SABININ, Yu.A., otv. red.; NIKOLAYEV, P.V., red.; RUDAKOV, V.V., red.; MYASNIKOV, V.A., red.; KULIKOV, S.N., red.

[Automated electric drives; servo systems, control, and converter devices] Avtomatizirovannyi elektroprivod; sledíashchie sistemy, upravlenie i preobrazovatel'nye ustroistva. Moskva, Nauka, 1965. 172 p. (MIRA 18:5)

1. Leningrad. Institut elektromekhaniki.

KULIKOV, S.N.

SABININ, Yu.A., kand.tekhn.nauk; BOCHAROV, Yu.I., inzh.; ZABOROVSKIY, S.A., inzh.; ZVYAGIN, I.Ye.; inzh.; KULIKOV, S.N., inzh.; POPOV, O.V., inzh.

A motor drive with wide-range smooth speed control. Elektrichestvo no.12:20-23 D '57. (MIRA 10:12)

1.Leningradskiy politekhnicheskiy institut im. Kalinina.
(Electric driving)

SABININ, Yu.A.; KULIKOV, S.N.

Results of the competition of the Central Scientific Technical Society of the Electric Power Industry. Elektrichestvo no. 12:86-87 D '60. (MIRA 14:1)
(Electric power--Competitions)

ZABOROVSKIY, Sergey Aleksandrovich, assistent; KULIKOV, Sergey Nikolayevich, assistent; POPOV, Oleg Vladimirovich, mladshiy nauchnyy sotrudnik; SABININ, Yuriy Alekseyevich

Automated electric drive of a coal loader. Izv. vys. ucheb. zav.; elektromekh. 5 no.7:810-816 '62. (MIRA 15:10)

1. Leningradskiy politekhnicheskiy institut (for Zaborovskiy, Kulikov).

(Coal-handling machinery—Electric driving)

ZABOROVSKII, S. A.; [illegible], [illegible]; [illegible]

New electric [illegible] drive system for the [illegible] in the pavilion of the [illegible] tracking telescope. [illegible] [illegible] 1964. [illegible]

Kulikov, S.V.

PHASE II TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 383 - II

BOOK Call No.: AF627938

Authors: GAVENKOV, N. G., and KULIKOV, S. V.
Full Title: OXYGEN AIRCRAFT EQUIPMENT (Textbook)
Transliterated Title: Kislorodnoye oborudovaniye samoletov

Publishing Data
Originating Agency: All-Union Voluntary Society for the Promotion of the Army, Aviation and Navy (DOSAAF)
Publishing House: Not given
Date: 1953 No. pp.: 215 No. of Copies: Not given
Editorial Staff
Editor: None Tech. Ed.: None
Editor-in-Chief: None Appraiser: None

Text Data
Preface: This book describes in detail aircraft oxygen apparatus and principles of their operation. Special attention is given to the description of problems connected with the technical operation with testing of the oxygen equipment according to basic technical parameters, and to the installations required for testing. A number of chapters deal with the problem of oxygen production and storage. The book contains also some theoretical information on the composition of the terestrial atmosphere and on physical properties of oxygen.

BULKOV, P.V

AID 383 - II

Kislorodnoye oborudovaniye samoletov

Introduction: None

Abstract: The table of contents gives a very detailed description of the text. The book is illustrated by 123 diagrams which show various oxygen apparatus and their components, such as: Compressors KN-2 and KN-3; Continuous delivery regulator KPA-3bis; Pulmonary regulators KP-14, KP-18, KP-16; Portable regulator KP-19; Bail-out regulator KP-15; Reductor KR-14; Indicator IK-14; Hose KSh-10; Mask KM-14; Testing installations KU-1 and KU-2; Automobile oxygen supply stations AKZS-15 and AKZS-40. The book contains also the following 12 tables: 1. Numerical data on international standard atmosphere; 2. Composition of the atmospheric air; 3. Basic technical data on empty containers; 4. Basic dimensions of oxygen cylinders; 5. Identification marking of oxygen cylinders; 6. Oxygen pressure in cylinders in relation to the external temperature during loading; 7. The percentage of the enrichment with oxygen of the inhaled air in relation to the changing altitute; 8. The percentage of enrichment with oxygen of the exhaled air in relation to the changing altitude; 9. The percentage of oxygen in the mixture; 10. Calculation of norms for the regulator KPA-3bis, taking into account an auxiliary delivery of 2 liters per minute of oxygen by means of the emergency valve; 11. Consumption of oxygen use of

pulmonary regulators with a shutoff switch of the air intake;
12. Percentage of oxygen in the inhaled mixture as influenced by the decreasing pressure in the measuring cylinder.

Evaluation: This is a well compiled and well illustrated textbook for the pre-military training of the DOSAAF organization. All described oxygen apparatus and devices are well known in the U.S.

Purpose: Textbook for aviation instrument mechanics and oxygen apparatus mechanics of the pre-military training organization DOSAAF.

KULIKOV, S.V., inzh.

Determining the moment of cavitation in propellers. Sudostroenie 24 no.5:12-15 My '58. (MIRA 11:6)
(Cavitation) (Propellers)

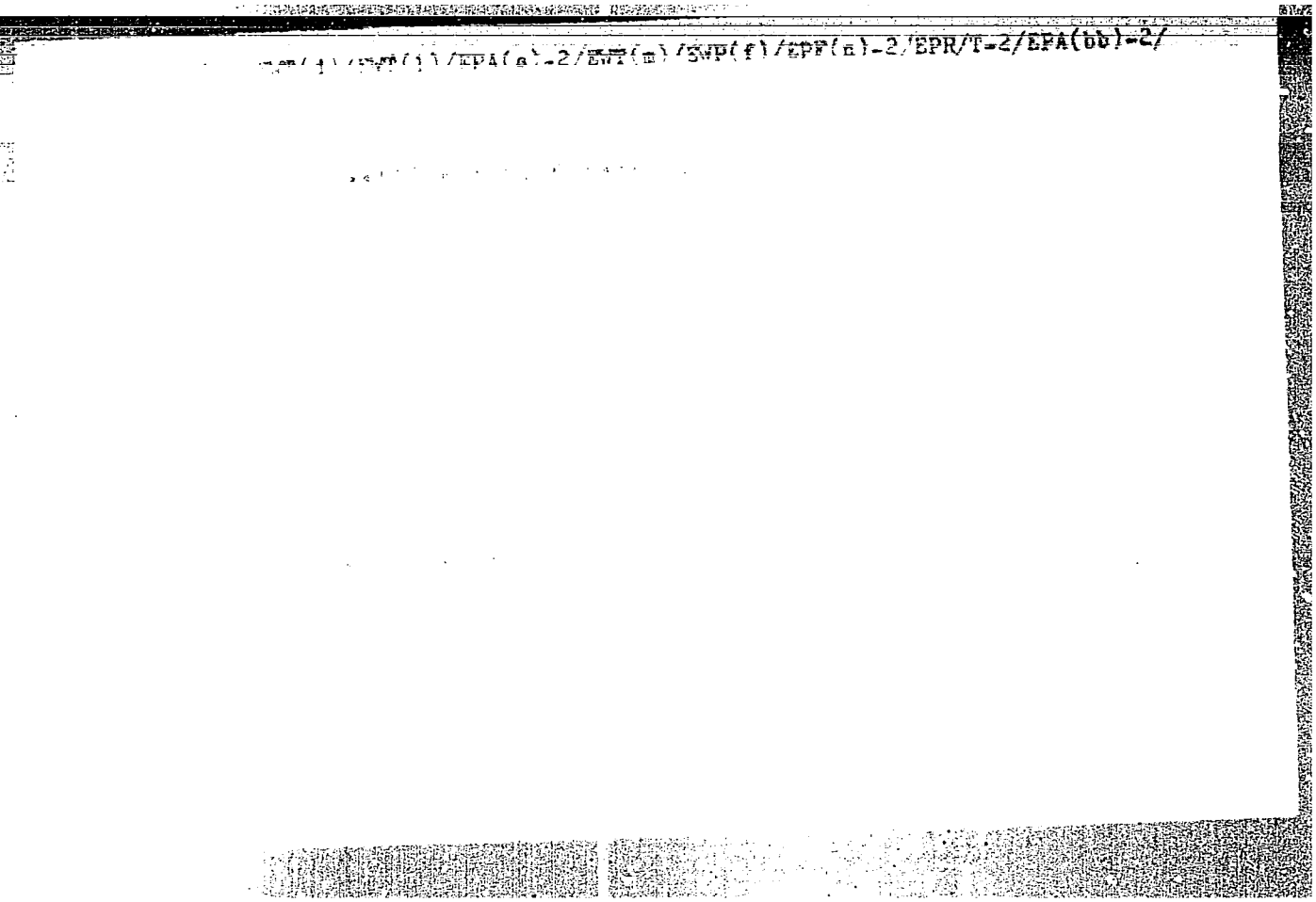
KULIKOV, S.V.

"Designing a Jet Propeller."

