Automated Heating of Open-Hearth Furnace

a pneumatic computer with pneumo-transformers (1, 2, 3, 4, 5, 6) and a proportion regulator PCHU-63 (RSNShch-63) that calculates the consumption of air for fuel types (and oxygen) and determines the required air quantity for burning with an air excess factor $\alpha = 1.15$. The quantity of carbon monoxide from the bath is not measured. Air feed is corrected automatically by the free-oxygen content in smoke gases analyzed by automatic magnetic gas analyzers (10, 11, MGK-348-TsLA) "Energoochermet", sending commands through an MP-130-12 (IR-130-12) regulator and a converter (12) into the computer for immediate correction of air feed. Heat loading is controlled by coke gas consumption variations, blast furnace gas consumption is constant; tar consumption is measured by the furnace operator through remote control. The heat loading control includes a coke gas regulator (13) with converter (14) and bellows (15), vault temperature measuring devices (16) and (17), regulators (18) and (19), and devices measuring the checker work top temperature (20) and (21). The coke gas regulator tends to maintain maximum consumption but the correcting devices limit it when the vault temperature reaches 1,720°C, or when the pressure in the furnace exceeds 3 mm water column, or if the blast fan capacity is not sufficient, or the free-oxygen content in smoke is below 5%, or the checker work tops are hotter than 1,400°C. If not limited, the coke gas consumption is determined by the gas line capacity, the pressure and

Automated Heating of Open-Hearth Furnace

A61/A026

control system consists of a remover (22), a regulator (23), an РПИД-06 (EPID-06) instrument (19), a servomotor (24), and a gate (25). The control pulse is given from a point in the vault center 2 m away from the front wall. A blocking system prevents overheating; the limit contact is placed in the EPID-06 instrument. When rapid gas separation or some other cause raises the pressure to 5mm water column, the system reduces the heat loading through the bellows. The valves are reversed automatically by an integral time relay (26) - the relay (27) is an emergency relay - and pulse alternation by the temperature of the gas and air regenerators. The reversing system is periodically connected to temperature transmitters (29-32) by a special multicontact relay (28). The maximum temperature of the air regenerator checker tops is limited by a regulator (33) watching the temperature and actuating a gate (34). After the checker tops are cooled down to normal temperature, gas consumption resumes after a time lag (3-4 min) set by a time relay (35). The system provides for a most favourable temperature during the entire heating time. The Tsentral'naya laboratoriya avtomatiki "Energochermet" (Central Automatics Laboratory "Energochermet") has devised a method for placing pyrometers directly into the work space through the vault, and this method has been used in the system described, and the indications are more accurate and reliable than with the usual radiation pyrometers on the front and rear walls facing

Card 2/6

the vault. Still, the method takes a great quantity of wires and cables, parts fail frequently, and much cooling water is needed. Tar makes out 6-8% of fuel in the NTMK furnaces, and the control system includes a tar meter of YPMA (YPMA) design. It works smoothly only when the tar flow through its transmitter is constant. The usual Shaw-Nicks gates being not suitable because of insufficient speed, rotary non-cooled gates have been used. They are rotated by a crank servo-motor SK-140 (SK-140). The other 380-ton open-hearth furnaces of the NTMK are fitted with automatic control systems similar in principle to the system described but using different devices. For instance, one furnace has been fitted with units of standard-block system AgC A3) of the Moscow 'Tizpribor' plant. The AUS system has proved good and is reliable, being handy and requiring less wires and tubes. The automatic control system has been put into constant operation in August 1959. The effect is a furnace output increase of 5 to 5.5%, a fuel consumption cut of 8-9%, and [illegible] longer service life of furnace lining. There is a figure.

Figure 1.

Schematic diagram of automatic [illegible] system

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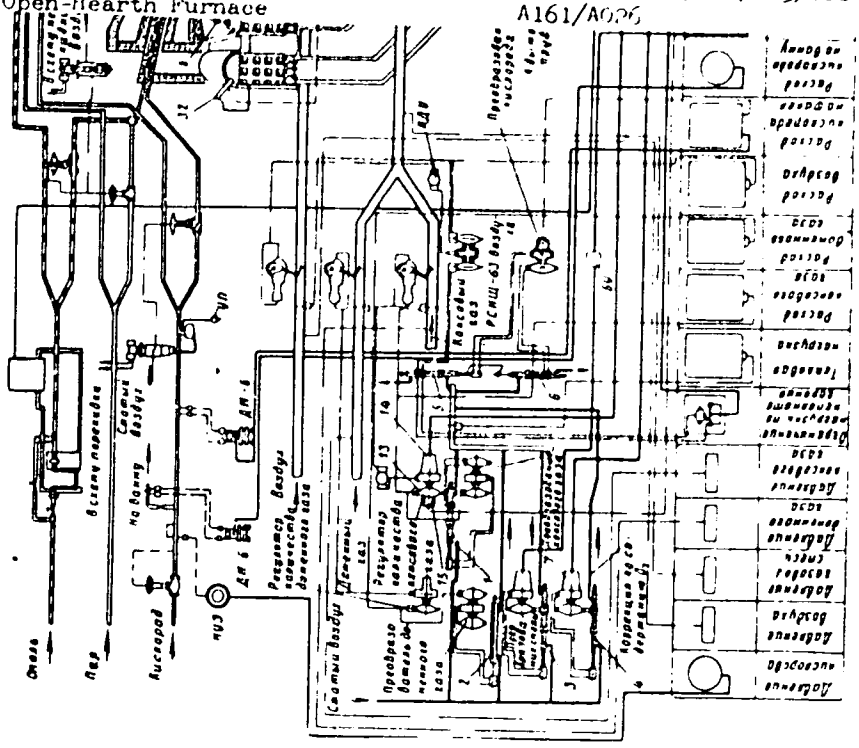
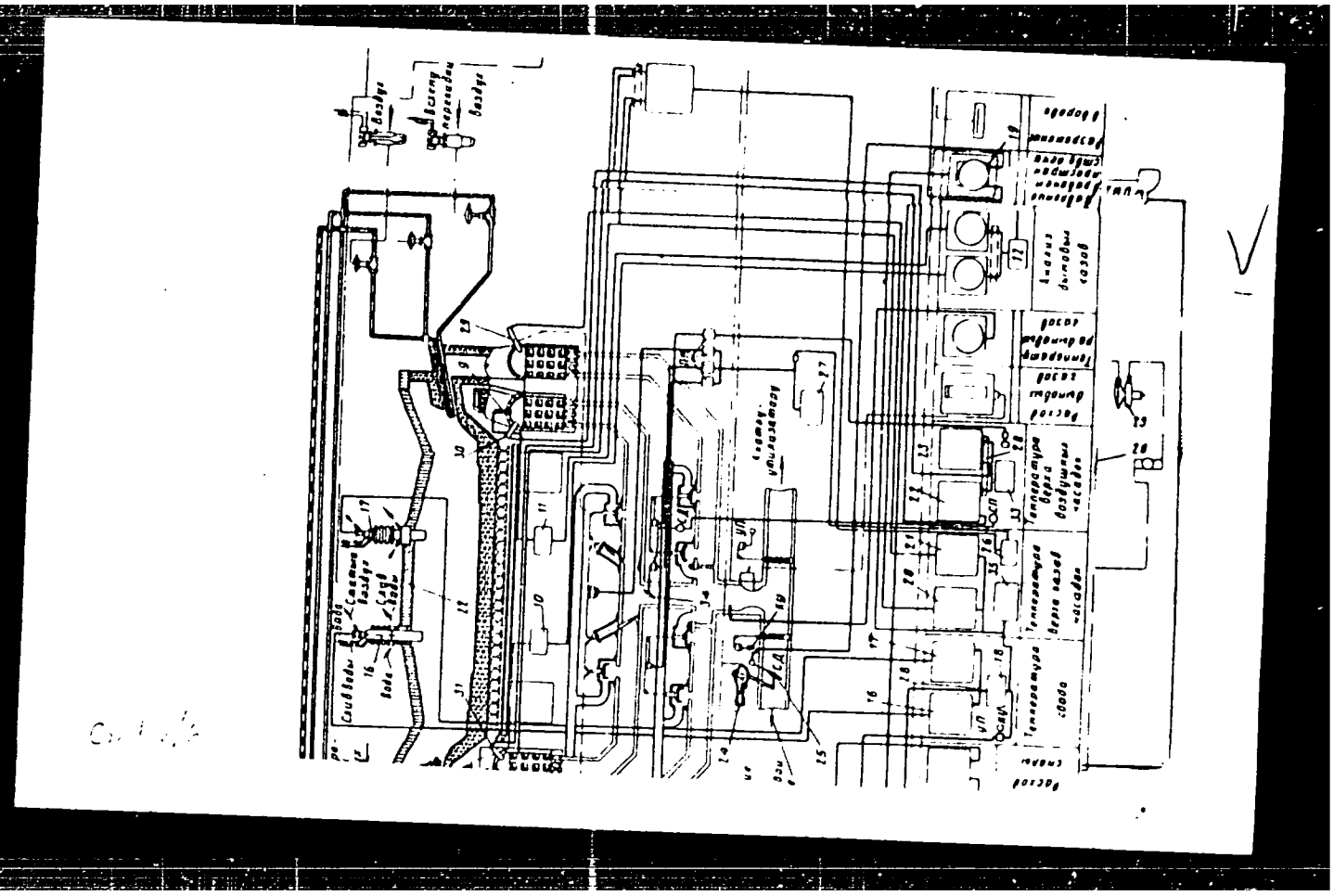
Automated Heating of Open-Hearth Furnace

S/118/60/000/010/005/008
A161/A026



Card 5/6



ACC NR: AP 7001[illegible] SOURCE CODE: UR/0048/66/030/012/2040/2047

AUTHOR: Popeko,L.A.; Val'skiy,G.V.; Petrov,G.A.; Kaminker,D.M.

