SHLYAPIN, V.B., kand.tekhn.nauk, VINOGRADOV, Yu.G., inzh.,
LEONT'YEV, D.V., inzh., LOWSKIY, Ye.D., kand.tekhn.nauk.

Built-up welding under flux by means of a weaving arc.
Svar. proizv. no.2:24-26 F '60. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta Ministerstva putey soobshcheniya.
(Electric welding)
(Machinery--Maintenance and repair)

AKIMOV, Vyacheslav Filippovich, inzh.; VINOGRADOV, Yuriy Ivanovich, inzh.; GINZBURG, Mark Yakovlevich, inzh.; KASPAR'YANTS, Konstantin Saakovich, inzh.; FRANKFURT, Yakov Mironovich, inzh.; MAMIKONOV, A.G., red.; NOVICHKOVA, M.M., ved. red.; VORONOVA, V.V., tekhn. red.

[Automation of field petroleum processing and gas transportation]Avtomatizatsiia promyslovoi podgotovki nefti i transporta gaza. [By]V.F.Akimov i dr. Moskva, Gostoptekhizdat, 1963. 166 p. (MIRA 16:3)

(Oil fields--Equipment and supplies) (Automation)
(Gas, Natural--Pipelines)

VINOGRADOV, Yu.I.; YERYUSHEV, N.N.

X-radiation from flares originating behind the solar disc. Izv. Krym. astrofiz. obser. 29:141-145 '63. (MIRA 16:10)

AUTHORS: Vinogradov, Yu. I.

Effect of proton and non-proton flares on the ionosphere, as observed at

S/035/61/000/005/022/042
A001/A101

3,1540

AUTHORS: Vinogradov, Yu.I., Savich, N.A.

TITLE: Comparison of development of individual parts of flares in Hα with the temporal course of ionizing radiation

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 5, 1961, 55, abstract 5A358 ("Izv. Krymsk. astrofiz. observ.", 1960, v. 24, 48-51, Engl. summary)

TEXT: The authors presume that radiation, active for the ionosphere, may be emitted by individual parts of the flares. There are 5 references.

Authors' summary

[Abstracter's note: Complete translation]

Card 1/1

L 47309-66 EWT(l)/FCC GW

ACC NR: AR6025799 SOURCE CODE: UR/0058/66/000/004/H058/H058

AUTHOR: Vinogradov, Yu. I.

TITLE: Concerning the connection between the sporadic E layer of the ionosphere and solar flares

SOURCE: Ref. zh. Fizika, Abs. 4Zh404

REF. SOURCE: Izv. Krymsk. astrofiz. observ., v. 34, 1965, 319-327

TOPIC TAGS: ionospheric propagation, ionosphere, solar flare, E layer, solar radio emission

ABSTRACT: On the basis of material obtained in the ionospheric station of the Crimean Astrophysical Observatory during 1958 — 1959, the author considers the connection between the variation of the critical frequency of the sporadic E layer of the ionosphere (E_s), solar flares, and radio emission from the sun. It is shown that the correlation between solar flares and the variation of the excess critical frequency of the E_s) layer over the month reaches 76%. No connection was observed between the mean value of the critical frequency of the E_s layer and radio emission from the sun at wavelengths 3 and 10 cm and 1.5 meters. [Translation of abstract]

SUB CODE: 04, 03

Card 1/1 ns

L 47025-66 EWT(1)/FCC EW

ACC NR: AR6028406 SOURCE CODE: 523.75+523.164+525.23

AUTHOR: Vinogradov, Yu. I.

34
B

TITLE: Correlation between the sporadic E layer of the ionosphere and solar flares

SOURCE: Ref. zh. Astronomiya, Abs. 5.51.443

REF SOURCE: Izv. Krymsk. astrofiz. observ., v. 34, 1965, 319-327

TOPIC TAGS: solar flare, sporadic layer, E layer, ionosphere

ABSTRACT: Observations at the ionosphere station of the Crimean Astrophysics Observatory in the period 1958-1959, showed a relationship between the line of critical frequency of the sporadic E layer of the ionosphere (E_s), solar flares, and radio emission. It was shown that the correlation between the line for an excess value of the critical frequency of E layer and solar flares during one month

Card 1/2 UDC: 523.75+523.164+525.23

L 17625-66

ACC NR: AR6028406 O

amounted to 76%. No correlation was observed between the average value of the critical frequency of E layer and solar radio emissions in the 3 cm, 10 cm, and 1.5-m waves. Orig. art. has: 14 reference items. [Translation of abstract] [FM]

SUB CODE: 03/

Card 2/2

L 34116-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG
ACC NR: AP6008828 SOURCE CODE: UR/0294/66/004/001/0050/0054

AUTHOR: Vinogradov, Yu. K. (Moscow); Volyak, L. D. (Moscow)

ORG: none

TITLE: Experimental determination of the saturated vapor pressure of sodium and potassium

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 1, 1966, 50-54

TOPIC TAGS: vapor pressure, sodium, potassium

ABSTRACT: Using the equilibrium method, the authors measured the saturated vapor pressures of sodium and potassium in order to be able to use these values for calculating the dissociation energy of the Na_2 and K_2 molecules. It is shown that the equations describing the experimental data obtained for the vapor pressure are of the form

$$\lg p = A - \frac{B}{T} - C \lg T + DT - ET^2 + F \lg e e^{-\theta/T} - \frac{F^2}{2} \lg e e^{-2\theta/T},$$

the coefficients of these equations being (in physical atmospheres)

Card 1/2 UDC: 546.32+546.33:536.421.3.001.5

L 34116-66
ACC NR: AP6008828

Element	A	B	C	D·10⁴	E·10⁶	Floge	β
Sodium	10.58987	5720.4	2.00789	5.00352	0.92555	0.48510	2458
Potassium	10.10888	4758.1	1.97400	4.98965	1.070	0.56762	2641

Table 1. Coefficients of equations in the measurement of saturated vapor pressures in physical atmospheres.

From these equations, the vapor pressures of sodium and potassium were obtained for 700, 750, 800, 850, 900, and 950C. The experimental values of P and equations log p = f(T) obtained will be used further to calculate the dissociation energies of Na_2 and K_2 molecules. The work was carried out under the guidance of N. B. Vargaftik, to whom the authors express their sincere appreciation. Orig. art. has: 2 figures, 3 tables, and 8 formulas.

SUB CODE: 07 / SUBM DATE: 06Jul65 / ORIG REF: 003 / OTH REF: 007

Card 2/2

VINOGRADOV, Yu.A., inzh.

Device for checking cable strands. Energetik 12 no.2:19-20 F '64. (MIRA 17:4)

S/883/62/000/000/004/020
E194/E155

AUTHORS: Vinogradov, Yu.M., and Kireyeva, Z.P.

TITLE: Methods of testing and assessing the anti-seizure properties of wear-resistant surface coatings

SOURCE: Metody ispytaniya na iznashivaniye; trudy soveshchaniya sostoyavshegosya 7-10 dek. 1960. Ed by. M.M. Khrushchov. Moscow, Izd-vo AN SSSR, 1962, 48-56

TEXT: Standardised methods of assessing the wear-resistant properties of treated metal surfaces are required, because new treatments are coming into use. Although the procedures developed for testing extreme-pressure lubricants might be applied, the anti-friction mechanism is different in the two cases. Three-contact machines are widely used for testing E.P. lubricants, notably the four-ball machine abroad and four-roller machine in the USSR. Neither the machines themselves nor the test procedures and methods of assessment have been standardised. It is wiser to use several methods of assessment. Comparative tests were made on a ЛТС-4 (LTS-4) four-roller machine and a Shell-Seta four-ball machine, and also on an Amsler friction machine and a type ЛТС-5 (LTS-5)

Card 1/4

Methods of testing and assessing...

bearing test machine. The steel specimens were given the following surface treatment: sulphiding; "seleniding"; sulphocyaniding; and chloriding. As there was no clear evidence of seizure in the four-roller machine, it was difficult to use the seizure load as the criterion. The size of wear scar for a given load is a useful method of assessment. Frictional torque, which can be accurately measured in this machine, is another useful criterion. In the Shell-Seta four-ball machine the surface treatment had little influence on the wear scar diameter at light loads, but the differences showed up at heavy loads. Once again the seizure load was not clear. Bearing in mind that the rollers and balls were made of different materials there is satisfactory agreement between tests in the four-cylinder and the four-ball machines. Friction machine KT-2 (KT-2) differs in principle, in that the property measured is the oil temperature at which stick-slip motion commences. This corresponds to the temperature at which the oil film is desorbed from the metal surface. In this machine the presence of lubricant masked the differences between the different surface treatments, which could only be revealed in

Card 2/4

the absence of lubricant. Long-term tests are carried out on friction machine LTS-5 and the Amsler machine. In the LTS-5 machine surface-treated cast iron bearings were tested and coefficient of friction measured as function of load at different speeds. In the Amsler machine the wear of a steel roller and a cast iron bush lubricated with spindle oil are measured every three hours. The differences in surface treatment showed up particularly clearly at high pressures. It is concluded that surface treatments which give good results in three-contact friction machines are also effective in the LTS-5 machine at high specific pressures. Three-contact friction machines are recommended for tests under severe conditions, particularly when the main object of the surface treatment is to prevent scoring. Either four-ball or four-roller machines may be used, but in the latter the preparation of the surface-treated specimens is simpler. It is recommended to assess the surface treatments by the ratio of wear scar diameter at a given load, the seizure load if it is clearly expressed, and the coefficient of friction. It is urgently necessary to develop and manufacture standard three-contact friction machines, preferably

Methods of testing and assessing... S/883/62/000/000/004/020
E194/E155

those which could use either cylinders or balls.
There are 4 figures and 2 tables.

