"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

platinum and bismuth, and for Bi on beryllium may be seen from figures 12, 13, and 15. The dependence $\eta(d)$ for Bi and Ag on beryllium (E_p= 600-3000 ev; - 180°C) is given in figures 14 and 16. The dependence $\sigma(d)$ for Ag on Be (E_p=600-3000 ev; -180°C)is illustrated in figure 17. For Ag $\lambda \ll 12$ up to 20 atomic layers. The total ionization range 1 for Bi is $\approx$ 25 atomic layers at $E_{p,max} \approx 800$ ev, while it is $\approx$ 80 atomic layers for Ag. There are 17 figures, 2 tables, and 3 Soviet references.

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A. I. Gertsena (Leningrad State Pedagogical Institute imeni A. I. Gertsen)

SUBMITTED: August 20, 1958

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

24.2500

65723

SOV/139-59-2-22/30

AUTHORS: Bronshteyn, I.M. and Segal', R.B.

TITLE: Slowing-Down of Electrons in Calcium and Magnesium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 2, pp 147-148 (USSR)

ABSTRACT: The paper presents data on the coefficient of secondary electron emission σ for thin layers of the metals deposited on platinum. Fig 1 shows how σ varies with E (the energy of the incident electrons) for platinum. Fig 2 shows similar curves for calcium on platinum; the thicknesses of the layers (in atomic diameters) are 36, 55 etc. Fig 3 gives the range ℓ as a function of E deduced from the results of Fig 2. Fig 4 and 5 give similar results for Mg. In general, the results agree well with those given by others. There are 5 figures and 8 references, 6 of which are Soviet and 2 English.

ASSOCIATION: Leningradskiy gosudarstvennyy pedinstitut imeni A.I.Gertsena (Leningrad State Pedagogical Institute imeni A.I. Gertsen)

SUBMITTED: July 7, 1958

Card 1/1

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

24.2500

65724
SOV/139-59-2-23/30

AUTHORS: Bronshteyn, I.M. and Segal', R.B.

TITLE: The Derivation of Electron Ranges from Secondary Emission Results

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 2, pp 149-152 (USSR)

ABSTRACT: The paper deals with the various possible sources of error in such measurements. Fig 1 collects the published data for the thicknesses needed to give the true value of σ as functions of E for various metals. Fig 2 gives data for Bi deposited on Be at 0.25 atomic layer/min (see previous paper for explanation); Fig 3 differs from Fig 2 only in that the Bi has been deposited at 5 atomic layers/min. It is concluded that the causes of error in many papers are 1) that very thin layers may not be continuous; 2) that care must be taken to ensure that the true σ has been reached; 3) that proper use has not been made of checks based on the inelastic scattering coefficient. There are 3 figures, and 8 references, 6 of which are Soviet and 2 English.

ASSOCIATION: Leningradskiy gosdarstvennyy pedinstitut imeni

Card 1/2

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65724

SOV/139-59-2-23/30

The Derivation of Electron Ranges from Secondary Emission Results

A.I.Gertsena (Leningrad State Pedag. Institute imeni A.I.Gertsen)

SUBMITTED: July 7, 1958

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SOV/109- - -4-3-36/38

AUTHORS: Bronshteyn, I.M., and Segal', R.B.

TITLE: Secondary Electron Emission of Calcium (Vtorichnaya elektronnaya emissiya kal'tsiya)

PERIODICAL: Radiotekhnika i Elektronika, Vol 4, Nr 3, 1959, pp 551-552 (USSR)

ABSTRACT: It is known that the secondary electron emission coefficient of alkali and rare earth metals is a function of the thickness of the emissive layer (Refs 1-5). As the thickness of the metal layer is gradually increased, the emission coefficient σ increases to a maximum and then decreases to the value corresponding to the electron emission of a pure metal. The work described was concerned with the investigation of σ of a platinum base coated with a layer of calcium. The authors also determined the dependence of σ on the energy of the primary electrons E_p for a thick layer of calcium. Fig 1 contains a family of curves $\sigma(E_p)$ for the layers of calcium of different thicknesses deposited on to a platinum base; Curve (1) corresponds to pure platinum, while Curve (10) is for a thick layer of calcium.

Card 1/2

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SOV/109- - -4-3-36/38

Secondary Electron Emission of Calcium

The remaining curves are for the films whose thicknesses range from 0.2 to 78 atomic layers. From Fig 1 it is found that the maximum σ is obtained at the film thickness of 0.6 atomic layers.

Card 2/2

There are 2 figures and 10 references, 5 of which are Soviet, 3 English, 1 French and 1 German.

SUBMITTED: September 8, 1958

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

S/181/60/002/01/21/035
B008/B014

AUTHORS: Bronshteyn, I. M., Segal', R. B.

