YUGOSLAVIA

STOJŠIĆ, S., and LIBMAN, E. [affiliations not given].

"Third Regular Conference of Specialists in Internal Medicine of the Autonomous Province of the Vojvodina."

Zagreb, Liječnički Vjesnik, Vol 85, No 9, September 1963, p 1012.

Abstract: The conference was held at Lake Palić 30 May-1 June 1963, was attended by interested physicians from throughout Yugoslavia, and was devoted to illnesses of the endocrine system and metabolic diseases. The fourth such conference will be held at the same place and will be devoted to gastro-enterological problems.

No references.

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YUGOSLAVIA

Dr St. STOJSIC and Dr E. LIBMAN (Affiliation not given.)

"Symposium on Diseases of the Liver, Gallbladder and Bile Ducts."

Belgrade, Medicinski Glasnik, Vol 16, No 9, Sept 1962; pp 412.

Abstract: Report of this Second Annual Meeting on Internal Medicine held in Palic June 1962 under the sponsorship of the Internal Medicine Section of the Serbian Medical Association for the Autonomous Region of Vojvodina, briefly reviewing subjects of around 30 papers presented on infectious hepatitis, serum transaminase test, cholestatic hepatoses due to drugs; parasitic diseases and infections; congenital atresia. Next year, meeting will also be held in Palic, devoted to Metabolic and Endocrine Diseases. A drug exhibit is part of meeting.

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15-57-12-17306

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 12, p 92 (USSR)

AUTHOR: Libman, E. P.

TITLE: Work of R. I. German in the Field of Chemistry and Mineralogy of Rare Metals (O rabotakh R. I. Germana v oblasti khimii i mineralogii redkikh metallov)

PERIODICAL: Tr. In-ta istorii yestestvozn. i tekhn. AN SSSR, 1956, Vol 12, pp 40-54.

ABSTRACT: The work of R. I. German in the field of chemistry and mineralogy was mainly dedicated to minerals containing rare elements and rare earths. He investigated many compounds of Nb, Ta, Th, Ce, U, Zr and others, he was the first to describe the Il'men zircons and he also worked out a method for obtaining ZrO_2. In 1859 he published a general summary on uranium minerals. Discovery of several new minerals, including pyrophyllite, pitticite and auerbachite, was associated with his name. German analyzed chemically ilmenorutile,

Card 1/2

Work of R. I. German in the Field of Chemistry (Cont.) 15-57-12-17306

eschenite, pyrochlore, orthite, bismutite and other minerals. His vast collection of rare minerals was partially preserved to this time in the Moscow Geological Prospecting Institute imeni S. Ordzhonikidze.

Card 2/2

O. V. Karpova

DIMITRIJEVIC-SOKCIC, Milica, dr; LIEMAN, Emil, dr; STOJSIC, Stevan, dr

Our 1st experience with chlorpropamide in the treatment of diabetes mellitus. Med. glas. 16 no.2:80-83 F '62.

1. Interno odeljenje Gradske bolnice u Subotici (Nacelnik: dr V. Percic)

(ANTIDIABETICS ther)

STOJSIC, Stevan; LIBMAN, Emil

Leukopenia in perchlorate therapy. Med. pregl. 17 no.12: 649-651 '64.

1. Odeljenje za unutrasnje bolesti Gradske bolnice u Subotici (Nacelnik: dr. Vinko Percic).

PERCIC, Vinko; LIBMAN, Emil; SVRAKA, Ladislav; STOJSIC, Stevan

Functional and histological changes in the gastric mucosa in cardiac patients. Med. pregl. 18 no. 3:81-87 ' 65.

1. Odeljenje za unutrasnje bolesti Gradske bolnice u Subotici (Nacelnik: dr. Vinko Percic) ; Odeljenje za patologiju i patolosku histologiju Gradske bolnice u Subotici (Nacelnik: dr. Ladislav Svraka).

BLOKHINTSEVA, T.D.; VASILENKO, A.T.; GREBINNIK, V.G.; ZHUKOV, V.A.; LIBMAN, G.; NEMENOV, L.L.; SELIVANOV, G.I.; YUAN' ZHUN-FAN [Yuan Jung-fang]

[Eight-liter hydrogen-deuterium dubble chamber in a magnetic field] Vos'militrovaia vodorodno-deiterievaia puzyr'kovaia kamera v magnitnom ple. Dubna, Ob"edinennyi in-t iadernykh issl., 1961. 20 p. (MIRA 15:1)
(Bubble chamber) (Magnetic fields)

LIBMAN, G.

3

S/056/62/042/003/046/049
B108/B102

946700

AUTHORS: Blokhintseva, T. D., Grebinnik, V. G., Zhukov, V. A., Libman, G., Nemenov, L. L., Selivanov, G. I., Yüan Jung-fang

TITLE: Measurement of the total cross section of the (π^-p) reaction with 340-Mev π^--mesons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 3, 1962, 912-913

TEXT: The reactions

$$\pi^- + p \to \pi^- + \pi^+ + n, \quad (1),$$
$$\pi^- + p \to \pi^- + \pi^0 + p, \quad (2),$$
$$\pi^- + p \to \pi^- + \gamma + p. \quad (3)$$

have been studied at energies of the primary π^- mesons of 340 ± 15 Mev with the aid of a 25-cm liquid-hydrogen chamber in a magnetic field of 12,000 oe. The respective total cross sections were determined as $\sigma_1 = 1.24 \pm 0.14$ mb, $\sigma_2 = 0.13^{+0.06}_{-0.04}$ mb, $\sigma_3 = 0.09^{+0.03}_{-0.06}$ mb. In the

Card 1/

Measurement of the total cross ...

determination of the cross section of reaction (3) only cases where the energy of the emitted gamma quantum was higher than 100 Mev were considered. In order to obtain a representation of the contribution of the different isotopic states in the cross sections of the reactions (1) and (2), the latter are written down in the form

$$\sigma_1 = \frac{1}{9}\left[\frac{1}{5}\left|A_2^{3/2}\right|^2 - \frac{1}{2}\sqrt{\frac{2}{5}}\,\mathrm{Re}\,(A_2^{3/2*}A_0^{1/2}) + 2|A_0^{1/2}|^2\right] + \frac{1}{9}\left||A^{1/2}|^2 - 2\,\mathrm{Re}\,(A_1^{3/2*}A_1^{1/2}) + |A_1^{3/2}|^2\right|,$$

$$\sigma_2 = \frac{1}{10}\left|A_2^{3/2}\right|^2 + \frac{1}{9}\left[\frac{1}{2}|A_1^{3/2}|^2 + 2\mathrm{Re}(A_1^{3/2*}A_1^{1/2}) + 2|A_1^{1/2}|^2\right],$$

where A_K^I denotes the invariant isotopic amplitudes (superscript refers to total isotopic spin of entire system, subscript denotes total isotopic spin of the system of two pions). The cross sections of the reactions (1) and (2) permit with some assumptions to infer the following about the magnitudes and phases of the isotopic amplitudes: (a) if the amplitudes

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S/056/62/042/003/046/049
B108/B102

Measurement of the total cross ...

$A_1^{1/2}$ and $A_1^{3/2}$ are zero, then the $A_2^{3/2}$ will be considerably smaller than $A_0^{1/2}$: $3.1|A_2^{3/2}|^2 \leqslant |A_0^{1/2}|^2 \leqslant 5.7|A_2^{3/2}|^2$; (b) if it is considered that σ_1 and σ_2 are determined mainly by $A_1^{1/2}$ and $A_1^{3/2}$, then the phase shift of these amplitudes is about 180°C, and their moduli are connected by the relation $|A_1^{3/2}| \approx 2|A_1^{1/2}|$. For incident pion energies of 340 Mev the maximum total energy (c.m.s.) of two pions is 400 Mev. If the case (a) applies, one may state that the pions in the energy range 280-400 Mev will interact mainly in states with total isotopic spin T = 0 and not with T = 2. Professor B. M. Pontekorvo and P. F. Yermolov are thanked for advice and discussions. There are 5 references: 2 Soviet and 3 non-Soviet. The references to English-language publications read as follows: J. Deahl et al, Proc. of the 1960 Ann. Int. Conf. on High Energy Phys. at Rochester, 1960, p. 185; H. J. Schnitzer. Preprint, 1961; B. C. Barish et al. Bull. Amer. Phys. Soc., II, 6, 523, 1961.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

Card 3/4

LIBMAN, G.

