They Write to Us

all generations, the development of the wool integument was disturbed. Taking into account that the deviations from the norm occured regularly in all four generations under experiment, the scientists concluded that some of them are hereditary. The investigations make it possible to find prophylactic measures against genetic effects of radiation sickness.

Card 2/2

VOINOV, A.G., inzhener; DOVZHENKO, V.G., inzhener.

Railroad platform cars with dump bodies for bulk material. Mekh.trud.rab. 7 no.9:45-46 S '53. (MLRA 6:9)
(Railroad--Freight cars)

DEGIL', G.S., inzh.; PANCHENKO, A.U., inzh.; TUROS, A.E., inzh.; SAPEL'NIKOV, K.N., inzh.; AVRUKH, V.Yu., inzh.; VOINOV, A.G., inzh.

Seals of water-cooled turbogenerators. Elek. sta. 34 no.5:72-79 My '63. (MIRA 16:7)

1. Glavnoye upravleniye energeticheskogo khozyaystva Donetskogo basseyna (for Degil', Panchenko, Turos). 2. Uralenergo (for Sapel'nikov).

(Turbogenerators)

1. VOINILOVICH, P. B.

2. USSR (600)

4. Science

7. Earth and the sun. Moskva, Goskul'tprosvetizdat, 1952.

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

VOINILOVICH, P. B.

Zemlia i solntse [Earth and the Sun]. Moskva, Gosud. [illegible]

SO: Monthly List of Russian Accessions, V-1 6 No 4, July 1953

1. VOINO-LASENETSKII, V. F., M. D.

2. USSR (600)

4. Callosities

7. Pathogenesis and therapy of corns, Sov. med. 17, no. 1, 1953.

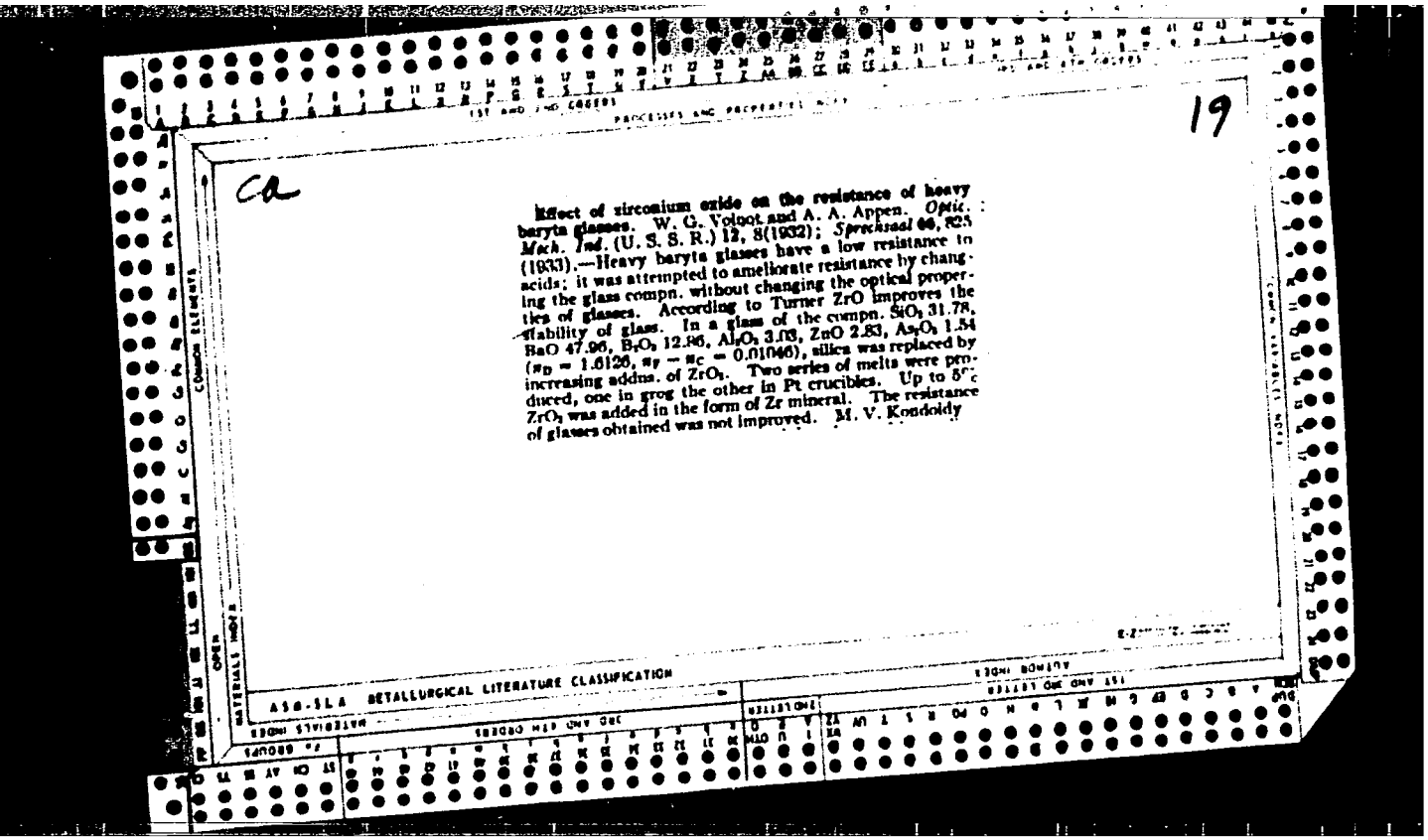
9. Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

VOINO-YASENETSKY, M.V.; VOINO-YASENETSKAYA, M.K.

Experimental pneumonia caused by bacteria of the Shigella group. Acta morph. acad. sci. hung. 11 no.4:439-454 '62.

1. Soviet Academy of Medicine (Laboratory for Infectious Pathology of the Pathological Department), Institute of Experimental Medicine, and Laboratory for Intestinal Infections of the "Pasteur" Research Institute, Leningrad.

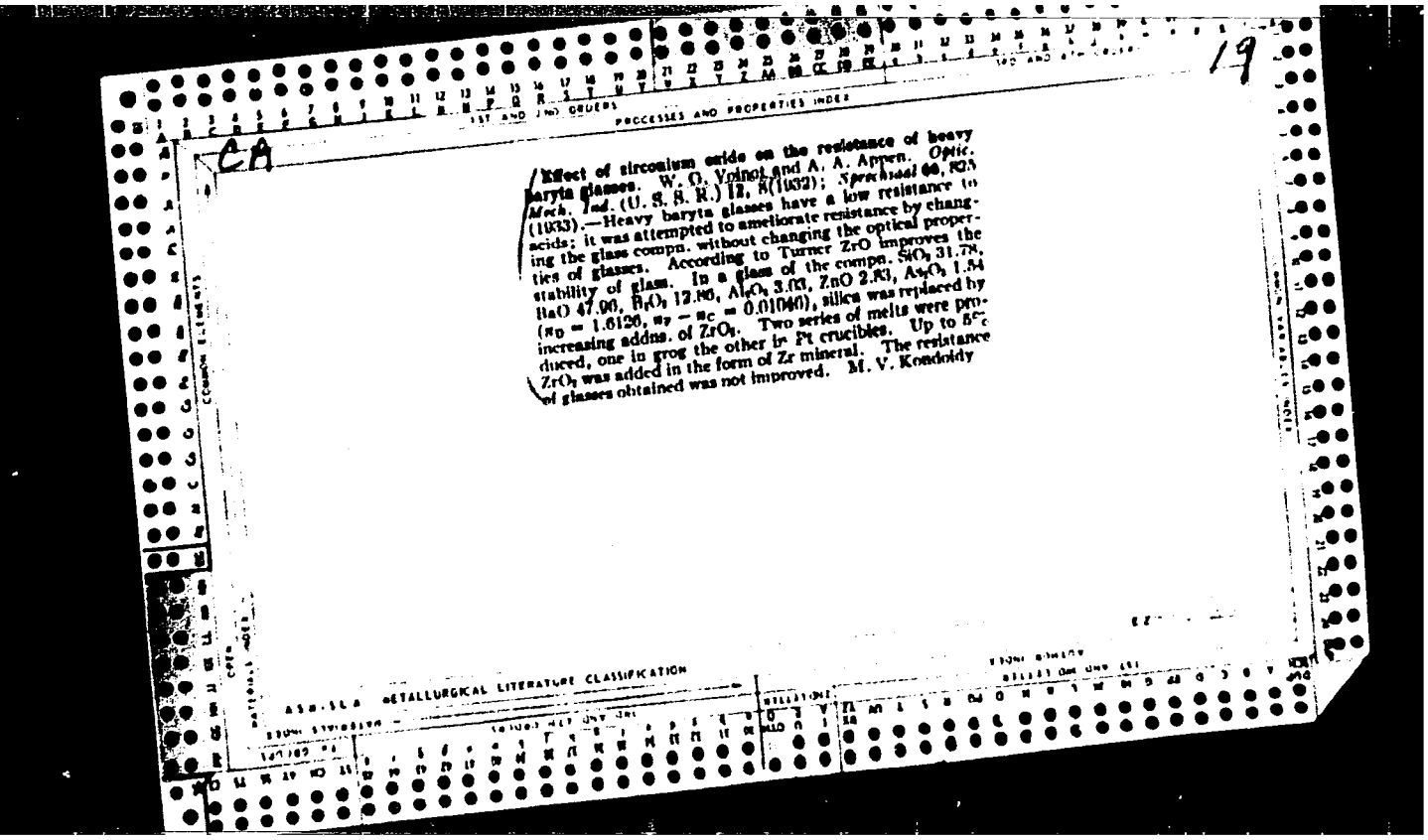
(SHIGELLA) (PNEUMONIA)



19

Ca

Effect of zirconium oxide on the resistance of heavy baryta glasses. W. G. Volpot and A. A. Appen. *Optic. Mech. Ind.* (U. S. S. R.) 12, 8(1932); *Spreckstal* 66, 825 (1933).—Heavy baryta glasses have a low resistance to acids; it was attempted to ameliorate resistance by changing the glass compn. without changing the optical properties of glasses. According to Turner ZrO improves the stability of glass. In a glass of the compn. SiO_2 31.78, BaO 47.96, B_2O_3 12.86, Al_2O_3 3.03, ZnO 2.83, As_2O_3 1.54 (n_D = 1.6126, $n_F - n_C$ = 0.01046), silica was replaced by increasing addns. of ZrO_2. Two series of melts were produced, one in grog the other in Pt crucibles. Up to 5% ZrO_2 was added in the form of Zr mineral. The resistance of glasses obtained was not improved. M. V. Kondoidy



CA

19

Effect of zirconium oxide on the resistance of heavy baryta glasses. W. O. Voinot and A. A. Appen. *Optic. Mech. Ind.* (U. S. S. R.) 12, 8(1932); *Spectroscopy* 60, 825 (1933).—Heavy baryta glasses have a low resistance to acids; it was attempted to ameliorate resistance by changing the glass compn. without changing the optical properties of glasses. According to Turner ZrO improves the stability of glass. In a glass of the compn. SiO_2 31.78, BaO 47.90, B_2O_3 12.80, Al_2O_3 3.03, ZnO 2.83, As_2O_3 1.54 (n_D = 1.6126, $n_F - n_C$ = 0.01040), silica was replaced by increasing addns. of ZrO_2. Two series of melts were produced, one in grog the other in Pt crucibles. Up to 5% ZrO_2 was added in the form of Zr mineral. The resistance of glasses obtained was not improved. M. V. Kondoidy

VOINOV, A.; SEMENOV, I.

International socialist division of labor in fuel power branches. (MIRA 13:12)
Vop. ekon. no.12:54-64 D '60.
(Communist countries--Power resources)
(Communist countries--Division of labor)

VOINOV, A., prof.; MADALINSKIY, G., inzh.; ZHIGAL'SKIY, A., inzh.

House with walls made of asbestos cement panels. Zhil. stroi. no.7:18-19 Jl '61. (MIRA 14:8)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Voinov).
(Asbestos cement) (Minsk--Apartment houses)

oxidation and, basically, act only on the development of the second stage of the pre-combustion process by shifting the boundary of the self-ignition of the hot combustion toward the side of higher temperatures and pressures. (b) Iron pentacarbonyl [$(FeCO_5)$ (hereinafter: IP)] and [$(C_8H_{16})_5Fe(CO)_5$]$_3$ (hereinafter: IIP) inhibit sharply the initial stages of the pre-combustion reaction, shift the boundary of the formation of the cold flame toward higher temperatures and pressures, and reduce it in size so that in rich mixtures there is no region of cold-flame oxidation at all. The entire character of the pre-combustion oxidation is altered: The hot-explosion region is shifted toward higher pressures and temperatures, with the minimums appearing in the temperature range of 760 to 800°K. (c) $C_{10}H_{16}N_2O_2Cu$ (hereinafter: III) appears to be comewhat intermediate between TE and IP, namely, it delays the beginning of the cold-flame oxidation, but to a smaller degree than IP, and gives the hot-detonation boundary a form that is similar to that afforded by IP (with a pressure minimum for rich mixtures); however, the detonation boundary lies much lower than with IP ahd, for lean mixtures, it may even be lower than for pure gasoline. Enrichment of the mixture with IP leaves the detonation boundary virtually unchanged, whereas with pure gasoline and all other additives it is displaced toward lower pressures. The peculiarities of a metal-organic antiknock additive are not determined by the presence in it of a specific metal. TE and FC contain different metals, but act almost identically on

L 18225-63
ACCESSION NR: AT3001862

the pre-ignition processes, whereas FC and carbonyl products of Fe (IP and IIP) act distinctly differently. It is concluded that the self-ignition tendency of a fuel-air mixture not only is not identical with its tendency toward detonation, but is not even single-valuedly related to it. Orig. art. has 6 figures.

ASSOCIATION: none

SUBMITTED:	00	DATE ACQ:	11Apr63	ENCL:	00
SUB CODE:	CH, PR, PH	NO REF SOV:	005	OTHER:	002

Card 3/3

VOINOV, A. M.

"The Economic Importance of the Development of Water Supply in the Chinese People's Republic."

dissertation defended for the degree of Candidate of Economy at the Inst. for Economy.

Defense of Dissertation (Jan-Jul 1957)
Sect. of Economy, Philosophy, and Jurisprudence
Vest. AN SSSR, 1957, v. 27, No. 12, pp. 126-128

VOINOV, A.M.

Water test model distribution of depth doses from the telecurie apparatus using radioactive cobalt. A.M. Voinov, G.E. Gulenko, B.M. Isaev, U.IA. Margulis. Vest. rent. i rad. no. 4:52-61 Jl-Ag '53.

VOINOV, A.M.; GULENKO,G.B.; ISAYEV, B.M.; MARGULIS, U.Ya.

[Distribution of deep-seated telecurietherapeutic doses due to radioactive cobalt in a water-filled phantom] Raspredelenie glubinnykh doz v vodnom fantome ot telekiuriustanovki, zariazhennoi radioaktivnym kobal'tom. Moskva, Medgiz, 1955. 9 p. (MIRA 11:4)
(COBALT--THERAPEUTIC USE)

VOINOV, Arkadiy Mikhaylovich, kand. ekonom. nauk; TARNOVSKIY, Oleg Ivanovich, kand. ekonom. nauk; TOVMOSYAN, M.Ye., red.; RAKITIN, I.T., tekhn. red.

[Toward a common aim with a united front; on the economic cooperation of socialist countries] Edinym frontom k edinoi tseli; ob ekonomicheskom sotrudnichestve sotsialisticheskikh stran. Moskva, Izd-vo "Znanie," 1961. 46 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.3, no.23/24) (MIRA 15:2)
(Communist countries—Foreign economic relations)

YAN TSZYAN'-BEY [Yang Chien-pei]; STARODUBROVSKAYA, V.N.; KONOVALOV, Ye.A.; GUAN' DA-TUN [Kuan Ta-t'ung]; OLEYNIK, I.P.; SEMENOVA, L.S.; KHE LI [He Li]; CHZHAN SY-TSYAN' [Chang SSU-ch'ien]; VOINOV, A.M.; SHIRYAYEV, S.L.; KURAKIN, V.A.; STUPOV, A.D., red.; KANEVSKAYA, T.M., red.; GERASIMOVA, Ye.S., tekhn.red.

[Economy of the Chinese People's Republic, 1949-1959] Ekonomika Kitaiskoi Narodnoi Respubliki, 1949-1959. Moskva, Gosplanizdat, 1959. 304 p. (MIRA 13:5)

1. Zaveduyushchiy sektorom ekonomiki stran narodnoy demokratii Instituta ekonomiki AN SSSR (for Stupov).
(China--Economic conditions)

Dec . 49

VOINOV A. N.

USSR/Physics - Combustion

"Influence of Chemical and Turbulent Factors on the Combustion Process Under Engine Conditions," A. S. Sokolik, A. N. Voinov, Yu. B. Sviridov, Inst of Chem Phys, Acad Sci USSR, 26 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 12

Attemps to eliminate errors of all previous investigations on subject and endeavors to conduct investigation of combustion speed at various stages of process under strictly constant physicochemical and dynamic conditions. Combustion process in an engine is not uniform and must be divided into three basic stages. Both factors, turbulent and physicochemical, affect every phase of combustion, but their mechanisms of affect are different. Therefore, different factors must be used for regulating speed in various stages of combustion. Submitted by Acad N. N. Semenov.

PA 157T81

Translation TABCON and Introduction W-13951 - 27 Sep 50

PA 164T56

VOINOV, A. N.

USSR/Physics - Combustion May 50
Engines, Internal Combustion

"New Apparatus for Investigating the Combustion Processes in Engines," A. N. Voinov

"Zhur Tekh Fiz" Vol XX, No 5, pp 607-618

Describes single-cycle engine used in tests, diesel head, fuel injector, automatic regulator, and "multislit" photo-recording apparatus, with photographs of detonating combustion, flame propagation, etc., obtained by it. Submitted 3 Jan 49.

