

Stefan Marinov

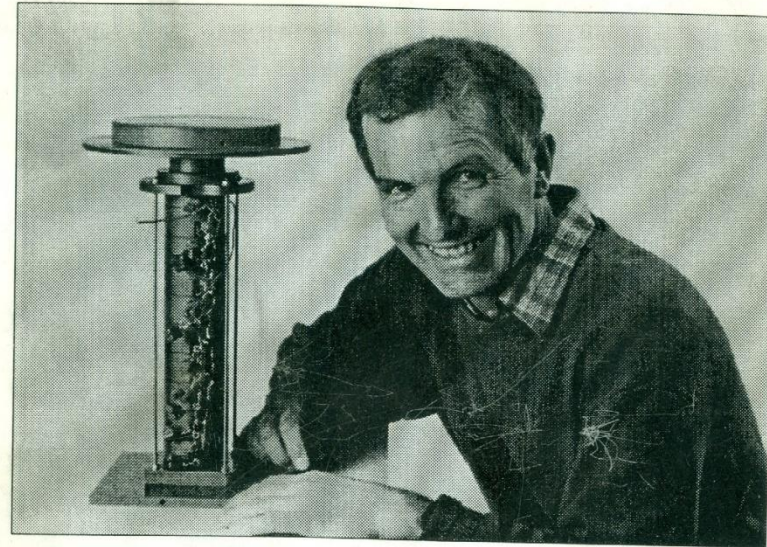
THE THORNY WAY OF TRUTH

Part IX

Documents on the violation of the laws
of conservation

EST-OVEST

Editrice Internazionale



The ninth part of the collection of documents THE THORNY WAY OF TRUTH (TWT) is dedicated to the perpetual mobile IL NICOLINO DI VENETO (VENETIN COLIU) which was discovered and developed by the troika Cavalli, Vianello and Marinov. VENETIN COLIU has many common features with Marinov's MAMIN COLIU but there is the following substantial difference: MAMIN COLIU is a generator without electromagnetic braking (zero Lenz effect), while VENETIN COLIU is a generator with electromagnetic acceleration (anti-Lenz effect), i.e., when electric power is extracted from MAMIN COLIU the mechanical power needed for its rotation remains the same, while in VENETIN COLIU this mechanical power decreases. Meanwhile when extracting electric power from a conventional generator, the mechanical power needed for its rotation increases (normal Lenz effect). The appearance of the anti-Lenz effect in VENETIN COLIU can be explained by every child who has heard that the alternating current in a coil appears with a certain time retardation after the applied (in the case of a generator, induced) tension. Indeed, every logically thinking child comes to the conclusion that the magnetic field generated by this current will brake the rotation when the current has the same direction as the tension and will accelerate the rotation when its direction is opposite. Marinov is photographed above with one of the VENETIN COLIU machines constructed in January 1991. At the present time the accelerating power is still less than the friction braking power, but there is a hope that when this volume will be published the machine will be run as a perpetual mobile. All Marinov's physics papers published in scientific journals which have not been reprinted in previous volumes of TWT are reprinted in this volume. Price: \$ 25

THE PERPETUUM MOBILE "IL NICOLINO DI VENETO" (VENETIN COLIU)

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Abstract. The two variations of the electromagnetic generator "Il Nicolino di Veneto" (Venetin Coliu) are presented which I have recently constructed. The idea for this machine was suggested by my friends Manuele Cavalli and Bruno Vianello (Treviso, Italy) and for this reason I called the machine "Il Nicolino di Veneto", as Veneto is the Northern Italian province where the town Treviso is situated. This machine, on the other hand, has many common features with the generator Mamin Coliu and I call it also with the Bulgarian translation of "Nicolino di Veneto" which is "VENETIN COLIU".

The substantial difference between MAMIN COLIU and VENETIN COLIU is the following: MAMIN COLIU is a generator without electromagnetic braking effect, while VENETIN COLIU has, so to say, a reversed electromagnetic braking effect, namely when induced electric energy is produced by VENETIN COLIU, it accelerates its rotation.

Thus there are now in the world the following three different classes of electromagnetic generators:

- The rotation of any conventional generator is *braked* when induced electric energy is produced by it, i.e., a conventional generator has an electromagnetic *braking* effect (*normal Lenz effect*).
- The rotation of MAMIN COLIU is *not braked* when induced electric energy is produced by it, i.e., MAMIN COLIU has *no* electromagnetic braking effect (*no Lenz effect*).
- The rotation of VENETIN COLIU is *accelerated* when induced electric energy is produced by it, i.e., VENETIN COLIU has an electromagnetic *accelerating* effect (*anomalous, or anti-, Lenz effect*).

In MAMIN COLIU the magnetic flux flowing through a coil is changed by changing the mutual positions of *permanent magnets* and inducing electric current in the coil; however the magnetic field of this induced current has no mechanical action on the moving permanent magnets.