(6)

BLOKHINTSEVA, T.D., GREBINNIK, V. T., LIBMAN, G., NEMENOV, L. L., SELIVANOV, G. I. YUNG-FANG, Yuan, ZHUKOV, V. A.

"π^--Meson Interaction with Hydrogen at 340 Mev"

report presented at the Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962

Joint Inst. for Nuclear Research
Lab. of Nuclear Problems

BLOKHINTSEVA, T.D.; GREBINNIK, V.G.; ZHUKOV, V.A.; LIBMAN, G.; NEMENOV, L.L.; SELIVANOV, G.I.; YUAN' ZHUN-FAN [Yüan Jung-fang]

Measurement of the total cross sections of (π^-p)-reactions, in which the π^--mesons have an energy of 340 Mev. Zhur.eksp.i teor. fiz. 42 no.3:912-913 Mr '62. (MIRA 15:4)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Nuclear reactions) (Mesons)

BLOKHINTSEVA, T.D.; GREBINNIK, V.G.; ZHUKOV, V.A.; LIEMAN, G.; MEZHNOV, L.; SELIVANOV, G.I.; YUAN' ZHUN-FAN [Yuan Jung-fang]; SARANTSEVA, V.R., tekhn. red.

[Interaction between π^--mesons and hydrogen at an energy of 340 Mev]Vzaimodeistvie π^--mezonov s vodorodom pri energii 340 Mev. Dubna, Ob"edinennyi in-t iadernykh issl., 1962. 27 p. (MIRA 15:10)
(Nuclear reactions) (Mesons) (Hydrogen)

3

41436

21.6000

S/120/62/000/005/009/036
E039/E420

AUTHORS: Blokhintseva, T.D., Vasilenko, A.T., Grebinnik, V.G., Zhukov, V.A., Libman, G., Nemenov, L.L., Selivanov, G.I., Yuan Jung-Fang

TITLE: An eight litre hydrogen-deuterium bubble chamber in a magnetic field

PERIODICAL: Pribory i tekhnika eksperimenta, no.5, 1962, 51-59

TEXT: A detailed description of the apparatus is given. Essentially it consists of two coaxial cylinders, the inner space being the working volume and the outer space for temperature control. The inner cylinder is of copper to improve heat transfer and the outer cylinder, together with most of the casing, is constructed from 1Х18Н9Т (1Kh18N9T) stainless steel. Observation ports at the ends of the inner cylinder consist of discs of ЛК-5 (LK-5) glass 40 mm thick and with an aperture of 280 mm. Detailed drawings are given of the expansion apparatus and the associated two stage double acting electromagnetic valve. The normal gas pressure for operating the expansion apparatus is 7 atm and the degree of expansion can be altered by changing the

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S/120/62/000/005/009/036
E039/E420

quantity of liquid in the hydraulic system. A detailed schematic layout of the gas system is shown and constructional details of the stereo-camera are given. The liquid nitrogen supply system for the radiation shield and a 24 litre Dewar flask for liquid hydrogen are also described. The magnetic field in the working volume is 12 kilo oersteds and is supplied by a standard MC-4 (MS-4) electromagnet. Preliminary cooling with liquid nitrogen must be gradual and consumes about 100 litres. Cracks were observed on the walls of the chamber when the cooling time was less than 8 hours. The time to fill the working volume with liquid hydrogen is about 3 hours and requires about 20 litres. During operation 2.5 to 3 litres/hour of liquid hydrogen are consumed. A photograph of a typical track showing the elastic collision of a π^- meson with hydrogen is shown. The chamber has been used satisfactorily for 6 months during which time 30000 stereo photographs were obtained. The expansion apparatus has performed about 70000 cycles without changing the bellows. The dead time of the chamber does not exceed 2 sec. There are 13 figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Research)

SUBMITTED: December 9, 1961

S/056/63/044/001/022/067
B104/B144

AUTHORS: Blokhintseva, T. D., Grebinnik, V. G., Zhukov, V. A., Libman, G., Nemenov, L. L., Selivanov, G. I., Yuan Jung-fan

TITLE: Interaction of π^- mesons with hydrogen at 340 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 1, 1963, 116-126

TEXT: The reactions $\pi^- + p \longrightarrow \pi^- + \pi^+ + n$, $\pi^- + p \longrightarrow \pi^- + \pi^0 + p$, and $\pi^- + p \longrightarrow \pi^- + \gamma + p$ were studied with a 25 cm liquid hydrogen bubble chamber in a 12,000-oe magnetic field. The π^- meson beam was generated in the synchrocyclotron of the Laboratoriya yadernykh problem OIYaI (Laboratory of Nuclear Problems OIYaI), the meson energy was 340 ± 15 Mev. 1400 two-pronged stars were found in 16,000 stereoscopic photographs. Those listed in Table 2 complied with the following conditions: (1) the angle α between the track of the incident particle and the central plane of the chamber must not exceed $\pm 4^\circ$; (2) the π^- meson track must not be shorter than 10 mm; (3) the distance between the point of interaction and the boundary of the visible range of the working volume of the chamber

Card 1/3

Interaction of π^- mesons with ...

must not be smaller than 20 mm; (4) the azimuthal angle of a negative particle must not exceed 70^0; (5) the noncomplanarity of elastic interactions must not exceed 3^0. The angular distributions and the energy distributions of the secondary particles suggest an effect due to resonance of the spin with the isospin 3/2. A steep increase of the $\pi\pi$ interaction cross section with a total isospin T = 0 was found by analyzing the energy distribution in the $(\pi^+\pi^-)$ c.m.s. There are 10 figures and 2 tables.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: August 4, 1962

S/056/63/044/002/019/065
B102/B186

AUTHORS: Blokhintseva, T. D., Grebinnik, V. G., Zhukov, V. A., Libman, G., Nemenov, L. L., Selivanov, G. I., Yüan Jung-fang

TITLE: The total π^-p-reaction cross-sections at π^- energies of 276 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 2, 1963, 498-499

TEXT: The total cross-sections of the reactions $\pi^- + p \rightarrow \pi^- + \pi^+ + n$ and $\pi^- + p \rightarrow \pi^- + \pi^0 + p$ were measured at $E_{\pi^-} = 276 \pm 10$ Mev in the lab system in a 25-cm liquid-hydrogen bubble chamber placed in a magnetic field. Among 6000 photographs made 5 events of the first, and one of the second reaction were found. The cross sections were:

$$\sigma_1 = 0.4^{+0.2}_{-0.3} \text{ mb} \quad \text{and} \quad \sigma_2 = 0.08 \pm 0.08 \text{ mb}.$$

The results are in close agreement with the theoretical predictions of

Card 1/2

The total π^-p-reaction ... S/056/63/044/002/019/065
B102/B186

H. Schnitzer (Phys. Rev. 125, 1059, 1962). There is 1 figure.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: September 24, 1962

Card 2/2

41014-65 EWT(m)/T/EWA(m)-2

Determination of the contribution of the 3/2, 3/2 isobar to inelastic interaction processes of 344 MeV Pi mesons with protons

SOURCE: Yadernaya fizika, v. 1, no. 1, 1965, 103-112

TOPIC TAGS: inelastic Pi meson scattering, isobaric model, isobar scattering effect, isobar channel contribution, meson proton interaction, inelastic scattering

ABSTRACT: S. J. Lindenbaum and R. M. Sternheimer (Phys. Rev., 109, 1723, 1958) proposed a model for the description of meson-meson production during πN colli- ding in which the meson production proceeds via the formation of the

[illegible] A. Bunti, Phys. [illegible]

Card 1/3

41014-65

ACCESSION NR: AP5007711

[illegible] mass spectrum the [illegible] cross section

[illegible] respectively.

Card 2/3

ACCESSION NR: AP5007711

[redacted]

[redacted] and 1 table.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Research)

SUBMITTED: 28Jul64 ENCL: 00 SUB CODE: NP

NO REF SOV: 007 OTHER: 011

Card 3/3

DRAGILEV, Mikhail Samuylovich; LIBMAN, G.I., red.; GRIGORCHUK, L.A., tekhn. red.

