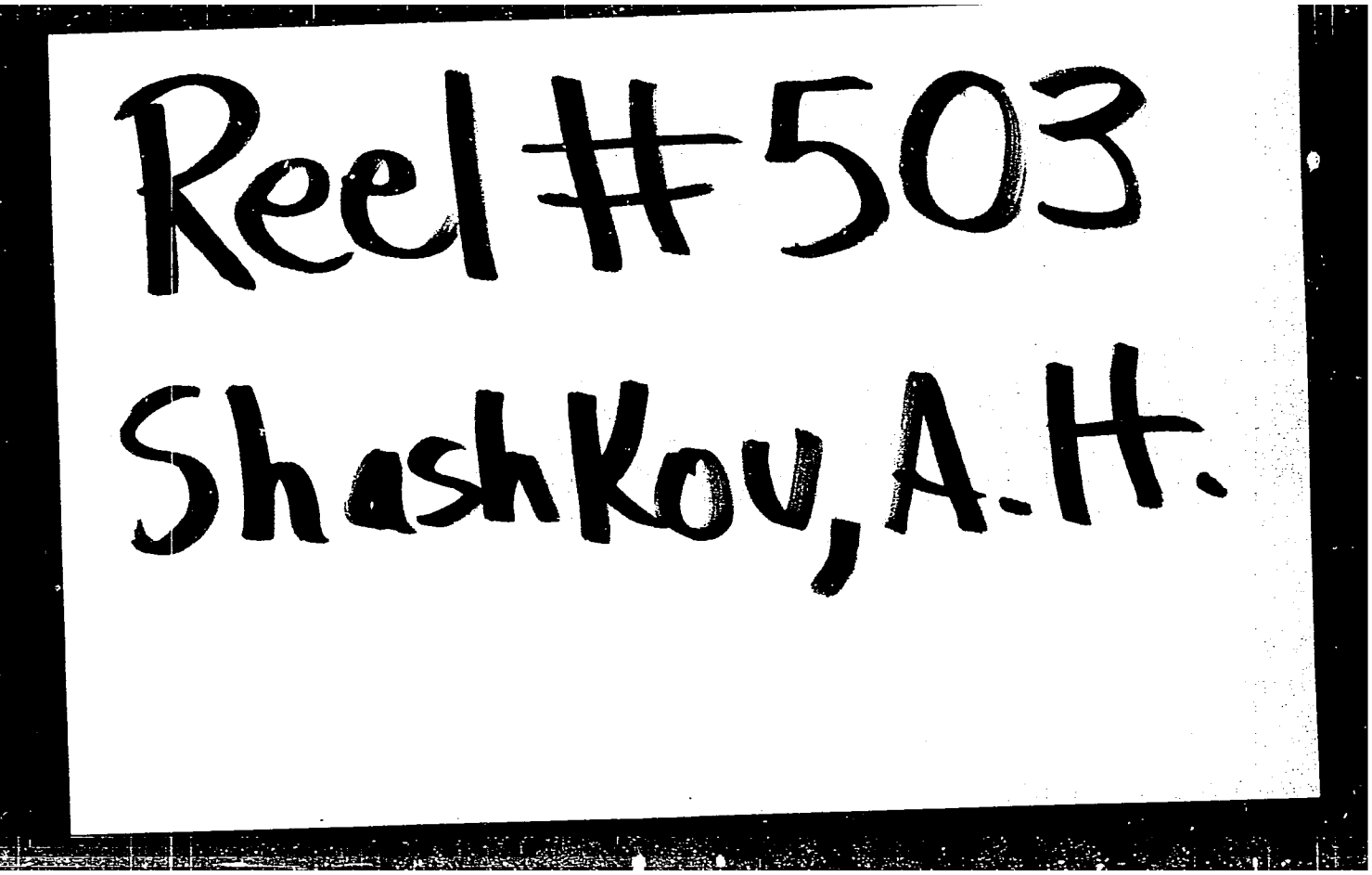


L 01499-66 EWT(m)/EWP(j)/T/ETC(m)/EPF(c) WW/RM

ACCESSION NR: AP5014740 UR/0201/65/000/001/0064/0068

AUTHORS: Shashkov, A. H.; Abramenko, T. N.

TITLE: Method of continuous measurement of the thermal conductivity (concentration) of a binary gas mixture

SOURCE: AN BSSR. Izvestiya. Seriya fiziko-tekhnicheskikh nauk, no. 1, 1965, 64-68

TOPIC TAGS: thermal conductivity, concentration, gas mixture, heat measurement

ABSTRACT: The authors describe a bolometric method of determining the time-varying concentration of a controlled fraction in a carrier gas from the change in the thermal conductivity of the mixture. The method consists of varying the current through an electrically heated wire placed in the gas stream in such a way that the wire temperature remains constant under all variations of the medium.

Card 1/3

L 01499-66

ACCESSION NR: AP5014740

The schematic diagram of the measurement circuit is shown in Fig. 1 of the Enclosure. The theory of the method is described and the equations for the temperature and current changes are derived under certain simplifying assumptions. The concentration of the controlled gas can be determined from the change in its thermal conductivity, which in turn can be derived from the change in the current. Advantages claimed for the measurement system are low time lag, small nonlinear distortion, independence of the measurement results of the fluctuations in the wire temperature, possibility of taking into account end effects, and sufficiently high sensitivity. Orig. art. has: 2 figures and 14 formulas.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 01 SUB CODE: TD, ME

NR REF SOV: 001 OTHER: 001

Card 2/3

L 01499-66

ACCESSION NR: AP5014745

ENCLOSURE: 01

0

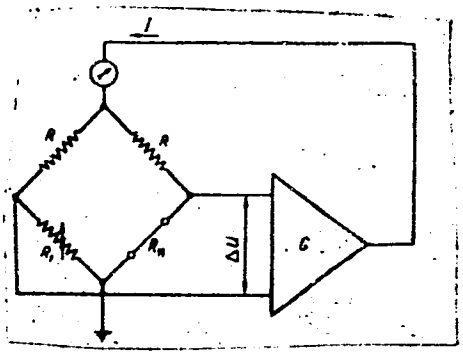
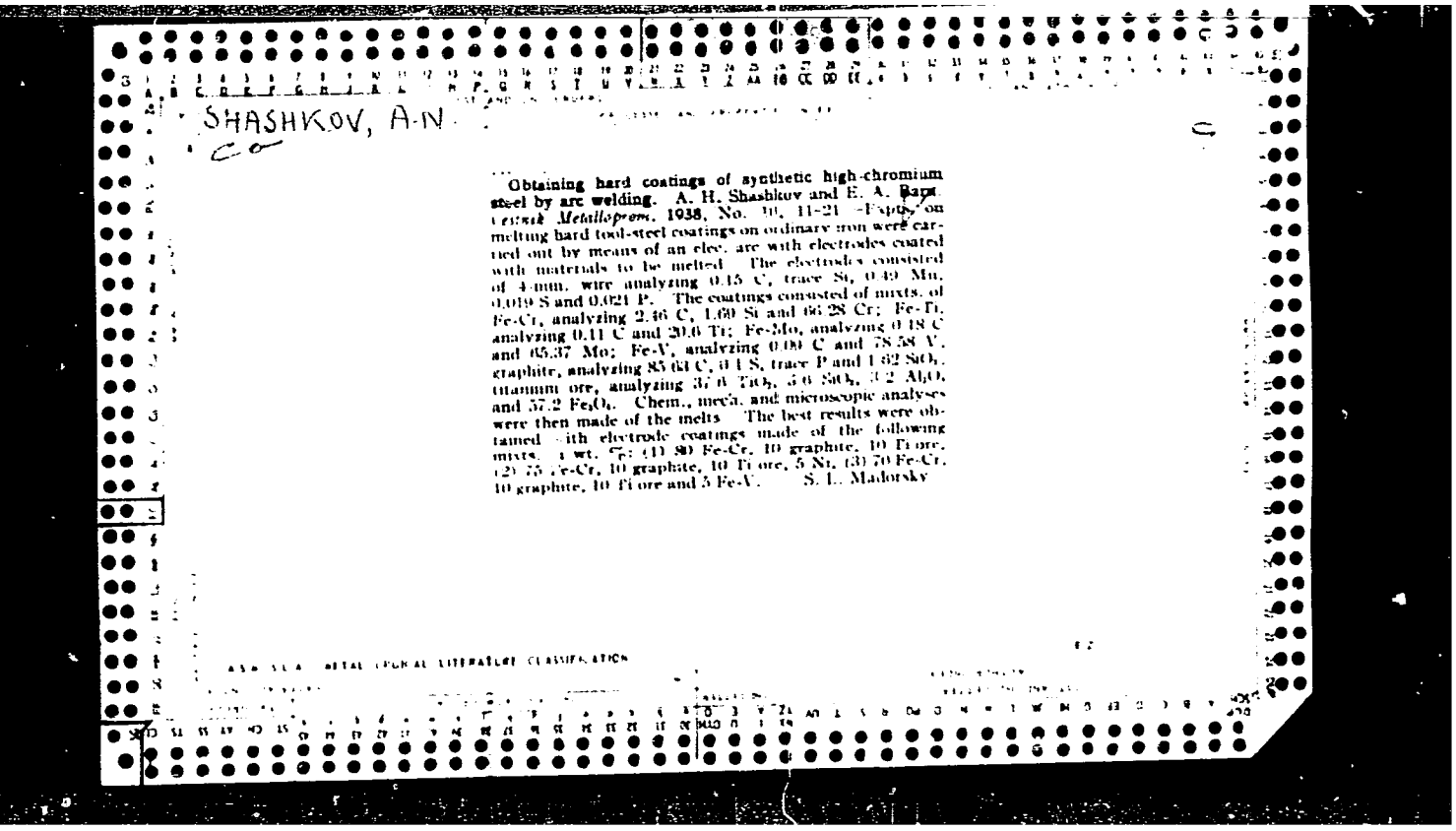


Fig. 1. Schematic diagram of measurement

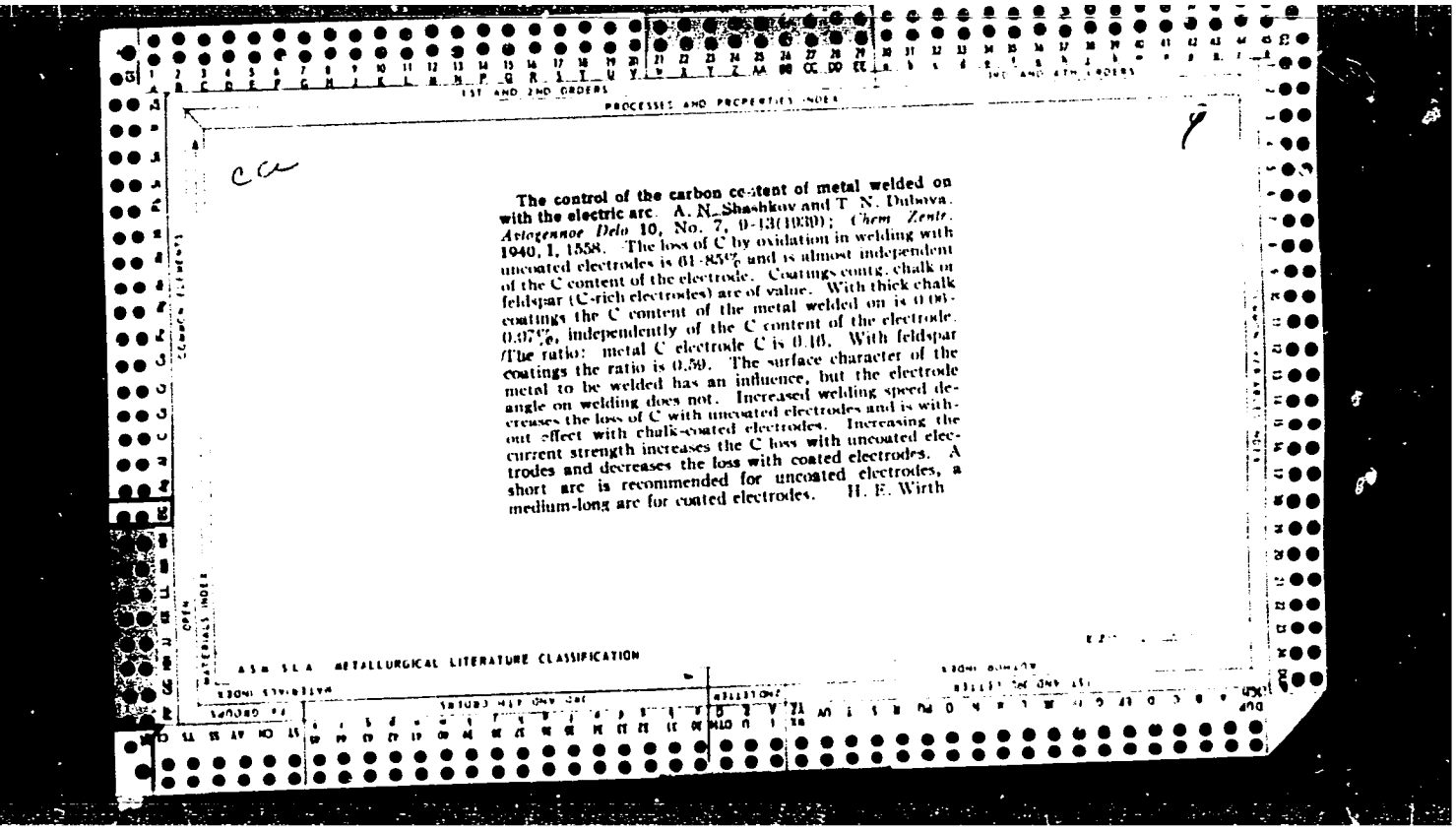
Card 3/3 dP



SHASHKOV, A.N.

