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And an interesting and informative patent -

The method of industrial production of electric energy without the cost of raw materials

[Patent link:]

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[Patent text]

The method of industrial production of electric energy without the cost of raw materials

INVENTION

Patent of the Russian Federation RU2141718

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Date of commencement of the patent: 1997.12.29

DESCRIPTION OF THE INVENTION

The invention - a method of industrial production of electric energy - is characterized by the fact that in order to exclude raw materials from production, electrical energy is converted by converting a constant voltage into electrical impulses containing harmonics that filter, harmonics are rectified, summed and used for different consumers.

The proposed method is one of the implementations of the "Monopulse effect" [5] *{see notes for an example}*. **The monopulse effect asserts that any impulse of an electric current (voltage) contains an unlimited supply of electrical energy. The energy of the electric pulse is inexhaustible.**

The modern economy requires more and more energy for various consumers, and electricity plays a very important role here because of its universal qualities. Energy development is one of the most acute problems of today, which is given priority. The main drawback of modern electricity production is that electricity can be obtained only by using various types of raw materials, mainly organic fuels. Organic fuel (coal, oil, gas) occupies a dominant position in the fuel and energy balance of our country. Its share in the production of electricity accounts for more than 70%. At the same time, oil and gas reserves are constantly reduced, their production will cost more and more. Coal stations because of the uneven distribution of high-quality coal resources, its extraction and transportation will cost more and more.

The main obstacle to the use of solar power plants is the low intensity of solar radiation, which is 40,000 times less than in existing power converters. Therefore, in order to generate electricity of 1.0 million kW, an area of 100 km 2 is required , which additionally has an irreparable effect on the heat balance of the Earth.

In order to exclude the mutual influence of wind power stations, only 2-3 windmills can be placed on 1 km 2 of the area and a total power of 2.5 MW can be obtained. At the same time, the entire territory becomes a dead zone due to the infrasound noise created by the blades of the impellers. In addition, such electricity will be of poor quality due to the variability of wind speed.

Restrictions for tidal and geothermal power plants are obvious - binding to strictly defined areas of the Earth, where there are appropriate conditions for this (height of the amplitude of tides, availability of suitable sources of underground heat).

Hydroelectric power stations that convert the mechanical energy of the falling water flow into electricity by means of hydro turbines, which drive electric generators, lead to shallowing of rivers and flooding of fertile lands, which causes irreparable damage to the national economy.

At the core of nuclear power in its time was the principle "The energy of the atom is inexhaustible." This principle gave impetus to the development of various technical directions, which in their perfection are capable of destroying all life on the planet. Such a concept is harmful and therefore lifeless. In contrast to the atomic concept, another alternative concept is proposed: "The energy of the electric current pulse (voltage) is inexhaustible," which solves absolutely all the energy problems of our days and future.

So it is accepted, and it is reasonable that scientific ethics requires, before asserting that the predecessor was mistaken, to look for a mistake in oneself. In this case everything is checked and errors are excluded. Here is an elementary example:

1 + 1 = 2. (1)

The primary initial result is two. Scientific thought considered that such an equality is not suitable for higher mathematics and the value of two is too much. Therefore, the left and right sides of the equality 1 are divided into two, that is,

1/2 + 1/2 = 1. (2)

It would seem that the arithmetic action here is not forbidden by mathematics and therefore both equalities are considered equivalent. However, all this is not so simple. Let's represent the left values of equalities - these are the coefficients determined by the amplitudes of the signals. Let us square both equations, we obtain in the first case

(1 + 1) 2 = 4 (3)

And in the second case

(1/2 + 1/2) 2 = 1. (4)

Consequently, as a result of dividing the left and right sides of the equation, its value decreases fourfold. In terms of signals, the signal power will be reduced fourfold or by the power level by -6.0 dB . This is an extremely large loss.

First-class scientists of the past did their best to prevent the first result and to direct the mathematical physics on the second result.

Leonard Euler (1707-1783) - a Swiss by birth, a philologist by education, lived for a long time in Russia, became a great mathematician, physicist, mechanic, astronomer - the main party to the dispute, together with D'Alembert and Lagrange on the possibility of decomposing a given function into a trigonometric The series introduced a formula bearing its name

$$\frac{e^{j\omega T}}{2} + \frac{e^{-j\omega T}}{2} = \cos\omega T \quad /5/$$

где ω - круговая частота $2\pi f$, T - период, вместо первого начального результата в виде

$$e^{j\omega T}+e^{-j\omega T}= 2\cos\omega T, \ /6/$$

From which Euler's formula was obtained by dividing the left and right sides of equality 6. This gross error exists in mathematical physics for about 250 years since the middle of the 18th century. And dominates in the fundamental relationships of the fundamentals of the theory of spectra of radio engineering signals. Thus, the trigonometric Fourier series was defined by dividing the left and right sides of the original equality by two

$$\frac{1}{2}f(t) = \frac{d_o}{2} + \sum_{n=1}^{\infty}(a_n\cos n\Omega t + b_n\sin n\Omega t) \quad /7/$$