TITLE: Secondary Electron Emission of Thin Metal Foils on an Activated Base

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 1, pp. 93-95

TEXT: The results published in Ref. 2 were checked by means of activated bases. It was shown that non-elastically reflected electrons played the most important part in the development of secondary electron emission. The authors used the same technique and instruments as described in Ref. 2. The functions $\sigma(E_p)$ and $\eta(E_p)$ of the coefficient of secondary electron emission for differently thick nickel layers on a silver-beryllium base are shown in Figs. 1a and b (η - coefficient of non-elastic reflection). When the nickel foil becomes thicker, $\sigma(E_p)$ and $\eta(E_p)$ approach the corresponding limits of nickel, thinner foils being necessary for smaller E_p. Nickel dust was applied to a hot base ($t \simeq 50°C$). Similar

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observations were made when bismuth dust was applied to a cold aluminum foil ($t \simeq -180^{o}C$) (Figs. 2a and 2b). The dependence of the coefficient of secondary electron emission on the thickness of the foils d for E_p = const is illustrated in Fig. 3. Fig. 4 shows the ($\delta - \eta$) curves obtained for nickel foils applied to a silver-beryllium base ($\delta = \sigma - \eta$). An equally thick nickel foil corresponds to the minima of these curves for all E_p = const. Fig. 5 shows the dependences of the coefficient of secondary electron emission $\sigma(E_p)$ for the application of bismuth foils of different thicknesses to an activated aluminum-magnesium base at room temperature. The results obtained from the application of metallic dust to an activated base correspond to the conclusions drawn from the dusting of pure metallic bases. Mention is made of M. M. Vudynskiy's observations. There are 5 figures and 4 references, 3 of which are Soviet.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

Secondary Electron Emission of Thin Metal Foils on an Activated Base

S/181/60/002/01/21/035
B008/B014

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A. I. Gertsena (Leningrad State Pedagogical Institute imeni A. I. Gertsen)

SUBMITTED: March 20, 1959

Card 3/3

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APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

34185

S/139/61/000/006/003/023
E039/E420

24,7700 (1160, 1164, 1385)

AUTHOR: Segal', R.B.

TITLE: The angular dependence of secondary electron emission from thin layers of beryllium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika no.6, 1961, 27-29

TEXT: The dependence of the coefficient of inelastic reflection η on the energy of the primary electrons E_p is investigated for different angles of incidence φ for thin layers of beryllium on a platinum base. The dependence of $\eta(E_p)$ for layers of beryllium of increasing thickness for an angle of incidence $\varphi = 70°$, is shown in Fig.1. The arrows indicate the discontinuity in the curves due to the effect of the heavy platinum layer. At an angle of incidence $\varphi = 0$, the effective path length of the primary electrons can be assumed to be $l_o = 2d_o$, where d is the thickness of the layer. If $\varphi > 0$ the path length is given by

$$l_\varphi = \frac{d_\varphi}{\cos\varphi} + d_\varphi = d_\varphi \left(1 + \frac{1}{\cos\varphi}\right)$$

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34185

The angular dependence ... S/139/61/00)/006/003/023
E039/E420

The dependence $\eta(E_p)$ for layers of a certain thickness (d = constant) for various angles of incidence is shown in Fig.3. From a consideration of the dependence $\eta(E_p)$ for various values of φ (Fig.3) and the dependence of $L(E_p)$ which is shown to be the same for different values of φ (Fig.4) it follows that the motion of the primary electrons cannot be assumed to be linear: already at half its path length the beam of primary electrons is essentially "smeared". There are 4 figures and 3 Soviet-bloc references.

ASSOCIATION: Cherepoveteskiy pedinstitut (Cherepovets Pedagogical Institute)

SUBMITTED: November 29, 1960

Card 2/ 2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL', R.B.

Free paths of slow secondary electrons in tellurium, lead, and germanium. Fiz. tver. tela 3 no.8:2413-2416 Ag '61. (MIRA 14:8)

1. Cherepovetskiy gosudarstvennyy pedagogicheskiy institut.
(Metals)
(Secondary electron emission)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

S/139/62/000/002/009/028
E073/E335

26.1420

AUTHOR: Segal', R.B.

TITLE: On the influence of the crystal structure of a metallic layer on its secondary electron emission

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no. 2, 1962, 47 - 50

TEXT: Suhrmann and Kundt (Ref. 3 - Z. f.Phys., 120, 363, 1943) have investigated the permeability of thin metallic films to secondary electrons and for this purpose they deposited such films onto an activated Be base, which was cooled to 83 °K and then heated; they used a beam with an angle approaching 45°. An instrument was used in the here described work which enabled turning the target so that any angle of incidence of the molecular beam relative to the target could be chosen. At 45° the results were basically similar to those obtained by Suhrmann and Kundt; they were different at 0° and Figs. 3 and 4 show $\sigma(E_p)$ and $\eta(E_p)$, respectively, for massive layers of Ag and Bi deposited at 83 °K (○) and after

Card 1/3 2

On

sub ... /002/009/028
lay ... E335
isti ... erature (+), ($\alpha = 0°$). Metal
char ... emperature maintained their character-
room ... down to 83 °K. The observed change in the
... of the layer deposited at 83 °K after heating
of the surface ... erature is attributed to a change in the microstructure
change is due to a disorder-order transition are not confirmed
by the here obtained results, particularly by the fact that no
change was observed in layers deposited at $\alpha = 0°$ after
heating to room temperature. There are 5 figures.

