AUTHOR SHPETNYY A.I.

TITLE The Energy Distribution and the Angular Distribution of the Reactions Be^9 (d,n)Be^{10} resulting from Neutrons. (Energeticheskoye i uglovoye raspredeleniye neytronov iz reaktsii Be^9(d,n)B^{10}.- Russian)

PA - 2952

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 32, Nr 3, pp 423 - 431 (USSR).

Received: 6/1957 Reviewed: 7/1957

ABSTRACT The present paper more accurately than before investigates the energy spectra and the angular distribution of the neutrons resulting from the reactions Be^9 (d,n)Be^{10} in dependence upon the energy of the inciding deuterons within the domain of from 0,5 to 1,6 MeV.

Experimental Order: The bundle of fast deuterons coming from an electrostatic generator, according to the magnetic analysis, impinges on a thin target of metallic beryllium. The energy of the impinging deuterons amounted to 0,5; 0,8; 1,0; 1,2; 1,4 and 1,6 MeV. The neutrons created by the reaction mentioned were recorded by means of the traces of the recoil protons in the emulsion. The author examined 33 photoplates with 400 to 800 traces of photoplates each.

CARD 1/3

PA - 2952

The Energy Distribution and the Angular Distribution of the Reactions Be^9 (d,n)Be^{10} resulting from Neutrons.

The energy spectra of the neutrons are shown in form of several diagrams. Five groups of neutrons were well dissolved in all spectra; they correspond to the five states of the nucleus B^{10} formed. For each maximum the energy Q of the reaction was computed, and the mean values of Q are given in a table for certain values of the deuteron energy E_d. This table contains also the corresponding values of the excitation energy E_x for the five states of B^{10}. The measuring results obtained here agree well with the results found previously.
The angular distribution of the neutrons for the five states of the B^{10} is shown in form of a diagram. Only the fourth excited state with E_x = 3,62 MeV is created by means of a mechanical stripping process.
The angular distribution of the remaining four groups of neutrons is characteristic of a process in which a compound nucleus is created. This angular distribution, however, also points in the direction of an interference of the process of stripping.

CARD 2/3

VAL'TER, A.K.; VATSET, P.I.; KOLESNIKOV, L.Ya.; TONAPETYAN, S.G. [Tonapetian, S.H.]; CHERNYAVSKIY, K.K. [Cherniavs'kyi, K.K.]; SHPETNYY, A.I. [Sgpetnyi, O.I.]

Neutron yield in the reaction $Be^{9}(t, n)$. Ukr. fiz. zhur. 6 no.4:457-460 Jl-Ag '61. (MIRA 14:9)

1. Fiziko-tekhnicheskiy institut AN USSR, g. Khar'kov.
(Nuclear reactions) (Neutrons--Emission)

VAL'TER, A.K.; VATSET, P.I.; KOLESNIKOV, L.[illegible]a.; TONAPETYAN, S.G.; CHERNYAVSKIY, K.K.; SHPETNYY, A.I.

Neutron yield from Li^6 (t, n) and Li^7 (t, n) reactions. Atom.energ. 10 no.6:577-586 Je '61. (MIRA 14:6)
(Neutrons) (Lithium—Isotopes) (Nuclear reactions)

VAL'TER, A.K.; VATSET, P.I.; KOLESNIKOV, L.Ya.; TONAPETYAN, S.G.; CHERNYAVSKIY, K.K.; SHPETNYY, A.I.

Neutron yield in the reaction of tritions with fluorine and aluminum nuclei. Zhur. eksp. i teor. fiz. 40 no.5:1237-1243 My '61. (MIRA 14:7)

1. Fiziko-tekhnicheskiy institut AN Ukrainskoy SSR.
(Nuclear reactions) (Tritons(Tritium ions)) (Neutrons—Measurement)

YLASENKO, Y.G. [Vlasenko, V.H.]; LUBYANYY, V.V. [Lub'yanyy, V.V.]; ...N', V.I.; SHPETNYY, A.I. [Shpetnyi, A.I.]

Spark chamber. Ukr. fiz. zhur. 10 no.1:21-25 Ja '65. (MIRA 18:4)

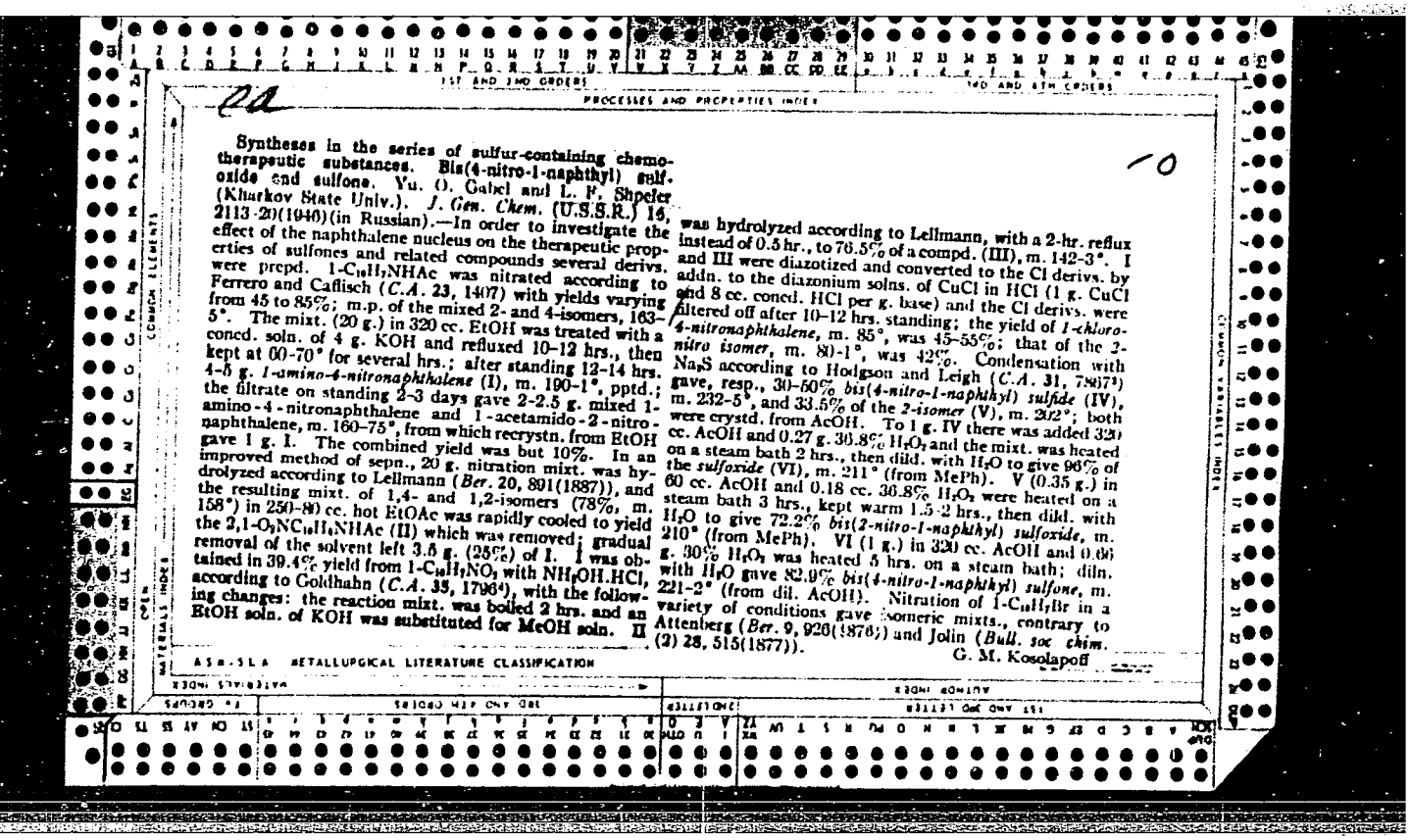
1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

SHEKHTMAN, A.P.

Global stages of the tectogenesis and Triassic igneous activity in the northeastern U.S.S.R. Izv. AN SSSR. Ser. geol. 29 no.2: 109-112 F '64. (MIRA 17:5)

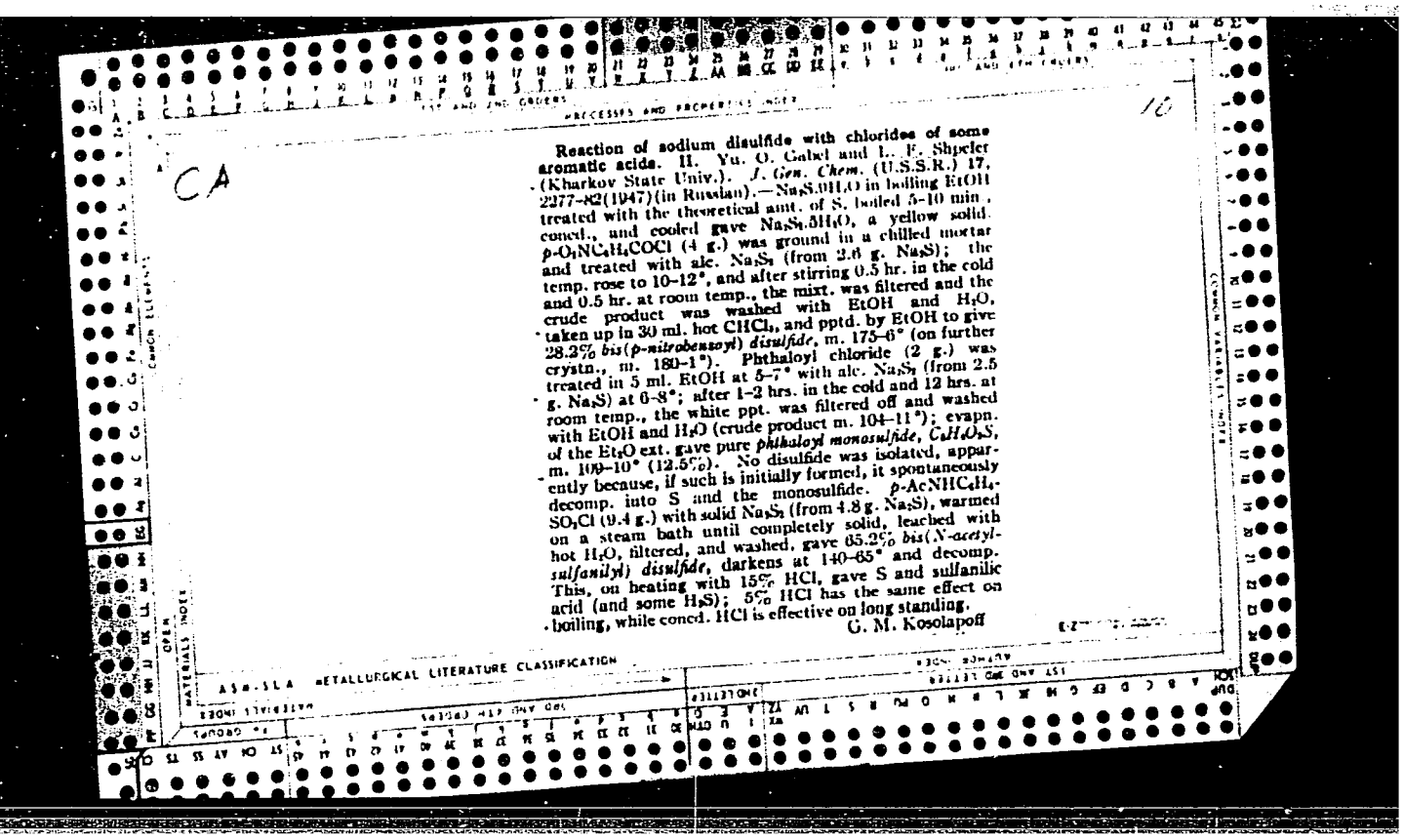
SHPEYZER, G.M.; ZAYDMAN, N.M.

Direct potentiometric determination of sulfides in waters.
Zav.lab. 31 no.3:272-273 '65.
(MIRA 18:12)



Syntheses in the series of sulfur-containing chemotherapeutic substances. Bis(4-nitro-1-naphthyl) sulfoxide and sulfone. Yu. O. Gabel and L. F. Shpefer (Kharkov State Univ.). *J. Gen. Chem.* (U.S.S.R.) 16, 2113-20(1946)(in Russian).—In order to investigate the effect of the naphthalene nucleus on the therapeutic properties of sulfones and related compounds several derivs. were prepd. 1-$C_{10}H_7NHAc$ was nitrated according to Ferrero and Caflisch (*C.A.* 23, 1407) with yields varying from 45 to 85%; m.p. of the mixed 2- and 4-isomers, 163–5°. The mixt. (20 g.) in 320 cc. EtOH was treated with a concd. soln. of 4 g. KOH and refluxed 10–12 hrs., then kept at 60–70° for several hrs.; after standing 12–14 hrs. 4–5 g. *1-amino-4-nitronaphthalene* (I), m. 190–1°, pptd.; the filtrate on standing 2–3 days gave 2–2.5 g. mixed 1-amino-4-nitronaphthalene and 1-acetamido-2-nitronaphthalene, m. 160–75°, from which recrystn. from EtOH gave 1 g. I. The combined yield was but 10%. In an improved method of sepn., 20 g. nitration mixt. was hydrolyzed according to Lellmann (*Ber.* 20, 891(1887)), and the resulting mixt. of 1,4- and 1,2-isomers (78%, m. 158°) in 250–80 cc. hot EtOAc was rapidly cooled to yield the 2,1-$O_2NC_{10}H_4NHAc$ (II) which was removed; gradual removal of the solvent left 3.5 g. (25%) of I. I was obtained in 39.4% yield from 1-$C_{10}H_7NO_2$ with $NH_2OH.HCl$, according to Goldhahn (*C.A.* 35, 1796⁴), with the following changes: the reaction mixt. was boiled 2 hrs. and an EtOH soln. of KOH was substituted for MeOH soln. II was hydrolyzed according to Lellmann, with a 2-hr. reflux instead of 0.5 hr., to 76.5% of a compd. (III), m. 142–3°. I and III were diazotized and converted to the Cl derivs. by addn. to the diazonium solns. of CuCl in HCl (1 g. CuCl and 8 cc. concd. HCl per g. base) and the Cl derivs. were filtered off after 10–12 hrs. standing; the yield of *1-chloro-4-nitronaphthalene*, m. 85°, was 45–55%; that of the *2-nitro isomer*, m. 80–1°, was 42%. Condensation with Na_2S according to Hodgson and Leigh (*C.A.* 31, 7897) gave, resp., 30–50% *bis(4-nitro-1-naphthyl) sulfide* (IV), m. 232–5°, and 33.5% of the *2-isomer* (V), m. 202°; both were crystd. from AcOH. To 1 g. IV there was added 320 cc. AcOH and 0.27 g. 30.8% H_2O_2 and the mixt. was heated on a steam bath 2 hrs., then dild. with H_2O to give 96% of the *sulfoxide* (VI), m. 211° (from MePh). V (0.35 g.) in 60 cc. AcOH and 0.18 cc. 36.8% H_2O_2 were heated on a steam bath 3 hrs., kept warm 1.5–2 hrs., then dild. with H_2O to give 72.2% *bis(2-nitro-1-naphthyl) sulfoxide*, m. 210° (from MePh). VI (1 g.) in 320 cc. AcOH and 0.60 g. 30% H_2O_2 was heated 5 hrs. on a steam bath; dild. with H_2O gave 82.9% *bis(4-nitro-1-naphthyl) sulfone*, m. 221–2° (from dil. AcOH). Nitration of 1-$C_{10}H_7Br$ in a variety of conditions gave isomeric mixts., contrary to Attenberg (*Ber.* 9, 926(1876)) and Jolin (*Bull. soc. chim.* (2) 28, 515(1877)).

