AUTHORS: Kupperberg, L. S., Bolotnyy, V. V.

TITLE: A Laboratory Plant for Ozone Production (Laboratornaya ustanovka dlya polucheniya ozona)

SOV/32-24-9-35/53

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 9, pp 1145-1147 (USSR)

ABSTRACT: For the production of smaller quantities of ozone, a laboratory plant was installed, following a project by N. Ya. Rozenshteyn. Ozone is obtained from oxygen or air by a silent discharge of a high voltage current. From the diagrams presented it is evident that the dried air passes through a gas counter of the type GKF . The voltage is 220 volts at a frequency of 50 cycles, and is increased to 3500-7000 volts by a transformer of the type TG -13. A diagram of the ozonizer is also given, the ozonizer consisting of three concentric tubes kept at a temperature of 25° by cooling water. The concentration of the ozone thus obtained depends directly on the voltage and the frequency, and is reciprocal to the air volume. The test results given show that, on a reduction of the air flow rate, the ozone concentration rises significantly, whereas the ozone yield decreases markedly. There are 2 figures and 2 tables.

Card 1/2

A Laboratory Plant for Ozone Production SOV/32-24-9-35/53

ASSOCIATION: Leningradskiy nauchno-issledovatel'skiy institut Akademii kommunal'nogo khozyaystva im. K. D. Pamfilova (Leningrad Scientific Research Institute of the Academy of Communal Economy imeni K. D. Pamfilov)

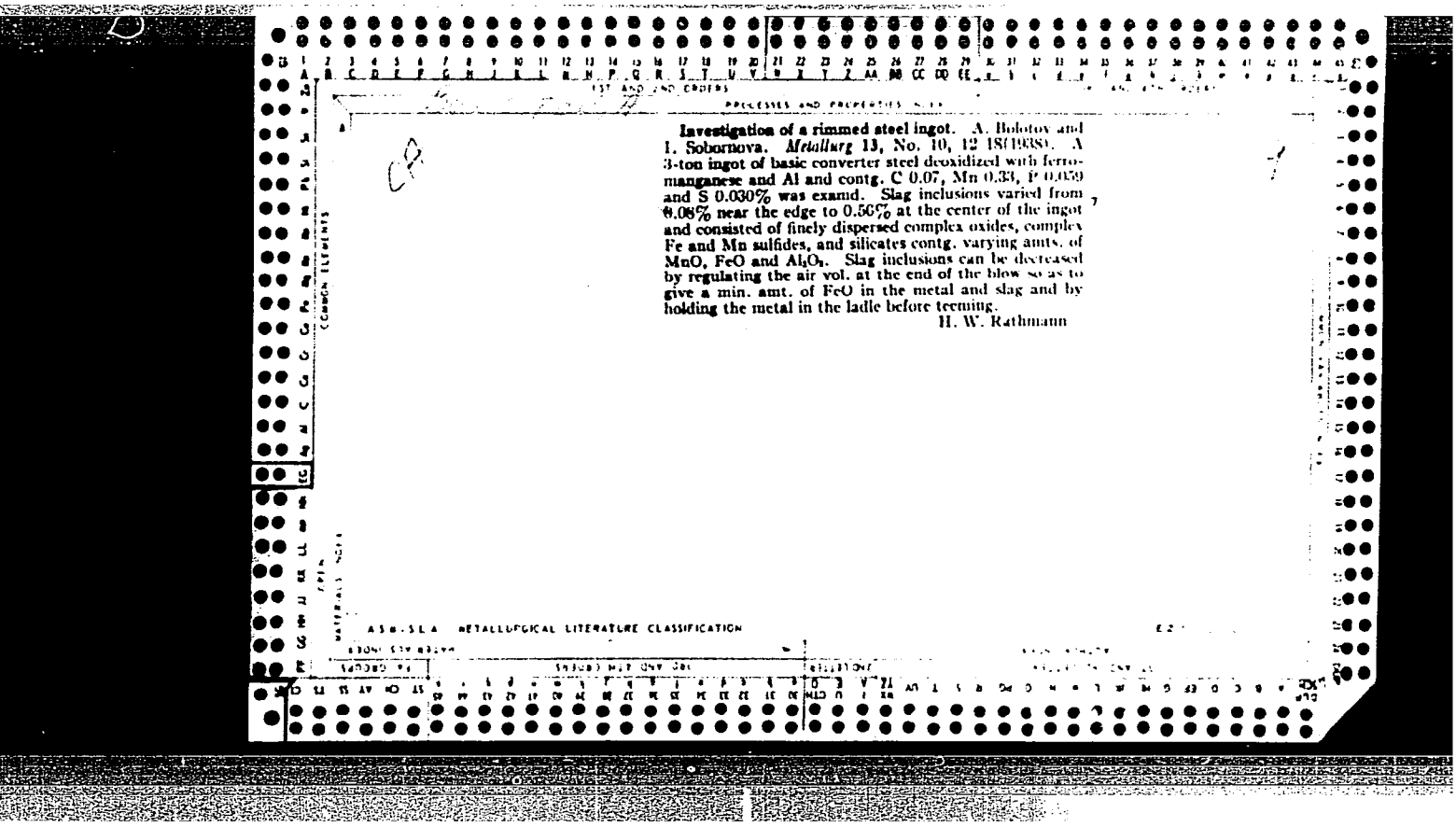
Card 2/2

Болотный, В. Я.

GURGENIDZE, V.M., prof. (Tbilisi); BOYAKHCHEV, L.R., inzhener (Tbilisi); CHIKVAIDZE, G.I., inzhener (Tbilisi); BOLOTNYY, V.Ya., inzhener (Dnepropetrovsk).

More on lengthening station tracks. Zhel.dor.transp. 39 no.9:56-58 S '57. (MIRA 10:10)

(Railroads--Stations)



Investigation of a rimmed steel ingot. A. Bolotov and I. Sobornova. *Metallurg* **13**, No. 10, 12 18(1938). A 3-ton ingot of basic converter steel deoxidized with ferromanganese and Al and contg. C 0.07, Mn 0.33, P 0.059 and S 0.030% was examd. Slag inclusions varied from 0.06% near the edge to 0.56% at the center of the ingot and consisted of finely dispersed complex oxides, complex Fe and Mn sulfides, and silicates contg. varying amts. of MnO, FeO and Al_2O_3. Slag inclusions can be decreased by regulating the air vol. at the end of the blow so as to give a min. amt. of FeO in the metal and slag and by holding the metal in the ladle before teeming.

H. W. Rathmann

ANDREYEV, A.M.; BOLOTOV, A.A.; LUKASHEV, A.A.

Synchronizing and velocity control circuits for mirror-scanning motion-picture cameras. Prib. i tekh. eksp. 8 no.3:136-139 My-Je '63. (MIRA 16:9)
(Motion-picture cameras)

BOLOTOV, A.A.

We are improving the quality and reducing waste. Tekst.prom.15 no.8:21-23 Ag'55. (MLRA 8:11)

1. Zaveduyushchiy otdelochnym proizvodstvom fabriki "Krasnaya Talka"

(Textile finishing)

BOLOTOV, A.D. (stantsiya Rossosh').

On a business accounting basis. Put' i put. khoz. no.10:32-33 O '57.
(MLRA 10:11)

1. Glavnyy bukhgalter Rossoshanskoy distantsii puti Yugo-Vostochnoy dorogi.

(Railroads--Accounts, bookkeeping, etc.)

BOLOTOV, A.D.

Sections are building their own apartment houses. Put' i put. khoz. no.9:19 S '58. (MIRA 11:9)

1. Glavnyy bukhgalter distantsii, st. Rossosh.
(Rossosh--Apartment houses)

SOV/123-59-16-66832

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 16, p 420 (USSR)

AUTHORS: Gurevich, A.M., Nagovitsyn, N.A., Bolotov, A.K.

TITLE: Investigations of the Wear of a Test Crankshaft of the D-54 Engine

PERIODICAL: Tr. Kirovskogo s.-kh. in-ta, 1958, 13, Nr 25, 42 - 48

ABSTRACT: The new "loop" lubrication system of the crankshaft reduced the wear of the crank journals of the shaft and of the bushings of the crank bearings. The service life of the crankshaft without balance weights with the new lubrication system is determined by the oval journals of the connecting rod and the maximum clearance in the connecting rod bearings.

Card 1/1

123-1-417

Translation from: Referativnyy Zhurnal, Mashinostroyeniye, 1957, Nr 1, p. 71 (USSR)

AUTHORS: Belikov, P.Ya., Bolotov, A.N., Kononenko, A.G.

TITLE: Production of High-strength Cast Iron (Opyt polucheniya vysokoprochnogo chuguna)

PERIODICAL: In sbornik: Opyt proiz-va otlivok. Khar'kov, Oblizdat, 1955, pp. 72-87.

ABSTRACT: The production of high-strength cast iron by treatment with technically pure Mg or with an alloy having a high Mg content is accompanied by a bright flash and a splashing of molten metal from the ladle. As experimentally established, an alloy composed of 5 to 7% Mg, 40 to 50% Si, the rest Fe has the optimum casting properties and produces a minimum flash. The cast iron produced with this alloy is characterized by its excellent technical pro-

Card 1/3

perties, a high fluidity and low shrinkage. It can be cast without refining into intricate castings of close-grained texture in all joints and passages and with wall thicknesses of 5 to 6 mm. Tempering for 1.5 to 2 hours at 750-800° produces pearlite-ferrite iron which has the characteristics of malleable ferrite iron. The initial cast iron smelted in a cupola has the following composition (in %%) - 3.0 -3.6 C; 1.5-2.2 Si; 0.4-0.6 Mn; 0.09-0.12 S; up to 0.2 P. Cast iron with an upper limit of C and Si content is recommended for castings having walls <10 mm thick, and for castings having walls> 40mm thick a cast iron with a lower limit C and Si content is advised. The alloy is added in pieces weighing from 4 to 10 kg in quantities equalling from 1.5 to 2% of the molten iron by weight, using a hopper and ordinary

pouring ladles installed in a chamber with natural draft. When the molds are prepared the cross section of the gate system is made 1.5 to 2-times larger than when similar castings are made of ordinary cast iron, and the deadheads are made approximately 20% smaller than for carbon steel castings.

Card 3/3

Kh.S.S.

BOLOTOV, A.R.; GALOCHKINA, A.P., inzh.

Intensification of the melting processes and increasing the productivity of the pot furnace. Stek. i ker. 20 no.6:1-4 Je '63. (MIRA 16:6)

1. Direktor Ulan-Udenskogo stekol'nogo zavoda (for Bolotov).
2. Ulan-Udenskiy stekol'nyy zavod (for Galochkina).
(Ulan-Ude--Glass manufacture)

POLETOV, A. T.

Grinevskiy, A. I., A. T. Poletov o prudovom rybovodstve [A. T. Poletov on raising fish in ponds]. Moskva, "Sov. nauka", 1953. 91 p.

SO: Monthly List of Russian Accessions, Vol 7, No 4, July 1954.

BOLOTOV, A. T.

" A. T. Bolotov, Selected Works on Agronomy, Fruit-Growing, Forestry and Botany. Article and Commentaries by I. M. Polyakov, Corr. Mem., Akad. Nauk, U.S.S.R. and A. P. Berdyshev, Editors." (p. 82) by Baranov, P. A. and Lebedev, D. V.

SO: JOURNAL OF GENERAL BIOLOGY (Zhurnal Obshchoy Biologii) Vol. XIV, No.1 (January - February) 1953.

PETROV, V.V.; GROTTGUS, T.; REYS, F.F.; STRAKHOV, P.I.; BOLOTOV, A.T.; TELEPNEV, V.D.; BEL'KIND, L.D., professor, redaktor; KUZNETSOVA, Ye.B., redaktor; TUMARKINA, N.A., tekhnicheskiy redaktor

[Selected works on electricity] Izbrannye trudy po elektrichestvu. Pod red. i s primechaniiami L.D. Bel'kinda. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 299 p. (MLRA 10:4)
(Electricity--Early works to 1850)

Bolotov, A. V.

USSR/Biology - Book review

Card 1/1 Pub. 86 - 35/36

Authors : Bolotov, A. V.

Title : Deficiencies of a useful book

Periodical : Priroda 2, 126-127, Feb 1954

Abstract : The shortcomings of a book, by G. E. Kiselev, entitled, "Floriculture," are reviewed.

Institution : .....

Submitted : .....

BOLOTOV, A.V., inzh.

Gas torches for drilling and working stone. Mekh.stroi. 19 no.3:16-17 Mr '62. (MIRA 15:3)

(Stone cutting)

BRICHKIN, A.V., prof., doktor tekhn.nauk; BELENKO, N.P., kand.tekhn.nauk; BOLOTOV, A.V., inzh.; GENBACH, A.N., inzh.; SHAMIN, P.A., kand. tekhn.nauk; SHERSTYUK, B.F., inzh.

Experimental studies of the parameters of the stream of a jet-piercing burner. Izv. vys. ucheb. zav.; gor. zhur. 6 no.3: 52-58 '63. (MIRA 16:10)

1. Kazakhskiy politekhnicheskiy institut. Rekomendovana kafedroy razrabotki rudnykh mestorozhdeniy. 2. Chlen-korrespondent AN KazSSR (for Brichkin).

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S/149/62/000/005/001/008
A006/A101

AUTHORS: Brichkin, A. V., Bolotov, A. V.

TITLE: On the use of an electric arc in rock drilling

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 5, 1962, 7 - 14

TEXT: The possibility of using an electric arc in rock drilling has been investigated by various authors. A number of devices proposed is discussed and was found deficient in operation. In 1959, Brichkin and Bolotov proposed a new design of an electric arc drill in which the arc arises between a rod and a ring electrode and is drawn out into a long ring-shaped tongue of flame due to electrodynamic forces. The gap between the electrodes remains constant. The drill is water or compressed-air cooled. Its schematic diagram is given. To determine power consumption for the formation of the high-temperature tongue of flame and to check the operational capacity of the unit, an experimental model was developed with a 6 mm-diameter carbon rod electrode serving as an anode and a 4 mm thick carbon plate with a central hole serving as a cathode. The length of the

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tongue of flame increases to 15 - 18 cm at higher current values (180 - 200 amps). The electrode consumption is 0.2 - 0.4 g/min. The tongue of flame is soft and its heat transmission capacity is low. When the tongue of flame passes through the ring-shaped arc, the gas is heated to 3,000 - 3,500°K, the tongue of flame becomes rigid and its heat transmission capacity increases. The heat and mass exchange between the gas flow and the ring-shaped tongue of flame of the arc assure an averaged temperature of the gas flow and its higher motion velocity. The increased power of the gas flow produces sufficient conditions for intensive drilling There are 7 figures.

ASSOCIATION: Kazakhskiy politekhnicheskiy institut (Kazakh Polytechnic Institute) Kafedra razrabotki rudnykh mestorozhdeniy (Department of Mining of Ore Deposits)

SUBMITTED: November 23, 1961

BRICHKIN, A.V.; BOLOTOV, A.V.

Use of an electric arc for rock boring. Izv. vys. ucheb. zav.; tsvet. met. 5 no.5:7-14 '62. (MIRA 15:10)

1. Kazakhskiy politekhnicheskiy institut, kafedra razrabotku rudnykh mestorozhdeniy.

(Electric arc) (Boring)

L 02272-67 EWT(m)/T DS

ACC NR: AP6025253 SOURCE CODE: UR/0057/55/036/007/1251/1258

AUTHOR: Brichkin,A.V.; Bolotov,A.V.; Borisova,T.V.

ORG: none

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B

TITLE: On the dynamics of the cathode and anode spots of an electric arc

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 7, 1251-1258

TOPIC TAGS: electric arc, arc property, cathode, anode, copper, cathode spot, anode spot

ABSTRACT: A large part of this paper is devoted to a mainly qualitative discussion of the growth and motion of cathode and anode spots in electric arcs. The electrode spots increase in diameter less rapidly than does the discharge channel; the authors feel that the reason for this behavior is to be found in the thermal inertia of the electrode material and its temperature and electron omission characteristics. The qualities whose possible influence on the dynamics of electrode spots is discussed include the thermal flux in the spot, the electrode temperature, the heat conductivity, the electrodynamic repulsion of autonomous cathode spots, the boiling point of the cathode material, the heat capacity of the cathode, the latent heats of fusion and vaporization and the temperature dependence of the electron emission within the cathode spot. The last factor accounts for gross differences in the behavior of cathode spots on electrodes of different materials. The high motility of the cathode spot on a copper

Card 1/2

UDC: 537.523

ACC NR: AP6025253

electrode is ascribed to a decrease in electron emission at high temperatures, owing to destruction of the oxide surface layer. Experiments were performed with arcs between concentric copper rings and between plane electrodes that were variously heated or cooled. The arc wandered in the annular space between the ring electrodes the more rapidly, the higher the electrode temperature (up to 500 or 700° C) and the shorter the gap. The cathode spot executed chaotic motions about its mean position and left no perceptible track; the anode spot moved more evenly and left a trail of molten electrode material. The current density in the anode spot decreased rapidly with increasing electrode temperature; that in the cathode spot was much less temperature dependent. It is concluded that from the discussion in this paper one can estimate the velocity with which the electrode spots must be made to move and devise means for realizing that velocity; that the current density in the anode spot on a copper electrode depends strongly on the electrode temperature, decreasing from 4.16×10^4 to 6.19×10^2 A/cm^2 as the temperature increases from 16 to 500° C, whereas the current density in the cathode spot depends but little on the temperature; and that the cathode spot has a tendency to move under the influence of the magnetic field of the current in the electrode. Orig. art. has: 5 formulas and 7 figures.