In VENETIN COLIU the magnetic flux flowing through a coil is changed by changing the mutual positions of pole shoes of *soft iron* and inducing electric current in the coil; at *lower* rotation, when the current induced in the coil is almost "in phase" with the induced tension, its magnetic field brakes mechanically the rotation of the moving pole shoes, but at *higher* rotation, when the current induced in the coil goes "out of phase" with respect to the induced tension (i.e., appears with a delay), its magnetic field accelerates mechanically the rotation of the moving pole shoes. At a certain rotational velocity VENETIN COLIU behaves as MAMIN COLIU, i.e., it has neither braking nor accelerating effect.

The accelerating power in the two variations of VENETIN COLIU which I have constructed is still less than the mechanical friction power and the energetic circle can be not closed to run the machine eternally. The construction of an eternally rotating machine (perpetuum mobile) is only a question of money and, as the reader can see by reading this report, the sum which I need is comically low.

1. HISTORICAL NOTES

After returning from a trip to Bulgaria (where I examined the plasma generator of Cyril Chukanov), I found a letter from Italy in my post. The beginning of the letter, in which Signor Manuele Cavalli presented himself and described the way on which he has heard of me and has found my address, was the following:

Manu-post

Treviso 25 settembre 1990

Caro Stefan,

... purtroppo non ci conosciamo, così mi presento. Mi chiamo Manuele Cavalli abito in provincia di Treviso, dove lavoro come perito elettronico. Sono sposato ad una ragazza e alla causa della verità. La prima mi è vicina e mi capisce, la seconda è lontana e non si fa comprendere. Per questo leggendo di qua' e di là, studiando e riflettendo per farmela almeno amica, ho percorso strade "nuove". Almeno questo era quello che credevo io prima di leggere un tuo articolo su Frigidaire e su Seagreen. Da cui di seguito mossa dopo mossa sono arrivato qui! Per farla breve ecco la cronistoria dei fatti:

- Leggo l'articolo su Frigidaire, scrivo a Frigidaire, ricevo risposta sulla rivista (vedi fotocopia allegata).
- Ricevo la lettera di Paolo Brunetti che replica appoggiandomi e fornendomi gentilmente il tuo indirizzo (vedi allegato).
- Rispondo a Paolo e mi accingo a scriverti

Perché?

Perché la cosa si sta facendo importante per me! E perché credo tu mi potrai aiutare. Rispondendo a questa mia lettera per esempio, rispondendo a quella inviata a Frigidaire, indicandomi delle letture interessanti o il modo di procurarmele. Quello che io ti posso offrire è la mia disponibilità, dei libri e la mia amicizia.

Mitt. Manuele Cavalli
Via Marche n. 1
31050 Monastier di Treviso
Italia.

Con stima & simpatia
a presto

Manuele Cavalli

And here is the letter which Sign. Cavalli has written to Vincenzo Sparagna, the editor of the Italian monthly FRIGIDAIRE, where Cavalli has read my papers "Violation of the laws of conservation of momentum, angular momentum and energy" (see TWT-VI, p. 322) and "On the present status of physics" (see TWT-VII, p. 227):



Una partita aperta tra E2 ed E4

Non sapendo con che preambolo iniziare, vengo subito al punto. Vi leggo da quando avete cominciato ad occuparvi delle nebulose problematiche scientifiche. (O da quando io ho scoperto che le trattavate?). Boh! non so, comunque l'importante è che lo facciate! Sono paurosamente interessato a tutto ciò che è verità pura. Gli spunti colti dagli articoli apparsi da qualche tempo su Frigidale, mi hanno fatto raggiungere e solcare l'impetuoso mare del dubbio. Ma non mi basta. Il fatto è che gli argomenti e le considerazioni di Boscoll e Monti, caro Sparagna, hanno ricalcato e ordinato sentieri da me già battuti, anche se in modi meno specia-

listici, istintivamente appunto. Quando poi nel numero di novembre è apparsa l'intervista di Stefan Marinov, il vaso non ha più retto la fatidica goccia. Da qualche anno infatti, dopo ricerche estreme, ho iniziato lo studio della fisica sviluppata dalla fine del 1800 e agli inizi del 1900. In particolare mi sono interessato allo studio dell'elettrostatica. La macchina Testatica di cui Marinov parla è qui nella mia mente, ancora non perfettamente definita ma potenzialmente funzionante. Or bene, se da una parte l'articolo in questione mi sprona energicamente a proseguire, dall'altra mi inibisce la tranquillità mentale già oberata dalle otto ore di sudore frontale quotidiano. Il punto è che non capisco dove vogliate arrivare. La questione pur nascendo da incongruenze tecniche ha risvolti chiaramente filosofici. Io, purtroppo, non ho il piacere di conoscere Marinov e lui non ha il piacere di conoscere me! Ma credo di non avere torto, reputandolo "Davvero non male!".