164T56

Fuel Abstracts

Other Petroleum Products
N 11/185-2

4742. PHASES OF COMBUSTION IN AN ENGINE. Sokolik A.S. Voinov, A.K. and Sbiridov, Yu.B. (Izv. Akad. Nauk SSSR, Otdel. Tekh. Nauk (Bull. Acad. Sci. U.S.S.R. Sect. Tech. Sci.) Apr. 1952, 629-634). The authors' three phase theory (Fuel Abstr. June 1950, n.s.7, 5055) is defended against the criticism of Sergel (Fuel Abstr., July 1952, n.s.12, 663).

CA

24

Mechanism of the development of the detonation spin. A. N. Voinov. *Doklady Akad. Nauk S.S.S.R.* **73**, 125-8 (1950); cf. V. Addresses considerations in support of the theory that the spiral form of an explosive wave produced in a moving gaseous stream contained in a tube is the necessary consequence of the existence of annular layers of gas around the wall of the tube which are subject to different temps. and pressures; they take their origin from turbulence produced by friction against rough spots on the tube wall. It is in these layers nearest the wall that autoignition first occurs.
O. W. Willcox

1951

VOINOV, A. N.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Fuels and Carbonization Products

Phases of combustion in a motor. A. S. Sokolik, A. N. Voinov, and Yu. B. Zeldovich. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1953, 783–6; cf. *C.A.* 47, 8358c.—Termination of a polemical discussion on an earlier paper with clarification of various points in light of discussion by other contributors to this topic. G. M. Kosolapoff

9-21-54
LM

VOINOV, A. N. XXXX Doc Tech Sci -- (diss) XXX "Study of Detonation and Spontaneous Combustion Under Conditions of a Light-Fuel Engine." Mos, 1957. 18 pp 22 cm. (Academy of Sciences USSR, Inst of Physical Chemistry), 125 copies (KL, 26-57, 107)

AUTHOR VOINOV, A.N.

TITLE Investigation of the Ignition By a Heated Surface Under the Conditions Prevailing in an Engine.
(Issledovaniye vosplameneniya nagretoy poverkhnost'yu v usloviyakh dvigatelya - Russian).

20-6-20/50

PERIODICAL Doklady Akademii Nauk SSSR,1957, Vol 113, Nr 6, pp 1259-1262 (U.S.S.R.)

ABSTRACT In laboratory tests no interrelation is observed between the tendency of a fuel to detonate in engines (octane value) and its tendency to ignite by incandescence.But in practical operation an increase of the octane value renders both the detonation and also the ignition by incandescence more difficult. The paper under review indicates some possible explanations of this contradiction.In this context, the author of the paper determined those temperatures of a heated surface which are necessary for the ignition if the temperatures and the compression pressures are changed within wide limits. Two values of the temperature of a plate were determined at certain unchanged initial conditions, namely T_1 - the temperature at the beginning of a regular ignition in each experiment (cycle) - and T_2 - the temperature corresponding to the complete cessation of the ignition. The difference between these two temperatures normally does not exceed 10^0; the mean value of T_1 and T_2 was usually chosen as ignition temperature T_i. Then one of the parameters of the operating conditions was changed, and the new value of T_i was determined in the same way, etc.

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Investigation of the Ignition By a Heated Surface Under the Conditions Prevailing in an Engine. 20-6-20/59

A diagram illustrates the obtained changes of the ignition temperature in dependence on the compression temperature for different fuels at unchanged compression pressure P_c = 8.25 ata and at α = 1. At lower T_c (550° K) the ignition temperatures of the different fuels fluctuate only within the limits of 1150 - 1200°, but at growing T_c these differences increase strongly. A second diagram illustrates the dependence $T_i = F(P_c)$. In this context, P_c denotes the compression pressure. This dependence is sufficiently similar to the dependence $T_i = f(T_c)$. Additional details and the fundamental mechanisms of these phenomena are discussed. The influence of the processes, which take place before the ignition, on the ignition temperature of a heated surface is a specific regulating factor that permits the ignition by moderately heated surfaces only at the very end of the combustion. (3 reproductions).

ASSOCIATION Institute for Chemical Physics, Academy of Science of the U.S.S.R.
PRESENTED BY KONDRAT'YEV V.N., Member of the Academy
SUBMITTED 10.11.1956
AVAILABLE Library of Congress
Card 2/2

Voinov, A. N.

USSR/Physical Chemistry - Kinetics, Combustion, Explositions, Topochemistry, Catalysis.

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3865.

Author : A.N. Voinov.
Inst : Academy of Sciences of USSR.
Title : Kinetic Dependences at Ignition by Heated Surface under Conditions in Motors.

Orig Pub: Dokl. AN SSSR, 1957, 114, No 1, 135-138.

Abstract: Starting from the general Zel'dovich relations of the conditions of gas ignition by a heated surface, the following equation is derived in application to such an ignition in motors: $\frac{T(s)}{[T(s) - T(c)]^{-1}} [\nu \cdot p^n (c) \exp [F / RT(s) / \lambda E]]^{\frac{1}{2}} = \text{const}$, where T(s) and T(c) are the temperatures of the surface and at the compression end, p(c) is compression, ν is kinetic viscosity, λ is heat conductivity. E is equal to about 60 to 77 kcal per mole for a series of fuels - benzene, isooctane etc. The ob-

Card : 1/2

VOINOV, A. N.

"Spoke about Self-ignition of homogeneous mixtures"

report presented at the conference on Combustion and Formation of the Mixture in Diesel Engines, convened by the Motor Laboratory, Acad. Sci. USSR, Moscow 10-12 June 1958.
(Vest. Ak Nauk SSSR, 1958, No. 9, 115-117)

ANDREYEV, B.V.; ARTEM'YEV, S.P.; ARKHANGEL'SKIY, V.M; AFANAS'YEV, L.L.; BABKOV, V.F.; BRONSHTEYN, L.A.; BURKOV, M.S.; BURYANOV, V.A..; VARSHAVSKIY, I.L.; VELIKANOV, D.P.; VOINOV, A.N.; VYMBOV, D.N.; DORMIDONTOV, A.V.; D'YACHKOV, A.K.; YEFREMOV, V.V.; ZHABIN, V.M.; ZELENKOV, G.I.; KALABUKHOV, F.V.; KALISH, G.G.; KRAMARENKO, G.V.; KRASIKOV, S.M.; LAKHTIN, Yu.M.; MIKULIN, A.A.; ORLIN, A.S.; OSTROVSKIY, N.B.; OSTROVTSOV, A.N.; RUBETS, D.A.; STEPANOV, Yu.A.; STECHKIN, B.S.; KHACHATUROV, A.A.; KHOVAKH, M.S.; CHARNSKIY, A.D.; SHARAPOV, K.A.

Nikolai Romanovich Briling; obituary. Avt.transp. 39 no.4:57 Ap '61. (MIRA 14:5)

(Briling, Nikolai Romanovich, 1876-1961)

L 8734-65 AEDC(a)
ACCESSION NR: AP4041060 S/0195/64/005/003/0388/0398

AUTHOR: Voinov, A. N.; Skorodelov, D. I.; Sokolov, F. P.

TITLE: Relationship of the delay in ignition of hydrocarbon-air mixtures during adiabatic compression to temperature and pressure

SOURCE: Kinetika i kataliz, v. 5, no. 3, 1964, 388-398

TOPIC TAGS: ignition delay, hydrocarbon air mixture, adiabatic compression, ignition zone, cold flame zone, preignition process, hot flame formation, engine knock

ABSTRACT: The effect of the temperature and pressure of adiabatic compression on the duration of the delay in ignition of mixtures of 60% isooctane with 40% n-heptane in stoichiometric proportions with air was investigated at temperatures to 800C and pressures to 20 absolute atmospheres. Data was obtained on the apparatus shown in Fig. 1 which registered the changes in the times of a given intensity of illumination from a cold flame as received by the photocathode. The appearance

At low temperatures and pressures ignition proceeds in one stage, but in the

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ACCESSION NR: AP4041060

temperature range of about 375 to 525C a preignition process stage preceeds the cold flame. Fig. 2 summarizes the relationship between the delays (τ_1 = first delay period to maximum intensity of cold flame, τ_2 = second delay until the formation of hot flame, τ_x = total delay) and the compression temperature at different pressures. The ignition zone is to the left of the heavy lines; the limits of the cold flame zone are shown by the dotted lines. The 2-stage preignition process and zones in which the temperature coefficient is negative or zero are observed far in the depth of the ignition zone at pressures above 20 abs. atm. The form of the ignition zone boundary is associated with the character of the change of the duration of delays inside the zone. Plotting the total delays on P-T coordinates gives reverse-S shaped curves which are more pronounced at lower pressures. Curve I was drawn joining the maximums of τ_2 at different pressures; curve II joins the minimums of the total time lags τ_x, and III, the minimum of the delays τ_2, limiting the 2-stage ignition from the low temperature side. It was concluded that 3 successive competing reactions, each playing a leading role in determined temperature zones, take part in the development of the preignition process. One reaction precedes the cold flame, one develops after the cold flame ignition [illegible] temperature coefficient and the third is at higher temperatures and has high activation energy values. The top of the 2-stage

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ACCESSION NR: AP4041060

ignition is where the rate of the third reaction exceeds that of the second. Based on this work, the anomalous "knock" in gasoline engines at higher temperatures is explained by the longer delay in ignition with increasing temperature. Orig. art. has: 7 figures.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AN SSSR), Moskovskiy avtomobil'nodorozhnyy institut (Moscow Automobile Highway Institute)

SUBMITTED: 10Jul62 ENCL: 0

SUB CODE: OF, FP NO REF SOV: 004 OTHER: 003

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ACCESSION NR: AP4041060

ENCLOSURE: 01

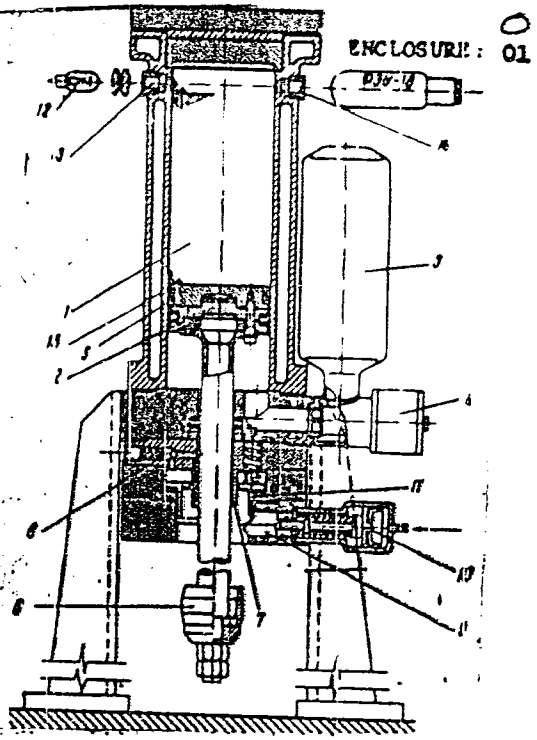

Fig. 1. Arrangement of adiabatic compression apparatus
1--vertical cylinder
2--piston
3--receiver
4--high speed electromagnetic valve
5--cast iron piston rings
6--steel housing
7--bushing
8--reducing valves (for lubrication)
9--steel bars
10--piston (compressed air)
11--expansion ring
12--lamp
13--quartz window
14--window to cathode photoamplifier
15--deflector

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ACCESSION NR: AP4041060

ENCLOSURE: 02

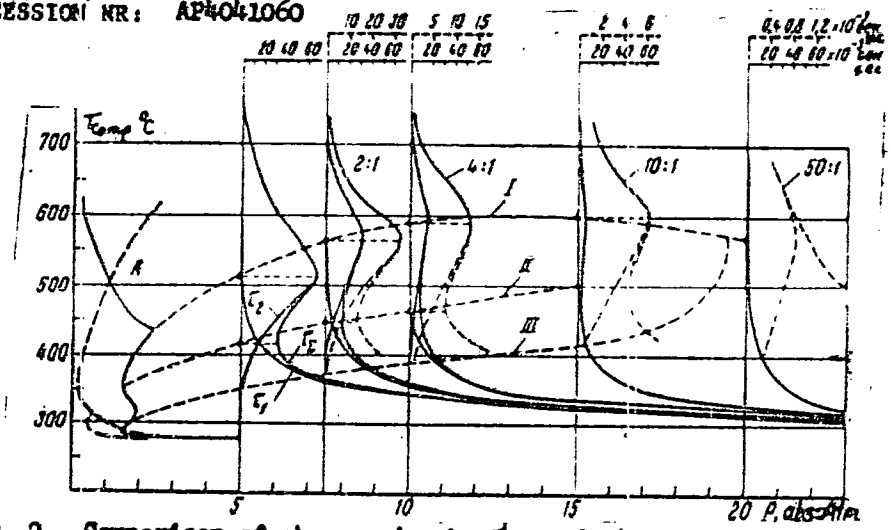

Fig. 2. Comparison of changes in τ_1, τ_2, and τ_E depending on T_{comp} at different P_{comp} with characteristic boundaries of the ignition zone.

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ACC NR: AP6019928 (A) SOURCE CODE: UR/0122/66/000/006/0038/0040

AUTHOR: Voinov, A. N. (Doctor of technical sciences, Professor); Rumyantsev, I. F. (Engineer); Nazarov, M. M. (Engineer); Nechayev, S. G. (Engineer)

ORG: None

TITLE: Gasoline engine rumble and preignition

SOURCE: Vestnik mashinostroyeniya, no. 6, 1966, 38-40

TOPIC TAGS: internal combustion engine, combustion instability, combustion chamber temperature, combustion pressure effect, carbon, oscillograph, GASOLINE ENGINE

ABSTRACT: Data are given from a study carried out at the Moscow Automobile and Highway Institute on the disturbance of combustion related to preignition caused by carbon. One cylinder of the GAZ-21 engine with variable compression was used for the test. A-95 gasoline was used with 1.1 gram of tetraethyl lead per kg of gasoline at 2000 rpm. Carbon formation was simulated artificially. Powdered carbon was introduced into the engine through the intake. The carbon particles had been graded for size. These were passed through a screen with square openings of 0.5, 0.3, 0.15 and 0.1 mm. Oscillograms were made for running cycles without carbon, during carbon injection and after the introduction of carbon. Three parameters were used in oscillogram analysis: maximum combustion pressure p_z, maximum pressure increase $dp/d\phi$ and angle of crankshaft deflection ϕ_z with respect to pressure p_z. A graph is given showing variation of these parameters with respect to the cycles resulting from the introduction of carbon parti-

Card 1/2 UDC: 621.434.019.4

cles. The results show that both particle size and amount affect rumble intensity. Both rumble and preignition increase as the concentration and size of the carbon particles are increased. 0.5 mm particles could not be used in the experiment since they caused improper exhaust valve seating. The following changes in parameters were observed as the quantity of carbon was increased: a significant increase in p_z and $dp/d\phi$; a reduction in ϕ_z; rumble intensity is finally retarded. Figures are given showing the effect of engine operation and other factors on rumble intensity. Increased compression and transition to full throttle increases preignition. It is assumed that this is due to additional flame fronts caused by glowing carbon particles. This phenomenon can be explained in the following manner for engines operating under ordinary conditions. As the engine is accelerated to full throttle, carbon particles break loose from the combustion chamber and piston walls as a result of increased turbulence in the air charge. These particles are then suspended inside the chamber and are heated to the combustion point causing preignition. This is the main cause of rumble. The results of this study agree with other studies on engines operating under normal conditions with normal carbon accumulation. Artificially induced rumble by means of carbon particle injection is an efficient way of saving valuable test time in evaluating the relative tendency of fuels toward this phenomenon. Orig. art. has: 7 figures.

SUB CODE: 21/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 005

Card 2/2 mlp

VOINOV, A.N., doktor tekhn. nauk; ANASHEV, M.D., doktor tekhn. nauk, retsenzent; VYRUBOV, D.N., doktor tekhn. nauk, red.

[Combustion processes in high-speed piston engines; fundamentals of the theory of combustion] Protsessy sgoraniia v bystrokhodnykh porshnevykh dvigateliakh; osnovy teorii goreniia. Moskva, Mashinostroenie, 1965. 211 p.
(MIRA 18:5)

L 03993-65 EWT(m)/EPF(c)/EWP(j)/T/EWA(c) RPL
WW/DS/WE/RM

AM5018097 BOOK EXPLOITATION UR/
621.432:541.126

Voinov, A. N. (Doctor of Technical Sciences)

Combustion processes in high-speed piston. Principles of combustion theory. (Protsessy sgoraniya v bystrokhodnykh porshnevykh dvigatelyakh osnovy teorii goreniya) Moscow, Izd-vo "Mashinostroyeniye", 1965. 211 p. illus., biblio. Errata slip inserted. 3200 copies printed.

TOPIC TAGS: piston engine, internal combustion engine, chemical process, self ignition, spark ignition, detonation, diffusion combustion, flame propagation, combustion process

PURPOSE AND COVERAGE: This book is intended for engineers working in the field of construction and testing of piston engines. The first part contains information on the modern theory of kinetics of chemical reactions and combustion, self-ignition, detonation, diffusion combustion, liquid droplet combustion, etc. Special attention is given to consideration of the simultaneous influence of physical and chemical factors on the ignition and combustion processes. The second part contains a description of complex phenomena in contem-

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L 03991-65

AM5018097

porary spark ignition and self-ignition engines. Examples illustrating the application of general theoretical assumptions to the analysis of combustion processes in engines are given.

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AM5018097

SUB CODE: FP SUBMITTED: 13Feb65 NO REF SOV: 055

OTHER: 016

Card 5/5

L 63993-65 EPA/EWT(m)/EPF(c)/EWP(f)/EWG(m)/EWI(m)/T/EWA(c)/ETC(m) RPL
WW/DS/WE RM

AM5018097 BOOK EXPLOITATION UR/

621.432:541.126

Voinov, A. N. (Doctor of Technical Sciences)

Combustion processes in high-speed piston. Principles of combustion theory. (Protsessy sgoraniya v bystrokhodnykh porshnevykh dvigatelyakh osnovy teorii goreniya) Moscow, Izd-vo "Mashinostroyeniye", 1965. 211 p. illus., biblio. Errata slip inserted. 3700 copies printed.