SUB CODE: 20 / 09 / SUBM DATE: 24May65 ORIG. REF: 010 OTH REF: 001

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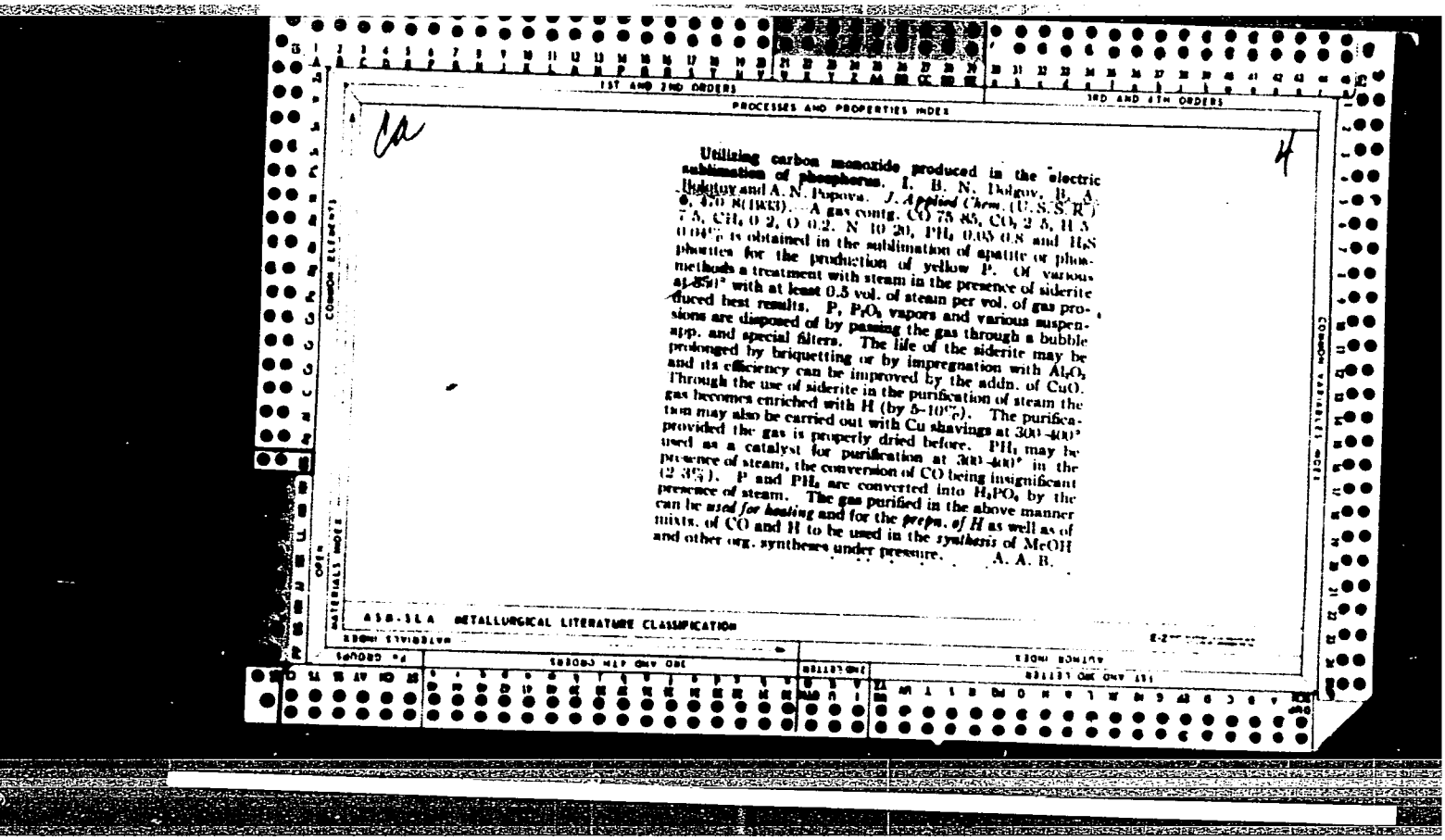
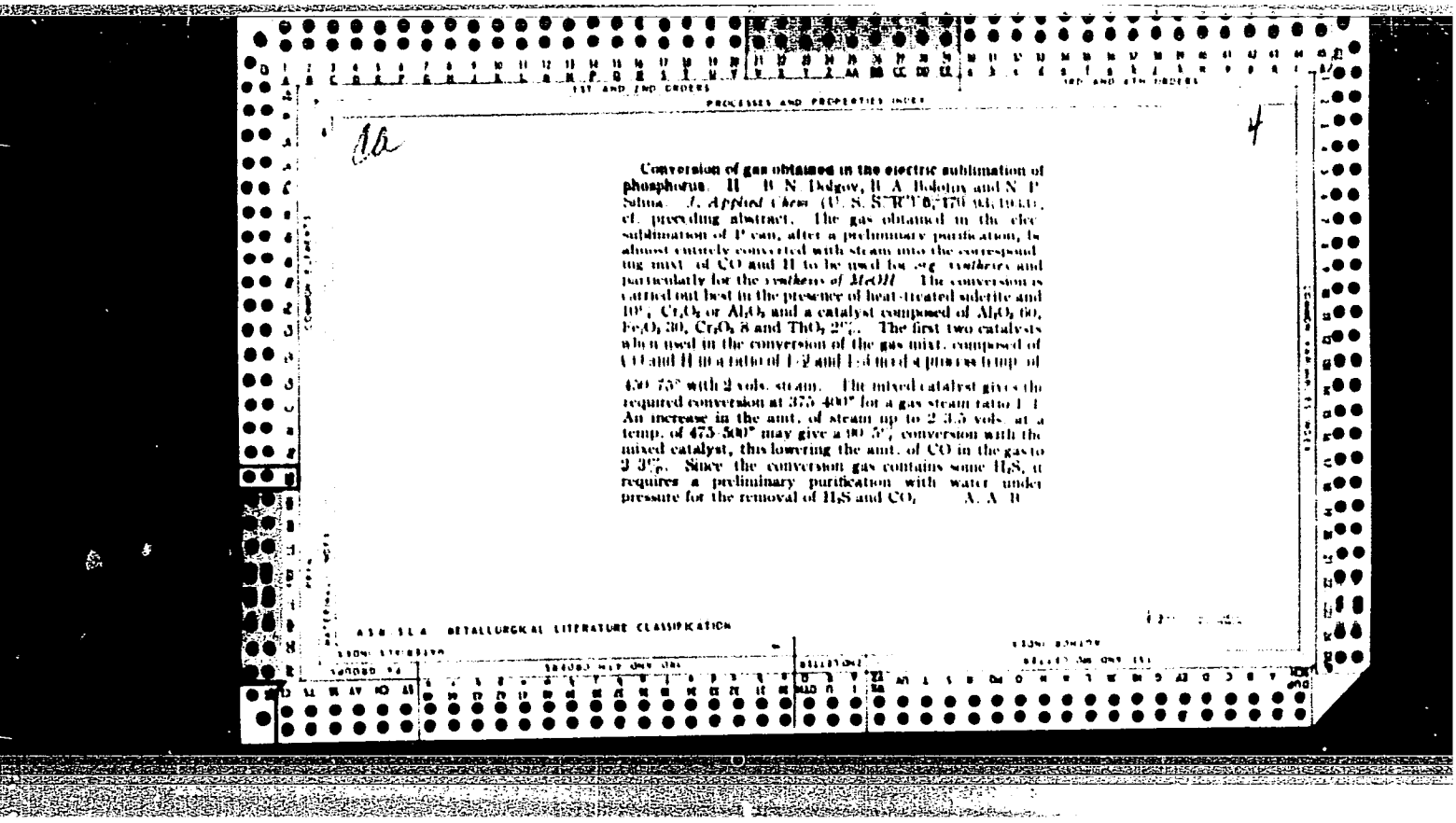


PROCESSES AND PROPERTIES INDEX

Utilizing carbon monoxide produced in the electric sublimation of phosphorus. I. B. N. Dolgov, B. A. Dolgoy and A. N. Popova. *J. Applied Chem.* (U.S.S.R.) 6, 430-8(1933).—A gas contg. CO 75-85, CO_2 2-5, H_2 7-15, CH_4 0-2, O 0-2, N 10-20, PH_3 0.03-0.8 and H_2S 0.04% is obtained in the sublimation of apatite or phosphorites for the production of yellow P. Of various methods a treatment with steam in the presence of siderite at 450° with at least 0.5 vol. of steam per vol. of gas produced best results. P, P_2O_5 vapors and various suspensions are disposed of by passing the gas through a bubble app. and special filters. The life of the siderite may be prolonged by briquetting or by impregnation with Al_2O_3 and its efficiency can be improved by the addn. of CuO. Through the use of siderite in the purification of steam the gas becomes enriched with H (by 5-10%). The purification may also be carried out with Cu shavings at 300-400° provided the gas is properly dried before. PH_3 may be used as a catalyst for purification at 300-400° in the presence of steam, the conversion of CO being insignificant (2-3%). P and PH_3 are converted into H_3PO_4 by the presence of steam. The gas purified in the above manner can be *used for heating* and for the *prepn. of H* as well as of mixts. of CO and H to be used in the *synthesis* of MeOH and other org. syntheses under pressure. A. A. B.

A58-51A METALLURGICAL LITERATURE CLASSIFICATION



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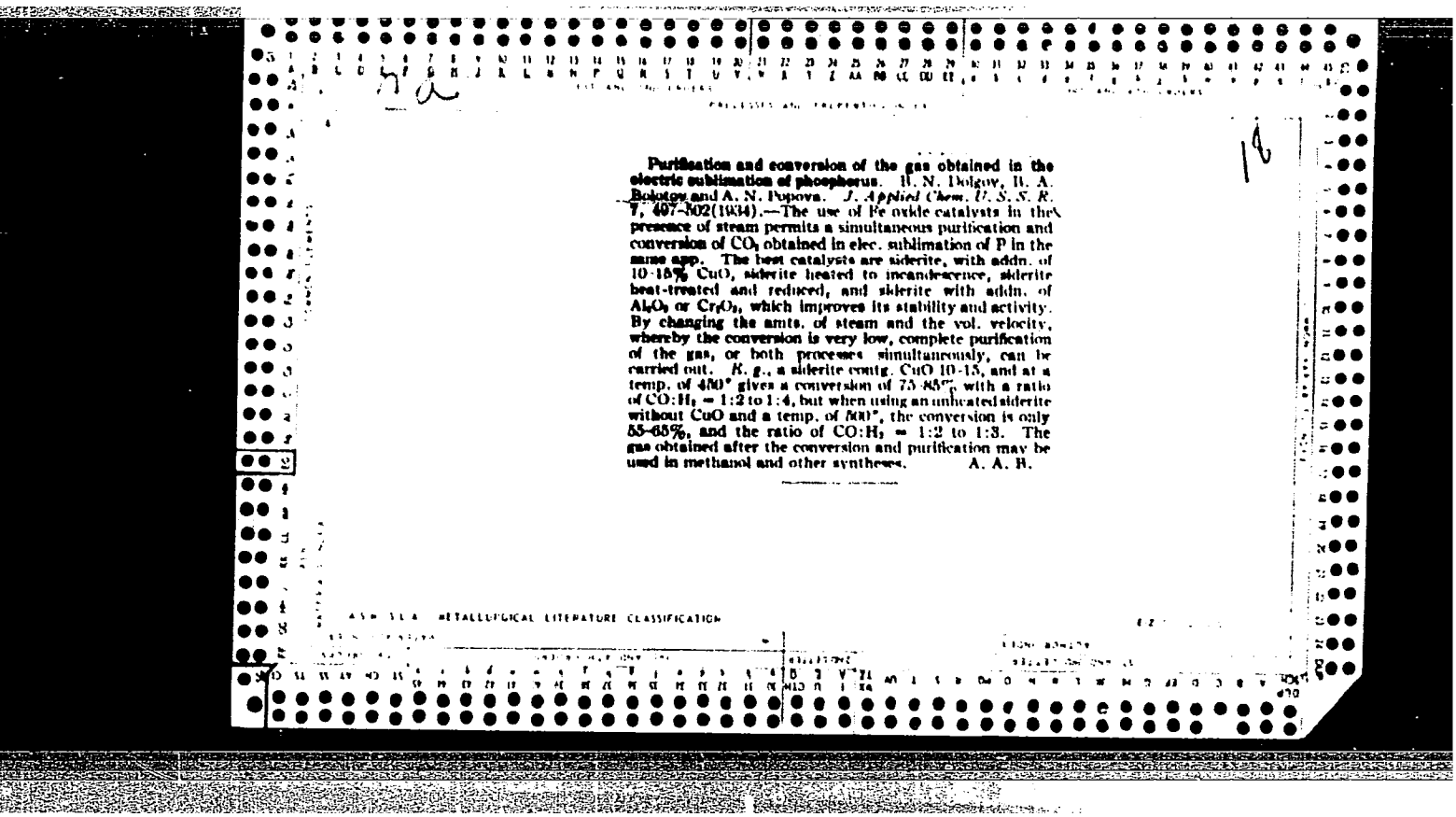
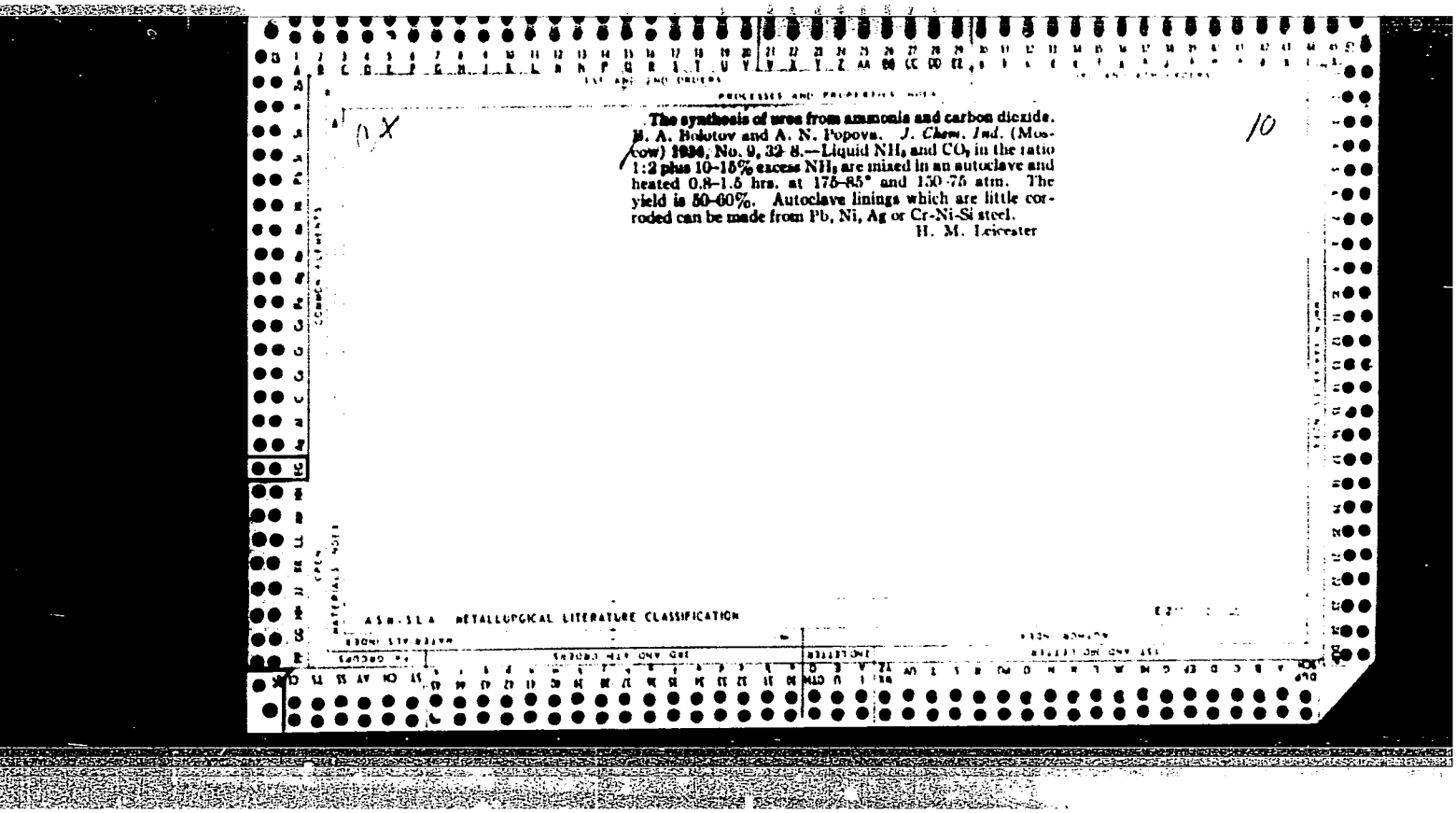
4

Conversion of gas obtained in the electric sublimation of phosphorus. II P N Dolgov, B A Bolotov and N P Sitina. *J. Applied Chem.* (U. S. S. R.) 6, 170-83 (1933); cf. preceding abstract. The gas obtained in the elec. sublimation of P can, after a preliminary purification, be almost entirely converted with steam into the corresponding mixt. of CO and H to be used for synthetic and particularly for the synthesis of *MeOH*. The conversion is carried out best in the presence of heat-treated siderite and 10% Cr_2O_3 or Al_2O_3 and a catalyst composed of Al_2O_3 60, Fe_2O_3 30, Cr_2O_3 8 and ThO_2 2%. The first two catalysts when used in the conversion of the gas mixt. composed of CO and H in a ratio of 1:2 and 1:3 and a pressure of up to 450-75° with 2 vols. steam. The mixed catalyst gives the required conversion at 375-400° for a gas steam ratio 1:1. An increase in the amt. of steam up to 2-3.5 vols. at a temp. of 475-500° may give a 90-5% conversion with the mixed catalyst, thus lowering the amt. of CO in the gas to 2-3%. Since the conversion gas contains some H_2S, it requires a preliminary purification with water under pressure for the removal of H_2S and CO_2. A. A. B.

