ETINGOF, S.V.

Reduce the scutching tow content in short hemp fiber. Tekst. prom. 17 no.6:63 Je '57. (MIRA 10:7)

(Hemp)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041222(

POPOV, V.M., prof., doktor tekhn. nauk; RODIN, A.N., inzh.; BATANOGOV, A.P., inzh.; ETINGOV, S.I., inzh.

Performance of automatic fans and heating equipment at Northern Ural bauxite mines. Gor. zhur. no.4:48-52 Ap '65. (MIRA 18:5)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut, Moskva (for Popov, Rodin, Batanogov). 2. Severoural'skiye boksitovyye rudniki (for Etingov).

SEMEVSKIY, Vladimir Nikolayevich, prof., doktor tekhn. nauk; VOLZHSKIY, Vladlen Mikhaylovich, gornyy inzh.; TIMOFEYEV, Oleg Vladimirovich, dots.,kand. tekhn. nauk; SHIROKOV, Anatoliy Pavlovich, kand. tekhn. nauk; KRAVCHENKO, Grigoriy Ivanovich, kand. tekhn. nauk; CHUKAN, Boris Karpovich, kand. tekhn. nauk; ETINGOV, Semen Isayevich, gornyy inzh.; NESTERENKO, G.T., kand. tekhn. nauk, retsenzent

[Rod bolting] Shtangovaia krep'. Moskva, Nedra, 1965. 327 p. (MIRA 18:7)

1. Zaveduyushchiy kafedroy Leningradskogo gornogo instituta im. G.V.Plekhanova (for Semevskiy). 2. Leningradskiy gornyy institut im. G.V.Plekhanova (for Volzhskiy, Timofeyev). 3. Kuznetskiy nauchno-issledovatel'skiy ugol'nyy institut (for Shiroko.).

ETINGOV, V.I., inzh.; GUSEVA, L.A., inzh.

Characteristics of flaw detection in welded joints of high-pressure vessels used in the chemical industry. Svar.proizv. no.2:38-39 F '64. (MIRA 18:1)

1. Irkutskiy filial Vsesoyuznogo nauchno-issledovatel'skogo i konstruktorskogo instituta khimicheskogo mashinostroyeniya.

SAMSONOV, G.V.; ETINGOV, Ye.D.

Selectivity of ion-exchange sorption of ristomycin on cation-exchange resins. Antibiotiki 10 no.11:992-996 N '65.

(MIRA 19:1)

1. Leningradskiy khimiko-farmatsevticheskiy institut. Submitted April 26, 1965.

POPOVSKIY, Mark Aleksandrovich; ETINGOF, Ye.B., red.; TRET'YACHENKO, B.F., red.; OSTRIROV, N.S., tekhn.red.

[When a physician dreams] Kogda vrach mechtaet. Moskva, Vses. uchebno-pedagog.izd-vo Trudrezervizdat, 1957. 189 p. (MIRA 12:3)
(MEDICINE)

SAMSONOV, G.V.; ETINGOV, Ye.D.

Determination of the equivalent weight, of ionogenic groups number and molecular weight of the antibiotic ristomycin.
Antibiotiki 10 no.5:401-405 My '65. (MIRA 18:6)

1. Leningradskiy khimiko-farmatsevticheskiy institut.

ETINGOF, Ye. I.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 22 - 39/56

Authors : Stepukhovich, A. D., and Etingof, Ye. I.

Title : Steric factors of elementary reversible reactions of H-, and CH_3-radicals with simple olefines

Periodical : Dok. AN SSSR 99/5, 815-818, Dec 11, 1954

Abstract : The results obtained by calculating the steric factors of reversible elementary reactions of H-, and CH_3-radicals, with olefine type molecules, are presented. It was established that the steric factors involved in the reactions of the hydrogen atom separation from the olefine molecules by means of the H-radical have one and the same order of magnitude. The steric factors of reversible reactions between vinyl-, allyl- and [illegible]-radicals and a methane molecule have an order of magnitude [illegible] equal to the steric factor of direct reactions. The [illegible] difference, in the steric factors in analogous reactions [illegible] radicals, is explained. Eight references: 6-USSR; 1-[illegible] (1949-19[illegible]). Table.

Institution: The N. G. Chernishevskiy State University, Saratov

Presented by: [illegible] Kondratyev, June 25, 1954

ETINGOF, Ye. I

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 5/22

Authors : Stepukhovich, A. D., and Etingof, Ye. I.

Title : Steric factors of elementary reversible reactions of H- and CH_3-radicals with simple olefines

Periodical : Zhur. fiz. khim. 29/11, 1974-1983, Nov 1955

Abstract : Experiments showed that the steric factors in reactions leading to displacement of H-atoms by olefine molecules and resulting in the formation of complex unsaturated radicals have a value of 10^{-3}. The steric reaction factors of complex radicals having a double bond with the hydrogen molecule were found to have a value much lower than the steric factors of reversible reactions. Reactions of complex radicals with simple molecules showed much lower values of the steric factors than reactions of simple radicals with complex molecules. Fifteen references: 13 USSR and 2 USA (1948-1955). Tables.

Institution : Saratov State University im. N. G. Chernyshevskiy

Submitted : October 23, 1954

PETUKHOV, P.Z., doktor tekhn.nauk; KAZANTSEV, A.V., inzh.-mekhanik; GUSAROV, M.I., gornyy inzh.; ETINGOV, S.I., gornyy inzh.

Effect of blasting on rod bolting. Gor. zhur. no.12:27-30 D '61. (MIRA 15:2)

1. Ural'skiy politekhnicheskiy institut im. Kirova (for Petukhov, Kazantsev). 2. Severoural'skiye boksitovyye rudniki (for Gusarov, Etingov).

(Blasting)
(Mine roof bolting)

ZASLOV, V.Ya.; MURZIN, G.A.; PAVLOV, O.V.; BELYAYEV, S.G.; ETINGOV, S.I.

Powered tool for installing roof bolting. Gor.zhur. no.4:55-58 Ap '64. (MIRA 17:4)

1. Nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut gornogo i obogatitel'nogo oborudovaniya (for Zaslov, Murzin, Pavlov, Belyayev). 2. Severoural'skiye boksitovyye rudniki (for Etingov).

KAZANTSEV, A.V.; ETINGOV, S.I.

The load on roof bolting in the room and pillar system of mining. Gor. zhur. no.11:31-36 N '64. (MIRA 18:2)

1. Ural'skiy politekhnicheskiy institut im. Kirova (for Kazantsev). 2. Severoural'skiye boksitovyye rudniki (for Etingov).

ETIS, V.S.; RAZUVAYEV, G.A.

Synthesis and properties of some thioxanthane-5-dioxide derivatives, possessing the indicator properties. Zhur. ob. khim. 27 no.11:3092-3097 N '57. (MIRA 11:3)
(Xanthene) (Indicators and testpaper)

[illegible], N.; KARPUKHA, F., master.

What happens when the collective agreement is broken. Sov.profsoiuzy 5 no.7:58-60 Jl '57. (MIRA 10:8)

(Kharkov--Machinery industry)

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041222(

TARTAKOVSKIY, V.I.; ETKIN, A.A.; KOGAN, M.L.; SHPRINTSEN, G.I.

Analog position system of program control for boring and turning lathes. Stan. i instr. 36 no.4:18-20 Ap '65. (MIRA 18:5)

ETKIN, B. Z.
Moscow Veterinary Academy
"Treatment of wounds with "Trephonated serum."
SO: Veterinariia 26(9), 1949, p. 38

ETKIN, G.S.

CA

A

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ceramic glass. A. I. Smirnovskii and G. S. Etkin. Russ. 59,371, March 31, 1941. Up to 70% of blue powder (waste product of Zn metallurgy) is added to the usual mixt. of Na_2CO_3, K_2CO_3 or saltpeter and clay.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ETKIN, L. G.

1. BOL'SHIKH, A. S. and LAPIN, A. A. and YETKIN, L. G.

2. USSR (600)

4. Testing Machines

7. Resonance type of machine for fatigue testing. Vest.mash. 32 no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041222(

ETKIN, L.G.

Method for determining the capacity of machine parts and units to dissipate energy during vibrations. Zav. lab. 22 no.12:1480-1482 '56. (MLRA 10:2)

1. Nauchno-issledovatel'skiy institut vesov i priborov.
(Machinery--Vibration)

ETKIN L. G.
p. 3

PHASE I BOOK EXPLOITATION SOV/3891

Moscow. Nauchno-issledovatel'skiy institut vesov i priborov

Vesoizmeritel'nyye pribory i ispytatel'nyye mashiny; teoriya i raschet, [vyp. 1] (Load-Measuring Devices and Testing Machinery; Theory and Design, [no. 1]) Moscow, Mashgiz, 1959. 178 p. 3,600 copies printed.

Sponsoring Agency: RSFSR. Moskovskiy ekonomicheskiy rayon. Sovet narodnogo khozyaystva.

Ed.: N.A. Mironov, Engineer; Ed. of Publishing House: L.G. Prokof'yeva; Tech. Eds: Z.I. Chernova and V.D. El'kind; Managing Ed. for Literature on Machine and Instrument Construction (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: This collection of articles is intended for scientific workers and technical personnel specializing in weighing devices, instrument construction, and related fields. It may also be useful to students of schools of higher technical education.