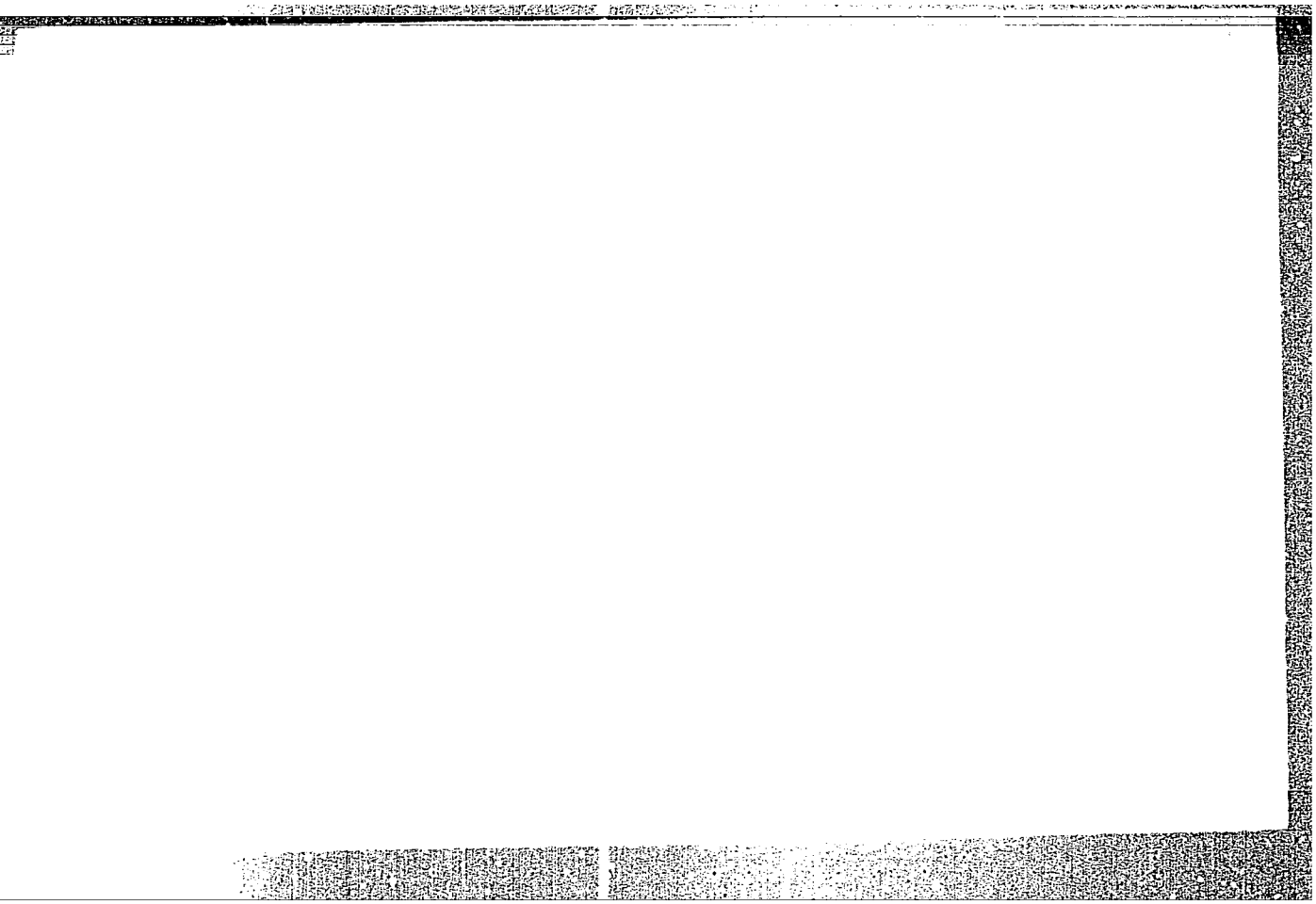
report presented at the 11th Annual Scientific Technical Conference on Ship Theory, organized by the Central Administration of the Scientific-Technical Society of the Shipbuilding Industry, 13-15 December 1960.

KULIKOV, Sergey Vasil'yevich; MIKHAYLIN, Mikhail Fedorovich;
DIYEV, D.F., kand. tekhn. nauk, retsenzent;
KOPEYETSKIY, V.V., kand. tekhn. nauk, retsenzent;
RUDETSKIY, A.A., nauchn. red.; SHAKHNOVA, V.M., red.

[Water jet propellers; theory and calculations] Vodomet-
nye dvizhiteli; teoriia i raschet. Leningrad, Sudo-
stroenie, 1965. 271 p. (MIRA 18:3)



APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927420015-1"



APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927420015-1"

ACC NR: AP7001384 (A,N) SOURCE CODE: UR/0413/66/C[illegible]021/0054/0054

INVENTOR: Kulikov, S. V.

ORG: none

TITLE: Device for storing electrical voltages. Class 21, No. 187837

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 54

TOPIC TAGS: storage device, voltage stabilization

ABSTRACT: This Author Certificate presents a device for storing electrical voltages. It contains a voltage follower (emitter), a storage capacitor connected to the voltage follower input in parallel through the normally open contacts of a switch, and an error compensation capacitor (see Fig. 1).

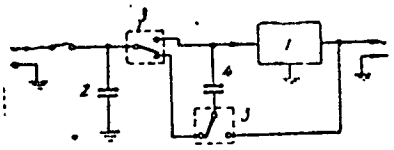


Fig. 1. 1 - voltage follower; 2 - storage capacitor; 3 - switch; 4 - error compensation capacitor

To increase the storage accuracy by compensating the voltage difference between the input and output of the voltage follower, one of the plates of the error compensation capacitor is connected to the follower input. The other plate is connected through the normally closed contacts of a two-position switch to the storage capacitor and through the normally open contacts of the same switch to the output of the voltage follower. Orig. art. has: 1 diagram.

SUB CODE: 09/ SUBM DATE: 010ct65 UDC: 681.142.07

Card 1/1

Kulikov, S. V.

AUTHOR: Kulikov, S. V. 119-1-3/13

TITLE: One of the Ways of Complex Automation (Ob odnom iz putey kompleksnoy avtomatizatsii)

PERIODICAL: Priborostroyeniye, 1958, Nr 1, pp. 9 - 9 (USSR)

ABSTRACT: The first question for the solution of the complex automation of production processes is: which technical means are at hand and which possibilities of solution are there?
In many cases there will first be an automatic control and only then an automatic complex control of operation processes will be possible.
The tele-control, suggested in reference 1, with subsequent tele-complex-control seems to be a correct, rational way in order to reach complex automation.
The advantages of the time-pulse system using additionally the dynamic method of compensation are: great exactness, multi-utilization of signal transfer-lines, simplicity of remote control head and receiver, operation security and finally the great number of the parameters possible to control.

Card 1/2

One of the Ways of Complex Automation 119-1-3/13

In order to extend the range of application of complex automation it is at present, first of all necessary to accelerate the investigations for the finishing of a complicated remote control head, equipped with semiconductors, as the heads produced hitherto do not by far meet the demands. There are 2 references, all of which are Slavic.

AVAILABLE: Library of Congress

1. Production-Automation

Card 2/2

5(4) SOV/119-59-9-3/19

AUTHOR: Kulikov, S. V., Engineer

TITLE: A Contact-less Polarized Relay in Semiconductor Triodes

PERIODICAL: Priborostroyeniye, 1959, Nr 9, pp 9-11 (USSR)

ABSTRACT: The present paper describes one of the possible circuit arrangements for a polarized relay. In this circuit, which was developed by the author, semiconductor triodes of Soviet origin are used. The individual parts of this circuit are described in brief. According to Kurt H. Meissner (Ref 2) who first described a circuit diagram of this type, the circuit is adapted for operation at room temperature only, as its temperature stability is poor and it cannot be used in the pre-cascades of silicon triodes owing to their higher threshold potential between base and emittor. Experimental and theoretical investigations by the author of the present paper proved these assumptions by Kurt H. Meissner, and also showed the circuit to be insufficiently sensitive. For this reason the author developed a different circuit arrangement, having a sensitivity several orders of magnitude higher and also a higher temperature stability (up to +60° C). The double current collecting brushes on the slide block of this circuit enable a reduction of the insensitive

Card 1/3

zone to an extremely small value as well as the application of silicon transistors in the pre-cascades. The positive, nonlinear coupling yields a slope, which corresponds to an ideal relay characteristic. The temperature variation of the collector current of the input cascade was compensated by introduction of thermistors and emittor resistances. By a theoretical investigation of the circuit an expression was found, which enables the determination of the sensitivity of the circuit under neglect of the sensitive reaction for both halves of the circuit. For reasons of expediency the limiting resistances were connected in the collector circuits, and not in the emittor circuits. Then the conditions for constancy of the slope of the mutual characteristic and for the constancy of the collector current are given. Starting from the condition of duality of the current-voltage characteristic of the reaction, the circuits with positive reaction are calculated. Formulas for the resistance of the reaction, corresponding to the initial and final range of the junction characteristic. For the region of insensitivity, expressed by the relative displacement of the slide blocks, a formula is given. The insensitive region can be reduced to zero

A Contact-less Polarized Relay in Semiconductor Triodes SOV/119-59-9-3/19

by the use of double slide blocks. Thereafter formulas are given for the temperature compensation of the influences of threshold voltage variations and for the error in geometric conformity of the slide blocks. A semiconductor relay constructed on the basis of above correlations was tested experimentally. Results obtained are given in a table. The high quality of the semiconductor relay described here opens farreaching possibilities of application. The development of polarized relays consisting exclusively of silicon transistors as far as the output cascades is extremely promising. For this reason the Soviet industry ought to produce efficient silicon transistors with p-n-p and n-p-n junctions as soon as possible. There are 2 figures, 1 table, and 11 references, 10 of which are Soviet.

Card 3/3

80165
S/108/60/015/04/07/007
B014/B014

9,2560
AUTHOR: Kulikov, S. V., Member of the Society

TITLE: Calculation of a Semiconductor Relay

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 4, pp. 73 - 80

TEXT: By way of introduction, the author briefly describes the general advantages of transistor relays and the relay circuit shown in Fig. 1. Thermal compensation is particularly important to transistor circuits, and the elements of thermal compensation are calculated in detail. First, the thermal compensation in the pre-cascade is treated, and formula (5) is derived for the stability of the zone that is insensitive to temperature fluctuations. The output cascade is studied similarly. Formula (6) is given for the determination of the insensitive zone. Formula (23) for the calculation of the hysteresis loop is explicitly written down. In this connection it is necessary to take into account the nonlinear properties of transistors, for which purpose the author makes use of gradual linear approximation. Next, he describes the self-excitation relay shown in Fig. 4, and gives formula (24) for the calculation of the half period of natural oscillations. In the diagram of Fig. 5 the values calculated for the

Card 1/2

insensitive zone and the hysteresis loop are compared with experimental values obtained from the relay depicted in Fig. 1. Experimental and calculated values are obviously in close agreement. Fig. 6 illustrates three pulse diagrams obtained from an experimental study of the self-excitation relay shown in Fig. 4. The author thanks Professor B. S. Sotskov for his advice given for the calculation of the above-mentioned systems. The circuit diagrams under consideration were discussed at a seminar of the sektsiya elementov avtomatiki i telemekhaniki IAT AN SSSR (Section of Elements of Automation and Telemechanics of the IAT AS USSR). The technical terms suggested by the Kafedra elektroniki MIFI (Chair of Electronics of MIFI) are used in this article. There are 6 figures and 6 Soviet references.