Where a o , a n , b n are the Euler-Fourier coefficients, $\Omega = \frac{2\pi}{T}$, T is the time, which led to the divergence of the series, since it reduces the amplitude of the original signal by a factor of two, or by a factor of four, or by the power level by -6.0 dB instead of the convergent Inverse Fourier series

$$f(t) = a_o + 2\sum_{n=1}^{\infty}(a_n\cos n\Omega t + b_n\sin n\Omega t) \quad /8/$$

The well-known Dirichlet kernel

$$\frac{\sin\frac{\omega T}{2}(2n+1)}{2\sin\frac{\omega T}{2}} = \frac{1}{2} + \sum_{n=1}^{\infty}\cos n\omega T \quad /9/$$

Is obtained by dividing the left and right parts of the following equality

Two, which led to disastrous consequences. Also, with such an error, there still exist the Dirichlet integral, the Fourier integral, and many other useful formulas for practice.

In the materials of the application, attention is paid to a non-temporal process that has not been sufficiently studied yet, but to the amplitude spectrum of this process as an energy-based basis of the material world with an unlimited supply of electrical energy.

All of this has been studied in a sufficient degree for practical implementation. Thus, harmonic analysis and harmonic synthesis of spectral functions were introduced [1]. The phenomenon of the amplitude of a single spectral line is established [2]. As was shown above, the representation of pulse signals by the Fourier series leads to a decrease in the amplitude of the pulses by a factor of two, or by a factor of four, or by a power level of -6.0 dB [3]. In addition, the practical application of the Fourier integral reduces the amplitude of single pulses by a factor of 2n , or 39.48 times in power, or by 16.0 dB in power level [4]. It should be noted that in this situation the transition to the basic formulas of the theory of spectra of a new generation, for example 8, 10, is inevitable. This transition leads to the discovery of a previously unknown phenomenon that any voltage pulse (current) contains an unlimited supply of electrical energy, and the energy of any single pulse is inexhaustible [5].

According to the terminology adopted in radio engineering, the spectrum of any single pulse can be represented as a spectral density $S(\omega)$ And the spectral density module $|S(\omega)|$. The spectral density of a single rectangular pulse is given by

$$S(\omega) = U\tau\frac{\sin\frac{\omega\tau}{2}}{\frac{\omega\tau}{2}} \quad /11/$$

And gives the distribution is not the amplitude, as it should be, but the area of the pulse $U\tau$ The product of the amplitude U by the frequency duration ω. The absolute value or the spectral density module has a similar form

$$|S(\omega)| = U\tau \frac{\left|\sin \frac{\omega\tau}{2}\right|}{\frac{\omega\tau}{2}} \quad /12/$$

При ω = 0 эти выражения равны единице, и интеграл от выражения 11

$$U\tau \int_0^\infty \frac{\sin \frac{\omega\tau}{2}}{\frac{\omega\tau}{2}} d\omega = \frac{U\tau}{2} \quad /13/$$

Equal to half the value of the area of the pulse. Since the pulse width τ Determines the spectrum $S(\omega)$ And is a constant value, and only the amplitude of the pulse is subject to change, it can be confidently asserted that the spectral density 11 represents a rectangular pulse with a half value of the amplitude $\frac{U}{2}\tau$. Therefore, the amplitude spectrum of single pulses has not yet been determined. To find the amplitude spectrum of a single pulse of a rectangular shape, we take the integral of its spectral density in the form of equality

$$U\tau \int_0^\infty \frac{\sin \frac{\omega\tau}{2}}{\frac{\omega\tau}{2}} d\omega = 2U \int_0^\infty \frac{\sin X}{X} dX \quad /14/$$

так как $\omega\tau/2 = X$, откуда $\omega = \frac{2X}{\tau}$.

Следовательно,

$$U\tau \frac{\sin \frac{\omega\tau}{2}}{\frac{\omega\tau}{2/}} = 2U \frac{\sin X}{X} \quad /15/$$

And therefore the amplitude spectrum of a single pulse of rectangular shape is twice as large as its spectral density.

Calculations with the amplitude spectrum of the pulse show that the integral of its value

$$2U\int_0^{\infty} \frac{\sin X}{X}\, dX = U \quad /16/$$

равен амплитуде заданного импульса.

Мощность, заключенная в амплитудном спектре

$$\left(2U\int_0^{\infty} \frac{\sin X}{X}\, dX\right)^2 = U^2 \quad /17/$$

равна квадрату амплитуды заданного импульса.

Однако при этом интеграл от модуля амплитудного спектра

$$2U\int_0^{\infty} \frac{|\sin X|}{X}\, dX = \infty \quad /18/$$

равен бесконечности. И мощность, заключенная в модуле амплитудного спектра

$$\left(2U\int_0^{\infty} \frac{|\sin X|}{X}\, dX\right)^2 = \infty \quad /19/$$

также равна бесконечности.