Card 1/3

AVAILABLE: Library of Congress

VL/pw/gmp
8-25-60

Card 3/3

SOV/32-25-7-30/50

Method for the Determination of Elasticity Moduli of Materials at Temperatures up to 1200°

is transferred on to an arrangement containing a phase transformer, amplifyers, filters for high frequencies and preliminary amplifyers. A precision instrument for measuring frequencies was designed (Fig 2) in order to measure the (E) and (G) values. A quartz generator with a thermostat, type 22-P, (part of the chronograph produced by the Leningradskiy zavod elektricheskikh chasov (Leningrad Factory of Electrical Clocks)) is used as time standard. The voltage of the generator is transferred to the frequency distributor over four decades of the type DP-2. An electron-stabilized rectifier, type ESV-1m, is used for feeding the testing apparatus described of the type MU. The apparatus MU was produced at the Opytnyy zavod NIKIMP (Experim. Plant NIKIMP). There are 2 figures and 1 Soviet reference.

ASSOCIATION: Nauchno-issledovatel'skiy i konstruktorskiy institut ispytatel'nykh mashin, priborov i sredstv izmereniya mass (Scientific Research and Construction Institute of Testing Machines, Testing Apparatus, and Means of Mass Determination)

Card 2/2

ETKIN, L.G.

PHASE I BOOK [illegible]

Ispytaniya detaley mashin na [illegible] prochnosti [illegible] (Testing [illegible]) Articles. [illegible] tific and Technical [illegible] 1960. 225 p. [illegible]

Reviewer: I.V. [illegible] Ed. of Publishing [illegible] Machine [illegible]

PURPOSE: This collection of [illegible] at plant laboratories and [illegible]

COVERAGE: The articles [illegible] search institutes in [illegible] for [illegible]. A [illegible] metal [illegible] articles are [illegible]

AVAILABLE: Library of Congress

Card 4/4

VK/mmb/gmp
9-7-60

(14)

ETKIN, L. G., Cand Tech Sci -- (diss) "Problems of the excitation of variable loads on auto-swinging conditions in fatigue testing machines." Moscow, 1960. 14 pp; (Ministry of Higher and Secondary Specialist Education USSR, Moscow Aviation Technology Inst); 150 copies; price not given; bibliography at end of text (15 entries); (KL, 18-60, 153)

ETKIN, L.G.

PHASE I BOOK EXPLOITATION SOV/4397

Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti

Priborostroyeniye i izmeritel'naya tekhnika (Instrument Manufacture and Measurement Technique) Moscow, Mashgiz, 1960. 462 p. Errata slip inserted. 5,000 copies printed.

Ed.: A.N. Gavrilov, Doctor of Technical Sciences, Professor; Tech. Ed.: A. Ya. Tikhanov; Managing Ed. for Literature on Machine and Instrument Construction (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: This collection of articles is intended for scientific and technical personnel in the instrument industry.

COVERAGE: The 23 articles deal with the present state and the outlook for the development of instrument manufacture and measurement technique. New problems of design, construction, and manufacture of instruments are discussed in the first two sections. Emphasis is given to problems of automation and mechanization of production and to the application of new techniques in program control, ultrasonics, and chipless working of metals. The third section deals with new measurement methods involving the use of ultrasonics and radio isotopes. Some theoretical aspects of metrology and measurement technique are also discussed in this section. No personalities are mentioned. References accompany several of the articles

AVAILABLE: Library of Congress

Card 6/5

VK/pw/mas
10-24-60

24 (3)

S/119/60/000/02/004/015
B014/B014

AUTHOR: Etkin, L. G., Engineer

TITLE: On the Generation of Vibrations of Elastic Systems by Electromagnetic Exciters

PERIODICAL: Priborostroyeniye, 1960, Nr 2, pp 11 - 13 (USSR)

ABSTRACT: The vibration of mass m with one degree of freedom generated by an electromagnetic exciter is investigated in the present paper. First, the author refers to a paper by V. O. Konenko (Ref 1) in which the influence exerted by the constant magnetic flux in the air gap of the electromagnet upon the vibration of the armature was studied. The force acting upon the armature and the equation of motion for mass m are defined by equations (1) and (2). Equation (2) is transformed into equation (3) by way of substitution. Solutions for (3) were derived by I. G. Malkin (Ref 2), G. S. Gorelik (Ref 3), and S. N. Shimanov (Ref 4): series (4). Substitution of series (4) into equation (3) and subsequent comparison of the coefficients lead to equations (5) whose solutions yield an approximate solution of equation (3). It develops that the solution of (3) may be represented as the sum of har-

Card 1/2

On the Generation of Vibrations of Elastic Systems by Electromagnetic Exciters

S/119/60/000/02/004/015
B014/B014

monic oscillations. Next, the shape of the vibrations of the system under consideration is obtained from these solutions. First, the author studies the case of resonance. Results are represented by curve 1 (Fig 2). Curve 2 (Fig 2) illustrates the vibration generated with a frequency which is lower than the resonance frequency. The oscillograms in figures 3 and 4 show that for the second case there exists no sinusoidal voltage in the transverse part of the U-shaped electromagnet. Finally, it is noted that the solution of equation (3) in the form of equation (6) is to be regarded as the actual approximation of the motion of the armature within the magnetic field. This was also confirmed by experiments. This solution is characterized by the fact that the periodicity of the coefficients of equation (2) is taken into account. There are 4 figures and 5 Soviet references.

Card 2/2

23467

S/115/61/000/006/003/006
E073/E535

9.6180 also 1327, 2807, 2208

AUTHOR: Etkin, L. G.

TITLE: Strain Gauge Dynamometer

PERIODICAL: Izmeritel'naya tekhnika, 1961, No.6, pp.21-22

TEXT: In measuring forces it is important to exclude the influence of non-central load applications and lateral forces. The Nauchno-issledovatel'skiy i konstruktorskiy institut ispytatel'nykh mashin, priborov i sredstv izmereniya mass (NIKIMP) (Scientific Research and Design Institute for Test Machinery Instruments and Mass Measuring Apparatus) developed an experimental strain gauge dynamometer for 5 tons which is sensitive only to forces directed along the axis of the dynamometer and is insensitive to lateral forces. The elastic element (Fig.1) is made of Steel 40X (40Kh) heat-treated to a hardness HRC 35-38. Inside the rigid body 1 there is an elastic rod 2 of rectangular cross-section. The rectangular plates 3 take up the transverse forces and the bending moments acting on the dynamometer. Calculations of the prototype have shown that all the bridging plates take up no more than 1% of the axial forces

Card 1/4

23467

S/115/61/000/006/003/006
E073/E535

Strain Gauge Dynamometer

acting on the elastic rod; since these bridging plates operate in the elastic range, the forces on them can be taken into consideration in calibrating the dynamometer. The bending moment caused by transverse forces acting on the dynamometer drops rapidly from one plate to the next and at about one-third from the root of the elastic rod these equal zero. It is at that point of the elastic rod that the wire strain gauges are fitted. These have a resistance of 400 Ohms, they are fitted on a 10 mm base and are made of 30 μ diameter constantan wire, which is glued on a film of БФ-2 (BF-2) glue. Fig.2 shows the gluing spots and electrical circuit of the strain gauges, which are so designed that any influence of the elastic rod on the measuring results is eliminated. The transverse forces did not show any appreciable influence during the tests. In the case of full load, the stress in the elastic rod reaches 25 kg/mm^2. This relatively low stress permits obtaining an elastic moment with a linear characteristic and a low hysteresis; the characteristic is linear within +0.16 and -0.1%. Calibration of the dynamometer and checking of its readings was by means of a 5-ton stationary dynamometer

23467

Strain Gauge Dynamometer

S/115/61/000/006/003/006
E073/E535

ДОП-5 (DOII-5) with an error of 0.1% of the measured load. These tests have shown that the error of the prototype in forty tests carried out over three months did not exceed 0.3% of the measured load beginning from 0.1 of the full scale reading. Variations in the dynamometer readings were between the limits: -0.17 to +0.1% and -0.5 to +0.45%. For recording the dynamometer readings an automatic instrument with eleven measuring channels was used. There are 2 figures.

[Abstractor's Note: This is a slightly abridged translation.]

Card 3/4

S/115/61/000/012/003/005
E198/E455

AUTHOR: Etkin, L.G.

TITLE: Vibration dynamometers

PERIODICAL: Izmeritel'naya tekhnika, no.12, 1961, 27-30

TEXT: A new type of dynamometer of high accuracy is described. Its construction is shown in Fig.1. Both the crosspiece and the rod with their respective electromagnets and amplifiers form electromechanic oscillatory systems, with frequencies practically equal to those of their free mechanical vibrations. The latter are determined by the dimensions and also, in the case of the crosspiece, by the tension caused in it by the deformation of the ring under the load P. The measurement of the load can thus be reduced to the measurement of the frequency of the oscillations in the crosspiece system. The oscillation frequency of the rod system is constant at a fixed temperature and the system is temperature-compensating. The dimensions of the rod can be calculated by the usual formula for the transverse vibrations of a rod fixed at one end. The dimensions are selected according to the range of loads for which the best compensation is required. Computation of the free vibration frequency for the crosspiece can

Card 1/2

S/115/61/000/012/003/005
E198/E455

Vibration dynamometers

be carried out either directly, which is rather involved, or by means of the approximate Rayleigh method, giving a very good agreement (error not exceeding 0.8% at 4000 kg.wt for a 5 ton instrument). A series of computations carried out for various cross-sections and lengths of the crosspiece show that the longer and thinner it is, the more sensitive is the instrument. On the other hand, the deviation of its characteristic from the linear increases with sensitivity. An accuracy test for a 5 ton model was carried out at VNIIM im. Mendeleyev with the aid of a standard static dynamometer, accurate to 0.1%, and the results have shown that the dynamical instrument can easily be brought up to the same order of accuracy. Another advantage is the possibility of constructing a registering apparatus with accuracy much higher than that of the elastic element. The disadvantage of the somewhat nonlinear characteristic at higher sensitivities may be remedied by research now in progress. There are 5 figures, 1 table and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc.