SUBMITTED: August 18, 1958 (initially) and September 4, 1959 (after revision)

Card 2/2

16.9500

78171
SOV/103-21-3-17/21

AUTHOR: Kulikov, S. V. (Moscow)

TITLE: Voltage Deviation Pickup Built of Semiconductor Elements

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol 21, Nr 3, pp 409-416 (USSR)

ABSTRACT: In the paper the principle of operation and the method of calculation of a voltage deviation pickup made of semiconductor elements is described. This pickup is used in voltage stabilization systems. The block diagram of this pickup is shown on Fig. 1. On Fig. 1 the following notations are introduced: D_1 D_1' are silicon reference diodes; T_1, T_1', T_2, T_2', T_3, T_3' are silicon transistors, R_{T_1}, R_{T_2} are thermal resistances. The Russian designations indicate the types of Soviet-made tubes. The diodes

Card 1/5

D_1 and D_1' are placed in opposite branches D_1-R_s-R_{11}-D_1'-R_{12} of the bridge serving as voltage reference. The regulated voltage E_{reg} is applied to one of the bridge diagonals through ballast resistance R_{13}. A preamplifier is connected to the other bridge diagonal. This preamplifier consists of T_1 and T_1' silicon transistors, the output current of which controls the relay power amplifier with germanium transistors: T_2, T_2', T_3 and T_3'. Thermal resistances R_{T_1}, R_{T_2} compensate the thermal changes in the system. In order for the load resistances to obtain a signal, the average value of which depends continuously on the input signal changing within a limited range, the capacitors C_1 and C_2 must be inserted in place of resistances R_5 and

R_3'. Thus, a self-oscillation is provided, and as a result the vibration linearization takes place. When the regulated voltage deviates, the width of the impulse modulation is carried out. A method for calculation of the pickup is given. From a given regulated voltage E_{reg}, the supply voltage E_3, and the load resistances R_3 and R_3', the remaining system parameters are determined. The calculation of the nonlinear bridge constants is carried out under the assumption that the reference diodes D_1 and D_1' are "conditionally autonomous" two-terminal networks with certain emf's and resistances. Calculation of the relay cascades and of the sensitivity of the entire system is carried out. The results obtained were checked experimentally. The assistance of B. S. Sotskov is acknowledged. The results of this study were presented at the Seminar held by the Laboratory of Automatic Elements of the Institute for Automation

Fig. 1.

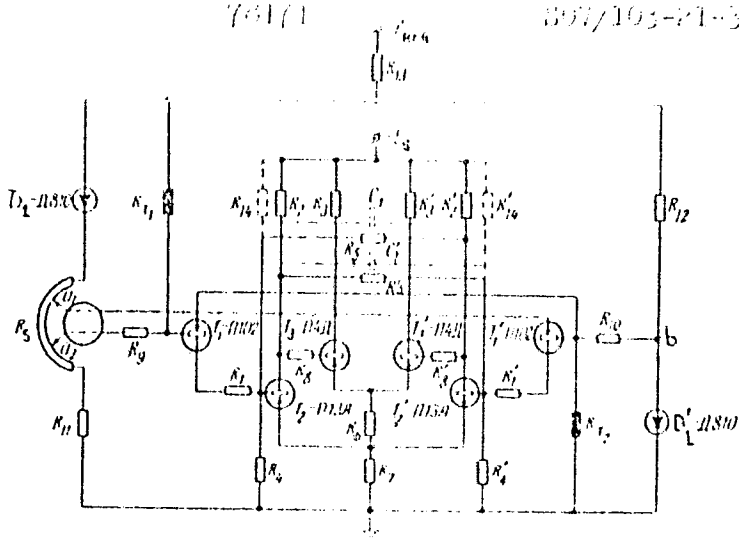


Fig. 1. Basic diagram of the voltage deviation pickup. $R_1 = R_1' = 1{,}2$ к; $R_2 = R_2' = 3{,}3$ к; $R_3 = R_3' = 100$ ом; $R_4 = R_4' = 5{,}6$ к; $R_5 = R_5' = 15$ к; $R_6 = 5$ ом; $R_7 = 5$ ом; $R_8 = R_8' = 1$ к; $R_9 = 0$; $R_{10} = 200$ ом; $R_{11} = 1920$ ом; $R_{12} = 2100$ ом; $R_{13} = 542$ ом; $R_{a_1-a_2} = 210$ ом; $R_{a_1} = 40$ ом; $R_{13} = 395$ ом.

Card 4/5

Voltage Deviation Pickup Built of Semiconductor Elements

78171
SOV/103-21-3-17/21

and Remote Control of the AS of the USSR. There are 5 figures; and 4 Soviet references.

SUBMITTED: August 19, 1959

Card 5/5

30654

S/105/61/000/011/002/002
E036/E118

9,2560 (1040, 1154, 1161)

AUTHOR: Kulikov, S.V., Engineer (Moscow)

TITLE: Temperature compensation of transistor switching stages

PERIODICAL: Elektrichestvo, no.11, 1961, 66-70

TEXT: Transistor switching circuits are being increasingly used because of their ability to switch power in excess of the collector dissipation. In industrial applications switching circuits are often required to have small operating thresholds and high stability and the sensitivity of the thresholds to temperature is of primary importance. In this article it is assumed that the instability arises from the temperature sensitivity of the points defining the cut-off, saturation and active regions. In measurements on transistors it has been found that as the temperature changes from -50 °C to +60 °C the characteristics are displaced and their slopes changed; these changes provide the basis of the outline analysis. Special temperature compensation methods are required for switching stages and these are divided into the following three groups: 1) By means of stabilising diodes, as discussed in Ref.3 (Low, Anders, Zawels, Waldhauer, Cheng

Card 1/ 4

30654

S/105/61/000/011/002/002
E036/E118

Temperature compensation of transistor..

Osnovy poluprovodnikovoy elektroniki, perevod c angl., "Fundamentals of Semiconductor Electronics", Izd. "Sovetskoye radio", 1958); 2) Using thermistors to compensate for the changes in the transfer characteristics; 3) In the third group of methods the transfer changes of the characteristics of the last stage are used to compensate the changes of the characteristics of the preceding stage to give overall stability. Two methods of thermo-compensation are considered in some detail. In the first example allowance is made only for temperature displacement of the direct transfer curves parallel to themselves. The circuit considered is shown in Fig.4 where the first stage is the silicon transistor T_1 (П102) (P102) and the output stage is the transistor T_2 (П4Д) (P4D). The resistance r_4 provided positive feedback between the stages. The input signal is applied between a and b, a and c, or b and c. The output is taken from r_2. The first stage is thermally compensated with a thermistor ММТ-1 (MMT-1) and the output stage by means of the transistor T_3 (П3В) (P3V) which markedly reduces the changes in collector current of T_2 with temperature. The biassing voltage E_{st} is determined

Card 2/ 4

graphically from the collector current - collector base voltage characteristics with the emitter open circuit. The current through the thermistor r_T must be such that the element is working on the linear part of its characteristic. Values of the components in the circuit of Fig.4 are quoted. With this system of stabilisation insignificant changes with temperature are observed; 0.05 mA for the cut-off state and 0.15 mA in the saturation state, and a 50 μA signal could be applied between a and b in the temperature range 20-60 °C and the output current from the transistor T_2 in the cut-off condition would not exceed 1 mA. Another circuit considered is shown in Fig.5, in which the output stage (transistor T_2) controls the initial stage (transistor T_1). Positive feedback is provided by the resistor r_5. The performance of an actual circuit, without the diode D, is quoted for the temperature range 20-60 °C. The input threshold voltages were quite unchanged and the output current of transistor T_2 did not exceed 1 mA at 60 °C. If the circuit parameters had not been selected with temperature stability of the thresholds in mind the displacement of these could be 0.3-0.5 V.
There are 5 figures and 6 references: 5 Soviet-bloc and
Card 3/4

30654

Temperature compensation of transistor... S/105/61/000/011/002/002
E036/E118

1 a Russian translation from a non-Soviet publication (Ref.3, as given in the text above).

SUBMITTED: November 9, 1959.

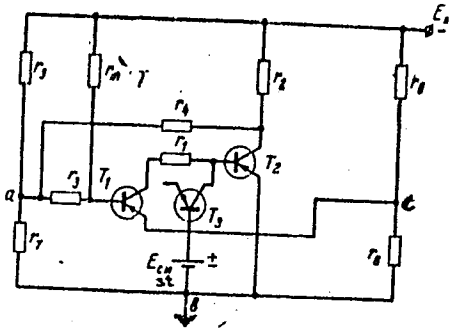


Fig.4

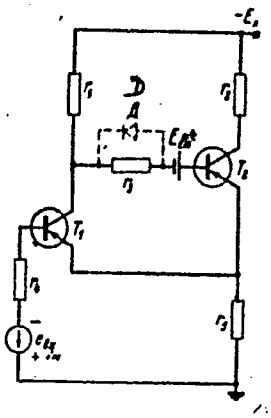


Fig.5

Card 4/4

KULIKOV, S.V. (Moskva)

Concerning "reversal" conditions in semiconducor relay devices.
Avtom.i telem. 22 no.7:914-918 Jl '61. (MIRA 14:6)
(Transistor circuits) (Switching circuits)

ACCESSION NR: AP3001136 S/0106/63/000/006/0067/0069

AUTHOR: Kulikov, S. V.

TITLE: Contactless relay using transistors with bipolar output

SOURCE: Elektrosvyaz', no. 6, 1963, 67-69

TOPIC TAGS: electronic transistorized relay, bipolar output, range use of pulses, varied d-c voltage, temperature range

ABSTRACT: A description is given of a bridge-type transistorized relay designed for the conversion of continuously varied d-c voltage and pulses into bipolar signals. In the circuit considered the transistor stages T sub 1 and T sub 1 prime and positive feedback resistors R sub 5 and R sub 5 prime constitute a relay. The bridge circuit, consisting of transistors T sub 2, T sub 2 prime and T sub 3 and T sub 3 prime, is controlled by this relay. When T sub 1 is saturated, T sub 2 and T sub 3 prime are cut off, while T sub 2 prime and T sub 3 become saturated and vice versa. Resistors R sub 6, R sub 7, and R sub 9 provide a bias which controls the cutoff action of the corresponding transistors. During

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ACCESSION NR: AP3001136

switching, the current in the load resistor R sub 2 changes direction. A continuous or pulsed control signal can be applied either to points a and b, c and b, or a and c. The circuit was tested in the temperature range of 20 to 60C. A continuously varied bipolar signal from a d-c source with an internal resistance of 15 kohm was applied to points a and c. The threshold of operation was plus or minus 100 microamp and remained nearly constant within the operating temperature range. The output current in the load resistor R sub 2 was found to jump from +8.5 to -8.5 mamp under these conditions. Orig. art. has: 1 figure and 8 formulas.

