LINKOV, Ya.I.; MOROZOV, I.G.

Cost of safety. Put' i put. khoz. no.3:31-32 Mr '58. (MIRA 11:4)
(Railroads--Safety measures)

YEVDOKIMOV, I.I.; ALEKSEYEV, V.D.; ASHIKHMIN, A.K.; BAYEV, N.V.; BEGLAR'YAN, P.A.; BYCHKOV, I.A.; VESLOVA, Ye.T.; VYZHEKHOVSKAYA, M.F.; GURETSKIY, S.A.; DEMIDOV, I.M.; YESIPOV, Ye.P.; ZHUKOV, V.D.; ZELINSKIY, M.G.; ZOL'NIKOV, F.T.; ZOLOTOVA, L.I.; KIVIN, A.N.; KOMARNITSKIY, Yu.A.; KONSTANTINOV, A.N.; KUL'CHITSKAYA, A.K.; MAKSIMENKO, I.I.; MELENT'YEV, A.A.; MOROZOV, I.G.; MURZINOV, M.I.; OZEMBLOVSKIY, Ch.S.; OSTRYAKOV, K.I.; PANINA, A.A.; PAVLOVSKIY, V.V.; PERMINOV, A.S.; PERSHIN, B.F.; PRONIN, S.F.; PSHENNYY, A.I.; POKROVSKIY, M.I.; RASPONOMAREV, Ye.A.; SEMIN, I.N.; SKLYAROV, Yu.N.; TIBABSHEV, A.I.; FARBEROV, Ya.D.; FEDOROV, G.P.; SHUL'GIN, Ya.S.; YAKIMOV, I.A.; VERINA, G.P., tekhn.red.

[Labor feats of railway workers; stories about the innovators] Trudovye podvigi zheleznodorozhnikov; rasskazy o novatorakh. Moskva, Gos.transp.zhel-dor.izd-vo, 1959. 267 p. (MIRA 12:9)
(Railroads) (Socialist competition)

MOROZOV, I. G.

USSR/Physics
Magnetic permeability
Permalloy

"Problem of the Relation of Magnetic Permeability of Permalloy-Type Alloys to Frequency," D. M. Alekseyev, G. T. Matsepin, I. G. Morozov, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dokl. Akad Nauk SSSR" Vol LXI, No 3

Reports experiments. Plots and discusses results.

Submitted 20 May 48

PA 11/49T100

I.G., MOROZOV

1360. On the Structure of the Extensive Atmospheric Showers by D M Alekseev, G T Zatsepin and I G Morozov Doklady Akad Nauk SSSR 61 457-458 (1948) July 21 (In Russian)

The fact (Zatsepin and Miller, Zhur Eksptl i Teoret Fiz 17 939 (1947)) that the registration of extensive showers is still observable between 2 counter systems S_1 and S_2 at distances reaching 600-1000 m, was submitted to further study at 3860 m altitude. In addition to coincidences C_4 and S_1 and S_2, the coincidences C_5 with a central counter group were recorded. According to the cascade theory, an electron-photon shower has a certain mean-square-root radius R_0 (R_0 = 100 m for p = 480 mm Hg at the altitude 3860 m), the shower density decreasing rapidly outside R_0. As a consequence, the ratio C_5/C_4 must grow with the distance between S_1 and S_2. The actual measurements showed the opposite effect: the ratio C_5/C_4 decreased from 0.77 ± 0.015 to 0.66 ± 0.075 when the distances grew from 2 to 600 m. These results confirm the hypothesis that the extensive atmospheric showers possess a "structure," perhaps in the shape of

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MOROZOV, I. G.

USSR/Nuclear Physics - Particles, Elementary
Nuclear Physics - Cosmic Radiation

Dec 48

"Distribution of Penetrating Particles and High-Energy Electrons in Wide Atmospheric Showers," D. M. Alekseyev, G. T. Zatsepin, I. G. Morozov, Phys Inst imeni P. N. Lebedev, 4 pp

"Dok Ak Nauk SSSR" Vol LXIII, No 4

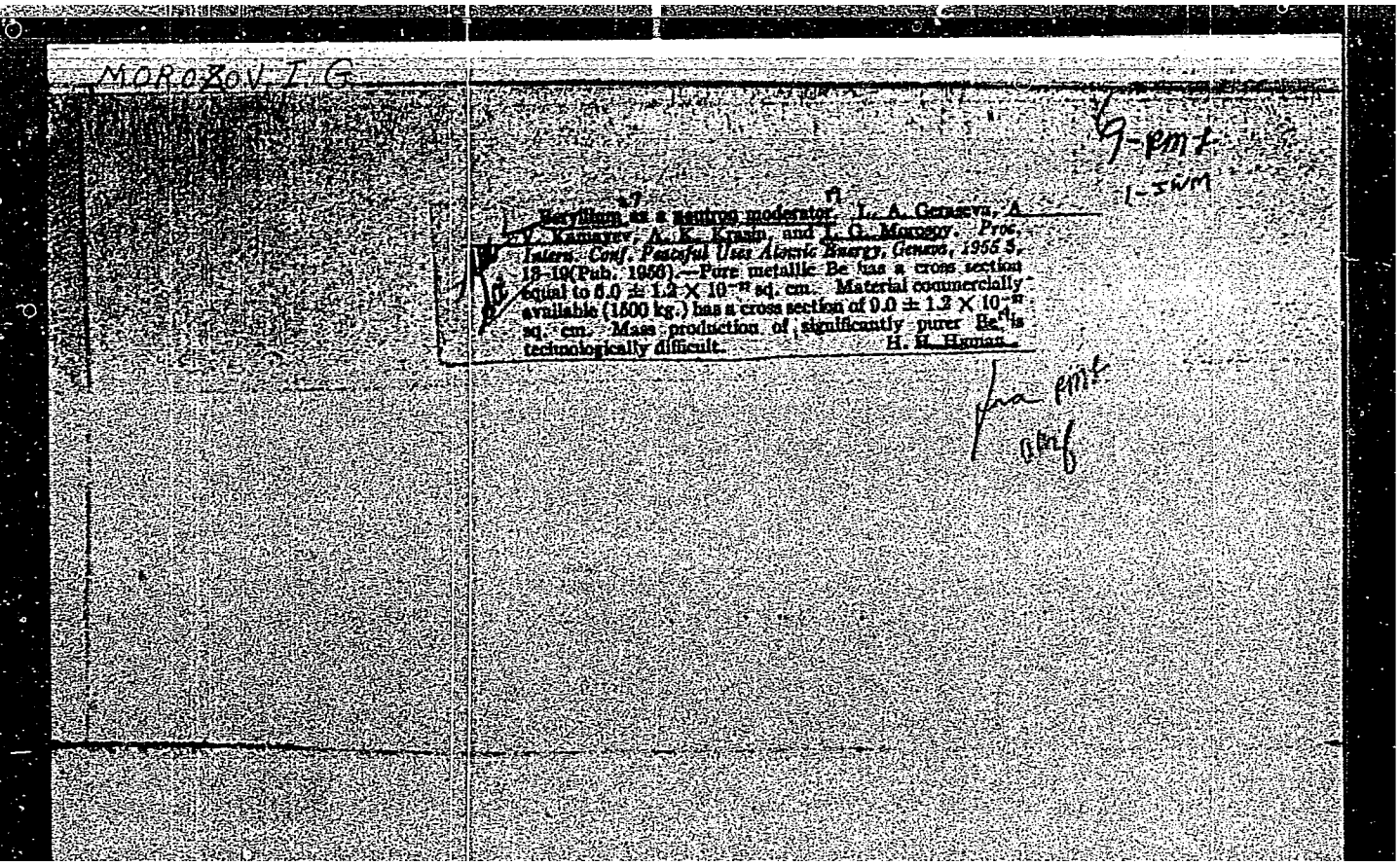
Describes observations made at 3,860-meter altitude. Results prove existence of penetrating particles in atmospheric showers. Considers that proportion of such particles is higher than usual estimate made by measuring their density and assuming uniform distribution in space. Submitted by Acad S. I. Vavilov, 30 Sep 48.

PA 45/49T100

KRASIN, A.K.; MOROZOV, I.G.; GERASEVA, L.A.; KAMAYEV, A.V.

[Study of beryllium as a neutron moderator] Izuchenie berilliia kak zamedlitelia neitronov. Moskva, 1955. 17 p. (MIRA 14:7)

(Beryllium) (Neutrons—Capture)



MOROZOV, I. G.

9-pmt
1-zwm

Beryllium as a neutron moderator. L. A. Genaeva, A. V. Kamaryev, A. K. Krasin, and I. G. Morozov. *Proc. Intern. Conf. Peaceful Uses Atomic Energy, Geneva, 1955* 5, 13–19(Pub. 1956).—Pure metallic Be has a cross section equal to $6.0 \pm 1.2 \times 10^{-24}$ sq. cm. Material commercially available (1500 kg.) has a cross section of $9.0 \pm 1.2 \times 10^{-24}$ sq. cm. Mass production of significantly purer Be is technologically difficult. H. H. Hyman.

for pmt
conf

MOROZOV, I. G.; INYUTIN, Ye. I.; SIDOROV, G. I.

Kinetics of a reactor with linearly increasing reactivity.
Inzh.-fiz. zhur. 6 no.1:73-78 Ja '63. (MIRA 16:1)

(Nuclear reactors)

MOROZOV, I. G.; [illegible], Yu. I.; [illegible], M. N.; [illegible]

"Experimental investigation of physical characteristics of water-water reactors for small power plants."

report submitted for 3rd Intl. Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

L 40826-65 EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EWG(m)/EPR/EWP(j)/EWP(t)/EWP(b)
Pc-4/Pr-4/Ps-4/Pu-4 IJP(c) JD/WW/JG/GS/RM
ACCESSION NR: AT5007909 S/0000/64/000/000/0194/0207

AUTHOR: Yurova, L. N.; Polyakov, A. A.; Klenov, G. I.; Morozov, I. G.; Inyutin, Ye. I.; Sidorov, G. I.

TITLE: A study of the physical characteristics of uranium-hydrogen containing reactors on a critical stand

SOURCE: Moscow. Institut atomnoy energii. Issledovaniya po primeneniyu organicheskikh teplonositeley-zamedliteley v energeticheskikh reaktorakh (Research on the use of organic heat-transfer agents and moderators in power reactors). Moscow, Atomizdat, 1964, 194-207

TOPIC TAGS: nuclear power plant, thermal reactor, power reactor, organic reactor coolant, heat transfer agent, organic moderator, uranium hydrogen reactor, isopropylbiphenyl, critical mass

ABSTRACT: The results of an experimental comparison of organic and aqueous moderators under identical conditions on a critical stand are presented. In these studies, monoisopropylbiphenyl was used as the organic moderator, the purpose of the experiment being to determine the critical mass of uranium in systems with organic and aqueous moderators for a given construction of fuel elements. The critical stand used is described, and the distribution of thermal neutrons is

Card 1/2

L 40826-65
ACCESSION NR: AT5007909

analyzed. The results show that the values of the migration area for media with monoisopropylbiphenyl lie below the values for aqueous moderators by 40-70% for identical values of Q_H/Q_5. Measurements were also carried out at different ratios of the active zone to determine the effect of the geometry of the active zone on the critical masses. These investigations showed that in the region where $D_{equiv} \sim 1$ when $Q_H/Q_5 = 200-300$ for monoisopropylbiphenyl and $Q_H/Q_5 = 300-400$ for aqueous moderators, the values of the critical masses are essentially independent of the geometry of the active zone. Orig. art. has: 11 figures, 2 tables and 7 formulas.

ASSOCIATION: None

SUBMITTED: 01Aug64 ENCL: 00 SUB CODE: NP, ED

NO REF SOV: 003 OTHER: 003

Card 2/2

17

L 24211-65 EWT(m)/EPF(c)/EPF(n)-2/EPR Pr-4/Ps-4/Pu-4 DM

ACCESSION NR: AP5001266 S/0089/64/017/006/0448/0452

42
B

AUTHOR: Sinev, N. M.; Krasin, A. K.; Bychkov, I. F.; Blokhin, O. I.; Broder, D. L.; Gabrusev, V. N.; Dudnikov, Yu. V.; Zhil'tsov, V. A.; Koptev, M. A.; Kotov, A. P.; Lantsov, M. N.; Ligochkin, G. A.; Merzlikin, G. A.; Morozov, I. G.; Komarov, A. Ya. (deceased); Orokhov, Yu. I.; Sergeyev, Yu. A.; Slyusarev, P. N.; Ushakov, G. N.; Fedorov, N. V.; Chernyy, V. Ya.; Shmelev, V. M.

TITLE: Small-size atomic electric power installation TES-3

19

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 448-452

TOPIC TAGS: small atomic power installation, portable atomic power installation, nuclear reactor, electric power generation, TES-3 reactor

ABSTRACT: The paper is a summary of the SSSR report #310 at the Third International Conference on Peaceful Uses of Atomic Energy in Geneva, 1964. It describes a movable small-size atomic electric power installation with the water cooled and moderated TES-3 reactor (under 10,000 kw). It consists of four

Card 1/2

L 24211-65
ACCESSION NR: AP5001266

blocks each of which was assembled at the manufacturing plant, and which are placed on four self-propelled flatcars on caterpillar tracks. No housing is required for the installation; the only local preparation needed is the radiation protection. The results with a demonstration model show a satisfactory agreement between the theoretically expected and actually obtained parameters of the installation. Orig. art. has: 4 figures

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 000 OTHER: 000

Card 2/2

L 16724-66 EWT(m) DIAAP

ACC NR: AP6008460 SOURCE CODE: UR/0089/65/019/005/0459/0460

AUTHOR: Grishanin, Ye. I.; Kukavadze, G. M.; Lependin, V. I.; Mamelova, L. Ya.; Morozov, I. G.; Orlov, V. V.; Pilipets, D. T.

ORG: none

TITLE: Measurement of the absorption cross section of sup 156 Gd

SOURCE: Atomnaya energiya, v. 19, no. 5, 1965, 459-460

TOPIC TAGS: gadolinium, neutron cross section, thermal neutron, neutron irradiation, mass spectrometer, neutron spectrum, nuclear reactor, neutron

ABSTRACT: Samples of gadolinium oxide were irradiated in a reactor with thermal neutrons to various integral fluxes. The thermal-neutron absorption cross section of ^{156}Gd was determined from the values of the ^{156}Gd and ^{157}Gd concentrations in the irradiated samples, measured on a mass spectrometer, and the value of the ^{157}Gd absorption cross section, obtained by averaging the cross section from resonance parameters over the neutron spectrum of the reactor. The cross section for 0.025-ev neutrons was found to be 13 ± 3 barns. [NA]

SUB CODE: 18, 20 / SUBM DATE: 02Apr65 / OTH REF: 003

Card 1/1

MOROZOV, I.I.

Stability of steam generation in a single turn of a uniflow boiler. Inzh.-fiz.zhur. 4 no.8:49-53 Ag '61. (MIRA 14:8)

1. Politekhnicheskiy institut, Chelyabinsk.
(Boilers)

MOROZOV, I.I., kand.tekhn.nauk, dotsent

Concerning the stability of the steam formation process in the parallel coils of a once-through boiler. Izv.vys.ucheb.zav.; energ. 5 no.11:66-68 N '62. (MIRA 15:12)

1. Chelyabinskiy politekhnicheskiy institut. Predstavlena promyshlennoy teploenergetiki.
(Boilers)

ACCESSION NR: AP4038663 S/0170/64/000/004/0051/0057

AUTHOR: Morozov, I. I.

TITLE: Effect of the variability of the heat flow on the stability of the operational process of a direct-flow steam generator

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 4, 1964, 51-57

TOPIC TAGS: Steam generator, heat flow

ABSTRACT: The paper shows the effect of a variable heat flow on the stability of the steam generation process in a single tube. The pressure in the tube is assumed to be low compared to the critical pressure, and approximately uniform along the heated portion. It is assumed that the physical constants of the fluid are constant for small temperature fluctuations, and that the heat flow along the tube may be neglected. A characteristic equation is derived for the case of a constant heat flow. Another equation is obtained for the case where the heat flow is uniform along the tube but variable with time. The effect of the flow pattern on the stability of the process is shown. The stability boundaries are given. A comparison of the experimental data with the predicted

Card 1/2

ACCESSION NR: AP4038663

stability boundaries shows good agreement. Orig. art. has: 3 figures and 23 formulas.

