L 45129-66

ACC NR: AP6020382

by a calcined dense material without metallic impregnations (2P-1000). The average rate of wear of this material was 0.13 microns/hr. If the permissible relative wear is taken at 15%, such rings could operate for 10,000 hours without replacement. The material from the "Acheson" company was less resistant in a gas medium, the wear being 3-4 times greater than for AO-1500805 and 10 times greater than for 2P1000. In general, the results are said to confirm the possibility of using graphite piston rings, with dry friction, in the cylinders of motors. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 21, 11/ SUBM DATE: none/ ORIG REF: 005

Card 2/2 MJS

YUDITSKIY, F. S.

Piston Rings

Eliminate loss caused by the turning of the piston ring in steam engine cylinders. Rech. transp. 12 no. 3, 1952.

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

124-1957-1-480

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 60 (USSR)

AUTHORS: Preobrazhenskiy, N.A., Yuditskiy, G.A.

TITLE: Investigation of the Pressure Pulsation Along the Walls of the Filling Conduit of a Lock Chamber (Issledovaniya pul'satsii davleniya na stenki vodoprovodnoy galerei shlyuza)

PERIODICAL: Izv. Vses. n.-i. in-ta gidrotekhn., 1955, Vol 54, pp 65-77

ABSTRACT: A description is adduced of tests for the study of the hydrodynamic pressure pulsations acting upon the wall and the valves of the filling conduit of a navigation lock chamber. Also described are tests intended for the development of methods for the alleviation of these pulsations. The test results are expressed in the form of graphical relationships between the pulsation pressures and the discharge rate. It is recommended that gratings be installed in the stop-log grooves below the valve gates.
Bibliography: 5 references

P.G.Kiselev

1. Canals--Navigational locks--Hydrodynamic pressure --Analysis

Card 1/1

124-1957-1-482

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 61 (USSR)

AUTHORS: Kumin, D.I., Preobrazhenskiy, N.A., Yuditskiy, G.A.

TITLE: Hydrodynamic Load Pulsations on Portions of the Filling Conduit Beyond the Gate Valve (Pul'satsiya gidrodinamicheskoy nagruzki na uchastok napornoy galerei za zatvorom)

PERIODICAL: Izv. Vses. n.-i. in-ta gidrotekhn., 1955, Vol 54, pp 78-85

ABSTRACT: Deviating from the study of the pressure pulsation at a given point (ref. RzhMekh 1957, Nr 1, 480), the present paper refers to an investigation of the pressure pulsation on an isolated wall area. The investigations were performed on a model of the filling conduit of a navigation lock. The construction of the model permitted a certain freedom of vertical and horizontal displacement in order to facilitate the measurement of the pressure acting on the wall area under examination. The tests revealed that the maximum pulsation pressures are proportional to the square of the discharge.

P.G.Kiselev

1. Hydraulic conduits--Pressure--Pulsation--Analysis

Card 1/1

124-1957-1-481

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 61 (USSR)

AUTHORS: Kumin, D.I., Yuditskiy, G.A.

TITLE: The Pulsation of the Hydrodynamic Load on the Gratings in a Pressure Conduit (Pul'satsiya gidrodinamicheskoy nagruzki na reshetku v napornoy galereye)

PERIODICAL: Izv. Vses. n.-i. in-ta gidrotekhn., 1955, Vol 54, pp 86-97

ABSTRACT: Description of tests for the study of the hydrodynamic pressure pulsations occurring on gratings mounted at shield-type valve gates of the filling conduits of navigation locks. The model of the grating had a certain freedom of displacement on its four support points under the action of the pulsational oscillations. The tests revealed that the maximum impulse of the pulsation was proportional to the square of the discharge rate. The test results are illustrated by graphs of the pulsations of the hydrodynamic pressure on the gratings plotted against the discharge rate; the oscillograph tracings are also reproduced.

P.G.Kiselev

Card 1/1 1. Canals--Navigational locks--Hydrodynamic pressure --Analysis

YUDITSKIY, G.A., Cand Tech Sci—(diss) "Pulsation of the hydrodynamic load upon the plates of jets of spillway dams." Len, 1958. 11 pp with graphs (Min of Electric Power Stations USSR. Technical Administration of the All-Union Sci Res Inst of Hydraulic Engineering im B.Ye. Vedeneyev), 150 copies (KL,25-58,116)

YUDITSKIY, G.A., starshiy inzhener

Experimental investigation of the pulsation of hydrodynamic loads on the apron plate. Izv.VNIIG 58:107-123 '58. (MIRA 13:7)

(Hydraulics)

YUDITSKIY, G.A., kand.tekhn.nauk

Device for measuring low speeds of water flow. Izv.VNIIG 64:251-255 '60. (MIRA 14:5)
(Hydraulics)

YUDITSKIY, G.A., kand.tekhn.nauk

Experimental study of the pulsation of hydrodynamic pressures on the reinforcing slabs of the tail race. Izv. VNIIG 65:117-124 '60. (MIRA 14:5)

(Hydraulics) (Dams)

YUDITSKIY, G.A., starshiy nauchnyy sotrudnik, kand. tekhn. nauk

Pulsation of hydrodynamic load on apron slabs under the conditions of a three-dimensional problem. Izv. VNIIG 73:141-154 '63 (MIRA 18:1)

Pulsation of a hydrodynamic load on apron slabs below multi-overflow dams with energy dissipators. Ibid.:155-172

ALESHKO, P.I., inzh.; NIKOLAYENKO, A.T., inzh.; YUDITSKIY, G.I., inzh.

Hydraulic driving for boring machinery. Shakht.stroi. no.2:6-10 F '59. (MIRA 12:3)

(Boring machinery)
(Oil hydraulic machinery)

CHEL'TSOV, Mikhail Ivanovich; SLOBOTKIN, Dmitriy Savvich; FADEYEV, Yevgeniy Ivanovich; SKIRGELLO, Ol'gerd Boleslavovich; POLYAK, Aron L'vovich; ZHUK, Boris Vasil'yevich; POLYAKOV, Nikolay Mikhaylovich; NIKOLAYENKO, Aleksey Timofeyevich; FAYNBERG, Grigoriy Solomonovich; YUDITSKIY, Grigoriy Izrailevich; DORO-SHENKO, Grigoriy Nesterovich; TRUPAK, N.G., prof., doktor tekhn. nauk, obshchiy red.; SMIRNOV, L.V., red.izd-va; KONDRAT'YEVA, M.A., tekhn.red.

[Handbook on special methods of shaft sinking] Spravochnik po prokhodke stvolov shakht spetsial'nymi sposobami. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 383 p. (MIRA 13:4)

(Shaft sinking)

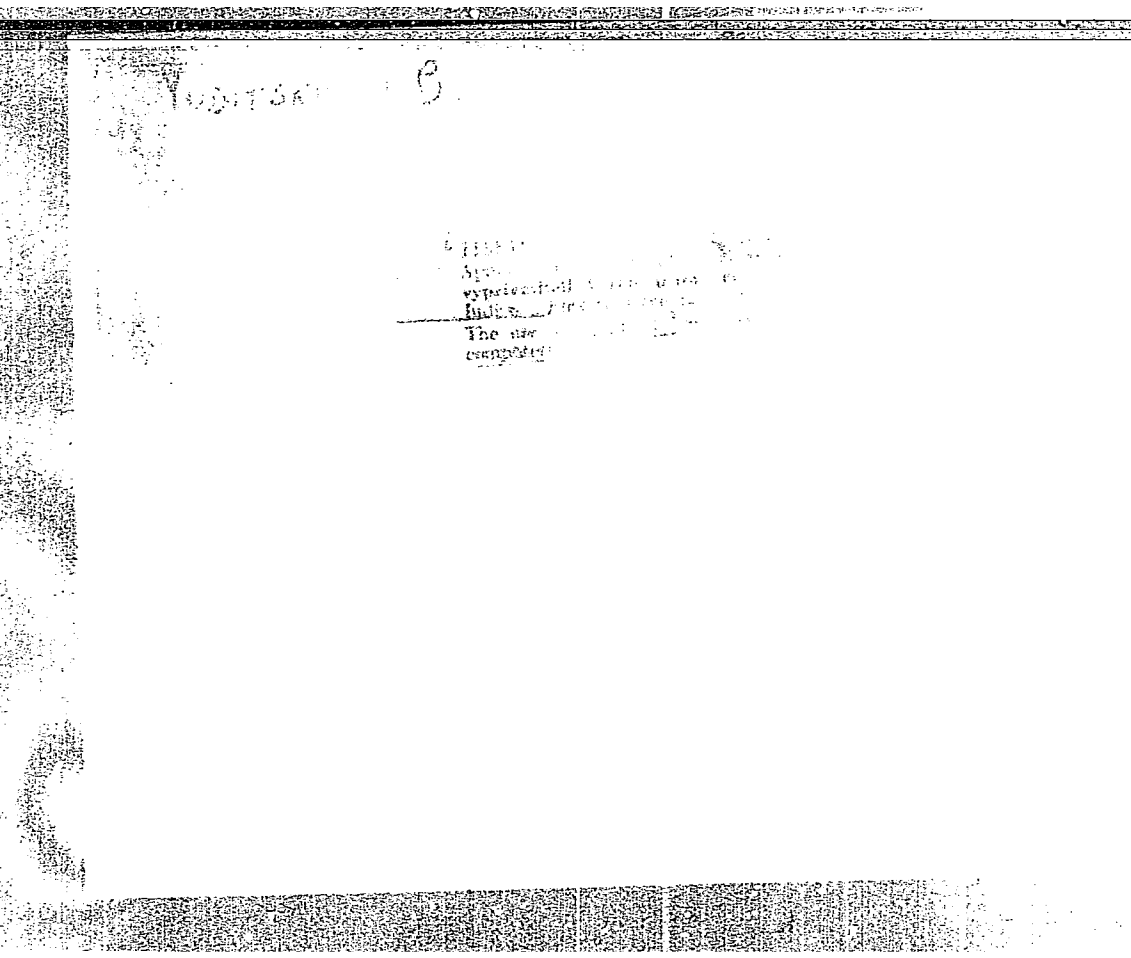
NIKOLAYENKO, A.T.; YUDITSKIY, G.I.; POLYAK, A.L.

Drilling equipment for the sinking of shafts and large diameter boreholes. Ugol' Ukr. 5 no.7:14-16 Jl '61. (MIRA 15:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii shakhtnogo stroitel'stva.
(Rock drills)

SEDOV, Boris Yakovlevich; NIKOLAYENKO, Aleksey Timofeyevich; YUDITSKIY, Grigoriy Izrailevich; KOSTAN'YAN, A.Ya., red. izd-va; LOMILINA, L.N., tekhn. red.

