{l} = -(\partial/\partial t)\int_S \mathrm{rot}\mathbf{A}.d\mathbf{s} = -(\partial/\partial t)\int_S \mathbf{B}.d\mathbf{s} = -\partial\Phi/\partial t, \tag{3}$$

where $d\mathbf{l}$ is the line element of the circuit, $\mathbf{A}$ is the magnetic potential produced by <u>all other</u> current elements of the circuit, S is any surface spanned on the circuit, and $\mathbf{B} = \mathrm{rot}\mathbf{A}$ is the magnetic intensity produced by all current elements of the circuit at the surface element $d\mathbf{s}$ of S.

By putting (1) in (3), we obtain

$$U_{ind} = -L(\partial I/\partial t). \tag{4}$$

Let us assume that besides the inductivity L the circuit has also a resistance R. If an external tension U_{gen}, which we shall call generating tension, acts in the circuit, we shall have, according to Ohm's law,

$$U \equiv U_{gen} + U_{ind} \equiv U_{gen} - L(\partial I/\partial t) = RI, \tag{5}$$

as in such a case the <u>net</u> tension acting in the circuit will be the sum of the external generating tension U_{gen} and the self-induced tension U_{ind}.

In VENETIN COLIU (see fig. 3) the external tension U_{gen} is the tension induced in the coil 3-3' because of the rotation of the "star" 5-5' with respect to the "crown" 4-4' that leads to a change of the generated by 2-2' magnetic flux crossing the coil, while U_{ind} is the tension induced in the coil 3-3' because of the change of its current.

If supposing that the generating tension is a cosinusoidal function of time

$$U_{gen} = U_{gen\text{-}max}\cos(\omega t), \tag{6}$$

where $U_{gen\text{-}max}$ is the maximum value of the generating tension, $\omega = 2\pi/T$ is its circular frequency, and T is the period of its changes from plus maximum to minus maximum and again to plus maximum, then by putting (6) into (5) we shall obtain the differential equation

$$U_{gen\text{-}max}\cos(\omega t) = RI + L(dI/dt), \tag{7}$$

whose solution can be searched in the form

$$I = I_{max}\cos(\omega t - \phi), \tag{8}$$

where I_{max} and ϕ are two positive (as we shall see later) constants.

Indeed, substituting (8) into (7) we obtain

$$U_{gen\text{-}max}\cos(\omega t) = RI_{max}\cos(\omega t - \phi) - \omega LI_{max}\sin(\omega t - \phi). \tag{9}$$

This equation can be written in the form

$$(U_{gen\text{-}max}/I_{max})\cos(\omega t) = (R\cos\phi + \omega L\sin\phi)\cos(\omega t) + (R\sin\phi - \omega L\cos\phi)\sin(\omega t). \tag{10}$$

Obviously it must be

$$R\sin\phi - \omega L\cos\phi = 0, \tag{11}$$

so that

$$\tan\phi = \omega L/R \tag{12}$$

and

$$U_{gen\text{-}max}/I_{max} = R\cos\phi + \omega L\sin\phi = (R^2 + \omega^2L^2)^{1/2}. \tag{13}$$

The quantity

$$Z = (R^2 + \omega^2L^2)^{1/2} \tag{14}$$

is called impedance of the circuit.

The quantity

$$\phi = \arctan(\omega L/R) = \arccos(R/Z) \tag{15}$$

is called phase angle and shows the angular delay in radians with which the maximum of the current appears after the maximum of the generating tension. As T is the period of the generating tension, then $\Delta t = (\phi/2\pi)T = \phi/\omega$ is the time after which the maximum of the current appears after the maximum of the tension.

The generating tension in the machine VENETIN COLIU shown in figs. 1-3 is not cosinusoidal and has the form shown in fig. 4a where there are presented two "bursts" of the generating tension (as they have been observed on the oscilograph) and the corresponding "bursts" of the current for two consequent approaches-separations of the moving and stationary pole shoes. Fig. 4a corresponds to the case for low rotational velocities when one can assume $R \gg \omega L$, and thus $\phi = 0$. In fig. 4b there is presented only one "burst" of induced tension and respective induced current at $\phi = \pi/4$ and in fig. 4c at $\phi = \pi/2$. I have to emphasize once more that the presented above theory is true for cosinusoidal generating tension which is not the case with the machine shown in figs. 1-3 where

the time of the increase of the positive U_{gen} is bigger than the time of its decrease and the time of the increase of the negative U_{gen} is shorter than the time of its decrease; moreover, between two consequent "bursts" of the generating tension there is considerable time where the generating tension is practically zero.

The form of the generated current in figs. 4b and 4c is presented substantially simplified. To obtain this form, one has to solve the differential equation (5) for the specific form of the generating tension. This is an extremely difficult mathematical task and thus I shall conditionally make use of the results obtained for the cosinusoidal form of the generating tension.

As in figs. 4b and 4c the induced negative current (which is below the x-axis) appears when the moving pole shoes are pretty far from the fixed ones, its magnetic action on the moving pole shoes is substantially weaker than the magnetic action of the induced positive current (which is above the x-axis), as the latter appears always when the moving pole shoes are quite in front of the fixed ones. For this reason the hatching of the negative current in figs. 4b and 4c is done not so dense as in fig. 4a where the positive and negative currents appear symmetric with respect to the conjunction line of the moving and fixed pole shoes.