ASSOCIATION: Politekhnicheskiy institut, Chelyabinsk (Polytechnic Institute)

SUBMITTED: 13May63	DATE ACQ: 19May64	ENCL: 00
SUB CODE: EE	NO REF SOV: 005	OTHER: 000

Card 2/2

S/170/63/006/001/007/015
B187/B102

AUTHORS: Morozov, I.I., Mal'kov, V.A.

TITLE: Effect of elastic volumes on the stability of the working process in steam generating pipes

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 1, 1963, 54-58

TEXT: The stability of steam production in the pipe of a heat exchanger with elastic input volume, having a gas cushion and a steam collector at the output, is studied for the simplest types of pipes. The conditions and the results published in the paper by I.I. Morozov (IFZh,no.8,1961) are used. The system of equations which describes this process, as given in that paper, is linearized. With the aid of the perturbation calculus and after a Laplace transformation the characteristic equation for the system is derived. Making a further simplification (absence of the steam collector at the end of the output) the following condition is obtained as a necessary and sufficient criterion for the stability of the system on a constant interface between liquid and steam:

$$\frac{\dot{G}}{2(p_0-p_1)}\left(\frac{\partial \dot{G}}{\partial p}\right)^{-1} < 1$$

Card 1/2

G is the liquid consumption, p_0 is the pressure in the gas cushion, p_1 is the steam pressure in the pipe. The stability is brought about by a decrease in pressure behind the elastic volume. A change in pressure before the elastic volume does not affect the stability. The results were experimentally verified on a model constructed according to the theoretical considerations. There are 3 figures.

ASSOCIATION: Politekhnicheskiy institut, g. Chelyabinsk (Polytechnic Institute, Chelyabinsk)

SUBMITTED: August 2, 1962

MOROZOV, I.I.

Effect of the variability of a heat flow on the stability of operation of a uniflow steam generator. Inzh.-fiz. zhur. 7 no.4:51-57 Ap '64. (MIRA 17:4)

1. Politekhnicheskiy institut, Chelyabinsk.

MOROZOV, I. I., YESIN V. I.

Determining the polytropic curve index of the gas expansion process in a high-pressure vessel. Inzh.-fiz. zhur. 7 no.6 108-113 '64. (MIRA 17:12

1. Politekhnicheskiy institut, g. Chelyabinsk.

USSR Electronics Components FD-[illegible]

Morozov, I. I.

Card [illegible] Pub. [illegible]

Author : Morozov, I. I., Active Member, VNORIE

Title : Temperature - Frequency Characteristics of Electrolytic Capacitors

Periodical : Radiotekhnika, 10, [illegible], May [illegible]

Abstract : Experimental data are cited on the variation of capacitance, loss angle, and impedance of electrolytic capacitors over the temperature range from -60° to +85°C and at frequencies from 5 cycles per second to 20 Mc per sec. An equivalent circuit which qualitatively explains the observed relationships is examined. The frequency ranges for effective utilization of electrolytic capacitors of different capacitances are indicated. Tables, graphs, four USSR references.

Institution : All-Union Scientific and Technical Society of Radio Engineering and Electric Communications imeni A. S. Popov (VNORIE)

Submitted : October 23, 1954

AUTHOR MOROZOV I.I. cand.phys.math.sc. (Moscow) 105-7-12/29
TITLE Tantalum Electrolytic Capacitors.
(Tantalovyye elektroliticheskiye kondensatory.-
Russian)
PERIODICAL Elektrichestvo '957. Nr 7, pp 54-57 (U.S.S.R.)

ABSTRACT Two types exist:
1.) Foil condensers, for which a tantalum foil with a thin dielectric tantalum oxide layer serves as anode, and a tantalum- or aluminum foil serves as cathode.
2.) Space porous condensers with an anode consisting of tantalum powder compressed to tablets at 10 to 60 kg/cm and baked in the vacuum at high temperatures of 1900°C.
A short survey on the properties of the tantalum electrolytic condensers is given and compared with aluminum electrolytic condensers. The maximum computed specific capacities of the sections with smooth anodes are larger by about 1.4 to 2-fold for tantalum condensers within the working domain of from 12 to 150 V voltage than for aluminum condensers. The highest specific capacity for tantalum-space porous condensers is attained at low voltages (200 to 600 μF/cbcm). The most obvious advantage

CARD 1/2

Tantalum Electrolytic Capacitors. 105-7-12/29

of the tantalum condenser is the favorable [illegible] of the leakage current upon the temperature [illegible] the high positive temperatures, by which the stable domain of higher temperatures can be increased. The dependences of the capacity and the tg [illegible] temperature and frequency as well as the resistance to frost of the tantalum foil condensers with smooth anodes differ only little from those of the aluminum condensers. The dependence of the capacity on temperature and frequency is more favorable in the case of space-porous tantalum condensers. The stability of the characteristics on well sealed tantalum condensers is satisfactory at high temperatures and at different working conditions. (With 6 Illustrations and 1 Slavic Reference)

ASSOCIATION: not given
PRESENTED BY: -
SUBMITTED: 25.12.1956
AVAILABLE: Library of Congress.

CARD 2/2

05364
SOV/102-59-1-9/12

AUTHOR: Morozov, I.I.

TITLE: Gas Pressure Calculations for Pneumatic Devices in Automatic Systems

PERIODICAL: Avtomatika, 1959, Nr 1, pp 79-83 (USSR)

ABSTRACT: It is pointed out that, although pressure calculations are often made from the adiabatic gas law (Eq 1), it is often the case that the mass of gas varies, in which case Eq (4) should be used. Fig 1 illustrates a pneumatic servo used in the tests (with V = const) and Fig 2 gives the curve found by experiment, which agrees with Eq (4) much better than it does with Eq (1), no matter whether we use n = 1 or n = 1,4, although the latter is the better. (In this case Eq (4) becomes Eq (5) since v is constant) The gas flow rate is given by Eq (6) and m is given by the equation below Fig 2; the pressure then follows Eq (7). The corresponding result derived from Eq (1) is Eq (8). Next the author considers the case in which the volume varies, here the pressure is governed by Eq (9) or by Eq (10) since $V = F_n - x$; x(t) is found by experiment. Eq (12) is just a repetition of Eq (8). Fig 3 shows pressure curves

Card 1/2

05364
SOV/1[illegible]-59-1-6/12

Gas Pressure Calculations for Pneumatic Devices in Automatic Systems

(1, 2 and 3); the experimental points (circles) fall accurately on the curve predicted from Eq (4). There are 3 figures and 5 Soviet references.

ASSOCIATION: Dnipropetrovs'kiy depzhavniy universitet (Dnipropetrovsk State University)

SUBMITTED: November 4, 1958

Card 2/2

10.7000
30 (7)

AUTHOR: Morozov, I. I.

S/170/59/0[illegible]
B014/B014

TITLE: Approximate Calculation of the Evacuation of a Gas Container

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Vol 2, Nr 12, pp 72-76 (USSR)

ABSTRACT: The author explains two methods of calculation. In the first method he proceeds from the following assumptions: The container has a constant volume, a supercritical ratio exists between the pressure inside the container and the pressure of the surrounding gas, no heat exchange takes place between the gas in the container and the container itself. Equation (1) describes the pressure change in the container during its evacuation. Equations (5) and (6) are derived on the assumption of an adiabatic process. The pressure drop in the container with progressing time is graphically represented in figure 1 according to these formulas. In the second method, which is more exact than the first, the polytropic process of evacuation is taken into account. The derivation of the polytropy constant is discussed in detail, and equation (19) is given for the pressure change in the container. A graphical comparison between the experimental values and the curves calculated from formulas (5), (6), and (19) is shown in figure 1. There are 1 figure and 5 Soviet

Card 1/2

Approximate Calculation of the Evacuation of a Gas Container

S/170/59/002/012/021
B014/B014

references.

ASSOCIATION: Gosudarstvennyy universitet, g. Dnepropetrovsk (State University, City of Dnepropetrovsk)

Card 2/2

S/170/60/003/008/013/014
B019/B054

AUTHOR: Morozov, I I

TITLE: Prevention of Aeration of a Liquid by a Non-submerged Part of a Turbulent Jet

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol 3, No. 8, pp. 107 - 109

TEXT: The author investigates the aeration of a liquid by a non-submerged part of a turbulent fluid jet for the case of a container whose inlet- and outlet openings are situated in the bottom (Fig. 1). It is assumed that no aeration takes place if the non-submerged part of the jet does not exceed a certain height. The author obtains formula (5) for the minimum level height of the liquid, at which no aeration takes place, as a function of the inlet velocity and of the jet radius. He checked this result by carrying out experiments with water and visually observing the appearance of aeration. The results graphically shown in Fig. 2 exhibit a satisfactory agreement between experiment and theory It further appears from (5) that aeration with a given level of the liquid may be prevented by

Card 1/2

Prevention of Aeration of a Liquid by a Non-submerged Part of a Turbulent Jet

S/170/60/003/008/013/014
B019/B054

reducing the jet velocity and the diameter of inlet openings and by increasing the turbulence. Finally, formula (7) is given for estimating the minimum level for a given inlet quantity of liquid and a given number of inlet openings. There are 2 figures and 1 Soviet reference.

ASSOCIATION: Gosudarstvennyy universitet, g. Dnepropetrovsk (State University, Dnepropetrovsk)

SUBMITTED: December 17, 1959

Card 2/2

MOROZOV, I.I. (Che[illegible])

[illegible] [illegible] systems with delay. Avtomatyka [illegible]

(MIRA [illegible])

ACCESSION NR: AP4041074 S/0170/64/000/006/0108/0113

AUTHORS: Morozov, I. I.; Yesin, V. I.

TITLE: Polytropic index determination of gas expansion in high pressure vessels

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 6, 1964, 108-113

TOPIC TAGS: gas expansion, high pressure vessel, expansion law, polytropic index, heat transfer, specific heat

ABSTRACT: The processes of gas expansion in high-pressure vessels were considered, with the gas obeying various expansion laws. Expressions to be used in engineering calculations were derived for instantaneous polytropic expansion indices and the gas pressure in the vessel. The instantaneous polytropic index was defined by

$$n = k - (k-1)\frac{dQ/dt}{G_a RT_a}.$$

An average value for n is then obtained for the expansion process $p_a = p_{a_0}(1 + Ct)^{-\frac{2n}{n-1}}$ where

$$C = \frac{n-1}{2V_a}\mu m f_m R\sqrt{T_{a_0}}.$$

Card 1/2

ACCESSION NR: AP4041074

$$\bar{n} \simeq k - \frac{2{,}1B}{1 + \frac{2{,}1}{k-1}B} \frac{t}{30}$$

This yields the result in good agreement with experiments. Analogous expressions were derived for the pressure in the vessel and for $\bar{n}$ under the conditions C_p, C_v = const. This yields for the pressure

$$p_e = p_{e_0} - \frac{\bar{n}}{V_e} p_0 v t$$

and for $\bar{n}$ (approximately)

$$\bar{n} \simeq 1 + \frac{k-1}{1 + \varepsilon_1 B_2},$$

$$B_2 = \frac{B_1}{k-1}; \quad \varepsilon_1 = f(\pi_k)$$

where ε_1 can be further approximated by $\varepsilon_1 \simeq 0{,}058\,(1 - \pi_k)$. Orig. art. has: 33 formulas and 4 figures.

ASSOCIATION: Politekhnicheskiy institut g. Chelyabinsk (Polytechnic Institute, Chelyabinsk)

SUBMITTED: 16Sep63

ENCL: 00

SUB CODE: TD

NO REF SOV: 003

OTHER: 000

Card 2/2

MOROZOV, I.K.; IVAKHNENKO, A.D., red.; SALAMATINOVA, A., tekhn.red.

[Story about a good friend] Povest' o bol'shom druge. Tashkent, Gos.izd-vo Uzbekskoi SSR, 1960. 99 p. (MIRA 14:2)

(Cotton-picking machinery)

MOROZOV, I.I.

Putting out fi[illegible]. Transp. i khran. nefti i nefteprod. 10:24-25 '63.

1. Novorossiyskaya perevalochnaya neftebaza.

MRK 207/22

PHASE I BOOK EXPLOITATION 1187

. Eksperimental'nyy nauchno-issledovatel'skiy institut metallorezhushchikh stankov

Modernizatsiya strogal'nykh, dolbezhnykh i protyazhnykh stankov: rukovodyashchiye materialy (Modernization of Planing, Shaping, Slotting, and Broaching Machines; Instructions) Moscow, Mashgiz, 1957. 178 p. 8,500 copies printed.

Authors: Boltukhin,A.K., Morozov, I.I., Kudinov, V.A., Lapidus, A.S., Belov, V.S., Manuylov, L.K., Mushtayev, A.F., Engineers; Ed.: Prokopovich, A.Ye.; Ed. of Publishing House: Shemshurina, Ye.A.; Tech. Ed.: Matveyeva, Ye.N.; Managing Ed. for Literature on Metal Working and Tool Making (Mashgiz): Beyzel'man, R.D., Engineer.

PURPOSE: The book is intended for production engineers and machinists in metal cutting shops.

COVERAGE: The book presents instructions on modernization of planers, shapers, slotters, horizontal broaching machines, and vertical broaching machines for internal and external broaching. A brief review and analysis of the operation of these machine tools is

Card 1/6

given and also the basic and most expedient methods of modernizing them. Examples of design and modernization of the speed drive and of the feed drive, measures for raising the level of mechanization and automation of machine tools are discussed and devices are shown for widening the applicability range of machines and for performing various operations not pertaining to those usually done on these machine tools. The problems of increasing rigidity, resistance to vibrations and the life of these machine tools is discussed. Drawings of basic units of standard plans for modernization of tools as worked out by TsKB Remashtrest (Central Design Bureau of the Trust for the Repair of Metal-cutting Machines) and engineering departments of machine-tool building plants are presented in detail. No personalities are mentioned. There are 16 references, all Soviet.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TJ1205.M6)

GO/nah
2-25-59

Card 6/6

BOLTUKHIN, A.K.; STERLIN, S.Z.; MUSHTAYEV, A.F.; MOROZOV [illegible] KUDINOV, V.A.; MONAKHOV, G.A.; AZAREVICH, G.M.; LAPIDUS, A.S.; PROKOPOVICH, A.Ye., redaktor; RZHAVINSKIY, V.V., redaktor izdatel'stva; TIKHANOV, A.Ya., tekhnicheskiy redaktor

[Modernization of knee and column type milling machines; instructions] Modernizatsiia konsol'no-frezernykh stankov; rukovodiashchie materialy. Pod red. A.E.Prokopovicha. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 194 p. (MLRA 10:8)

1. Moscow. Eksperimental'nyy nauchno-issledovatel'skiy institut metallorezhushchikh stankov
(Milling machines)

PETROV, Vladimir Arsent'yevich; KOLMAKOV, Nikolay Alekseyevich; EPEL'MAN, Gilel' Grigor'yevich. Prinimali uchastiye: NIKITIN, V.V., MOROZOV, I.I.; SIVOKHA, N.V.; UTROBINA, N.I.; NIKITINA, N.N.; PANKOV, N.N.; BAUSHEV, N.P.; TATEVOSOV, K.G., dots.; LIPKIND, L.M., LEBEDEVA, A.K., inzh.-ekon.; VIL'DAVSKIY, I.M., dots., retsenzent; VOLKOV, S.A., kand. ekon. nauk, dots., red.; CHFAS, M.A., red. izd-va; PETERSON, M.M., tekhn. red.

[Continuous conveyer methods used in the lot production of composite machines] Potochno-konveiernye metody v seriino m proizvodstve slozhnykh mashin; iz opyta Leningradskogo zavoda poligraficheskikh mashin. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 130 p. (MIRA 14:9)

1. Rabotniki Leningradskogo zavoda poligraficheskikh mashin(for Nikitin, Morozov, Sivokha, Utrobina, Nikitina, Pankov, Baushev). 2. Leningradskiy inzhenerno-ekonomicheskiy institut (for Tatevosov, Lipkind, Lebedeva).

(Leningrad--Printing machinery and supplies)
(Factory management)

MOROZOV, I.I.: SHESTAKOV, A.I., inzh., retsenzent; SHATUNOV, V.G., inzh., red.; KHITROVA, N.A., tekhn. red.

[Organization of train traffic on lenthened haul distances] Organizatsiia dvizheniia poezdov na udlinennykh tiagovykh plechakh. Moskva, Transzheldorizdat, 1963. 84 p. (MIRA 16:10)

(Railroads--Traffic)

S/044/62/000/008/016/073
C111/C333

AUTHOR: Morozov, I. I.