ASSOCIATION: none

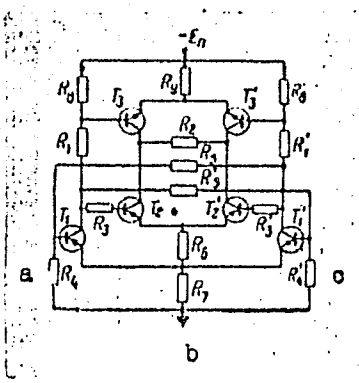
SUBMITTED: 05Oct62 DATE ACQ: 01Jul63 ENCL: 01

SUB CODE: 00 NO REF SOV: 004 OTHER: 000

Card 2/3

ACCESSION NR: AP3001136

ENCLOSURE: 01



Card 3/3

KULIKOV, S.V.

Replacement of a transistor by autonomous four-terminal networks. Radiotekhnika 19 no.8:66-69 Ag '64. (MIRA 17:9)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni A.S. Popova.

KULIKOV, G. Ya.

"Investigation of the Processes of Scalding and Baking Sheep Products." Cand Tech Sci, Moscow Technological Inst of the Food Industry, Min Higher Education USSR, Moscow, 1954. (KL, No 15, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

Card: 1/1

J

COUNTRY : USSR
CATEGORY : Soil Science. Physical and Chemical Properties of Soil.
ABS. JOUR. : RZhBiol., No. 4,1959, No. 15354

AUTHOR : Kulikov, T.A.
INST. : Kirghiz Agricultural Institute
TITLE : Determination of Soil Moisture by the Method of Quick Drying.

ORIG. PUB. : Tr. Kirg. s.-kh. in-ta, 1957, vyp. 10, No.1, 109-112

ABSTRACT : Soil samples weighing 10 - 20 g were dried in a drying cabinet on an iron glass for 10 - 15 minutes at a temperature of 120 - 130 degrees. The value for moisture of soil containing a small amount of humus (2 - 5.5) was 1.1 lower than that obtained by the usual drying method (12 hours at a temperature of 105 degrees).

Card: 1/1

KULIKOV, T. A.: Master Agric Sci (diss) -- "The thermal characteristics of typical soils of the Kirgiz SSR". Frunze, 1958. 25 pp (Kirgiz Agric Inst), 250 copies (KL, No 5, 1959, 153)

VASIL'YEV, Prokopiy Vasil'yevich. Prinimal uchastiye KULIKOV, T.A. kand. nauk; NEKRASOV, N.N., otv. red.; PAL'TEROVICH, D.M., red.izd-va; RYLINA, Yu.V., tekhn. red.

[Economics of the utilization and reproduction of forest resources] Ekonomika ispol'zovaniia i vosproizvodstva lesnykh resursov. Moskva, Izd-vo AN SSSR, 1963. 483 p. (MIRA 16:12)

1. Chlen-korrespondent AN SSSR (for Nekrasov).
(Forests and forestry--Economic aspects)

KULIKOV, V., referent

Saturation irrigation of winter wheat. Bogdan Bochev. Zemledelie 26 no.9:89 S '64. (MIR [illegible])

KULIKOV, V.

New method of preparing Bordeaux mixture. Zashch. rast. ot vred. i bol. 10 no.3:48 '65. (MIRA 19:1)

KULIKOV, V. A.

(1)

Review of Applied Mycology
Vol. 33 Mar. 1954

Kulikov (V. A.). Термический метод борьбы с мучнистой росой Крыжовника. [A thermal method of controlling powdery mildew of Gooseberry.]—Сад и Огород [*Orchard & Garden*], *1953*, 8, pp. 72–74, 2 figs., 1953.

Treatment of gooseberry bushes in the U.S.S.R. by spraying with hot water (75° and 80° [C.]) containing 1 gm. sodium arsenate per pail of water gave promising control of powdery mildew [*Sphaerotheca mors-uvae*: see preceding and next abstracts] in tests from 1947 to 1951, resulting in 2·2 per cent. infected shoots at 75° as against 23·6 (for those treated with 0·02 per cent. [? cold] sodium arsenate solution) and at 80° 0·1 as against 22·1 (untreated). The 75° treatment also reduced berry infection from 50 per cent. (sprayed with water at normal temperature plus 4 gm. sodium arsenate) to 14·7 per cent. The sprayer should be kept about 5 to 20 cm. away from the bush, depending on the type of machine, the diameter of the opening, and the initial temperature of the solution.

The advantage of the hot-water method is that two sprays are sufficient to give satisfactory control, whereas other treatments require four sprays.

KULIKOV, V. A.

Fungi

Development of cleistocarp stage in the fungus Sphaerotheca mors-uvae depending upon the temperature and humidity of air. Mikrobiologyia, 22 No. 2, 1953.

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

Kulikov, V

USSR/Meadow Cultivation. The Pasture. K-2

Abs Jour: Referat Zh-Biol., No 6, 1957, 22632

Author : Kulikov, V.
Inst : c
Title : Irrigation of Pastures on High Mountains.

Orig Pub: S. kh. Kirgizii, 1955, No 5, 25-28

Abstract: Data of the Institute of water economy and energy, Academy of Sciences Kirghiz SSR, on the study of irrigating conditions in the high-mountain valley of Susamir and on bogs of the Pokrov rayon of the Issik-Kulsk oblast are given. The object of the investigation: to clarify the need for irrigation and its effect on increase of the grass crop. The distribution of summer precipitation is described after many years of observation and data on grass yields are stated depending on the precipitation during the vegetative period. It was established that sown grasses in districts of mountainous pastures receive their

Card : 1/2 -3-

USSR/Meadow Cultivation. The Pasture. K-2

Abs Jour: Referat Zh-Biol., No 6, 1957, 22632

moisture from summer precipitation to the extent only of 47-83%. Hence it follows that in order to get full-value fodder grass crops, an extra artificial irrigation is necessary.

Card : 2/2 -4-

COUNTRY : USSR
CATEGORY : Cultivated Plants. Commercial. Oleiferous. Sugar-Bearing. M
JOUR. : RZhBiol., No. 1, 1959, No. 3791
AUTHOR : Gonolarov, A.J.; Kulikov, V.A.
INST. : Kirghiz Sel.-Exp. Inst. of Agriculture
TITLE : Beet Sowing and Sugar Beet Industry of Kirghizia.

SOURCE : Tr. Kirg. n.-i. in-ta zemledeliya, 1957, vyp. 1, 17-27
ABSTRACT : Presented is data on sowing areas, productivity and total yield of sugar beet in Kirghizia for the years 1929-1955 as well as data on the industrial capacity of sugar mills and their supply with beet raw material.

CARD: 1/1

USSR/Cultivated Plants - Commercial. Oil-Bearing. Sugar-Bearing. M-5

Abs Jour : Ref Zhur- Biol., No 7, 1958, 29877

Author : Kulikov, V., Paradiyev, A., Poderyagin, G., Li, A., Popova, I.

Inst : -

Title : Side-Dressing Cotton Plants with Liquid Nitrogen Fertilizers.

Orig Pub : Khlopkovodstvo, 1957, No 5, 19-24.

Abstract : Field tests made in 1956 by the Pakhta-Aral'skaya Experimental Station in the Sovkhoz "Pakhta-Aral" in South Kazakhstanskaya Oblast' to study the effect of side dressing cotton plants with liquid ammonia (82.3% N) and ammoniate A (36% N) have shown that their effect was equal to that of NH_4NO_3. The depth of placement of the liquid fertilizers should not be less than 18-20 cm. The expenditure of labor when using liquid fertilizer is almost cut in half. With machines being created to apply these

Card 1/2

Abs Jour : Ref Zhur - Biol., No 7, 1958, 29877

fertilizers it is necessary to foresee the possibility of placing them when cultivating or cutting the irrigation furrows in such a manner that the depth of application is considerably lower than the bottom of the irrigation furrow.

KULIKOV V A

USSR/Diseases of Plants. Diseases of Cultivated Plants O-2

Abs Jour : Ref Zhur-Biol., No 2, 1958, 6482

Author : ~~Kulikov V. A.~~
Inst : Not given
Title : American Powdery Smut of the Goosberry and its Control

Orig Pub : S. kh. Povolzh'ya, 1957, No 5, 56-57

Abstract : A thermal method of control which consists of spraying the infected plants with water heated to 80° has been proposed. The spraying is carried out by means of an automatic /pump/ or a hydraulic hose; on large plantations with a plunger type sprayer OBP. The spraying should be carried out immediately after the appearance of the smut on the berries following florescence.

Card 1/1

KULIKOV, V., Geroy Sotsialisticheskogo Truda, delegat XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza

End of the "cotton island." Gidr. i mel. 14 no.1:21-23 Ja '62. (MIRA 15:1)

1. Direktor sovkhoza "Pakhta-Aral".
(Golodnaya Steppe--Cotton growing)

KULIKOV, V., Geroy Sotsialisticheskogo Truda, delegat XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza

Diversified mechanized farming. Zemledelie 24 no.1:29-31 Ja '62. (MIRA 15:2)

1. Direktor sovkhoza "Pakhta-Aral".
(Golodnaya Steppe--Farm mechanization)

INVENTOR, V A

27587
S/102/61/000/001/005/005
D274/D303

9,7200 (1068 also 1147)

AUTHORS: Kulykov, V.O. and Pushchalovs'kyy, A.D. (Kyyiv)

TITLE: Multiplier incorporating magnetic amplifiers

PERIODICAL: Avtomatyka, no. 1, 1961, 67-70

TEXT: A multiplier is described which could be used in simulators which require increased reliability and simplicity in operation, as well as small size. The multiplication of two signals of different sign can be carried out by a magnetic-amplifier multiplier which works on sufficiently high loads without pre-amplification of signal. The amplifier is designed in accordance with the relationship

$$a \cdot b = \frac{1}{4}\left[(a + b)^2 - (a - b)^2\right] \qquad (1)$$

The basic circuit of the multiplier (which is shown in a figure) incorporates magnetic amplification with internal feedback. For certain values of voltage, displacement current, and load resistance, an output characteristic $I_1 = f(I_{amp})$ can be obtained which has the

Card 1/3

form of a quadratic parabola. On using Eq. (1) for the multiplication of two signals, it is necessary to have a squaring amplifier with a quadratic characteristic in all four quadrants. Such a squaring amplifier can be obtained by suitable connection of four magnetic amplifiers. These amplifiers are connected in a differential circuit which yields a current given by the expression

$$I_{l_{3-4}} = c\left[(I_{amp_1} - I_{amp_2})^2 - (I_{amp_1} - I_{amp_2})^2\right], \quad (3)$$

which corresponds to Eq. (1). A model of the described device was successfully tested. The characteristic of the amplifiers has a certain spread which affects the accuracy of the multiplier. The maximum relative error in multiplying two quantities is +3%. With more accurate construction of magnetic amplifiers, the accuracy of the multiplier can be increased. A figure shows the characteristic of the squaring amplifier. It gives a power output of approximately 0.2 watt. The range of the variables which can be multiplied (with an accuracy of +3%) is shown in a figure. The described device was constructed in diverse models, using transformer steel and permalloy.