G. M. Kosolapoff



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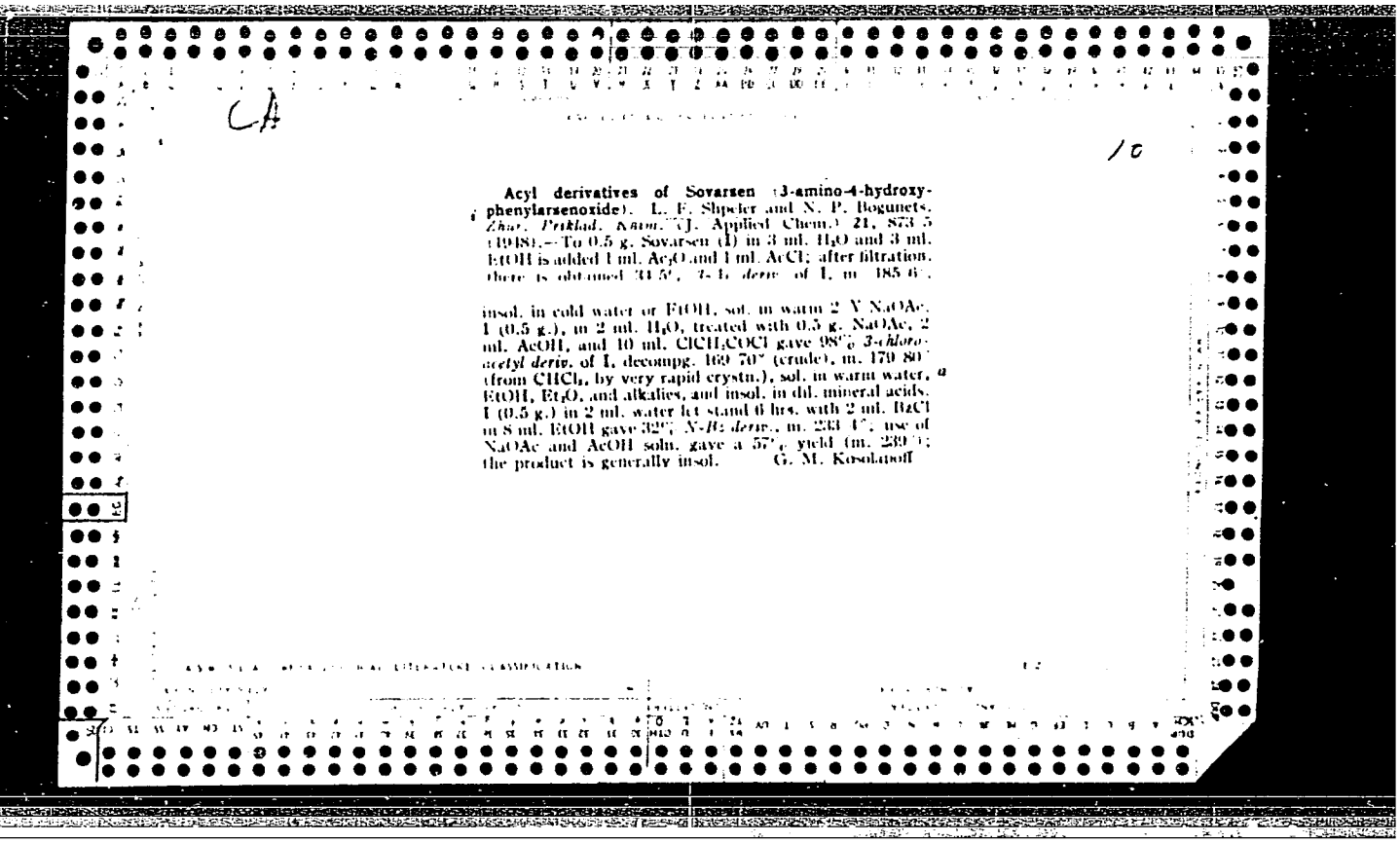
16

Reaction of sodium disulfide with chlorides of some aromatic acids. II. Yu. O. Gabel and L. F. Shpeler (Kharkov State Univ.). *J. Gen. Chem.* (U.S.S.R.) 17, 2277–82(1947)(in Russian).—$Na_2S.9H_2O$ in boiling EtOH treated with the theoretical amt. of S, boiled 5–10 min., concd., and cooled gave $Na_2S_5.5H_2O$, a yellow solid. *p*-$O_2NC_6H_4COCl$ (4 g.) was ground in a chilled mortar and treated with alc. Na_2S_5 (from 3.6 g. Na_2S); the temp. rose to 10–12°, and after stirring 0.5 hr. in the cold and 0.5 hr. at room temp., the mixt. was filtered and the crude product was washed with EtOH and H_2O, taken up in 30 ml. hot $CHCl_3$, and pptd. by EtOH to give 28.2% *bis(p-nitrobenzoyl) disulfide*, m. 175–6° (on further crystn., m. 180–1°). Phthaloyl chloride (2 g.) was treated in 5 ml. EtOH at 5–7° with alc. Na_2S_5 (from 2.5 g. Na_2S) at 0–8°; after 1–2 hrs. in the cold and 12 hrs. at room temp., the white ppt. was filtered off and washed with EtOH and H_2O (crude product m. 104–11°); evapn. of the Et_2O ext. gave pure *phthaloyl monosulfide*, $C_8H_4O_2S$, m. 109–10° (12.5%). No disulfide was isolated, apparently because, if such is initially formed, it spontaneously decomp. into S and the monosulfide. *p*-$AcNHC_6H_4SO_2Cl$ (9.4 g.) with solid Na_2S_5 (from 4.8 g. Na_2S), warmed on a steam bath until completely solid, leached with hot H_2O, filtered, and washed, gave 65.2% *bis(N-acetylsulfanilyl) disulfide*, darkens at 140–65° and decomp. This, on heating with 15% HCl, gave S and sulfanilic acid (and some H_2S); 5% HCl has the same effect on boiling, while concd. HCl is effective on long standing.

G. M. Kosolapoff



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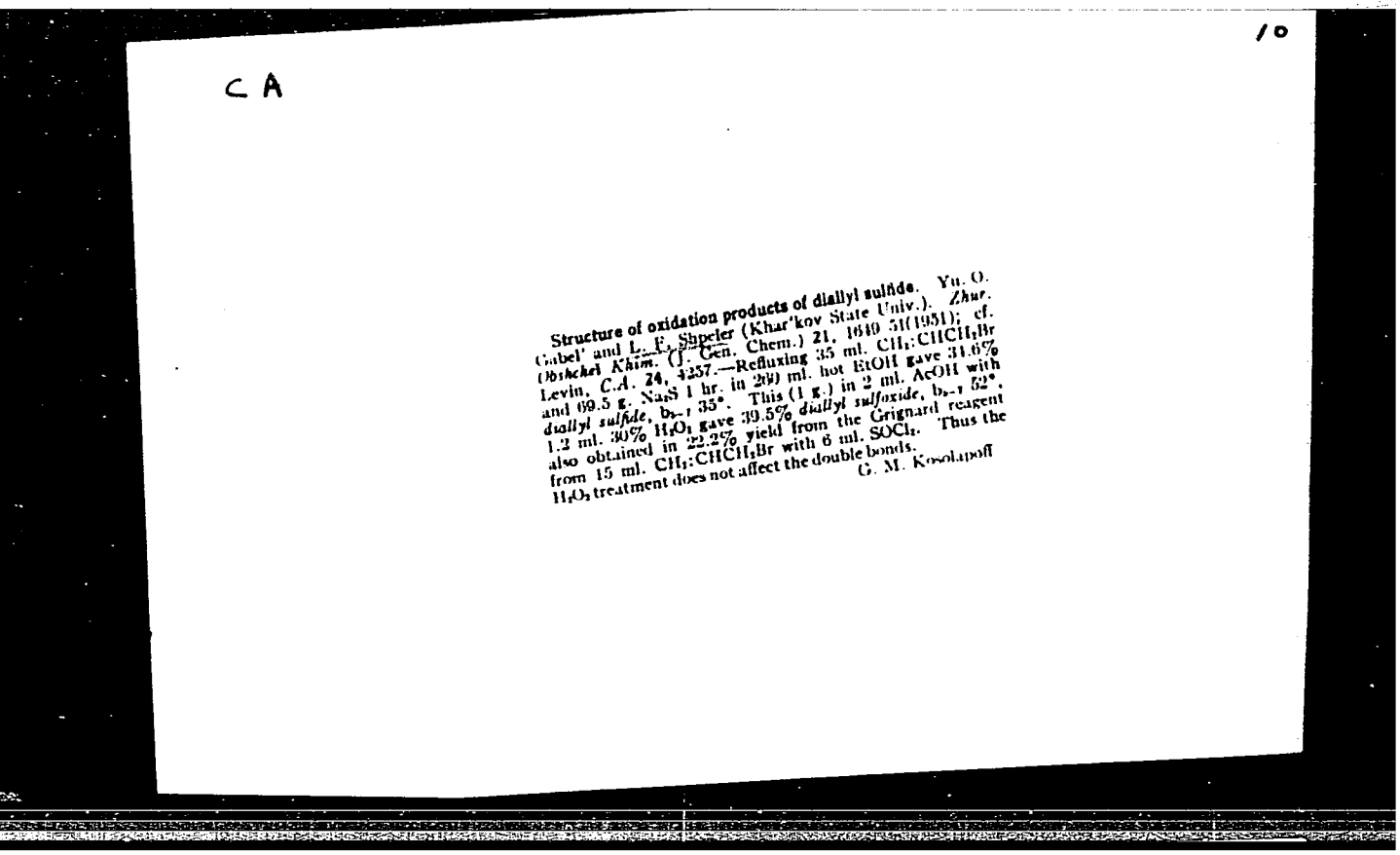
10

Acyl derivatives of Sovarsen (3-amino-4-hydroxyphenylarsenoxide). L. F. Shpeler and N. P. Bogunets. *Zhur. Prikład. Khim.* (J. Applied Chem.) 21, 873-5 (1948).—To 0.5 g. Sovarsen (I) in 3 ml. H_2O and 3 ml. EtOH is added 1 ml. Ac_2O and 1 ml. AcCl; after filtration, there is obtained 34.5%, 7-I *deriv.* of I, m. 185-6°, insol. in cold water or EtOH, sol. in warm 2 *N* NaOAc. I (0.5 g.), in 2 ml. H_2O, treated with 0.5 g. NaOAc, 2 ml. AcOH, and 10 ml. $ClCH_2COCl$ gave 98% *3-chloroacetyl deriv.* of I, decompg. 169-70° (crude), m. 179-80° (from $CHCl_3$, by very rapid crystn.), sol. in warm water, EtOH, Et_2O, and alkalies, and insol. in dil. mineral acids. I (0.5 g.) in 2 ml. water let stand 6 hrs. with 2 ml. BzCl in 8 ml. EtOH gave 32% *N-Bz deriv.*, m. 233-4°; use of NaOAc and AcOH soln. gave a 57% yield (m. 230°); the product is generally insol. G. M. Kosolapoff



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C A

Structure of oxidation products of diallyl sulfide. Yu. O. Gabel' and L. F. Shpeler (Khar'kov State Univ.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 1040-51(1951); cf. Levin, *C.A.* 24, 3257.—Refluxing 35 ml. CH_2:$CHCH_2Br$ and 69.5 g. NaS 1 hr. in 200 ml. hot EtOH gave 31.6% *diallyl sulfide*, b_{15} 35°. This (1 g.) in 2 ml. AcOH with 1.2 ml. 30% H_2O_2 gave 39.5% *diallyl sulfoxide*, $b_{0.1}$ 52°, also obtained in 22.2% yield from the Grignard reagent from 15 ml. CH_2:$CHCH_2Br$ with 6 ml. $SOCl_2$. Thus the H_2O_2 treatment does not affect the double bonds.

G. M. Kosolapoff

SHPEYYER, L.F.; PAVLOVSKAYA, M.Ye.

Synthesis of nitrogen derivatives of phenocyacetic acid. Report No.1: Azophenoxyacetic acids. Ukr. khim. zhur. 30 no.1:63-65 '64. (MIRA 17:6)

1. Khar'kovskiy sel'skokhozyaystvennyy institut imeni V.V. Dokuchayeva.

SHPEYER, M.G., inzhener.

Operating heating networks. Energetik 5 no.3:5-7 Mr '57. (MLRA 10:3)

(Heating from central stations)

SOV/94-58-12-14/19

AUTHOR: Shpeyer, M.G., Engineer

TITLE: Conference on the Development of District Heating in the USSR (Soveshchaniye po voprosam dal'neyshego razvitiya teplofikatsii SSSR)

PERIODICAL: Promyshlennaya Energetika, 1958, Nr 12, pp 29-31 (USSR)

ABSTRACT: In June 1958, there was held in Moscow an All-Union Conference on the future development of district heating in the USSR called by the Moscow Directorate of the Scientific-Technical Society of the Power Industry and the High Pressure Steam Commission of the Power Institute, Academy of Sciences USSR. The conference was attended by representatives of the Academy of Sciences, of State Plans USSR, RSFSR and UkrSSR, Councils of National Economy, Scientific Research Institutes and operating and maintenance organisations. The attendance was 237. Engineer B.I.Dub of the Ministry of Power Stations noted that further development of district heating would be based on the construction of large stations for high and super-high steam conditions with 50 and 100 MW turbines types VPT-50, VT-50 and VT-100. Doctor of Technical Sciences S.F.Kop'yev of the Power Institute of

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Conference on the Development of District Heating in the USSR

the Academy of Sciences of the USSR, pointed out difficulties arising from the absence of a standard procedure for making technical and economic evaluations of various systems of heat supply. The Power Institute, Academy of Sciences of the USSR is doing work on this problem. Professor L.A.Melent'yev of the Leningrad Laboratory of the Power Institute, Academy of Sciences of the USSR, noted that at present the effectiveness of combined generation of heat and electricity is not very great because of the great lag in the construction of heating systems and the inadequate use that is being made of pass-outs on turbines. The rate of development of district heating must be considerably accelerated. A.A.Nikolayev, of Teploelektroproyekt, pointed out the need to construct large heat and electric power stations. Professor Lozhkin of the Central Boiler Turbine Institute pointed out the advantages of steam-gas installations for district heating purposes. Ya.M.Ostrovskiy of Mosenergo pointed out that the extensive housing construction of Moscow would require

Conference on the Development of District Heating in the USSR

many more heat and power stations in the near future. The development of district heating in Leningrad was described by I.S.Lanin of Lenenergo. V.D.Blankman of Kiyevenergo gave a similar account in respect of Kiyev. The conference decided that the main directions of heat supply development should be as follows: heat and electric power stations should be constructed instead of boiler houses for industrial process steam supply; when heat supply from Heat and Electric Power Stations is not economically justified large boiler houses should be provided for heat supply to both industry and housing; the use of gas or liquid fuel will greatly reduce the capital costs required for heat and electric power stations; in calculating the economic effect of heat supply the correct basis is the cost of fuel that is displaced when the heat supply is provided.

SOV/94-58-12-14/19

Conference on the Development of District Heating in the USSR

A number of detailed recommendations are made about the best ways of developing district heating in the future.

Card 4/4

SOV/96-59-6-19/22

AUTHOR: Shpeyer, M.G. (Engineer)

TITLE: Conference on the Construction of Thermal Systems (Soveshchaniye po voprosam stroitel'stva teplovykh setey)

PERIODICAL: Teploenergetika, 1959, Nr 6, pp 90-91 (USSR)

ABSTRACT: An All-Union Conference on the construction of thermal systems was held in Moscow on the 11th - 13th March; it was convened by the Moscow Directorate of the Scientific-Technical Society of the Power Industry (District Heating Section). Representatives of the Acad.Sci. USSR, GOSSTROY USSR, GOSPLAN USSR, Councils of National Economy, design, operating, and erection organisations, and educational and research institutes participated in the conference. Thirteen reports were read and a number of communications were made. Ye.Ya. Sokolov read a report on 'The present state and future prospects of district heating'. The reports by Engineer S.Ye. Zakharenko of Mosteploset'stroy and Engineer A.A. Gerbko (Mospodzemstroy) dealt with the need for a review of methods of laying heating systems. Engineer A.I. Odnopozov (Glavleningradstroy)described the specially difficult conditions of laying heating systems in

Card 1/2

Conference on the Construction of Thermal Systems

Leningrad. The report of Cand.Tech.Sci. A.A. Skvortsov of the All-Union Thermal-Technical Institute stressed the need to mechanise the construction of heating systems as far as possible. Engineer A.A. Lyamin of Mosenergoproyekt described the use of ready-made reinforced concrete ducts for the construction of large diameter heat supply pipes. Cand.Tech.Sci. V.P. Vital'yev of ORGRES discussed costs of different methods of making heating systems. Engineer M.G. Shpeyer of Teploelektroproyekt discussed the mechanical strength of different types of heating supply system construction. The Conference noted the need to introduce new types of construction and thermal insulation. The Conference requested various responsible bodies to test a number of new types of construction. Other detailed recommendations were made.

Card 2/2 There are no figures, no references.

SHPEYER, M.G.

Hydropneumatic method of rinsing heating networks and systems.
Vod.i san.tekh. no.7:9-11 Jl '59. (MIRA 12:9)
(Heating pipes)

SHPEYER, M.G.

Conference on outlooks for the development of districts heating of cities in the U.S.S.R. Prom.energ. 15 no.4:50-51 Ap '60. (MIRA 13:6)
(Heating from central stations--Congresses)

ZELIKSON, Nison Moiseyevich; SHPEYER, Mikhail Grigor'yevich; SIMEL'NIKOVA, L.N., red.; BORUNOV, N.I., tekhn. red.