TITLE: Algebraic stability criteria for systems with constant delay

PERIODICAL: Referativnyy zhurnal, Matematika, no. 8, 1962, 48, abstract 8 B 48 ("Nauchn. zap. Dnepropetr. un-t", 1961, 55, 67-69)

TEXT: The author attempts to give simple conditions for the asymptotic stability (in the A. M. Lyapunov sense) of the trivial solution of the equation

$$\sum_{k=0}^{n} a_k x^{(k)}(t) + b_k x^{(k)}(t-\tau) = 0$$

where a_k, b_k and $\tau > 0$ are constants ($k = 0,1,\ldots,n$ and $n \geq 1$ are integers). He actually succeeds through elementary calculations for $n \leq 3$. The conditions are then simple inequalities, e. g., for $n = 1$: $a_1^2 > b_1^2$, $a_0^2 > b_0^2$, $a_1 a_0 > b_1 b_0$. For $n > 3$, however, the promised

Card 1/2

simplicity of the proof and the conditions themselves appears to be rather doubtful. On page 56 (after formula (8)) the author has committed an inaccuracy at the point where he states, "it is known that the real roots of an algebraic equation are negative, if, and only if, the coefficients of the equation are positive." This statement, which is correct for N = 2, has simplified the author's expansion for n = 1 (N -- degree of the algebraic equation).

[Abstracter's note: Complete translation.]

AID P - 4849

Subject : USSR/Engineering

Card 1/2 Pub. 103 - 9/26

Authors : Morozov, I. K., P. A. Sharanov and A. Ya. Kiryushov

Title : Control devices for parts processed in grinding machines

Periodical : Stan. i instr., 2, 25-28, F 1956

Abstract : The authors present several measuring devices installed on cylindrical grinding machines, on surface grinders, and others. They illustrate the construction and describe the operation of these devices; their advantages in increased productivity of the machines, and their immediate effect on quality and precision of finished products. The use of such control instruments reduces spoilage and minimize the time required in manual inspection. Six drawings.

SOV/121-58-9-10/24

AUTHORS: Larichev V.N., Lind A B, and Morozov I K.

TITLE: A Pneumatic Device for the Inspection and Sorting of the Housings of Live Centres (Pnevmaticheskiy pribor dlya kontrolya i sortirovki korpusov vrashchayushchikhsya tsentrov)

PERIODICAL: Stanki i Instrument 1958, Nr 9 pp 27-28 (USSR)

ABSTRACT: A pneumatic device is described, developed by the Office for Interchangeability of the Standards, Measures and Measuring Instruments Committee (Byuro vzaimozamenyayemosti komiteta standartov, mer i izmeritel'nykh priborov) under the designation BV-790 in order to inspect the fitting dimensions of the housings of live centres for lathes. Each of the two inspected hole diameters is sorted within the allowable limits into four dimensional groups, thus creating 16 groups. The maximum value of the mean diameter determines the group. The diameter and the deviation from the cylindrical form are measured by two pairs of nozzles at larger at right angles. The distance between nozzles is about 75% of the length of the bore. Fig 2 shows the pneumatic circuit. The air is filtered and

Card 1/2

A Pneumatic Device for the Inspection and Sorting of the Housings of Live Centres SOV/121-58-8-10/29

stabilised and then proceeds to the distributor containing the intake nozzles with a diameter so chosen that the measuring pressure fed to the pneumatic plug is half the working pressure. The pneumatic plug is a two-step cylindrical plug and inspects simultaneously two fitting diameters and the shape deviations (ovality and conicity). It is connected to an 8 contact differential mercury transmitter operating by the counter-pressure method. In one of the transmitter chambers a constant pressure is maintained. The other chamber has its pressure varied depending on the outflow from the pneumatic plug. Calibration is carried out with the help of a master component.
There are 2 figures.

Card 2/2

AID P - 4849

Stan. i instr., 2, 25-28, F 1956

Card 2/2 Pub. 103 - 9/26

Institution : Interchangeability Bureau of the Ministry of Machine Tools and Apparatus Industry (MSiIP)

Submitted : No date

LARICHEV, V.N.; LIND, A.B.; MOROZOV, I.K.

Pneumatic instruments used for checking and sorting running-center bodies. Stan. i instr. 29 no. 8:27-28 Ag '58. (MIRA 11:8)
(Engineering instruments)
(Lathes--Testing)

MOROZOV I. K.

5

PHASE I BOOK EXPLOITATION SOV/5862

Vysotskiy, A. V., Ye. R. Dvoretskiy, V. V. Kondashevskiy, V. T. Kuz'michev, I. K. Morozov, P. M. Polyanskiy, Z. L. Tubenshlyak, G. V. Khokhlova, G. V. Chasovnikov, and M. L. Shleyfer

Pribory i ustroystva dlya aktivnogo kontrolya razmerov v mashinostroyenii (Instruments and Equipment for the Active Control of Dimensions in Machine Building) Moscow, Mashgiz, 1961. 303 p. (Series: Progressivnyye sredstva kontrolya razmerov v mashinostroyenii) Errata slip inserted. 7000 copies printed.

Ed. of Series: B. S. Bayburov, M. I. Kochenov, and D. D. Malyy; Scientific Ed.: Ye. R. Dvoretskiy; Ed. of Publishing House: A. G. Akimova; Tech. Ed.: V. V. El'kind; Managing Ed. for Literature on Means of Automation and Instrument Building: N. V. Pokrovskiy, Engineer.

PURPOSE: This book is intended for technical personnel engaged in the design of controlling devices. It may also be useful to students specializing in the field of instrumentation at schools of higher technical education and tekhnikums.

Card 1/6

5

Instruments and Equipment (Cont.) SOV/5862

COVERAGE: Dimensional control instruments and devices used in machine [illegible] which have been tested under experimental and industrial conditions [illegible] described. Concise information on non-Soviet control systems is also given. The present work is part of a series devoted to modern controlling devices and was recommended by the Commission of the State Scientific-Technical Committee of the Council of Ministers USSR. The commission was set up to assist in the introduction of advanced methods and devices of dimensional control in machine building. No personalities are mentioned. There are 54 references: 47 Soviet, 20 English, and 7 German.

TABLE OF CONTENTS:

Card 2/6

Instruments and Equipment (Cont.) SOV/5862

Card 3/6

Instruments and Equipment (Cont.) SOV/5862

SOV/5862

Instruments and Equipment (Cont.)

AVAILABLE: Library of Congress (TS167.P73)

Card 6/6

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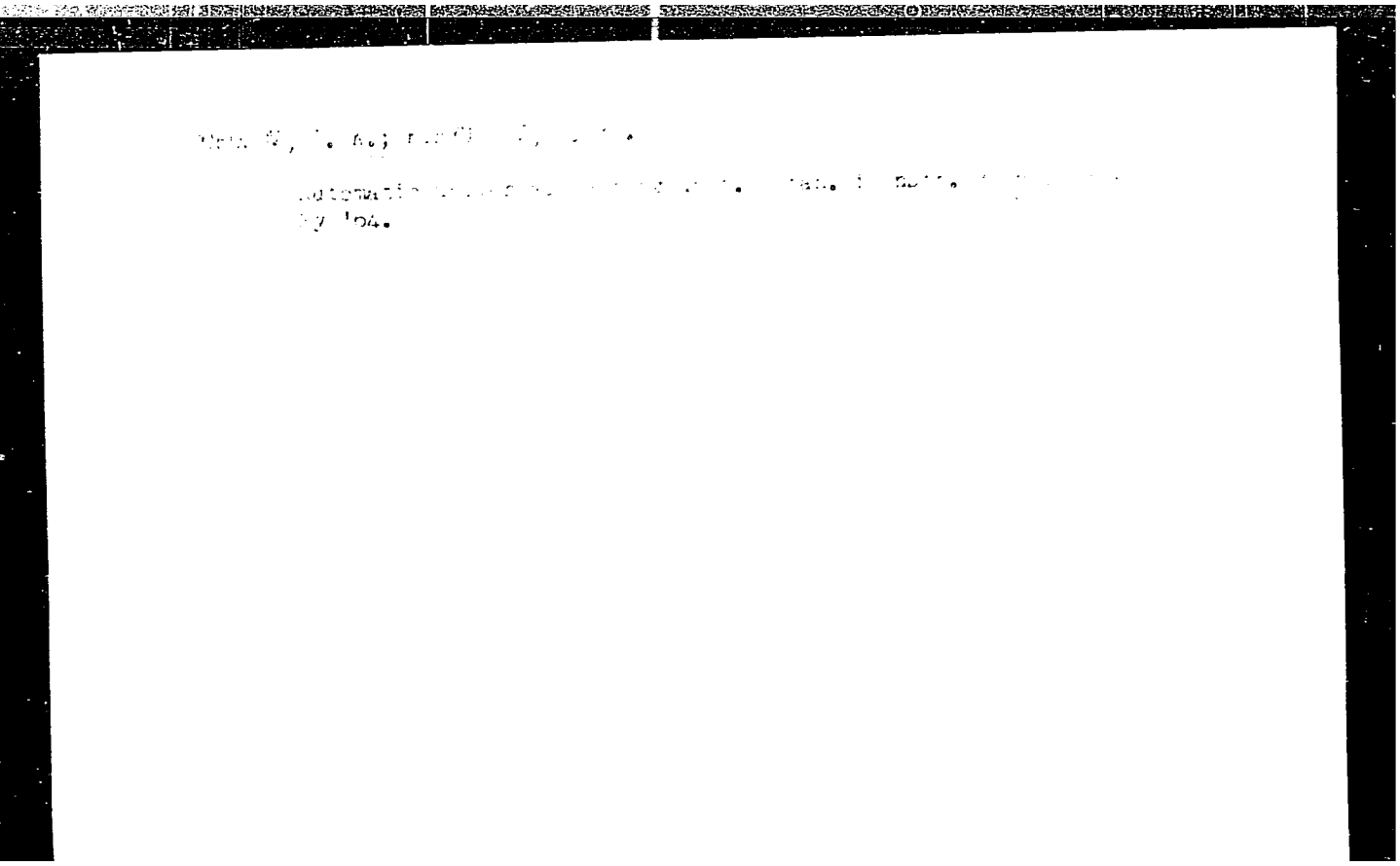


MOROZOV, Ivan Kon[illegible]

[The regiment [illegible] commander] [illegible] ra [illegible]ivizii. [illegible] [illegible] 19[illegible]. [illegible] p.

Morozov, I.L.

117-58-6-9/36

AUTHORS: Balats, D.S., Shershnev, V.K., Morozov, I.L., Engineers

TITLE: Increasing the Wear Resistance of the Bearing Settings in the Frames of Face Machines (Povysheniye iznosostoykosti posadochnykh mest pod podshipniki v korpusakh zaboynykh mashin)

PERIODICAL: Mashinostroitel', 1958, Nr 6, pp 19-20 (USSR)

ABSTRACT: The worn bearing-settings in face machines were repaired formerly in the following way: a 5-mm layer of the metal was removed, and then new metal fused-on by means of the TsM-7 electrodes. This new metal is then machined. The process of repairing the setting in this way is very difficult. In the Rutchenkovsk Plant imeni N.S. Krushchev two apparatuses (Figure 2-3) were developed: a floating reamer and a floating roller. The repair process is now carried out in the following way: electric fusing on the worn surface; rough boring with an allowance of 0.15-0.25 mm; clean boring (with the reamer) with an allowance of 0.01-0.25 mm; finishing by means of the special floating roller. This method is used for repairing settings under the bearings with a diameter of 90-220 mm. The

Card 1/2

117-58-6-9/36

Increasing the Wear Resistance of the Bearing Settings in the Frames of Face Machines

new method increases the wear resistance of the settings 3-4 times and the period between overhauls 2-3 times. There are 2 figures.

ASSOCIATION: Rutchenkovskiy zavod imeni N.S. Krushchëva (Rutchenkovsk Plant imeni N.S. Khrushchev

AVAILABLE: Library of Congress

Card 2/2 1. Machines-Bearing settings-Maintenance

MOROZOV, I.M.

Fences made of decorative blocks. Rats. i izobr. predl. v stroi. no.130: 26-27 '56. (Fences) (Concrete blocks) (MLRA 9:9)

MOROZOV, I.N., inzh.; BARBASHEV, G.K.

Electromagnetic circuit breaker of a piston expander. Kislorod 12 no.5:40-41 '59. (MIRA 13:2)
(Refrigeration and refrigerating machinery)
(Circuit breakers)

MOROZOV, Ivan Romanovich; KRAYSHO, Ye.G., redaktor; PAVLOVA, M.M., [illegible] redaktor

[Shelterbelt afforestation along river beds] Zashchitnoe lesorazvedenie v ruslakh rek. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1956. 94 p. (MLRA 10:10)

(Windbreaks, shelterbelts, etc.)

MATYAKIN, G.I.; NIKITIN, P.D.; KOZMENKO, A.S.; BRUDZ, I.D.; MIRONOV, V.V.; MATYUK, I.S.; BEREZINA, V.M.; MININ, D.D.; ISHIN, D.P.; [illegible] I.R.; OGLYAZO, G.O.; CHASHKIN, M.I.; KORNYSHEV, Ye.G., red.; ZUBAVICH, M.N., tekhn.red.

[Reference book for workers in the field of land improvement through afforestation] Spravochnik agrolesomelioratora. Izd.3. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1959. 308 p. (MIRA 13:6)

(Afforestation)

LEVITSKIY, Ivan Ivanovich, kand. sel'khoz. nauk; MOROZOV, I.A., red.

[Willow and its use; based on materials from the examination and management of willow stands in the lower Volga] Iva i ee ispol'zovanie; po materialam obsledovaniia i ustroistva ivniakov Nizhnei Volgi. Moskva, Lesnaia promyshlennost', 1965. 97 p. (MIRA 18:9)

MOROZOV, I.R.

Calculation in the varnish industry. Zhur.prikl.khim. 30 no.8:
1270-1274 Ag '57. (MIRA 11:1)
(Varnish and varnishing--Tables, calculations, etc.)

MOROZOV, I.S., inzhener.

Technical and economic factors pertainin to industrial plants and projects. Stroi.prom. 31 no.6:24-25 Je '53. (MLRA 6:7)

1. TSentral'nyy gosudarstvennyy institut po proyektirovaniyu metalloobrabatyvayushchikh i mashinostroitel'nykh zavodov. (Industrial buildings)

MOROZOV, I.S.; LI CHI-FA [Li Ch'ih-fa]

Reciprocal system $SnCl_2 + PbS \rightleftarrows SnS + PbCl_2$. Zhur. neorg. khim. 8 no.7:1688-1692 Jl '63. (MIRA 16:7)

(Tin sulfides) (Lead sulfides) (Chlorination)

MOROZOV, I.S., inzhener; TROKHIMOVSKAYA, M.N., inzhener.

Attaching porous soles to the uppers in welt shoes. Leg.prom. 14 no.4: 31-32 Ap '54.
(Boots and shoes) (MLRA 7:6)

MOROZOV, I.S., inzhener.

Improving the method of attaching porous rubber soles. Leg.prom. 14 no.10:14-16 O '54. (MLRA 7:11)
(Soles)

FLEYMAN, D.Z.; MOROZOV, I.S.