[Critical evaluation of present-day imperialism in economics courses] Kritika sovremennogo imperializma v kurse politicheskoi ekonomii. Moskva, Gos. izd-vo "Vysshaia shkola," 1961. 125 p. (MIRA 14:8)
(Economics)

LIBMAN, Georgiy Izraylovich; SHIRYAYEV, Yu.S., red.; ROTOVA, R.S., red. izd-va; MURASHOVA, V.A., tekhn. red.

[Constant growth of socialist production] Nepreryvnyi rost sotsialisticheskogo proizvodstva. Moskva, Gos. izd-vo "Vysshaia shkola," 1961. 120 p. (MIRA 15:4)
(Economics) (Communism)

VOROZHEYKIN, Dmitriy Ivanovich, inzh.; LIBMAN, Grigoriy Markovich; LEVIN, Boris Mordukhovich; BEKHTEREV, Ivan Andreyevich; CHERNYSHEVICH, Fedor Ignat'yevich; BOVE, Ye.G., kand. tekhn. nauk, retsenzent; TISHCHENKO, A.I., inzh., retsenzent; YAKOVLEV, D.V., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Operation and maintenance of electric d.c. locomotives] Ekspluatatsiia i obsluzhivanie elektrovozov postoiannogo toka. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1961. 341 p. (MIRA 14:8)
(Electric locomotives)

YAKOVLEV, Dmitriy Vasil'yevich; RAKOV, V.A., inzh., retsenzent; LIBMAN, G.M., inzh., retsenzent; KHRAKOVSKIY, Ye.M., inzh., red.; MEDVEDEVA, M.A., tekhn. red.

[[Operation of d.c. electric locomotives and their maintenance] Upravlenie elektrovozami postoiannogo toka i obsluzhivanie ikh. Moskva, Vses.izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1961. 269 p. (MIRA 14:12)
(Electric locomotives)

RUBCHINSKIY, Zigmund Moiseyevich, kand. tekhn. nauk; TASTEVEN, Yevgeniy Edmundovich, inzh.; SHIRYAYEV, Arkadiy Pavlovich, inzh.; DOLMATOV, A.A., kand. tekhn. nauk, retsenzent; LIBMAN, G.M., inzh., retsenzent; NAKHODKIN, M.D., kand. tekhn. nauk, retsenzent; SAZONOV, I.A., inzh., retsenzent; TRAKHTMAN, L.M., kand. tekhn. nauk, retsenzent; ZUBLEVSKIY, S.M., inzh., red.; RAKOV, V.A., inzh., red.; USENKO, L.A., tekhn. red.

[Design, arrangement, and working principles of the rolling stock of multiple-unit trains]Ustroistvo i rabota motorvagonnogo podvizhnogo sostava. Moskva, Transzheldorizdat, 1962. 335 p. (MIRA 16:1)

(Electric railroads--Rolling stock)

KALININ, V.K., kand. tekhn. nauk; MIRONOV, K.A., inzh.; LEVIN, B.M., inzh.; LIBMAN, G.M., inzh.; YERSHOV, Ye.F., inzh.; PANCHENKO, P.M., inzh.; BOLYCHEV, N.G., mashinist elektrovoza; ZOLOTAREV, V.N., mashinist instruktor; YANIN, I.A., inzh.; BOVE, Ye.G., kand. tekhn. nauk, red.; USENKO, L.A., tekhn. red.

[Electric networks and maintenance of the equipment of electric locomotives] Elektricheskie skhemy i ukhod za oborudovaniem elektrovozov. [By] V.K.Kalinin i dr. Moskva, Transzheldorizdat, 1963. 279 p. (MIRA 16:7)
(Electric locomotives)

LIBMAN, Grigoriy Markovich; CHERNYAVSKIY, Simon Nisonovich; RIVIN, I.M., inzh., prepodavatel'; GORCHAKOVA, O.D., red.

[Systems and operation of d.c. locomotives] Ustroistvo i rabota elektrovozov postoiannogo toka. Moskva, Transport, 1964. 343 p. (MIRA 17:9)

1. Omskaya tekhnicheskaya shkola (for Rivin).

33779
S/108/62/017/001/006/007
D271/D304

9.4110 (1003, 1140, 1331)

AUTHORS: Lifshits, Z.M., Moskovskaya, G.M., and Libman, I.S., Members of the Socieity (see Association)

TITLE: New modulator power triodes

PERIODICAL: Radiotekhnika, v. 17, no. 1, 1962, 59 - 61

TEXT: New types of power triodes ГМ-3А (GM-3A) and ГМ-3А (GM-3B) are described, some drawings, characteristics and the usual catalogue data are given. The triodes were developed for low and video frequency range, with anode dissipation of 7.5 kW; new anti-emission surfacing is used to reduce thermal emission of the grid and high vacuum is obtained by the use of metallic getter. GM-3A triode has water cooled anode, GM-3B - air cooled. The cathode consists of six loops of thoriated carbide tungsten wire forming a cylindrical surface. Cylindrical grid is a helical winding of molybdenum wire covered with platinum in order to reduce thermal emission. The anode of the air cooled triode has cooling fins; the inner surface of the anode is covered with electrolytic black chromium to reduce the

Card 1/2

New modulator power triodes

reflection of the cathode radiation and, by this means, to reduce the thermal current of the grid. The getter is of titanium and zirconium. The triodes can be employed as oscillators and for power amplification up to 25 - 30 Mc/s. There are 6 figures.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A.S. Popov) [Abstractor's note: Name of association taken from first page of journal]

SUBMITTED: July 3, 1961

LIFSHITS, Z.M.; MOSKOVSKAYA, G.M.; LIBMAN, I.S.

New power modulator trides. Radiotekhnika 17 no.1:59-61 Ja '62. (MIRA 15:2)

1. Deystvitel'nyye chleny Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Triodes) (Modulation (Electronics))

LIBMAN, I.Ya., inzhener; KHARIN, I.V., inzhener.

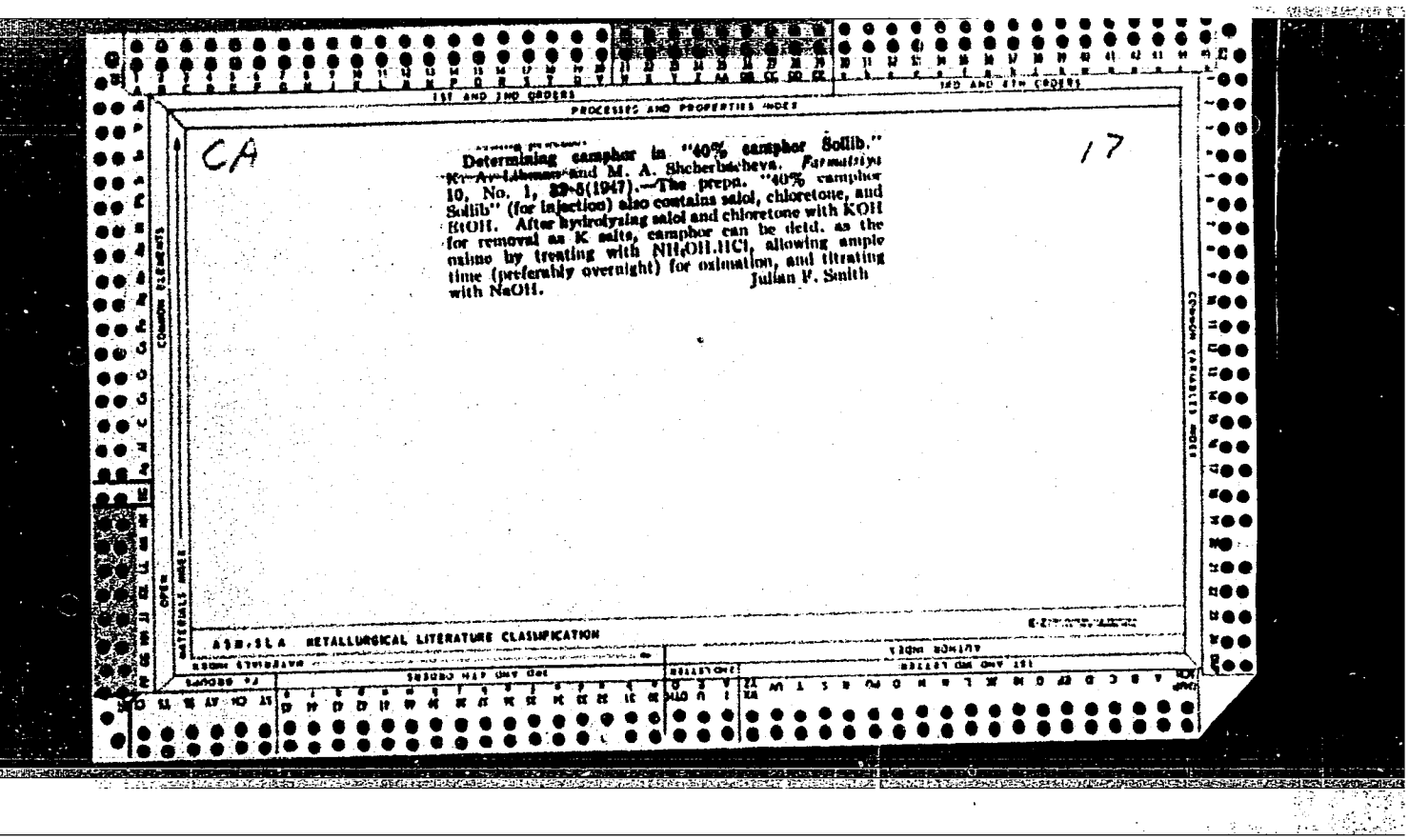
Casting of abrasive wheel dressers. Lit.proizv. no.9:27-28 S '56. (MLRA 9:11)
(Founding) (Grinding wheels)