Co

Obtaining hard coatings of synthetic high-chromium steel by arc welding. A. N. Shashkov and E. A. Barsukova. *Vestnik Metalloprom.* 1938, No. 10, 11-21.—Experiments on melting hard tool-steel coatings on ordinary iron were carried out by means of an elec. arc with electrodes coated with materials to be melted. The electrodes consisted of 4-mm. wire analyzing 0.15 C, trace Si, 0.49 Mn, 0.019 S and 0.021 P. The coatings consisted of mixts. of Fe-Cr, analyzing 2.46 C, 1.60 Si and 66.28 Cr; Fe-Ti, analyzing 0.11 C and 20.6 Ti; Fe-Mo, analyzing 0.18 C and 65.37 Mo; Fe-V, analyzing 0.09 C and 78.58 V; graphite, analyzing 85.61 C, 0.1 S, trace P and 1.62 SiO_2; titanium ore, analyzing 37.6 TiO_2, 5.6 SiO_2, 3.2 Al_2O_3 and 57.2 Fe_3O_4. Chem., mech. and microscopic analyses were then made of the melts. The best results were obtained with electrode coatings made of the following mixts.: 1 wt. %: (1) 80 Fe-Cr, 10 graphite, 10 Ti ore; (2) 75 Fe-Cr, 10 graphite, 10 Ti ore, 5 Ni; (3) 70 Fe-Cr, 10 graphite, 10 Ti ore and 5 Fe-V. S. L. Madorsky



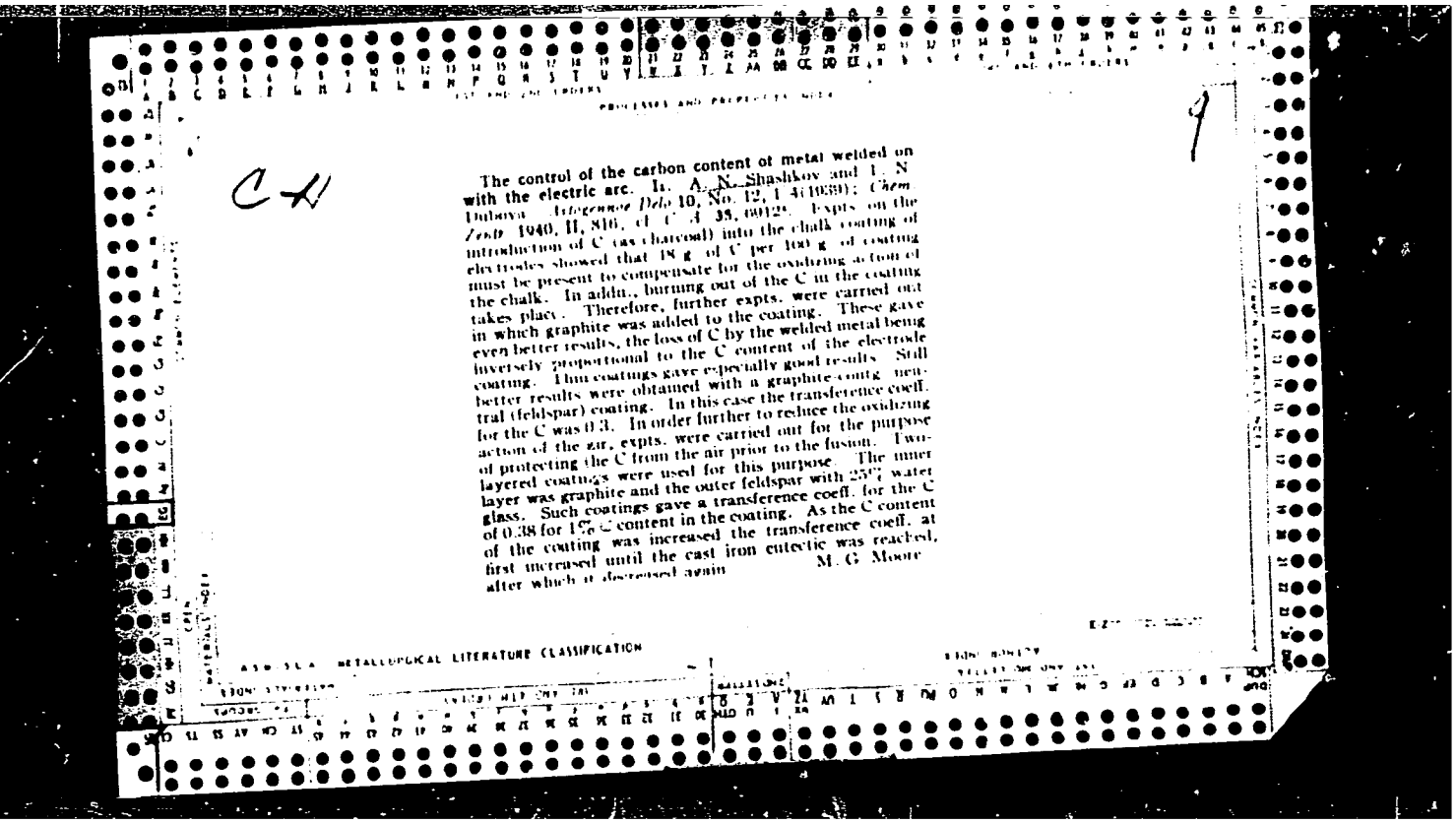
PROCESSES AND PROPERTIES INDEX

CA

7

The control of the carbon co-tent of metal welded on with the electric arc. A. N. Shashkov and T. N. Dubova. *Avtogennoe Delo* 10, No. 7, 9-13(1939); *Chem. Zentr.* 1940, I, 1558. The loss of C by oxidation in welding with uncoated electrodes is 61-85% and is almost independent of the C content of the electrode. Coatings contg. chalk or feldspar (C-rich electrodes) are of value. With thick chalk coatings the C content of the metal welded on is 0.06-0.07%, independently of the C content of the electrode. The ratio: metal C electrode C is 0.46. With feldspar coatings the ratio is 0.59. The surface character of the metal to be welded has an influence, but the electrode angle on welding does not. Increased welding speed decreases the loss of C with uncoated electrodes and is without effect with chalk-coated electrodes. Increasing the current strength increases the C loss with uncoated electrodes and decreases the loss with coated electrodes. A short arc is recommended for uncoated electrodes, a medium-long arc for coated electrodes. H. E. Wirth

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



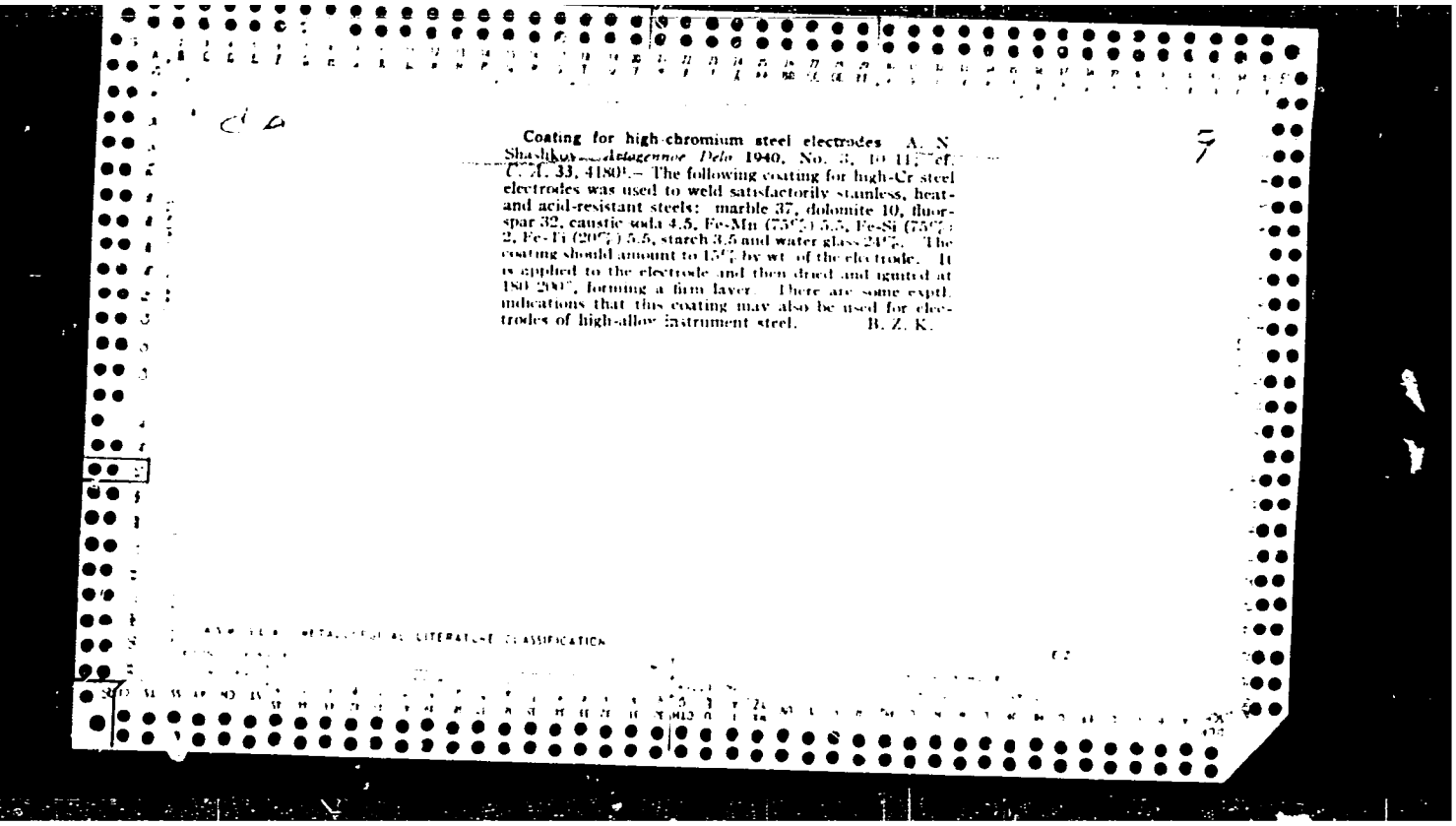
C-4

9

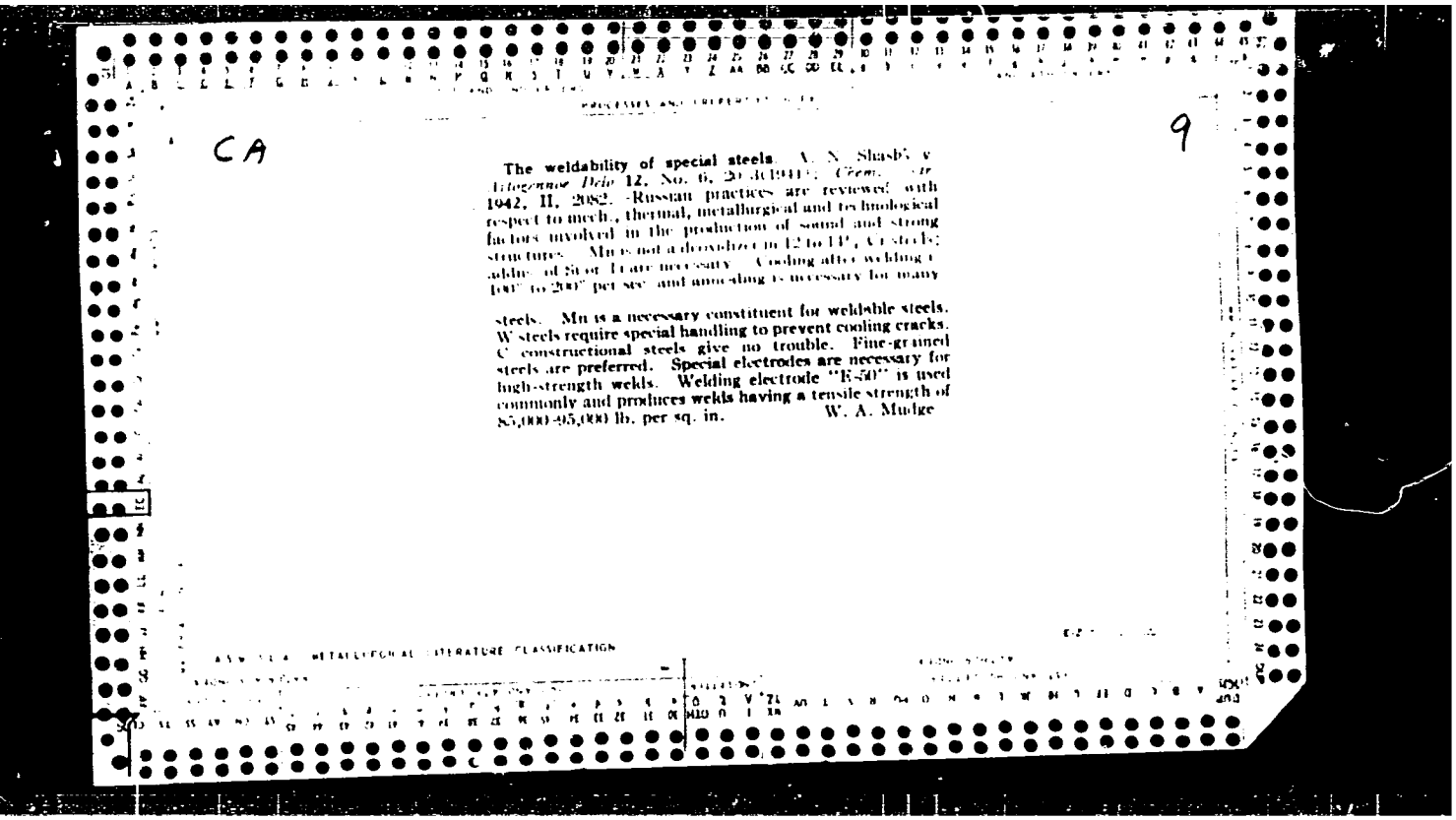
The control of the carbon content of metal welded on with the electric arc. Iu. A. N. Shashkov and I. N. Dubova. *Integrennoe Delo* 10, No. 12, 1 4(1939); *Chem. Zentb.* 1940, II, 816. cf. C. A. 35, 6012⁸. Expts. on the introduction of C (as charcoal) into the chalk coating of electrodes showed that 18 g. of C per 100 g. of coating must be present to compensate for the oxidizing action of the chalk. In addn., burning out of the C in the coating takes place. Therefore, further expts. were carried out in which graphite was added to the coating. These gave even better results, the loss of C by the welded metal being inversely proportional to the C content of the electrode coating. Thin coatings gave especially good results. Still better results were obtained with a graphite-contg. neutral (feldspar) coating. In this case the transference coeff. for the C was 0.3. In order further to reduce the oxidizing action of the air, expts. were carried out for the purpose of protecting the C from the air prior to the fusion. Two-layered coatings were used for this purpose. The inner layer was graphite and the outer feldspar with 25% water glass. Such coatings gave a transference coeff. for the C of 0.38 for 1% C content in the coating. As the C content of the coating was increased the transference coeff. at first increased until the cast iron eutectic was reached, after which it decreased again.

M. G. Moore

ASM-WSA METALLURGICAL LITERATURE CLASSIFICATION



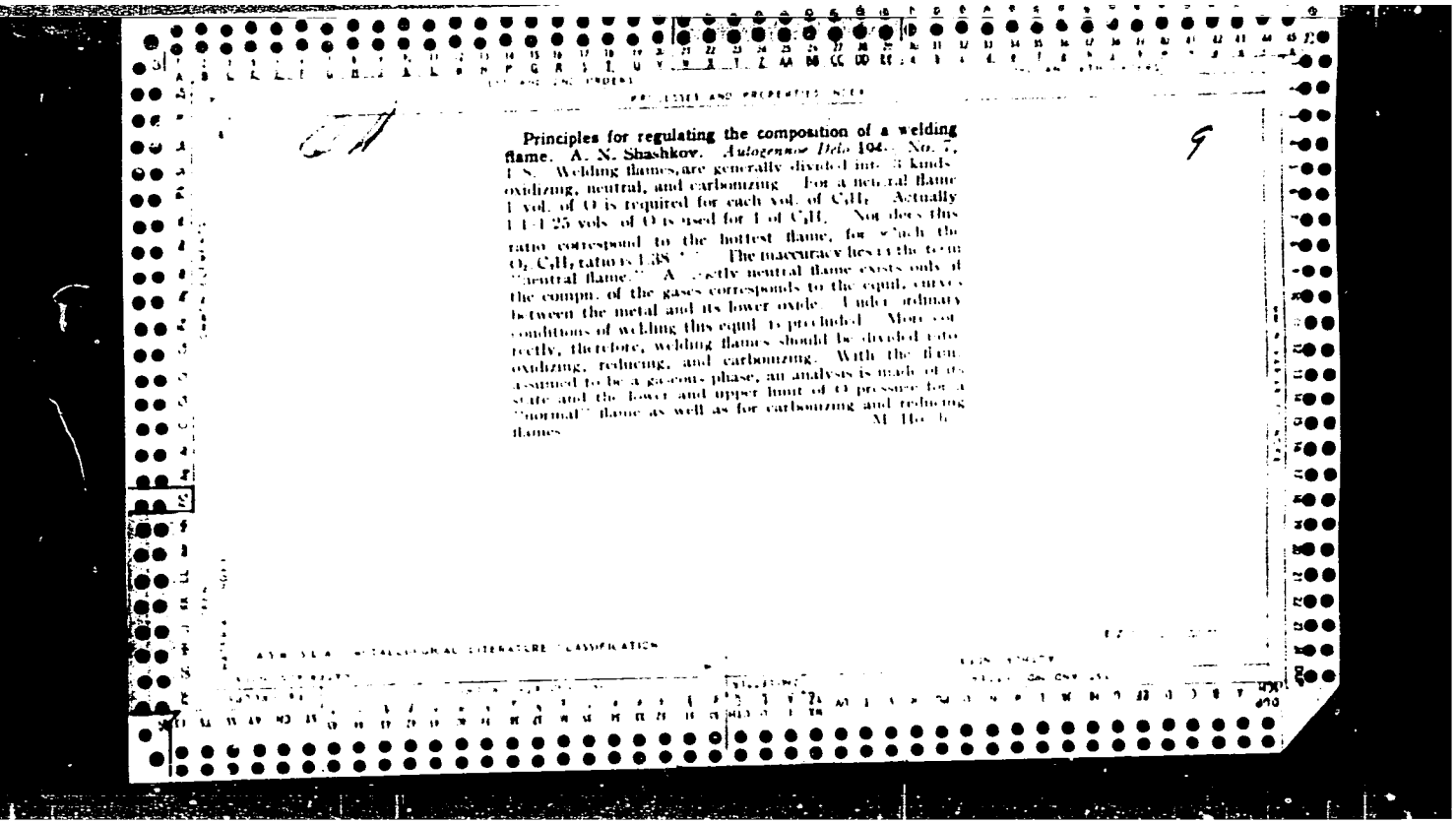
Coating for high-chromium steel electrodes. A. N. Shashkov. *Metallurg* 1940, No. 3, 10-11; cf. *C. A.* 33, 4180⁹.— The following coating for high-Cr steel electrodes was used to weld satisfactorily stainless, heat- and acid-resistant steels: marble 37, dolomite 10, fluorspar 32, caustic soda 4.5, Fe-Mn (75%) 5.5, Fe-Si (75%) 2, Fe-Ti (20%) 5.5, starch 3.5 and water glass 24%. The coating should amount to 15% by wt. of the electrode. It is applied to the electrode and then dried and ignited at 180-200°, forming a firm layer. There are some exptl. indications that this coating may also be used for electrodes of high-alloy instrument steel. B. Z. K.



