RAYKHTSAUM, Arkadiy Grigor'yevich; ZHEKUDEV, A.P., redaktor; RYKOV, N.A., redaktor; NADEINSKAYA, A.A., tekhnicheskiy redaktor.

[Technical control at coal concentration plants] Tekhnicheskii kontrol' na ugleobogatitel'nykh fabrikakh. Moskva, Ugletekhizdat, 1955. 106 p. (Coal preparation) (MLRA 9:4)

ZHERDEV, Aleksey Prokof'yevich; IVANOV, Petr Ivanovich; NABOKOV, Konstantin Fedorovich; TARASOV, Ivan Nikolayevich; ANDRES, U.TS, otvetstvennyy redaktor; RYKOV, N.A., redaktor izdatel'stva; ZAZUL'SKAYA, V.F., tekhnicheskiy redaktor

[Work practices of the Novo-Uzlovsk coal preparation plant] Opyt raboty Novo-Uzlovskoi tsentral'noi obogatitel'noi fabriki. Moskva, Ugletekhizdat, 1956. 78 p. (MLRA 10:7)
(Donets Basin--Coal preparation)

ZHERDEV, A.S., inzh.

Method for calculating the production costs of refrigeration.
Khol.tekh. 41 no.1:45-46 Ja-F '64. (MIRA 17:3)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy myasnoy promyshlennosti.

SUROV, P.N., glav. red.; NEDESHEV, A.A., nauchnyy sotr., otv. za vypusk; ZHERDEV, F.G., red.; KUTS, L.I., nauchnyy sotr., red.; MEL'NIKOV, G.A., red.; AMELIN, N., red.; YURGANOVA, M., tekhn. red.

[Natural resources and prospects for the economic development of Chita Province; materials] Prirodnye bogatstva i perspektivy razvitiia ekonomiki Chitinskoi oblasti; materialy.... Chita, Chitinskoe knizhnoe izd-vo, 1960. 147 p. (MIRA 15:1)

1. Konferentsiya po razvitiyu proizvoditel'nykh sil Vostochnoy Sibiri. Chitinskoye regional'noye soveshchaniye. 2. Chitinskaya kompleksnaya laboratoriya Sibirskogo otdeleniya Akademii nauk SSSR (for Kuts). 3. Nachal'nik proizvodstvenno-tekhnicheskogo otdela Chitinskogo sovnarkhoza (for Zherdev). 4. Direktor kompleksnoy laboratorii Sibirskogo otdeleniya AN SSSR (for Mel'nikov).
(Chita Province--Natural resources)
(Chita Province--Industries)

S/137/61/000/012/013/149
A006/A101

AUTHOR: Zherdev, I.I.

TITLE: Electric circuits of three-phase arc furnaces

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 53, abstract 12V321 ("Nauchn. tr. Dnepropetr. metallurg. in-t", 1959, no. 40, 5 - 18)

TEXT: To investigate 3-phase steelmelting arc furnaces, a calculation method is suggested. It is based on a simplified equivalent system of circuit in which was assumed that instantaneous values of arc voltage during the whole time of arc burning are constant in each half-period. The author analyzes cases of one, two and three burning arcs, and also burning at different phase voltages. See EI ChM, 1961, no. 34, ref. 180.

B. Barskiy

[Abstracter's note: Complete translation]

Card 1/1

ZHERDEV, I.T.; DEKHANOV, N.M.; VOLKOV, V.F.; KUZNETSOV, L.I.; DAVATTS, V.N.; POLYAKOV, I.I.

Structure of the furnace bath in the production of 45-percent ferrosilicon. Izv. vys. ucheb. zav.; chern. met. 5 no.3:77-87 '62. (MIRA 15:5)

1. Dnepropetrovskiy metallurgicheskiy institut i Zaporozhskiy zavod ferrosplavov.
(Ferrosilicon—Electrometallurgy) (Electric furnaces)

S/137/61/000/012/014/149
A006/A101

AUTHOR: Zherdev, I.T.

TITLE: Conditions for the continuous burning of a three-phase arc

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 53, abstract 12V322 ("Nauchn. tr. Dnepropetr. metallurg. in-t", 1959, no. 40, 19 - 23)

TEXT: Continuous burning of an arc can be assured by selecting the correlations of inductive and active resistances, connected in series with the arc, and of the voltages in the circuit and the arc. A method is given to calculate the aforementioned relations, assuring great accuracy. See EI ChM, 1961, no. 32, ref. 169.

V. Barskiy

[Abstracter's note: Complete translation]

Card 1/1

ZHERDEV, I.T.; POLYAKOV, I.I.; DAVATTS, V.N.; MOSKOVTSEV, D.P.

Distribution of electric current density in the charge materials of a rotating ferrosilicon furnace. Elektrichestvo no.8:30-33 Ag '62. (MIRA 15:7)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Electric furnaces)

SVENCHANSKIY, A.D.; ARONOV, L.I.; SHEVTSOV, M.A.; KHOLODOV, A.I.; SUCHIL'NIKOV, S.I.; KHITRIK, S.I.; CHUYKO, N.M.; ZHERDEV, I.T.; SISOYAN, G.A.; KOZLOV, V.S.; KULIKOVSKIY, L.F.; NOVIKOV, O.Ya.

Professor S.I. Tel'nyi. Elektrichestvo no.10:89 O '60. (MIRA 14:9)
(Tel'nyi, Stepan Ivanovich, 1890-)

DONSKOY, A.V.; ZHERDEV, I.T.; ZOTOV, V.P.; MURATOV, S.M.; NOVIKOV, O.Ya.; OKOROKOV, N.V.; PATON, B.Ye.; SISOYAN, G.A.; SVENCHANSKIY, A.D.

Stepan Ivanovich Tel'nyi; obituary. Elektrichestvo no.1:93 Ja '63. (MIRA 16:2)

(Tel'nyi, Stepan Ivanovich, 1890-1962)

ZHERDEV, I.T.; POLYAKOV, I.I.; MOSKOVTSEV, D.P.; DAVATTS, V.N.

Structure of the furnace bath during the making of silicon-chromium alloys. Izv. vys. ucheb. zav.; chern. met. 5 no.8:53-56 '62. (MIRA 15:9)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Electric furnaces)
(Silicon-chromium alloys--Electric properties)

ZHERDEV, I.T.; DAVATTS, V.N.; POLYAKOV, I.I.; MOSKOVTSEV, D.P.

Gas holes in a rotary furnace for making 90% ferrosilicon. Izv. vys.ucheb.zav.; chern.met. 5 no.11:70-75 '62. (MIRA 15:12)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Electric furnaces—Design and construction)
(Ferrosilicon—Electrometallurgy)

ZHERDEV, I.T.; POLYAKOV, T.I.; MOSKOVSKIY, D.P.; ZAGIKOV, Ye.S.

Structure of the bath of a rotary silicochromium furnace. Zav.vys. ucheb.zav.; chern.met. 6 no.4:57-60 '63. (MIRA 16:8)

1. Dnepropetrovskiy metallurgicheskiy institut.

ZHERDEV, I. T.; POLYAKOV, I. I.; DAVATTS, V. N.; MOSKOVTSEV, D. P.

Characteristics of the structure of the bath of a rotary ferrosilicon furnace. Izv. vys. ucheb. zav.; chern. met. 5 no.12:61-66 '62. (MIRA 16:1)

1. Dnepropetrovskiy metallurgicheskiy institut.

(Rotary hearth furnaces)
(Ferrosilicon-electrometallurgy)

ZHEREDEV, I.T., prof. (Dnepropetrovsk)

Control of a three-phase shunted arc circuit. Elektrichestvo no.5:29-33 My '63. (MIRA 16:7)

(Electric furnaces)

ZHERDEV, I.T., doktor tekhn.nauk; IVONIN, A.I., kand.tekhn.nauk; PISHCHIKOV, G.P., inzh.; NIKOLAYEV, A.N., inzh.

Using strain-gauge method in determining specific pressures caused by piercing. Biul.nauch.-tekh.inform.VNITI no.4/5:31-38 '58. (MIRA 15:1)

(Strain gauges) (Rolling (Metalwork))

S/137/61/000/012/015/149
A006/A101

AUTHOR: Zherdev, I.T.

TITLE: Asymmetric electric circuit of a three-phase arc furnace

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 12, 1961, 53, abstract 12V323 ("Nauchn. tr. Dnepropetr. metallurg. in-t", 1959, no. 40, 25 - 32)

TEXT: A method is suggested to calculate an electric circuit containing steelmelting arc furnaces and which is characterized by different active and inductive phase resistances. An equivalent diagram of such a circuit is given and an analytical calculation method is explained. The method can also be used when the symmetry of the circuit is disturbed by unequal voltages in the arcs.

B. B.

[Abstracter's note: Complete translation]

Card 1/1

S/137/61/000/011/035/123
A060/A101

AUTHORS: Zherdev, I.T., Davatts, V.N.

TITLE: Measurement of current density in the melt of an electric corundum furnace

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 11, 1961, 1, abstract 11103 ("Nauchn. trudy Dnepropetr. metallurg. in-t", 1959, no. 40, 49-54)

TEXT: The authors describe the method for measuring the current density of the electro-corundum melt. Probes with graphite plates were used for measuring. The measurements were carried out after opening the top during full-power operation of the furnace. The probes were inserted into the liquid melt in the middle between the electrodes of the furnace to a depth of 300-500 mm. The mean values of the current density are 1.78-1.9 amperes/cm^2, and those of the resistivity are 0.55-0.74 ohm/cm.

V. Neyman

[Abstracter's note: Complete translation]

Card 1/1

S/137/61/000/012/088/149
A006/A101

AUTHORS: Zherdev, I.T., Ivonin, A.I., Pishchikov, G.P.

TITLE: Experimental investigation of the pressure on the working surface of piercing mill rolls

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 35, abstract 12D284 ("Nauchn. tr. Dnepropetr. metallurg. in-t", 1959, no. 40, 115 - 128)

TEXT: The distribution of metal pressure along the deformation seat during piercing was investigated with the aid of wire pressure meters mounted on the working roll of the mill. The pressure on two clamping screws of each roll was measured with wire gauges glued onto each clamping screw. Grade X 25 T (Kh25T) and 1 X3H9T (1Kh3N9T) steel specimens were investigated. The location of the piercing axis above or below the mill axis causes non-uniform metal pressure on the working rolls. To assure a stable piercing process, the blank axis should be shifted in respect to the mill axis. To facilitate the exchange of the worn out ruler guide, the axis of piercing is usually located above the mill axis.

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S/137/61/000/012/088/149
A006/A101

Experimental investigation ...

When determining the total pressure of metal on the piercing mill rolls, it is necessary to measure the pressure simultaneously on two working rolls.

N. Yudina

[Abstracter's note: Complete translation]

Card 2/2

SOV/124-58-10-11818

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 10, p 150 (USSR)

AUTHORS: Zherdev, I. T., Ivonin, A. I., Pishchikov, G. P., Nikolayev, A. N.

TITLE: A Strain-gage Method for the Determination of Specific Pressures Arising During Broaching (Tenzometricheskiy metod opredeleniya udel'nykh davleniy pri proshivke)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. trubnyy in-t, 1958, Nr 4-5, pp 31-38

ABSTRACT: Bibliographic entry

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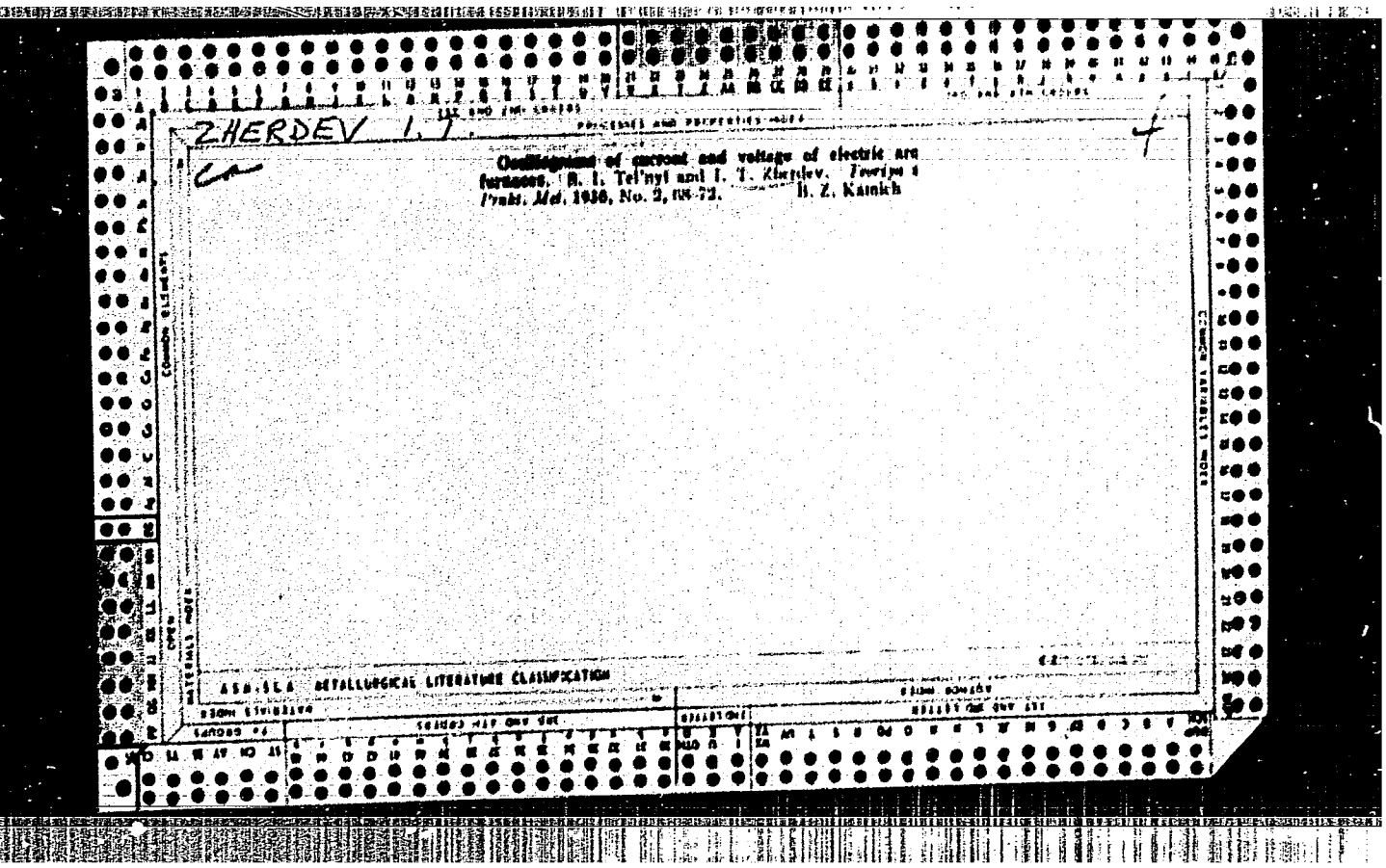

ZHERDEV, I.T.; DAVATS, V.N.; POLYAKOV, I.I.

Investigation of the structure of the working chamber of a ferrosilicon furnace. Izv. vys. ucheb. zav.; chern. met no.9: 173-181 '60. (MIRA 13:11)

(Electric furnaces)

ZHERDEV, I.T., prof.doktor tekhn.nauk

Electric circuit of a three-phase shunted arc. Elektrichestvo no.2:46-52 F '60. (MIRA 13:5)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Electric furnaces)

SOV/137-59-2-4317

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 2, p 284 (USSR)

AUTHORS: Zherdev, I. T., Ivonin, A. I., Pishchikov, G. P., Nikolayev, A. N.

TITLE: An Extensometric Method for Determination of Specific Pressures During Piercing Operations (Tenzometricheskiy metod opredeleniya udel'nykh davleniy pri proshivke)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. trubnyy in-t, 1958, Nr 4-5, pp 31-38

ABSTRACT: The determination of specific and total roll pressures (RP) during piercing operations was conducted on a laboratory rolling-piercing mill at the VNITI [diameter of the roll (R) at the gorge: 158 mm, length of the body of the R: 140 mm] on specimens made of 1Kh18N9T steel, heated to a temperature of approximately 1150°C, and having a length of 120 mm and a diameter of 35 mm. Emanating from the length of the deformation area, which was determined earlier by the method of the deceleration of a pierced specimen passing through the rolls, seven wire resistance pressure gages were placed along the length of the right working R (one at the gorge and three each along the length of the inlet and the outlet cones) in such a manner that they

Card 1/2

An Extensometric Method for Determination of Spedific Pressures (cont.)

were inclined at an angle of 30° with respect to each other. In order to measure the total pressure, wire resistance strain gages were attached to the two pressure screws of the left working R. Indications from the measuring rods carrying the gages, the combined pressure gages, and the gages mounted on the pressure screws were calibrated with the aid of a special attachment on a tension testing machine. Inasmuch as the experimental conditions permitted registering the specific pressures in one sectional plane only, seven specimens were pierced in order to determine the pressure distribution over the entire deformation area. The readings of the gages were recorded on an oscillograph of the MPO-2 type, the rate of advance of the film amounting to 1 m/sec (in the case of specific pressures) and 0.05 m/sec (in the case of the total pressure). The tests demonstrated that the values of the total pressure, measured directly and computed from the specific pressures, practically coincide in the case of piercing without a mandrel and diverge by 20% or more during piercing operations with a mandrel. This latter circumstance is explained by the downward displacement of the axis of piercing with respect to the axis of the roll stand and by the radial distribution of the spot strain gages.

V. D.

Card 2/2

ZHERDEV, I. T.

Rokhman, Ye, A. and Zherdev, I. T. - "Automatic working adaptation in the bending press for broaching the hole in the in the disk of a seamless rolled wheel," Nauch. Trudy (Dnepropetr. metallurg. in-t im. Stalina), Issue 16, Supplement to Mekhanika Mekhanizatsiya metallurg. tsekhov, 1949, p. 295-300.

SO: U-3850, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

PA - 3109

AUTHOR ZHERDEV I.T., Dr.Techn.

TITLE Current in the Charge Materials of a Ferrosilicon Furnace. (Tok shikhtovykh materialov ferrosilitsiyevoy pechi -Russian)

PERIODICAL Elektrichestvo, 1957, Vol?, Nr 5, pp 65 - 67 (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT

A method is described for the determining of the current density and the outcome of the related experimentation. The research was made in an oven in which 45% ferrosilicon was placed. For probes special forms of round steel were employed with diameters of 1o to 2o mm and length of 6 m. The ends were tied up and the spars which were thus held were plunged into to material to be investigated. The potentials of every spar were measured in regard to the zero point and also with the current of the probes both open and closed. Moreover the phase voltage of the electrode oven, in the vicinity of which the probes were divided, was measured as well as the current in the maximal current circuit of the probes. This was done during the closing of the said circuit. An equation was derived according to which one can calculate the current amplitude of the alloying in the area between the probe spaces during normal oven usage. With the help of the current density and of potential-difference it is easily possible to calculate the mean specific resistance of the alloying between the probes. The method does not claim to be exact but it is possible with its help to determine the amplitude order of the current density and that of the specific resistance.

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(With 3 illustrations, 1 table and 2 Slavic references)

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ZHERDEV, I.T.; MOSKOVTSEV, D.P.; POLYAKOV, I.I.

Dimension of gas cavities in ferrosilicon furnaces. Stal'
25 no.8:716-717 Ag '65. (MIRA 18:8)

ZHERDEV, M.