LIBMAN, Janina

Gastric cancer in aged men. Polski przegl. chir. 33 no.7/9:779-781 '61.

1. Z I Kliniki Chirurgicznej AM w Krakowie Kierownik: prof. dr J.Bogusz.

(STOMACH NEOPLASMS in old age)



CA 17

Determining camphor in "40% camphor Sollib." K. A. Libman and M. A. Shcherbacheva. *Farmatsiya* 10, No. 1, 39-8(1947).—The prepn. "40% camphor Sollib" (for injection) also contains salol, chloretone, and EtOH. After hydrolyzing salol and chloretone with KOH for removal as K salts, camphor can be detd. as the oxime by treating with $NH_2OH.HCl$, allowing ample time (preferably overnight) for oximation, and titrating with NaOH. Julian F. Smith

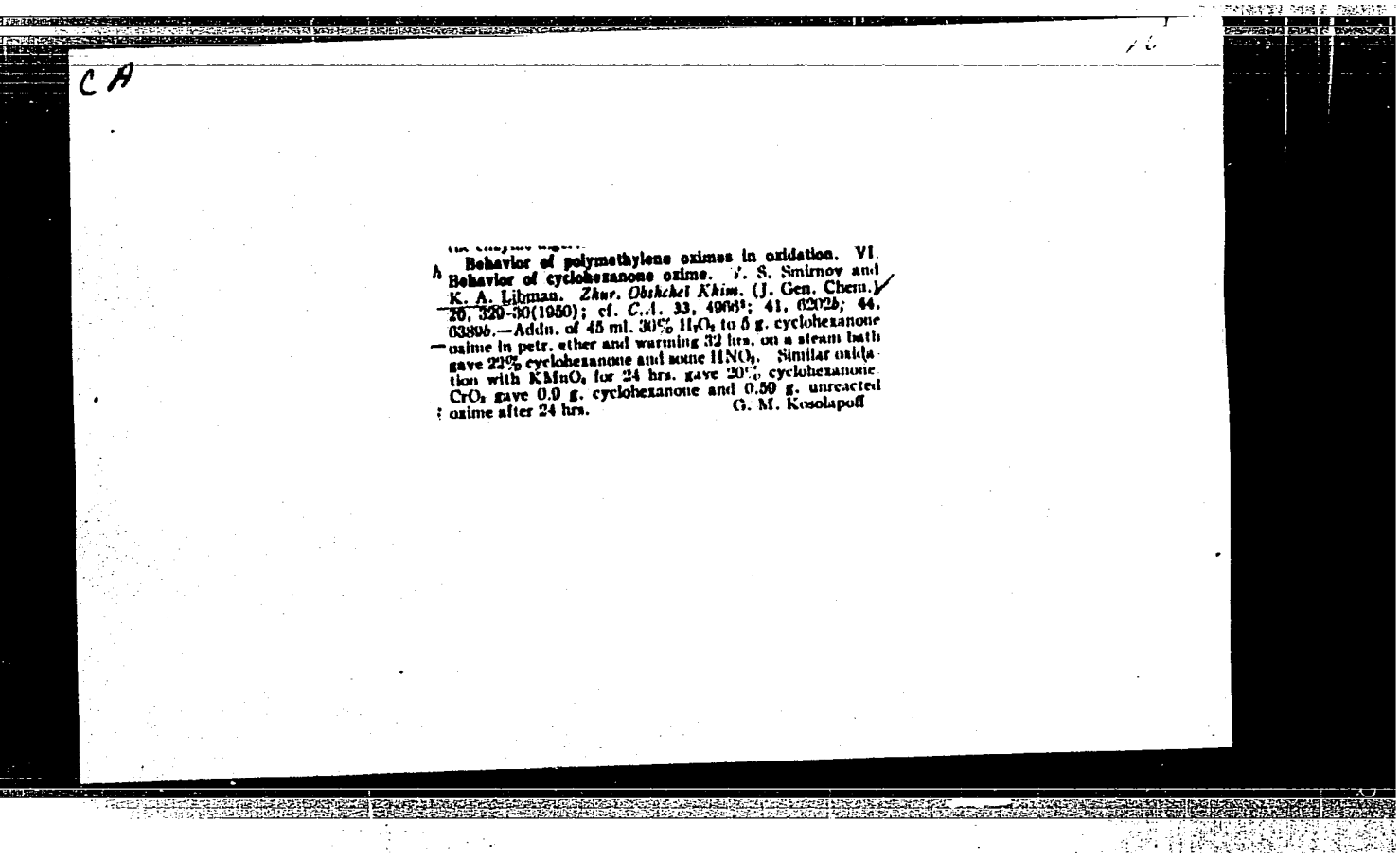
LIBMAN, K.A.

Highly dispersed silver sulfathiazole. Patent U.S.S.R. 78,424, Dec. 31, 1949.
(CA 47 no.19:10181 '53)

LIBMAN, K. A.

33483. Vysokonislersnyy Preparat Serebryanoy Soli Sul'fatiazola. Med. Prom-st' sssr, 1949, No 5, C. 43-44

SO: Letopis'nykh Statey, Vol. 45, Moskva, 1949



CA

A Behavior of polymethylene oximes in oxidation. VI. Behavior of cyclohexanone oxime. V. S. Smirnov and K. A. Lihman. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 320–30(1950); cf. *C.A.* 33, 4966[8]; 41, 6202*b*; 44, 03896.—Addn. of 45 ml. 30% H_2O_2 to 5 g. cyclohexanone oxime in petr. ether and warming 32 hrs. on a steam bath gave 22% cyclohexanone and some HNO_3. Similar oxidation with $KMnO_4$ for 24 hrs. gave 20% cyclohexanone. CrO_3 gave 0.9 g. cyclohexanone and 0.50 g. unreacted oxime after 24 hrs. G. M. Kosolapoff

USSR/Chemistry - Sulfa Drugs May 51

"Brief Communication: Highly Dispersed Preparation of the Silver Salt of Sulfathiazole," K. A. Libman, All-Union Sci Res Lab Dispersed Drugs

"Zhur Prik Khim" Vol XXIV, No 5, pp 558-560

Highly dispersed prepn of Ag salt of sulfathiazole (I) is best obtained by reaction of Na salt of I with $AgNO_3$ under exposure to sound waves, filtration and washing to remove $NaNO_3$, exposure of resultant paste to sound, and drying from frozen state. Prepn so obtained has high content of small particles and retains high deg of dispersion.

183T44

LENCZYK, Maria; CHABINKA, Wojciech; GEDLICZKA, Otmar; JASIENSKI, Stefan; LIBMAN, K.; NOSEK, H.; OSZACKI, Jan; RODECKI, A.

Statistical analysis of cases of cancer of the stomach treated in Cracov in the years 1947-1956. Polski tygod. lek. 14 no.14:615-618 6 Apr 59.