[Drilling rigs for sinking shafts and boreholes]Burovye ustanovki dlia prokhodki stvolov i skvazhin; spravochnik. Moskva, Gosgortekhizdat, 1962. 363 p. (MIRA 16:2)
(Shaft sinking) (Boring)



YUDITSKIY, M.

GUREVICH,G.; VINNIKOV,M.; YUDITSKIY,M.; KARP,I.

Clubs train public-spirited instructors. Voen.znan.31 no.4:9 Ap'55. (MLRA 8:10)

(Military education)

YUDIN, M.S.

Using synthetic materials instead of scarce nonferrous metals.
Metallurg 9 no.9:34-35 S '64.

1. YUDITSKIY, M. M.

2. USSR (600)

4. Axonometric Projection

7. Device for drawing axonometric representations of bodies from two rectangular projections. Lit. proiz. no. 10. 1952.

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

YUDITSKIY, M. M.

Dissertation: "Construction of Axonometric Representatives Without the Use of Secondary Projections." Cand Tech Sci, Kiev Construction Engineering Inst, Khar'kov, 1954. Referativnyy Zhurnal--Matematika, Moscow, Jul 54.

SO: SUM No. 356, 25 Jan 1955

YUDITSKIY, Meyer Moiseyevich; LEYBIN, A.S., otv. red.; KOVALEVA, Z.G., red.; TROFIMENKO, A.S., tekhn. red.

[Construction of axonometric drawings without the use of secondary projections] Postroenie aksonometricheskikh izobrazhenii bez ispol'zovaniia vtorichnykh proektsii. Khar'kov, Izd-vo Khar'kovskogo gos. univ. im. A.M.Gor'kogo, 1958. 36 p. (MIRA 14:7)
(Geometrical drawing)

YUDITSKIY, M.M., dotsent; MAKUKHA, G.G., aspirant

Plotting axonometric projections of machine parts in the rectangular coordinate system. Izv.vys.ucheb.zav.; mashinostr. no.8:13-22 '62. (MIRA 15:12)

1. Kommunarskiy gornometallurgicheskiy institut.
(Axonometric projection) (Machinery—Drawing)

KUZNETSOV, A. V.; YUDITSKIY, M. M., kand. tekhn. nauk, dotsent

Devices for plotting axonometric projections. Vest. mashinostr. 42 no.10:82-85 O '62. (MIRA 15:10)

(Geometrical drawing—Equipment and supplies)

YUDITSKIY, M.M., kand.tekhn.nauk, dotsent; MAKUKHA, G.G.

Device for drawing rectangular isometric projections. Vest. mashinostr. 43 no.8:88-89 Ag '63. (MIRA 16:9)
(Isometric projection) (Geometrical drawing--Equipment and supplies)

YUDITSKIY, M.M., kand. tekhn. nauk, dotsent

Device for plotting rectangular axonometric drawings of machine parts. Vest. mashinostr. 44 no.6:88 Je '64.
(MIRA 17:8)

DEMKOVSKIY, Petr Nikolayevich; YUDITSKIY, M.M., dotsent, otv.red.; RAZILYANSKAYA, I.L., red.; KUDNITSKAYA, I.T., tekhn.red.

[Theoretical fundamentals of layout and the mechanization of laying out processes] Teoreticheskie osnovy razmetki i mekhanizatsiia ee protsessa. Khar'kov, Izd-vo Khar'kovskogo gos.univ., 1960. 98 p. (MIRA 14:1)
(Laying out (Machine-shop practice))

S/121/60/000/010/001/001
A004/A001

AUTHORS: Shcherbakov, V. I., Yuditskiy, S. A.

TITLE: The Designing of Pneumatic Automation Systems With Pneumatic Path Control

PERIODICAL: Stanki i Instrument, 1960, No. 10, pp. 1-5

TEXT: The authors give an account of the method developed by the ENIMS of building schematic pneumatic circuits for pneumatic automation systems. The orders determining the operation of the system are transmitted by the cylinder rods at the end points of their paths (path control). The pneumatic equipment necessary for the cycle, can be divided into order devices, control devices, intermediate and additional devices. In order to effect complex cycles with path control with the aid of pneumatic automation, the following main devices are necessary: path and separating valves, memory valves, controlling air distributors and pneumatic cylinders. Since a universal system of conventional notation of pneumatic devices does not exist, the authors suggest a conventional notation for the described method of building pneumatic circuits, which is somewhat more simplified than the semi-constructive presentation. In pneumatic circuits using

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The Designing of Pneumatic Automation Systems With Pneumatic Path Control

conventional notations, cylinders, air distributors (controlling their operation) and path valves are laid out together, while order elements and control cavities of the air distributors are mapped separately. Fig. 5 shows a block diagram of such a pneumatic circuit. The authors indicate the following sequence for the designing of a pneumatic automation system: Plotting the cyclogram of cylinder operation, plotting the cyclogram of the path valve position, writing out the control orders for every cycle, inserting into a table the orders given by the path valves, the memory valves necessary, and also the orders which are not to be given at the given cylinder stroke - as well as the maintenance of this position at the end of this stroke. Then the cyclogram of the effects of the control orders has to be plotted. The orders whose execution is withdrawn have to be determined for every cycle by the table and cyclogram, and entered into the corresponding horizontal graph, while the sections of each order abolished have to be marked on the cyclogram. The possibility of abolishing the orders without introducing into the layout additional devices and of marking this on the position cyclogram of the control orders should be used. Then the compressed-air supply lines for the valves whose orders are to be abolished have to be mapped

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S/121/60/000/010/001/015
A004/A001

The Designing of Pneumatic Automation Systems With Pneumatic Path Control

and the number of memory valves necessary and orders controlling their switching determined. The abolishment is indicated on the operation cyclogram of the control orders. All devices and their connection should be indicated on the pneumatic circuit and the orders controlling the manifold valves determined and indicated on the circuit. There are 7 figures and 5 references: 4 Soviet and 1 US.

Card 3/3

22916
S/121/61/000/007/001/004
D040/D112

28,1000 1089, 1068

AUTHORS: Pomerantsev, L.M., Shcherbakov, V.I., and Yuditskiy, S.A.

TITLE: Designs of pneumatic counting-memory systems

PERIODICAL: Stanki i instrument, no. 7, 1961, 4-7

TEXT: The discussed pneumatic automatic control systems have been built and tested at the ENIMS pneumatics laboratory. The article presents a detailed discussion of general design principles of these systems, which are suitable for use in machines, machine tools, or automatic transfer lines. They have been described previously (Shcherbakov, V.I., and Yuditskiy, S.A., "Stanki i instrument", no. 10, 1960). A pneumatic memory unit - giving a command for actuating the work element of the machine after it has received a given number of pressure pulses - is included into the control system if the work element has to function periodically after a certain number of cycles. The interaction principle of counting-memory system elements is shown in a block diagram (Fig. 1) where the channels memorizing action pulses are marked 1_n, 2_n, 3_n, ...n_n, and the channels memorizing the return pulses - $\overline{1}_n$, $\overline{2}_n$, $\overline{3}_n$ .... $\overline{n}_n$. Π is the action pulse channel and $\overline{\Pi}$ the return pulse channel. The

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22916
S/121/61/000/007/001/004
D040/D112

Designs of pneumatic counting-memory systems

top system in (Fig. 1) is symmetric, with only one channel for each received pulse (both action and return), and the bottom one is asymmetric and memorizes action pulses only. The "memorizing valves" are four-way air-distribution valves. Pulse amplifiers (Fig. 3) in the form of three-way valves may be used in the units for compensating pressure drop in the air lines. A weak pulse acts on the membrane (1), the membrane pushes the pusher (2), and the valve (3) opens wider and passes a high-pressure pulse from the line. The duct from the amplifier to the "memorizing valve" is connected to the atmosphere when the amplifier is in the zero position. The article includes descriptions of high-order units built up from simple counting-memory units by means of addition and multiplication operations, and calculations for determining the necessary number of valves for different arrangements. Two practical examples are given - a simple binary unit controlling the switch of a conveyer transporting parts, and a unit in a storage hopper in an automatic transfer machine giving control commands after the passage of every sixth part. There are 10 figures and 1 Soviet-bloc reference.

Card 2/4

ACC NR: AT6021722 SOURCE CODE: UR/0000/66/000/000/0005/0017

AUTHOR: Yuditskiy, E. A.

ORG: none

TITLE: Synthesis of control systems for machine tools with pneumatic drives

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki. Pnevmoavtomatika (Pneumatic automation). Moscow, Izd-vo Nauka, 1966, 5-17

TOPIC TAGS: pneumatic control, automatic pneumatic control, pneumatic control system, pneumatic servomechanism, pneumatic device

ABSTRACT: The author describes the design of two types of sequential control systems for pneumatic drives. In its basic version such drives consist of an air cylinder in which the piston can assume one of two stable positions. The displacement of the piston is controlled by an air-distributing valve in response to external and feedback commands. Figure 1 shows the block diagram of a pneumatic prime mover (O) and the associated control system (A). The prime mover includes logic converters (B) and a binary delay block (C). The sequential control system (A) is described by the equation system

$$\left.\begin{aligned} \mu_A^p &= F(\rho_A^p, R^p, x_A^p);\\ x_A^{p+1} &= \mu_A^p;\\ \lambda_A^p &= \Phi(\rho_A^p, R^p, x_A^p), \end{aligned}\right\}$$

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ACC NR: AT6021722

where Φ and F are logic operations, and the remainder of the symbols is obvious from the block diagram. It is always assumed that the design of the delay block (C) is given, while block (B) may, or may not be specified. The performance of the control system is described by its transfer functions, i. e., the relation of the output to a given input R. With a fixed input R the control system is sequential and cyclic, that is a certain sequence of outputs is repeated in predetermined intervals. Two approaches to the design of the sequential control unit are possible: the first based on all known required transfer functions; the second based on a universal command unit, incorporating a clock, and capable of generating the desired transfer functions. The structure of the latter unit is determined only by the length of the cycle. In the first system a filter is incorporated which rejects signals from the control unit that would cause unstable conditions. This filter may be a separate entity, or a part of the logic unit (B). In the second system a clock determines the timing of the sequential operation. The delays between the individual steps in the sequence can be either fixed by the control system, or natural, due to the response of the total system. The advantages of the second system are in its versatility, reliable and stable operation, ease of maintenance, and simplicity of synthesis. Orig. art. has: 8 figures, 7 tables.