Card 2/2

ETKIN, L.G.

Vibratory dynamometers. Priborostroenie no.8:28 Ag '62. (MIRA 15:9)

(Dynamometer)

L 19819-65 EWT(d)/EEC(k)-2/EEC-4 Po-4/Pq-4/Pg-4/Pk-4/Pl-4

ACCESSION NR: AP5001031 S/0115/64/000/011/0035/0037

AUTHOR: Etkin, L. G.; Yanovskiy, V. Ya.; Ramm, D. V.

TITLE: Effect of inertial forces on vibration-frequency sensors

SOURCE: Izmeritel'naya tekhnika, no. 11, 1964, 35-37

TOPIC TAGS: measuring sensor, vibration frequency sensor, primary element

ABSTRACT: Some theoretical considerations are offered regarding the effect of inertial (e.g., centrifugal) forces on vibration of the sensitive element represented by a flat bar with one constrained end. Several positions of the bar with respect to the inertial-force field are analyzed: (1) Centrifugal and Coriolis forces are applied in the maximum-stiffness plane of the bar; (2) Centrifugal and Coriolis forces are at right angles, etc. Formulas for calculating frequency errors are developed. Orig. art. has: 2 figures and 14 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: IE NO REF SOV: 002 OTHER: 000

Card 1/1

DORZHIYEV, D.D., inzh.; RAMM, D.V., inzh.; ETKIN, L.G., kand.tekhn.nauk

Some problems in the theory of vibration-frequency transducers. Priborostroenie no.3:10-13 Mr '65. (MIRA 18:4)

RAMM, D.V., inzh.; SHEREMETIKOV, G.A., inzh.; [illegible] N., [illegible] tekhn.nauk

Increasing the precision of vibration-frequency [illegible].
Priborostroenie no.6:7-8 Je '65. (MIRA 18:7)

L 5345-55
ETP(b)/ETC(m) WW
ACC NR: AP5026108

SOURCE CODE: UR/0119/65/000/010/0009/0010

AUTHOR: Belyayev, M. F. (Engr.); Dorzhiyev, D. D. (Engr.); Etkin, L. G. (Candidate of technical sciences)

29
B

ORG: none

TITLE: Vibration-frequency pressure sensors 10

SOURCE: Priborostroyeniye, no. 10, 1965, 9-10

TOPIC TAGS: pressure sensor, pressure transducer

ABSTRACT: The development of a new vibration-type pressure sensor is reported. Its operation depends on the variation of stress in a composite diaphragm deformed by the pressure being measured. The strained diaphragm initiates vibrations in an adapter connected to an oscillator whose feedback is again associated with the diaphragm. Two varieties of the sensor, for 50 and 100 atm, were tested; the sensor error was found to be 0.1% or lower; the effect of the ambient temperature (displacing the entire characteristic of the instrument) could be excluded. Formulas for designing the sensor are supplied. Orig. art. has: 5 figures, 9 formulas and 2 tables.

UDC: 62.531:621.3.083.08

Card 1/1 SUB CODE: IE/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

0901 1170

1ST AND 2ND ORDERS PROCESSES AND PROPERTIES INDEX 3RD AND 4TH ORDERS

ETKIN, M.M. 17

CA

Critical study of some test reactions for sulfanilamide. M. M. Etkin. *Farmatsiya* 4, No. 11/12, 41-2(1941).— The reaction with benzidine, recommended as a test for sulfanilamide, is not specific; phthalimide, anthracene, naphthalene, camphor, caffeine and Ph_2NH give a similar blue color. Again, H_2SO_4 has been recommended but is not specific; primary NH_2 groups in the reaction product (isonitrile or diazotization tests) may merely indicate the presence of unreacted sulfanilamide. Julian F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ARAKELOV, A.S.; BORISOV, V.A.; GAL'PERIN, I.I.; GUREVICH, A.G.; DOVZHUK, G.T.; PARSHIN, R.N.; SOKOLOVSKIY, S.M.; SELIKHOV, V.L., SHIFRIN, D.L.; ETKIN, M.V.; GET'YE, V.A., red.toma; YELIN, V.I., red.toma; SOLDATOV, K.N., red.toma; SVYATITSKAYA, K.P., vedushchiy red.; TROFIMOV, A.V., tekhn.red.

[Equipment used in the petroleum industry] Neftianoe oborudovanie; v shesti tomakh. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry. Vol.1. [Compressors and pumps] Kompressory i nasosy. 1958. 234 p. (MIRA 12:5)

(Petroleum industry--Equipment and supplies)
(Pumping machinery) (Compressors)

ETKIN, S.M.

F

A

2158. NEW MATERIAL (EXPANDING CEMENT) FOR WATERPROOFING METAL LININGS. Etkin, S. M. (Gornyi Zh. (Min. J.), Dec. 1950, 33-34).

Manufacture of the rapid hardening, quick setting cement mentioned in F.A., Feb. 1951, n.s.9, 724 is described. It is a mixture of 20% calcium. hydro-aluminate (prepared from slaked lime, aluminous cement and water), 15% gypsum and 65% aluminous cement. (L).

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ETKIN, V. G., ISAYEV, S. G., BYKOV, F. N.

Cigarette Manufacture and Trade

Increasing productivity of a Kurkevich" type cigarette packing machine, Tabak 13 No. 1 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.
2

2163. Etkin, V.S.

Nabivnaya Mashina Sistemy Kurkevicha. M., Pishchepromizdat, 1954. 80 s.s Ill.
22sm. 2.000 EKZ. 2r. 50k.
(54-56266)p 679.74.05

ALEKSANDROV, N.V.; GERSHENZON, Ye.M.; ETKIN, V.S.

Regenerative low-noise microwave amplifiers. Elektrosviaz '15 no.6:31-37 Je '61. (MIRA 14:6)
(Amplifiers (Electronics))

ETKIN, V. S.

USSR/Physics

Card 1/1

Authors : Etkin, V. S.

Title : Scientific demonstration of FM-oscillations

Periodical : Usp. Fiz. Nauk, 52, Ed. 2., 311 - 313, 1954

Abstract : Report describes an arrangement for scientific demonstration of frequency modulated oscillations. The arrangement uses the method of changing the circuit parameter (inductance) based on the nonlinearity of the iron magnetization curve and changes in the coefficient of mutual inductance of the connected circuits. The generator is assembled in accordance with a three-point system with the center point in the capacitive circuit. The circuit coil is inductively connected with the modulating coil fed by a technical frequency current of 50 c. Change in depth of modulation is attained with rheostat R_M and displacement of coils over the entire iron core which represents a closed circuit. Drawings of the arrangement are included. Graphs.

Institution : ....

Submitted : ....

ETKIN, V. S

ETKIN, V.S.

Modulation of carriers by means of a change in the magnetic permeability of ferromagnetic conductors. Radiotekh. i elektron. 2 no.4: 506-507 Ap '57. (MLRA 10:9)

(Radio, Shortwave)

EFKIN, V.S., Cand Phys-Math Sci--(diss) "Application of the controlled surface effect to ~~for~~ modulation." Len, 195[illegible]. 8 pp (Len State Pedag Inst im V.I. Lenin), 140 copies. Bibliography at end of text (10 titles) (KL,25-58,107)

06494

SOV/141-58-4-10/26

AUTHOR: Etkin, V.S.

TITLE: Application of the Controlled Surface Effect in Modulation (O primenenii upravlyayemogo poverkhnostnogo effekta dlya modulyatsii)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1958, Nr 4, pp 95-99 (USSR)

ABSTRACT: First, the modulation of a UHF signal passing through a half wave resonator containing a controlled impedance is considered. The equivalent circuit of such a modulation system is shown in Fig 1, where C_p, L_p and R_p are the parameters of the resonator, while Z_H is the input impedance of the load; the segment 1-2 represents the feeder line whose impedance is ρ. The voltage at the points 2,2 is given by (Ref 11):

$$U_2 = \frac{2 Z_p U_n}{Z_p + \rho\left(1 + \frac{Z_p}{Z_H}\right)} \qquad (1)$$

where U_n is the amplitude of the incident wave at the points 2,2 and Z_p is the impedance of the resonator.