Centralized cutting of stiff leather for sole components. (MIRA 14:6)
Kozh.-bouv.prom.3 no.3:12-13 Mr '61.
(Shoe manufacture)

MOROZOV, I.S ; FEYGMAN, [illegible] ; [illegible], starshiy inzhener

Technological progress in the leather and shoe industry of the Kirghiz S.S.R. Kozh.-obuv.prom. 3 no.12:4-7 D '61. (MIRA 15:1)

1. Glavnyy inzhener Upravleniya legkoy promyshlennosti Kirgizskoy SSR (for Morozov). 2. Glavnyy spetsialist kozhevenno-obuvnoy promyshlennosti Gosudarstvennogo nauchno-tekhnicheskogo komiteta Kirgizskoy SSR (for Feygman). 3. Upravleniye legkoy promyshlennosti Kirgizskoy SSR (for Gatyzhskiy).
(Kirghizistan--Leather industry)
(Kirghizistan--Shoe industry)

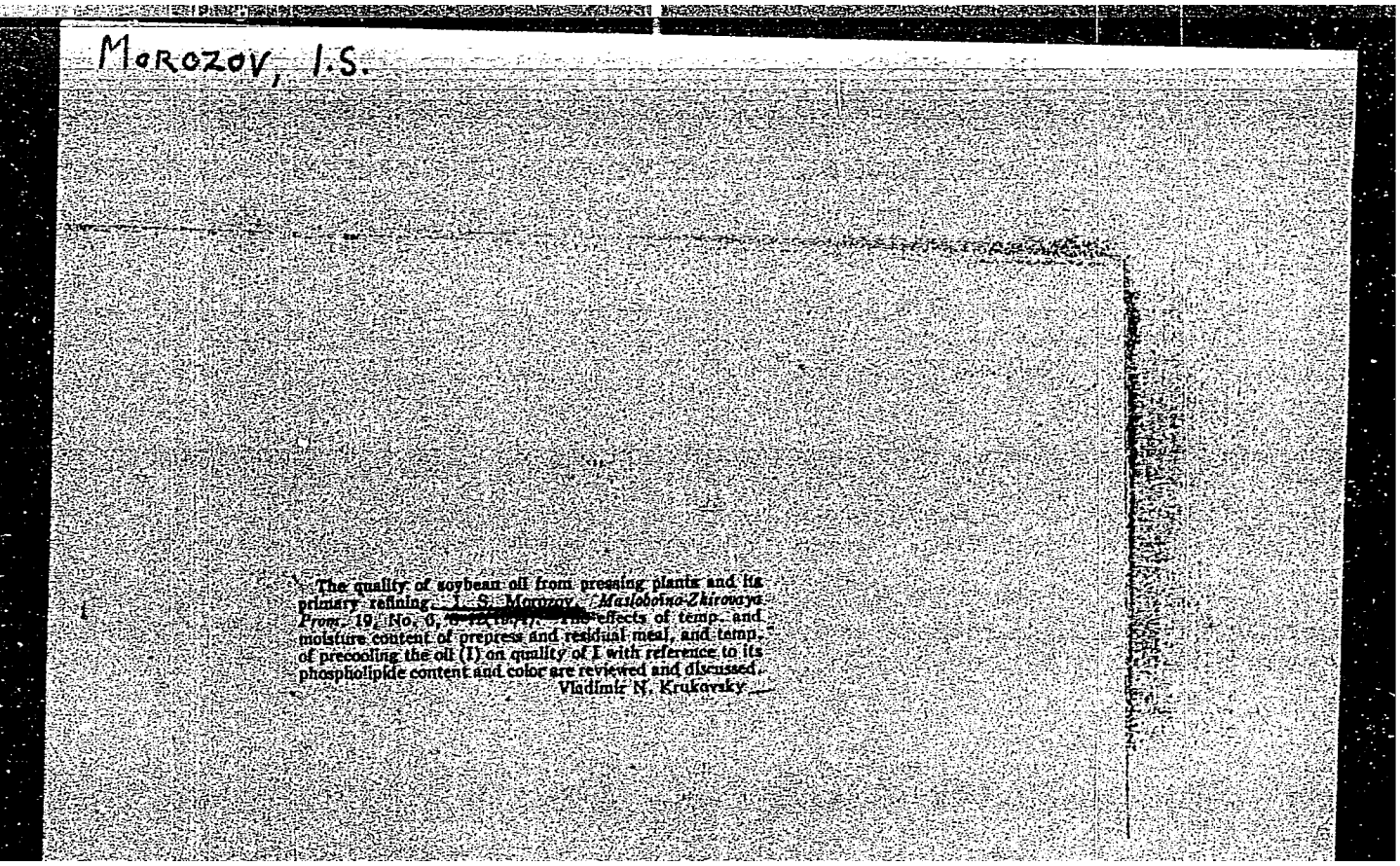
AUTHOR: Morozov, I. S. SOV/29-58-4-28/23

TITLE: A Method for Producing Synthetic Benzene and Dichlorethane Resins (Sposob polucheniya sinteticheskoy smoly [illegible] dikhloretana)

PERIODICAL: Byulleten izobreteniy, 1958, Nr 4, p 74 (USSR)

ABSTRACT: Class 39b 22 Nr 111497 (576284/4687, 12 September 1955 Submitted to the USSR Ministry of the Chemical Industry The quality of synthetic resins, obtained by the Friedel-Crafts reaction in the presence of aluminum chloride, is improved by introducing chlorinated diphenyl "khlorol" into the reaction of benzene with dichlorethane, in a quantity of up to 50% of the weight of the benzene. The resins obtained in this way may be used for producing perchlorovinyl enamels.

Card 1/1



Morozov, I.S.

The quality of soybean oil from pressing plants and its primary refining. I. S. Morozov. *Maslobolno-Zhirovaya Prom.* 19, No. 6, [illegible]. The effects of temp. and moisture content of prepress and residual meal, and temp. of precooling the oil (I) on quality of I with reference to its phospholipide content and color are reviewed and discussed.
Vladimir N. Krukovsky

MOROZOV, I.S., kandidat tekhnicheskikh nauk

Improvements in cooker operation. Masl.-zhir.prom.20 no.5:29-31 '55.
(MLRA 8:11)

1. TsNIIKPP

(Oil industries--Equipment and supplies)

MOROZOV, I. S., kand. tekhn. nauk

Production of corn oil. Trudy TSNIIKPP no. 3:156-177 '59.
(MIRA 13:9)

(Corn oil)

BARBARASH, A. S., inzh.; STYAZHKINA, A. G., kand.tekhn.nauk; IVANOVA, A. N., inzh.; ROZHKOVA, T. K., inzh.; MOROZOV, I. S., kand.tekhn.nauk

Corn oil, its refining and use in food. Masl.-zhir. prom. 27 no.10:21-23 O '61. (MIRA 14:11)

1. Leningradskiy maslozhirovoy kombinat (for Barbarash, Styazhkina). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut zhirov (for Ivanova, Rozhkova). 3. TSentral'nyy nauchno-issledovatel'skiy institut krakhmalo-patochnoy promyshlennosti (for Morozov).

(Corn oil)

LIPATOVA, N.P.; MOROZOV, I.S.

X-ray diffraction examination of pentachlorooxyniobates of alkali metals and ammonium. Zhur.neorg.khim. 10 no.12: 2817-2819 D '65. (MIRA 19:1)

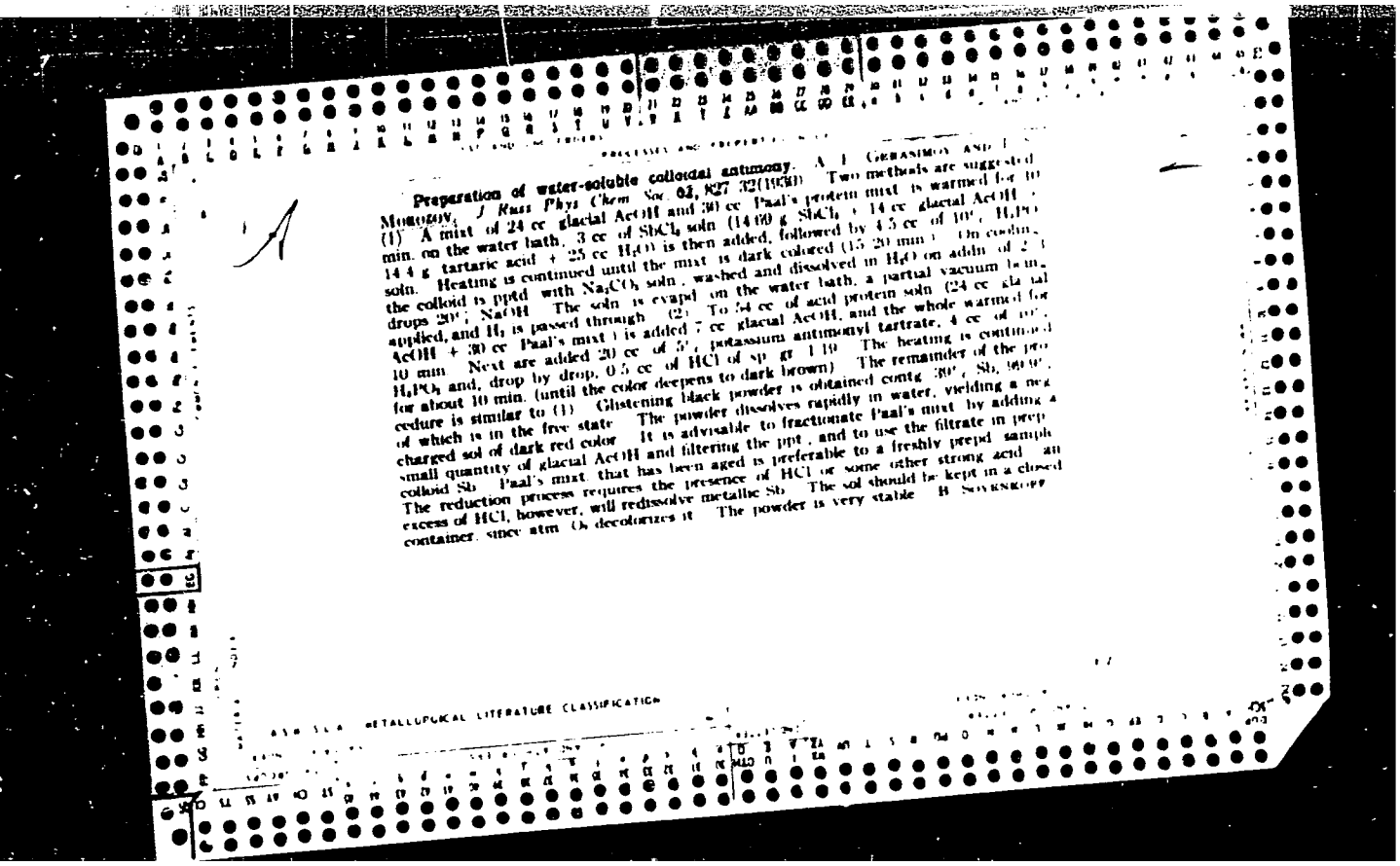
MOROZOV, Ivan Alek[illegible]evich; STEPAN[illegible], [illegible]; BRAT[illegible]SKIY, N.G., [illegible], red.

(Trucks of all-metal passenger [illegible]; operation, maintenance and repair [illegible] meta[illegible] [illegible] ekspluatatsiia i remont. Moskva, [illegible]. [illegible] p. [illegible]

TERENT'YEV, F.A.; SERGEYEVA, T.Ye.; MOROZOV, I.S.; OLONOVSKIY, Ye.A.

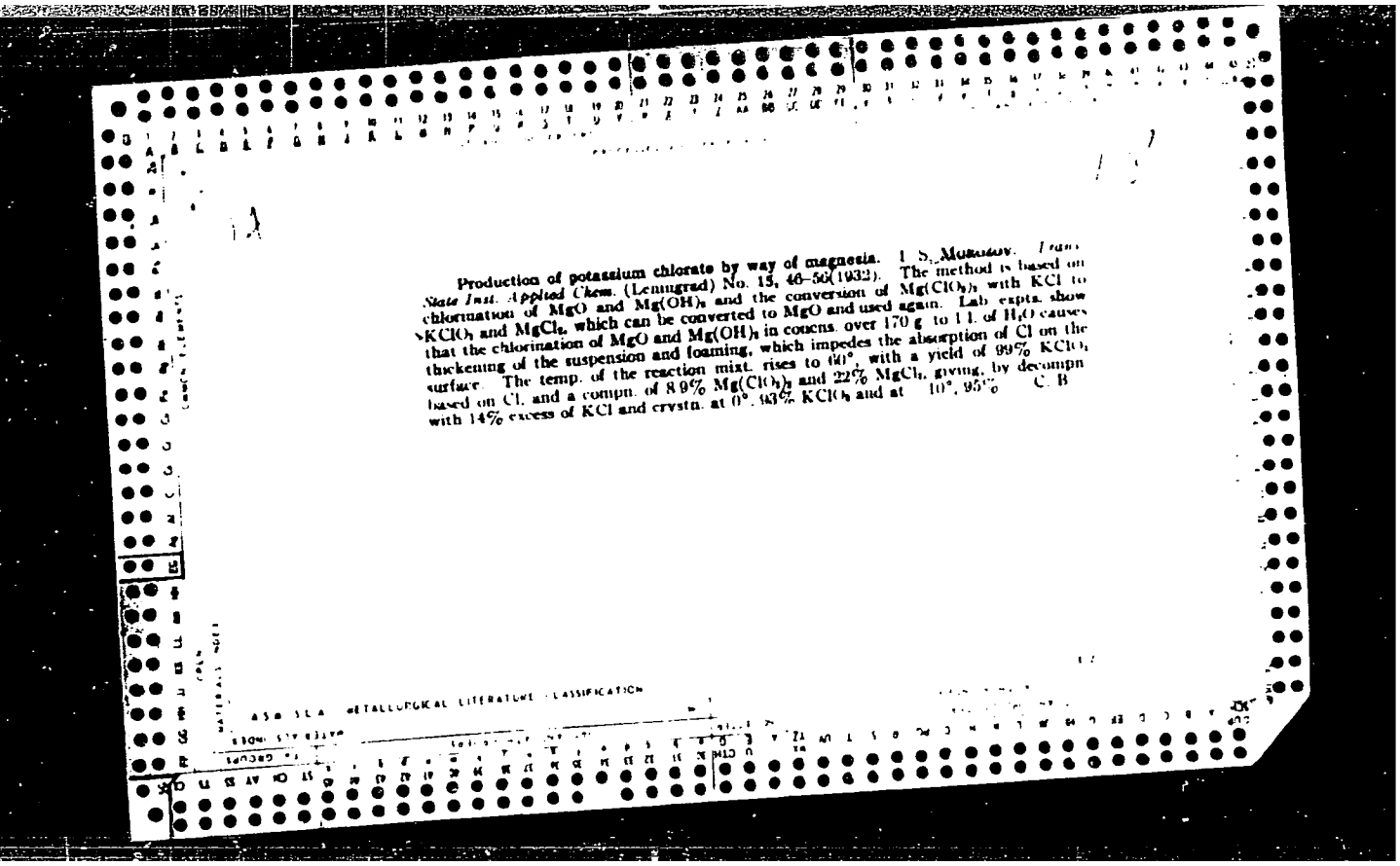
Impracticality of vaccinating mature cattle against brucellosis. Veterinariia 34 no.12:60-64 D '57. (MIRA 11:1)

1.Nauchno-proizvodstvennaya laboratoriya Ministerstva sel'skogo khozyaystva RSFSR.
(Brucellosis in cattle)