Card 2/3

27587
S/102/61/000/001/005/005
D274/D303

Multiplier incorporating magnetic...

The lag of a device, made of permalloy, is comparatively small; the time constant is approximately 0.01 sec. The bandpass is 10 cy. with an error of +2%. There are 5 figures and 2 Soviet-bloc references.

SUBMITTED: May 25, 1960

Card 3/3

MIKHAYLOV, V.N., doktor tekhn. nauk; KULIKOV, V.A., kand. tekhn. nauk;
ALTUKHOV, V.F., inzh.; MALYSHEV, V.V., inzh.; PUPYNINA, E.G., inzh.

Organizing conveying for assembly work of metal railroad-car windows. Nauch. trudy Len. lesotekh. akad. no.76:77-82 '57.
(Railroads--Cars--Construction) (MIRA 11:4)
(Conveying machinery)

LINDENBRATEN, L.D., prof.; KULIKOV, V.A.

"Technique of X-ray diagnosis" by Kh.Poppe, Ph.Lauwers, I.Lohstoeter. Reviewed by L.D.Lindenbraten V.A.Kulikov. Med. rad. 7 no.12: 80-81 D'62. (MIRA 16:10)

KULIKOV, V.A.

Kulikov, V.A."A study of the selection of grooves on horizontal-drilling and chain-mortising machines (for wood)", Trudy Lesotekhn. akad. im. Kirova, No. 63, 1948, p. 86-104, -Bibliog: 13 items.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 9, 1949)

KULIKOV, V. A.

Kulikov, V. A. - "Constructing limit gages for woodworking," Trudy Lesotekhn. akad. im. Kirova, No 65, 1949, p. 109-19, - Bibliog: p. 119

SO: U-5240, 17, Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

MIKHAYLOV, V.N., doktor tekhnicheskikh nauk; KULIKOV, V.A., kandidat tekhnicheskikh nauk.

Preparing and introducing the All-Union State Standard on tolerance and shrinkage in woodworking. Der.i lesokhim.prom. 2 no.7:9-11 Jl '53. (MLRA 6:5)

1. Leningradskaya lesotekhnicheskaya akademiya imeni S.M. Kirova. (Woodwork--Standards)

MIKHAYLOV, V.N., professor; KULIKOV, V.A., kandidat tekhnicheskikh nauk; YANTOVSKIY, A.T., inzhener.

Standardizing the finished dimensions of parts and tenon joints of furniture. Der. i lesokhim. prom. 2 no.8:3-7 Ag '53. (MLRA 6:7)

1. Leningradskaya lesotekhnicheskaya akademiya imeni S.M.Kirova. (Furniture)

MIKHAYLOV,V.N., doktor tekhnicheskikh nauk; KULIKOV,V.A., kandidat tekhnicheskikh nauk; SHCHERBAKOV,M.M., inzhener

Standardizing the cross sections of furniture parts. Der.prom. 4 no.6:3-5 Je'55. (MLRA 8:10)

1. Leningradskaya ordena Lenina lesotekhnicheskaya akademiya imeni S.M.Kirova

(Furniture industry)

VLASOV, Georgiy Dmitriyevich, prof., doktor tekhn.nauk; KULIKOV, Valentin Anatol'yevich, dotsent, kand.tekhn.nauk; RODIONOV, Sergey Vasil'yevich, dotsent, kand.tekhn.nauk. Prinimali uchastiye: SOKOLOV, P.V., dotsent, kand.tekhn.nauk; SAPOZHNIKOV, A.K., inzh.; NEKHAMKIN, N.O., red.; VOLOKHONSKAYA, L.V., red.izd-va; KORNYUSHINA, A.S., tekhn.red.

[Technology of the woodworking industries] Tekhnologiia derevo-obrabatyvaiushchikh proizvodstv. Moskva, Goslesbumizdat, 1960. 566 p. (MIRA 13:9)

(Woodworking industries)

KULIKOV, V.A., kand.tekhn.nauk

Analytical method for calculating allowances in manufacturing subassemblies from wood. Der.prom. 9 no.3: 6-8 Mr '60. (MIRA 13:6)

1. Lesotekhnicheskaya akademiya im. S.M.Kirova.
(Woodwork--Tables, calculations, etc.)

MIKHAYLOV, Vladimir Nikolayevich, prof., doktor tekhn. nauk [deceased]; KULIKOV, Valentin Anatol'yevich, dots., kand. tekhn. nauk; VLASOV, Georgiy Dmitriyevich, prof., doktor tekhn. nauk; CHULITSKIY, N.N., red.; VOLOKHONSKAYA, L.V., red. izd-va; PARAKHINA, N.L., tekhn. red.

[Technology of machine woodwork] Tekhnologiia mekhanicheskoi obrabotki drevesiny. Moskva, Goslesbumizdat, 1961. 544 p. (MIRA 14:9)

(Woodwork)

KULIKOV, V.A., kand.tekhn.nauk

Nomogram for determining the operational allowances in the manufacture of parts from wood. Der.prom. 11 no.5:5-6 My '62. (MIRA 15:5)

(Woodwork)

KULIKOV, V.A.

Standardizing the dimensions and profiles of parts in the manufacture of furniture. Nauch. trudy LTA no.97:29-33 '62.
(MIRA 17:2)

KULIKOV, V.A.; SHIMKEVICH, T.Ye.

Determining the thickness of a veneer sheet. Nauch. trudy LTA no. 97:111-114 '62. (MIRA 17:2)

KULIKOV, V.A., kand.tekhn.nauk; TARASOVA, L.I., inzh.

Surface smoothness of peeled veneer. Der.prom. 11 no.10:12-13 O '62. (MIRA 15:9)

(Veneers and veneering)

MIKHAYLOV, Vladimir Nikolayevich, prof., doktor tekhn. nauk [deceased]; KULIKOV, Valentin Anatol'yevich, dots., kand. tekhn. nauk; VLASOV, Georgiy Dmitriyevich, prof., doktor tekhn. nauk; KASHINA, T.S., dots., kand. tekhn. nauk; BURKOV, V.I., red.

[Technology of the mechanical processing of wood] Tekhnologiia mekhanicheskoi obrabotki drevesiny. Izd.2., ispr. i dop. Moskva, Lesnaia promyshlennost', 1964. 565 p. (MIRA 17:12)

KULIKOV, V.A., kand. tekhn. nauk; MARTYNIKHINA, N.M., inzh; KOL'MAN, B.P., inzh.

Vacuum gluing of plywood. Der. prom. 13 no.3:14-17 Mr '64 (MIRA 17:7)

1. Lesotekhnicheskaya akademiya imeni S.M. Kirova.

KULIKOV, Valentin Anatol'yevich, dots., kand. tekhn. nauk; VASECHKIN, Yuriy Vasil'yevich, dots., kand. tekhn. nauk; MIKHAYLOV, A.N., dots., kand. tekhn. nauk, retsenzent; SHEYDIN, I.A., kand. tekhn. nauk, retsenzent; KIRILLOV, N.M., dots., kand. tekhn. nauk, otv. red.; VASIL'YEVA, N.V., red.

[Technology of the production of gluing materials and slabs; laboratory manual for the students of the faculty of mechanical technology of wood] Tekhnologiia proizvodstva kleenykh materialov i plit; posobie k laboratornym rabotam (dlia studentov fakul'teta mekhanicheskoi tekhnologii drevesiny). Leningrad, Vses. zaochnyi in-t, 1963. 83 p. (MIRA 17:12)

KULIKOV, V.A.

Dust storms in the southern Ukraine in the spring of 1960.
Pochvovedenie no.6:10-18 Je '61. (MIRA 14:6)

1. Upravleniye gidrometeorologicheskoy sluzby USSR, Kiyev.
(Ukraine--Dust storms)

BORISOGLEBSKIY, G.I.; KULIKOV, V.A.; MOGILA, L.Ye.

Dust storms in the south of the European part of the U.S.S.R. in the summer of 1960. Meteor.i gidrol. no.5:29-33 My '61. (MIRA 14:4)
(Russia, Southern--Dust storms)

AUTHORS: Saratovkin, D. D. and Kulikov, V. A. SOV/139-58-4-23/30

TITLE: On the Crystallisation at the Surface of a Super-Saturated Solution Under the Effect of an Electric Field (O kristallizatsii na poverkhnosti peresyshchennogo rastvora pod deystviyem elektricheskogo polya)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, 1958, Nr 4, pp 140-143 (USSR)

ABSTRACT: Paper presented at the Inter-University Conference on Dielectrics and Semiconductors, Tomsk, February, 1958. A. V. Shubnikov (Refs 1 and 3) described the following experiment: if a drop of ammonium chloride is put on a slightly heated slide, the formation of typical crystalline dendrites can be observed under the microscope at the edges of the drop, which grow and fill up the entire field of vision; in the space which is free of dendrites there is never a spontaneous occurrence of new crystallisation centres. The picture is completely different if immediately after observation of visible dendrites any charged body is placed near to the drop, for instance a comb which has been rubbed on hair. In this case new centres of crystallisation form which grow into cross-like skeletons

Card1/3

On the Crystallisation at the Surface of a Super-Saturated Solution Under the Effect of an Electric Field

of an obviously different origin than the originally formed dendrites. To get a better picture of the phenomena the authors of this paper carried out several experiments and as a result of this they express the hypothesis that the formation of new crystallisation centres is caused by the bombardment of the surface of the drop with dust particles, which are always present in the air and become charged by the electric field. Several experiments were made to verify this hypothesis, one of which consisted of applying the source of the field not from the top but from the bottom where the glass of the slide was located between the field and the drop. It was found that in this case no new centres formed and, therefore, the authors consider their hypothesis confirmed.
There are 4 references, all of which are Soviet.

SOV/139-58-4-23/30

On the Crystallisation at the Surface of a Super-Saturated Solution Under the Effect of an Electric Field

ASSOCIATION: Novosibirskiy institut sovetskoy kooperativnoy torgovli (Novosibirsk Institute of Soviet Co-operative Trading)

SUBMITTED: April 7, 1958

Card 3/3

SARATOVKIN, D.D.; KULIKOV, V.A.; KAUSHANSKAYA, F.I.