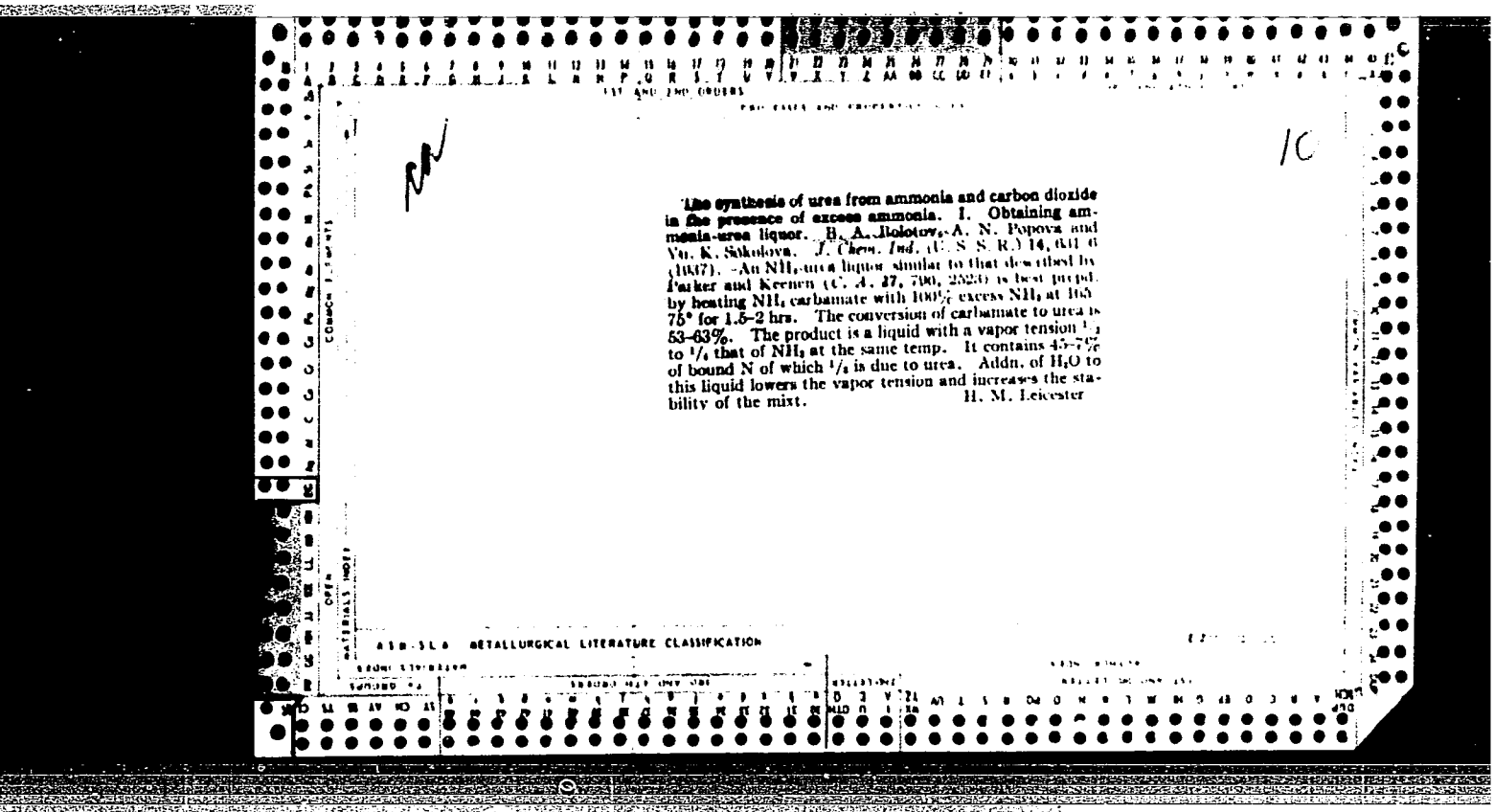


Purification and conversion of the gas obtained in the electric sublimation of phosphorus. B. N. Dolgov, B. A. Bolotov and A. N. Popova. *J. Applied Chem. U. S. S. R.* 7, 497–502(1934).—The use of Fe oxide catalysts in the presence of steam permits a simultaneous purification and conversion of CO_2 obtained in elec. sublimation of P in the same app. The best catalysts are siderite, with addn. of 10-15% CuO, siderite heated to incandescence, siderite heat-treated and reduced, and siderite with addn. of Al_2O_3 or Cr_2O_3, which improves its stability and activity. By changing the amts. of steam and the vol. velocity, whereby the conversion is very low, complete purification of the gas, or both processes simultaneously, can be carried out. *E. g.*, a siderite contg. CuO 10-15, and at a temp. of 480° gives a conversion of 75-85%, with a ratio of $CO:H_2 = 1:2$ to 1:4, but when using an unheated siderite without CuO and a temp. of 500°, the conversion is only 55-65%, and the ratio of $CO:H_2 = 1:2$ to 1:3. The gas obtained after the conversion and purification may be used in methanol and other syntheses. A. A. B.

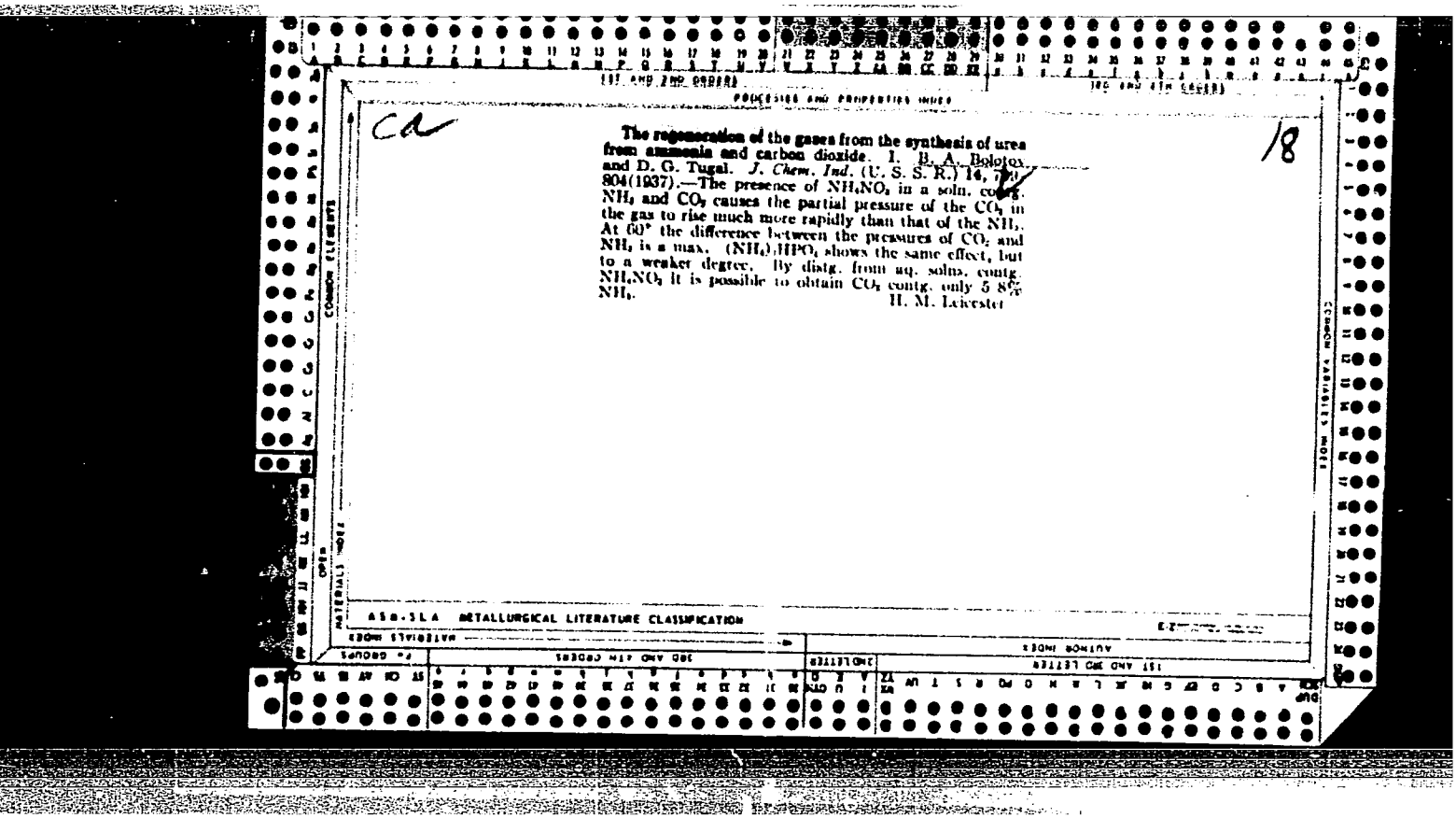


The synthesis of urea from ammonia and carbon dioxide. B. A. Bolotov and A. N. Popova. *J. Chem. Ind.* (Moscow) **1934**, No. 9, 32–8.—Liquid NH_3 and CO_2 in the ratio 1:2 plus 10–15% excess NH_3 are mixed in an autoclave and heated 0.8–1.5 hrs. at 175–85° and 150–75 atm. The yield is 50–60%. Autoclave linings which are little corroded can be made from Pb, Ni, Ag or Cr-Ni-Si steel.

H. M. Leicester

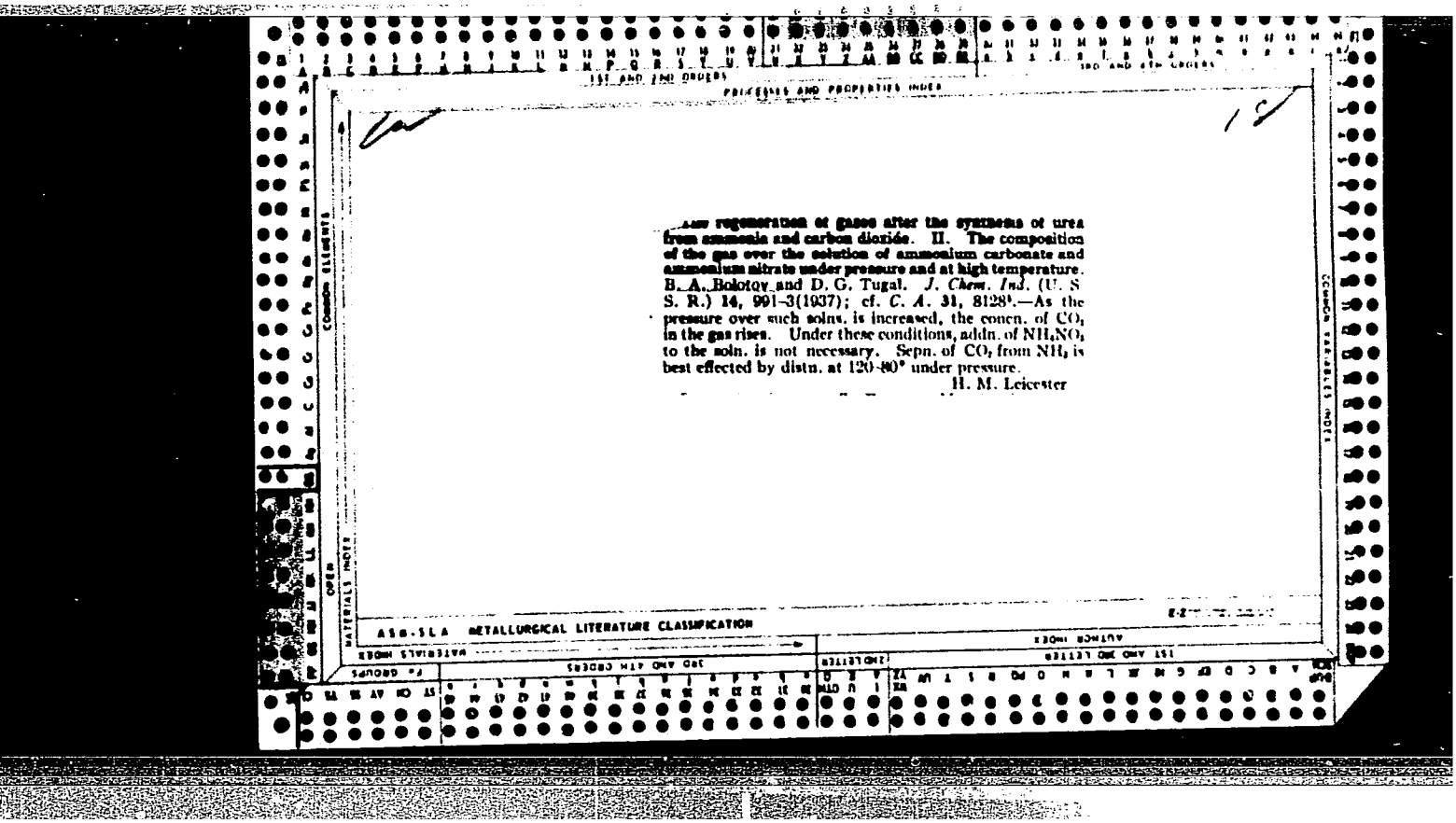


The synthesis of urea from ammonia and carbon dioxide in the presence of excess ammonia. I. Obtaining ammonia-urea liquor. B. A. Bolotov, A. N. Popova and Vn. K. Sakolova. *J. Chem. Ind.* (U. S. S. R.) 14, 611-6 (1937). —An NH_3-urea liquor similar to that described by Parker and Keenen (*C. A.* 27, 700, 2523) is best prepd. by heating NH_4 carbamate with 100% excess NH_3 at 165-75° for 1.5–2 hrs. The conversion of carbamate to urea is 53–63%. The product is a liquid with a vapor tension 1/3 to 1/4 that of NH_3 at the same temp. It contains 45–7% of bound N of which 1/3 is due to urea. Addn. of H_2O to this liquid lowers the vapor tension and increases the stability of the mixt. H. M. Leicester