Card 4/4

VINOGRADOV, Yu.M.; KIREYEVA, Z.P.

Using the methods of chemical heat treatment for increasing the wear resistance of surface layers of bearings. Trudy Sem.po kach.poverkh. no.5:138-145 '61. (MIRA 15:10)
(Bearings (Machinery)) (Case hadening)

L 3418-66 EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/GS

ACCESSION NR: AT5020441 UR/0000/65/000/000/0176/0182

38
34
B+1

AUTHOR: Vinogradov, Yu. M. 44,55

TITLE: Investigation of the effectiveness of chemical-thermal treatment of various metals 44,55

SOURCE: AN SSSR. Nauchnyy sovet po treniyu i smazkam. Teoriya smazochnogo deystviya i novyye materialy (Theory of lubricating action and new materials). Izd-vo Nauka, 1965, 176-182

TOPIC TAGS: metal surface treatment, sulfidization, tellurization, sulfocyanidation, selenocyanidation / VTZ 1* titanium alloy, 45 steel, SCh18 36 cast iron, 1Kh18N9T steel 18

ABSTRACT: The use of active group VI elements in surface treatment of metals, in particular, sulfidization, sulfocyanidation, selenocyanidation, and tellurization of steel 45, cast iron SCh18-36, steel 1Kh18N9T, and titanium alloy VTZ-1,* was investigated. It is noted that during each process the effects are not only due to a single compound but are complicated chemical reactions which also depend on the environmental conditions. In steel 45 the microhardness is substantially increased by selenocyanidation, sulfocyanidation, and tellurization and almost

Card 1/2

* [VT3-1 designation instead of VTZ-1] 18

L 3418-66
ACCESSION NR: AT5020441

unaffected by sulfidization. Only selenocyanidation improves microhardness in cast iron and, to a lesser extent, in titanium (factor of 2), while the other treatments are ineffective. Wear tests showed that the wear properties of steel 45 exhibited the most improvement of the four metals investigated (sulfidization most effective) with cast iron next (sulfidization). Steel 1Kh18N9T wear properties were least affected by sulfidization and were somewhat improved by the other treatments. Titanium alloy VTZ-1 responded least to the treatments, with tellurization being most effective. It was concluded that sulfidization was the best treatment for carbon steel and cast iron, while sulfocyanidation, selenocyanidation, and tellurization are most effective for stainless steels and titanium alloys. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 22May65 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 004

Card 2/2 nd

L 8130-66 EWT(d)

ACC NR: AP5024980 SOURCE CODE: UR/0286/65/000/016/0043/0044

AUTHORS: Vinogradov, Yu. M.; Vulis, M. L.

21
B

ORG: none

TITLE: A device for the demodulation of binary single-cycle phase-manipulated signals. Class 21, No. 173803 [announced by the State All-Union Central Scientific Research Institute of Comphrehensive Automation (Gosudarstvennyy vsesoyoznyy tsentral'nyy nauchno-issledovatel'skiy institut kompleksnoy avtomatizatsii)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 43-44

TOPIC TAGS: demodulator, binary control signal, automatic control equipment

ABSTRACT: This Author Certificate presents a device for the demodulation of binary single-cycle phase-manipulated signals (see Fig. 1). The device operates on a non-synchronous reception method using the phase demodulation according to the difference of the interchange sequence of the sinusoidal signal half-cycles. The device is designed for the reception of signals with amplitude-phase distortions without a pause between the shifted half-cycles. A polarity discriminator and an amplitude discriminator are included in the input of the device. These discriminators are

Card 1/2 UDC: 621.394.376

2

connected with the duration discriminators of the two channels and with the input of the common duration discriminator which triggers only with the merging of the half-periods.

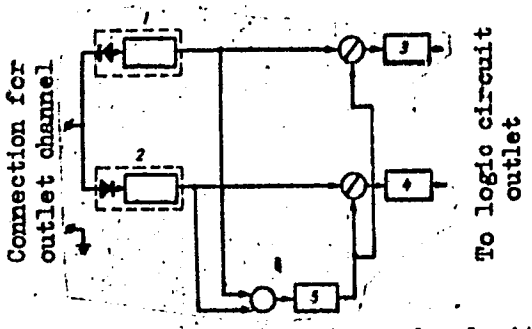


Fig. 1. 1 and 2- amplitude discriminator and polarity discriminator; 3 and 4- duration discriminators; 5- common duration discriminator

Orig. art. has: 1 figure.

SUB CODE: EC/ SUBM DATE: 06Feb64

Card 2/2

VINOGRADOV, Yu.M., inzh.; KIREYENKOV, V.K., inzh.; KRITS, B.O., inzh.; PROKOF'YEV, V.F.

Quick-response telemechanical system for data transmission by telephone lines. Mekh. i avtom. proizv. 19 no.7:43-47 Jl '65. (MIRA 18:9)

VINOGRADOV, Yu.M.

Sulfidizing, selenizing and tellurizing steels, cast iron and alloys. Metalloved. i term.obr.met. no.10:36-41 O '65. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo mashinostroyeniya.

VINOGRADOV, Yu.M.

Effect of lubrication on the seizing process during metal cutting. Trudy Sem. po kach. poverkh. no.1:30-41 '51. (MLRA 10:8)
(Metal cutting) (Lubrication and lubricants)

VINOGRADOV, Yu.M.

Correlation between friction and surface smoothness in metal cutting in various media. Trudy Sem.po kach.poverkh.2:28-50 '53.
(MLRA 7:2)
(Metal cutting) (Friction) (Surfaces (Technology))

VINOGRADOV, YU. M.

32-6-18/54

AUTHOR: VINOGRADOV, Yu.M., ZELENOVA, V.D.

TITLE: The Application of the Radiostructural Analysis for the Investigation of Steel Sulphidization. (O primenenii rentgenostrukturnogo analiza pri issledovanii sul'fidirovaniya staley, Russian)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol 23, Nr 6, pp 697-699 (U.S.S.R.)

ABSTRACT: For the purpose of determining the results of the thermochemical treatment of steel, - of sulphidization - the results of friction- and wearability tests can be compared with those obtained by the phase analysis of the upper layer of the products to be sulphided. In this way it is possible to find out upon which of the reagents existing in the upper metal layers the efficacy of sulphidization depends. The investigation was carried out by means of radiostructural analysis. A direct connection was found to exist between the increase of the frictional properties of steel sulphidization and the forming of the chemical compound FeS on the metal surface. Results showed that during sulphidization in the case of different compositions and at different temperatures, the surface layer has different compositions of the respective phases. The top layer of the product to be sulphided can contain the following reagents by which the phase is composed: the a-Fe lattice, FeS-sulphide, FeN-nitride (ε -phase), Fe_4N-nitride (γ' -phase), the ferric oxides: FeO_4, Fe_2O_3, FeO.

Card 1/2

32-6-18/54

The Application of the Radiostructural Analysis for the Investigation of Steel Sulphidization.

Experiments were carried out with a machine with four rollers (LTC-4). The roll rotating with a velocity of 300 wg/min was made of (40x) steel and was hardened to 40-42 R_c. Pure sulphidization was obtained with the following compositions:
2 g NaCNS, 6 g $Na_2S_2O_3$ per 100 g mixture of 55% Na_2SO_4 and 45% KCl at a temperature of 560° and a duration of one hour.

ASSOCIATION: Institute for the Construction of Chemical Machines for Scientific Research.

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 2/2

VINOGRADOV, Yu. M.

24-1-20/26

AUTHORS: Vinogradov, Yu. M., and Dombrovskaya, N. S. (Moscow).

TITLE: Improvement of the anti-seizing properties of steel by chlorination (Povysheniye protivozadirnykh svoystv staley putem khlorirovaniya).

PERIODICAL: Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk, 1958, No.1, pp. 128-130 (USSR).