Stereoscopic observations of skeletal and dendritic forms of crystal growth. Izv. TPI 95:206-216 '58. (MIRA 14:9)

1. Predstavleno professorom doktorom A.A.Vorob'yevym.
(Crystals--Growth)

S/139/62/000/006/010/032
E073/E335

AUTHORS: Savitskiy, K.V., Zhdanova, V.N., Savitskiy, A.P., Kulikov, V.A. and Maslovskaya, T.I.

TITLE: The relationship between the mechanical properties and the porosity of copper produced from powder

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no. 6, 1962, 57 - 63

TEXT: The hardness and the compression strength in the as-sintered state and after deformation of 10, 20, 30% (for compression strength) and 50% (for hardness) were determined on cylindrical samples of 1-6% porosity, 12-15 mm high, 7 mm in diameter, prepared from powder passed through a sieve with a 50-μ mesh. The hardness-porosity and compressive strength-porosity curves pass through maxima for about 2.4% porosity and both the hardness and compressive strength were the higher the higher the degree of deformation. The hardness of all the samples was equal to or greater than that of cast copper, which could be explained by the existence of fine micropores formed as a result of powder-metallurgical proparation. X-ray diffraction photographs

Card 1/2

The relationship between ....

(breadth of the (331) line) showed that the block structure of copper produced from powder was finer than that of cast copper and this could influence the strength by blocking dislocations and forming a fine mosaic structure. The degree of distortion of the internal structure was estimated from X-ray diffraction photographs. The recrystallization temperature of a metal with an inertia porosity of 2.4% and deformed by 20% was 600 °C; the recrystallization temperature decreases with increasing porosity and forged copper produced from powder as the lowest recrystallization temperature, which may even be lower than that of cast copper. Double pressing with intermediate annealing and subsequent sintering at a moderately high temperature yields material of a higher strength than single pressing followed by long-duration sintering at elevated temperatures. There are 4 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva (Siberian Physicotechnical Institute of Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: November 21, 1961

SAVITSKIY, K.V.; ZHDANOVA, V.N.; SAVITSKIY, A.P.; KULIKOV, V.A.

Hardening of metals by dispersed particles. Issl. po zharopr. splav. 9:119-126 '62. (MIRA 16:6)
(Metals--Hardening)

S/136/62/000/001/005/005
E073/E335

18.8200 1454

AUTHORS: Garmata, V.A., Fal'kevich, E.S., Arutyunov, E.A. and Kulikov, V.A.

TITLE: Influence of admixtures on the hardness of commercially pure titanium and its relation to other mechanical properties

PERIODICAL: Tsvetnyye metally, no. 1, 1962, 80 - 83

TEXT: The test results of over 2 500 specimens from various batches of titanium sponge, produced under normal shop conditions, were utilized for analyzing the relation between the hardness, ultimate strength, elongation and contraction. Furthermore, the influence of admixtures contained in this sponge on the mechanical properties of the ingots produced from it were studied. A correlation analysis was made on the basis of the results of determination of the mechanical properties of samples from 300 different batches of titanium sponge. The hardness was measured on titanium ingots 60 mm dia. x 50 mm produced by vacuum electric arc smelting, using a consumable electrode. The hardness was measured in the as-cast state, using a 10-mm diameter steel ball

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S/136/62/000/001/005/005
E073/E335

Influence of admixtures on ...

with a pressure of 3000 kg. The correlation analysis for determining the relation between the hardness of the Ti in the as-cast state and the chemical composition was based on the results obtained from specimens of 2 500 batches of Ti sponge in which the content of individual elements varied within very narrow limits. On the basis of the obtained results, equations were derived (which are given in the table) for inter-relating the hardness with other properties. It was found that the hardness could serve as a general criterion for determining whether the Ti sponge was satisfactory with respect to mechanical properties and chemical composition.
It is mentioned in an editorial note that this is one of the first attempts to apply mathematical statistics in metallurgy.
There are 3 figures, 1 table and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. The English-language reference mentioned is: Ref. 3L K. Telbor - Iron Steel Inst., 1932, 20, 140/146.

Card 2/3

32548

S/136/62/000/001/005/005

Influence of admixtures on E073/E335

Table.

Function	Argument	Investigation limits	Correlation ratio	Correlation Coefficient	Eq. expressing linear relation
Ultimate strength, σ_b	Hardness	110-210 units H_B	0.9731	0.9662	$\sigma_b = 0.311 \cdot H_B + 1.63$
Elongation, δ	Hardness	110-50 units H_B	0.8057	-0.7879	$\delta = -0.642 \cdot H_B + 123.51$
Elongation, δ	Hardness	150-210 units H_B	0.504	-0.420	$\delta = -0.076 \cdot H_B + 38.26$
Contraction, ψ	Hardness	110-170 units H_B	0.912	-0.895	$\psi = -0.484 \cdot H_B + 138.4$
Contraction, ψ	Hardness	170-210 units H_B			$\psi = -0.25 \cdot H_B + 98.6$
Hardness	Content N_2, %	0.01-0.042	0.3711	0.3587	$H_B = 609.5\%N_2 + 123.5$
"	" O_2, %	0.03-0.15%	0.3091	0.2536	$H_B = 119.9\%O_2 + 125.8$
"	" Fe, %	0.02-0.30%	0.5972	0.5936	$H_B = 164.5\%Fe + 123.6$

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Influence of admixtures on S/136/62/000/001/005/005
E073/E335

Table (cont.)

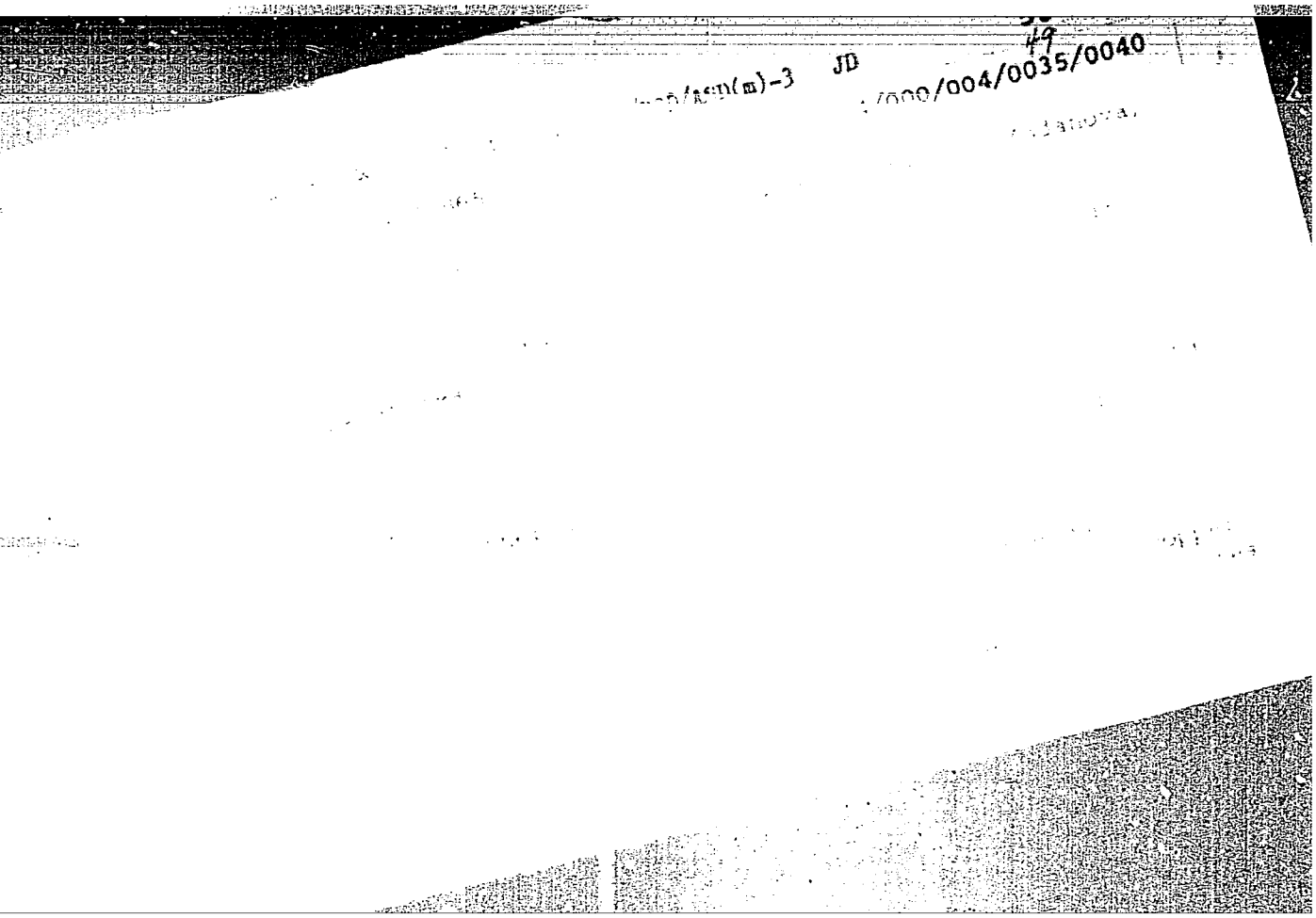
** Since only a few Ti ingots with a hardness of 170 - 210 units H_B were available, the correlation analysis of the relation between hardness and contraction was not carried out in this range; this formula was determined empirically