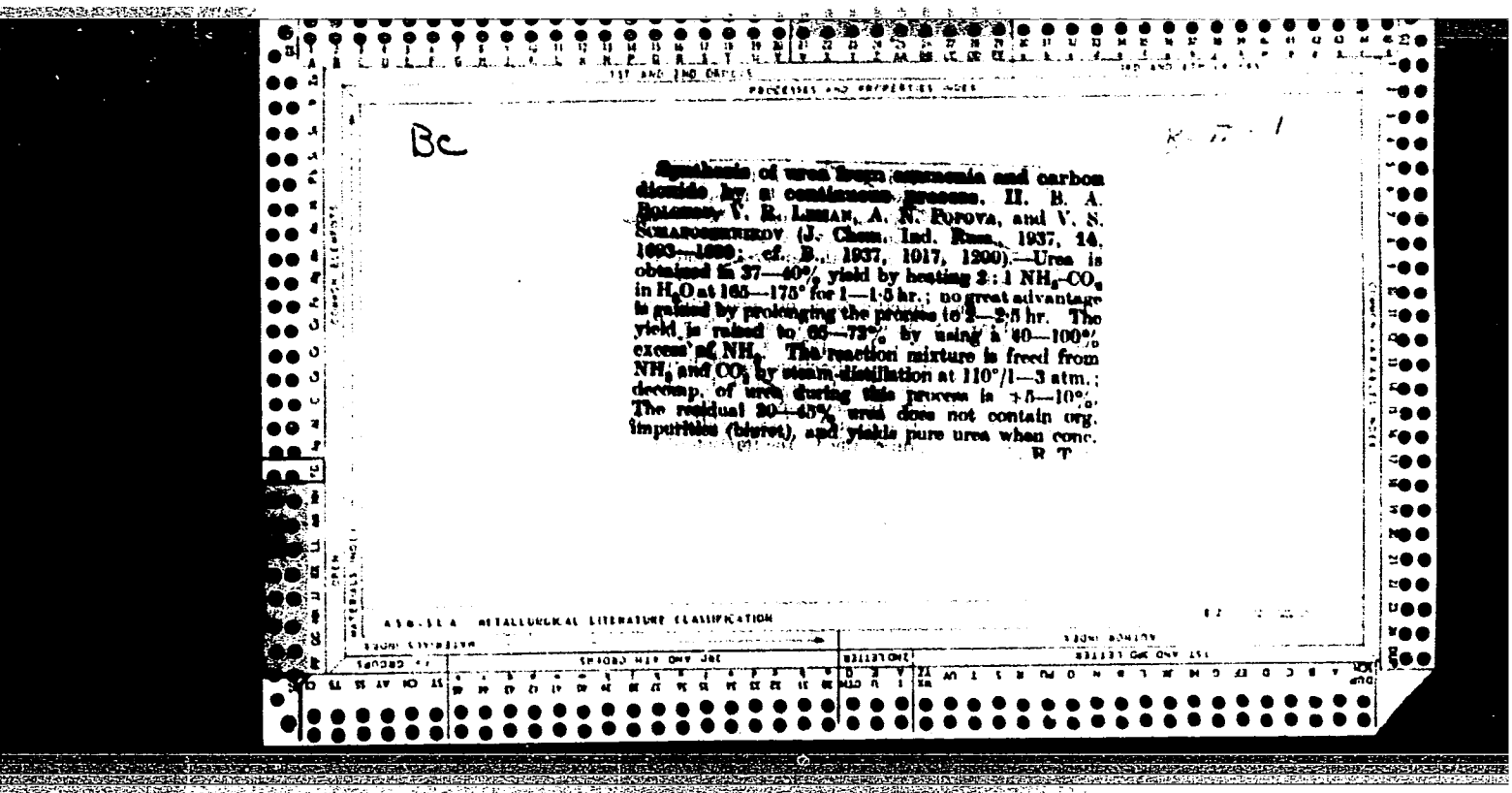
The regeneration of the gases from the synthesis of urea from ammonia and carbon dioxide. I. B. A. Bolotov and D. G. Tugal. *J. Chem. Ind.* (U. S. S. R.) 14, 799-804(1937).—The presence of NH_4NO_3 in a soln. contg. NH_3 and CO_2 causes the partial pressure of the CO_2 in the gas to rise much more rapidly than that of the NH_3. At 60° the difference between the pressures of CO_2 and NH_3 is a max. $(NH_4)_2HPO_4$ shows the same effect, but to a weaker degree. By distg. from aq. solns. contg. NH_4NO_3 it is possible to obtain CO_2 contg. only 5.8% NH_3.

H. M. Leicester



...ew regeneration of gases after the synthesis of urea from ammonia and carbon dioxide. II. The composition of the gas over the solution of ammonium carbonate and ammonium nitrate under pressure and at high temperature. B. A. Bolotov and D. G. Tugal. *J. Chem. Ind.* (U. S. S. R.) 14, 991–3(1937); cf. *C. A.* 31, 8128⁹.—As the pressure over such solns. is increased, the concn. of CO_2 in the gas rises. Under these conditions, addn. of NH_4NO_3 to the soln. is not necessary. Sepn. of CO_2 from NH_3 is best effected by distn. at 120–80° under pressure.

H. M. Leicester



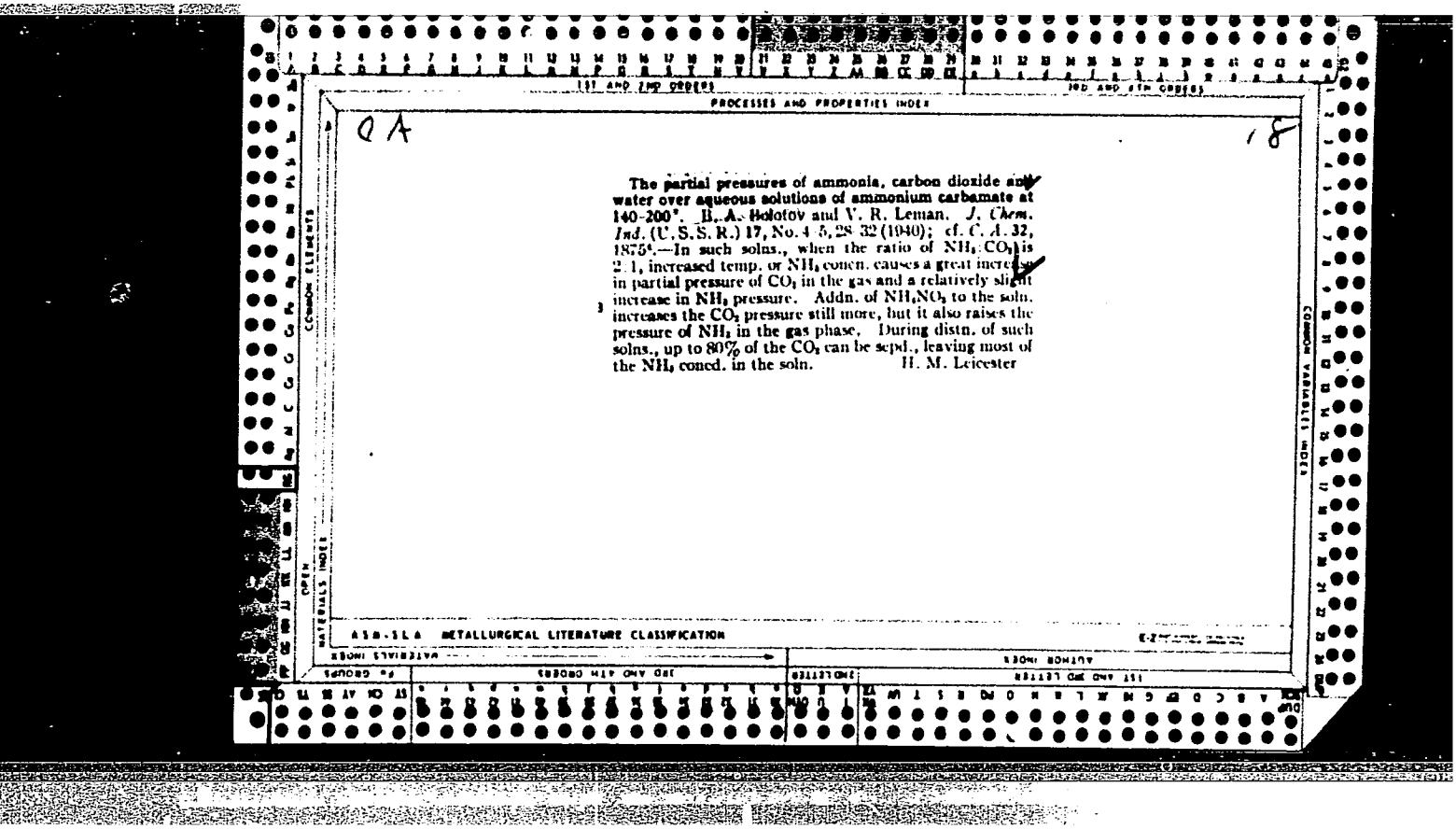
Bc

Synthesis of urea from ammonia and carbon dioxide by a continuous process. II. B. A. Rozanov, V. R. Lerman, A. N. Popova, and V. S. Sharogradskov (J. Chem. Ind. Russ., 1937, 14, 1693—1699; cf. B., 1937, 1017, 1200).—Urea is obtained in 37—40% yield by heating 2:1 NH_3–CO_2 in H_2O at 165—175° for 1—1·5 hr.; no great advantage is gained by prolonging the process to 2—2·5 hr. The yield is raised to 66—73% by using a 80—100% excess of NH_3. The reaction mixture is freed from NH_3 and CO_2 by steam-distillation at 110°/1—3 atm.; decomp. of urea during this process is +5—10%. The residual 30—45% urea does not contain org. impurities (biuret), and yields pure urea when conc.

R. T.

BOLOTOV, B. A.

RT-1019 (Investigation of the partial pressures of NH_3, CO_2, and H_2O over aqueous solutions of ammonia and ammonium carbamate at temperatures, of 140 - 200°C. Part IV) Izuchenie partsial'nykh uprugostei NH_3, CO_2 i H_2O nad vodnymi rastvorami ammiaka i karbamata ammoniia pri temperaturakh 140 - 200°. Soobshchenie 4.
Zhurnal Khimicheskoi Promyshlennosti, 17(7): 25-28, 1940



PROCESSES AND PROPERTIES INDEX

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The partial pressures of ammonia, carbon dioxide and water over aqueous solutions of ammonium carbamate at 140–200°. B. A. Bolotov and V. R. Leman. *J. Chem. Ind.* (U.S.S.R.) 17, No. 4–5, 28–32 (1940); cf. *C. A.* 32, 1875⁶.—In such solns., when the ratio of NH_3:CO_2 is 2:1, increased temp. or NH_3 concn. causes a great increase in partial pressure of CO_2 in the gas and a relatively slight increase in NH_3 pressure. Addn. of NH_4NO_3 to the soln. increases the CO_2 pressure still more, but it also raises the pressure of NH_3 in the gas phase. During distn. of such solns., up to 80% of the CO_2 can be sepd., leaving most of the NH_3 concd. in the soln. H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

18

The partial pressure of ammonia, carbon dioxide and water over aqueous solutions of ammonia and ammonium carbamate at 140–200°. IV. B. A. Bolotov and V. R. Leman. *J. Chem. Ind.* (U. S. S. R.) 17, No. 7, 25–8 (1940); cf. *C. A.* 34, 7070[9].—When such solns. contain 100 g./l. total NH_3, even if the NH_3 is in 300–3000% excess over the CO_2, the gas compn. over the soln. consists chiefly of a mixt. of NH_3 and H_2O, which prevents the prepn. of pure NH_3 by distg. the solns. under pressure. Addn. of NH_4NO_3 to these solns. increases the amt. of CO_2 in the gas phase. However, if the NH_3 concn. in the soln. is increased to 200 g./l., the vapor pressure of H_2O falls, and pure NH_3 can be obtained by distg. at 140–80°.

H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Bolotov, B.A.

Catalytic transformation of ethyl alcohol under pressure. B. A. Bolotov and L. K. Smirnova. *J. Gen. Chem. U.S.S.R.* 25, 1033-8(1955)(Engl. translation).—See *C.A.* 50, 8445f. B. M. R.

USSR/ Organic Chemistry - Synthetic organic chemistry E-2

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11623

Author : Bolotov B.A., Smirnova L.K.
Title : Catatytic Conversion of Ethyl Alcohol Under Pressure

Orig Pub : Zh obshch. khimii, 1955, 25, No 10, 1987-1992

Study of conversion of ethyl alcohol (I) over Cu catalyst at 275-400° and at a pressure from atmospheric to 156 atm., in a flow system. Composition of condensate collected at 275-300° and 10 atm is similar to that obtained without increase in pressure At 300° and 5 atm a condensate is formed containing mostly ketones: 18.0% acetone, 27.1% methyl propyl ketone, 4.4% methyl isobutyl ketone and 7.0% dipropyl ketone. On raising the pressure to 40-120 atm the condensate is found to contain paraffins (10-12%), while the yield of ketones drops sharply. Condensate collected at 350° and a pressure of 10 atm consists essentially of paraffins: n-pentane (II) 14.5%, hexanes 13.9%, n-heptane 24.2%, octanes 8.6% and n-nonane 11.3%. At the same temperature and a pressure of 156 atm formation of II is increased (73.2%) and yield of higher paraffins is decreased. I was fed at a rate of 80-85 g/hour into a reactor containing 120-130 ml of catalyst.

Card 1/1

AID P - 1580

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 10/21

Authors : Dolgov, B. N., Bolotov, B. A., and Komissarova, L. A.

Title : Study of the catalytic reactions of transformations of ethyl alcohol. Part I.

Periodical : Zhur. prikl. khim., 28, no.1, 71-80, 1955

Abstract : At 250-275°C, in the presence of copper catalyst ethyl alcohol yields 30-35% ethyl acetate as the main reaction product; at 300-325°C, the main reaction product (60%) consists of acetone and higher ketones, such as methylpropyl ketone, methyl isobutyl ketone, dipropyl ketone, and methyl amyl ketone. A mechanism of formation of higher ketones is proposed. Seven diagrams, 4 tables, 13 references (9 Russian: 1925-49)

Institution: None

Submitted : Jl 9, 1953

AID P - 2284

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 10/21

Authors : Bolotov, B. A, B. N. Dolgov and P. M. Adrov

Title : Catalytic conversion of ethyl alcohol to acetone and methyl propyl ketone

Periodical: Zhur. prikl. khim., 28, no.3, 299-306, 1955

Abstract : Experiments on the formation of acetone and higher ketones from ethyl alcohol in the presence of a copper catalyst are described. At 280-320°C, acetone is formed (15%); at 330-380°C, a mixture of acetone and propyl ketone is formed (20%). Higher temperatures and increased contact time cause formation of higher ketones.

Institution: None

Submitted : Jl 9, 1953

AID P - 2781

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 9/19

Authors : Bolotov, B. A., B. N. Dolgov, and K. P. Katkova

Title : Mechanism of the formation of acetone and methyl propyl ketone from ethyl alcohol. Part III.

Periodical : Zhur. prikl. khim. 28, 4, 414-421, 1955

Abstract : Catalytic transformations of ethyl alcohol, acetaldehyde, and ethyl acetate in the presence of a copper catalyst were studied. The experiments were carried out at 200-375°C. Five tables, 5 diagrams, 5 references (4 Russian: 1939-1955).

Institution : None

Submitted : Jl 9, 1953

AID P - 3425

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 10/18

Authors : Bolotov, B. A., P. M. Adrov, and L. K. Prokhorova

Title : Catalytic transformations of n-propyl and n-butyl alcohols

Periodical : Zhur. prikl. khim., 28, 5, 516-522, 1955

Abstract : Experiments were carried out with copper catalysts activated by ThO_2, MnO, Al_2O_3. At 250°C, the alcohols were transformed into esters (40-45%); at 325°C, sym. ketones (45%) were formed (catalyst, Cu-ThO_2). At 400-425°C, ketones were formed (36%) (catalyst, Cu-MnO-Al_2O_3). Five tables, 4 diagrams, 3 references, 2 Russian (1955).

Institution : None

Submitted : No date

BOLOTOV, B.A.

CH

Catalytic reactions of transformation of ethyl alcohol. B. N. Dolgov, B. A. Bolotov, and Ju. A. Komissarova. *Zhur. Prikład. Khim.*, 28, 11–30; *J. Appl. Chem.* (U.S.S.R.) 28, 01–8(1955)(Engl. translation).—Activated Cu catalyst is the most effective one in the catalytic transformation of EtOH; metal oxide catalysts are less effective. Ketonization of EtOH over Cu catalyst occurs at 275–350° at high space velocities. The Cu catalyst yields EtOAc at 230–50°, Me_2CO at 275–300°, MeCOPr at 320–50°, and highly condensed products at higher temps. At 300–50° the yield of Me_2CO is 35–40% on EtOH taken, or 94–5% of theory. The presence of up to 20% H_2O at 325° aids the catalytic formation of Me_2CO and MeCOPr. G. M. Kosolapoff

(2)

Bolotov, B.A.