As the magnetic field produced by the induced positive current diminishes the force with which the fixed pole shoes attract the moving ones, this positive current which appears before the crossing of the conjunction line (the y-axis in fig. 4) will brake the rotation, however this current which appears after the crossing of the conjunction line will accelerate the rotation. Thus the magnetic action of the positive current appearing before the crossing of the conjunction line leads to a Lenz effect, while the magnetic action of the positive current appearing after the crossing of the conjunction line leads to an anti-Lenz effect. The magnetic action of the negative current leads always to a Lenz effect as it increases the force with which the fixed pole shoes attract the moving ones and it always appears after the crossing of the conjunction line.

The elementary torque caused by the magnetic action of the induced current I at a certain moment t during a differential time interval dt will be proportional to I(t)dt and will be inversely proportional to the distance d = d(t) of the moving pole shoes from the conjunction line at this very moment.

As figs. 4b and 4c show, at a certain rotational velocity the accelerating torque of the magnetic field generated by the induced positive current, appearing after the crossing of the conjunction line, becomes equal to the sum of the braking torques of the magnetic field generated by the induced positive current, appearing before the crossing of the conjunction line, and of the magnetic field generated by the negative induced current (the latter appears always after the crossing of the conjunction line). For this rotational velocity there is neither braking nor acceleration of the machine as a whole. For velocities higher than this critical velocity, the net torque of the positive and negative currents accelerates the machine as a whole (if assuming, of course, that the mechanic friction is zero).

This is the whole "puzzle" with VENETIN COLIU.

One will say that this effect must exist in any electromagnetic generator and it had to be discovered by Tesla and Siemens and by every intelligent student who will ruminate a little bit over the electromagnetic generators when taking into account the retardation of the current with respect to the induced generating tension. Yes, the anti-Lenz effect exists in EVERY electromagnetic generator! - Why then was it no noticed until now? - For two reasons:

1) The generator must have an abrupt change of the induced "positive" tension into "negative" tension, as this is the case with the machine shown in figs. 1-3. In almost all generators used by mankind the induced generating tension has rather a cosinusoidal character where the effect is weaker.

2) The non-braking or accelerating effect for the machine as a whole appears when $\cos\phi$ becomes much less than unity. However then the induced current is pretty low. The accelerating anti-Lenz effect will be the largest for $\cos\phi = 0$, but in such a case, at final ohmic resistance, as is the case in every generator, the induced current will tend to zero. Thus $\cos\phi$ must be neither too high nor too low.

The Bosch compagny has produced millions and millions of such ignition coils but none of the engineers who have developed and examined the models has noticed that these ignition coils violate the energy conservation law and that with their help a perfect *perpetuum mobile* can be constructed. All these engineers were interested only in the tension produced by the coils and NOBODY OF THEM has carried out energetic measurements which EVERY CHILD can do.

3. THE EFFECTS DUE TO THE EDDY CURRENTS

If eddy currents can be built in the iron of the moving and fixed pole shoes, their magnetic action always brakes the rotation. Thus the eddy currents have an action similar to the action of the mechanic friction and, as the mechanic friction, they must be diminished to the possible lowest level.

It must be clear that there is no principal physical difference between "directed" currents induced in a coil and "eddy" currents induced in the bulk iron of the pole shoes, as both appear because of the change of the magnetic flux through the cross-section of certain circuits. However, by changing the phase angle ϕ between generating tension and induced current in the coil, we can make that the Lenz effect of the coil's currents becomes an anti-Lenz effect. We cannot do this with the eddy currents, as their phase angle is always near to zero.

The best way for avoiding the eddy currents is to make all pole shoes and iron parts in VENETIN COLIU by magnetic materials which have no eddy currents (ferrite, metglass, corovac), as I have done in the machine VENETIN COLIU - II (see sect. 6).

The braking effect of the eddy currents at different rotational velocities can be established very easily by measuring the electric power consumed by the driving motor at open coils: once when the ring magnets are there and once when they are taken out. If we denote the first power by $(P_{frict})_{gen+mot+eddy}$ and the second power by $(P_{frict})_{gen+mot}$, then their difference

$$(P_{frict})_{eddy} = (P_{frict})_{gen+mot+eddy} - (P_{frict})_{gen+mot} \qquad (17)$$

will be the friction power due to the eddy currents.

If we denote by $(P_{frict})_{mot}$ the friction power of the motor plus the ohmic power lost in the motor's windings, then the friction power of the generator due only to the mechanical friction of its moving parts will be

$$(P_{frict})_{gen} = (P_{frict})_{gen+mot} - (P_{frict})_{mot}. \qquad (18)$$

As it was said above, by making short circuiting of the generator's coils (at certain rotational velocity) the driving power of the motor P_{mot} diminishes with a certain amount ΔP_{mot}. If we would have

$$\Delta P_{mot} > (P_{frict})_{gen+eddy}, \qquad (19)$$

we can run the machine as a *perpetuum mobile* in the way shown in fig. 5: We set the machine in rotation by the help of the driving motor which rubs the "fly-wheel" of our generator. When the necessary rotational velocity is achieved, the driving motor is distached and all coils of the generator are short-circuited. If, for this rotational velocity, the inequality (19) is satisfied, the machine will accelerate itself until the inequality (19) will be no more satisfied or until the machine will break to pieces because of the high centrifugal forces.