Card 1/3

06494

SOV/141-58-4-10/26

Application of the Controlled Surface Effect in Modulation

U_2 can approximately be expressed by Eq (3), provided the conditions of Eq (2) are fulfilled. In the resonator concerned, the impedance Z_p in the vicinity of the resonance can be expressed by:

$$Z_p = R \sim \sqrt{\mu} \qquad (4)$$

The system can, therefore, be employed as a modulator and its modulation index is expressed by Eq (5). This relationship was investigated experimentally in 2 resonators: one of these was in the form of a coaxial line in which the inner conductor was made of a ferrite material (permalloy); the second resonator was in the form of a two-conductor line in which both conductors were made of permalloy. The results taken at a field of 18 Oe are shown in the table on p 97 and in the oscillograms of Fig 2. The modulation sensitivity of these systems, that is the ratio of the modulation attenuation to the magnitude of the modulation field,is indicated in Table 2, p 98. The author

Card 2/3

06494
SOV/141-58-4-10/26

Application of the Controlled Surface Effect in Modulation

investigated also a parametric-type modulation in oscillators where the amplitude was non-linearly controlled by changing a parameter (Ref 12). It was found that in this case it was possible to obtain very high modulation levels, such as would not be obtained with the resonator-type modulators. The author makes acknowledgment to N.N.Malov for suggesting the subject and for directing this work. There are 2 figures, 2 tables and 13 references, 6 of which are English and 7 Soviet, one of the Soviet references being translated from English.

ASSOCIATION: Moskovskiy pedagogicheskiy institut imeni V.I.Lenina (Moscow Pedagogical Institute imeni V.I.Lenin)

SUBMITTED: 25th November 1957

Card 3/3

SOV-109-3-6-18/27

AUTHOR: Etkin, V. S.

TITLE: Phase Modulation during the Reflection of Waves from a Complex Load having the Form of a Low-Frequency Detector (Fazovaya modulyatsiya pri otrazhenii voln ot kompleksnoy upravlyayemoy nagruzki v volnovode v vide nizkochastotnogo detektora)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 6, pp 834-835 (USSR)

ABSTRACT: If a transmission line is terminated with an imperfectly matched load the phase and the modulus of the reflection coefficient in the line can be varied by changing the load. In this way it is possible to construct a phase modulator (see Fig.1). The modulator described was built from a standard detector head containing a diode type DG-Ts1. The modulation was achieved by varying the biasing current of the diode. The measured results, taken by means of the equipment shown in Fig.2, are plotted in Fig.3, where the phase φ and the standing wave ratio (KCB) are plotted as a function of the modulating current. The work was carried out under the direction of Prof. N. N. Malov. The paper

Card 1/2

SOV-109-3-6-18/27

Phase Modulation During the Reflection of Waves from a Complex Load having the Form of a Low-Frequency Detector

contains 3 figures and 2 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut im. V. I. Lenina (Moscow State Pedagogical Institute im. V. I. Lenin)

SUBMITTED: November 14, 1957.

Card 2/2

1. Waves - Reflection 2. Phase modulations - Applications 3. Transmission lines - Applications

108-13-3-8/13

AUTHOR: Etkin, V. S.

TITLE: The Use of Controlled Surface Effect in Modulation (Primeneniye upravlyayemogo poverkhnostnogo effekta dlya modulyatsii)

PERIODICAL: Radiotekhnika, 1958, Vol. 13, Nr 3, pp. 66 - 69 (USSR)

ABSTRACT: Various co-vibration systems with ferromagnetic elements in forced as well as in self-excited oscillations are investigated as modulators. The experiments were carried out with iron, steel, and permalloy (alloy 80HXC). These showed that permalloy was the most sensitive. Mainly thin lines were used. The modulation was caused by the municipal line-current. - The data for the maximum amplitudes of modulation with forced oscillations in various systems and at various frequencies, as well as the minimum amplitude of the same field on the surface on the same conditions for various line diameters are given. The minimum amplitudes are connected with heat effects. Therefore these minima are unequal because of their different cooling conditions. It is shown that in forced oscillations it is

Card 1/2

difficult to obtain a very low modulation. The experiments showed that it is possible to produce a self-excitation system with a controlled ferro-magnetic element with which there is possible a deep modulation up to a pulse modulation. The experiments showed that in this the magnitude of the circuit resistance is of decisive influence. The experiments carried out for this purpose with the generator are described. The permalloy samples were supplied by the IPS TsNIChM. Professor N. N. Malov posed the problem and directed the work. There are 2 figures, 1 table, and 3 references, 3 of which are Soviet.

SUBMITTED: November 28, 1956 (initially) and July 1, 1957 (after revision)

SOV/58-59-8-18582

Translated from: Referativnyy Zhurnal Fizika, 1959, Nr 8, p 222 (USSR)

AUTHOR: Etkin, V.S.

TITLE: Some Properties of Metallic Non-Homogeneities on the Surface of Dielectric Tubes

PERIODICAL: Uch. zap. Mosk. gos. ped. in-ta, 1958, Vol 138, pp 165-169

ABSTRACT: It is experimentally demonstrated that it is possible to rotate the plane of polarization by means of sections of circular tubular dielectric waveguides having metallic non-homogeneities on their surface. The experimental set-up is similar to one previously described in the literature (RZhFiz, 1954, Nr 1, 960). Strips of tin foil were used as non-homogeneities, that were parallel to the axis of the waveguide or wound around it in a spiral in half-turn and quarter-turn lengths. In every case a rotation of the plane of polarization and the appearance of elliptical polarization are observed. Diagrams are presented showing the turn of the plane of polarization and the variability of ellipticity as functions of the parameters of the non-homogeneities and their orientation.

I.F. Dobrovol'skiy

Card 1/1

SOV/58-59-9-20911

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 9, p 210 (USSR)

AUTHOR: Etkin, V.S.

TITLE: Some Questions of Modulation by Means of the Surface Effect

PERIODICAL: Uch. zap. Mosk. gos. ped. in-ta, 1958, Vol 138, pp 171 - 183

ABSTRACT: The author makes a theoretical study of the operating characteristics of v h f - modulators which utilize ferromagnetic conductors. He provides experimental data concerning the magnetic properties of some ferromagnetic conductors at v h f. He considers the question of adopting the above-mentioned modulators for the modulation of the oscillations of self-oscillators. He makes a theoretical and experimental study of the conditions of maximum sensitivity of the self-oscillator to a variation in the parameter, as well as the conditions assuring modulation linearity. Cf also RZhFiz, 1958, Nr 2, 4091; Nr 11, 25807.

Yu.B. Chernyak

Card 1/1

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041222(

68501

9,4340

S/141/59/002/05/025/026
E192/E382

AUTHORS: Gershenzon, Ye.M. and Etkin, V.S.

TITLE: Parametric Regeneration at Microwaves in a Semiconductor Diode

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 5, pp 835 - 836 (USSR)

ABSTRACT: The authors have observed the parametric regeneration in various samples of mass-produced detector diodes, type DGS-3, and also in microwave junction-type diodes prepared by the IRE AN SSSR (Institute of Radio-electronics of the Ac.Sc., USSR). The experimental equipment (shown in Figure 1) consisted of:

1 - a klystron generator operating at a wavelength of 7 cm;
2 - attenuators;
3 - a resonant circuit with a variable capacitance;
4 - a klystron generator producing the pump frequency (wavelength of 3.5 cm);
5 - an impedance transformer;
6 - a filter suppressing the pump frequency signal;
7 - an oscillograph.

Card1/2

68561

S/141/59/002/05/025/026
E192/E382

Parametric Regeneration at Microwaves in a Semiconductor Diode

A resonant circuit was in the form of a waveguide section fitted with two plungers and two perpendicular waveguides feeding the pump power. The investigated diode D was situated in the centre of the waveguide "cross" and operated under the self-bias conditions. With the diode DGS-3 it was possible to obtain amplification of the order of 2 to 3 db. The diodes of the IRE AN SSSR gave a gain of 12-15 db over the bandwidth of 2 Mc/s. The authors make acknowledgment to the IRE AN SSSR for supplying the samples of the diodes and to N.N. Malov and N.V. Aleksandrov for advice during the experiments. There are 2 figures and 4 references, 2 of which are English and 2 Soviet.

ASSOCIATION: Moskovskiy pedagogicheskiy institut im. B.I. Lenina (Moscow Pedagogical Institute imeni V.I. Lenin)

SUBMITTED: First - April 4, 1959
After revision - June 8, 1959

Card 2/2

9.4340
6.4500

80128
S/141/59/002/06/009/024
E310/E352

AUTHORS: Aleksandrov, N.V., Gorskaya, L.B., Gershenzon, Ye.M. and Etkin, V.S.

TITLE: Control of the Amplitude and Phase of an Electromagnetic Wave in a Waveguide by Means of Germanium Plate

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 6, pp 911 - 914 (USSR)

ABSTRACT: Experiments were conducted on phase and amplitude modulation of an electromagnetic wave incident on a germanium plate inside a waveguide by controlling the concentration of free-charge carriers in the germanium. The concentration of free-charge carriers changes the permittivity of the semiconductor, thus influencing the absorption of electromagnetic waves in the semiconductor. The control of concentration was achieved by using the Hall effect in a germanium plate having different velocities of recombination on its opposite surfaces. High-resistance (35 - 40 Ω.cm) antimony-alloyed n-type germanium was used. Concentration of free-charge carriers N was approximately 10^{14} per cm^3; permittivity was

Card1/3

approximately 16. By varying the electrical current flowing through the germanium plate, both the modulus and the phase of the reflection coefficient, as well as the phase of the passing wave, can be varied. In this way, a phase modulation can be achieved, the percentage of which for a given material depends upon the phase difference caused by reversal in current at a given current value. An audio-frequency generator and a pulse generator were used as signal sources. Modulation percentage was independent of the period of modulation voltage up to 0.1 μs pulses. Efficiency of the modulator can be increased considerably by more careful treatment of the plate surfaces to increase the difference in the recombination rate on the surfaces. There are 4 figures and 11 references, 6 of which are English, 1 German and 4 Soviet.