ABSTRACT: It is shown in this paper that chlorating is promising from the point of view of improving the anti-seizing properties of rubbing parts. Chlorating can be effected in a gaseous medium as well as in a salt bath containing active chlorine compounds. It is important to ensure optimum temperature conditions during the process. The temperature graph characterising the interaction of gaseous chlorine flowing above iron powder or steel chips for the heating temperatures from room temperature up to 600°C, Fig.1, p.128, indicates that after a period of continuous temperature rise there is a sudden peak in the curve at 232°C and this indicates that for gas chlorination a temperature of 200°C is required. NIIKhIMMAShe carried out experiments with specimens of steel "45" chlorinated at 150 and 200°C for durations of ten minutes. As a result of this treatment, thin

Card 1/3

Improvement of the anti-seizing properties of steel. 24-1-20/26
(Cont.) films of chemical compounds formed; X-ray diffraction analysis of the chlorinated specimens revealed the presence in the surface layers of the compounds $FeCl_2$ and Fe_2O_3. "Steel 45" specimens which have been thus treated were tested on a 4-roller test machine (Ref.3) MTC-4. The tests were carried out in the dry state, the conical rollers consisted of steel "40" in the non-hardened state, the roller speed was 300 r.p.m. The diameter of the cavity, d in mm, caused by wear applying a load P, kg, was used as a criterion for judging the anti-seizing properties. In Fig.2, p.128 curve 1 (values designated by +) applies for steel in the "raw" state, whilst curves 2 and 3 apply to steels chlorinated respectively at 150°C and 200°C. It can be seen from these results that chlorination has an appreciable anti-seizing effect which is somewhat higher for a treatment temperature of 200°C than for a lower treatment temperature. The character of the disruption during friction of chlorinated metal surfaces also differs from that of non-treated metal. In the latter case friction of clean (unlubricated) metallic surfaces is accompanied by deep plastic deformations, whilst in

Card 2/3

Improvement of the anti-seizing properties of steel. 24-1-20/26
(Cont.)

the case of chlorinated surfaces the disruption is localised inside thin surface layers even at high load values. Figs. 3 and 4 show micro-cuts of cross sections of wear cavities of specimens of non-treated "Steel 45" tested with a load of 17 kg and of chlorinated "Steel 30" tested with a load of 130 kg, both at magnifications of thirty times. The diameter of the wear cavities is almost equal (1.7 mm) but the texture penetrates considerably deeper in the case of untreated specimens. The surface layers of chlorides forming after treatment by the here described method can be easily removed by means of solvents and this is a disadvantage of this method of chlorination. In spite of this, chlorination may prove an effective means for improving the anti-seizing properties of steel. Of particular interest is the combination of processes of chlorination and sulphating in the same way as lubricant additives are used which contain compounds of Cl and S.
There are 4 figures and 3 references, all of which are Russian.

Card 3/3 (Note: This is a complete translation except that the introductory paragraph has been omitted).

SUBMITTED: August 8, 1957.
AVAILABLE: Library of Congress.

Vinogradov, Yu. M.

5(2);25(1) PHASE I BOOK EXPLOITATION SOV/2313

Akademiya nauk SSSR. Institut mashinovedeniya

Povysheniye stoykosti detaley mashin /sul'fidirovaniye/; sbornik statey (Increasing the Wear Resistance of Machine Parts /Sulfurization/; Collection of Articles) Moscow, Mashgiz, 1959. 126 p. Errata slip inserted. 4,500 copies printed.

Ed. (Title page): M. M. Khrushchov, Doctor of Technical Sciences; Ed. (Inside book): A.G. Nikitin, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on General Technical and Transport Machine Building (Mashgiz): K.A. Ponomareva, Engineer.

PURPOSE: This collection of articles is intended for engineering and technical workers of machine-building and overhauling plants.

COVERAGE: This book presents results of investigations of methods to increase the resistance of machine parts to seizure. A new method of sulfurization which improves the friction behavior of cast iron and steel and an analysis of the effect of sulfurization on the antifriction properties and wear of metal are given.

Card 1/6

These articles are the transactions of a seminar held at the Institute of Mechanical Engineering of the Academy of Sciences, USSR, in December 1956.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 6/6 GO/ec
10-20-59

VINOGRADOV, YU. M.

PHASE I BOOK EXPLOITATION SOV/5053

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Iznos i iznosostoykost'. Antifriktsionnyye materialy (Wear and Wear Resistance. Antifriction Materials) Moscow, Izd-vo AN SSSR, 1960. 373 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 1)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: M. M. Khrushchov, Professor; Eds. of Publishing House: M. Ya. Klebanov, and S. L. Orpik; Tech. Ed.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya Konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in 5 main areas: 1) Hydrodynamic Theory of Lubrication and Friction Bearings (Chairmen: Ye. M. Gut'yar, Doctor of Technical Sciences, and A. K. D'yachkov, Doctor of Technical Sciences); 2) Lubrication and Lubricant Materials (Chairman: G. V. Vinogradov, Doctor of Chemical Sciences); 3) Dry and Boundary Friction (Chairmen: B. V. Deryagin, Corresponding Member of the Academy of Sciences USSR, and I. V. Kragel'skiy, Doctor of Technical Sciences); 4) Wear and Wear Resistance (Chairman: M. M. Krushchov, Doctor of Technical Sciences); and 5) Friction and Antifriction Materials (Chairmen: I. V. Kragel'skiy, Doctor of Technical Sciences, and M. M. Krushchov, Doctor of Technical Sciences). Chairman of the general assembly (on the first and last dry of the conference) was Academician A. A. Blagonravov. L. Yu. Pruzhanskiy, Candidate of Technical Sciences, was scientific secretary. The transactions of the conference were published in 3 volumes, of which the present volume is the first. This volume contains articles concerning the wear and wear resistance of antifriction materials. Among the topics covered are: modern developments in the theory and experimental science of wear resistance of materials, specific data on the wear resistance of various combinations of materials, methods for increasing the wear resistance of certain materials, the effects of friction and wear on the structure of materials, the mechanism of the seizing of metals, the effect of various types of lubricating materials on seizing, abrasive wear of a wide variety of materials and components under many different conditions, modern developments in antifriction materials, and the effects of finish machining on wear resistance. Many personalities are mentioned in the text. References accompany most of the articles.

Card 6/13

7

VINOGRADOV, Yu. M. (Candidate of Technical Sciences)

Improving the Antifriction Properties of Metals by Methods of Thermochemical Surface Treatment.

Povysheniye iznosostoykosti i sroka sluzhby mashin. t. 2 (Increasing the Wear Resistance and Extending the Service Life of Machines. v. 2) Kiyev, Iz-vo AN UkrSSR, 1960. 290 p. 3,000 copies printed. (Series: Its: Trudy, t. 2)

Sponsoring Agency: Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Tsentral'noye i Kiyevskoye oblastnoye pravleniya. Institut mekhaniki AN UkrSSR.

Editorial Board: Resp. Ed.: B. D. Grozin; Deputy Resp. Ed.: D. A. Draygor; M. P. Braun, I. D. Faynerman, I. V. Kragel'skiy; Scientific Secretary: M. L. Barabash; Ed. of v. 2: Yu. A. Samokhvalov; Tech. Ed.: N. I. Rukhlina.

COVERAGE: The collection contains papers presented at the Third Scientific Technical Conference held in Kiyev in September 1957 on problems of increasing the wear resistance and extending the service life of machines. The conference was sponsored by the Institut stroitel'noy mekhaniki AN UkrSSR (Institute of Structural Mechanics of the Academy of Sciences Ukrainian SSR), and by the Kiyevskaya oblastnaya organizatsiya nauchno-tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti (Kiyev Regional Organization of the Scientific Technical Society of the Machine-Building Industry).

L 35465-65 EPF(c)/EWT(m)/EWG(m)/EWP(b)/T/EWA(d)/EWP(t) Pr-4 IJP(c) RJW/
DJ/RJW/JD/GS

ACCESSION NR: AT4049816 S/0000/64/000/000/0083/0089

AUTHOR: Vinogradov, Yu. M.

TITLE: Increasing the wear resistance of steel, cast iron and titanium alloys by sulfocyaniding, sulfiding and seleniding

SOURCE: Soveshchaniye po uprochneniyu detaley mashin, 1962. Protsessy uprochneniya detaley mashin (Processes in the hardening of machine parts); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1964, 83-89

TOPIC TAGS: steel, cast iron, titanium alloy, steel wear resistance, cast iron wear resistance, titanium alloy wear resistance, sulfiding, seleniding, sulfocyaniding

ABSTRACT: One of the ways of increasing the wear resistance and friction resistance of metals is the creation of chemical compounds on the surface differing from the base metal. Elements of groups V, VI and VII of the periodic table are used, the methods being known as sulfiding, sulfocyaniding, seleniding, etc. The number of thermochemical procedures worked out at present is quite high. In the present paper, 4 metals are used as examples: carbon steel 45, stainless steel

Card 1/3

L 35465-65

ACCESSION NR: AT4049816

1Kh18N9T grey iron SCh 18-36 and titanium alloy VT-1. Samples of these metals were treated in salt baths for sulfocyaniding, sulfiding and seleniding with tests afterwards by methods worked out by NIIKhIMMASH. The methods included: 1) sulfiding in the NIIKhIMMASH [illegible] bath with 30.0% sodium sulfate, 41.7% potassium chloride, 1.8% sodium sulfocyanate and [illegible]% sodium thiosulfate at a working temperature of 560C for 1 hour, 2) sulfocyaniding in a bath with [illegible]% yellow potassium ferrocyanide, [illegible]% sodium carbonate, [illegible]% sodium thiosulfate and 4.1% ammonium thiocyanate at a working temperature [illegible] for 1 hours, 3) sulfocyaniding by the SATS (Societe d'Application de Traitements de Surface) method with 34% sodium cyanide, [illegible]% sodium sulfite, [illegible]% sodium carbonate, 16% potassium carbonate and 2% potassium chloride at a working temperature of 580C for 1 hour; 4) seleniding by the NIIKhIMMASH method with 29.1% sodium sulfate, [illegible]% potassium chloride, 5.5% potassium [illegible] at a working temperature of 560C for 1 hour; and 5) selenium-yaniding by the NIIKhIMMASH method with yellow potassium ferrocyanide, 1.3% sodium hydroxide and 17% selenium at a working temperature of 560C for 1 hour. The metals were then examined under the electron microscope and tested by common metallographic methods. Wear was tested

Card 2/3

L 3541[illegible]

4

ACCESSION NR: AT4049816

on friction machines. The tests indicated that enrichment of metals by sulfides and selenides results in higher microhardness at the surface. It is advisable to use sulfiding in the NIIKhIMASH 2/6 bath and sulfocyaniding by the SATS method for carbon steel and cast iron. Sulfocyaniding in a bath with yellow potassium ferrocyanide and seleniding should be used for stainless steel and titanium. The SATS method and methods using selenium are highly toxic and safety precautions should be observed. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 21May64

ENCL: 00 SUB CODE: MM

NO REF SOV: 006

OTHER: 002

Card 3/3

L 24863-66 EWP(e)/EWT(m)/EWP(j)/T/ETC(m)-6 IJP(c) WW/DJ/GS/RM/WH

ACC NR: AT6008950 (A) SOURCE CODE: UR/0000/65/000/000/0107/0112

AUTHORS: Vinogradov, Yu. M.; Vasil'yev, I. V.; Gopius, A. D.; Brusnichkin, N. S.