The decrease of the power of the driving motor when short-circuiting the generator's coils can be easily measured. If there are no eddy currents, the whole this power ΔP_{mot} is "anti-Lenz" power, i.e., "power created from nothing", or "free power".

However, when there are eddy currents, not the whole power ΔP_{mot} is "free power". Now I shall explain this important aspect of the VENETIN COLIU machine.

As it was said above (see sect. 1 and fig. 4a), the magnetic lines produced by the induced positive current have the same direction as the magnetic lines produced by the permanent ring magnet and this leads to a decrease of the magnetic flux on the track 2(N)-4-5-6-1-2(S), while the magnetic lines produced by the induced negative current are opposite to the magnetic lines produced by the permanent ring magnet and this leads to an increase of the magnetic flux on the track 2(N)-4-5-6-1-2(S). Thus when positive current will be induced in the coil, there will be less eddy currents, as the eddy currents are proportional to the change of the magnetic flux going through the pole shoes because of their mutual motion, and if the flux is less, also its change will be less. On the other hand, when negative current will be induced in the coil, there will be more eddy currents.

Let us now look at figs. 4b and 4c. For this case the induced negative current appears when the moving pole shoes are far from the conjunction line and, as mentioned above, we can take into account only the magnetic action of the induced positive current. As the magnetic field of the positive current diminishes the eddy currents, then we have to conclude that a part of the self-accelerating effect in VENETIC COLIU is due not to the anti-Lenz effect but to the decrease of the braking action of the eddy currents.

Of course, we must take into account that the "accelerating" effect due to the decrease of the eddy currents is a secondary effect, as the eddy currents are determined by the whole magnetic flux on the track 2(N)-4-5-6-1-2(S), and the current induced in the coil leads only to slight changes of this flux. Thus, according to me, the biggest part of the self-accelerating power ΔP_{mot} is "anti-Lenz" power, i.e., "free power", and a smaller part is due to a decrease of the eddy currents braking.

My experimental possibilities did not allow to specify these two powers. Obviously in a machine where there are no eddy currents (as in my machine VENETIN COLIU - II) the whole decrease of the motor power ΔP_{mot} is anti-Lenz, or free, power.

4. THE EFFECTS DUE TO THE HYSTERESIS

Let us assume that the generating tension has a strict cosinusoidal character. It is easy to see now that the generator will arrive at the most to a zero Lenz effect when the phase angle between the generating tension and the induced current will become $\phi = \pi/2$.

This can be clearly seen in fig. 7a where the induced current is given as function of time and t_2 is the moment when the moving pole shoe crosses the conjunction line.

If the magnetic intensity generated by the permanent ring magnet 2-2' will be denoted by H and the magnetic intensity generated by the current induced in the coil 3-3' will be denoted by ΔH, then the graph of ΔH will be the same as the graph of I.

In fig. 7b is given the graph of the force F_H acting on the moving pole shoe if assuming μ = Const, where μ is the permeability of the pole shoes iron. As at the moments t_o and t_4 the moving pole shoe is exactly between two successive fixed pole shoes, the force at these two moments will be zero. The negative current produces attractive forces and thus during the time t_o-t_1 the negative current induced in the coil supports the rotation. The positive current produces repulsive forces and thus during the time t_1-t_2 the positive current induced in the coil brakes the rotation. Similarly during the time t_2-t_3 the induced current supports the rotation and during the time t_3-t_4 the induced current brakes the rotation. Forces supporting the rotation are noted by "+" and forces braking the rotation are noted by "-". We thus see that at $\phi = \pi/2$ the net torque caused by the induced current will be zero and the Lenz effect will be zero.

Now I shall show that if one will take into account the hysteresis effects in the iron of the pole shoes, one will come to the conclusion that even at a strict cosinus

idal character of the generating tension VENETIN COLIU can become a self-accelerating generator.

First let us remember briefly the hysteresis properties of the ferromagnetic materials.

If a ferromagnetic material with a permeability μ is put in a field of magnetic intensity H, it becomes magnetized and the additional "ampere-windings" appearing in the ferromagnetic material increase the magnetic intensity to a value

$$B = \mu H \tag{20}$$

which is called magnetic induction. I firmly defend the opinion that between H and B there is no principal physical difference[6] (between the electric intensity E and the electric displacement D there is principal physical difference[6]), so that they must be called by the same name and denoted by the same symbol, but for historical reasons and for clarity I use the usual symbols H and B and the usual names "magnetic intensity" and "magnetic induction".

The magnetic induction B, however, depends not only on H but also on the "history", i.e., on the magnetic intensities which have acted on the material before putting it in the field of the magnetic intensity H. The dependence of B on the "historical" H is called hysteresis.

The graphic dependence of B on H is called hysteresis loop and such a typical hysteresis loop is shown in fig. 6 taken from ref. 7 where its character is explained in detail.