ORG: none

TITLE: Delayed gamma radiation from fission fragments from the slow neutron induced fission of U 235 /Report, Sixteenth annual Conference on Nuclear Spectroscopy and Nuclear Structure held at Moscow, 26 Jan. - 3 Feb. 1966/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no.12, 1966, 2040-2047

TOPIC TAGS: nuclear fission, fission product, gamma spectrum, delayed gamma emission, uranium

ABSTRACT: The authors have investigated delayed gamma radiation emitted by fission fragments from the slow neutron induced fission of U^{235}. The target was a 2.3 cm diameter 400 $\mu g/cm^2$ thick film of uranium oxide on a 40 $\mu g/cm^2$ aluminum oxide substrate. The target was mounted between two n-p tkpe gold-silicon semiconductor detectors, which served to record the two fission fragments, and was located in the neutron beam from a reactor. The direction of the neutron beam was parallel to the plane of the target. The gamma rays were detected by a 3 x 4 cm NaI(Tl) scintillator immediately beyond one of the fission fragment detectors. This scintillator recorded with good efficiency only gamma rays produced in its immediate vicinity, i.e., it recorded essentially only gamma rays emitted by a fragment after it had been brought

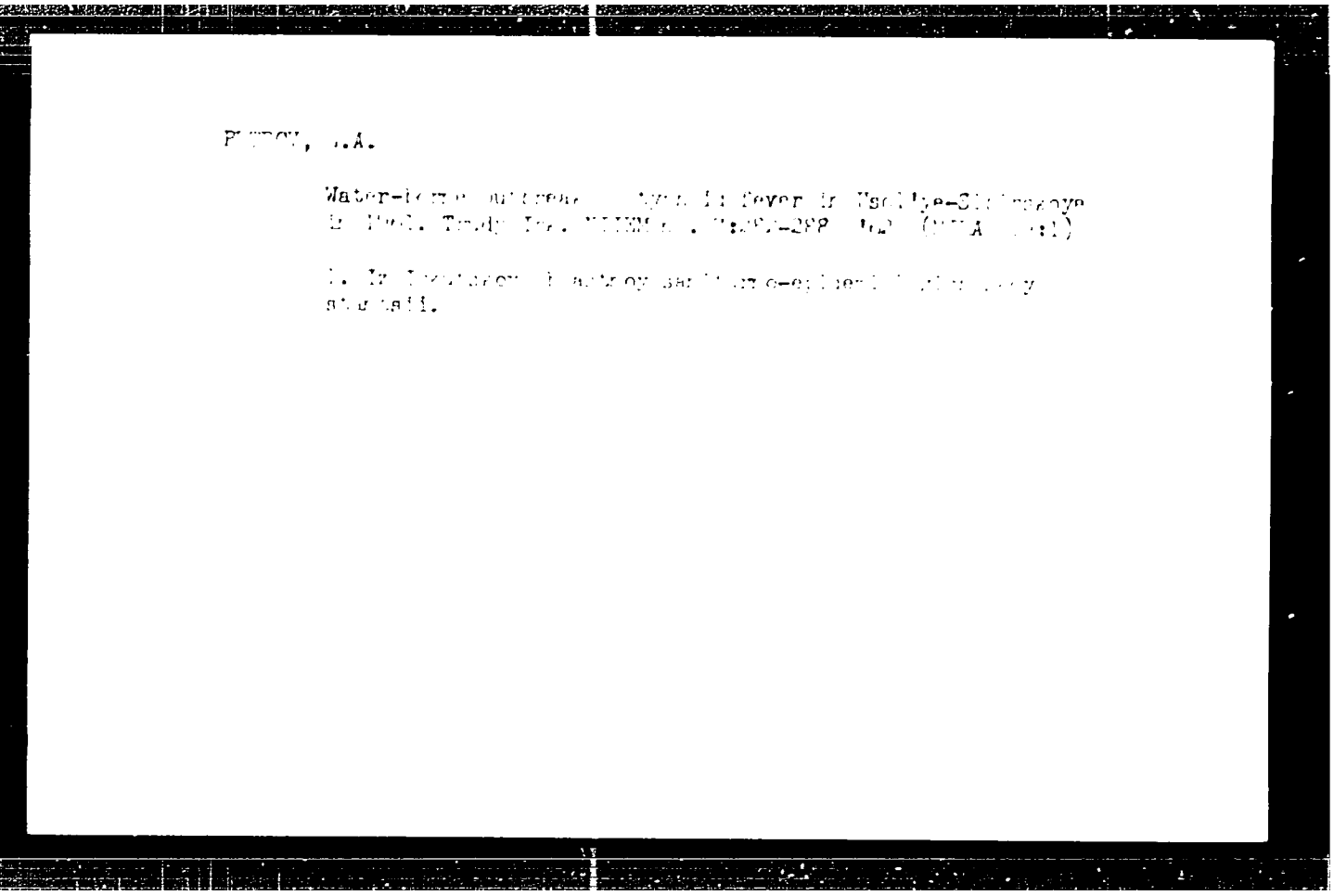
Card 1/2

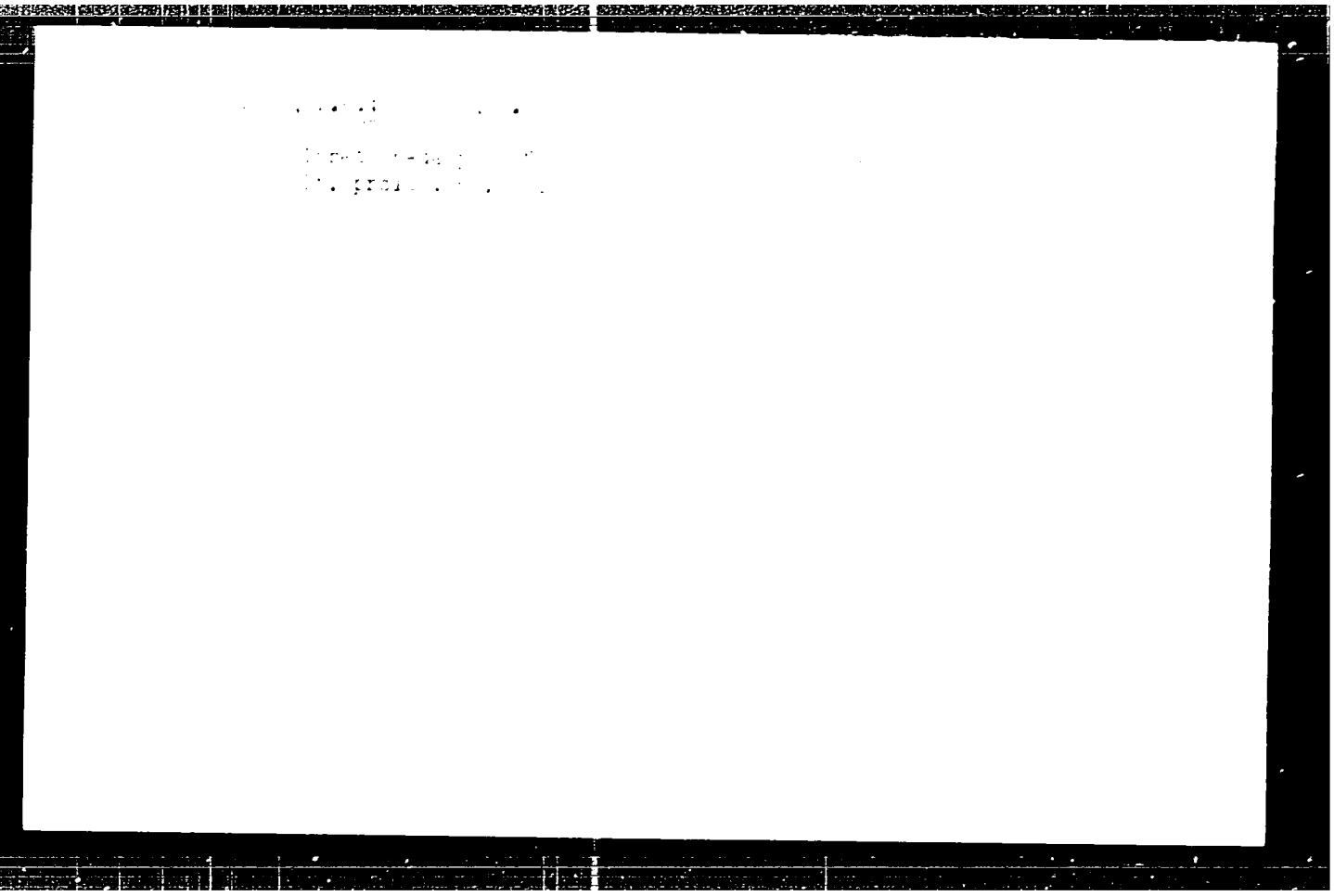
ACC NR: AP7001728

to rest in the associated semiconductor detector. The minimum delay of the recorded gamma rays was thus determined by the fragment flight time from the target to the detector; this detector was mounted 10 cm from the target, and the minimum delay time was accordingly about 10^{-8} sec. The pulses from the semiconductor detectors and the scintillator were analyzed in a rather complex electronic circuit and were recorded in pulse height analyzers. The delayed gamma ray spectra from the heavier and the lighter fragments are presented graphically. The lighter fragment produced more delayed gamma rays per fission than did the heavier one. A peak was observed in each of these spectra that had not been found in the previous work of the authors (Atomnaya energiya,19, 186 (1965)). It is suggested (but it was not confirmed) that each of these peaks may be due to simultaneous recording of gamma rays belonging to two other peaks observed in both experiments. The gamma ray spectrum was investigated as a function of the fragment mass. For this investigation the gamma ray energy range was divided into three regions (above 40 keV, between 100 and 185 keV, and between 185 and 250 keV), the fission fragment masses were determined from the kinetic energies of the two fragments from the same fission, and the results are presented graphically. There are considerable differences between the curves for the different gamma ray energy ranges, and between the present curves and the analogous curves obtained by Sven A.E.Johansson (Nucl.Phys.,64,147 (1965)) for spontaneous fission of Cf^{252}. No dependence of the delayed gamma ray spectrum on the total mass of the two fragments could be detected. The authors thank V.F.Afanas'yev for fabricating the large semiconductor detectors, and V.D.Yurchenko and E.B.Rodzevich for assisting with the measurements. Orig. art. has: 9 figures.

SUB CODE: 20 SUBM DATE: None ORIG REF: 003 OTH REF: 004

Card 2/2





ROZENTAL', K.I.; VESELOVSKIY, V.I.; Prinimal uchastiye: PETROV, G.A.
(Moscow)

Kinetics of the electrochemical oxidation and reduction of H_2O_2 and oxyhydrogen on an Au electrode in N H_2SO_4 solution. Zhur.fiz.khim. 35 no.11:2481-2486 N '61. (MIRA 14:12)

1. Fiziko-khimicheskiy institut imeni L.Ya. Karpova.
(Hydrogen)
(Oxygen)
(Oxidation-reduction reaction)

DVORKIND, M.M.; KORSHUNOV, V.S.; PETROV, G.A.; VYDRINA, Zh.A.

Studying service conditions and type of wear of refractories in a 15-ton rotary steel smelting furnace. Ogneupory 27 no.3:134-140 '62. (MIRA 15:3)

1. Vostochnyy institut ogneuporov (for Dvorkind, Korshunov).
2. Nichne-Tagil'skiy metallurgicheskiy kombinat (for Petrov, Vydrina).
(Smelting furnaces) (Refractory materials)

L 22720-66 EWT(d)/T/EWP(l) IJP(c) BB/GG

ACC NR: AP6002943 (A) SOURCE CODE: UR/0286/65/000/024/0106/0107

AUTHORS: Baranenko, P. M.; Petrov, G. A.; Vasil'yev, V. I.

ORG: none

TITLE: Key-actuated device for setting and automatic decoding of information. Class 42, No. 177173

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 106-107

TOPIC TAGS: information processing, punched paper tape, punched card/ ALGOL-60

ABSTRACT: This Author Certificate presents a key-actuated device for setting and automatic decoding of information written in symbols of the algorithmic language ALGOL-60. The device contains a key field, a coder, a memory unit, and a control unit. To use the device with any punch and to eliminate subjective operator errors, the device contains a mode setting unit and dump of the memory, control and blocking registers (see Fig. 1). The mode setting unit is connected to the register dump units and the blocking unit. The register dump unit is also connected to the control unit, and the blocking unit is connected to a distributor. The outputs of the register dump unit are connected to the inputs of the memory register dump. The output of the blocking unit is connected to the input of the control unit, and the outputs of the distributor are connected to the corresponding register inputs.

Card 1/2

UDC: 681.142

L 22720-66

ACC NR: AP6002943

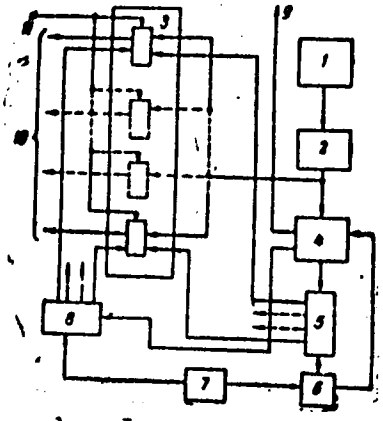


Fig. 1. 1 - key field; 2 - coder; 3 - memory unit; 4 - control unit; 5 - distributor; 6 - blocking unit; 7 - mode setting unit; 8 - register dump unit of memory unit; 9 - control unit output for blocking punch; 10 - outputs from registers to distributor; 11 - input from punch for register dump.