Catalytic transformation of primary alcohols into ketones. V. Catalytic transformation of amyl, hexyl and heptyl alcohols over an activated copper catalyst. B. A. Bolotov, B. N. Dolgov, and K. P. Kutkova. *Zhur. [illegible]* 28, 1181-9(1955); cf. *C.A.* 50, 703*f*, 3095g.—AmOH, *n*-$C_6H_{13}OH$, and *n*-$C_7H_{15}OH$ passed over a Cu catalyst activated with ThO_2 at 250-75° yield up to 60% of esters, while at 325-50° are formed the corresponding sym. ketones in yields up to 44-55%. Generally, with increase of mol. wt. of the alc., the yields of esters and ketones show an increase, as is illustrated by graphical presentation of the results. The predominant content of CO in the off-gases indicates that the formation of the ketones may proceed through aldehydes and aldols. The presence of CO_2 and olefins in the off-gas indicates a partial decompn. of the esters and the ketones and partial conversion of CO.

G. M. Kosolapoff

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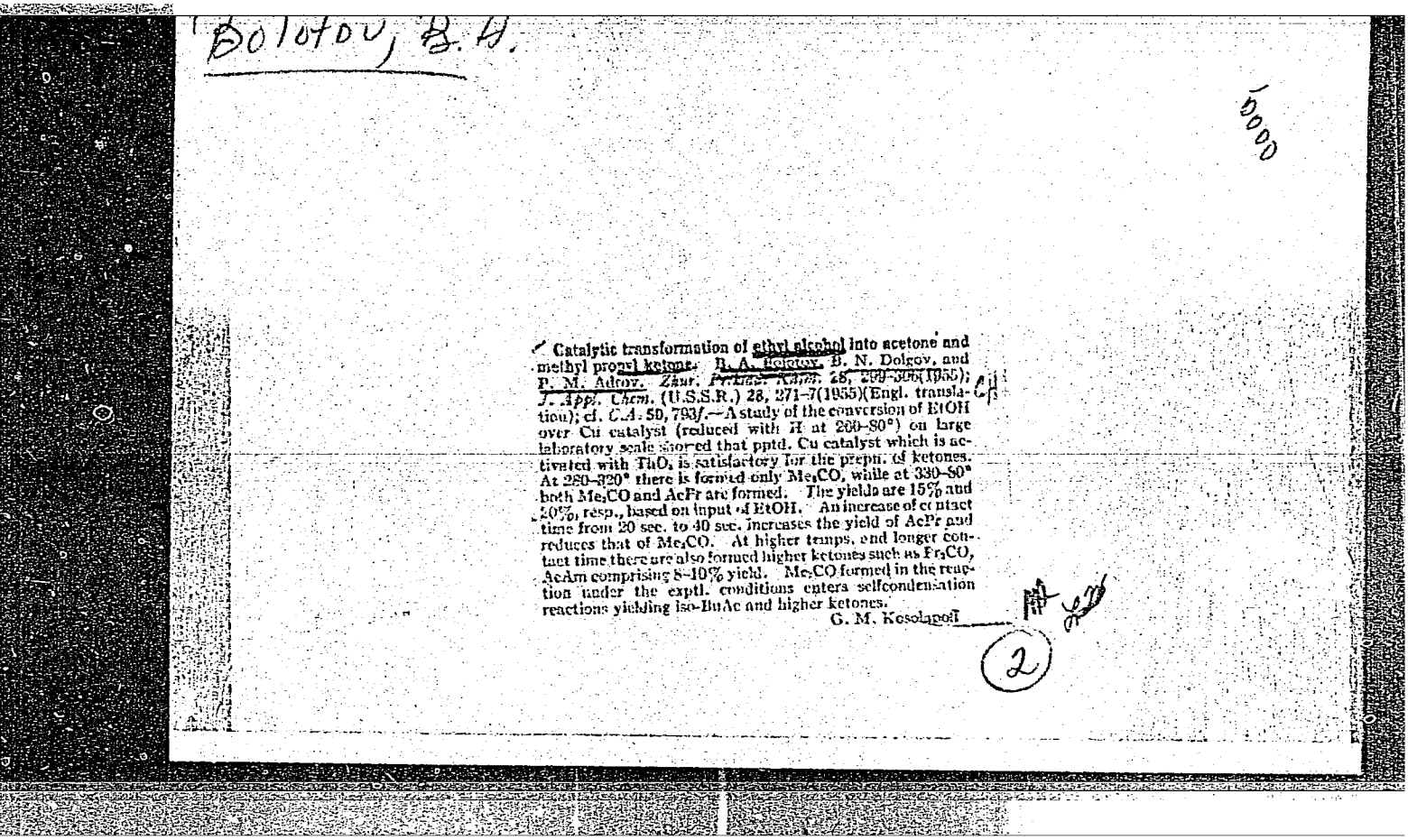
PM



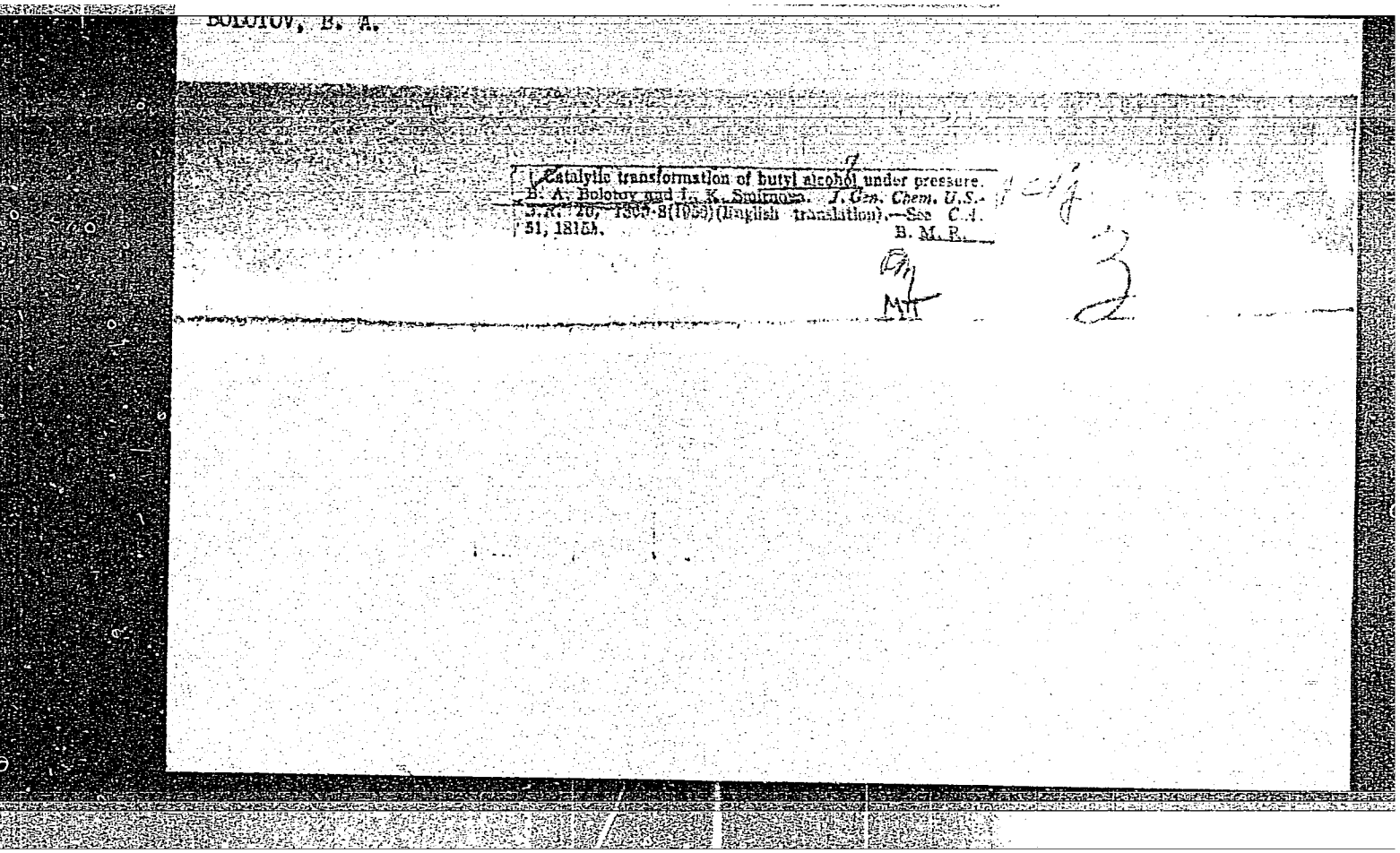
Bolotov, B. A.

5000

Catalytic transformation of ethyl alcohol into acetone and methyl propyl ketone. B. A. Bolotov, B. N. Dolgov, and P. M. Adcov. *Zhur. Prikladn. Khim.* 28, 299-306(1955); *J. Appl. Chem.* (U.S.S.R.) 28, 271-7(1955)(Engl. translation); cf. *C.A.* 50, 793*f*.—A study of the conversion of EtOH over Cu catalyst (reduced with H at 260–80°) on large laboratory scale showed that pptd. Cu catalyst which is activated with ThO_2 is satisfactory for the prepn. of ketones. At 280–320° there is formed only Me_2CO, while at 330–50° both Me_2CO and AcPr are formed. The yields are 15% and 20%, resp., based on input of EtOH. An increase of contact time from 20 sec. to 40 sec. increases the yield of AcPr and reduces that of Me_2CO. At higher temps. and longer contact time there are also formed higher ketones such as Pr_2CO, AcAm comprising 8–10% yield. Me_2CO formed in the reaction under the exptl. conditions enters selfcondensation reactions yielding iso-BuAc and higher ketones.

G. M. Kosolapoff

(2)



BOLOTOV, B. A.

Catalytic transformation of butyl alcohol under pressure.
B. A. Bolotov and I. K. Smirnova. *J. Gen. Chem. U.S.S.R.* 20, 1309-8(1950)(English translation).—See *C.A.* 51, 1815h.
B. M. B.

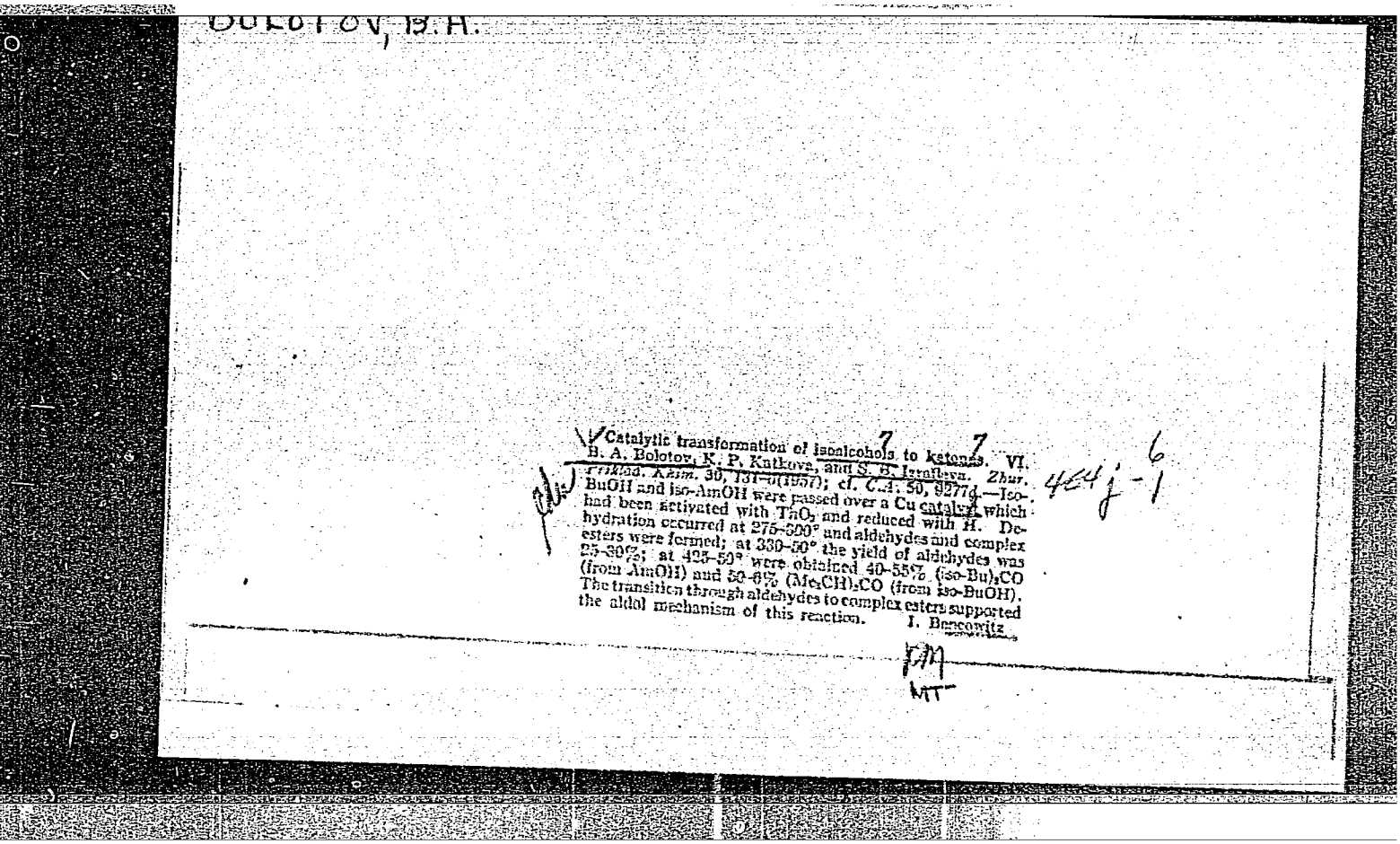
BOLOTOV, B.A.; SMIRNOVA, L.K.

Part 2: The catalytic transformation of n-butyl alcohol under pressure. Zhur.ob.khim. 26 no.6:1662-1665 Je '56. (MIRA 11:1)

1.Leningradskiy gosudarstvennyy universitet.
(Catalysis) (Butanol)

Distr: 4E4j/4E2c(j) 7

Catalytic transformations of ethyl acetate under pressure. B. A. Bolotov and S. N. Borisov (State Univ., Leningrad). *Zhur. Obshchei Khim.* 27, 1237–42(1957); cf. *C.A.* 50, 2410d.—Passage of EtOAc and H at 275–400°/10 atm. over activated Cu catalyst gave Me_2CO, MePrCO, iso-BuMeCO, Pr_2CO, other ketones, and hydrocarbons of the same C content as the ketones above. Raising the pressure to 100 atm. lowered the yields of ketones and increased that of hydrocarbons. The decompn. of EtOAc appears to proceed through 2 paths: decompn. to 2AcH and decompn. to Me_2CO. The ketone formation is ascribed by aldol condensation of AcH. This indicates that EtOAc is not a likely intermediate in formation of ketones and hydrocarbons from EtOH. G. M. Kosolapoff



BOLOTOV, B.A.

