ACCESSION NR: AP4030381 S/0145/64/000/002/0160/0173

AUTHOR: Balandin, G. F. (Candidate of technical sciences, Docent); Gini, E. Ch. (Candidate of technical sciences); Matveyko, Yu. P. (Aspirant); Sokolov, Ye. A. (Engineer); Stepanov, Yu. A. (Candidate of technical sciences, Docent); Yakovlov, Yu. P. (Aspirant)

TITLE: The role of technological factors in producing strength in thin walled castings

SOURCE: IVUZ. Mashinostroyeniye, no. 2, 1964, 160-173

TOPIC TAGS: mechanical property, thin walled casting, aluminum, magnesium alloy, mold, microstructure, nonuniform porosity, hardening process, hexacholroethane, acetyline

ABSTRACT: The mechanical properties of large-scale thin-walled castings used as panels were investigated at the MVTU foundry. Sample panels, 370 mm by 35 mm and 4 to 1.5 mm in thickness, were cast from various aluminum and magnesium alloys (e.g. AL2, AL4, AS15, ML15, etc.). Before pouring the material, the mold was covered by hexachloroethane (C_2Cl_6) for aluminum alloys and with acetylene carbon black for the ML15 alloy. The aluminum alloy specimens had a strength within the GOST 2685-55 standard.

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ACCESSION NR: AP4030361

Lowering the specimen thickness to below 2 mm revealed a definite reduction in mechnical properties of the cast. The microstructure of the panels showed no observable effects caused by minimum or maximum superheat conditions. However, there was a noticeagle increase in nonuniform porosity for very thin-walled specimens cast from V15 and AL19 alloys. There was considerable scatter in the measured strength of various specimens, caused primarily by a nonuniform temperature distribution in the casting during the pouring of the alloy in the mold. It is shown that the melt temperature distribution in the mold, the method of pouring the melt in the mold, and the method of feeding the alloy during the hardedning process are significant factors contributing to the nonuniformity between specimens and within the given specimen itself. A detailed comparison is made between casting in sandstone molds and a pressing-out methos to enhance uniform temperature distributions in the molten alloy. In general, the two methods yield similar data scatter in the strength of the casting. Orig. art. has: 7 figures
ASSOCIATION: none

SUBMITTED: 04Mar63
SUB CODE: MM NO REF SOV: 022 ENCL: 00
OTHER: 010

2/2
Card

[redacted], D. ., kand. tekhn. nauk; GINI, E.Ch., kand. tekhn. nauk

Technology of casting thin-walled large panels. Izv. vys. ucheb. zav.; mashinostr. no.3:45-52 '65.
(MIRA 18:6)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche imeni Baumana.

L 19739-65 EWT(m)/EWP(b)/EWP(t) JD/MLK

ACCESSION NR: AT4048346 S/0000/64/000/000/0223/0227

AUTHOR: Balandin, G. F.; Gini, E. Ch.; Matveyko, Yu. P.; Sokolov, Ye. A.; Stepanov, Yu. A.; Yakovlev, Yu. P.

TITLE: Formation of gas defects in thin-walled large-size castings 18

SOURCE: AN SSSR. Komissiya po tekhnologii mashinostroyeniya. Gazy* v litom metalle (Gases in cast metals). Moscow, Izd-vo Nauka, 1964, 223-227

TOPIC TAGS: cast metal, cast aluminum, cast manganese, mold filling, degassing, gas defect, casting porosity, gas blister, gas hollow

ABSTRACT: The authors consider defects of a gaseous origin in thin-walled large-size panel-type castings with a body thickness of 2.5 - 3 mm and a surface area of up to 2 square meters. Such defects are conditionally divided into three groups: gas-shrinkage porosity, gas blisters in the body of the casting, and gas hollows or depressions on the surface. The importance of the degassing of the alloys (normally aluminum and manganese) of which these castings are generally manufactured is discussed, and techniques which may be used for this purpose are described. The relationship of the process of filling and ventilating the sand mold to the formation of gas defects in thin-walled panel-type castings when the latter are poured into such molds, is analyzed. The failure of efforts to remove

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L 19739-65
ACCESSION NR: AT4048346

the gas and air from the cavity of the mold by improving the gas-permeability of the mold mixture is discussed on the basis of certain experiments which were carried out along these lines. The technique of cutting escape channels along the joining plane of both half-sections of the mold, in order to provide an escape passage for the gases and air, is considered by the authors to be a reasonably effective procedure. The use of various special coverings on the mold surface in order to secure improved filling qualities (hexachlorethane and acetylene black, in particular) is analyzed and experimental results are given. Certain other chemical solvents are also discussed in this connection. The authors consider the difficulties encountered in pouring thin-walled castings whose design incorporates bosses and fluted sections into sand-clay molds because of the increased danger of the formation of gas-originated defects. Controlled temperature conditions during the filling of the mold are recommended in this case. Problems arising from the improper position of the casting in the mold and improper design of the mold itself are discussed as they relate to the type of defect under consideration when squeeze-pouring panel-type castings. Attention is also called to the importance of the correct selection of the die for the metallic half-forms of the mold, when pouring thin-walled castings by the extrusion method, since in many cases this may be the direct cause of the formation of gas defects on the casting surface and a source of gas saturation of the metal. "Engineer L. P. Kashirtsev took part in the experimental work." Orig. art. has: 1 table and 3 figures.

Card 2/3

L 19739-65
ACCESSION NR: AT4048346

ASSOCIATION: none

SUBMITTED: 20May64 ENCL: 00 SUB CODE: MM

NO REF SOV: 006 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: 08/26/2000 CIA-RDP86-00513R001653210019-3"

L 10998-66

ACC NR: AP6001979 SOURCE CODE: UR/0105/65/000/003/0091/0091

AUTHOR: Veshenevskiy, S. N.; Voronetskiy, B. B.; Gus'kov, P. S.; Klimov, D. Yu.; Maslennikov, L. V.; Pashkov, M. V.; Petrov, I. I.; Sokolov, I. I.; Stepanov, Yu. V.; Turovskaya, P. G.; Khechumyan, A. P.; Tsein, V. S.; Shteyn, I. M.

ORG: none

TITLE: Professor K. V. Urnov

SOURCE: Elektrichestvo, no. 3, 1965, 91

TOPIC TAGS: scientific personnel, academic personnel

ABSTRACT: Konstantin Vasilevich Urnov died on 11 December 1964 after a serious illness. He was a distinguished scientist and one of the oldest electro-polygraphists. He was born in 1907 and graduated from the Ivanovskiy Polytechnic Institute in 1929, after which he continued to work on the Board of Electric Installations for the next 25 years. His outstanding contribution was to relate successfully the activities of industry with those of the higher educational institutions. His name is closely linked to the development of domestic polygraphic machinery. He was imaginative, creative and bold. Since 1935 he was also engaged in teaching and scientific research work at the Moscow Power Institute and the Moscow Polygraphic Institute where he set up a course on "Electric Drives and Automation of Polygraphic Machines". He is the author of over 30 inventions and published works, including one book. He was a scientist-communist, a man of great knowledge, a good colleague and friend. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 05 / SUBM DATE: none

UDC: 621.313.1/3

Card 1/1

ACC NR: AM6029198 Monograph UR/

Stepanov, Yuriy Aleksandrovich; Gini, Enriko Chel'sovich; Sokolov, Yevgeniy Alekseyevich; Matveyko, Yuriy Pavlovich

Casting of thin-walled structures (Lit'ye tonkostennykh konstruktsiy) Moscow, Izd-vo "Mashinostroyeniye", 1966. 254 p. illus., biblio. Errata slip inserted. 4500 copies printed.

TOPIC TAGS: panel casting, pressure casting, metal casting

PURPOSE AND COVERAGE: This book is intended for engineering and scientific research workers concerned with problems of casting. It may also be useful to students of schools of higher education specializing in machine-building. The book presents results of work completed by the authors at the foundry laboratory of the Moscow Higher Technical School im. Bauman (MVTU) in connection with casting of thin-wall structures. On the basis of theoretical concepts of the interaction between the casting and the mold, various Soviet and non-Soviet studies concerning the theory of producing thin-wall panel castings are summarized.

TABLE OF CONTENTS [Abridged]:

Card 1/2 UDC: 621.74.032

ACC NR: AM6029198

SUB CODE: 13/ SUBM DATE: 11Feb66/ ORIG REF: 086/ OTH REF: 036/

Card 2/2

STEPANOV, Yuriy Grigor'yevich; FEDOROV, A.V., red.; MURASHOVA, L.A., tekhn. red.

[Electronic countermeasures] Maskirovka ot radioelektronnogo nabliudeniia. Moskva, Voenizdat, 1963. 48 p. (MIRA 17:1)

(Radar) (Military electronics)

STEPANOV, Yu.G., inzhener-kapitan 2-go ranga; LEVIN, D.Z., kand. voyenno-morskikh nauk, kapitan 3-go ranga zapasa

Work of the U. S. Navy 1: creating military space weapons. Mor. sbor. 47 no.1:82-89 Ja '64. (MIRA 18:7)

STEPANOV, Yu.G., inzhener-kapitan 2-go ranga

Radio electronics and shipbuilding. Mor. sbor. 48 no.6:71-76 Je '65. (MIRA 18:6)

STEPANOV, Yu.I.

Machine which protects sugar beets. Znan.sila no.4:27 Ap '54.
(MLRA 7:5)

(Agricultural machinery) (Sugar beets)

STEPANOV, Yu. M., and BERESIN, A. B.

"To Produce Aluminum of Very High Purity by the Sonic Smelting Method" a paper read at the International Metallurgists' Conference, Moscow 26-30 June 56

SO: CS-3,302,240, 11 Jan 57.

84706

S/020/60/133/006/014/016
B004/B064

11.1325

AUTHORS: Stepanov, Yu. N., Margolis, L. Ya. and Roginskiy, S. Z., ~~Corresponding~~ Member AS USSR

TITLE: The Mobility of Modifying Admixtures in Silver

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 6, pp. 1374-1387

TEXT: In the introduction the authors discuss papers on the modification of the catalytic activity of metals with admixture of small quantities of metalloids (Refs. 1-13). In the present paper, they investigate the behavior of admixtures, the change in their concentration, and their escaping from the metal. Silver powder was tagged with Cl^{36}, I^{131}, or S^{35} by adsorption of NaCl, KI, or Na_2SO_4, and then pressed to tablets.