Orig. art. has: 1 diagram.

SUB CODE: 09/ SUBM DATE: 050ct64

Card 2/2 UDC

PETROV, Gennadiy Alekseyevich; LITVINA, Lidiya Semenovna; BAULIN, V.A., red.; GROMOV, A.S., tekhn. red.

[Operation of the equipment of public-food service] Ekspluatatsiia oborudovaniia predpriiatii obshchestvennogo pitaniia. Moskva, Gos. izd-vo torg. lit-ry, 1962. 243 p. (MIRA 15:7)
(Restaurants, lunchrooms, etc.—Equipment and supplies)

MYAKOTKIN, Yu.I.; EL'KIN, I.A.; VOLKOV, G.N., inzh., retsenzent; GOLOV, G.N., inzh., retsenzent; PETROV, G.A., inzh., retsenzent; MAULIN, V.A., red.; EL'KINA, E.M., tekhn. red.

[New equipment for public food-serving establishments] Novoe oborudovanie predpriiatii obshchestvennogo pitaniia. Moskva, Gos. izd-vo torg. lit-ry, 1961. 198 p. (MIRA 15:2)
(Restaurants, lunchrooms, etc.—Equipment and supplies)

KLYUCHEROV, A.P.; KONDRAT'YEV, S.N.; Prinimali uchastiye: GUSAROV, F.V.; UDOVENKO, V.G.; PETROV, G.A.; BURKSER, V.Ye.; SHMONIN, I.A.; KUDRIN, Ye.A.; GALAKHMATOV, S.N.; ZIMINA, L.P.; SHISHARIN, B.N.; KONDYURINA, R.V.; BURMISTROV, K.A.; SHIRNIN, I.A.; SIMONENKO, F.N.; GORSHILOV, Yu.V.; KOLPAKOV, B.V.; GUSAROV, A.K.; BOLOTOV, P.G.

Heat insulation of open-hearth furnace crowns. Metallurg no.11: 14-17 N '60. (MIRA 13:10)

1. Nizhe-Tagil'skiy metallurgicheskiy kombinat.
(Open-hearth furnaces--Design and construction)
(Insulation (Heat))

PETROV, G.A.; KLYUCHEROV, A.P.; SHISHARIN, B.N.

Cleaning open-hearth furnace regenerator checkers. Metallurg 6 no.4:19-20 Ap '61. (MIRA 14:3)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.
(Open-hearth furnaces—Equipment and supplies)

PETROV, V.D.

Attachments for the KGP-2 combine for harvesting sugar beets, carrots and onions. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh. inform. 17 no.1:81-82 '64. (MIRA 17:2)

AUTHOR: Petrov, G. D.

TITLE: In Connection with the Two Reports by V. I. Arabadzhi (Po povodu dvukh statey V. I. Arabadzhi)

PERIODICAL: Meteorologiya i Gidrologiya, 1957, No. 1, pp. 57-58 (U.S.S.R.)

ABSTRACT: Critical review is presented of two articles written by V. I. Arabadzhi: 1) entitled "Diffusion of Light by Charged Droplets", published in journal Meteorology and Hydrology, No. 4, in 1952 and 2) "Electrification of Particles in the Clouds", published in journal Meteorology and Hydrology, No. 6, 1955. The errors in the articles are pointed out and corrections for same are suggested. With respect to article 1), the reviewer points out that the gas kinetic radius of the particles has no bearing on its light diffusion and that neither the charge of a droplet nor its movement have any effect on the diffusion of light. The assumption of the author (article 2) that "the electrification of droplets on the clouds is due to the fact the droplets of various dimensions experience different capillary pressures" is also proven untrue.

There is one Slavic reference.

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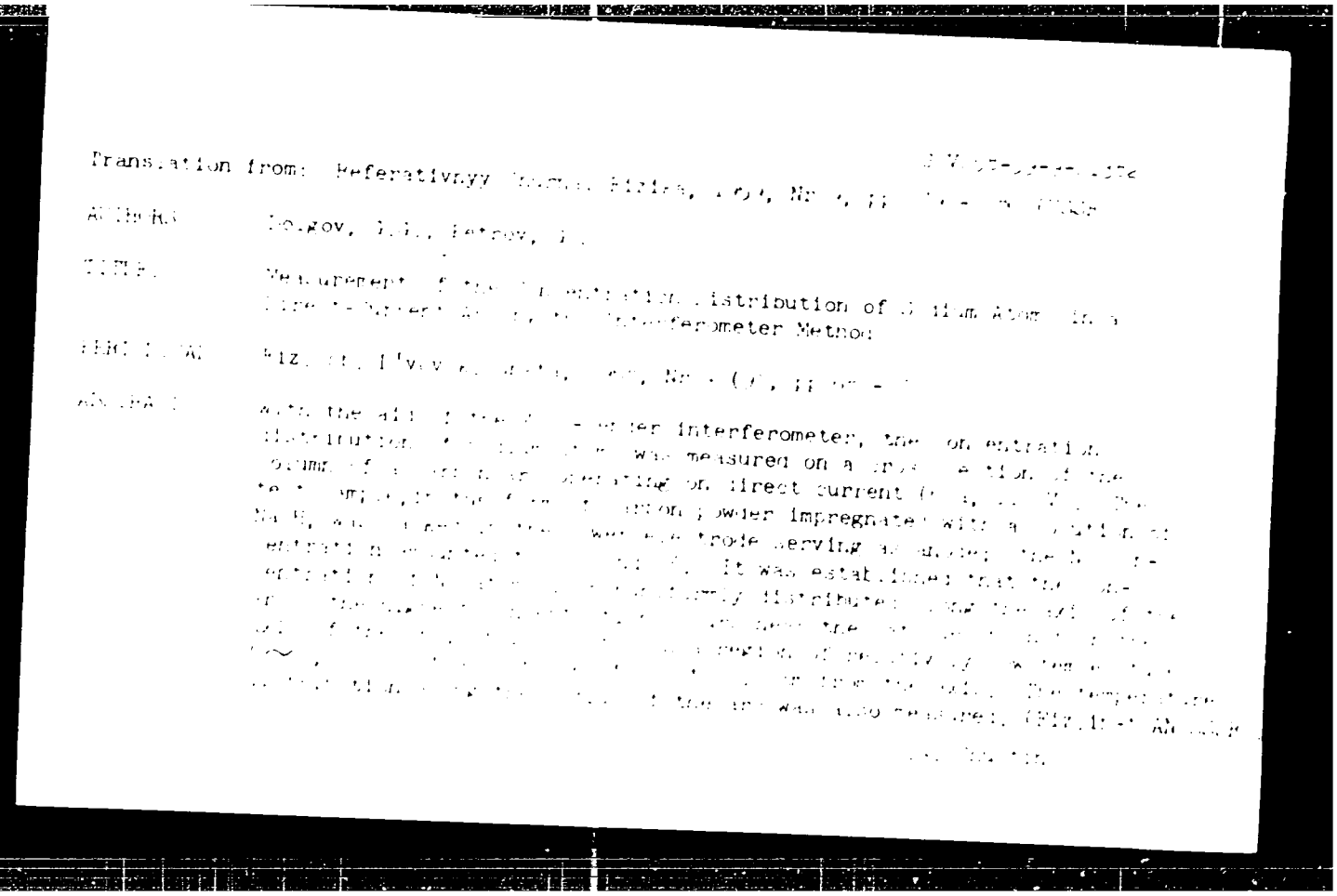

Translation from: Referativnyy [illegible], Fizika, [illegible], Nr [illegible], [illegible]

Author(s): [illegible]

Title: [illegible]istribution of [illegible] Atom [illegible] Interferometer Method

[illegible]: [illegible]

[illegible]: [illegible] interferometer, the [illegible] was measured on a [illegible] direct current [illegible] powder impregnated with [illegible] probe serving [illegible] It was established [illegible] uniformly distributed [illegible]

PETROV, Georgiy Dmitriyevich; DOLGOV, P.N., prof., doktor tekhn.nauk, red.; KOMAR'KOVA, L.M., red.izd-va; ROMANOVA, V.V., tekhn.red.

[Barometric hypsometry in gravimetric operations] Barometricheskoe nivelirovanie pri vypolnenii gravimetricheskikh rabot. Pod red. P.N.Dolgova. Moskva, Izd-vo geodez.lit-ry, 1959. 107 p. (MIRA 12:10)

(Barometric hypsometry)

AUTHOR: Petrov, G. D.

TITLE: A Method for Measuring the Charges and Dimensions of Aerosol Particles from an Aeroplane

PERIODICAL: Izvestiya Akademii nauk, SSSR, Seriya geofizicheskaya, 1959, Nr 11, pp 1665-1669 + 1 plate (USSR)

ABSTRACT: The method is based on the deceleration of the air stream carrying the cloud droplets to a velocity of about cm/sec. The stream then enters a vertical electric field which deflects the charged particles from their original horizontal direction and the trajectories of the particles are photographed. The ratio of the charge to the radius of the particle is determined from the deflection angle and the radius of the particle from the width of the track. The optical system of the instrument is shown in Fig 1. Light from a mercury lamp is focussed on the particle A by the objective lens 3, while the particle is moving between the condenser plates in a direction perpendicular to the plane of the drawing. The particle is photographed through the microscope 4. The angle between the axes of the microscope and the objective lens is 20° so that direct light from the lamp does not enter the microscope. The mercury lamp gives

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A Method for Measuring the Charges and Dimensions of Aerosol Particles from an Aeroplane

300 flashes/sec. Typical trajectories are shown in Fig. 2 in which the thick black line is the eye-piece wire. The deflection of the particle trajectory is determined by measuring the angle between the particle track and the eye-piece wire and the appropriate formula for small deflections is given by Eq (1) where q is the charge on the particle, r is its radius, E is the electric field, V_0 is the horizontal velocity of the particle, α is the angle between the particle trajectory and the perpendicular to the wire, β is a constant correction, η is the viscosity of the air and ρ is the density of the particle. The horizontal velocity of the particle V_0 is given by Eq (2), where f is the frequency of the alternating supply for the lamp, ℓ is the distance between neighbouring "dashes" on the photograph of the particle track and γ is the magnification of the microscope. In order to determine the particle radius, the tracks were examined with the aid of a microphotometer. The particle diameter may be deduced from these measurements in the following way

(cf Fig 4). The amount of light reaching the point $A(X_1, Y_1)$ is given by Eq (3). The function A(r) was determined by examining the image of a stationary particle using the same microphotometer. Since the intensity distribution is axially symmetric, the image may be split into N circular zones, as shown in Fig 5. The readings of the microphotometer S(y) can then be written in the form given by Eq (4). This equation may be reduced to Abel's equation whose solution is then given by Eq (5), where A(i) is the intensity distribution along the radius of the image of a stationary particle, ℓ is the width of a zone, i is the number of the zone and k is an integer such that $i \leq k \leq N-1$. Fig 6 shows the distribution A(r) obtained with the aid of Eq (5) for two particles. The minimum measurable diameter in the present experiments was 2μ. The maximum diameter was 14 μ. The maximum charge to radius ratio was 5×10^{-4} esu/cm. Typical distributions obtained are shown in Figs 7 to 9. Fig 7 shows the number of particles as a function of the

A Method for Measuring the Charges and Dimensions of Aerosol Particles from an Aeroplane

radius, Fig. 5 shows the number of particles as a function of charge, and Fig. 6 shows the number of particles as a function of e/r. Acknowledgments are made to N. V. Krasnogorskiy, L. M. Levin for valuable advice and suggestions and to E. I. Lipatov and A. I. Koryagin for help in the measurements. There are 6 figures and 12 references, 7 of which are Soviet and 5 English.