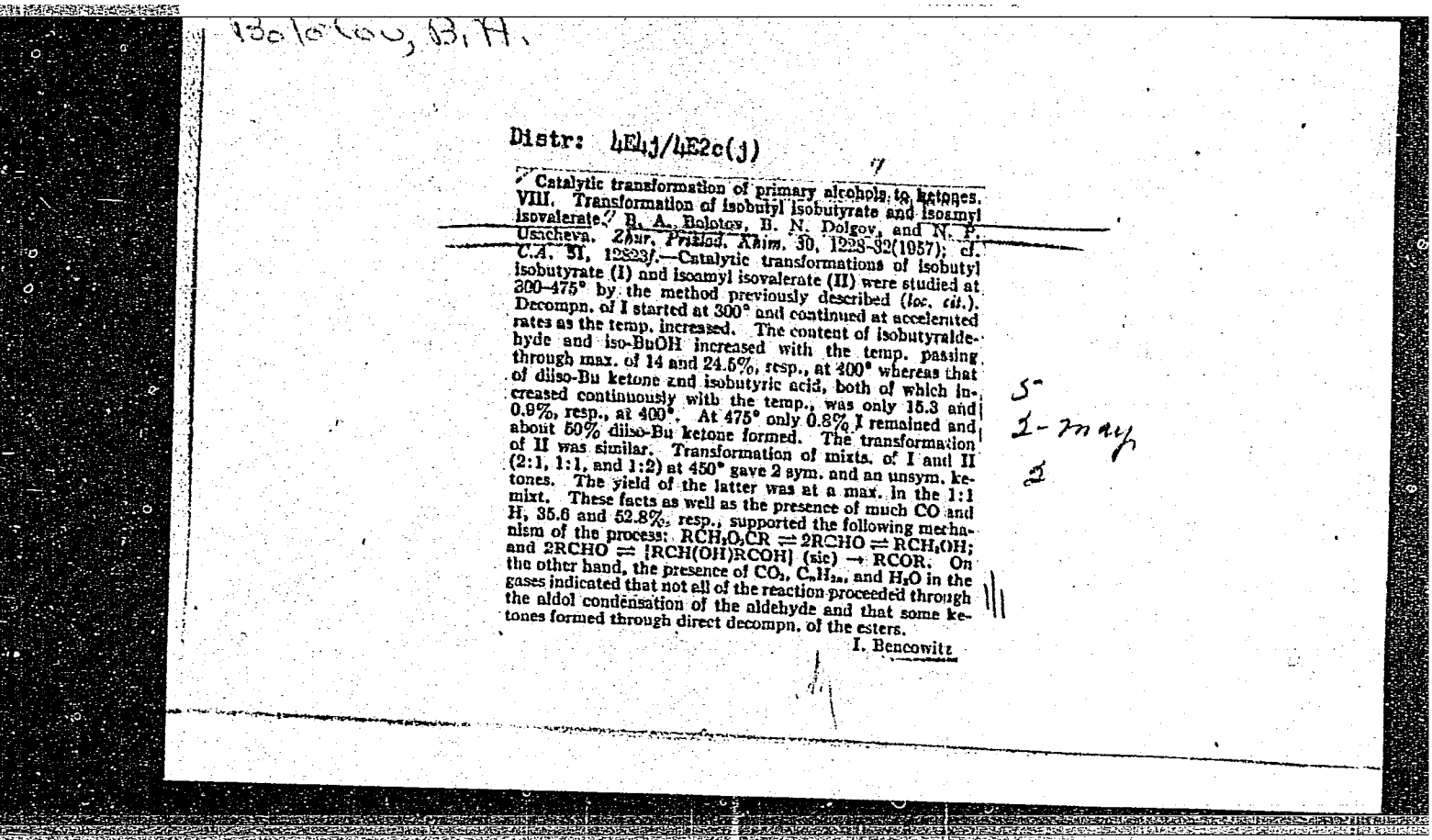
Catalytic transformation of isoalcohols to ketones. VI. B. A. Bolotov, K. P. Katkova, and S. B. Israfilova. *Zhur. Prikład. Khim.* 30, 131–6(1957); cf. *C.A.* 50, 9277d.—Iso-BuOH and iso-AmOH were passed over a Cu catalyst which had been activated with ThO_2 and reduced with H. Dehydration occurred at 275–500° and aldehydes and complex esters were formed; at 330–50° the yield of aldehydes was 25–30%; at 425–50° were obtained 40–55% $(iso\text{-}Bu)_2CO$ (from AmOH) and 50–6% $(Me_2CH)_2CO$ (from iso-BuOH). The transition through aldehydes to complex esters supported the aldol mechanism of this reaction. I. Bencowitz

464j-1

BOLOTOV, B.A.

Catalytic transformation of primary alcohols to ketones. VII. Catalytic transformation of mixtures of primary [illegible] alcohols to ketones. B. A. Bolot[illegible] and [illegible] Zhur. Priklad. Khim. [illegible] (C.A. 51, 1[illegible]) Mixts. of iso-BuOH [illegible] vapors were carried in a current of H over a [illegible] treated with [illegible]. With mixts. contg. [illegible] of iso-BuOH-iso-AmOH, the products were [illegible] and aldehydes; at higher temps., above 350°, the proportion of ketones increased rapidly. The yield of symmetrical [illegible] Pr and diiso-Bu ketones and of unsymmetrical [illegible] ketone at 420° reached a total of 31-40%. [illegible] (35%) of the unsymmetrical ketone was obtained at [illegible] with a = 1:1. The yield of ketones was reduced and that of aldehydes increased at higher gas rates. The results indicate that aldehydes and aldols are intermediate [illegible] ketone formation.

[illegible]



Baloteov, B. N.

Distr: 4E4j/4E2c(j)

Catalytic transformation of primary alcohols to ketones. VIII. Transformation of isobutyl isobutyrate and isoamyl isovalerate. B. A. Bolotov, B. N. Dolgov, and N. P. Uscheva. *Zhur. Prikład. Khim.* 30, 1293-32(1957); cf. *C.A.* 51, 12823*f*.—Catalytic transformations of isobutyl isobutyrate (I) and isoamyl isovalerate (II) were studied at 300–475° by the method previously described (*loc. cit.*). Decompn. of I started at 300° and continued at accelerated rates as the temp. increased. The content of isobutyraldehyde and iso-BuOH increased with the temp. passing through max. of 14 and 24.5%, resp., at 400° whereas that of diiso-Bu ketone and isobutyric acid, both of which increased continuously with the temp., was only 15.3 and 0.9%, resp., at 400°. At 475° only 0.8% I remained and about 50% diiso-Bu ketone formed. The transformation of II was similar. Transformation of mixts. of I and II (2:1, 1:1, and 1:2) at 450° gave 2 sym. and an unsym. ketones. The yield of the latter was at a max. in the 1:1 mixt. These facts as well as the presence of much CO and H, 35.6 and 52.8%, resp., supported the following mechanism of the process: $RCH_2O_2CR \rightleftharpoons 2RCHO \rightleftharpoons RCH_2OH$; and $2RCHO \rightleftharpoons$ [RCH(OH)RCOH] (sic) $\rightarrow$ RCOR. On the other hand, the presence of CO_2, C_nH_{2n}, and H_2O in the gases indicated that not all of the reaction proceeded through the aldol condensation of the aldehyde and that some ketones formed through direct decompn. of the esters.

I. Bencowitz

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BOLOTOV, B.A.; BARANOVA, N.A.; BOGDANOVA, M.V.

Catalytic decomposition of ethylbutyrate and butylacetate, metameric esters. Zhur. prikl. khim. v. 31 no.5:778-784 My '58. (MIRA 11:6)

(Butyric acid) (Acetic acid)

5(3) PHASE I BOOK EXPLOITATION SOV/2924

Bolotov, Boris Aleksandrovich, Vyacheslav Aleksandrovich Komarov, and Tat'yana Vsevolodovna Nizovkina

Prakticheskiye raboty po organicheskomu katalizu (Practical Studies in Organic Catalysis) [Leningrad] Izd-vo Leningr. univ., 1959. 194 p. Errata slip inserted. 4,120 copies printed.

Sponsoring Agency: Leningrad. Universitet. Redaktsionno-izdatel'skiy sovet.

Resp. Ed.: B. N. Dolgov, Professor; Ed.: Ye. V. Shchemeleva; Tech. Ed.: Ye. G. Zhukova.

PURPOSE: This book is intended for the personnel of scientific research institutes and factory laboratories. It will be of interest to teachers and students of advanced courses in chemistry and chemical technology vuzes. It may also be used as a manual to aid in setting up and performing various

Card 1/6

operations with catalytic methods, and in organizing effective work practices.

COVERAGE: The book describes the principal apparatus used to produce catalytic reactions at normal and higher pressures, methods of producing and studying catalysts, and the methods of producing those catalytic reactions which embrace the main branches of organic catalysis. The authors thank K. P. Katkova, I. M. Stroyman, Ye. A. Chernikova, N. P. Usacheva, and R. M. Adrov. References accompany each chapter.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (QD 501.B757)

Card 6/6

TM/jmr
1-22-60

5.3400

77654
SOV/80-[illegible]

AUTHORS: Bolotov, B. A., Dolgov, B. N., Katkova, K. P.

TITLE: Concerning the Mechanism of Formation of Ketones From Primary Alcohols. Communication X

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 2, pp 425-431 (USSR)

ABSTRACT: The study of V. O. Komarevsky and A. G. Schmidt (J. Am. Chem. Soc., 1944, Vol 66, p 1117) of the transformation of branched alcohols and aldehydes over Cr_2O_3 showed that ketones are formed when the α-carbon atom is not substituted; otherwise, the reaction gives only the corresponding aldehydes, in good yield. The above authors advanced an explanation, according to which α -substituted aldehydes cannot participate in an aldol condensation preceding the ketone formation. Contrary to the above, the authors of the present study found (This journal, 1957, Vol 30, pp 131 and 286) that branched alcohols were converted over copper

Card 1/4

Concerning the Mechanism of Formation of Ketones From Primary Alcohols. Communication X

7765
SOV/80-33-2-29/52

catalysts, into ketones at temperatures higher by 100° C than the conversion temperatures of normal alcohols. The above does not necessarily disprove the explanation of the ketone formation through the aldol condensation, advanced by the American authors. The present study describes the conversion of primary branched amyl alcohols substituted in α -position. A copper catalyst, activated with thorium oxide, and reduced with hydrogen at 275-300° C, was used in the experiments which were made at 275-525° C, at a molar ratio hydrogen: alcohol = 1:1, and a space velocity of 150-160. Under these conditions 2,2-dimethylpropan-1-ol at 275° C yielded 23% dimethylpropanal and 4% ester; at 350° C only dimethylpropanal was obtained, in 24% yield, and at 425° C, in 77% yield. The total yield of the reaction products was 56% at 275° C and only 32% at 350° C, due, evidently, to increased decomposition of the aldehyde. The ketone was absent at all temperatures.

Card 2/4

Concerning the Mechanism of Formation of Ketones From Primary Alcohols. Communication X

77654
SOV/80-33-2-29/52

2-methylbutan-1-ol at 275° C yielded 11% of 2-methylbutanal and 43% isoamylvalerate; at 325-375° C the yield of the aldehyde increased up to 39% and that of the ester decreased to 15%; above 400° C the aldehyde was transformed into a symmetric ketone (3,5-dimethylheptan-4-one) in yields increasing with temperature (28% at 500° C). It was established that all alcohols fully substituted in α -position were converted, depending on the temperature, into either esters or ketones via the intermediate aldehyde. 2,2-dimethylpropan-1-ol was an exception; it yielded only the aldehyde. The presence of hydrogen at the α -carbon atom of the aldehyde determined the possibility of the ketone formation. The above confirmed the validity of the suggested aldol mechanism of ketone formation from primary alcohols, which can be expressed as follows:

Card 3/4

Concerning the Mechanism of Formation of Ketones From Primary Alcohols. Communication X

77654
SOV/80-33-2-29/52

$$2RCH(R')CH_2OH \xrightarrow{-2H_2} 2RCH(R')CHO \rightarrow RCH(R')CHOHCR(R_1)CHO \xrightarrow{-CO,-H_2} \rightarrow RCH(R')COCH(R')R.$$

There are 5 tables; 2 figures; and 16 references, 4 U.S., 2 French, 1 German, 9 Soviet. The U.S. references are: V. I. Komarevsky, I. R. Coley, J. Am. Chem. Soc., 63,700, 3269 (1941); Advances in Catalysis and Related Subjects, VIII, 207 (1956); V. I. Komarevsky, A. G. Schmiht, J. Am. Chem. Soc., 66, 1117 (1944); E. Hunters, S. Mülliken, Identific. of Pure Organic Comp., N.Y., (1946).

SUBMITTED: June 5, 1959

Card 4/4

L 12369-63 EWP(j)/EPF(c)/EWT(m)/BDS Pc-4/Pr-4 RM/WW
S/081/63/000/005/005/075

AUTHORS: Bolotov, B. A. and Dolgov, B. N. 64

TITLE: Catalytic conversion of primary alcohols

PERIODICAL: Referativnyy zhurnal, Khimiya, no. 5, 1963, 68, abstract 5B492 Kataliz v vyssh shkole Tr. I, Mezhvuz, soveshcheniya I Ch. 2., 1962, 248-257)

TEXT: Primary alcohols of normal structure over Cu-catalysts, activated by ThO_2, at 250-275°C are transformed into esters with yields of up to 60%, and at 325-350°C, into symmetrical ketones with yields of 45-55%. The formation of ketones from primary alcohols of iso-structure occurs 100°C higher than for alcohols of normal structure. The yield of ketones of 425-450°C is 40-55%. During catalytic changes in C_2H_5OH and acetaldehyde, at temperatures higher than 275°C, new condensation reactions arise on the catalyst of the produced acetone with acetaldehyde, leading to the formation of methyl-propyl ketone, dipropyl ketone, methyl-amyl ketone and other higher ketones. At 10-40 atmospheres pressure and 350-375°C, primary alcohols are converted into saturated hydrocarbons with the same number of carbon atoms in the chain as are contained in ketones produced at atmospheric pressure. The introduction of TiO_2 into the composition of the Cu-catalyst changes the direction of reaction of conversion of the primary alcohols. A new reaction

Card 1/2

L 12369-63

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Catalytic conversion of ....

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leading to formation of new higher saturated primary alcohols and aldehydes takes place. The data provided by the experiment confirm the proposition of the formation of ketones and high order hydrocarbons from primary alcohols through the intermediate stage of aldol formation. Authors' abstract.

[Abstractor's note: Complete translation]

Card 2/2

STARIKOV, Nikolay Antonovich, professor-doktor; BOLOTOV, B.N., otvetstvennyy redaktor; SIRENKO, S.M., redaktor izdatel'stva; ANDREYEV, S.P., tekhnicheskiy redaktor

[Mining mineral deposits at great depths] Razrabotka rudnykh mestorozhdenii na bol'shikh glubinakh. Khar'kov, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 189 p. (MLRA 9:7)

1. Deystvitel'nyy chlen AN USSR (for Starikov)
(Mining engineering)

BOLOTOV B.V.

LOPUSHANSKIY, Vladimir Yefimovich; PLATONOV, Aleksandr Fedorovich; BOLOTOV, B.V., otvetstvennyy redaktor; LIBERMAN, S.S., redaktor izdatel'stva; ANDREYEV, S.P., tekhnicheskiy redaktor.

[Mine foreman's manual] Spravochnik gornogo mastera. Izd.2-oe, perer.i dop. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 415 p. (MIRA 10:11)
(Mining engineering)

SUVOROV, N.A., kand. tekhn. nauk; BOTOTOV, B.K., kand. tekhn. nauk; LAGUTTSEV, A.R., inzh.

Studying the effect of the wall advancement rate on the manifestation of rock pressure using models of equivalent materials. Izv. vys. ucheb. zav.; gor. zhur. 8 no.1:15-19 '65.

(MIRA 18:3)

1. Khar'kovskiy institut gornogo mashinostroyeniya, avtomatiki i vychislitel'noy tekhniki. Rekomendovana kafedroy tekhnologii gornogo proizvodstva.

BOLOTOV, B.V.; ZAKHAROV, V.M.

Compensation of the analog memory errors of a magnetic memory device. Izv. vys. ucheb. zav.; radiotekh. 4 no. 2:215-217 Mr-Ap '61. (MIRA 14:5)

1. Rekomendovana kafedroy dal'ney svyazi Odesskogo elektrotekhnicheskogo instituta svyazi.
(Magnetic memory (Calculating machines))

L 54562-65 EWT(d)/EEC(f)/EED-2/EWP(1) Po-4/Pq-4/Pg-4/Pk-4 IJP(c) BB/GG
ACCESSION NR: AP5015318 UR/0286/65/000/009/0075/0075
681.2.087

40
B

AUTHOR: Bolotov, B. V.; Dorogov, A. Ye.; Ogurtsov, K. A.