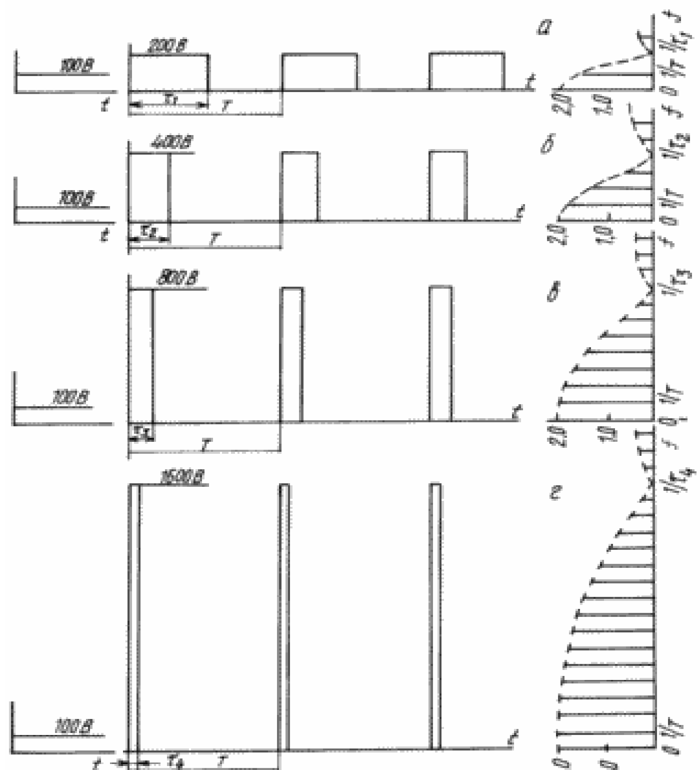
It was shown above that by introducing an error in the Fourier series, the amplitude of all harmonics of the signal decomposition was doubled, or by a power level of -6.0 dB . This error is eliminated, and the amplitude of the harmonics of the spectrum is increased to its real value. The spectrum of the periodic signal and the amplitude spectrum of a single pulse are also equalized. Now the maximum coefficient of harmonics in the first and in the second case should not exceed two. The basis of the proposed method of industrial electric power production is the open "Monopulse effect" - the energy of any electric pulse is inexhaustible, therefore the proposed power plant will be called a **single-pulse electric station** (MIPES).

The set of actions aimed at the production of electricity, which characterizes the proposed method, includes the following methods.

The choice of the DC voltage of the external power supply, which is the main parameter of the MIPES operation . The voltage value of such a source can be equal to 1, 10, 100, 200 V and any other voltage, depending on what power the station should work on. The design power of the external power source is selected as standard, equal to 1, 100, 10000, 40,000 VA, respectively, with a load of 1 ohm . The value of the voltage of the constant source determines the average value of the constant component of the periodic signal and its entire spectral composition. The greater the voltage of the external source, the greater the values of the harmonic components of the signal spectrum. In our case, in all cases, the external power source is assumed equal to the voltage of 100 V. The constant component for the considered variants is also expected to be equal to 100 V. The maximum voltage of the harmonics of the pulse signal must not exceed 200V .

The selected voltage of the external power source is fed to a DC voltage converter into a pulse signal of a predetermined shape and a given amplitude spectrum with an infinite harmonic composition at the output of the converter. The pulse shape and the duty cycle are determined in advance - the ratio of the period to the pulse duration, the selection of which is shown in Fig.

1 . Here, a constant voltage of 100 V is converted into a square wave impulse signal with a maximum voltage of 200 V and a duty ratio of two shown in FIG. 1a , or a duty cycle equal to four, but the amplitude of the 400 V pulses (Figure 1b) or the amplitude in the 800 V pulse, but the duty cycle of eight (Figure 1c) or the pulse amplitude of 1600 V at duty cycle 16 (Figure 1d) - without any significant energy costs. In other words, as a result of converting a DC voltage of 100 V to an external power source with a power of 10000 VA, different harmonic composition of the amplitude spectrum can be obtained without additional energy costs. At the same 100 V , one harmonic can be obtained in the first fundamental lobe of the spectrum (Figure 1a) , three harmonics (Fig. 1b), seven harmonics (Figure 1c), 15 harmonics (Fig. 1d) , etc. to infinity . When the duty cycle of pulse signals increases, the pulse width decreases , The width of the fundamental lobe of the spectrum is increased, defined as 1 / , Which leads to an increase in the number of harmonics in this part of the spectrum and at $\tau \to 0$, $1/\tau \to \infty$, And the number of harmonics also tends to infinity at a constant voltage of an external power supply of 100 V.