The regularity of distribution of the admixture was examined with an end window counter. The silver tablets were then heated with gas mixtures. Fig. 1 shows that the heating of the tablets with air or nitrogen to 300°C did not brin about a change of the specific radioactivity, whereas

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The Mobility of Modifying Admixtures in Silver

S/020/60/133/006/014/016
B004/B064

air with 3% ethylene reduced the radioactivity under the same conditions. The authors assumed that a reduction of chlorine to HCl takes place, and that all reducing agents containing hydrogen are bound to cause the same effect. The experimental data of Table 1 (reaction with H_2, C_2H_4, N_2 + 5.3% i-C_3H_7OH, N_2 + 2% C_2H_4O, CO) confirm this. Only CO proved not to reduce radioactivity. Further experiments were conducted to determine HCl in the reaction products. Silver tablets containing Cl^{36} were heated with C_2H_4 to 300°C. A silver tablet cooled to 40°C stood at a distance of 15 cm. After five hours of experimenting the silver plate had become radioactive. The same effect was obtained with $S^{35}O_4^{2-}$. Absorbing the reaction products in water, containing methyl red, proved their acidity. HCl was nephelometrically determined with $AgNO_3$. Measurement of radioactivity in sections through the silver tablets proved that radioactivity decreased in the entire volume of tablets, i.e. that no surface reaction was concerned. The diffusion of chlorine ions by silver was proven on a silver single crystal with Cl^{36}. Fig. 2 shows the change of the radioactivity of Ag in various N_2 + C_2H_4 mixtures at 300°C, Fig. 3 log C (C

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84706

The Mobility of Modifying Admixtures in Silver

S/020/60/133/006/014/016
B004/B064

= initial rate of the decrease of radioactivity) as a function of the time of treatment, and Table 2 the decrease of the radioactivity of silver tagged with $S^{35}O_4^{2-}$, I^{131} or Cl^{36} in ethylene. To keep constant the activity of the silver catalyst, the authors recommend to add the metalloids concerned to the gases introduced. There are 3 figures, 2 tables, and 13 references: 12 Soviet and 1 US.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

SUBMITTED: May 18, 1960

Card 3/3

STEPANOV, Yu.N.; MARGOLIS, L.Ya.; ROGINSKIY, S.Z.

Modification of a silver catalyst by organohalogen compounds.
Dokl. AN SSSR 135 no.2:369-372 N '60. (MIRA 13:11)

1. Institut fizicheskoy khimii AN SSSR. 2. Chlen-korrespondent AN SSSR (for Roginskiy).
(Catalysts) (Silver)

33482

S/195/61/002/005/007/027
E040/E485

11.1330

AUTHORS: Stepanov, Yu.N., Margolis, L.Ya.

TITLE: Mobility of catalyst modifying additives introduced into silver catalyst

PERIODICAL: Kinetika i kataliz, v.2, no.5, 1961, 684-689

TEXT: The activity of many catalysts can be profoundly modified by the presence of even minute quantities of various elements or compounds and especially of halides. Because the selectivity of the catalytic action of pure silver in the synthesis of ethylene oxide is usually very low, it was thought desirable to investigate the effect of various catalyst-modifying additives on the selectivity of silver in the above reaction. The investigation was based on the use of tracer technique, in which the radio-isotopes Cl^{36}, I^{131} and S^{35} were introduced as chloride, iodide or sulphate ions into pure silver catalyst. Pellets of the modified silver catalysts were heated in a stream of reactants and the mobility of the additive substances were determined from changes in the radioactivity counts. Preliminary tests showed that silver chloride, silver iodide and silver sulphate formed during the

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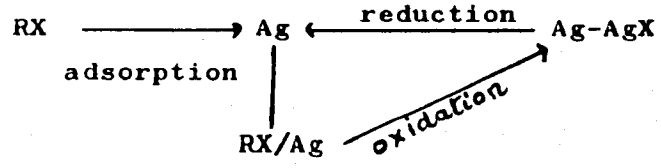
Mobility of catalyst ...

reactions were present on the surface of the catalyst pellets only. The tests were made in a stream of nitrogen, air and a 3% ethylene/air mixture, the reaction time being up to 5 hours. The results showed that the catalyst additives are progressively reduced during the reaction and removed from the silver catalyst surface which, in the authors' opinion, may be responsible for the low selectivity of the catalyst in the synthesis of ethylene oxide. Similar results were obtained in tests with iodide and sulphate tracers. An increase of the reaction temperature and the use of higher concentrations of the reactant were found to favour the process of additive reduction and thereby diminish the catalyst's selectivity. In order to check the correctness of previously reported observations that the synthesis of ethylene oxide can be made much more selective by introducing a small quantity of organic halides into the reaction in the presence of silver catalyst, an investigation was made of the oxidation of CH_2Cl_2, $CHCl_3$, CCl_4, C_6H_5I, C_6H_5Br, C_2Cl_6 and C_2H_5I heated in the presence of oxygen at 250°C on silver catalyst and $(CH_3)_2CHCl$, C_2HCl_5, $(CH_2Cl)_2$ and C_6H_5Cl also heated to the same temperature but in the absence of oxygen. It was found that the organic halides introduced into the

Mobility of catalyst ...

reaction medium are first adsorbed on the surface of silver catalyst and then oxidized to silver halide (in the presence of oxygen) and progressively removed from the reaction system. A schematic representation of these reactions is as follows:



X - halogen.

The optimum conditions of the catalyst modification by the presence of organic halides are determined by the relative velocities of the oxidation and reduction reactions in the Ag-AgX system. All the radiographical measurements were carried out by M.Ya.Kushnerev, J.Mikulski, T.Werber, S.Z.Roginskiy and M.I.Yanovskiy are mentioned in the article. There are 5 figures, 4 tables and 16 references: 11 Soviet-bloc and

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33482
S/195/61/002/005/007/027
E040/E485

Mobility of catalyst ...

5 non-Soviet-bloc. The two references to English language publications read as follows: Ref.7: US Pat. 2680752, June 1954; Ref.14: US Pat. 9307, February 1957.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics AS USSR)

X

Card 4/4

KUSHNEREV, M.Ya.; STEPANOV, Yu.N.

Study of the phase of modified silver. Zhur. prikl. khim. 36 no.4:912-914 Ap '63. (MIRA 16:7)

(Silver)

STEPANOV, Yu.N.

Some problems of the classification of rubber industry equipment and the specialization of the design and planning organizations. Kauch. i rez. 23 no.7:46-47 Jl '64. (MIRA 17:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut rezinotekhnicheskogo mashinostroyeniya (VNIIRTMASh).

KOMISSARENKO, B.T.; STEPANOV, Yu.P. (Dolinsk Sakhalinskoy oblasti)

Preparing the patient for radiography of the gastro intestinal tract. Vop.kur.fizioter. i lech.fiz.kul't. 23 no.2:166-167 Mr-Ap '58. (MIRA 11:6)

(ALIMENTARY CANAL--RADIOGRAPHY)

KOTOUSOV, L.S.; MARTYNOV, Ye.M.; STEPANOV, Yu.P.

Separation of neon isotopes by the thermal diffusion method.
Atom.energ. 10 no.6:632-633 Je '61. (MIRA 14:6)
(Isotope separation) (Neon—Isotopes) (Thermal diffusivity)

Yu. P. Sredanov

21(8) PHASE I BOOK EXPLOITATION SOV/2117

Sovshchaniye po eksperimental'noy tekhnike i metodam vysokotempera-turnykh issledovaniy, 1956

Eksperimental'naya tekhnika i metody issledovaniy pri vysokikh temperaturakh; trudy soveshchaniya (Experimental Techniques and Methods of Investigation at High Temperatures; Transactions of the Conference on Experimental Techniques and Methods of Investigation at High Temperatures) Moscow, AN SSSR, 1959. 789 p. (Series: Akademiya nauk SSSR. Institut metallurgii. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali) 2,200 copies printed.

Resp. Ed.: A.M. Samarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.L. Bendriker.

PURPOSE: This book is intended for metallurgists and metallurgical engineers.

COVERAGE: This collection of scientific papers is divided into six parts: 1) thermodynamic activity and kinetics of high-temperature processes 2) constitution diagram studies 3) physical properties of liquid metals and slags 4) new analytical methods and problems of pure metals 5) pyrometry, and 6) general questions. For more specific coverage, see Table of Contents.

Card 18/32

STEPANOV, Yuriy Sergeyevich; SYSOYEVA, N.V., red.; MASLENNIKOVA, T.A., tekhn. red.

[Modern methods for deducing the equation of state for solids; textbook on gas dynamics for students of faculties of mechanics and mathematics of State universities] Sovremennye metody opredeleniia uravneniia sostoianiia tverdykh tel; uchebnoe posobie po gazovoi dinamike dlia studentov mekhaniko-matematicheskikh fakul'tetov gosudarstvennykh universitetov. Moskva, Izd-vo Mosk.univ., 1961. 62 p. (MIRA 14:12)

(Gas dynamics) (Equation of state)

PETROV, Rem Viktorovich; PRAVETSKIY, Vladimir Nikolayevich; STEPANOV, Yuriy Sergeyevich; SHAL'NOV, Mikhail Ivanovich; LANDAU-TYLKINA, S.P., red.; MIRONOVA, A.M., tekhn. red.