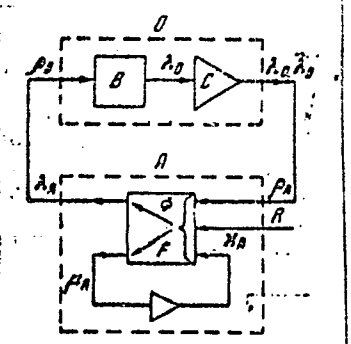

Fig. 1.

SUB CODE: 13/ SUBM DATE: 03Feb66/ ORIG REF: 005

Card 2/2

ACC NR: AT6021723 SOURCE CODE: UR/0000/66/000/000/0018/0027

AUTHOR: Yuditskiy, S. A.

ORG: none

TITLE: Structural synthesis of pneumatic automata for control of machine tools

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki. Pnevmoavtomatika (Pneumatic automation). Moscow, Izd-vo Nauka, 1966, 18-27

TOPIC TAGS: pneumatic control, automatic pneumatic control, pneumatic control system, pneumatic servomechanism, pneumatic device

ABSTRACT: This paper deals with the design of sequential control systems for applications in machine tools energized by pneumatic prime movers. A typical pneumatic drive with the associated control system is shown in Figure 1. The pistons in cylinders 1 through n can each assume one of two discrete positions sensed by the limit switch pairs $LS_1 \ldots LS_n$. The output of the limit switches controls the state of the flip-flops $FF_1 \ldots FF_n$, which in turn provide position indication at any given time to the main control logic A. The use of the flip-flops in conjunction with the limit switches is desirable to increase the stability and reliability of the system. The main control logic A controls the sequence of the operation in accordance with a predetermined pro-

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ACC NR: AT6021723

gram. Delays $D_1 \ldots D_n$ are incorporated to prevent trace conditions. The delays are realized through bistable elements. Thus the output signals from the main logic A are functions of the input signals, the stored program, and the appropriate delays. Actuators $Y_1 \ldots Y_n$ control valves $V_1 \ldots V_n$ in response to commands received in binary form from the main logic A. The author uses an example to describe the selection of optimum valve actuators and synthesis of the main logic based on minimization of the transfer functions. The proper selection of the actuators will provide the simplest possible structure of the main logic A. The design information is detailed and given in step-by-step form. Orig. art. has: 2 figures, 2 tables.

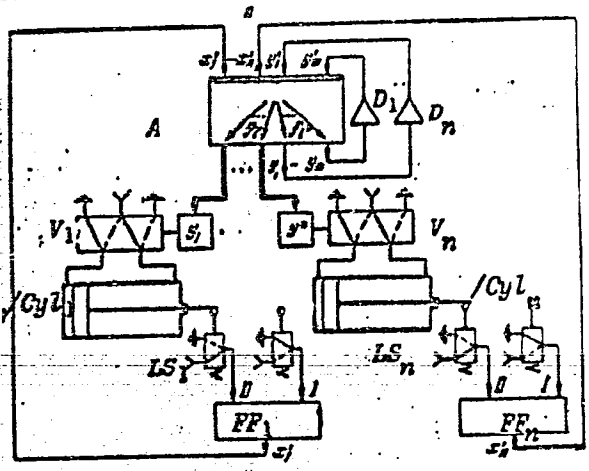

Fig. 1.

SUB CODE: 13/ SUBM DATE: 03Feb66/ ORIG REF: 008

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S/121/62/000/002/001/004
D040/D113

AUTHORS: Shcherbakov, V.I., Pomerantsev, L.M., and Yuditskiy, S.A.

TITLE: Universal pneumatic command units

PERIODICAL: Stanki i instrument, no. 2, 1962, 5-10 33

TEXT: A new rotor-type command unit developed by ENIMS is described, and, in connection with system combinations proposed for pneumatically controlling automatic machines which require quick settings for different operational cycles, pneumatic control units with air distributor blocks are discussed. Schematics of different operators and examples of possible control circuits are given. References are made to Soviet and English-language sources dealing with pneumatic control circuits and memory valves controlling logic circuits. One suggested control circuit corresponds to an asymmetric counting-memory unit previously described by the authors (Ref. 3: Stanki i instrument, no. 7, 1961). The new rotor-type command unit, shown in a diagram, includes a camshaft bearing a sprocket, driven by a pneumatic piston, and three-way valves actuated by the cams. It is suggested that auxiliary four-

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S/121/62/000/002/001/00[illegible]
D040/D113

Universal pneumatic command units

way valves should be modified in design when used in cases where damage may be caused by an unintended air pressure drop in the system. The above-mentioned rotor-type units have been developed for 12 and 24 control signals. There are 8 figures and 10 references: 7 Soviet-bloc and 3 non-Soviet-bloc. The three English-language references are: W.M. Morrison, Pneumatic Control Circuits, "Automation Progress", no. 5, 1961; Cowherd, Design of Pneumatic Relay Circuits, "Product Engineering", October, 1956; Cameron, Valve with a Memory Handles Logic Circuits, "Product Engineering", May 1958.

Card 2/2

S/876/62/000/000/005/007
E191/E481

AUTHORS: Shcherbakov, V.I., Yuditskiy, S.A.

TITLE: The application of pneumatic power to the automation of production processes

SOURCE: Proyektirovaniye i ekspluatatsiya avtomaticheskikh liniy mekhanicheskoy obrabotki. Mosk. dom nauchno-tekhn. prop. Ed. by A.P. Vladziyevskiy. Moscow, Mashgiz. 1962. 205-233

TEXT: The spread of pneumatic power in the automation of engineering production is assisted by the rapid action, simple design for complex cycles, long life, explosion-proof quality, reliable operation in a wide range of temperatures, easy mains distribution and simplicity of design and maintenance inherent in pneumatic equipment. A disadvantage is the low pressure of compressed air systems used in practice. Another disadvantage is the absence of the steady rate of displacement which is overcome by hydro-pneumatic devices. Pneumatic devices are especially useful in modernization projects. Pneumatic components are described and illustrated including pneumatic cylinders, distribution pipelines, moisture separators, pressure regulators,

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oil atomizers, decelerating (snubbing) control valves, selector valves, air operated control valves and others. Examples of pneumatic circuits are given, including a system for continuous reciprocation of a pneumatic cylinder and a pneumatic transmission with 2 cylinders. Pneumatic systems for complex automatic cycles are divided into systems with program controllers and systems with memorizing valve elements. In the first system, a controller containing a programming unit with cams provides the sequence of the cycle. After each stroke of a pneumatic cylinder, the distribution camshaft is turned and issues the subsequent control signal. In the second system, the desired sequence is ensured by pneumatic devices, such as memorizing control valves and selector valves and by the use of limit valves with pneumatic return. Examples are illustrated and described for each of the two systems. A design procedure is given in detail for the two-cylinder pneumatic drive. There are 19 figures and 2 tables.

ACCESSION NR: AT4042436 S/0000/64/000/000/0050/0058

AUTHOR: Yuditskiy, S. A.

TITLE: Synthesis of pneumatic relay control systems for the pneumatic devices of mechanical automata

SOURCE: Vsesoyuznoye soveshchaniya po pnevmo-gidravlicheskoy avtomatike. 5th, Leningrad, 1962. Pnevmo- i gidroavtomatika (Pneumatic and hydraulic control); materialy* soveshchaniya. Moscow, Izd-vo Nauka, 1964, 50-58

TOPIC TAGS: automation, automatic control system, pneumatic control system, pneumatic relay, mechanical automaton, track control, single output relay

ABSTRACT: The author points out the growing importance of pneumatic control in modern industry and in the operation of mechanical automata, and suggests that perhaps the most important element in these systems is the pneumatic relay. After briefly describing the pneumatic elements shown in Figs. 1 and 2 of the Enclosure, the author discusses a number of practical relay control systems. Finally he discusses the synthesis of pneumatic control systems with track control, and the realization of pneumatic circuits with single-output relays. Several examples are given (See Fig. 3 in the Enclosure). Orig. art. has: 6

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ACCESSION NR: AT4042436

figures and 31 formulas.

ASSOCIATION: none

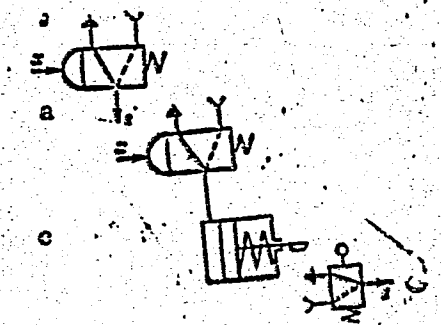
SUBMITTED: 29Jan64 ENCL: 03

SUB CODE: IE NO REF SOV: 007 OTHER: 000

Card 2/5

ACCESSION NR: AT4042436

ENCLOSURE: 01



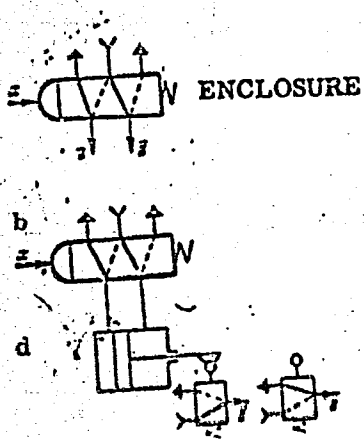


Fig. 1. Pneumatic elements of Type A; (a) single output relay with unilateral control; (b) double output relay with unilateral control; (c) as in (a), plus a cylinder and track distributor; (d) as in (b), plus a cylinder and two track distributors.

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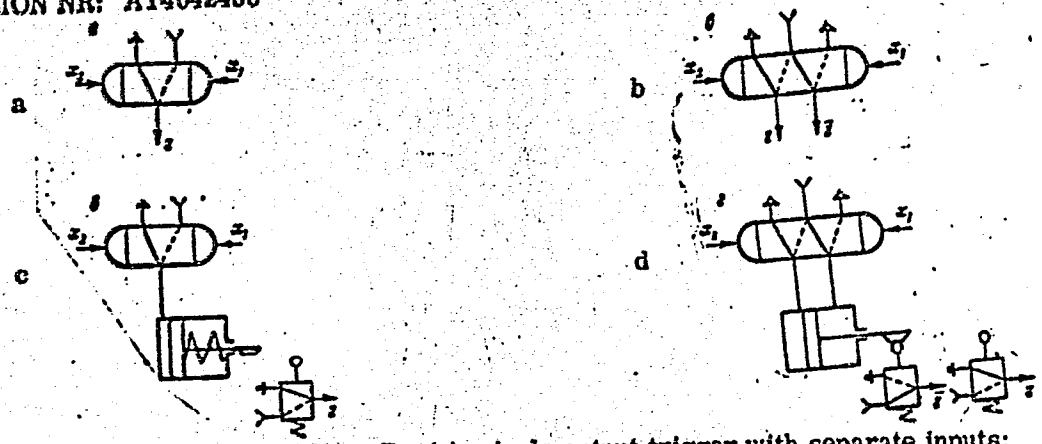

Fig. 2. Pneumatic elements of Type B: (a) single output trigger with separate inputs; (b) double output trigger with separate inputs; (c) as in (a), plus a cylinder and track distributor; (d) as in (b), plus a cylinder and two track distributors.