ASSOCIATION: Cherepovetskiy pedagogicheskiy institut (Cherepovets Pedadogical Institute)

SUBMITTED: November 29, 1960

Card 2/3 2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

37915

S/108/62/017/006/002/007
D407/D301

9,7100

AUTHOR: Segal', S.G., Member of the Society (see Association)

TITLE: Signal-transmission dynamics in shift-register parametrons and limiting values of pulse frequency

PERIODICAL: Radiotekhnika, v. 17, no. 6, 1962, 11 - 18

TEXT: A method is proposed for determining the steady-state amplitude of the control signal in a parametron network as a function of the coupling coefficient, of the negative coupled-resistance, of the circuit loss-resistance and of the pulse frequency. By connecting several parametrons and by using the oscillations of some of them as control signals for the others, it is possible to design various logical - and computer devices. Semiconductor-diode capacitive parametrons are considered. The operation of the two neighbouring parametrons P_{n1} and P_{n2}, forming a shift-register circuit, is analyzed. In the first approximation it can be assumed that

4

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the steady-state amplitude U_{st} is the sum of displacement voltage and of the contact potential difference. The displacement voltage is selected in such a way, that the negative coupled-resistance be highest. The oscillations of the parametron P_{n1} produce forced oscillations in the parametron P_{n2}, connected to P_{n1} over the resistance R. These forced oscillations constitute the control signal which effects the recording of information in P_{n2}. The equivalent circuit is shown. In addition to the control signal, a residual oscillation with amplitude U_{res} is present in P_{n2}. The amplitude U'_o of the initial signal, which determines the phase of the parametric oscillations of P_{n2} is expressed by formula

$$U'_o = -K U_o \left\{ \left(1 - \frac{U_{st}}{U_o}\right) - \frac{e^{-\frac{T}{3\tau}}}{\frac{\tau_p}{\tau} - 1} \left[\left(\frac{U_{st}}{U_o}\right)^{1-\frac{\tau_{rs}}{\tau}} - 1 \right] - \left(1 - e^{-\frac{T}{3\tau}}\right) \right\} - U_{st}\, e^{-\frac{T}{2\tau}}, \qquad (9)$$

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where U_0 is the amplitude of the initial signal at P_{n1}, $\tau = 2L/r$ is the time constant and τ_{rs} -- the resultant time constant. Thus, the initial signal U_0 at P_{n1} produces the initial signal U_0' at P_{n2}; analogously, U_0' produces the initial signal U_0'' at the following parametron P_{n3}, etc. Formula (9) can be regarded as a point transformation of the half-line $U_0 \geq 0$ into itself. The fixed points of this transformation are given by the condition $U_0' = U_0$, under which the process of transmission of information can be considered as a periodic motion of a system. In order that this process take place in an actual device, it is necessary that the periodic motion is stable. The fixed points and their stability are determined by means of a diagram. For this purpose, the notations $U_0/U_{st} = \xi$, $T/\tau = \gamma$, and $\tau_{rs}/\tau = \varepsilon$, are introduced; equation (9) is rewritten in these variables, $(\xi' = f(\xi))$. The curve $\xi' = f(\xi)$ is constructed; the points of intersection of this curve with the straight line $\xi' = \xi$ constitute the fixed points of the transformation. By constructing the curves for various values of γ, it is possible to determine the limiting value of the pulse-frequency $F = 1/T$, for which the process of trans-

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mission is still stable. Examples of such curves are shown. Further, the author considers the effect of mistuning between the frequency of parametric excitation ω and the initial natural frequency ω_0 of the circuit. If these frequencies are mistuned ($\Delta\omega = \omega - \omega_0$), then the frequency of the residual oscillations is no longer constant. Formulas are derived for U_{res} which show that in the case of mistuning, the limiting pulse-frequency can be higher, yet the upper range of working frequencies may divide into a number of separate bands. These frequency bands can be determined by the same method as above (point transformation and diagram construction). There are 6 figures.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A.S. Popov).

SUBMITTED: August 16, 1961

Card 4/4

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL', R.B.

Effect of the crystalline structure of a metallic film on its secondary electron emission. Izv.vys.ucheb.zav.;fiz. 2:47-50 '62. (MIRA 15:7)

1. Cherepovetskiy pedagogicheskiy institut.
(Metallic films) (Secondary electron emission)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

S/169/62/000/011/025/077
D228/D307

AUTHOR: Segal', R.B.

TITLE: Size distribution of small ions in air

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 36, abstract 11B230 (Uch. zap., Cherepovetsk. gos. ped. in-t, 3, no. 3, 1962, 3-12)

TEXT: The size and composition of small ions depend on many factors, including the air temperature and humidity. The influence of these factors on the composition and size of small ions is estimated theoretically. A formula is derived to give the distribution of small ions; the dependence of the size of ions on the air humidity is clearly evident from it. Most small ions consist of 13 particles (12 water molecules + a simple ion) in moist air and of 3-4 molecules in dry air.
[Abstracter's note: Complete translation]

Card 1/1

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

42801

S/194/62/000/011/044/062
D295/D308

9.5120

AUTHOR: Segal', R. B.

TITLE: Comparison of the "zero" and "specular" base-layer methods in secondary-electron emission of thin metal layers

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 11, 1962, 46, abstract 11Zh287 (Uch. zap., Cherepovetsk. gos. ped. in-t, v. 3, no. 3, 1962, 13-21)

TEXT: It is shown that in investigating the secondary electron emission of thin metal layers, the use of either type of base layer does not affect the results. (The author calls "zero" base layer such a base layer for which the coefficient of inelastic reflection of electrons, η_b, is considerably smaller than the same quantity for the layer η_1. A base layer for which $\eta_b > \eta_1$ is called "specular". Examples of the first combination are layers of Be, Ca and Mg on Ag, Bi, Ni, etc. bases. The second case corresponds,

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D295/D308

Comparison of the ...

for example, to Pt, Ag, Bi deposited on Be.) [Abstracter's note: Complete translation.]

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL', R.B.

Distribution of light ions in the air by their size. Uch. zap. CHGPI 3 no.3:3-12 '62.