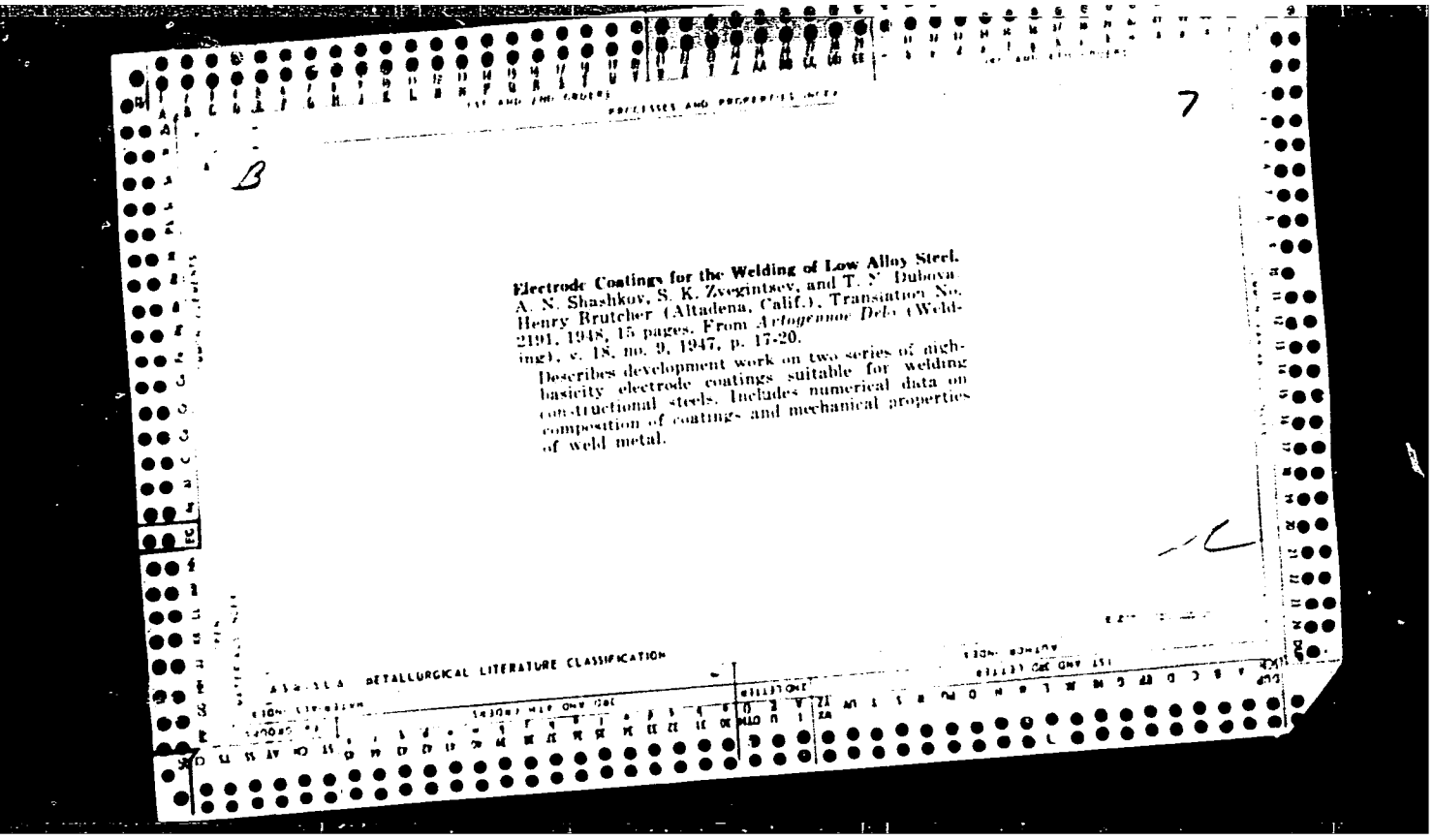
CA

9

The weldability of special steels. A. N. Shashi, *Trudy Leningrad. Fiziko-Tekh. Inst.* 12, No. 6, 25-30(1941); *Chem. Abs.* 1942, II, 2082. Russian practices are reviewed with respect to mech., thermal, metallurgical and technological factors involved in the production of sound and strong structures. Mn is not a deoxidizer in 12 to 14% Cr steels; addns. of Si or Ti are necessary. Cooling after welding at 100° to 200° per sec. and annealing is necessary for many steels. Mn is a necessary constituent for weldable steels. W steels require special handling to prevent cooling cracks. C constructional steels give no trouble. Fine-grained steels are preferred. Special electrodes are necessary for high-strength welds. Welding electrode "E-50" is used commonly and produces welds having a tensile strength of 85,000-95,000 lb. per sq. in. W. A. Mudge



Principles for regulating the composition of a welding flame. A. N. Shashkov. *Autogennoe Delo* 10[illegible] No. [illegible], 1 N. Welding flames are generally divided into 3 kinds—oxidizing, neutral, and carbonizing. For a neutral flame 1 vol. of O is required for each vol. of C_2H_2. Actually 1.1–1.25 vols. of O is used for 1 of C_2H_2. Nor does this ratio correspond to the hottest flame, for which the O_2:C_2H_2 ratio is 1.38 [illegible]. The inaccuracy lies in the term "neutral flame." A exactly neutral flame exists only if the compn. of the gases corresponds to the equil. curves between the metal and its lower oxide. Under ordinary conditions of welding this equil. is precluded. More correctly, therefore, welding flames should be divided into oxidizing, reducing, and carbonizing. With the flame assumed to be a gaseous phase, an analysis is made of its surface and the lower and upper limit of O pressure for a "normal" flame as well as for carbonizing and reducing flames. M. Hoc[illegible]



Electrode Coatings for the Welding of Low Alloy Steel. A. N. Shashkov, S. K. Zvegintsev, and T. S. Dubova. Henry Brutcher (Altadena, Calif.), Translation No. 2191, 1948, 15 pages. From *Avtogennoe Delo* (Welding), v. 18, no. 9, 1947, p. 17-20.

Describes development work on two series of high-basicity electrode coatings suitable for welding constructional steels. Includes numerical data on composition of coatings and mechanical properties of weld metal.

SHASHKOV, A. N. Docent

PA 20/49T41

USSR/Engineering
Welding - Electrodes
Testing and Standardization

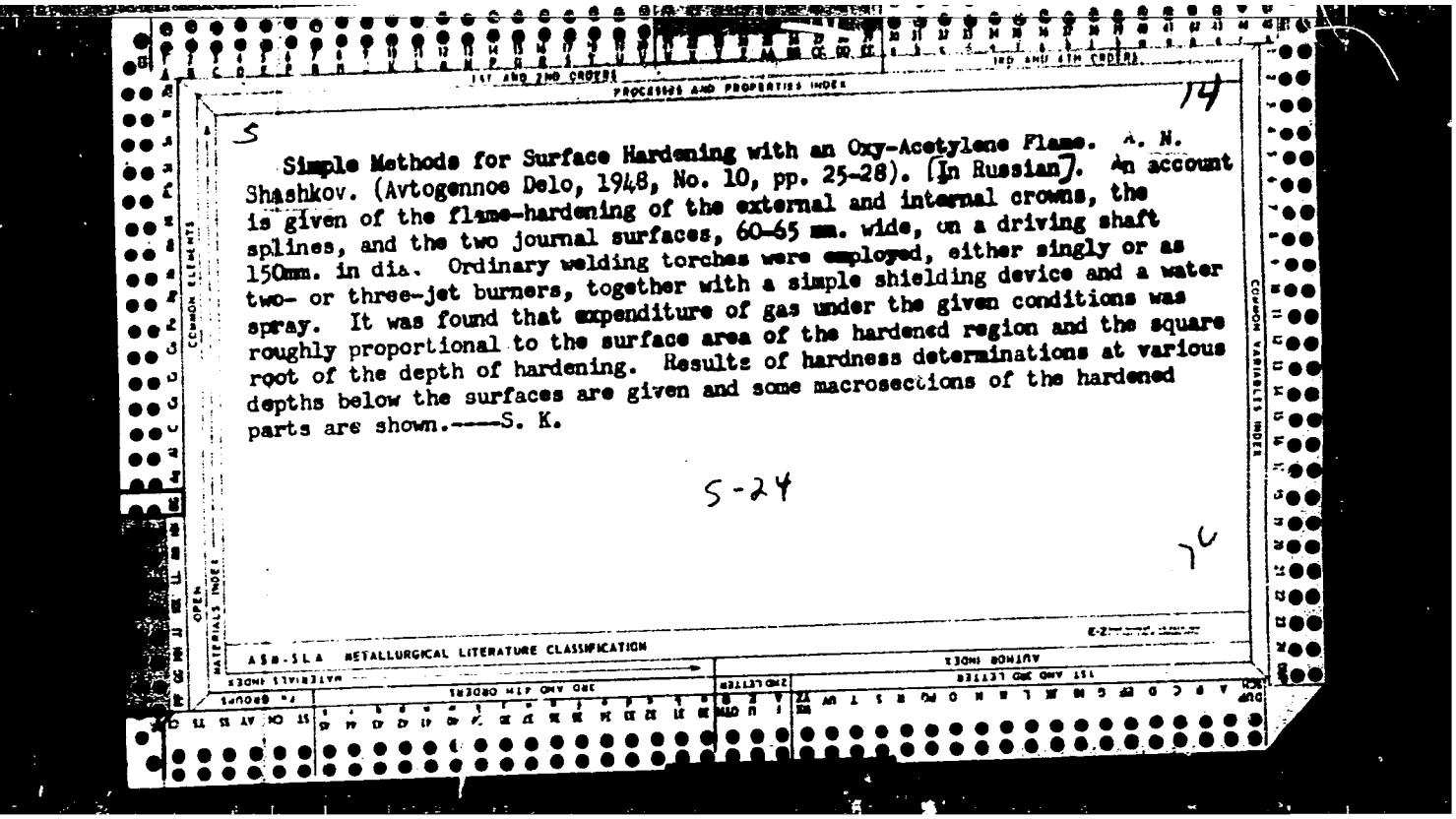
Sep 48

"What Are the Necessary Electrode Grades?" Docent A. N. Shashkov, All-Union Sci Res Inst of Autogenous Welding, 2½ pp

"Avtogennoye Delo" No 9

Discusses types of electrodes needed for various purposes and stresses desirability of increased production of those in short supply. Includes eight tables.

20/49T41



PROCESSES AND PROPERTIES INDEX

14

S

Simple Methods for Surface Hardening with an Oxy-Acetylene Flame. A. N. Shashkov. (Avtogennoe Delo, 1948, No. 10, pp. 25-28). [In Russian]. An account is given of the flame-hardening of the external and internal crowns, the splines, and the two journal surfaces, 60-65 mm. wide, on a driving shaft 150mm. in dia. Ordinary welding torches were employed, either singly or as two- or three-jet burners, together with a simple shielding device and a water spray. It was found that expenditure of gas under the given conditions was roughly proportional to the surface area of the hardened region and the square root of the depth of hardening. Results of hardness determinations at various depths below the surfaces are given and some macrosections of the hardened parts are shown.——S. K.