ORG: none

TITLE: The use of antifriction plastics for slip bearings in chemical machine building

SOURCE: Moscow. Institut mashinovedeniya. Plastmassy v podshipnikakh skol'zheniya; issledovaniya, opyt primeneniya (Plastics in friction bearings; research and experiment in application). Moscow, Izd-vo Nauka, 1965, 107-112

TOPIC TAGS: friction coefficient, wear resistance, antifriction material, antifriction bearing, steel, teflon, polyamide / Kh23N27M2T steel

ABSTRACT: Teflon-4 and teflon-40 (with and without fillers), pyroceramic plastics, polyamides, textolites, fiber plastics, and graphite plastics are examined as the currently most promising antifriction materials for chemical machine building. The use of the Kh2M, MT-2, MT2M, and MT-8M friction machines is discussed. The Kh2M is very convenient for laboratory research in aqueous solutions of bases, acids, and salts. The other machines permit the determination of the

Card 1/2

L 24863-66 2

ACC NR: AT6008950

dependence of wear resistance and the friction coefficient upon various factors studied. The life of a bearing assembly was increased to 8000--10 000 hrs by the use of teflon-40. Teflon-4 is found to be unsuitable for use in certain media. In view of the higher chemical stability of teflon-4 and of its good antifriction qualities, work should be continued in creating its compositions with other materials. Orig. art. has: 1 table and 1 diagram.

SUB CODE: 11/ SUBM DATE: 31Jul65

Card 2/2 dda

L 30364-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB/GD

ACC NR: AT6012377 SOURCE CODE: UR/0000/65/000/000/0102/0109

AUTHORS: Kornilov, I. I. (Doctor of chemical sciences, Professor); Vinogradov, Yu. M.

ORG: none

TITLE: Titanium and its alloys for large-scale chemistry

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 102-109

TOPIC TAGS: titanium, titanium alloy, corrosion resistance, corrosion resistant alloy, heat exchanger, corrosion resistant metal / VT1 titanium, OT4-1 titanium alloy, AT2 titanium alloy, AT3 titanium alloy, AT4 titanium alloy, AT6 titanium alloy

ABSTRACT: Examples are given of the use of titanium and its alloys in recent years on the basis of research and design work of various organizations. The Scientific Research Institute of Chemical Machine Construction (Nauchno-issledovatel'skiy institut khimicheskogo mashinostroyeniya) built one of the first containers of OT4-1 titanium alloy and also welded pipe of VT1 titanium for operation in a medium

Card 1/2

L 30354-66

ACC NR: AT6012377

containing H_2SO_4, $(NH_4)_2SO_4$, acid resin, hydrogen, benzene hydrocarbons, ammonia, hydrogen sulfide, etc, at temperatures of 60—70C. Heat-exchange and filtering apparatus have also been made with VT1 titanium. Titanium inserts for lining steel chemical apparatus have been created. AT2 titanium alloy is designed for cryogenic devices to liquid-helium temperatures; AT3 titanium alloy is designed for operation in a sulfuric acid medium at 300—350C under pressure. Alloy AT4 is used for compressor machines, and alloy AT6 is used for autoclaves. The new corrosion-resistant alloys required now and in the future are outlined. Orig. art. has: 8 figures and 1 table.

SUB CODE: 07,11/ SUBM DATE: 02Dec65/ ORIG REF: 021

Card 2/2

L 01307-67 EWT(d)/EWT(m)/EWP(w)/EWP(c)/EWP(v)/T/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP6003317 IJP(c) JD/WW/JG/WB SOURCE CODE: UR/0365/66/002/001/0025/0031

AUTHOR: Kornilov, I. I.; Vinogradov, Yu. M.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

TITLE: Use of titanium in the chemical machine building industry and its principles of alloying

SOURCE: Zashchita metallov, v. 2, no. 1, 1966, 25-31

TOPIC TAGS: titanium, titanium alloy, chemical ~~engineering~~ plant equipment, corrosion resistant alloy, creep, solid solution

ABSTRACT: Titanium has a high resistance to corrosion and relatively high strength properties. This makes it an excellent structural material for producing chemical machine parts and apparatuses. At the present time only technically pure titanium (BT-1) is widely used in the industry for the production of pipes, heat-exchange apparatuses for heating electrolytes, condensers for condensation of ammonium pyrodine bases, heaters, tanks, filters, blades for centrifugal pumps for organic salts containing HCl, valve pumps, sprayers, atomizers, etc. However, titanium alloys will be more widely used in the future because BT-1 has a relatively low strength, it shows creep at room temperature, and stresses of ~80% of the yielding point, as well as a low corrosion resistance in hot solutions of some acids. Some known titanium alloys

Card 1/2 UDC: 669.295 : 620.193.4

L 01307-67

ACC NR: AP6003317

have a higher corrosion resistance than pure titanium. Titanium alloyed with 0.2-0.3% palladium has high stability in mineral acids. The selection of alloying elements for metals, including titanium, is controlled by their reaction with the metal. A study of the metal chemistry of titanium resulted in the separation of four groups of elements in the periodic system. The elements of the first group form continuous solid solutions with titanium; the elements of the second group form limited solid solutions; the elements of the third group form ionic compounds; and the elements of the fourth group do not react with titanium. Only the first two groups are of interest for efficient alloying. The main alloying elements for the formation of corrosion- and heat-resistant titanium alloys in the form of α-solid solution are zirconium and hafnium in unlimited concentration, and Al, Sn, Pd, Si, Cu, Ag, Mn, Cr, Fe, Mo and Nb within the limits of solubility. Oxygen, nitrogen, and hydrogen cause brittleness and can be used only for special purposes. Alloys in the form of β-solid solution can be made by using Mo, Nb, and V as alloying elements in large concentrations (>20-30%) and Zr, Al, Cr, and Fe in small concentrations to preserve a stable β-structure of the alloy. Since there is a shortage of tantalum, it can be recommended only for special cases. The titanium compounds TiAl, Ti_3Al, TiB_2, TiC, TiN, and their solid solutions have high melting points and heat resistance and can be sued as heat-resistant coatings. The ternary and more complex systems are also of interest: Ti-Mo-Nb, Ti-Mo-Zr, Ti-Cr-Cu, Ti-Zr-Sn, Ti-Pd-Cu, Ti-Mo-Pd, Ti-Mo-Cr, Ti-Cr-Pd, and others. With respect to corrosion resistance interesting results can be obtained in the region of β-solid solutions with a high concentration of molybdenum and niobium. Orig. art. has: 5 fig. and 1 table.

SUB CODE: 11,07/3/SUBM DATE: 11Mar65/ ORIG REF: 024/ OTH REF: 002

Card 2/2

KORNILOV, I.I.; VINOGRADOV, Yu.M.

Using titanium in chemical machinery manufacture and principles of its alloying. Zashch. met. 2 no.1:25-31 Ja-F '66. (MIRA 19:1)

1. Institut metallurgii imeni A.A. Baykova, Moskva. Submitted March 11, 1965.

L 3364-66 EWT(m)/EPF(c)/ETC/EWG(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) RLW/
ACC NR: AP5025598 JD/DJ

UR/0129/65/000/010/0036/0041
621.785.53:669.131.6:669.14.018.8

60
57
B

AUTHOR: Vinogradov, Yu. M. 44,55

TITLE: Sulfurizing, selenizing and tellurizing of steels, cast iron and alloys

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1965, 36-41

TOPIC TAGS: sulfurizing, tellurizing, selenizing, stainless steel, carbon steel, cast iron, titanium alloy, wear resistance, friction

ABSTRACT: Specimens of steels, cast iron and a titanium alloy were sulfurized, selenized and tellurized in different salt baths, and principally in a bath consisting of 78% $K_4Fe(CN)_6$, 17% KOH, and 5% Se (or Te), at 550-570°C for 3 hr (selenizing, tellurizing) or 1 hr (sulfurizing). They then were tested in a friction testing machine to determine their anti-seizing properties and wear resistance. The findings, as well as the data of X-ray and electron diffraction analysis show that the antifriction properties of metal surfaces improve if the structure contains sulfides, selenides or tellurides, particularly if the lower layers are at the same time nitride-enriched. For example, sulfurizing doubles the service life of the piston rings of marine engines, diesels, and compressors. Sulfurizing and sulfocyaniding are the best method for carbon steels and cast iron, whereas selenizing and tellurizing are best for stainless steels and titanium alloys. The last two methods involve the

Card 1/2

L 3364-66

ACC NR: AP5025598

3

use of toxic elements and hence may be recommended only for cases where no other method is effective. Sulfurizing and sulfocyaniding may be recommended for introduction. Orig. art. has: 3 figures, 2 tables.