Comparison of the methods of "zero" and "mirror" backings in studying secondary electron emission from the metallic films. Ibid.:13-21 (MIRA 18:5)

1. Rekaktor zhurnala "Uchonyye zapiski Cherepovetskogo gosudarstvennogo pedagogicheskogo institut".

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

27294

9.4130
24.6610

S/181/61/003/008/024/034
B109/B202

AUTHOR: Segal', R. B.

TITLE: Mean free path of slow secondary electrons in tellurium, lead, and germanium

PERIODICAL: Fizika tverdogo tela, v. 3, no. 8, 1961, 2413-2416

TEXT: The author experimentally determined the mean free path of slow secondary electrons. He discusses the results, which deviate from those obtained by M. G. Nakhodkin and V. O. Romanovskiy (Ref. 5: UFZh, 4, 479, 1959) and N. D. Morgulis and M. G. Nakhodkin (Ref. 6: DAN SSSR, 94, 1029, 1954). Platinum which had been annealed for several hours was used as sublayer. The secondary-electron emission coefficient was measured by a device similar to a spherical capacitor. Pressure in the measuring instrument did not exceed $5 \cdot 10^{-8}$ during the measurements. The measurement results obtained for tellurium are given in Fig. 1 which shows the dependence of the secondary-electron emission coefficient on the primary-electron energy (in electron volts) with layer thickness d as parameter. Fig. 4 shows the dependence of the secondary-electron emission coefficient on the layer

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

27294

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B109/B202

Mean free path of slow secondary ...

thickness of germanium with the energy of the primary electron parameters as parameter (the small maximum in the function at a layer thickness of approximately one atomic diameter is due to the decrease of the work function of the platinum sublayer; 1 - 2600 ev, 2 - 2000 ev). These measurement values indicate that the mean free path of the slow secondary electrons with energies less than 50 ev never exceeds 10 atomic diameters. This holds both for metals (Pb) and for semiconductors. It is also in good agreement with the values obtained by A. J. Dekker (Solid State Physics, 6, 271, 1958) from theoretical considerations. The author explains the discrepancy between these values and the values given in Ref. 5 and Ref. 6 as being due to the effect of the nature and temperature of the sublayers on measurement results. Also, the preparation of the specimens has to be considered; in this case the atoms of the elements studied were incident perpendicular to the sublayer and not at a large angle of inclination. There are 4 figures and 9 references: 8 Soviet and 1 non-Soviet.

ASSOCIATION: Cherepovetskiy gosudarstvennyy pedagogicheskiy institut (Cherepovets State Pedagogical Institute)

Card 2/4

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

Z/056/62/019/001/009/012
I037/I237

AUTHOR: Segal, S.

TITLE: Factories for instrument production

PERIODICAL: Přehled technické a hospodářské literatury. Hutnictví a strojírenství, v. 19, no. 1, 1962, 46

TEXT: Review of Polish instrument producing factories devised for prospective customers abroad with data about complete production programs.

HS 62-558. 1961, Mechanik Warszawa 34, no. 5, 224-225

[Abstracter's note: Complete translation.]

Card 1/1

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL', S. A. (Engineer)

Electric Welding

Contact welding practice. Avtog. delo. 23, No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. Unclassified.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

BEDAL', S. A. (Engr.)

"Comparative Investigations of Heat-Resistant Alloy Joints (EI602, EI435, EI703) Carried out by Argon-Arc and Electric Arc Welding,"

presented at All-Union Scientific-Technical Conference on Welding in Shielding Gases, Leningrad, Dec 1957.

(Svarochnoye Proizvodstvo, 1958, No. 4, pp 46-47 - author Tyul'kov, M. D.)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL, Sandu; BUNEA, Victor, ing.; BERBERIAN, Alexandru, ing. (Bucuresti)

Technical progress at the Electric Machine Plant in Bucharest. Electrotehnica 12 no.1/2:47-53 Ja-F '64.

1. Chief Engineer at the Electric Machine Plant, Bucharest (for Segal). 2. Electric Machine Plant, Bucharest (for Bunea, Berberian).

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SHVARTS, Boris Aronovich; LIPKINA, Vera Arkad'yevna; SEGAL', Solomon Grigor'yevich; BARANOVSKIY, Boris Konstantinovich; FURSOV, V.A., otvetstvennyy redaktor; LIPKINA, V.A., redaktor; LEDNEVA, N.V., tekhnicheskiy redaktor

[New radiobroadcasting apparatus; a collection of papers] Tekhnika sviazi: Novaia radioveshchatel'naia apparatura; informatsionnyi sbornik. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1956. 108 p. (MIRA 10:1)

1. Russia (1923- U.S.S.R.) Ministerstvo svyazi. Tekhnicheskoye upravleniye.
(Radio--Transmitters and transmission)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

AUTHORS: Segal', S.; Koshevoy, L. SOV-107-58-8-25/53

TITLE: The RDPK-30 Receiver-Amplifier Assembly (Priyemo-usilitel'-noye ustroystvo (RDPK-30)

PERIODICAL: Radio, 1958, Nr 8, pp 20-22 (USSR)