[Heat insulation of the piping of heat distribution networks] Teplovaia izoliatsiia truboprovodov teplovykh setei. Moskva, Gosenergoizdat, 1962. 127 p. (MIRA 15:10)
(Heating pipes) (Insulation (Heat))

SHPEYER, M.G., inzh.

Plenary session of the Central Heating Section of the Scientific and Technical Society of the Power Industry. Elek. sta. 33 no.6:93-94 Je '62. (MIRA 15:7)
(Heating from central stations--Congresses)

SHPEYER, M.G., inzh.

Conference on the operation of municipal central heating networks. Elek. sta. 34 no.8:94 Ag '63. (MIRA 16:11)

KHAZANOV, M.A., professor; SHPEYER, S.Ye.; KRASNOPERKO, R.A.

Clinical course and picture of acute poliomyelitis. Klin.med. 34 no.4: 66-73 Ap '53. (MLRA 6:7)

1. Klinika nervnykh bolezney Minskogo meditsinskogo instituta.
(Poliomyelitis)

SHPEYER, V. M. (Engr.)

"Excavation of Ground in Digging Basement Pits for Residential and Public Buildings." Cand Tech Sci, Sci Res Inst of Construction Engineering, Academy of Architecture USSR, 5 Mar 54. Dissertation (Vechernyaya Moskva Moscow, 24 Feb 54)

SO: SUM 186, 19 Aug 1954

SHPEYER, V.M., kand.tekhn.nauk; BARON, F.Ya., kand.tekhn.nauk; GRISHNEVA, M.D., mladshiy nauchnyy sotrudnik; SOLOV'YEVA, M.S., mladshiy nauchnyy sotrudnik; PETROVA, V.V., red.izd-va; OSENKO, L.M., tekhn.red.

[Information for organizing mass construction of settlement buildings of few stories in economic regions] Ukazaniia po organizatsii massovogo zhilishchnogo maloetazhnogo stroitel'stva poselkov v ekonomicheskikh raionakh. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 63 p. (MIRA 13:1)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Sotrudniki sektora organizatsii zhilishchnogo stroitel'stva Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu (NIIOMTP) (for Shpeyer, Baron, Greshneva, Solov'yeva).
(Assembly-line methods) (Construction industry)

SHPEYER, V., kand.tekhn.nauk

Build cheaply and efficiently. NTO 2 no.4:35-36 Ap '60. (MIRA 13:6)

(Building)

VERIGO, G.S., inzhener; SHPEYER, V.N., inzhener.

Preparation and assembly of large-block cornices in the construction at Moscow State University. Mekh.stroi. 10 no.12:26-27 D '53. (MLRA 6:11)
(Cornice work)

CHUDNYY, Aleksandr Yakovlevich; SHPEYYER, L.F., otv. red.;
FISHCHENKO, B.V., red.

[Problems and exercises in organic chemistry] Zadachi i uprazhneniia po organicheskoi khimii. Khar'kov, Izd-vo Khar'kovskogo gos. univ., 1965. 130 p. (MIRA 18:12)

SHPEYYER, N. A.

68-1-10/21

AUTHOR: Simachev, L.V., Peleshuk, M.I., Gekhtman, D.Ya., Shpeyyer, N.A., Pryakhin, L.G. and Gerasimov, V.I.

TITLE: Comments on the Paper of R.Z. Lerner "On Changes in the Composition of the Coke Oven Department for a Considerable Increase in the Number of Coke Ovens in a Battery". (Otkliki na statyu R.Z. Lernera "Ob izmenenii komponovki koksovogo tsekha dlya znachitel'nogo uvelicheniya chisla pechey v batareye")

PERIODICAL: Koks i Khimiya, 1957, No.1, pp. 35 - 36 (USSR)

ABSTRACT: These relate to the paper published in Koks i Khimiya, 1956, No.4. The authors agree with the proposals of R.Z. Lerner (batteries of 100 ovens) and consider that 4 batteries of the proposed type should be urgently designed. There is 1 table.

ASSOCIATION: Glavmekhanomontazh and Koksokhimmontazh.

AVAILABLE: Library of Congress

Card 1/1

LUSHKOV, Natan Lazarevich; RAZDUY, Feliks Ivanovich; SHPEYZMAN, Beniamin Matveyevich; VEYNGARTEN, A.M., otv.red.; STOLYARSKIY, L.L., red.; TSAL, R.K., tekhn.red.

[Hydrogen in welded seams and its elimination] Vodorod v svarnykh shvakh i bor'ba s nim. Leningrad, Gos.soiuznoe izd-vo sudostroit.promyshl., 1959. 55 p. (MIRA 12-7)
(Electric welding)

SHPEYZMAN, L.M., kandidat tekhnicheskikh nauk.

Utilization of waste heat by means of heat pumps for refrigeration and heat supply. Trudy LTIKHP 11:63-73 '56. (MLRA 10:6)

1. Kafedra kholodil'nykh ustanovok.
(Heat pumps) (Refrigeration and refrigerating machinery)

SHPEYZMAN, M. N.

"Investigation of the Trapezoidal Threading Process Done by Milling." Cand Tech Sci, Tallin Polytechnic Inst, Min Higher Education USSR, Tallin, 1955. (KL, No 14, Apr 55)

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

135-9-8/24

AUTHOR: Shpeyzman , M.M., Candidate of Technical Sciences

TITLE: The "MCT-1" Type Friction Buff Welding Machine (Mashina tipa "MCT-1" dlya stykovoy svarki treniyem)

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 9, p 23-24 (USSR)

ABSTRACT: Detailed description is made and operating information is given on machine "MCT-1" for friction welding of high-speed, stainless, carbon steel and other metals. It accommodates work pieces of 8 mm to 32 mm in diameter and 380 mm in total length, is driven by a 7 kw electric motor and has a pneumatic mechanism which produces the axial setting pressure and operates the clamping devices. This machine is designed for mass production of parts, but it is readily re-adjustable and hence is also applicable for series production. The machine "MCT-2" which is mentioned, is designed for piece work and differs from the "MCT-1" type in the design of clamping devices (it utilizes the conventional three-cam chucks for various sizes of work pieces).
The article contains 4 drawings and 1 diagram

ASSOCIATION: VNIIESO
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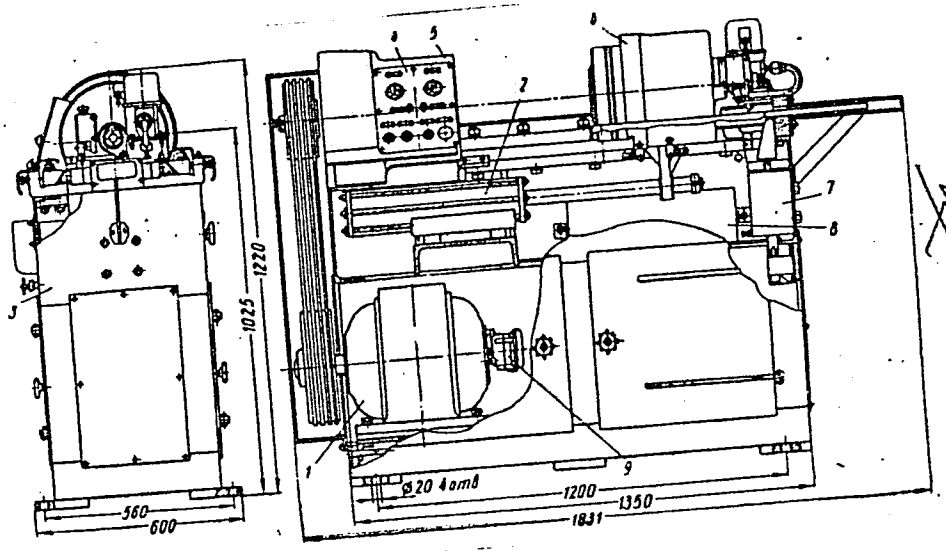
A New Friction-Welding Machine



Card 2/4

A New Friction-Welding Machine

blank to be welded and produces the necessary axial stress to press both blanks together. The electric and pneumatic systems of the machine ensure the regulation of the axial stress during the heating and forging of the blanks. The carriage is displaced along the bed guides by the pusher. The blank clamped in the carriage chuck is pressed against the blank revolving in the clamping device of the head stock, thus heating the face ends of both blanks, and spinning the metal in the form of a burr, while the carriage shaft is displaced. The quantity of extruded metal and the carriage shaft displacement having attained the magnitude stipulated by the technology, the terminal switch is reversed and, through the coil of the electromagnetic valve and reversing magnetic starter, acts on motor 1. Compressed air from the receiver 8 enters the carriage and produces a forging stress. Simultaneously, the process of reversing braking of the motor begins and continues until the contacts of PKC (RKS) speed control relay 9 are disconnected and the motor stops. Within 0.8-1.5 seconds after the motor has stopped, the electric system reverses the electropneumatic valves, thus lowering the catch wedge. The new machine welds alloyed steel blanks of 10 - 20 mm diameter and low-carbon steel blanks of 10 - 25 mm diameter. The maximum total length of the blanks may amount to 380 mm. During the heating process the axial stress pressing the blanks together can be within the range of 250 - 2,500 kg, while this stress during forging

Friction welding equipment. Avtom. svar. 16 no.3:[illegible] (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvarochnogo oborudovaniya.

L 16799-63 EPA/EPR/EPF(c)/EWT(m)/BDS AFFTC/ASD/APGC Paa-4/Ps-4/
Pr-4 BW/WW/DJ
ACCESSION NR: AP3006475 S/0145/63/000/004/0058/0079

AUTHOR: Berger, Ye. G. (Candidate of technical sciences, Assistant); Kel'zon, A. S. (Candidate of technical sciences, Docent); Pryadilov, V. I. (Docent); Smirnova, O. Ye. (Engineer); Troitskaya, Z. V. (Engineer); Shpeyzman, R. L. (Engineer)

TITLE: Investigating vibrations of a system of coaxial rotors

SOURCE: IVUZ. Mashinostroyeniye, no. 4, 1963, 58-79

TOPIC TAGS: aircraft turbine, gas turbine, self centering, self aligning, turbine compressor, free turbine, rotor, coaxial rotor, high speed turbine, vibration, elastic bearing, rigid bearing, damped bearing, critical revolution, vibration amplitude, vibration free

ABSTRACT: The object of the investigation was the self-aligning dynamic conditions in aviation gas turbine engines, consisting of a compressor, a compressor turbine, and a free turbine. The system investigated consisted of an aircraft gas turbine engine with an

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L 16799-63
ACCESSION NR: AP3006475

8-stage axial compressor flexibly coupled with the turbine and a free turbine. The free turbine was mounted coaxially with the compressor turbine (Fig. 2) but rotated independently. The engine operated in the range of 25,000 to 45,000 rpm. The compressor and turbine used the full range of operational velocities; the free turbine did not exceed 25,000 rpm. The experimental study was made with an 8-stage compressor having a rigid horizontal shaft on two bearings — either or both elastic or rigid. The various relationships derived are presented graphically in Figs. 3-5. It is shown that self-aligning conditions may be achieved by adequate design of the rigid and elastic bearings.\\ Self-aligning may occur in coaxial rotors of any type after passing the critical speed. Apart from the system shown in Fig. 6 of the Enclosure, other self-aligning systems exist. It is characteristic of these systems that both bearings situated between the coaxial rotors are rigid and the mounting of the system to the stationary turbine body secures 4 degrees of freedom without counting the rotor revolution. In this category of coaxial rotors, the amplitudes of vibrations increase

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L 16799-63
ACCESSION NR: AP3006475

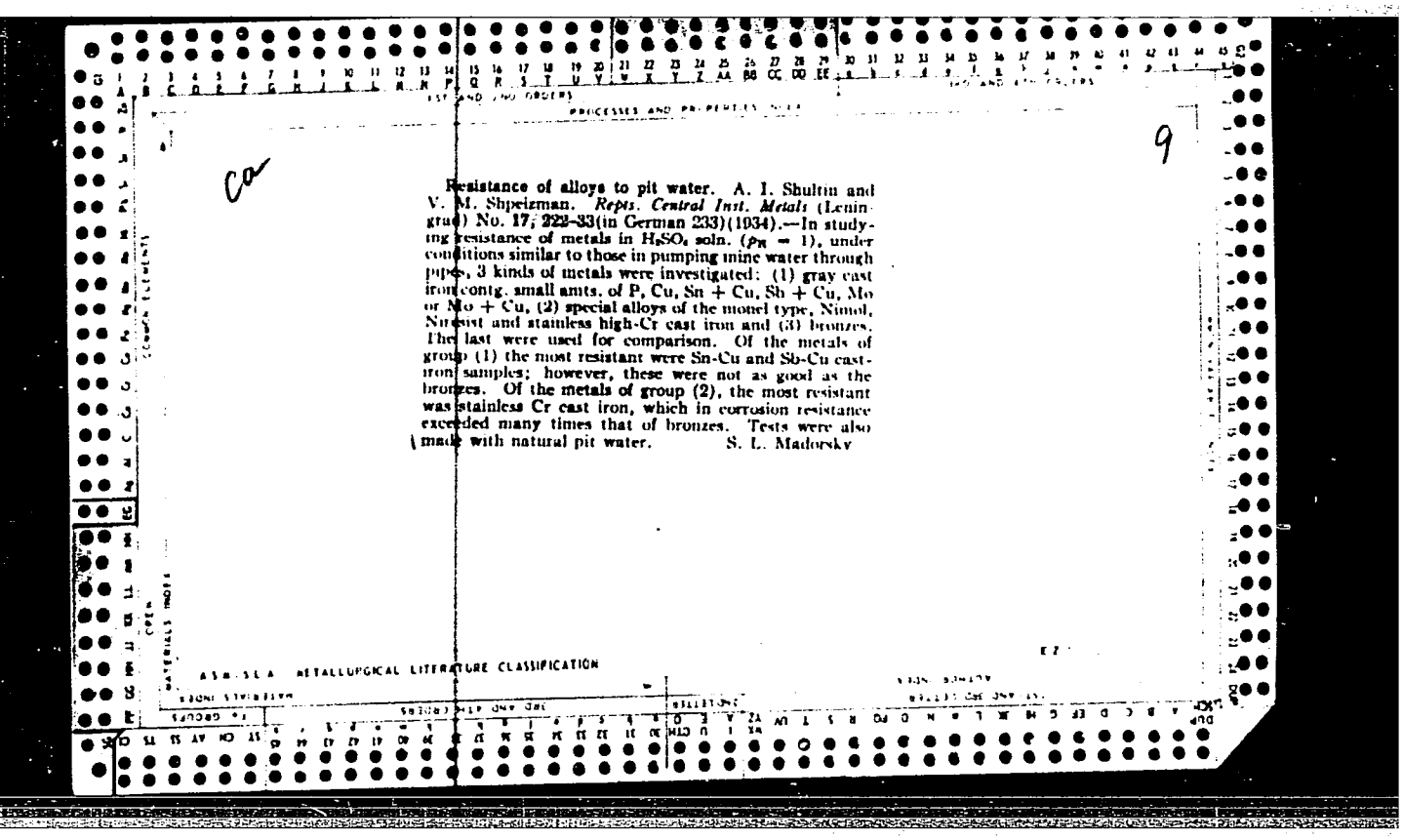
slightly during passage through the critical speed and because of self-alignmnet sharply diminish thereafter, which ensures a wide range of vibration-free operational velocities. Orig. art. has: 43 formulas and 8 figures.