TOPIC TAGS: piston engine, internal combustion engine, chemical process, self ignition, spark ignition, detonation, diffusion combustion, flame propagation, combustion process

PURPOSE AND COVERAGE: This book is intended for engineers working in the field of construction and testing of piston engines. The first part contains information on the modern theory of kinetics of chemical reactions and combustion, self-ignition, detonation, diffusion combustion, liquid droplet combustion, etc. Special attention is given to consideration of the simultaneous influence of physical and chemical factors on the ignition and combustion processes. The second part contains a description of complex phenomena in contem-

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porary spark ignition and self-ignition engines. Examples illustrating the application of general theoretical assumptions to the analysis of combustion processes in engines are given.

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SUB CODE: FP SUBMITTED: 13Feb65 NO REF SOV: 055

OTHER: 016

Card 5/5

OLEYNIK, I.P., kand. ekon. nauk, nauchn. sotr.; VOINOV, A.M., nauchn. sotr.; SEMENOV, I.I., nauchn. sotr.; PLAKSIN, S.V., nauchn. sotr.; KACHALOV, I.P., nauchn. sotr.; SEMENOVA, L.S., nauchn. sotr.; STOROZHEV, I.V., nauchn. sotr.; GERTSOVICH, G.B., nauchn. sotr.; SERGEYEV, V.P., nauchn. sotr.; ALIKHODZHICH, A., nauchn. sotr.; LISOV, V.Ye., red.; NIKOLAYEV, D.N., red.; PONOMAREVA, A.A., tekhn. red.

[International socialist division of labor] Sotsialisticheskoe mezhdunarodnoe razdelenie truda. Pod red. I.P.Oleinika. Moskva, Izd-vo ekon. lit-ry, 1961. 350 p. (MIRA 14:11)

1. Akademiya nauk SSSR. Institut ekonomiki mirovoy sotsialisticheskoy sistemy. 2. Institut ekonomiki mirovoy sotsialisticheskoy sistemy AN SSSR (for all except Lisov, Nikolayev, Ponomareva).
(Communist countries—Division of labor)

41836

S/262/62/000/004/012/024
I014/I252

11.7600

AUTHOR: Voinov, A. N.

TITLE: Investigation of the compressive and incandescent-surface ignition of homogeneous fuel-air mixtures

PERIODICAL: Referativnyy zhurnal, Silovyye ustanovki, no. 4, 1962, 52, abstract 42.4.308 "Sgoraniye i smeseobrazovanie v dizelyakh" M., AN SSSR, 1960, 37-52

TEXT: The tendency to ignite by compression is in complex relationship with mixture composition, temperature and pressure. Stoichiometric mixtures ignite most easily at low compression temperatures (under low pressure), and very rich mixtures ($\alpha < 0,5$)—at high temperatures. Assuming ignition time to be constant throughout the compression process in the low temperature range, the tendency to ignite is mainly determined by temperature and depends only slightly on pressure; at high compression temperatures the situation is reversed. A necessary condition for bulk (explosive) self-ignition, accompanied by high-intensity shock waves, is the presence of a two-stage pre-inflammation process with a high-intensity cold flame and correspondingly short subsequent periods of delay. In the absence of a cold flame, or at low intensity, ignition is localized in character. In the case of simultaneous appearance of a large number of sites of localized self-ignition, formation of small-amplitude shock waves is also possible, producing low-tone knocking different from that charac-

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Investigation of the compressive...

teristic of explosive self-ignition. Explosive self-ignition is promoted by homogeneous temperature of the mixture, by high pressures, by relatively low compression temperatures and by poor heat withdrawal from the reacting mixture. By contrast, in the case of high temperatures or of heat withdrawal during expansion, ignition is localized even in fuels with a strong tendency for detonation. Explosive self-ignition never sets in either near incandescent surfaces or near a flame front spreading out from a spark or from sites of localized ignition. Temperatures of incandescent-surface ignition decrease sharply when pre-inflammation exothermic reactions, due to compressive heating, set in in the surrounding mixture. Admixtures preventing or promoting detonation affect the temperature of incandescent-surface ignition in the same manner as they do the development of pre-inflammation processes in a mixture heated by compression; the higher the compression temperature and pressure, the stronger the influence. There are 9 figures and 6 references.

[Abstracter's note: Complete translation.]

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29442
S/081/61/000/017/139/166
B117/B102

11.7100

AUTHOR: Voinov, A. N.

TITLE: Study of the inflammation of homogeneous fuel-air mixtures by compression and by an incandescent surface

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1961, 469 - 470, abstract 17H198 (Sb. "Sgoraniye i smeseobrazovaniye v dizelyakh". M., AN SSSR, 1960, 37 - 52)

TEXT: The effects of temperature, pressure, and of the composition of the operating mixture on the inflammation of homogeneous mixtures of hydrocarbons with different structures and of sulfuric ether by compression and by an incandescent surface have been studied on an installation for separate operations. The inflammation and combustion processes were recorded by means of a piezoelectric pickup with a cathode-ray oscilloscope and a multislit recorder. It has been shown that mixtures of stoichiometric structure are inflamed at low temperatures and maximum pressures, while saturated mixtures ($\alpha < 0.5$) are inflamed at high temperatures and pressures. The tendency to inflammation in the low-temperature range is

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Study of the inflammation of...

determined chiefly by the temperature and depends only slightly on the pressure. At high temperatures, inflammation is determined chiefly by the pressure and depends only slightly on the temperature. If a two-stage process takes place before inflammation with a cool flame of high intensity, spontaneous bulk inflammation, accompanied by the development of strong shock waves, will take place. It is promoted by the uniformly heated mixture, high pressure, relatively low temperatures, and weak heat withdrawal from the reacting mixture. If there is no cool flame or if there is a cool flame of low intensity, inflammation will exhibit a point character. This is promoted by high temperatures and by heat withdrawal due to extension. Spontaneous bulk inflammation occurs neither in the vicinity of an incandescent surface nor in that of a flame front propagating from a spark or from point foci. The temperature of inflammation from an incandescent surface is largely reduced by the development of exothermic reactions prior to inflammation, which are caused by heating due to compression. [Abstracter's note: Complete translation.]

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8466?

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B004/B056

11.7200

AUTHOR: Voinov, A. N.

TITLE: The Thecry of Turbulent Burning

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 1, pp. 117-120

TEXT: The author discusses the "frontal model" of the turbulent flame, according to which the flame front cannot be destroyed (Fig. 1). This assumption holds, according to his opinion, only as long as the volume of the combustion products is large compared with the combustion zone, so that under all circumstances the complete combustion and the attaining of the adiabatic flame temperature is secured. If, however, a tongue-shaped propagation of the flame occurs, or if separate moles of combustion products are formed which are surrounded by a fresh gas mixture, the temperature of the combustion product may be reduced, which leads to the extinction of the flame. The conditions of this effect are investigated on the basis of the experimental data of J. Longwell et al. (Ref. 6).

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The Theory of Turbulent Burning

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The mole of the combustion products is assumed to be a cylinder with a basis of 1 cm^2, and a height of 0.25 cm. The fresh gas (isooctane and air in a ratio of 1 : 1.43) enters through the basal surfaces and leaves through the lateral surfaces (Fig. 2). Extinction takes place already in the case of an entering rate of the fresh gas of V_0 = 0.8 m/sec, which is only 1.8 times higher than the laminar propagation rate U_{lam} of the flame. The equation for the propagation velocity U_{turb} of the turbulent flame, which is mentioned in Ref. 9, is discussed: $U_{turb} = a\overline{U'} + b$ (1). ($\overline{U'}$ = root mean square of propagation velocity $b \cong U_{lam}$). The ratio $U'_{max}/\overline{U'}$ is given as being equal to 3.5 - 4 (Ref. 10) in the case of turbulence in tubes, and in the case of turbulizing grids as being equal to 6 (Ref. 11), so that, in agreement with the experiments, considerable deviations from $\overline{U'}$ occur. In contrast to U_{lam}, U_{turb} is a much more complex function of the mean reaction rate $\overline{W_r}$ and, besides, depends on the intensity and velocity of the pulsations. Herefrom there follows a simple explanation of the stabilization of the flame by means of pilot flames behind non-streamlined bodies. The narrowing of the region of the extinction

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The Theory of Turbulent Burning

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of the combustion on stabilizers, before which fine networks are arranged, is explained by the greater probability of the extinction of moles with relatively small dimensions. The author mentions Ya. B. Zel'dovich and K. I. Shchelkin. There are 2 figures and 14 references: 6 Soviet, 2 US, 2 British, and 1 German.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

PRESENTED: June 6, 1960 by V. N. Kondrat'yev, Academician

SUBMITTED: May 31, 1960

STECHKIN, B.S., akademik, glavnyy red.; SVIRIDOV, Yu.B., zam.otv.red.; APASHEV, M.D., red.; BRILING, N.R., red.; VASIL'YEV, B.N., red.; VOINOV, A.N., red.; ZAGRYAZKIN, N.N., red.; GORSHKOV, G.B., red.izd-va; MAKAGONOVA, I.A., tekhn.red.

[Combustion and carburetion in diesel engines; proceedings of the scientific and technical conference organized by the Engines Laboratory in June 1958] Sgoranie i smesseobrazovanie v dizeliakh; trudy nauchno-tekhnicheskoi konferentsii, provedennoi v iiune 1958 g. Laboratoriei dvigatelei. Moskva, 1960. 238 p.
(MIRA 14:2)

1. Akademiya nauk SSSR. Laboratoriya dvigateley. 2. Chlen-korrespondent AN SSSR (for Briling). 3. Laboratoriya dvigateley Akademii nauk SSSR (for all, except Gorshkov, Makagonova).
(Diesel engines)

VOINOV, A.N.

Contribution to the theory of turbulent burning. Dokl. AN SSSR 135 no.1:117-120 N '60. (MIRA 13:11)

1. Institut khimicheskoy fiziki AN SSSR. Predstavleno akademikom V.N. Kondrat'yevym.

(Combustion)

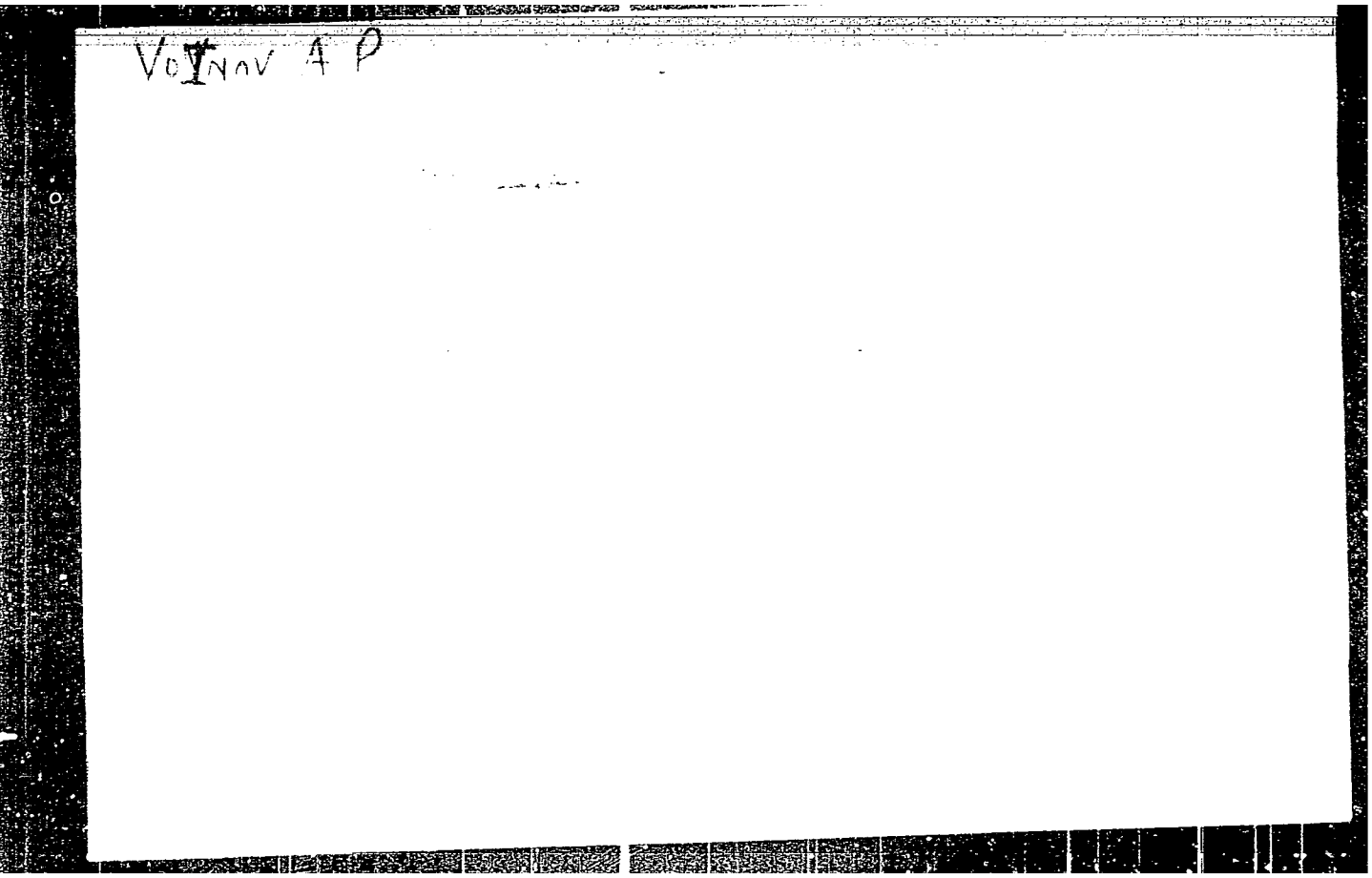
BELYAYEV, S.V.; arkhitektor; VOINOV, A.P., prof., nauchnyy rukovoditel'

History of the utilization of plastic materials in construction and architecture. Sbor.nauch.trud.Bel.politekh.inst. no.81: 61-79 '59. (MIRA 13:5)
(Plastics)

VOINOV, A.P., kand.tekhn.nauk, dotsent

Problems concerning the automation of pneumatic cleaning operation of the heating surfaces of boilers. Izv. vys. ucheb. zav.; energ. 5 no.6:93-97 Je '62. (MIRA 15:6)

1. Odesskiy politekhnicheskiy institut. Predstavlena kafedroy parovykh kotlov i kotel'nykh ustanovok.
(Boilers--Cleaning)



VOINOV, A.P., prof.

White-Russian architecture and architectural engineering at the 40th anniversary of the great October revolution. Sbor.nauch.trud.Bel. politekh.inst. no.66:72-90 '57. (MIRA 16:9)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR. Zaveduyushchiy kadfedroy arkhitektury Belorusskogo politekhnicheskogo instituta imeni Stalina.

VOINOV, A.P., professor; ZYSMAN, A.I., dotsent; KULIN, V.I.; BELYAYEV, S.V., arkhitektor; BELSHCHIK, N.P., inzh.; VOINOV, V.A.

New designs of precast apartment houses built of spatial elements. Sbor.nauch.trud.Bel.politekh.inst. no.81:15-60 '59. (MIRA 13:5)

(White Russia--Apartment houses)
(Precast concrete construction)

MAKLETSOVA, N.N.; BELOGORTSEV, I.D.; VARAKSIN, V.N.; YELISEYEV, I.K.; ZYSMAN, A.I.; VOINOV, A.P., prof., retsenzent; CHECHKO, E.I., red.; KUZ'MENOK, P.T., tekhn.red.

[Principles of designing apartment houses] Osnovy proektirovaniia zhilykh zdanii. Minsk, Red.-izdat.otdel Belorusskogo politekhn. in-ta im. I.V.Stalina, 1960. 194 p. (MIRA 13:8)

1. Minsk. Belorusskiy politekhnicheskiy institut. 2. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR i chlen-korrespondent Akademii nauk BSSR (for Voinov).
(Apartment houses)
(Architecture--Designs and plans)

VOINOV, A.P.

Rapid method of withdrawing gas samples for analysis. Gaz. prom. no.4:48 Ap '58. (MIRA 11:4)
(Gases—Analysis)

BOGDANOV, Yu.B.; VOINOV, A.S.; SUKHANOV, V.A.; KHARITONOV, L.Ya.

Structural relations between the Karelian and the Belomorsk formations in the Kem' region of eastern Karelia. Dokl. AN SSSR 156 no. 3:550-553 '64. (MIRA 17:5)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova. Predstavleno akademikom D.V.Nalivkinym.

BOGDANOV, Yu.B.; VOINOV, A.S.