[Protection from radioactive fallout] Zashchita ot radioaktivnykh osadkov. Moskva, Medgiz, 1963. 187 p. (MIRA 16:9)
(RADIOACTIVE FALLOUT)

STEPANOV, Yu.S. (Moskva)

Determination of the compression diagram for low carbon steel in the region of elastoplastic deformations. PMTF no.3:116-121 My-Je '63. (MIRA 16:9)

(Deformations (Mechanics))

L 62471-65 EEO-2/EWT(d)/FSS-2/EWT(l)/EWT(m)/EWP(w)/EPF(c)/EWA(d)/EWP(j)/T/EWP(t)/EWA/EED-2/EWP(z)/FCS(k)/EWP(b) MJW/JD/EM/RM/RDW(NLB)

ACCESSION NR: AP5018207 UR/0207/65/000/003/0120/0126

AUTHORS: Arkhipov, B. A. (Moscow); Stepanov, Yu. S. (Moscow)

TITLE: On the reaction pulse during crater formation and on simulation of the impact process

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1965, 120-126

TOPIC TAGS: cratering, momentum transfer, impact shock, impact testing, hypervelocity projectile/ St 20 steel, St 30 steel, St 45 steel, Armco, Neptun chronometer, P 500 polyethylene, SKB rubber, RK 9 resin

ABSTRACT: The coefficient of reaction pulse ξ was measured experimentally as a function of the impact velocity and the target and projectile material properties during the high velocity impact of a small particle on a low-melting point target. The reaction momentum (or pulse) is expressed by the two relations

$$J_R = \xi \sqrt{2ME_0}, \quad \xi = J_R\left[(m_0 + m_1)(m_0 v_0^2 - 2Q)\right]^{-1/2},$$

where E_0 is the initial kinetic energy and Q is the heat energy transferred into melting and evaporation. J_R was measured experimentally by using a ballistic pendulum. Its magnitude was estimated from the following two expressions

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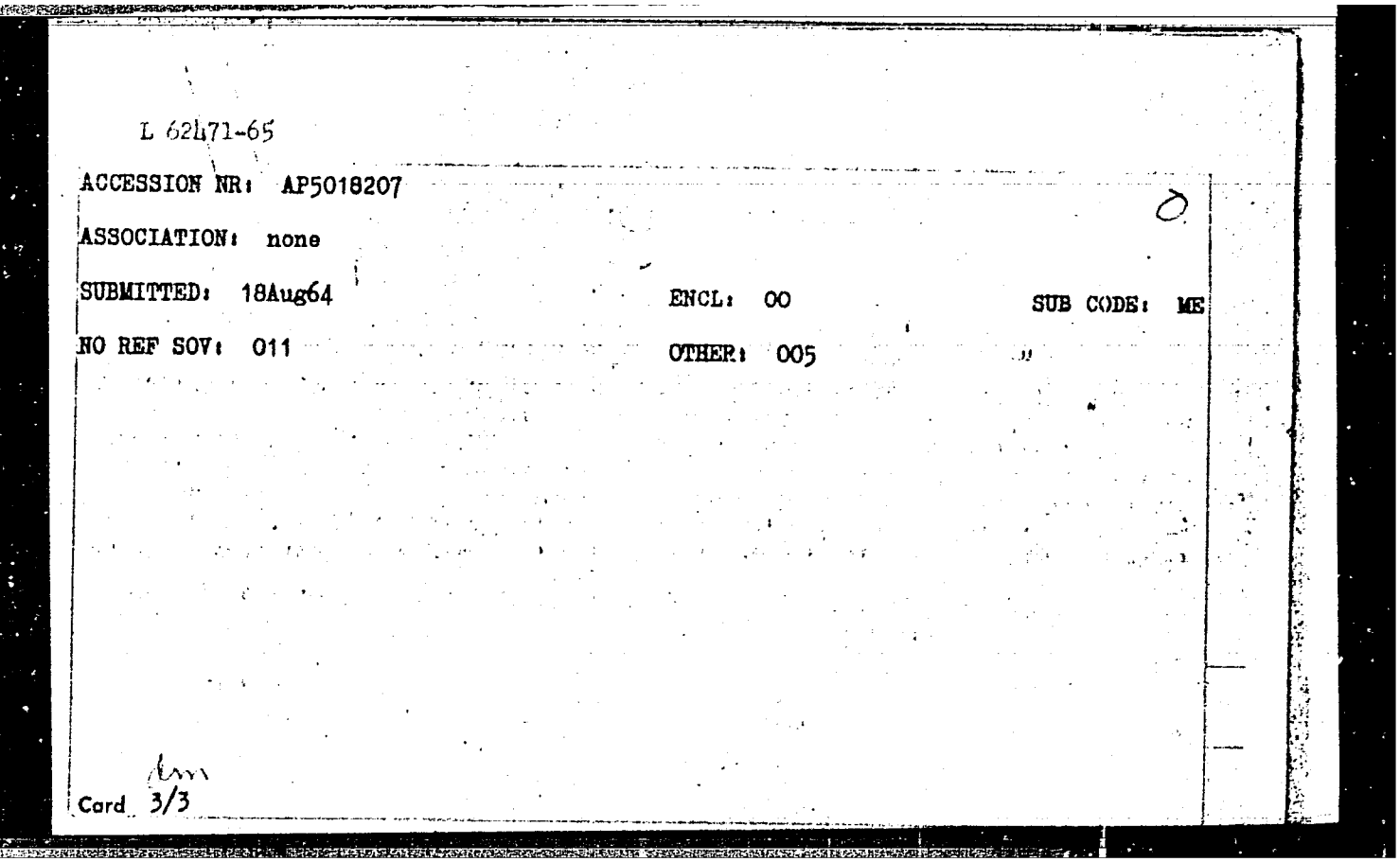
$$J_R = m\,[2gR(1-\cos\alpha)]^{1/2},\quad m = M_0 + P_1,\qquad J_R = mS\left(\frac{g}{R}\right)^{1/2},$$

where M_0 is the pendulum mass and P_1 is the mass of the target. The following materials were used as targets: Cd, Bi, Sn, Pb, Sb, Zn, Al, Fe, polyethylene P-500, synthetic rubber SKB, butyl-rubber, polysiobutylene, and RK-9 resin. The projectiles were 10-mm diameter spheres and were of the same materials as the above listed targets. The velocity was measured by using a wire counter which broke an electric circuit upon contact. The signal was recorded on an electron chronometer. The results are given on five graphical plots. The first shows the dependence of ξ on the impact velocity v_0. It indicates a monotonic increase in ξ until $J_R >> J$, after which it reaches an asymptotic value and a decrease in ξ with increased target density for a given v_0. ξ does not depend on the shape or density of the projectile. The second figure shows the satisfactory agreement between theory and experiments regarding the impact simulation process for h/r^* versus v_0 (h- crater depth, r*- effective projectile radius). The next two curves show the correlation between crater dimensions d/h and the impact velocity. It is observed that with increase in v_0 the crater shape tends towards a hemisphere. The last figure shows photographs of various craters. "The authors are grateful to E. I. Andriankin for evaluating these results." Orig. art. has: 12 formulas, 6 figures, and 2 tables.

Card 2/3



L 62471-65

ACCESSION NR: AP5018207

ASSOCIATION: none

SUBMITTED: 18Aug64 ENCL: 00 SUB CODE: ME

NO REF SOV: 011 OTHER: 005

Card 3/3

L 33552-65 EWA(h)/EWT(m)
ACCESSION NR AM4042768 BOOK EXPLOITATION 19 S/

Petrov, Rem Viktorovich; Pravetskiy, Vladimir Nikolayevich; Stepanov, Yuriy Sergeyevich; Shal'nov, Mikhail Ivanovich

Protection from radioactive fallout (Zashchita ot radioaktivnykh osadkov), Moscow, Medgiz, 1963, 187 p. illus., biblio. 28,000 copies printed.

TOPIC TAGS: radioactive fallout, radiation injury, radiation dosimetry, thermonuclear explosion

TABLE OF CONTENTS [abridged]:

Card 1/2

L 33552-65
ACCESSION NR AM4042768

SUBMITTED: 06Jun63 SUB CODE: LS, CB, PH

NO REF SOV: 013 OTHER: 019

Card 2/2

STEPANOV, Yu. V.

STEPANOV, Yu. V.: "Investigation of flat gratings with greatly distorted profiles for high-pressure ventilation stages". Khar'kov, 1955. Min Higher Education Ukrainian SSR. Khar'kov Polytechnic Inst. (Dissertations for the Degree of Candidate of Technical Sciences.)

So: Knizhnaya letopis' No. 49, 3 December 1955. Moscow.

STEPANOV, Yu. V.

"Investigation of the Load Regime of Automobile Springs"
Nauch. Tr. M sk. Avtomekh. In-ta, N 1, 1954, 61-71

The author recommends a method for conducting experiments in the determination of the repeatability of stress amplitudes in the springs of an automobile. He describes apparatus and indicates experimental results obtained for the automobile GAZ-51 on measured tracks 0.25 and 1.) km long. He gives an example of the determination of the life of a spring. (RZhMekh, No 7, 1955)

SO: Sum-No 787, 12 Jan 56

SOV/124-59-1-258

Translation from: Referativnyy zhurnal. Mekhanika, 1959, Nr 1, p 32 (USSR)

AUTHOR: Stepanov, Yu.V.

TITLE: Experimental Examinations of Diffuser-grates of Strongly Curved Profiles

PERIODICAL: Tr. Khar'kovsk. aviats. in-ta, 1957, Nr 17, pp 127-141

ABSTRACT: The results of an experimental investigation of diffuser grates are presented for strongly curved (by 60°) profiles with different density and at small angle of incidence (± 5°). The effects of the roughness, of the Reynolds number and of the relative aspect ratio on the efficiency of the diffuser grate are considered. The performed investigation has shown the possibility of applying diffuser grates made of strongly curved profiles to axial engines.

L.G. Naumova

Card 1/1

34057

S/096/62/000/002/001/008
E194/E435

26 2120

AUTHORS: Yershov, V.N., Candidate of Technical Sciences
Stepanov, Yu.V., Candidate of Technical Sciences,
Pavlenko, G.V., Engineer, Brekhov, A.F., Engineer

TITLE: Extending the region of stable operation of an axial compressor stage

PERIODICAL: Teploenergetika, no.2, 1962, 41-44

TEXT: A typical form of instability in axial compressors operating at low speeds is the formation of rotating zones of breakaway of fluid from the blades. These zones of breakaway usually begin only at the blade roots or tips but increase as the amount of throttling is increased and, at very low rates of flow, may cover the entire blade length. In multi-stage axial compressors running below the rated speed, critical angles of incidence occur mainly on the first stages or on stages immediately beyond air bleeding points. Total breakaway may occur on a few stages but may sometimes occur on all with great loss of efficiency. The trouble can be overcome by increasing the flow through the early stages but this is wasteful. Attention to blade design cannot

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Extending the region of stable ...

give much improvement. Theoretical investigations of the stability of an axially symmetrical flow indicate that when stability is lost, flow may take one of two forms: with the formation of rotating zones of breakaway, or with an axially symmetrical annular zone of breakaway, or annular swirl, associated with the occurrence of a counter flow. The relative stabilities of these two kinds of flow vary according to circumstances but, by promoting annular swirl it is in principle possible to prevent completely the formation of rotating zones of breakaway. Tests were made with compressor stages in which various measures had been taken to promote annular swirl, namely: cutting annular slots in the casing just ahead of and just beyond the tips of the blades; installing an annular step or ridge in the casing just in front of the ring of blades; also, blowing air into an annular slot located just ahead of the blades. All of these measures were found to extend the zone of stable operation; however, the most convenient and structurally simple is that of blowing air through an annular slot. With this stage, tested when air was blown in at a head two or three times greater than that of the stage, the boundary of stable

Extending the region of stable ...

operation was displaced by 25 to 30% in the direction of lower outputs and the maximum energy of pulsation in the zone of breakaway was reduced by 40%. The amount of air blown in was about 2.5% of the minimum flow necessary to ensure stable operation. Additional tests have shown that the effect of blowing in air in this way differs for the different stages. There are 6 figures and 3 Soviet-bloc references.