S-24

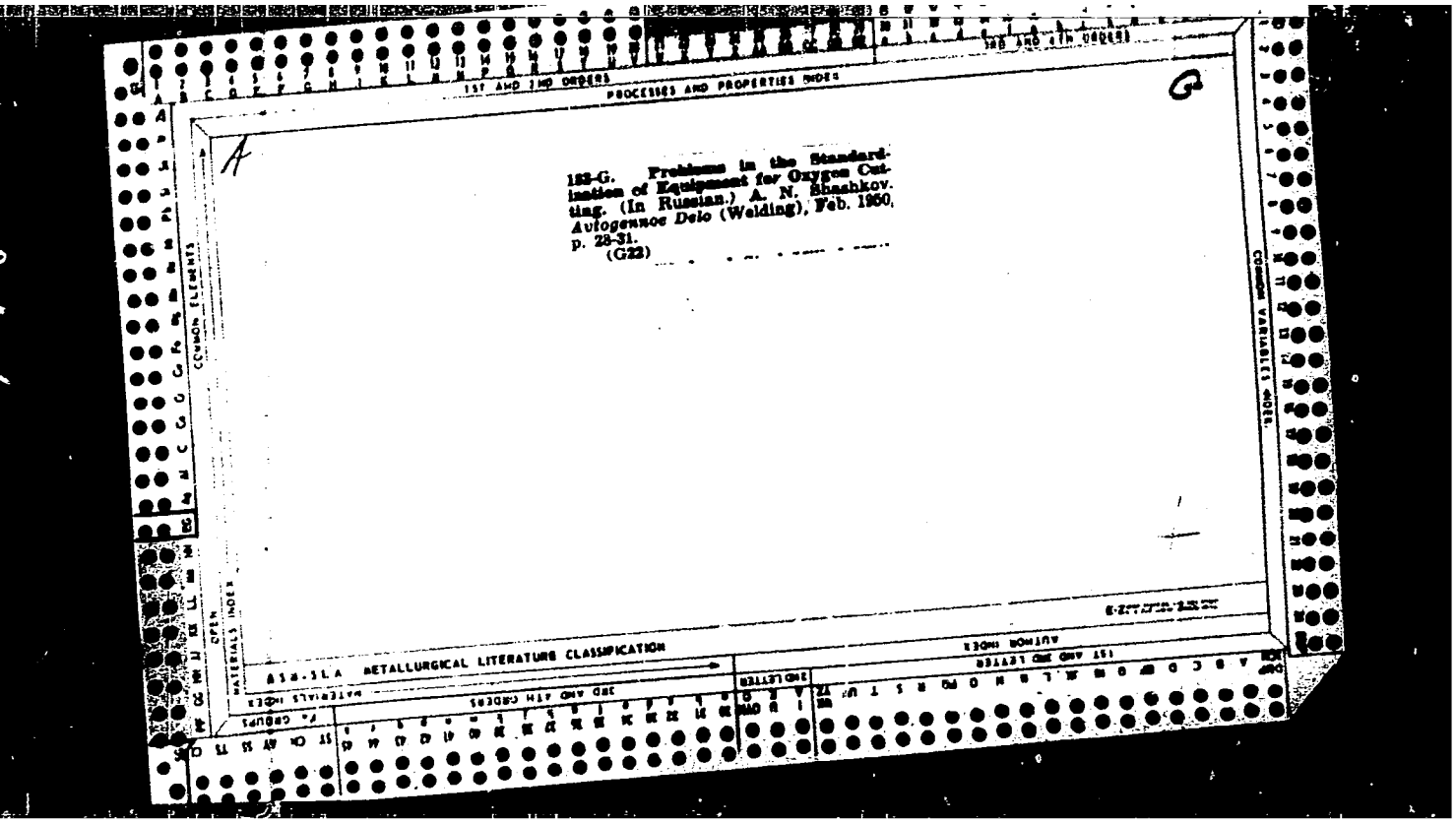
76

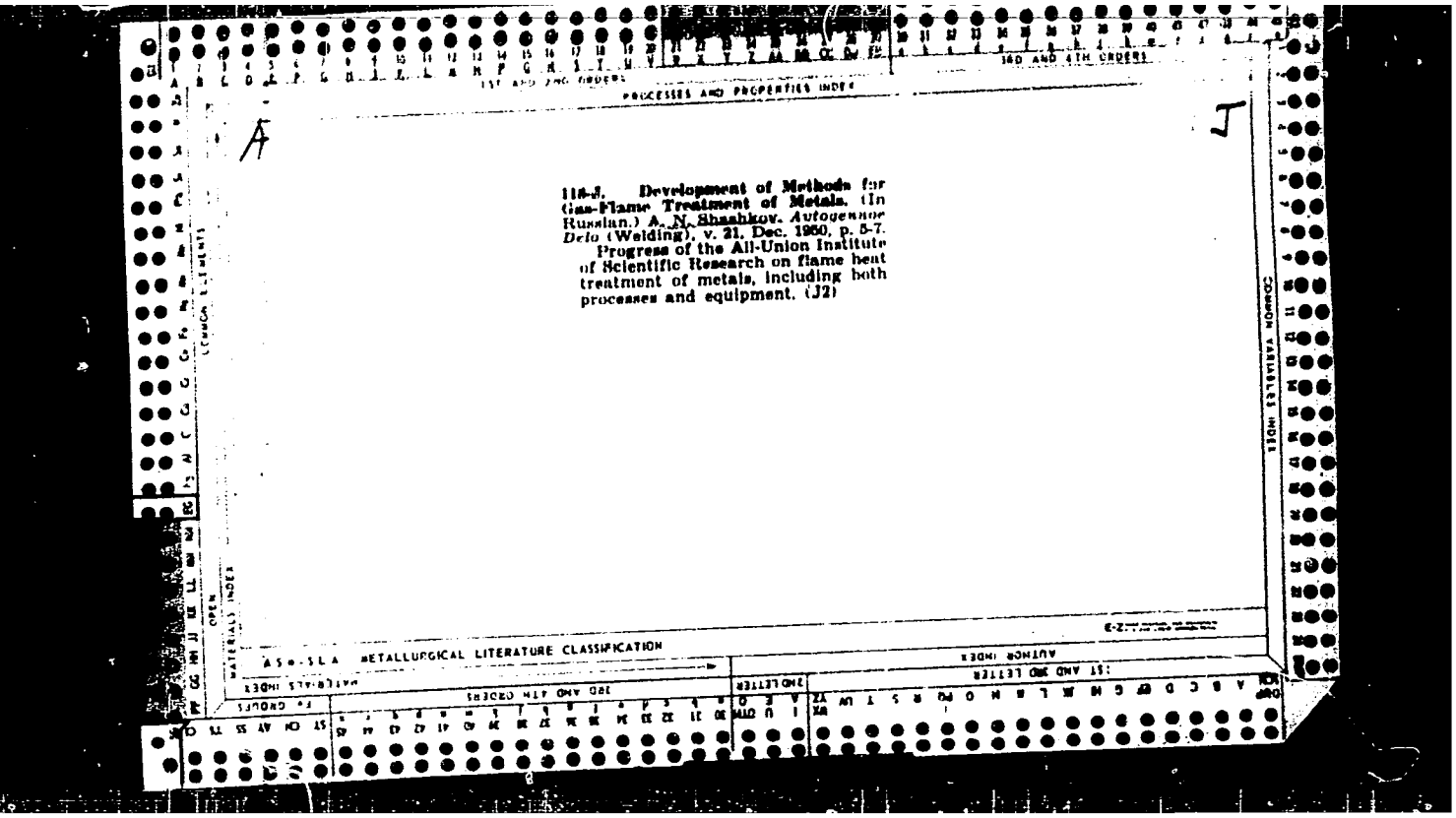
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

4

Waxing of metallographic microsections. A. N. Shashkov.—*Zavodskaya Lab.* 14, 1017(1948).—The section is ground, then polished only partially, and coated with paraffin at 70-80°. After cooling and mech. removal of the excess paraffin, polishing is completed and the section etched as usual. In cast iron, this procedure reduces oxidation around the graphitic inclusions, gives sharper boundaries of the phosphidic eutectic, and purer ferritic fields.
N. Thon





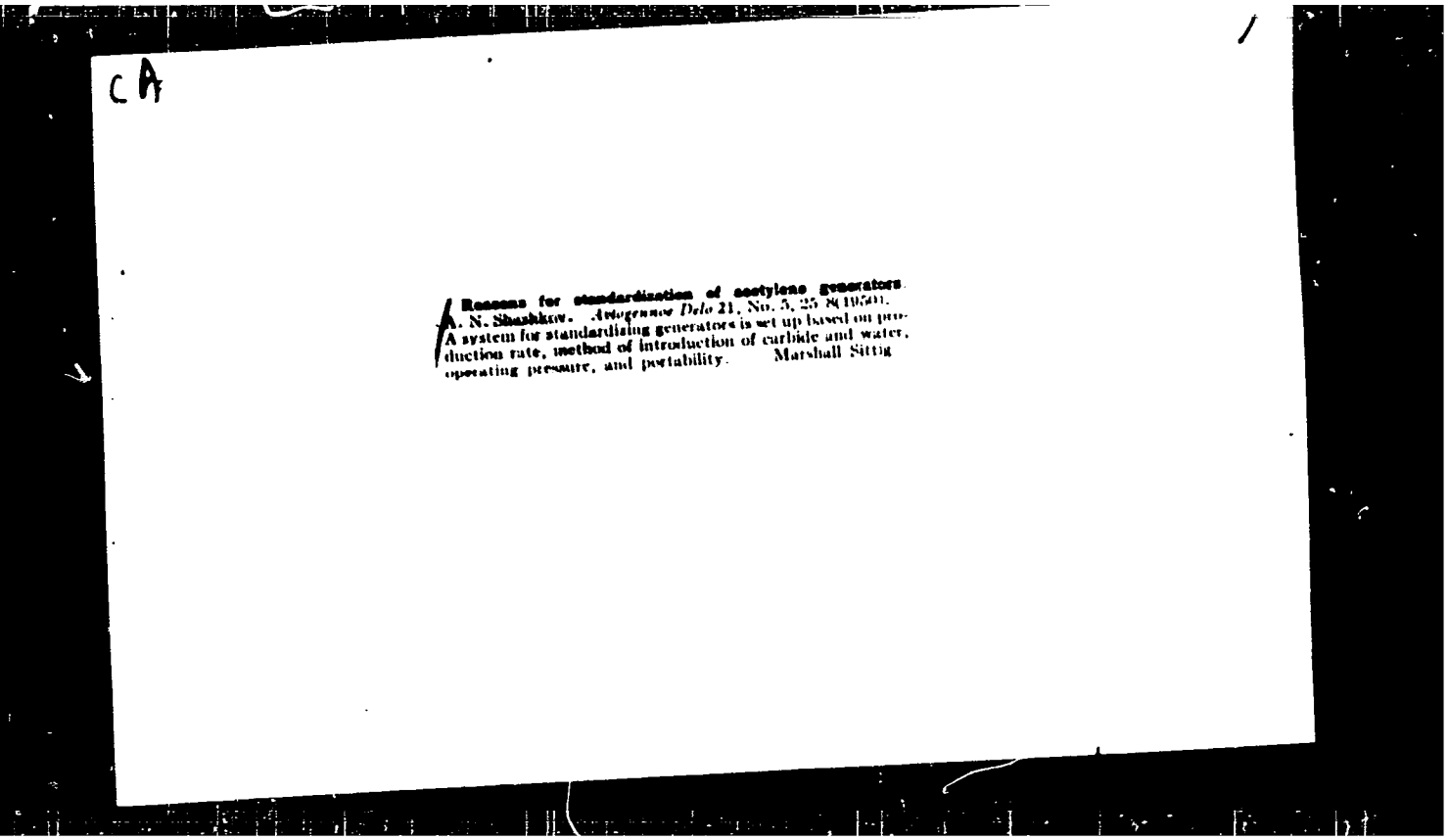
PROCESSES AND PROPERTIES INDEX

A

J

118-J. **Development of Methods for Gas-Flame Treatment of Metals.** (In Russian.) A. N. Shashkov. *Avtogennoe Delo* (Welding), v. 21, Dec. 1950, p. 5-7.
Progress of the All-Union Institute of Scientific Research on flame heat treatment of metals, including both processes and equipment. (J2)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

Reasons for standardization of acetylene generators. A. N. Shashkov. *Avtogennoe Delo* 21, No. 5, 25–8 (1950). A system for standardizing generators is set up based on production rate, method of introduction of carbide and water, operating pressure, and portability. Marshall Sittig

SHASHKOV, A. N.

USSR/Metals - Welding, Equipment Jan 51

"Gas Formation and Its Elimination in Electrode Coatings Containing Ferrosilicon," Docent A. N. Shashkov

"Avtogen Delo" No 1, pp 9-11

Elaborately analyzes causes of gas evolution in process of manufg electrodes. Suggests passivating treatment of ferrosilicon with 7% sol of sodium bichromate to eliminate gas-forming reaction. Method may be used for making even large batches of coating material, to 100 kg, with storage of mixt for several hr.

183778

183778

SHASHKOV, A.N.

USSR/Engineering - Welding, Equipment Aug 51

"Exposition of New Equipment for Autogenous Welding," A. N. Shashkov

"Avtogen Delo" No 8, pp 28-31

Exposition was arranged in Leningrad by VNIIAvtogen for demonstration of equipment developed during postwar Five-Year Plan, chiefly in 1943 - 1950. Briefly describes some exhibits. Includes 4 photographs.

200T57

USSR/Engineering - Welding, Methods Sep 51

"Nitrogen-Shielded Arc Welding of Copper," Docent A. N. Shashkov, Laureate of Stalin Prize, Ts. S. Khromova, Engr, VNIIavtogen

"Avtogen Delo" No 9, pp 4-7

Investigates application of nitrogen as protective medium for arc welding and compares results with those of argon-shielded arc welding. Due to insufficiently high mech properties of welded metal, tested various deoxidizers. Obtained best results by using mixts of charcoal, ferrophosphorous, aluminum power, ferrosilicon

202T33

USSR/Engineering - Welding, Methods Sep 51
(Contd)

and ferromanganese. Substitution of nitrogen for argon proved to be quite possible.

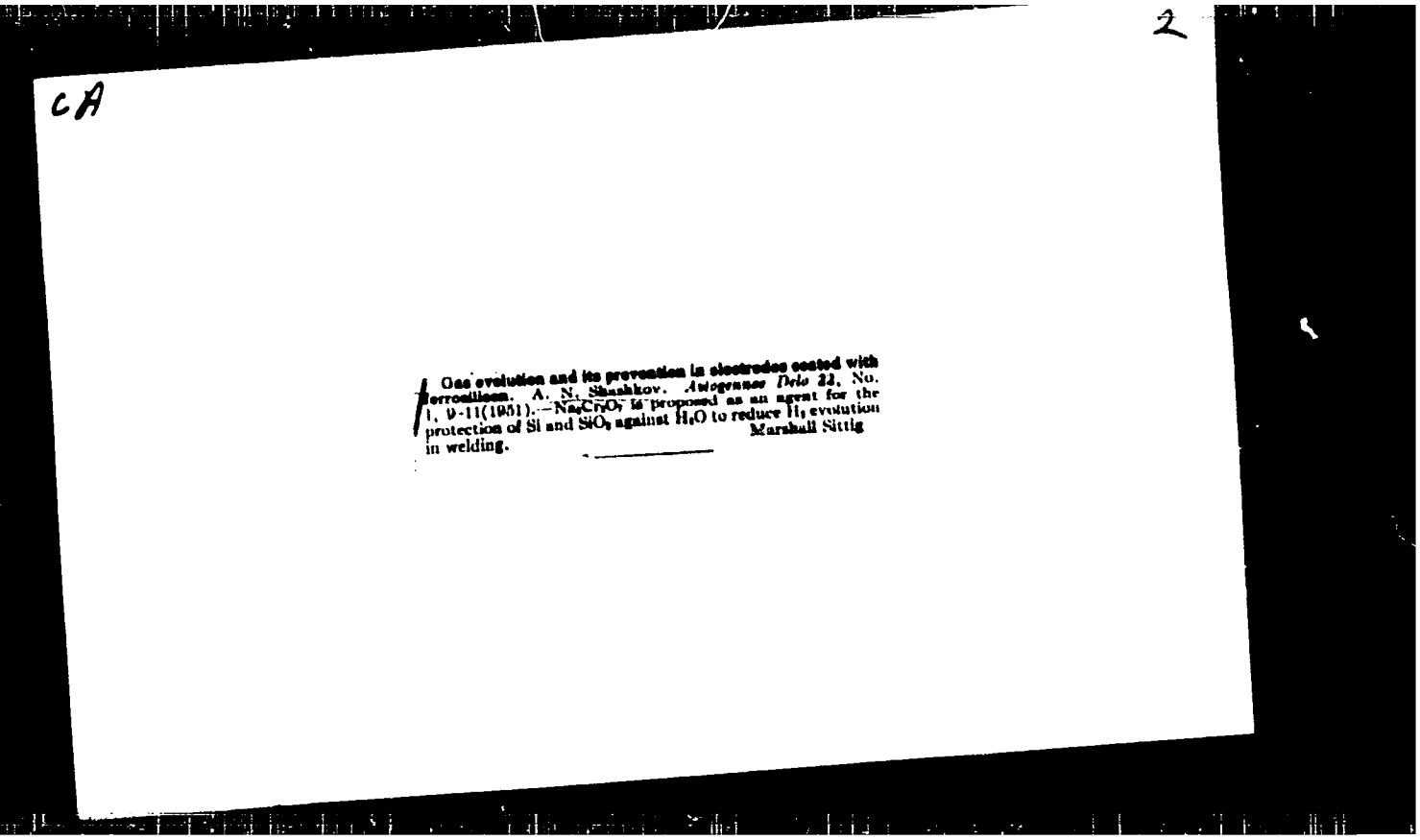
202T33

SHASHKOV, A. N.