1. (Z Instytutu Onkologii w Krakowie; dyrektor: doc. dr med. Hanna Kolodziejska, z I Kliniki Chirurgicznej A.M. w Krakowie; kierownik: prof. dr med. J. Bogusz, z II Kliniki Chirurgicznej A. M. w Krakowie; kierownik: prof. dr med. K. Michejda i z III Kliniki Chirurgicznej A. M. w Krakowie; kierownik: prof. dr med. J. Jasienski) Krakow, ul. Garncarska 11 Instytut Onkologii.

(STOMACH NEOPLASMS, statist.
in Poland (Pol))

SYCH, Marek; LIBMAN, Janina

Photometric determination of blood loss during surgical operations. Polski tygod. lek. 14 no.41:1821-1824 12 Oct 59.

1. (Z I Kliniki Chirurgicznej A. M. w Krakowie; kierownik: prof. dr Jozef Bogusz).
(SURGERY, OPERATIVE) (BLOOD VOLUME)

L 7993-66

ACC NR: AP5026564 SOURCE CODE: UR/0286/65/000/019/0127/0127

AUTHORS: Lebedev, O. Ye.; Levina, G. N.; Lepekhina, V. T.; Libman, M. L.; Martynkevich, G. M.; Ozerov, L. N.

ORG: none

TITLE: Arrangement for protecting and uncovering evacuated gauge of a device. Class 62, No. 175398 [announced by Special Construction Bureau of the Analytic Instrument Construction, AN SSSR (Spetsialnoye konstruktorskoye byuro analiticheskogo priborostroyeniya AN SSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 127

TOPIC TAGS: vacuum, vacuum measurement, vacuum seal

ABSTRACT: This Author Certificate introduces an arrangement for protecting and uncovering an evacuated gauge of a device while introducing the gauge into the investigated medium (see Fig. 1). The arrangement contains a sealed hood connected to the nipple of the device and a mechanism for destroying this hood. To make sure that the investigated medium enters the gauge and to protect the gauge from damage while it is being uncovered, the hood is made up of two metallic parts fixed to one another and to the nipple with airtight glass seams. The parts of the hood are also provided with earlike holders which are connected to the hood-destroying mechanism.

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UDC: 629.19:621.3.083.8:543.27

Card 2/2

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.P., inzh.

Mobile auxiliary stations for railroad blocking in the German Federal Republic (from "Der Eisenbahningenieur," no.6, 1959). Avtom., telem. i sviaz' 4 no.4:47-48 Ap '60. (MIRA 13:6)
(Germany, West--Railroads--Signaling)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

Development of an international signaling system. Avtom., telem. i sviaz' 2 no.7:45-46 Jl '58. (MIRA 11:6)
(Wiesbaden, Germany--Railroads--Congresses)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

Principles for linking flashing light signals of railroad crossings with the devices of railroad stations. Avtom. telem. i sviaz' 2 no.11:46-48 N '58. (MIRA 11:12)
(Railroads--Signaling)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

From abroad. Avtom.telém. i sviaz' 3 no.12:43-44 D '59. (MIRA 13:4)
(United States--Railroads)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

Rail networks without insulated rail joints. Avtom., telem.i sviaz' 4 no.3:47 Mr '60. (MIRA 13:7)
(Railroads--Rails)

AFANAS'YEVA, S.I.; LIBMAN, M.R.

Rail couplers on electrified railroads of the German Federal Republic.
Avtom., telem. i sviaz' 4 no.10:45 O '60. (MIRA 13:10)
(Germany, West--Electric railroads--Wires and wiring)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

Use of a magnetic transducer for switching on blinker signals.
Avtom., telem.i sviaz' 6 no.2:47-48 F '62. (MIRA 15:3)
(Railroads--Signaling)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

Automation of the centralized traffic control on the railroads of Greater Hamburg. Avtom., telem.i sviaz' 6 no.5:46 My '62. (MIRA 15:4)

(Hamburg—Railroads—Signaling)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

Use of television on foreign railroads. Avtom., telem. i sviaz' 6 no.3:45-46 Mr '62. (MIRA 15:3)
(Germany, West--Railroads--Electronic equipment)
(Germany, West--Industrial television)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

Television system for observing the tail end of a train. Avtom., telem. i sviaz' 6 no.6:46-47 Je '62. (MIRA 15:7)
(Germany, West—Railroads—Electronic equipment)
(Germany, West—Railroads—Industrial television)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

Portable radio transmitter-receivers for car checkers. Avtom., telem. i sviaz' 7 no.1:43-44 Ja '63. (MIRA 16:2)
(Railraods—Communication systems) (Railraods—Electronic equipment)

AFANAS'YEVA, S.I., inzh.; LIBMAN, M.R., inzh.

Use of radio control in operating railway crossway level barriers during switching operations in the U.S.A. Avtom., telem. i sviaz' 8 no.4:47 Ap '64. (MIRA 18:2)

69331

S/129/60/000/05/004/023
E193/E283

18.7100

AUTHORS: Filyand, M. A., and Romanov, V. A., Candidates of Technical Sciences, Libman, N. B., Engineer and Podolinskaya, S. N., Engineer (Deceased)

TITLE: Non-Oxidizing Heating of Precision Engineering Alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 5, pp 15-18 (USSR)

ABSTRACT: The object of the investigation, described in the present paper, was to explore the possibility of providing a protective atmosphere during heat treatment of watch parts (balance springs) by using titanium hydride as the source of pure hydrogen. There are two methods of preparing titanium hydride. One consists in heating metallic titanium in hydrogen to 900°C and cooling it to room temperature in the same atmosphere. Diffusion of hydrogen, slow in the initial stages of the process, becomes quite rapid when cracks have appeared in the metal; when the saturation point has been reached, a large quantity of hydrogen becomes adsorbed on the surface of the grains, as a result of which the quantity of this gas absorbed by the metal after this treatment is

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Non-Oxidizing Heating of Precision Engineering Alloys

higher than that indicated by the stoichiometric formula of titanium hydride. In the other method, which is more economical, titanium hydride is obtained by reduction of TiO_2 with metallic hydrides such as calcium hydride. It has been postulated that the composition of titanium hydride is given by the formula $TiH_{1.75}$; the TiH_2 phase, richer in hydrogen, has face-centre cubic crystal lattice ($a = 4.48$ Å). In the absence of a conclusive proof of an existence of a hydride with the formula TiH_2, it is probable that this phase consists of $TiH_{1.75}$ with some excess of dissolved hydrogen. Titanium hydride has density of 3.912 g/cm^3, is stable at room temperature, and not hygroscopic. One volume of titanium can retain at room temperature 1800 volumes of hydrogen; on heating, most of this hydrogen is liberated, but complete liberation takes place only at relatively high temperatures (800 to 1000°C). The balance springs, whose heat treatment was the object of the present investigation, are made of two types of Elinvar alloys; a carbide-bearing alloy N35KhMV, and a precipitation-hardening alloy, N41KhTA. In the first series of

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Non-Oxidizing Heating of Precision Engineering Alloys

experiments, the heat treatment of these components was carried out at 640 to 700°C, in the protective atmospheres of town gas, dissociated ammonia, commercial grade helium, nitrogen, and hydrogen. Although all gases were passed through a drying and purifying train, they failed to prevent oxidation of the heat-treated parts. The attempts to heat-treat these components in vacuum were also unsuccessful; springs, made of alloy N35KhMV, retained their bright surface but lost some of their elasticity, evidently due to the surface layer becoming depleted of carbon; vacuum heat-treated alloy N41KhTA acquired a matt surface, most likely owing to the precipitation of titanium on the alloy surface; similar effects were observed in the case of venadium- and molybdenum-bearing alloys. In the next stage of the investigation hydrogen, obtained by dissociation of titanium hydride, was used (titanium hydride contained 0.75% impurities, including 0.05% N and 0.05% C). The

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Non-Oxidizing Heating of Precision Engineering Alloys

experiments consisted in placing the parts to be heat-treated and titanium hydride (contained in small cylindrical capsules with perforated lids) in a heat-resisting cylindrical container (700 mm long, 12 mm internal diameter), evacuating the container to approximately 10^{-5} mm Hg, sealing it off, and heating in an electric furnace to approximately 700°C, and recording the variation of pressure in the container during the first and subsequent heating cycles. The results are reproduced graphically on p 17, where the pressure in the container (kg/cm^2) is plotted against temperature (°C); graphs a and be relate to specimens in which 2 and 4 g of titanium hydride, respectively, were placed in the container; numbers ascribed to each curve denote first, second, etc., heating cycle. It will be seen that when titanium hydride is heated for the first time, no significant quantity of hydrogen is liberated until a temperature of approximately 500°C is reached, intensive evolution of hydrogen taking place at 550 to 600°C; on cooling hydrogen is re-absorbed by titanium