Card2/3

ASSOCIATION: Moskovskiy pedagogicheskiy institut im. V.I. Lenina (Moscow Pedagogical Institute imeni V.I. Lenin)

SUBMITTED: June 8, 1959

Card 3/3

ETKIN, V.S.

32921

9,2572 (1139)

S/194/61/000/011/056/070
D271/D302

AUTHORS: Bogatkova, O.M., Gershenzon, Ye.M., Dombrovskaya, T.S., Ptitsyna, N.G., Rozhkova, G.I., Sperantov, V.V. and Etkin, V.S.

TITLE: Single-circuit regenerative and super-regenerative parametric amplifiers with semiconductor diodes

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 11, 1961, 12, abstract 11 K91 (V sb. Poluprovodnik. pribory i ikh primeneniye, no. 6, M., Sov. radio, 1960, 41-62)

TEXT: Theoretical and experimental results are given of a study of single-circuit regenerative and super-regenerative parametric amplifiers with semiconductor diodes. The amplifier forward and reflex operation in a synchronous and biharmonic mode is considered. Results of the investigation into noise parameters of the diode are given. Experiments confirmed the analytical results. It

Card 1/2

32921
S/194/61/000/011/056/070
D271/D302

Single-circuit...

is shown that super-regenerative operation leads to considerable distortions of the received signal spectrum, but on the other hand it makes it possible to widen the amplifier bandwidth and to achieve greater stabilization of gain. 8 references. [Abstracter's note: Complete translation]

Card 2/2

28788
S/106/61/000/006/004/005
A055/A127

9.2570 (1144,1159,1139)

AUTHORS: Aleksandrov, N. V., Gershenzon, E. M. and Etkin, V. S.

TITLE: Regenerative low-noise microwave amplifiers.

PERIODICAL: Elektrosvyaz', no. 6, 1961, 31 - 37

TEXT: The authors derive generalized formulae giving the amplification factor, passband and the noise factor of resonator-type regenerative microwave amplifiers. The elements of the total resistance type are called by the authors regenerative elements with negative effective resistance (Ref. El. - R_-), while the elements of the total-conductance type are called regenerative elements with negative effective conductance (Reg. El. - G_-). Figure 2a is the equivalent circuit of an active Reg. El. - R_-. R_c is the loss resistance of the element; X_c its reactance; R_- the negative resistance created by the element in the circuit. Figure 2b is the equivalent circuit of the resonator-type regenerative passage-coupled amplifier, and Figure 2 c the equivalent circuit of the reflection-coupled amplifier; $X = X_{circ} + X_c$, R_c is the loss resistance in the amplifier circuit and Z_0 is the wave impedance of the feeding line. Figure 3a is the equivalent circuit of Reg.El. - G_-. G_c is the loss conductance of the element; B_c its reac-

Card 1/10

28788
S/106/61/000/006/004/005
Regenerative low-noise microwave amplifiers AC55/A127

tive conductance, G_- the negative conductance created by the element in the circuit. Figure 3b is the equivalent circuit of the passage-coupled amplifier and Figure 3c of the reflection-coupled amplifier. Basic formulae for the amplification factor and the noise factor. The amplification factor of an passage-coupled amplifier is determined as the ratio of the power at the amplifier output to the power given up by the signal source to a matched load. This latter power is

$$P_{cc} = \frac{E^2}{4R_d} \qquad (3)$$

E being the RMS of the emf. On the other hand:

$$P_{c\ outp} = \frac{E^2\ R_\mu}{(R - R_-)^2} \qquad (4)$$

and, therefore:

$$K = \frac{P_{c\ outp}}{P_{cc}} = \frac{4\ R_d\ R_\mu}{(R - R_-)^2} \qquad (5)$$

Card 2/11

where $R = R_c + R_k + R_d + R_H$. In the case of reflection-coupled amplifiers, the amplification factor is the ratio of the reflected wave power to the incident power, (i.e., the reflection factor):

$$K = \frac{P_{reflect.}}{P_{inc}} \tag{6}$$

Since $P_{inc} = \frac{U^2_{inc}}{Z_0}$, $P_{reflect} = \frac{U^2_{reflect}}{Z_0}$, and $U_{reflect} = U_{inc} - Z_0 I_H$,

$$K = \frac{U^2_{reflect}}{U^2_{inc}} = \left| 1 - \frac{Z_0 I_H}{U_{inc}} \right|^2 \tag{7}$$

Taking into account the equivalent circuits (Figure 2 and 3), the authors obtain:

$$K = \left| 1 - \frac{2Z_0 I_H}{E} \right|^2, \text{ i.e., for } K \gg 1 \qquad K = \frac{4 Z_0^2 I_H^2}{E^2} \tag{8}$$

or

$$K = \frac{4\,Z_0^2}{(R - R_-)^2} \tag{9}$$

where $R = Z_0 + R_K + R_c$, $I_H = \frac{E}{R - R_-}$. The pass-band of the amplifier is determined by the Q-factor of the system:

$$\frac{\Delta f}{f} = \frac{1}{Q_p} = \omega C(R - R_-) \tag{10}$$

In the case of passage-coupled amplifiers:

$$\sqrt{K}\,\frac{\Delta f}{f} = 2\sqrt{R_d R_H}\,\omega_0 C = 2\sqrt{R_d R_H}\,\frac{C}{2\pi\sqrt{LC}} = \frac{\sqrt{R_d R_\mu}}{\pi}\sqrt{\frac{C}{L}} = \frac{\sqrt{R_d R_\mu}}{\pi\rho} \tag{11}$$

where $\rho = \sqrt{\frac{L}{C}}$ is the characteristic impedance of the circuit.

UK

Card 4/11

Regenerative low-noise microwave amplifiers

If $R_K \ll R_H$; $R_d \approx R_H \approx 1/2\ R_-$, then $\sqrt{K}\,\frac{\Delta f}{f} = R_- \omega_c\ C.$ (12)

In the case of reflection-coupled amplifiers

$$\sqrt{K}\,\frac{\Delta f}{f} = 2\ Z_0 \omega_0\ C \qquad (13)$$

or (since usually $Z_0 \gg R_K$ and hence $R_- \approx Z_0$):

$$\sqrt{K}\,\frac{\Delta f}{f} = 2\ R_- \omega_0\ C. \qquad (14)$$

The noise factor is expressed by:

$$F = \frac{P_{n\ outp}}{K\ P_{n\ inp}} \qquad (15)$$

$P_{n\ outp}$ being the noise power at the amplifier output, and $P_{n\ inp}$ the noise power at the amplifier input, i.e., the power given up by the noise source with internal resistance R_d and temperature T_0 ($T_0 \approx 290^\circ K$) to the matched load. The noise emf operating in the circuit are:

28788
S/106/61/000/006/004/005
A055/A127

Regenerative low-noise microwave amplifiers

1) the noise emf of the signal source: $E^2_{nd} = 4\ KT_0\ R_d \Delta f$ (16),

2) the thermal noise emf produced in R_k $E^2_{nk} = 4\ KT_k\ R_k \Delta f$, (17)

3) the thermal noise emf produced in R_c $E_{nc} = 4\ KT_c\ R_c \Delta f$, (18)

4) the thermal noise emf produced in R_H $E_{nH} = 4\ KT_H\ R_H \Delta f$, (19)

Besides, sources of non-thermal noises may exist in the amplifier, which can be represented as sources of additional noises with resistance R_c and temperature T_{cg}:

$$E^2_{ng} = 4\ KT_{cg}\ R_c \Delta f \quad (20)$$

Considering the noises as non-correlated, the authors obtain, in the case of passage-coupled amplifiers

$$P_{n\ outp} = 4\ K \Delta f \left[\frac{T_0 R_d R_\mu}{(R - R_-)^2} + \frac{T_K R_K R_\mu}{(R - R_-)^2} + \frac{T_c R_c R_\mu}{(R - R_-)^2} + \frac{T_H R_H R_\mu}{(R - R_-)^2} + \frac{T_{cg} R_c R_\mu}{(R - R_-)^2} \right]$$

and $P_{n\ inp} = KT_0 \Delta f$, so that:

Card 6/11

$$F_{passage} = 1 + \frac{R_k T_k}{R_d T_0} + \frac{R_k T_k}{R_d T_0} + \frac{R_c T_{cg}}{R_d T_0} \qquad (21)$$

In the case of reflection-coupled amplifiers, they obtain in an analogous manner:

$$F_{reflect} = 1 + \frac{R_k T_k}{R_d T_0} + \frac{R_c T_c}{R_d T_0} + \frac{R_c T_{cd}}{R_d T_0} \qquad (22)$$

It ensues from (21) and (22) that the reflection-coupled amplifier is characterized by a smaller noise factor than the passage-coupled amplifier. To obtain the minimum noise factor, there must be a strong mismatch between amplifier and signal generator:

$$R_c \ll R_d; \quad R_k \ll R_d; \quad R_H \ll R_d \qquad (23)$$

To obtain a high amplification, it is necessary that:

$$R_- \approx R. \qquad (24)$$

The use of a ferrite circulator ensures a smaller noise factor and a greater stability of the whole system. In parametric amplifiers, the noise factor is somewhat greater in both cases. For parallel circuits, the basic formulae are analogous

Card 7/11

28788
S/106/61/000/006/004/005
A055/A127

Regenerative low-noise microwave amplifiers

to the preceding ones:

$$K_{passage} = \frac{4\, G_d\, G_\mu}{(G - G_-)^2}$$

where $G = G_d + G_k + G_c + G_H$.