TITLE: Analog device. Class 42, No. 170699

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 75

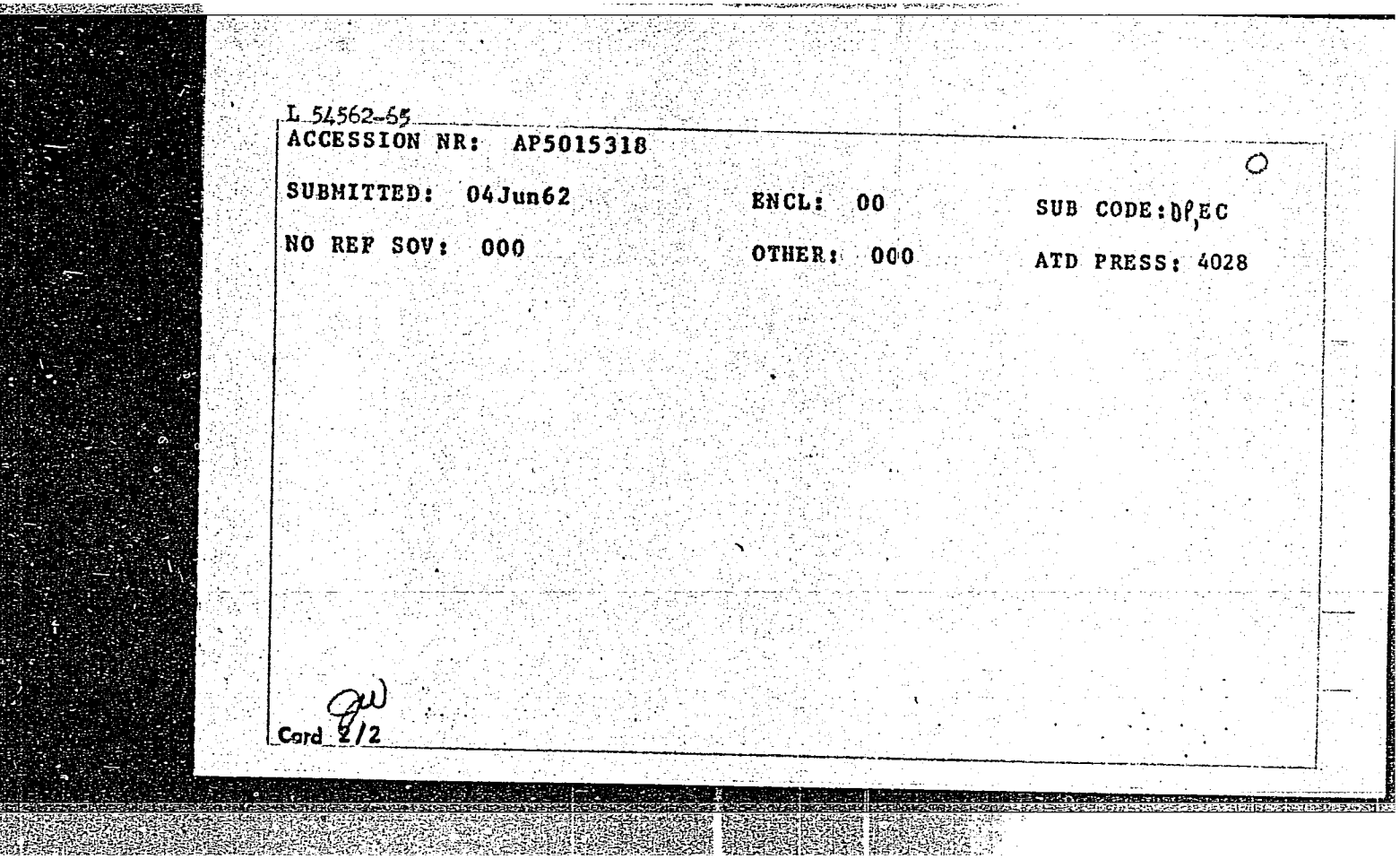
TOPIC TAGS: analog device, analog storage element, magnetic analog storage element

16C

ABSTRACT: The proposed analog device contains a generator of incremental rectangular pulses, a hf oscillator, a comparator, and a key. To add up the d-c voltages transmitted to the input of the device at various moments of time, magnetic analog storage elements are connected to a key which alternately connects them to the common input of the device. Orig. art. has: 1 figure. [DW]

ASSOCIATION: none

Card 1/2



L 54562-65
ACCESSION NR: AP5015318

SUBMITTED: 04Jun62 ENCL: 00 SUB CODE: DP,EC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4028

Card 2/2

L 18440-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AP6006388 SOURCE CODE: UR/0413/66/000/002/0118/0118

INVENTOR: Zakharov, V. M.; Ashman, A. Ye.; Bolotov, B. V.

ORG: none

40
13

TITLE: A magnetic analog memory unit. 16,44 Class 42, No. 178179

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 118

TOPIC TAGS: analog computer system, computer memory

ABSTRACT: This Author's Certificate introduces a magnetic closed analog memory unit which contains a null indicator, a shaper and a switching circuit. Reliability and accuracy are improved by connecting the mismatch signal shaper through a two-way switch to the null indicator and the pulse shaper. One pulse shaper input is connected to the switching circuit, and the other is connected to a full wave magnetic memory element.

Card 1/2

UDC: 681.14.001.57

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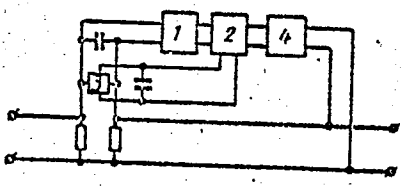
L 18440-66

ACC NR: AP6006388



1 - null indicator; 2 - shaper; 3 - switching circuit;
4 - full wave magnetic memory element.

SUB CODE: 09/ SUBM DATE: 23Nov62

Card 2/2 mc

CHALYY-PRILUTSKIY, A.N.; BOLOTOV, B.Ye.

New method for fastening converters by means of magnets. Izm.tekh. no.2:36 Mr-Ap '58. (MIRA 11:3)
(Machine-shop practice)

SOV-115-58-4-19/45

AUTHORS: Chalyy-Prilutskiy, A.N.; Bolotov, B. Ye.

TITLE: A Device for the Dynamic Calibration of Piezo Plates (Prisposobleniye dlya dinamicheskoy graduirovki p'yezo-plastin)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 4, 35-37 (USSR)

ABSTRACT: The article deals with a device and method for determining the frequency characteristics of piezo plates used in piezo pick-ups. By plotting frequency versus voltage, the intensity of polarization in relation to the frequency of excitation of the piezo plates could be found, with amplitude constant. Two piezo plates are used, one excited at various frequencies from a sound oscillator via an amplifier and the voltage being measured from the other which also resonates. This voltage is first amplified and then passed to the voltmeter. A capacitance pick-up is used to determine the amplitude of the oscillations and also for static calibration. Here the pick-up is adjusted over a certain range by the operating screw, and the deflection

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A Device for the Dynamic Calibration of Piezo Plates SOV-115-58-4-19/45

of the beam on a cathode oscilloscope, to which the pick-up is connected, is noted. There are 2 diagrams and 1 graph.

1. Piezoelectric transducers--Calibration

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8(2) 25(6)

AUTHOR: Bolotov, B.Ye., Engineer SOV/119-58-12-9/13

TITLE: A Device for the Determination of the Causes of Noise in Ball Bearings (Ustanovka dlya opredeleniya prichin shuma podshipnikov kacheniya)

PERIODICAL: Priborostroyeniye, 1958, Nr 12, pp 23-24 (USSR)

ABSTRACT: In 1957 this device has been shown for the first time on the Vsesoyuznaya promyshlennaya vystavka (All-Union Industry Exhibition). It is at present in operation in the 4-y Gosudarstvennyy Ordena Lenina podshipnikovyy zavod im Kuybysheva (Fourth State Ball Bearing Works Distinguished With the Lenin Order). It is based upon the fact that the noise frequency of a ball bearing is superposed by oscillations which are due to the flaws in the ball bearing. If a ball bearing rotates at 3000 revs/minute, the inner ring, if oval-shaped, will produce oscillations with a frequency of 50 cy/sec, which can be measured. Ball bearings which are to be tested are with their inner ring mounted on a shaft journaled on points which are driven by a cotton belt. A feeler pin mounted on a frame is touching the outer ring of the ball bearing and transmits the vibrations to a piezocrystal, which drives the input of a two-channel

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A Device for the Determination of the Causes of Noise in Ball Bearings

amplifier with a frequency range of 0 to 500 cy and of 400 cy to 20 kcy. Each channel of the amplifier has a pointer instrument which is calibrated in relative noise units. The amplifier is connected with a loudspeaker which permits an acoustic observation of the noises. This device can be produced with the means available in any factory.- There are 1 figure and 2 tables.

S/115/60/000/05/06/034
B007/B011

AUTHOR: Bolotov, B. Ya.

TITLE: Determination of the Waviness of the Groove Surface in Roller Bearing Bushings

PERIODICAL: Izmeritel'naya tekhnika, 1960, No. 5, pp. 10-11

TEXT: The measuring instrument ИВ-1 (IV-1) is described here. It offers the possibility of estimating the height of waves in the range of from 0.05 to 1μ, and thence to calculate the radial acceleration of roll bodies in roller bearings. The instrument described here is based on the principle of the measurement of small dislocations with the aid of a capacitive feeler. The scheme of this instrument is shown in Fig. 1 and described. The loop oscilloscope МПО-2 (MPO-2) is used for recording the waviness diagram. The instrument error is ±5% in the entire wave measuring range. Fig. 2 offers the waviness diagrams of the surface of a roller bearing bushing. There are 2 figures and 1 Soviet reference.

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25(1), 28(2) SOV/115-59-8-10/33

AUTHOR: Bolotov, B. Ye.

TITLE: A Device for Measuring the Noise of Ball Bearings

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 8, pp 24 - 25 (USSR)

ABSTRACT: The existing methods of measuring the noises of ball bearings by microphones are suitable for laboratory application only. In this article, a device is described which may be used also under shop conditions for measuring noises in ball bearings. For eliminating the influence of foreign noises, the microphone was replaced by a barium titanate transducer which indicates the vibrations in the audio frequency range. The arrangement of the noise measuring apparatus is shown in Figure 1. The circuit diagram of the amplifier is shown in Figure 2. The ball bearing to be tested is fixed in this device and rotated by an electric motor VN-2 (20 watts at 2,550 rpm). The piezo-electric transducer is connected to an amplifier composed of tubes 6Zh8, 6N8S, 6P6S, 6Kh6S, SG4S and 5Ts4S. The amplifier has two output channels.

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A Device for Measuring the Noise of Ball Bearings

One of them is connected to a milliammeter or an oscillograph, while the other output channel is connected to a loudspeaker. Using a voltage divider, the amplification may be set to 100, 300, 1000, 3000 and 10,000 times. At the"4th GPZ", such a device is used for sorting ball bearings. About three seconds are required for checking one ball bearing. There are 1 diagram, 1 circuit diagram and 1 table.

S/115/61/000/002/004/006
B116/B203

AUTHOR: Bolotov, B. Ye.

TITLE: A method of measuring the eigenfrequencies of bearing races

PERIODICAL: Izmeritel'naya tekhnika, no. 2, 1961, 15-16

TEXT: When studying the causes of vibration and noise in ball bearings, it was found that the ball-bearing races cause much of the noise. They play the part of a resonator (particularly the outer races). The pitch of the tone (which may be called the natural tone of the bearing) is determined by the eigenfrequency of the outer race. The natural tone pitch is determined by the race thickness and diameter, and does not depend on the bearing speed. The author's method of measuring the eigenfrequency of bearing races is based on the resonance phenomenon. The block diagram of the apparatus is shown in the figure. The race 1 suspended from the support 2 is excited by the electromagnetic vibrator 3. The latter is fed from the sound generator 4 with alternating current. The piezoelectric transmitter 5 takes up the vibrations of the race, and transmits an electric signal to the amplifier and, after rectification, to the indicator

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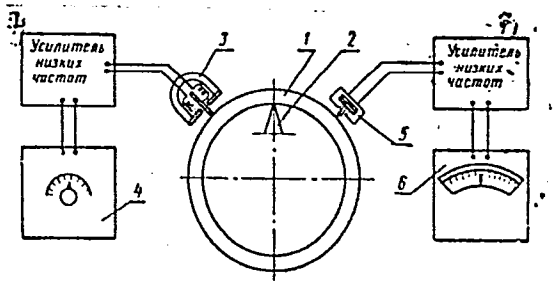
6. The piezo-transmitter may also be connected with an electronic oscilloscope. The eigenfrequency of the bearing race is measured in the following manner: the race is suspended from the support and fixed together with the electromagnetic vibrator, and the piezo-transmitter is lowered down to the race. The resonance frequency is determined by changing the frequency of the exciting current and reading the indication on the pointer. [Abstracter's note: This is nearly a full translation from the original]. There is 1 figure.

Legend to the figure: 1) Race, 2) support, 3) vibrator, 4) sound generator, 5) piezo-transmitter, 6) indicator, 7) low-frequency amplifier.



ANDRUSHEVICH, Yu.M.; BOLOTOV, B.Ye.

Device for checking uniform motion of shafts in machine-tool drives. Izm.tekh. no.9:23-24 S '62. (MIRA 15:11)
(Electronic instruments)

BOLOTOV, B.Ye.

Device for measuring the amplitude of vibrations. Izm. tekh. no.11:34 N '64. (MIRA 18:3)

ACC NR: AP7005606 SOURCE CODE: UR/0413/67/000/002/0045/0046

INVENTOR: Bolotov, E. S.; Telegin, G. A.

ORG: None

TITLE: A memory unit. Class 21, No. 190424

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 45-46

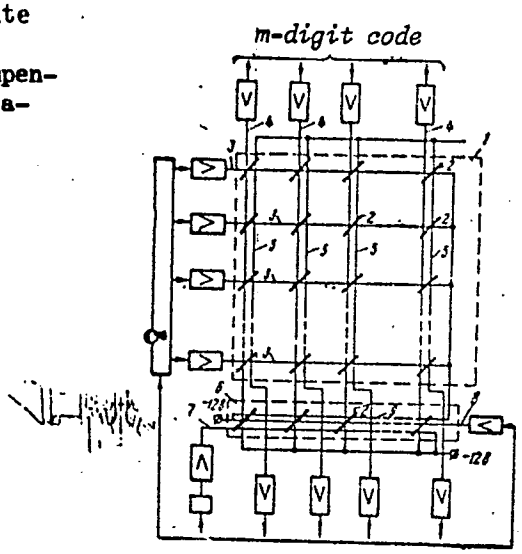
TOPIC TAGS: computer memory, ferrite core memory

ABSTRACT: This Author's Certificate introduces a memory unit which contains a matrix of ferrite cores made from a material with rectangular hysteresis loop, address, digital place and output buses passing through these cores and a compensation bar. To assure constant loading during recording, the digital place buses are threaded through the cores of the compensation bar together with a reset bus, a compensation bus and a common address bus. In this arrangement, the threading of the reset bus matches that of the digital place buses while the threading of the compensation and common address buses opposes that of the digital place buses.

Card 1/2 UDC: 681.142.07

ACC NR: AP7005606

1--matrix of ferrite cores; 2--ferrite cores; 3--address buses; 4--digital place buses; 5--output buses; 6--compensation bar; 7--reset bus; 8--compensation bus; 9--common address bus



SUB CODE: 09/ SUBM DATE: 15Dec65

Card 2/2

GERASIMENKO, G.I., dotsent; Prinimali uchastiye: KUBOTA, V.P., marksheyder; BOIGTOV, G.D., marksheyder; KOROLENKO, A.N., marksheyder

Comparative evaluation of mine surveying instruments used for underground chambers and cavities. Izv.vys.ucheb.zav.; gor. zhur. 6 no. 12:48-53 '63. (MIRA 17:5)

1. Donetskiy ordena Trudovogo Krasnogo Znameni politekhnicheskiy institut.

USSR/Human and Animal Physiology. Digestion. Salivary Glands. T-7

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55695.

Author : Dolotov, G.N., Ryumina, T.F.
Inst : Molotov Institute of Medicine.
Title : The Methods of Registering Salivary Discharge in Dogs.

Orig Pub: Tr. Molotovsk. med. in-ta, 1957, vyp. 26, 66-70.

Abstract: It has been proposed to introduce a device which is constructed along the same basic principles as the water transmission device. The apparatus is simple and convenient to use. Its indicators do not depend on the surrounding environment (temperature and air pressure), and they reflect exactly the volume of

Card : 1/2

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55695.

the liquid entering the system, as well as characterize the modus of its entrance (fast, slow, jerky).

VOLKOV, A.; BOLOTOV, I.; YEGOROVA, Ye.; MENDELEVICH, A.

Analysis of the merchandise turnover system in the public food service. Obshchestv.pit. no.9:46-47 S '60. (MIRA 13:11)

1. Nachal'nik planovo-finansovogo otdela Upravleniya obshchestvennogo pitaniya g.Leningrada (for Volkov). 2. Nachal'nik planovogo otdela tresta obshchestvennogo pitaniya, Leningrad (for Bolotov). 3. Nachal'nik planovogo otdela tresta obshchestvennogo pitaniya, Leningrad (for Yegorova). 4. Nachal'nik planovogo otdela, tresta obshchestvennogo pitaniya (for Mendelevich).
(Restaurants, lunchrooms, etc.--Finance)

BOLOTOV, I. E.

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19

Application of Autoradiography to the Study of Intra-Crystalline Liquation in Steel. I. E. Bolotov, M. I. Gol'dshtein, A. A. Popov and A. B. Fedorov. (*Zavodskaya Laboratoriya*, 1956, 22, (6), 682–683). [In Russian]. After a brief introduction to the autoradiographic method as a tool for studying segregation of elements in steel, experimental details are given and some results obtained with S, P and W are presented and discussed. ^{32}P, ^{35}S, and ^{185}W respectively, were used as tracers, in concentrations to give 1 mCu per kg metal intensity. With phosphorus and sulphur a structural Cr-Ni-Mo steel was used. The experiments with tungsten gave more detailed information on the effect of cooling rate on intra-crystalline liquation, which was evaluated by microphotometric measurements on the autoradiographs.—E. K.