New data on the Proterozoic stratigraphy in northern Karelia. Vest. LGU no.24:5-16 '62. (MIRA 16:2)
(Karelia—Geology, Stratigraphic)

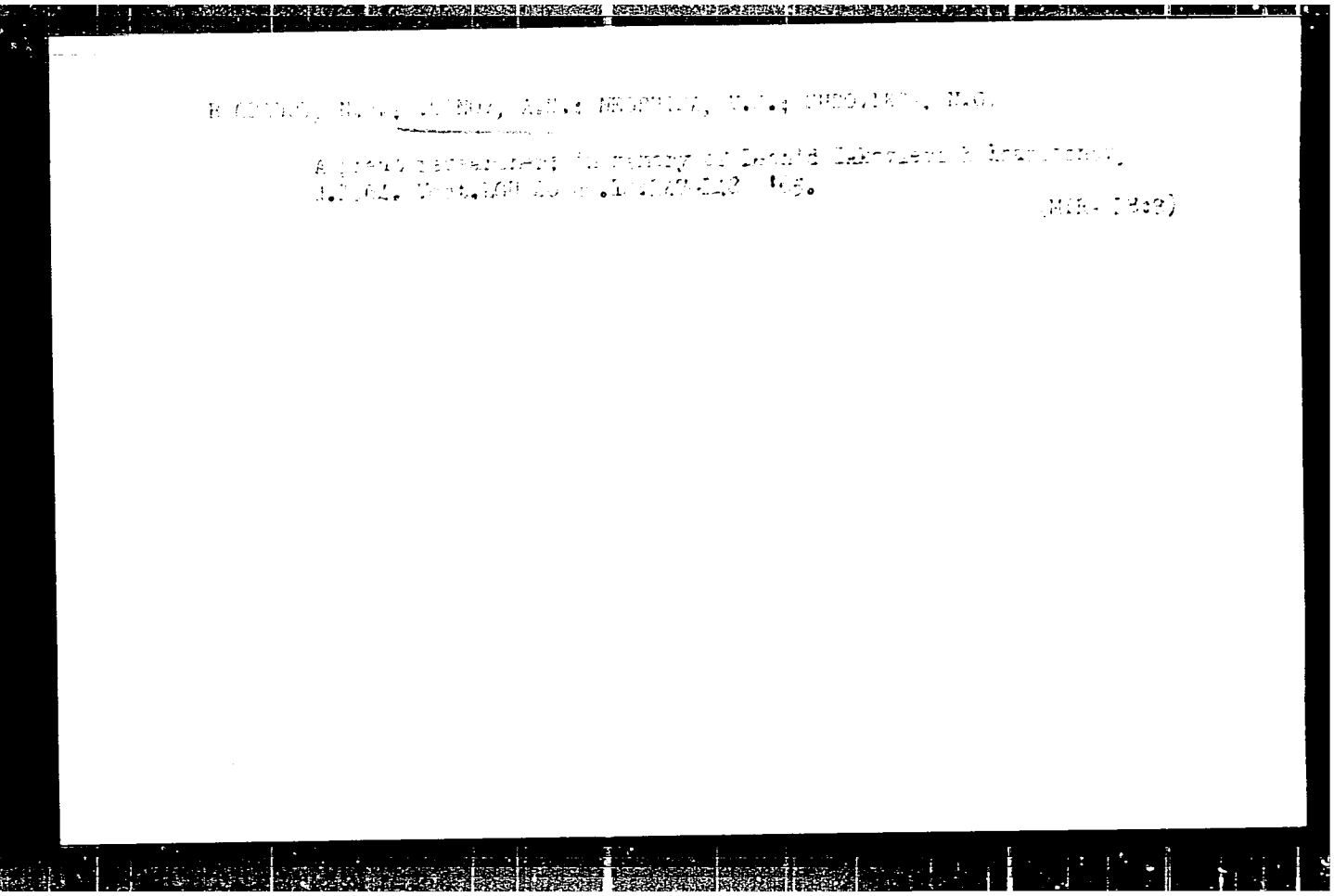
VOINOV, A.S.

Genesis of Proterozoic albitites in northern Karelia. Vest. LGU 18 no.12:18-31 '63. (MIRA 16:8)
(Karelia—Albitite)

VOINOV, A. V.

BOGOLYUBOV, Sergey Konstantinovich; BRITKIN, A.S., professor, retsenzent; VOINOV, A.V., inzhener, redaktor; POPOVA, S.M., tekhnicheskiy redaktor; TIKHONOV, A.Ya., tekhnicheskiy redaktor

[Problem book on mechanical drawing] Zadachnik po cherocheniiu. Izd. 3-e, ispr. i dop. Moskva, Ges. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 264 p. (MLRA 10:4)
(Machinery--Drawing)



BOGDANOV, Yu.B.; [illegible], A.S.

Proterozoic conglomerates in northern [illegible]. Izv. vys. ucheb. zav.; geol. i razv. 7 no.6:25-35 Je '64 (MIRA 18:7)

1. Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova.

~~VIP~~ Voinov, A.V.

VIL'YAMS, D.A.; DOLMATOVSKIY, Yu.A., inzhener, retsenzent; PETUKHOV, P.D. inzhener, retsenzent; VOINOV, A.V., redaktor; POPOVA, S.M., tekhnicheskiy redaktor; MODEL', B.I., tekhnicheskiy redaktor.

[Constructing curvilinear surfaces; a collection of drawings] Postroenie krivolineinykh poverkhnostei; al'bom chertezhei. (K al'bomu chertezhei prilagaetsia tekstovaia chast' otdel'noi knigoi] Moskva. Gos.nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1951. 95 p.(Chiefly illus.) (MLRA 8:11)
(Automobiles--Design and construction)

BOGOLYUBOV, Sergey Konstantinovich; VOINOV, Aleksandr Vasil'yevich; OSADCHENKO, V.A., inzh., retsenzent; IVANOV, Yu.B., kand. tekhn. nauk, red.; BYSTRITSKAYA, V.V., red. izd-va; UVAROVA, A.F., tekhn. red.

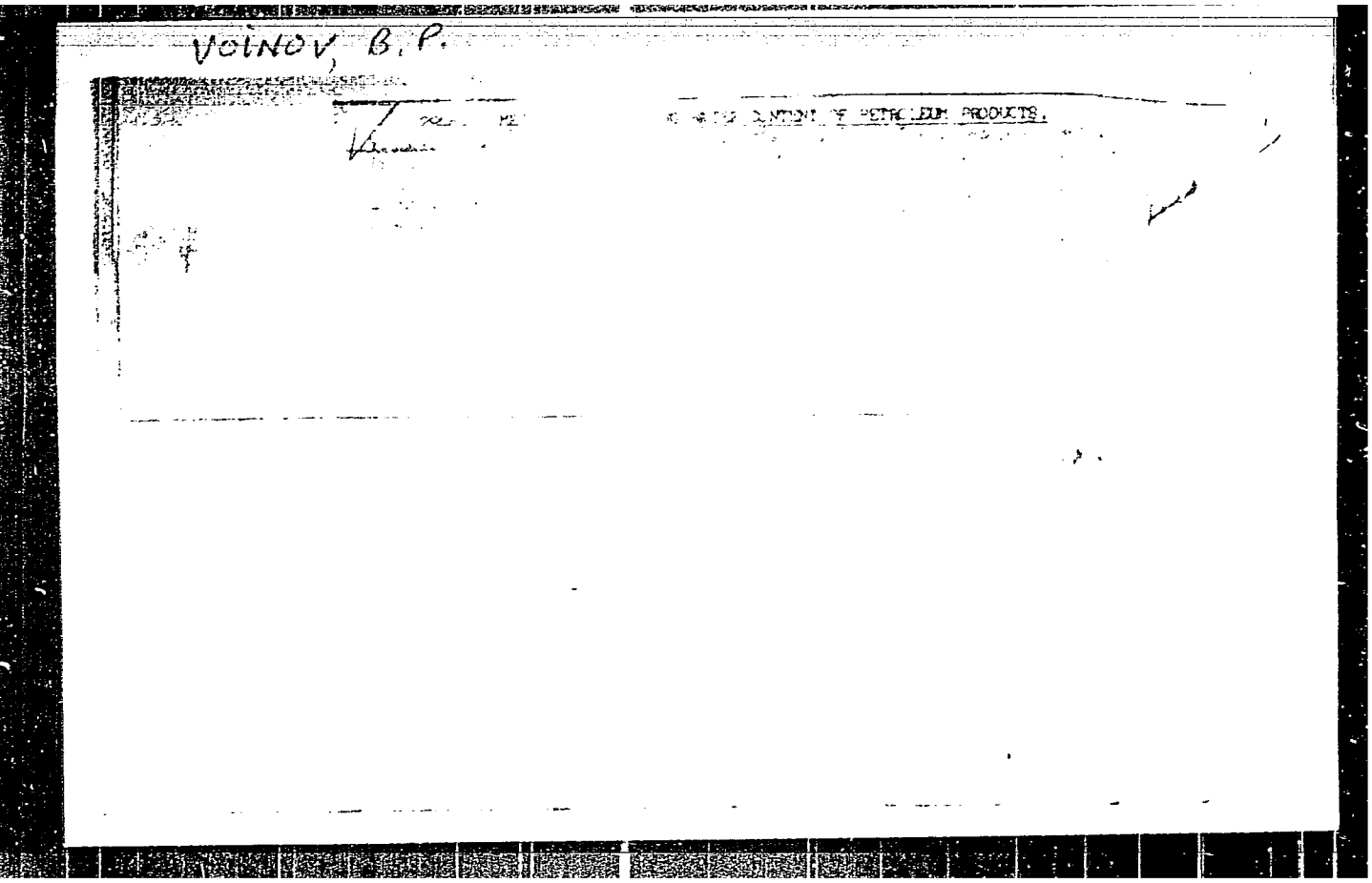
[Course in technical drawing] Kurs tekhnicheskogo chercheniia. Moskva, Mashgiz, 1962. 358 p. (MIRA 15:6)
(Mechanical drawing)

MERKULOV, N. (g.Gor'kiy); RYS', A.; VYAL'YATAGA, Yu. [Valjataga, J.] (Tallin); FROLOV, V.; SAFONOV, V.; KOLESNIK, V.; KALININ, V.; ROGOV, A. (g.Gorodets Gor'kovskoy obl.); VOINOV, B. (g.Saratov)

From the editors' mail. Sots.trud 7 no.7:141-144 Jl '62. (MIRA 15:8)

1. Glavnyy inzh. normativno-issledovatel'skoy laboratorii Glavnogo upravleniya mestnoy promyshlennosti pri Sovete Ministrov Belorusskoy SSR (for Rys'). 2. Yuriskonsul't yuridicheskoy konsul'tatsii Ivanovskogo oblastnogo soveta professional'nykh soyuzov (for Frolov). 3. Zamestitel' nachal'nika otdela truda zavoda "Krasnoye Sormovo" (for Safonov). 4. Nachal'nik otdela truda Gosudarstvennogo tresta po vyrashchivaniyu sakharnoy svekly Krasnodarskogo sovnarkhoza (for Kolesnik). 5. Nachal'nik otdela truda i zarabotnoy platy tresta "Astrakhanpromstroy" (for Kalinin).

(Steel industry--Quality control)
(Production standards--Research)
(Wages)



VOINOV, B. S.,

"Miniature Wide--band Tank Circuit," Semiconductor Devices and Their Uses; Collection of Articles, No. 2, p 386, Moscow, Izd-vo, "Sovetskoye radio," 1957.

VOINOV, B. S., Cand. Phys-Math. Sci. (diss) "Investigation of Broad-Band Non-Contact Fluctuating Systems with Non-Heterogeneous Spectrum Lines and Their Use in Radio-Measuring Apparatus." Khar'kov, 1961, 9 pp. (Khar'kov State Univ.) 175 copies (KL Supp 12-61, 250).

VOINOV, B.S.

Miniature broadband oscillatory circuit. Poluprov. prib. i ikh. prim. no.2:386-392 '57. (MIRA 11:6)
(Radio circuits) (Transistors)

H-33

Country : Rumania
Category :

48124

Abs. Jour. :

Author : Voinov, C.
Institut. :
Title : Increasing the Output Capacity by Modernization of the Available Paper-Making Machines (Rumanian People's Republic).
Orig Pub. : Celuloza si hirtie, 1958, 7, No 9, 375-383

Abstract : The possibilities are considered of modernizing individual units.

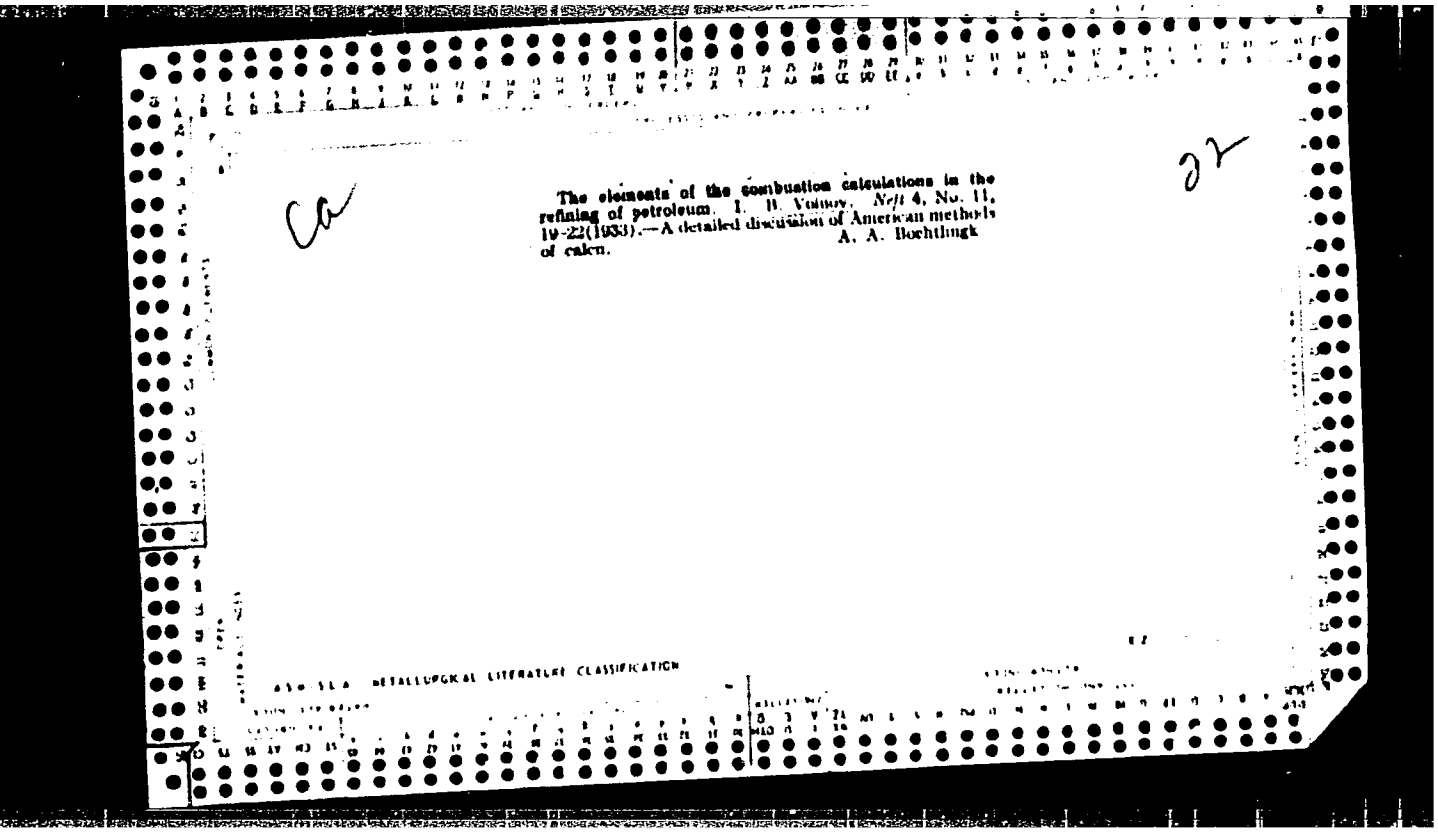
According to author's summary.

VOINOV, I.

VOINOV, I.

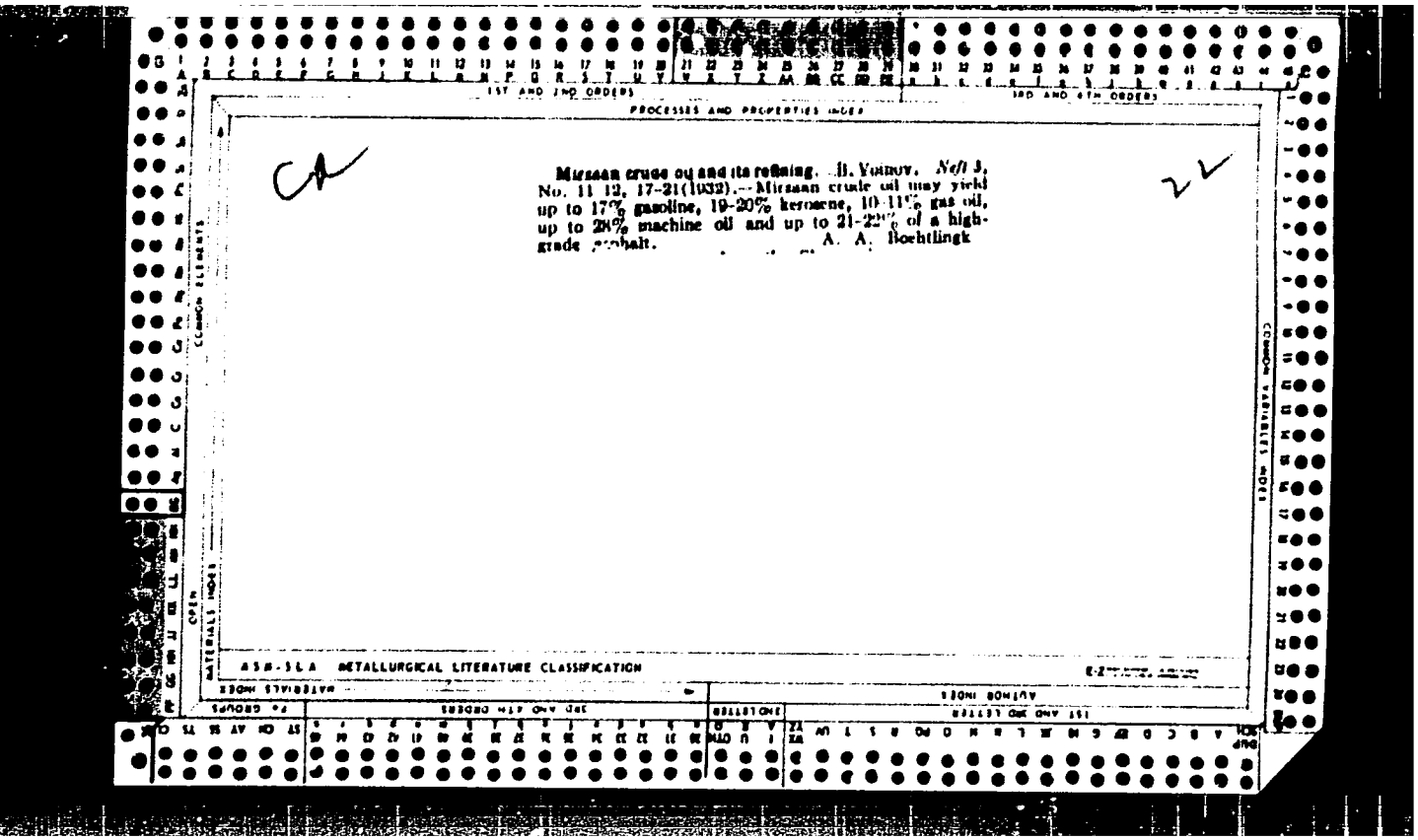
Standard accounting without the use of standard charts. (MLRA 10:7)
Bukhg.uchet 14 no.6:33-37 Je '57.