E credetemi quando definisco una persona in questi termini la mia stima per lui è massima. Sembra però, anche dalle foto sornione a fianco dell'inizio articolo, che gatta ci covi. Come può un personaggio del genere, entrare in una stanza, avvicinarsi ad un tavolo, chinarsi con il naso a

pochi centimetri da un PERPETUUMMOBILE, e non assorbirne l'anima, il principio della sua essenza.

Pur non reputandomi un buon osservatore scientifico, io stesso credo avrei saputo intuire di più. Non vorrei entrare in particolari tecnici, però il nome della macchina stessa fa pensare al connubio di due tecnologie TES- (da Tesla, con il suo famoso trasformatore) e -TATICA (dal tipo di energia utilizzata, l'elettrostatica appunto).

Nell'articolo invece si parla solo di condensatori di piccola e grande capacità. Non credo inoltre sia necessario un laboratorio ben attrezzato per riprodurre questo tipo di macchina, visto che Paul Baumann lavorò in carcere! E ancora. Credendo pure io nella logica intuitiva e nell'ispirazione piuttosto che nella logica scientifica (retaggio di pseudo-cultura), non posso credere che il "segreto" della macchina sia tanto occulto.

Non riesco a digerire molte delle frasette (quasi per sadico gioco) tecnicamente incongruenti che appaiono in un così brillante argomento.

Carissimo Marinov, dolcissimo Frigidale volete farmi dormire? (perdo preziose ore di sonno nel tentativo di risolvere questa dannata partita a scacchi, di cui mi sembra, stiamo giocando il centro).

Che cosa volete da me? Volete darmi una mano, o devo

fare da solo?

Un pò meno notizie sensazionalistiche e un pò più di precisione!

E come se io vi dicessi che al momento sto cercando di sviluppare un motore elettrostatico a cilindri, su modello di un'altro Padre, F. Luscia e non vi spiegassi come mai questa macchina è autoeccitante e come penso di poter realizzare il trasformatore di Tesla necessario per innescare il funzionamento perpetuo.

Vi prego quindi, fatemi capire se volete seminare per raccogliere o per dare aria ai "Semi!". (Come si dice qui nel veneto).

Ho sempre creduto che questa partita iniziata da Seagreen e di cui voi ora avete il tratto, sia partita da E2-E4. Giochi aperti quindi!

Con stima e fiducia vostro

**Manuele Cavalli,
Trevise**

Caro Manuele, quello che so è che Marinov sta lavorando e così gli altri. Come un fiume inghiottito dal deserto dell'imbecillità contemporanea la ricerca va avanti, ma sottoterra. Quando sgorgherà sarà una cascata resa purissima dal lungo filtraggio nelle profondità oscure del fango.

A presto, comunque, altri enigmi e qualche risposta ai tuoi angosciosi quesiti.

V.S.

I answered with a letter of the 3 October 1990, expressing my consent for scientific cooperation.

Then Cavalli wrote me a very long letter of the 21 October, of which I cite here the following part concerning his interest in a further development of my machine MAMIN COLIU,

so that the energetic circle can be eventually closed and the machine run as a perpetuum mobile:

Ho comunque una certa libertà di movimento, se posso esserti utile conta pure su di me. Potrei se ti interessa portare avanti i tuoi esperimenti con la tua macchina MAMIN COLIU, ad esempio, risolvendo quei problemi tecnici ed economici (di cui parlavi nell'articolo su Seagreen) che ti hanno impedito di giungere ad un risultato definitivo. Potrei fare delle ricerche per te, o cercare qualcuno che ti possa aiutare; avrei anche la possibilità di creare un banca dati di riferimento e di scambio per tutti quelli che come te e me fanno ricerche.

I answered with a letter of the 7 November in which I wrote that I can bring to Italy one of the MAMIN COLIU models to demonstrate the non-braking effect. If Sign. Cavalli should be convinced that it indeed is a non-braking generator, then he can develop further the machine and eventually close the energetic circle. Here is a part of my letter:

Posso portare un modello della mia macchina MAMIN COLIU (simile alla quella fotografata nel SEAGREEN). Ne ho fatto 6 modelli, porterò l'ultimo, anche se è troppo pesante, quasi 15 chili. Lo porterò nel caso ^{che} vorreste fare un settimo modello. La macchina PRODUCE energia dal niente. Arrivo a ottenere una tensione d'uscita abbastanza alta, ma non riesco a ottenere una corrente alta, dunque una potenza alta. Ci sono problemi solamente TECNOLOGICI e FINANZIARI. Nella MAMIN COLIU TUTTO È CHIARO! Secondo me ci vogliono 10,000,000 lire per farla e il VOSTRO lavoro. Io potrei avanzare 1,000,000. Poi voi dovete decidere, anche cercare qualche sponsor, se avete degli amici.

In the middle of November I visited Cavalli for two days in his house in Monastier di Treviso (a small village in the suburbs of Treviso) bringing the sixth model of MAMIN COLIU (see it on p. 94 of TWT-III). I learned his charming wife Lucia and he introduced to me some of his friends interested in "alternative energetics". With two of his friends, Alberto and Maurizio, we visited Paolo Brunetti in Bologna who offered to all of us a splendid dinner.