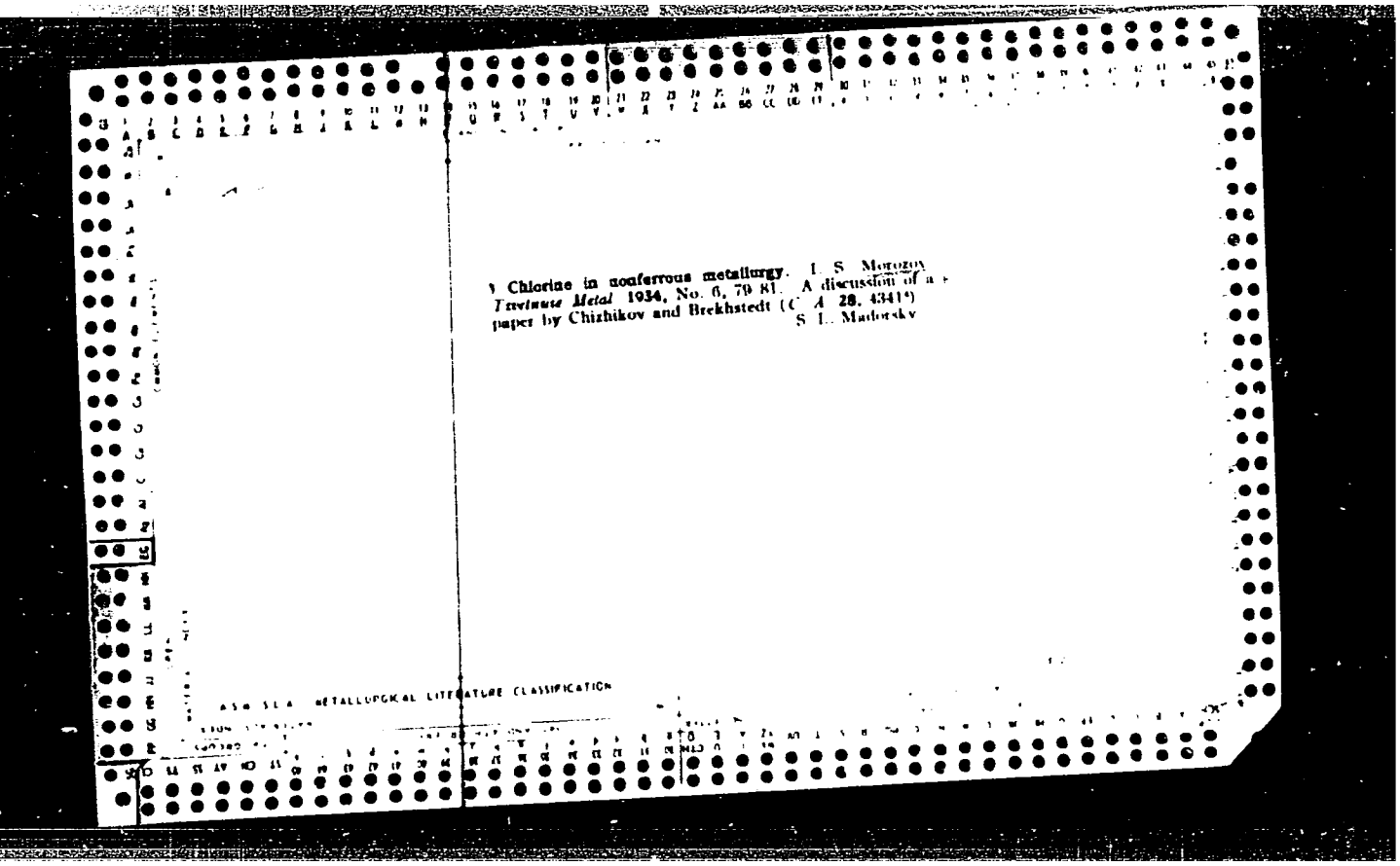


Preparation of water-soluble colloidal antimony. A. I. GERASIMOV AND I. MOSCOW, *J Russ Phys Chem Soc* **62**, 827-32(1930). Two methods are suggested (1) A mixt of 24 cc glacial AcOH and 30 cc Paal's protein mixt is warmed for 10 min. on the water bath, 3 cc of $SbCl_3$ soln (14.09 g $SbCl_3$ + 14 cc glacial AcOH + 14.4 g tartaric acid + 25 cc H_2O) is then added, followed by 4.5 cc of 10% H_2PO_4 soln. Heating is continued until the mixt is dark colored (15-20 min.). On cooling, the colloid is ppted with Na_2CO_3 soln., washed and dissolved in H_2O on addn of 2-3 drops 20% NaOH. The soln is evapd on the water bath, a partial vacuum being applied, and H_2 is passed through. (2) To 54 cc of acid protein soln (24 cc glacial AcOH + 30 cc Paal's mixt.) is added 7 cc glacial AcOH, and the whole warmed for 10 min. Next are added 20 cc of 5% potassium antimonyl tartrate, 4 cc of 10% H_3PO_4 and, drop by drop, 0.5 cc of HCl of sp. gr. 1.19. The heating is continued for about 10 min. (until the color deepens to dark brown). The remainder of the procedure is similar to (1). Glistening black powder is obtained containing 30% Sb, 60% of which is in the free state. The powder dissolves rapidly in water, yielding a negatively charged sol of dark red color. It is advisable to fractionate Paal's mixt. by adding a small quantity of glacial AcOH and filtering the ppt., and to use the filtrate in prep. colloid Sb. Paal's mixt. that has been aged is preferable to a freshly prepd. sample. The reduction process requires the presence of HCl or some other strong acid; an excess of HCl, however, will redissolve metallic Sb. The sol should be kept in a closed container, since atm. O_2 decolorizes it. The powder is very stable. B. SOBOLEFF

METALLURGICAL LITERATURE CLASSIFICATION



Production of potassium chlorate by way of magnesia. I. S. Muzafarov. *Trans. State Inst. Applied Chem.* (Leningrad) No. 15, 46–56(1932). The method is based on chlorination of MgO and $Mg(OH)_2$ and the conversion of $Mg(ClO_3)_2$ with KCl to $KClO_3$ and $MgCl_2$, which can be converted to MgO and used again. Lab. expts. show that the chlorination of MgO and $Mg(OH)_2$ in concns. over 170 g. to 1 l. of H_2O causes thickening of the suspension and foaming, which impedes the absorption of Cl on the surface. The temp. of the reaction mixt. rises to 60°, with a yield of 99% $KClO_3$ based on Cl, and a compn. of 8.9% $Mg(ClO_3)_2$ and 22% $MgCl_2$, giving, by decompn with 14% excess of KCl and crystn. at 0°, 93% $KClO_3$ and at 10°, 95% C. B



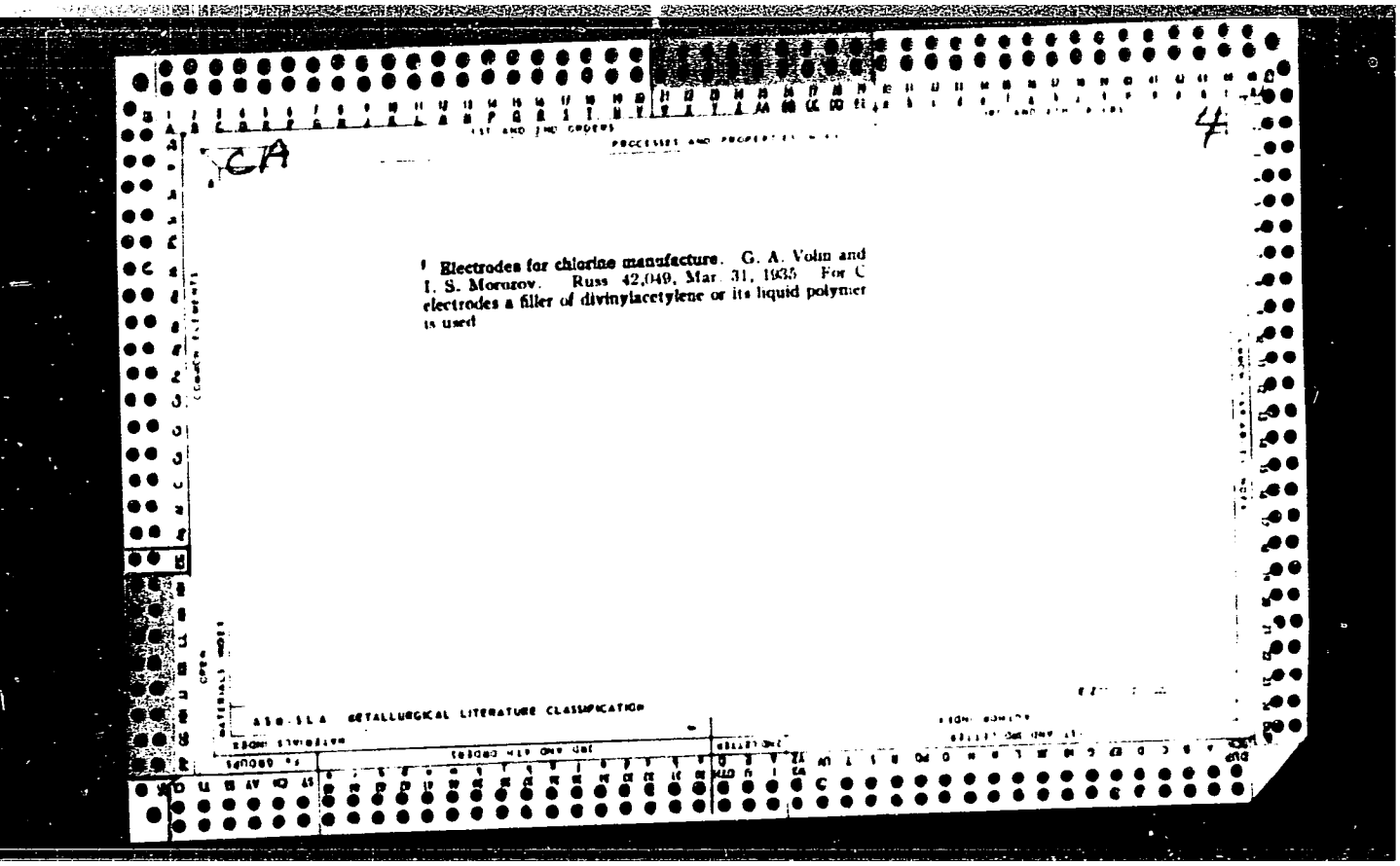
Chlorine in nonferrous metallurgy. I. S. Morozov. *Tsvetnye Metal* 1934, No. 6, 79-81. A discussion of a paper by Chizhikov and Brekhstedt (C. A. 28, 4341[9]).
S. L. Madorsky

Using chlorine gas in nonferrous metallurgy. G. G. Urazov and I. S. Morozov. *Trans. State Inst. Applied Chem.* (U. S. S. R.) No. 20, 7-41(1934).—Because of the considerable chem. affinity of Cl gas, it reacts readily with different compds. of colored metals. Their sulfides, and that of Fe, are changed into chlorides at 300-700°, and in the presence of water this change takes place at room temp. This change at room temp. also takes place with their oxides, carbonates and silicates. Chlorination can be applied the best with sulfide ores at 300-700° and with mixed ores contg. sulfides and oxides in the presence of H_2O. V. D. Kartenko

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Preparation of hydrochloric acid from hydrogen and
chlorine. I. S. Morozov *Trans. State Inst. Applied*
Chem. (U. S. S. R.) No. 20, 69-70(1934).—A series of
expts. on the prepn. of HCl from H_2 and Cl_2 and a de-
scription of semifactory production of HCl are given.
HCl, free from Cl_2, could be obtained when these gases
were burnt in presence of some catalyst, such as pieces
of quartz. The excess of H_2 over Cl_2 must be 5-10%.
Then combustion of Cl_2 is 100%. V. D. Karpenko

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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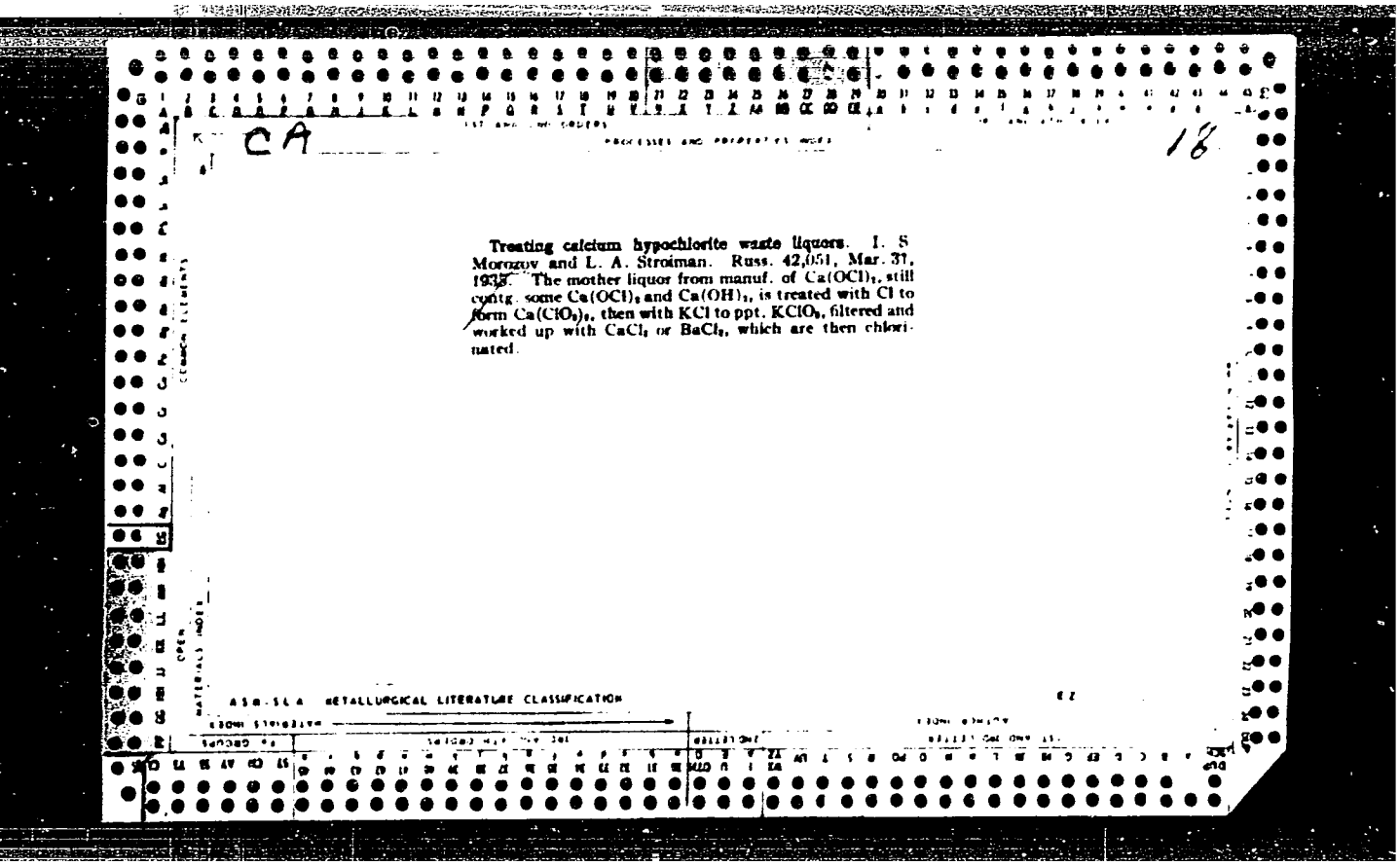
Electrodes for chlorine manufacture. G. A. Volin and I. S. Morozov. Russ 42,040, Mar. 31, 1935. For C electrodes a filler of divinylacetylene or its liquid polymer is used

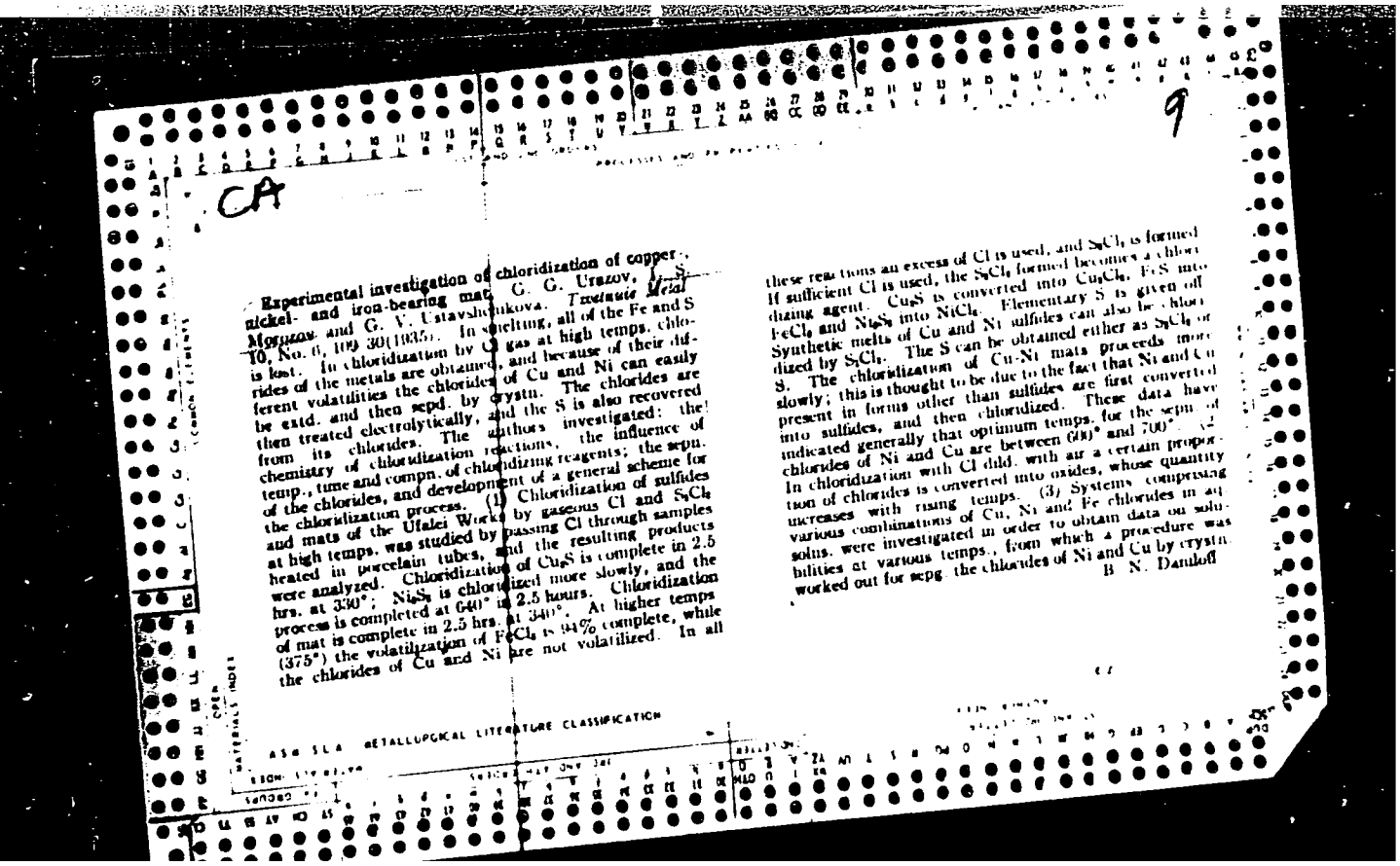


CA

18

Treating calcium hypochlorite waste liquors. I. S Morozov and L. A. Stroiman. Russ. 42,051, Mar. 31, 1935. The mother liquor from manuf. of $Ca(OCl)_2$, still contg. some $Ca(OCl)_2$ and $Ca(OH)_2$, is treated with Cl to form $Ca(ClO_3)_2$, then with KCl to ppt. $KClO_3$, filtered and worked up with $CaCl_2$ or $BaCl_2$, which are then chlorinated.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