ASSOCIATION: Khar'kovskiy aviatsionnyy institut
(Khar'kov Aviation Institute)

4

Card 3/3

L 31320-66 EEC(k)-2/EWT(1)/EWA(h)

ACC NR: AP5026508 SOURCE CODE: UR/0286/65/000/019/0039/0039

10
B

AUTHORS: Gryazev, G. V.; Anfilov, V. Ye.; Shevchenko, T. G.; Stepanov, Yu. N.

ORG: none

TITLE: A generator-vector meter for determining the amplitude-phase frequency characteristics of quadripoles. Class 21, No. 175127

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 39

TOPIC TAGS: vector study, phase characteristic, damping factor

ABSTRACT: This Author Certificate presents a genrator-vector meter for determining the amplitude-phase frequency characteristics (AFCHKH) of quadripoles. The device contains an infralow frequency generator (for producing two 90° phase-shifted voltages) and a ferrodynamic system vector meter. It is designed to make possible the use of the device for determining the AFCHKH in the lower part of the infralow frequencies by measuring the instantaneous values of the amplitude and phase of the signals. The vector meter is provided with a sliding system which has a small moment of inertia and a large opposing moment. The vector meter is also provided with an air damper with a small damping coefficient, and with flat extensions for insuring two-dimensional freedom of the sliding system and for producing the opposing moment. In order to broaden the working range in the upper part of the infralow frequencies by means of measuring the average values of the amplitude and phase of the signals, the vector

Card 1/2 UDC: 621.317.757

L 31320-66
ACC NR: AP5026508

meter is provided with a sliding system which has a large moment of inertia and a small opposing moment. The vector meter in this case is provided with a fluid damper having a large damping coefficient.

SUB CODE: 09/ SUBM DATE: 15Feb64

Card 2/2

L 6976-66 EEC(k)-2/EWA(h)/EWP(k)/EWT(d)/EWT(l)/EWT(m)/ETC(m)/T-2/FS(v)-3/EWA(d)/
ACC NR: AP6000307 EWP(w)/EWP(v) SOURCE CODE: UR/0293/65/003/006/0903/0916
TT/EM/GW/WW

66

AUTHOR: Stepanov, Yu. S.

B

ORG: none

TITLE: Some questions of penetration in collisions with meteoritic particles 12

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 6, 1965, 903-916

TOPIC TAGS: meteorite, spaceship skin, meteoritic penetration, meteoritic abrasion, micrometeorite, meteoritics

ABSTRACT: The problem of the abrasive and piercing effects of micrometeoritic collisions with spaceships and satellites is investigated. The dependence of the ratio of maximum penetrable barrier thickness to the depth of the crater on the velocity of collision is analyzed. On the basis of experimental determination of several of the physical parameters involved in the theoretical estimates, the maximum penetrable thicknesses are computed for several particle-barrier pairs for collision velocities of ~100 km·sec^{-1}. The problem of the penetration of several barriers by a nondeforming particle is examined, and, after certain assumptions are made, the penetration of a second barrier by a deformed particle and stream of fragments is evaluated. On the basis of the solution obtained and information gathered from rocket and satellite flights, an estimate is made of the rate of annual surface abrasion resulting from collisions with meteoric particles at various heights above the earth. Re-

UDC: 523.51:531.66:629.195

Card 1/2

L 6976-66

ACC NR: AP6000307

lying heavily on the findings of Wursthorn, Whipple, and Fireman, the author concludes that a layer of aluminum shielding having a thickness of 0.22 mkm, such as was used on Echo 1, remains intact for at least one year. The maximum annual wear of the aluminum surface at a height of 2000 km does not exceed $1.6 \cdot 10^{-3}$ mkm. It is noted that the return to earth from space of specimens of materials with known properties that had been subjected to micrometeoritic bombardment helps in establishing the dust spectrum with respect to mass and velocity. Orig. art. has: 30 formulas, 7 figures, and 4 tables. [DM]

SUB CODE: SV, AA/ SUBM DATE: 19Nov64/ ORIG REF: 008/ OTH REF: 016/ ATD PRESS: 4144

Card 2/2

STEPANOV, Yu.V.

Reliability of the results of prospecting in the Yun'-Yaga deposit of the Pechora Basin. Razved. i okh. nedr 28 no.9: 51-55 S '62. (MIRA 15:9)

1. Vorkutinskaya geologorazvedochnaya ekspeditsiya.
(Pechora Basin--Coal geology)

STEPANOV, Yu.V.

Representativeness of drilling and logging operations in determining the thickness and structure of coal seams in the Inta deposit. Trudy MGRI 39:169-174 '63. (MIRA 16:10)

GORELOV, P.N.; STEPANOV, Yu.V.

Multisectional trough type divider with a vibratory drive for the reduction of pulverized coal samples. Koks i khim. no.7: 15-17 '63. (MIRA 16:8)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Coke industry--Equipment and supplies)

ZIMAKOV, B.M.; STEPANOV, Yu.V.

Oil manifestation in the Vorkuta coal-bearing region of the Pechora Basin. Sov. geol. 8 no.3:125-127 '65.
(MIRA 18:5)

1. Vorkutskaya kompleksnaya geologorazvedochnaya ekspeditsiya UTGU i Moskovskiy geologorazvedochnyy institut im. S. Ordzhonikidze.

VESHENEVSKIY, S.N.; VORONETSKIY, B.B.; GUS'KOV, P.S.; KLIMOV, D.Yu.; MASLENNIKOV, L.V.; PASHKOV, M.V.; PETROV, I.I.; SOKOLOV, I.I.; STEPANOV, Yu.V.; TUROVSKAYA, P.G.; KHECHUMAN, A.P.; TSEIN, V.S.; SHTEYN, I.M.

Professor Konstantin Vasil'evich Urnov, 1907-1964; obituary. Elektrichestvo no.3:91 Mr '65. (MIRA 18:6)

[illegible], Yuriy [illegible]

[Hose with a [illegible] for [illegible] in an atmosphere of carbon dioxide] Shlang s [illegible] gorelkoi dlia svarki v srede uglekislogo gaza. Leningrad, 1954. ? p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Svarka, rezka, i paika metallov, no.?) ([illegible])

ACCESSION NR: AP4040983 S/0147/64/000/002/0159/0162

AUTHOR: Stepanov, Yu. V.

TITLE: The application of the principle of the minimum dissipation of mechanical energy to the equalizing effect of grids

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 2, 1964, 159-162

TOPIC TAGS: grid, energy dissipation, variational principle, maximal flow, mechanical energy dissipation, equalizing effect, turbine, hydrodynamics, boundary problem

ABSTRACT: The author notes that a unique solution to the problem of the steady-state movement of a viscous liquid in a certain volume is possible only if the boundary conditions on the surface limiting the given volume are known. Since the boundary conditions are conditioned by the very form of the movement, the problem loses its specificity. In many cases, the boundary conditions are not given completely, and an infinite number of mathematically equivalent forms of movement may be realized within the volume of liquid considered. In order to approximate the actually existing form, it becomes essential either to postulate additional suppositions or to apply some criteria which make it possible to select, from all the mathematically possible forms of movement, that which is actually being

Card 1/4

ACCESSION NR: AP4040983

realized. Variational principles of maximum consumption, maximal flow of mechanical energy, its minimum dissipation, etc. are occasionally employed as such criteria. In recent years, the author has conducted studies into the variational criteria of stability with respect to turbomachines. This research has resulted in the establishment of the principle of the maximum flow of mechanical energy. Its application, as well as the use of a particular case — the minimum dissipation of mechanical energy — permits a new approach to the study of the movement in the flow-through section of turbines under all operating conditions(including non-steady-state modes). By way of example, in the present article, the author considers the possibility of applying the principle of the minimum dissipation of mechanical energy to the solution of the problem of the equalizing action of a grid located in a stream with regular non-uniformity. In the solution (See Figure 1. of the Enclosure), it was assumed that there are no tangential stresses between the jets and between the jets and the walls as the liquid travels in the tube at different speeds. The following parameters were considered constant: 1. the static pressures in the tube sections located far in advance and behind the lattice array; 2. the axial velocities for the section of each current tubing, in view of the small initial non-uniformity and the smallness of the transverse velocities in comparison with the axial; 3. the resistance factor of the

Card 2/4

ACCESSION NR: AP4040983

lattice array

$$\zeta_{latt} = \frac{\Delta H}{\rho \frac{c_{latt}}{2}}$$

for the tube section. The dissipation of mechanical energy in the segment 1 — p is written in the following form

$$X = x_{latt}\,\zeta_{latt}\frac{\rho(c_{latt} + c_{latt})^2}{2} + (1 - x_{latt})\zeta_{latt}\frac{\rho c_{latt}^2}{2}. \quad (1)$$

Here D' is the dissipation of mechanical energy per unit volume in unit time in a flow reforming segment. Dissipation behind the grid (segment p — 2) is disregarded. Orig. art. has: 5 formulas and 2 figures.