ASM

376-K. Nitrogen-Arc Welding of Copper. (In Russian.) A. N. Shashkov and Ts. S. Khromova. *Avtogennoe Delo*, v. 22, Sept. 1951, p. 4-7.

The use of nitrogen instead of argon as a protective medium. Results of the two methods are compared in photographs. Data are tabulated and charted. (K1, Cu)



CA

2

Gas evolution and its prevention in electrodes coated with ferroalloys. A. N. Shashkov. *Avtogennoe Delo* 22, No. 1, 9-11(1951).—$Na_2Cr_2O_7$ is proposed as an agent for the protection of Si and SiO_2 against H_2O to reduce H_2 evolution in welding.

Marshall Sittig

SHASHKOV, A. N., Docent

PA 233T49

USSR/Metallurgy - Welding, Equipment Aug 52

"Drying Oxygen Before the Reducing Valve," Docent A. N. Shashkov, Stalin Prize Laureate

"Avtogen Delo" No 8, pp 16-19

Suggests oxygen drying as measure for preventing freezing of reducing valve when gas is used in open-air operations during cold weather season. Drying is realized by connecting special drier to reducing valve on side of high-pressure gas entrance. Blue vitriol and unslaked lime are best drying agents, single charge of which

233T49

provides for drying 30-35 cu m, or 5-6 cylinders of oxygen. Drier proved to be adaptable for continuous consumption of gas at rate of 15 cu m/hr.

233T49

SHASHKOV, A. N. (Docent)

USSR/Metallurgy - **Flame Cutting, Processes, Equipment** Sep 52

"High-Speed Severing Oxygen Cutting," Docent A. N. Shashkov, S. G. Guzov, Engr, Stalin Prize Laureates, VNII avtogen (All-Union Sci Res Inst of Welding and Cutting of Metals)

"Avtogen Delo" No 9, pp 1-4

Presents method in which intensification of cutting is achieved by decreasing angle of attack of oxygen stream to 30-45° depending on thickness of metal to be cut. Discusses

232T75

use of special tips with 2 channels for oxygen cutting, resulting in obtaining cuts of quality superior to that produced by ordinary method. Describes PLS-1 portable cutting machine with max speeds in 400-2,150 mm/min range and outlines its application. Tabulates speeds and requirements of oxygen and acetylene for cutting steels 3-30 mm thick.

232T75

SHASHKOV, A.N.

Welding

All-Union Scientific Research Institute "Autogenous Welding" in 1947-1951. Avtog. delo 23 no. 3, 1952. Direktor VNIIAvtogena

SO: Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

Oxyacetylene Welding and Cutting

Rapid oxygen-cutting Avtog delo 23 no 9 1952

Monthly List of Russian Accessions, Library of Congress, November, 1952, Unclassified

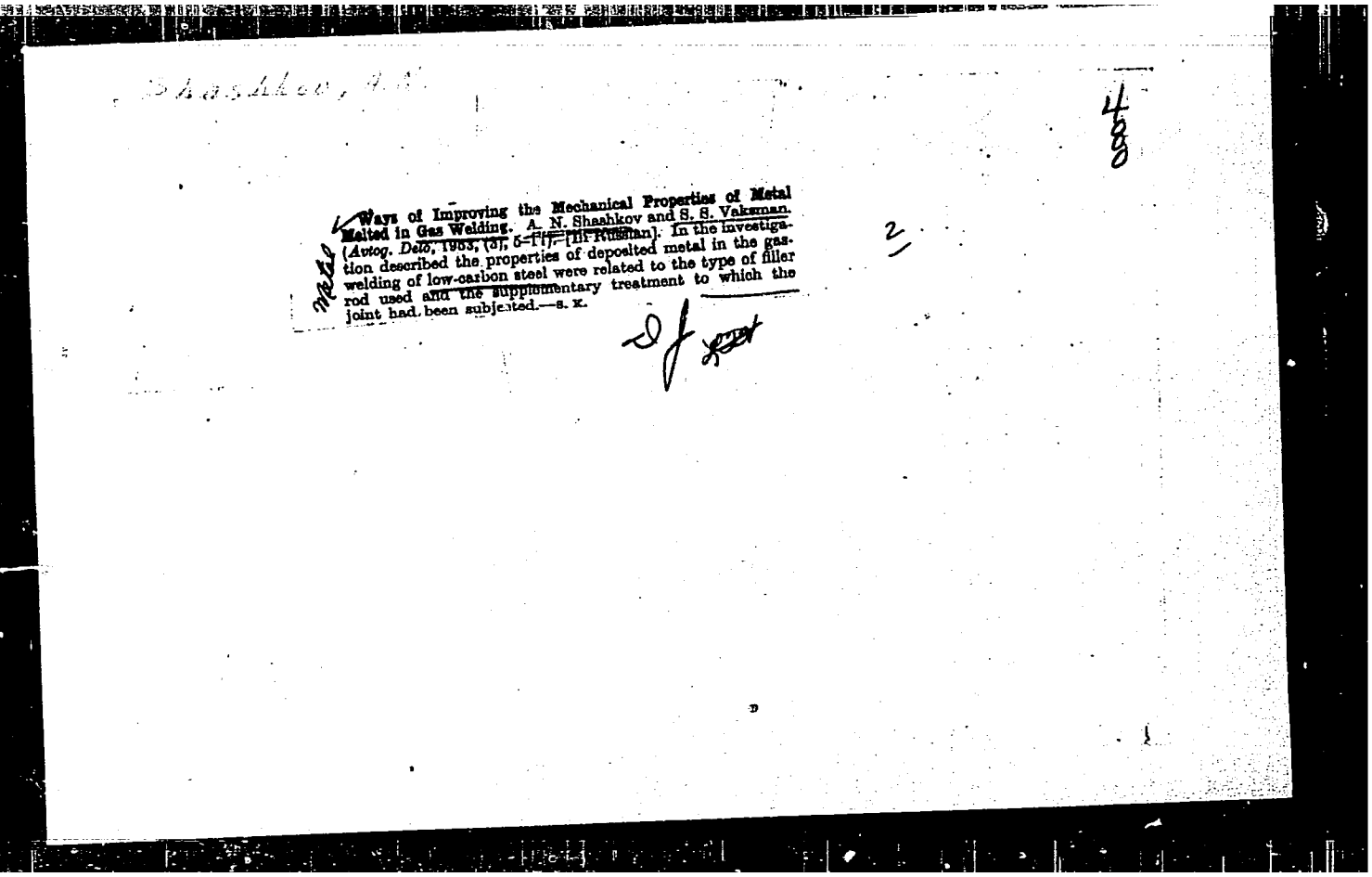
SHASHKOV, A.N., redaktor.; VEKSER, A.A., redaktor.; YEVDOKIMOVA, E.N., tekhnicheskiy redaktor.

[Machines for oxygen cutting] Mashiny dlia kislotnoi rezki. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1953. 121 p. (Moscow, Vsesoiuznyi nauchno-issledovatel'skii institut avtogennoi obrabotki metallov. Rukovodiashchie materialy, no. 1(3)). (MLRA 9:11)
(Gas welding and cutting)

SHASHKOV, A. N.

All-Union Scientific Research Institute on Autogenous Welding and its work. Trudy VNIIAvtogen no.1:5-21 '53.
(MIRA 12:10)

(Gas welding and cutting)



Ways of Improving the Mechanical Properties of Metal Melted in Gas Welding. A. N. Shashkov and S. S. Vakuman. (*Avtog. Delo*, 1953, (3), 5–11). [In Russian]. In the investigation described the properties of deposited metal in the gas-welding of low-carbon steel were related to the type of filler rod used and the supplementary treatment to which the joint had been subjected.—S. K.

Shashkov, A. N.

E. T. R.
Vol. 3 No. 5
May 1954
Welding and Joining

7360* Increasing Impact Strength of Gas Welds. (Russian.) A. N. Shashkov, Ts. S. Khromova, and S. S. Vaksman. *Vestnik Mashinostroeniia*, v. 33, on. 9, Sept. 1953, p. 81-85.
High Mn content in Si-steel welding rods was found to increase strength and plasticity of the weld. Tables, micrographs, graphs. 3 ref.

SHASHKOV, A. N.

Dissertation: "Alloying Carbon and Silicon With Low-Carbon Steel for Electrodes for Welding Cast Iron." Cand Tech Sci, Moscow Order of Labor Red Banner Higher Technical School imeni N. E. Bauman, 28 Jun 54. (Vechernyaya Moskva, Moscow, 18 Jun 54)

SO: SUM 318, 23 Dec 1954

STRIZHEVSKIY, I.I., kandidat khimicheskikh nauk; KOVAL'SKIY, V.A., inzhener; SHASHKOV, A.N., kandidat tekhnicheskikh nauk, redaktor; MATVEYEVA, L.S., redaktor.

[Operation of portable acetylene generators] Ekspluatatsiia perenosnykh atselilenovykh generatorov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1955. 71 p. (Rukovodiashchie materialy po gazoplamennoi obrabotke metallov, no.8). (MLRA 9:9)

(Acetylene generators)

EDEL'SON, A.M.; SHASHKOV, A.N., red.; ANTOSHINA, Ye.V., red.; MATVEYEVA, Ye.N., tekhn. red.; SOKOLOVA, T.F., tekhn. red.

[Operation of apparatuses for metallization] Ekspluatatsiia metallizatsionnykh apparatov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1955. 106 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut avtogennoi obrabotki metallov. Rukovodiashchie materialy, no.5). (MIRA 10:11)

(Metal spraying--Equipment and supplies)

SHASHKOV, A.N., kandidat tekhnicheskikh nauk

Agricultural machinery and gas flame machining of metals. Svar. proizv. no.1:12-14 Ja '55. (MLRA 8:9)
(Agricultural machinery--Repairing) (Oxyacetylene welding and cutting)

SHASHKOV, A.N.

Formation of cast iron in electrodes with alloying coatings. (MIRA 11:12)
Trudy VNIIAvtogen no.3:83-124 '55.
(Cast iron--Welding) (Electrodes) (Alloys)

FD-2528

Shashkov, A. N.
USSR / Chemistry - Acetylene

Card 1/1 Pub. 50 - 7/14

Authors : Shashkov, A. N., Strizhevskiy, I. I., Ol'kovskiy, V. F., Matveyev, N. N.

Title : Improvement of efficiency and increased automatization in the operation of acetylene-filling equipment

Periodical : Khim. prom. No 4, 222-227, Jun 1955

Abstract : Describe the design and operation of small units installed at consumer plants and used for the production from calcium carbide of dissolved acetylene filled into cylinders. Various improvements in the design and operation of the generator and compressor are described. Power to the carbide feed is furnished by an engine of the membrane type activated by water or gas (e. g. compressed air). By this means the danger of explosions is reduced. Four figures, 2 graphs, 5 tables.

Institution : All-Union Scientific Research Institute of the Autogenous Working of Metals (VNIIAVTOGEN)

SHASHKOV, A.N.

Alloying low-carbon steel electrodes with carbon and silicon for cast iron welding. A. N. Shashkov. *Svarochnoe Proizvodstvo* 1955, No. 6, 1–5. ~~Low-C steel~~ rods (4 mm. diam.) were coated with a layer of alloying and a layer of slag-forming material. The former consisted of ferrosilicon (75%), graphite, ferrotitanium, and ferrophosphorus; the latter of marble, dolomite, CF_3, and alundum. The slag-forming layer was represented on the SiO_2-Al_2O_3-CaO diagram by the area SiO_2 52–55, CaO 35–38, and Al_2O_3 7–10% (varied by the substitution of CaO with 7–10% MgO and the addn. of 8–10% CaF_2). The compn. of the molten metal (formed by a welding arc between 2 electrodes and collected on a cast iron plate) lay between the isotherms 1300–1500° on either side of the eutectic line on the Fe-C-Si diagram and was correlated by the alloying factor ∂ = (C + Si/3)%. A plot of ∂_m in the melt vs. ∂_e in the alloying coat on the rod passed through a max. of ∂_m = 5.04 at ∂_e = 10.4. Higher values of ∂_e were of no value and occasionally harmful. I. Bencowitz.

MG

NINBURG, A.K., kandidat tekhnicheskikh nauk; SHASHKOV, A.N., kandidat tekhnicheskikh nauk, dotsent, redaktor; UVAROVA, A.F., Takhnicheskiy redaktor.

Flame cutting of surfaces. Rukovodiashchie materialy po gazoplamennoi obrabotke metallov no.6:3-84 '55. (MLRA 9:8)
(Gas welding and cutting)

SHASHKOV, A.N., kandidat tekhnicheskikh nauk; GUZOV, S.G., inzhener.

The cutting of very thick steel blanks and billets. Svar.proizv. no.11:23-26 N '55. (MLRA 9:1)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov.
(Gas welding and cutting)

SHASHKOV, A.N., kandidat mekhanicheskikh nauk, otvetstvennyy redaktor;
UVAROVA, A.F., tekhnicheskiy redaktor

[Gas-flame working of metals] Gazoplamennaia obrabotka metallov; trudy Vsesoiuznoi nauchno-tekhnicheskoi konferentsii. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 182 p.(MLRA 9:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov.
(Gas welding and cutting)

137-58-5-9001

Translation from Referativnyy zhurnal, Metallurgiya 1958, Nr 5, p 36 (USSR)

AUTHOR Shashkov A.N.

TITLE A Geometric Method for Selecting Charge Ingredients (Geometricheskiy sposob podbora sostava shikhty)

PERIODICAL V sb.: Probl. dugovoy i kontakt. elektrosvarki. Kiyev-Moscow, Mashgiz, 1956, pp 211-216

ABSTRACT The geometric method proposed for the selection of composition of charge mixtures is based upon the similarity of right triangles (T). Each pure component is represented by a T in which the one leg is an index of the amount of the component introduced into the mixture, while the other leg is a measure of the resultant content. By assuming the limiting value of the index of content to be a constant it is possible, by means of constructing several T's, to obtain any number of ratios of corresponding sides representing measures of content which would satisfy the condition that their sum be equal to unity or to 100%. The sides representing the amount of a component that has been introduced will indicate the value of the relative amounts introduced, and their sum will be equal to unity or 100%. The author

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137-58-5-9001

A Geometric Method for Selecting Charge Ingredients

describes the design and operation of a device employed in the geometric method of selecting charge components. The following operations may be performed with its aid: a) determination of the composition of a mixture from a given composition of charge; b) selection of a charge according to given contents and mixtures; c) checking on the feasibility of obtaining a certain mixture composition from given ingredients. The charge may be selected with an accuracy of up to 1.0-0.5%. By increasing the dimensions of component T's the accuracy of charge selection can be raised to 0.5-0.3%.

Ye. K.

1. Furnaces--Operation 2. Geometry--Applications

Card 2/2

AID P - 5399

Subject : USSR/Engineering

Card 1/1 Pub. 107a - 1/12

Author : Shashkov, A. N., Kand. of Tech. Sci.

Title : Adding welding cast irons

Periodical : Svar. proizv. 10, 1-5, O 1956

Abstract : The author discusses the composition and graphitization of two typical additional cast irons (GOST 2671-44) used for welding of cast iron. The field of application, the microstructures and the grading of welding cast irons, as well as the current cast iron shop practice are discussed. Two tables, 8 graphs, 1 photo with 8 micro-pictures, a GOST standard; 6 Russian references (1935-55).

Institution : All Union Scientific Research Institute of the Autogenous Treatment of Metals (VNIIAvtogen).

Submitted : No date

Shashkov, A.N.