Here I shall turn reader's attention only to the minor hysteresis loop at the upper part of the big hysteresis loop. This minor loop will be described if the magnetic intensity H suffers small changes ΔH so that the magnetic induction B will suffer corresponding changes ΔB. Exactly this isthe case with VENETIN COLIU.

If the magnetic intensity generated by the permanent ring magnet will be considered positive and will correspond to the middle point of the minor hysteresis loop, then ΔH generated by the positive current will be negative and ΔH generated by the negative current will be positive.

Looking at the character of the minor hysteresis loop in fig. 6, we can draw in fig. 7c the graph of ΔB as function of time and then in fig. 7d the graph of the force F_B acting on the moving pole shoe. Fig. 7d shows clearly that the net accelerating torque acting on the pole shoes will be larger than the net braking torque and thus the machine as a whole will be accelerated.

My experimental possibilities did not allow to specify which part of the self-accelerating effect in my machine VENETIN COLIU - I was due to the hysteresis of the iron.

In the following three sections I shall present the three VENETIN COLIU machines constructed by me.

5. THE MACHINE VENETIN COLIU - I

VENETIN COLIU - I is the machine presented in figs. 1, 2, 3 and 5.

In Table I are presented three energetic input-output measurements with VENETIN COLIU -I at three different rotational velocities. The tension applied to the motor and the current flowing in the motor were direct. The generator's coils were either all open or all closed. The alternating tension induced in any of the generator's coils was measured at open coils and the alternating current flowing in every of the coils was measured at closed coils.

The power produced by the whole generator (the Joule heat power) was calculated according to the formula

$$P_g = 10 I_g^2 R, \tag{21}$$

where the number 10 is taken for the ten coils and R = 350 Ω was the ohmic resistance of any of the coils (to have more "copper" the original coils with R = 1100 Ω have been exchanged with new ones). The inductance of every coil was about L = 1 H.

Table 1

Tension applied to the motor	Current consumed by the motor		Power consumed by the motor		Increase of the consumed power	Tension induced in the coils	Current flowing in the coils	Power produced by the generator
	at open coils	at closed coils	at open coils	at closed coils				
U_m (V)	I_m (mA)	I'_m (mA)	P_m (mW)	P'_m (mW)	ΔP_m (mW)	U_g (V)	I_g (mA)	P_g (mW)
5	36	41	180	205	+ 25	1.5	2.5	22
10	46	46	460	460	0	2.5	3.5	43
20	70	66	1400	1320	- 80	6.0	4.0	56

The last line in this table shows that if the driving motor will be replaced by a flywheel, as shown in fig. 5, which will be set at the same rotational velocity, and the friction power of the machine will be less than 80 mW, then the machine will become self-accelerating and thus will present a *PERPETUUM MOBILE*.

6. THE MACHINE VENETIN COLIU - II

VENETIN COLIU - II is the machine presented in figs. 8, 9 and 10. By looking at these figures and at fig. 3, one understands how the machine is constructed and which is its function.

In VENETIN COLIU - II the magnetic flux was led always through ferrites and the magnetic "friction" due to the eddy currents was reduced to zero.

The absence of eddy currents was demonstrated in the most pure way by looking at the current consumed by the d.c. motor (at a definite driving tension), first when the ring magnet was put in the machine and second when it was taken out. There was no change in

the current in these two cases.

Measurements have been also done by setting the machine in rotation with a certain speed by the help of a motor which rubbed the circumference of the rotor (similarly as in fig. 5) and measuring the cost down times. With and without the ring magnet these times were equal.

However VENETIN COLIU - II showed smaller self-accelerating effect than VENETIN COLIU - I. My explanation is the following:

VENETIN COLIU - I has a sharp change from positive induced tension to negative induced tension when the moving pole shoes cross the conjunction line, because the pole shoes are slim. Meanwhile the tension induced in VENETIN COLIU - II was almost cosinusoidal (the pole shoes had pretty large faces). On the other hand perhaps (see sect. 4) the iron in VENETIN COLIU - I has a thicker hysteresis loop than the ferrite in VENETIN COLIU - II.

To obtain a self-accelerating effect in VENETIN COLIU - II, I had to make $\cos\phi$ very small, i.e., I had to run the machine at very high velocities. But at $\cos\phi$ very small the induced current was very feeble and the self-accelerating effect very feeble. As a matter of fact, the current in VENETIN COLIU - II increased for an increase of the rotational velocity from zero to about 1 rev/sec; further increase of the rotational velocity did not increase the current. Meanwhile the current in MAMIN COLIU - I always increased with the rotational velocity (of course, at higher velocities this increase was weaker).

When the driving tension of the d.c. motor was U_m = 30 V, the tension produced by the first coil with R_g = 413 Ω was U_g = 70 V and the tension produced by the second coil with R_g = 17 Ω was U_g = 8 V.

7. THE MACHINE VENETIN COLIU - III.

VENETIN COLIU - III is the machine presented in figs. 11 and 12.

A d.c. motor (seen on the top of the figures) rotates a plastic "cup" with its bottom up. On the rim of this "cup" 16 cylindrical permanent neodymium magntes (with height 10 mm and diameter 10 mm) are arranged (in fig. 11 one can see 8 of these magnets). To diminish the pernicious eddy currents, "caps" of soft ferrites are sticked on both bases of these cylindrical magnets. With the aim to make the line of decrease of the induced positive tension and the line of increase of the induced negative tension more steep (see fig. 4), the ferrite "caps" are slanted on both sides ending thus with a vertical edge (the scanting can be clearly seen in fig. 11). The introduction of the scanted ferrite "caps" diminished, however, the induced generating tension.