Automatic safe draw works. Nov.neft.tekh.:Bur.no.3:[1.6.2]33 '48.
(Oil well drilling--Equipment and supplies) (MLRA 9:4)

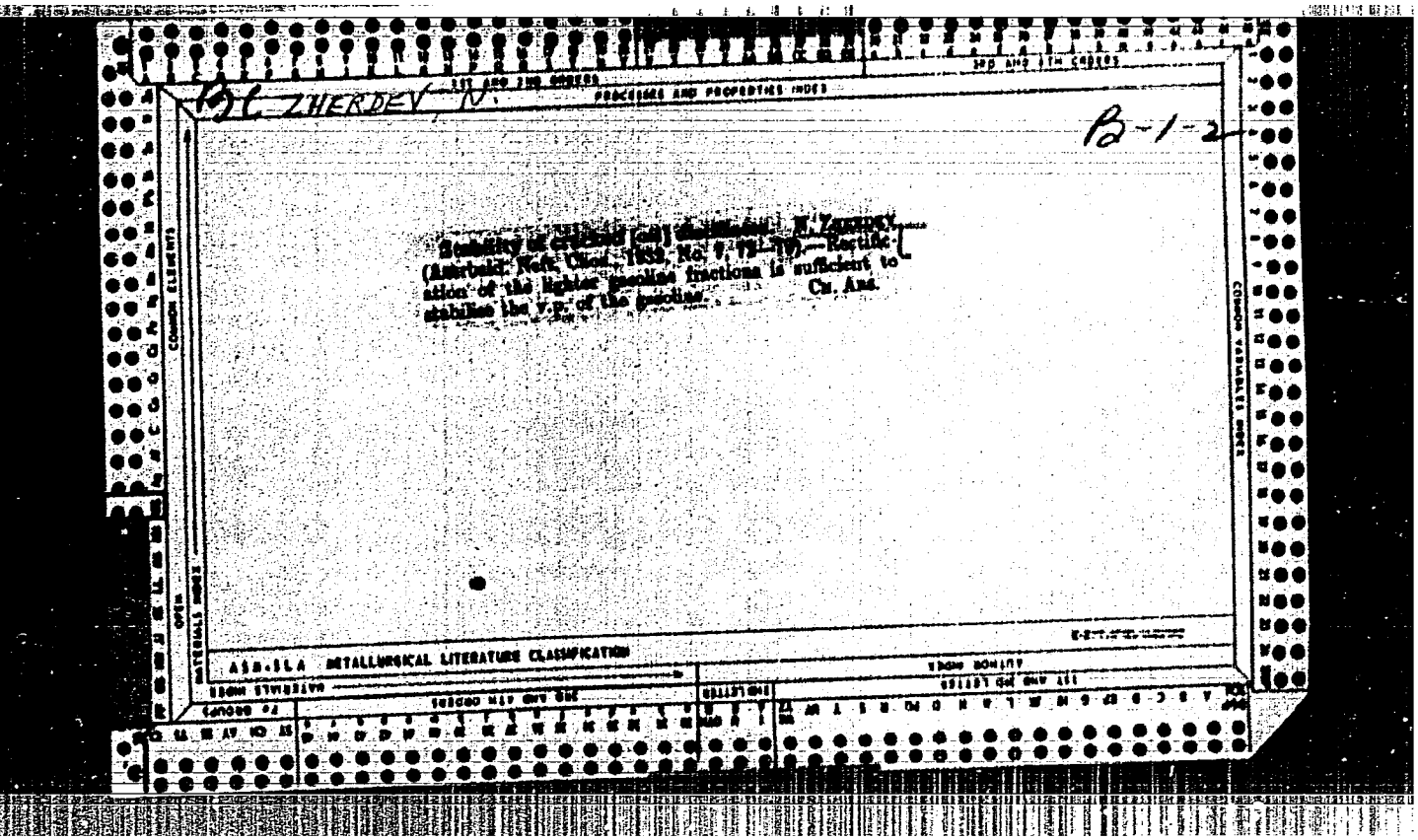
ZHERDEV, M.G., red.; GALUSTOV, S.G., red.; SHASHIN, V.D., red.; PETROVA, Ye.A., ved. red.

[Equipment and technology of drilling wells; transactions] Tekhnika i tekhnologiia bureniia skvazhin; trudy. Pod red. M.G.Zherdeva, S.G.Galustova, V.D.Shashina. Moskva, Izd-vo "Nedra," 1964. 238 p. (MIRA 17:5)

1. Respublikanskoye soveshchaniye po preduprezhdeniyu i bor'be s oslozhneniyami v burenii i obmenu opytom po tekhnike i tekhnologii prokhodki skvazhin. 1962.

DENISOV, P.I., red.; ZHERDEV, M.G., red.; ZHERDEV, M.G., red.; ISAYEVA, V.V., ved. red.; VORONOVA, V.V., tekhn. red.

[Technical methods and equipment for drilling deep wells] Tekhnika i tekhnologiia bureniia glubokikh skvazhin; materialy respublikanskogo soveshchaniia v g.Kuibysheve. Moskva, Gostoptekhizdat, 1962. 278 p. (MIRA 15:12)
(Boring)



ZHERDEV, N.

1A

22

Stabilization of cracked distillates. N. Zherdev. *Azerbaidzhanskoe Neftyanoe Khozyaistvo* 1933, No. 7, 72 9.—Rectification of the lighter gasoline fractions is sufficient for stabilizing the vapor pressure of the gasoline. Complete flow diagrams, including the temps. employed by coml. plants using this principle are given. V. K.

AS8-SLA METALLURGICAL LITERATURE CLASSIFICATION

25(2) PHASE I BOOK EXPLOITATION SOV/2118

Gavrilov, A.N., Doctor of Technical Sciences, Professor; P.I. Kovalev; B.A. Khokhlov; and N.F. Zherdev

Al'bom prisposobleniy dlya metallorezhushchikh stankov, primenyayemykh v priborostroyenii (Album of Fixtures for Metal-Cutting Tools Used in the Instrument-Making Industry) Moscow, Mashgiz, 1958. 166 p. 5,000 copies printed.

Ed.: A.N. Gavrilov, Doctor of Technical Sciences, Professor; Scientific Ed. of Publishing House: G.F. Kochetova; Tech. Ed.: Ye.S. Gerasimova; Managing Ed. for Literature on Machine Building and Instrument Making (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: The album is intended for tool designers and process engineers. The album may also be used as a textbook by students in vtuzes and machine-tool tekhnikums in connection with projects and work leading to a diploma.

COVERAGE: This album is intended to facilitate the work of creating better machine-tool fixtures. There are 180 drawings of the more common and characteristic fixtures from some twenty instrument-making plants. There are brief explanations

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for each drawing setting forth the principle of the operation, the advantages and shortcomings of the fixture. and the field of its application. There are drawings showing the sequence of operations on machined parts. Schematic drawings of the elements for installation and clamping are provided with symbols especially developed by the authors. For a more convenient use of the album, the drawings of machine-tool fixtures are divided into three groups:

1. fixtures for drilling machines (jigs), marked by the letter "K" placed before the fixture's number;
2. fixtures for milling machines, marked by the letter "F";
3. fixtures for lathes and cylindrical grinding machines, marked by the letter "T". No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

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Album of Fixtures (Cont.) SOV/2118

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VK/gmp

9-3-59

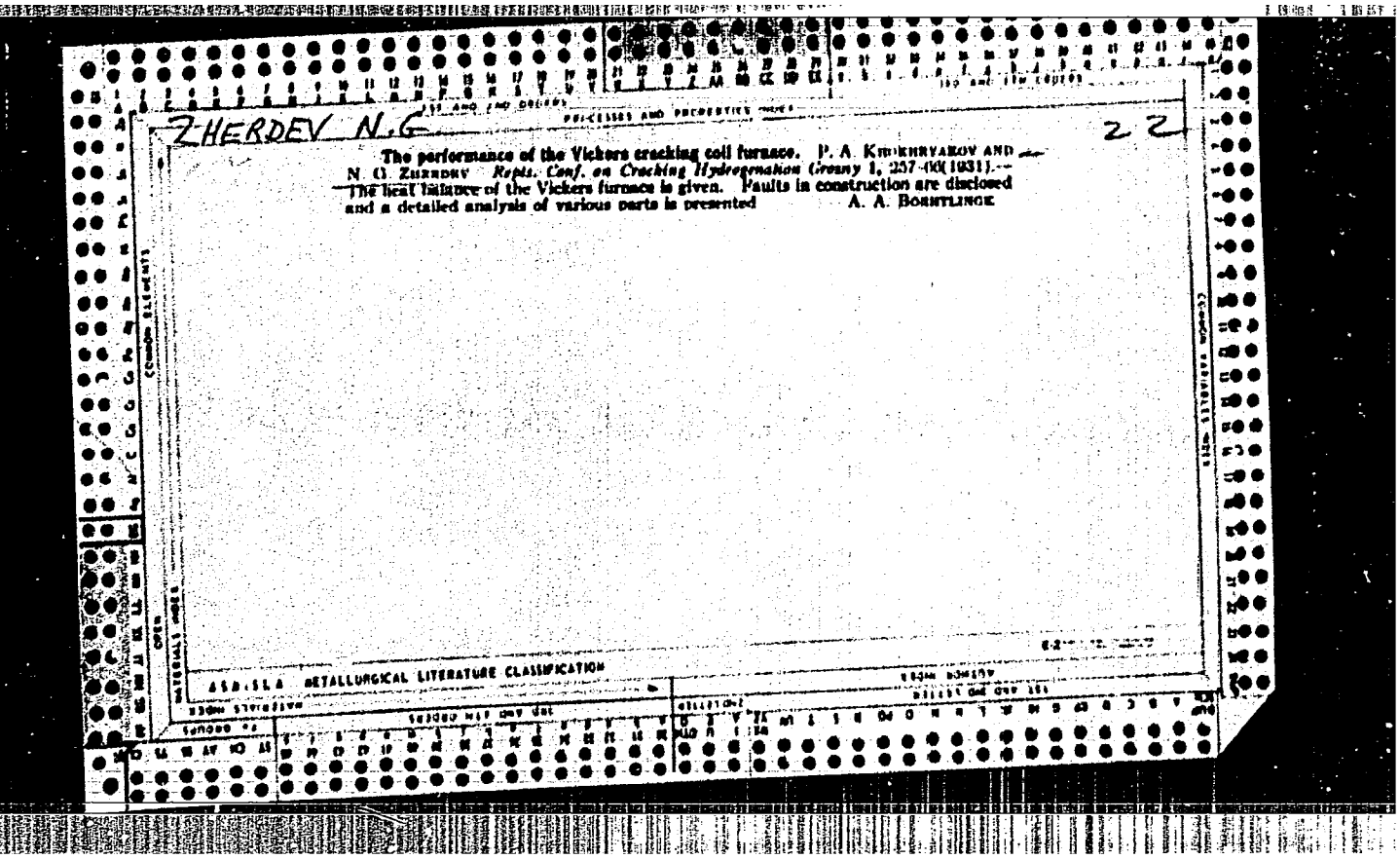
GAVRILOV, A.N.; KOVALEV, P.I.; KHOKHLOV, B.A.; ZHERDEV, N.T.; GAVRILOV, A.N., doktor tekhn. nauk, prof., red.; KOCHETOVA, G.F., nauchnyy red.; GERASIMOVA, Ye.S., tekhn. red.

[Album of attachments for machine tools used in the instrument industry] Al'bom prisposobleniĭ dlia metallorezhushchikh stankov, primeniaemykh v priborostroenii. Pod.red. A.N. Gavrilova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 166 p.
(Machine tools--Attachments) (MIRA 11:7)

GAVRILOV, A.N., doktor tekhn.nauk, prof.; KOVALEV, P.I.; KHOKHLOV, B.A.; ZHERDEV, N.F.; KASPEROVICH, N.S., inzh., red; SMIRNOVA, G.V., tekhn. red.

[Album of attachments for machine tools used in the manufacture of instruments] Al'bom prisposoblenii dlia metallorezhushchikh stankov, primeniaemykh v priborostroenii. Pod red. A.N.Gavrilova. Izd.2., ispr. i dop. Moskva, Mashgiz, 1963. 216 p. (MIRA 16:7)

(Machine tools--Attachments)



ZHERDEV N.G

22

The performance of the Vickers cracking coil furnace. P. A. KIRICHENKOV AND N. G. ZHERDEV *Repts. Conf. on Cracking Hydrogenation (Russ.)* 1, 257-66(1931).—The heat balance of the Vickers furnace is given. Faults in construction are disclosed and a detailed analysis of various parts is presented A. A. BOEHTLINGK

ASBISLA METALLURGICAL LITERATURE CLASSIFICATION

ZHERDEV, O. [Zherdiev, O.]; KUZNETSOV, Ye. [Kuznietsov, IE.]

Simazine from waste products. Nauka i zhyttia 12 no.1:23 Ja '63.
(MIRA 16:3)
(Herbicides)

PERMINOV, A.Ye.; ROMANOV, A.A.; MIZEROV, A.V.; TSYBA, M.M.; ZHELUDKOV, A.S.; NEKRASOV, V.V.; PRASOLOV, M.I.; BARTENEV, S.N.; BELYAYEVA, T.P.; ZHERDEV, P.A.; KOYVUNEN, T.M.; SMORODOV, P.V., redaktor; PODNYEL'SKAYA, K.M., tekhn. red.

[Manual for a Karelian field crop grower] Spravochnik karel'skogo polevoda. Petrozavodsk, Karel'skoe knizhnoe izd-vo, 1962. 435 p. (MIRA 17:3)

ZHERDEV, P.D.

Ornamental gardening in the city of Frunze. Izv. AN Kir.SSR. Ser.biol.nauk 1 no.3:123-146 '59. (MIRA 13:7)
(FRUNZE--LANDSCAPE GARDENING)

5.4130
5.4110

68123
SOV/78-5-1-45/45

5(2)
AUTHORS: Zherdev, Yu. V., Ormont, B. F.

TITLE: On the Dependence of the Forbidden Zone of Phases in the System ZnSe - CdSe on Structure and Composition

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 1, p 239 (USSR)

ABSTRACT: The authors were interested in the system ZnSe - CdSe because the phase transition from the structure of the sphalerite type to the wurtzite type takes place in it in which only the long-range order of atoms varies whereas the tetrahedral short-range order is not affected. The authors investigated ZnSe and CdSe which are used for the production of luminophores and contained impurities of the order of 10^{-3} - 10^{-4}%. The width ΔE_F of the forbidden zone (between the cubic and the hexagonal structure region) was determined from the spectra of absorption and diffused reflection as well as from the dependence of the logarithm of conductivity upon the reciprocal temperature value (ΔE_T).

The ZnSe - CdSe mixtures were sintered at 1060° in quartz ampoules. The phases of the preparations were examined by means

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On the Dependence of the Forbidden Zone of Phases in the System ZnSe - CdSe on Structure and Composition

of an X-ray spectroscope. The spectra of absorption and diffused reflection were taken by means of SF-4 and SF-2 spectrophotometers. The values of ΔE_F obtained from the two spectra are in good agreement (Fig). ΔE_F varies continuously with changed composition from 2.66 ev for ZnSe to 1.72 ev for CdSe. ΔE_T drops from 2.65 ev for ZnSe to 0.68 ev for CdSe with a distinctly marked break. The slope of the gradient is steeper in the sphalerite region. In the wurtzite region, ΔE_T runs almost in parallel with ΔE_F with a difference of about 0.9 ev, whereas in the sphalerite region the difference increases from zero for ZnSe to 0.7 ev at the interface. The various possibilities of interpreting these phenomena are at present being studied by the authors. It is assumed that ZnSe has a stronger covalent linkage than CdSe. There is 1 figure.

SUBMITTED: August 11, 1959

Card 2/2

ZHERDEV, Yu.V

S/078/60/005/008/007/018
B004/B052 82326

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AUTHORS: Zherdev, Yu. V., Ormont, B. F.

TITLE: The Dependence of the Width of the Forbidden Band in the System ZnSe - CdSe on Structure and Composition

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 8, pp. 1796-1799

TEXT: For an introduction , the authors discuss the influence of short range order, long range order, binding energy, and extension of the homogeneity range of the modification taking part in the phase transition, on the electric properties of semiconductors. The sphalerite - wurtzite-type transition, as observed in sulfides and selenides of Zn, Cd, Mn, etc, is given special attention. Since the investigation of the temperature dependence of the conductivity is difficult in the case of thermodynamically unstable modifications, the authors chose the pseudobinary system ZnSe - CdSe for their investigation. The phase transition in this system only depends on the composition and is not

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The Dependence of the Width of the Forbidden Band in the System ZnSe - CdSe on Structure and Composition

S/078/60/005/008/007/018
B004/B052 82326

influenced by impurities. The preparations were produced from high purity ZnSe and CdSe (content of Fe, Ni, Co, and Cu: 10^{-4}%), partly by sintering in evacuated quartz ampuls (10^{-3} torr) at 1060°C (20 h), partly by sintering in selenium vapor ($P_{Se} \approx 1.5$ torr). The temperatures were kept constant by means of an ЭПВ-01 (EPV-01) thermoregulator. The samples produced by these two methods showed no difference in their electric properties. Radiographs of the samples were taken by means of fine focus tubes designed by B. K. Lemazhikhin in the Institut biofiziki AN SSSR (Institute of Biophysics of the AS USSR), and the РКУ-114 (RKU-114) camera, or by means of a УРС-50и (URS-50i) X-ray diffractometer. The data of the analysis are given in a Table and in Fig. 1. At a sintering temperature of 1060°C, the homogeneity range of the sphalerite modification lies between 0 and 30.7 atom% of CdSe, that of the wurtzite-type modification between 33.4 and 100 atom% of CdSe. At the boundary of the homogeneity range, the value of the lattice constant for pure ZnSe rises from 5.656 A to 5.790 A, then drops to 4.081 A during the phase transition, and for pure CdSe it rises again to 4.285 A. The

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The Dependence of the Width of the Forbidden Band in the System ZnSe - CdSe on Structure and Composition

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B004/B052 82326

ratio of c/a remains almost constant. The curve of the interatomic distance d, as function of the composition, shows no bend in the phase transition. The specific conductivity σ was measured by a ППТВ/I (PPTV/I) potentiometer. Fig. 2 shows the curve $\log\sigma = f(1/T)$ for the cubical structure, Fig. 3 the same function for the hexagonal structure, and Fig. 4 shows ΔE_T, the width of the forbidden band as function of the composition. ΔE_T drops from 2.65 ev (pure ZnSe) to 1.50 ev (boundary of the homogeneity range). In the wurtzite-type range, the reduction from 1.40 ev to 0.68 ev (pure CdSe) takes place more slowly. Any possible deviations from the stoichiometrical composition of ZnSe and CdSe were not taken into consideration in the evaluation of the experimental data. There are 4 figures, 1 table, and 14 references: 12 Soviet, 1 US, and 1 German.

SUBMITTED: February 7, 1959

Card 3/3

L 18879-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS/ES(w)-2 AFFTC/ASD/SSD Pn-4/
Pc-4/Pr-4/Pab-4 RM/WW/MAY

ACCESSION NR: AP3006539 S/0191/63/000/009/0036/0040

AUTHORS: Zherdev, Yu. V.; Korolev, A. Ya.; Zakharov, V. A.

TITLE: Microscopic investigation of the cracking of VPM-1 fiberglass by thermal aging

SOURCE: Plasticheskiye massy*, no. 9, 1963, 36-40

TOPIC TAGS: glass fiber cracking, fiberglass, plastics, VPM-1 microstructure, fiberglass insulating property, fiberglass mechanical property, fiberglass thermal aging, KOH

ABSTRACT: In the microscopic study of VPM-1, based on organosilicon resin and low alkali glass, etching with solvents and hot KOH facilitated the observation of the fine structure of the resin. At 200C the linkage between binder & filler starts to break. The kinetics of pore and crack formation in thermal aging at 300-400C were studied. Thermal aging causes internal stresses producing brittle breakdown of the binder and almost complete stripping from the fiber. It was discovered the fiber has a catalytic effect on strengthening the adjacent thin layer of binder. To improve insulating and mechanical properties of the fiberglass, the resin needs to be modified to increase its adhesiveness to the glass

Card 1/2

L 18879-63

ACCESSION NR: AP3006539

and to form a more elastic intermediate layer on the fiber. Orig. art. has: 7 figures.