ASSOCIATION: Akademiya nauk SSSR, Institut prikladnoy geofiziki (Academy of Sciences USSR, Institute of Applied Geophysics)

SUBMITTED: March 27, 1959

PETROV, G.D.

Determining coordinates and altitudes of points in regional gravimetric surveying. Razved.i prom.geofiz. no.32:102-109 '59. (MIRA 13:4)

(Prospecting--Geophysical methods)
(Surveying)

PETROV, G.D.

Increasing the accuracy of measuring altitudes by the method of barometric hypsometry. Razved.i prom.geofiz. no.33:85-96 '59. (MIRA 13:4)

(Barometric hypsometry)

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A[illegible] [illegible], L., [illegible], L., Petrov, G.D., and

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P[illegible] [illegible] Izvestiya,

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par[illegible]
on a [illegible]
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Solovyev [illegible]
Kapel' [illegible], guaranteed the re-
cording of [illegible]. The measurements
were carried out by [illegible] Voyeykov
near Berkhovud, the [illegible] being 1 meter above the
ground. According [illegible] was here the mean value of
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Electri[illegible] [illegible]arges of [illegible]

[illegible] 150 V m. [illegible] overall [illegible] activity being [illegible] little [illegible] erg [illegible]. The measurements [illegible] were [illegible] by A. I. [illegible] Izv. Akad. Nauk SSSR, ser. geofiz., No. [illegible]; the apparatus [illegible] In persistent [illegible] there was little variation in the field strength in the [illegible] V m limits [illegible] measurements were [illegible] made [illegible] temperature of [illegible] at an altitude of [illegible] m near [illegible] by [illegible] apparatus mounted in [illegible]; at the end of the measurements there were [illegible] particles in the [illegible]. Particle charges in [illegible] near [illegible] Tserkov were measured by [illegible]. This me[illegible] has been described [illegible] Izv. Akad. Nauk SSSR, ser. [illegible] generally from the other two methods [illegible] charged and neutral.

Card 2/8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001240420014-3"

Electric charges of ... S/049/61/000/001/008/008
D226/D306

droplets. The authors then describe the aircraft, El'brus, Voyeykovo and balloon measurements in detail. Fig. 1 shows that droplets with a radius of $<6 - 8\,\mu$ predominate in clouds and those with a radius of $>6\,\mu$ in fogs, although there were fogs with particles having a mean radius of $4 - 5\,\mu$. The recording of all visually observed small droplets in the Solov'yev and Petrov methods was restricted by the quality of the photofilm that was used. This work clarified the apparently linear relationship between the mean charges and sizes of cloud droplets illustrated in Fig. 2. The frequency of the various values of q on cloud and fog droplets is depicted below in Fig. 3 which shows the charge distribution for these particles. When plotting this graph only the data on the charges of fog droplets were used; the ordinate corresponds to droplets with a charge of less than 11 units. This necessitated the presentation of comparable data since no uncharged particles were recorded in the El'brus and balloon measurements. The mean charge values for fog and cloud droplets are given in tabulated form. The straight lines plotted from these data are shown in Fig.

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Electric charges of ...

4 which gives the interval distribution for the frequency of values of the parameter p; the lines are drawn on the probability grid developed by N.A. Fuks (Ref. 6: Mekhanika aerozoley, Izd. Akad. Nauk SSSR, Moscow, 1955), and Numbers 1 - 3 respectively denote the El'brus, Voyeykovo and aircraft measurements. p is the proportional ratio of the charge of a droplet to its radius, i.e.:

$$p = \frac{\epsilon}{\kappa T} \cdot \frac{1}{r} \qquad (1)$$

where κ is the Boltzman constant, T is the absolute temperature assumed to be equal to 300° and ϵ is the electron charge. There are 4 figures, 1 table and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: S. Twomey, The electrification of individual cloud droplets. Tellus, 8, No. 4, 1956; B. Phillips, G. Kinzer, Measurement of the size and electrification of droplets in cumuli clouds. J. Meteorol., 15, No. 4, 1958.

ASSOCIATION: Akademiya Nauk SSSR, Institut prikladnoy geofiziki, Glavnaya geofizicheskaya observatoriya im A.I. Voyeykova (Academy of Sciences, Institute of Applied Geophysics, Central Geophysical Observatory, im A.I.

Card 4/6

3.5110 (1114)
3.5130 (1482)

89512
S/043/61/000/0[illegible]
D272/D306

AUTHOR: Petrov, I.D.

TITLE: On the distribution of droplet charges in [illegible] clouds

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. [illegible], 1961, 1085-1087

TEXT: The author investigates the distribution of [illegible] cloud particles (dia. 2 - 25 μ) according to measurements [illegible] by himself in an aircraft (Ref. 2: Izv. AN SSSR. Ser. Ge[illegible]. 11, 1959). He found experimentally that, on an average, the density of cloud particles distribution can be calculated from:

$N=N_0 e^{-\alpha p^2}$ .....(1) where $p = \frac{e}{kt} q/r$; e = electron charge; t = temperature in ^0K; α = constant = 0.5 ± 0.1; parameter p [illegible] - charge on a particle, r - radius of a particle). An average charge i_a for a particle of a given size can be found from the work of

Card 1/[illegible]

29512
S/049/61/000/[illegible]/[illegible]
D272/D306

On the distribution of ...

A.P. Katsyka, L. G. Makhotkin and the author (Ref. 1: Izv. [illegible] Ser. geofiz. no. 1, 1961) when it is noticed that $\bar{r}_p$ [illegible] hence $\bar{r}_q = \pm \frac{1}{\sqrt{\pi}} \frac{kT}{e} r$ [illegible] $\frac{kT}{e} r$ ..... (2). The above [illegible] correct for the averages taken for a great volume of [illegible] measurements taken in a space limited to 100 m horizontally [illegible] agree with the law expressed in Eq. (1). This is due to [illegible] sence of updraughts in cumuliform clouds which may influence [illegible] electrical structure in a cloud and change the distribution [illegible] charges on cloud droplets. A figure shows changes in [illegible] trical charge on cloud droplets and in the spectrum [illegible] ticle charges along the route of an aircraft flying through [illegible] lower parts of two cumuliform clouds (August 28, 1960). [illegible] average densities of total charges on particles are [illegible] a number of cumuliform clouds. It is assumed that in the [illegible] of convection currents, there are spherical and cylindrical [illegible] zones of predominant total charges. The size of a zone [illegible] experimentally along the route of a flying aircraft [illegible]

Card 2/ [illegible]

On the distribution of ...

between two nearest points in the cloud where the total charges are equal to zero. Applying a statistical interpretation to the results of measurements it is possible to define distribution of zones and their concentration. Fig. 2 shows the probable distribution of zones according to chords (line 1), according to the assumed spherical shape (line 2), and according to the assumed cylinder shape (line 3). From the data obtained it would appear that an average length of chord is about 120 m, an average diameter of sphere is 75 m. Density of cylinder shaped zones is 35 per sq. km and 400 per sq. km in the case of spherical zones. Assuming that the zones of predominant electrical charges have considerable heights and that the change of charge on the raindrops is effected mainly by a process of gravitational coagulation, it is possible to estimate the change of charge on a drop. There are 1 table, 2 figures and 9 references: 8 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: P.A. Allee, B.B. Phillips, Measurement of cloud droplet charge, electric field and polar conductivities in super cooled clouds. J. Meteorol. 16, no. 4, 1959).

Card 3/3

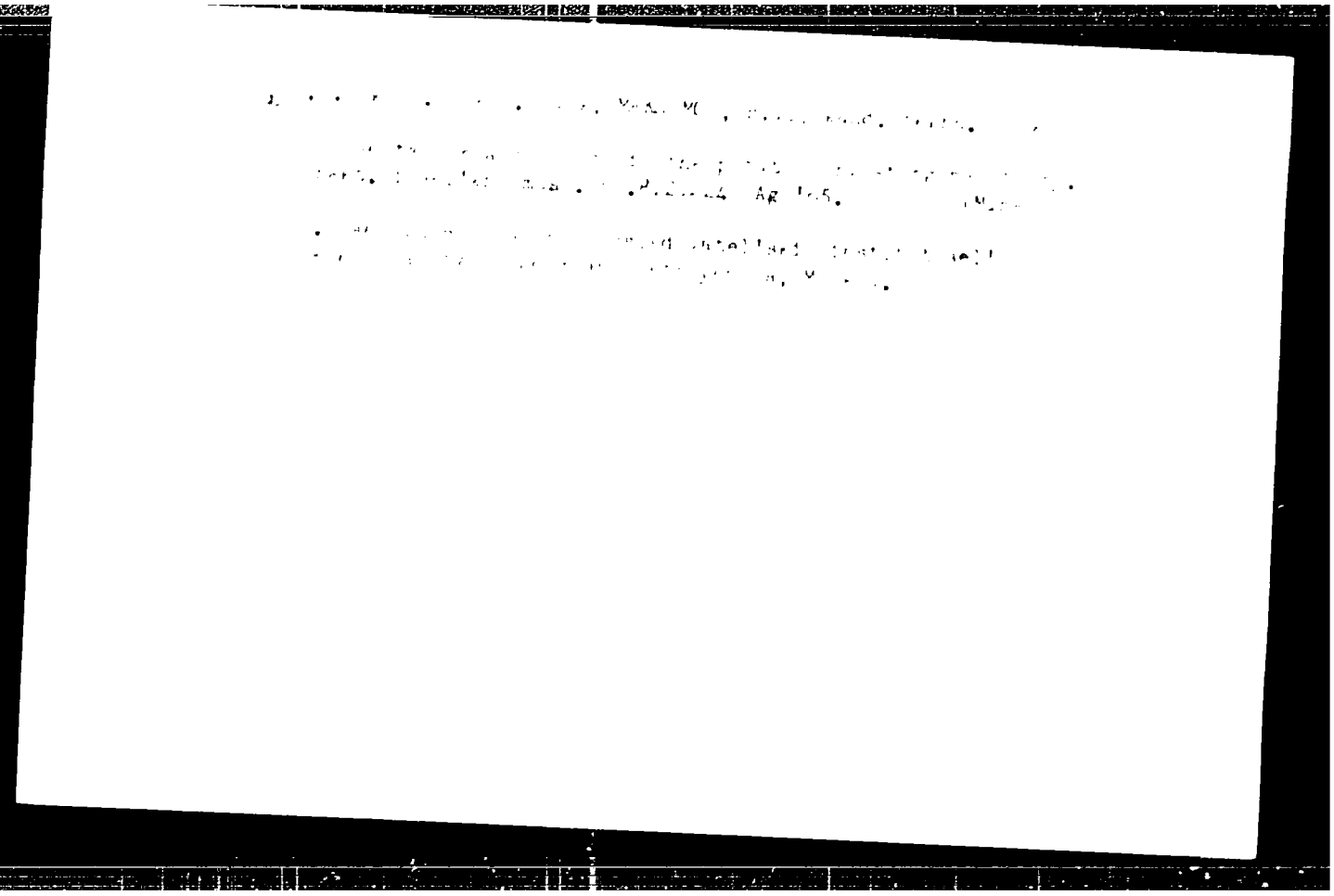
29512
S/049/61/000/007/004/...
D272/D306

On the distribution of ...