ABSTRACT: The RDPK-30 is a remote-fed radio-diffusion assembly developed by the Construction Bureau of the Ministry of Communications. It consists of a central transmitter and rectifier assembly which feeds the regional receiver points by cable line. DC current of up to 250 v is fed along the cable together with the program broadcast, amplitude modulated at 31 kc. Telephone conversations can also be transmitted along the line. The receiver-amplifier section of the RDPK-30 works on transistors and has an output of 30 w. Up to 3 additional amplifiers can be attached, each fed by a separate set of storage batteries. A total output of 100 w can thus be achieved. The receiver operates on a 150-400 c band and the feed cable can be laid up to 22 km. The receiver has a set of filters to separate telephone conversations from normal broadcasts and feed them through to a subscription telephone. Provisions are made so the transmitting operator can listen to the broadcast from the output of the receiver. Details of the receiver and amplifier

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are given. The latter is a 3-stage amplifier - class A, AB push-pull, and AB output. Thermal stabilization is provided and great attention paid to ventilation since the temperature has a sharp effect on the performance of the set. The RDPK-30 is the first remote controlled and powered "radio-knot" to operate entirely from transistors and will shortly go into serial production. There are 3 circuit diagrams and 1 table.

1. Radio communication systems--Equipment 2. Radio communication systems--Performance 3. Transistors--Applications

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

Segal', S.G.

8(3) SOV/19-59-5-107/308

AUTHOR: Segal', S.G.

TITLE: A Device for Compensating Nonlinear Distortions in Amplifiers and Transmitters.

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 5, p 27 (USSR)

ABSTRACT: Class $21a^2$, 18_{04}. Nr 69049 (331702/3019 of 26 February 1944)
Submitted to the People's Commissariat for Communications of the USSR. The device includes negative feedback. A nonlinear element is introduced into the feedback tract of the device, this element having amplification coefficients of the nonlinear members of its characteristic greater than the analogous coefficients of the basic tract.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

8(1) SOV/19-59-6-61/309

AUTHORS: Fursov, V.A., Segal', S.G., Avtsyn, N.P., and Persits, Z.L.

TITLE: A Device for the Automatic Switching-Over of a Storage Battery from Charging to Discharging and Vice-Versa

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 6, p 15 (USSR)

ABSTRACT: Class 21b, 26_{02}. Nr 118532 (582114 of 16 Aug 1957).
A device as in title, with an ampere-hour meter for switching on and off a battery-charging booster. To simplify the switching circuit of the meter, there is a diode in the meter circuit shunted with a resistance.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

9(6) SOV/19-59-6-77/309

AUTHORS: Fursov, V.A., Segal', S.G., and Persits, Z.L.

TITLE: A Device for Measuring the Consumption of Electrical Energy in a Direct-Current Circuit

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 6, p 18 (USSR)

ABSTRACT: Class 21e, 17_{06}. Nr 118548 (580108 of 6 July 1957).
The device includes an induction a.c. meter, current and voltage pick-ups of the circuit being tested, a plug-in for connecting the meter into the power supply circuit, and an a.c. source. To simplify the power supply system of the meter and to improve the accuracy of the measurement, static converters of d.c. into a.c. are employed as current and voltage pick-ups. These static converters are made in the form of valve bridges commutated by the alternating current from the above mentioned a.c. source.

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SEGAL', Solomon Grigor'yevich; KOSHEVOY, Leonid L'vovich; SLINENKOV, A.S., otv. red.; NOVIKOVA, Ye.S., red.; SLUTSKIN, A.A., tekhn. red.

[RDPK-30 apparatus] Apparatura RDPK-30. Moskva, Sviaz'izdat, 1961. 23 p. (MIRA 15:3)
(Wire broadcasting—Equipment and supplies)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL, S.G.

~~9127~~ 9.2520

S/019/60/000/03/042/260
D039/D005

AUTHORS: Koshevoy, L.L. and Segal', S.G.

TITLE: A Device for Amplification of Electrical Oscillations

PERIODICAL: Byulleten' izobreteniy, 1960, Nr 3, p 14 (USSR)

ABSTRACT: Class $21a^2$, 18_{08}. Nr 125815 (590946/26 of 31 Jan 58).

This device includes amplifiers of small and strong signals, operating on a common load. To raise the efficiency of amplifiers and reduce the nonlinearity of crystal triodes, it is fitted with crystal diodes connected into the collector circuit of the small signal amplifier, whereas the source of bias is connected into its emitter circuit. The voltage of the source of bias is proportional to the collector or emitter current on the strong signal amplifier. The emitter circuit of the latter is connected to a source of bias having a voltage proportional to the small signal amplifier's collector current or emitter current.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

28517 3/106/61/000/007/004/004
A055/A127

9.3270

AUTHOR: Segal', S. G.

TITLE: Passage of radiosignals through resonant systems with periodically varying parameters

PERIODICAL: Elektrosvyaz', no. 7, 1961, 48 - 55

TEXT: This article is a mathematical analysis of the passage of non-modulated or modulated oscillations through a resonant system with periodically varying parameters. The author recapitulates the theory of forced oscillations in a series resonant circuit whose capacitance is a periodical function of frequency 2ω. This theory, such as it is applied in the present article, was developed by G. S. Gorelik [Ref. 3: "Resonansnyye yavleniya v lineynykh sistemakh s periodicheski menyayushchimisya parametrami" ("Resonance phenomena in linear systems with periodically varying parameters"), "ZhTF", 1934, no. 10, "ZhTF, 1935, nos. 2, 3]. Only systems located in the absence of attenuation, in the unstable region are examined by the author. Using the Mathieu equation and the Vronskiy determinant, he arrives at the following conclusions: When a signal