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ACCESSION NR: AT4042436 ENCLOSURE: 03

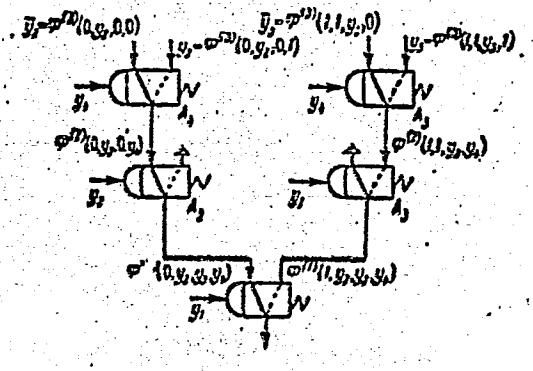

Fig. 3. Example of the realization of a pneumatic system using single output relays.

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YUDITSKIY, S.A. (Moskva)

Drive for industrial machinery and multiple-purpose automatic systems for its control. Mashinovedenie no.3:21-30 '65. (MIRA 18:6)

YUDITSKIY, S. B., jt. au.

Commutation at shock charges in electric engines of direct current Moskva, 1935. 26 p. (51-45764)

TK2681.S5

USSR/Electricity Aug 48
Generators, Synchro
Generators, Electric

"Studies of Self-Exciting Synchronous Generators With Solid Rectifiers during Nonstationary Operation," S. B. Yudits'kiy, Cand Tech Sci, All-Union Electrotech Inst imeni V. I. Lenin, 7 pp

"Vest Elektro-Prom" No 8

Many factories are now producing 15, 30, 50 and 75 kva generators of this type, designed on Yuditskiy's system. Discusses sudden application and removal of nominal load, starting asynchronous motors with

14/49T10

USSR/Electricity (Contd) Aug 48

short-circuited rotors, sudden short circuit, parallel running of synchronous generators excited from solid rectifiers, investigation of synchronous motor self-excited from selenium rectifiers under nonstationary conditions.

14/49T1

YUDITSKIY, Samuil Borisovich; RATGAUZ, I.I., redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor.

[Synchronous machines with semiconductor rectifiers] Sinkhronnye mashiny s poluprovodnikovymi vypriamiteliami. Izd. 2-e, perer. Moskva, Gos. energ. izd-vo, 1954. 151 p. (MLRA 8:2)
(Electric motors, Synchronous)

YUDITSKIY, Samuil Borisovich; FAYBISOVICH, I.L., redaktor; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor.

[Pumpless controllable mercury rectifiers for charging storage batteries of electric mine locomotives] Rudnichnye beznasosnye upravliaemye rtutnye vypriamiteli dlia zariadki akkumuliatornykh batarei shakhtnykh elektrovozov. Moskva, Ugletekhizdat, 1955. 27 p. (MLRA 9:5)
(Electric current rectifiers) (Electric locomotives)

YUDITSKIY, S.B.

110-4-13/25

AUTHOR: Sakovich, A.A., and Yuditskiy. S.B., Candidates of Technical Sciences

TITLE: The Stability of Mercury Valve Excitation Systems (Ob ustoychivosti raboty sistemy vozbuzhdeniya rtutnykh ventiley)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, No. 4, pp. 38 - 42 (USSR).

ABSTRACT: Single-anode valves are particularly subject to extinction of the excitation-arc when grid control is used. The stability of alternating-current excitation is reduced by the ionic current that flows to the excitation anode at high loads. B.N. Klyarfel'd, in his works notes the influence of the excitation anode configuration and also of lowering the vapour-pressure on the arc stability at low loads. Other investigators have suggested other causes but so far extinction of the excitation arc has not been completely prevented. Since this kind of extinction is one of the main defects of the valves, special investigations were conducted at the All-Union Electrotechnical Institute, with close attention to the influence of the processes of current commutation of the main anode on extinction of the excitation. A special equivalent circuit illustrated in Fig.1 was used to investigate the influence of commutation of the main current and

Card1/5

reproduced the most severe operating conditions of the valve. The apparatus imposes on the anode circuit of the valve periodically-repeated current impulses having amplitudes of up to 1 200 A and with rates of change of current of the order of $10^7 - 10^8$ A/sec. Immediately after the current impulse has passed, a negative voltage of the order of several kV is applied to the anode. The main circuit components are described. The operation of the circuit during tests on a large high-voltage valve is illustrated by the oscillogram in Fig.2. The influence of the main current circuit on the excitation system of the valve is illustrated by the oscillogram in Fig.3, taken whilst the excitation was working on a.c. This oscillogram shows that arc extinction occurs at the instant when the main anode ceases to pass current. The method that is described can be used to cause artificial extinction of the excitation arc under the influence of processes in the main circuit. Hence, it can be used to determine how changes in construction or in the circuit influence the stability of the excitation arc.

An investigation was then made of the effect of structural features of the valve on extinction of the excitation. It was found that the use of a hollow excitation anode did not assist

stability. The influence of screening the excitation anode was examined. As earlier work had shown that the arc was more stable if the mercury vapour pressure was raised, shields were used to raise the pressure of mercury vapour near the anode, but this measure had no important effect. Nor did changes in the location of the anode relative to the centre of the cathode appreciably influence the stability of the excitation arc. However, it was established that when the resistance in the excitation anode circuit and the voltage applied to the arc were increased, the mean time of burning of the arc was extended. It was also extended by increasing the inductance. Raising the excitation current from 8 to 10 A greatly improved the stability of burning.

An investigation was made of the influence of the excitation current and of the amplitude of the impulse anode current on the arc stability, using an experimental mercury-arc rectifier, type PMHB, 200 x 6 connected as shown in Fig.4. A constant current was maintained in the excitation anode circuit and current impulses were applied to the main anode. For each value of excitation current the relationship between the time of burning of the arc and the amplitude of the current impulse was

 determined for two values of excitation current; the results

are graphed in Fig.5. This graph indicates that when the anode current impulse ranges from 500 to 700 A, increased excitation causes the curves to be displaced in the direction of higher current impulses on the main anode. In other words, the time of burning is longer when the current is greater.
The effect of extinction of the excitation arc when the main current ceases to flow (which is the main cause of unstable operation of the excitation in single anode valves) was observed for the first time in this work. The reasons for this are discussed in relation to the theory of Prof. L.A. Sen and the work of A.V. Rubchinskiy. The excitation arc was certainly not extinguished every time the cathode spot disappeared. The effect of repeated ignition of the cathode spot results from the statistical nature of the relationship between extinction of excitation and the discharge parameters of the main circuit.
In considering the stability of the excitation arc, it is necessary to distinguish between the factors that reduce the stability at low and at high loads on the main anode.
Stability of the excitation system can be increased by raising the mean excitation current, but this is expensive. It is, therefore, better to use other means such as a series forcing

The Stability of Mercury Valve Excitation Systems

transformer in the excitation circuit. Then when the current on the main anode increases, a counter-voltage is induced in the excitation circuit by the forcing transformer and this reduces the short-term excitation current almost to zero. When the main anode current falls, the excitation current increases and reaches a peak value of almost double the main current. When the main current has died down, the series transformer acts as a choke in the excitation circuit so that the excitation current slowly falls to its mean value. Forcing of the excitation is also applicable when a.c. excitation is used. The engineers who took part in the experimental work were N.Yu. Nadel'yak, S.Yu. Nemchin and A.A. Pentsev. There are 5 figures.

ASSOCIATION: All-Union Electro-technical Institute (Vsesoyuznyy elektrotekhnickeskiy institut)

SUBMITTED: November 14, 1957

AVAILABLE: Library of Congress

Card 5/5

YUDITSKIY, S.B.

SOV/112-58-1-1233

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1958, Nr 1, p 186 (USSR)

AUTHOR: Yuditskiy, S. B.

TITLE: Power Semiconductor Rectifiers as Elements of Automatic-Control Systems (Silovyye poluprovodnikovyye vypryamiteli -- elementy sistem avtomaticheskogo upravleniya)

PERIODICAL: V sb.: Raboty M-va elektrotekhn. prom-sti SSSR po mekhaniz. i avtomatiz. nar. kh-va, 3., M., 1956, pp 87-92

ABSTRACT: Characteristics and processing of germanium valves are described, and the problems associated with current leads and cooling are mentioned. Cost of a mercury rectifier with voltages up to 1,000 v does not depend on the voltage value; therefore, the cost per kilowatt decreases with higher voltage. Cost per kilowatt of a germanium rectifier remains constant, that is, below a certain voltage value (at present, about 100 v), the germanium rectifier becomes cheaper than the mercury one. Fields of application for germanium rectifiers are briefly described, and their advantages are emphasized for supplying