ANTONOV, I.A., kand.tekhn.nauk; ANTOSHIN, Ye.V., inzh.; ASINOVSKAYA, G.A., inzh.; VASIL'YEV, K.V., kand.tekhn.nauk; GUZOV, S.G., inzh.; DEYKUN, V.K., inzh.; ZAYTSEVA, V.P., inzh.; KAZHEKOV, P.P., inzh.; KARAN, Yu.B., inzh.; KOLTUNOV, P.S., kand.tekhn.nauk; KOROVIN, A.I., inzh.; KRZHECHKOVSKIY, A.K., inzh.; KUZNETSOVA, Ye.I., inzh.; MATVEYEV, N.N., tekhnik; MOROZOV, M.Ye., inzh.; NEKRASOV, Yu.I., inzh.; NECHAYEV, V.D., kand.tekhn.nauk; NINBURG, A.K., kand.tekhn.nauk; SPEKTOR, O.Sh., inzh.; STRIZHEVSKIY, I.I., kand.khim.nauk; TESMENITSKIY, D.I., inzh.; KHROMOVA, TS.S., inzh.; TSEUNEL', A.K., Inzh.; SHASHKOV, A.N., kand. tekhn.nauk, dots.; SHEELECHNIK, M.M., inzh.; SHUKHMAN, D.Ya., inzh.; EDEL'SON, A.M., inzh.; VOLODIN, V.A., red.; UVAROVA, A.F., tekhn.red.

[Machines and apparatuses designed by the All-Union Institute of Autogenous Working of Metals] Mashiny i apparty konstruktsii VNIIAvtogen. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1957. 173 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut avtogennoi obrabotki metallov, no.9)
(Gas welding and cutting--Equipment and supplies)

SHASHKOV, A.N., kand.tekhn.nauk

Flame metal working during 40 years. Svar.proizv.no.11:35-38 N '57. (MIRA 10:12)

(Gas welding and cutting) (Metal spraying)

NINBURG, A.K., kand.tekhn.nauk; SHASHKOV, A.N., kand.tekhn.nauk, red.; GRUSHEVSKAYA, G.M., red.izd-va; SHIGIN, S.T., tekhn.red.

[Using substitute gases for acetylene in flame machining of metals] Ispol'zovanie gazov-zamenitelei atsetilena pri gazoplamennoi obrabotke metallov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel'noi lit-ry. 1958. 56 p. (Spravochnye materialy po gazoplamennoi obrabotke metallov. No.11) (MIRA 12:5)
(Gas welding and cutting--Equipment and supplies)

ANTOSHIN, Ye.V., inzh.; SHASHKOV, A.N., kand.tekhn.nauk, red.; UVAROVA, A.F., tekhn.red.

[Metal coatings by gas flame spraying] Nanesenie pokrytii sposobom gazoplamennogo napyleniia. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1958. 82 p. (Spravochnye materialy po gazoplamennoi obrabotke metallov, no.15) (MIRA 12:1)
(Metal spraying) (Gas torches)

5(0) PHASE I BOOK EXPLOITATION SOV/2227

Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov

Proizvodstvo atsetilena dlya gazoplamennoy obrabotki metallov (Production of Acetylene for Flamespraying Metals) Moscow, Mashgiz, 1958. 87 p. (Series: Spravochnyye materialy po gazoplamennoy obrabotke metallov, vyp. 14) Errata slip inserted. 7,000 copies printed.

Comps.: I.I. Strizhevskiy, Candidate of Chemical Sciences and S.G. Guzov, Engineer; Eds.: A.N. Shashkov, Candidate of Technical Sciences and V.A. Koval'skiy, Engineer; Tech. Ed.: A.Ya. Tikhanov; Managing Ed. for Literature on Heavy Machine Building (Mashgiz): S.Ya. Golovin, Engineer.

PURPOSE: This book is intended for persons engaged in the production of acetylene for the purpose of flamespraying metals.

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COVERAGE: The book provides a systematic discussion of the structure of equipment used in acetylene production and their arrangement in installations which prepare and use acetylene to flame-spray metals. Rules for servicing equipment, production control and industrial safety measures are also discussed. The book, Obshchaya instruktsiya po proizvodstvy atsetilena (General Instructions for Acetylene Production), published in 1952, served as a basis for reference materials. Rules for the location and construction of acetylene installations and the distribution of equipment are given in accordance with the Giprokislorod (State Institute for the Design and Planning of Oxygen Installations) under the Ministry of the Chemical Industry. No personalities are given. There are no references.

TABLE OF CONTENTS:

Production of Acetylene (Cont.) SOV/2227

Supplement 12. Standard specifications for the construction of an acetylene installation 75

Supplement 13. List of official materials (standards, technical conditions, regulations, instructions) 86

AVAILABLE: Library of Congress

Card 5/5

Tm/bg
8-17-59

SOV-135-58-9-3/20

AUTHOR: Shashkov, A.N., Candidate of Technical Sciences

TITLE: On the Welding of Plastics (K voprosu o svarke plastmass)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 9, pp 6-9 (USSR)

ABSTRACT: The article contains general information on the technology of welding plastics and equipment used for this purpose. Information includes description of the "GGP-1-56" welding torch designed by VNIIAvtogen according to experimental investigations carried out by engineer I.A. Nemkovskiy. The torch was developed on the basis of the "GSM" welding torch, to which a special tip was added to be used with acetylene and hydrogen. It proved satisfactory in practical use and is now being produced at the 1st Moscow Autogen Plant. Information includes technical characteristics of the torch. There are 2 tables, 1 scheme, 1 graph, 4 diagrams and 2 photos.

ASSOCIATION: VNIIAvtogen

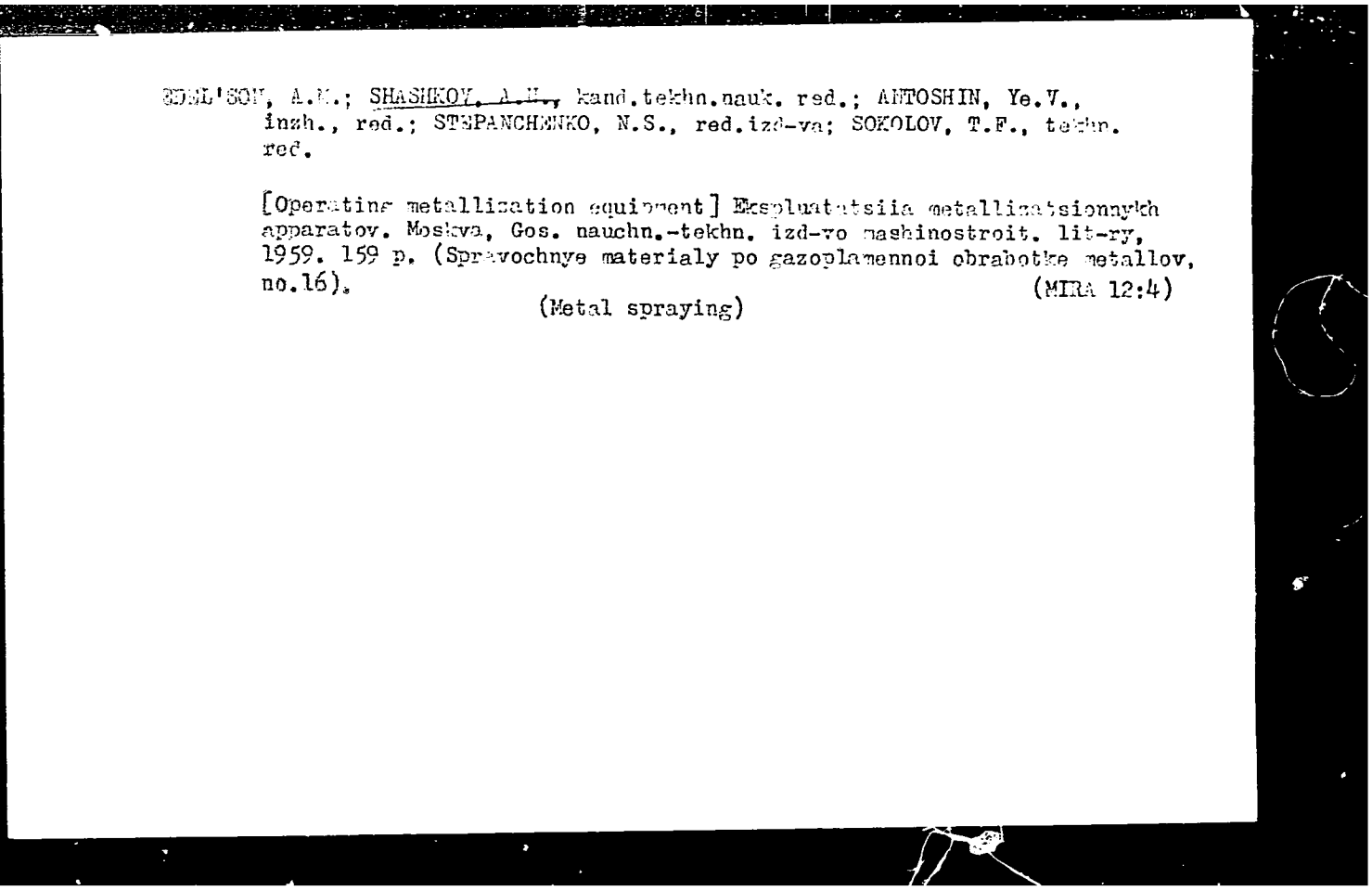
1. Plastics--Welding 2. Plastics--Bonding

Card 1/1

SHASHKOV, A.N., kand.tekhn.nauk, red.; BELAYA, K.A., red.; TYURIN, V.I., tekhn.red.

[Machines and equipment for the flame machining of metals; catalog] Mashiny i apparatura dlia gazoplamennoi obrabotki metallov; katalog. Moskva, TSentr.in-t nauchno-tekhn.informatsii mashinostroeniia, 1959. 137 p. (MIRA 13:11)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov.
(Gas welding and cutting)



SEMEL'SON, A.K.; SHASHKOV, A.N., kand.tekhn.nauk, red.; ANTOSHIN, Ye.V., inzh., red.; STEPANCHENKO, N.S., red.izd-va; SOKOLOV, T.F., tekhn. red.

[Operating metallization equipment] Eksploatatsiia metallizatsionnykh apparatov. Moskva, Gos. nauchn.-tekhn. izd-vo mashinostroit. lit-ry, 1959. 159 p. (Spravochnye materialy po gazoplamennoi obrabotke metallov, no.16). (MIRA 12:4)

(Metal spraying)

SHASHKOV, A. N.
Direktor, VNIIAvtogen

Azetylen-Erzeugungstechnik in der Sowjetunion

Prof. SCHASCHKOW, Moskau, Direktor des Instituts WNIIAWTOGEN

DK 661.744 (47)

In der Sowjetunion wird dem Entwerfen von Azetylenentwicklern für die autogene Metallbearbeitung große Aufmerksamkeit geschenkt. Die großen Entfernungen zwischen den meisten Industriebetrieben, die beträchtliche Anzahl weit entfernter Baustellen, deren Versorgung mit Azetylen-Flaschengas Schwierigkeiten macht, die lange Dauer der kalten Jahreszeit usw. – all dies bedingt gewisse Besonderheiten in der Bauart der Azetylenentwickler.

In der Sowjetunion gilt das Staatsnormblatt für Azetylenentwickler – Gost 5190-57, das die Klasseneinteilung der Entwickler und die wichtigsten technischen Anforderungen enthält, die an sie zu stellen sind.

Die Staatsnorm hat die Aufgabe, die wirtschaftlichsten und sichersten konstruktiven und betrieblichen Bestimmungsgrößen der Entwickler auszuwählen und die mit den Entwicklern zusammenhängenden Entwürfe und technischen Normen zu vereinheitlichen. Der Klasseneinteilung ist die Leistungsskala in m^3/h (Tafel 1) zugrunde gelegt.

Tafel 1. Typeneinteilung der Entwickler nach der stündlich erzeugten Azetylenmenge m^3/h

0,3	1,25	2,5	3,0	5,0	10	20	40	80 m^3/h

Die Norm legt außerdem drei Druckstufen für den Azetylendruck im Entwickler fest:

a) Niederdruckanlagen, höchstens 0,1 atü (Entwickler offener Bauart),
b) Mitteldruckanlagen, von 0,1 bis 1,5 atü (Entwickler geschlossener Bauart),
c) Hochdruckanlagen, über 1,5 atü.

Diese Unterteilung weicht dadurch wesentlich von der in anderen Ländern üblichen ab, daß höhere Drücke zugelassen sind.

Praktisch unterscheiden sich die Niederdruckentwickler nur wenig von den Mitteldruckentwicklern, denn ein Druckanstieg auf etwa 1,0 atü geschieht bei den meisten Bauarten der Letzteren nur bei Betriebsunterbrechungen infolge der Verdrängung des Wassers aus dem Gassammler. Während des Betriebes ist der Gasdruck in den Entwicklern beider Typen wenig unterschiedlich.

Hinsichtlich der konstruktiven Ausführung besteht jedoch ein wesentlicher Unterschied zwischen den Entwicklern offener und geschlossener Bauart. Erstere haben offene Gassammler von veränderlichem Volumen (Gasglocken), und der Gasraum ist von der äußeren Atmosphäre durch Wasser abgetrennt; infolgedessen befindet sich das Gas im Gassammler unter einem niedrigen Druck, und die Gasmenge hängt im wesentlichen von dem jeweiligen Gasvolumen ab. Bei den anderen Entwicklern stellt der Gassammler einen geschlossenen Behälter dar. Die Änderung der Gasmenge hängt bei diesen Entwicklern hauptsächlich von der Änderung des Gasdruckes ab. Diese Entwickler gehören der Mitteldruckgruppe an, da es zweckmäßig ist, den Druck des Flaschenazetylens als „Hochdruck" zu bezeichnen. Eine solche Klasseneinteilung ist begründet, denn in der UdSSR sind Entwickler vorhanden, die zur Füllung von Azetylenflaschen unter Drücken bis zu 25 atü bestimmt sind.

Die Staatsnorm bestimmt auch die zulässigen Anwendungsbereiche der verschiedenen Systeme der Wechselwirkung zwischen Kalziumkarbid und Wasser und der Regelung der Gaserzeugung. Die Einfallbauart, die den besten Kalziumkarbid-Ausnutzungsgrad ergibt, wird vorwiegend für Entwickler mit großer Leistung angewendet; doch sind auch Kleinentwickler dieser Bauart geschaffen worden, die [illegible] Kalziumkarbid verarbeiten.

Die Wasserzuflußbauart, die eine genaue Dosierung des Wassers ermöglicht, wird für Entwickler von kleinen und mittleren Leistungen – bis zu 10 m^3/h – angewendet, und außerdem für die sogenannten „Trocken"-Entwickler für größere Leistungen.

Azetylenentwickler in Verdrängungsbauart finden in der UdSSR nur eine verhältnismäßig geringe Anwendung. Zum Teil ist dies darauf zurückzuführen, daß Entwickler dieser Bauart [illegible] Kalziumkarbid nicht zu verarbeiten vermögen. Die „Tauch"-Entwickler werden praktisch nicht mehr verwendet, da sie verhältnismäßig wenig betriebssicher sind.

Eine Eigentümlichkeit des sowjetischen Entwicklerbaues sind Entwickler, welche die Wasserzuflußbauart und die Tauchbauart vereinigen. Zu diesen Entwicklern gehören die Entwickler Typ HB (für Niederdruck) und Typ BP (Mitteldruck).