ASSOCIATION: none

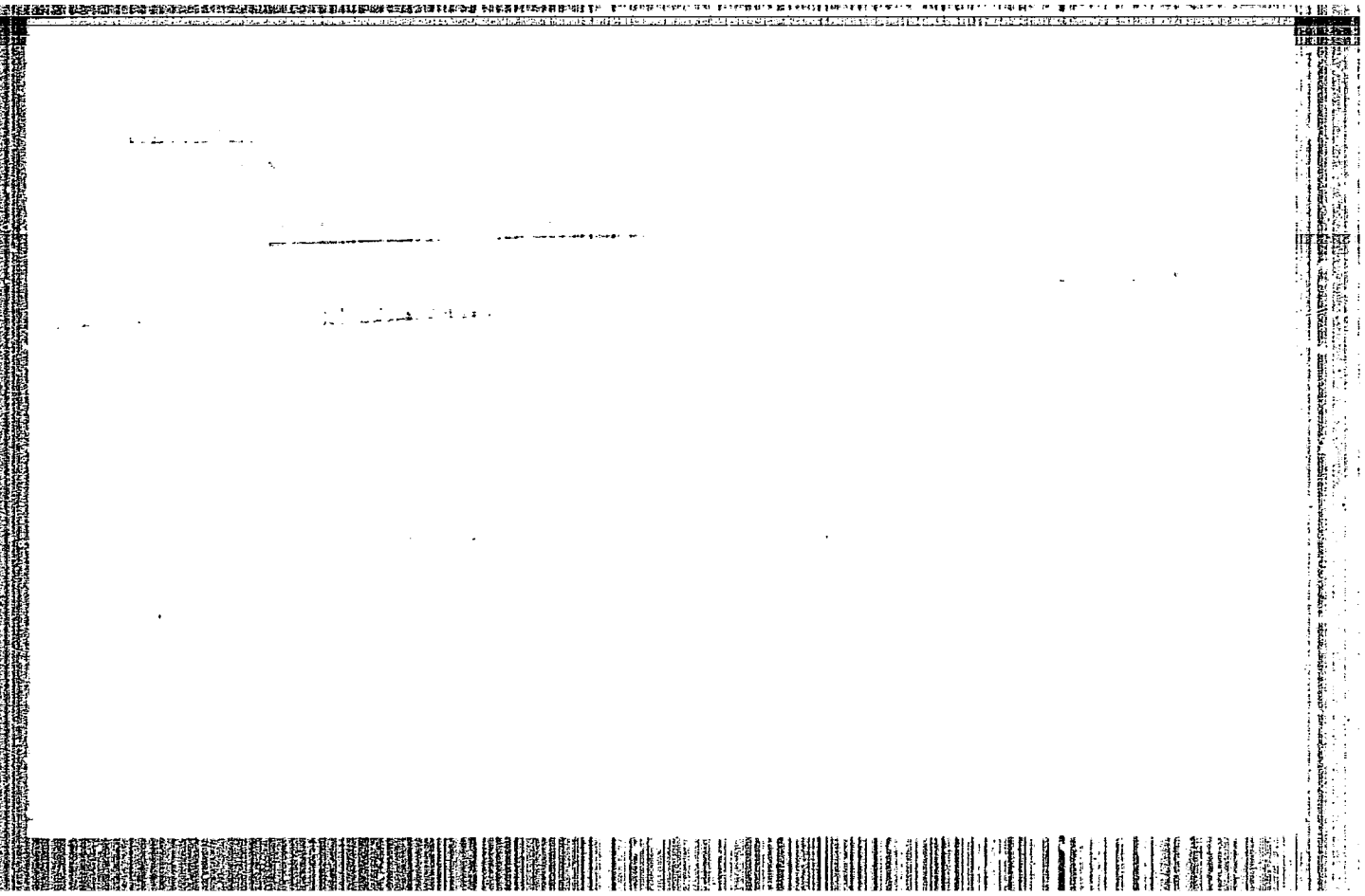
SUBMITTED: 00 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: MA NO REF SOV: 006 OTHER: 009

Card 2/2

ZHERDEV, Yu.V.; KOROLEV, A.Ya.

Microscopic analysis of the chemically modified surface of polytetrafluoroethylene. Plast.massy no.12:35-39 '63. (MIRA 17:2)



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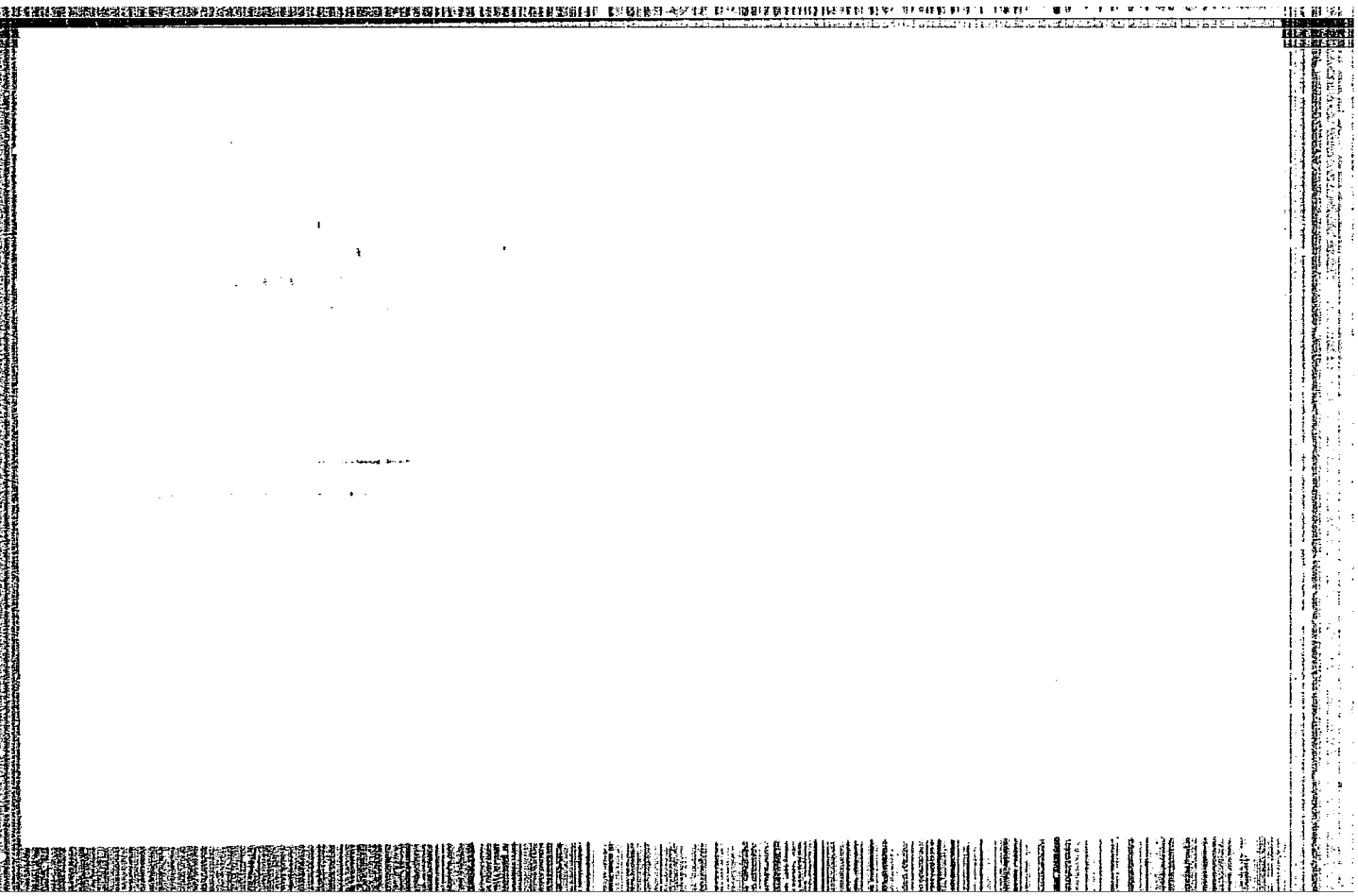

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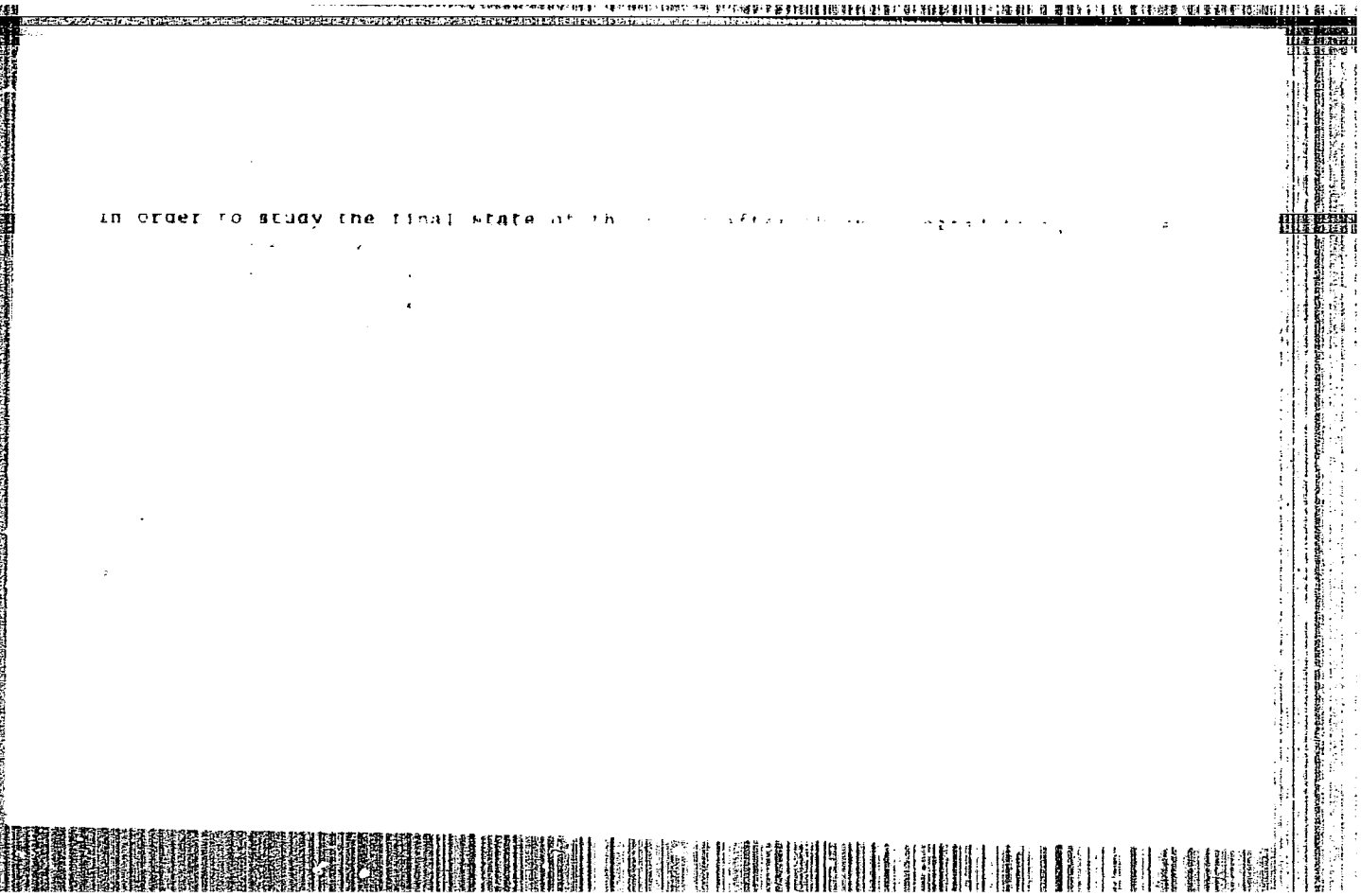

L 04103-67 EWT(1)/EWT(m)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AT6031140 SOURCE CODE: UR/3136/65/000/028/0001/0032

AUTHOR: Kagan, Yu.; Zhernov, A. P.

64
61

ORG: none

TITLE: The theory of electroconductivity of metals with nonmagnetic impurities 16

SOURCE: Moscow. Institut atomnoy energii. Doklady, IAE-1028, 1965. K teorii elektroprovodnosti metallov s nemagnitnymi primesyami, 1-32

TOPIC TAGS: electric conductivity, phonon, phonon spectrum, impurity conductivity, impurity scattering, nonmagnetic impurity

ABSTRACT: A theory of the electrical conductivity of metals containing impurities is developed which systematically accounts for the modification of the phonon spectrum arising in the presence of interstitial impurity atoms or with arbitrary changes in the amplitude of electron scattering by an individual ion. The extrinsic resistance factor is determined for the entire temperature range. Within the low-temperature range electron scattering by a fluctuating impurity ion is shown to produce the term $\sim T^2$, interference between scattering by an admixed ion and by a disturbed phonon spectrum to produce the term $\sim T^4$,

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L 04103-67

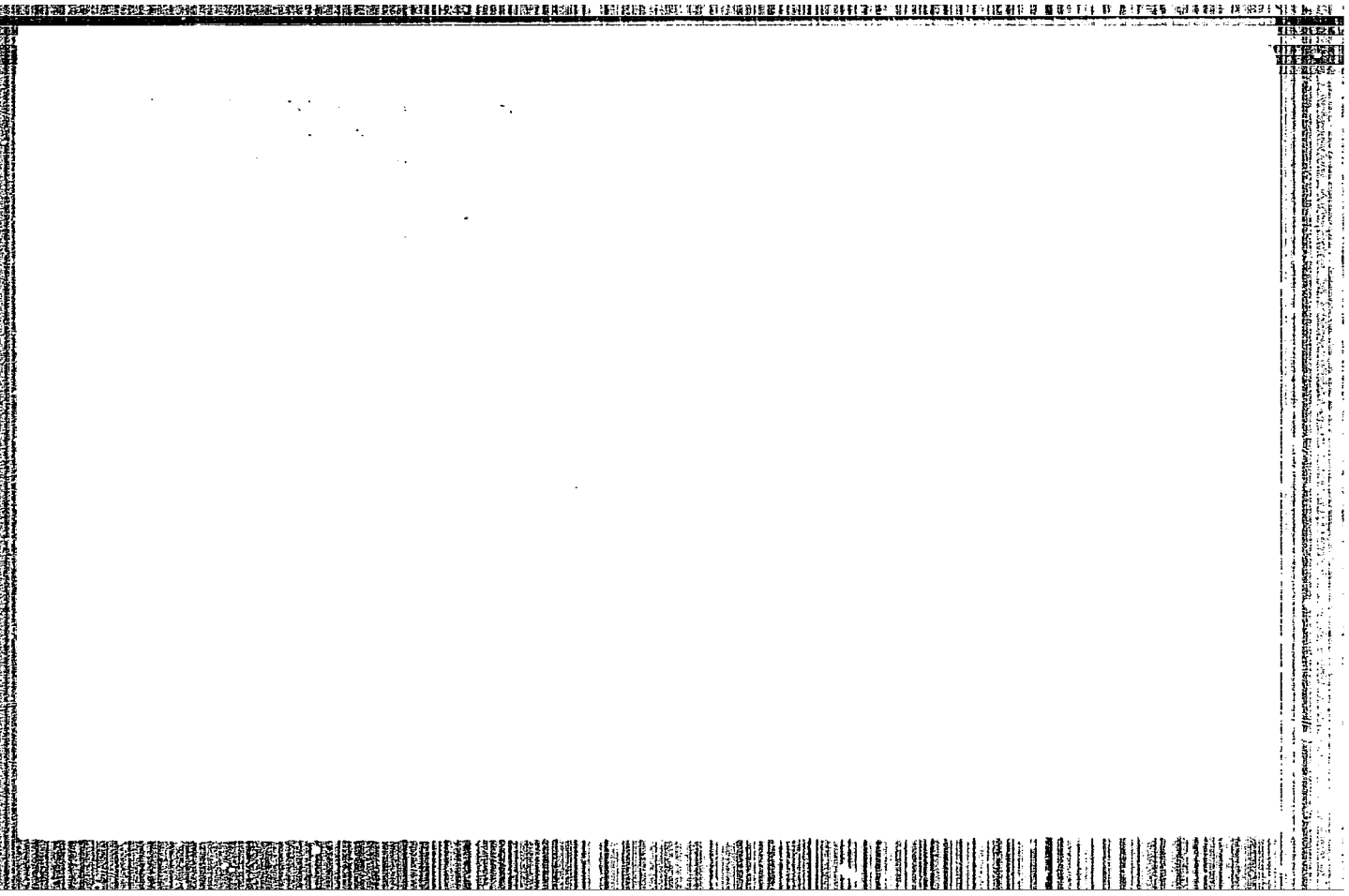
ACC NR: AT6031140 O

and scattering by a deformed phonon spectrum to produce the term ~T^5. (With a small amount of impurities all these terms are proportional to the concentration). The further behavior of the temperature of impurity resistance is characterized by several anomalies, particularly in the case of admixed heavy atoms, which is accompanied by the appearance of a quasi-local level. Within the high-temperature range the impurity resistance factor is found to vary linearly with temperature: furthermore, the derivative may have an arbitrary sign. A simple approximate relationship is shown to exist between the sign of this derivative and the relative position of admixed atoms and the matrix in the periodic system. A comparison is made with experimental data which demonstrates a qualitative agreement with the theoretical. Orig. art. has: 42 formulas and 3 figures. [Authors' abstract] [SP]