ASSOCIATION: none

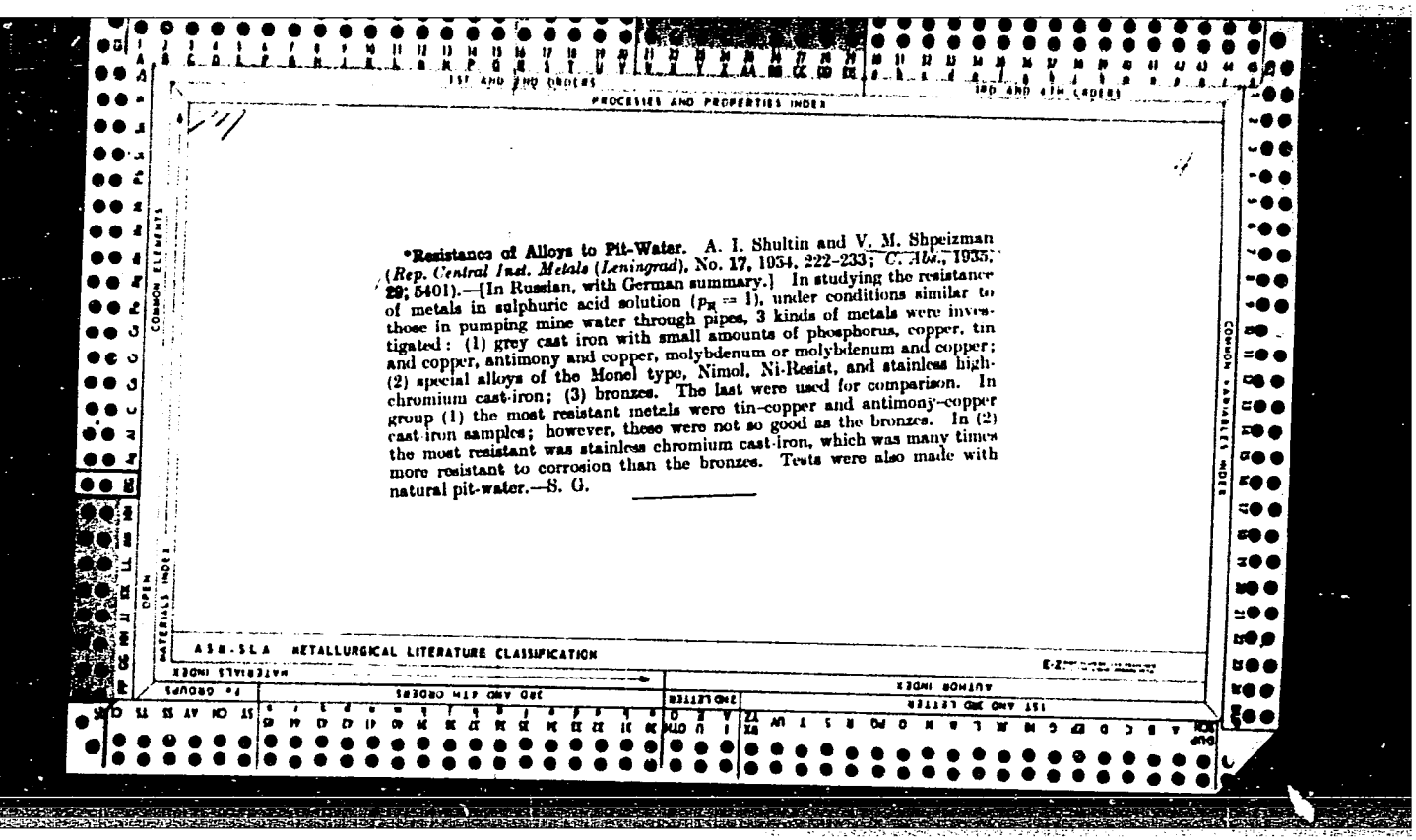
SUBMITTED: 00 DATE ACQ: 30Sep63 ENCL: 03

SUB CODE: PR NO REF SOV: 007 OTHER: 001

Card 3/6



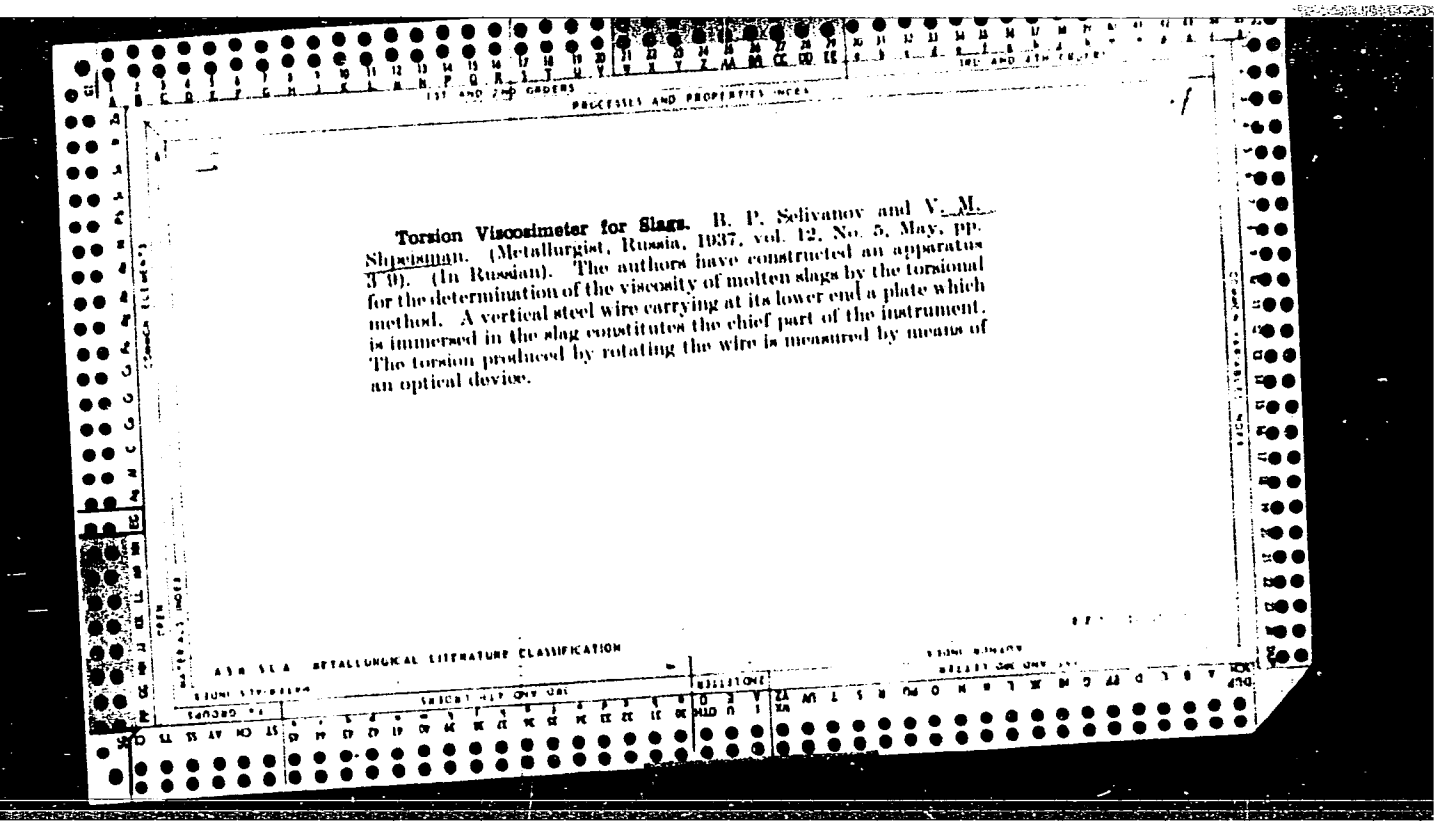
Resistance of alloys to pit water. A. I. Shultin and V. M. Shpeizman. *Repts. Central Inst. Metals* (Leningrad) No. 17, 222–33(in German 233)(1934).—In studying resistance of metals in H_2SO_4 soln. (p_H = 1), under conditions similar to those in pumping mine water through pipes, 3 kinds of metals were investigated: (1) gray cast iron contg. small amts. of P, Cu, Sn + Cu, Sb + Cu, Mo or Mo + Cu, (2) special alloys of the monel type, Nimol, Nirosist and stainless high-Cr cast iron and (3) bronzes. The last were used for comparison. Of the metals of group (1) the most resistant were Sn-Cu and Sb-Cu cast-iron samples; however, these were not as good as the bronzes. Of the metals of group (2), the most resistant was stainless Cr cast iron, which in corrosion resistance exceeded many times that of bronzes. Tests were also made with natural pit water. S. L. Madorsky



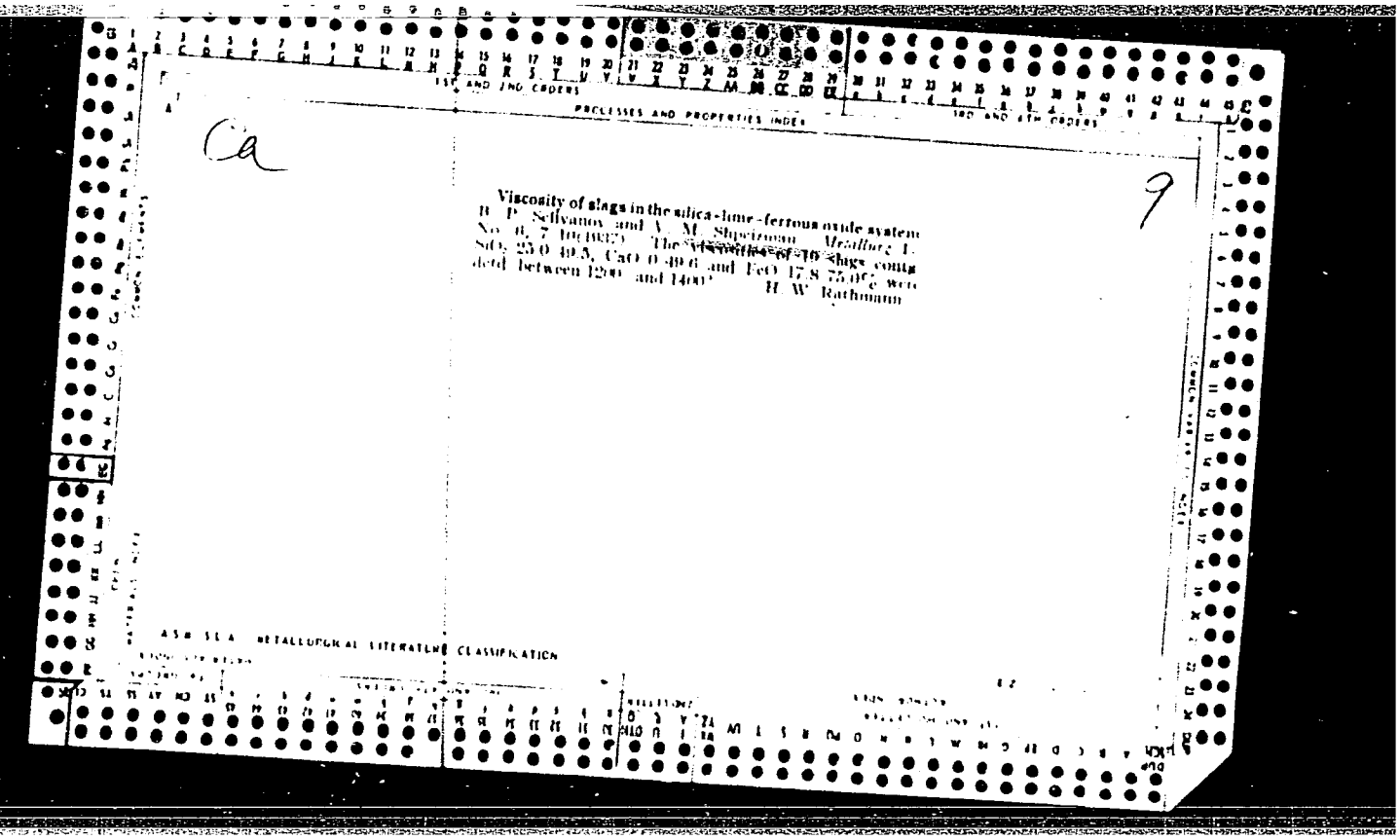
PROCESSES AND PROPERTIES INDEX

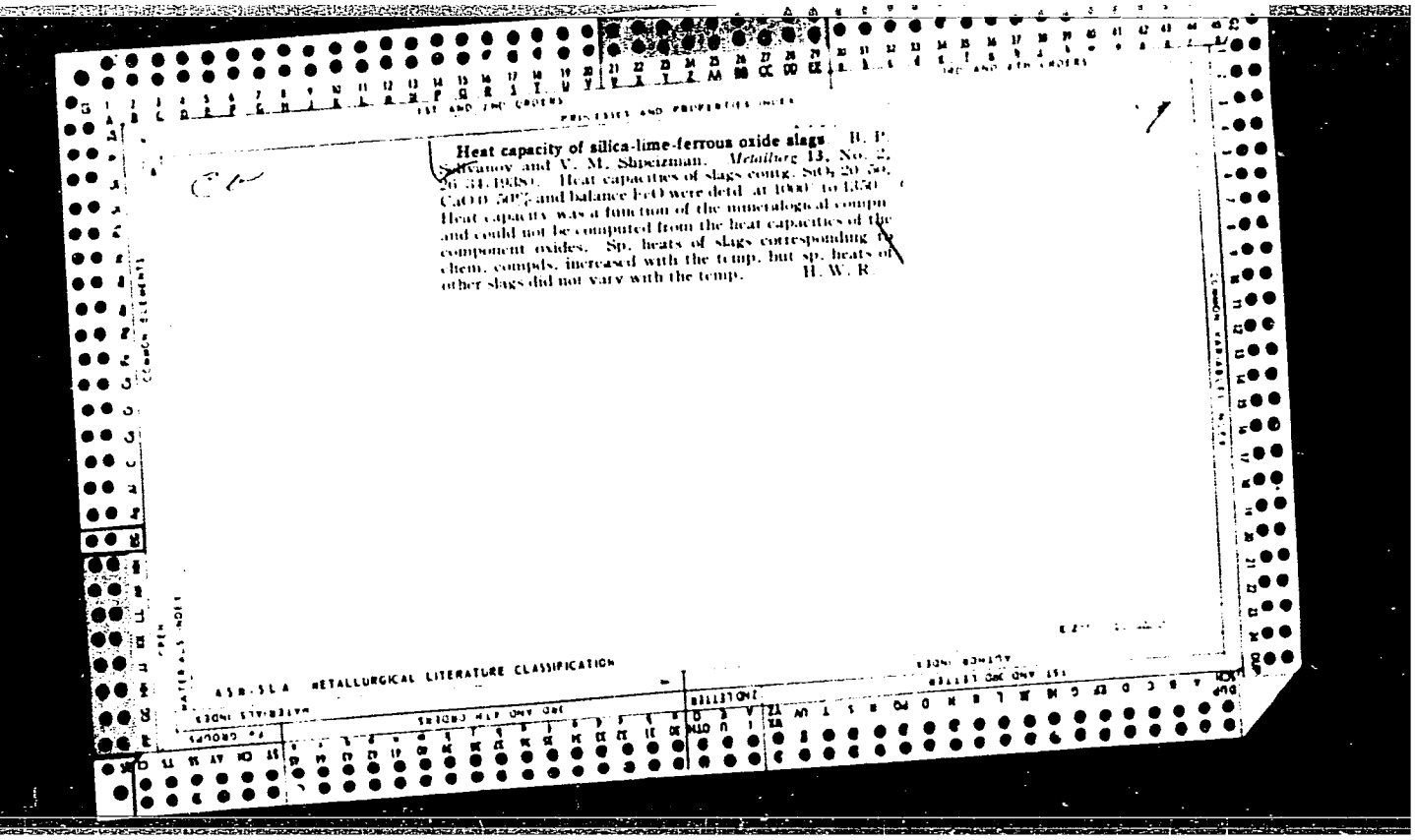
•**Resistance of Alloys to Pit-Water.** A. I. Shultin and V. M. Shpeizman (*Rep. Central Inst. Metals* (*Leningrad*), No. 17, 1934, 222-233; *C. Abs.*, 1935, **29**, 5401).—[In Russian, with German summary.] In studying the resistance of metals in sulphuric acid solution ($p_H = 1$), under conditions similar to those in pumping mine water through pipes, 3 kinds of metals were investigated: (1) grey cast iron with small amounts of phosphorus, copper, tin and copper, antimony and copper, molybdenum or molybdenum and copper; (2) special alloys of the Monel type, Nimol, Ni-Resist, and stainless high-chromium cast-iron; (3) bronzes. The last were used for comparison. In group (1) the most resistant metals were tin-copper and antimony-copper cast-iron samples; however, these were not so good as the bronzes. In (2) the most resistant was stainless chromium cast-iron, which was many times more resistant to corrosion than the bronzes. Tests were also made with natural pit-water.—S. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