Outside of the rotating "cup" there are two fixed coils, numbered 1 and 2, with scanted soft cylindrical ferrites for cores, and inside there is another fixed coil, numbered 5, with cylindrical ferrite for core. Two coils, numbered 3 and 4, can be put also outside . These two coils, for clarity of the photographs, are taken out in figs.

11 and 12. When the "cup" with the 16 magnets rotates, alternating tension is induced in the five fixed coils.

VENETIN COLIU - III showed a very feeble self-accelerating effect. I shall present here one of the measurements when there was a zero Lenz effect.

When driving the d.c. motor with a tension U_m = 15 V, the driving current at open and short-circuited coils remained the same, I_m = 103 mA. Thus the machine showed a zero Lenz effect and the input power at unloaded and loaded generator was P_m = 1545 mW. The heat power produced by the five coils was the "load", i.e., the output power of the generator. The output powers produced by every of the coils are given in table 2.

Table 2

Coil	L_g (H)	R_g (Ω)	I_g (mA)	P_g (mW)
1	0.15	10	61	37.2
2	0.15	10	68	46.2
3	4.35	440	12	63.4
4	4.35	440	11	53.2
5	0.19	20	46	42.3

In the second column there are given the inductances of the generator's coils, in the third column their resistances, in the fourth column the alternating currents generated in the short-circuited coils, and in the fifth column the powers produced as heat in the coils calculated according to formula (21), omitting the number 10. Thus the total heat power produced by the generator was P_g = 242.3 mW.

I could very easily establish that quite the whole power P_g was free power, as the "friction power" due to the eddy currents could be measured in the following simple way:

I took in my hands the soft ferrite cores of the first and second coils and let the driving motor rotate by applying to it a tension U_m = 15 V. By approaching both ferrite cores to the rotating magnets, I saw that the current consumed by the motor increased by ΔI_m = 2 mA. Thus the whole friction power due to the eddy currents, generated because of the presence of two ferrite cores, was (at U_m = 15 V) P_{eddy} = 30 mW. For all five coils taking into account that the ferrite core of coil 5 produced eddy currents with both its ends, we should have friction power P_{eddy} = 90 mW. Thus the decrease of the consumed power due to the decrease of the eddy currents as a result of the short-circuiting of the coils (see sect. 3) was much less than 90 mW.

I did measurements with an outside coil of very thick wire (diameter 3 mm) whose inductance was L_g = 0.03 H and resistance R_g = 1 Ω. At driving tension of the motor U_m = 15 V the current generated at short-circuiting was I_g = 305 mA and the generated heat power was P_g = 93 mW. However the short-circuiting led to a slight increase of the consumed power ΔP = 30 mW.

There are no technical and financial problems (for me!) to make VENETIN COLIU - III with coils having more copper (i.e., with bigger cross-sections), so that the output power should superate the input power. My aim, however, is to run the machine eternally.

I sale my VENETIN COLIU machines for $ 2500 each, so that I can accumulate money for the next models. When I shall construct the VENETIN COLIU machine with a closed energetic circle (as *perpetuum mobile*) the prices of these first prototypes, which will be signed, will jump ten and hundred times. On the other hand, any dubious person can make the simple measurements reported here to become persuaded that free energy can be produced.

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FIGURE CAPTIONS

Fig. 1. The machine VENETIN COLIU - I. The ten rectifiers serve to rectify the alternating current produced by the ten coils, so that another d.c. motor can be set in motion. The ten double condensers serve to increase the output of the machine; this, however, diminishes the phase angle ϕ and the anti-Lenz effect.

Fig. 2. The machine VENETIN COLIU - I open.

Fig. 3. Schematic drawing of the machine VENETIN COLIU - I.

Fig. 4. Time correletion between tension, U, and current, I, in VENETIN COLIU:
a) $\phi = 0^{o}$, a case appearing when $R > \omega L$, i.e., for low rotation.
b) $\phi = 45^{o}$, a case appearing when $R = \omega L$, i.e., for some critical rotation.
c) $\phi = 90^{o}$, a case appearing when $R < \omega L$, i.e. for high rotation.

Fig. 5. The way in which the VENETIN COLIU machine will be run as a perpetuum mobile.

Fig. 6. The hysteresis loop.

Fig. 7. The time graphs:
a) of the induced magnetic intensity ΔH
b) and of the caused by it force F_H which brakes (-) or supports (+) the rotation,
c) of the respective magnetic induction ΔB
d) and of the caused by it force F_B which brakes (-) or supports (+) the rotation.

Fig. 8. Drawing of the machine VENETIN COLIU - II. The diameter of the rotor is 160 mm.

Fig. 9. The machine VENETIN COLIU - II.

Fig. 10. The machine VENETIN COLIU - II open.

Fig. 11. The machine VENETIN COLIU - III. The diameter of the rotor is 118 mm.

Fig. 12. The machine VENETIN COLIU - III.