SUB CODE: 11, 20/ SUBM DATE: none/ ORIG REF: 016/
OTH REF: 009

KH

Card 2/2



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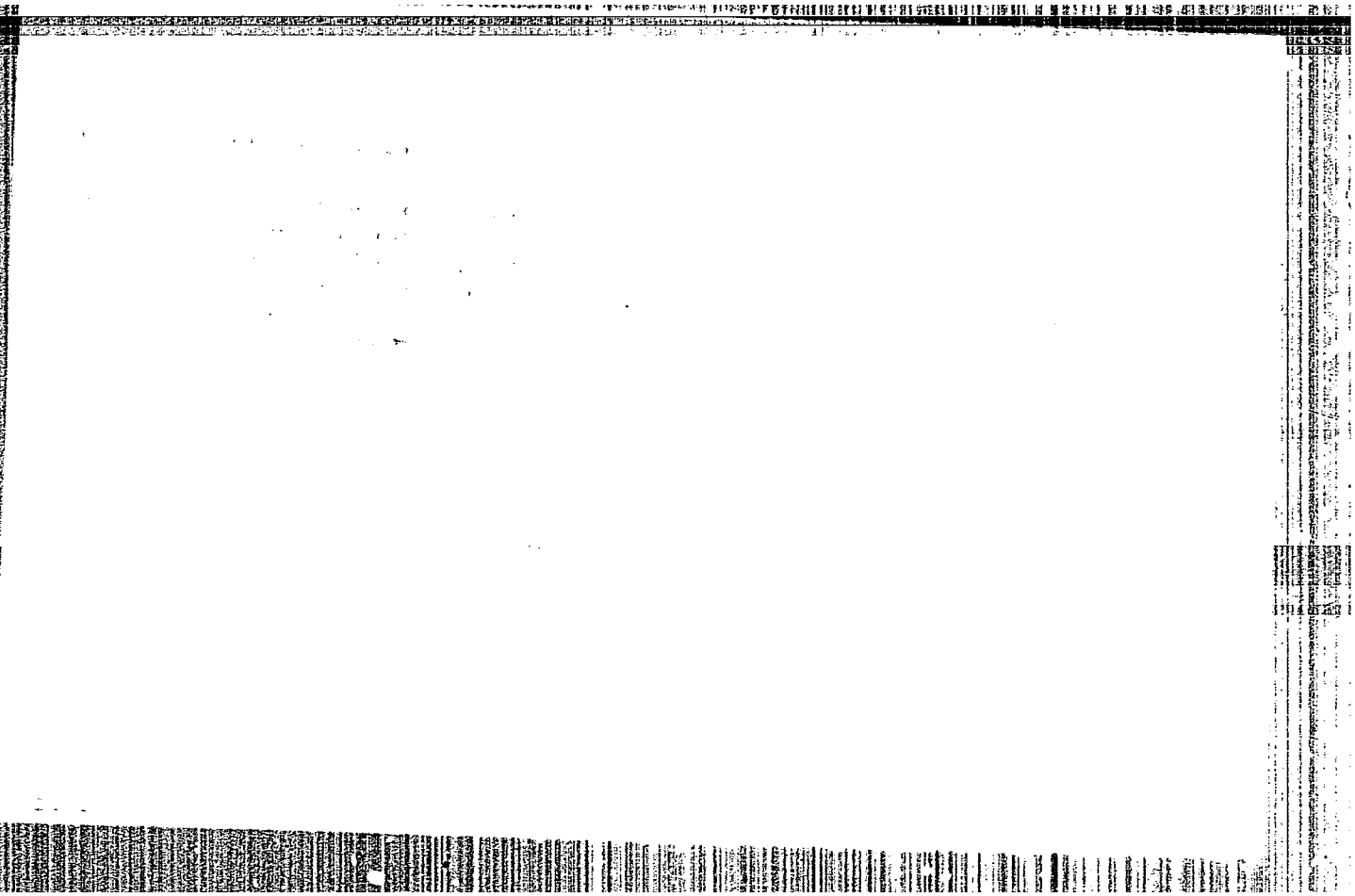

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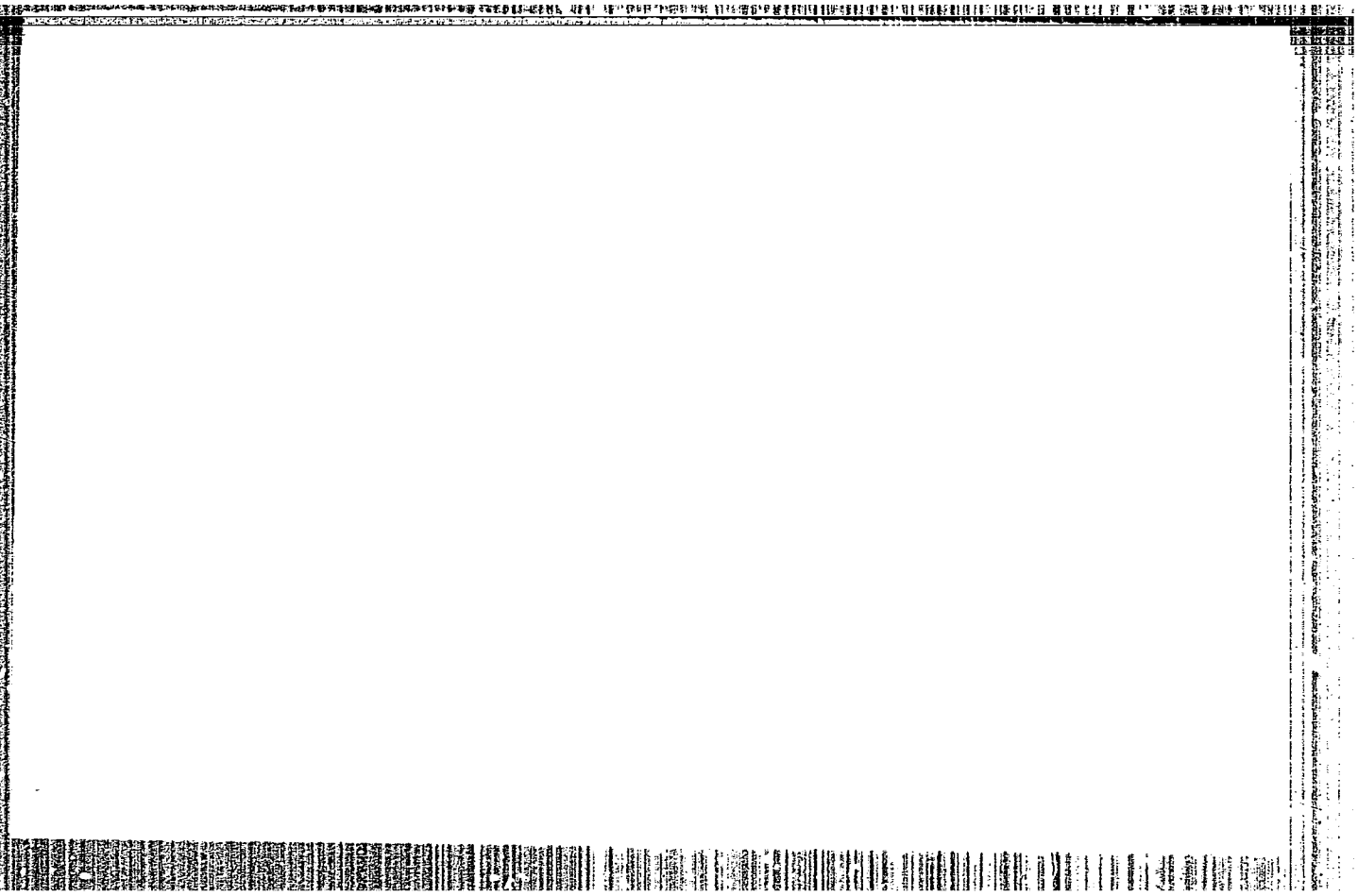


APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R002064710020-9"

L 03030-67 EWP(j)/EWT(m)/T LJP(c) RM/WW

ACC NR: AP6023068 (A) SOURCE CODE: UR/0191/66/000/004/0047/0050

AUTHOR: Kravchenko, L. I.; Zherdev, Yu. V. 39 B

ORG: none

TITLE: Dependence of the stability of glass-fiber plastics on their microstructure

SOURCE: Plasticheskiye massy, no. 4, 1966, 47-50

TOPIC TAGS: fiber glass, silicate glass, porosity

ABSTRACT: A study was made of plastics of nonoriented glass fibers prepared from alumino-silicate or alkaline glasses with PN-1, DGM, MDF-2 and TMGF-11 binders. The microstructure of the glass-fiber plastics was determined microscopically. Alumino-silicate glass-fiber plastics had a lower porosity, were less hygroscopic, and more stable than their alkaline analogs. A removal of absorbed water by compression molding and high temperature destroyed the microstructure of alkaline glass-fiber. The flexural strength of the plastics studied changed with the increasing force of compression from 0.5 to 10 kg/cm^2. It had a maximum at 3-5 kg/cm^2 compression. Glass-fiber plastic obtained in an autoclave in vacuo or under pressure had a lower porosity and higher flexural strength than plastics obtained by a conventional compression molding. Orig. art. has: 5 fig. and 2 tables.

SUB CODE: 20,11/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 003

1/1 UDC: 678.744.5.066 : 677.521/: 678.01 : 539.4

L 07337-67 EWT(m)/EWP(1) IJP(c) WW/GW/WW/RM
ACC NR: AT6034060 (A) SOURCE CODE: UR/0000/66/000/000/0370/0374 21 B+1

AUTHOR: Neverov, A. N.; Bocharnikov, V. K.; Zherdev, Yu. V.; Avrasin, Ya. D.

ORG: none

TITLE: Increasing the radiation resistance of glass-fabric reinforced and glass-powder-filled plastics through the use of boron-free glass

SOURCE: Simpozium po radiatsionnoy khimii polimerov. Moscow, 1964. Radiatsionnaya khimiya polimerov (Radiation chemistry of polymers); doklady simpoziuma. Moscow, Izd-vo Nauka, 1966, 370-374

TOPIC TAGS: glass reinforced plastic, boron free glass, radiation resistance

ABSTRACT: A study has shown that the use of boron-free glass in glass-fabric-reinforced and in glass-powder-filled plastics improves their radiation resistance. Samples of organosilicon resins [unspecified] reinforced or filled with common aluminoborosilicate glass, titanium glass, or quartz-like glass were prepared, irradiated with mixed radiation from a nuclear reactor at a dose rate of about 30 Mrad/hr to integral doses of 930 and 1260 Mrad, and subjected to mechanical testing. It was found that the mechanical strength of

Card 1/2

samples with aluminoborosilicate glass-fabric reinforcement deteriorates substantially, while that of samples with quartz-like glass fabric deteriorates to a lesser extent. Thus, after irradiation to a dose of 1260 Mrad, the bending strength drop for the above two samples was 65% and 10%, respectively. The detrimental effect of boron was attributed to the fact that resin layers adjacent to the aluminoborosilicate glass filler are subject to additional irradiation with α particles formed by the nuclear reaction

$$B^{10} + n \rightarrow Li^{7} + \alpha,$$

This was confirmed by electron microscopy. Orig. art. has: 2 tables and 4 figures.

SUB CODE: 11/ SUBM DATE: 25Jul66/ ATD PRESS: 5101

ZHERDEV, P.D.

Landscape gardening in Frunze today and tomorrow. Izv.AN Kir.SSR. Ser.biol.nauk 4 no.3:5-13 '62. (MIRA 15:11)
(FRUNZE--LANDSCAPE GARDENING)

ZHERDEV, T.

Hemp

Productivity of hemp is increasing. Kolkh. proizv. 12 No. 6, 1952

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

ZHERDEV, V.V.

System for edgewise gluing of veneer with adhesive tape cuts.
Der.prom. 11 no.6:21 Je '62. (MIRA 15:6)
(Veneers and veneering)
(Gluing)

ZHERDEVA, A.F., inzhener.

Safety guard made of unbreakable glass. Der. prom. 6 no.5:22 My '57.
(Woodworking machinery--Safety appliances) (MIRA 10:6)

ZHERDEVA, Aleksandra Nikolayevna; ABULEVICH, Vanda Konstantinovna; KOPCHENOVA, Ye.V., nauchnyy red.

[Mineralogy of titanium placers]. Mineralogiia titanovykh rossypei. Moskva, Izd-vo "Nedra," 1964. 237 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut mineral'nogo syr'ia. Trudy, no. 11) (MIRA 17:6)

TRET'YAKOV, N.I.; ZHERDEVA, L.A.

Surgion's tactics in gastroduodenal hemorrhages. Khirurgiia Supplement:29-30 '57. (MIRA 11:4)
(STOMACH--SURGERY) (HEMORRHAGE)

ZHERDEVA, L.G.; POTANINA, V.A.

Chemical composition and properties of lubricating oils from sulfur-bearing crudes as dependent on the refining depth. Trudy VNII NP no.7:19-34 '58. (MIRA 12:10)
(Lubrication and lubricants) (Petroleum--Refining)

SIDLYARONOK, F.G.; ZHERDEVA, L.G.

Chemical composition and properties of extracts from selective refining of oils. Trudy VNII NP no.7:34-48 '58.
(MIRA 12:10)

(Petroleum products)

ZHERDEVA, L.G.; SIDLYARONOK, F.G.; POTANINA, V.A.

Characteristics of naphthenes contained in extracts from the selective refining of oils. Trudy VNII NP no.7:62-68 '58.
(MIRA 12:10)

(Naphthenes) (Petroleum--Refining)

ZHERDEVA, L.G.; MIKHAYLOV, I.A.; DRACHENKO, A.D.; CHERCHENKO, N.V.; TIMOFEYEVA, K.M.

Possibility of using the continuous process of adsorption stripping of petroleum fractions. Trudy VNII NP no.7:93-103 '58. (MIRA 12:10)

(Petroleum--Refining) (Adsorption)

ZHERDEVA, L.G.; MIKHAYLOV, I.A.; DENCHENKO, A.D.; CHERCHENKO, N.V.; LEVINSON, S.Z.; TIMOFEYEVA, K.M.

Production of lubricating oils by adsorption refining with a moving bed of adsorbent. Trudy VNII NP no.7:103-119 '58. (MIRA 12:10)

(Lubrication and lubricants) (Adsorption)

ZHERDEVA, L.G.; MIKHAYLOV, I.A.; KROL', B.B.; CHERCHENKO, N.V.; LOKTIONOVA, Ye.L.

Testing new silica alumina gel adsorbents for the adsorption stripping of oils. Trudy VNII NP no.7:155-166 '58. (MIRA 12:10)

(Petroleum products) (Adsorbents--Testing)

ZHERDEVA, L.G.; SIDLYARONOK, F.G.

Chemical composition and properties of high-boiling fractions and oils from cracking fractions. Trudy VNII NP no.7:221-244 '58. (MIRA 12:10)
(Cracking process) (Petroleum products)

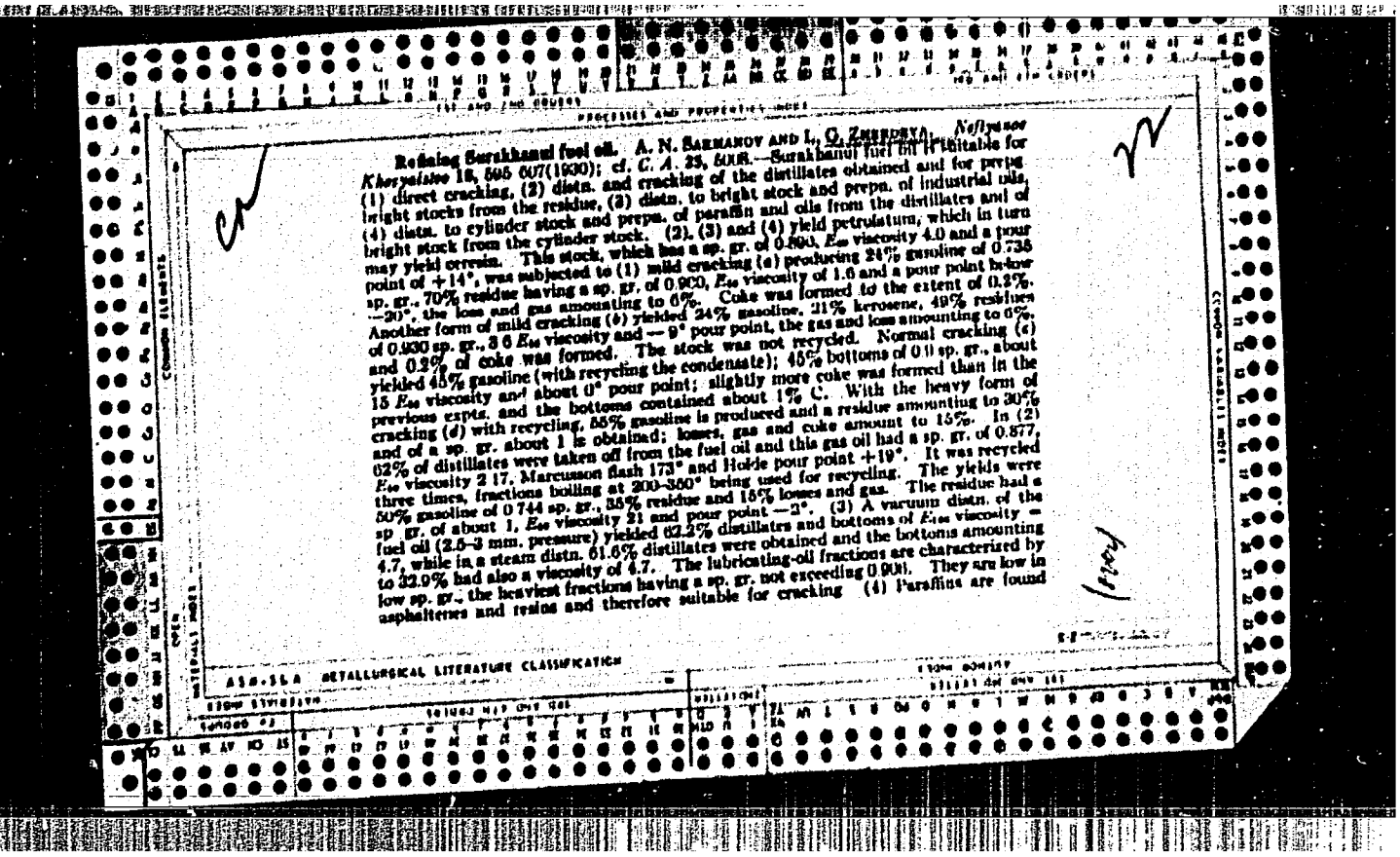
KARASEVA, A.A.; ZHERDEVA, L.G.; VOZNESENSKAYA, Ye.V.

Paraffins from eastern sulfur-bearing petroleum crudes. Trudy VNII NP no.7:309-317 '58. (MIRA 12:10)
(Petroleum--Refining) (Paraffins)

ZHERDEVA, L.G.; KARZHEV, V.I.; SIL'CHENKO, Ye.I.; DETUSHEVA, E.P.; ROBOZHEVA, Ye.V.; SIDLYAROHOK, F.G.; LEBEDEVA, N.M.