ASSOCIATION: Akademiya nauk SSSR. Institut prikladnoy geofiziki (Academy of Sciences USSR, Institute of Applied Geophysics)

SUBMITTED: January 4, 1961

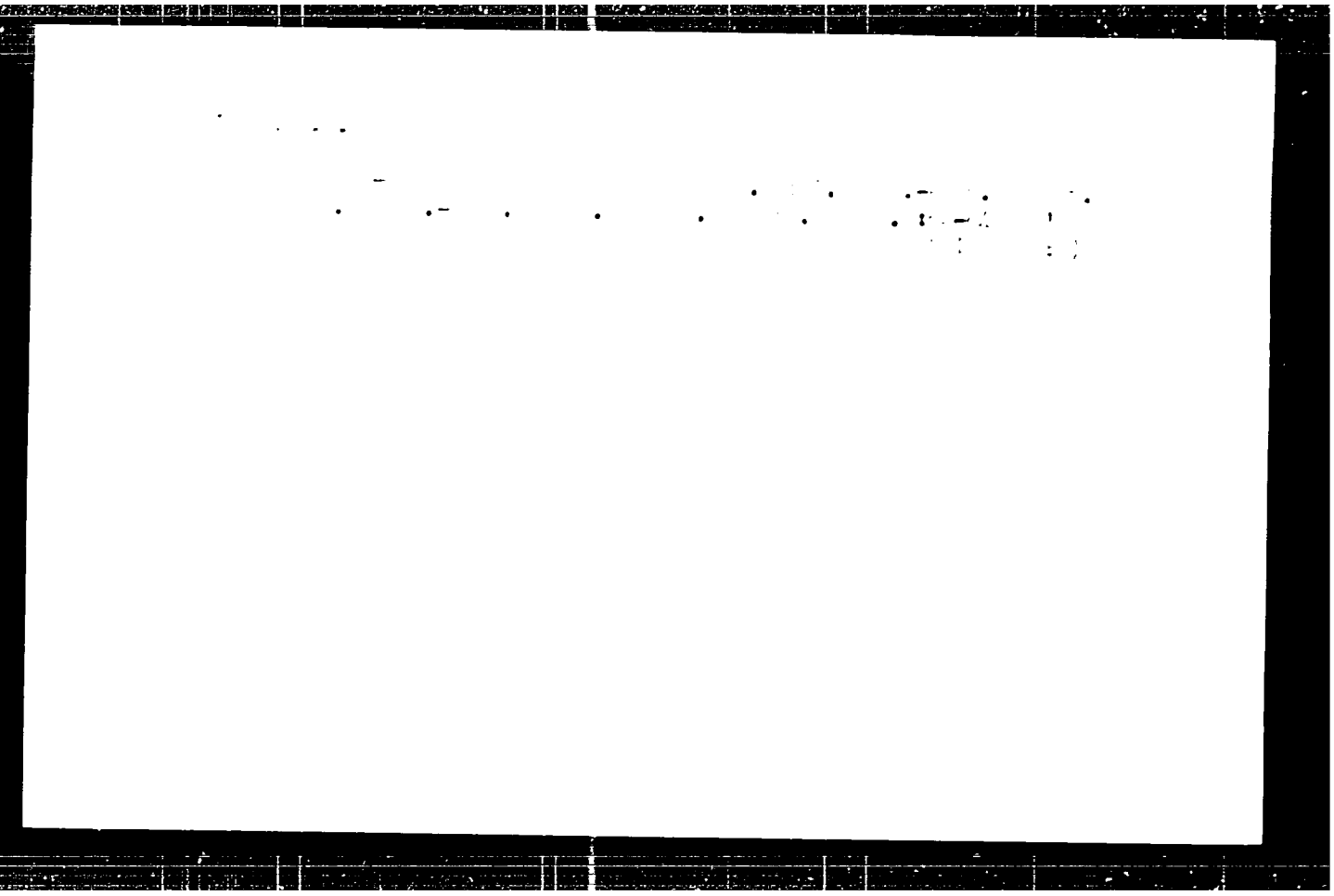
Card 4/[illegible]

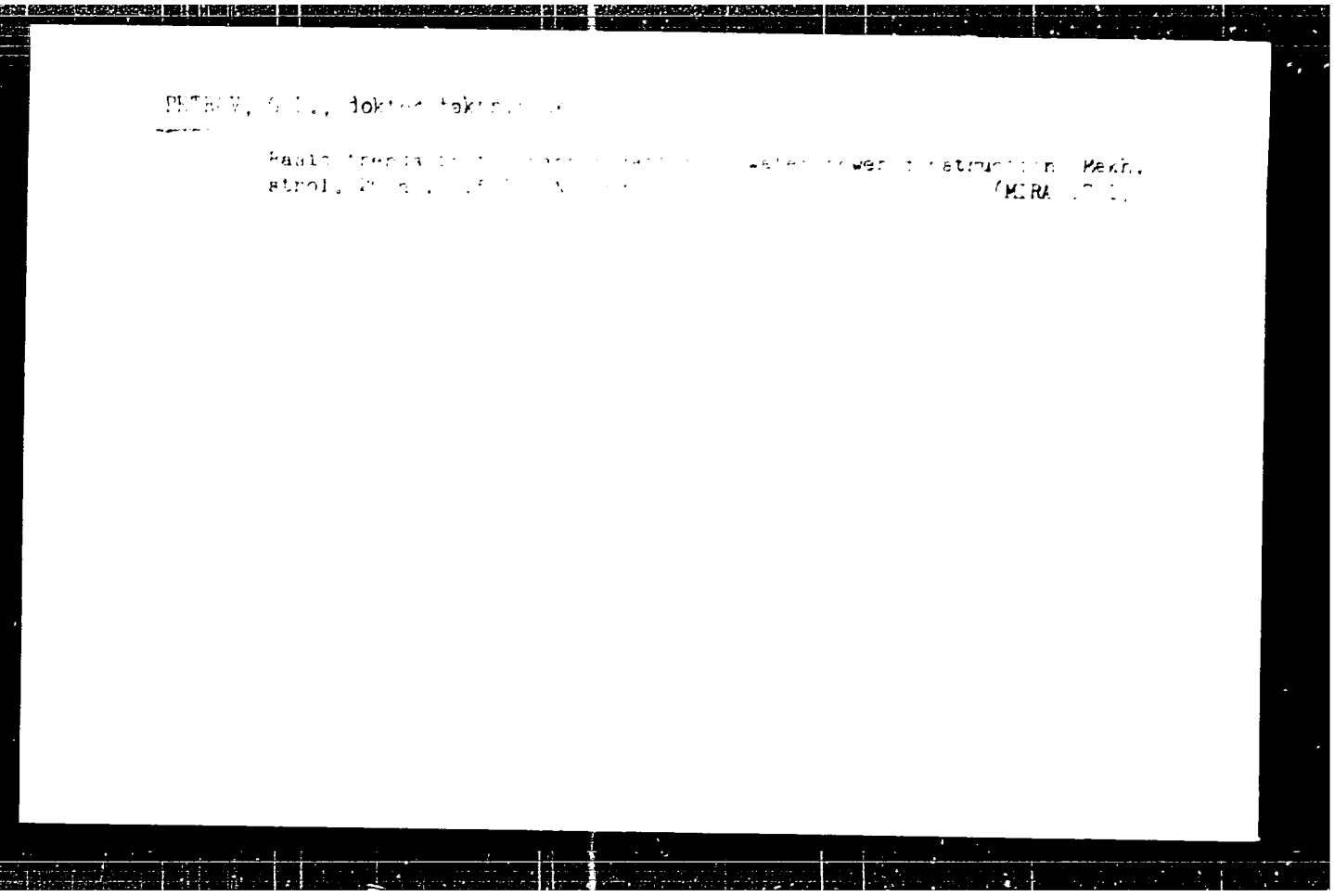


PETROV, G.D.; FIRSOV, N.V.; KOLCHIN, N.N.; KALAMIN, A.I.; KUCHERENKO, N.Ye.; ANIKEYENKO, A.I.

Mechanization of potato storing and prospects for its development. Trakt. i sel'khozmash. no.7:22-24 Jl '64. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya, Moskva (for Petrov, Firsov, Kolchin, Kalamin). 2. Nauchno-issledovatel'skiy institut torgovli i obshchestvennogo pitaniya (for Kucherenko). 3. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy torgovli i obshchestvennogo pitaniya (for Anikeyenko).





ALEKSEYEV, G.P.; ANDON'YEV, V.S.; ARNOL'D, A.V.; BASKIN, S.M.; BASHMAKOV, N.A.; BEREZIN, V.D.; BERMAN, V.A.; BIYANOV, T.F.; GORBACHEV, V.N.; GRECHKO, I.A.; GRINBUKH, G.S.; GUSEV, A.I.; DEMENT'YEV, N.S.; DMITRIYEV, V.P.; DUL'KIN, V.Ya.; ZVANSKIY, M.I.; ZENKEVICH, D.K.; IVANOV, B.V.; INYAKIN, A.Ya.; ISAYENKO, P.I.; KIPRIYANOV, I.A.; KITASHOV, I.S.; KOZHEVNIKOV, N.N.; KORMYAGIN, B.V.; KROKHIN, S.A.; KUDOYAROV, L.I.; KUDRYAVTSEV, G.N.; LARIN, S.G.; LEBEDEV, V.P.; LEVCHENKOV, P.N.; LEMZIKOV, A.K.; LIPGART, B.K.; LOPAREV, A.T.; MALYGIN, G.F.; MILOVIDOVA, S.A.; MIRONOV, P.I.; MIKHAYLOV, B.V., kand. tekhn. nauk; MUSTAFIN, Kh.Sh., kand. tekhn. nauk; NAZIMOV, A.D.; NEFEDOV, D.Ye.; NIKIFOROV, I.V.; NIKULIN, I.A.; OKOROCHKOV, V.P.; PAVLENKO, I.M.; PODROBINNIK, G.M.; POLYAKOV, G.Ya.; PUTILIN, V.S.; RUDNIK, A.G.; RUMYANTSEV, Yu.S.; SAZONOV, N.N.; SAZONOV, N.F.; SAULIDI, I.P.; SDOBNIKOV, D.V.; SEMENOV, N.A.; SKRIPCHINSKIY, I.I.; SOKOLOV, N.F.; STEPANOV, P.P.; TARAKANOV, V.S.; TREGUBOV, A.I.; TRIGER, N.L.; TROITSKIY, A.D.; FOKIN, F.F.; TSAREV, B.F.; TSETSULIN, N.A.; CHUBOV, V.Ye., kand. tekhn. nauk; ENGEL', F.F.; YUROVSKIY, Ya.G.; YAKUBOVSKIY, B.Ya., prof.; YASTREBOV, M.P.; KAMZIN, I.V., prof., glav. red.; MALYSHEV, N.A., zam. glav. red.; MEL'NIKOV, A.M., zam. glav. red.; RAZIN, N.V., zam. glav. red. i red. toma; VARPAKHOVICH, A.F., red.; PETROV, G.D., red.; SARKISOV, M.A., prof., red.; SARUKHANOV, G.L., red.; SEVAST'YANOV, V.I., red.; SMIRNOV, K.I., red.; GOTMAN, T.P., red.; BUL'DYAYEV, N.A., tekhn. red.