ASSOCIATION: NIIKhIMMASh 44,55

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, GC

NO REF SOV: 011 OTHER: 001

Card 2/2

AUTHOR: Vinogradov, Yu. M. (Engineer), Klreyenko, V. K. (Engineer); Krits, B. O. (Engineer), Prokof'yev, V. I. (Engineer)

TITLE: High-speed telemechanical system for data transmission on telephone lines

SOURCE: Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 7, 1965, 43-47

TOPIC TAGS: data transmission, computer application, data processing, system, production engineering, punched paper tape, punched card, telemetry

ABSTRACT: The authors describe a high-speed telemechanical system for transmission of information developed by TsNIIKA together with the special design office at the Vilnyus Computing Machine Plant. The system was designed to transmit large volumes of production type alphanumeric data to a central computer processing point. The input console consists of an FTA-2 teleprinter [illegible] tape perforator (from the Pyatnadtsatyy Computing-Analyzing [illegible]) [illegible] a simple relay circuit [illegible] TsNIIKA [illegible] paper tape [illegible]

Card 1/2

L 62973-65
ACCESSION NR: AP5018529

reader reads the data from the punched tape at a rate of 200 lines/second and feeds them to the telemetry transmitter (in the same cabinet), which transmits them in a standard telegraph code to the telemetry receiver at the processing point. At the latter station the data are fed to the [illegible] and punch perforator assembly, where they are punched [illegible] code and transmitted [illegible] metry transmitter receives [illegible] nor detecting and correcting features. The output of the telemetry [illegible] so be fed directly into a suitable digital computer, such as the "Minsk 2". The [illegible] Telemechanics Division of TsNIIKA has completed fabrication of experimental samples of attachment to the telemetry [illegible] operate on municipal and industrial telephone lines, as well as [illegible] the system with [illegible] modulation [illegible] and pulse-frequency modulation [illegible] and performance of the BTI system [illegible]

ASSOCIATION: none

SUBMITTED: [illegible]

NO REF SOV: 000

Card 2/2

SUB CODE: DP

VINOGRADOV, Yu.M., kand.tekhn.nauk

Conference on the chemical and heat treatment of metals. Khim. i neft. mashinostr. no.1:42 Ja '65. (MIRA 18:3)

KHRUSHCHOV, M.M., doktor tekhn. nauk, prof., otv. red.; VINOGRADOV, Yu.M., red.; KUGEL', R.V., red.; MATVEYEVSKIY, R.M., red.; PRUZHANSKIY, L.Yu., red.; ORPIK, S.L., red.; POLYAKOVA, T.V., tekhn. red.

[Methods for wear testing]Metody ispytaniia na iznashivanie; trudy. Moskva, Izd-vo Akad.nauk SSSR, 1962. 237 p. (MIRA 15:12)

1. Soveshchaniye po metodam ispytaniya na iznashivaniye, Moscow, 1960.

(Testing machines) (Radioisotopes--Technological innovations)

S/123/62/000/019/001/010
A006/A101

AUTHORS: Vinogradov, Yu. M., Kireyeva, Z. P.

TITLE: Improved wear resistance of surface layers of bearings by chemical and thermal treatment

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 19, 1962, 21 - 22, abstract 19B110 (In collection: "Kachestvo poverkhnosti detaley mashin, v. 5", M., AN SSSR, 1961, 138 - 145)

TEXT: The authors studied the effect of chemical processing and heat treatment methods (sulfonation, selenization, chlorination) upon the wear resistance of surface layers of cast-iron slide bearings. The investigation was made in a laboratory with СЧ 18-36 (SCh-18-36) cast-iron, subjected to sulfonation in a "NIIKHIMMASh 2/6 no. 1" salt bath, at 560°C; selenization at the same temperature in a salt bath, containing a mixture of selenium, sodium cyanide and others; and chlorination in gaseous chlorine at 220°C. Tests on a 4-roll machine have shown that the studied chemical- and heat-treatment methods increased considerably the antigalling properties of cast-iron as compared

Card 1/3

Improved wear resistance of surface layers of...

with non-treated cast-iron or bronze ОЦС 6-6-3 (OTsS 6-6-3); at heavy loads (100 - 200 kg) the highest effect is obtained by sulfonation and selenization, and the least effect by chlorination. Simultaneously it is confirmed that the chemical and thermal treatment reduces considerably the friction coefficient of cast iron which differs only slightly from that of bronze. Wearing tests on an Amsler machine were carried out in a wide range of specific pressure (50 - 120 kg/cm^2) and speed (200 - 500 rpm). The tests show that the chemical and thermal treatment increases wear resistance of friction pairs only to a certain limit. The stricter the friction conditions, the more positive is the effect of the chemical and thermal treatment. The range of the positive effect of the investigated chemico-thermal treatment upon the wear-resistance is wide; therefore it is actually possible to employ these methods for bearings. This was confirmed by tests on the ЛТС -5 (LTS-5) machine at 300 - 1000° rpm. These experiments prove the possibility of using, within certain limits, mineral oil-greased cast-iron bearings which had been subjected to chemico-thermal treatment, instead of non-ferrous metal bearings. The highest practical interest for raising the wear resistance is offered by sulfonation. However, in individual cases selenization is

Card 2/3

S/123/62/000/019/001/010
A006/A101

Improved wear resistance of surface layers of...

recommended. The corrosion resistance of X18H9 (Kh18N9) type stainless steel in nitric, phosphoric and acetic acid is not reduced after sulfonation, and anti-friction properties are improved. Therefore the use of sulfonated corrosion-resistant materials is possible for bearings operating in aggressive media.

L. Litvinenko

[Abstracter's note: Complete translation]

Card 3/3

S/514/61/000/005/005/014
1007/1207

AUTHORS : Vinogradov, Yu.I., and Mireyeva, Z.P.

TITLE: Increased wear resistance of surface layers of bearings by combined chemical-heat treatment

SOURCE: Akademiya nauk SSSR. Komissiya po tekhnologii mashinostroyeniya. Seminar po kachestvu poverkhnosti. Trudy no.5, 1961. Kachestvo poverkhnosti detaley mashin; metody i pribory, uprochneniye metallov, tekhnologiya mashinostroyeniya, 138-145

TEXT: Tests were carried out to find the most efficient method for the surface-coating of sliding-contact bearings to increase their wear resistance. The first series determined the anti-seizing properties of surface coatings. Wear resistance was tested on the Amsler friction-machine. The dependence of the friction moment at the shaft on the specific pressure at various speed was plotted and definite conclusions drawn on the effectiveness of surface-coating methods. A second series of tests was conducted under conditions simulating the field operation of bearings. Wear and specific-load resistance of friction couples were found to increase as a result of combined chemical heat-treatment. From these tests the

Card 1/ 3

S/514/61/000/005/005/014
1001/1207

Increased wear resistance...

following table was plotted showing maximum loads at which bearings made of different materials may work with sufficient reliability:

Bearing (load in kg/cm^2) Material	Rotation Speed rpm			
	300	500	800	1000
Plain cast-iron	10	10-12	15-20	20
Sulfide-coated cast iron	40	45-50	55	60
Selenium-coated cast iron	45	55-60	65-70	70-75
Bronze	45	55-60	65-70	70-75
Chloride-coated cast iron	55	65-70	70-75	70-80

The test results permitted the following conclusions to be drawn: 1). Surface-coating of cast iron increases the wear resistance of bearings and improves their friction properties permitting them to replace nonferrous metals operating with mineral lubricants. 2). Stainless-steel bearings subjected to surface coating may be used in corrosive media. 3). Anti-friction and anti-seizing (gripping properties of bearing components are greatly improved as a result of combined chemical-heat

Card 2/3

S/514/61/000/005/005/014
I007/I207

Increased wear resistance...

treatment. Of most practical interest are sulfide coatings. Industrial methods of chloride coating still need further refinement. There are 4 figures and 1 table

Card 3/3

VINOGRADOV, Yu.M., kand.tekhn.nauk; ZELENOVA, V.D., inzh.;
SHISHOKINA, K.V., kand.tekhn.nauk

Using X-ray diffraction and electron diffraction examination in investigating wear-resistant coatings. Trudy NIIKHIMMASH no.27:168-175 '59. (MIRA 14:8)
(Protective coatings--Testing) (X rays--Diffraction)
(Electron diffraction examination)

VINOGRADOV, Yu.M., kand.tekhn.nauk

Chlorination, sulfurization and thiocyaniding used as means for increasing the wear resistance of metals. Trudy NIIKHIMMASH no.27:150-167 '59. (MIRA 14:8)
(Cash hardening)

S/137/62/000/006/145/163
A057/A101

AUTHORS: Vinogradov, Yu. M., Kireyeva, Z. P.