RMP

RG pra ang

BOLOTOV, I.N.; LITVINOV, N.I., aspirant; APENNIKOV, S.A., aspirant; LUKASHOV, A.I.; PROTASOV, N., aspirant; GOLOVANYUK, V.I., aspirant; GUBAYDULLIN, Kh.

Combine cultivation practices with the use of herbicides. Zemledelie 27 no.6:53-59 Je '65. (MIRA 18:9)

1. Luganskiy sel'skokhozyaystvennyy institut (for Bolotov, Litvinov). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut kormov (for Apennikov). 3. Donskaya opytnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta maslichnykh i efiromaslichnykh kul'tur (for Lukashov) 4. Belorusskaya sel'skokhozyaystvennaya akademiya (for Protasov). 5. Bashkirskiy nauchno-issledovatel'skiy institut sel'skogo khozyaystva (for Gubaydullin).

BOLOTOV, I.N. Cand Agr Sci -- (diss) " Study of the Performance of the Flax Seeder SL-44 at Increased Velocity."

Len, 1958. 20 pp (Min of Agr RSFSR. Len Agr Inst). 100 copies.

(KL, 10-58, 120).

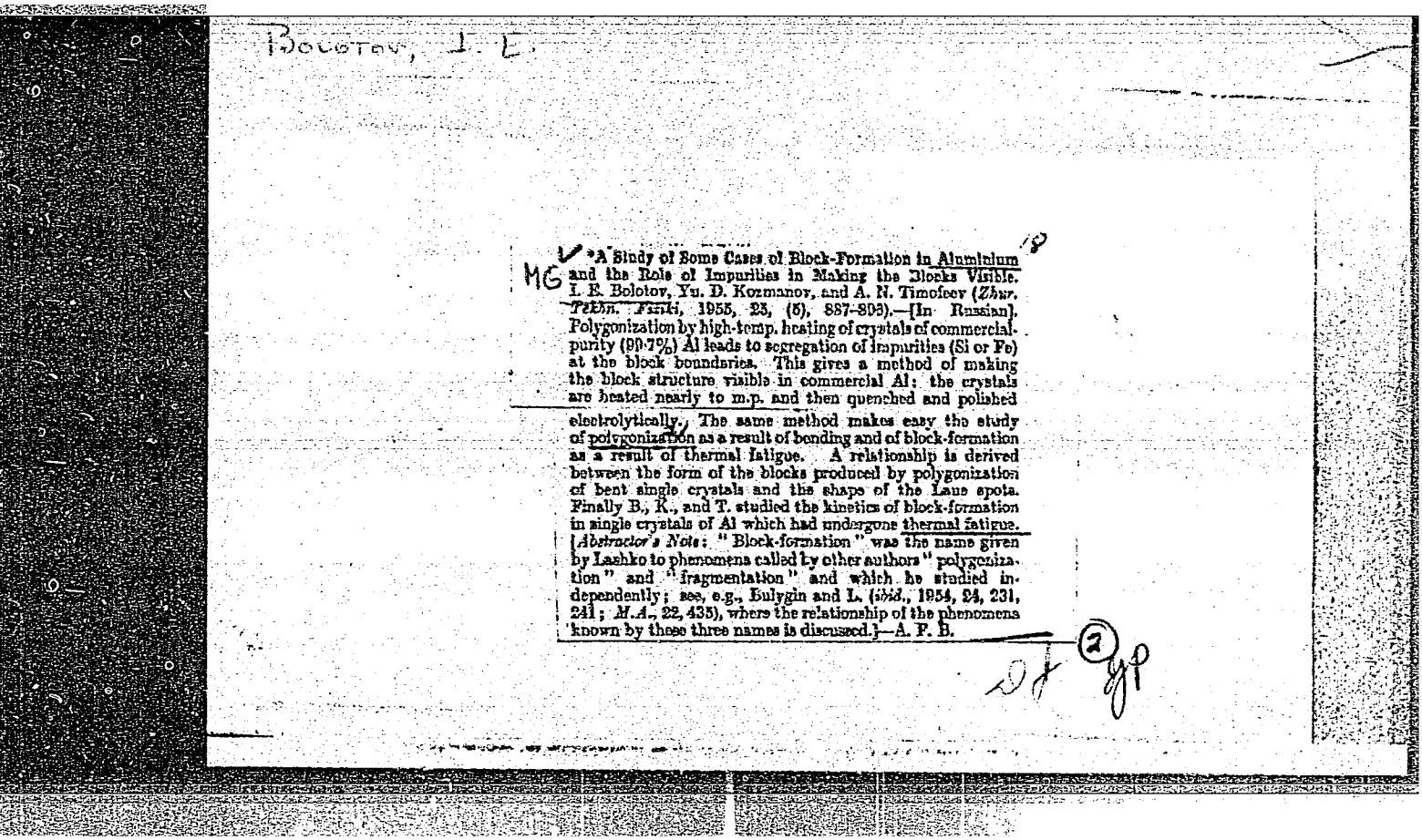
BOLOTOV, I.N., KOZYREVA, A.A.; KONDRASHUK, P.K.; KRYLOV, A.A.; TOLKOVSKIY, V.A.; KHAYLIS, G.A., Prinimal uchastiye LEBEDEV, Ya.A.; GOLOMYSOV, F.S., red.; BARANOVA, L.G., tekhn. red.; FRIDMAN, Z.L., tekhn. red.

[Over-all mechanization of flax growing]Kompleksnaia mekhanizatsiia l'novodstva. [By] I.N.Bolotov i dr. Leningrad, Sel'khozizdat, 1962. 354 p. (MIRA 16:2)
(Flax processing machinery)

"The Adsorption of Impurities at the Grain Boundaries in Aluminium." I. E. Bolotov and Yu. D. Kuzmanov (*Doklady Akad. Nauk S.S.S.R.*, 1954, **98**, (2), 293–295).—[In Russian]. Experiments are described in which single crystals of pure and commercial Al were subjected to bending round a cylindrical surface of 7 mm. radius, followed by a 5-hr. anneal at 640° C., cooling, and a 1-hr. anneal at 400° C. The commercial (99·7%) Al contained Si 0·15, Fe 0·05, and Mg 0·01%, and the pure (99·99%) Al contained Si 0·01, Fe 0·0005, and Mg 0·007% (both brands contained traces of Cu). After electrolytic polishing and etching, only the specimens of commercial Al revealed under the microscope the existence of well-defined blocks of crystallites. This difference was attributed to the adsorption at the grain boundaries of Si and/or Fe precipitated from supersaturated solid soln. during heat-treatment at 400° C.—S. K. L.

Bolotov I. E.

Use of Micro-Autoradiography in the Study of the Redistribution of Chromium during Diffusional Annealing. I. E. Bolotov and M. I. Gol'dshtein. (*Zavodskaya Laboratoriya*, IUSS, **21**, (7), 828-830). [In Russian]. The application of the contact radiographic method for finding the distribution of chromium in a steel after various treatments is described. Cr^{51} was used as the tracer, being introduced as the oxide together with aluminium into the molten steel (0·40% C, 0·58% Mn, 0·24% 5% Si 2·4 Cr, 0·13% Ni, 0·012% P, 0·30% S). Sections were prepared from the 600 g ingot and annealed at 1200, 1300 and 1400° C for various times. After polishing, contact autoradiographs were taken. The original heterogeneity of the chromium distribution was appreciably depressed by annealing for 5 h at 1300° C or 1 h at 1400° C.



Bolotov, I. E.

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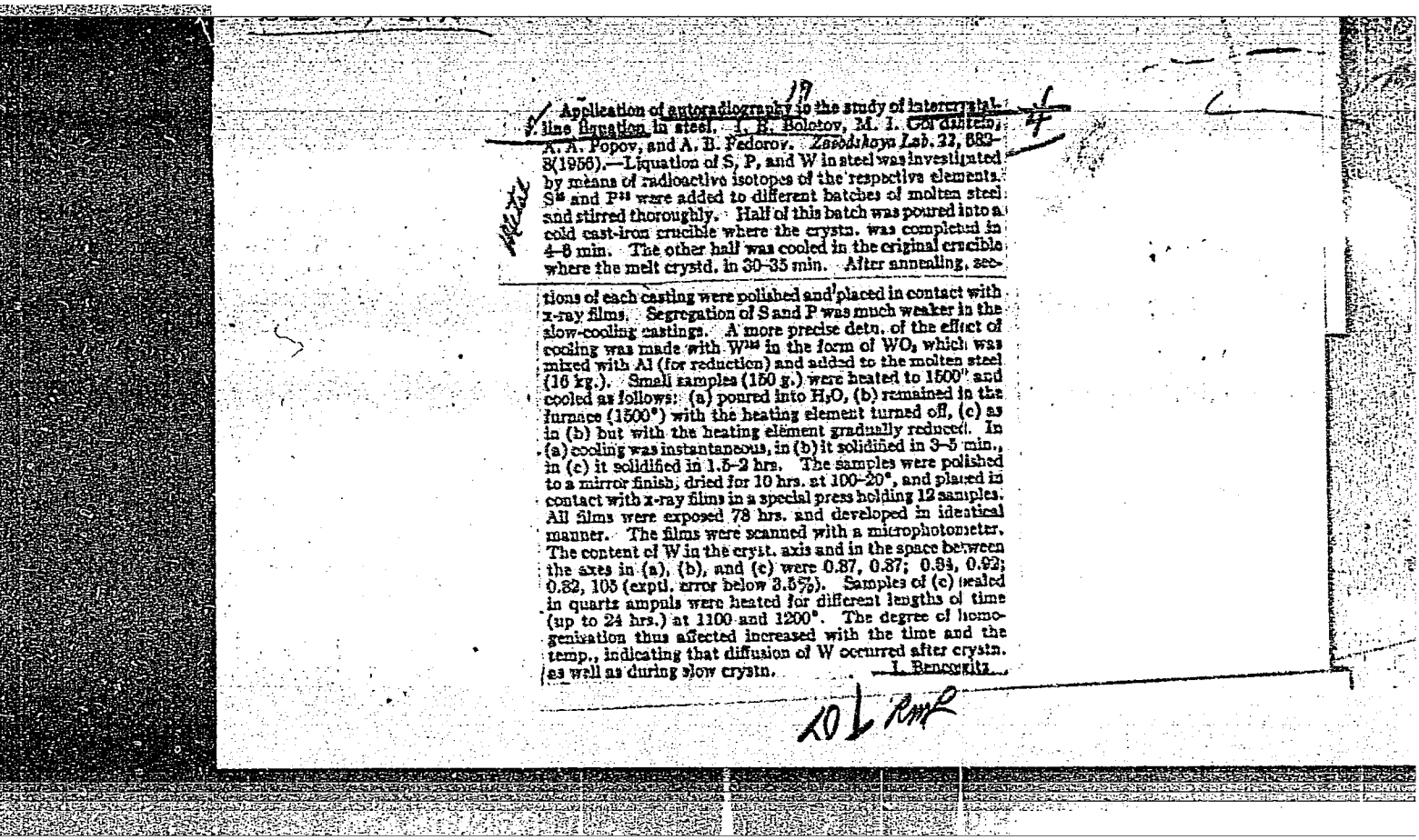
*A Study of Some Cases of Block-Formation in Aluminium and the Role of Impurities in Making the Blocks Visible. I. E. Bolotov, Yu. D. Kozmanov, and A. N. Timofeev (*Zhur. Tekhn. Fiziki*, 1955, 25, (5), 887-893).—[In Russian]. Polygonization by high-temp. heating of crystals of commercial-purity (99·7%) Al leads to segregation of impurities (Si or Fe) at the block boundaries. This gives a method of making the block structure visible in commercial Al: the crystals are heated nearly to m.p. and then quenched and polished electrolytically. The same method makes easy the study of polygonization as a result of bending and of block-formation as a result of thermal fatigue. A relationship is derived between the form of the blocks produced by polygonization of bent single crystals and the shape of the Laue spots. Finally B., K., and T. studied the kinetics of block-formation in single crystals of Al which had undergone thermal fatigue. [*Abstractor's Note*: "Block-formation" was the name given by Lashko to phenomena called by other authors "polygonization" and "fragmentation" and which he studied independently; see, e.g., Bulygin and L. (*ibid.*, 1954, 24, 231, 241; *M.A.*, 22, 435), where the relationship of the phenomena known by these three names is discussed.]—A. F. B.



Application of autoradiography to the study of intercrystalline liquation in steel. I. B. Bolotov, M. I. Gordienko, A. A. Popov, and A. B. Fedorov. *Zavodskaya Lab.* 22, 883–8(1956).—Liquation of S, P, and W in steel was investigated by means of radioactive isotopes of the respective elements. S^{35} and P^{32} were added to different batches of molten steel and stirred thoroughly. Half of this batch was poured into a cold cast-iron crucible where the crystn. was completed in 4–8 min. The other half was cooled in the original crucible where the melt crystd. in 30–35 min. After annealing, sections of each casting were polished and placed in contact with x-ray films. Segregation of S and P was much weaker in the slow-cooling castings. A more precise detn. of the effect of cooling was made with W^{185} in the form of WO_3 which was mixed with Al (for reduction) and added to the molten steel (16 kg.). Small samples (150 g.) were heated to 1500° and cooled as follows: (a) poured into H_2O, (b) remained in the furnace (1500°) with the heating element turned off, (c) as in (b) but with the heating element gradually reduced. In (a) cooling was instantaneous, in (b) it solidified in 3–5 min., in (c) it solidified in 1.5–2 hrs. The samples were polished to a mirror finish, dried for 10 hrs. at 100–20°, and placed in contact with x-ray films in a special press holding 12 samples. All films were exposed 78 hrs. and developed in identical manner. The films were scanned with a microphotometer. The content of W in the crystl. axis and in the space between the axes in (a), (b), and (c) were 0.87, 0.87; 0.84, 0.92; 0.82, 105 (exptl. error below 3.5%). Samples of (c) sealed in quartz ampuls were heated for different lengths of time (up to 24 hrs.) at 1100 and 1200°. The degree of homogenization thus affected increased with the time and the temp., indicating that diffusion of W occurred after crystn. as well as during slow crystn. —I. Beneovitz

Bol. Ye., I. Ye.

137-1958-2-2492

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 43 (USSR)

AUTHORS: Gol'dshteyn, M. I., Bolotov, I. Ye., Sklyuyev, P. V.

TITLE: An Investigation of the Liquation Phenomena in a Steel Ingot (Issledovaniye likvatsionnykh yavleniy v stal'nom slitke)

PERIODICAL: V sb.: Primeneniye radioaktivn. izotopov v chernoy metallurgii. Chelyabinsk, Knigoizdat, 1957, pp 106-119

ABSTRACT: Based on a critical review of existing methods of determining quantitatively the extent of dendritic liquation in a steel ingot, a method is proposed which involves autoradiographing metallographic specimens with the aid of photographic plates, then making a quantitative determination of the concentration of an element from exposure density of the plates. The dendritic liquation of C, S, and P was studied on small laboratory ingots, and in the case of S and P also on 7.4-ton industrial ingots of medium-carbon alloy steel. In the tests involving C and S ordinary metallographic specimens were used; in the tests relating to P, laminae up to 0.05 mm thick were used. The laboratory melts were poured into two ingots; one, weighing 16 kg, was cast into a mold; the other cooled in a furnace crucible with the current on.

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An Investigation of the Liquation Phenomena in a Steel Ingot

In the case of the quickly cooled ingot, in the region of the acicular crystals, C became concentrated along the boundaries of the crystals, but at the center of the ingot it became concentrated in the interaxial spaces of the fine dendrites, the axes of which were poor in C. In the slowly cooled ingot the dendrites were larger, and the concentration of C in their axes was almost one-half less than in the interaxial spaces. In the quick-cooled ingot the dendritic liquation of P bore the same character as did that of C, but in the slow-cooled ingot it was practically identical throughout the ingot. The S all concentrated in the interaxial and interdendritic spaces, and its distribution throughout the ingot was similar to that of P, but with more clearly defined boundaries. S, too, was encountered in the form of sulfurous inclusions, which were practically insoluble in the solid metal. In the 7.4-ton ingot the dendritic liquation of P was obviously more pronounced in the bottom part than in the upper part, which accounts for the fact that metal from the bottom part of an ingot is oftentimes of poorer quality. The S concentrated in the interaxial and interdendritic spaces in the form of nonmetallic inclusions, the dimensions of which increased in proportion to their proximity to the center of the ingot, i.e., to their remoteness from its