(Continued on next card)

ALEKSEYEV, G.P.---(continued). Card 2.

[Volga Hydroelectric Power Station; a technical report on the design and construction of the Volga Hydroelectric Power Station (Lenin), 1950-1958] Volzhskaia gidroelektrostantsiia; tekhnicheskii otchet o proektirovanii i stroitel'stve Volzhskoi GES imeni V.I.Lenina, 1950-1958 gg. V dvukh tomakh. Moskva, Gosenergoizdat. Vol.2.[Organization and execution of construtions and assembly work] Organizatsiia i proizvodstvo stroitel'no-montazhnykh rabot. Red. toma: N.V.Razin, A.V.Arngol'd, N.L. Triger. 1962. 591 p. (MIRA 16:2)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Razin).
(Volga Hydroelectric Power Station (Lenin)--Design and construction)

KHASKHACHIKH, L.P.; [illegible] KOLOV, B.A.; [illegible] ENKIN, Ye.M.; SEVAST'YANOV, V.I., glav. red.; KUZNETSOV, A.Ya., zam. glav. red.; MIKHAYLOV, A.V., doktor tekhn. nauk, zam. glav. red.; ABRAMOV, Yu.S., red.; IVANOV, M.A., red.; PETROV, G.D., doktor tekhn. nauk, red.; CHEMIN, A.N., red.

'Volga Hydroelectric Power Station (22d Congress of the [illegible]'; album of engineering drawing] Volzhskaia gidroelektrostantsiia im. XXII s"ezda KPSS; al'bom chertezhei. Moskva, Gosenergoizdat. [illegible] t.p. [Organization and the carrying out of installation and construction operations' Organizatsiia i proizvodstvo stroitel'no-montazhnykh rabot. 1963. 24 p. (MIRA 16:1)

.. Moscow. Vsesoyuznyy proyektno-izyskatel'skiy i nauchno-issledovatel'skiy institut "Gidroproyekt" im. S.Ya. Zhuk.
(Volga Hydroelectric Power Station(22d Congress of the [illegible]

PETROV, G.D.; DIDENKO, N.F.

Mechanized harvesting of vegetables in the U.S.A. Trakt. i sel'khozmash. 32 no.12:38-40 D '62. (MIRA 16:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(United States—Vegetables—Harvesting)

PETROV, G.D., inzh.

"Cable suspended transportation in hydraulic engineering construction" by I.M.Podurovskii. Reviewed by G.D.Petrov. Gidr. stroi. 32 no.9:62-63 S '62. (MIRA 16:2)
(Cableways) (Podurovskii, I.M.)

PETROV, G. D., inzh.

On the occasion of the twenty-fifth anniversary of the Moscow Canal. Gidr. stroi. 33 no.12:53-55 D '62.
(MIRA 16:1)

(Moscow Canal) (Hydraulic engineering)

PETROV, G.D., inzh.

"Inspecting the quality of concrete work in construction of the arch dam of the Ladzhanuri Hydroelectric Power Station" by P.P. Tsulukidze. Reviewed by G.D.Petrov. Gidr. stroi. 33 no.11:62 N '62. (MIRA 16:1)
(Ladzhanuri Hydroelectric Power Station—Concrete construction)
(Tsulukidze, P.P.)

PETROV, G.D.; KLETSKIN, M.I.

Results of the inspection and testing of potato diggers and grading stations by a government agency in 1961. Trakt. i sel'khozmash. 32 no.2:17-22 F '62. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Potato digger (Machine))
(Potatoes)

PETROV, G.D., kand.tekhn.nauk

Equipment for harvesting potatoes in the United States. Trakt. i sel'khozmash. 32 no.2:43-46 F '62. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(United States—Potato digger (Machine)
(United States--Potatoes--Transportation)

YERMOLOV, V. V. and PETROV, G. D.

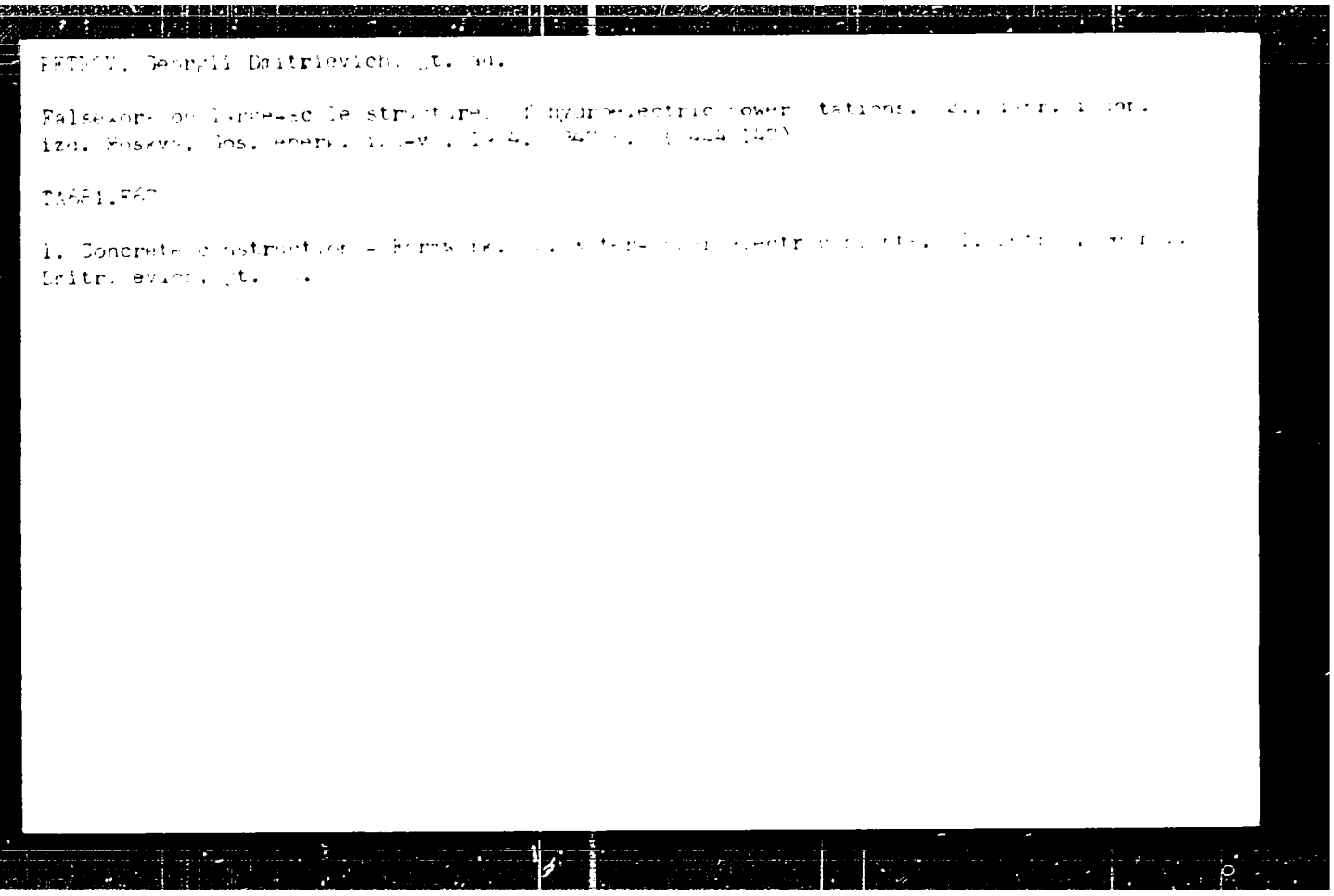
"[illegible]," [illegible].

PETROV, G.D., inzhener, mayor.

The type of concrete plant for large-scale construction. Mekh. stroi. 4 no.6 :1-7 Je '47. (MLRA 9:2)
(Concrete plants)

PETROV, G.D., inzhener, mayor; BELYAVSKIY, V.A., inzhener, kapitan.

Making reinforced concrete pipes in vibration forms. Mekh. stroi. 4 no.6:13-15 Je '47. (MLRA 9:2)
(Pipe, Concrete)



PETROV, Georgii Dmitrievich, d. sci.

Professor of [illegible] structures. Hydroelectric power stations. [illegible] izd. Moskva, Gos. energ. izd-vo, 1954. [illegible] (MLRA 10:2)

TA661.P48

1. Concrete construction - Forms [illegible] Dmitr. evich, d. sci.

PETROV, G. D.

USSR/Engineering - Book review

Card 1/1 #Pub. 70 - 9/9

Authors # Petrov, G. D., Engineer, Recipient of Stalin Premium

Title # Belt conveyers in hydrotechnical construction

Periodical # Mekh. stroi. 3, 31-32, March 1954

Abstract # Critical review of a book, by Shcherbakov and Uglichskiy, on the employment of belt conveyers for the feeding of wet cement and other loose materials during the construction of large hydrotechnical plants, is presented.

Institution : .....

Submitted : .....

BORODIN, P.V., kandidat tekhnicheskikh nauk; MIKLASHEVSKIY, Ye.P., professor, doktor tekhnicheskikh nauk.

"Sheathing of massive hydroelectric power plant structures." V.V. Ermolov, O.D.Petrov. Reviewed by P.V.Borodin, E.P.Miklashevskii. Gidr.stroi 23 no.6:47-48 '54. (MLRA 7:9)
(Ermolov, V.V.) (Petrov, O.D.) (Concrete construction--Formwork)

PETROV, G.D., inzhener, laureat Stalinskoy premii.

Use of cable cranes in the construction of major water power installations. Mekh. stroi. 12 no.5:10-15 My '55. (MLRA 8:6)

(Cranes, Derricks, etc.) (Hydroelectric power stations)

ZHUK, S.Ya., akademik, glavnyy redaktor; PETROV, G.D., redaktor toma; TISTROVA, O.N., redaktor; SKVORTSOV, I.M., tekhnicheskiy redaktor

[Volga-Don; technical report on the construction of the V.I.Lenin Volga-Don Canal, the Tsimlyansk Hydroelectric Development and Irrigation Facilities] Volgo-Don; tekhnicheskii otchet of stroitel'stve Volgo-Donskogo sudokhodnogo kanala imeni V.I.Lenina TSimlinskogo gidrouzla i orositel'nykh sooruzhenii. V piati tomakh (1949-1952). Moskva, Gos. energ. izd-vo. Vol.4. [Concrete work] Betonnye raboty. Glavn.red. S.IA.Zhuk. Red. toma G.D.Petrov. 1956. 427 p. (MLRA 9:12)

1. Russia (1923- U.S.S.R.) Ministerstvo elektrostantsii. Byuro tekhnicheskogo otcheta o stroitel'stve Volgo-Dona.
(Volga-Don Canal) (Concrete construction)

PETROV, G.D., laureat Stalinskoy premii, inzhener; KUYBIDA, G.G., inzhener.

Cable cranes for concrete placing. Mekh.stroi. 13 no.2[illegible]-12 F '[illegible]. (MLRA 9:5)

(Concrete construction) (Cranes, derricks, etc.)