TITLE: Increase of the resistance to wear of surface layers of bearings by methods of thermo-chemical treatment

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 105, abstract 6I666 (V sb. "Kachestvo poverkhnosti detaley mashin Sb. 5". Moscow, AN SSSR, 1961, 138 - 145)

TEXT: The most effective method for the increase of antifriction properties of a metal was sought for. Tests were carried out on friction machines, imitating the work of a bearing under real conditions. The thermo-chemical treatment of the OUC 6-6-3 (OTs6-6-3) bronze and pig iron was carried out by the following technology: 1) sulfurization in a salt bath of the type NIIKhIMMASh 2/6 no. 1 at 560°C during 1 hr; a metal layer enriched with FeS is formed on the surface; 2) selenization in a salt bath containing 3 parts of Se and 6 parts of Na-cyanide per 100 parts of the melt (55% Na_2SO_4 and 45% KCl) at 560°C; the surface of the metal is enriched with FeSe; 3) chlorination in gaseous Cl_2 at 220°C during 15 minutes; the surface layer of the metal is en-

Card 1/2

Increase of the resistance...

riched with $FeCl_2$. It was determined that an increase of the resistance to wear of bearings can be effected by covering their surface with selenides and chlorides. Sulfurized, selenidized, and chlorinated cast iron can be used as a substitute for non-ferrous metals in service with mineral oil lubrication. Bearings from 18-8 steel can be used after sulfurization in service in aqueous acid solutions, since sulfurized Cr-Ni-steel does not change its corrosion resistance. Of the most practical interest is sulfurization. There are 9 references.

A. Babayeva

[Abstracter's note: Complete translation]

Card 2/2

BORISOGLEBSKIY, B.N., kand. tekhn. nauk, red.; VINOGRADOV, Yu.M., kand. tekhn. nauk, red.; GALITSKIY, B.A., red.; GORYAINOVA, A.V., kand. tekhn. nauk, red.; ZHEREBTSOV, A.N., red.; KORETSKIY, I.M., red.; MAKAROVA, N.S., red.; MORDOVSKIY, S.I., kand. tekhn. nauk; SALAMATOV, I.I., doktor tekhn. nauk; SHVARTS, G.L., kand. tekhn. nauk, red.; YUKALOV, I.N., kand. tekhn. nauk, red.; YUSOVA, G.M., kand. tekhn. nauk, red.; VASIL'YEVA, G.N., red.

[Manufacture of filters in the U.S.S.R.; collection of reports at the united session of the scientific and technical councils of the All-Union Scientific Research Institute of Chemical Machinery, the Ukrainian Scientific Research Institute of Chemical Machinery and the technical council of the Ural Chemical Machinery Plant] Fil'trostroenie v SSSR; sbornik dokladov na ob"edinennoi sessii nauchno-tekhnicheskikh sovetov Niikhimmasha, Ukrniikhimmasha i tekhnicheskogo soveta zavoda "Uralkhimmash." Moskva, Otdel nauchno-tekhn. informatsii, 1963. 107 p. (MIRA 17:12)

1. Nauchno-issledovatel'skiy institut khimicheskogo mashinostroyeniya (for Borisoglebskiy, Mordovskiy).

VASYUTINSKIY, G.N., inzh.; VINOGRADOV, Yu.N., inzh.; DUDYREV, A.K., inzh.

Experience in the organization of the current maintenance of electric locomotives using the shift system on the Ural and Sibiria railroads. Trudy TSNII MPS no.246:5-39 '62. (MIRA 16:2)

(Electric locomotives—Maintenance and repair)

VINOGRADOV, Yu.N., inzh.; RUDAKOV, B.V., inzh.; KIRILLOV, G.B., inzh.

Cutting the time of preliminary drying of the armature of electric traction engines before impregnation. Trudy TSNII MPS no.246: 113-118 '62. (MIRA 16:2)

(Electric railway motors)

VINOGRADOV, Yu.N. (Sverdlovsk)

Servicing of electric locomotives by shifting crews. Zhel. dor.transp. 40 no.4:74-75 Ap '58. (MIRA 13:4)

1. Glavnyy inzhener depo Sverdlovsk-Sortirovochnyy.
(Electric locomotives--Maintenance and repair)

VINOGRADOV, Yu.N.

Using distilling wash concentrate in pressing particle boards.
Der.prom. 9 no.8:13-14 Ag '60. (MIRA 13:8)

1. Sibirskiy tekhnologicheskiy institut.
(Hardboard)

VINOGRADOV, Yu.N.; KNIZHNIK, S.O.; ANDROSOV, N.N., nauchnyy sotrudnik

Burnishing as a means for increasing the hardness of collector copper. Elek. i tepl. tiaga 7 no.10:11-12 O '63. (MIRA 16:11)

1. Rukovoditel' laboratorii Ural'skogo otdeleniya Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya (for Vinogradov). 2. Glavnyy inzh. depo Kurgan (for Knizhnik). 3. Ural'skoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya (for Androsov).

VINOGRADOV, Yu.N., inzh.; KONSTANTINOV, Ye.S., inzh.

Wear of collectors and use of EG-2a brushes with shock absorbing construction in the traction motors of electric locomotives. Elektrotekhnika 34 no.11:14-19 N '63. (MIRA 17:2)

VINOGRADOV, Yu.N., inzh.; MEDVEDEV, N.F., inzh.

Methodology for determining the time for the repair of electric locomotive parts and analysis of their wear. Trudy TSNII MPS no.266:4-36 '63. (MIRA 17:2)

VINOGRADOV, Yu.N., inzh.; BESSONOV, V.P., inzh.

New engineering principles in the manufacture of traction wheel pairs. Elek. i tepl. tiaga no.1:28-29 Ja '61. (MIRA 14:3)
(Car wheels)

32(3) SOV/112-59-3-5093

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 3, p 112 (USSR)

AUTHOR: Vinogradov, Yu. N.

TITLE: Energy Regeneration Without Invertors
(Rekuperatsiya energii bez invertorov)

PERIODICAL: Elektr. i teplovozn. tyaga, 1958, Nr 1, pp 30-31

ABSTRACT: The article describes tentative experience in the Sverdlovsk railroad with regenerative braking on heavy-weight trains with VL-22^{m} locomotives, without invertors at the traction substations. Based on the above experience, an instruction for regenerative braking was developed which stipulates that the best speed for the regenerative braking is 45-55 km/hr. The regenerative braking is most stable when the traction motors are connected in parallel and voltages up to 4,000 v are possible. To avoid collapse of the regenerative braking, quick setting on the zero position of the engineman's controller handle is prohibited for locomotives operating under traction conditions.

L.A.Ch.

Card 1/1

VINOGRADOV, Yu.N.; DENISOV, O.B.; TRAYTEL'MAN, G.Ya.

Pressing particle boards with the use of slops concentrates.
Der.prom. 9 no.3:11-12 Mr '60. (MIRA 13:6)

1. Sibirskiy tekhnologicheskiy institut.
(Hardboard)

VINOGRADOV, Yu.N.

Recuperation of electric power without using inverters. Elek. i tepl. tiaga 2 no.1:30-31 Ja '58. (MIRA 11:3)

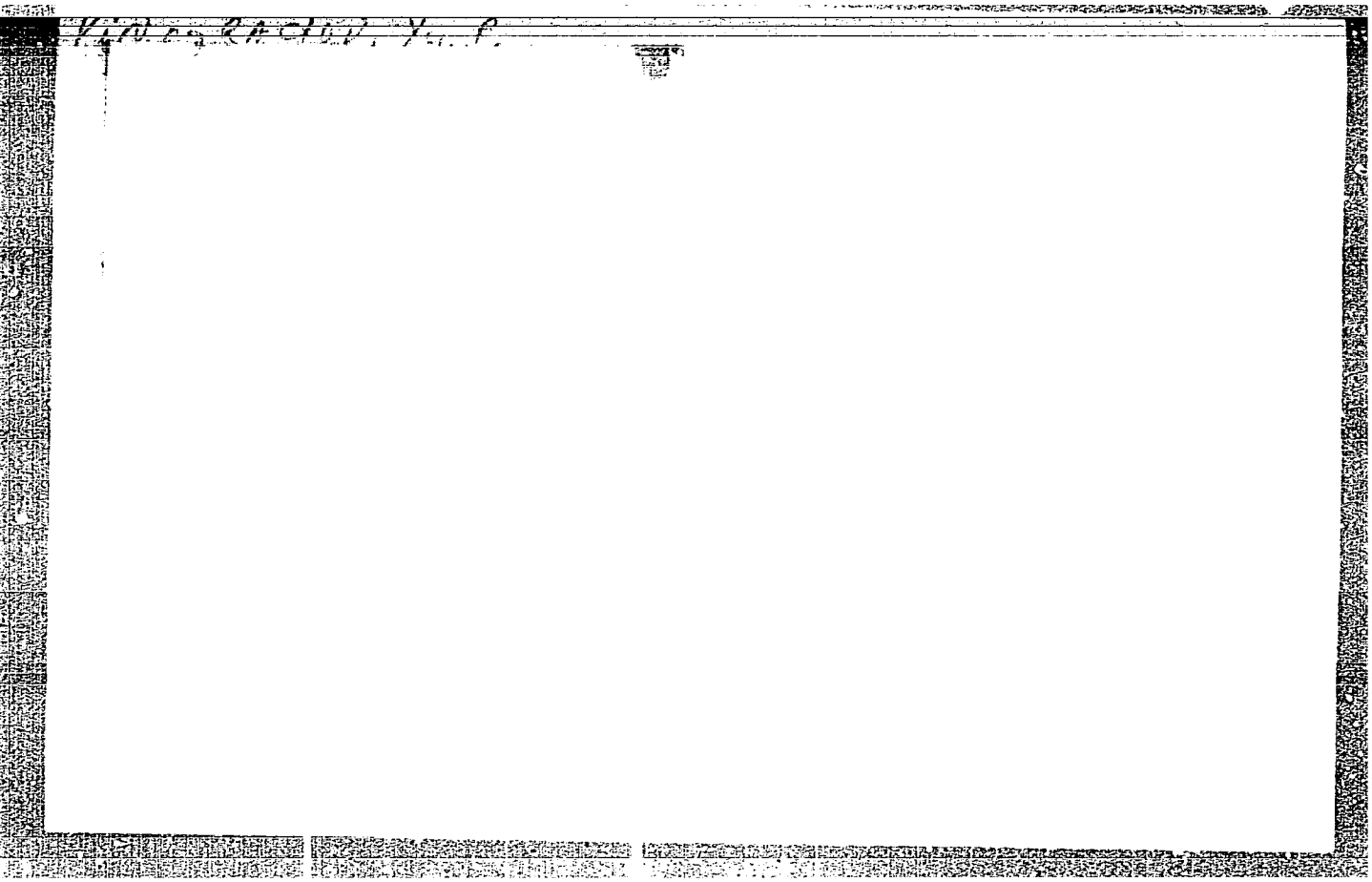
1.Glavnyy inzhener lokomotivnogo depo Sverdlovsk-Sortirovochnyy.
(Electric railroads)