Isomerization of hydrocarbons of petroleum paraffin wax.
Neftekhimiia 1 no.5:639-647 S-O '61. (MIRA 15:2)

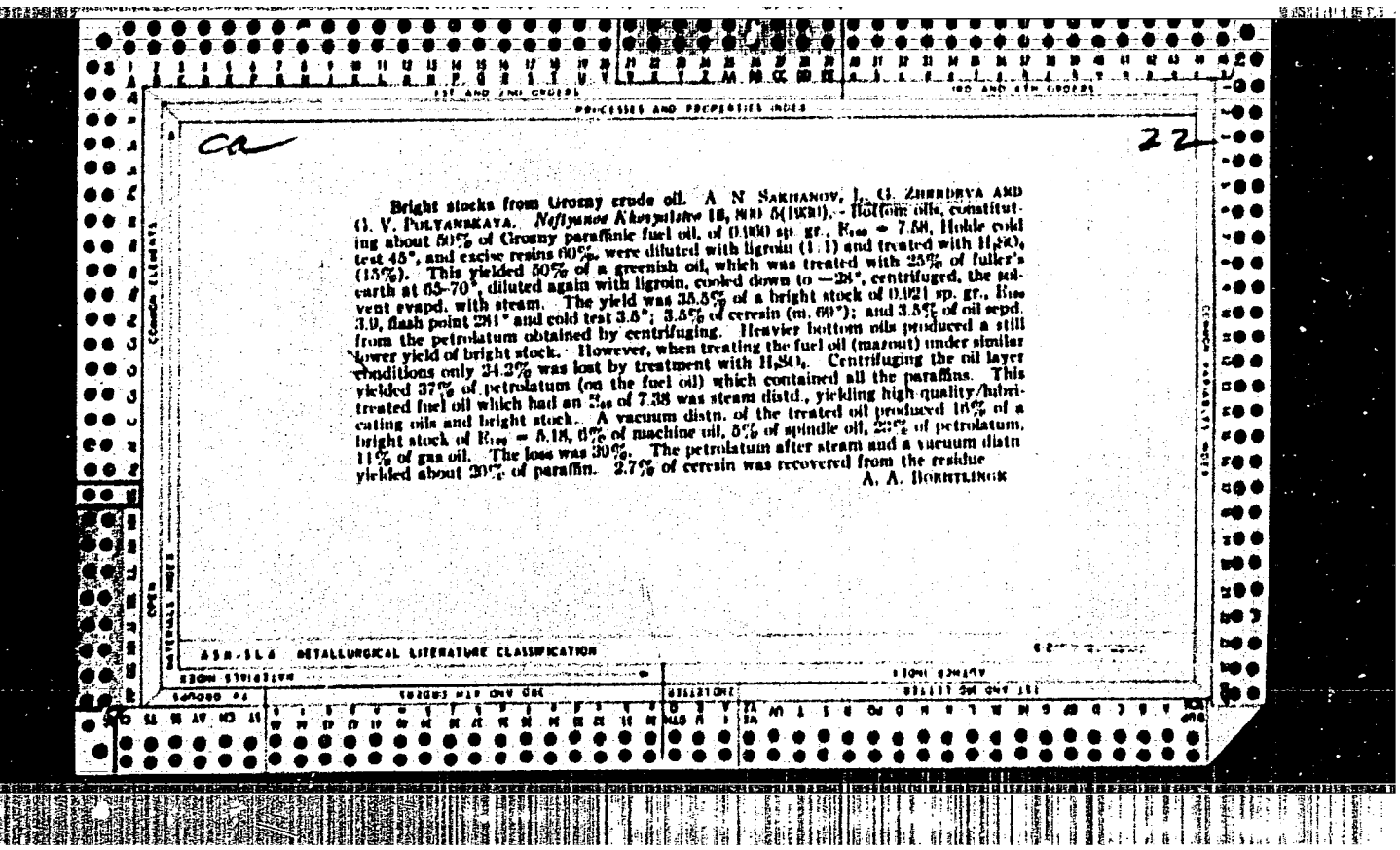
1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti, gaza i polucheniyu iskusstvennogo zhidkogo topliva VNII NP, g. Moskva.
(Paraffin wax)(Hydrocarbons)(Isomerization)



Refining Surakhanui fuel oil. A. N. SARMANOV AND L. G. ZHEREBYA. *Neftyanoe Khozyaistvo* 18, 605-607(1930); cf. *C. A.* 25, 5008.—Surakhanui fuel oil is suitable for (1) direct cracking, (2) distn. and cracking of the distillates obtained and for prepg. bright stocks from the residue, (3) distn. to bright stock and prepn. of industrial oils, (4) distn. to cylinder stock and prepn. of paraffin and oils from the distillates and of bright stock from the cylinder stock. (2), (3) and (4) yield petrolatum, which in turn may yield ceresin. This stock, which has a sp. gr. of 0.890, E_{20} viscosity 4.0 and a pour point of +14°, was subjected to (1) mild cracking (a) producing 24% gasoline of 0.736 sp. gr., 70% residue having a sp. gr. of 0.920, E_{20} viscosity of 1.6 and a pour point below —20°, the loss and gas amounting to 6%. Coke was formed to the extent of 0.2%. Another form of mild cracking (b) yielded 24% gasoline, 21% kerosene, 49% residues of 0.930 sp. gr., 3.6 E_{20} viscosity and — 9° pour point, the gas and loss amounting to 6%, and 0.2% of coke was formed. The stock was not recycled. Normal cracking (c) yielded 45% gasoline (with recycling the condensate); 45% bottoms of 0.9 sp. gr., about 15 E_{20} viscosity and about 0° pour point; slightly more coke was formed than in the previous expts. and the bottoms contained about 1% C. With the heavy form of cracking (d) with recycling, 55% gasoline is produced and a residue amounting to 30% and of a sp. gr. about 1 is obtained; losses, gas and coke amount to 15%. In (2) 62% of distillates were taken off from the fuel oil and this gas oil had a sp. gr. of 0.877, E_{20} viscosity 2.17, Marcusson flash 173° and Holde pour point +19°. It was recycled three times, fractions boiling at 200-360° being used for recycling. The yields were 50% gasoline of 0.744 sp. gr., 35% residue and 15% losses and gas. The residue had a sp. gr. of about 1, E_{20} viscosity 21 and pour point —2°. (3) A vacuum distn. of the fuel oil (2.5-3 mm. pressure) yielded 62.2% distillates and bottoms of E_{20} viscosity = 4.7, while in a steam distn. 61.6% distillates were obtained and the bottoms amounting to 32.9% had also a viscosity of 4.7. The lubricating-oil fractions are characterized by low sp. gr., the heaviest fractions having a sp. gr. not exceeding 0.908. They are low in asphaltenes and resins and therefore suitable for cracking (4) Paraffins are found

carried out for 1.5 hrs. and the settling for 3 hrs. Any difficulties encountered in the sepn. of the acid from the sludge can be overcome by air agitation. The acid, which settles, contains 18 to 38% of free acid. It is transferred into another separator. Hot water is again added to the sludge (1:1), the strength of the acid recovered amounting to 10 to 15%. About 70% of the spent acid can be recovered by this method. Thirty % of fuel oil is then added to the remaining sludge and the mixt. agitated with steam and air. The temp. may now be raised because sulfuric acid, which causes the formation of coke, is absent. This mixt. is transferred into the first two agitators, is agitated for 1.5 hrs. and is then ready for use as fuel. It does not contain lumps. The addition of an excess of oil to the acid sludge should be avoided because the dil. acid obtained in the second treatment is difficult to sep. Excessive temp. during treatment as well as too prolonged air agitation causes the formation of a solid, brittle sludge which does not stay in suspension. The acidity of the fuel so obtained does not exceed 1%. The amt. of fuel oil admixed with the sludge depends upon the viscosity and other properties required for the fuel. The weak H_2SO_4 is passed to the acid concn. plant.

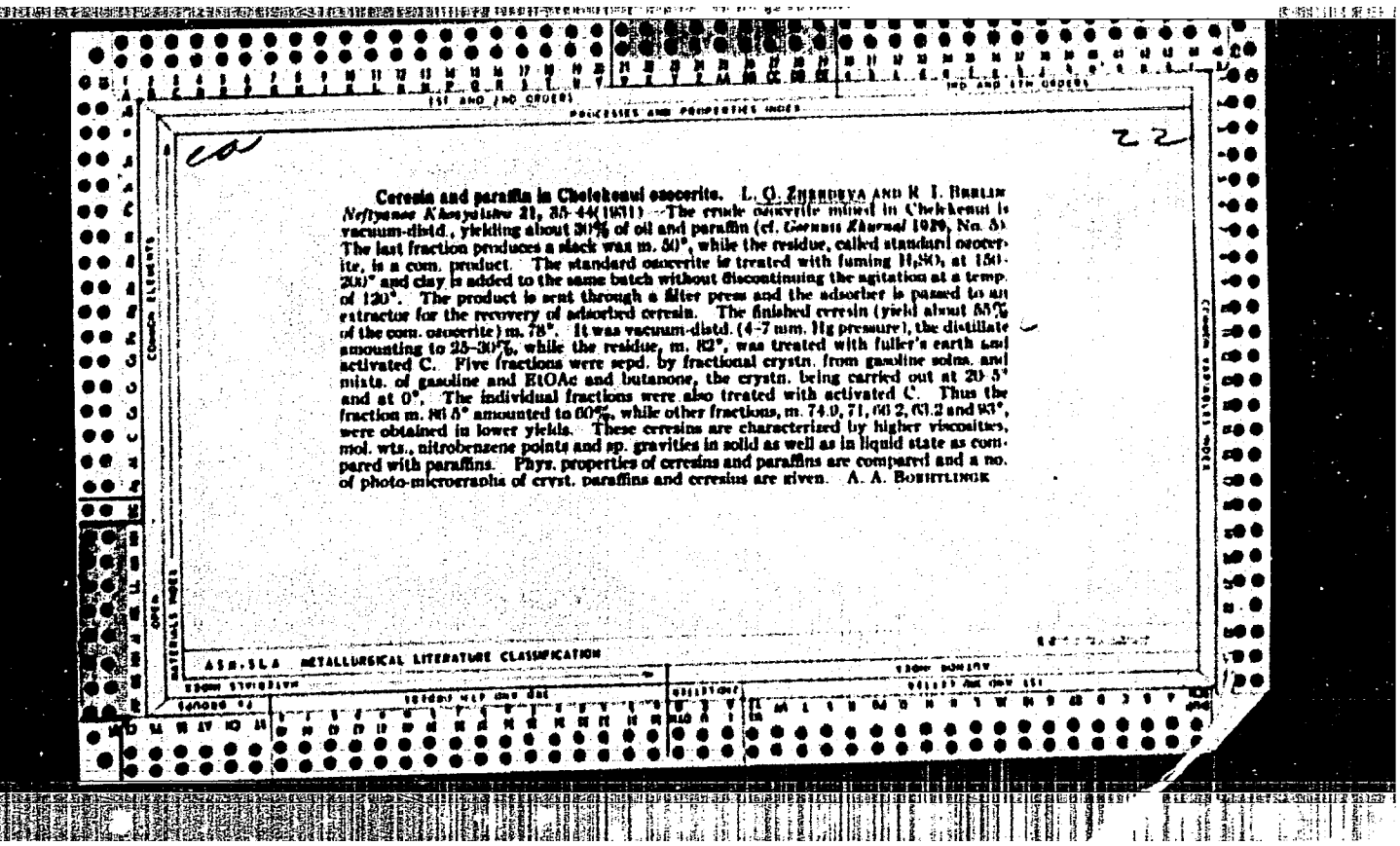
A. A. BOSHTLINGK



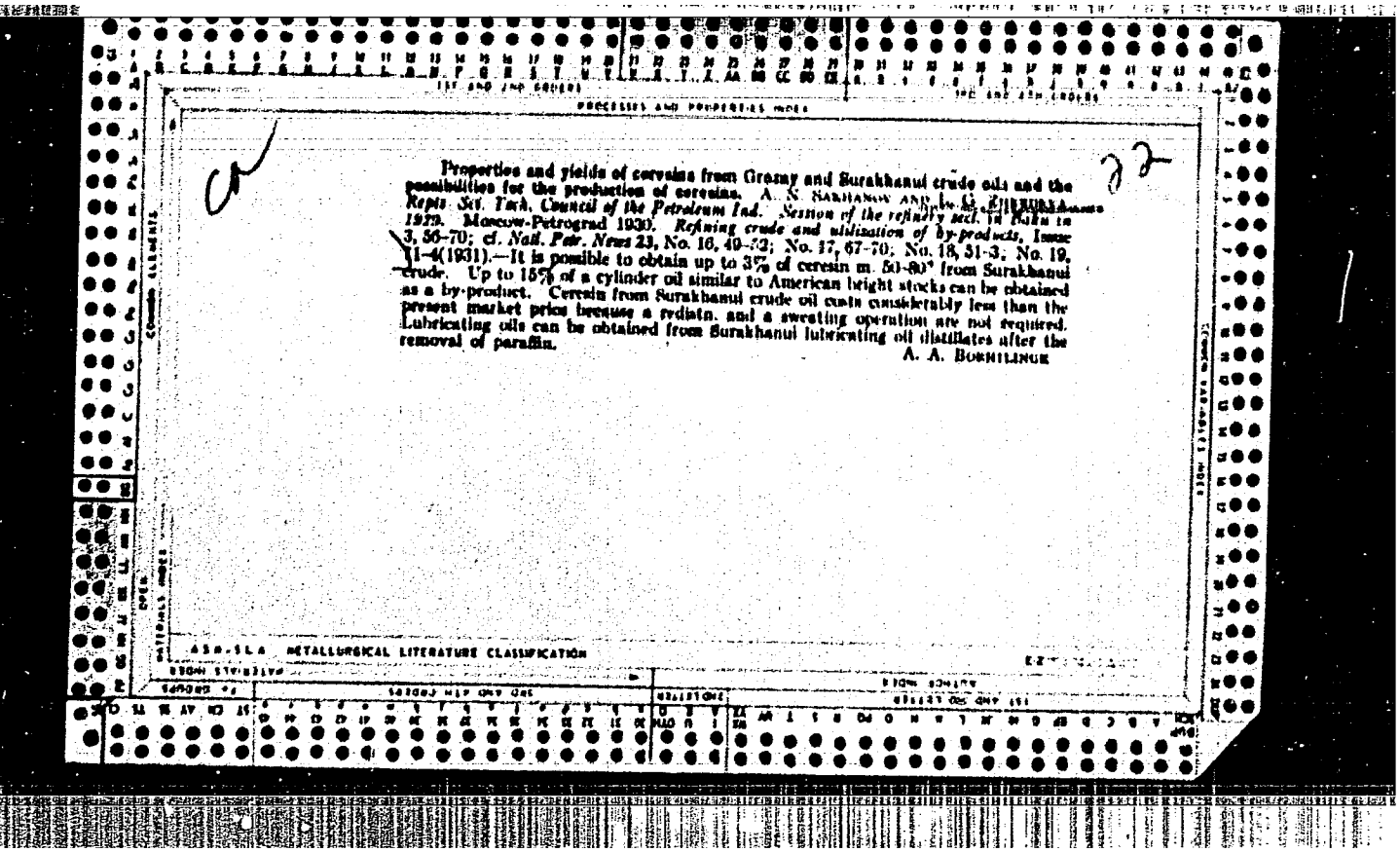
22

Bright stocks from Grozny crude oil. A. N. Sakhanov, L. G. Zheberya and G. V. Polyanskaya. *Neftyanoe Khozyaistvo* 18, No. 5(1933).—Hoffman oils, constituting about 50% of Grozny paraffinic fuel oil, of 0.930 sp. gr., R_{oo} = 7.58, Hoble cold test 45°, and excise resins 60%, were diluted with ligroin (1:1) and treated with H_2SO_4 (15%). This yielded 50% of a greenish oil, which was treated with 25% of fuller's earth at 65–70°, diluted again with ligroin, cooled down to —28°, centrifuged, the solvent evapd. with steam. The yield was 35.5% of a bright stock of 0.921 sp. gr., R_{oo} 3.9, flash point 281° and cold test 3.5°; 3.5% of ceresin (m. 69°); and 3.5% of oil sepd. from the petrolatum obtained by centrifuging. Heavier bottom oils produced a still lower yield of bright stock. However, when treating the fuel oil (mazout) under similar conditions only 34.2% was lost by treatment with H_2SO_4. Centrifuging the oil layer yielded 37% of petrolatum (on the fuel oil) which contained all the paraffins. This treated fuel oil which had an R_{oo} of 7.38 was steam distd., yielding high-quality lubricating oils and bright stock. A vacuum distn. of the treated oil produced 16% of a bright stock of R_{oo} = 5.18, 6% of machine oil, 5% of spindle oil, 25% of petrolatum, 11% of gas oil. The loss was 30%. The petrolatum after steam and a vacuum distn yielded about 20% of paraffin. 2.7% of ceresin was recovered from the residue

A. A. Bortlinok



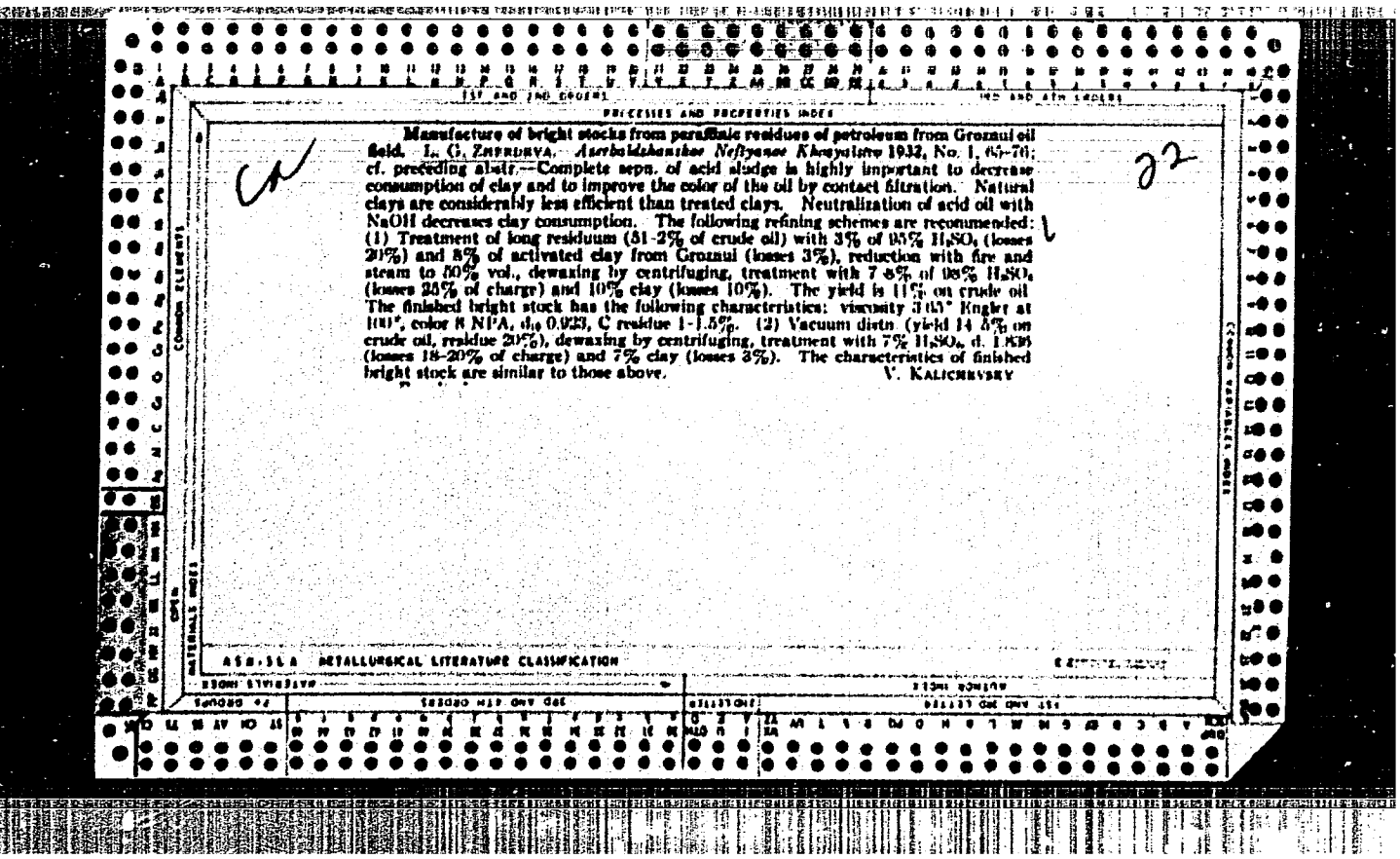
Ceresin and paraffin in Cheleken ozocerite. L. O. ZHARDEVA AND R. I. BERLIN *Neftyanoe Khozyaistvo* 21, 35–44(1931).—The crude ozocerite mined in Cheleken is vacuum-distd., yielding about 30% of oil and paraffin (cf. *Chemie Zhurnal* 1929, No. 5). The last fraction produces a slack wax m. 50°, while the residue, called standard ozocerite, is a com. product. The standard ozocerite is treated with fuming H_2SO_4, at 150–200° and clay is added to the same batch without discontinuing the agitation at a temp. of 120°. The product is sent through a filter press and the adsorber is passed to an extractor for the recovery of adsorbed ceresin. The finished ceresin (yield about 55% of the com. ozocerite) m. 78°. It was vacuum-distd. (4–7 mm. Hg pressure), the distillate amounting to 25–30%, while the residue, m. 82°, was treated with fuller's earth and activated C. Five fractions were sepd. by fractional crystn. from gasoline solns. and mixts. of gasoline and EtOAc and butanone, the crystn. being carried out at 20–5° and at 0°. The individual fractions were also treated with activated C. Thus the fraction m. 80.5° amounted to 60%, while other fractions, m. 74.0, 71, 69.2, 69.2 and 93°, were obtained in lower yields. These ceresins are characterized by higher viscosities, mol. wts., nitrobenzene points and sp. gravities in solid as well as in liquid state as compared with paraffins. Phys. properties of ceresins and paraffins are compared and a no. of photo-microgramphs of cryst. paraffins and ceresins are given. A. A. BOBTELINOK



Properties and yields of ceresins from Grozny and Surakhanui crude oils and the possibilities for the production of ceresins. A. N. SARKISOV AND [illegible]. *Repts. Sci. Tech. Council of the Petroleum Ind. Session of the refinery sect. in Baku in 1929.* Moscow-Petrograd 1930. *Refining crude and utilization of by-products*, Issue 3, 56–70; cf. *Nat. Petr. News* 23, No. 16, 49–53; No. 17, 67–70; No. 18, 51–3; No. 19, 51–4(1931).—It is possible to obtain up to 3% of ceresin m. 50–80° from Surakhanui crude. Up to 15% of a cylinder oil similar to American bright stocks can be obtained as a by-product. Ceresin from Surakhanui crude oil costs considerably less than the present market price because a redistn. and a sweating operation are not required. Lubricating oils can be obtained from Surakhanui lubricating oil distillates after the removal of paraffin.