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$$e = E \sin \omega_{signal} t = E \sin \omega(1 + \frac{\omega_{signal} - \omega}{\omega})t = E \sin(1+\Delta)\tau \qquad (17)$$

where $\tau = \omega t$ and $\Delta = \frac{\omega_{signal} - \omega}{\omega}$, or a signal $e = E \cos \omega_{signal} t = E \cos (1+\Delta)\tau$, detuned with respect to half the frequency of the parameter variation, is applied to the examined circuit, a complicated oscillation arises in the circuit, approximating the sum of two harmonic components at frequencies $(1 \pm \Delta)\omega$. The oscillation amplitude (at a fixed ratio Δ/δ) is inversely proportional to δ, δ being the part of the circuit attenuation, which is not compensated by the parametric influence. The author determines next the power amplification factor of the examined circuit. He finds:

$$K_p = \frac{P_{load}}{F_{signal}} = \frac{1}{4\omega^2 L^2} \frac{R_1 R_{source}}{\delta^2(1+\Delta^2/\delta^2)}, \qquad (28)$$

where L is the inductance of the circuit, R_1 is the resistance inserted in the circuit by the load, and R_{source} is the signal source resistance. Another expression for K_p is:

$$K_p = \frac{Q^2_{load}}{Q_{ext\ source}\ Q_{ext\ 1}} \frac{1}{(1-\frac{Q_{load}M}{2})^2} \frac{1}{1+\frac{4\Delta^2 Q^2_{load}}{(1-Q_{load}M/2)^2}} \qquad (29)$$

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where Q_{load} is the "loaded" Q-factor of the circuit, $Q_{ext\ source}$ is the external Q-factor of the signal source, $Q_{ext\ 1}$ is the external Q-factor of the load, and M is the percentage modulation of the capacitance. If a signal

$$e = E \sin(\omega t + \pi/4) = \frac{E}{\sqrt{2}}(\sin\tau + \cos\tau)$$

is applied to the circuit, the amplification factor is:

$$K_{po} = \frac{1}{2}\frac{R_1 R_{source}}{\omega^2 L^2 \delta^2}$$

or

$$K_{po} = 2\frac{Q^2_{load}}{Q_{ext\ source}\ Q_{ext\ 1}}\frac{1}{(1 - \frac{Q_{load}\ M}{2})^2}. \qquad (35)$$

The author analyzes the passage of modulated oscillations through the examined circuit. The amplitude modulated signal emf applied to the circuit is assumed to be:

$$e = E\ (1+m \sin \Omega t) \sin (\omega t+\pi/4)$$

or:

$$e = E\ (1+m \sin \Omega t) \sin (\omega t-\pi/4).$$

The analysis leads here to the following conclusions: From the point of view of

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the passage of the side-frequencies of the modulated oscillation, the examined circuit behaves, at signal-phase $+\pi/4$, as a usual resonant circuit with attenuation δ, and, at signal-phase $-\pi/4$, as a resonant circuit with attenuation $2h+\delta$. The phase selectivity of the circuit with respect to the side-frequencies of mutually orthogonal AM oscillations is:

$$S = \frac{\alpha/\delta}{\beta/(2h+\delta)} = \frac{2h+\delta}{\delta}\sqrt{\frac{1+\frac{\Delta^2}{(\delta+2h)^2}}{1+(\Delta/\delta)^2}}$$

where $\alpha = \frac{1}{\sqrt{1+(\Delta/\delta)^2}}$ and $\beta = \frac{1}{\sqrt{1+\frac{\Delta^2}{(\delta+2h)^2}}}$, or

$$S = \frac{1+\frac{Q_{load}M}{2}}{1-\frac{Q_{load}M}{2}}\sqrt{\frac{1+\frac{4\Delta^2 Q_{load}^2}{(1+\frac{Q_{load}M}{2})^2}}{1+\frac{4\Delta^2 Q_{load}^2}{(1-\frac{Q_{load}M}{2})^2}}}. \qquad (38)$$

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

28517 S/106/61/000/007/004/004

Passage of radiosignals through resonant systems with... A055/A127

There are 1 figure and 3 Soviet-bloc references.

SUBMITTED: October 22, 1960

Abstracter's note: The following subscripts are translated in text and formulae: 1 (load) stands for H, signal stands for c, source stands for i, load. stands for Нагр, ext (external) stands for ен]

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31208

9,3280
9.3274

S/108/61/016/012/002/009
D201/D302

AUTHOR: Segal', S.G., Member of the Society (see Association)

TITLE: A resonant circuit with a pulse active resistance

PERIODICAL: Radiotekhnika, v. 16, no. 12, 1961, 15-20

TEXT: The author considers the phase and frequency discriminating properties of a simple pulsed system, consisting of a resonant circuit in parallel, to which is periodically switched a small resistance. A proper choice of switching-in frequency in relation to the resonance and signal frequency makes the circuit phase sensitive, similarly to a synchronous detector, with the difference that in the circuit described the output signal is neither d.c. nor frequency modulated, but corresponds to the carrier frequency of the input signal. The phase sensitivity of the circuit may be proved by simple physical considerations. Let the e.m.f. at the input be of the form $e=E\sin(\omega t+\varphi)$, $\omega=2\pi f=\omega_0=\frac{1}{\sqrt{LC}}$. In parallel to a resonant circuit a small resistance R is switched in by