9

Experimental investigation of chloridization of copper-, nickel- and iron-bearing mat. G. G. Urazov, V. Mogutnov, and G. V. Ustavshchikova. *Tsvetnaia Metal* 10, No. 6, 109-30(1935). In smelting, all of the Fe and S is lost. In chloridization by Cl gas at high temps. chlorides of the metals are obtained, and because of their different volatilities the chlorides of Cu and Ni can easily be extd. and then sepd. by crystn. The chlorides are then treated electrolytically, and the S is also recovered from its chlorides. The authors investigated: the chemistry of chloridization reactions, the influence of temp., time and compn. of chloridizing reagents; the sepn. of the chlorides, and development of a general scheme for the chloridization process. (1) Chloridization of sulfides and mats of the Ufalei Works by gaseous Cl and S_2Cl_2 at high temps. was studied by passing Cl through samples heated in porcelain tubes, and the resulting products were analyzed. Chloridization of Cu_2S is complete in 2.5 hrs. at 330°; Ni_3S_2 is chloridized more slowly, and the process is completed at 640° in 2.5 hours. Chloridization of mat is complete in 2.5 hrs. at 340°. At higher temps (375°) the volatilization of $FeCl_3$ is 94% complete, while the chlorides of Cu and Ni are not volatilized. In all these reactions an excess of Cl is used, and S_2Cl_2 is formed. If sufficient Cl is used, the S_2Cl_2 formed becomes a chloridizing agent. Cu_2S is converted into $CuCl_2$, FeS into $FeCl_3$ and Ni_3S_2 into $NiCl_2$. Elementary S is given off. Syuthetic melts of Cu and Ni sulfides can also be chloridized by S_2Cl_2. The S can be obtained either as S_2Cl_2 or S. The chloridization of Cu-Ni mats proceeds more slowly; this is thought to be due to the fact that Ni and Cu are present in forms other than sulfides are first converted into sulfides, and then chloridized. These data have indicated generally that optimum temps. for the sepn. of chlorides of Ni and Cu are between 600° and 700°. In chloridization with Cl dild. with air a certain proportion of chlorides is converted into oxides, whose quantity increases with rising temps. (3) Systems comprising various combinations of Cu, Ni and Fe chlorides in aq. solns. were investigated in order to obtain data on solubilities at various temps., from which a procedure was worked out for sepg. the chlorides of Ni and Cu by crystn.

B. N. Danilov

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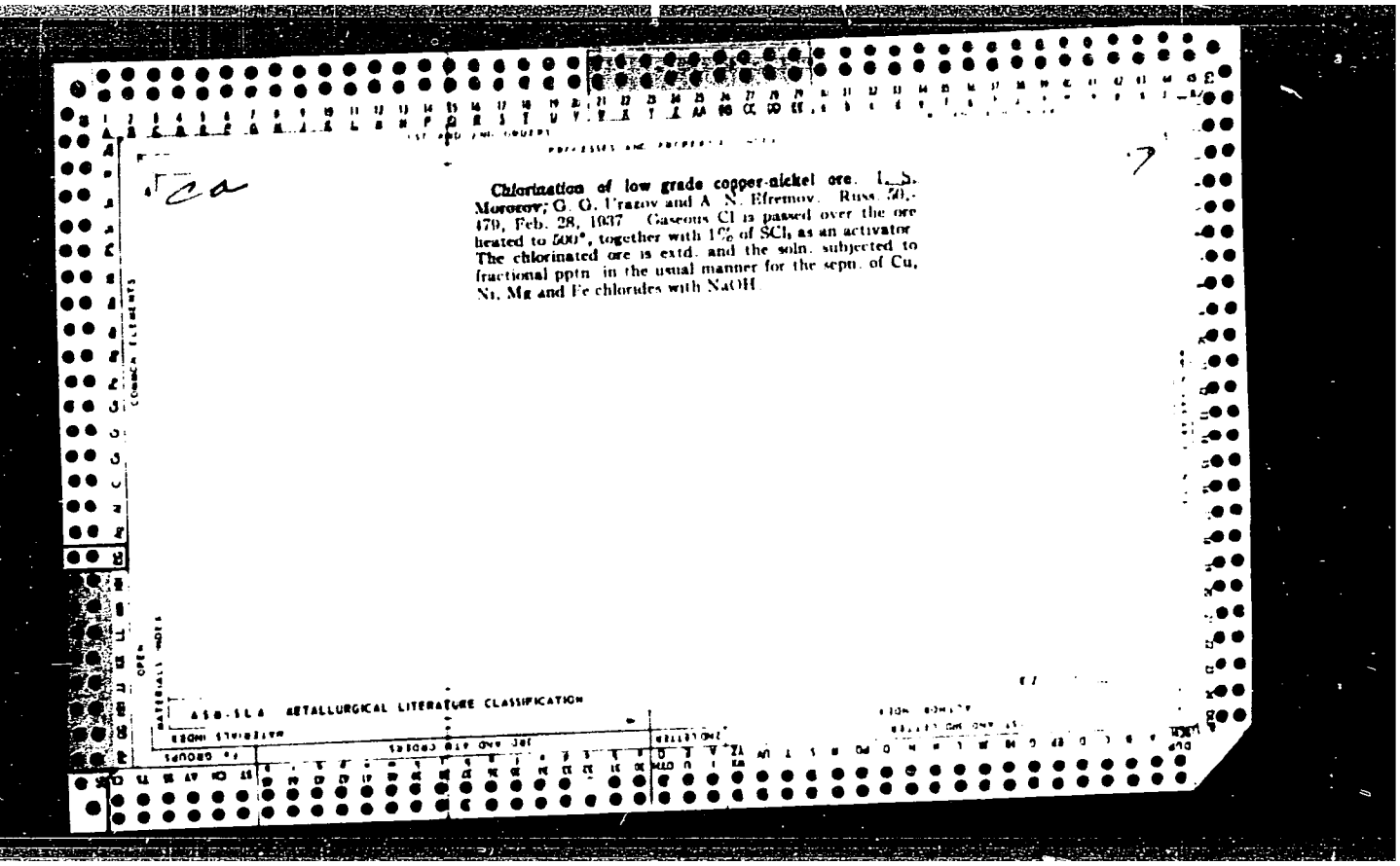

Chlorination of low grade copper-nickel ore. L. S. Moscow; G. G. Urazov and A. N. Efremov. Russ. 50,-479, Feb. 28, 1937. Gaseous Cl is passed over the ore heated to 500°, together with 1% of SCl_2 as an activator. The chlorinated ore is extd. and the soln. subjected to fractional pptn. in the usual manner for the sepn. of Cu, Ni, Mg and Fe chlorides with NaOH.

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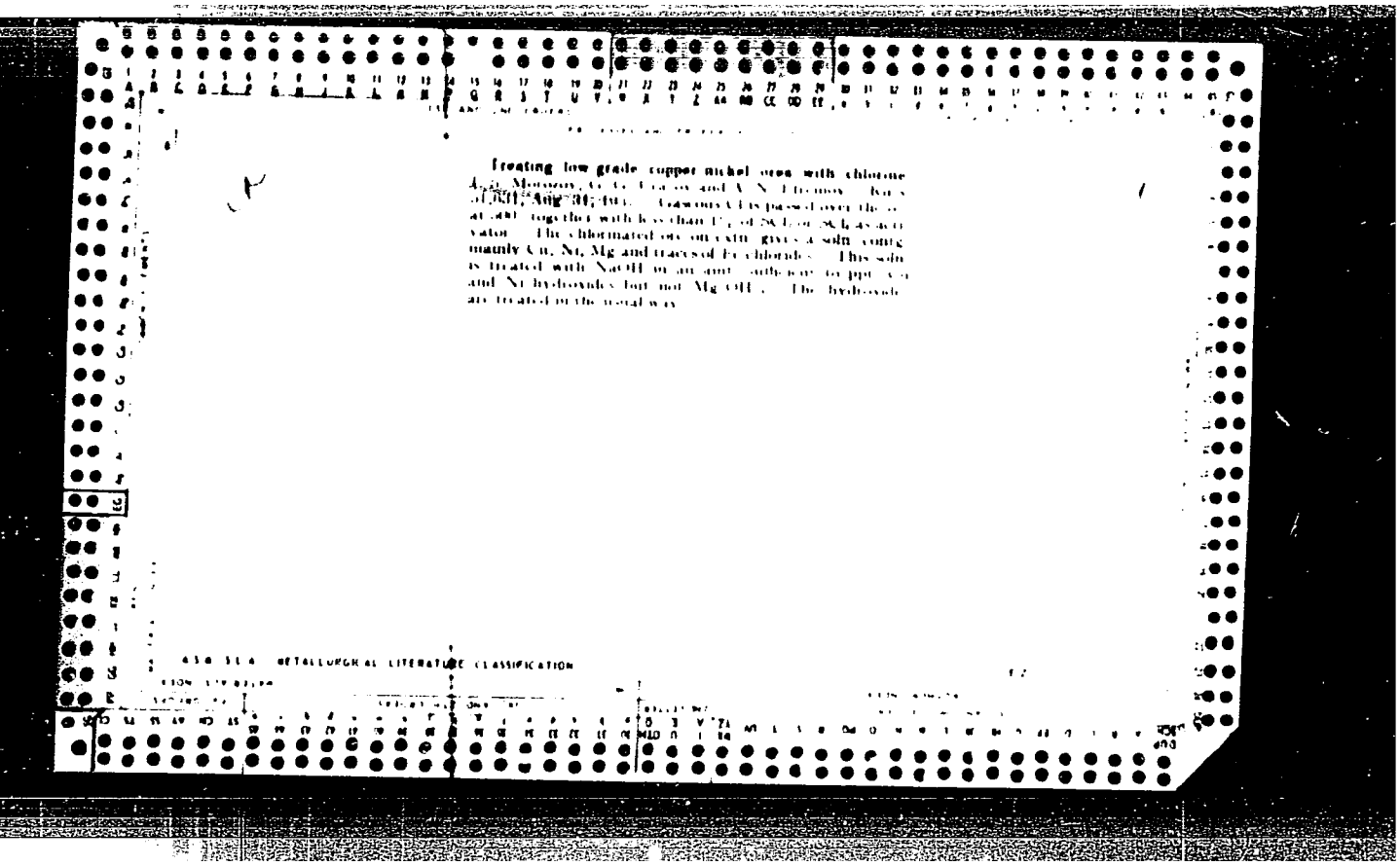