ASSOCIATION: none

SUBMITTED: 09Dec63 ENCL: 01

SUB CODE: ME, PR NO REF SOV: 002 OTHER: 000

Card 3/4

ACCESSION NR: AP4040983

ENCLOSURE: 01

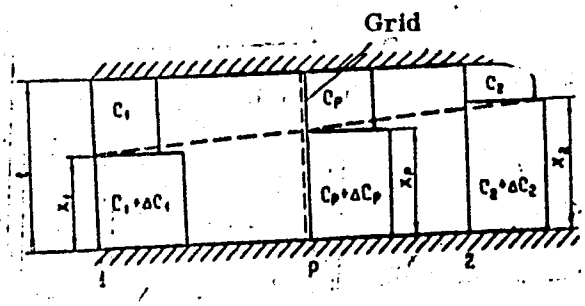


Figure 1. Schematic diagram of the spreading of the flow before and after the grid

Card 4/4

STEPANOV, Yu.V.

Applying the principle of the minimum of mechanical energy dissipation to the equalizing action of grids. Izv.vys.ucheb.zav.; av.tekh. 7 no.2:159-162 '64. (MIRA 17:9)

L 28968-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) BC

ACC NR: AP6019175 SOURCE CODE: UR/0103/65/026/010/1853/1856

AUTHOR: Stepanov, Yu. V. (Moscow)

30
B

ORG: none

14

TITLE: Principles of optimal control of second order systems with varying load moment and a number of limitations with cyclical program operation

SOURCE: Avtomatica i telemekhanika, v. 26, no. 10, 1965, 1853-1856

TOPIC TAGS: optimal control, algorithm

ABSTRACT: For second order systems with varying load moment and a number of limitations (on moment and motor speed), it is shown to be possible to work out fixed displacements in regimes near optimal. A method is presented for evaluation of the error of the process and selection of a motor with these control procedures. The control process selected utilizes linear correction of path or movement time to produce the required displacement of the controlled object in minimal time with maximal accuracy, under conditions of periodic change of the structure and algorithm of the control program. Orig. art. has: 3 figures and 12 formulas. [JPRS]

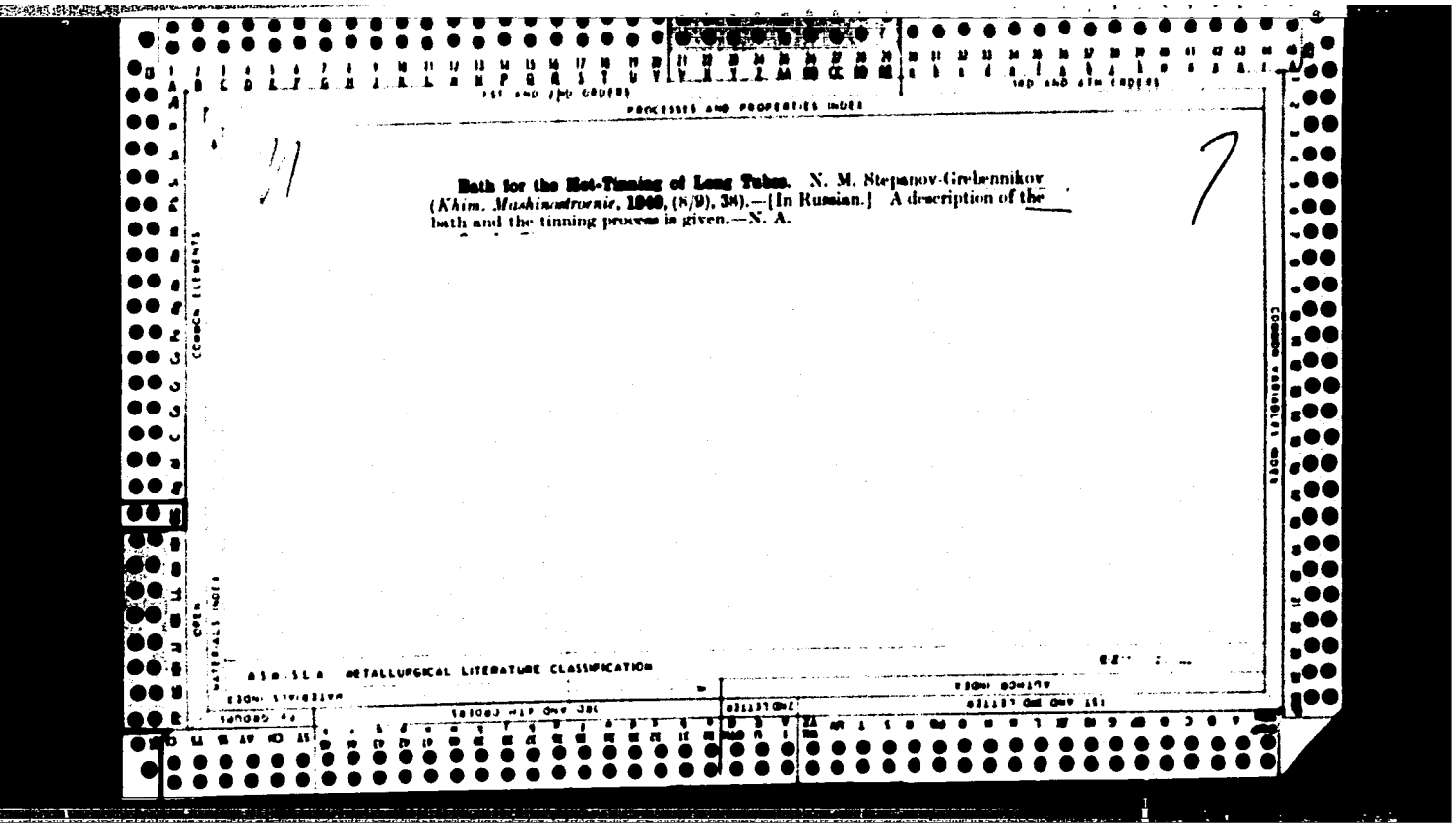
SUB CODE: 13 / SUBM DATE: 19Nov64 / ORIG REF: 004

Card 1/1 BLG UDC: 62-503.53

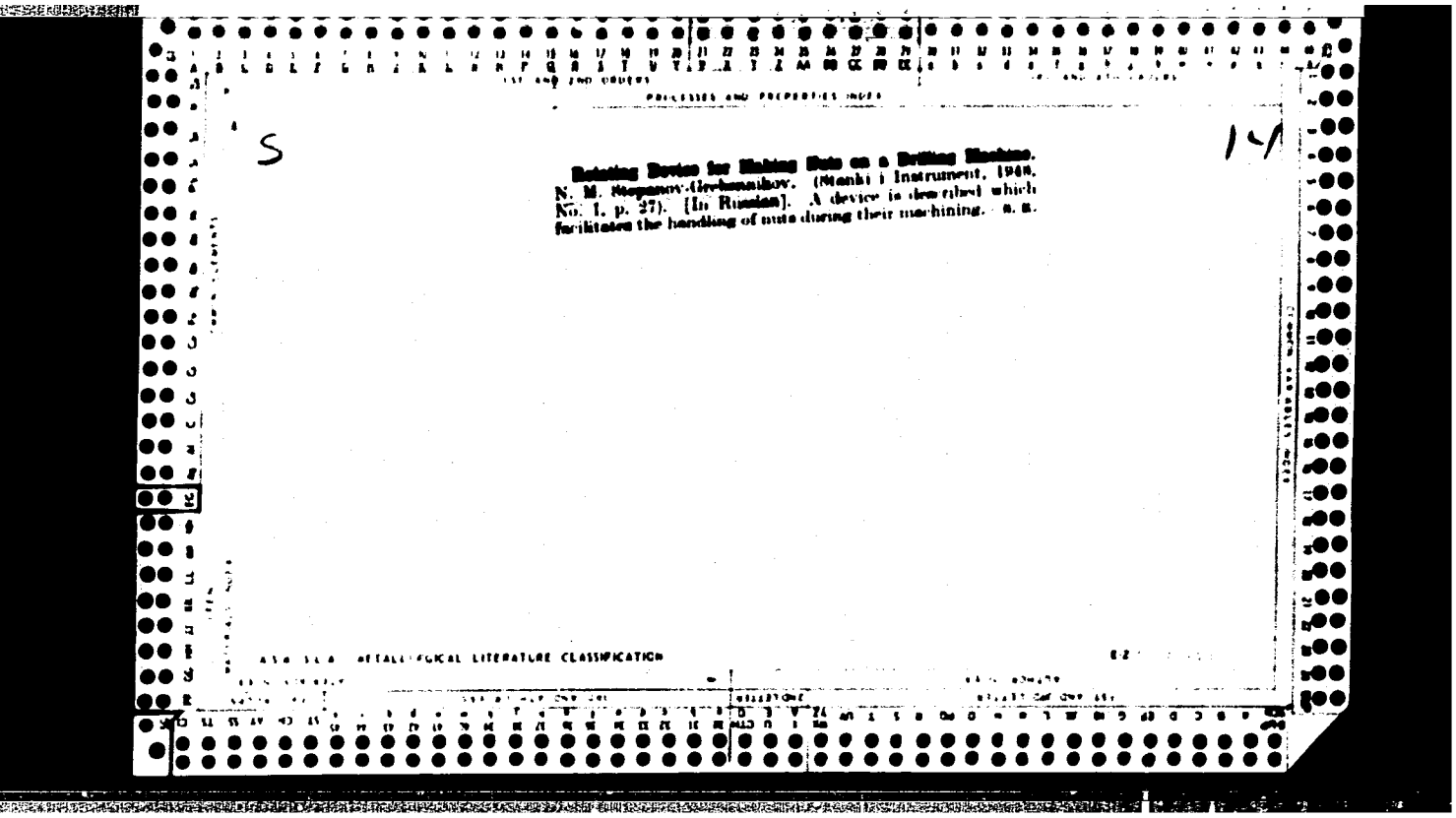
STEPANOV-[illegible], N. N.

"A Double Tool Holder for Planning Racks," Stanki i Instrument," 10, No. 12, 1939.

Report U-1505, 4 Oct 1951.