Card 1/2

SOV/112-58-1-1233

Power Semiconductor Rectifiers as Elements of Automatic-Control Systems

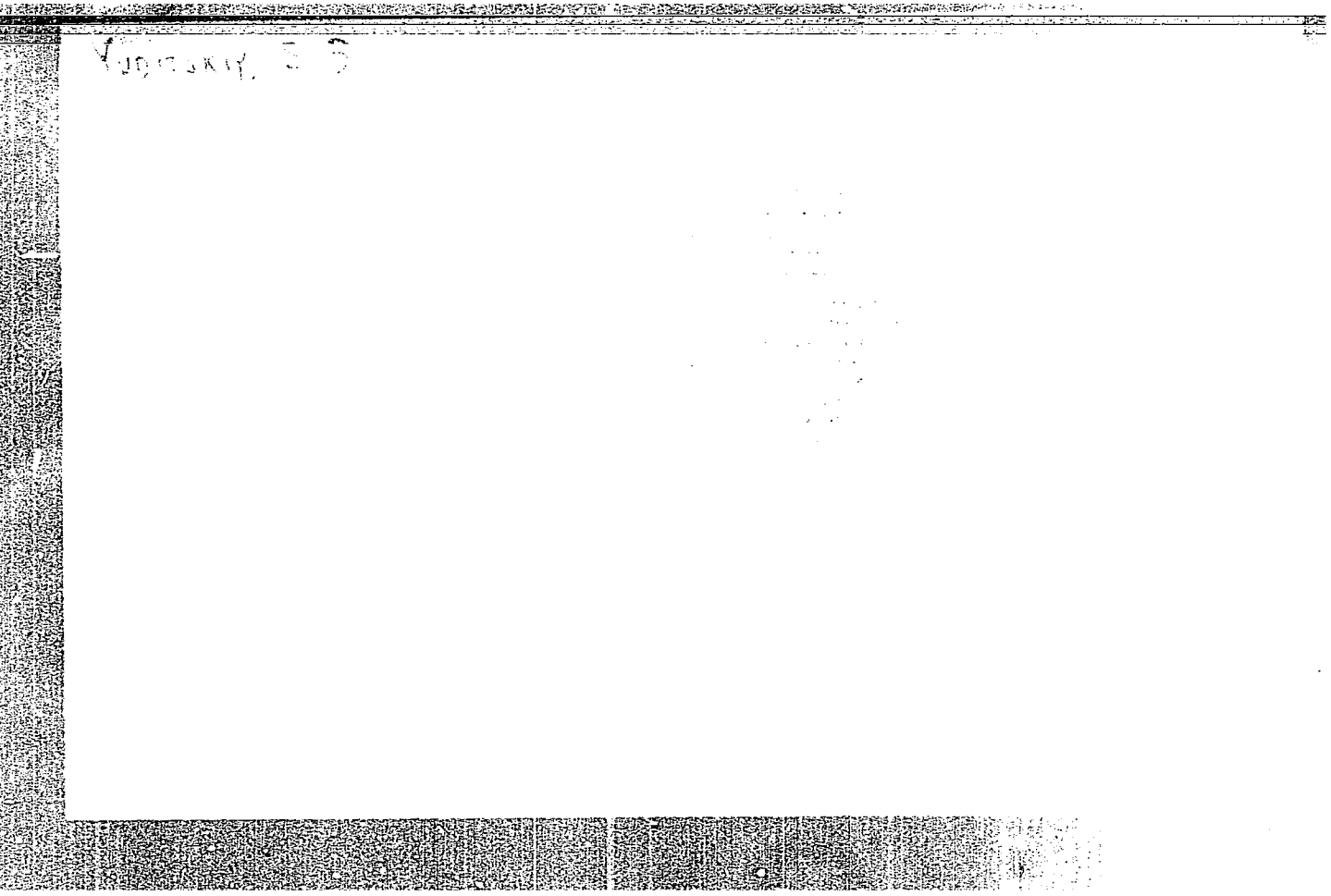
electrolytic low-voltage installations and for excitation of synchronous machinery. It is noted that because of their low forward resistance, germanium rectifiers used for excitation of synchronous generators reduce the necessary residual flux density. Photographs of 10-, 50-, and 200-amp rectifiers developed by VEI are presented.

S.M.A.

AVAILABLE: Library of Congress

1. Control systems--Equipment 2. Rectifiers--Performance
3. Semiconductors--Performance

Card 2/2



YUDITSKIY

YUDITSKIY, S. B.

"Semiconductor Power Rectifiers -- Elements of Systems of Automatic Control," pp 87-92, ill

Abst: A description is given of the principle of operation and construction of germanium and silicon rectifiers; their basic advantages and deficiencies are pointed out. The article considers the areas of application of semiconductor rectifiers (electrolysis in the chemical industry, ferrous and nonferrous metallurgy, galvanoplastics, charging storage batteries for automobiles, and low-power units for the purpose of automatization of electrid drive.

SOURCE: Raboty MER SSSR po Mekhan. i Avtomatizatsii Narodn. Khoz. (Work of the Ministry of the Electrical Engineering Industry USSR on Mechanization and Automation in the National Economy), Part 3, Moscow, TsBTI, 1956

Sum 1854

YUDITSKIY, S.B., kandidat tekhnicheskikh nauk.;BUTAYEV, F.I., kandidat tekhnicheskikh nauk.

Single-anode pumpless mercury-arc rectifiers with uninsulated cathodes. Vest. elektroprom. 28 no.1:38-42 Ja '57. (MIRA 10:4)

1. Vsesoyuznyy elektrotekhnicheskiy institut im. Lenina.
(Mercury-arc rectifiers)

AUTHOR: Yuditskiy, S.B. (Cand.Tech.Sci.) 110-7-14/30

TITLE: A medium-power rectifier-invertor for electrical drives. (Vypryamitel'-invertor sredney moshchnosti dlya elektroprivoda).

PERIODICAL: "Vestnik Elektropromyshlennosti" (Journal of the Electrical Industry), Vol.28, No.7, 1957, pp.51-55 (USSR).

ABSTRACT: Steel-clad mercury arc rectifiers with pumps are becoming increasingly used but are only economic in large sizes. A three-anode pumpless rectifier with grid control type PM-200 which has been developed by the author in the All-Union Electrotechnical Institute and successfully produced in the Zaporozhe Electrical Apparatus Works affords the possibility of controlling a drive in which the speed varies from zero to the rated value. When dynamic braking of the motor is used the grid controlled rectifier can operate as an invertor. The main technical characteristics of the rectifier are tabulated. It is intended for a rectified voltage of 600 V and a current of 200 amps. The design is described in some detail and illustrated with a sketch. The rectifier was first tested under conditions applying to lift drive. The tests were made on a test bench consisting of the three-anode rectifier with

Card 1/3

A medium-power rectifier-invertor for electrical drives. (Cont.)

110-7-14/30

air cooling system starting gear and grid control. The rectifier installation was mounted in a steel cupboard of 680 x 680 x 1650 mm. Ignition tests were carried out with the rectifier both cold and hot. Load oscillograms are given in Fig.4. The tests show that the voltage could be controlled smoothly from zero to rated value both at zero and full load. Oscillograms taken with the grid control in operation are shown in Fig.5. Load tests and overload tests were carried out. The rectifier type PM-200 was also tried out in the driving circuit of a motor in the 'Izvestia' printing works. Before the rectifier was installed in the printing works it was given extensive short-circuit tests in the All-Union Electrotechnical Institute. The rectifier was used in the supply circuit of one section of a rotary printing press from August to October, 1953. E.L.Ettinger and B.M.Gutkin of the Elektroprivod works developed the supply circuit.

Card 2/3

The rectifier type PM-200 was tested in conditions of high ambient temperature with the object of determining the suitability of the rectifier for electrical supply to drives in metallurgical works where the rectifier must operate

A medium-power rectifier-invertor for electrical drives. (Cont.) 110-7-14/30

both as rectifier and invertor with currents of 200 amps at 600 volts d.c. at an ambient temperature of 40 C. Two rectifier installations were tested. The tests were carried out under the leadership of the chief tester of the Zaporozhe works engineer V.D.Kolesnikov. The rectifier was placed in a special chamber in order to control the ambient temperature. The rectifier was tested on load both as a rectifier and as an invertor. Operation was normal and the excitation operated stably.

There are 5 figures.

ASSOCIATION: All-Union Electrotechnical Institute (VEI)

AVAILABLE:

Card 3/3

Yuditskiy, S.B.

SOV/19-59-8-114/339

AUTHOR: Sakovich, A.A., Yuditskiy, S.B.

TITLE: A Power Converter for Converting A/C Into D/C

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 8, p 26 (USSR)

ABSTRACT: Class 21g, 11_{02}. Nr 119269 (595024 of 15 March 1958) With the addition of Claim Nr 595023 .(1) The converter is based on a transistor and consists of a p-n-p (or n-p-n-) junction system controlled by varying the conductivity of the junctions; to simplify the control circuit, a circuit containing a limiting resistance and a contact which when closed effects a halfwave current in the power circuit is switched in parallel to one of the junctions. (2) To regulate the output [illegible] the contact is made to close rhythmically with corresponding phase shift in relation to the [illegible] applied to the converter. (3) To increase the operational reliability, an n-p (or p-n) junction of the same low-power transistor whose other junction is

Card 1/2

8(3) SOV/105-59-10-4/25

AUTHORS: Bagayev, V. S., Vul, B. M., Zherebtsova, A. A., Yuditskiy, S. B.

TITLE: Investigation of Large Germanium Rectifiers

PERIODICAL: Elektrichestvo, 1959, Nr 10, pp 21-26 (USSR)

ABSTRACT: This article presents the results of an investigation of large germanium rectifiers of the VG type which were made by the Vsesoyuznyy elektrotekhnicheskiy institut im. Lenina (All-Union Electrotechnical Institute imeni Lenin)(Ref 1). Figure 1 shows the section of a VG-10 rectifier. The dependence of the [illegible] currents upon voltage and temperature was [illegible] temperature maintained constant by means of a thermostat. The saturation current was determined by measuring the [illegible] backward current at voltages of

$$U \approx \frac{kT}{q}$$ and [illegible]

backward branch of the static characteristics (Ref 4). U [illegible] the voltage in the p-n transition of the rectifier, T the absolute temperature, k the Boltzmann constant, and q the elementary charge. The backward branch of the static characteristics [illegible] plotted at two values of heat emission. The inv[illegible]

Card 1/3

The following results: (1) The rectified current I_d exhibits a sufficiently large section on the static characteristics for which formula (1) holds. The deviations from this formula occurring at increased current densities result from the occurrence of the electron component of the rectified current, which in turn leads to an additional voltage drop and additional losses. The temperature coefficient of the rectified current in the experiments is in good agreement with that of calculations. It is about 3% for the group of rectifiers under discussion. (2) The saturation current calculated according to the formula [illegible] Table 3) is somewhat higher than those [illegible] (3) The differential capacity of p-n transitions of the investigated rectifiers is inversely proportional to the square root of the voltage applied. This indicates the gradual character of the p-n transitions. (4) The backward currents increase monotonously with increasing backward voltage. (5) The published breakdown voltages of the individual rectifiers approximately agree with those to be expected from the specific resistance of germanium foils. Formula (11) yields excessively high breakdown voltages if the heating of the rectifier is assumed to be the only reason

for the increase in the backward current. Formula (13) holds for the overheating of the diode when breakdown occurs, which approximately agrees with the experimental results. There are 7 figures, 6 tables, and 7 references, 4 of which are Soviet.