AUTHOR: Petrov, I.I., Engineer

TITLE: Ways of Further Mechanizing Large-Scale Hydraulic Engineering Works [Puti dal'neyshey mekhanizatsii massovykh gidrotekhnicheskikh rabot]

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1958, Nr 10, pp 4-10

ABSTRACT: The article describes the development of the mechanization of mass hydraulic engineering works. Many successes have been achieved, however the present rate of development of heavy equipment is the same as when the Volgodonskoy canal Volga-Don canal was finished. The Uralets-2 and EO-1 excavators are mentioned as being inadequately utilized because of a shortage of dump trucks. Material used in the construction of caterpillar treads and wheel-rims wears out too quickly. The amount of spare parts produced is not on a par with foreign countries. Ways of further mechanizing large-scale hydraulic engineering works are recommended by the author. The most important excavating and concrete-laying machinery should be produced in the complete sets necessary for its full utilization. Spare parts production should

Card 1/2

Ways of Further Mechanizing Large Scale Hydraulic Engineering Works

be increased. The parts of existing machinery should be re examined and wear-resistant materials, light metals, alloys and plastics should be used. The manufacture of auxiliary equipment for excavation and concrete work should be organized. There are [illegible] tables, 6 photos, 2 diagrams and [illegible] drawings.

1 Water power--Work 2 Construction equipment--Maintenance
3 Construction equipment--Production

Card [illegible]

PETROV, G.D., inzh.; KOGAN, I.Ya., kand.tekhn.nauk

Using cable cranes in building hydraulic structures abroad.
Mekh.stroi. 15 no.10:28-32 O '58. (MIRA 11:11)
(Cableways) (Hydraulic engineering)

PETROV, G.D., inzh.

Method for further mechanization of mass hydraulic engineering work. Gidr. stroi. 27 no.10:11-12 O '58. (MIRA 11:12)
(Hydraulic engineering--Equipment and supplies)

ACC NR: AP6035867 SOURCE CODE: UR/0413/66/000/020/0079/0080

INVENTOR: Muradyan, A. G.; Gol'dfarb, I. S., Petrov, G. D.

ORG: none

TITLE: Equipment for data transmission and reception using optical carrier. Class 21, No. 187155. [announced by the Central Scientific-Research Institute of Communications, Ministry of Communications SSSR (Tsentral'nyy nauchno-issledovatel'skiy institut svyazi Ministerstva svyazi SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 79-80

TOPIC TAGS: data transmission, laser application, laser communication, laser modulation

ABSTRACT: An Author Certificate has been issued for a data transmission and reception apparatus with an optical carrier (see Fig. 1). To increase the capacity of

Card 1/2 UDC: 621.375.8 621.376.9

ACC NR: AP6035867

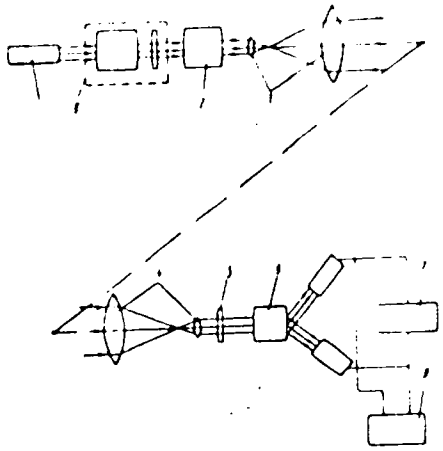


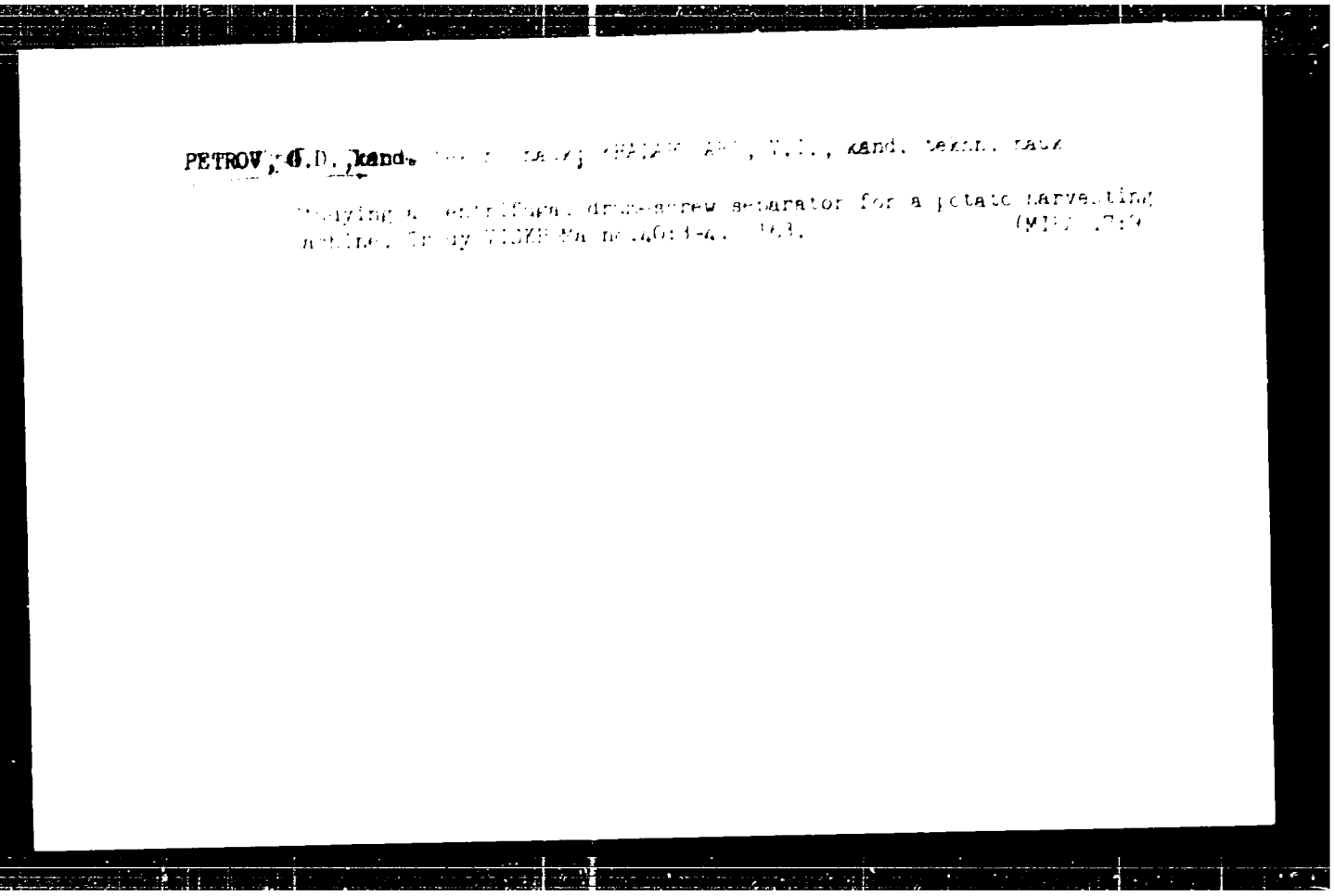
Fig. 1. Data transmission and reception apparatus

1 - Monochromatic radiation source; 2 - polarizing electro-optical modulators; 3 - transmitting system; 4 - receiving system; 5 - 1/4 plate; 6 - double refracting prism; 7 - differentiating circuit; 8 - amplitude modulator; 9 - adder.

transmited data, the amplitude modulator is placed between the light source and the polarizing modulator in the transmitter; in the receiver an adder is connected to the photoreceiver outputs in parallel with the differentiating circuit. Orig. art. has: 1 figure.

SUB CODE: 17,09,20/ SUBM DATE: 21Jul65/ ATD PRESS: 5106

Card 2/2



PETROV, G.D., kand. [illegible], V.I., kand. sexn. nauk

[illegible] a centrifugal drum-screw separator for a potato harvesting machine. Trudy VIMA no.46:3-4. '63. (MIRA 17:4)

PETROV, G.D.

"Research and Investigation of the Operating Qr and Wear in Separate Heavy Earth or Rotat-ricating Engines." and Tech Sci, Mos Pow Inst for the Mechanization and Electrification of Agriculture imeni V. M. Molotov, Min Higher Education USSR, Moscow, 1955. (KL, 6-56, 99r 55)

SO: Sum. No. 704, 2 Nov 56 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15).

LAYKHTER, E.G.; CHUMAK, A.V., inzh., red.; BEZHUCHKIN, I.P., kand.tekhn. nauk, red.; ZANIN, A.V., kand.tekhn.nauk, red.; ZVOLINSKIY, N.P., inzh., red.; IVANOV, I.S., inzh., red.; KLETSKIN, M.I., inzh., red.; PETROV, G.D., kand.tekhn.nauk, red.; PUSTYGIN, M.A., doktor tekhn. nauk, red.; RABINOVICH, I.P., kand.tekhn.nauk, red.; RUDASHEVSKIY, D.Sh., kand.tekhn.nauk, red.; SINEOKOV, G.N., doktor tekhn.nauk, red.; SYSOYEV, N.I., kand.tekhn.nauk, red.; FEDOROV, V.A., inzh., red.; CHAPKEVICH, A.A., kand.tekhn.nauk, red.; PONOMAREVA, A.A., tekhn.red.

[Bibliographic manual on tillage machinery and implements] Bibliograficheskii spravochnik po pochvoobrabatyvaiushchim mashinam i orudiiam. Moskva, Gosplanizdat. No.2. [Literature in the Russian language from 1730-1955] Literatura na russkom iazyke za 1730-1955 gg. Pod red. G.N.Sineokova. 1959. 263 p. (MIRA 13:9)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Bibliography--Agricultural machinery)

PETROV, G.D., kand.tekhn.nauk

Ways for developing universal root crop harvesting machines. Trakt. i sel'khozmash. 33 no.2:21-24 F '63. (MIRA 16:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Root crops—Harvesting)

S/169/62/000/011/027/077
D228/D307

AUTHOR: Petrov, G.D.

TITLE: Aircraft measurement of cloud particle charges

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 36, abstract 11G233 (In collection: issled. oblakov. osadkov i grozovogo elektrichestva, M., Gidrometeoizdat, 1961, 278-280)

TEXT: An aircraft device for measuring the size and charge of separate cloud particles is described. Particles, braked to a speed of 20 cm/sec, were flying past in a vertically homogeneous electric field, where they were photographed by means of a microscope. The size of a particle was determined from the width of the track that it left on photographic film. The charge was ascertained from the angle by which the trajectory of a particle deviated from the horizontal. Since the working volume of the device was lit by a gas-discharge lamp, giving 800 flashes per second, the track of a particle on photographic film was obtained as a dotted line; this

Card 1/2

Aircraft measurement ... S/169/62/000/011/027/077
D228/D307

allowed the rate of particle motion to be determined. The results of charge measurements in cumuli and strato-cumuli are given. It is shown that in the size range from 2 to 12 μ the average charge and the average size of particles in such clouds are related linearly.

[Abstracter's note: Complete translation]

Card 2/2

PETROV, N.D., inzh.

Mechanized transportation of the concrete mix. Mekh. stroi., 19 no.5:10-13 My '62. (MIRA 15:5)
(Concrete--Transportation)
(Motortrucks)

[redacted], I. D.; [redacted] V. V.

Types of potato diggers. Trakt. i sel'khozmash. No. 6, [illegible] Je '62. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Potato digger (Machine))

PETROV, G.D., inzh.

Belt conveyers for concreting operations. Gidr. str. 3[illegible] no.12 17-21 D '61. (MIRA 15:2)

(Conveying machinery)
(Concrete Transportation)

SEVAST'YANOV, V.I., glav. red.; KUZNETSOV, A.Ya., zam. glav. red.; MIKHAYLOV, A.V., doktor tekhn. nauk, zam. glav. red.; ALEKSEYEV, Yu.S., red.; IVANOV, P.A., red.; PETROV, G.D., red.; RAPOPORT, Ya.D., red.