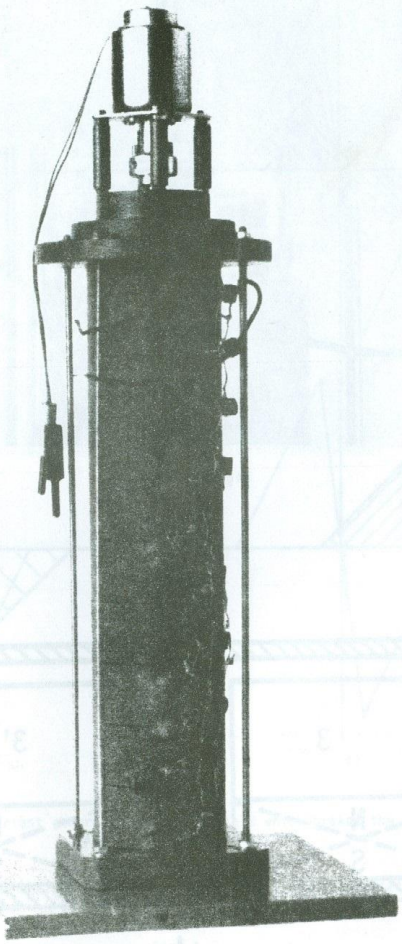


Fig. 1

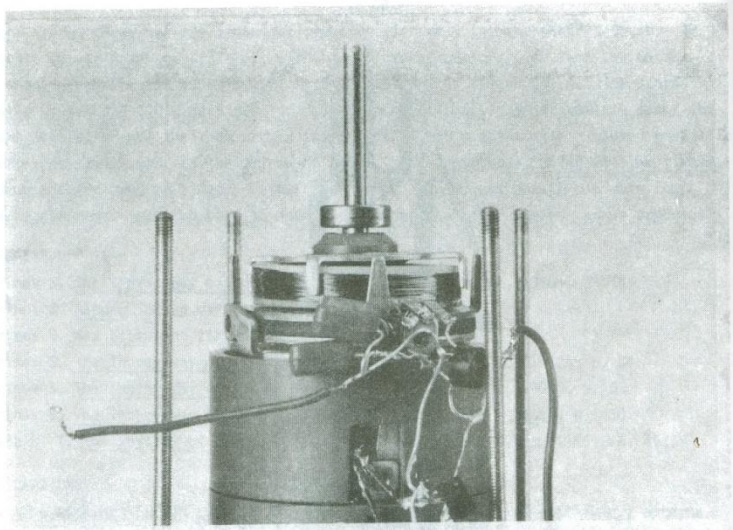


Fig. 2

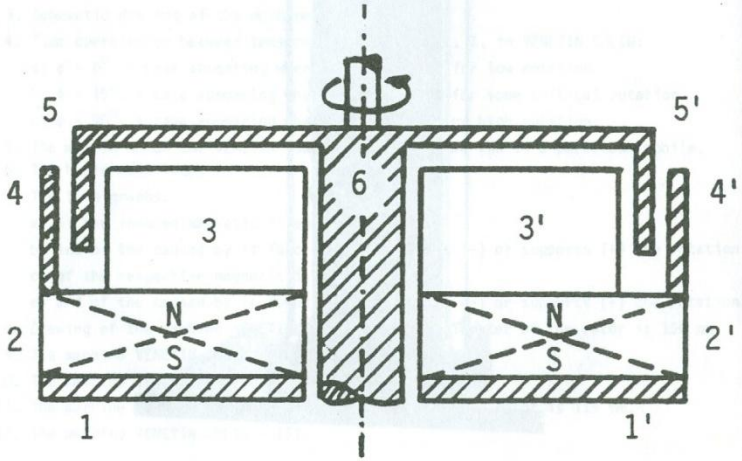
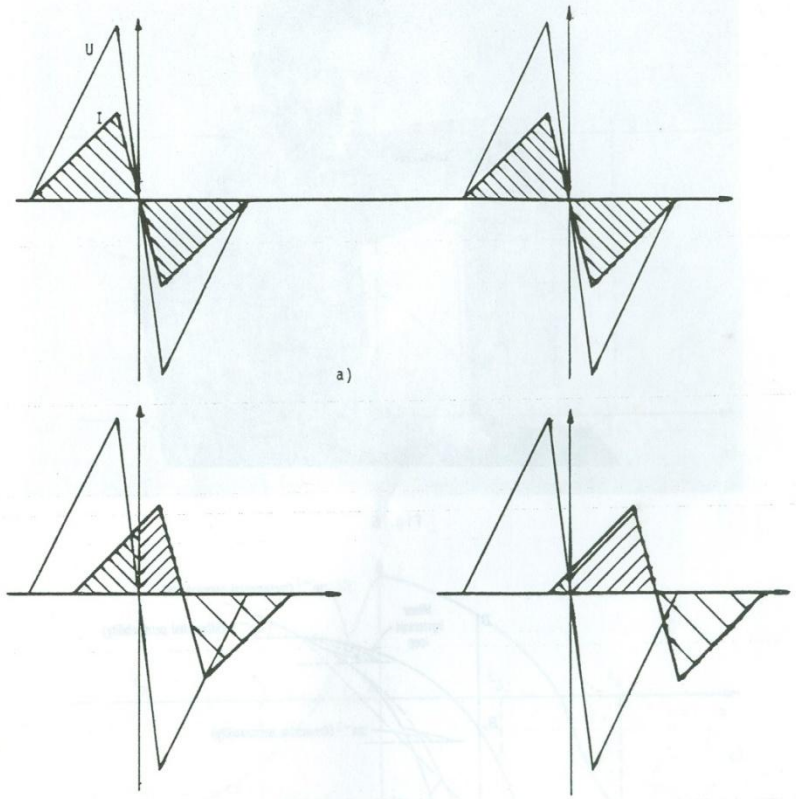