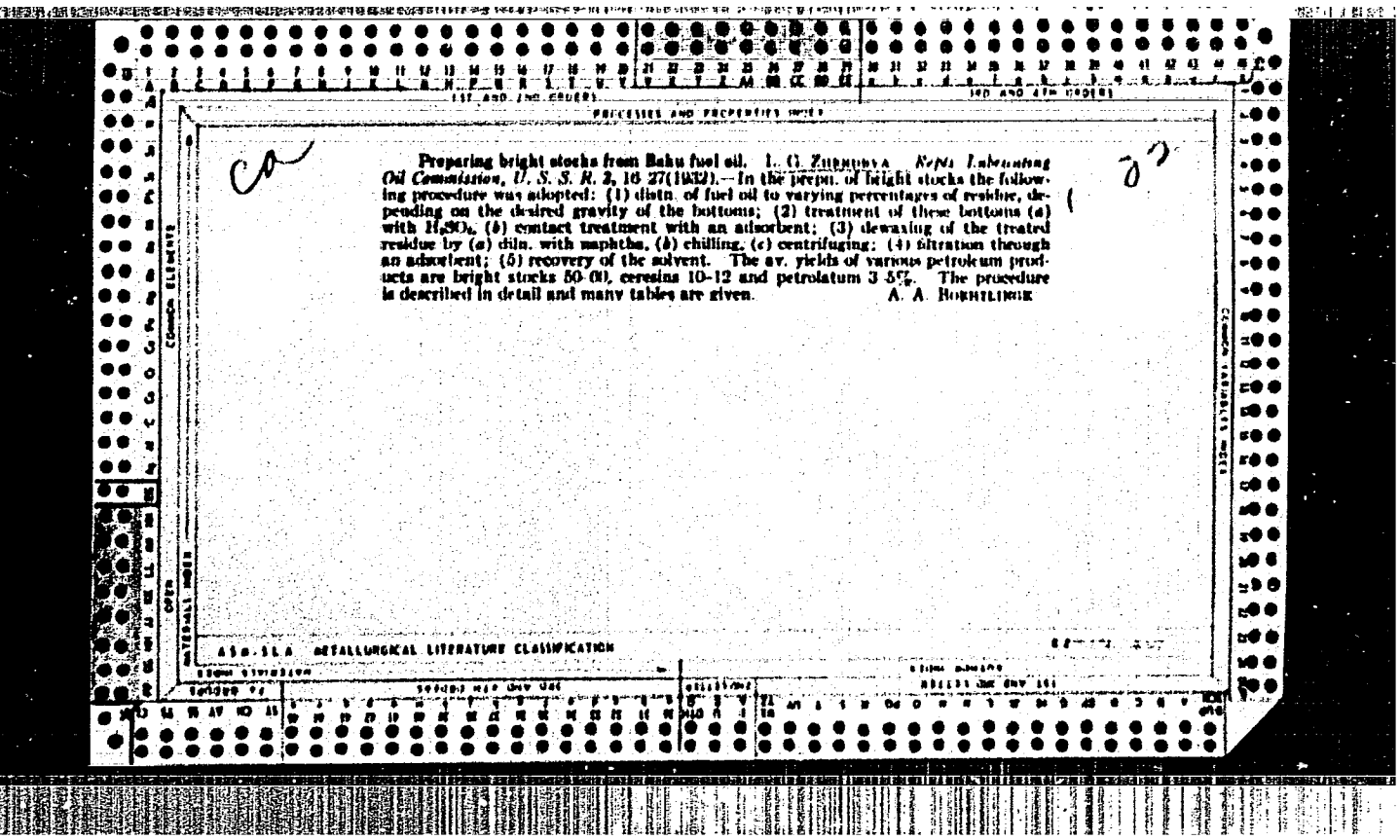
A. A. BORNILINGE

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



Manufacture of bright stocks from paraffinic residues of petroleum from Grozuai oil field. L. G. Zhdanova. *Azerbaidzhanskoe Neftyanoe Khozyaistvo* 1932, No. 1, 65–76; cf. preceding abstr.—Complete sepn. of acid sludge is highly important to decrease consumption of clay and to improve the color of the oil by contact filtration. Natural clays are considerably less efficient than treated clays. Neutralization of acid oil with NaOH decreases clay consumption. The following refining schemes are recommended: (1) Treatment of long residuum (51-2% of crude oil) with 3% of 95% H_2SO_4 (losses 20%) and 8% of activated clay from Grozuai (losses 3%), reduction with fire and steam to 50% vol., dewaxing by centrifuging, treatment with 7-8% of 98% H_2SO_4 (losses 25% of charge) and 10% clay (losses 10%). The yield is 11% on crude oil. The finished bright stock has the following characteristics: viscosity 3.05° Engler at 100°, color 8 NPA, d_{15} 0.923, C residue 1-1.5%. (2) Vacuum distn. (yield 14.5% on crude oil, residue 20%), dewaxing by centrifuging, treatment with 7% H_2SO_4, d. 1.838 (losses 18-20% of charge) and 7% clay (losses 3%). The characteristics of finished bright stock are similar to those above.

V. Kalichevsky



Preparing bright stocks from Baku fuel oil. L. G. Zhirnova. *Neft. Lubricating Oil Commission, U. S. S. R.* 2, 16-27(1932).—In the prepn. of bright stocks the following procedure was adopted: (1) distn. of fuel oil to varying percentages of residue, depending on the desired gravity of the bottoms; (2) treatment of these bottoms (a) with H_2SO_4, (b) contact treatment with an adsorbent; (3) dewaxing of the treated residue by (a) dilu. with naphtha, (b) chilling, (c) centrifuging; (4) filtration through an adsorbent; (5) recovery of the solvent. The av. yields of various petroleum products are bright stocks 50-60, ceresins 10-12 and petrolatum 3-5%. The procedure is described in detail and many tables are given. A. A. Boichtchik

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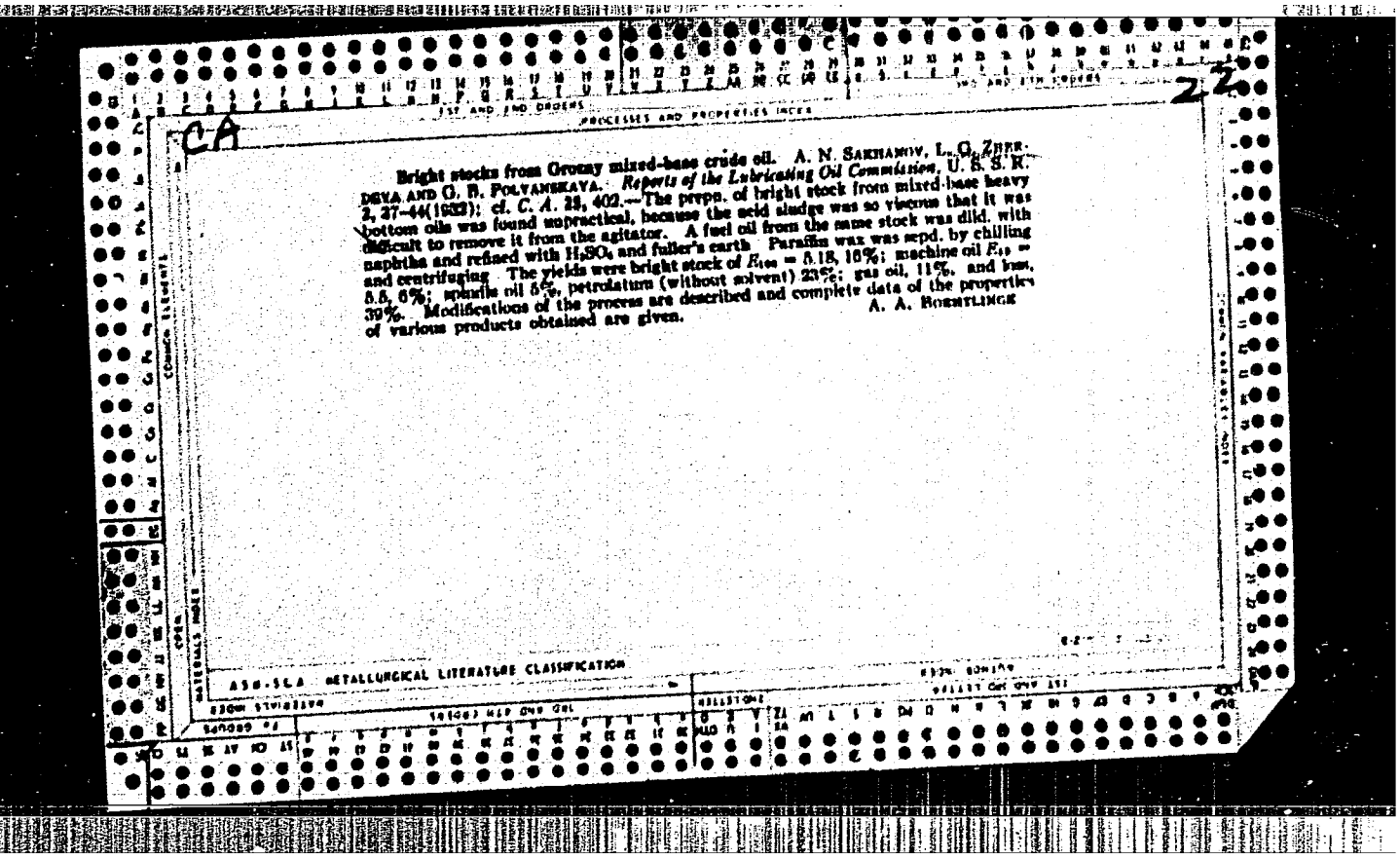

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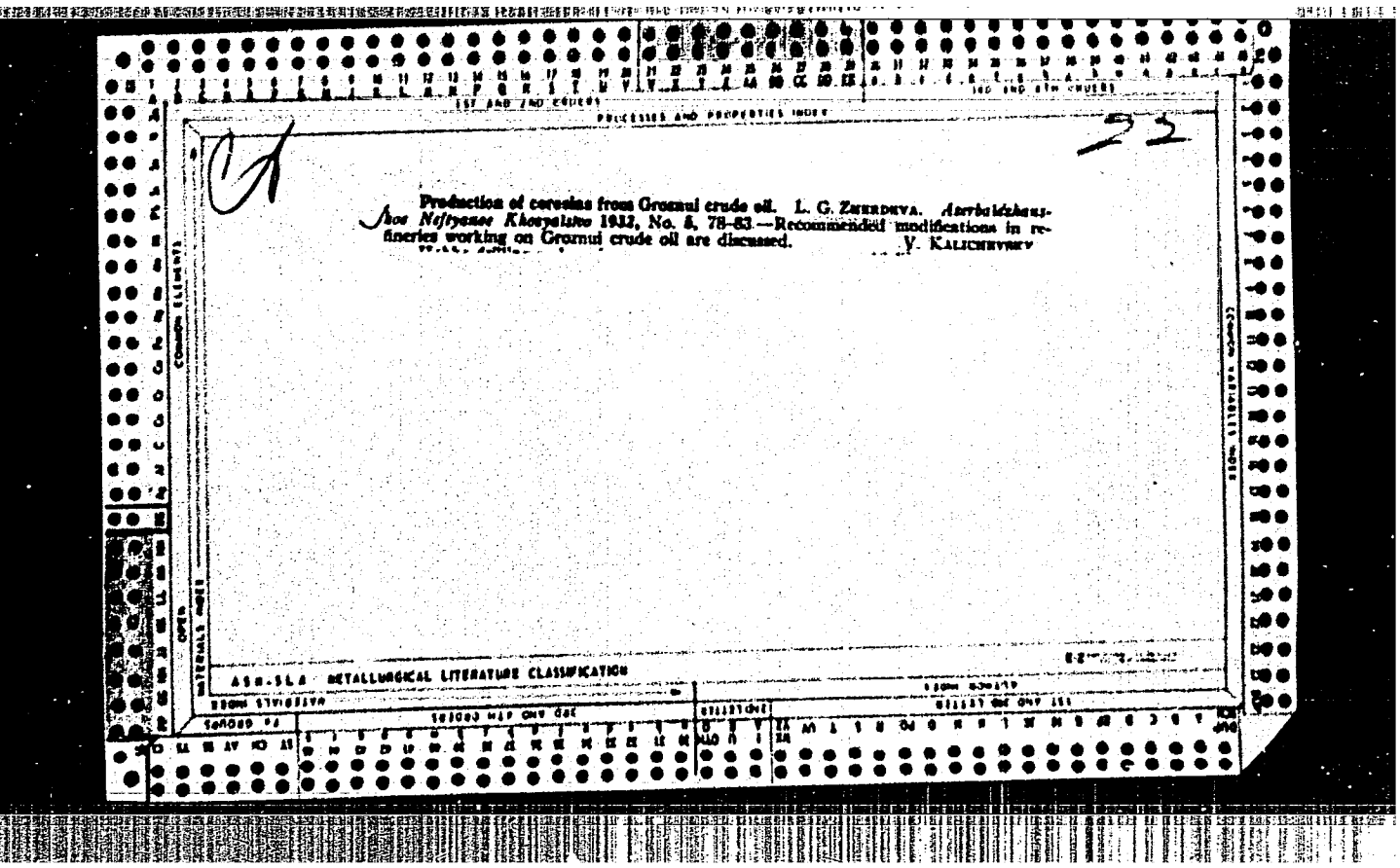
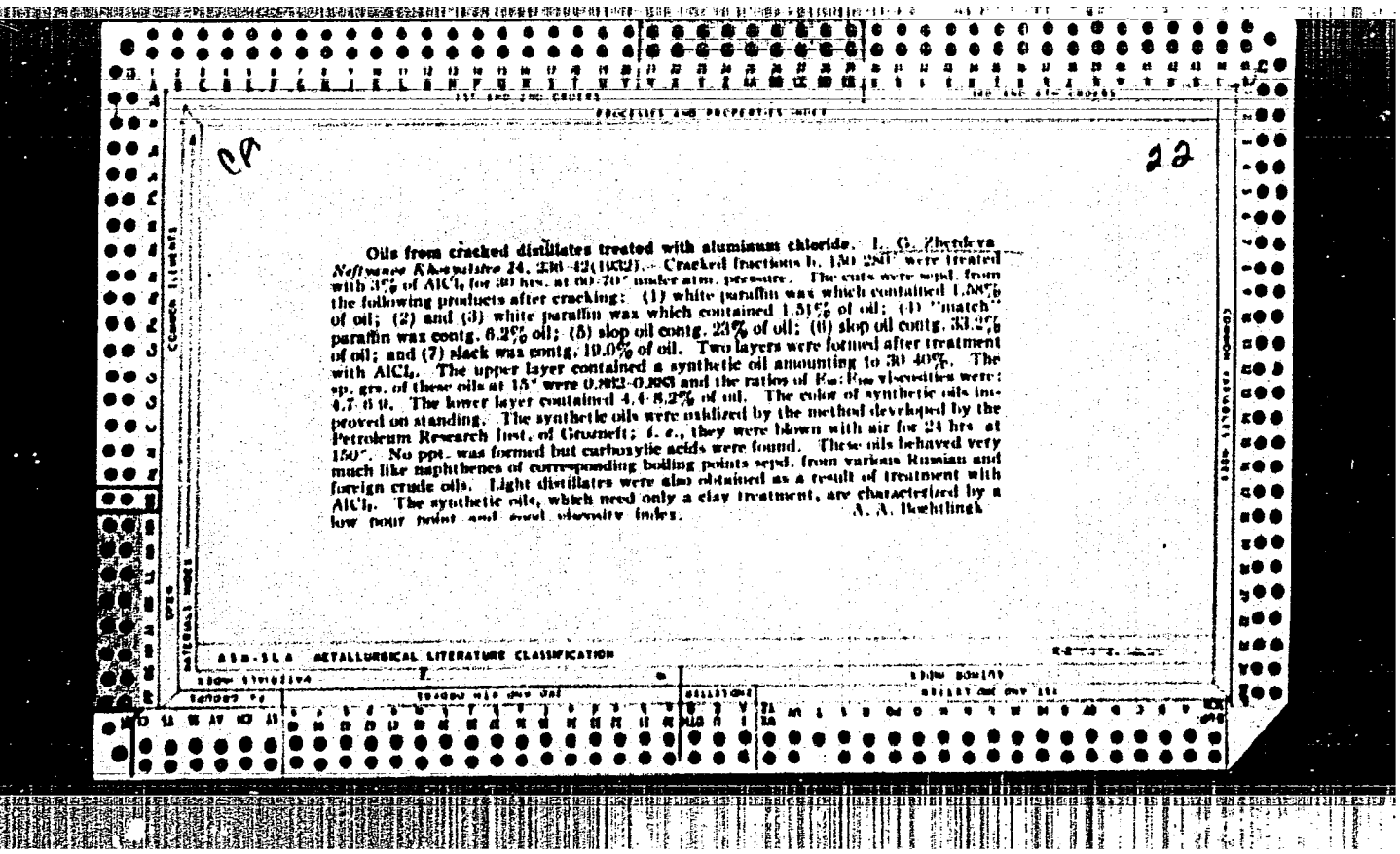
Bright stocks from Grozny mixed-base crude oil. A. N. SAKHANOV, L. G. ZHER-DEVA AND G. B. POLYANSKAYA. *Reports of the Lubricating Oil Commission, U. S. S. R.* 2, 37–44(1932); cf. *C. A.* 28, 402.—The prepn. of bright stock from mixed-base heavy bottom oils was found unpractical, because the acid sludge was so viscous that it was difficult to remove it from the agitator. A fuel oil from the same stock was dild. with naphtha and refined with H_2SO_4 and fuller's earth. Paraffin wax was sepd. by chilling and centrifuging. The yields were bright stock of $E_{100} = 5.18$, 16%; machine oil $E_{10} = 5.5$, 6%; spindle oil 6%, petrolatum (without solvent) 23%; gas oil, 11%, and loss, 39%. Modifications of the process are described and complete data of the properties of various products obtained are given.