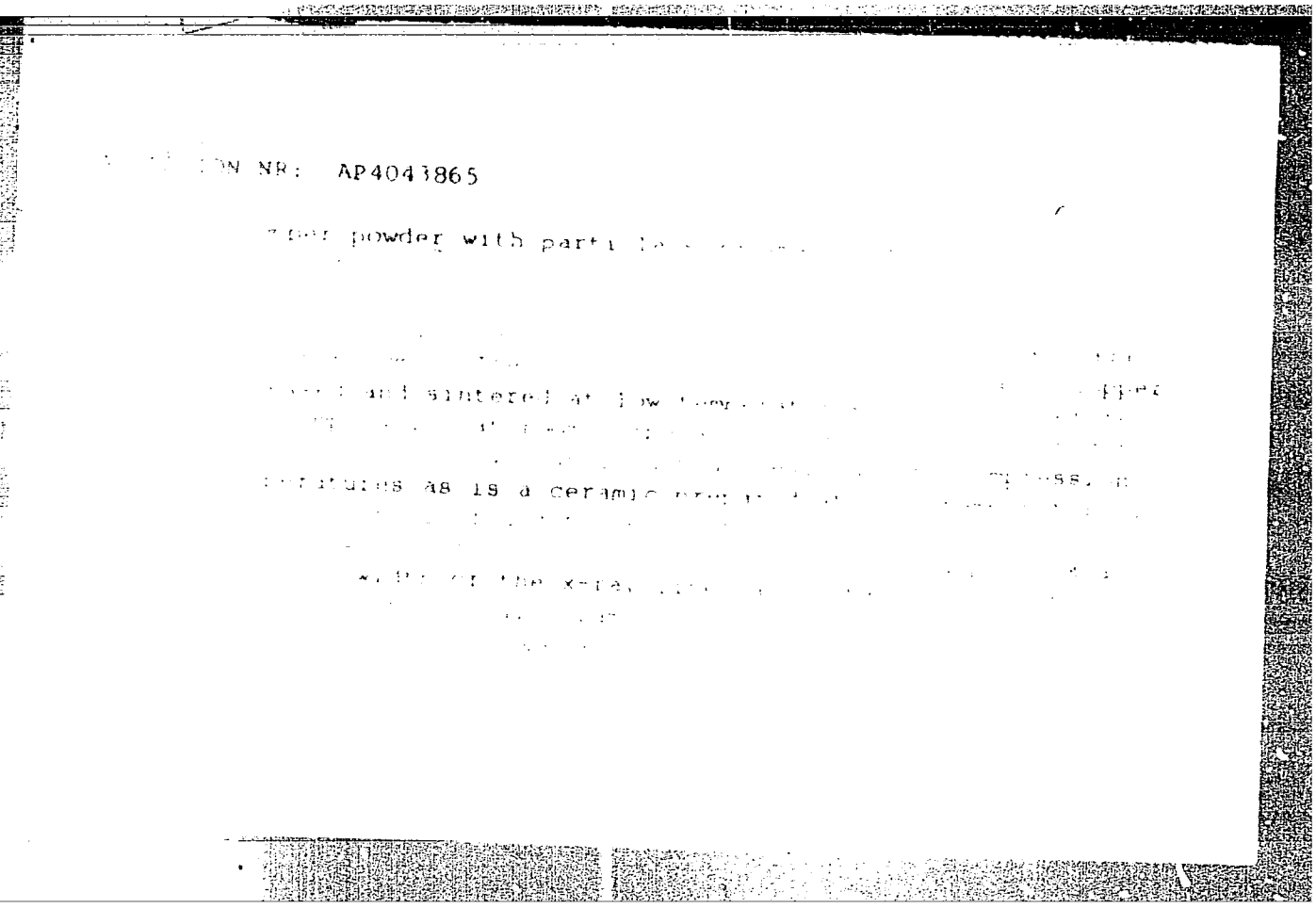
Card 4/4

FAL'KEVICH, E.S.; GARMATA, V.A.; Prinimali uchastiye: KRAMNIK, V.Yu.; LYUKEVICH, Ye.A.; ARTYUNOV, E.A.; KULIKOV, V.A.

Quality control of titanium sponge. Titan i ego splavy no.9:191-195 '63. (MIRA 16:9)

(Titanium—Testing)





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powder with part

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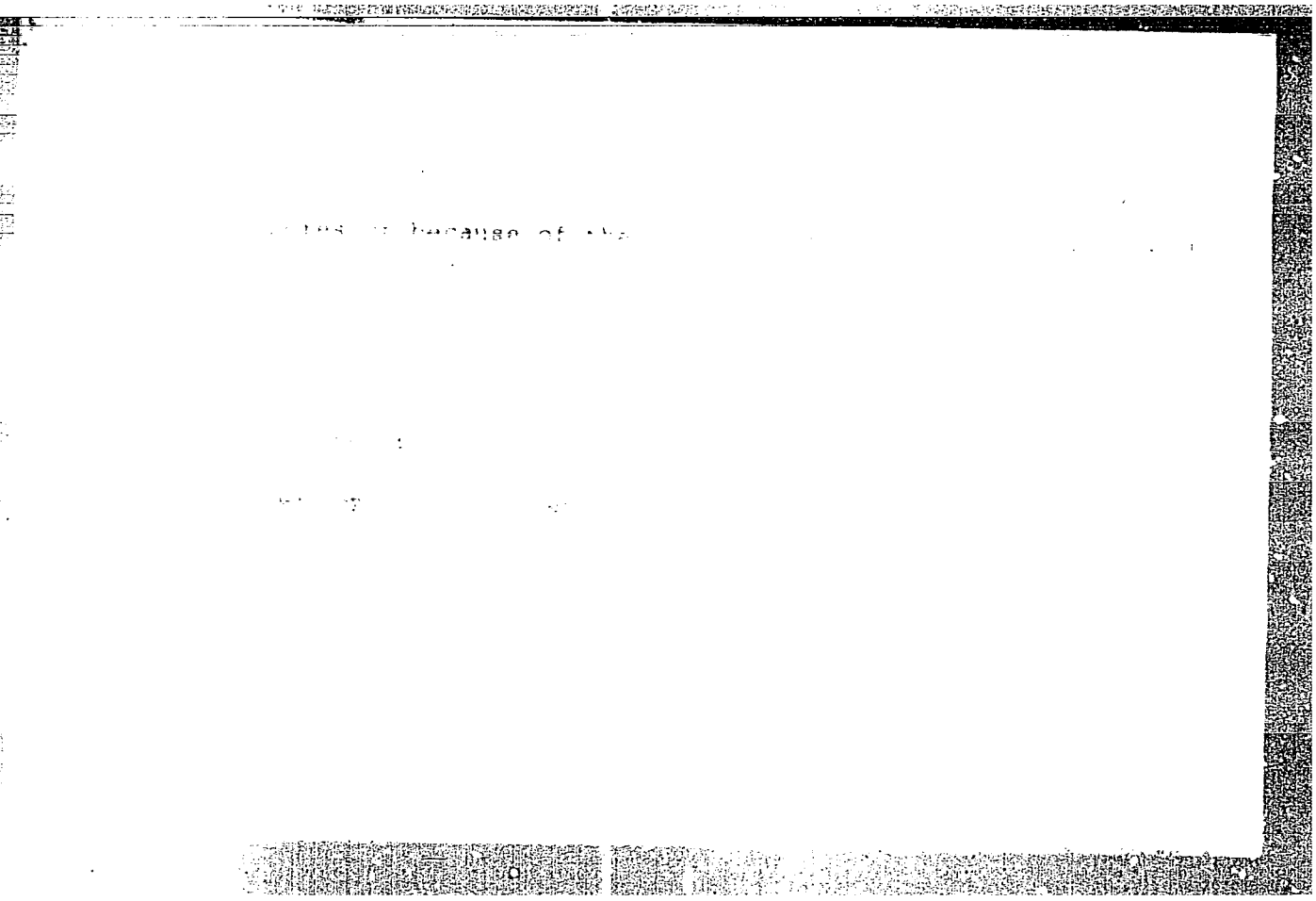

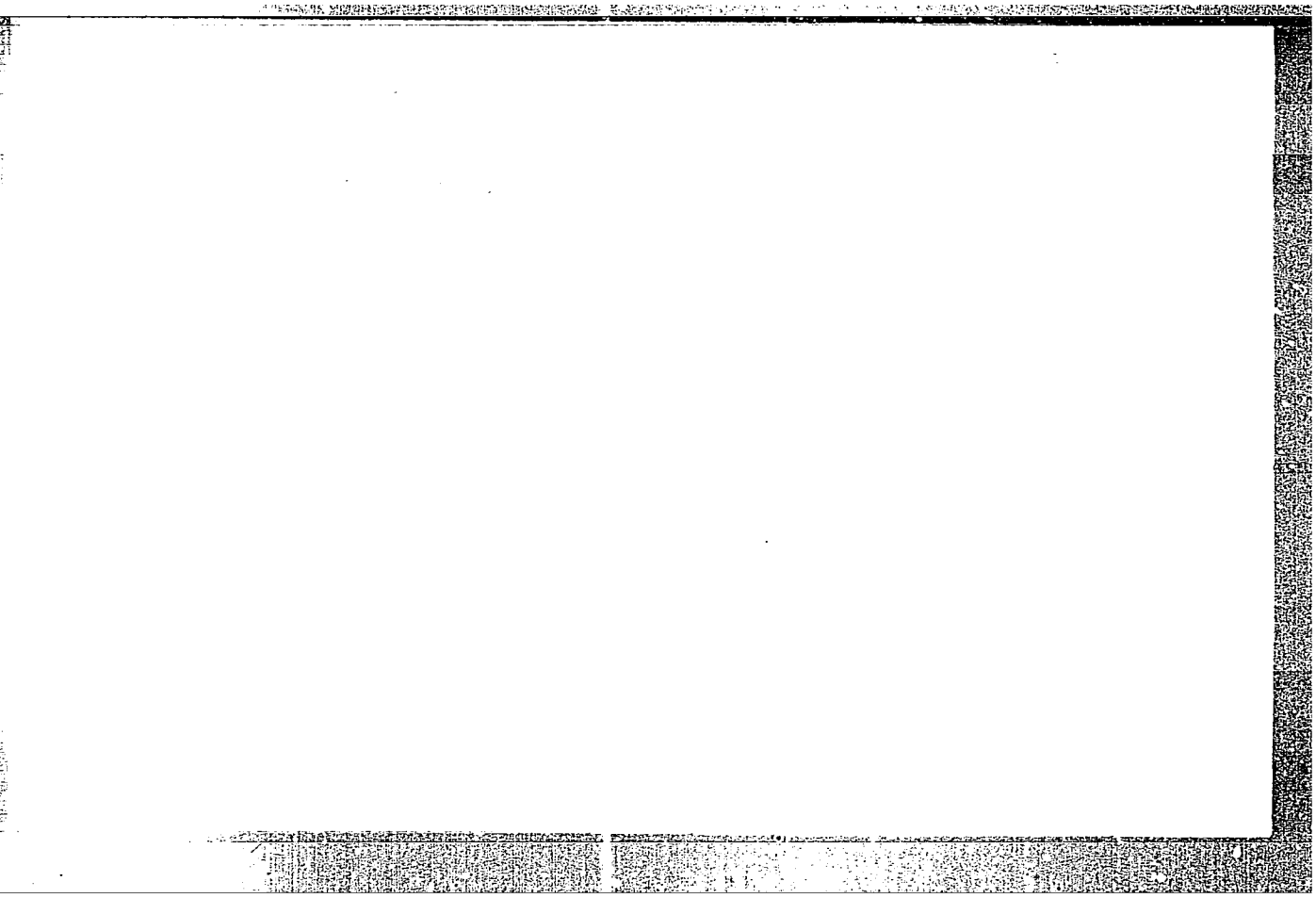

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improvement of the mechanical properties of the alloys at high temperatures in