$$K_{reflect.} = \frac{4Y_0^2}{(G - G_-)} \tag{25}$$

where $G = Y_0 + G_k + G_c$.

$$F_{passage} = 1 + \frac{G_k\, T_k}{G_d\, T_0} + \frac{G_c T_c}{G_d T_0} + \frac{G_\mu T_\mu}{G_d T_0} + \frac{G_c T_{cg}}{G_c T_0},$$

$$F_{reflect.} = 1 + \frac{G_k T_k}{G_d T_0} + \frac{G_c T_c}{G_d T_0} + \frac{G_0 T_{cg}}{G_d T_0} \tag{26}$$

Card 8/11

Regenerative low-noise microwave amplifiers

The condition for high amplification is:

$$G_{-} \approx G \tag{27}$$

The condition for low noise is:

$$\left.\begin{array}{ll} G_K \ll G_d & T_{cg} \ll T_0 \\ G_H \ll G_d & G_K \ll Y_0 \\ G_c \ll G_d & G_c \ll Y_0 \end{array}\right\} \tag{28}$$

To ensure low-noise, the regenerative elements of the microwave circuits must satisfy the conditions:

$$R_{-} \gg R_c; \quad G_{-} \gg G_c \tag{29}$$

There are 3 figures and 7 references, 5 Soviet-bloc and 2 non-Soviet-bloc. The references to two English-language publications read as follows: Krömer. The

28788
S/106/61/000/006/004/005
A055/A127

Regenerative low-noise microwave amplifiers

physical principles of a Negative mass amplifier. Proc. IRE, 1959, vol. 47, No. 3. 2) Sard. Tunnel (Esaki)diode amplifiers with unusually large band-widths. Proc. IRE, 1960, vol. 48, No. 3.

SUBMITTED: March 3, 1961

[Abstracter's note: The following subscripts are translated in formulas and text: reflect. is the translation of отр; passage is the translation of пр; inc. (incident) is the translation of пад; n (noise) is the translation of ш; outp. is the translation of вых; inp. is the translation of вх; d replaces д.

X

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041222(

S/141/61/004/001/010/022
E192/E382

9.2572 25950

AUTHORS: Gershenzon, Ye.M., Lyubimova, T.F., Ptitsyna, N.G., Rozhkova, G.I. and Etkin, V.S.

TITLE: Investigation of the Super-regenerative Regime in Single-tuned Parametric Amplifiers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1961, Vol. 4, No. 1, pp. 113 - 120

TEXT: The super-regenerative regime in parametric amplifiers can be achieved by additionally introducing low-frequency modulation of the variable capacity in the system (Ref. 1 - Heffner, H., Wade, G. and Junger, M. - Proc. IRE, 47, 1971, 1959; Ref. 2 - B. Bossard - Proc. IRE, 47, 1970, 1959). If this regime in the amplifier is achieved by a comparatively slow modulation of the pump signal, the oscillations in a series LCR circuit of the system can be described by:

$$L\frac{d^2q}{dt^2} + R\frac{dq}{dt} + \frac{q}{C_0}\{1 + m[1+h\cos(\omega_m t)]\sin(\omega_n t)\} = E_0\cos(\omega_c t - \varphi), \quad (1)$$

Card 1/8

S/141/61/004/001/010/022
E192/E382

where ω_c is the signal frequency,
ω_H is the modulation frequency,
m is the mean modulation depth of the nonlinear capacitance, and
h is the depth of the low-frequency pump-source modulation.

Eq. (1) can also be written as:

$$\ddot{y} + 2\theta\dot{y} + (1 + 2\xi_0)\,y + my\,[1 + h\cos(\Omega\tau)]\sin(2\tau) = \lambda\cos[(1+\xi)\tau - \psi], \quad (2)$$

where:

$$y = q/C_0u_0;\ \lambda = E_0/u_0;\ 2\theta = R/\omega_0 L;\ 2\omega_0/\omega_H = 1 + \xi_0;$$
$$2\omega_c/\omega_H = 1 + \xi;\ 2\omega_m/\omega_H = \Omega;\ \tau = \omega_H t/2;\ \omega_0 = 1/\sqrt{LC_0}. \quad (2a)$$

In the analysis of this equation it is assumed that $\xi_0 = 0$ and that the system can be solved by the Van-der-Pol equation, which is in the form:

$$y = a \sin \tau + b \cos \tau$$

where a and b are slowly varying time functions. Consequently, the system of simplified equations for the amplifier (Ref. 3 - the authors - Radio-engineering industry, 17, 3, 1959) can be written as:

$$2\dot{a} = \lambda \cos(\xi\tau - \psi) - \left(2\theta + \frac{m}{2}\right)a - \frac{mh}{2}a\cos(\Omega\tau);$$
$$-2\dot{b} = -\lambda \sin(\xi\tau - \psi) + \left(2\theta - \frac{m}{2}\right)b - \frac{mh}{2}b\cos(\Omega\tau). \quad (3)$$

which differs from those obtained in Ref. 3 by the presence of the last terms which are due to the modulation. It can be assumed that the solution of the simplified equations is in the form:

$$a = \sum_N \{A_{1N} \sin[(\xi + N\Omega)\tau - \vartheta] + A_{2N} \cos[(\xi + N\Omega)\tau - \vartheta]\};$$

$$b = \sum_N \{B_{1N} \sin[(\xi + N\Omega)\tau - \vartheta] + B_{2N} \cos[(\xi + N\Omega)\tau - \vartheta]\} \quad (N \neq 0), \qquad (4)$$

where A_{1N}, A_{2N}, B_{1N} and B_{2N} are constant coefficients. These constants can be determined from an infinite system of algebraic equations which are obtained by substituting Eqs. (4) into Eqs. (3). However, in practice, it is sufficient to consider only a finite N, so that the number of equations is reduced. By analysing the solutions obtained on the basis of Eqs. (4), it is concluded that:
1) the amplification bandwidth in the super-regenerative regime is greater than that in the regenerative regime for the same maximum amplification coefficient, and
2) at $\omega_c = \omega_H/2 \pm N\omega_m$, the amplitude of the oscillations

25950

Investigation of the S/141/61/004/001/010/022
E192/E382

of the signal frequency and other frequency components achieves a maximum, this maximum being most pronounced in the component $\omega_c \pm N\omega_m$ which coincides with $\omega_H/2$. The oscillations in the super-regenerative amplifier have a complex spectrum and two types of frequency characteristics are possible:
a) the overall value of the oscillations excited is regarded as the response of the system and thus the corresponding frequency characteristic can be observed if the amplifier is followed by a video detector;
b) the amplitude of the oscillations having a frequency of the input signal, or that of one of the spectral components, is regarded as the response of the system; in this case the characteristic can be determined if the amplifier is followed by a filter or a superheterodyne receiver having a narrow bandwidth. These effects are illustrated by families of frequency characteristics of the two types which are given in Figs. 1 and 2. The characteristics of Fig. 1 were evaluated for $\Theta = 0.021$, $m = 0.08$, $n = 0.047$, $\Omega = 6 \times 10^{-3}$ and $h = 100\%$;

Card 5/8

25950

Investigation of the ....

S/141/61/004/001/010/022
E192/E382

the parameters for Fig. 2 were Θ = 0.021, m = 0.08, n = 0.047, Ω = 0.25 x 10 and h = 0.75%. From these figures it is seen that the magnitude of the secondary maxima in the super-regenerator-filter system decays faster than in the super-regenerator-video detector system. The super-regenerative amplifier was investigated experimentally at comparatively low frequencies (1.3 Mc/s) and at UHF. The amplifier for 1.3 Mc/s was studied by employing a sweep-frequency generator and a superheterodyne receiver. Investigation of the UHF amplifiers was performed by means of a spectrum analyser. The measured results are in qualitative agreement with the calculated data. In particular, the measured characteristics show that in the case when the modulation frequency ω_m is greater than the bandwidth of the amplifier, the frequency response of the system has a large number of narrowly-spaced peaks (comb-like response).

The authors express their gratitude to Yu.Ye. D'yakov for discussing the problems of this work.

Card 6/8

25950

S/141/61/004/001/010/022
E192/E382

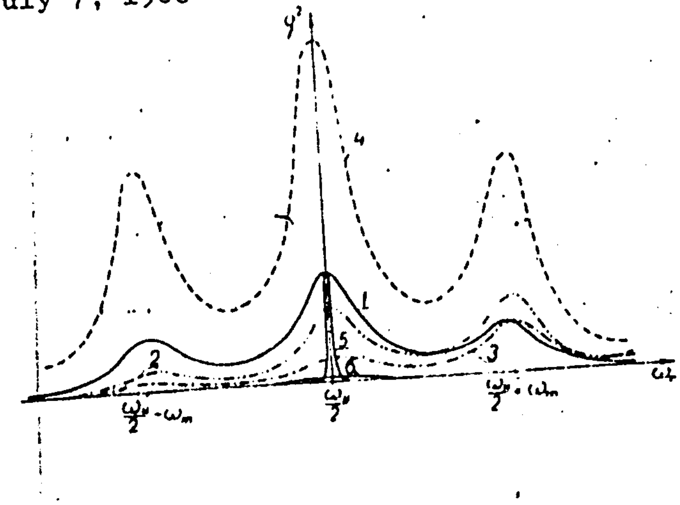
Investigation of the ....