Treating low grade copper nickel ores with chlorine

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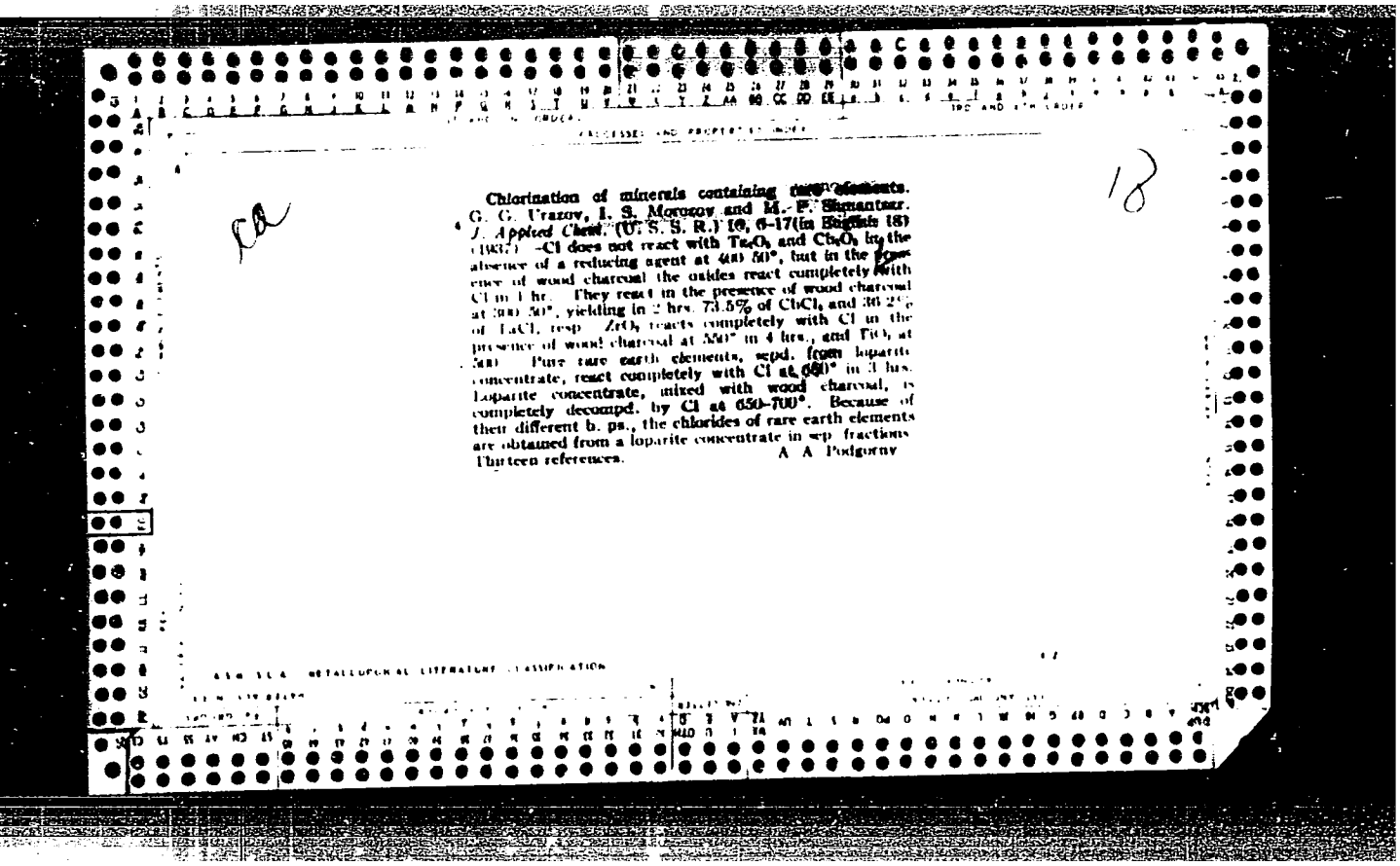
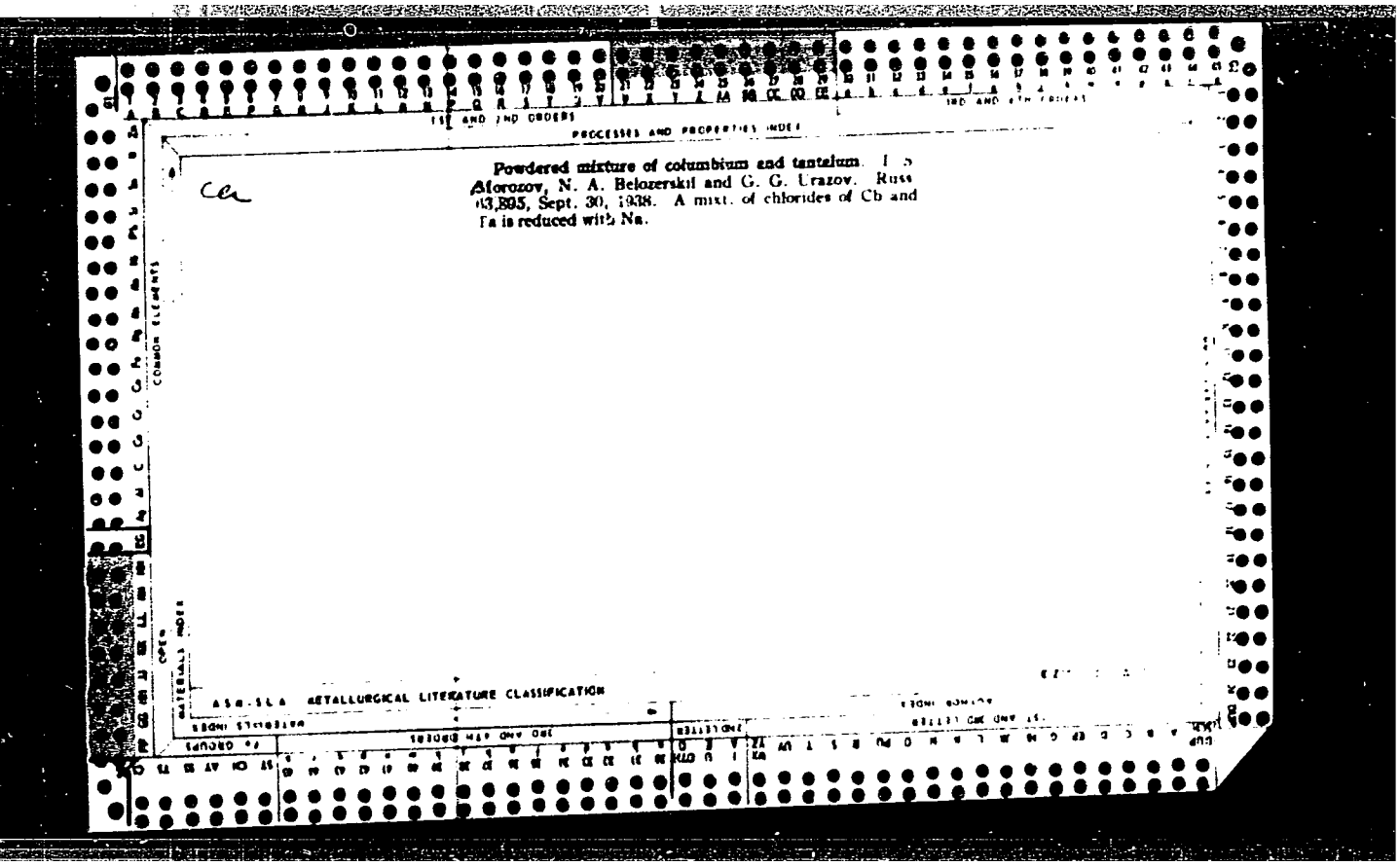
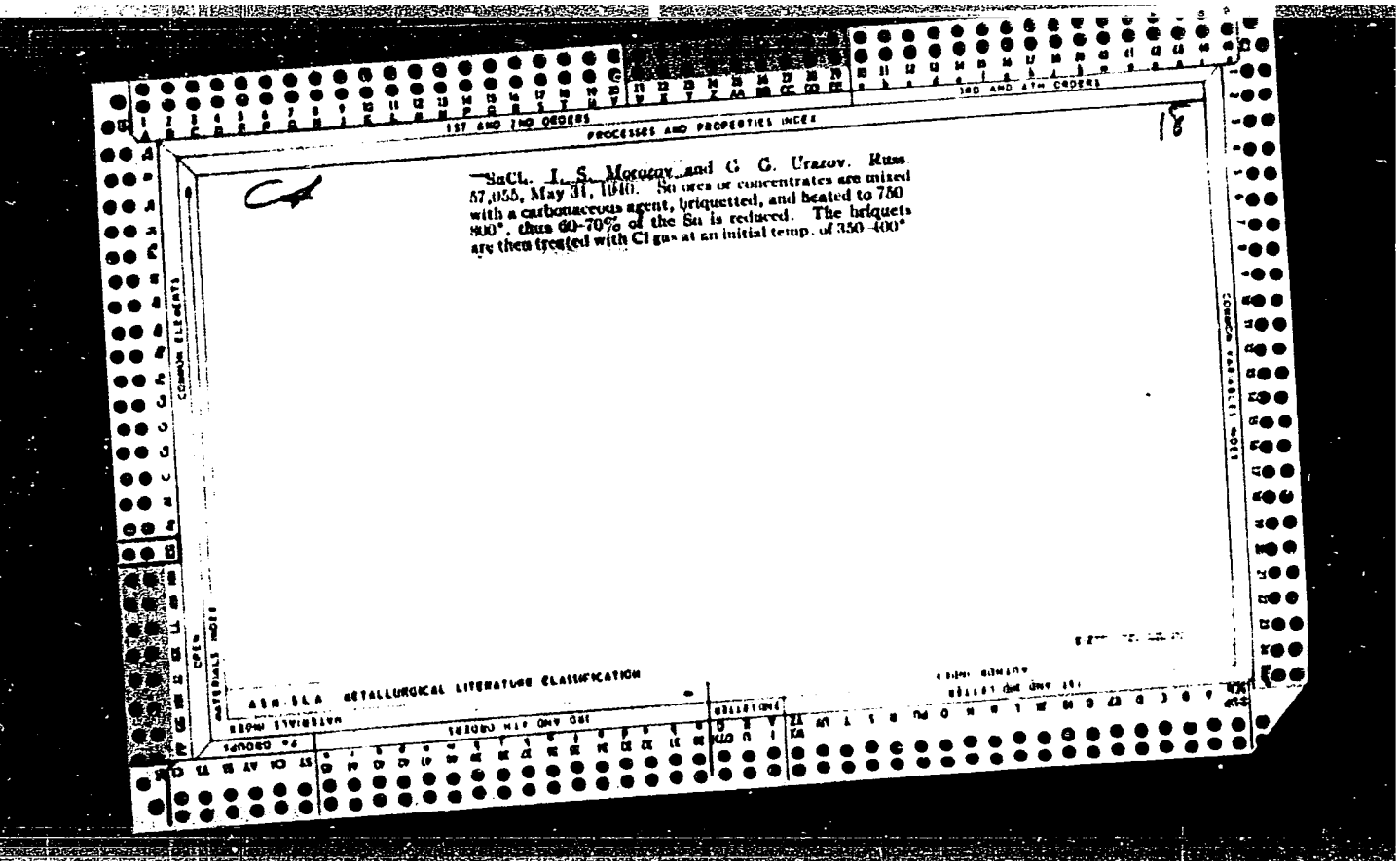


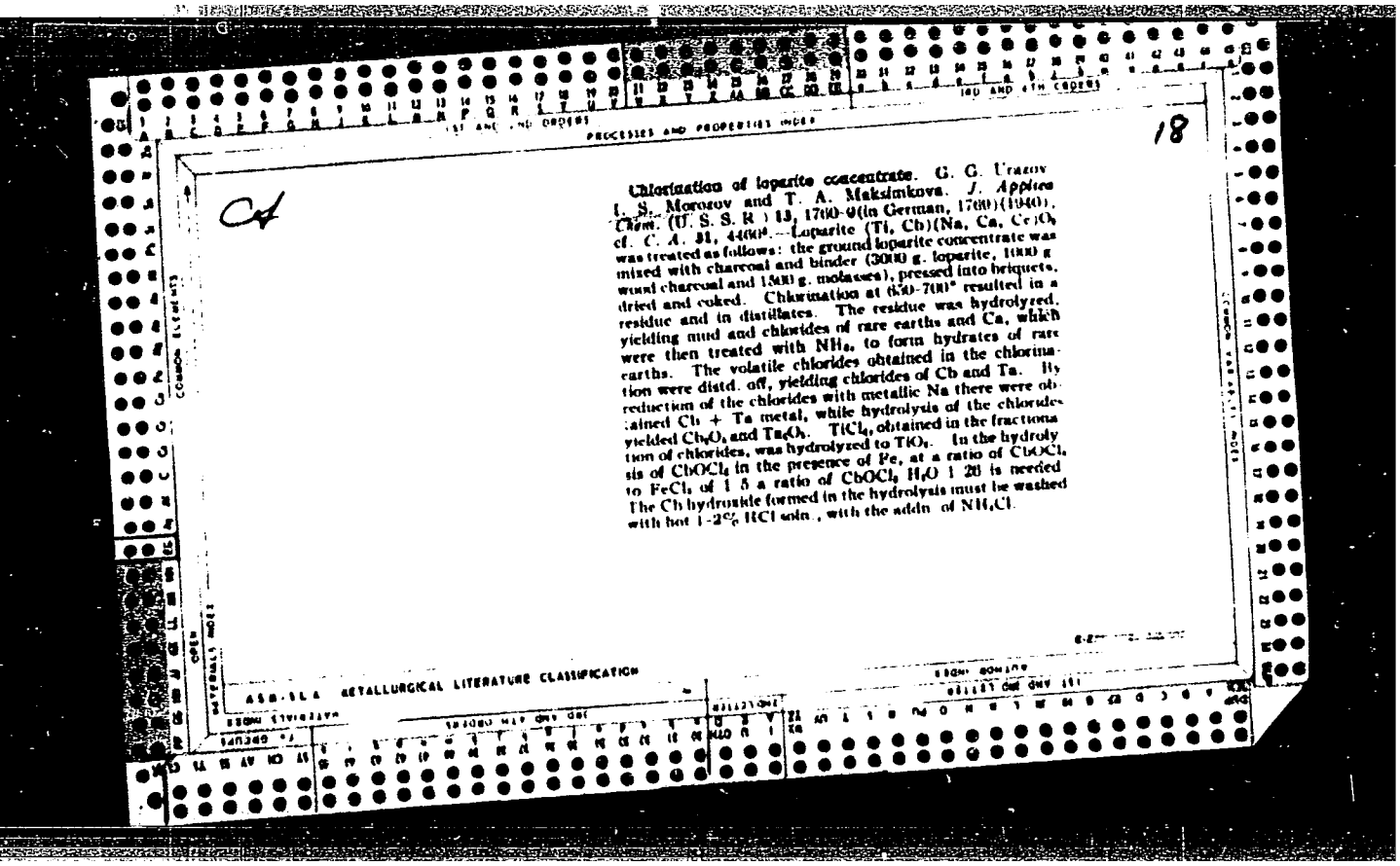
Chlorination of minerals containing rare elements. G. G. Urazov, I. S. Morozov and M. F. Shmantser. *J. Applied Chem.* (U. S. S. R.) 10, 6–17(in English 18) (1937). –Cl does not react with Ta_2O_5 and Cb_2O_5 in the absence of a reducing agent at 400–50°, but in the presence of wood charcoal the oxides react completely with Cl in 1 hr. They react in the presence of wood charcoal at 300–50°, yielding in 2 hrs. 73.5% of $CbCl_5$ and 36.2% of $TaCl_5$ resp. ZrO_2 reacts completely with Cl in the presence of wood charcoal at 550° in 4 hrs., and TiO_2 at 500–. Pure rare earth elements, sepd. from loparite concentrate, react completely with Cl at 650° in 3 hrs. Loparite concentrate, mixed with wood charcoal, is completely decompd. by Cl at 650–700°. Because of their different b. ps., the chlorides of rare earth elements are obtained from a loparite concentrate in sep. fractions. Thirteen references.

A. A. Podgorny



Powdered mixture of columbium and tantalum. I. S
Morozov, N. A. Belozerskii and G. G. Urazov. Russ
03,895, Sept. 30, 1938. A mixt. of chlorides of Cb and
Ta is reduced with Na.





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18

Chlorination of loparite concentrate. G. G. Urazov, I. S. Morozov and T. A. Maksimkova. *J. Applied Chem.* (U. S. S. R.) 13, 1700-9(in German, 1760)(1940). cf. *C. A.* 31, 4460⁹.—Loparite (Ti, Cb)(Na, Ca, Ce)O_3 was treated as follows: the ground loparite concentrate was mixed with charcoal and binder (3000 g. loparite, 1000 g. wood charcoal and 1500 g. molasses), pressed into briquets, dried and coked. Chlorination at 650–700° resulted in a residue and in distillates. The residue was hydrolyzed, yielding mud and chlorides of rare earths and Ca, which were then treated with NH_3, to form hydrates of rare earths. The volatile chlorides obtained in the chlorination were distd. off, yielding chlorides of Cb and Ta. By reduction of the chlorides with metallic Na there were obtained Cb + Ta metal, while hydrolysis of the chlorides yielded Cb_2O_5 and Ta_2O_5. $TiCl_4$, obtained in the fractionation of chlorides, was hydrolyzed to TiO_2. In the hydrolysis of $CbOCl_3$ in the presence of Fe, at a ratio of $CbOCl_3$ to $FeCl_3$ of 1:5 a ratio of $CbOCl_3$ H_2O 1:20 is needed. The Cb hydroxide formed in the hydrolysis must be washed with hot 1–2% HCl soln., with the addn. of NH_4Cl.