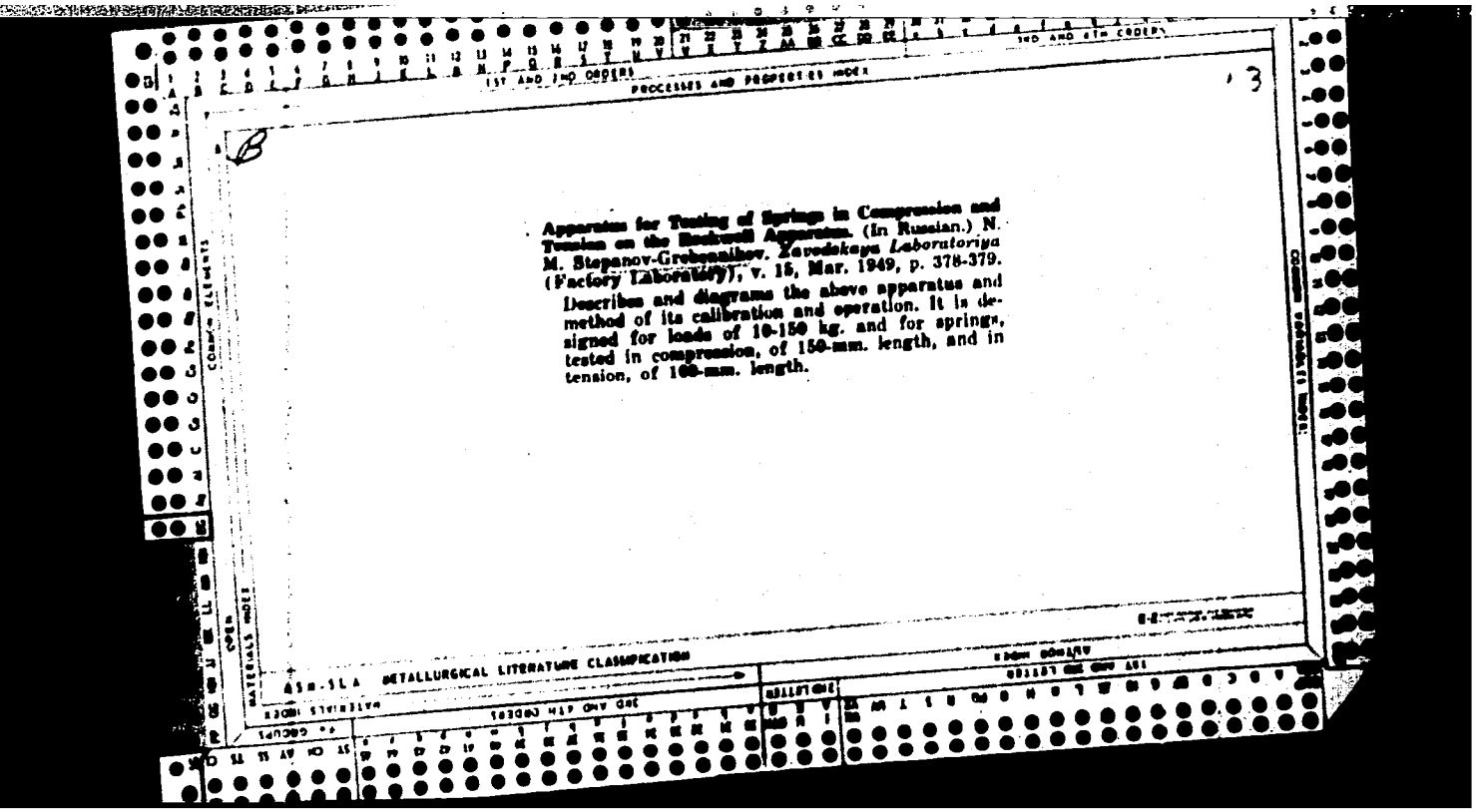
Bath for the Hot-Tinning of Long Tubes. N. M. Stepanov-Grebennikov (*Khim. Mashinostroenie*, **1960**, (8/9), 38).—[In Russian.] A description of the bath and the tinning process is given.—N. A.



S

14

Rotating Device for Making Slots on a Drilling Machine.
N. M. Stepanov-Gevkmanikov. (Stanki i Instrument, 1958, No. 1, p. 27). [In Russian]. A device is described which facilitates the handling of nuts during their machining. — A. S.



Apparatus for Testing of Springs in Compression and Tension on the Rashevskii Apparatus. (In Russian.) N. M. Stepanov-Grebennikov. *Zavodskaya Laboratoriya* (Factory Laboratory), v. 15, Mar. 1949, p. 378-379.

Describes and diagrams the above apparatus and method of its calibration and operation. It is designed for loads of 10-150 kg. and for springs, tested in compression, of 150-mm. length, and in tension, of 100-mm. length.

STEPANOV-GREBENNIKOV, N. M.

Restavratsiia tsilindrovykh kryshek dvigatelei vnutrennego sgoraniia srednei i bol'shoi moshchnosti. (Vestn. Mash., 1950, no. 10, p. 32-34)

Renovating cylinder end caps in medium and high-power internal combustion engines.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

[illegible], . .

[illegible] and [illegible]:

[illegible]-purpose instrument for semi-automatic polishing of carbide-tipped plate on lathes. Vest.mash. 31, no. 1, 1951.

[illegible] LIST of [illegible], DEPT. OF COMMERCE, [illegible] 1952. UNCLASSIFIED.

USSR/Metallurgy - Welding, Copper Aug 52

"Electric Arc Welding of Copper Using a Copper Electrode With Quality Coating," P.T. Dmitriyev, N. N. Stepanov-Grebennikov, N. I. Makeyev, Engineers

"Avtogen Delo" No 8, pp 1-4

Reviews existing methods of copper joining, finding them unsatisfactory, and suggests new method developed by group of workers of a machine-building plant after experimenting for 1 1/2 yrs. Method is based on using copper electrode with special coating named "Komsomolets-100," consisting of following components: ferromanganese, silicon copper, fluorspar, feldspar, and water glass. Discusses results of testing new electrodes.

233T45

STEPANOV-GREBENNIKOV, N. M.

233T45

STEPANOV-GREBENNIKOV, N.M.

Making a pneumatic drill from a worn-out electric drill. Vest.mash. 33 no.5:76-77 My '53. (MLRA 6:5)
(Drilling and boring machinery) (Pneumatic tools)

STEPANOV-[illegible], N. M.

USSR/Engineering - Arc welding

Card : 1/1 Pub. 128 - 18/32

Authors : Stepanov-Grebenshikov, N. M. and Makeev, N. I.

Title : Electrical arc-welding with copper-electrodes having a special coating

Periodical : Vest. mash. 34/7, 61-64, July 1954

Abstract : The author gives some information on electrical arc-welding of various alloys, with specially coated, mark ML and MS, electrodes. The composition of the electrodes, and methods of welding are described. Illustrations depicting the microstructure of steel, and other alloys, are presented. Tables; diagram.

Institution : ...

Submitted : ...

Evaluation B-83422

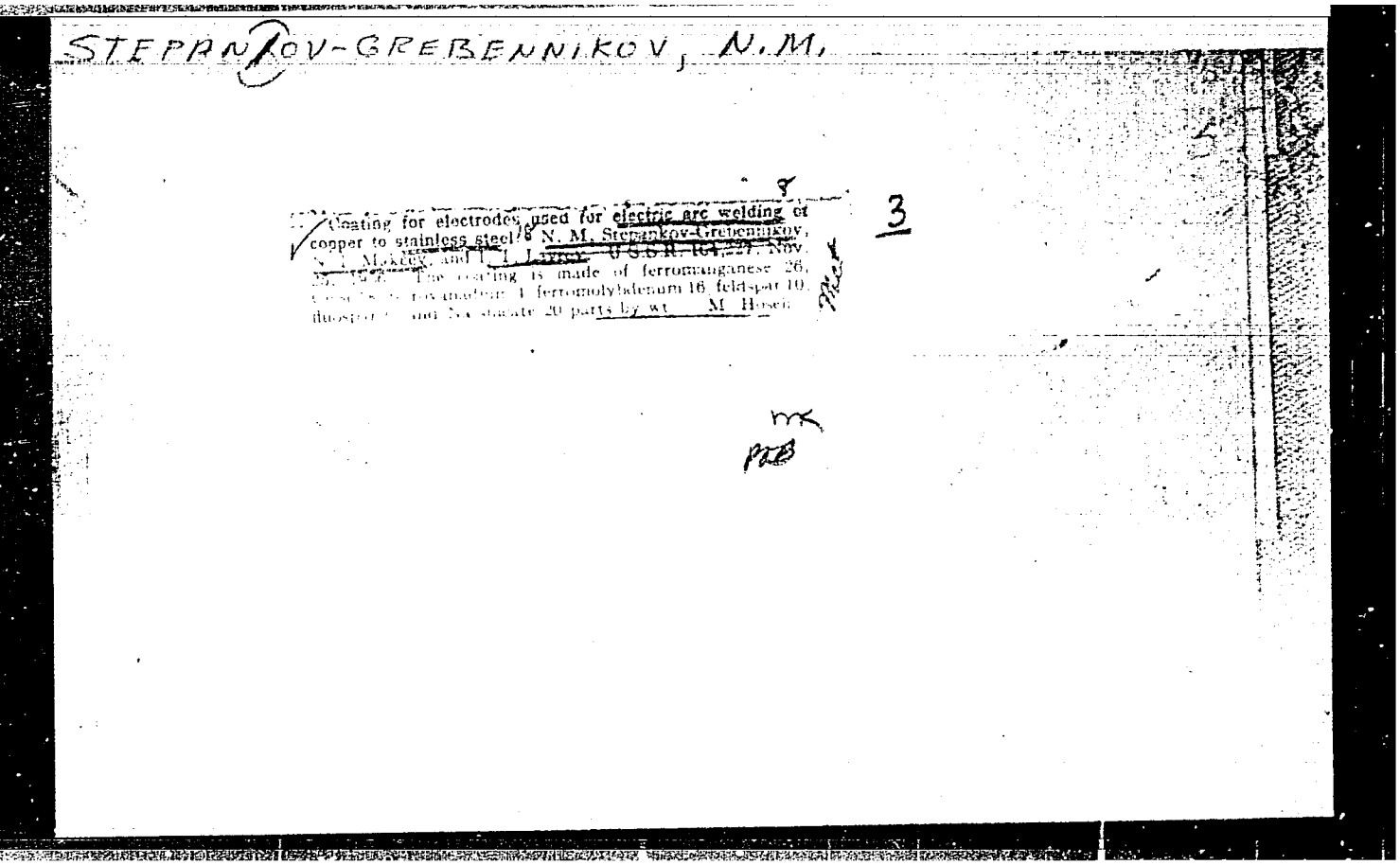
STEPANOV -- GREBENNIKOV, N.M.