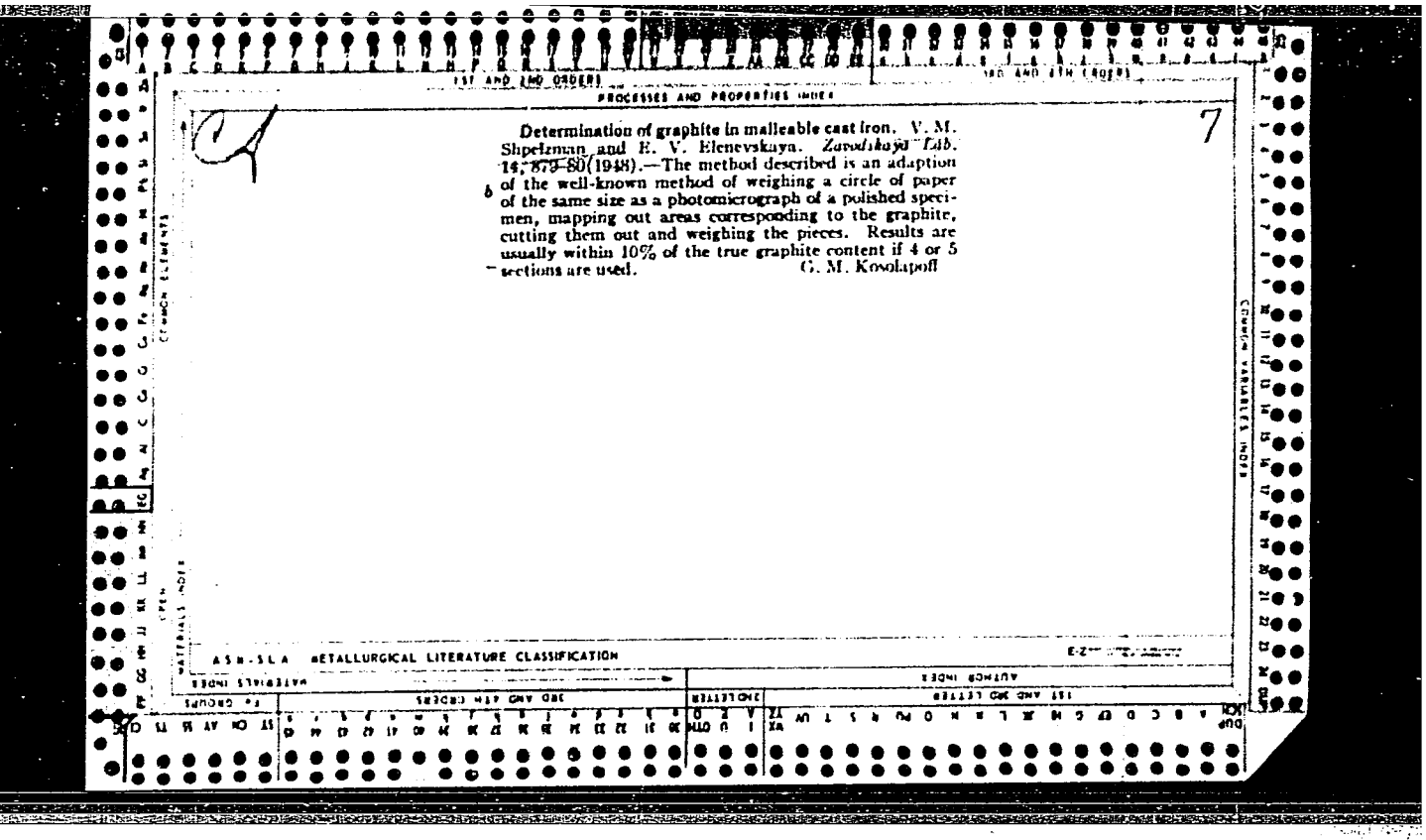


Torsion Viscosimeter for Slags. B. P. Selivanov and V. M. Shpetsman. (Metallurgist, Russia, 1937, vol. 12, No. 5, May, pp. 3-9). (In Russian). The authors have constructed an apparatus for the determination of the viscosity of molten slags by the torsional method. A vertical steel wire carrying at its lower end a plate which is immersed in the slag constitutes the chief part of the instrument. The torsion produced by rotating the wire is measured by means of an optical device.





Heat capacity of silica-lime-ferrous oxide slags. B. F. Sel'tsanov and V. M. Shpeizman. *Metallurg* 13, No. 2, 30-31 (1938). Heat capacities of slags contg. SiO$_2$ 20-50, CaO 0-50% and balance FeO were detd. at 1000° to 1350°. Heat capacity was a function of the mineralogical compn. and could not be computed from the heat capacities of the component oxides. Sp. heats of slags corresponding to chem. compds. increased with the temp. but sp. heats of other slags did not vary with the temp. H. W. R.



PROCESSES AND PROPERTIES INDEX

7

Determination of graphite in malleable cast iron. V. M. Shpelzman and E. V. Elenevskaya. *Zavodskaya Lab.* 14, 879–80(1948).—The method described is an adaption of the well-known method of weighing a circle of paper of the same size as a photomicrograph of a polished specimen, mapping out areas corresponding to the graphite, cutting them out and weighing the pieces. Results are usually within 10% of the true graphite content if 4 or 5 sections are used. G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1. SHPEYZMAN, V. M.

2. USSR (600)

4. Steel Castings

7. Mechanical properties of steel parts, produced from shaped castings and forged products, Vest. mash., 32, No. 11, 1952

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

SHPEYZMAN, V. M.

Laboratory Installation for Determining the Tendency of a Steel to Hot Cracking. V. M. Shpeizman. (*Liteinoe Proizvodstvo*, 1953, (7), 12–13). [In Russian]. A special testing machine is described for evaluating the tendency to hot cracking of steel specimens. During a test the temperature of the specimen, the stress to which it is subjected and the free linear contraction during cooling from the crystallization temperature to room temperature are evaluated. The method is that two similar specimens are cast simultaneously and are then allowed to cool. The contraction and temperature of one, which is allowed to contract freely, is recorded. The contraction of the other is prevented by an applied load which is measured and recorded. A series of tests is also described in which tendency to hot cracking was evaluated from the behaviour of frame-shaped specimens. Results for several alloy steels are presented.—S. K.

SHPEYZMAN, V. M.

USSR/Miscellaneous-Metallurgy

Card 1/1

Authors : Gulyaev, B. B., Shpeyzman, V. M., and Kovalenko, P. E.

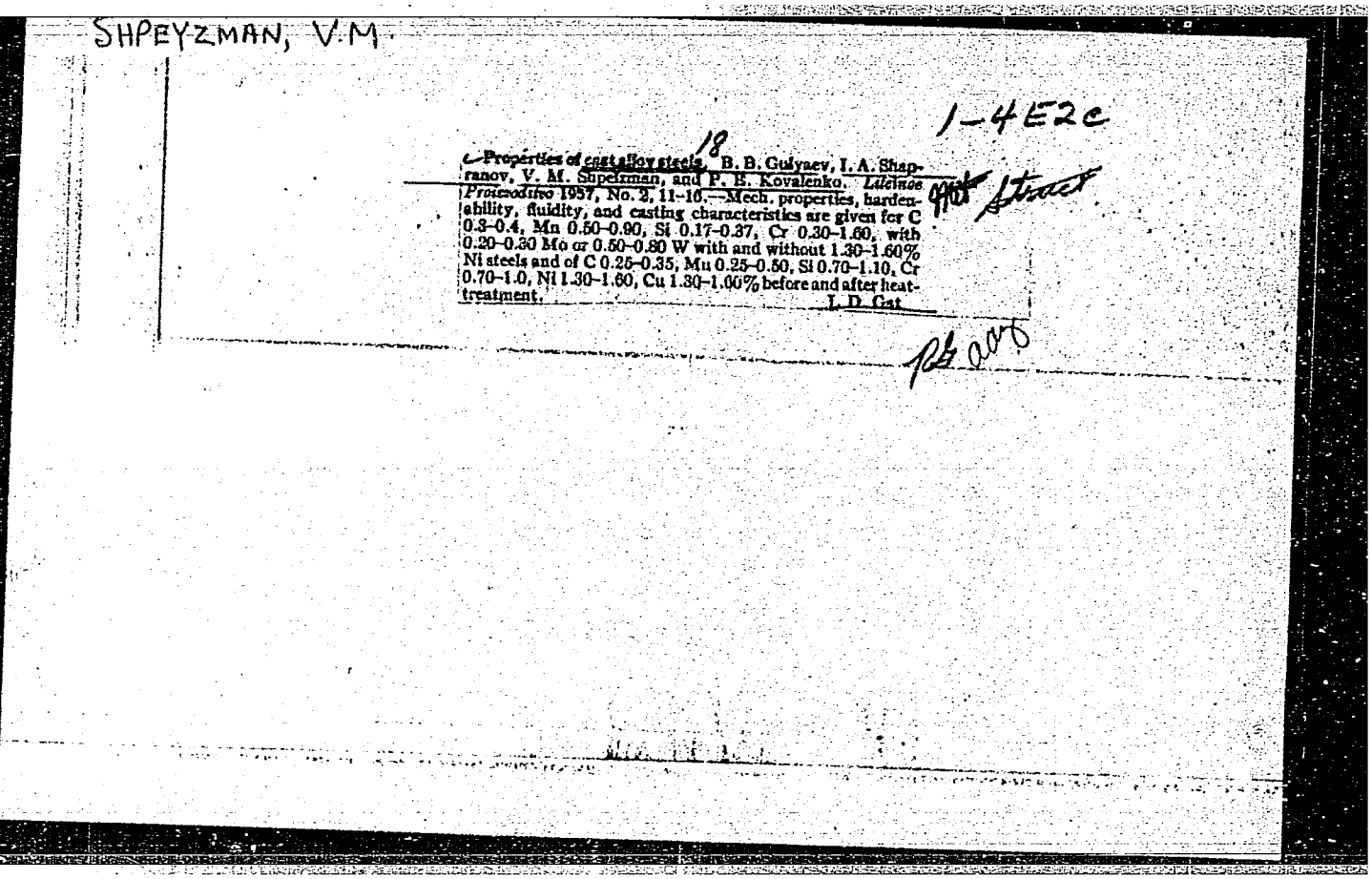
Title : Metal filling of a channel in a sand-mold

Periodical : Lit. Proizv. 1, 15 - 17, Jan-Feb 1954

Abstract : The basic specific features of metal filling in a sand-mold channel are as follows: 1) During the process of mold-filling the temperature of the mold decreases but its viscosity increases. The filling of the mold is done in a comparatively short time within which no stationary motion may be obtained. 2) Chilling of the metal leads to the appearance of solid phases which may have already originated during the filling of the mold and this is the reason for discontinuation of motion lasting till the completion of filling. The ability of the metal to fill the mold is usually defined as its flowability. Three references. Table, graphs.

Institution: ....

Submitted : ....



SHPEYZMAN, V.M.

1-4E2c

18

Properties of cast alloy steels. B. B. Gulyaev, I. A. Shapranov, V. M. Shpeĭzman, and P. E. Kovalenko. *Liteĭnoe Proizvodstvo* 1957, No. 2, 11–16.—Mech. properties, hardenability, fluidity, and casting characteristics are given for C 0.3–0.4, Mn 0.50–0.90, Si 0.17–0.37, Cr 0.30–1.60, with 0.20–0.30 Mo or 0.50–0.80 W with and without 1.30–1.60% Ni steels and of C 0.25–0.35, Mn 0.25–0.50, Si 0.70–1.10, Cr 0.70–1.0, Ni 1.30–1.60, Cu 1.30–1.60% before and after heat-treatment.

L. D. Gat

12 abs

AUTHORS: Shpeyzman, V. M., Krasovskaya, Ye. A. 32-2-23/60

TITLE: A Simplified Method for the Determination of Humidity of Materials Used in Welding (Uproshchennyy metod opredeleniya vlazhnosti materialov, primenyayemykh pri svarke).

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 2, pp. 187-188 (USSR).

ABSTRACT: The methods employed hitherto for the determination of crystal water either called for complicated apparatus, or worked with a little accuracy. The present method consists of a collection of the humidity separated from the sample smelted in vacuo by phosphorus anhydride. The appliance used here is constructed analogously to that according to G.I. Batalin for the determination of hydrogen in steel according to the vacuum smelting method. A cartridge contains the phosphorous anhydride, the sample under investigation is mounted at the end of a glass tube, which can be stuck into a furnace. The tube is connected with a manometer and can be evacuated (to about 0,1 mm). Previous to the investigation the sample is dessicated at 105 - 110° C in order to remove the adsorbed and hygroscopic humidity. The determination of crystal water

Card 1/2

SHPEYZ.MAN, V M

25(1,6) PHASE I BOOK EXPLOITATION SOV/2577

Lushkov, Natan Lazarevich, Feliks Ivanovich Razduy, and Veniamin Matveyevich Shpeyzman

Vodorod v svarnykh shvakh i bor'ba s nim (Hydrogen in Welded Joints and Its Control) Leningrad, Sudpromgiz, 1959. 55 p. Errata slip inserted. 5,000 copies printed.

Resp. Ed.: A. M. Veyngarten; Ed.: L.L. Stolyarskiy; Tech. Ed.: R. K. Tsal.

PURPOSE: This book is intended for production engineers and foreman.

COVERAGE: The authors discuss the causes and sources of hydrogen impregnation in welded joints, formation of cracks and flakes, and methods of determining hydrogen content in the weld metal, fluxes, coverings, and ferroalloys. They present data on the effect of moisture in the coatings and fluxes on the hydrogen content of the weld metal and make recommendations for reducing or eliminating the tendency of welded joints to develop cracks

Card 1/4

VEYNGARTEN, Abram Mikhaylovich, kand. tekhn.nauk; DELLE, Vasiliy Adoliyevich, prof., doktor tekhn. nauk; NOSKIN, Aba Vladimirovich, kand. tekhn. nauk; SOKOLOV, Nikolay Nikolayevich, kand. tekhn. nauk; TOVSTYKH, Yevgeniy Vasil'yevich, kand. tekhn. nauk; SHPEYZMAN, Veniamin Matveyevich, kand. tekhn. nauk; LEBEDEV, K.P., kand. tekhn. nauk, retsenzent; ALESHIN, D.V., inzh., retsenzent; MES'KIN, V.S., doktor tekhn. nauk, nauchnyy red.; KLIORINA, T.A., red.; TSAL, R.K., tekhn. red.; KRYAKOVA, D.M., tekhn. red.

[Shipbuilding steel]Sudostroitel'naia stal'. [By] A.M. Veingarten i dr. Leningrad, Sudpromgiz, 1962. 303 p. (MIRA 15:11)
(Shipbuilding materials) (Steel, Structural)

L 10767-65 EWT(m)/EWP(w)/EPR/EWP(b) Ps-4 ESD(t)/ASD(m)-3/ASD(f)-2/AFETR/ AS(mp)-2/ASD(a)-5 JW/JD

ACCESSION NR: AP4044928 S/0181/64/006/009/2610/2617

AUTHORS: Stepanov, V. A.; Kurov, I. Ye.; Shpeyzman, V. V. B

TITLE: Time-to-rupture of metals subjected to torsion 14

SOURCE: Fizika tverdogo tela, v. 6, no. 9, 1964, 2610-2617

TOPIC TAGS: metal breaking, torsion, aluminum, copper, zinc, plastic deformation, activation energy 16

ABSTRACT: In an earlier paper (FTT, 4, 191, 1962) Kurov and Stepanov reported that the dependence of the time-to-repture τ on the stress σ and temperature T, in the case of aluminum, 27 copper and zinc subjected to torsion, was

$$\tau = \tau_0' e^{-\alpha\sigma} e^{\frac{U_0 - \gamma\sigma}{RT}},$$

where U_0, τ_0', α and γ are constants for a given metal, and R is the

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ACCESSION NR: AP4044928

gas constant. Formally Eq. (1) differs from the dependence

$$\tau = \tau_0 e^{\frac{U_0 - \gamma\sigma}{RT}}$$

found by Zhurkov et al. for uniaxial tension, only by the stress dependence of the pre-exponential factor. However, the basic difference is that the activation energy of the fracture process, U_0, for torsion is only half the energy for tension. The present work reports further tests carried out between -85 and +100C on Zn and Al + 5.5% Si hollow cylinders (outside diameter 2 mm, inside -- 1.5 mm). These tests confirmed that the type of stress affects U_0. It is suggested that the change in U_0 is due to a change in the fracture mechanism: from fluctuation-type breaking of interatomic bonds in the case of tension to flow of vacancies to the tip of a growing crack in the case of torsion. The change in the mechanism is due to a sharp increase in the degree of plastic deformation and the rate of vacancy formation on transition from tension to torsion.

Card 2/3

L 10767-65

ACCESSION NR: AP4044928

Orig. art. has: 7 figures, 6 formulas, and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute AN SSSR)

SUBMITTED: 24Feb64 ENCL: 00

SUB CODE: MM, SS NR REF SOV: 015 OTHER: 004

Card 3/3

FLID, R.M.; KRASOTKIN, A.Ye.; SHPICHINETSKAYA, L.S.; CHIRIKOVA, A.V.; BELYY, A.P.; BARATS, M.I.; KRUPTSOV, B.K.; BELYANINA, Ye.T.

Effect of alcaline admixtures on catalytic oxidation of primary alcohols to aldehydes. Khim.nauk i prom. 3 no.5:683 '58.

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova.
(Alcohol) (Oxidation) (Catalysts)

L 46998-66 EWP(j)/EWT(m)/T IJP(c) RM/WW

ACC NR: AP6027271 (A) SOURCE CODE: UR/0191/66/000/008/0006/0008

79 27 B

AUTHOR: Shpichinetskaya, L. S.; Orlova, N. V.