Fig. 3



induced current generating magnetic field which brakes the motion of the magnet inducing the current

induced current generating magnetic field which accelerates the motion of the magnet inducing the current

Fig. 4

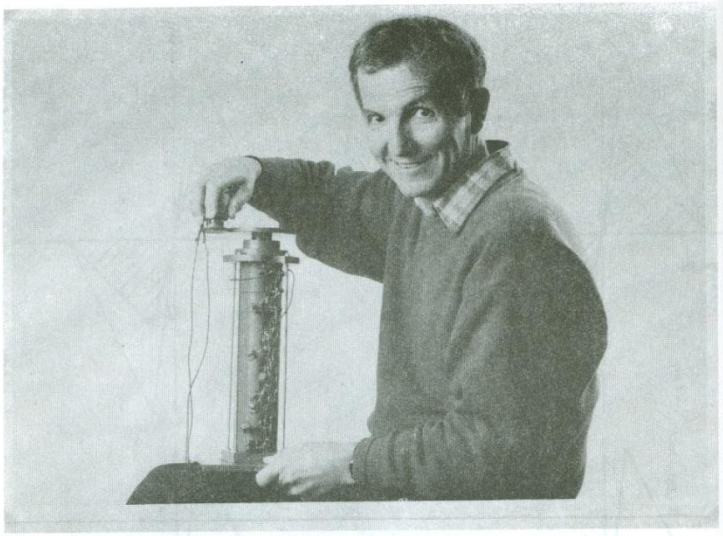


Fig. 5

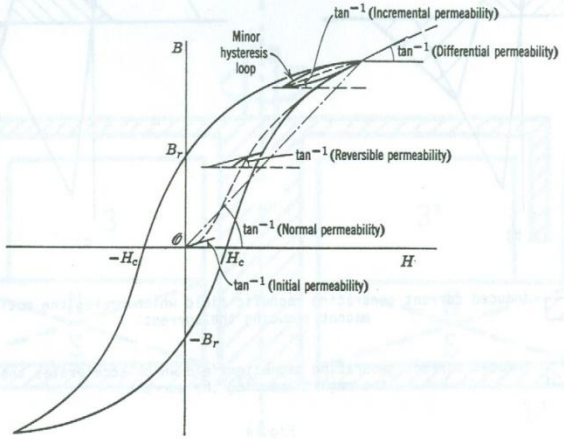


Fig. 6

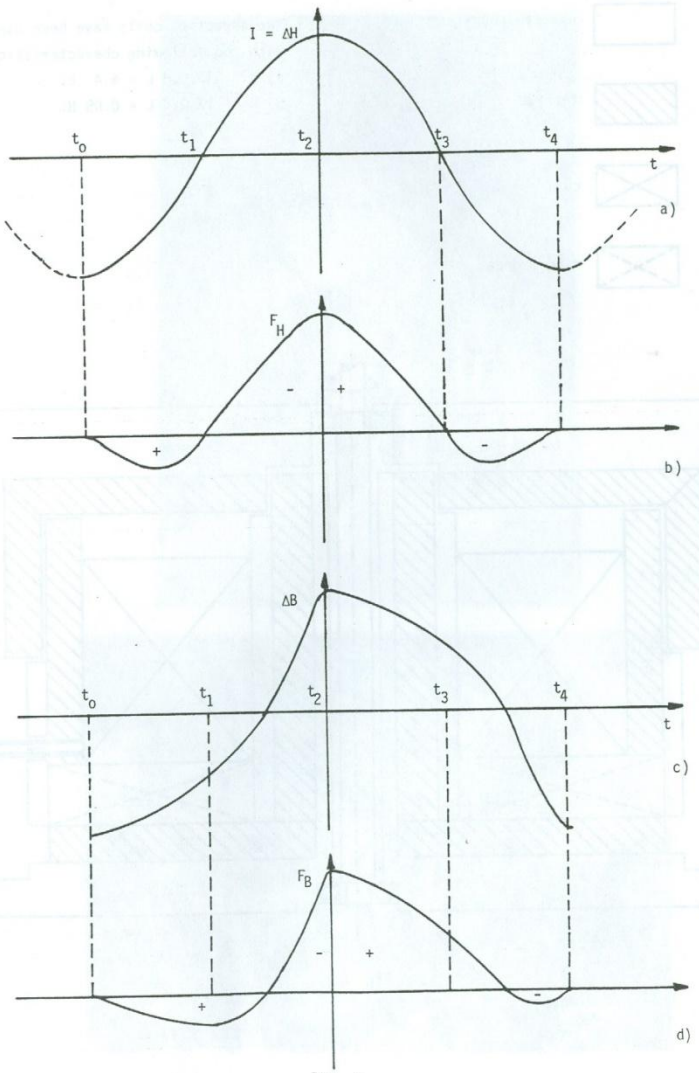


Fig. 7

plastic (PVC)

ferrite

coil

ring magnet

Two induction coils have been used with the following characteristics:
a) R = 413 Ω, L = 4.4 H.
b) R = 17 Ω, L = 0.05 H.