Фиг.1

The selected voltage of the external power source is fed to a DC voltage converter into a pulse signal of a predetermined shape and a given amplitude spectrum with an infinite harmonic composition at the output of the converter. The pulse shape and the duty cycle are determined in advance - the ratio of the period to the pulse duration, the selection of which is shown in Fig.
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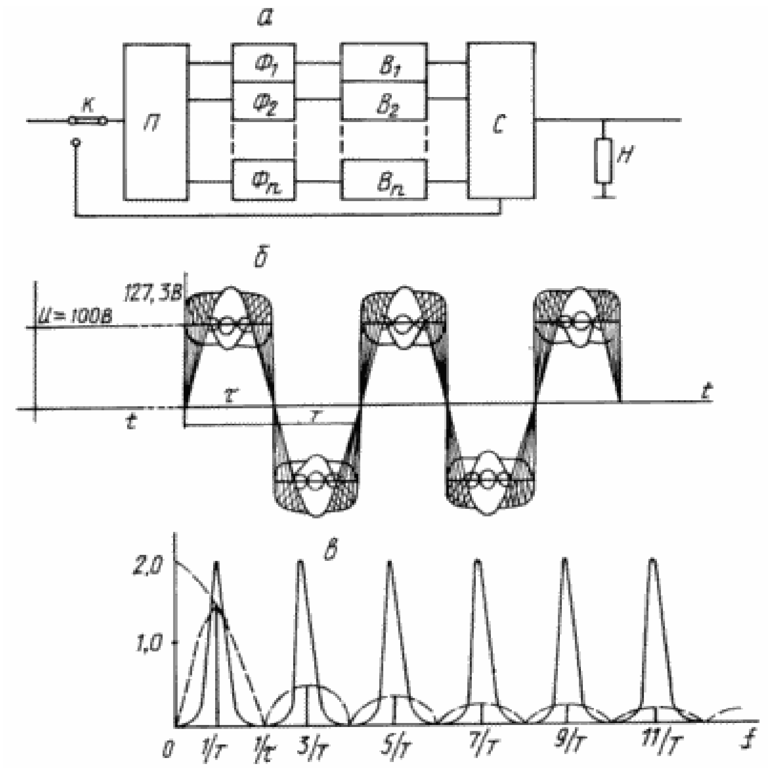
Filter each harmonic of the amplitude spectrum of a pulse signal obtained by converting the DC voltage of an external source into a pulsed signal by a separate filter.

The signal of each harmonic, obtained by filtering the components of the pulse signal, is rectified, converting it into a constant voltage.

Summarize the constant voltages, rectified signals of each harmonic on the total adder.

Depending on the DC voltage selected by the converter, the pulse in the pulse signal is determined by the gain in obtaining the output power of the MIPES and, consequently, the method of implementing this proposal is determined. Signals with a poor composition of harmonics can be designed for a low level of output power for the same material costs. But the implementation of such MIPES is distinguished by its accessibility and simplicity. Thus, a method for producing electric power is proposed, characterized in that, for the sake of simplest realization, the constant voltage of the external source is converted into a pulse signal with a duty ratio of two. Features of the implementation of the proposed method are shown in FIG. 1-1 . In Fig. 1-1a shows an approximate composition of the elements of the functional diagram, where K is the key that performs the function of transferring the MIPES to the autonomous operation mode. In this case, part of the DC voltage from the output of the adder C is fed to the station input instead of the external power supply voltage. P is a DC to pulsed signal converter with a duty cycle of two. Φ 1 , Φ 2 , ... Φ n - resonant high-Q filters, tuned to the 1st harmonic, 3rd harmonic, etc. Up to the 29th harmonic. B 1 , B 2 , ... In n - full-wave rectifiers, if possible with low losses. C is the total adder, possibly on the transformer, and H is the load of the consumers.

In Fig. 1-1b shows the pulse signal obtained at the output of the converter P.



Фиг. 1-1

Feature image signal in this form due to the fact that the true pattern of pulses with the harmonics that are present in this form this pulse and pulse recreate impossible due to lack of measuring equipment. These pulses can only be synthesized. In FIG. 1-1b shows a synthesized pulse signal with a duty ratio and with all two harmonics, which are involved in its formation, which shows that the spectrum of harmonic actually form continuous zone excess capacity zone, - all that more 100 V , and the potential deficiency zone, - all below 100V . Vzaimodeystvie these areas leads to a reciprocal compensation and pulse formation, which is observed on an oscilloscope screen. In FIG. 1-1v shows harmonic signal spectrum on the motion and filters tuned to these harmonics. Here we have the 1st harmonic of a resonance curve of the filter, the third harmonic curve filtra etc. up to the 29th harmonic. Analysis calculated output power when using the spectrum type "Meander" pulses are shown in Table. 1 . Here, for the 15 resonant filter F n presents data for calculating coefficient harmonics 2A n , obtained harmonic coefficients 2A I n , alternating voltage harmonics to the filter output - U n , the expected amount of the DC voltage output from rectifier ΣU_n, и $(\Sigma U_n)^2$- the expected total power at the adder output in VA .

Таблица 1

Расчетные данные выходной мощности электростанции
при использовании спектра импульсов типа "Меандр".

$\Phi_п$	$2A_п$	$2A_п^I$	$U_п$	$\Sigma U_п$	$(\Sigma U_п)^2$
I.	4 /п	I,2732	I27,32	I27,32	I62I0,382
2.	-4 /3п	-0,4244	42,44	I69,76	288I8,457
3.	4 /5п	0,2546	25,46	I95,22	38II0,848
4.	-4 /7п	-0,I8I9	I8,I9	2I3,4I	45607,873
5.	4 /9п	0,I4I5	I4,I5	227,56	5I783,553
6.	-4/IIп	-0,II57	II,57	239,I3	57I83,I56
7.	4/I3п	0,0979	9,79	248,92	6I96I,I66
8.	-4/I5п	-0,0849	8,49	257,4I	66259,908
9.	4/I7п	0,0749	7,49	264,90	70I72,0I0
I0.	-4/I9п	-0,0670	6,70	27I,60	73766,56
II.	4/2Iп	0,0606	6,06	277,66	77095,075
I2.	-4/23п	-0,0554	5,54	283,20	80202,240
I3.	4/25п	0,0509	5,09	288,29	83III,I24
I4.	-4/27п	-0,0473	4,73	293,02	85860,720
I5.	4/29п	0,0439	4,39	297,4I	88452,708