SUBMITTED: May 11, 1959

Card 3/3

YUDITSKIY, S.B., kand.tekhn.nauk

Semiconductor power rectifiers and converter devices. Vest.elektroprom. 33 no.2:17-23 F '62. (MIRA 15:2)
(Electric current rectifiers) (Electric current converters)

USSR

L 633-64 MLK(a)

ACCESSION NR: AP3007569 S/0286/63/000/010/0023/0023

AUTHOR: Sakovich, A. A.; Yuditskiy, S. B.; Abramovich, M. I. #43

TITLE: Ring-register trigger circuit. Class 21, No. 154574

SOURCE: Byul. izobret. i toverny*kh znakov, no. 10, 1963, 23

TOPIC TAGS: register, ring register starter, ring register trigger circuit, register trigger circuit, trigger circuit, trigger

ABSTRACT: An Author Certificate has been issued for a ring-register trigger for use in current-supply circuits. To simplify the device, an induction coil is connected in series and an oscillatory circuit or a capacitor is connected in parallel with the supply-source circuit. When a capacitor is used, its plates are connected to the source through two pairs of controlled rectifiers. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 16Jul62 DATE ACQ: 14Oct63 ENCL: 00

SUB CODE: SD NO REF SOV: 000 OTHER: 000

Card 1/1

SAKOVICH, A.A., kand. tekhn. nauk; YUDITSKIY, S.B., kand. tekhn. nauk;
KURTSINA, Z.T., inzh.; FUKALOVA, R.A., inzh.;
IH'KOV, Yu.M., inzh.

Converter system with silicon rectifiers for a.c. multiple-unit cars. Elektrotekhnika 34 no.11:25-30 N '63.
(MIRA 17:2)

ACCESSION NR: AP4042063 S/0105/64/000/007/0012/0018

AUTHOR: Sakovich, A. A. (Candidate of technical sciences); Yuditskiy, S. B. (Candidate of technical sciences); Abramovich, M. I. (Engineer); Sokolova, N. D. (Engineer)

TITLE: Using thyristors in control circuits of static frequency changers

SOURCE: Elektrichestvo, no. 7, 1964, 12-18

TOPIC TAGS: thyristor, frequency changer, thyristor frequency changer, thyristor control

ABSTRACT: The well-known general characteristics of thyristors are described, as well as the fundamental circuits in which the thyristor is used as a switching element. As an example of thyristor control for frequency changers a scheme of the conversion of single-phase into 3-phase power with step frequency lowering is described in detail. A rectifying-pulse generator 1 (see Enclosure 1) with its amplifier 2 and ring switch 3 ensures, via transformer 4, feeding the power thyristors with control pulses for single-phase/3-phase-lower-frequency

Card 1/3

ACCESSION NR: AP4042063

conversion. Generator 5 of inverter pulses with its amplifier 6 ensures feeding the control pulses that correspond to the invertor operation of the power thyristors. Frequency regulator 7 ensures the simultaneous phase control of the rectifying pulses by controlling the generator-1 voltage and the divider-6 frequency. Power-supply unit 9 feeds the system with ac and dc; other blocks are intended for protection. A simplified connection diagram is supplied, and the functioning of the control system is explained. Two thyristor control schemes converting 50 cps single-phase into 0—16-2/3 cps (stepwise) 3-phase power were built. One of them serves to control 3-phase induction motors from 1 to 10 kw in a laboratory. The other was put into tentative operation on 1Dec62. Orig. art. has: 6 figures and 3 formulas.

ASSOCIATION: Vsesoyuzny*y elektrotekhnicheskiy institut (All-Union Electrotechnical Institute)

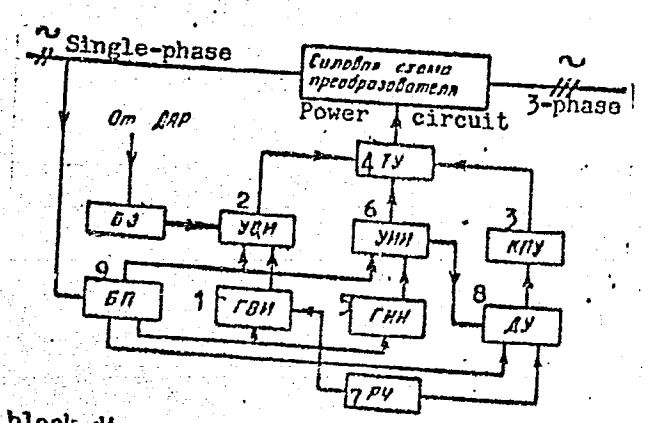
SUBMITTED: 27Feb64 ENCL: 01

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

Card 2/3

ACCESSION NR: AP4042063

ENCLOSURE: 01



A block diagram of the single-phase-to-3-phase frequency-lowering thyristor-control system

Card 1/3

S/0286/64/000/010/0040/0040

ACCESSION NR: AP4039790

AUTHOR: Yuditskiy, S. B.; Sakovich, A. A.; Nemchin, S. Yel; Volonikhina, N. V.; Tumberg, T. E.; Stepanova, A. M.; Kondratov, V. P.; Lukinova, E. I.

TITLE: A method for making silicon controlled rectifiers. Class 21, No. 162595

SOURCE: Byul. izobr. i tovar. znakov, no. 10, 1964, 40

TOPIC TAGS: rectifier, silicon rectifier, silicon controlled rectifier, semiconductor device, thyratron, semiconductor thyratron

ABSTRACT: This author's certificate introduces a method for making silicon controlled rectifiers which consist of four layers of silicon with conductivity n-p-n-p. The end layer with n-condictivity is the cathode, the other end layer with p-conductivity is the anode and the middle layer with p-conductivity is the gate. First a five-layer n-p-n-p-n structure is created by simultaneous two-phase diffusion of the acceptor and donor impurities, then one of the outer layers is ground off to produce an n-p-n-p structure and this is melted in a vacuum furnace simultaneously with an acceptor alloy of aluminum-silicon and a donor alloy of

Card 1/2

ACCESSION NR: AP4039790

silver-lead-antimony in order to produce the anode, cathode and gate contacts. The surface layer of n-type silicon between the cathode and the gate is then removed by etching.

ASSOCIATION: none

SUBMITTED: 11Jul62 DATE ACQ: 19Jun64 ENCL: 00

SUB CODE: PR NO REF SOV: 000 OTHER: 000

Card 2/2

ACCESSION NR: AP4041963 S/0286/64/000/012/0047/0047

AUTHOR: Sakovich, A. A., Yuditskiy, S. B., Abramovich, M. I.

TITLE: Static frequency converter. Class 21, No. 163265

SOURCE: Byul. izobr. i tovar. znakov, no. 12, 1964, 47

TOPIC TAGS: frequency converter, static frequency converter, phase splitter, semiconductor diode, asynchronous motor, voltage converter, converter control flexibility

ABSTRACT: A patent has been granted for a static frequency converter, using controlled semiconductor diodes for the power supply of the asynchronous motors and containing a converter of three-phase voltage into single-phase, as well as a phase-splitter. For the purpose of ensuring flexibility in control with high efficiency and power coefficients, the three-phase-to-single-phase voltage converter (with the single-phase voltage of higher frequency) is designed according to a 12-valve circuit with an implicitly expressed d-c element and feeds a 12-valve phase-splitter. The latter consists of three single-phase bridges with equalizing reactors in the diagonals, between the midpoints of which are connected the windings of the motors. Continuous adjustment of the rate of revolution of the motors is accomplished by employing a unit for changing the frequency of the single-phase voltage provided by the 3-to-1 voltage phase converter. For step-by-step adjustment, on

Card 1/3

ACCESSION NR: AP4041903

the other hand, a unit is employed (again in the control system) which permits the variation of the duration of the phase-splitter operating cycles. Orig. art. has: 1 figure.

ASSOCIATION: None

SUBMITTED: 23Jan62 ENCL: 01

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

ACCESSION NR: AP4041903

ENCLOSURE: 01

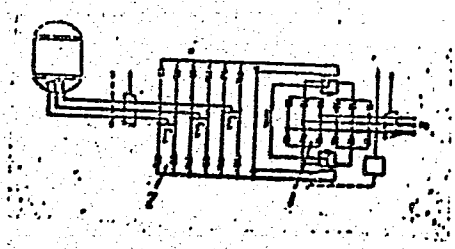


Fig. 1 — 1) Converter of three-phase voltage into 1 phase voltage; 2) Phase-splitter; 3) Equalizing reactors

3/3

Card

SAKOVICH, A.A., kand. tekhn. nauk; YUDITSKIY, S.B., kand. tekhn. nauk.; ABRAMOVICH, N.D., inzh.

Multichannel ring-type switching device using regulated silicon valves. Elektrotekhnika 35 no.5:60-61 My'64 (MIRA 17:8)

L 11551-66 EWT(l)/EWT(m)/EEC(k)-2/T/EWP(t)/EWP(b)/EWA(h) IJP(c) JD

ACC NR: AP6005026 SOURCE CODE: UR/0105/65/000/001/0042/0048

AUTHOR: Aleksashkin, A. A.; Bykov, Ye. I.; Zemlyanaya, Ye. A.; Krotov, L. B.; Kurtsina, Z. T.; Poselenov, L. B.; Sakovich, A. A.; Yuditskiy, S. B.

ORG: none

TITLE: New semiconductor rectifiers for the rectifier substations of subways

SOURCE: Elektrichestvo, no. 1, 1965, 42-48

TOPIC TAGS: semiconductor rectifier, electric engineering, electric substation equipment

ABSTRACT: Computations are presented to prove the feasibility and economy of replacing the six IVS-500/2 type sealed mercury-arc rectifiers with stacks of VK-200/4A type silicon rectifier cells (average current 200 amp; operating peak inverse voltage [PIV] 400 v; rated PIV 600 v) in the rectifier substations that supply 825 volts d-c for subway traction. The computed six-phase rectifier unit has six parallel branches per phase, with six series-connected cells per branch. The number of parallel branches is computed on the basis of peak load and surge current, taking the circuit-breaker interrupting time into consideration. The number of series-connected cells is computed on the basis of the PIV's, with allowances for variations in the supply voltage. The overall efficiency of the rectifier unit is 98.9 percent. It is assembled from modular stacks (12 cells

L 11551-66

ACC NR: AP6005026

rectifiers (due to the high cost of single-crystal silicon and the low level of automation), conversion of subway substations to such rectifiers pays for itself in five to six years, and the economy of building new rectifier substations of this type is even greater. Orig. art. has: 4 figures, 23 formulas, and 1 table. [JPRS]

SUB CODE: 09 / SUBM DATE: 08Jun64 / ORIG REF: 002

SAKOVICH, A.A., kand. tekhn. nauk; YUDITSKIY, S.B., kand. tekhn. nauk; ABRAMOVICH, M.I., inzh.; SOKOLOVA, N.D., inzh.