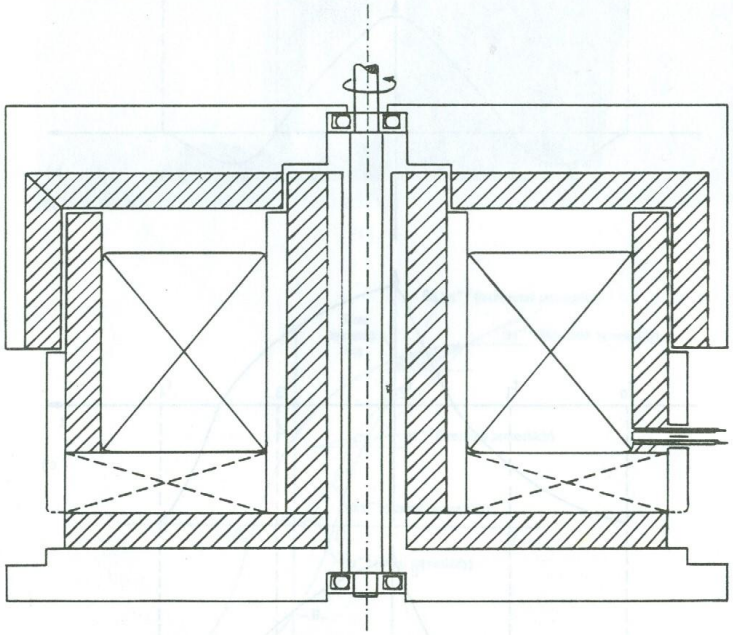


Fig. 8

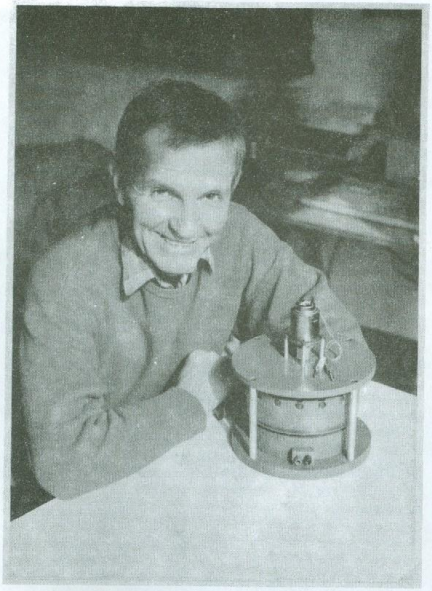


Fig. 9

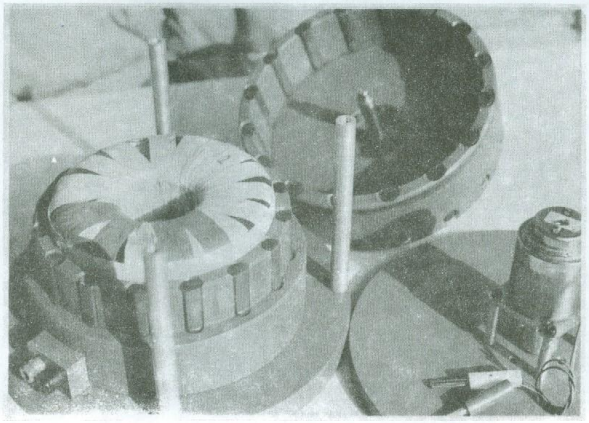


Fig. 10

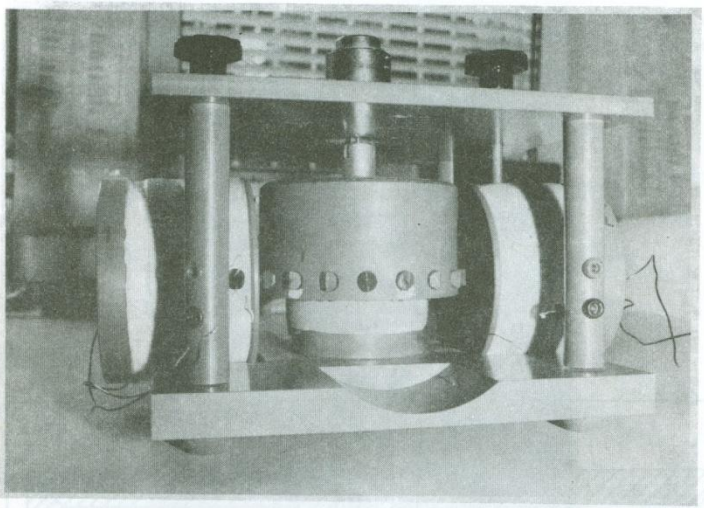


Fig. 11

Fig. 12