The second feature of the solution of the problem consists in, characterizing methods when the voltage of the external power source is converted into a predetermined signal form and the repetition frequency of the pulse signal with high duty cycle and any form of pulses. Changing the duty ratio of pulse signals corresponding to these changes and the amplitude spectrum differs high harmonic content and gives a considerable gain output MIPES with the same number of resonant filters and the same voltage of the external source. What happens signal changes and its amplitude spectrum for the rectangular pulse and the duty cycle, - 2, 4, 8 and 16 , shown in FIG. 1 and viewed in detail above. Results shown apply to all other forms of video pulses. In FIG. 2 is an exemplary functional block diagram and the pulse signals from the amplitude spectrum of a rectangular, triangular, and kosinusbikvadratichnoy form with increased porosity. The circuit shown in FIG. 2a comprises MH - driving generator FI - shaper various forms of video pulses. F n , B n , C, H and - elements for circuit device of FIG. 1-1 , the difference of which is an increased electrical resistance. In FIG. 2b shows a pulse signal which is obtained by converting a DC voltage 100V . The amplitude of a video is increased to 300 V with a corresponding change in the spectrum. In FIG. 2B the same steps result in the conversion of the triangular video pulse, but the amplitude of the pulse increases to 600V . The amplitude spectrum of the pulse signal differs a high content of harmonics.

From these calculation it is evident that by using a pulse signal with a duty ratio equal to two, and 15 resonance filters expected maximum capacity of 88452.7 VA on resistance of 1 ohm when consumed power of the external power source 10000 BA . The gain is estimated no more than 78452.7 VA . Accurate gain in the preparation of useful output power taking into account losses in the inverter, filters, rectifiers, and other factors not provided can be evaluated in the development of a particular device. But at this stage, considering increase of power output of adders for compensating losses can provide - increasing the number of filters, since the energy of any electrical pulse inexhaustible, and increase the DC voltage of the external power source, knowing that with increasing supply voltage twice - 200 V power increases four times - 40,000 VA . The total voltage at the input of the adder will be 594.82 in , power plant capacity will increase four times and will be 353,810.83 VA . Power Winning here turns 313,810.83 VA that solves all the problems associated with losses.

This may also be used trapezoidal, cosine, kosinuskvadratichnye, kosinuskubichnye video pulses, in which the number of harmonics in the main lobe of the spectrum takes an intermediate value between rectangular and triangular pulses, and no special interest. Richer spectrum have kosinusbikvadratichny, kosinuspyatistepennoy etc. video pulses on the content of harmonics in the main lobe of the first spectrum. In FIG. 2i shows the range and kosinusbikvadratichnye pulses after converting the external DC voltage source into a pulse signal. The amplitude of the video pulses increases to 900 V , and the number of harmonics here reaches 17 . This is significantly higher than all of the above. For comparison data calculating power for 15 filters station. Analysis calculated output power when using the spectrum of video pulses of rectangular shape are provided in Table. 2 , which shows the results for the 15 resonant filter P n , the data X - in degrees, values of sinX , data X in radians, A n - harmonic spectrum coefficients, U n - variable component of voltage harmonics to the filter output, Σ'U n - summa DC harmonics at the output of the rectifier, (Σ'U n) 2 - expected total power received at the output summatora VA . Calculation shows that when using a rectangular video pulse with increased porosity and 15 resonant filter poluchenie expected maximum power combiner 3188510.2 BA the resistor 1 Ohm at consumed power of the external power source 10000 BA . The gain can be estimated no more than 3,178,510.2 VA .

Analysis calculated output power when using the triangular shape of the spectrum of video pulses are shown in Table. 3 . Here, F n - resonance filters 2A n - harmonic spectrum coefficients, U n alternating voltage harmonics to the filter output, Σ'U n - expected summa DC harmonic voltage output from the rectifier and (Σ'U n) 2 - expected total power at the output station adder VA . From the above calculation shows that the triangular video pulse at the same duty ratio and a constant voltage of the external power increases the output power up station 6899132.6 VA that 3710622.4 BA ahead produces rectangular video pulse with all conditions being equal. The gain in the power stations using the combiner triangular video pulse estimated 6889132.6 VA at the load of 1 ohm .

Таблица 3

Расчетные данные выходной мощности электростанции при использовании спектра видеоимпульсов треугольной формы.