Cavalli's friend who was at the most interested in the "perpetuum mobile" problems was Signor Bruno Vianello of Roncade, another small suburb of Treviso.

After spending two fine days in the beautiful Cavalli's house, I left MAMIN COLIU in his and Vianello's hands and with a package of the 20th November I dispatched them additionally some pieces from Graz.

On the 6 December Cavalli sent me a telefax. As the text was badly received, I retype it here, giving, because of its importance, also its English translation and reproducing only the designs of which the most important is Fig. 3 which, as a matter of fact, became then the machine "Il Nicolino di Veneto". The graph beneath the figures represents the dependence of the tension produced by the coil as a function of time. The rapid change of the voltage from positive to negative occurs exactly at the moment when the moving pole shoes pass in front of the stationary pole shoes.

Fig. 1

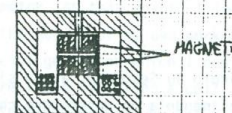
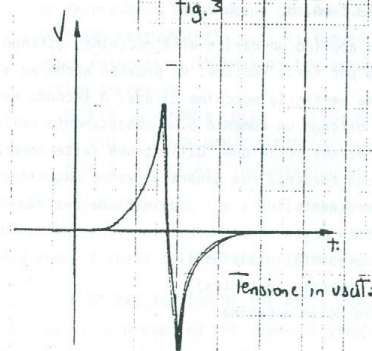
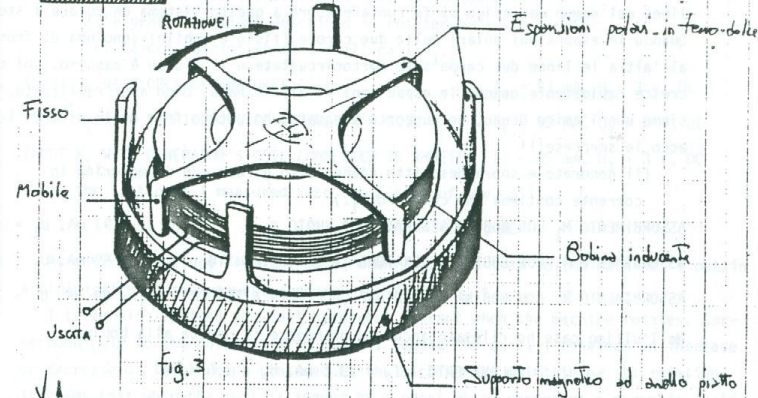
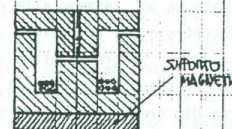


Fig. 2



Caratteristiche elettriche della bobina:

Bobina ~ 1100 Ω
 Filo di rame smaltato da Ø 1,1 mm
 Ritorni a vuoto:
 15 φ Gau / hwi } 9,2 Volt. ≈
 3,3 mA ≈ } A.C.

NB.

Aspetto una Tua opinione a presto →

Maurizio

Cavalli's fax thus was the following:

Caro Stefano,

in breve, sei mesi dopo aver letto il tuo articolo su Seagreen, avevo sintetizzato il concetto utilizzato per la MAMIN COLIU definendola un generatore che non funziona come motore. A questo punto mi sono guardato un po' intorno alla ricerca di qualche cosa di simile. Ho trovato proprio nel contesto del mio lavoro un generatore particolare che ti disegno nel foglio che segue. Si tratta di un generatore magnetico realizzato fissando una bobina su di un supporto formato da una calamita anellare e da un'espansione polare a forma di corona. Per chiudere le linee del campo magnetico si fa ruotare sopra a questo sistema un rotore a stella. Quando le espansioni polari delle due corone (fissa e mobile) sono una di fronte all'altra le linee del campo sono cortocircuitate e il flusso è massimo, poi decresce rapidamente quando le espansioni si allontanano. Dopo aver realizzato, insieme con l'amico Bruno, un supporto adeguato, ho potuto fare delle misure. Ed ecco le sorprese!!!

(Il generatore sopra descritto viene fatto girare con un motorino in corrente continua che chiamerò M_1 .)

ASSORBIMENTO M_1 CON BOBINA GENERATORE A VUOTO $I_1 = 91 \text{ mA}$, $U_1 = 3 \text{ V}$, DC

ASSORBIMENTO M_1 CON BOBINA GENERATORE IN CORTOCIRCUITO $I_1' = 89 \text{ mA}$, $U_1 = 3 \text{ V}$, DC

ASSORBIMENTO M_1 CON BOBINA GENERATORE COLLEGATA A TESTER $I_1' = 89 \text{ mA}$, $U_1 = 3 \text{ V}$, DC

Nell'ultimo caso ho rilevato anche le grandezze in uscita alla bobina:

RILEVAMENTO $I_2 = 13.2 \text{ mA}$, $U_2 = 1.6 \text{ V}$, AC

Come potrai notare dai dati, quando io applico un carico alla macchina, ottengo una diminuzione dell'energia richiesta per farla ruotare. Ho provato anche ad alimentare con corrente continua la bobina mentre la macchina girava. A secondo della polarità con cui alimentavo la bobina ottengo un aumento o un abbassamento della corrente assorbita dalla macchina per la sua rotazione. Dalle prove fatte sembra che quando viene fornita alla bobina una corrente che genera un campo magnetico che coincide con quello del magnete permanente, si ottiene una diminuzione della corrente richiesta per il movimento.