[Volga Hydroelectric Power Station (22d Congress of the CPSU); album of drawings] Volzhskaia gidroelektrostantsiia imeni XXII s"ezda KPSS; al'bom chertezhei. Moskva, Gosenergoizdat. Pt.1. [Basic structures] Osnovnye sooruzheniia. 1962. 62 p. (MIRA 15:5)

1. Moscow. Vsesoyuznyy proyektno-izyskatel'skiy i nauchno-issledovatel'skiy institut "Gidroproyekt" imeni S.Ya.Zhuk. (Volga Hydroelectric Power Station (22d Congress of the CPSU)—Design and construction)

PETROV, G.D., inzh.

Characteristics of work involved in diverting the Pechora and the Vychegda into the Volga. Gidr. stroi. 31 no.7:21-27 Jl '61. (MIRA 14:7)

(Rivers—Regulation)
(Hydraulic engineering)

PETROV, G.D.; kand.tekhn.nauk; FIRSOV, N.V., kand.tekhn.nauk

Harvesting potatoes in a continuous operation. Mekh. i elek. sots. sel'khoz. 19 no.2:10-12 '61. (MIRA 14:3)

1. Vsesoyuznyy nauchno-issledova el'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Potatoes—Harvesting)

PETROV, G.D., kand. tekhn. nauk; CHAUS, V.M., kand. sel'skokhoz. nauk

Development of the mechanization of potato harvesting abroad.
Mekh. i elek. sots. sel'khoz. 21 no.1 [illegible] '63.
(MIRA 16:2)

(Potatoes--Harvesting)

KLETSKIN, M.I.; PETROV, G.D.

Results obtained in 1961 from testing potato combines and grading points. Trakt.i sel'khozmash. 31 no.3:22-27 Mr '61. (MIRA 14:3)

1. Glavnyy konstruktor Vsesoyuznogo nauchno-issledovatel'skogo instituta sel'skokhozyaystvennogo mashinostroyeniya (for Kletskin). 2. Nachal'nik laboratorii kartofeleuborochnykh mashin Vsesoyuznogo nauchno-issledovatel'skogo instituta sel'skokhozyaystvennogo mashinostroyeniya (for Petrov).

(Potato digger(Machine)) (Potatoes--Grading)

PETROV, G.D., kandidat tekhnicheskikh nauk.

Using vibrating screens in potato combines. Sel'khozmashina no.10: 10-13 O '56. (MLRA 9:12)
(Potatoes--Harvesting) (Combines (Agricultural machinery))

PETROV, G.D.

The KGP-2 potato combine. Biul.tekh.-ekon.inform. no.?: 52-54 '60. (MIRA 13:7)
(Potato digger(Machine))

PETROV, G.D., kand.tekhn.nauk

Courses and prospects in design and research on potato harvesting machinery. Trakt. i sel'khozmash. 30 no.7:16-20 Jl'60. (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.

(Potato digger (Machine))

FEDOROV, L.T., kand.tekhn.nauk; LEONT'YEVSKIY, B.B.; GIL'DENBLAT, Ya.D., kand.tekhn.nauk; KOMENISTOV, D.V.; ROSSINSKIY, K.I., kand.tekhn. nauk; KUZ'MIN, I.A., kand.tekhn.nauk; KONDRATSKAYA, A.A., inzn.; NISAR-MUKHAMEDOVA, G.N., inzh.; PANOVA, G.M., inzh.; ROZHDESTVENSKIY, G.L., inzh.; SEMIKOLENOV, A.S., inzh.; TSAREVSKIY, S.V., inzn.; ZHUKOVA, M.F., inzh.; GRISHIN, M.M., retsenzent; KRITSKIY, S.N., doktor tekhn.nauk, red.; MENKEL', M.F., doktor tekhn.nauk, red.; GALAKTIONOV, V.D., kand.geol.-min.nauk, red.; ZAVALISHIN, I.S., inzh., red.; MALYSHEV, N.A., inzh., red.; MIKHAYLOV, A.V., doktor tekhn. nauk, red.; PETROV, G.D., inzh., red.; RAPOPORT, Ya.D., red.; RUSSO, G.A., kand.tekhn.nauk, glavnyy red.; SEVAST'YANOV, V.I., inzh., red.; TITOV, S.V., inzh., red.; TISTROVA, O.N., red.; LARIONOV, G.Ye., tekhn.red.

[Hydrology and water economy of the Volga-Don] Gidrologiia i vodnoe khoziaistvo Volgo-Dona. Pod red. S.N.Kritskogo i M.F.Menkelia. Moskva, Gos.energ.izd-vo, 1960. 146 p. (MIRA 13:11)

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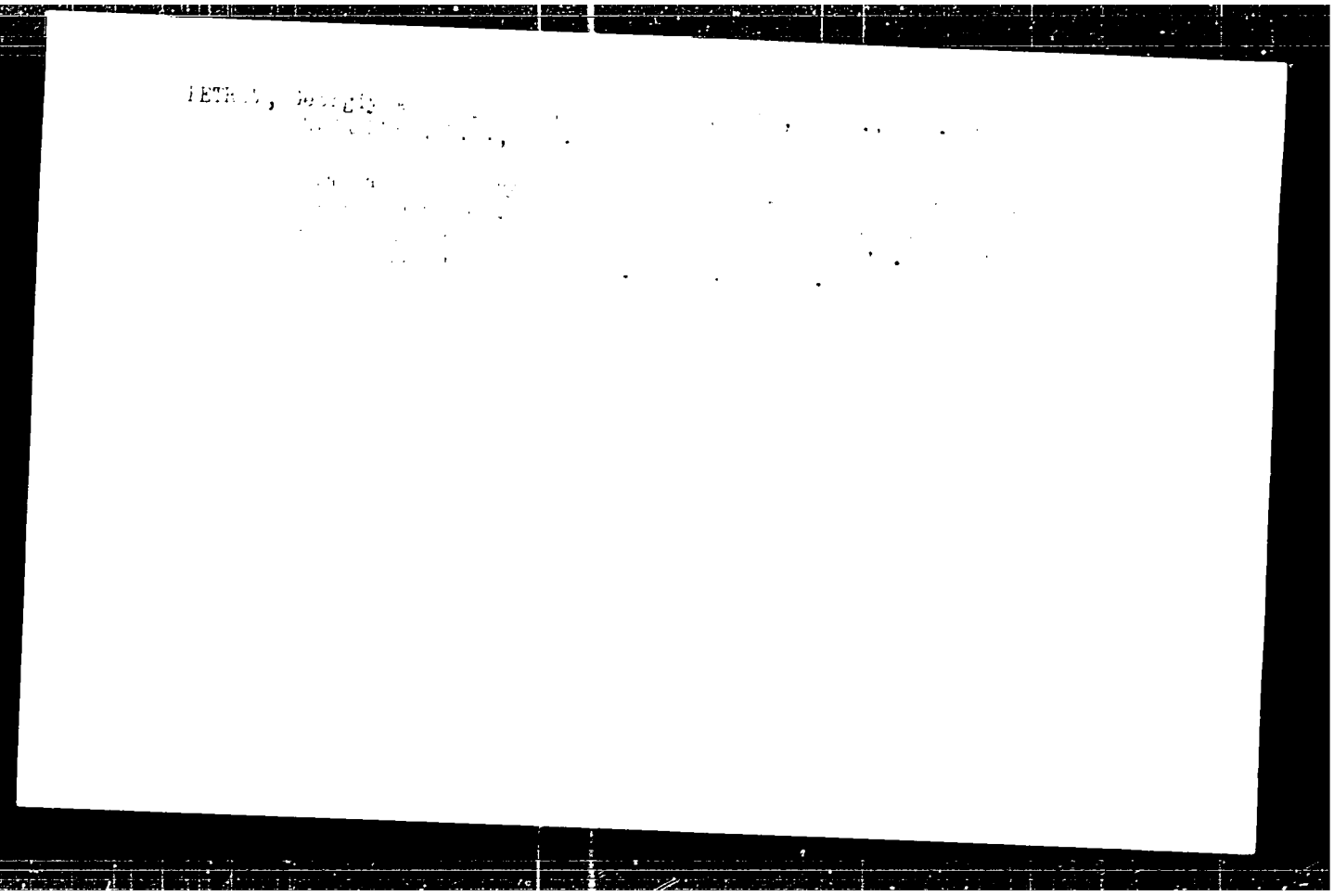

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Smutkina, L. S.
Pechkovskaya, Z. B.

TITLE: The Physico-chemical Nature of Coal Substance (Fiziko-khimicheskaya priroda kokseovaniya ugley

PERIODICAL: Doklady Akademii nauk SSSR, 1 [illegible], Vol 125, Nr 4, pp [illegible]
(USSR)

ABSTRACT: A polymer is the substance of the organic ground mass of fossil coal. Its structural elements are formed by a flat aromatic net of carbon atoms (in the nuclear part of the structure) with organic, not aromatic side radicals (peripheral part). The latter contain carbon, hydrogen, oxygen and several other elements (Ref 1). Under thermal conditions of coal pyrolysis it is possible to draw a particular clear distinction with respect to time between the separate stages of primary and secondary decomposition. Both of these belong to the reactions of the peripheral and the nuclear part of the structure which differ with respect to the amount of activation energy (Ref 2). The vigorous separation of [illegible] substances (Curve I) and the constancy of the size of the nets L_a (Curve II) are characteristic of the [illegible]

Card 1/3

The physico-chemical Nature of Coal Coking

tion of coking coal at 500° [illegible]
nuclear part of the structure. [illegible]
one minimum and one maximum [illegible]. The [illegible]
ed nature and composition of [illegible]
gas-vapor-phase at 450° in the "boil n" layer. [illegible]
the simultaneous decomposition of the carbon parti[illegible]
a rapid discharge of the products forme[illegible]
show the dependence of the tar [illegible]
the duration of pyrolysis in [illegible]
substances in each stage of coal decomposition. [illegible]
of pyrolysis the yield in asphaltenes, carbenes and [illegible]
paraffins rises with increasing degree of decomposition. They
are heavy, high-molecular products of synthesis in the vapor-
vapor-phase. Their elementary composition is transformed in
the direction of the increasing ratio C/H. The yield of
containing products decreases. [illegible] results [illegible]
of a rapid disproportionation among the volatile substances
and the solid radical of the destructing elements C and H
through which the end groups of molecules are enriched. This
is characteristic of a selective process. In this connection
O and H are rapidly removed from the reaction system. Thus,
favorable conditions of synthesis are created for other layer
subgtances both in the gas phase and the solid radical. [illegible]

Card 2/3

The Physico-chemical Nature of Coal Coking

conditions of a not selective high-temperature-process. However, the reactions proceed to a great extent under the [illegible] of the C-C-bonds. Entire fragments of the side radicals are broken off. As a result of this coal is not [illegible] the destructive elements C and [illegible] Ref 4 . In the case of acceleration of the temperature rise of from 2 degrees/min to 100 degrees/min the sum $V_t + V_{radical}$ increases [illegible] (V_t denotes the sum of the losses in weight, V [illegible] "remaining" volatile substances [illegible] . The rise of the solid radical becomes flatter and flatter. In conclusion, the authors give a physical summary of the [illegible] There are 4 figures, 1 table, and 8 references, [illegible] are Soviet.

PRESENTED: November 22, 1958, by A. V. Topchiyev, [illegible]

SUBMITTED: July 29, 1958

Card 3/3

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