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Non-Oxidizing Heating of Precision Engineering Alloys

and given off again during subsequent heating. During subsequent heating, the liberation of hydrogen begins at approximately 300°C, this temperature remaining constant, irrespective of the number of the heating/cooling cycles. Regarding the protective properties of the atmosphere obtained by this method, it was found that to preserve the bright surface of the treated articles, hydrogen pressure of 3 to 4 kg/cm^2 had to be attained in the container at the heat-treatment temperature. Owing to the ability of titanium hydride to liberate hydrogen on heating, and to re-absorb it on cooling, one and the same charge of titanium hydride can be used more than once; it was established, experimentally, that 8 to 10 g titanium hydride (TiH_2) was sufficient to heat-treat 12 to 15 batches, each containing 400 balance springs. In the next series of experiments, an attempt was made to produce hydrogen by dissociation of titanium hydride, store it in a

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Non-Oxidizing Heating of Precision Engineering Alloys

cylinder under the pressure of 1.5 to 2 kg/cm^2, and then use it for heat-treatment when necessary. The parts to be heat-treated were placed in the container which was then evacuated, filled with the cylinder hydrogen, sealed off and heated to the required temperature. Although the pressure in the container at the heat-treatment temperature reached 5 to 7 kg/cm^2, the heat-treated parts became slightly oxidized. It was inferred that from this that full protection against oxidation is given only by hydrogen obtained directly from titanium hydride. It was also proved, experimentally, that when titanium hydride is used to provide the protective atmosphere, full protection against oxidation can be ensured by evacuating the container to vacuum no better than 10^{-1} mm Hg. The bright surface of the heat-treated components can be preserved even without preliminary evacuation of the container, but in this case, three times more titanium hydride have to be used to ensure favourable ratio of the partial pressure

Card 6/8 of hydrogen and water vapour which, according to the

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Non-Oxidizing Heating of Precision Engineering Alloys

equation $Fe + H_2O \rightleftarrows FeO + H_2$, should be (at 700°C) not less than 2.5. In the last stage of the present investigation, the application of titanium hydride in heat-treatment of soft magnetic alloys was studied. A trial batch of electro-mechanical filter resonators, in the form of flat plates (6 x 8.5 x 0.2 mm), made of Permendur alloy K50F2 was placed in the container, together with 6 g of titanium hydride (TiH_2). The container was evacuated to 2×10^{-2} mm Hg, heated to 850°C and after 2 h at the temperature, cooled in the furnace at the rate of 50°C/h. No evidence of oxidation was found on the parts treated in this manner, whereas the previous attempts to protect them from oxidation by annealing in high vacuum (10^{-4} mm Hg), or by using commercial grade hydrogen, proved to be unsuccessful. It was also found that titanium hydride can be used for bright annealing of Co-, Ni-, and Cr-base, precision

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S/129/60/000/05/004/023
E193/E283

Non-Oxidizing Heating of Precision Engineering Alloys

engineering alloys, such as permalloy, vicaloy, and others. There are 2 figures and 5 references, 4 of which are Soviet and 1 German.

ASSOCIATION: NIIChasprom

Card 8/8

L 34065-65 EPA(s)-2/EWA(c)/EWT(m)/ETI/ [illegible]

[illegible]

AUTHOR: Libman, N. B.; Khodakova, T. A.

TITLE: Aging of N4IKhTA alloy

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 2, 1965, 16-19

TOPIC TAGS: alloy aging, spring alloy, nickel alloy, iron alloy, alloy mechanical [illegible], alloy heat treatment, alloy [illegible]

ABSTRACT: The authors investigated the aging of N4IKhTA alloy, which is used [illegible] elastic deformations and a low thermoelastic coefficient (e.g., hair springs). [illegible]

L 34065-65

ACCESSION NR: AP5005098 2

but longer aging aging at this temperature caused overaging. The dependence of the electrical resistivity on quenching temperature revealed that resistance in-

[illegible] quenching from 1150, [illegible]

[illegible] was demonstrated that [illegible]

ASSOCIATION: Moskovskiy Institut stali i splavov (Moscow steel and alloys institute)

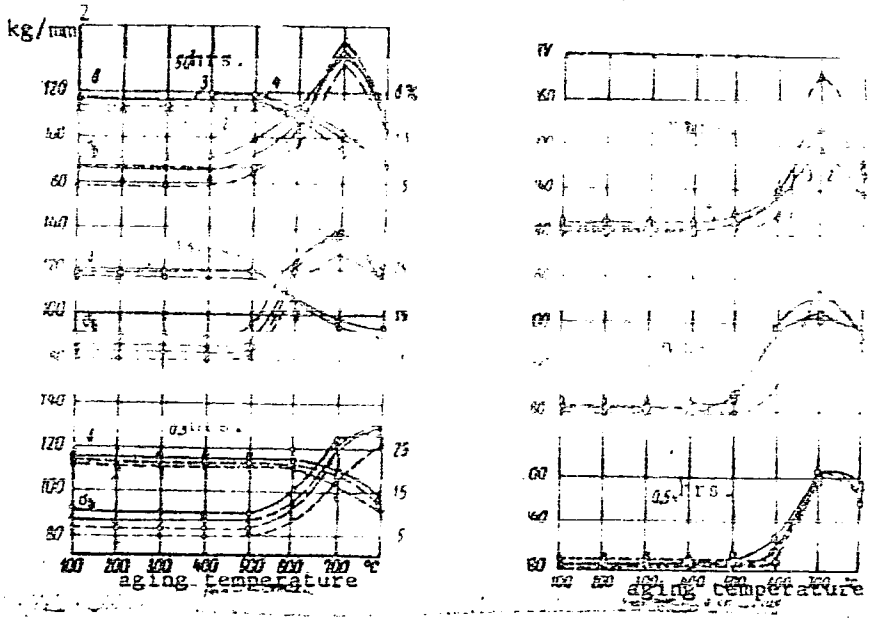
SUBMITTED: 00 ENCL: 02 SUB CODE: MM

NO REF SOV: 002 OTHER: 001

Card 2/4

L 34065-65

ACCESSION NR: AP5005098 ENCLOSURE: 01



Card 3/4

L 34065-65

ACCESSION NR: AP5005098 ENCLOSURE: 02

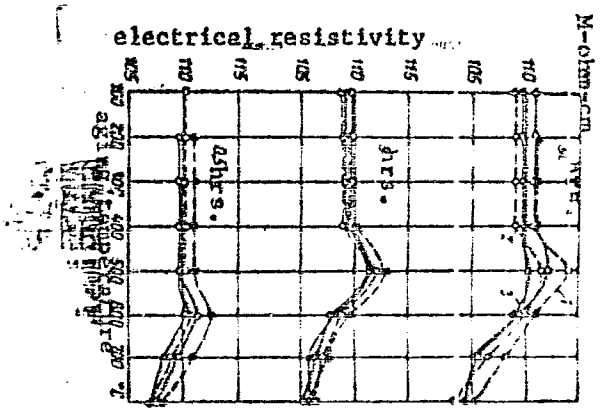


Figure 1. Dependence of the electrical resistivity and mechanical properties on the aging conditions and quenching temperature: 1 - 1050C, 2-100C, 3-950C, 4-900C.