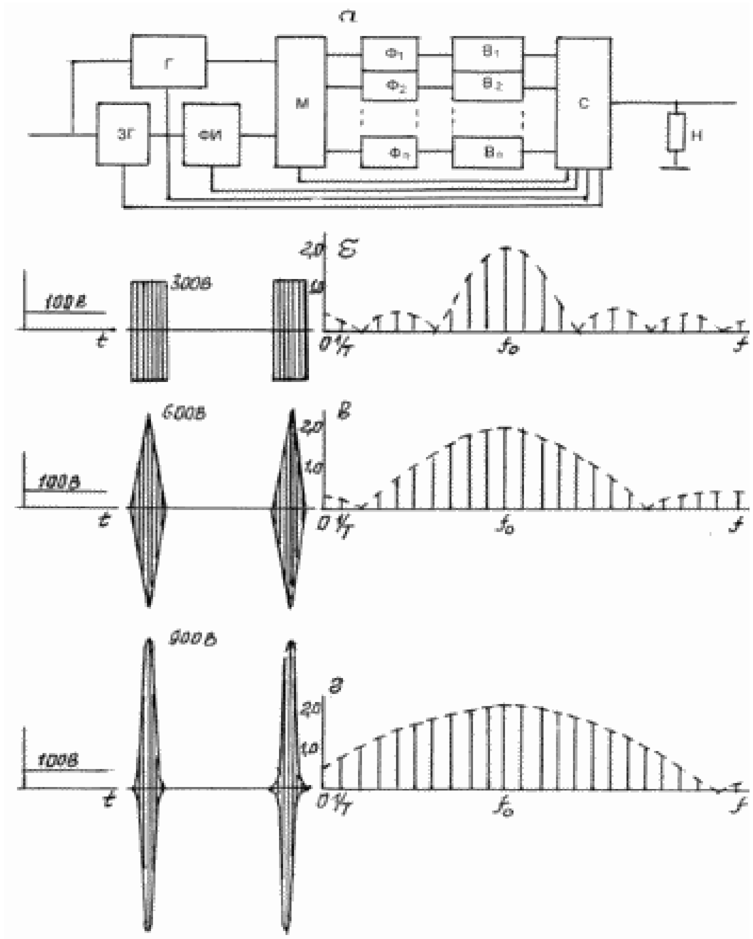
$Ф_п$	$2A_п$	$U_п$	$\Sigma U_п$	$(\Sigma U_п)^2$
I.	I.9939	I99,39	I99,39	39756,4
2.	I,9878	I98,78	398,I7	I58539,3
3.	I.9684	I96,34	595,0I	354036,9
4.	I,9490	I94,90	789,9I	623950,7
5.	I,9I80	I9I,80	98I,7I	963754,5
6.	I,8870	I88,70	II70,4I	I369859,5
7.	I,8439	I84,39	I354,80	I835483,0
8.	I,8008	I80,08	I534,88	2355856,6
9.	I,7474	I74,74	I709,62	2922800,5
I0.	I,6940	I69,40	I879,02	3530716,I
II.	I,63I4	I63,I4	2042,I6	4I704I7,4
I2.	I,5688	I56,88	2I99,04	4835776,9
I3.	I,498I	I49,8I	2348,85	55I7096,3
I4.	I,4274	I42,74	249I,59	6208020,7
I5.	I,3503	I35,03	2626,62	6899I32,6

Analysis calculated output power when using the spectrum of a video kosinusbikvadratichnogo given in Table. 4 , where the resonance filter F n shows data coefficients harmonics 2A n , U n - voltage harmonics to the filter output, ΣU n - the total output voltage from the rectifier, (ΣU n) 2 - output power station adder VA . Power value, which can give power with a pulse will 8407796.1 VA . It's more to 1,508,663.5 VA triangular video pulse and 5219285.9 VA longer video pulse of rectangular shape with all things being equal. Power Win thus estimated 8397796.1 VA at the load of 1 ohm .

Таблица 4

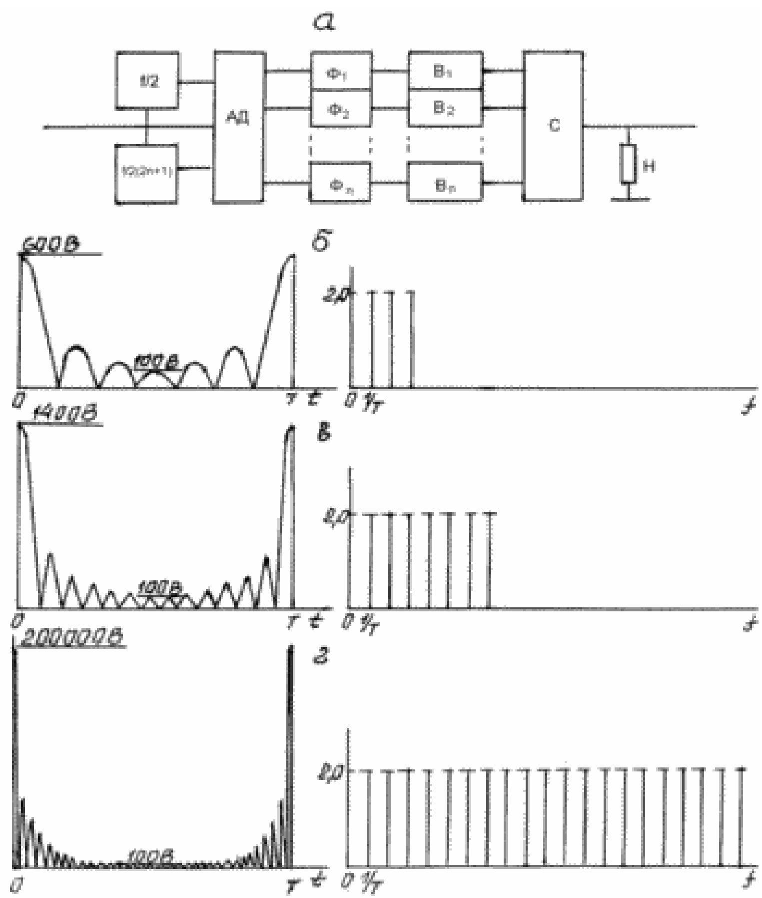
Расчетные данные выходной мощности электростанции при использовании спектра видеоимпульсов косинусбиквадратичной формы