1. Glavnyy bukhgalter Glavuglemasha, Moskva.
(Costs, Industrial) (Machinery industry--Accounting)

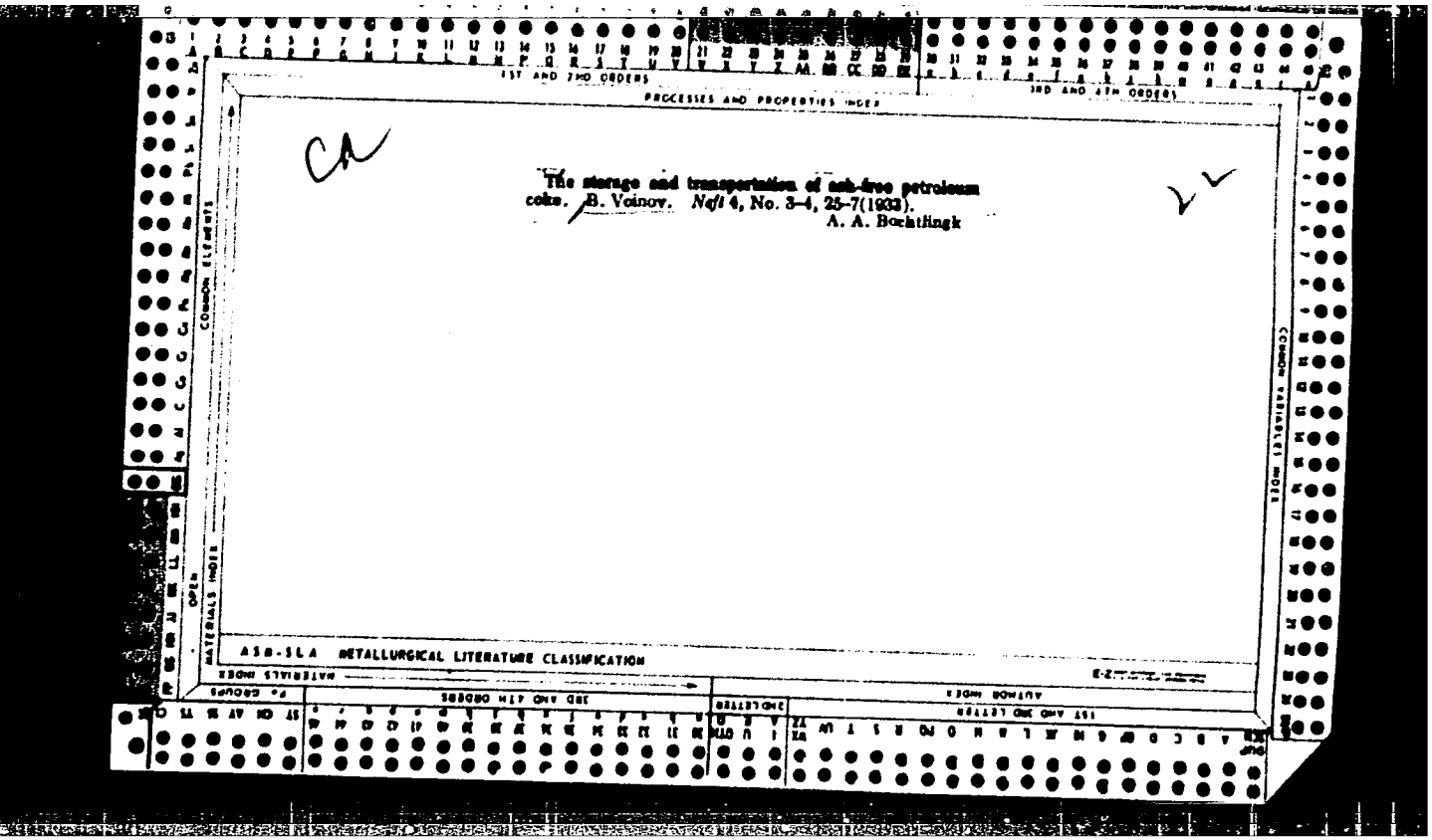


The elements of the combustion calculations in the refining of petroleum. I. II. Voinov. *Neft* 4, No. 11, 19-22(1933).—A detailed discussion of American methods of calcn.
A. A. Boehtlingk

A S & T A METALLURGICAL LITERATURE CLASSIFICATION

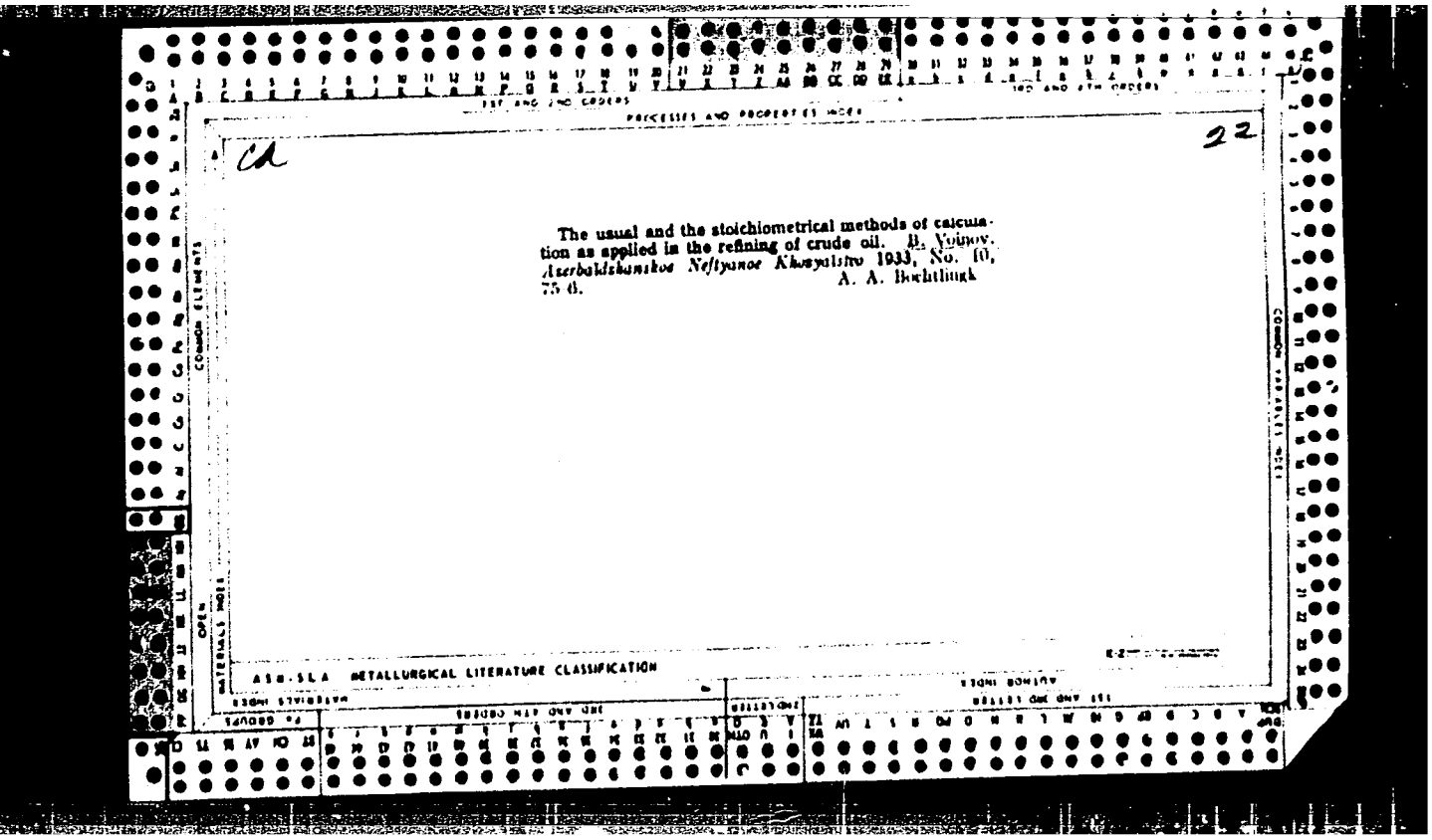


Mirzaan crude oil and its refining. B. Yunov. *Neft* 3, No. 11 12, 17-21(1932).—Mirzaan crude oil may yield up to 17% gasoline, 19-20% kerosene, 10-11% gas oil, up to 28% machine oil and up to 21-22% of a high-grade asphalt. A. A. Boehtlingk



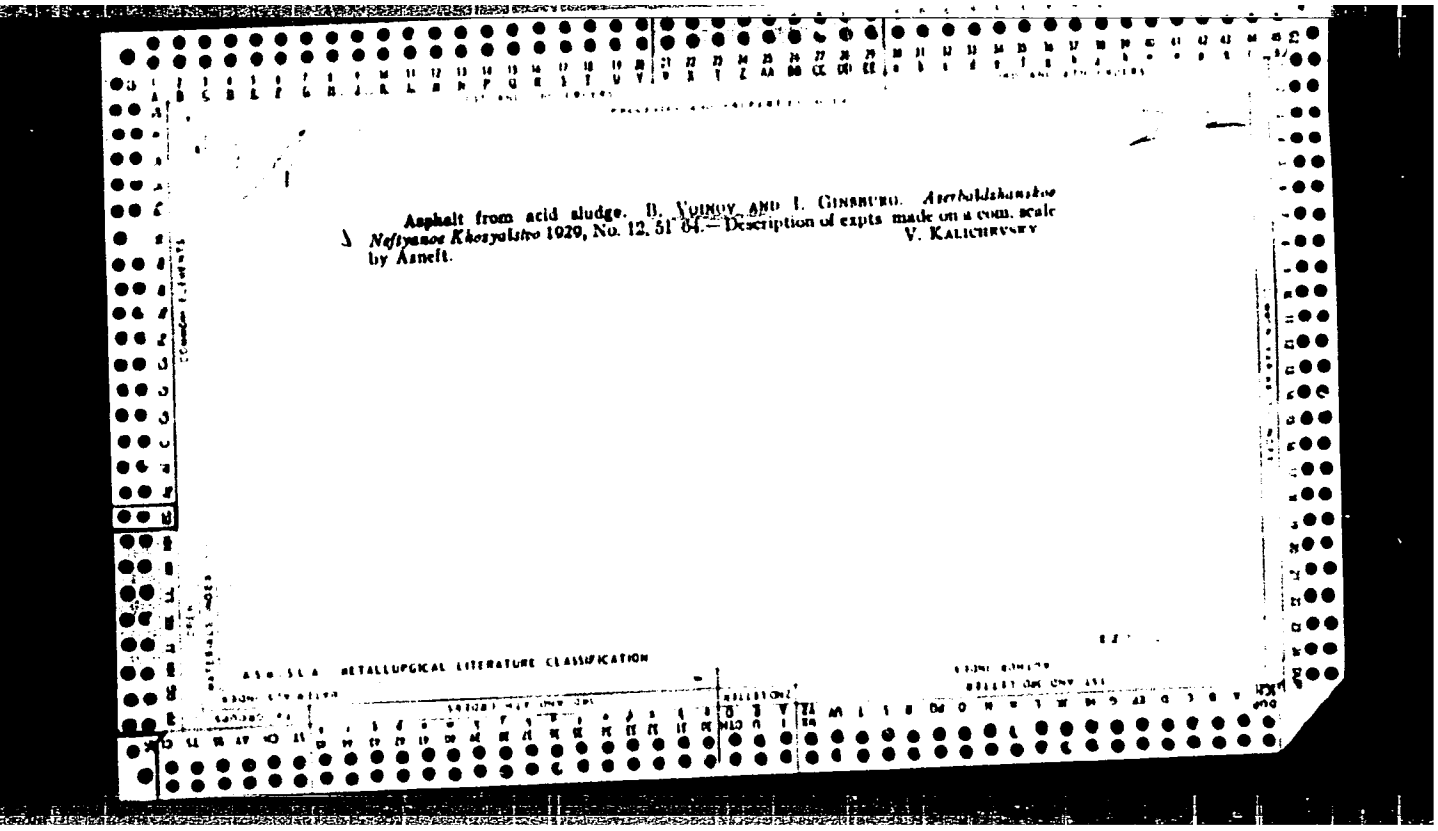
The storage and transportation of ash-free petroleum coke. B. Voinov. *Neft* 4, No. 3–4, 25–7(1933).
A. A. Berkhingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



The usual and the stoichiometrical methods of calculation as applied in the refining of crude oil. B. Yoinov. *Azerbaidzhanskoe Neftyanoe Khozyaistvo* 1933, No. 10, 75 d.