In FIG. 1 - MAMIN COLIU (Tua proposta in sintesi).

In FIG. 2 - MAMIN COLIU NUOVO (Mia proposta in sintesi).

In FIG. 3 - Rappresentazione globale della macchina.

TRANSLATION:

Dear Stefan,

in brief, six months after having read your article in SEAGREEN, I synthesized the concept of MAMIN COLIU, defining it as a generator which cannot function as a

motor. At this point, I looked around for finding something similar. I found in the domain of my own work (Cavalli is electrician in a car service - S.M.) a special generator which I design in the following sheet. This is a magnetic generator realized by fixing a coil over a support formed by a ring magnet and pole shoes in form of a crown. For closing the lines of the magnetic field, a rotor in form of a star rotates above. When the pole shoes of the two crowns (fixed and rotating) are in front of each other, the lines of the field are shortcircuited and the flux is maximum; the latter decreases rapidly when the pole shoes go away from each other. After having built, together with our friend Bruno, an adequate support, I could do measurements. And here is the surprise!!!

(The generator above described is rotated by a small motor of direct current which I shall call M_1 .)

INPUT M_1 WITH OPEN GENERATOR'S COIL $I_1 = 91 \text{ mA}$, $U_1 = 3 \text{ V}$, DC

INPUT M_1 WITH SHORTCIRCUITED GENERATOR'S COIL $I_1' = 89 \text{ mA}$, $U_1 = 3 \text{ V}$, DC

INPUT M_1 WITH GENERATOR'S COIL CONNECTED TO AMMETER $I_1' = 89 \text{ mA}$, $U_1 = 3 \text{ V}$, DC

In the last case I measured also the output of the coil:

OUTPUT $I_2 = 13.2 \text{ mA}$, $U_2 = 1.6 \text{ V}$, AC

As you can conclude from the data, when I apply a load to the machine, I obtain a diminution of the requested energy for rotating it.

I tried also to feed the coil by direct current when the machine rotates. Correspondingly to the polarity with which I feed the coil, I obtained an increase or decrease of the current consumed by the machine for maintaining its rotation. It seems that when the coil is feeded by current which generates a magnetic field which coincides with that of the permanent magnet, the current needed for the rotation decreases.

In FIG. 1 - MAMIN COLIU (Your proposal in synthesis).

In FIG. 2 - NEW MAMIN COLIU (My proposal in synthesis).

In FIG. 3 - Global presentation of the machine.

Now I shall interrupt for a while the historical notes and I shall give my explanation of the physical reasons which lead to the strange effect observed in Cavalli's machine which I shall call further "Il Nicolino di Veneto" (VENETIN COLIU).

2. EXPLANATION OF THE ANTI-LENZ EFFECT IN VENETIN COLIU

In Fig. 1 is presented the over-all view of VENETIN COLIU and in Fig. 2 its schematic diagram:

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 going through 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. 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 this flux is maximum; and when these go apart this flux decreases.

Consequently an electric tension will be induced in the coil's windings. If the coil is shortcircuited, 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

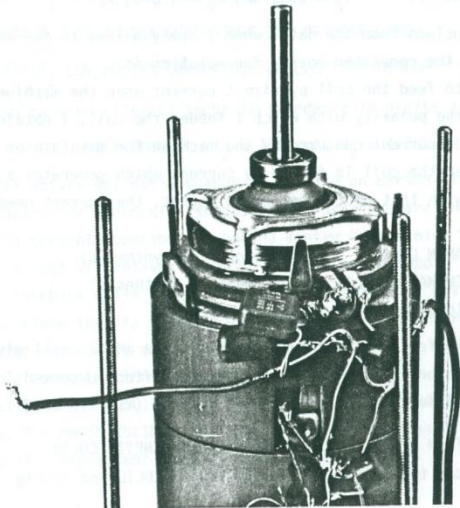


Fig. 1. - Over-all view of VENETIN COLIU which is one of the ten generators in the machine constructed by Marinov (see the over-all view of the whole machine in the next pages).

magnetic flux will follow the way 2(N)-4-5-6-1-2(S), as certain lines will be shortcircuited 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 bigger force than in the case where the coil should be open.

Thus if the coil is shortcircuited, 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 (normal Lenz effect). Cavalli has not mentioned this effect in his fax, but he could also observe it in his machine.