In großen Stückzahlen wird der Entwickler HB-1,25 von 1,25 m^3/h Leistung gebaut. Bild 1 zeigt sein Aufbauschema. Das Entwicklergehäuse 1, von offener Bauart, ist im mittleren Teil durch die Scheidewand 2 geteilt. Der obere und der untere Teil des Gehäuses sind durch das Überlaufrohr 3 verbunden. Der untere Teil des Gehäuses dient als Gassammler. In diesem Teil ist die Retorte 4 eingeschweißt. In die Retorte wird die gitterartige Schublade 5 von besonderer Bauart eingesetzt; das Kalziumkarbid fällt auf die obere Hälfte der Schublade aus. In den hinteren Teil der Retorte mündet das Rohr 6 des Gegendruckraumes 7 ein, in den das Wasser aus der Retorte abgedrängt wird. Mit der Retorte verbunden sind Wasserzulaufrohr 8 und Gasabgang 9. Das Wasser wird der Retorte aus dem Entwicklergehäuse durch die Öffnung 10 zugeführt.

Vor der Inbetriebsetzung des Entwicklers wird der ganze Gassammler und ein Teil der oberen Hälfte des Gehäuses mit Wasser gefüllt. Darauf wird der Hahn 11 geöffnet und das Wasser fließt in den unteren Teil der Retorte ab. Wenn das Wasser in der Retorte mit dem Kalziumkarbid in Berührung kommt, beginnt die Gaserzeugung. Das Gas füllt den Gassammler, und der Wasserspiegel sinkt in diesem bis zur Einmündung des Wasserzulaufrohres 10. Gleichzeitig mit der Drucksteigerung wird ein Teil des Wassers aus der Retorte in den Gegendruckraum verdrängt.

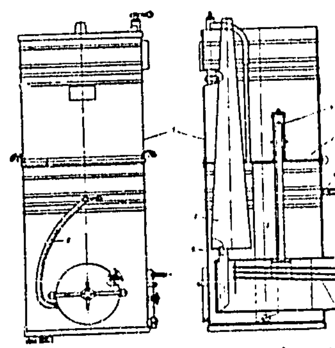


Bild 1. Niederdruck-Azetylen-Entwickler HB-1,25 mit einer Leistung von 1,25 m^3/h

-1
(SENT TO RUSSIAN)

SOURCE: Schweisstechnik, Jan 59, ...

SUBJECT OR SUMMARY

REQUESTOR | ROOM NO. 300

SEND TO:

SPECIAL INSTRUCTIONS:

[redacted]

25(1) SOV/135-59-5-1/21

AUTHOR: Shashkov, A. N., Candidate of Technical Sciences, Director

TITLE: Gas Welding and Cutting From 1959 to 1965

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 5, pp 1-4 (USSR)

ABSTRACT: The development of gas welding and cutting during the 1959-1965 7-year plan is to proceed on the basis of the following: the control figures for the development of the national economy of the USSR contained in Khrushchev's report; the resolution of the Party and Government on the introduction of welding technique into production, given in issue Nr 11, 1958, of this journal; data on the tempo and trends of its development in previous years, and scientific and technical progress, which enable future progress to be evaluated. According to the control figures for the 7-year plan affecting the development of gas welding and cutting, the output of production means is to rise 85-88%, steel production from 55 million tons in 1958 to 86-91 million tons in 1965, machine construction as a whole, including gas welding and cutting equipment, is to almost double, i.e., an average yearly increase of 10-15%. Table 1 illustrates the growth of the output of autogenous

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Gas Welding and Cutting From 1959 to 1965

equipment from 1940 to 1958 from 100 to 1620 (in %). It is shown in Table 2 how the gas welding and cutting process is being extended to non-metallic products such as plastic and ceramics. The output of oxygen and gaseous fuels is to be tripled to meet the demands of future equipment with an hourly consumption of up to 3000 cubic metres of production of oxygen; mechanization and automation means is to rise by 3.85 times and that of non-mechanized equipment by 40-100%. In 1965, about a third of the acetylene used will be obtained from natural gas. Yu. V. Dalago submitted a method of storing and transporting acetylene at low temperatures. Acetylene balloons in the future will have a capacity of 8-9 kgms. Twenty-two central acetylene producing stations with an output of 150-300 cubic metres per hour are to be constructed; in 1965 they will have tripled the total production capacity of solute acetylene. New kinds of non-evaporative torches will increase the consumption of liquid fuels (benzine and kerosene), now comprising 50-60% in weight of the consumption of acetylene. The quantity of natural and petroleum

Card 2/3

Gas Welding and Cutting From 1959 to 1965

gases and propane-butane reduced mixtures for gas welding and cutting in 1965 is to constitute about a third of the acetylene that would be required. Rocket-type torches, flameless combustion torches and explosive-action equipment is to be used. The basic technological processes of gas welding and cutting are described and shown in Figure 2. Photo-electronic copying devices and fully automatic machines are to be introduced. Gas-electric, in particular gas-arc cutting will be developed rapidly and equipment for oxygen cutting with electric heating should be produced. The lack of filler metals and powdered and volatile fluxes is to be remedied. Hardening with gas-flame heating and the wide use of gas-substitutes will be employed. Application of plastic, heat-resisting, infusible and other coatings will be developed. There are three tables and one graph.

ASSOCIATION: VNIIAVKOGEN

Card 3/3

SOV/135-59-11-1/26

18(2,3,4)

AUTHORS: Shashkov, A.N., Candidate of Technical Sciences, and Voshchanov, K.P., Engineer

TITLE: The Practice of the Central Experimental Welding Shops of VNIIAVTOGEN in the Light of the Decisions of the June Plenum of the Central Committee of the C.P.S.U.

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 11, pp 1-3 (USSR)

ABSTRACT: At the June Plenum of the Central Committee of the C.P.S.U., N.S. Khrushchev emphasized the need for organizing special welding plants disposing of highly qualified experts and modern equipment. The large enterprises can fulfill any kind of welding jobs. However, it would be inexpedient to provide with a complete welding equipment all machine-building plants, where the volume of welding is small. Since 1930, the Central Experimental Welding Shops of VNIIAVTOGEN of the Mosgorsovnarkhoz have performed various welding jobs, and of late, they also carry out the gas-flame machining of metals. The jobs performed by these shops can be divided into 4 principal groups: 1) Performing of complex and responsible welding

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The Practice of the Central Experimental Welding Shops of VNIIAVTOGEN in the Light of the Decisions of the June Plenum of the Central Committee of the C.P.S.U.

jobs such as repairing worn-out crank shafts of powerful stationary diesel engines, or welding 10,000 ton hydraulic press components. In the course of a year, the Central Shops serve, on the average, 350-400 enterprises. All basic methods of welding used in industry are applied. The Shops are well equipped with various welding materials, such as filler metals, fluxes, electrodes, etc., and dispose of a modern welding equipment: 2) Assistance rendered by the Shops to other enterprises when special methods of metal welding and cutting are needed; 3) Metal spraying and surfacing by plastics. These processes are widely used in the radio and electrical industry; 4) Setting in operation and adjusting new equipment such as acetylene stations, gas-cutting automatic machines, equipment for special steels cutting, installations for metal spraying and surfacing by plastics, argon arc welding, gas welding of non-ferrous metals with application of gaseous flux BM-1, and low temperature welding of cast iron. In the course of a year, 70-120 different enterprises are served in this field by the Shops. It is planned to organize a special welding plant along the following

The Practice of the Central Experimental Welding Shops of VNIIAVTOGEN in the Light of the Decisions of the June Plenum of the Central Committee of the C.P.S.U.

lines: It should consist of two departments: procurement-mechanical and assembling-welding. The first department should be equipped with all sorts of metal-cutting machines, such as lathes, drilling, milling and shaping machines, metal cutting shears, etc., for preparing the work pieces to be welded and for their subsequent machining after the welding. The second department should be provided with modern equipment permitting performance of all kinds of welding, such as arc welding, gas-electric welding, contact welding, etc.; it should be also equipped with installations for automatic surfacing by plastics. A special section should be organized for carrying out jobs at other plants when the units to be repaired cannot be dismantled and delivered to the welding plant. For this purpose, transportable electro-welding assemblies and other appliances for automatic welding and oxygen cutting should be available.

SHAPIRO, Il'ya Samuilovich; SHASHKOV, A.N., kand.tekhn.nauk, red.; SOBOLEVA, G.N., red.izd-va; SMIRNOVA, G.V., tekhn.red.

[Air-arc cutting of metals] Vozdushno-dugovaia rezka metallov. Pod red. A.N.Shashkova. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 42 p. (Bibliotechka avtogenshchika, no.3). (MIRA 13:7)

(Electric metal cutting)

ELEL'SON, A.M.; SHASHKOV, A.N., kand.tekhn.nauk, red.; SOBOLEVA, G.N., red.izd-va; SMIRNOVA, G.V., tekhn.red.

[Use of metallizing for the reconditioning of worn machine parts] Primenenie metallizatsii dlia vosstanovleniia iznoshennykh detalei mashin. Pod red. A.N.Shashkova. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 71 p. (Bibliotechka avtogenshchika, no.2). (MIRA 14:3)
(Machinery--Maintenance and repair)
(Metal spraying)

KOROVIN, A.I.; SHASHKOV, A.N., kand.tekhn.nauk, red.; SOBOLEVA, G.N., red.izd-va; SMIRNOVA, G.V., tekhn.red.

[Flame process of surface hardening] Gazoplamennaia poverkhnostnaia zakalka. Pod red. A.N.Shashkova. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 79 p. (Bibliotechka avtogenshchika, no.1). (MIRA 14:3)

(Flame hardening)

KULAGIN, Ivan Dmitriyevich, kand.tekhn.nauk; SHASHKOV, Andrey Nikolayevich, kand.tekhn.nauk; UMNYAGIN, Mikhail Grigor'yevich

Specialists answer questions about welding. Tekh. mol. 28 no. 12:7-10 '60. (MIRA 13:12)

1. Institut metallurgii imeni A.A.Baykova AN SSSR. (for Kulagin). 2. Direktor Vsesoyuznogo nauchno-issledovatel'skogo instituta avtogennoy obrabotki metallov (for Shashkov). 3. Direktor Vsesoyuznogo proyektno-tekhnologicheskogo instituta tyazhelogo mashinostroyeniya (for Umnyagin).
(Welding)

SOTSKOV, B.S., doktor tekhn.nauk, prof.; VOROB'YEVA, T.M.; kand.tekhn. nauk; CHUDNOVSKIY, A.F., doktor fiz.-mat.nauk, prof.; KAGANOV, M.A., kand.fiz.-mat.nauk.

Review of I.F.Volshin, A.S.Kasperovich, and A.G.Shashkov's book "Semiconductor thermistors." Inzh.-fiz.zhur. no.1:124-126 Ja '60. (MIRA 13:4)

(Thermistors) (Voloskin, I.F.) (Kasperovich, A.S.) (Shashkov, A.G.)

STRIZHEVSKIY, I.I., kand.khim.nauk; KOVAL'SKIY, V.A., inzh.; SHASHKOV, A.N., kand.tekhn.nauk, red.; STEPANCHENKO, N.S., red.izd-va; UVAROVA, A.F., tekhn.red.

[Handling and operation of portable acetylene generators] Ekspluatatsiia perenosnykh atsetilenovykh generatorov. Izd.2., perer. i dop. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1960. 78 p. (Spravochnye materialy, no.18). (MIRA 13:7)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov.
(Acetylene generators)

ASINOVSKAYA, Gnesya Abramovna; ZELIKOVSKAYA, Nataliya Mikhaylovna; SHSHKOV, A.N., kand.tekhn.nauk, red.; SOBOLEVA, G.N., red.izd-va; SMIRNOVA, G.V., tekhn.red.

[Gas welding of brass and its deposition on ferrous metals] Gazovaia svarka latuni i naplavka ee na chernye metally. Pod red. A.N.Shashkova. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1960. 102 p. (Bibliotechka avtogenshchika, no.4/5) (MIRA 14:3)

(Brass--Welding) (Gas welding and cutting) (Hard facing)

TROFIMOV, Aleksandr Alekseyevich; SHASHKOV, A.N., kand.tekhn.nauk, red.; SOBOLEVA, G.N., red.izd-va; SMIRNOVA, G.V., tekhn.red.

[Mechanized oxygen cutting] Mekhanizirovannaia kislorodnaia rezka. Pod red. A.N.Shashkova. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1961. 90 p. (Bibliotechka avtogenshchika, no.6) (MIRA 14:6)

(Gas welding and cutting)

SHASHKOV, A.N., kand.tekhn.nauk; ASINOVSKAYA, G.A., inzh.; DOBKINA, Ye.N., inzh.

Investigating and developing a self-fluxing filler metal for brass welding. Trudy VNIIAvtogen no.8:37-54 '62. (MIRA 15:6)
(Brass--Welding)

TSYGANOV, M.A., inzh.; TITOV, A.S., inzh.; SHASHKOV, A.N., kand.tekhn.nauk

Consultations on readers' questions. Svar. proizv. no.8:48 Ag '62. (MIRA 15:11)

1. Otdel okhrany truda TSentral'nogo komiteta professional'nogo soyuza rabochikh mashinostroyeniya (for TSyganov). 2. Glavnoye upravleniye srednikh spetsial'nykh uchebnykh zavedeniy (for Titov). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov (for Shashkov).

(Welding)

SHASHKOV, A. N., kand. tekhn. nauk

Cutting centers point the way toward the automation of the gas cutting of metals. Avtom. svar. 15 no.11:84-87 N '62. (MIRA 15:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov.

(Gas welding and cutting)

NEKRASOV, Yu.I.; SHASHKOV, A.N., kand.tekhn. nauk; SOBOLEVA, G.N., red.izd-va; GORDEYEVA, L.P., tekhn. red.

[Welding metals with the use of liquid fuel] Svarka metallov s ispol'zovaniem zhidkogo goriuchego. Pod red. A.N.Shashkova. Moskva, Mashgiz, 1963. 85 p. (Bibliotechka avtogenshchika, no.7) (MIRA 16:7)

(Gas welding and cutting)

SPEKTOR, G.Sh.; SHASHKOV, A.N., kand. tekhn.nauk, red.; SOBOLEVA, G.N., red.izd-va; GORDEYEVA, L.P., tekhn. red.

[Through and skin oxygen cutting under flux] Razdelitel'naia i poverkhnostnaia kislorodno-fliusovaia rezka. Moskva, Mashgiz, 1963. 93 p. (Bibliotechka avtogenshchika, no.8) (MIRA 16:8)

(Gas wedling and cutting)

KOVAL'SKIY, V.A.; OFITSEROV, D.M.; SHASHKOV, A.N., kand. tekhn. nauk, red.

[Handbook on portable acetylene generators] Rukovodstvo po perenosnym atsetilenovym generatoram. Moskva, Mashgiz, 1963. 114 p. (Bibliotechka avtogenshchika, no.10) (MIRA 17:4)

ASINOVSKAYA, G.A.; SHASHKOV, A.N., kand. tekhn. nauk, red.; SOBOLEVA, G.N., red. izd-va; GORDEYEVA, L.P., tekhn. red.

[Gas welding of metals] Gazoplamennaia paika metallov. Pod red. L.N.Shashkova. Moskva, Mashgiz, 1963. 124 p. (Biblio-techka avtogenshchika, no.9) (MIRA 16:7)
(Gas welding and cutting)

SHASHKOV, A.N., kand.tekhn.nauk; BERG, T.V., inzh.

Consultations in answer to letters from readers. Svar.proizv. no.1:48 Ja '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov (for Shashkov). 2. Moskovskiy opytnyy svarochnyy zavod (for Berg).
(Gas welding and cutting)

EVKOV, V.V.; SHASHKOV, A.N., kand. tekhn. nauk, red.

[Equipment for gas welding and cutting; operation maintenance and repair] Apparatura dlia gazovoi svarki i rezki; ekspluatatsiia, obsluzhivanie i remont. Moskva, Izd-vo "Mashinostroenie," 1964. 135 p. (Biblioteshka avtogenshchika, no.11-12) (MIRA 17:7)

SHASHKOV, A.N., kand. tekhn. nauk; ASINOVSKAYA, O.A., inzh.; SPEKTOR, O.Sh., inzh.