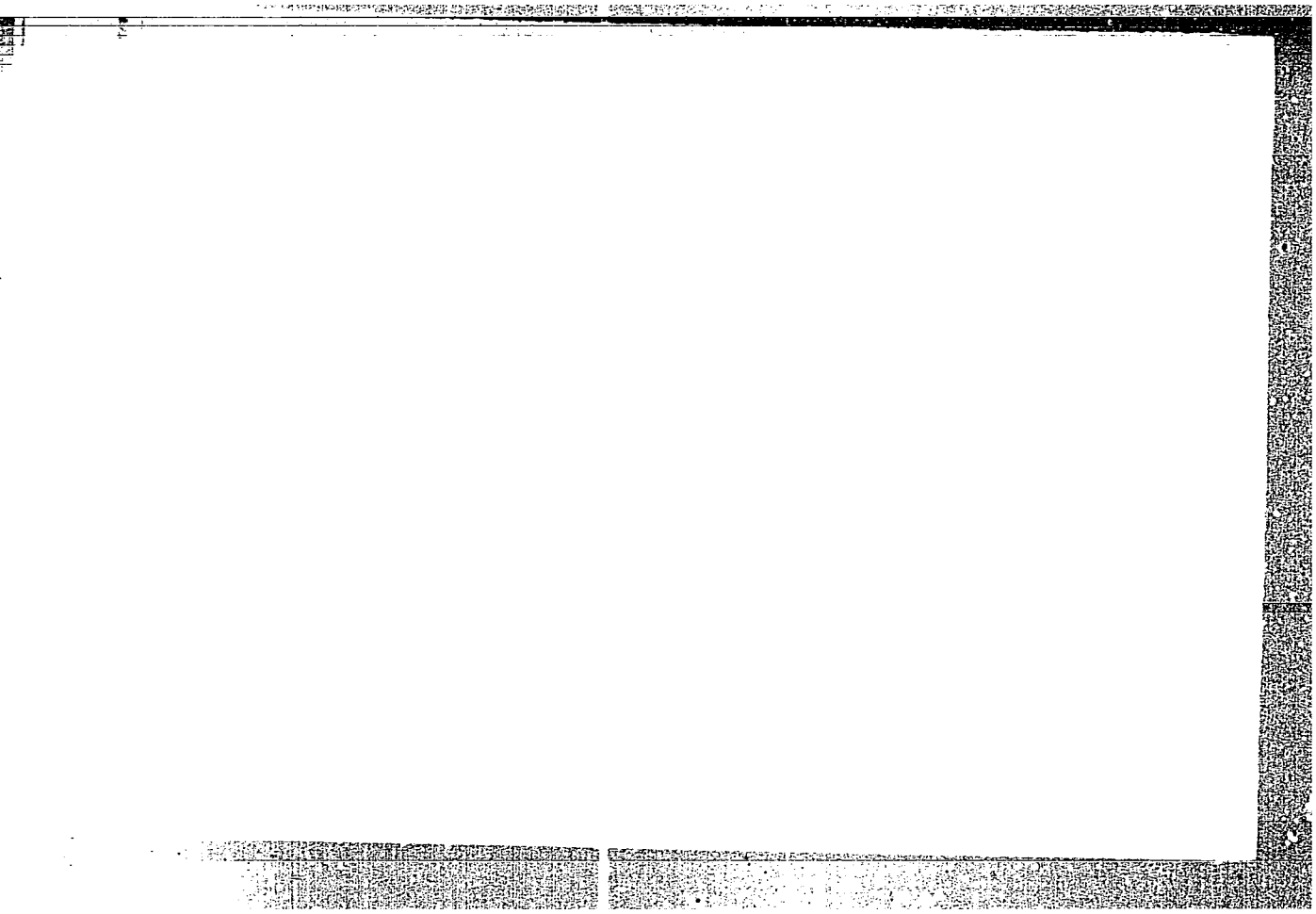
[redacted]

SAVITSKIY, K.V.; ITIN, V.I.; KOZLOV, Yu.I.; KULIKOV, V.A.

Effect of annealing on the properties of cold-worked Cu-Al alloys prepared by the sintering method. Fiz. met. i metalloved. 19 no.1:117-122 Ja '65. (MIRA 18:4)

1. Sibirskiy fiziko-tekhnicheskiy institut.

ABSTRACT: A study has been m
[illegible] on the mechanical properties of aluminum bronze [illegible] with a changing
[illegible] The authors found that the presence of a solid solution [illegible] serves to improve the
[illegible]



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L 2099-66 EWP(e)/EWT(m)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) IJP(c) JD/EM
ACCESSION NR: AP5022547 UR/0226/65/000/009/0081/0090

AUTHOR: Grigor'yeva, V. V.; Savitskiy, K. V.; Zhdanova, V. B.; Kulikov, V. A.; Sergeyenkova, V. M.; Savitskiy, A. P.; Itin, V. I.; Kozlov, Yu. I.

TITLE: Resistance to deformation and stability of deformation-induced distortions of sintered powder alloys

SOURCE: Poroshkovaya metallurgiya, no. 9, 1965, 81-90

TOPIC TAGS: sintered nickel alloy, aluminum oxide containing alloy, dispersion strengthened alloy, alloy deformation resistance, deformation induced distortion, distortion stability, alloy microhardness

ABSTRACT: Compacts of powders of pure nickel and nickel with 1, 3, and 5% of α-Al_2O_3 or γ-Al_2O_3 were sintered at 1200—1400C in a hydrogen atmosphere and tested for compressive strength under compression at a rate of 0.15 mm/min with a reduction of up to 30% at 20 and 500C. The stability of deformation-induced distortions was investigated by measurements of the microhardness of specimens vacuum annealed in the 200—1050C range. The room-temperature compressive strength of sintered nickel alloys with up to 5% Al_2O_3 was slightly higher than that of pure sintered nickel, and the difference was somewhat greater at 500C. At both test temperatures,

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the compressive strength was higher in alloys containing α-Al_2O_3 and slightly increased in all alloys as the Al_2O_3 concentration increased. The size of Al_2O_3 particles had practically no effect on the room-temperature compressive strength, but at 500C the compressive strength of alloys increased appreciably as the particle size of Al_2O_3 decreased from 2 to 1 μ. The type of Al_2O_3 modification had the most sharply pronounced effect on the compressive strength. For example, an alloy with 3% α-Al_2O_3 had a compressive strength of about 65 and 36 dan/mm^2 at 20 and 500C, respectively, compared with 58 and 28 dan/mm^2, respectively, for an alloy with 3% γ-Al_2O_3. Low-temperature annealing (at up to 300—400C) produced an equally slight increase in the hardness of both nickel and Ni-Al_2O_3 alloys deformed 30% at 20C. Annealing at temperatures higher than 400C decreased the hardness of sintered nickel and all Ni-Al_2O_3 alloys. However, the hardness of cold-deformed Ni-Al_2O_3 alloys after high-temperature annealing remained higher than that of identically treated sintered nickel. The hardness level of Ni-Al_2O_3 alloys increased with higher content and fineness of Al_2O_3 powder. The maximum softening of Ni and Ni-γ Al_2O_3 alloys occurred at the same temperature, while the temperature of maximum softening of Ni-α Al_2O_3 alloys was about 100C higher. The higher temperature stability of the deformation-induced distortions and a higher compressive

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strength at room and elevated temperatures favor the use of sintered Ni-a Al_2O_3 alloys. Orig. art. has: 8 figures and 5 formulas. [KS]

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute of Problems of the Science of Materials, AN UkrSSR); Sibirskiy fiziko-tekhnicheskiy institut im. V. D. Kuznetsova (Siberian Physicotechnical Institute)

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AUTHOR: Savitskiy, K.V.; Grigor'yeva, V.V.; Kulikov, V.A.; Savitskiy, A.P.; Sergeyenkova, V.M.

ORG: Siberian Physicotechnical Institute im. V.D. Kuznetsov (Sibirskiy fiziko-technicheskiy institut)

TITLE: Investigation of the properties of extruded nickel-aluminum oxide alloy

SOURCE: Poroshkovaya metallurgiya, no. 1, 1967, 31-36

TOPIC TAGS: nickel alloy, ~~dispersion strengthened nickel alloy~~, aluminum oxide ~~containing alloy, nickel alloy property~~, powder metal sintering, powder metal compaction, metal extrusion, grain growth, porosity

ABSTRACT:

A mixture of metallic nickel and various amounts of aluminum oxide powders (1—5%) was compacted under a pressure of 15 kg/cm^2 into billets 25 mm in diameter and 35 mm long. One group of billets was sintered in hydrogen atmosphere at 1000°C for 2—3 hr and extruded into bars 10 mm in diameter. Another group was sintered at 1300°C without subsequent extrusion. Specimens, 6.5 mm in diameter and 10.5 mm in length, cut from the billets, were annealed at 700°C for 2 hr. It was found that alloying with aluminum oxide

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prevents grain growth. Extruded specimens, however, had a finer grain and block structure and higher density than sintered billets. Sintered specimens containing 1% aluminum oxide retained up to 6% of their porosity, while the porosity of extruded specimens was practically nil. Alloying with aluminum oxide also increased the compression strength, particularly in the case of extruded alloys. For instance, the deformation pressure for 10% reduction of extruded powdered nickel specimens was 28 kg/mm^2, that for sintered nickel alloy specimens (containing 3% Al_2O_3) was 43 kg/mm^2, and that for extruded alloy specimens of the same composition was 54.5 kg/mm^2. Orig. art. has: 2 figures and 3 tables. [TD]

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GRIGOR'YEVA, V.V.; SAVITSKIY, K.V.; ZHDANOVA, V.N.; KULIKOV, V.A.; SERGEYENKOVA, V.M.; SAVITSKIY, A.P.; ITIN, V.I.; KOZLOV, Yu.I.

Strain resistance and resistance to deformational distortions of ceramic metal alloys. Porosh. met. 5 no.9:81-90 S '65. (MIRA 18:9)

1. Institut problem materialovedeniya AN UkrSSR i Sibirskiy fiziko-tekhnicheskiy institut imeni Kuznetsova.

[illegible], V.I.; [illegible], A.F., SAVITSKIY, K.V.; KOZLOV, Yu.I.; KULIKOV, V.A.

Sintering of the metal ceramic alloy Cu - Al. Izv. vys. ucheb. zav.; fiz. 8 no.2:139-144 '65. (MIRA 18:7)

1. Sibirskiy fiziko-tekhnicheskiy institut imeni Kuznetsova.