There are 7 figures and 6 references: 4 Soviet and 2 non-Soviet (quoted in text).

ASSOCIATION: Moskovskiy pedagogicheskiy institut im.V.I.Lenina (Moscow Pedagogical Institute im. V.I. Lenin)

SUBMITTED: July 7, 1960

Fig. 1:



Card 7/8

9.2572 25951 S/141/61/004/001/011/022
E033/E435

AUTHORS: Gershenzon, Ye.M., D'yakov, Yu.Ye., Soina, N.V., Smirnova, L.A. and Etkin, V.S.

TITLE: Widening the passband of parametric amplifiers with the help of coupled circuits

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1961, Vol.4, No.1, pp.121-125

TEXT: The relatively narrow frequency passband of tuned parametric amplifiers is not a fundamental deficiency and can be overcome by the use of coupled tuned circuits. This article investigates the possibility of widening the passband by two coupled circuits. The amplifier is represented as two identical coupled circuits tuned to the same frequency ω_0, but the capacity of one circuit is varied at a frequency $\omega_H = 2\omega_0$. The differential equations for such a driven oscillatory circuit may be written as

$$\frac{d^2q_1}{dt^2} + 2h\frac{dq_1}{dt}\, q_1\omega_0^2\,[1 + m\cos\omega_H t] + \gamma_1\frac{d^2q_2}{dt^2} = e^{j\omega t} + e^{-j\omega t};$$

$$\frac{d^2q_2}{dt^2} + 2h\frac{dq_2}{dt} + q_2\omega_0^2 + \gamma_1\frac{d^2q_1}{dt^2} = 0, \tag{2}$$

Card 1/5

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041222(

S/141/61/004/001/011/022
E033/E435

25951

Widening the passband ...

where $\eta = M/L$ - the coupling coefficient; $2h = R/L$; $\omega_0^2 = 1/LC_0$; L, R being the self-inductance and resistance of each circuit, M the mutual inductance, C_0 the constant capacity of the tuned circuit. The variable capacity C_1 is related to C_0 by $C_1^{-1} = C_0^{-1}(1 + m \cos \omega_H t)$. The solution depends on the degree of coupling. It is shown that: 1) if the coupling is less than, or equal to, critical ($\varkappa = \eta Q \leqslant 1$) then the amplifier is excited only at the frequency $\omega_H/2$ and the critical modulation depth increases $(1 + \varkappa^2)$ times in comparison with a single tuned circuit; 2) if the coupling is greater than critical ($\varkappa = \eta Q > 1$) then the amplifier is excited at three frequencies: $\omega_1 = \omega_H/2$, ω_2 and ω_3 which correspond to detuning $\alpha_1 = \pm \sqrt{\varkappa^2 - 1} / Q$ (ω_2 and ω_3 are approximately the same as for the frequencies of the normal oscillatory system). As far as the passband widening is concerned only the first case, when $\varkappa \leqslant 1$, is of interest (since with coupling greater than critical, the frequency response curve is double humped with a deep drop in the middle). The gain k and the passband $\Delta f/f$ are found next.

Card 2/5

Widening the passband 25951

S/141/61/004/001/011/022
E033/E435

$$k = \frac{Q^2}{Q_{ext}^2 n^2} \frac{1}{(1 + \varkappa^2)^2} \qquad (8)$$

where $Q_{ext} = 1/Z\omega_0 C_0$; $n = 1 - m^2/m_{cr}^2$

Z is the wave impedance of the supply line to the amplifier; m_{cr} is the critical modulation. For $n \ll 1$, the passband equals

$$\frac{\Delta f}{f} \simeq \frac{n}{Q} \frac{1 + \varkappa^2}{1 - \varkappa^2} \qquad (9)$$

and hence

$$\frac{\Delta f}{f} \sqrt{k} = \frac{1}{Q_{ext}} \frac{1}{1 - \varkappa^2} \qquad (10)$$

If $\varkappa < 1$, reduction in the gain is accompanied by increase in the passband and the product $(\Delta f/f)\sqrt{k}$ can be significantly greater than for a single circuit. The phase change introduced into the

Card 3/5

Widening the passband 25951

S/141/61/004/001/011/022
E033/E435

signal is given by

$$\mathrm{tg}\,\varphi \approx - \frac{\alpha_1 Q}{n} \frac{1 - \varkappa^2}{1 + \varkappa^2} \qquad (12)$$

where $\alpha_1 = 1 - (\omega^2/\omega_0^2)$. The frequency response curves are illustrated. The theoretical results were confirmed on an experimental model at 4.5 Mc/s frequency. For the single-circuit amplifier, the passband was 50 kc/s and the gain 20 dB; for the coupled circuit case, the passband was 150 Mc/s. Thus $(\Delta f/f)\sqrt{k}$ was increased from 1/9 to 1/3. The use of coupled circuits leads to a similar widening at uhf, e.g. for a single circuit amplifier with $k \approx 20$ dB, bandwidth ≈ 15 Mc/s; for a double circuit amplifier with $k \approx 20$ dB, the bandwidth is 45 to 50 Mc/s. There are 3 figures and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The three references to English language publications read as follows: H.Heffner, G.Wade, J.Appl.Phys., 29, 1262 (1958); H.Heffner, K.Kotzebue, Proc.IRE, 46, 1301 (1958); G.F.Herrmann, M.Uenohara, A.Uhlir, Proc.IRE, 46, 1301 (1958).

Card 4/5

25951

Widening the passband ... S/141/61/004/001/011/022
E033/E435

ASSOCIATION: Moskovskiy pedagogicheskiy institut im. V.I.Lenina
(Moscow Pedagogical Institute imeni V.I.Lenin)

SUBMITTED: July 7, 1960

Card 5/5

22272

S/109/61/006/005/019/027
D201/D303

9,2572

AUTHORS: Gershenzon, Ye.M., Ptitsyna, N.G., Rozhkova, G.I., and Etkin, V.S.

TITLE: A single circuit parametric amplifier

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 5, 1961, 829 - 834

TEXT: The authors give certain results of studying a single circuit parametric amplifier using a simi-conductor diode. They based their study on works published in the thirties, of the school of L.I. Mandel'shtam and of N.D. Papaleksi (Ref. 5: K. voprosu o parametricheskoy regeneratsii (On the Question of Parametric Regeneration) IEST, 1935, 3, 1) (Ref. 6: E.M. Rubchinskiy, IEST, 1953, 3, 7) (Ref. 7: M. Divil'kovskiy, S. Rytov, ZhTF, 1936, 6, 3, 474) (Ref. 8: V.A. Lazarev, Kolebaniya v svyazannykh sistemakh s periodicheski menyayushchimisya parametrami (Oscillations in Linked Systems With Periodically Changing Parameters) ZhTF, 1940, 10, 11, 918).

X

Card 1/6

the equation for the amplitude of the fundamental of oscillations is derived as

$$A^2 = \frac{\lambda^2}{4C^2}\left[\left(\xi_0^2 + \left(\theta + \frac{m}{4}\right)^2\right)\sin^2\Psi + \right.$$
$$\left. + \left(\xi_0^2 + \left(\theta - \frac{m}{4}\right)^2\right)\cos^2\Psi - \xi_0\frac{m}{4}\sin 2\Psi\right] \qquad (8)$$

where Ψ is the signal frequency and ω_p the pumping frequency. The amplitudes of harmonics are given in

$$A^2_{1+\xi} = \lambda^2\frac{\theta^2 + (\xi_0 + \xi)^2}{4(4\xi^2\theta^2 + C^2)}, \quad A^2_{1-\xi} = \lambda^2\frac{\left(\frac{m}{4}\right)^2}{4(4\xi^2\theta^2 + C^2)}. \qquad (9)$$

and the resonance curves for synchronism and 2nd harmonic regime are given for three values of ξ, from which it may be seen that the maximum of amplification occurs near $\omega_s = 1/2\ \omega_p$. The minimum noise figure which can be obtained is given by

A single circuit ...

$$F_{min} = 1 + \frac{1}{\frac{f_{cr}}{f} - 1}\frac{T_s}{T_o},$$

in which f_{cr} is the frequency at which the modulation of the self-capacity of the diode can compensate only for losses introduced by the diode itself. The experimental studies of single circuit amplifiers were carried out using arrangements described by the authors (Ref. 15: Osnovy teorii, rascheta i voprosy metodiki eksperimental'nogo issledovaniya odnokonturnykh parametricheskikh usiliteley SVCh na poluprovodnikovykh diodakh, Radioelektronnaya prom - st', 1959, 17, 3) at frequencies 3,000 and 4,500 mc/s. It was observed that there are two harmonics present at the output.

Table.

(1) working $f_{раб}$, Мгц mc/s	Q	(2) $Q_{внешн}$ ext	(3) K, дб db	(4) amp. $\Delta f_{усил}$, Мгц mc/s	(5) tuning $\Delta f_{перестр}$, Мгц mc/s	(6) $\sqrt{K_1}\frac{\Delta f_{внсп}}{f}$
4500	25—30	30—35	27 (500 раз)	7		$155/4500 \approx \frac{1}{30}$
	25—30	30—35	20 (100 раз)	15	40*	$150/4500 \approx \frac{1}{30}$.

Card 4/6

22272
S/109/61/006/005/019/027
D201/D303

A single circuit ...