ORG: none

TITLE: Preparation of thermostable polyformaldehyde by using cationic-type catalysts

SOURCE: Plasticheskiye massy, no. 8, 1966, 6-8

TOPIC TAGS: tin compound, catalytic polymerization, polyformaldehyde plastic

ABSTRACT: The polymerization of gaseous formaldehyde in the presence of $SnCl_4$ was studied in the inert solvents toluene, white spirit and methylene diacetate, the latter being used as a solvent for polyformaldehyde (PFA) at the acetylation stage. The effect of catalyst concentration, temperature and duration of polymerization or PFA concentration on the polymerization was determined. A slight increase in catalyst concentration, from 0.002 ml/l (6×10^{-6} mole/l) to 0.005 ml/l (15×10^{-6} mole/l) causes a sharp drop in the viscosity of the polymer, viz., from 1.94 to 0.65. The viscosity is higher in methylene diacetate than in white spirit or toluene. A rise in PFA concentration causes an increase in the molecular weight of the polymer because at low PFA concentrations the chain-breaking reactions are more prevalent. Of the impurities H_2O, CH_3OH and HCOOH, the most active chain-breaking agent is H_2O. Under suitable polymerization conditions, PFA of the desired molecular weight (from 20,000 to 135,000) can be obtained. Thermostable PFA is obtained in two stages: polymerization of formal-

Card 1/2 UDC: 678.644'141.01:536.495]:678.044.8

L 46998-66
ACC NR: AP6027271

dohydo and acetylation of PFA to block the terminal groups of molecules. The optimum conditions for the acetylation were determined: it is best carried out in a homogeneous medium with methylene diacetate as the solvent for PFA. The PFA obtained is stabilized with a polyamide resin and diphenylamine (or phenol derivatives), which prevent its thermal and oxidative degradation. It can be worked by extrusion and casting. Orig. art. has: 2 figures and 4 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 006

Card 2/2

SHPICHINETSKAIA P. S.

Opyt primeneniia kisloi diety pri vialo zazhivaiushchikh ranakh. [Result of application of acidified diet in sluggish wound healing] Klin. med., Moskva 29:6 June 51 p. 86.

Khar'kov.

SHPICHINETSKAYA, P.S., kandidat meditsinskikh nauk (Khar'kov)

In vivo diagnosis of thrombosis of the abdominal aorta. Vrach. delo no.5:523 My '57. (MLRA 10:8)

1. Terapevticheskoye otdeleniye (zav. - kand. med. nauk P.S.Spichinetskaya) otdelencheskoy bol'nitsy st. Osnova vrachebno-sanitarnoy sluzhby Yuzhnoy zheleznoy dorogi
(THROMBOSIS) (AORTA--DISEASES)

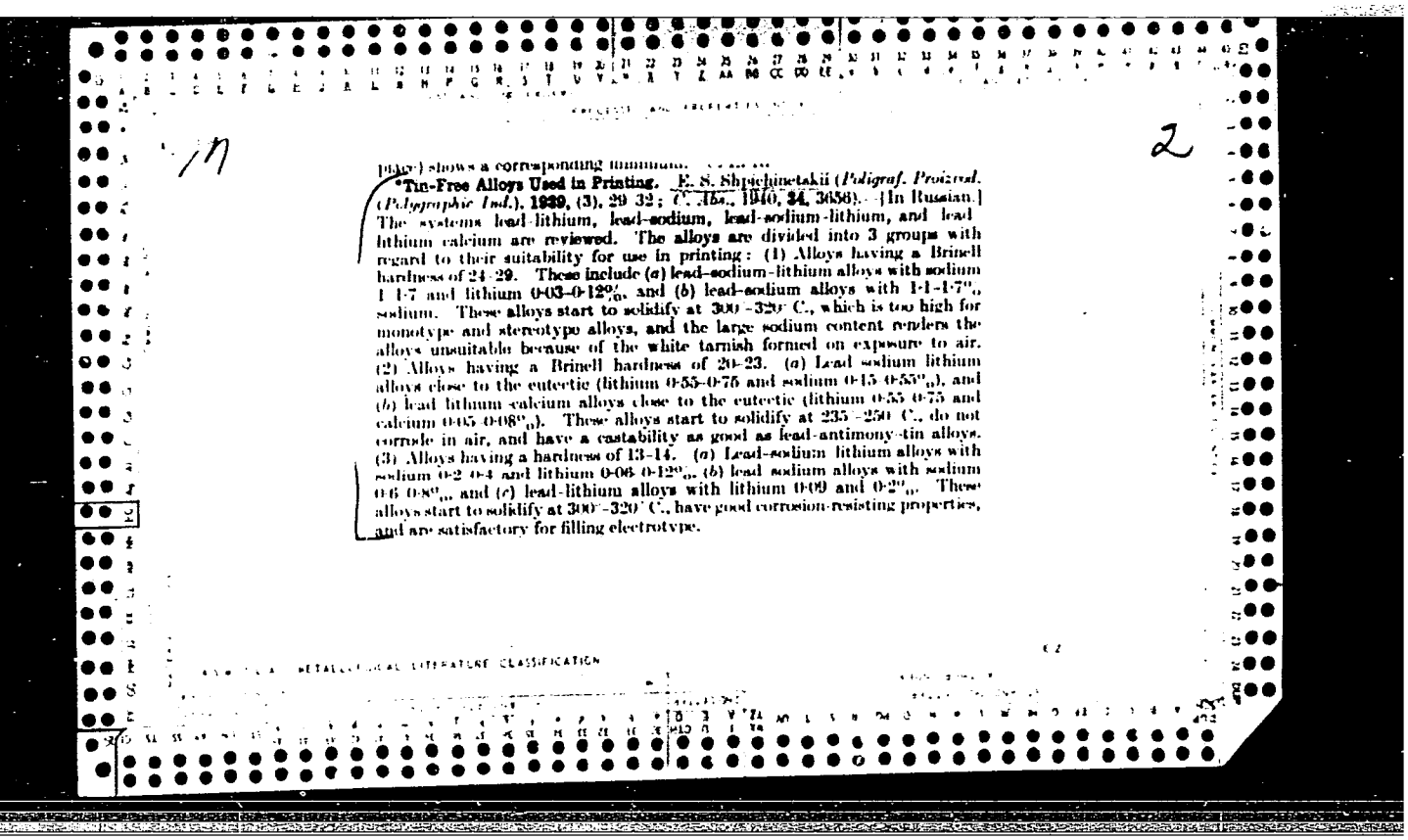
SHPICHINETSKAYA, P.S. [Shpychynets'ka, P.S.], kand.med.nauk

Case of necronephrosis following transmembranal use of rivanol. Ped., akush. i gin. 23 no.1:62-64 '61. (MIRA 14:6)

1. Terapevticheskoye otdeleniye (nachal'nik - P.S.Shpichinetskaya [Shpychynets'ka, P.S.]) 2-y zheleznodorozhnoy bol'nitsy Yuzhnoy zheleznoy dorogi (nachal'nik - S.D.Pokhil'ko).
(KIDNEYS—DISEASES) (PREGNANCY, COMPLICATIONS OF)
(RIVANOL)

SARATOVKIN, Dmitriy Dmitriyevich; PRONOV, A.P., kandidat tekhnicheskikh nauk, retsenzent; BAKSHTEYN, S.Z., kandidat tekhnicheskikh nauk, retsenzent; SHPICHINETSKIY, S.S., redaktor; KAMAYEVA, O.M., redaktor izdatel'stva; ISLENT'YEVA, T.G., tekhnicheskiy redaktor

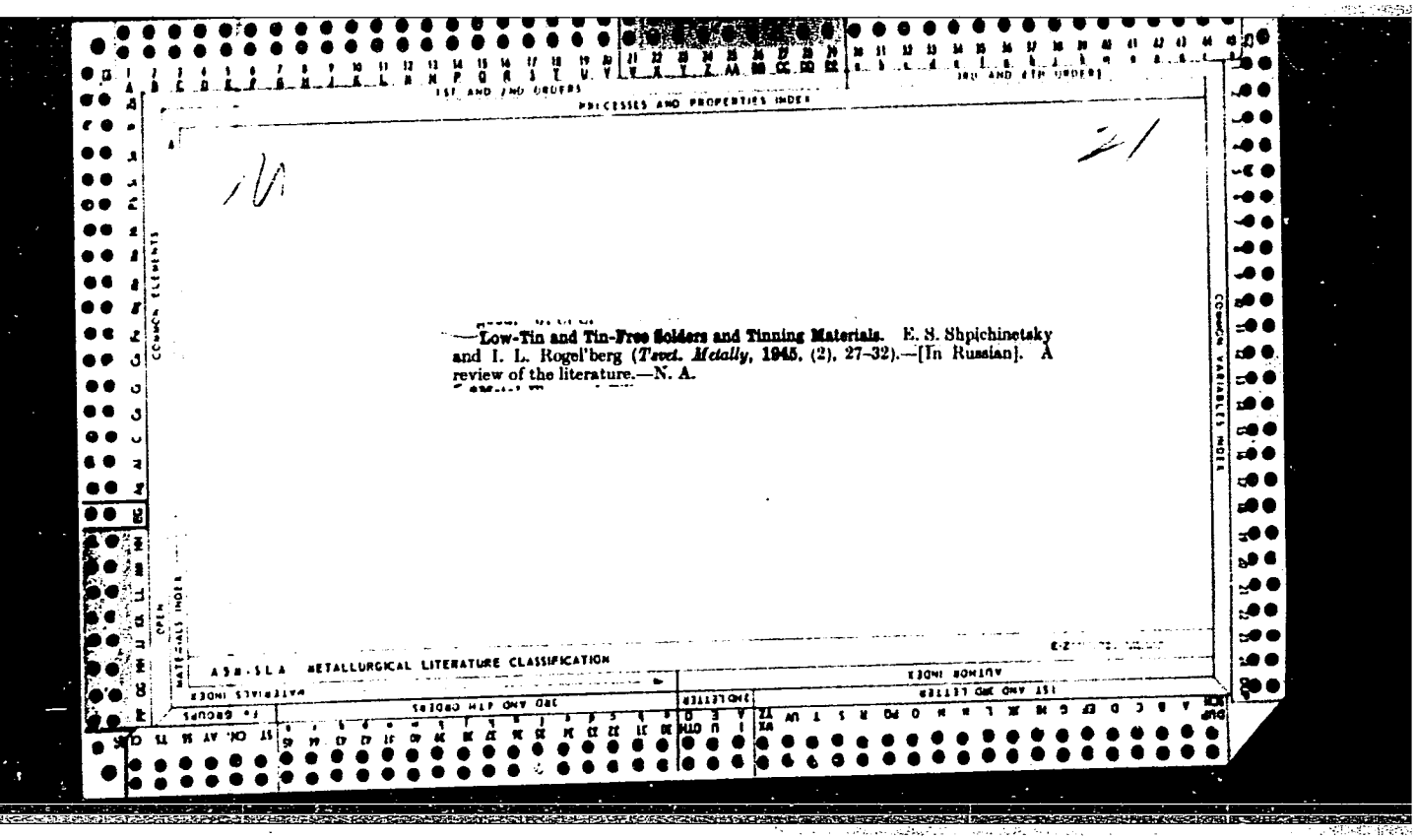
[Dendritic crystallization] Dendritnaia kristallizatsiia. Izd. 2-ce, ispr.i dop. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 125 p. (MLRA 10:10)
(Solidification)



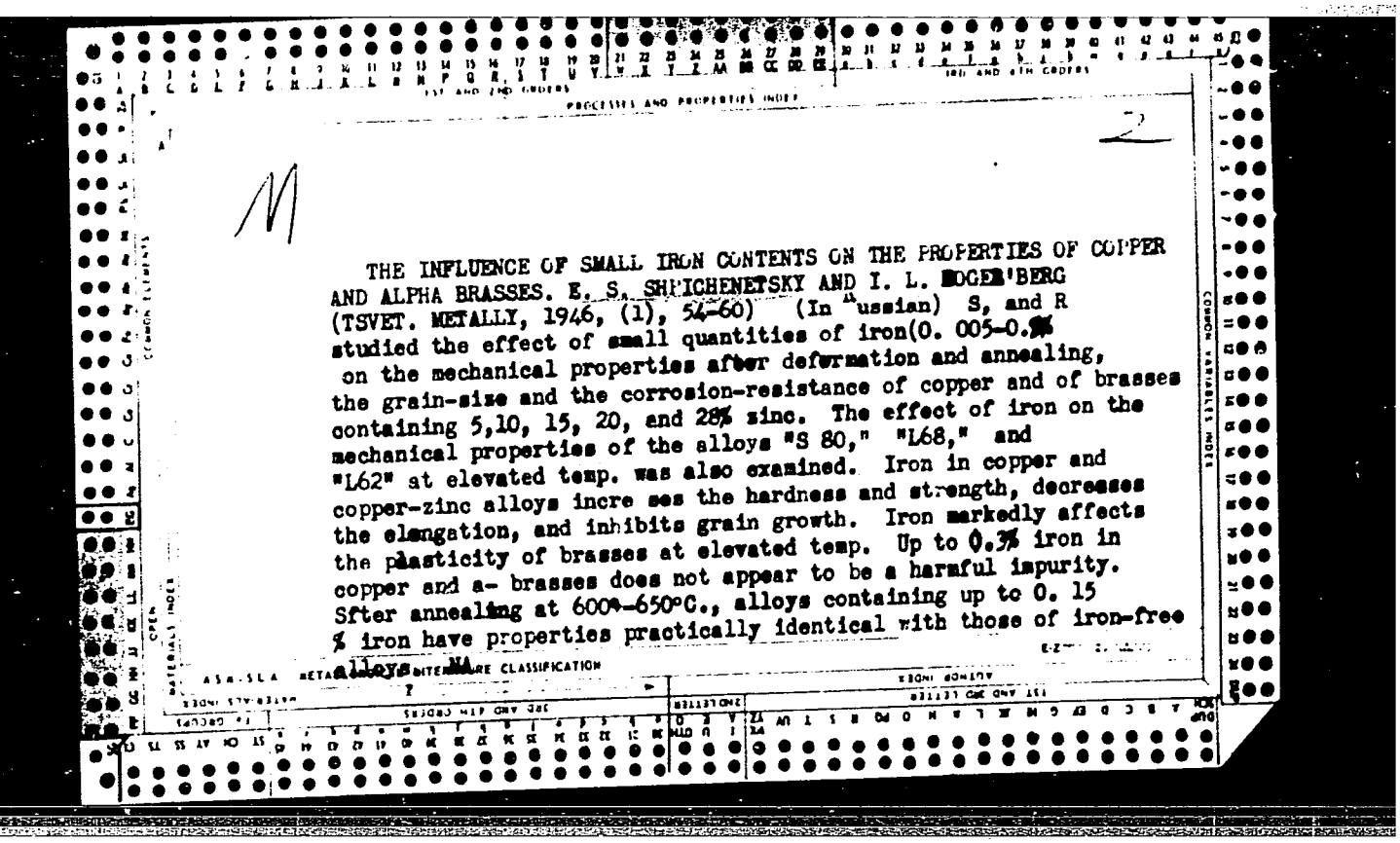
[illegible] shows a corresponding [illegible].

***Tin-Free Alloys Used in Printing.** E. S. Shpichinetskii (*Poligraf. Proizvod. (Polygraphic Ind.)*, **1939**, (3), 29–32; *C. Abs.*, 1940, **34**, 3658). [In Russian.] The systems lead–lithium, lead–sodium, lead–sodium–lithium, and lead–lithium–calcium are reviewed. The alloys are divided into 3 groups with regard to their suitability for use in printing: (1) Alloys having a Brinell hardness of 24–29. These include (*a*) lead–sodium–lithium alloys with sodium 1·1–1·7 and lithium 0·03–0·12%, and (*b*) lead–sodium alloys with 1·1–1·7% sodium. These alloys start to solidify at 300–320° C., which is too high for monotype and stereotype alloys, and the large sodium content renders the alloys unsuitable because of the white tarnish formed on exposure to air. (2) Alloys having a Brinell hardness of 20–23. (*a*) Lead–sodium–lithium alloys close to the eutectic (lithium 0·55–0·75 and sodium 0·45–0·55%), and (*b*) lead–lithium–calcium alloys close to the eutectic (lithium 0·55–0·75 and calcium 0·05–0·08%). These alloys start to solidify at 235–250° C., do not corrode in air, and have a castability as good as lead–antimony–tin alloys. (3) Alloys having a hardness of 13–14. (*a*) Lead–sodium–lithium alloys with sodium 0·2–0·4 and lithium 0·06–0·12%, (*b*) lead–sodium alloys with sodium 0·6–0·8%, and (*c*) lead–lithium alloys with lithium 0·09 and 0·2%. These alloys start to solidify at 300–320° C., have good corrosion-resisting properties, and are satisfactory for filling electrotype.