Use of regulated silicon diodes (thyristors) in the control circuits of static frequency converters. Elektrichestvo no.7:12-18 Jl '64. (MIRA 17:11)

1. Vsesoyuznyy ordena Lenina elektrotekhnicheskiy institut imeni V.I. Lenina.

YUDITSKIY, V., ISAKOVICH, YE.

Employees, Training of

Selection and training of personnel of the claculating-machine stations and bureaus. Bukhg. uchet. 11 no. 3, 1952.

Monthly List of Russain Accessions, Library of Congress June 1952 UNCLASSIFIED

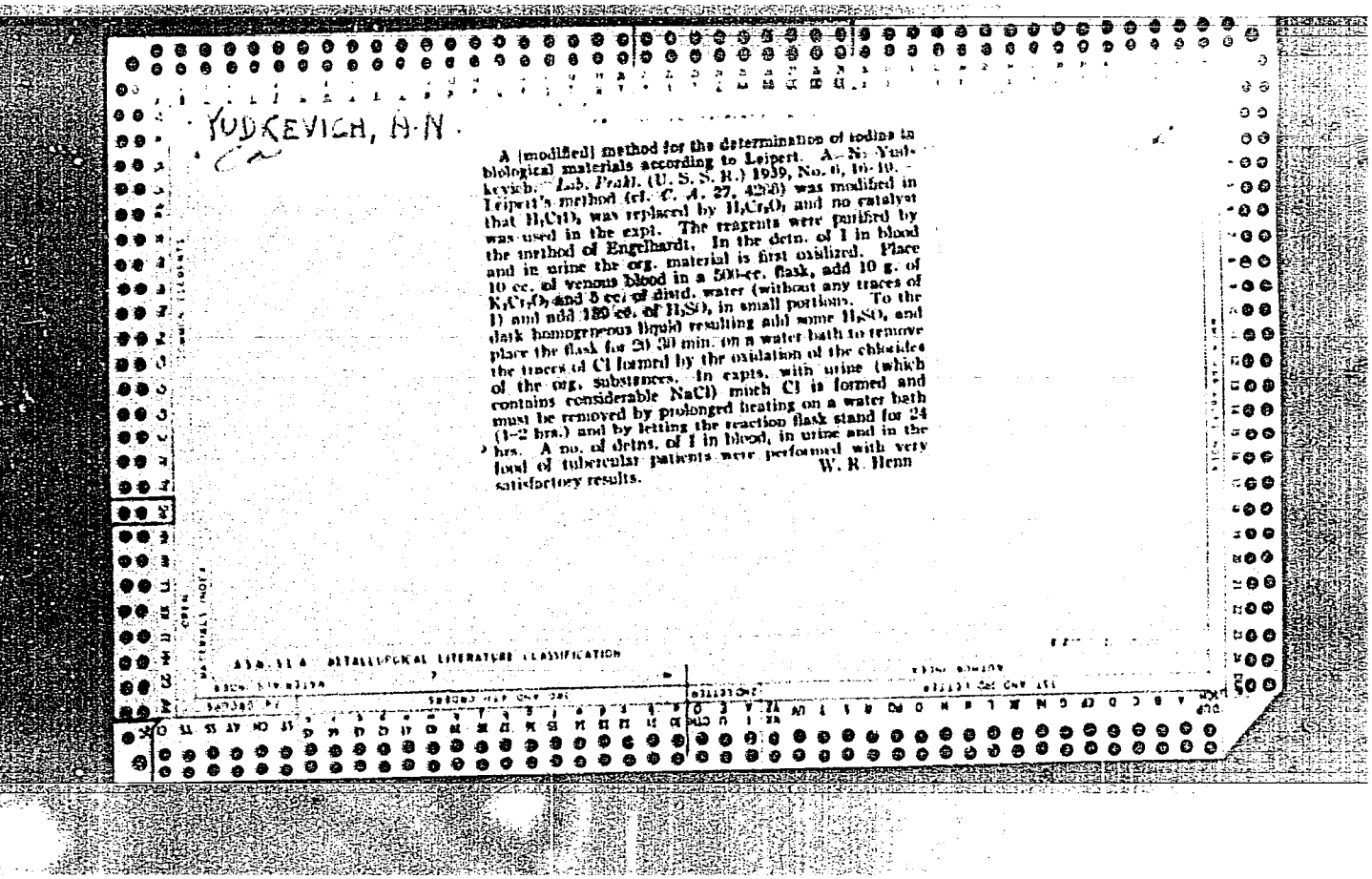
27

BORODULIYA, V. A.; ZAHARIN, A. I.; YUDITSKII, V. I.; ZABRODSKIY, S. S.

"Investigation into hydrodynamics and thermal diffusivity of a fluidized bed."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 8-12 May 1964.

Inst of Heat & Mass Transfer, AS BSSR.



YUDKEVICH, A.N.

A [modified] method for the determination of iodine in biological materials according to Leipert. A. N. Yudkevich. *Lab. Prakt.* (U. S. S. R.) 1939, No. 6, 10-10. — Leipert's method (cf. *C. A.* 27, 4250) was modified in that H_2CrO_4 was replaced by $H_2Cr_2O_7$ and no catalyst was used in the expt. The reagents were purified by the method of Engelhardt. In the detn. of I in blood and in urine the org. material is first oxidized. Place 10 cc. of venous blood in a 500-cc. flask, add 10 g. of $K_2Cr_2O_7$ and 5 cc. of distd. water (without any traces of I) and add 180 cc. of H_2SO_4 in small portions. To the dark homogeneous liquid resulting add some H_2SO_4 and place the flask for 20-30 min. on a water bath to remove the traces of Cl formed by the oxidation of the chlorides of the org. substances. In expts. with urine (which contains considerable NaCl) much Cl is formed and must be removed by prolonged heating on a water bath (1-2 hrs.) and by letting the reaction flask stand for 24 hrs. A no. of detns. of I in blood, in urine and in the food of tubercular patients were performed with very satisfactory results.

W. R. Henn

YUDKEVICH, A. N.

"The Clinical Significance of Kimbarov's Color Sedimentation Reaction in Virus Influenza and Seasonal Catarrh. Vrachebnoye Delo, Vol 6, 1952, pp 533-536.

YUDKEVICH, F. S.

"Concerning the Electromagnetic Wave Reflection on a Layer with a Negative Dielectric Constant" Zhur. Phys., III, No. 2, Vol. III, 1940

Lebedev Physical Inst., Acad. of Science of the USSR, Moscow. c1940-.

L 3095-66 FSS-2/EWT(l)/EWT(m)/FS(v)-3/FCC/EWA(d)/EWA(h) TT/GS/GW
ACCESSION NR: AT5023620 UR/0000/65/000/000/0464/0465

AUTHORS: Kidrina, G. A.; Kulagin, Yu. M.; Malyshev, A. B.; Nazarova, M. N.; Svidskiy, P. M.; Yudkevich, I. S.

TITLE: Investigation of the radiation intensity in Van Allen belts by the Kosmos-17 satellite

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 464-465

TOPIC TAGS: satellite, satellite data analysis, radiation intensity, Van Allen belt, charged particle, Geiger counter, scintillator, nuclear explosion, electron, proton, solar cycle, solar activity, magnetic activity, geomagnetism

ABSTRACT: Data on the streams of charged particles registered by Geiger counters and scintillators at the elevation of 260-780 km for May 22-30, 1963 are presented. Results obtained with Geiger counters in the inner Van Allen belt are plotted in B, L-coordinates. Simultaneous determinations obtained with scintillators and with variously screened Geiger counters showed that in the interval of $1.15 \leq L \leq 1.6$ the major part of the registered intensity was related to the electrons from the high-altitude nuclear explosion of July 9, 1962. The L-order increase of protons with

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energy of $E_p \geq 30$ Mev since 1958 is explained by the lowering of the solar activity in the 11-year solar cycle. During magnetically quiet days the maximum of intensity in the outer belt was recorded at L = 4.7—4.8; during increased magnetic activity the maximum was transposed toward lower valued of L. In the inter-belt space a narrow zone was discovered in which electrons with energy $0.1 \leq 1.5$ mev were recorded. Here, the radiation intensity and the maximum location are related directly to the magnetic activity. Stable corpuscular streams, apparently of electrons with energies of 50-100 kev, were registered below the inner belt. Their global distribution indicates that the corpuscles are trapped by the earth's geomagnetic forces. These streams reach a magnitude of 10^5—10^6 $cm^{-2} \cdot sec^{-1}$.

ASSOCIATION: none

1047

SUBMITTED: 02Sep65 ENCL: 00 SUB CODE: ES, SV

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4106

Card 2/2

L 23431-66 FSS-2/EWT(1)/FCC/EWA(d)/EWA(h) TT/GH

ACC NR: AP6012831 SOURCE CODE: UR/0293/66/004/002/0257/0267

AUTHOR: Kirdina, G. A.; Kulagin, Yu. M.; Malyshev, A. B.; Nazarova, M. N.; Svidskiy, P. M.; Yudkevich, I. S.

ORG: none

TITLE: Study of the emission intensity in the Earth's radiation belts by the Cosmos-17 satellite

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 2, 1966, 257-267

TOPIC TAGS: cosmic radiation, radiation belt, corpuscular radiation, radiation intensity measurement, spaceborne measurement/Cosmos-17

ABSTRACT: Four independently operating Geiger and scintillation counters were used on Cosmos-17 to record charged-particle fluxes in the Earth's radiation belts at altitudes of 260—780 km from 22 to 30 May 1963. The counters differed only in their shielding and radiation detectors. Simultaneous measurements of the counting rates made it possible not only to determine the level of the fluxes but also to reach certain conclusions on the composition of the trapped radiation and to establish the hardness of the energy spectrum of the penetrating particles. Based on the composition of particles penetrating a shielding of 1 g/cm^2, it was found that the inner radiation belt can be divided into two regions. At L = 1.15—1.6, the main portion of the fluxes is produced by electrons from nuclear explosions, at L = 1.6—2.5, it

Card 1/2 UDC: 537.591

L 23431-66
ACC NR: AP6012831

is produced by protons. The flux of protons with energies greater than 30 Mev has increased since 1958. A third narrow region was detected between the inner and outer radiation belts in which electrons with energies of 0.1—1.5 Mev were recorded. Below the lower boundary of the inner belt, stable streams of soft corpuscules, i.e., electrons with energies between 50 and 100 kev, were detected. Orig. art. has: 1 table and 7 figures. [JR]

SUB CODE: 04/ SUBM DATE: 19Apr65/ ORIG REF: 003/ OTH REF: 008/ ATD PRESS: 4235

Card 2/2

ACC NR: AP7002575 (A,N) SOURCE CODE: UR/0413/66/000/023/0073/0073

INVENTOR: Solov'yeva, N. A.; Yudkevich, M. I.; Pasternak, I. I.