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

means of a switch K. The switching frequency is 2f, time of remaining in the cct is τ ($\tau \ll \frac{T}{2}$). If the phase angle φ is such that the switch K is closed when $V_c = 0$ and if τ is sufficiently small, the resistance R will have little effect on the resonant cct. When K is closed at instants when $V_c = max$, the capacitor discharges and all energy stored in the previous half-cycle is dissipated in R. It follows that the source energy is not stored any more in the cct which has no resonant properties during time τ. Assuming that the switch closes at instant $t = 0, \frac{\pi}{\omega}, \frac{2\pi}{\omega}, \ldots \frac{n\pi}{\omega}$, neglecting τ with respect to period T, and that the inductive current does not change during τ, the expression for current during the time interval between switching is easily derived as Eq.(14)

$i = \frac{E}{r} \alpha t' \sin(\omega t + \varphi) + \frac{E}{r} \sin \varphi_0 (1 - e^{-\alpha t}) \cos \omega t$, where t' is the time interval from the beginning of the given main interval between switching. When $\varphi = 0$ the current is not sinusoidal and has its fundamental component

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D201/D302

A resonant...

derived from the Fourier series as Eq.(20) $\frac{E}{r}\frac{1}{4Q}\sqrt{1+\pi^2} \approx 0{,}83\frac{1}{Q}\frac{E}{r}$

which means that for $\varphi = 90^\circ$ the signal e.m.f. induces a fundamental frequency current higher by a factor of $\frac{Q}{0{,}83}$ compared with its value at $\varphi = 0$. The Fourier series shows also that at $\varphi = 0$ the quadrature component of current predominates. This component can be eliminated by a second circuit of the kind described above. The cct is phase sensitive when the switching frequency is $\underline{2f}$, where n=1 2,3... If the external e.m.f. differs from f by Δf (Δf sufficiently small) then the current is given by Eq.(22) $i = \frac{E}{r}\left[\sin\Delta\omega t \cdot \cos\varphi \cos\omega t + \cos\Delta\omega t \cdot \sin\varphi \cos\omega t\right]$

which means that a frequency spectrum appears, symmetrical with respect to f, which is equivalent to the presence in the résonance cct of two side-bands of amplitude modulate signal. If an interference is present, then provided its spectrum lies outside the signal bandwidth, it may be filtered and after detection by a LP filter this feature improves the

Card 3/4

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D201/D302

A resonant ...

L.F. response of the circuit. The basic feature of the circuit is thus the fact that the current amplitude in the resonant circuit depends on the phase angle of the current itself being independent of it. Such a circuit may be used, therefore, for transforming a frequency or phase modulated signal into an AM signal with constant frequency and phase. With the circuit $Q \approx 50$ and the phase of signal varying from 0 to 180°, the amplitude of the cct voltage was changing by a factor of 20. The lower phase sensitivity was due obviously to the finite τ and finite forward diode resistances. There are 2 figures and 1 Soviet-bloc reference.

4

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications im. A.S. Popov) [Abstractor's note: Name of Association taken from first page of journal]

SUBMITTED: May 16, 1961

Card 4/4

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL', S.G.

Dynamics of signal transmission in shift registers using parametrons and limiting values of cadence frequency. Radiotekhnika 17 no.6:11-18 Je '62. (MIRA 15:5)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Electronic calculating machines)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

USSR

ACCESSION NR: AP4014204 S/0286/64/000/003/0068/0068

AUTHOR: Persits, Z. L.; Segal', S. G.

TITLE: A logical or computing element having a magnetic core with a rectangular hysteresis loop. Class 42, No. 160368

SOURCE: Byul. izobret. i tovarn. znakov, no. 3, 1964, 68

TOPIC TAGS: logical element, computing element, thyratron, control circuit, electronic switch, computer, data processing

TRANSLATION: A logical or computing element having a magnetic core with a rectangular hysteresis loop containing input, output and timing windings. The element is notable for the fact that with the purpose of obtaining output pulses with a significant voltage (on the order of tens of volts), light indication of the information stored in the element and assurance of a simple cascading of the elements in a system, it has a cold cathode thyratron tube the grid of which is connected to the output winding of the core while the anode or cathode circuit serves as the output of the element.

ASSOCIATION: none

Card 1/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

ACCESSION NR: AP4014204

SUBMITTED: 16Aug57 DATE ACQ: 02Mar64 ENCL: 01

SUB CODE: CP, GE NO REF SOV: 000 OTHER: 000

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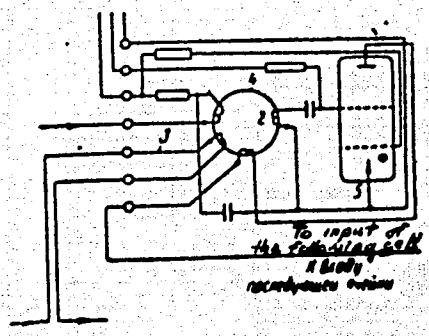
"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

ACCESSION NR: AP4014204

ENCL: 01



1 -- input winding
2 -- output winding
3 -- timing winding
4 -- magnetic core
5 -- cold cathode thyratron

Card 3/3

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L 11977-65 EWT(d)/EEC(k)-2/EED-2/EWP(1) Pa-4/Pq-4/Pg-4/Pk-4 IJP(c)

BB/GG

ACCESSION NR: AP4048577 S/0286/64/000/019/0043/0043

AUTHOR: Segal', S. G.; Koshevoy, L. L.