A. A. BOSHTLINGK



Production of cerosins from Groznui crude oil. L. G. ZHERDEVA. *Azerbaidzhan. Neftyanoe Khozyaistvo* 1932, No. 8, 78–83.—Recommended modifications in refineries working on Groznui crude oil are discussed. V. KALICHEVSKY



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Oils from cracked distillates treated with aluminum chloride. I. G. Zhenkova *Neftyanoe Khozyaistvo* 24, 338-42(1938).—Cracked fractions b. 150-280° were treated with 3% of $AlCl_3$ for 30 hrs. at 60-70° under atm. pressure. The cuts were sepd. from the following products after cracking: (1) white paraffin wax which contained 1.88% of oil; (2) and (3) white paraffin wax which contained 1.51% of oil; (4) "match" paraffin wax contg. 6.2% oil; (5) slop oil contg. 23% of oil; (6) slop oil contg. 33.2% of oil; and (7) slack wax contg. 19.0% of oil. Two layers were formed after treatment with $AlCl_3$. The upper layer contained a synthetic oil amounting to 30-40%. The sp. grs. of these oils at 15° were 0.882-0.893 and the ratios of Ru:Ru viscosities were: 4.7-6.9. The lower layer contained 4.4-8.2% of oil. The color of synthetic oils improved on standing. The synthetic oils were oxidized by the method developed by the Petroleum Research Inst. of Grozneft; *i. e.*, they were blown with air for 24 hrs. at 150°. No ppt. was formed but carboxylic acids were found. These oils behaved very much like naphthenes of corresponding boiling points sepd. from various Russian and foreign crude oils. Light distillates were also obtained as a result of treatment with $AlCl_3$. The synthetic oils, which need only a clay treatment, are characterized by a low pour point and good viscosity index.

A. A. Buchtilingk

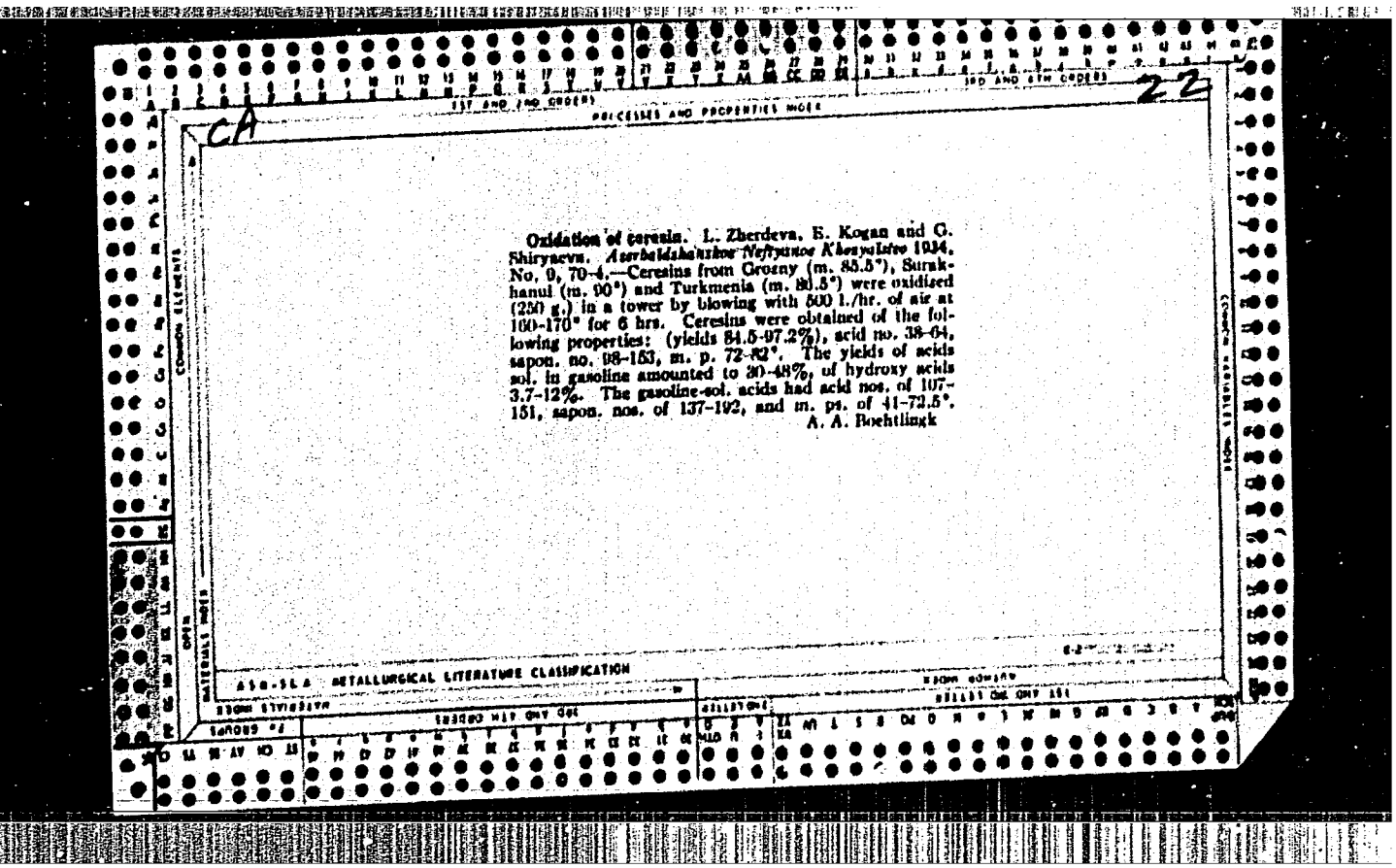
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

1

Method of determining iodine numbers L. Zheltkova and G. Shiryaeva. *Gozenerskie Neftyanik* 4, No. 6-, 45-7(1934).—After a crit. review of various methods, the use of the Margosches' method is recommended, as follows: Mix 0.1-0.2 g. of the sample with 15 cc. of a solvent contg. 2 vols. of ether and 1 of acetone and 25 cc. of 0.2 *N* I in alc. Close the flask (with a ground-glass stopper) and carefully agitate. Add 200 cc. of H_2O, shake the mixt. for 5 min. and allow to settle 5 min. Titrate the excess I_2 with $Na_2S_2O_3$. A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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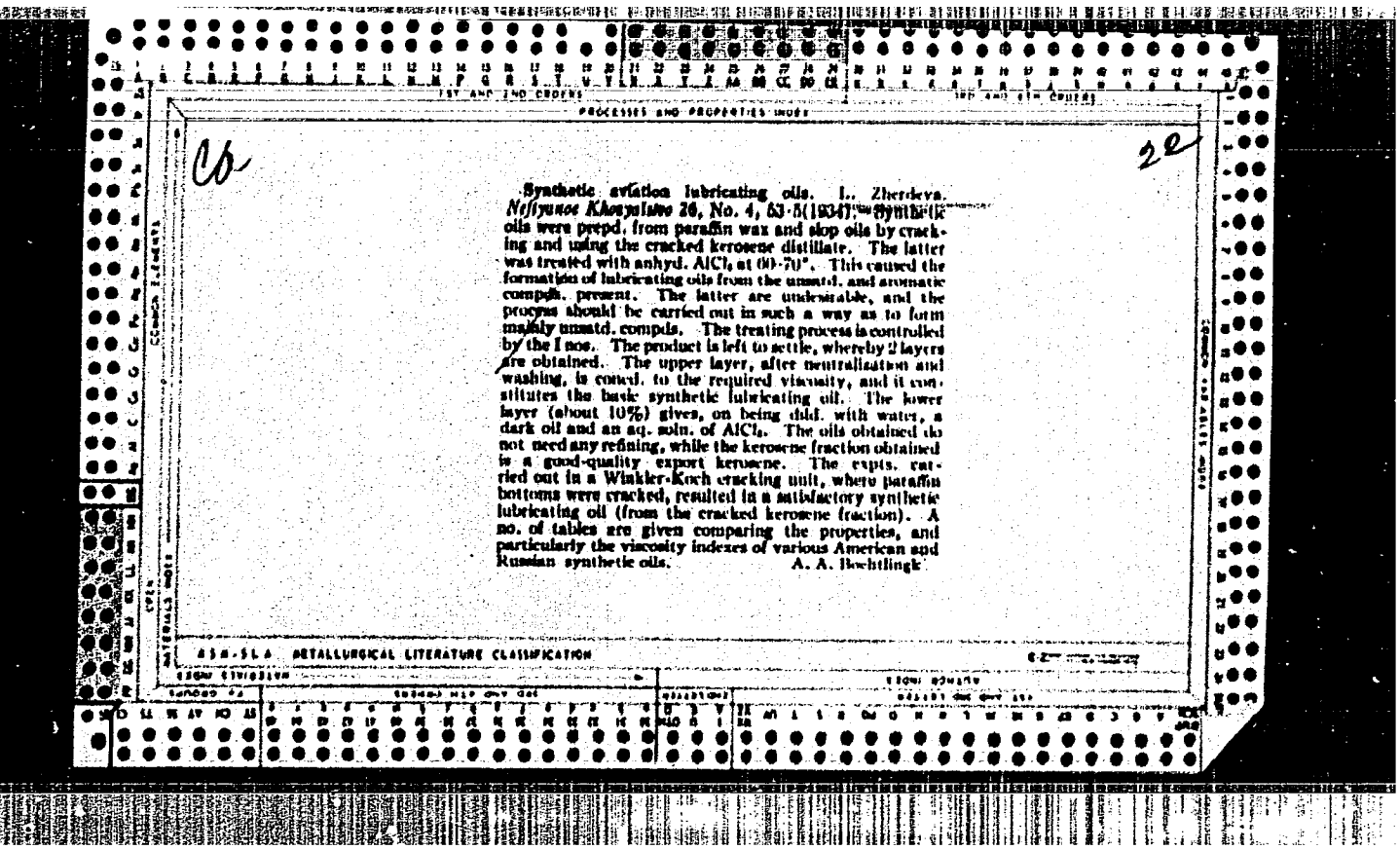
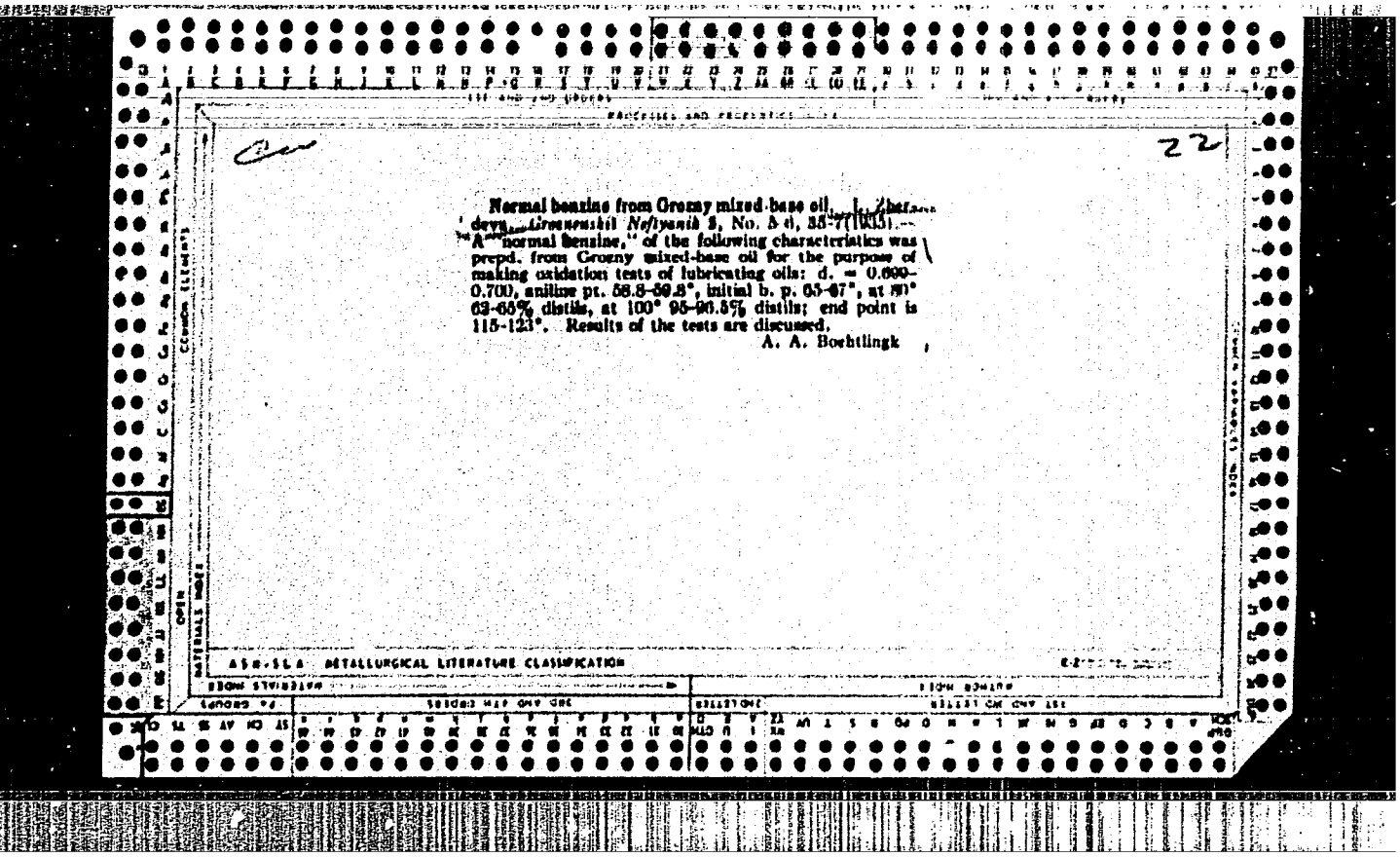
Oxidation of ceresin. L. Zherdeva, E. Kogan and G. Shiryaeva. *Azerbaidzhanskoe Neftyanoe Khozyaistvo* 1934, No. 9, 70–4.—Ceresins from Grozny (m. 85.5°), Surakhanui (m. 90°) and Turkmenia (m. 80.5°) were oxidized (250 g.) in a tower by blowing with 500 l./hr. of air at 160–170° for 6 hrs. Ceresins were obtained of the following properties: (yields 84.5–97.2%), acid no. 38–64, sapon. no. 98–153, m. p. 72–82°. The yields of acids sol. in gasoline amounted to 20–48%, of hydroxy acids 3.7–12%. The gasoline-sol. acids had acid nos. of 107–151, sapon. nos. of 137–192, and m. pts. of 41–72.5°.
A. A. Boehtlingk

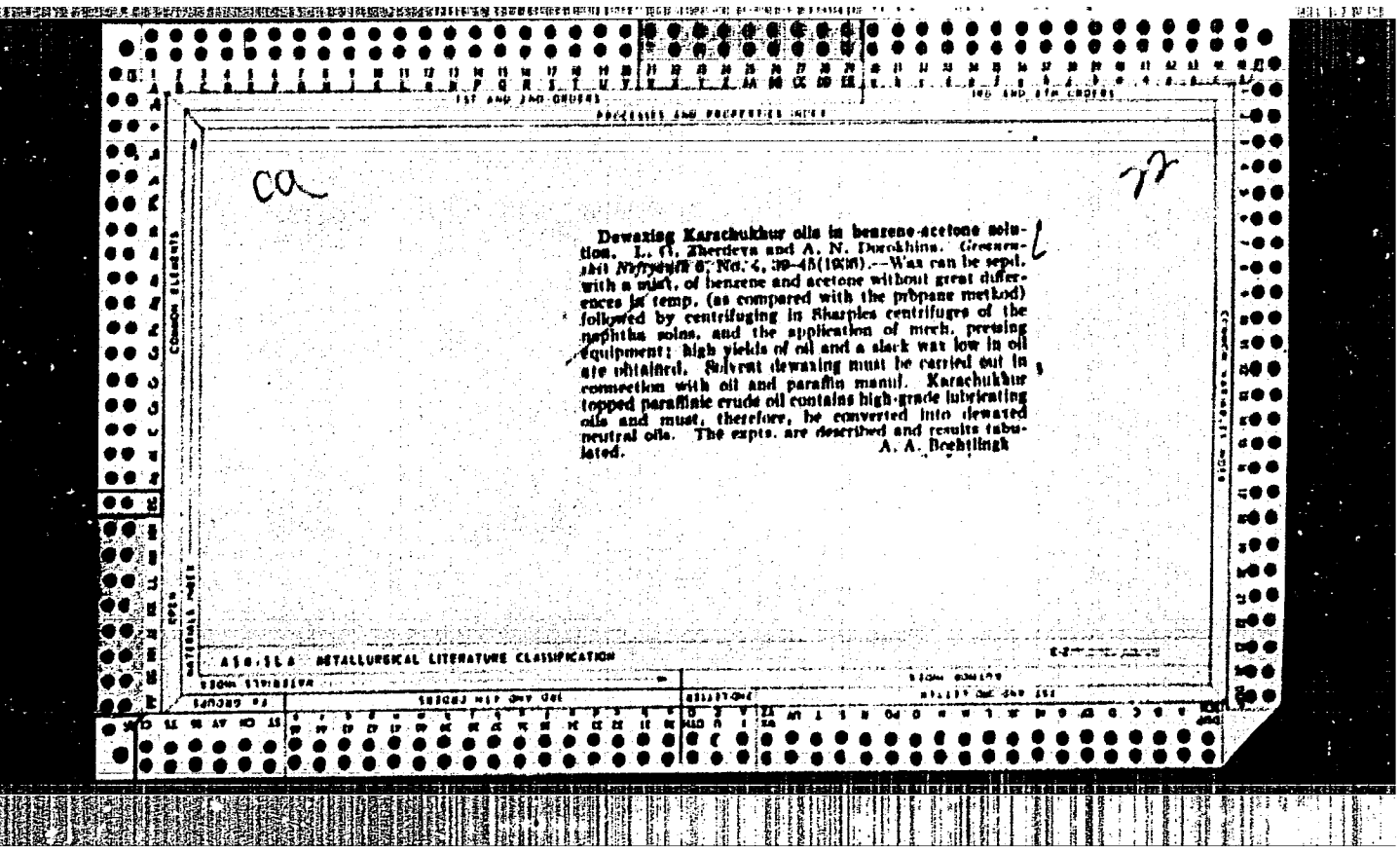


Synthetic aviation lubricating oils. L. Zherdeva. *Neftyanoe Khozyaistvo* 26, No. 4, 63-5(1934). Synthetic oils were prepd. from paraffin wax and slop oils by cracking and using the cracked kerosene distillate. The latter was treated with anhyd. $AlCl_3$ at 60-70°. This caused the formation of lubricating oils from the unsatd. and aromatic compds. present. The latter are undesirable, and the process should be carried out in such a way as to form mainly unsatd. compds. The treating process is controlled by the I nos. The product is left to settle, whereby 2 layers are obtained. The upper layer, after neutralization and washing, is concd. to the required viscosity, and it constitutes the basic synthetic lubricating oil. The lower layer (about 10%) gives, on being dild. with water, a dark oil and an aq. soln. of $AlCl_3$. The oils obtained do not need any refining, while the kerosene fraction obtained is a good-quality export kerosene. The expts. carried out in a Winkler-Koch cracking unit, where paraffin bottoms were cracked, resulted in a satisfactory synthetic lubricating oil (from the cracked kerosene fraction). A no. of tables are given comparing the properties, and particularly the viscosity indexes of various American and Russian synthetic oils. A. A. Boehtlingk