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 (no Lenz effect). And at high velocities the input power decreases at closed coil (anti-Lenz effect).

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

The coil has a certain ohmic resistance R and a certain inductive resistance ωL , where ω is the angular frequency of the current going through the coil and L is its inductance (I shall suppose that the tension is sinusoidal function of time, although this is not exactly the case in VENETIN COLIU - see the graph in Cavalli's fax). The impedance of the coil is

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

and

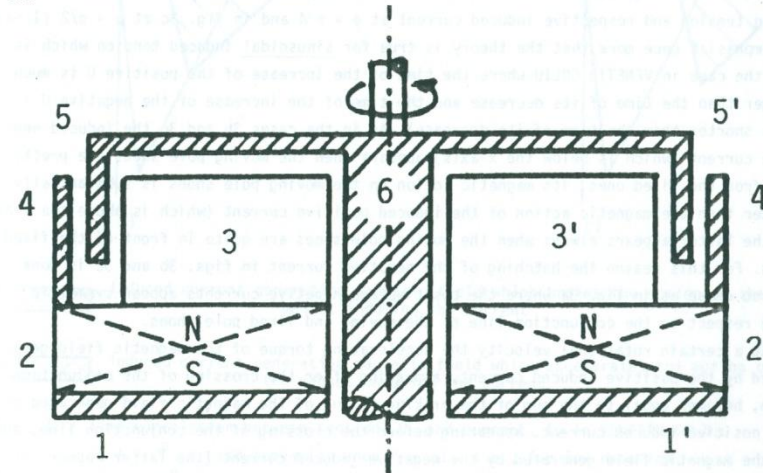


Fig. 2. Diagram of the generator VENETIN COLIU.

$$\phi = \arccos(R/Z) \quad (2)$$

is the phase angle showing the angular delay in radians with which the maximum of the current in the coil appears after the appearance of the maximum of the tension. If T is the period of the induced 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.

At lower rotational velocities we can accept $\omega L \ll R$. In such a case the current appears simultaneously with the tension and VENETIN COLIU works as a conventional generator. With the increase of the rotational velocity, a part of the current which generates north pole in the coil up in fig. 2 appears when the moving pole shoes go away from the fixed pole shoes. As this current decreases the attraction between the pole shoes, its action is not opposing the driving torque of the motor but supporting it.

At the critical velocity the braking and accelerating torques become equal and the machine shows zero Lenz effect. With further increase of the angular velocity, the accelerating torque becomes stronger than the braking torque and the machine becomes self-accelerating.

The correlation in time between tension and current in VENETIN COLIU is presented in fig. 3. In fig. 3a ^{there} are presented two "bursts" of induced tension and respective induced current at $\phi = 0$ for two consequent approaches-separations of the moving and stationary pole shoes. As the latter are very slim and the distance between every two consequent pole shoes is considerable, for the predominant part of the time there is no induced tension in the coil, as for the predominant part of the time the magnetic flux through the coil remains quite the same. In fig. 3b there is presented only one "burst" of induced tension and respective induced current at $\phi = \pi/4$ and in fig. 3c at $\phi = \pi/2$ (I have to emphasize once more that the theory is true for sinusoidal induced tension which is not the case in VENETIN COLIU where the time of the increase of the positive U is much bigger than the time of its decrease and the time of the increase of the negative U is much shorter than the time of its decrease). As in the cases 3b and 3c 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. 3b and 3c is done not so dense as in fig. 3a where the positive and negative currents appear symmetric with respect to the conjunction line of the moving and fixed pole shoes.

At a certain rotational velocity the accelerating torque of the magnetic field generated by the positive induced 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 positive induced 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