5

Coating for electrodes for arc welding of copper to carbon steel. N. M. Stepanov-Grebennikov, N. I. Makeev, and I. T. Lytvov. U.S.S.R. 104,203, Nov. 25, 1956. The coating is made of ferromanganese 20, ferrosilicon 18, CuSi 12, feldspar 14, fluospar 10, and Na silicate 20 parts by wt.

M. Hosch

3



STEPANOV-GREBENNIKOV, N.M.

Coating for electrodes used for electric arc welding of copper to stainless steel. N. M. Stepankov-Grebennikov, V. I. Makarov, and T. I. Larina. USSR 104,227. Nov. 30, 1956. The coating is made of ferromanganese 26, [illegible] ferrotitanium 4 ferromolybdenum 16 feld-spar 10, fluospar [illegible] and Na silicate 20 parts by wt. M. Hosen

3

STEPANOV-GREBENNIKOV, N.M.

Attachments used in automatic machining of Raschig ring on milling machines. Izobr.v SSSR 2 no.10:39-40 O '57. (MIRA 10:11)
(Milling machines--Attachments)

Units for heat treatment of large-size cylindrical springs. Mashinostroitel' no.5:41-42 My '57. (MLRA 10:6)
(Metals--Heat treatment) (Springs (Mechanism))

STEPANOV-GREBENNIKOV, N.M.

Machining slots in flanging for swing bolts. Mashinostroitel' no.6:39 Je '57. (MLRA 10:7)

(Bolts and nuts)

AUTHOR: Stepanov-Grebennikov, N.M., Engineer 135-9-16/24

TITLE: Sorting Device for Automatic Welding-Flux (Apparat dlya proseva avtosvarochnogo flyusa)

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 9, p 33-34 (USSR)

ABSTRACT: A sorting device for automatic welding-flux, suggested by A.M.Ofitserov (Tambov plant "Komsomolets"), comprises three electrically driven sorting sieves mounted on top of each other which sort welding flux into four grain-size grades. The design is described in full detail and shown by a drawing. The productive capacity of the device is 1000-1200 kg/hr. Presently, flux for automatic welding is being sorted by manual sieving, which takes 5 minutes per 1 kg.
The article contains 1 drawing.

ASSOCIATION: Tambov "Komsomolets" Plant (Tambovskiy zavod "Komsomolets")

AVAILABLE: Library of Congress

Card 1/1

STEPANOV-GREBENNIKOV, N.M., inzh.

Modifying the construction of the piston for the 2R-3/220 compressor. Kislorod 10 no.4:39 '57. (MIRA 11:2)
(Air compressors)

STEPANOV-GREBENNIKOV, N. M.

AUTHOR: Stepanov-Grebennikov, N.M. 117-2-16/29

TITLE: Milling Cutter for Chuck Jaw Teeth (Freza dlya obrabotki zub'-yev kulachkov)

PERIODICAL: Mashinostroitel', 1958, # 2, p 32-33 (USSR)

ABSTRACT: This special face mill, devised by N.P. Rubtsov, is designed for cutting teeth on self-centering three-jaw chucks of machine tools. The mill is to be used on lathes. It will be fixed in the lathe spindle ("ДИП-200" or "ДИП-300" -lathe), and the jaw to be cut will be clamped in the tool-holder. The upper saddle will be set for full jaw tooth height, the spindle switched on low speed (12 to 20 rpm).

After the mill has passed the entire jaw blank, the jaw teeth are ready cut and relieved.

The mill increases the efficiency of the operation by more than 400 %, improves the jaws' self-centering accuracy, and increases the life of jaws.

There is 1 drawing.

AVAILABLE: Library of Congress

Card 1/1

AUTHOR: Stepanov-Grebennikov, N.M., Engineer 67-58 3-10/18

TITLE: Improvement of the Performance of the Oxygen Apparatus KG -30 (Povysheniye proizvoditel'nosti kislorodnoy ustanovki KG -30)

PERIODICAL: Kislorod, 1958, . Nr 3, pp. 41-41 (USSR)

ABSTRACT: Following a suggestion made by the manager of the oxygen station of the "Komsomolets" machine-building plant of Tambov, the attempt was made to increase production figures by increasing the number of revolutions of the apparatus. For this purpose the driving disk of 370 mm diameter on the electromotor was exchanged for one having a diameter of 407 mm. In this way the compressors performed 440-444 revs. per minute instead of the former 398-402 revs. Originally, the compressor supplied 180 m^3/h air; pressure in the heat exchanger amounted to 100 atm. excess pressure and the output of the apparatus was $\pm$ 30 m^3/h. Under the new conditions the compressor supplied 200 m^3/h air, pressure in the apparatus was reduced to 50-55 atm. excess pressure, and the output of the apparatus increased to 34-35 m^3/h oxygen. Also the time needed for starting the apparatus became shorter. Such a KG -30 forced type of apparatus proved to be both efficient and economical after

Card 1/2

Improvement of the Performance of the Oxygen Apparatus KG -30 67-58-3-10/18

having been in operation for two years, and is therefore recommended for use by other plants in which apparatus of this kind are used. It is, however, recommended first to examine the construction of the apparatus in order to make sure that its forced construction will not cause premature wear of the apparatus.

1. Oxygen--Production 2. Industrial equipment--Performance

Card 2/2

STEPANOV-GREBENNIKOV, N.M.

Modernized fettling of charging hole lids in the chemical equipment. (MIRA 14:5)
Khim.mash. no.3:40-41 My-Je '61.
(Chemical engineering--Equipment and supplies)

STEPANOV-GREBENNIKOV, N.

Innovations can be planned. Izobr. i rats. no. 5:28 My '61. (MIRA 14:5)

1. Chlen prezidiuma oblastnogo soveta Vsesoyuznogo obshchestva izobretatelev i ratsionalizatorov, rukovoditel' briza zavoda "Komsomolets", g. Tambov.
(Tambov—Machinery industry—Technological innovations)

STEPANOV-GREBENNIKOV, N.M.

Device for metal chipping. Mashinostroitel' no.10:30 O '61. (MIRA 14:9)

(Cutting machines)

STEPANOV-GREBENNIKOV, N.M., inzh.

Mechanization of the lifting of a binding clip on three-roller machines. Khim.mashinostr. no.4:37 Jl-Ag '63. (MIRA 16:9)
(Chemical engineering—Equipment and supplies)

GIL'FERDING, Rudol'f [Hilferding, Rudolf][deceased]; STEPANOV-SKVORTSOV, I.I. [translator]

[Financial capital; a study of the latest phase in the development of capitalism] Finansovyi kapital; issledovanie noveishei fazy v razvitii kapitalizma. Perevod s nemetskogo I.I.Stepanova-Skvortsova. Moskva, Izd-vo sots.-ekon.lit-ry, 1959. 490 p. (MIRA 12:5)
Translated from the German.
(Finance) (Capital)

STEPANOVA, A.

Prospects for the development of Bulgaria's economy and foreign trade. Vnesh. torg. 42 no.9:3-6 '62. (MIRA 15:9)
(Bulgaria—Economic conditions) (Bulgaria—Commerce)

STEPANOVA, A. A.

Influence of Topography Upon the Contamination of Fields and Upon the Productivity of Cultivated Plants Under the Conditions of the Mariy Right Bank of the Volga." Cand Biol Sci, Saratov U, Saratov, 1954. (RZhGeol, No 1, 1955)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

USSR/Cultivated Plants - General Problems.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15457

Author : A.A. Stepanova

Inst : Mariyskiy State Pedagogical Institute.

Title : The Effect of Relief on Field Weed Growth and the Yield of Cultivated Plants along the Mariyskiy Right Bank of the Volga.
(Vliyaniye rel'yefa na zasorennost' poley i urozhaynost' kul'turnykh rasteniy v usloviyakh Mariyskogo pravoberezh'ya Volgi).

Orig Pub : Uch. zap. Mariysk. gos. ped. in-t, 1956, 10, No 3, 33-48

Abstract : The results of the studies of 1949-1951 are reviewed. On the slopes studied, on the water shed and in the balley, one set out 129 sites of 100 square meters each, 507 sites of 0.25 square meters each and on 29 slopes

Card 1/4

2

USSR/Cultivated Plants - General Problems. M.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15457

where weed growth was studied. The descriptions of the sites and slopes included computations of the amount of shoots of the cultivated plants, the floristics of the weeds taking account of their altitude, story, abundance and phenological conditions, with a calculation of the weed stems. On the basis of this data the weeds were divided into three groups:
1. The broadly adaptable species which are encountered equally at all relief elements.
2. The mesophytics, adapted to depressions in the relief.
3. The species which are abundant at minimal moisture at heightened relief elements. The coefficients of encounterability were computed for the last two groups of weeds as well as the percentage of weed choking at the various relief elements. On the convex slope: the watershed had 10.6%, the top of the slope 26.9%, the middle of the slope 47.4%, the bottom part of the slope 76%;

Card 2/4

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15457

on the concave slopes there were respectively: 15.5, 21.5, 33.8, 43.3: in the valley there was 44.7% with a large preponderance of perennials. An investigation of the development of the parts of the weeds above ground showed a growing development curve according to the measure of progress downward along the slope, the same relation prevailing in the plant cultures. The weed development appeared as an indicator of the capacity to seed production, and moreover the seed washout with higher relief was adapted to the depression, since the weed choking is higher in the depressions. The effect of relief on the yield of cultivated plants was seen in a reduced harvest from the watershed downwards to the convex slopes and an increased harvest to the botton part of the slope with a high index for the valley. For the various elements of the relief there

MITYUSHIN, Nikolay Leont'yevich; STEPANOVA, A.A., red.; KOPELEVICH, Ye.I., red.; SHAPENKOVA, T.A., tekhn.red.

[Handling and sorting raw materials and finished products at flax mills] Priemka i sortirovka syr'ia i gotovoi produktsii na l'nozavodakh. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po legkoi promyshl., 1958. 143 p. (MIRA 12:3)
(Flax)

STEPANOVA, A.A.

Use of campolon in the treatment of Leiner's erythroderma. Vopr. pediat. 19 no.2:17-19 1951. (CIML 20:8)

1. Of Dzerzhinsky Rayon Children's Hospital (Head Physician—A.D. Shvayeva), Leningrad.

STEPANOVA, A.A.