VINOGRADOV, Yu. N.; IVANTSEV, A. M., inzh.

Device for measuring the pressure of the prongs of a brush holder. Elek. i tepl. tiaga 6 no.9:25-27 S '62. (MIRA 15:10)

1. Rukovoditel' Ural'skogo otdeleniya Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya (for Vinogradov).

(Electric railway motors—Equipment and supplies)
(Brushes, Electric)



VINOGRADOV, YU. P.

PA 53T88

USSR/Petroleum Industry
Oil Wells
Filtration

Aug 1947

"Some Frequent Solutions of Problems of Filtration," Yu. P. Vinogradov, P. P. Kufarev, Physical Engin Inst, Tomsk State U imeni V. V. Kuybyshev, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 4

Discusses specific cases of formulas for calculating filtration in oil bores applied to filtration problems of wells. Submitted by Academician S. L. Sobolev, 23 Feb 1947.

[redacted]

53T88

L 15742-63 EWT(d)/FCC(w)/BDS AFFTC/IJP(C)
ACCESSION NR: AR3002682 S/0124/63/000/005/B139/B139

SOURCE: Rzh. Mekhanika, Abs. 5B851 53

AUTHOR: Vinogradov, Yu.P.

TITLE: Approximate solution of equations of the type of the equation of the filtration problem for some initial regions

CITED SOURCE: Uch. zap. Rostovsk.-n/D gos. ped. in-t. Fiz.-matem. fak. vyp. 6, 1961, 51-55

TOPIC TAGS: filtering, liquid, series solution, series, surface, boundary condition, differential equation

TRANSLATION: The solution of the filtering problem for a heavy liquid with a free surface reduces to the finding of the function $z(w, t)$, holomorphic with respect to w, and single sheeted for $|w|<1$. The case is considered for boundary condition of the form

$$Re\left[\frac{\partial z}{\partial t} w \frac{\partial z}{\partial w} + \alpha w \frac{\partial z}{\partial w}\right] = 1$$

Card 1/2

L 15742-63
ACCESSION NR: AR3002682

where α is small. The solution is presented in the form of a series, arranged according to the increasing degree of α, $z(w, t) = z_0(w, t) + \alpha z_1(w, t) + \alpha^2 z_2(w, t)$ ... An approximate solution is obtained for the cases when the initial regions are the circle $|w| < 1$ and the strip in the center of the aperture is found at the point $w = 0$. I.F. Shelikhova

DATE ACQ: 14Jun63 SUB CODE: PH ENCL: 00

Card 2/2

VINGRADOV, Yu. P.

S/044/62/000/001/015/061
C111/C444

AUTHOR: Vinogradov, Yu. P.

TITLE: On the solution of filtration problems for some initial domains

PERIODICAL: Referativnyy zhurnal. Matematika, no. 1, 1962, 30, abstract 1 B 142. (Uch. zap. Rostovsk. - n/D. gos. ped. in-t, 1960, vyp 5 (42), 73-77)

TEXT: Considered in the contraction of the contour of a mineral oil region. In the initial moment $t = 0$ the plane domain G_o is filled with mineral oil and bounded by the contour $\Gamma(t_o)$; inside of G_o there exists an oil well (drain). It is supposed that on the contour $\Gamma(t)$ and on the contour of the oil well there is a constant pressure given. The solution of the problem leads to the determination of a function $z(w,t)$ $[z(0,t) = z_o]$ holomorphic with respect to w and schlicht for $|w|<1$ which on the circle $|w| = 1$ satisfies the condition

$$w \frac{\overline{\partial z}}{\partial t} \frac{\partial z}{\partial w} + \frac{1}{w} \frac{\partial z}{\partial t} \frac{\overline{\partial z}}{\partial w} = 2 . \qquad (1)$$

Card 1/2

On the solution of filtration ... S/044/62/000/001/015/061
C111/C444

The function $z(w,0) = f_0(w)$ is given ; the point z_0 determines the centre of the oil well. It is proved that for some special initial domains G_0 the searched function $w(z,t)$ may be set up in the form

$$z(w,t) = a(t)w^2 + b(t)w + \frac{c(t)w}{c+1} + m_0 \ln \frac{1-\alpha(t)w}{1-\alpha(t)w} + z_0 \quad (|\alpha(t)| = 1) \quad (2)$$

where $a(t)$, $b(t)$, $c(t)$ are functions of the time parameter t which takes real values; m_0 is a purely imaginary number. The problem leads to a certain system of ordinary differential equations for $a(t)$, $b(t)$, $c(t)$; the corresponding system of equations is obtained by substituting (2) into (1). Under some suppositions on $a(t)$, $b(t)$, $c(t)$, m_0 one obtains well-known special solutions of the general problem.

[Abstracter's note : Complete translation.]

Card 2/2

41795
S/044/62/000/010/021/042
B166/B102

5.4407

AUTHOR: Vinogradov, Yu. P.

TITLE: Approximate solution to an equation of the type encountered in the filtration problem for certain initial domains

PERIODICAL: Referativnyy zhurnal. Matematika, no. 10, 1962, 26, abstract 10V129 (Uch. zap. Rostovsk.-n/D gos. ped. in-t. Fiz.-matem. fak., no. 6, 1961, 51 - 55)

TEXT: The solution of the filtration problem for a heavy liquid with a free surface can be reduced to finding a function $z(w,t)$ which is holomorphic with respect to w and one-sheeted when $|w| < 1$. The case examined is when the boundary condition has the form $\mathrm{Re}\left[\frac{\partial \bar{z}}{\partial t} w \frac{\partial z}{\partial w} + \alpha w \frac{\partial z}{\partial w}\right] = 1$, (1), where α is small. The solution is sought in the form of a power series of α: $z(w,t) = z_0(w,t) + \alpha z_1(w,t) + \alpha^2 z_2(w,t) + \ldots$. An approximate solution is obtained for cases when the initial domains are a circle $|w| < 1$ and a strip (the center of the slit is located at point $w = 0$).

[Abstracter's note: Complete translation.]

Card 1/1

112-57-8-17597

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 8, p 244 (USSR)

AUTHOR: Vinogradov, Yu. P.

TITLE: Wraparound Antenna (Spiral'naya antenna)

PERIODICAL: Tekhn. televideniya (TV Engineering), 1956, Nr 19, pp 30-42

ABSTRACT: Bibliographic entry.

Card 1/1

VINOGRADOV, Yu.P.; KOLOSOV, I.N.

Bench drilling machine with pneumatic drives. Stan. i instr. 29 no.3:20 Mr '58. (MIRA 12:1)
(Drilling and boring machines)

VINOGRADOV, Yu. P.

Category : USSR / Radio Physics. Radiation of Radio Waves. Trans- I-5
mission Lines and Antennas

Abs Jour : Ref Zhur - Fizika No 3, 1957, No 7278

Author : Vinogradov, Yu. P.
Title : Helical Antenna

Orig Pub : Tekh. televideniya, 1956, vyp. 19, 30-42

Abstract : A method is proposed for calculating the directivity pattern of a helical antenna. The antenna is broken up into elementary dipoles, and its field is determined as the sum of the fields of the elementary dipoles. Expressions are derived for the components of the electric field intensity, which contain Anger functions. These expressions are valid for antennas with an integral number of turns n. It is indicated that if n is not an integer, the resulting expressions are quite cumbersome and contain along with the Anger function also the Weber function. An analysis is also made of the polarization characteristics of the antenna. The calculated directivity patterns are compared with the experimental ones

Card : 1/2

Category : USSR / Radio Physics. Radiation of Radio Waves. Transmission Lines and Antennas I-5

Abs Jour : Ref Zhur - Fizika No 3, 1957, No 7278

for λ = 23.3, 32.8, and 37 cm. The antenna was made of copper tubing 8 mm in diameter, the inside diameter of the helix was 81 mm, and the shield was made of brass, 330 mm in diameter, with a center opening of 15 mm. The experimental diagrams turned out to be somewhat narrower (by approximately 5 percent) than the calculated ones, with the width of the directivity pattern varying by a factor of 1,3 over the band. The SWR of the antenna is greater than 0,75. Certain features of the matching of the antennas over a wide frequency range are also noted.