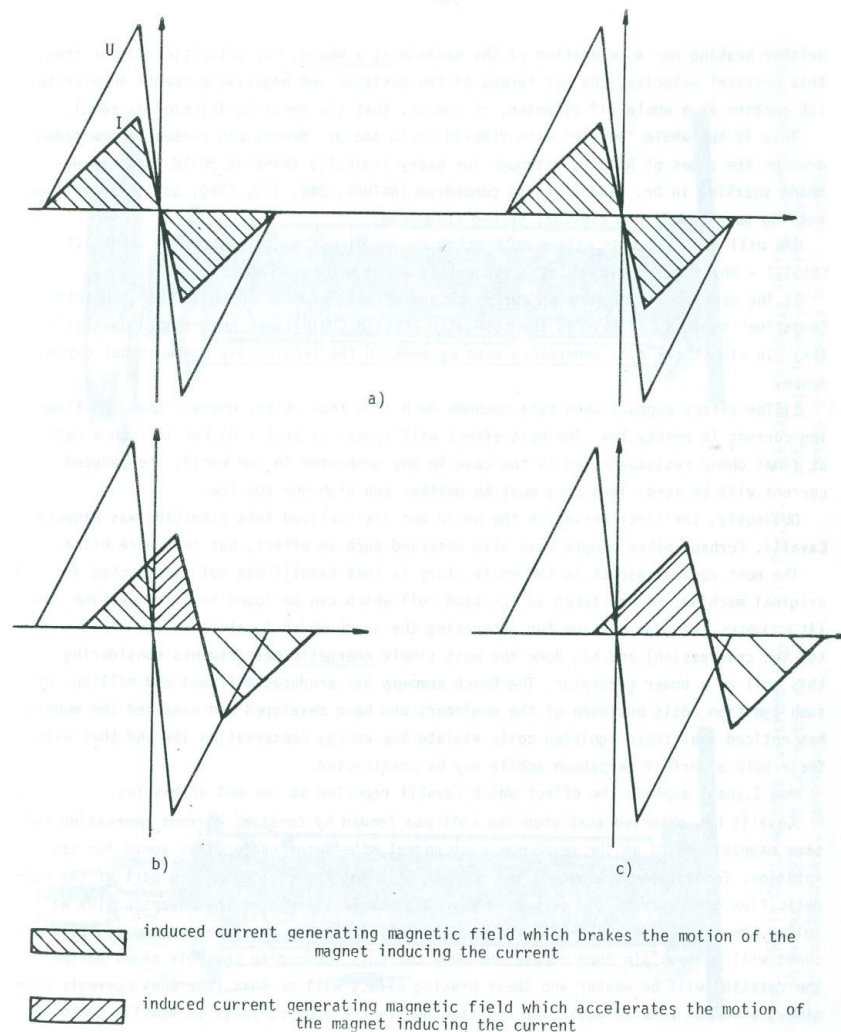


Fig. 3. - Time correlation between tension, U , and current, I , in VENETIN COLIU:

- a) $\phi = 0^\circ$, a case appearing when $R \gg \omega L$, i.e., for low rotation,
- b) $\phi = 45^\circ$, a case appearing when $R = \omega L$, i.e., for higher rotation,
- c) $\phi = 90^\circ$, a case appearing when $R \ll \omega L$, i.e., for very high rotation.

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 and Dr. Maddox can present a new conundrum on the pages of NATURE, although for every logically thinking child there is nothing puzzling in Dr. Maddox' first conundrum (NATURE, 346, 103, 1990) and there will be nothing puzzling in his eventual second conundrum.

One will say that this effect must exist in any direct current generator. Yes, IT EXISTS! - Why then it was not observed 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 VENETIN COLIU (see the graph in Cavalli's fax). In almost all d.c. generators used by mankind the tension has a sinusoidal dependence.

2) The effect appears when $\cos\phi$ becomes much less than unity. However then the flowing current is pretty low. The best effect will appear at $\cos\phi = 0$, but in such a case, at final ohmic resistance, as is the case in any generator in our world, the induced current will be zero. Thus $\cos\phi$ must be neither too high nor too low.

Obviously, the first person in the world who has realized this situation was Manuele Cavalli. Perhaps other people have also observed such an effect, but they were blind.

The most comical aspect in the whole story is that Cavalli has not constructed an original machine. He has taken an ignition coil which can be found in every benzine car (it activates the high voltage for generating the spark which ignates the gas mixture after the compression) and has done the most simple energetic measurements considering this coil as a power generator. The Bosch company 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 may be constructed.

Now I shall explain the effect which Cavalli reported at the end of his fax.

Cavalli has observed that when the coil was feeded by constant current generating the same magnetic field as the permanent ring magnet, the motor needed less power for its rotation. Indeed, in such a case the magnetic flux of the coil "binds" a part of the magnetic flux generated by the permanent magnet. Thus less lines of the magnetic flux will follow the way 2(N)-4-5-6-1-2(S) and the attraction between the fixed and moving pole shoes will be less. In such a case the eddy currents induced in the pole shoes during the rotation will be weaker and their braking effect will be less (the eddy currents have always a normal Lenz effect). The friction due to the eddy currents in VENETIN COLIU has very important NEGATIVE influence and I shall come to this topic later, as this was one of the reasons hampering me to run my first VENETIN COLIU machine (see figs. 4 and 5) as a perpetuum mobile.

Cavalli has further observed that when the coil was feeded by constant current genera-

ting magnetic field opposite to the field of the permanent ring magnet, the motor needed more power for its rotation. Oppositely to the first case, now the magnetic flux of the coil "repels" a part of the magnetic flux generated by the permanent magnet which instead to go through the "air" of the coil will follow the way 2(N)-4-5-6-1-2(S) through the "iron" and the attraction between the fixed and moving pole shoes will be bigger. Now the eddy currents appearing in the pole shoes during the rotation will be stronger and the braking effect will be bigger.

At the end I shall calculate the input and output powers of Cavalli's machine in which **he has taken** only one Bosch generator (see the figures in Cavalli's fax):

Input power at open generator's coil: $P_1 = I_1 U_1 = 273 \text{ mW}$.