[illegible] METALLURGICAL LITERATURE CLASSIFICATION



—**Low-Tin and Tin-Free Solders and Tinning Materials.** E. S. Shpichinetsky and I. L. Rogel'berg (*Tsvet. Metally*, 1945, (2), 27–32).—[In Russian]. A review of the literature.—N. A.



THE INFLUENCE OF SMALL IRON CONTENTS ON THE PROPERTIES OF COPPER AND ALPHA BRASSES. E. S. SHPICHENETSKY AND I. L. ROGEL'BERG (TSVET. METALLY, 1946, (1), 54-60) (In Russian) S, and R studied the effect of small quantities of iron(0. 005-0.5% on the mechanical properties after deformation and annealing, the grain-size and the corrosion-resistance of copper and of brasses containing 5,10, 15, 20, and 28% zinc. The effect of iron on the mechanical properties of the alloys "S 80," "L68," and "L62" at elevated temp. was also examined. Iron in copper and copper-zinc alloys incre ses the hardness and strength, decreases the elongation, and inhibits grain growth. Iron markedly affects the plasticity of brasses at elevated temp. Up to 0.3% iron in copper and a- brasses does not appear to be a harmful impurity. Sfter annealing at 600°-650°C., alloys containing up to 0. 15 % iron have properties practically identical with those of iron-free alloys

CA

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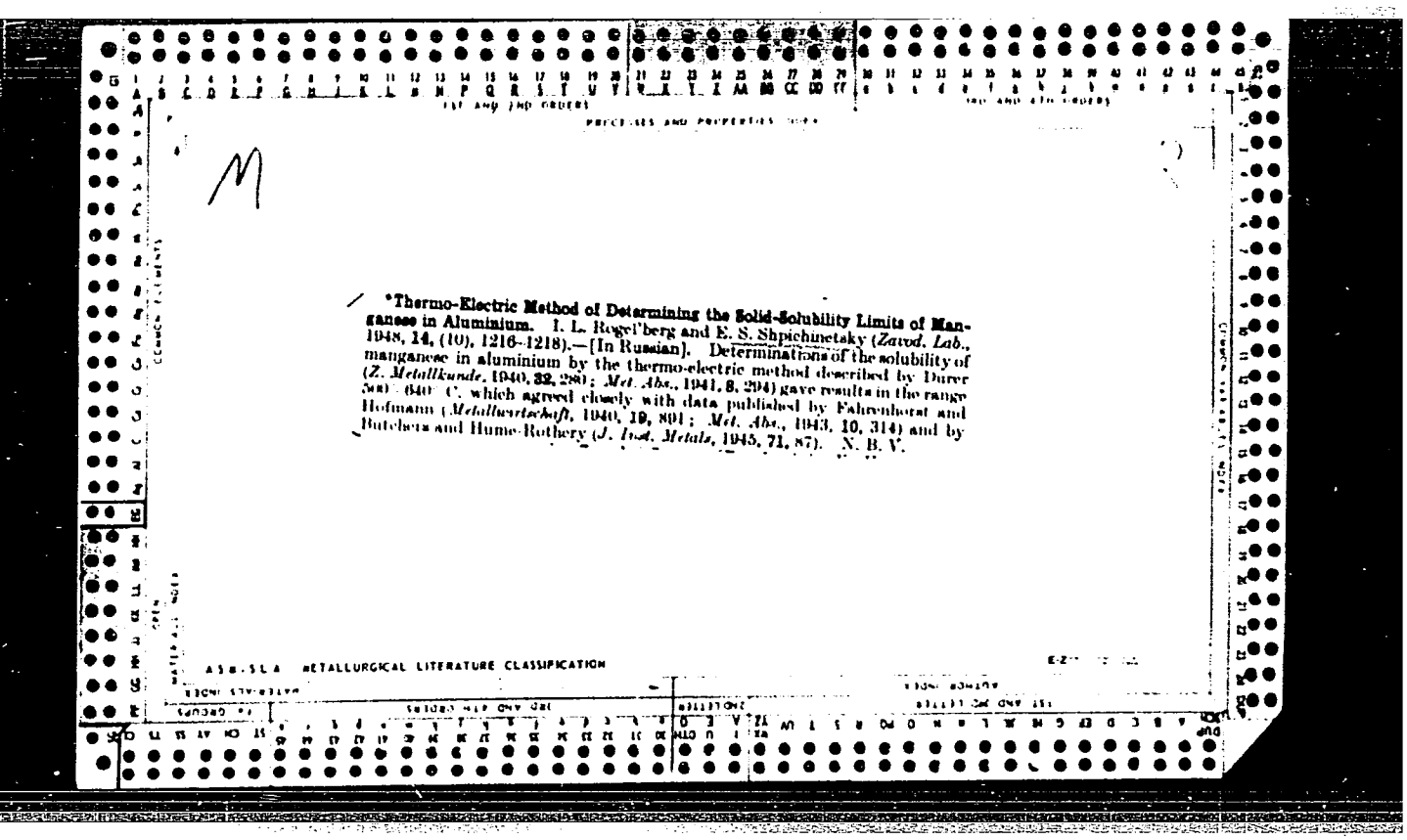
Solid solutions of lithium in lead. S. A. Pogodin and K. S. Shpichinetskii (Inst. General and Inorg. Chem., Acad. Sci. U.S.S.R., Moscow). *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* **15**, 88-95(1947). The objects of this study were Pb-Li alloys contg. 0.03-1.1 wt. % of Li. To det. the boundaries of α-phase, specimens were vacuum-sealed in glass tubes and heated in series for 18 days at 200°, for 25 days at 170°, and for 20 days at 120°. These 3 series were cooled from their hardening temp. in a mixt. of solid CO_2 and alc. (−80°). A 4th series was cooled from 120° to 20° during 7 days. The boundaries of the solid soln. of Li in Pb were 2.1 at. % (0.07 wt. %) at 200°, 1.8 at. % (0.00 wt. %) at 170°, and 1.2 at. % (0.01 wt. %) at 120°. The soly. of Li in Pb conformed to the Schroeder-Le Chatelier equation. By extrapolation the soly. of Li in Pb at the eutectic point (225.15°) was 2.6 and at 20° 0.35 at. %. The hardness of Pb-Li alloys increased for the first 2 hrs. after casting and then gradually dropped to 10.5-11 Brinell hardness at 0.03-0.09 wt. % of Li.

M. Hosch

CA

7

Ternary alloys of lead with sodium and lithium. S. A. Pogodin and E. S. Shpichinetskii (Inst. Gen. and Inorg. Chem., Acad. Sci. U.S.S.R., Moscow). *Izvest. Sektora Fiz.-Khim. Anal., Inst. Obshchel i Neorg. Khim., Akad. Nauk S.S.S.R.* 15, 96–111(1947); cf. *C.A.* 36, 4701⁸; and preceding abstr. Pb-Na-Li alloys with up to 50 at. % of Na and up to 50 at. % of Li were subjected to thermal analysis and their hardness and microstructure were studied. On the system's phase diagram the surface of the liquidus comprised 4 areas of crystn. of α,β NaPb and LiPb phases. The system formed 3 eutectics: (1) m. 234° contained Li 10 at. %, Na 5 at. %, and the rest Pb, (2) m. 265° contained Li 12.3 at. %, Na 27.5 at. %, and the rest Pb, and (3) a eutectic formed by NaPb and LiPb, m. 310°, and contg. Li 15 and Na 35 at. %. On the phase diagram was clearly seen the existence of a berthollide type β-phase. The boundaries of the triple solid soln. at 200 and 20°, regarded only as an approximation, were also detd. The alloys with greatest hardness had Na 0.6–0.8 and Li 0.03–0.06%. M. H.



Thermo-Electric Method of Determining the Solid-Solubility Limits of Manganese in Aluminium. I. L. Rogel'berg and E. S. Shpichinetsky (*Zavod. Lab.*, 1948, **14**, (10), 1216–1218).—[In Russian]. Determinations of the solubility of manganese in aluminium by the thermo-electric method described by Durer (*Z. Metallkunde*, 1940, **32**, 280; *Met. Abs.*, 1941, **8**, 294) gave results in the range 580 – 640° C. which agreed closely with data published by Fahrenhorst and Hofmann (*Metallwirtschaft*, 1940, **19**, 891; *Met. Abs.*, 1943, **10**, 314) and by Butchers and Hume-Rothery (*J. Inst. Metals*, 1945, **71**, 87). N. B. V.

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

[redacted]-SHPICHINETSKIY, [redacted].

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 470 - I

Call No.: TN671.R6

BOOK

Authors: ROGEL'BERG, I. L. and SHPICHINETSKIY, YE. S.

Full Title: DIAGRAMS OF THE RECRYSTALLIZATION OF METALS AND ALLOYS (Manual)

Transliterated Title: Diagrammy rekristallizatsii metallov i splavov (Spravochnik)

PUBLISHING DATA

Originating Agency: None

Publishing House: State Scientific and Technical Publishing House of Literature on Ferrous and Nonferrous Metallurgy

Date: 1950 No. pp.: 280 No. of copies: 3,500

Editorial Staff

Appraiser: Volovik, B. Ye., Prof. Doctor

TEXT DATA

Coverage: This reference book contains 299 diagrams of recrystallization of metals and alloys. The diagrams are three-dimensional and show the relation between the grain size (average surface expressed in micros square), the amount of plastic deformation (expressed in %) and the temperature of annealing (in centigrades). A short outline is presented explaining the present day concept of this kind of re-crystallization diagrams and factors which determine them. The values have been taken from experimental results. Each diagram is supplemented with some additional data, such as the exact composition of an alloy, type of sample

taken, kind of plastic deformation, time of annealing, and time of cooling. In some cases the original grain size is indicated. The table of contents indicates the metals presented on the diagrams.

In many cases some important data are missing - such as original grain, size temperature of deformation, recovery prior to recrystallization, and the amount of small impurities etc., which limits the value of those diagrams. However, they are based on a very extensive literature (listed at the end of the book) and also on numerous tests made by the authors and by other Soviet metallurgists. Therefore, the book may be of use in determination of grain growths.

Table of Contents

SLAVINSKIY, M.P., professor, doktor [deceased]; FILIN, N.A., professor, doktor, retsenzent; SHPICHINETSKIY, kandidat tekhnicheskikh nauk, retsenzent; ROGEL'BERG, I.L., inzhener, retsenzent; SAMSONOV, G.V., redaktor; KAMAYEVA, O.M., redaktor; MIKHAYLOVA, V.V., tekhnicheskiy redaktor

[Physical and chemical properties of elements] Fiziko-khimicheskie svoistva elementov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1952. 763 p. (MLRA 9:12)
(Chemistry, Metallurgic) (Chemical elements)

SHPICHENETSKIY, Ye.S.

DNESTROVSKIY, Nikolay Zel'manovich; BOGOLYUBSKIY, V.I., inzhener, retsenzent; LEKARENKO, Ye.M., inzhener, retsenzent; SHPICHENETSKIY, Ye.S., redaktor; STARODUBTSEVA, S.N., redaktor; BEKKER, O.G., tekhnicheskiy redaktor.

[Drawing of nonferrous metals and alloys] Volochenie tsvetnykh metalov i splavov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 270 p. (MLRA 8:3)
(Metal drawing)(Nonferrous metals--Metallurgy)

ROGEL'BERG, I.L.; SHPICHINETSKIY, Ye.S.

Brittleness of nickel. TSvet.met. 28 no.5:63-66 S-O '55.
(MIRA 10:10)

(Nickel)

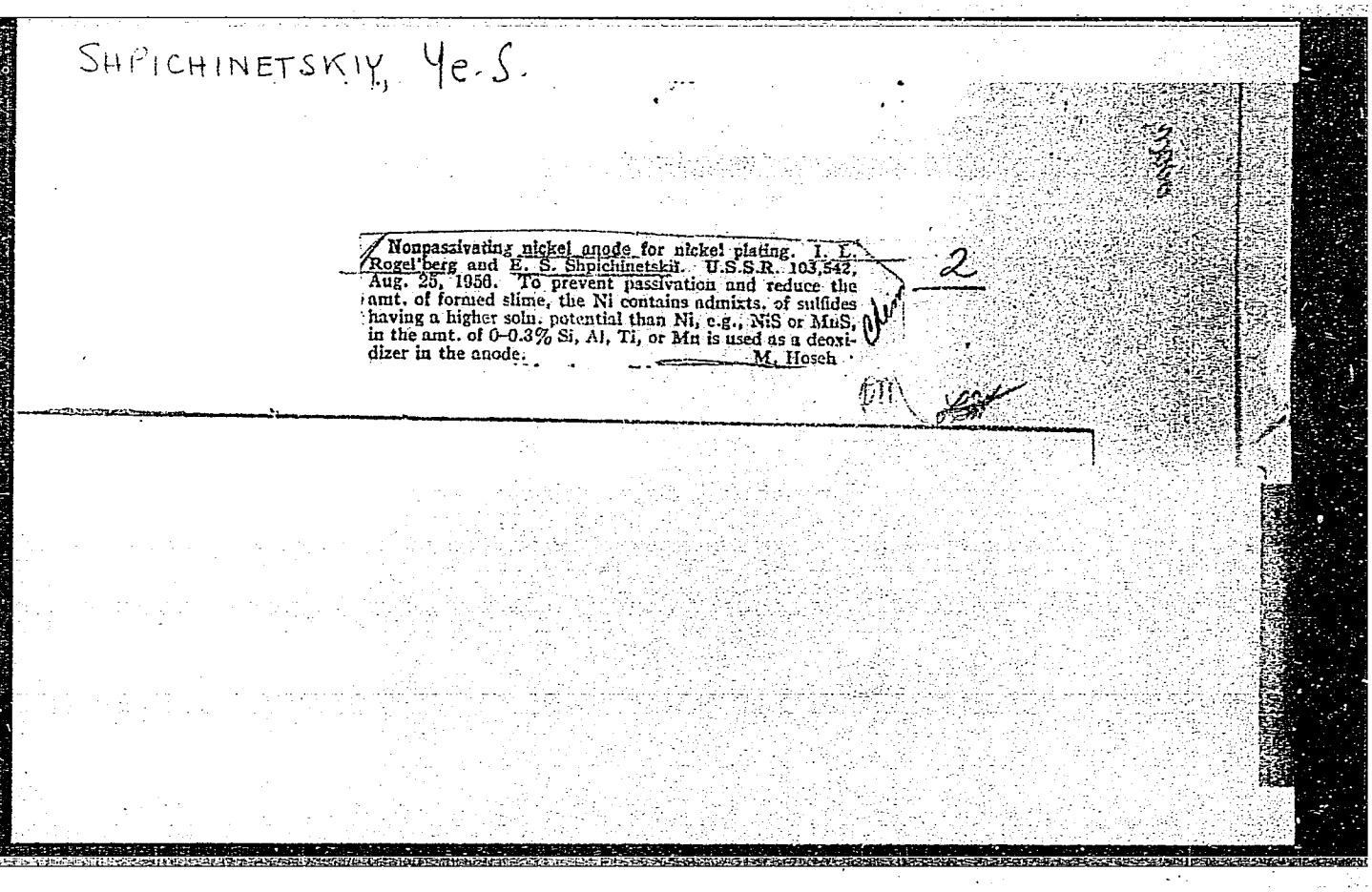
VYSOTSKAYA, Veronika Nikolayevna; CHIPIZHENKO, Andrey Ivanovich; MAL'TSEV, M.V., kandidat tekhnicheskikh nauk, retsenzent; SHPICHINETSKIY, Ye.S., kandidat tekhnicheskikh nauk, retsenzent; KHEYNES, S.A., inzhener, retsenzent; FOMIN, N.V., redaktor; KAMAYEVA, O.M., redaktor izdatel'stva; KARASEV, A.I., tekhnicheskiy redaktor

[Physical metallurgy] Metallovedenie. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 360 p.
(Physical metallurgy) (MLRA 10:1)

SHPICHINETSKIY, Ye. S.

POSTNIKOV, N. N., inzhenr, retsenzent; SHPICHINETSKIY, Ye. S., redaktor; KAMAYEVA, O. M., redaktor; izdatel'stva; EVENSON, I. M., tekhnichesk y redaktor; SMIRYAGIN, Aleksey Petrovich

[Industrial nonferrous metals and alloys] Promyshlennye tsvetnye metally i splavy. Izd. 2-e, perer. i dop. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 559 p. (MLRA 9:7)
(Nonferrous metals)



SHPICHINETSKIY, Ye.S.