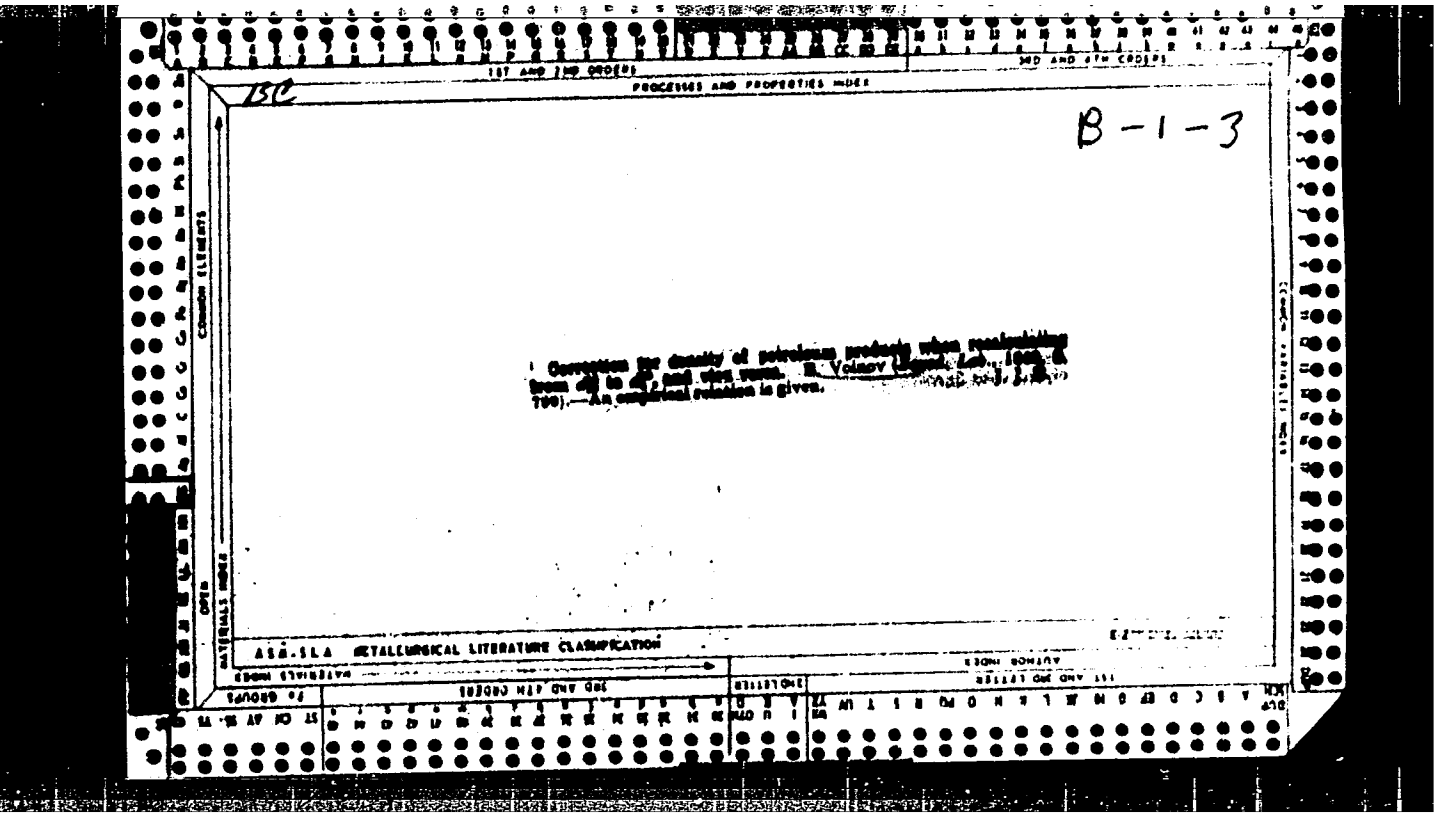
A. A. Boehthingk

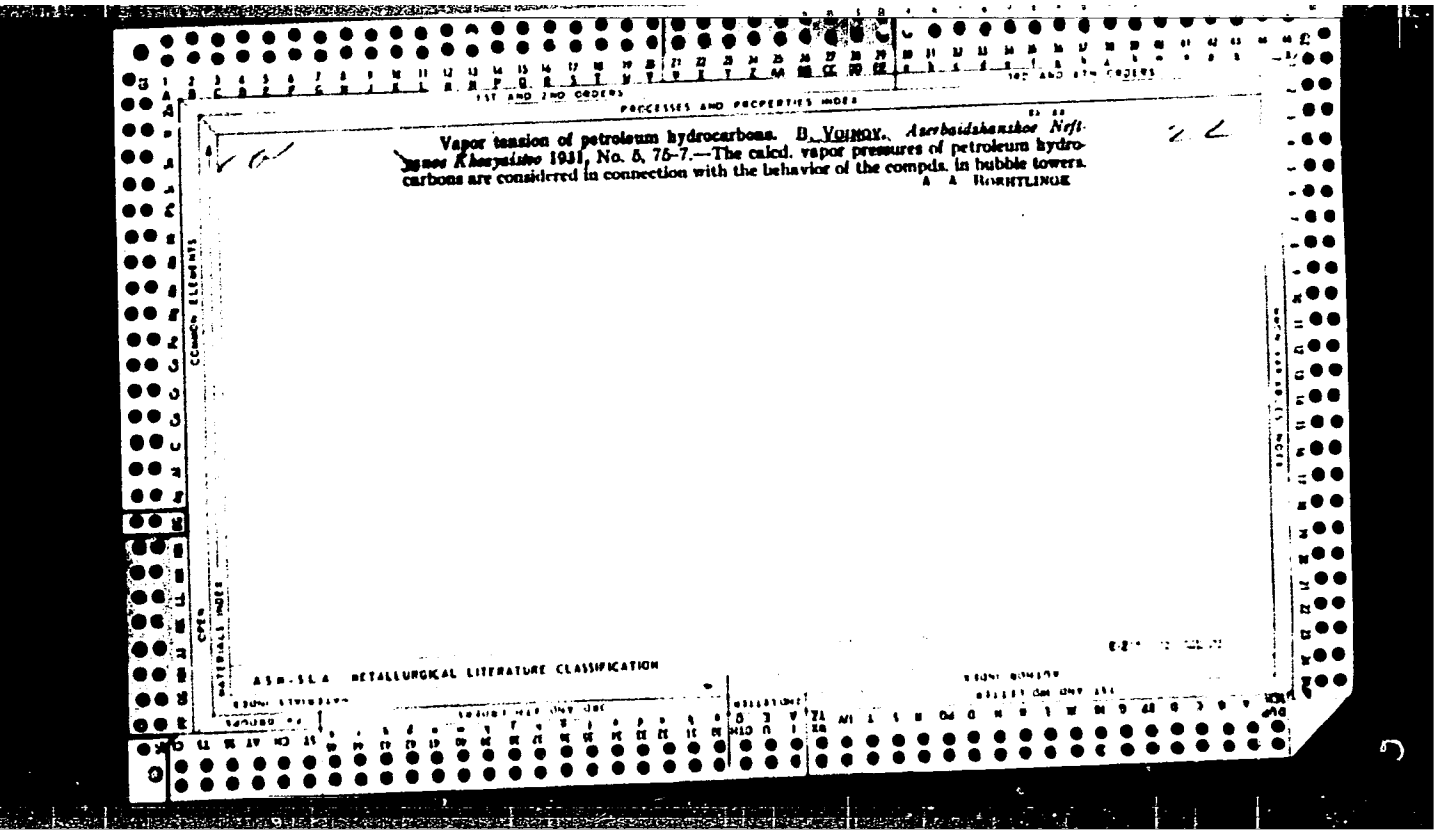


Asphalt from acid sludge. B. Voinov and I. Ginsburg. *Azerbaidzhanskoe Neftyanoe Khozyaistvo* 1929, No. 12, 51-64.—Description of expts made on a com. scale by Asneft.

V. Kalichevsky

A50 SLA METALLURGICAL LITERATURE CLASSIFICATION

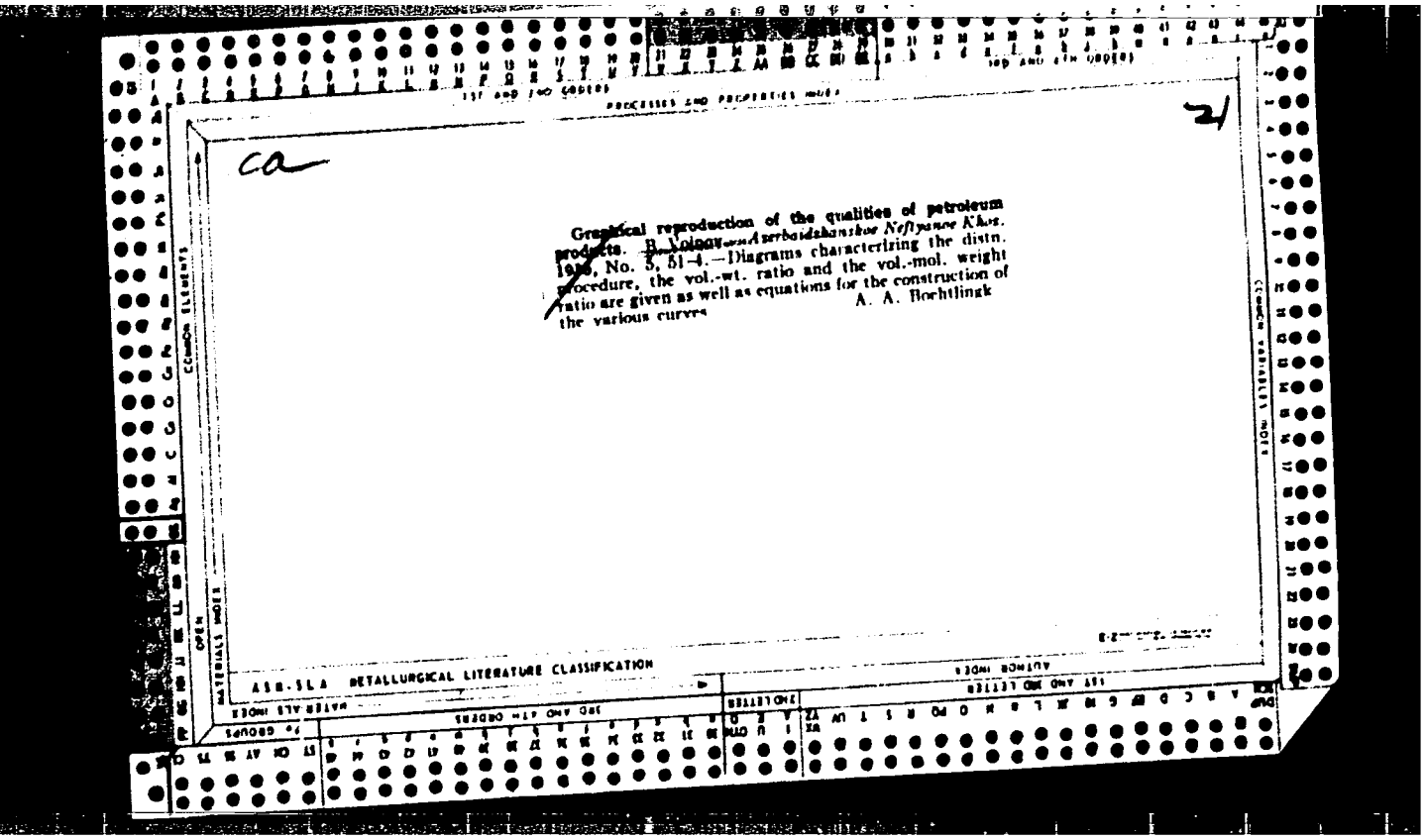




PROCESSES AND PROPERTIES INDEX

Vapor tension of petroleum hydrocarbons. B. Voinov. *Azerbaidzhanskoe Neft. Khozyaistvo* 1931, No. 5, 75-7.—The calcd. vapor pressures of petroleum hydrocarbons are considered in connection with the behavior of the compds. in bubble towers.
A. A. Boshtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Graphical reproduction of the qualities of petroleum products. B. Volosov and Serbaidzhanskoe Neftyanoe Khoz. 1935, No. 5, 51–4.—Diagrams characterizing the distn. procedure, the vol.-wt. ratio and the vol.-mol. weight ratio are given as well as equations for the construction of the various curves

A. A. Bochtlingk

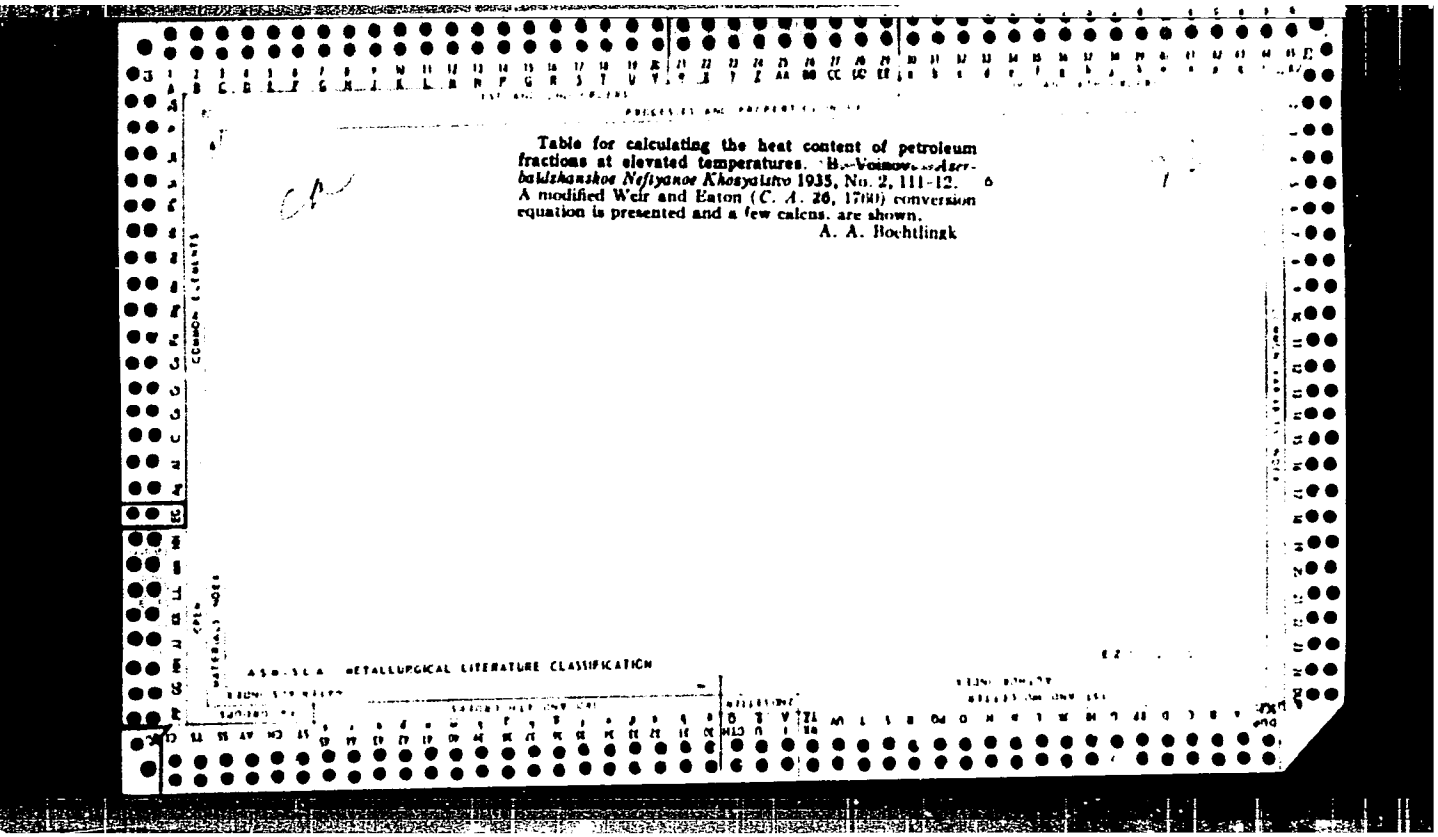
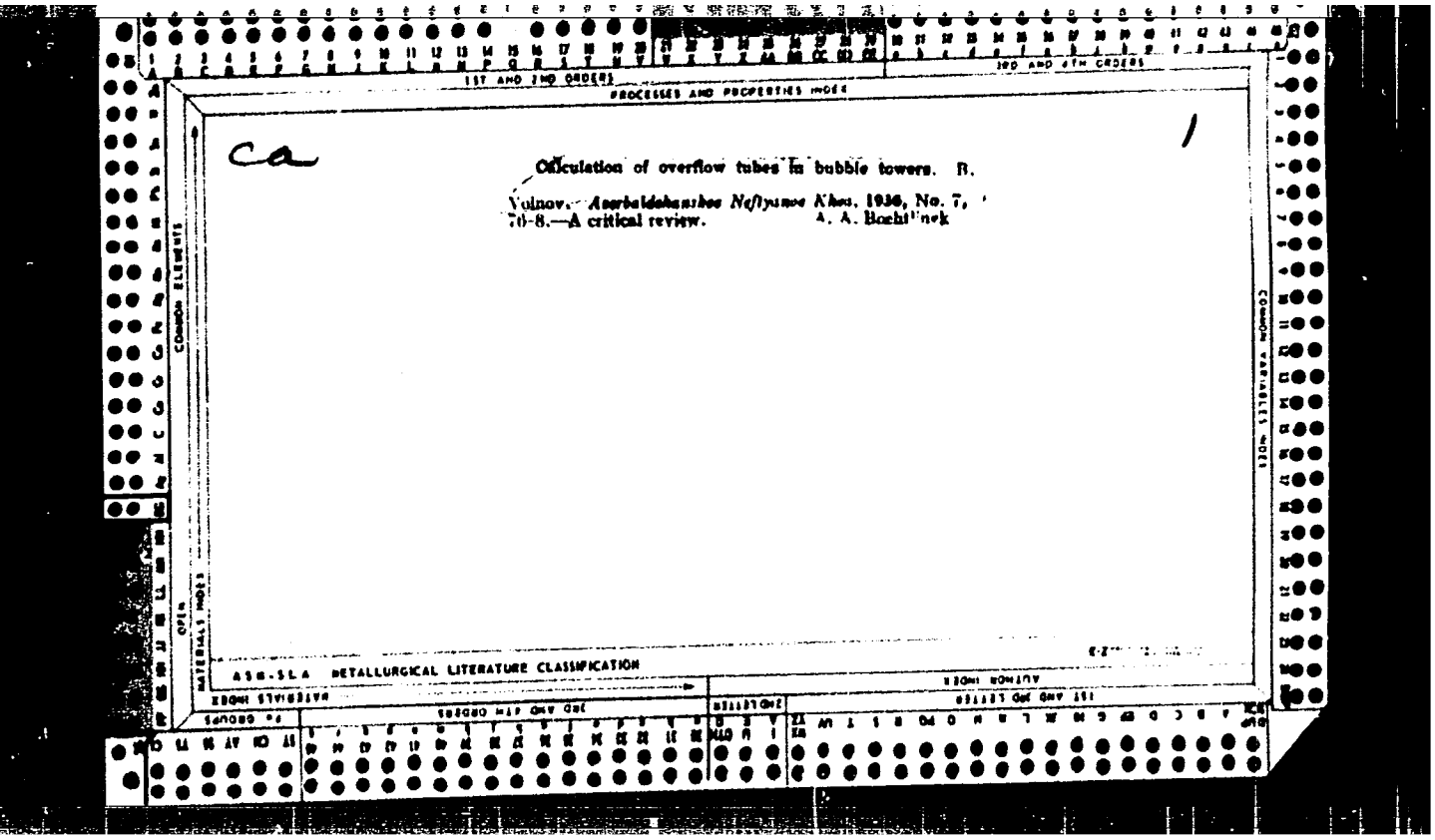


Table for calculating the heat content of petroleum fractions at elevated temperatures. B. Voinov. *Azerbaidzhanskoe Neftyanoe Khozyaistvo* 1935, No. 2, 111-12. A modified Weir and Eaton (*C. A.* 26, 1780) conversion equation is presented and a few calcns. are shown.

A. A. Bochtlingk



VOINOV, B. P., et al.

Tekhnologicheskie raschety dlia masterov po pererabotke nefti. [Technological data for petroleum refinery foremen]. Baku, Aznefteizdat, 1953. 260 p.

SO: Monthly List of Russian Accessions, Vol. 6 No. 8 November 1953

VOINOV, B. P.

PA 65T4

USSR/Chemistry - Paraffins May 1948
Chemistry - Molecular Weights

"New Equation for the Relation of the Molecular Weight of Naphtha Hydrocarbons and Fractions to Their Specific Gravity and Boiling Point," B. P. Voinov, 2 pp

"Neft Khoz" Vol XXVI, No 5

In "Neft Khoz" No 3, 1947, there appeared the analytical relation of the molecular weight of alkanes (paraffin hydrocarbons) to their boiling points at atmospheric pressure. Because the application of this system was limited, a new system has been evolved.