Input power at short-circuited generator's coil: $P'_1 = I'_1 U_1 = 267 \text{ mW}$.

Output of the short-circuited coil (ohmic heat):

a) For the coil of the Bosch generator which has a wire of diameter of 0.1 mm and resistance $R = 1100 \Omega$ (see the figures on the sheet with the drawings in Cavalli's fax): $P_2 = I_2 U_2 = 3.3 \times 9.2 = 30 \text{ mW}$.

b) For a new wound coil with greater diameter of the wire and resistance 52Ω (see the figures in the text of Cavalli's fax): $P_2 = I_2 U_2 = 13.2 \times 1.6 = 21 \text{ mW}$.

Thus when the output of the generator was $P_2 = 30 \text{ mW}$ (respectively, $P_2 = 21 \text{ mW}$), the input to the driving motor instead to increase has decreased with $\Delta P_1 = P'_1 - P_1 = -6 \text{ mW}$.

I shall show later that when the cross section of the copper in the coil is the same, the output must be the same and is thus independent of the thickness (and consequently of the number of turns) of the coil's wire. Cavalli's VENETIN COLIU machine with four generators is shown in fig. 6.

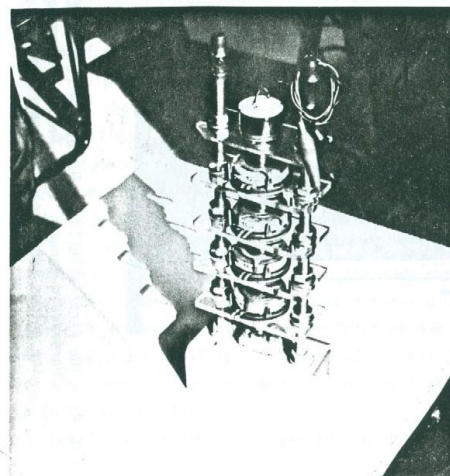


Fig. 6. The machine VENETIN COLIU constructed by Cavalli in December 1991 with four generators which have been taken from the Italian car Alfa Romeo Giulia and are produced by the German company Bosch under Bosch production number 1237011030. I have bought from Bosch in Würzburg one such generator for DM 35. The time of delivery was one day.

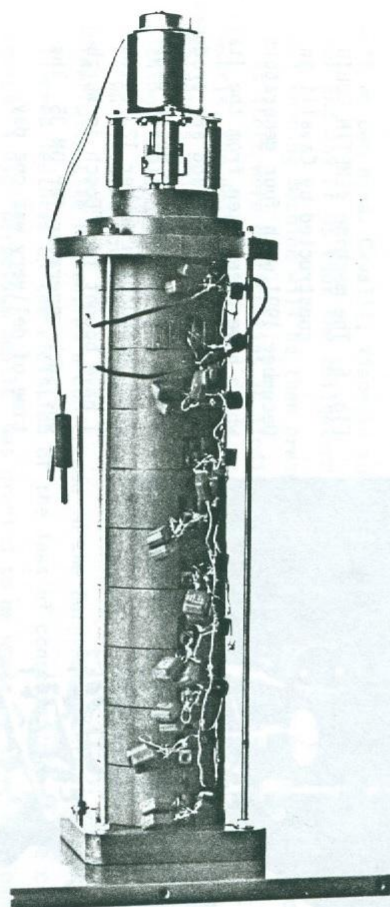


Fig. 4. - The first VENETIN COLIU machine constructed by Marinov in January 1991. The d.c. motor on the top drives ten Bosch a.c. generators.

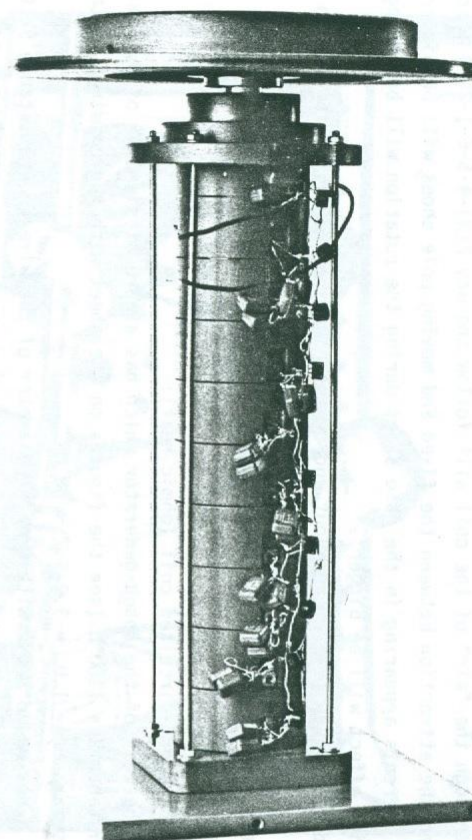


Fig. 5. - The same machine as in fig. 4, where the driving motor sets in motion a fly-wheel, so that all losses are reduced to a minimum.