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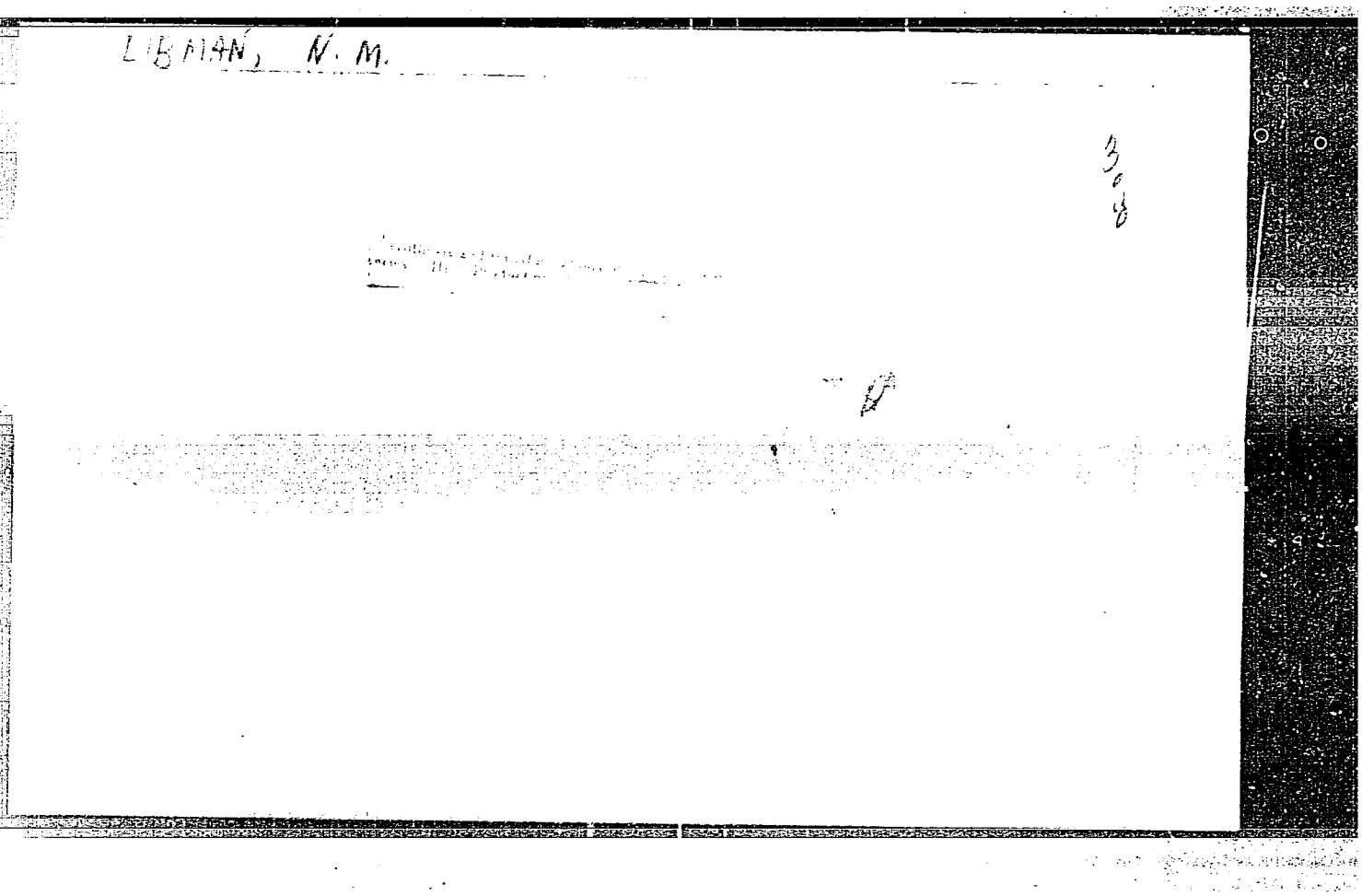

USSR/Chemistry - Synthesis

Card : 1/1

Authors : Chelpanova, L. F., and Libman, N. M.

Title : Synthesis and conversion of alpha-glycols of the ethylene series. Part 3.- Derivation of 2, 4-diphnylbutene-3-diol-1, 2

Periodical : Zhur. Ob. Khim., 24, Ed. 6, 1014 - 1017 - 1954

Abstract : A new glycol of the acetylene series - 2, 4-diphenylbutene-3-diol-1, 2, with melting point of 101 - 102°, was synthesized in strict accordance with the Iotsich method. Two new, hitherto unknown in literature, geometrical isomers of ethylene glycol - 2, 4-diphenyl-butene-3-diol-1, 2, with melting point of 52 - 53° and 68 - 70°, were obtained. It was found that both acetylene and ethylene type glycols, when subjected to catalytic reduction, yield one and the same saturated glycol - 2, 4-diphenyl-butanediol-1, 2 with melting point of 56 - 57°. Four references.

Institution : The Lensoviet Technological Institute, Leningrad

Submitted : February 2, 1954

5 (3)

AUTHORS: Kuznetsov, S. G., Libman, N. M. SOV/79-29-7-70/83

TITLE: Synthesis of Cyclic Amino Alcohols With Cholinolytic Properties (Sintez tsiklicheskikh aminospirtov s kholinoliticheskimi svoystvami)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2421-2428 (USSR)

ABSTRACT: Kuznetsov assumed earlier (Ref 1) that the cholinolytic drugs, the effect of which resembles that of atropine and which belong to the group of the aminoalkyl esters, react in the organism with cholinoreactive systems in the cyclic ionic form. In this form the distance between the nitrogen and the carbon atom combined with the cyclic radicals is highly fixed, owing to the intramolecular ion-dipole effect, and is approximately equal to 3.7 Å. An example of a similar cyclic structure in the case of the dimethyl-aminoethyl ester of the benzylic acid is given:

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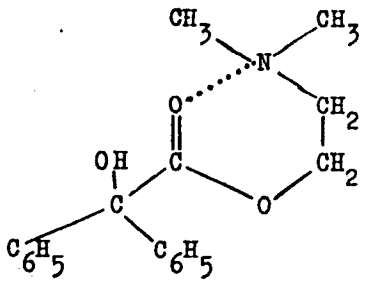
Synthesis of Cyclic Amino Alcohols With Cholinolytic Properties

SOV/79-29-7-70/83



The authors conclude in this connection that this distance corresponds with a distance between any certain points of the cholinoreactive system and that it is essential for the molecules of the cholinolytic compound. The authors wanted to find the experimental confirmation of this assumption. For this purpose the synthesis of cyclic structures which were similar to the structure mentioned was carried out. By a covalent bond a greater stability of the distance between N and C should be attained, than with the comparatively weak ion-dipole bond. In the given formulae (I), (II), (III) and (IV) the structural

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formulae of this kind of cyclic compounds which were synthesized, are presented. Compound (I) was synthesized by reaction of lithium-phenyl with the methyl ester of the 1-methyl-nipecotic acid, compound (II) by dehydration of the above compound according to the instructions of references 2-4. Compound (III) was newly obtained by the authors according to the reaction scheme 1. The 3-diphenyl-methylol-dimethylamino-cyclohexene-2 being novel as well was obtained according to scheme 2. The considerable influence exercised by the distance between the nitrogen atom and the carbon atom combined with the cyclic radicals upon the physiological activity was thus established. There are 2 tables and 13 references, 1 of which is Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy sanitarno-khimicheskiy institut Akademii meditsinskikh nauk SSSR (All-Union Scientific Research Institute of Hygienic Chemistry of the Academy of Medical Sciences, USSR)

Synthesis of Cyclic Amino Alcohols With Cholinolytic Properties

SOV/79-29-7-70/83

SUBMITTED: May 21, 1958

Card 4/4

RABINOVICH, A.P.; LIBMAN, N.M.

Treatment of diabetes mellitus with sulfanilamide preparations.
Vrach.delo no.6:641-642 Je '60. (MIRA 13:7)

1. Khar'kovskiy gorodskoy protivozobnyy dispanser.
(DIABETES) (SULFONAMIDES)

LIBMAN, N.M.; KUZNETSOV, S.G.

Amino alcohols of the acetylene series. Part 2: XX 1,1-disubstituted 5-dialkylaminopentinols with different position of their trible bond. Zhur.ob.khim. 31 no.7:2283-2289 Jl '61. (MIRA 14:7)

1. Institut toksikologii Akademii meditsinskikh nauk SSSR.
(Alcohols)

S/079/63/033/001/003/023
D205/D307

AUTHORS: Libman, N. M. and Kuznetsov, S. G.