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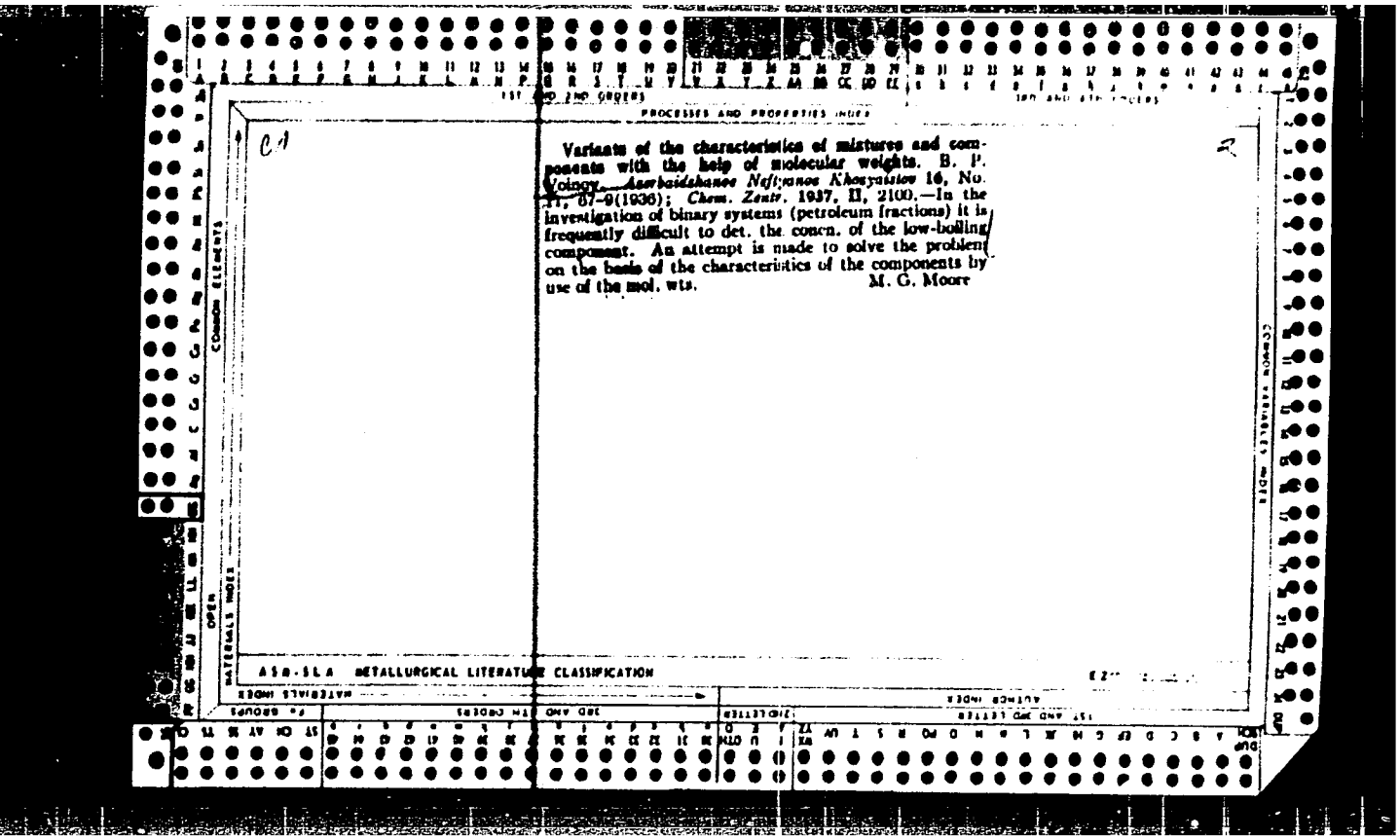
VOINOV, B. P.

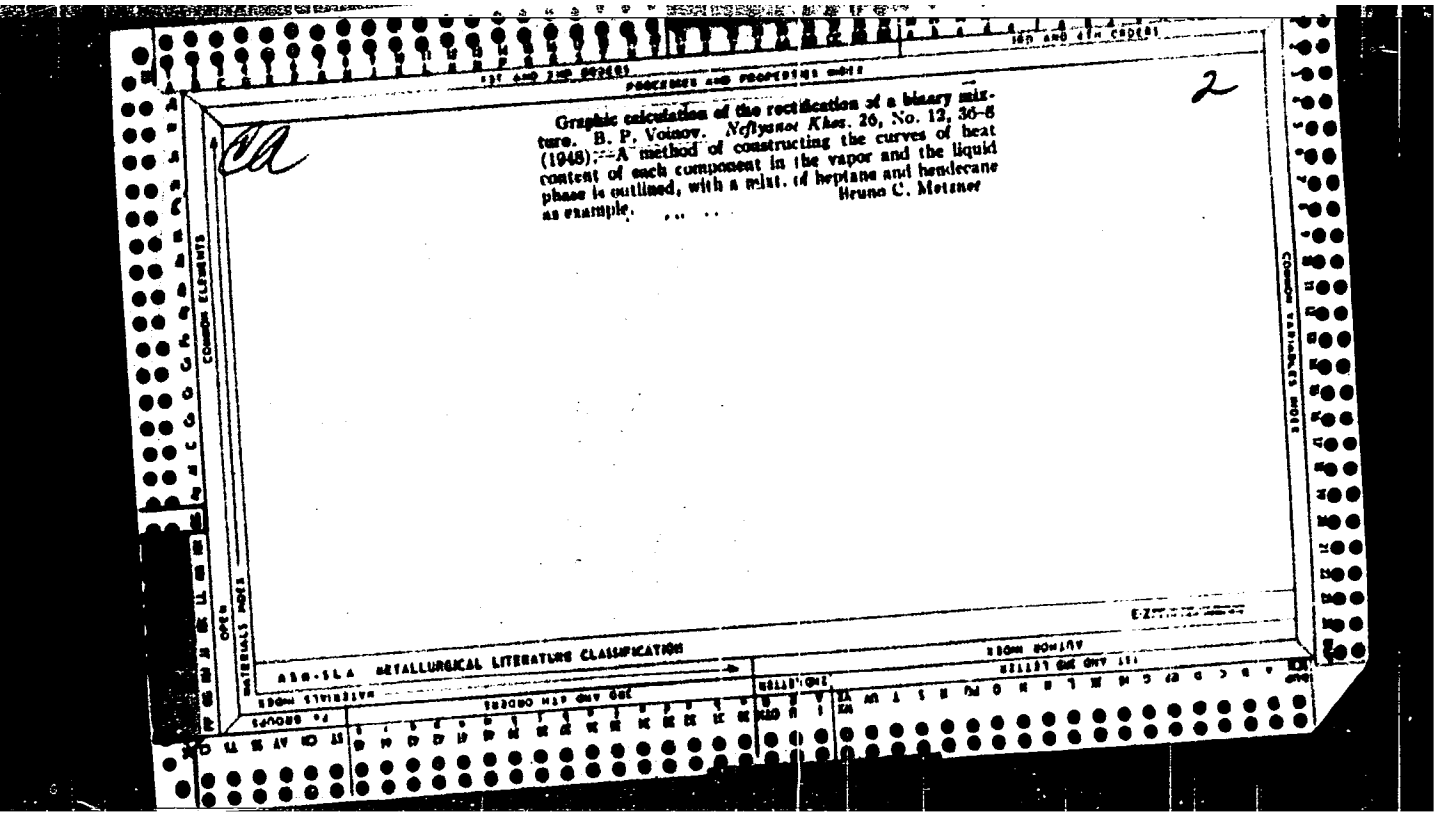
Voinov, B. P. "A graphic calculation of the separation of a binary mixture", Neft. khoz-vo, 1948, No. 12, p. 36-38.

SO: U-2888, 13 Feb. 53, (Letopis' Zhurnal 'nykh Statey, No. 2, 1949).



Variants of the characteristics of mixtures and components with the help of molecular weights. B. P. Voinov. *Azerbaidzhanov Neftyanoe Khozyaistvo* 16, No. 11, 67-9(1936); *Chem. Zentr.* 1937, II, 2100.—In the investigation of binary systems (petroleum fractions) it is frequently difficult to det. the concn. of the low-boiling component. An attempt is made to solve the problem on the basis of the characteristics of the components by use of the mol. wts.

M. G. Moore



Graphic calculation of the rectification of a binary mixture. B. P. Voinov. *Neftyanoe Khoz.* 26, No. 12, 36–8 (1948).—A method of constructing the curves of heat content of each component in the vapor and the liquid phase is outlined, with a mixt. of heptane and hendecane as example. Bruno C. Metzner

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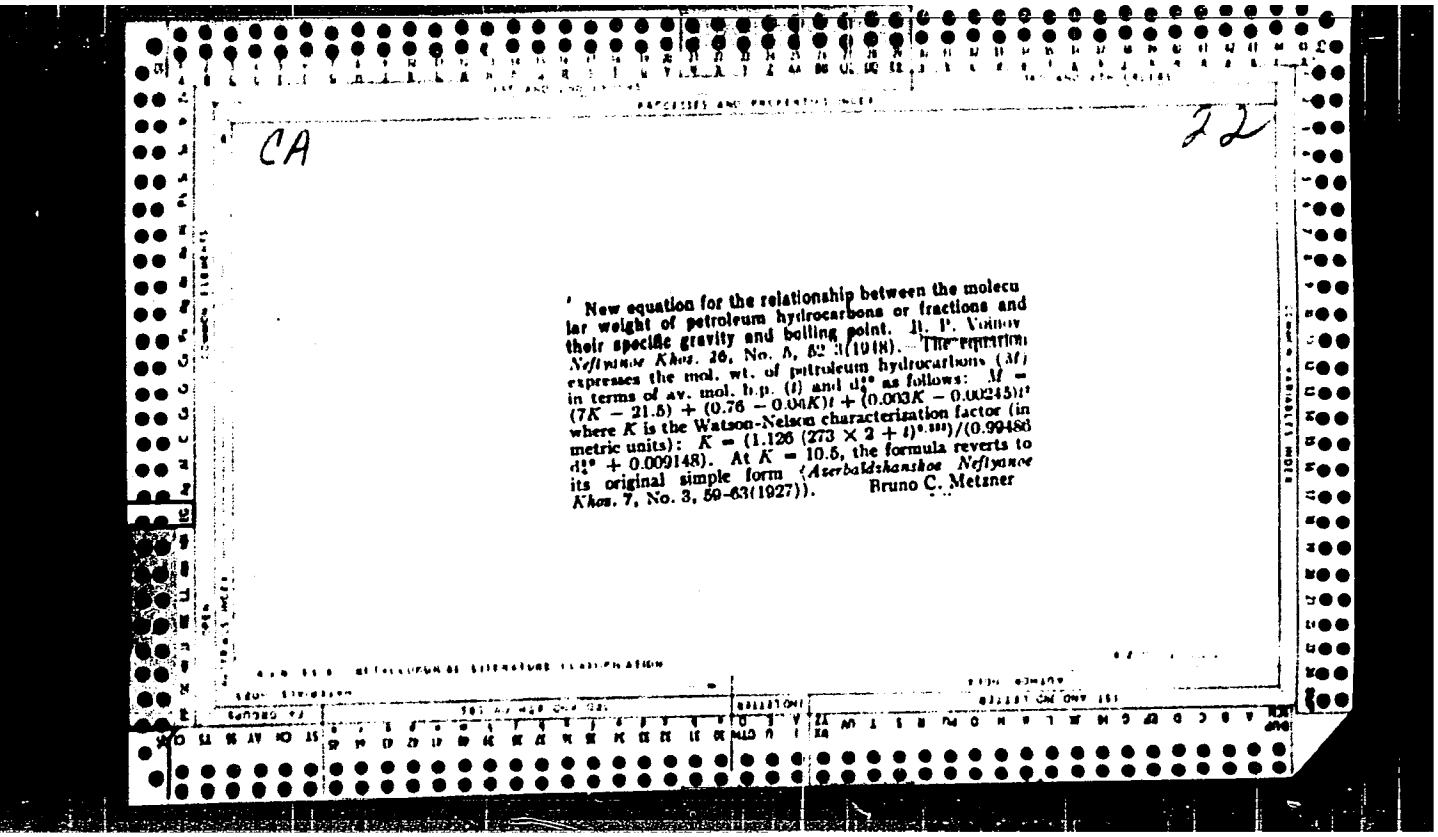

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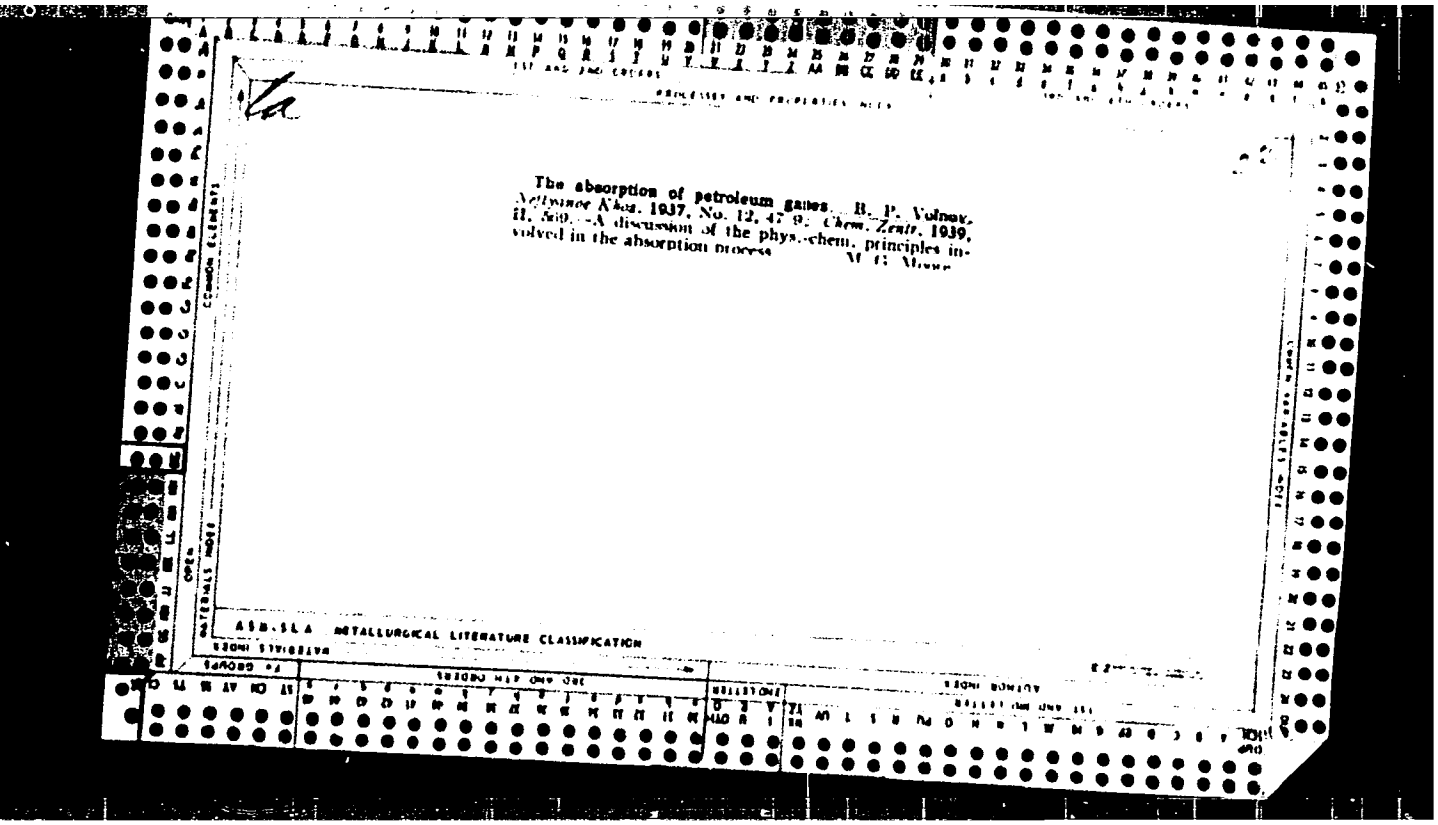
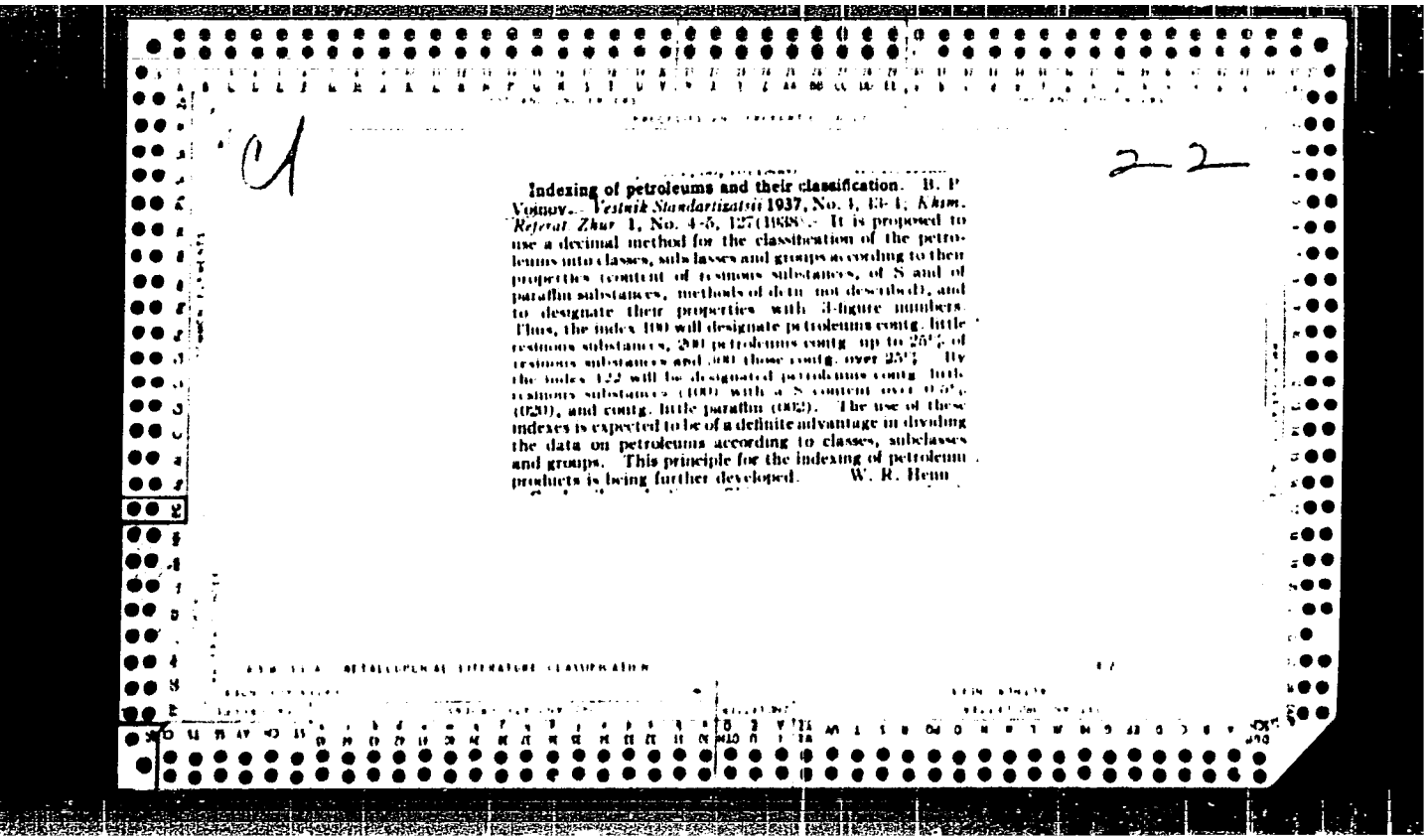
New equation for the relationship between the molecular weight of petroleum hydrocarbons or fractions and their specific gravity and boiling point. N. P. Voinov. *Neftyanoe Khoz.* 26, No. 5, 82-3(1948). The equation expresses the mol. wt. of petroleum hydrocarbons (M) in terms of av. mol. b.p. (t) and d_4^{15} as follows: $M = (7K - 21.5) + (0.76 - 0.04K)t + (0.003K - 0.00245)t^2$ where K is the Watson-Nelson characterization factor (in metric units): $K = (1.126\ (273 \times 2 + t)^{0.333})/(0.9948 d_4^{15} + 0.009148)$. At $K = 10.5$, the formula reverts to its original simple form (*Aserbaidzhanskoe Neftyanoe Khoz.* 7, No. 3, 59-63(1927)). Bruno C. Metzner



The absorption of petroleum gases. B. P. Volnov. *Neftyanoe Khoz.* 1937, No. 12, 47–9; *Chem. Zentr.* 1939, II, 3610.—A discussion of the phys.-chem. principles involved in the absorption process.