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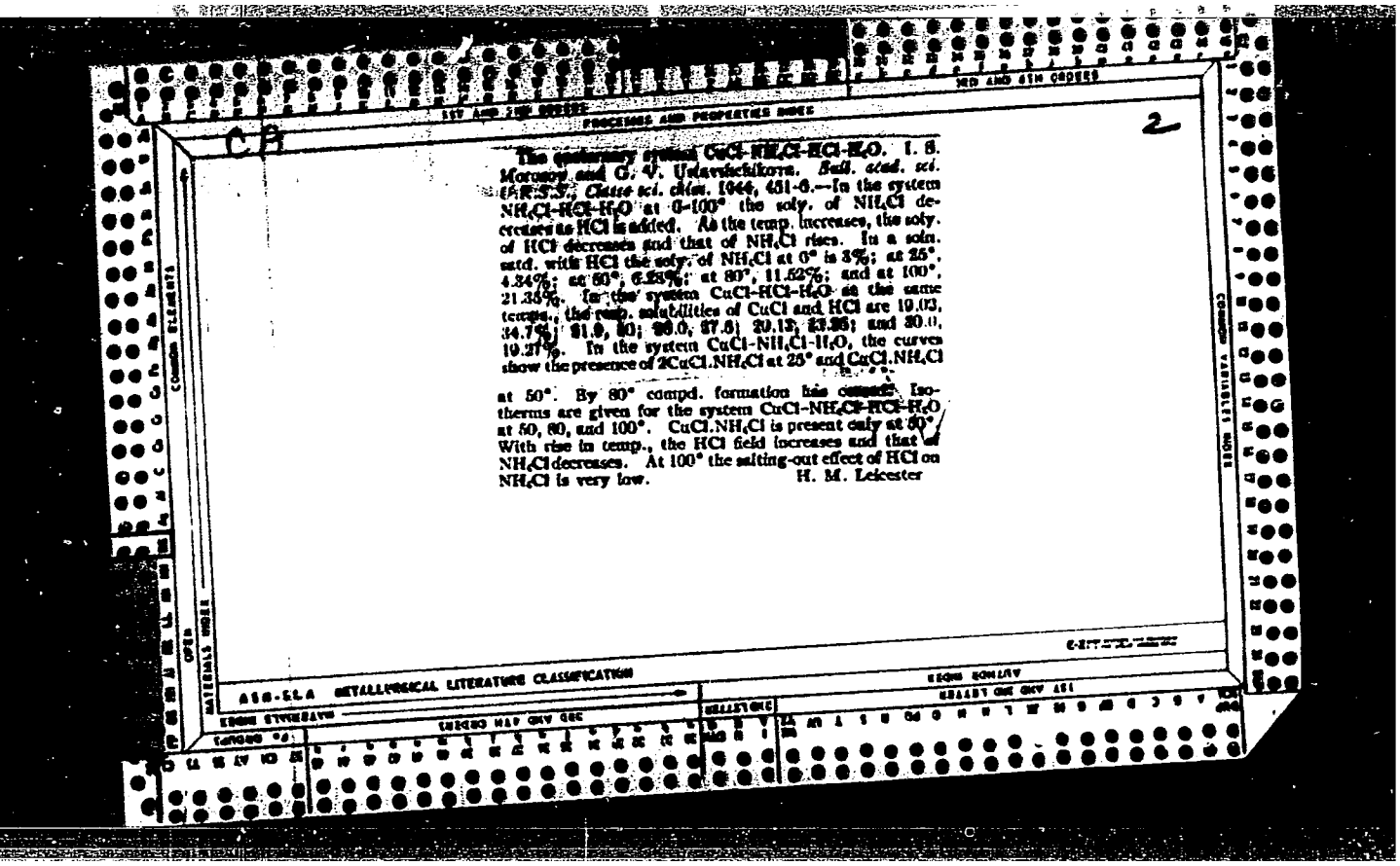
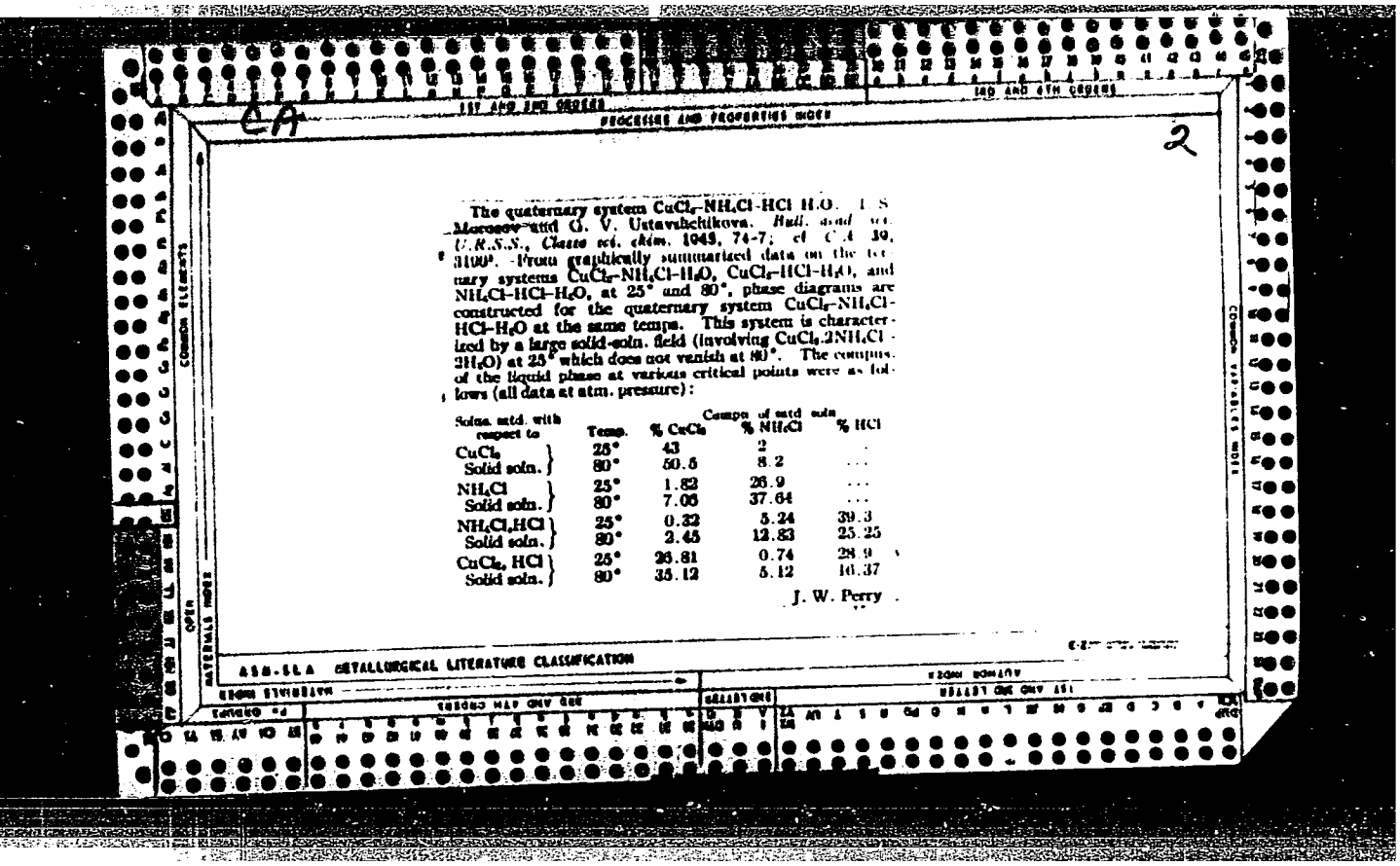


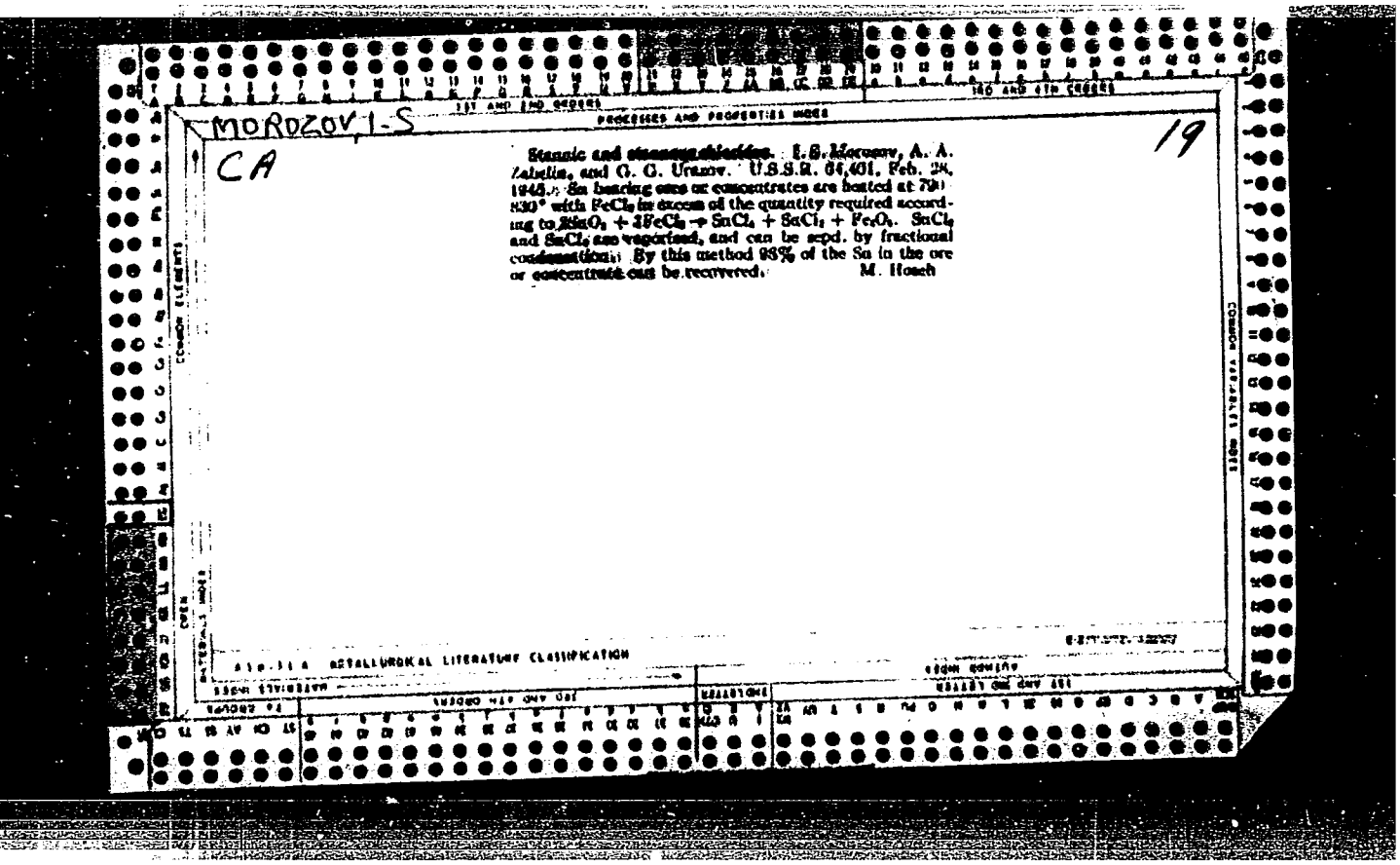
The quaternary system CuCl-NH_4Cl-HCl-H_2O. I. S. Morozov and G. V. Udovichkina. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1944, 481-6.—In the system NH_4Cl-HCl-H_2O at 0-100° the solv. of NH_4Cl decreases as HCl is added. As the temp. increases, the solv. of HCl decreases and that of NH_4Cl rises. In a soln. satd. with HCl the solv. of NH_4Cl at 0° is 3%; at 25°, 4.34%; at 60°, 6.23%; at 80°, 11.52%; and at 100°, 21.35%. In the system CuCl-HCl-H_2O at the same temps., the resp. solubilities of CuCl and HCl are 19.03, 34.7%; 21.0, 30; 20.0, 27.8; 20.15, 23.35; and 20.0, 19.21%. In the system CuCl-NH_4Cl-H_2O, the curves show the presence of $2CuCl.NH_4Cl$ at 25° and $CuCl.NH_4Cl$ at 50°. By 80° compd. formation has ceased. Isotherms are given for the system CuCl-NH_4Cl-HCl-H_2O at 50, 80, and 100°. $CuCl.NH_4Cl$ is present only at 50°. With rise in temp., the HCl field increases and that of NH_4Cl decreases. At 100° the salting-out effect of HCl on NH_4Cl is very low. H. M. Leicester



The quaternary system $CuCl_2$–NH_4Cl–HCl–H_2O. I. S. Morozov and G. V. Ustavshchikova. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1943, 74–7; cf. *C.A.* 39, 3109⁹. From graphically summarized data on the ternary systems $CuCl_2$–NH_4Cl–H_2O, $CuCl_2$–HCl–H_2O, and NH_4Cl–HCl–H_2O, at 25° and 80°, phase diagrams are constructed for the quaternary system $CuCl_2$–NH_4Cl–HCl–H_2O at the same temps. This system is characterized by a large solid-soln. field (involving $CuCl_2.2NH_4Cl.2H_2O$) at 25° which does not vanish at 80°. The compns. of the liquid phase at various critical points were as follows (all data at atm. pressure):

Solns. satd. with respect to	Temp.	Compn. of satd. soln. % $CuCl_2$	% NH_4Cl	% HCl
$CuCl_2$ } Solid soln.	25°	43	2	...
	80°	50.5	8.2	...
NH_4Cl } Solid soln.	25°	1.82	26.9	...
	80°	7.06	37.64	...
NH_4Cl,HCl } Solid soln.	25°	0.32	5.24	39.3
	80°	2.45	12.83	25.25
$CuCl_2$, HCl } Solid soln.	25°	26.81	0.74	28.9
	80°	35.12	5.12	16.37

J. W. Perry



MOROZOV I-S

CA

19

Stannic and stannous chlorides. I. S. Morozov, A. A. Zaitelin, and G. G. Urazov. U.S.S.R. 64,401, Feb. 28, 1945. Sn bearing ores or concentrates are heated at 750-830° with $FeCl_3$ in excess of the quantity required according to $2SnO_2 + 4FeCl_3 \rightarrow SnCl_4 + SnCl_2 + Fe_2O_3$. $SnCl_4$ and $SnCl_2$ are vaporized, and can be sepd. by fractional condensation. By this method 98% of the Sn in the ore or concentrate can be recovered. M. Hoseh

CA 2

Volatility of hydrogen chloride in hydrochloric acid solutions of various salts. I. S. Morozov (N. S. Kurnakov Inst. Gen. Inorg. Chem. Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1946, 37-45(in Russian).—Detns. were made at 25° by the flow method (passing of a known vol. of air and analysis of the HCl absorbed on large (700-800 g.) samples of soln.; concns. c are expressed in moles/100 moles H_2O, partial pressures of HCl, p, in mm. Hg. Selected points are given. (1) Pure HCl, c 24.67, 29.54, 36.49, 37.0, 40, p 1.54, 12.90, 160.0, 272.3, 515.0. (2) CuCl (c 1.32) + HCl, c 16.0, 26.8, 32.0, p 0.79, 90.23, 306.8; CuCl (c 4.8) + HCl 23.7, 29.0, 35.6, p 23.4, 93.7, 663.0; NH_4Cl (c 1.65) + HCl c 17.6, 20.7, 27.0, 28.0, p 2.1, 10.5, 87.4, 153. Both CuCl and NH_4Cl lower p. Comparison of the compns. of solns. having the same p shows that every 2 mols. CuCl introduced bind 1 HCl, i.e. the compd. is 2CuCl.HCl. In the system CuCl (c 1.35) + NH_4Cl (c 2.7) + HCl, c 15.3, 20.2, 30.6, 31, p 0.6, 10.1, 297.6, 824.0; CuCl (c 2.70) + NH_4Cl (c 3.4) + HCl c 17.5, 27.8, 28.7, 32.0, p 2.8, 117.8, 169.1, 558; NH_4Cl displaces HCl in the compd. 2CuCl.HCl, forming the more stable compd. $2NH_4Cl$.CuCl which has no effect on p. This compd. is formed upon introduction into HCl of 1.35 moles CuCl and 2.7 moles NH_4Cl; the p isotherm of such solns. is identical with that of pure HCl. In solns. contg. 2.7 moles CuCl and 3.4 moles NH_4Cl (or $2NH_4Cl$.CuCl + 1 mole CuCl), p is the same as in HCl contg. 1 mole CuCl. (3) With rising temp., NH_4Cl increases the soly. of HCl up to 65°, and thus decreases p. At 0°, 1.89 moles NH_4Cl raise the soly. of HCl from c 35 to 40.5, at p 760. This may indicate a compd. $NH_4Cl.nHCl$, with the no. n depending on the temp. (4) $TiCl_4$ (c 1.80) + HCl c 11.1, 19.5, 25.0, 26.5, p 5.2, 48.11, 253.4, 401. At HCl c 14.2, LiCl c 0, 4.6, 12.0, 19.5, p 5.5, 6.5, 19.1, 76.7, and at HCl c 19.2, LiCl 0, 5.0, 11.0, 12.9, p 7.9, 18.6, 64.7, 99.1. That is, addn. of 1.4 moles LiCl or of 0.36 mole $TiCl_4$ raises p by the same amt. as an increase of HCl by 1 mole. The same effect is brought about by introduction of 0.7 mole H_2SO_4. (5) $CuCl_2$ (c 0.82) + HCl c 10.7, 25.8, 30.0, p 3, 22, 234; $CuCl_2$ (c 2.1) + HCl c 17.4, 26.0, 30.2, p 3.5, 67.0, 278; $CuCl_2$ (c 4.6) + HCl c 14.0, 24.2, 27.0, 31.8, p 1.7, 56.1, 139, 512. $CuCl_2$ has the particular effect of lowering p at low concns. only; with 2 moles $CuCl_2$, the p isotherm is identical with that of pure HCl. This dual effect is due to formation of $CuCl_2.nH_2O$ at low concns. which is overshadowed by hydration of the salts added at higher concns. Increase of $CuCl_2$ to c 4.6 brings about increase of p as compared with pure HCl. (6) $SnCl_4$ (c 12.8) + HCl c 3.6, 21, 30.8, p 0, 27.1, 400.3; $SnCl_4$ (c 2.9) + HCl c 10.8, 19.4, 22.0, p 0, 12.0, 30.5. $SnCl_2$ (c 5.3) + HCl c 15.8, 26.0, 28.2, 30.5, p 1.65, 94.90, 194.0, 314.6; $SnCl_2$ (c 3.2) + HCl 23.0, 25.2, 29.0, 29.8, p 44.5, 83.9, 231.0, 276.8. Along with formation of compds. H_2SnCl_6 and $HSnCl_3$, the effect of hydration plays a role. The p isotherms with 12.8 moles $SnCl_4$ and with 5.3 moles $SnCl_2$ are identical.

N. Thon

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