Card : 2/2 - 27 -

VINOGRADOV, Yu.S., dotsent, kand. tekhn. nauk

Critical analysis of the methods for determining uneveness in textile products. Tekst. prom. 24 no.9:16-20 S '64. (MIRA 17:11)

1. Ivanovskiy tekstil'nyy institut.

VINOGRADOV, Yu.S., dotsent

Need for a revision of the methods for determining unevenness in textiles. Tekst. prom. 25 no.8:78-81 Ag '65. (MIRA 18:9)

1. Ivanovskiy tekstil'nyy institut imeni Frunze.

VINOGRADOV, Yuriy Sergeyevich; SEVOST'YANOV, A.G., prof., retsenzent; NESHATAYEVA, N.M., red.

[Mathematical statistics and its application in the textile industry to research] Matematicheskaia statistika i ee primenenie k issledovaniiam v tekstil'noi promyshlennosti. 2. izd., perer. i dop. Moskva, Legkaia industriia, 1964. 319 p. (MIRA 17:10)

VINOGRADOV, Yu.S., dotsent, kand. tekhn. nauk

"Methods for studying the unevenness of the products of spinning."
Reviewed by IU.S. Vinogradov. Tekst. prom. 24 no.7:84-86 Jl '64.

In foreign countries. Ibid.:81. (MIRA 17:10)

1. Ivanovskiy tekstil'nyy institut.

VINOGRADOV, Yu.S., kand.tekhn.nauk

For a correct use of mathematical statistics in research. Tekst. prom. 18 no.3:64-66 Mr '58. (MIRA 11:3)
(Mathematical statistics) (Textile research)

VINOGRADOV, Yuriy Sergeyevich; BOYEV, G.P., professor, retsenzent; SOLOV'YEV, A.N., professor, retsenzent; SEVOST'YANOV, A.G., kandidat tekhnicheskikh nauk, retsenzent; ARKHANGEL'SKIY, S.S., redaktor; MEDVEDEV, L.Ya., tekhnicheskiy redaktor

[Mathematical statistics and their application to studies in textile production] Matematicheskaia statistika i ee primenenie k issledovaniiam v tekstil'nom proizvodstve. Moskva, Gos. nauchno-tekhn. izd-vo Ministerstva legkoi promyshl. SSSR, 1956. 260 p. (MIRA 10:1)
(Mathematical statistics)

VINOGRADOV, Yuriy Sergeyevich

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MATEMATICHESKAYA STATISTIKA I YEYE PRIMENENIYE K ISSLEDOVANIYAM V TEKSTIL'NOY PROIZVODSTVE (MATHEMATICAL STATISTICS AND THEIR APPLICATION TO RESEARCH IN THE MANUFACTURE OF TEXTILES) MOSKVA, GIZLEGPROM, 1956. 260 p. DIAGS., TABLES. "LITERATURA": p.257

VINOGRADOV, Yu. S.

"On the Theory of Friction Transmissions." Sub 16 May 51, Inst of Machine Science, Acad Sci URRS

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

VINOGRADOV, Yu.S. (Ivanovo)

Consumer's satisfaction with goods for personal use dependent on the number of standard sizes and other factors. Shvein. prom. no.1:15-19 Ja-F '63. (MIRA 16:4)

(Clothing industry—Standards)
(Mathematical statistics)

Applied Mechanics
Review

Soil Mechanics,
Seepage

1001. Yu. P. Vinogradov and P. P. Kufarev, On a problem of filtration (in Russian), Prikl. Mat. Mekh. 12, 181-186 (1948).

The following problem is considered. In an incompressible fluid, which fills some two-dimensional region G_t that varies with the time t, there exists at a point $z = 0$ an overflow of magnitude $2\pi q(t)$ which changes with time. The velocity potential is assumed to be constant on the boundary C_t of G_t during some interval of time. It is required to determine the nature of the motion and the shape of the region G_t if the region G_0 occupied by the fluid at time $t = 0$ is given. On the basis of the results of P. J. Polubarinova-Kochina [Prikl. Mat. Mekh. 9, 79-90 (1945); C. R. Acad. Sci. URSS 47, 250-254 (1945)] and L. A. Galin [C. R. Acad. Sci. URSS 47, 246-249 (1945)] this problem is reduced to the solution of a system of integrodifferential equations. A study of these equations permits the authors to draw certain conclusions on the existence and nature of the solution of a boundary-value problem to which the present problem had been reduced by Polubarinova-Kochina, and to develop two methods for the solution of the problem.

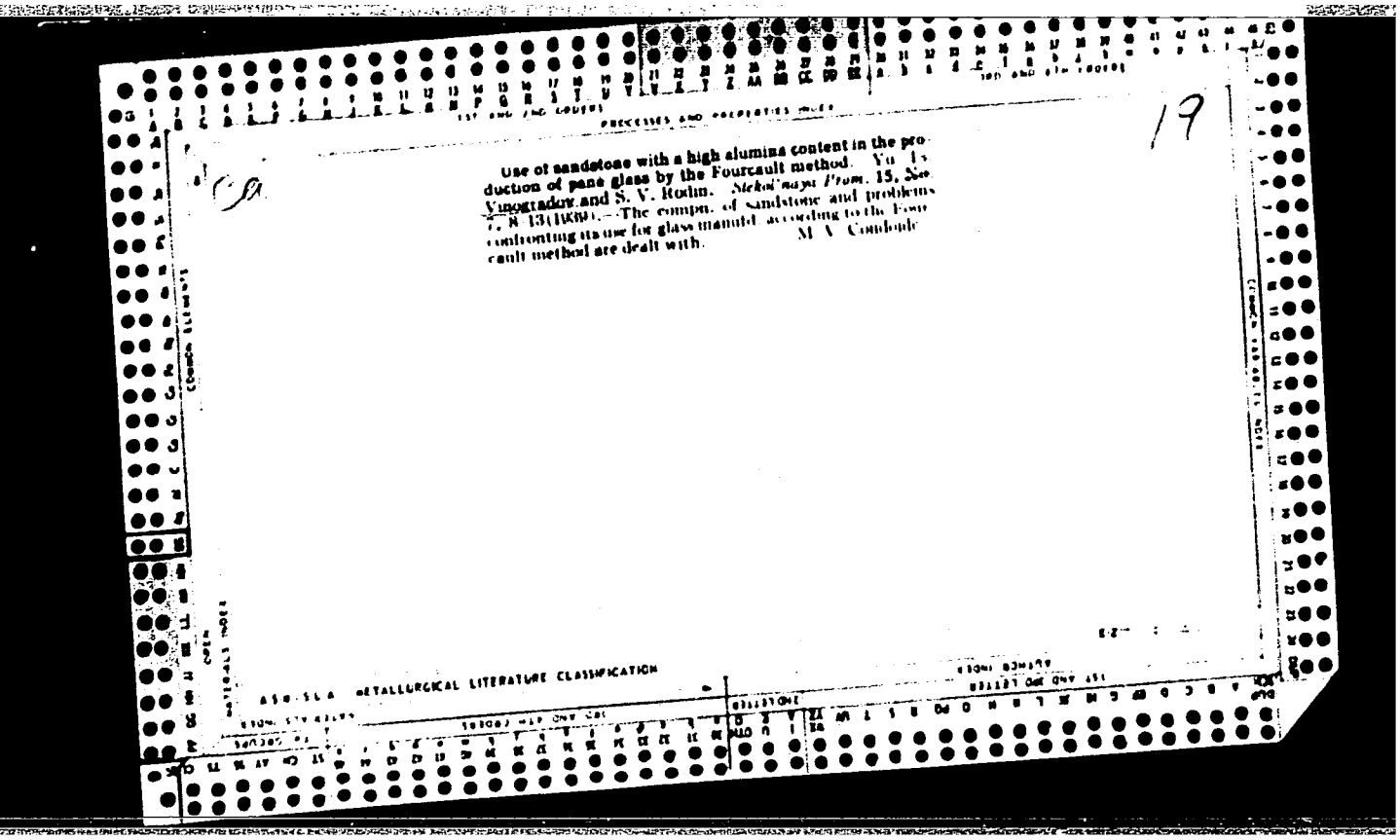
Courtesy of Mathematical Reviews H. P. Thielman, USA

1950

VINOGRADOV, Yu.S.

Possibilities and prospects of the application of mathematical statistics in the problems of textile manufacture. Izv.vys.ucheb.zav.; tekh. tekst.prom. no.3:150-155 '63. (MIRA 16:9)

1. Ivanovskiy tekstil'nyy institut imeni M.V.Frunze.
(Mathematical statistics) (Textile industry)



Use of sandstone with a high alumina content in the production of pane glass by the Fourcault method. Yu. I. Vinogradov and S. V. Rodin. *Steklo i Keram.* 15, No. 7, 13(1958).—The compn. of sandstone and problems confronting its use for glass manufd. according to the Fourcault method are dealt with. M. V. Condoide

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A50-51A METALLURGICAL LITERATURE CLASSIFICATION