Nonpassivating nickel anode for nickel plating. I. L. Rogel'berg and E. S. Shpichinetskii. U.S.S.R. 103,542, Aug. 25, 1956. To prevent passivation and reduce the amt. of formed slime, the Ni contains admixts. of sulfides having a higher soln. potential than Ni, e.g., NiS or MnS, in the amt. of 0–0.3% Si, Al, Ti, or Mn is used as a deoxidizer in the anode.

M. Hosch

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ROGEL'BERG, I.L.; SHPICHINETSKIY, Ye.S.

Chemical composition of "Depassivated" nickel anodes. TSvet. met. 29 no.8:68-70 Ag '56. (MLRA 9:10)

1. Giprotsvetmetobrabotka.
(Electrolytes--Conductivity)

SHPICHINETSKIY, Ye.S.

4

27 27

Nickel containing oxygen. L. L. Rogel'berg and E. S. 4E2c
Shpichinetskiĭ. U.S.S.R. 105,350, Apr. 25, 1957. Molten Ni having a clean surface is deoxidized with C and then kept boiling to burn out the C and drive out the gases, such as CO, contained in the melt. The Ni is then satd. with O. The resulting Ni is suitable for *nonpassivating Ni anodes*.

M. Hosch

MT

SHPICHINETSKIY Ye. S. 136-11-12/17

AUTHORS: Rogel'berg, I.L. and Shpichinetskiy, Ye.S.

TITLE: Alloys of Nickel with Tungsten, Calcium and Strontium for Cores of Oxide Cathodes of Radio Valves (Splavy nikelya s vol'framom, kal'tsiyem i strontsiyem dlya kernov oksidnykh katodov radiolamp)

PERIODICAL: Tsvetnyye Metally, 1957, No.11, pp. 67 - 74 (USSR).

ABSTRACT: The authors review existing alloys (Soviet and foreign) used for making radio-valve oxide-cathode cores (Tables 1 and 2) and describe work carried out in 1951-1955 on new alloys. The personnel consisted of metallurgists and electric-vacuum technologists including the authors, B.I. Puchkov, L.M. Baranova, B.P. Nikonova, V.S. Parkhomenko, L.N. Manina, A.A. Nekrasov, S.P. Dobrushina, A.N. Makovskaya and others (not named). The selection of alloys for the investigation, the production-technology and the mechanical properties of the products are dealt with. The recommended alloys are Ni-Ca (0.1-0.25%), Ni-Sr (0.1-0.25%) and Ni-W (2.5-3.5%) which contribute good emission properties and long service. The initial characteristics, speed of activation and life of valves with cathodes on Ni-Ca and Ni-Sr cores are practically identical and are considerably better than those of valves with cathodes of types A, B or ЯНК nickel especially under hard conditions. A possible disadvantage,

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Alloys of Nickel with Tungsten, Calcium and Strontium for Cores of Oxide Cathodes of Radio Valves

however, is the increased conductivity between heater and core which would appear to limit the applicability of these alloys because of current leakage, but the authors give data to show that this disadvantage is not fully confirmed. Valves with Ni-W alloy cathode cores were found to possess high emission properties, long life and good resistance to vibration and other properties superior to those of valves with standard cores. On the other hand, the activation of the Ni-W core valves is slower than that of Ni-Ca and Ni-Sr core valves. The Ni-W and Ni-Ca alloys are currently being used in various valves; Ni-W alloy tubes are being produced at the Revdinskiy Non-ferrous Metals Treatment Works and strip of all three new alloys is being produced at the experimental plant of the Giprotsvetmetobrabotka organisation.
There are 2 figures, 5 tables and 14 references, 3 of which are Russian, 2 German, 1 French and 8 English.

ASSOCIATION: Giprotsvetmetobrabotka

AVAILABLE: Library of Congress

Card 2/2

1. Cathodes (Electron tubes)--Development 2. Nickel alloys--Applications

SOV/137-58-10-20788

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 63 (USSR)

AUTHORS: Luzenberg, A.A., Rogel'berg, I.L., Shpichinetskiy, Ye.S.

TITLE: Production of LNO-grade Plastic Nickel with Minimal Non-metallic Inclusions (Polucheniye plastichnogo nikelya marki LNO s minimal'nym kolichestvom nemetallicheskikh vklyucheniy)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 22, pp 28-31

ABSTRACT: In the production of LNO-grade Ni strip at the Kol'chugino Plant im. S. Ordzhonikidze, rejects due to cold brittleness came to as much as 15% of the weight of the finished product. It is found that the brittleness of Ni strip is related not to an increase in the free C contents, but to inadequate deoxidation in the desulfurization of Ni. A new process of treatment of Ni melt and of introduction of Mg therein for degasification and desulfurization is suggested. The method of deoxidation suggested was tested with various types of mix and made it possible completely to eliminate rejects due to brittleness and oxide film. 1. Nickel--Production 2. Nickel--Impurities 3. Nickel --Mechanical properties 4. Oxide films--Metallurgical effects. G.E.

Card 1/1

DNESTROVSKIY, Nikolay Zinov'yevich; POMERANTSEV, Sergey Nikolayevich; SHPICHINETSKIY, Ye.S., kand. tekhn. nauk, retsenzent; POSTNIKOV, N.N., inzh., retsenzent; RZHEZNIKOV, V.S., red.; KOSOLAPOVA, E.F., red. izd-va; BERLOV, A.P., tekhn. red.

[Concise manual on working nonferrous metals and alloys] Kratkii spravochnik po obrabotke tsvetnykh metallov i splavov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi metallurgii, 1958. 406 p. (MIRA 11:8)

(Nonferrous metals--Metallurgy)

SHPICHINETSKIY YE. S.

PHASE I BOOK EXPLOITATION SOV/3505

Spravochnik po mashinostroitel'nym materialam v chetyrekh tomakh, tom 2: Tsvetnyye metally i ikh splavy (Handbook on Machine-Building Materials in 4 volumes, v. 2: Nonferrous Metals and Alloys) Moscow, Mashgiz, 1959. 639 p. Errata slip inserted. 25,000 copies printed.

Ed.: G. I. Pogodin-Alekseyev, Doctor of Technical Sciences, Professor; Ed. of this vol.: M. A. Bochvar, Engineer; Ed. of Publishing House: V. I. Rybakova, Engineer; Managing Ed. for Information Literature: I. M. Monastyrskiy, Engineer; Tech. Eds.: T. F. Sokolova and B. I. Model'.

PURPOSE: This book is intended for machine designers and metallurgists.

COVERAGE: The book presents comprehensive tabular and textual data on the chemical composition, physical and mechanical properties, microstructure, heat treatment, applications, etc., of various nonferrous metals and alloys used in machinery manufacture. Metals dealt with are aluminum, magnesium, copper, nickel, cobalt, titanium, zinc, and cadmium, together with certain precious and rare metals. Special materials considered are hard alloys (including sintered carbides), cermets, and ply metals. Special alloys, such as bearing,

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Card 10/22

GORELIK, S.S.; SHPICHINETSKIY, Ye.S.; MUKHORTOV, N.F.

Investigating softening and structural changes in deformed "cunico" alloys under the effect of heating. Izv.vys.ucheb.zav.; tsvet. met. 2 no.1:113-120 '59. (MIRA 12:5)

1. Moskovskiy institut stali. Kafedra fiziki metallov i rentgenografii.
(Copper-nickel-cobalt alloys--Testing)

BAL'SHIN, M.Yu., kand.tekhn.nauk; VINOGRADOV, S.V., inzh.; GLAZUNOV, S.G., kand.tekhn.nauk; ZELIKMAN, A.N., kand.khim.nauk; KISLYAKOV, I.P., kand.tekhn.nauk; KURITSYNA, A.D., kand.tekhn.nauk; LEBEDEV, A.A., A.A., inzh.; LUZHNIKOV, L.P., kand.tekhn.nauk; POMERANTSEV, S.N., inzh.; RUDNITSKIY, A.A., doktor khim.nauk; SMIRYAGIN, A.P., kand. tekhn.nauk; TRET'YAKOV, V.I., kand.tekhn.nauk; CHURSIN, V.M., kand.tekhn.nauk; CHUKHROV, M.V., kand.tekhn.nauk; SHAROV, M.V., kand.tekhn.nauk, SHPAGIN, A.I., kand.tekhn.nauk; SHPICHINETSKIY, Ye.S., kand.tekhn.nauk; POGODIN-ALEKSEYEV, prof., doktor tekhn. nauk, red.; BOCHVAR, M.A., inzh., red.toma; RYBAKOVA, V.I., inzh., red.izd-va; SOKOLOVA, T.F., tekhn.red.; MODEL', B.I., tekhn.red.

[Handbook of materials used in the machinery industry; in four volumes] Spravochnik po mashinostroitel'nym materialam; v chetyrekh tomakh. Pod red. G.I.Pogodina-Alekseeva. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. Vol.2. [Nonferrous metals and alloys] TSvetnye metally i ikh splavy. Red.toma M.A.Bochvar. 1959. 639 p. (MIRA 13:1)

(Nonferrous metals) (Nonferrous alloys)
(Machinery industry)

MAL'TSEV, Mikhail Vasil'yevich, prof., doktor tekhn.nauk; BARSUKOVA, Tamara Aleksandrovna, dotsent, kand.tekhn.nauk; BORIN, Fedor Andreyevich, dotsent, kand.tekhn.nauk; GOLOVIN, A.F., prof., general-mayor inzh.-tekhnicheskoy sluzhby, retsenzent; USOV, A.F., dotsent, kand.tekhn.nauk, retsenzent; PANCHENKO, Ye.V., dotsent, kand.tekhn.nauk, retsenzent; KRIMER, B.I., dotsent, kand.tekhn.nauk, retsenzent; SHPICHINETSKIY, Ya.S., red.; KAMAYEVA, O.M., red.izd-va; VAYNSHTEYN, Ye.B., tekhn.red.

[Metallography of nonferrous metals and alloys; with an atlas of macro- and microstructures in supplement] Metallografiia tsvetnykh metallov i splavov; s prilozheniem atlasa makro- i mikrostruktur. Pod obshchey red. M.V.Mal'tseva. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 372 p. (MIRA 13:9)

1. Kafedra metallovedeniya Moskovskogo instituta tsvetnykh metallov i zolota im. M.I.Kalinina (for Mal'tsev, Barsukova, Borin).
(Nonferrous metals--Metallography)

SHPICHINETSKIY, Ye.S.; NOVIKOV, I.I.

Nickel brittleness in connection with retrograde solubility of grain boundaries. Issl.splav.tsvet.met. no.2:101-103 '60. (MIRA 13:5)
(Nickel--Brittleness) (Crystallization)

86079

S/180/60/000/005/030/033
E193/E183

18.7500 1416, 1555

AUTHORS: Agafonov, A.G., Golomolzina, Yu.A., Rogel'berg, I.L., and Shpichinetskiy, Ye.S., (Moscow)

TITLE: Crystallization of Graphite on the Surface of Technical Purity Nickel

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, No.5, pp. 223-224

TEXT: The object of the investigation described in the present paper was to determine the causes of the formation of black spots on annealed nickel sheet. To this end, specimens of nickel sheet, containing 0.03-0.10% C, and small quantities of Si, Mg and Mn, subjected to vacuum annealing for 3 hours at 800 °C, followed by cooling at the rates of 2-3, 10-15 and 150-200 °C/min, were studied. The results of electron diffraction analysis showed that the black surface film (estimated to be 10^{-6}-10^{-5} cm thick), formed under these conditions, is pure graphite. Microscopic examination confirmed this finding and revealed that graphite is first precipitated at the grain boundaries and then spreads over the surface. In analogy to the hyper-eutectoid steels, presence

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S/180/60/000/005/030/033
E193/E183

Crystallization of Graphite on the Surface of Technical Purity Nickel

of silicon in nickel intensified the crystallization of graphite. The rate of cooling after annealing had a marked effect on the phenomenon studied. At the cooling rate of 2-3 °C/min, the formation of surface graphite film took place when the carbon content in nickel was $\geq$ 0.04%. When the cooling rate was increased to 10-15 °C/min, the minimum carbon content leading to the formation of the surface graphite film was found to be 0.06%. No graphite film was formed on the surface of specimens that, after annealing, had been cooled at the rate of 150-200 °C/min. Crystallization of graphite on nickel surface can take place also when annealing is carried out in a reducing atmosphere. In this case, graphite is crystallized also from the gaseous phase. It has been shown experimentally that in the absence of carbon in nickel, no formation of the surface graphite film takes place during annealing in a reducing atmosphere. This indicates that when such film is formed under these conditions on nickel

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86079

S/180/60/000/005/030/033
E193/E183

Crystallization of Graphite on the Surface of Technical Purity Nickel

containing $\geq$ 0.04% C, graphite particles precipitated from the metal act as crystallization nuclei for carbon which condenses from the gaseous phase during cooling.

There are 1 plate (opposite page 222) and 8 references: 4 Soviet and 4 non-Soviet.

SUBMITTED: May 26, 1960

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18 1220
9.4130 also 1160

28563 S/137/61/000/009/059/087
A060/A101

AUTHORS: Rogel'berg, I. L., Shpichinetskiy, Ye. S.

TITLE: On the problem of the optimal composition of alloying elements in alloys for the emitters of secondary electrons

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 9, 1961, 24, abstract 9I158 ("Tr. Gos. n.-i. i proyektn. in-ta po obrabotke tsvetn. met.", 1960, no. 18, 215-220)

TEXT: An analysis is carried out of the literature data on the dependence of the coefficient of secondary electron emission δ of metallic alloys upon the concentration of the alloying elements. To establish the optimal compositions of the materials used as emitters of secondary electrons, the binary alloys of Cu, Ag, and Ni with admixtures of Mg, Be, Al, and Ti up to 1 - 9% by weight were investigated. The δ was measured at an acceleration potential of the primary electrons - 300 volts (δ_{300}) at the maximum δ (δ_{max}). Before testing the alloys were activated at temperatures equal to 0.52 - 0.89 of their melting temperature (reckoned in the absolute scale). It was established that the nature of the dependence of δ_{300} and δ_{max} upon the concentration of the alloying elements is

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A060/A101

On the problem of the optimal composition ...

the same for all the alloys studied: with low concentrations of the alloying metals the σ does not depend upon the concentration and only exceeds the σ of the base metal slightly, taking the values 1.5 - 2.8; an increase in the concentration of the alloying metal causes a stepwise increase of σ_{300} and σ_{max} up to the values 4.6 - 6.5 and 5.7 - 8.5 respectively, which then do not change at a further addition of alloying metal. The width of the step-wise variation region for σ does not exceed 0.1% by weight. The concentration values are found at which the σ undergo the jump. They are (in % of the second element): Al - Mg (0.3), Cu - Mg (0.6), Ni - Mg (0.8), Cu - Be (0.35), Al - Mg (0.2), Ni - Be (0.6), Cu - Al (0.8), Cu - Ti (1.1), Ag - Be (0.2). The results obtained make it possible to conclude that the optimal compositions of alloys for secondary-electron emitters are determined by two factors: From below, the range of the possible compositions is restricted by the specific requirement, - to obtain the greatest possible σ (as compared with unalloyed metal), and its upper limit depends only upon the mechanical properties of the alloy (flowability, deformability, etc). There are 16 references.

A. Danilin

[Abstracter's note: Complete translation]

Card 2/2

28562

S/137/61/000/009/058/087
A060/A101

18.1220
9,4130 also 1160

AUTHORS: Rogel'berg, I. L., Shpichinetskiy, Ye. S.

TITLE: Aluminum-magnesium-bronze, an alloy for secondary-electron emitters

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 9, 1961, 23, abstract 9I153 ("Tr. Gos. n.-i. i proyektn. in-ta po obrabotke tsvetn. met.", 1960, no. 18, 221-232)

TEXT: Copper based alloys with admixtures of Mg for the manufacture of emitters of secondary electrons are discussed. Their important drawbacks are poor technological characteristics: large interval of crystallization, low flowability, considerable evaporation and oxidation of Mg in the process of smelting and casting. An additional alloying of the indicated Al alloys is proposed for eliminating these drawbacks. Ternary compositions were investigated with Al content up to 10% by weight and Mg content up to 4% by weight. Their coefficient of secondary electron emission was measured in a range of primary electron energies 100 - 700 volts, and their mechanical properties in the temperature range 650 - 850°C were determined. On the basis of the experiments carried out, a concentration region of alloys which possess the required

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28562 S/137/61/000/009/058/087
A060/A101

Aluminum-magnesium-bronze, an alloy ...

operational and technological characteristics was outlined in the phase diagram of Cu-Al-Mg. As the optimal alloy, a bronze with 5 - 6% Al by weight and 1% Mg by weight [Бр. АМг6-1 (Br. Amg 6-1)] is proposed, the production of which in the form of strips has been mastered on an industrial scale.

A. Danilin

[Abstracter's note: Complete translation]

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