Combination of psychological and therapeutic methods of analgesia in labor. Akush. i gin. no.5:75-76 S-O '55. (MLRA 9:1)

1. Iz rodil'nogo doma st. Lyublino Moskovskogo-Kurskoy zh.d.
(LABOR, anesthesia and analgesia
psychoprophylactic & ther. method)

STEPANOV, A.V.; STEPANOVA, A.A.; KOSTYUK, V.I.

Pyrolysis and the compression of pyrogas using a high-pressure pyrolysis chamber. Neft. i gaz. prom. no.3:56-58 Jl-S '64. (MIRA 17:12)

70-2-16/24

AUTHOR: Zhdanov, G.S., Zhuravlev, N.N., Stepanova, A.A. and Umanskiy, M.M.

TITLE: The crystal chemistry of metal hexaborides. (Kristallokhimiya geksaboridov metallov)

PERIODICAL: "Kristallografiya" (Crystallography), 1957, Vol.2, No.2, pp. 289-290 (U.S.S.R.)

ABSTRACT: The MeB_6 structure consists of a three-dimensional framework of B atoms with Me atoms in the interstices and is formally like the CsCl structure with B_6 and Me units. In group II, Be, Mg, Ca, Sr and Ba form hexaborides as do Y, La, Ce, Pr, Nd, Gd, Er, Yb in group III. The formation by the remaining lanthanides and by Sc of hexaborides can also be predicted. In group IV, SiB_6 and ThB_6 are known. When the unit cell sizes are plotted against atomic radii the compounds fall into three series corresponding to the three groups. Coefficients of thermal expansion of CaB_6 and SiB_6 have been measured by X-ray diffraction (5.9 and 6.5 x 10^{-6}, respectively) and are added to the measurements already made (A.A.Stepanova and M.M. Umanskiy, Trudy soveshchaniya po khimii bora i ego soedineniy. Fiz.-Khim. in-t. im. Karpova, 1955) for Ce, La and Ba (7.3, 6.4 and 6.8 x 10^{-6}, respectively). The coefficient

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The crystal chemistry of metal hexaborides. (Cont.)

for Ce apears to be anomalous.

There are 4 figures and 8 references, 6 of which are Slavic.

ASSOCIATION: Moscow State University. (Moskovskiy Gosudarstvennyy Universitet)

SUBMITTED: October 8, 1956.

AVAILABLE: Library of Congress

S/137/60/000/02/05/010

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No 2, p 92, # 2782

AUTHORS: Stepanova, A.A., Umanskiy, M.M.

TITLE: Parameters of the Unit Cells of Metal Hexaborides

PERIODICAL: V sb.: Bor. Tr. Konferentsii po khimii bora i yego soyedineniy, Moscow, Goskhimizdat, 1958, pp 102 - 105

B

TEXT: Information is given on results of roentgenographic investigations into temperature dependence of the parameters of Ba, La, Ce hexaboride unit cells at 500 - 810°C. Mean values of the coefficients of thermal expansion determined on the basis of data obtained are for BaB_6 $6.8 \cdot 10^{-6}$, for LaB_6 $6.4 \cdot 10^{-6}$ and for CeB_6 $7.3 \cdot 10^{-6}$.

A.P.

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SOV/70-3-1-13/26

AUTHORS: Zhuravlev, N.N. and Stepanova, ~~A.A.~~

TITLE: X-ray Determination of the Structure of ScB_2 (Rentgenograficheskoye opredeleniye struktury ScB_2)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 1, pp 83 - 85 (USSR)

ABSTRACT: There are no data in literature on the existence of compounds of scandium with boron. The compound, which was investigated by the present authors, was obtained at the Institut metallokeramiki i spetsial'nykh splavov AN SSSR (Institute for Metallo-ceramics and Special Alloys of the Ac.Sc.USSR) by G.V. Samsonov. The weight of the specimen was about 15 mg and was in the form of a powder. Powder photographs with and without rotation were obtained with the specimen. A large number of lines were found. It was shown that ScB_2 belongs to the hexagonal syngony and is isostructural with AlB_2. The following lattice constants were obtained:
$a = 3.140 \pm 0.002$ kX; $c = 3.510 \pm 0.002$ kX;
$c/a = 1.118$; $\sigma_x = 3.67$ g/cm^3; $z = 1$; space group D_{6h}^1 - C6/mmm .

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X-ray Determination of the Structure of ScB_2

The following persons are thanked for advice and help: Professor G.S. Zhdanov, Docent M.M. Umanskiy, G.V. Samsonov and N.V. Troneva.
There are 3 references, 2 of which are Soviet and 1 German.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova (Moscow State University imeni M.V. Lomonosov)

SUBMITTED: February 27, 1957

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SOV/70-3-1-19/26

AUTHORS: Stepanova, A.A. and Zhuravlev, N.N.

TITLE: X-ray Study of the Borides YbB_6, UB_4, HoB_4 and GdB_4 (Rentgenograficheskoye issledovaniye boridov YbB_6, UB_4, HoB_4 and GdB_4)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 1, pp 94 - 95 (USSR)

ABSTRACT: Specimens of the substances were prepared at the Institut metallokeramiki i spetsial'nykh splavov AN USSR (Institute for Metallo-ceramics and Special Alloys of the Ac.Sc. Ukrainian SSR) by G.V. Samsonov. They were in the form of powders. The thermal expansion of YbB_6 (cubic) was determined and the coefficient of thermal expansion for the substance was found to be 5.85×10^{-6} deg^{-1}. Figure 1 shows the dependence of the period a of this substance on temperature. The following table gives the data obtained for the other three substances (tetragonal):

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X-ray Study of the Borides YbB_6, UB_4, HoB_4 and GdB_4

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Compound	a in kX	c in kX
UB_4	6.983 ± 0.005	3.930 + 0.003
HoB_4	7.050 ± 0.005	3.992 ± 0.003
GdB_4	7.079 ± 0.005	4.030 ± 0.004

Professor G.S. Zhdanov, Docent M.M. Umanskiy and Doctor of Technical Sciences G.V. Samsonov are thanked for their assistance. There are 1 figure, 1 table and 3 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova (Moscow State University imeni M.V. Lomonosov)

SUBMITTED: April 30, 1957

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24 (8)

AUTHORS: Zhuravlev, N. N., Stepanova, A. A., Zyuzin, N. I.

SOV/56-37-3-55/62

TITLE: On the Problem of the Superconductivity of the Compound BiPt

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 3(9), pp 880 - 881 (USSR)

ABSTRACT: The critical temperatures for BiPt found by various authors partly differ considerably. Whereas, e.g., according to Matthias, T_c = 1.21 °K, N. Ye. Alekseyevskiy et al. found 2.4 °K, but he also showed that in some BiPt-alloys superconductivity does not occur down to 1.3 °K (Refs 2,3). As shown by reference 4, BiPt crystallizes only in one form viz. hexagonally with the parameters a = 4.20 and c = 5.55 Å (NiAs-structure). Radiographical investigations carried out by the authors of this "Letter to the Editor" gave the same result. Temperature investigations also showed that it crystallizes in NiAs-structure, and the thermal expansion coefficients (parallel and perpendicular to the hexagonal axis) were determined as amounting to $(4.0 \pm 1.0).10^{-6}$ degree^{-1} and $(19.0 \pm 2.0).10^{-6}$ degree^{-1}.

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On the Problem of the Superconductivity of the Compound BiPt

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The authors investigated several BiPt-alloys of different composition also stoichiometrical ones, and subjected them to different types of thermal treatment. It was, however, found again that in all cases the BiPt-phase in an AsNi-structure crystallizes, and the lattice parameters were determined as amounting to a = 4.315 and c = 5.490 ± 0.005 Å. The alloys were investigated radiographically by means of the powder method, and the maximum change of the volume of an elementary cell was found to amount to ~ 0.8% as against the stoichiometric composition (48.3% by weight Pt). This reduction of the elementary cell was found at 45% by weight Pt. The change of the size of the elementary cell and the herewith connected variation of the distance between two Bi-atoms might be responsible for the variation of T_c; already in a previous paper (Ref 7) it was shown that a decrease of the minimum interatomic Bi-Bi distances leads to an increase of T_c. The authors thank Professor G. S. Zhdanov and N. Ye. Alekseyevskiy for discussions. There are 7 references, 5 of which are Soviet.

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Moscow State Univ.

PHASE I BOOK EXPLOITATION SOV/4164

Vsesoyuznoye soveshchaniye po splavam redkikh metallov. 1st, Moscow, 1957

Redkiye metally i splavy; trudy... (Rare Metals and Alloys; Transactions of the First All-Union Conference on Rare-Metal Alloys) Moscow, Metallurgizdat, 1960. 438 p. 3,150 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Institut metallurgii; USSR Komissiya po redkim metallam pri nauchno-tekhnicheskom komitete.

Ed.: I.I. Shapovalov; Ed. of Publishing House: O.M. Kamayeva; Tech. Ed.: P.G. Islent'yeva.

PURPOSE: This collection of articles is intended for metallurgical engineers, physicists, and workers in the machine-building and radio-engineering industries. It may also be used by students of schools of higher education.

COVERAGE: The collection contains technical papers which were presented and discussed at the First All-Union Conference on Rare-Metal Alloys, held in the Institute of Metallurgy, Academy of Sciences USSR in November 1957. Results of investigations of rare-metal alloys, titanium, and copper-base alloys with additions of rare metals are presented and discussed along with investigations of rhenium, vanadium, niobium, and their alloys. The effect of rare-earth metals on properties of magnesium alloys and steels is analyzed. The uses of rhenium as a dehydrating catalyst, electroplating material, and material suitable for making plugs for automobile electrical systems are discussed. Also, the effect of the addition of certain elements on the properties of heat-resistant steel is examined and alloys with special physical properties (particularly semiconductive alloys) are discussed. No personalities are mentioned. Soviet and non-Soviet references accompany some of the articles.

PART II. TITANIUM, AND COPPER-BASE ALLOYS WITH RARE-METAL ADDITIONS

Rare Metals (Cont.) SOV/4164

PART VI. ALLOYS WITH SPECIAL PHYSICAL PROPERTIES

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10/14/60

STEPANOVA, A. A.