TITLE: Method of increasing the information capacity of logic, memory, and calculating circuitry by parametric switching elements. Class 42, No. 165573

SOURCE: Byulleten' izobreteniy i tovarnv*kh znakov, no. 19, 1964, 43

TOPIC TAGS: computer information capacity, parametric switching elements, pump voltage phase

ABSTRACT: An Author Certificate was issued for a method of increasing the information capacity of logic, memory, and calculating circuitry by means of parametric switching elements. To increase the information capacity, parametron switching is accomplished by reversing the pump-voltage phase by 180°.

ASSOCIATION: none

SUBMITTED: 29Dec61 ATD PRESS: 3120 ENCL:

SUB CODE: DP, EC NO REF SOV: 000 OTHER: 000

Card 1/1

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

L 63714-65 EWT(d)/EWT(1)/EED-2/EWP(1)/EWA(h) IJP(c) BB/GG

ACCESSION NR: AP5014057 UR/0108/65/020/005/0066/0069 15

621.372.4 B

AUTHOR: Segal', S. G. (Active member)

TITLE: Stability of signal transmission in a parametron-type shift register when the forced component of parametric oscillations is present

SOURCE: Radiotekhnika, v. 20, no. 5, 1965, 66-69

TOPIC TAGS: shift register, parametron, parametron stability

ABSTRACT: In a previous-author's work (Radiotekhnika, v. 17, no. 6, 1962), the signal transmission in a shift register was examined without an allowance for the forced component of parametric oscillations. This component arises when an excited parametron still continues to receive the signal from a preceding parametron, which phenomenon takes place when the pumping-signal duration exceeds one-third of the clock-frequency period. This case is explored in the present article; formulas describing (a) a sum of free and forced oscillation components and (b) only free rising oscillations are derived. Time diagrams of three interconnected parametrons are shown. Orig. art. has: 2 figures and 14 formulas.

Card 1/2

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ACCESSION NR: AP5014057

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi (Scientific and Technical Society of Radio Engineering and Electrocommunication)

SUBMITTED: 17Nov64 ENCL: 00 SUB CODE: DP, EC

NO REF SOV: 001 OTHER: 000

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APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

L 18455-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AP6006378 SOURCE CODE: UR/0413/66/000/002/0113/0114

43
B

INVENTOR: Segal', S. G.

ORG: none

16C,44

TITLE: A threshold logical element. Class 42, No. 178162 [announced by the Central Design Office of the Ministry of Communications SSSR (Tsentral'noye konstruktorskoye byuro Ministerstva svyazi SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 113-114

TOPIC TAGS: logic element, parametron, resistance bridge, computer component

ABSTRACT: This Author's Certificate introduces a threshold logical element based on parametrons. The device is designed to perform a wide variety of logical operations by using a coupling transformer with n input windings. The secondary of the transformer has a grounded centertap and is connected in a bridge circuit with two nonlinear resistors. The nonlinear bridge output is connected through a resistor to the input winding of the parametron.

UDC: 681.142.07

Card 1/2

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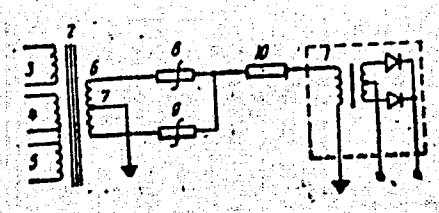
L 18455-66

ACC NR: AP6006378



1 - parametron; 2 - coupling transformer; 3-5 - input windings to the coupling transformer; 6 - output winding from the coupling transformer; 7 - centertap of the output winding from the coupling transformer; 8 and 9 - nonlinear resistors; 10 - decoupling resistor.

SUB CODE: 09/ SUBM DATE: 09Feb65

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL, S.M.

Prevention of tenosynovitis stenosans of the wrist flexors. Sovet. med. 16 no. 7:25 July 1952. (CLML 22:4)

1. Of the Medical Union of the Peat Industry (Head Physician -- G. B. Sorin), Leningrad Oblast.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

LUZIN, V.I.; SEGAL', S.Z.

Calculating the stabilization products of petroleum. Neft. khoz. 41 no.2:8-10 F '63. (MIRA 17:8)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

BEGALY, G.A.

Stabilization of petroleum in the field. Neft. khoz. 43 no.5:30-33 My '65. (MIRA 18:6)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

Segal, U.

DIMITRIU, C. C., Prof.; SCHACHTER, A., dr.; DECEBAL, Colita, dr.; KASPROVSKI, E., dr.; SEGAL, U., dr.

Results of Rauwolfia serpentina alkaloid (serpasil) therapy of hypertensive diseases. Med. int., Bucur. 7 no.4:104-111 Oct-Dec 55.

(HYPERTENSION, therapy
reserpine)
(RESERPINE, ther. use
hypertension)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL, V.A.

History of the complete processing of nepheline in the U.S.S.R.
Khim. v shkole 15 no.2:7-12 Mr-Ap '60. (MIRA 14:5)

1. Institut istorii yestestvoznaniya i tekhniki AN SSSR.
(Nepheline)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447630005-1

SEGAL, V.A.

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(Aluminum industry)
(Cryolite)

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SEGAL', Valentin Frantsevich; MATTES, N.V., prof., doktor tekhn. nauk, retsenzent; KURDYUMOV, A.A., prof., doktor tekhn.nauk, retsenzen; MAKSIMADZHI, A.I., nauchnyy red.; SOSIPATROV, O.A., red.; TSAL, R.K., tekhn. red.

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Segal, V. M.

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