Investigating the nature and conditions of the change in the chemical composition of structural steel at the surface of the cut. Trudy VNIIAvtogen no.10:3-26 '64. (MIRA 17:10)

SHASHKOV, A.N., kand. tekhn. nauk

Ways of expanding flame machining. [Trudy]LMZ no.11:29-38 '64.
(MIRA 17:12)

ARTYUKHOVSKAYA, S.A.; TESMENITSKIY, D.I.; ASINOVSKAYA, G.A.; BOYKO, M.I.; KOLTUNOV, P.S.; NEKRASOV, Yu.L.; KOROVIN, A.I.; NECHAYEV, V.D.; NINBURG, A.K.; SHASHKOV, A.N.; EDEL'SON, A.M.; ANTONOV, I.A., kand. tekhn. nauk, red.

[Using acetylene substitute gases for flame metalworking.] Primenenie gazov-zamenitelei atsetilena pri gazoplamennoi obrabotke metallov. Moskva, Mashinostroenie, 1964. 150p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut avtogennoi obrabotke metallov. Spravochnye materialy po gazoplamennoi obrabotke metallov, no.23). (MIRA 17:9)

SHASHKOV, A.N., kand.tekhn.nauk; MEL'NICHENKO, N.T., inzh.; KIRSANOV, N.I., inzh.

Consultations on questions asked in our readers' letters. Svar.proizv. no.10:48 O '64. (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov (for Shashkov).

SHASHKOV, A. M.; EFEKTOR, O. Ch.; ASINOVSKAYA, G. A.

"Influence of thermal cutting under metal on section borders"

paper presented at 18th Annual Assembly, Intl Inst of Welding, Paris, 5-10 Jul 1965.

SPASSKOV, A.N., kand. tekhn. nauk; NEKRASOV, Ye.I., inzh.; VAKSMAN, S.S., inzh.

Coated wire for steel welding with a propane-butane-oxygen flame. Svar. proizv. no.10:26-28 O '65. (MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennogo mashinostroyeniya.

L 7894-66 EWT(m)/EPF(c)/EWP(j)/EWA(c) RM

ACC NR: AP5024966 SOURCE CODE: UR/0286/65/000/016/0030/0030

AUTHORS: Shashkov, A. N.; Tesmelitskiy, D. I.; Ofitserov, D. M.; Zakharova, N. I.

ORG: none

TITLE: Method for obtaining acetylene. Class 12, No. 173748 [announced by All-Union Scientific Research Institute for Autogenous Machine Building (Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennogo mashinostroyeniya)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 30

TOPIC TAGS: acetylene, calcium carbide, isoamyl alcohol, kerosene

ABSTRACT: This Author Certificate presents a method for obtaining acetylene in high pressure gas generators by interacting calcium carbide with hot water. To prevent explosion hazards, the reaction is carried out at temperatures not exceeding 40C in an inert medium such as kerosene. Antifoaming agents such as isoamyl alcohol are added to the inert medium.

SUB CODE: 07/ SUBM DATE: 16Oct64

nw
Card 1/1

UDC: 662.766.3

[illegible], I.V.; [illegible], A.E.; Kobozev, N.I.

Study of catalysts by the method of exoelectron emission. Zhur. fiz. khim. 35 no.11:2657-2660 N '61. (MIRA 14:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Catalysts)
(Electrons)

24350

S/051/62/012/005/015/021
E075/E136

AUTHORS: Krylova, I.V., Shashkov, A.S., and Kobozev, N.I.

TITLE: Investigation of crystallophosphors ZnS.Cu by the method of exoelectronic emission

PERIODICAL: Optika i spektroskopiya, v.12, no.5, 1962, 635-636

TEXT: A study was made of the influence of additions of Cu on the intensity of luminescence, exoelectronic emission and catalytic activity of ZnS. The phosphor samples were prepared from melt by heating in air at 800 °C. The emission was excited by X-rays and luminescence by ultraviolet light. Catalytic activity of the samples was measured by the decomposition of methanol between 300-350 °C. It was shown that non-activated ZnS gives comparatively weak emission. Small additions of Cu (7.5×10^{-6} and 7.5×10^{-4} g/g ZnS) give sharp emission maxima at 140 and 260 °C. The latter maxima were shown to correspond to maxima of catalytic activity at 330 °C. Thus the experiments demonstrated that the luminescence centres have a connection with the catalytic centres and exoelectronic emission, and that the

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S/189/63/000/001/004/008
D204/D307

AUTHORS: Shashkov, A. S., Krylova, I. V. and Kobozev, N. I.

TITLE: A study of the sintering of silver black by exoelectronic emission

PERIODICAL: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 1, 1963, 18-22

TEXT: The aim of the present work was the study of catalytic and emissive properties of silver black in dependence on temperature and previous thermal treatment. Ag black was obtained by the reduction of A_5NO_3 with ammoniacal hydrazine sulfate at 0°C, and was fired in H_2 in the temperature range 50 - 650°C. The catalytic activity was assessed by the decomposition reaction of H_2O_2, at 20, 30 and 40°C; the energies of activation corresponding to variously pre-treated Ag catalysts were also measured. The catalytic activity of Ag black was found to decrease as the firing temperature was raised to ~250°C, remained constant for firing temperatures

Card 1/3

of ~250° to 550°C, and fell sharply in specimens fired at higher temperatures. The energies of activation were respectively ~5500 cal/mole and ~7000 cal/mole for specimens fired at 50 - 250°C and 250 - 600°C. The exoelectronic emission increased slightly between 50 and 250°C, (for specimens fired at 200 and 250°C), and increased further between 250 and 550°C, the sharpest emission peak appearing at 550°C. The emission fell sharply at higher temperatures. Measurements of magnetic susceptibility on catalysts fired at different temperatures showed also that increased emissivity is connected with reduced diamagnetism. It is suggested that at low temperatures the catalysts contain a high proportion of an amorphous, chemically active atomic phase covering the crystals. After firing and exposure to air, a surface film of AG_2O is formed. The surface concentration of this active phase is reduced after firing to 50 - 250°C, whilst catalysts fired at 300 - 500°C possess a finely crystalline surface with a small proportion of the atomic phase. The crystals become coarser at 550°C, decreasing the specific surface of the catalyst. There are 5 figures.

A study of the sintering ... S/189/63/000/001/004/008
D204/D307

ASSOCIATION: Kafedra fizicheskoy khimii (Physical Chemistry Department)

SUBMITTED: February 12, 1962

Card 3/3

L 18321-63 EPF(c)/EWT(l)/EWT(m)/BDS/ES(w)-2 AFFTC/ASD/ESD-3/IJP(C)/
SSD Pr-4/Pab-4 RM/WW
ACCESSION NR: AP3004982 S/0076/63/037/008/1851/1854

74
73

AUTHORS: Shaskov, A. S.; Krylova, I. V.; Kobozev, N. I.

TITLE: Study of adsorption catalysts by exoelectronic emission 21

SOURCE: Zhurnal fiz. khimii, v. 37, no. 8, 1963, 1851-1854

TOPIC TAGS: adsorption catalyst, catalyst , exoelectronic emission, platinum, hydrogen peroxide, barium sulphate

ABSTRACT: Authors studied a series of catalysts of $Pt/BaSO_4$ type with a varied platinum content. The reflecting properties and magnetic susceptibility of the catalysts were studied in addition to the catalytic and emissive properties. Small additions of platinum result in intense activation of the exoelectronic emission with $BaSO_4$. They are catalytically inactive in the decomposition of hydrogen peroxide. Appearance of catalytic activity in the platinum coincides with the region of exoelectronic emission decrease and light reflection from the carrier. Analysis of magnetic susceptibility showed that catalysts with a small platinum content are paramagnets and those with a platinum concentration of 0.0018 to 0.0036 g/g $BaSO_4$ are diamagnets. Authors conclude that these results confirm the mechanism found earlier during the investigation of the luminescent

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L 18321-63
ACCESSION NR: AP3004982

properties of adsorption catalysts. Orig. art. has: 5 figures.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet M. V. Lomonosova (Moscow state university) Khimicheskiy fakul'tet (Chemical faculty)

SUBMITTED: 20Sep62 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: PH, CH NO REF SOV: 004 OTHER: 003

Card 2/2

KOBOZEV, N. I.; KRYLOVA, I. V.; SHASHKOV, A. S.

"The effect of electron properties of support upon exoelectron emission and catalysis."

report submitted to 3rd Intl Cong on Catalysis, Amsterdam, 20-25 Jul 64.

Moscow State Univ im Lomonosov.

SHASHKOV, A.S.; KRYLOVA, I.V.

Decomposition of hydrogen peroxide on copper catalysts. Vest. Mosk. un. Ser. 2:Khim. 20 no. 5:37-41 S-O '65. (MIRA 18:12)

1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta. Submitted Sept. 7, 1964.

ACC NR: AP7002863 (N) SOURCE CODE: UR/0149/66/000/006/0110/0115

AUTHOR: Novikov, I. I.; Shashkov, D. P.

ORG: Department of Metal Science of Non-Ferrous, Rare and Radioactive Metals, Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov. Kafedra metallovedeniya tsvetnykh, redkikh i radioaktivnykh metallov)

TITLE: The inherent and the impurity brittleness of metallic compounds

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 6, 1966, 110-115

TOPIC TAGS: metal compound, single crystal compound, polycrystal compound, ~~metal compound~~ brittleness, ~~brittleness-ductility transition~~, INTERMETALLIC COMPOUND, PHASE TRANSITION

ABSTRACT: In a general case, it can be assumed that metallic and intermetallic compounds have inherent and volume and boundary impurity brittleness. Experimental data show that gas impurity segregations along grain boundaries, which cause the boundary impurity brittleness, play an exceptionally important role in the brittle failure of compounds. To determine the nature of the brittle-to-plastic transition of metallic compounds without boundary impurity brittleness, high-purity single crystal and polycrystal (the latter obtained by the levitation melting of the former) iron, cobalt, nickel and manganese silicides were subjected to tension and bend tests and electric conductivity measurements at temperatures up to 800C. The transition of the polycrystalline compounds through the temperature threshold of impurity brittleness with heating was found to be associated with desorption of the

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ACC NR: AP7002863

gas impurities along the grain boundaries. Nisi, MnSi, FeSi, and CoSi single crystal compounds had brittle-to-plastic transition temperatures of 630, 810, 920 and 950C, respectively, compared with 900, 1140, 1240 and 1310C for polycrystalline compounds of the same composition. The difference is explained by the absence of boundary impurity brittleness in the single crystal compounds. The brittle-to-plastic transition of metallic compounds, as well as the observed drop in the electric conductivity which accompanied it, are explained by the disappearance of oriented interatomic bonds. The embrittling action of gas impurity segregations along the grain boundaries is explained by the formation of additional oriented bonds within the near-boundary zone of crystals. Hence, both the inherent and the impurity brittleness can have an identical, in principle, nature resulting from the existence of oriented interatomic bonds. Orig. art. has: 5 figures and 1 table.

SUB CODE: 11, 20/ SUBM DATE: 05Jul66/ ORIG REF: 010/ OTH REF: 004

Card 2/2

ACC NR: AP6036441 SOURCE CODE: UR/0370/66/000/006/0101/0109

AUTHOR: Novikov, I. I. (Moscow); Shashkov, D. P. (Moscow)

ORG: none

TITLE: The effect of melting and annealing conditions on the brittle-to-plastic transition temperature of metallic compounds

SOURCE: AN SSSR. Izvestiya. Metally, no. 6, 1966, 101-109

TOPIC TAGS: intermetallic compound, brittle compound, ductile compound, brittleness ductility transition temperature, gas impurity effect, annealing, metal melting

ABSTRACT: Cast specimens of Al_3Mg_2 (37.3% Mg), $CuAl_2$ (53.45% Cu), and Cu_3Si (8.6% Si) compounds melted in air, in a vacuum of $5 \cdot 10^{-4}$ mm Hg, or in air with an air-steam mixture passed through the melt (to obtain compounds with various gas contents) were subjected to bend tests at temperatures of up to 600C. All compounds were found to have a very narrow (only several degrees) temperature of transition from brittle to ductile behavior; specimens melted with air-steam passed though the melt had the highest transition temperature (about 650C for Cu_3Si) and the highest microhardness. Vacuum-melted compounds had the lowest transition temperature (about 500C for Cu_3Si) and the lowest microhardness. Regardless of the melting conditions, the room-temperature microhardness of the grain boundaries was 20—40% higher than that of the grains, which can be explained by the segregation of gas impurities along the

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ACC NR: AP6036441

grain boundaries. The grain-boundary microhardness of specimens annealed at various temperatures gradually decreased with increasing annealing temperatures, and with annealing at transition temperatures, became equal to the grain microhardness. This showed that the transition from brittle to ductile behavior of the investigated compounds was associated with the resorption of gas impurities. The harmful effect of gas impurities on the ductility and grain-boundary microhardness was confirmed by annealing the compounds in air and in vacuum. The transition temperature and grain-boundary microhardness increased with prolonged annealing in air due to a higher content of absorbed gas impurities, but decreased with prolonged vacuum annealing, which lowered the content of gas impurities. Orig. art. has: 7 figures and 1 table.

SUB CODE: 11,13/SUBM DATE: 25Ddec64/ ORIG REF: 008/ OTH REF: 001/ ATD PRESS: 5108

Card 2/2

S/180/62/000/001/006/014
E039/E520

18.6100

AUTHORS: Korol'kov, A.M. and Shashkov, D.P. (Moscow)

TITLE: The electrical resistivity of some alloys in the liquid state

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.1, 1962, 84-88

TEXT: While the structure of metals and alloys and their properties in the solid state have been studied extensively, the properties of liquid metal solutions have not. It is known from theory that in both the liquid and solid state short range order exists. Pure metals show an increase in electrical resistivity on heating and a marked jump on melting. The latter is due to the breakdown of the crystal lattice with a consequent loss of long range order. This paper describes the investigation of a number of alloys in the liquid state for which structural diagrams indicate both the absence of any appreciable mutual solubility of the components in the solid state (Al-Sn) as well as the existence of such solubility (Al-Cu; Pb-Sn; Al-Si; Al-Ge;

S/806/62/000/003/011/018

AUTHORS: Korol'kov, A. M., Shashkov, D. P.

TITLE: Electrical conductivity of some liquid metals and alloys.

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniye splavov tsvetnykh metallov. no.3. 1962, 126-135.

TEXT: Following a thorough survey of existing literature on the phenomenon of electrical conductivity in solid and liquid metals and the various structural and other factors affecting it, the paper describes the results of an experimental investigation of binary alloys of a eutectic type based on Al and Pb (composition and purity of components tabulated). The investigation was conducted by A. R. Regel's rotating-magnetic-field method (ZhTF, v.18, no.12, 1948); its accuracy is ±5%. A relatively simple variation of specific resistance (SR) versus composition, with a shallow depression in the vicinity of the eutectic point, obtains with those Al alloys, e.g., Al-Si and Al-Ge, in which there is no formation of chemical compounds. Si reduces the conductivity of liquid Al significantly near the eutectic point. In Al-Cu alloys, in which an Al-based solid solution and an intermetallic Al_2Cu compound exists, the SR increases with an addition of Cu to the Al, attains a maximum at 5.7% Cu, and, with Cu more than 10%, drops to less than the SR of pure Al. The Al-Ag alloys, both at 800°C and at (t_{liq} + 100°), exhibit a unique drop in SR with the addition of Ag. Ag-Zn alloys have a slightly depressed SR with 10% Zn, but the SR rises again