$Ф_n$	$2A_n$	U_n	ΣU_n	$(\Sigma U_n)^2$
1.	1,9969	199,69	199,69	39876,1
2.	1,9939	199,39	399,08	159264,8
3.	1,9908	199,08	598,16	357795,4
4.	1,9878	198,78	796,94	635113,4
5.	1,9781	197,81	994,75	989527,6
6.	1,9684	196,84	1191,59	1419886,7
7.	1,9587	195,87	1387,46	1925045,2
8.	1,9490	194,90	1582,36	2503863,1
9.	1,9335	193,35	1775,71	3153146,0
10.	1,9180	191,80	1967,51	3871095,6
11.	1,9025	190,25	2157,76	4655928,2
12.	1,8870	188,70	2346,46	5505874,5
13.	1,8654	186,54	2533,00	6416089,0
14.	1,8439	184,39	2717,39	7384208,4
15.	1,8223	182,23	2899,62	8407796,1



Фиг.3

The third feature of the solution proposed method is associated with a further increase in output power MIPES using external power supply voltage 100 V , power of 10,000 VA and 15 of resonant filters. Apart from the changes of porosity and forms video pulses for increased power output can be used to shift RF pulses under the same conditions being equal. The radio pulse amplitude spectrum is more uniformity of the amplitudes of harmonics, centered around the carrier frequency f o . Explanation of this proposal are shown in Fig. 3 . In FIG. 3a is a functional diagram of the device in which the constant voltage of the external power source 100 V is converted into a signal of a carrier frequency f o and jointly CO formed signals after PG and PI is supplied to the modulator M which outputs obtained radiopulse signal with high duty ratio and various forms of radio pulses. In FIG. 3b shows a rectangular shaped RF pulses and the corresponding amplitude spectrum. The spectrum of the rf pulse is symmetric about the frequency f o , and to calculate the total amplitude of the left take the sum of seven harmonics of f o 1231.38 B , add harmonic amplitude at a frequency f o 200 and add it to the right seven amplitudes of harmonics of f o 1231.48 In . The total voltage at the same time will be equal to 2661.96 In . The expected maximum power is the square of the voltage and the amount (2661.96) 2 , and is equal to 7,086,031.0 VA . This is 3,897,520.8 VA is greater than for the rectangular video pulse with all things being equal. The gain power when using rectangular radiopulse under equal amount 7076031.0 VA at the load of 1 ohm .



Фиг.4

Not difficult to see that the transition from kosinusbikvadratichnogo video pulse to kosinusbikvadratichnomu radiopulse difference in output power received is not experiencing significant changes and is only 442,352.9 VA . This indicates priblizhenie to the limit beyond which the increase in power tools discussed becomes meaningless at all equal. However, this limit can be achieved, but a different approach. This approach is the use of non Dirihle core, which lowers the harmonic amplitudes twice, and the expansion 10. This expansion has the feature that the coefficients of all harmonics included in it from the first to the infinity equal to two. In FIG. 4 is an explanation producing maximum power using the amplitude spectrum of pulse signals for industrial power generation. In FIG. 4a is a functional diagram of the device according to the present proposal. The constant voltage of the external source is also under these conditions of 100 V and a capacity of 10000 BA fed to the two oscillator sinusoidal signals. A generator generates a continuous sine wave of low frequency f / 2 equal to half the pulse repetition frequency, and the second - sunusoidu high frequency f / 2 (2n + 1) . These two signals are fed to an analog divider AD . The resulting output signals BP filtered F n , rectified in n and summed in adder S. In FIG. 4b shows the signal and its amplitude spectrum, consisting of three harmonics of a voltage of 200 V each. The pulse amplitude is equal to 600 .

In FIG. 3a presents kosinusbikvadratichnye radio pulses and the amplitude spectrum of the signal. The total voltage here is defined as 1387,46V + 200 + B = 1387.46 2974.92 In . The expected power output power equal to 8,850,149.0 VA . The difference compared with the video pulse is 442,352.9 VA . The gain power is 8840149.0 VA at the load of 1 ohm. Therefore, the transition from video pulses to the radio pulses significantly improves power MIPES with all things being equal. In FIG. 3B are diagrams of a triangular radio pulse and its amplitude spectrum. To calculate the total amplitude with seven harmonics left of f o will 1354.8 The plus 200 central harmonic and 1354.8 in the right of f o , that make 2909.6 In . Expected capacity by adder would be 8,465,772.1 VA . This is 1,566,639.5 VA is greater than when using a triangular video pulse. The gain is defined as the power 8455772.1 VA at the load of 1 ohm.