M. G. Mason

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



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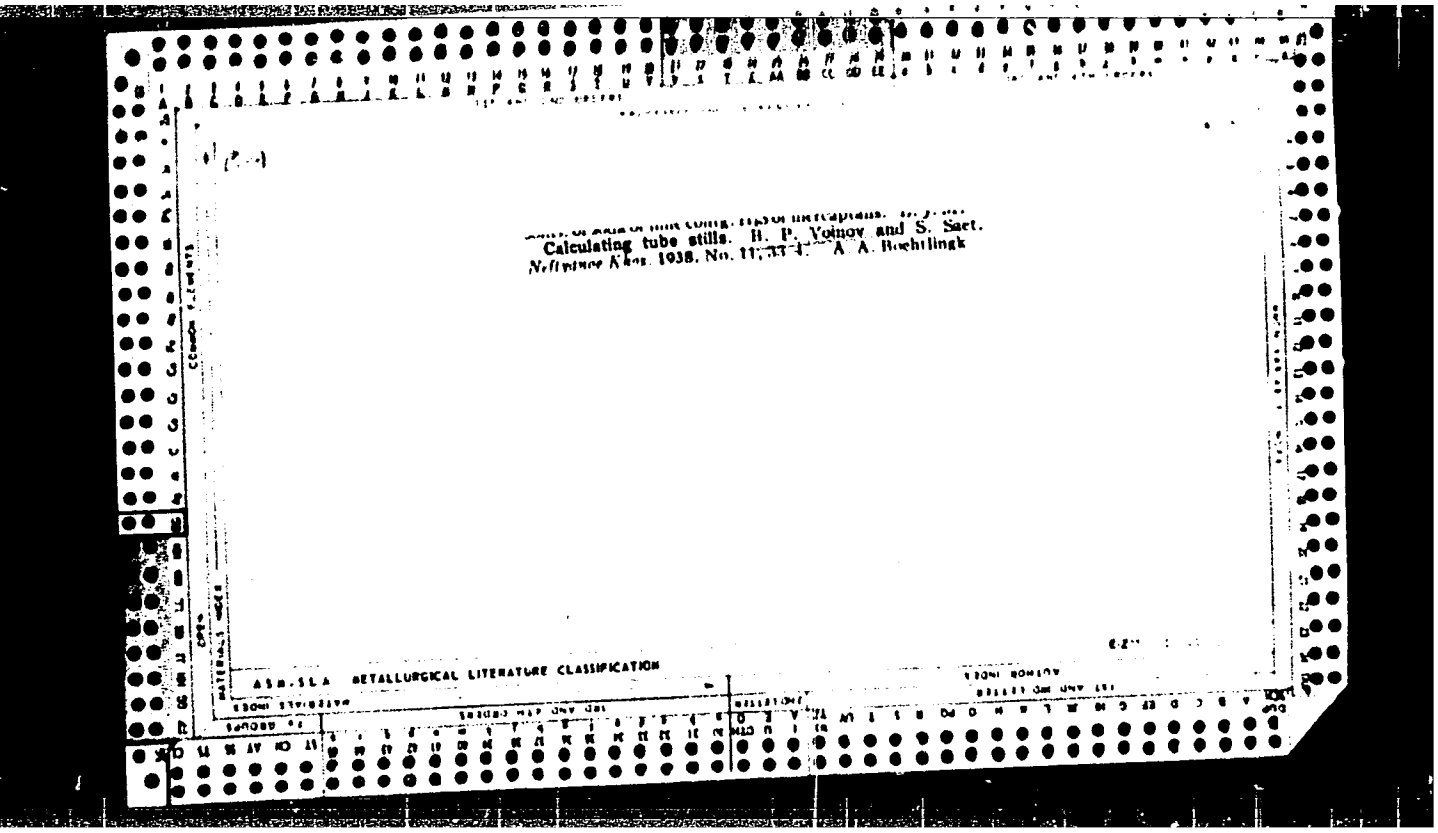
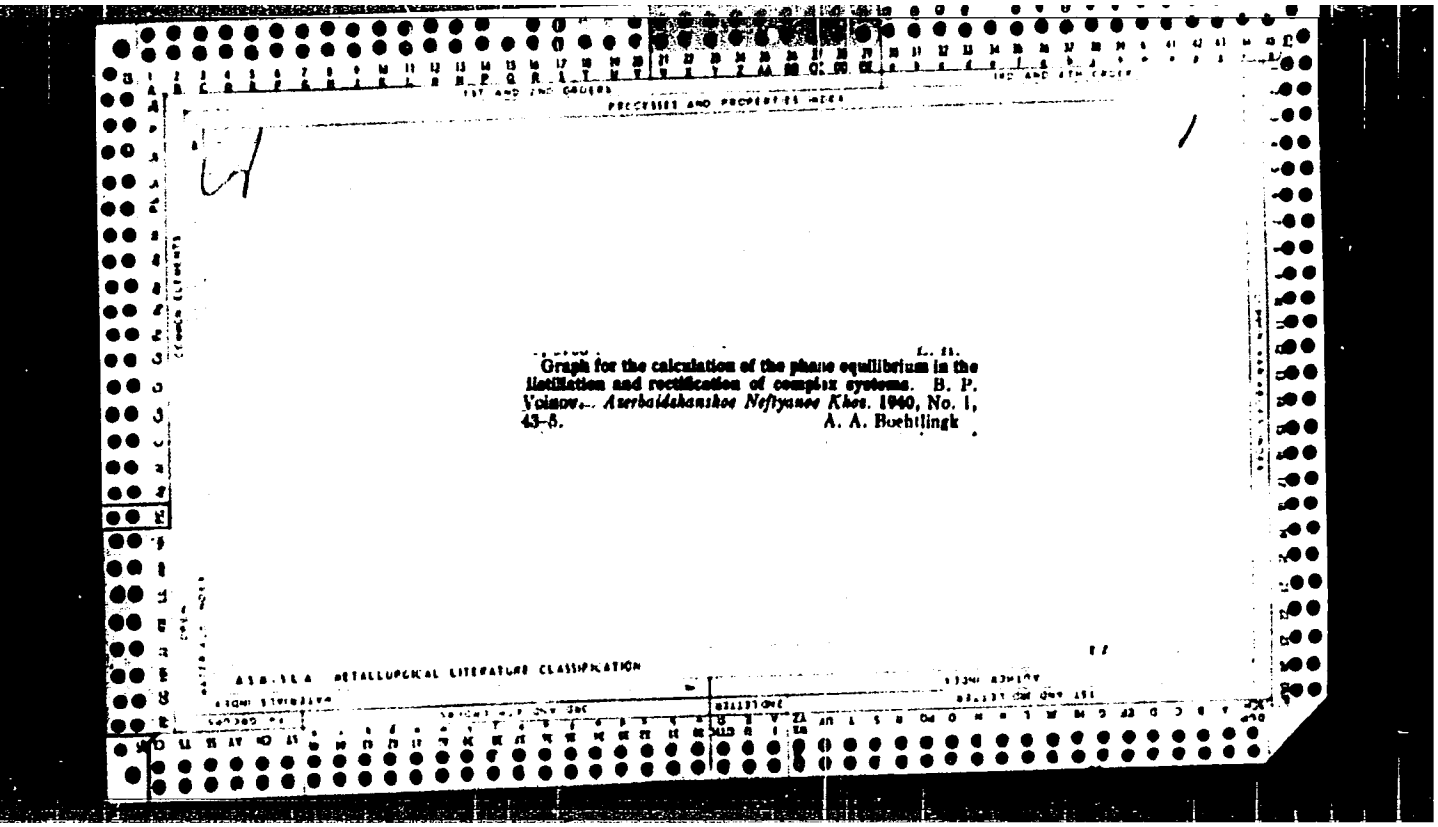
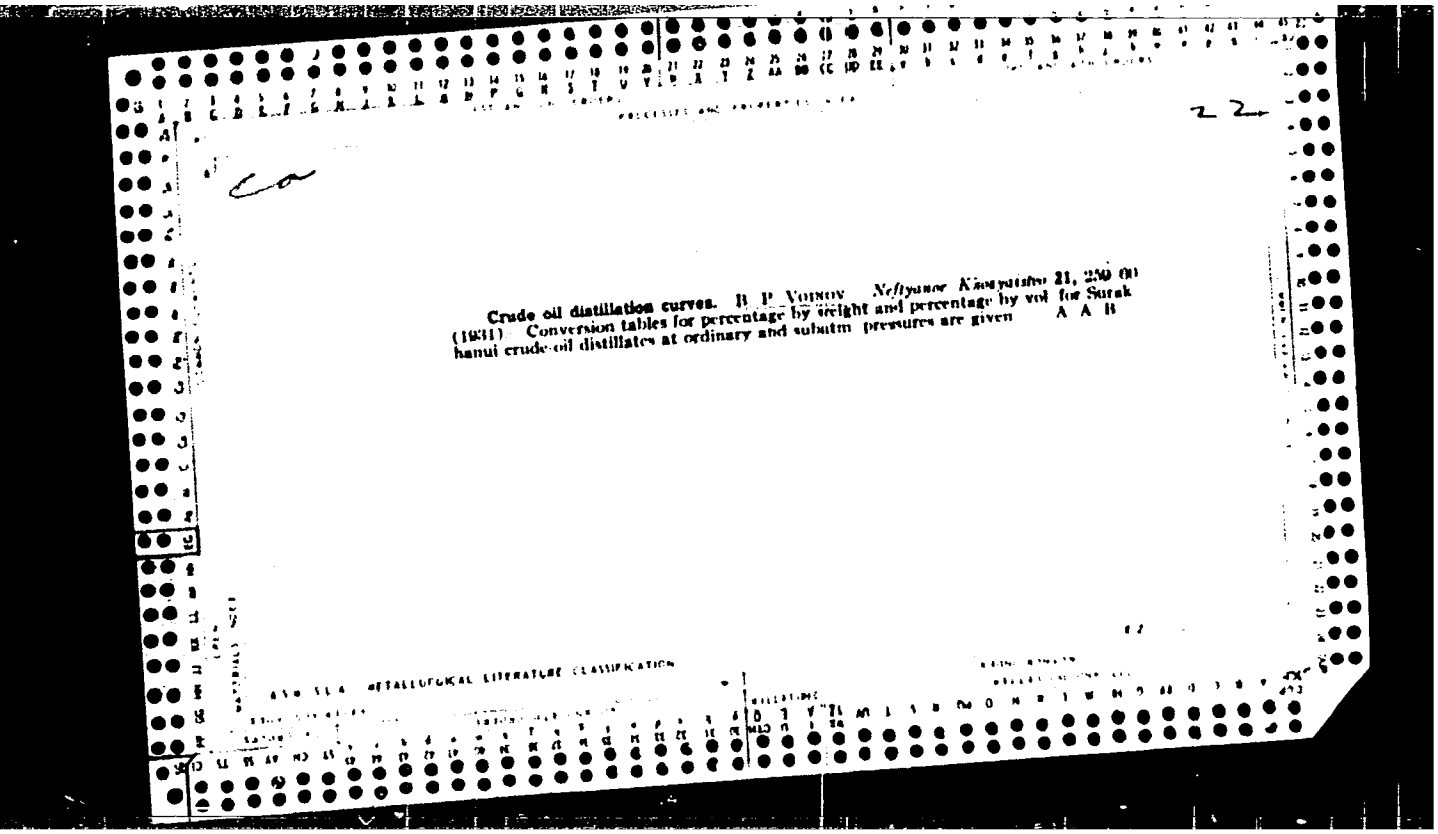
Indexing of petroleums and their classification. B. P. Voinov. *Vestnik Standartizatsii* 1937, No. 4, 33-4; *Khim. Referat Zhur* 1, No. 4-5, 127(1938).—It is proposed to use a decimal method for the classification of the petroleums into classes, subclasses and groups according to their properties (content of resinous substances, of S and of paraffin substances, methods of distn. not described), and to designate their properties with 3-figure numbers. Thus, the index 100 will designate petroleums contg. little resinous substances, 200 petroleums contg. up to 25% of resinous substances and 300 those contg. over 25%. By the index 122 will be designated petroleums contg. little resinous substances (100) with a S content over 0.6% (020), and contg. little paraffin (002). The use of these indexes is expected to be of a definite advantage in dividing the data on petroleums according to classes, subclasses and groups. This principle for the indexing of petroleum products is being further developed. W. R. Henn

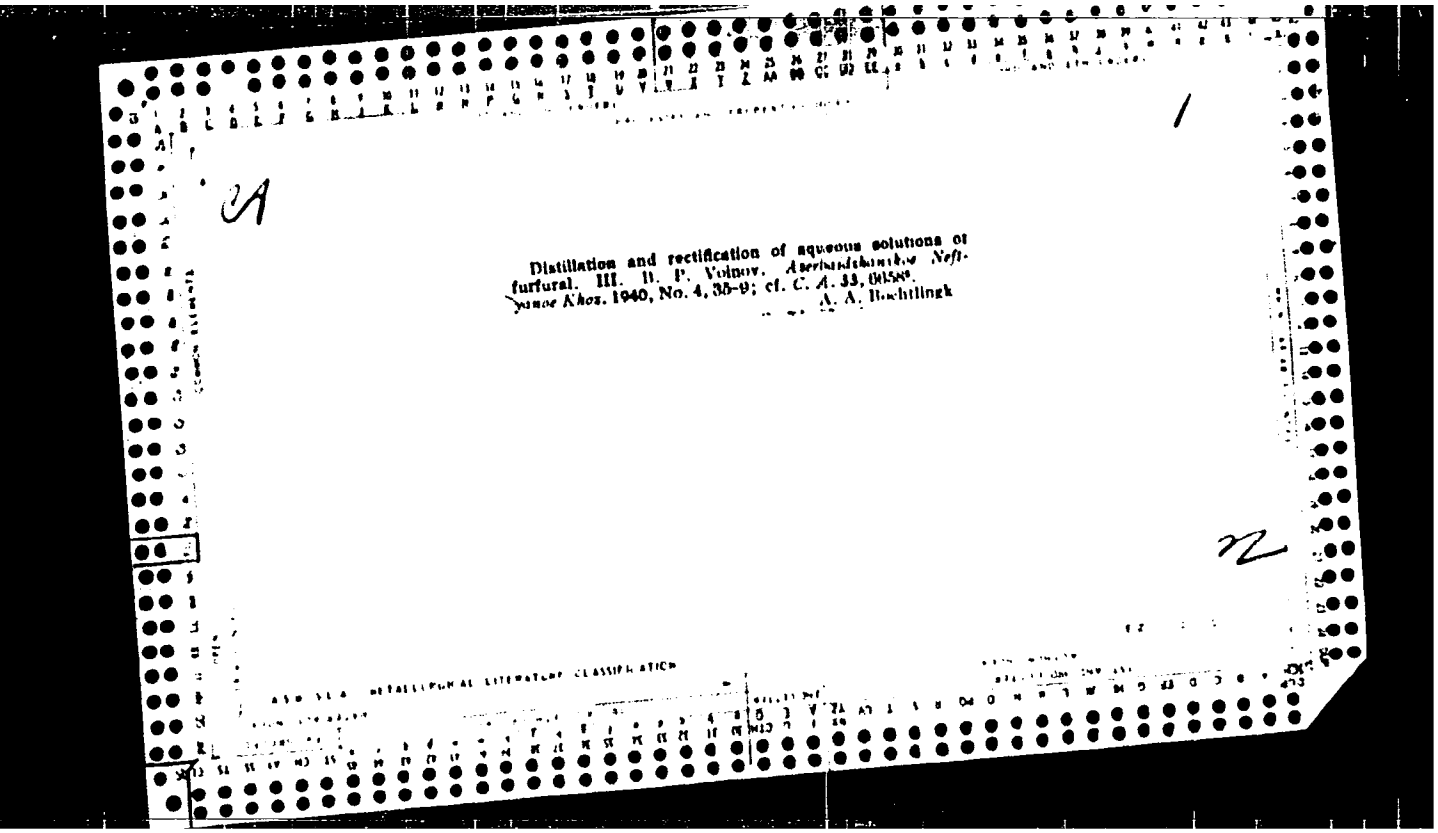




Graph for the calculation of the phase equilibrium in the distillation and rectification of complex systems. B. P. Voinov. *Azerbaidzhanskoe Neftyanoe Khoz.* 1940, No. 1, 43–6.
A. A. Boehtlingk



Crude oil distillation curves. B. P. Vorkov. *Neftyanoe Khozyaistvo* 21, 250-9 (1931). Conversion tables for percentage by weight and percentage by vol. for Surakhanui crude-oil distillates at ordinary and subatm. pressures are given. A A B



Distillation and rectification of aqueous solutions of furfural. III. B. P. Voinov. *Aperbaidzhanskoe Neftyanoe Khoz.* 1940, No. 4, 35–9; cf. *C. A.* 33, 08589.
A. A. Bochtlingk