Table (cont'd). Legend: 1 - $f_{working}$ mc/s; 2 - Q_{ext}; 3 - K, db; 4 - f_{ampl} mc/s; 5 - f_{tuning} mc/s; 6 - $\sqrt{K_1}\ \frac{\Delta f_{exp}}{f}$.

The table gives the magnitudes of the Q-factor of one of the amplifier models, together with the measured values of other parameters at a frequency of 4,500 mc/s, using diodes as described by M. Gershenzon and V.S. Etkin (Ref. 12: O parametricheskoy regeneratsii v diapazone SVCh na poluprovodnikovom diode, Izv. vuzov MVO SSSR (Radiofizika) 1959, 2, 5, 835). Similar results have been obtained at 3,000 mc/s. The authors acknowledge the help of K.A. Merkur'yev, N.Ye. Skvortsova, A.V. Krasilov, V.M. Val'd - Perlov and A.A. Rabinovich-Vizel'. There are 3 figures, 1 table and 17 references: 13 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: H. Heffner, G. Kotzebue, Proc. I.R.E., 1958, 46, 6, 1301; G. Herrman, H. Venohara, A. Uhlir, Proc. I.R.E., 1958, 46, 6, 1301; S. Blooms, K.K. Chang, R.C.A. Rev., 1957, 18, 4, 578; A. Uhlir, Proc. I.R.E., 1956,

Card 5/6

22272 S/109/61/006/005/019/027
D201/D303

A single circuit ...

44, 4, 557.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy in-t im. V.I. Lenina Kafedra eksperimental'noy fiziki (Moscow State Pedagogical Institute im. V.I. Lenin, Department of Experimental Physics)

SUBMITTED: July 2, 1959 (initially)
March 3, 1960 (after revision)

X

Card 6/6

S/109/61/006/005/021/027
D201/D303

9,2572

AUTHORS: Gershenzon, Ye.M., and Etkin, V.S.

TITLE: Spectral and amplitude frequency characteristics of super regenerative parametric amplifiers

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 5, 1961, 837 - 838

TEXT: Parametric regenerative amplifiers may be considered as regenerative amplifiers with a negative resistance at each of the frequencies which are amplified, i.e. at f_s and $f_{diff} = f_p - f_s$, where f_s and f_{diff} and f_p are the signal frequency, the difference frequency, and pump frequency respectively. According to Ye.M. Gershenzon, N.G. Ptitsyna, G.N. Rozhkova and V.S. Etkin (Ref. 3: Ob odnokonturnom parametricheskom usilitele, Radiotekhnika i elektronika, 1961, 6, 5, 829). The expression for gain of every harmo-

Card 1/4

Spectral and amplitude ...

nic with large amount of regeneration is given by

$$k = \frac{Z^2}{(R - R\ )^2}, \qquad (1)$$

[Abstractor's note: This expression is not explicably given in the reference mentioned], where Z - the characteristic resistance of the line feeding the amplifier, R - the total resistance of the equivalent circuit of the amplifier, R - the negative resistance given by

$$R = \frac{m}{2} \frac{1}{\omega_0\ c_0}, \qquad (2)$$

where ω_0 - the circuit frequency, C_0 - capacitance at working point [Abstractor's note: The capacitance C_0 in Eq. (2) is printed in a small character]. If the pump voltage, which governs the capacitance of the diode, is modulated by low frequency $\Omega = 2\pi F$

Card 2/4

22274

S/109/61/006/005/021/027
D201/D303

Spectral and amplitude ...

which amounts to the same as if C_0 were modulated, then one could say that the negative resistance is being modulated. This is why the behavior of a super regenerative amplifier could qualitatively be described using the theory of a normal super regenerative amplifier having a modulated negative resistance as proposed by G.S. Gorelik (Ref. 4: Lineynyye rezonansnyye yavleniya v superregenerativnom priyemmike, Elektrosvyaz' 1939, 6). On account of the above, the spectrum at the output of the amplifier should have two families of spectra, $f_s \pm nF$ and $f_{diff} \pm nF$, $n = 0, 1, 2, \ldots$, with two maxima at frequencies $f_p/2 \pm nF$ appearing on the frequency characteristics. In the present article, the above deductions have been confirmed for amplifiers described in (Ref. 3: Op.cit.). At super regeneration a "high" frequency of pump modulation was used (2 - 5 mc/s), comparable in magnitude to the pass-band of the amplifier. It was shown that, indeed, at super regeneration there exist at the output of the amplifier two families of spectra and at the same time the frequency characteristics, while expanding,

Card 3/4

22274
S/109/61/006/005/021/027
D201/D303

Spectral and amplitude ...

assume additional maxima. The ordinate of the frequency characteristic represents in this case the total amplitude of oscillations at all frequencies, excited in the parametric super regenerative amplifier by the signal frequency ω. This amplitude was measured by the current of the video detector at the output of the amplifier. The oscillograms obtained with a wave analyzer for the regenerative and the super regenerative states are shown in this article as well as the oscillograms of the frequency characteristics of the amplifier obtained with a sweep generator at regeneration and super regeneration. The super regeneration increases the gain (e.g. for the same average pumping level from 20 to 35 - 40 дб) and the passband (2 to 4 times). This is achieved however by considerably distorting the signal which precludes the use of the super regenerative amplifiers in many applications. There are 10 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: H. Heffner, G. Wade, Proc. I.R.E., 1159, 47, 7, 1971; B.Bossard, Proc. I.R.E., 1959, 47, 7, 1969 [Abstractor's note: This is essentially a complete translation].

SUBMITTED: March 9, 1960

Card 4/4

32923

S/194/61/000/011/058/070
D271/D302

9,2570(1139,1144,1157)

AUTHORS: Gershenzon, Ye.M., Gurvich, Yu.A., Litvak-Gorskaya, L.B. and Etkin, V.S.

TITLE: Some problems of development of microwave amplifiers based on negative mass of current carriers in semiconductors

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 11, 1961, 13, abstract 11 K98 (V sb. Poluprovodnik., pribory i ikh primeneniye, no. 6, M., Sov. radio, 1960, 92-102)

TEXT: The calculation is given of the microwave reflex amplifier making use of the negative effective mass of current carriers in semiconductors. It is shown that the product of the square root of gain K and transmitted bandwidth Δf increases with the concentration of negative mass carriers. The problem of the intrinsic noise of the amplifier is considered and effective temperature of

Card 1/2

32923
S/194/61/000/011/058/070
D271/D302

Some problems of development...

amplifier noise is evaluated. The upper limit of the effective noise temperature is 100°K for frequencies at which instability of the space charge does not occur. The comparison of the average periods of optical and acoustical scatters leads to the conclusion that acoustic scatter can be avoided by the use of a sufficiently strong electric field. It is suggested that a possibility exists of realizing an amplifier based on negative mass carriers in germanium, operating on d.c. because the amplification effect at the expense of negative mass must take place in this as well. Measurement of the voltage-current characteristic of a specimen may permit one to judge whether negative effective mass carriers are present. 8 references. [Abstracter's note: Complete translation]

Card 2/2

GERSHENZON, Ye.M.; SELIVANENKO, N.Ye.; ETKIN, V.S.

Use of tunnel diodes in radio engineering circuits. (MIRA 14:7)
Elektrosviaz' 15 no.8:11-19 Ag '61.
(Transistor circuits) (Diodes) (Transistors)

GERSHENZON, Ye.M.; LYUBIMOVA, T.F.; PTITSYNA, N.G.; ROZHKOVA, G.I.; ETKIN, V.S.

Investigation of superregenerative conditions in single-stage parametric amplifiers. Izv.vys.ucheb.zav.; radiofiz. 4 no.1: 113:120 '61. (MIRA 14:8)

1. Moskovskiy pedagogicheskiy institut imeni V.I.Lenina.
(Amplifiers (Electronics))

GERSHENZON, Ye.M.; D'YAKOV, Yu.Ye.; SOINA, N.V.; SMIRNOVA, L.A.; ETKIN, V.S.

Increasing the band-pass of parametric amplifiers by means of coupled stages. Izv.vys.ucheb.zav.; radiofiz. 4 no.1:121-125 '61. (MIRA 14:8)

1. Moskovskiy pedagogicheskiy institut imeni V.I.Lenina.
(Amplifiers (Electronics))

ROZHKOVA, G.I.; ETKIN, V.S.

Problem concerning the passage of random signals through systems with variable parameters. Radiotekh. i elektron. 7 no.8:1451-1453 Ag '62. (MIRA 15:8)
(Automatic control) (Electronics)

GERSHENZON, Ye.M.; LYUBIMOVA, T.F.; ROZHKOVA, G.I.; ETKIN, V.S.

Dynamic characteristics of a stage with variable capacitance and low level of regeneration. Izv. vys. ucheb. zav.; radiotekh. 6 no.3:303-304 My-Je '63. (MIRA 16:9)

1. Rekomendovano kafedroy eksperimental'noy fiziki Moskovskogo pedagogicheskogo instituta imeni Lenina.

(Parametric amplifiers)

ROZHKOVA, G.I.; ETKIN, V.S.

Discussion of the article "Sensitivity gain of a radar receiver using a synchronous parametric amplifier" published in the Proceedings of the I.R.E. Radiotekh. i elektron. 8 no.6: 1082-1086 Je '63. (MIRA 16:7)

(Radar)

NIKULINA, L.N.; SELIVANENKO, N.Ye.; ETKIN, V.S.

Superhigh frequency converter using tunnel diodes. Elektrosviaz' 17 no.11:1-11 N '63. (MIRA 17:1)