The proposed method can give good results not only in a high power level. You can also build systems to power the measured watts, milliwatts, etc. Here the possibilities are unlimited. In FIG. 4c shows the output of AD , comprising seven harmonics of 200V . The signal amplitude in this case is increased to 1400 . If you submit a signal containing the 15 harmonic, its amplitude will increase to 3000 . At 15 resonant filters receive the total voltage of about 3000 V. A power combiner for gain limiting value 9,000,000 VA . In FIG. 4d approximately depicts a pulse signal and its amplitude spectrum to obtain the limit value of output power. At 1000 resonance filters total voltage to be adder 200000 In . Power to the combiner output can be expected - 40000000000 VA at the load of 1 ohm . This is more in 40 times the power of the Volkhov hydroelectric power station and the Dnieper combined. If an external source to increase the voltage up to 200 V , the power increase capacity (400000) 2 to 160 000 000 000 BA , but at 400 (800000) 2 - up to 640 000 000 000 BA that provide all electrical energy without Russia costs of raw materials and in compliance with environmental regulations.

Thus, the amplitude spectrum of any voltage (current) pulse is an inexhaustible source of electrical energy that can be used for industrial purposes.

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CLAIM

1. A process of industrial production of electrical energy without the costs of raw material, consisting in the fact that the coefficients of decomposition of periodic functions Reverse Fourier define the desired composition of the amplitude spectrum of the harmonics for synthesizing a periodic signal, synthesized, define the parameters of a periodic signal, fix the presence of excess

building zones in a synthesized periodic signal after that is selected based on the average DC voltage of the periodic signal of the external power source, wherein tinuous voltage is converted into a periodic pulse signal with the selected average voltage value with a predetermined composition of harmonic amplitude spectrum with fixed zones of excess capacity and only if the voltage given composition amplitude spectrum harmonic of fixed zones of excess capacity filtered, each harmonic is rectified, the rectified voltage of each harmonic summed and thus obtained by the DC voltage used as a power source for various consumer of, after the transfer of work in standalone mode.

2. A method according to claim 1, characterized in that the constant voltage of the external power source is supplied to the inverter DC voltage into a pulse signal, generating a pulse signal with a duty cycle of two different pulse shapes, each harmonic of the amplitude spectrum of the pulse signal with a duty ratio two filtered rectified voltage harmonics, straightened voltage harmonics are summed in common with the adder output DC voltage obtained is used for various electrical consumers and translate a job autonomous th mode.

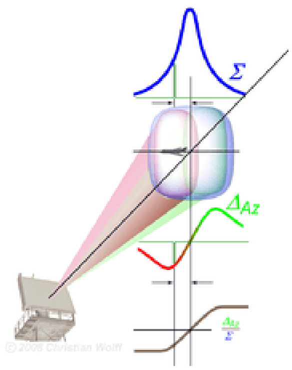
3. A method according to claim 1, characterized in that the permanent external supply voltage is converted into a signal that sets the pulse repetition frequency, different forms of video pulses formed with high porosity and uniform composition harmonics amplitude spectrum, the amplitude spectrum of each harmonic with a uniform composition is filtered, rectified voltage harmonics , rectified voltage harmonics are summed in common with the adder output DC voltage obtained is used for the different power consumers and translation t work in offline mode.

4. A method according to claim 1, characterized in that the permanent external supply voltage is converted to a carrier frequency signal is formed by a modulator RF pulses of different pulse shapes with high porosity and uniform composition harmonics close to the carrier frequency of each harmonic amplitude spectrum radio pulses with uniform spectrum near the carrier frequency filtered rectified voltage harmonics, rectified voltage harmonics are summed in common with the adder output to the obtained permanent posal used for various electrical consumers and translate work in standalone mode.

5. A method according to claim 1, characterized in that the permanent external supply voltage is converted into two sinusoidal signals with different multiple frequencies, the analog form the divider pulse signal with a maximum factor of two for all harmonics amplitude spectrum obtained pulse signal each harmonic amplitude spectrum maximal ratio filtered rectified voltage harmonics, rectified voltage harmonics are summed in common with the adder output DC voltage obtained Use for any electrical consumers and translate work in standalone mode.

NOTES:

1. **Monopulse radar**



Monopulse radar is a radar system that compares the received signal from a single radar pulse against itself in order to compare the signal as seen in multiple directions, polarizations, or other differences. The most common form is an adaptation of conical scanning radar which compares the return from two directions to directly measure the location of the target. This avoids problems in decoding conventional conical scanning systems, which can be confused by rapid changes in signal strength. The system also makes jamming more difficult. Most radars designed since the 1960s are monopulse systems. Wikipedia

2. **Amplitude-Comparison Monopulse**

https://en.wikipedia.org/wiki/Amplitude-Comparison_Monopulse