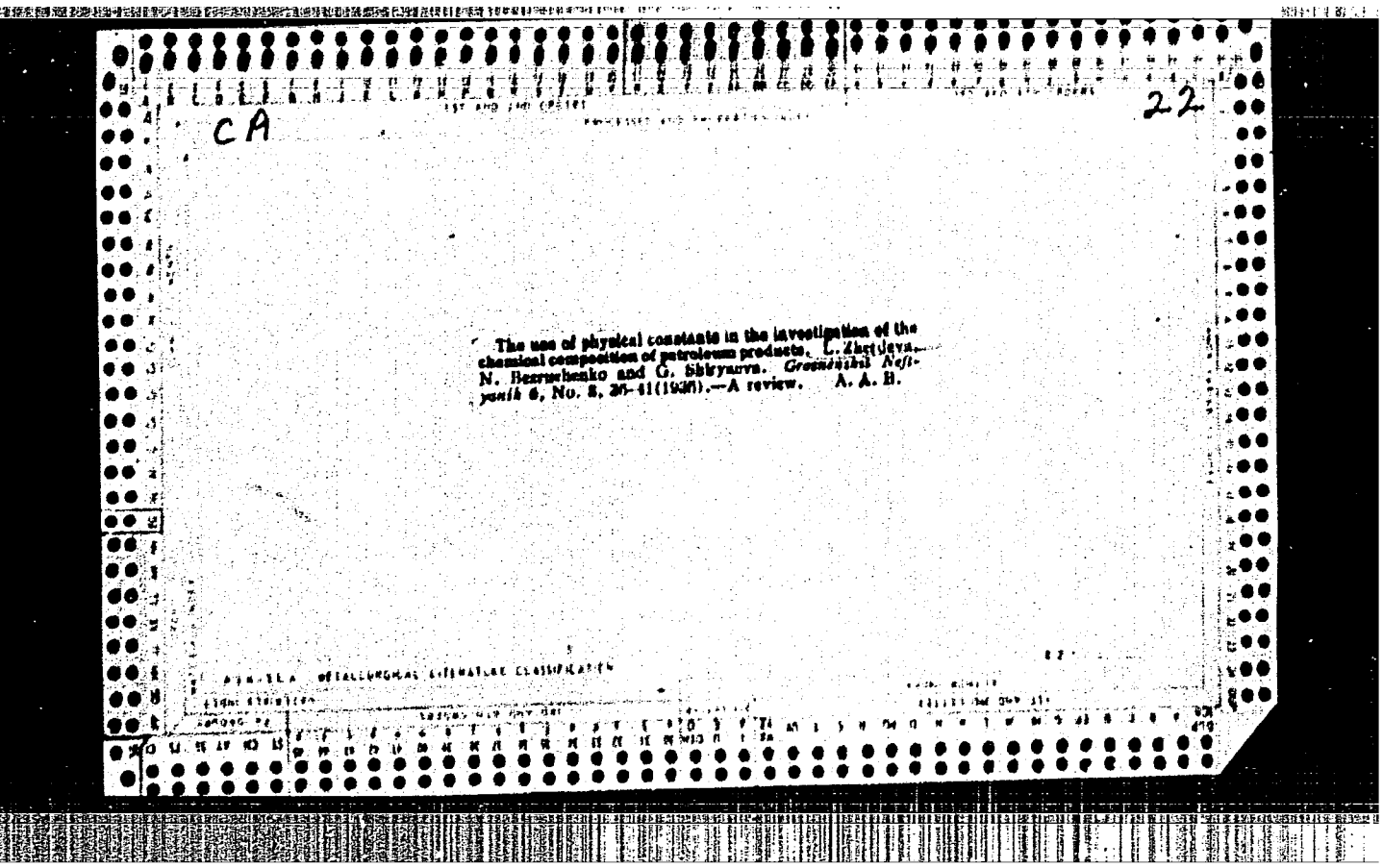


Normal benzine from Grozny mixed-base oil ... devn. *Neftyanik* 3, No. 5-6, 35-7(1933). — A "normal benzine," of the following characteristics was prepd. from Grozny mixed-base oil for the purpose of making oxidation tests of lubricating oils: d. = 0.690–0.700, aniline pt. 56.8–59.8°, initial b. p. 65–67°, at 91° 62–65% distils, at 100° 95–96.5% distils; end point is 115–123°. Results of the tests are discussed.

A. A. Boehtlingk



Dewaxing Karachukhur oils in benzene-acetone solution. L. G. Zhertieva and A. N. Dorokhina. *Grozneńskii Neftyanik* 6, No. 4, 39-45(1936).—Wax can be sepd. with a mixt. of benzene and acetone without great differences in temp. (as compared with the propane method) followed by centrifuging in Sharples centrifuges of the naphtha solns. and the application of mech. pressing equipment; high yields of oil and a slack wax low in oil are obtained. Solvent dewaxing must be carried out in connection with oil and paraffin manuf. Karachukhur topped paraffinic crude oil contains high-grade lubricating oils and must, therefore, be converted into dewaxed neutral oils. The expts. are described and results tabulated.
A. A. Boehtlingk



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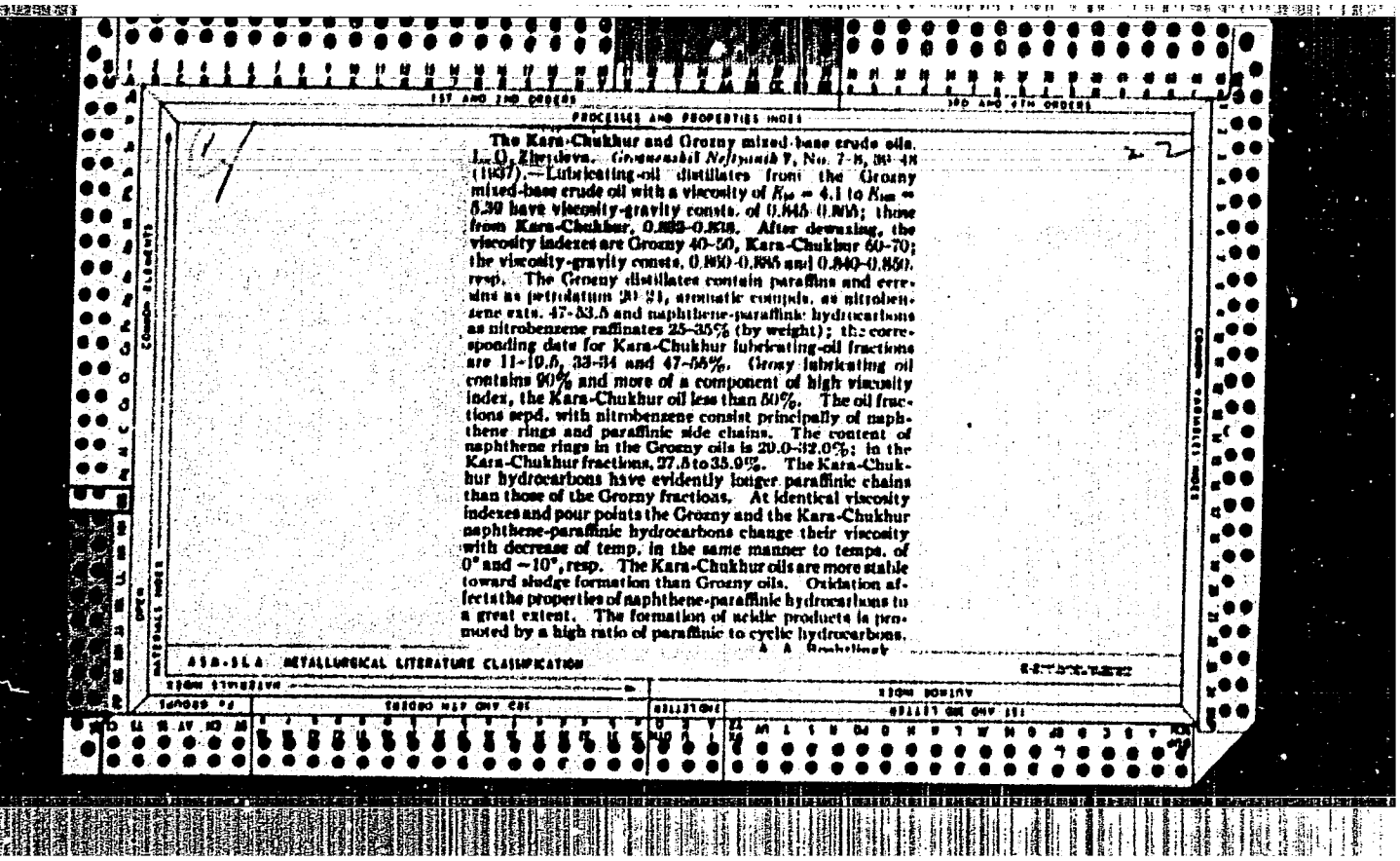
The use of physical constants in the investigation of the chemical composition of petroleum products. L. Zhuravleva, N. Berezhenko and G. Sibiryaeva. *Groznenskii Neftyanik* 6, No. 8, 26-41(1940).—A review. A. A. B.



PROCESSES AND PROPERTIES INDEX

The Kara-Chukhur and Grozny mixed-base crude oils. L. O. Zhirdova. *Grozneftsk. Neftyanik* 7, No. 7-8, 89-98 (1937).—Lubricating-oil distillates from the Grozny mixed-base crude oil with a viscosity of $E_{50} = 4.1$ to $E_{50} = 5.30$ have viscosity-gravity consts. of 0.845-0.865; those from Kara-Chukhur, 0.855-0.875. After dewaxing, the viscosity indexes are Grozny 40-50, Kara-Chukhur 60-70; the viscosity-gravity consts. 0.850-0.885 and 0.840-0.850, resp. The Grozny distillates contain paraffins and cerezins as petrolatum 21-31, aromatic compds. as nitrobenzene exts. 47-53.5 and naphthene-paraffinic hydrocarbons as nitrobenzene raffinates 25-35% (by weight); the corresponding data for Kara-Chukhur lubricating-oil fractions are 11-19.5, 33-34 and 47-56%. Grozny lubricating oil contains 90% and more of a component of high viscosity index, the Kara-Chukhur oil less than 50%. The oil fractions sepd. with nitrobenzene consist principally of naphthene rings and paraffinic side chains. The content of naphthene rings in the Grozny oils is 20.0-32.0%; in the Kara-Chukhur fractions, 27.5 to 35.9%. The Kara-Chukhur hydrocarbons have evidently longer paraffinic chains than those of the Grozny fractions. At identical viscosity indexes and pour points the Grozny and the Kara-Chukhur naphthene-paraffinic hydrocarbons change their viscosity with decrease of temp. in the same manner to temps. of 0° and −10°, resp. The Kara-Chukhur oils are more stable toward sludge formation than Grozny oils. Oxidation affects the properties of naphthene-paraffinic hydrocarbons to a great extent. The formation of acidic products is promoted by a high ratio of paraffinic to cyclic hydrocarbons.

A. A. Gushchinsky

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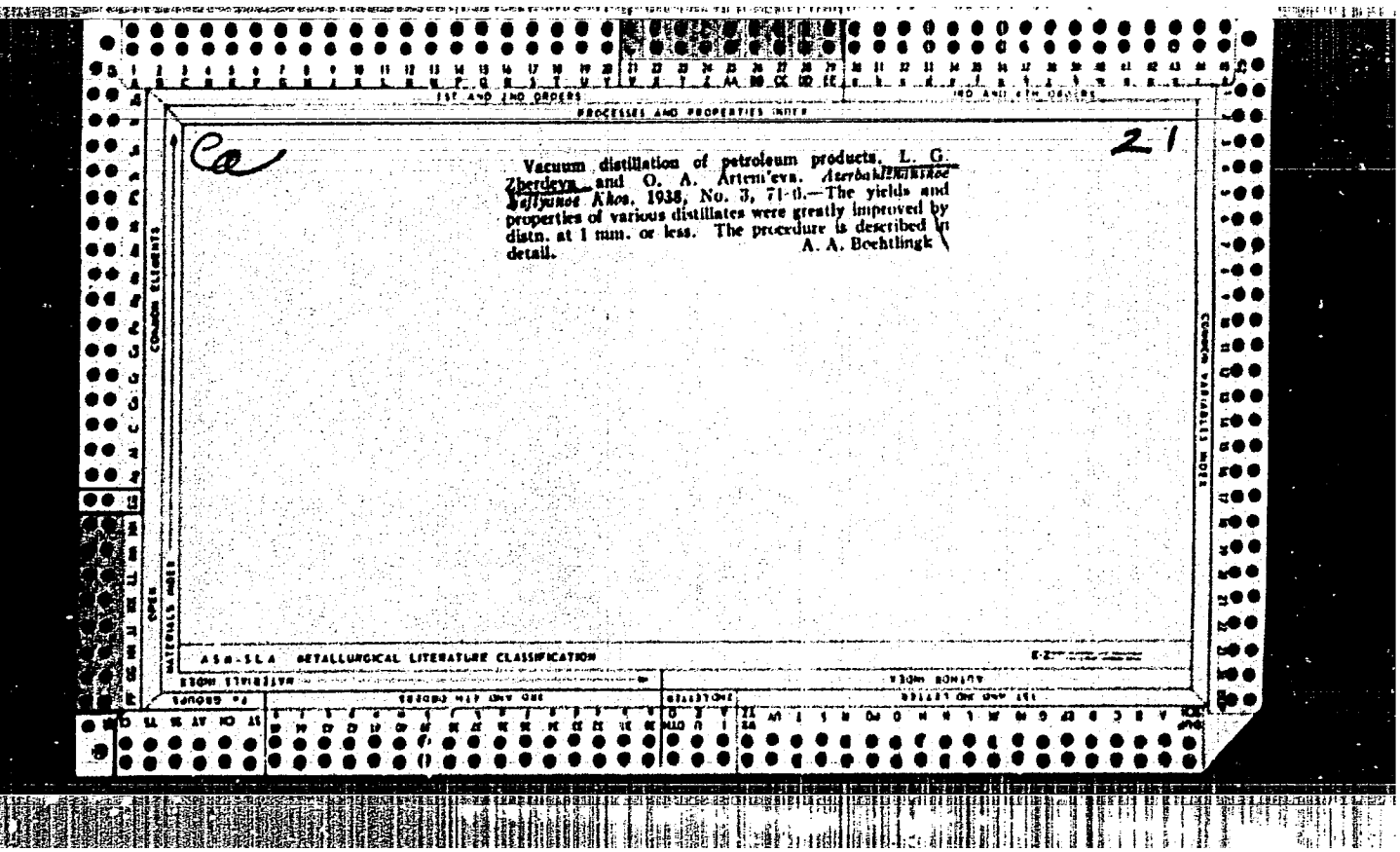

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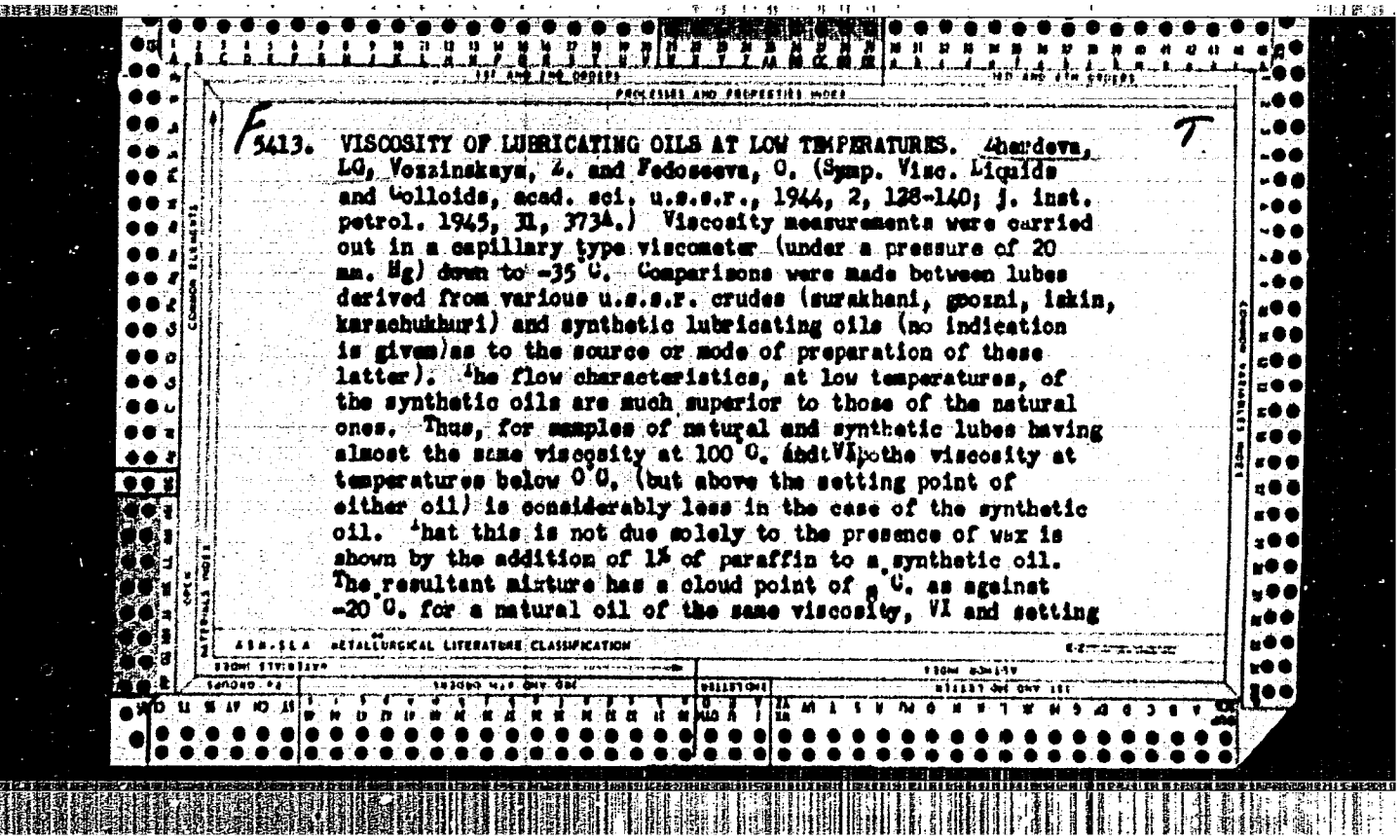
Vacuum distillation of petroleum products. L. G. Zberdeva and O. A. Artem'eva. *Azerbaidzhanskoe Neftyanoe Khoz.* 1938, No. 3, 71-6.—The yields and properties of various distillates were greatly improved by distn. at 1 mm. or less. The procedure is described in detail.

A. A. Boehtlingk



F 5413. VISCOSITY OF LUBRICATING OILS AT LOW TEMPERATURES. Aherdova, LG, Vozzinskaya, Z. and Fedoseeva, O. (Symp. Visc. Liquids and Colloids, acad. sci. u.s.s.r., 1944, 2, 128-140; j. inst. petrol. 1945, 31, 373A.) Viscosity measurements were carried out in a capillary type viscometer (under a pressure of 20 mm. Hg) down to -35° C. Comparisons were made between lubes derived from various u.s.s.r. crudes (surakhani, groznı, iskin, karachukhuri) and synthetic lubricating oils (no indication is given as to the source or mode of preparation of these latter). The flow characteristics, at low temperatures, of the synthetic oils are much superior to those of the natural ones. Thus, for samples of natural and synthetic lubes having almost the same viscosity at 100° C. and VI, the viscosity at temperatures below 0° C. (but above the setting point of either oil) is considerably less in the case of the synthetic oil. That this is not due solely to the presence of wax is shown by the addition of 1% of paraffin to a synthetic oil. The resultant mixture has a cloud point of 8° C. as against -20° C. for a natural oil of the same viscosity, VI and setting

point, yet, despite this, its viscosity at low temperatures (below 0 C.) is considerably less than that of the natural oil. Examination of data shows that an increase of 10-12 units in the VI for a synthetic oil has the result of having its viscosity at -30 C. Synthetic oils show a linear relationship between the logarithm of the viscosity and the temperature within the temperature range 0 to -35 C.; in the case of natural oils this relationship loses its linear character at about -15 C. The addition of 2% of paraffin to a synthetic oil causes a break at about this temperature. In the case of two oils with the same VI and viscosity at 100 C. that containing aromatic rings has the greater viscosity at negative temperatures. It is thus shown that, for oils of different origin, the VI, even if coupled with the setting point, gives no indication of the viscosity/temperature relation ships below about 0 C., and that the chemical nature of the oil components is the factor determining low temperature flow. The results are presented in tables and graphs.