ORG: none

TITLE: Iron-nickel base alloy. Class 40, No. 189151 [announced by the Central Scientific-Research Institute of Ferrous Metallurgy im. I. P. Bardin (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 73

TOPIC TAGS: iron nickel alloy, cobalt containing alloy, manganese containing alloy, silicon containing alloy, THERMAL EXPANSION

ABSTRACT:

This Author Certificate introduces an iron-nickel alloy with a low coefficient of thermal expansion, which remains constant at temperatures up to 300C. The alloy contains 37.5—38.5% nickel, 1.5—2.5% cobalt, 0.05% max carbon, 0.30% max silicon, and 0.40% max manganese.

SUB CODE: 11/ SUBM DATE: 25Oct65/ ATD PRESS: 5113

Card 1/1 UDC: 669.15'24-194:669.018.47

YUDKEVICH, M. I.

137-1957-12-24884

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 275 (USSR)

AUTHORS: Yudkevich, M. I., Solov'yeva, N. A.

TITLE: To the Problem of the Stability of the Gamma Phase of the N29K Alloy at Temperatures Below Zero (K voprosu ob ustoychivosti gamma-fazy splava N29K pri temperaturakh nizhe nulya)

PERIODICAL: Sb. tr. Tsentr. n.-i. in-t chernoy metallurgii, 1956, Nr 15, pp 124-130

ABSTRACT: The phase transformation $\gamma \rightarrow \alpha$ in "Covar" (Transl. Editor's Note: 28 percent Ni, 18 percent Co, 54 percent Fe) is accompanied by an increase in volume and frequently results in a cracking of an alloy-glass bond. Factors which lower the temperature of the $\gamma \rightarrow \alpha$ transition to below -70° were investigated. The effects of cold deformation, heat treatment, and the chemical composition of the alloy on the stability of the gamma phase at sub-zero temperatures were investigated in a number of specimens containing 26-32 percent Ni, 13 - 19 percent Co, 0.5 - 0.8 percent Cr, and Fe (remainder). The degree of decomposition of the solid gamma solution was determined by means of the microscope. The specific resistance and the coercive force

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To the Problem of the Stability of the Gamma Phase (cont.)

were measured after annealing for one hour at 950°, and after the specimen was annealed and cooled at a temperature of - 80° for a period of two hours. A dilatometric investigation of the specimens was conducted in the 20-500° range. The primary factor in the stability of the gamma-phase at sub-zero temperatures is the chemical composition of the alloy; in this respect Ni appears more effective than Co. The conditions of heat treatment and the extent of workhardening have only a slight effect on the stability of the gamma phase. The existence of areas with an insignificant degree of decomposition of gamma phase in the liquation zones is pointed out.

P. S.

1. Iron-nickel-cobalt alloys-Phase studies 2. Iron-nickel-cobalt-chromium alloys-Phase studies

Card 2/2

AUTHORS: [illegible] M. [illegible] gnatov, D.V.

TITLE: Investigation [illegible] idizability of Iron-N[illegible] [illegible] Chromium, and Copper for conding [illegible]

SOURCE: [illegible] Tsentra[illegible] nauchno-issledovat[illegible] [illegible] Sbornik trudov, no. 25 Mo[illegible] [illegible] pp. 305-31[illegible]

TEXT: [illegible] an experimental [illegible] [illegible] on the [illegible] the alloys [illegible] [illegible] metal surface [illegible] [illegible] wetting [illegible] [illegible] It is [illegible] [illegible] lated that a [illegible] [illegible] a specified [illegible] [illegible] bond [illegible] as an excess [illegible] [illegible] particular [illegible] spalling [illegible] which are [illegible] H47 [illegible] N47[illegible] the [illegible] N29[illegible] which [illegible] widely used alloy [illegible] the alloys [illegible] [illegible] The microstr[illegible]

Card [illegible] 4

Investigation of the oxidizability . . . .

cubic lattice. The tests were made at a T of . . . of 200-300 min. The mean oxidation rate is highest in the N47D5 alloy, and least in the N47KhB alloy. The rate . . . creases with holding time according to an aprx. parabolic . . . film appears on the N47KhB alloy, then on the N47D5 . . . alloy. Electron-diffusion analysis indicates that the . . . on the Fe-Ni-Cr alloy N47KhB corresponds to a solid . . . Cr_2O_3 at 600-. . . C, at 800-. . . the probable compo . . . boundary is the oxide αCr_2O_3, whereas in the outer oxi . . . the solid solution $NiFe_2O_4$ plus $NiCrO_4$ and $FeCrO_4$. Fu . . . sition of the oxide film are provided. The elevated oxidi . . . alloy N27K18 is explained by the . . . protective . . . containing a solid solution of Ni . . . O_4 and $CrFe_2O_4$ whi . . . stresses that appear in the lattice of that solid solution be . . . large-size ions such as Ni^{2+} and Cr^{3+}. The results o . . . are consistent with those of the Japanese author K. Ono . . . no. 12 . . . There are 6 figures, 1 table, and 5 re . . . language Soviet, K. Ono's English-language paper).

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PHASE I BOOK EXPLOITATION SOV/3940

Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Institut pretsizionnykh splavov

Pretsizionnyye splavy (Precision Alloys) Moscow, Metallurgizdat, 1959. 268 p. (Series: Its: Sbornik trudov, vyp. 22) 2,150 copies printed.

Additional Sponsoring Agency: USSR. Gosudarstvennyy planovyy komitet

Ed.: D. I. Gabrielyan; Ed. of Publishing House: Ye. I. Levit; Tech. Ed.: P. G. Islent'yeva.

PURPOSE: This collection of articles is intended for technical personnel and scientific workers in the metallurgical, instrument-manufacturing, and electrical-equipment-manufacturing industries. It may also be useful to students of schools of higher technical education.

COVERAGE: This collection of articles presents the results of studies of precision alloys made in recent years by the Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy). Properties of metal alloys which can be soldered (soft or hard) with glass and ceramic materials

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and alloys used for making springs are discussed. Anomalies of electrical resistance and thermal expansion and the effect of irradiation on properties of alloys are considered. Problems connected with the determination of magnetic susceptibility and with rolling of bimetallic strips are reviewed. An analysis of alloys used in manufacturing high-temperature transducers and strain gages is presented. No personalities are mentioned. References follow several of the articles.

TABLE OF CONTENTS:

S/137/62/000/001/112/237
A052/A101

12300

AUTHOR: Yudkevich, M. I.

TITLE: Alloys for soldering with ceramics

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 62, abstract 1E380 ("Sb. tr. Tsentr. n.-i. in-t chernoy metallurgii", no. 22, 1959, 10-17)

TEXT: Mechanical properties after deformation and heat treatment of Н47Д (N47D), Н33К (N33K), Н46 (N46), and Н 49 (N49) alloys are given as well as the coefficient of thermal expansion ρ, elastic modulus, heat conductivity, specific gravity and magnetic properties. The N47D alloy gives more reliable soldered joints with certain types of ceramics than the usually used Ст 1008 (St 1008). The N33K alloy can be used for soldering with such kinds of ceramics as steatite and Sinoxal. Soldered joints withstand sharp temperature changes from -70° to $+ 150^{\circ}$C without hermeticity and strength being impaired. The N33K alloy is sufficiently resistant against corrosion by H_2O, H_2O_2, H_2SO_4 and NaOH at 100°C.

A. Fedorovskiy

[Abstracter's note: Complete translation]

Card 1/1

YUDKEVICH, M.I.; IGNATOV, D.V.

Investigating the oxidizability of iron-nickel alloys with additions of cobalt, chromium, and copper (for glass-metal bonding). Sbor. trud. TSNIICHM no.25:303-310 '62. (MIRA 15:6)
(Iron-nickel alloys--Testing) (Glass-metal sealing)

44683
S/869/62/000/000/007/012
B102/B186

21.2300

AUTHOR: Yudkevich, M. S.

TITLE: Thermal neutron spectrum in a homogeneous mixture of moderators having different temperatures

SOURCE: Teoriya i metody rascheta yadernykh reaktorov; sbornik statey. Ed. by G. I. Marchuk. Moscow, Gosatomizdat, 1962, 144 - 154

TEXT: The thermal neutron spectrum studied belongs to a medium in which various kinds of moderator nuclei having different temperatures are uniformly distributed; it is assumed that there is no direct energy exchange between unlike moderator nuclei. All energy exchanges take place via neutrons, but the neutron density is considerably lower than the nuclear density so such exchanges do not affect the state of the moderator. The consideration is based on the neutron kinetic equation

$$\sum_k \left[\int_0^\infty G_k(E' \to E) N(E') dE' - V_k(E) N(E) + S(E) - \gamma(E) N(E) = 0, \right.$$

$$V_k = \int_0^\infty G_k(E \to E') dE' \qquad (1),$$

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Thermal neutron spectrum...

where $N(E)$ is the neutron density at an energy E, $G_k(E' \to E)dE'$ is the probability that a neutron having an energy E' will be scattered from the k-th moderator and thereby acquire an energy E, $\gamma(E)$ is the capture probability for a neutron of energy E, and $S(E)$ describes the neutron source. This equation of motion is studied for three limiting cases; a general solution is only possible numerically. 1) The moderator consists of a mixture of heavy nuclei. With $\phi(E) = \sqrt{E}N(E)$, the equation of motion can be reduced to the differential form

$$\frac{2}{m}\Sigma_s\left[TE\phi'' + E\phi' + \phi\right] + S(E) = \Sigma_c(E)\phi \qquad (2),$$

whose general form in first approximation reads

$$\frac{2}{m_o}\Sigma_{s_o}\left[T_oE\phi'' + E\phi' + \phi\right] + S(E) = \Sigma_c(E)\phi \qquad (3).$$

T is the temperature of the medium, Σ_s the macroscopic scattering cross section of a free moderator nucleus at rest, Σ_c the capture cross section, and

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