TITLE: Aminoalcohols of the acetylenic series. III. Reduction of the triple bond

PERIODICAL: Zhurnal obshchey khimii, v. 33, no. 1, 1963, 28-35

TEXT: The present work describes the reduction of 1-diethylamino-3-(9'-hydroxyfluorenyl-9')propyne-2, 1,1-diphenyl-4-dimethylaminobutyn-2-ol-1, 1,1-diphenyl-4-piperidinobutyn-2-ol-1, 1-diethylamino-4-(9'-hydroxyfluorenyl-9')butyne-3, 1,1-diphenyl-5-dimethylaminopentyn-2-ol-1, 1,1-diphenyl-5-diethylaminopentyn-2-ol-1, 1-diethylamino-4-(9'-hydroxyfluorenyl-9')butyne-2, and 1,1-diphenyl-5-dimethylaminopentyn-3-ol-1- Hydrogenation over Adams' Pt, generally in EtOH, gave 1-diethylamino-3-(9'-hydroxyfluorenyl-9')propane, 1,1-diphenyl-4-dimethylaminobutanol-1, 1,1-diphenyl-4-piperidinobutanol-1, 1-diethylamino-4-(9'-hydroxyfluorenyl-9')butane, 1,1-diphenyl-5-dimethylaminopentanol-1, and 1,1-diphenyl-5-diethylami-

nopentanol-1. Hydrogenation of the acetylenic alcohols over Lindlar's catalyst allowed reduction to the olefinic alcohols, interrupting the reaction at this stage. The following cis-alcohols were obtained in this way: 1-diethylamino-3-(9'-hydroxyfluorenyl-9')propene-2, 1,1-diphenyl-4-dimethylaminobuten-2-ol-1, 1,1-diphenyl-4-piperidinobuten-2-ol-1, 1-diethylamino-4-(9'-hydroxyfluorenyl-9')butene-3, 1,1-diphenyl-5-dimethylaminopenten-2-ol-1, 1-diethylamino-4-(9'-hydroxyfluorenyl-9')butene-2, and 1,1-diphenyl-5-dimethylaminopenten-3-ol-1. The following trans-olefinic alcohols were obtained by reduction of the triple bonds with $LiAlH_4$ or $Na/liq.NH_3$: 1-diethylamino-3-(9'-hydroxyfluorenyl-9')propene-2, 1,1-diphenyl-4-dimethylaminobutene-2-ol-1, 1,1-diphenyl-4-piperidinobutene-2-ol-1, 1-diethylamino-4-(9'-hydroxyfluorenyl-9')butene-3, 1,1-diphenyl-5-dimethylaminopenten-2-ol-1, and 1,1-diphenyl-5-dimethylaminopenten-3-ol-1. Most of the reduced or semi-reduced alcohols were converted to their hydrochlorides by treatment with alcoholic HCl. There are 1 figure and 3 tables.

SUBMITTED: February 3, 1962

LIBMAN, N.M.; KUZNETSOV, S.G.

Synthesis of some substituted amino ketones having cholinergic properties. Zhur.ob.khim. 33 no.6:1991-1999 Je '63. (MIRA 16:7)
(Ketones) (Parasympathomimetic substances)

AKISHINA, N.I.; SHIFMAN, L.M.; LIBMAN, N.M.

Use of reserpine and aminazine in a pathological climacteric in women. Trudy Ukr. nauch.-issl. inst. eksper. endok. 19:369-378 '64.
(MIRA 18:7)

1. Iz klinicheskogo otdela i otdela elektrofiziologii Ukrainskogo instituta eksperimental'noy endokrinologii i Khar'kovskogo gorodskogo protivozobnogo dispansera.

KUZNETSOV, S.G.; LIEBMAN, N.M.

Synthesis of biologically active substituted acetylenic amines.
Zhur. org. khim. 1 no.8:1399-1406 Ag '65. (MIRA 18:11)

L 44351-66 EWT(m)/EWP(k)/EWP(t)/ETI IJP(c) JD/HW/JG/WB

ACC NR: AP6012609 SOURCE CODE: UR/0182/66/000/004/0013/0016

53
52
B

AUTHOR: Generson, L. G.; Libman, P. M.

ORG: none

TITLE: Experience in the production of and research into rotor forgings of Kh18N12M2T corrosion-resistant austenitic steel

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 4, 1966, 13-16

TOPIC TAGS: austenitic steel, engineering machinery, metal forging, plasticity, impact strength, ferrite / Kh18N12M2T austenitic steel

ABSTRACT: This steel is used as the material for certain turbomachine elements operating in aggressive media. These elements are mostly represented by rotors, disks and other important work parts which, in addition to being corrosion-resistant, must meet high requirements as to physical homogeneity of metal and level of strength and plasticity. In particular, the initial experience in the production of rotor forgings of Kh18N12M2T austenitic steel (~0.09% C, ~0.89% Si, ~1.50% Mn, ~16.6% Cr, ~13.3% Ni, ~2.50% Mo, ~0.66% Ti, ~0.010% S, ~0.018% P) at the Neva Machine Building Plant imeni V. I. Lenin has revealed that some of

UDC: 621.984

these requirements (particularly the plasticity and impact strength of the rotor metal) are difficult to meet. Accordingly, to eliminate this snag, the authors experimentally produced a 2,280-kg rotor forging from a 3,750-kg ingot. The forging itself was produced in a 3000-ton press at temperatures of 1160-860°C, in 7 hot-upsetting and drawing operations until it was brought into the shape shown in Fig. 1. After this it was cooled in air and heat-treated

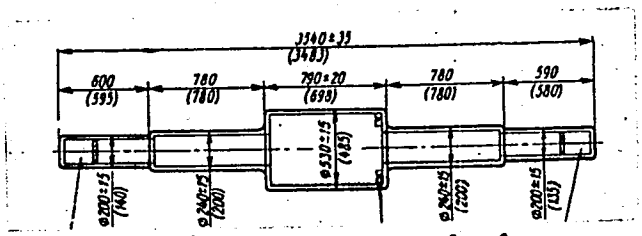

Fig. 1. Sketch of rotor forging (snagging contour) indicating the sites from which samples were taken.

L 44351-66

ACC NR: AP6012609

(austenitized at 1150-1170°C with cooling by running water and tempered at 820-840°C for 10 hr with cooling in furnace to 150°C). Subsequent mechanical tests of samples showed a satisfactory level of mechanical properties in the longitudinal direction but unsatisfactory plasticity and impact strength for tangential samples taken from the rotor-barrel end. This prompted a thorough microstructural investigation of the quality of the metal of the entire rotor, which revealed a high content of ferritic phase (as much as 7-9%) running in striated form in the direction of (longitudinal) drawing; this accounts for the relatively low plasticity and impact strength of the metal of the tangential and radial specimens. To reduce the α —phase content and to improve the plasticity and impact strength of Kh18N12M2T steel, metallic Ca (0.5 kg/ton) and Ce (2 kg/ton) were added to the melt from which the next forging was produced. This time the mechanical properties of the tangential and radial specimens were also found satisfactory. Orig. art. has: 7 figures, 4 tables.

SUB CODE: 11, 13/ SUBM DATE: none/

Card 3/3 blg

LIBMAN, S.

PUSTYNSKIY, F.; LIBMAN, S.

Overall revision of machine-tractor stations. Izm.tekh.no.4:49 Jl-Ag '55. (MLRA 8:10)

(Machine-tractor stations)

RUSSIYAN, S.V.; BARANOV, I.A.; GOLOVANOV, N.N.; SOKOLOV, A.N., LIBMAN, S. Ye., kandidat tekhnicheskikh nauk, redaktor; EL'TSUFIN, S.A. DLUGOKANSKAYA, Ye.A., tekhnicheskiy redaktor.

[Planning technical founding processes] Proektirovanie tekhnologicheskikh protsessov liteinogo proizvodstva. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1951. 304 p. (MLRA 8:8)
(Founding)

LIBMAN, S.Ye., inzh.; PACHIN, V.Kh., inzh.; STERNIN, M.G., inzh.; EL'TSUFIN, S.A., inzh.

Investment casting of segments of the nozzle apparatus for the RPT-50 steam turbine. Energomashinostroenie 6 no.3: 35-37 Mr '60. (MIRA 13:6)
(Steam turbines) (Precision casting)

S/114/60/000/003/005/008
E194/E355

AUTHORS: Libman, S.Ye., Pachin, V.Kh., Sternin, M.G. and El'tsufin, S.A., Engineers

TITLE: Casting of Nozzle Segments of Steam Turbine Type ВПТ-50 (VPT-50) by the Lost-wax Method

PERIODICAL: Energomashinostroyeniye, 1960, No. 3, pp. 35 - 37

TEXT: The nozzles of the high-pressure cylinder of turbine VPT-50 operate on steam at a pressure of 90 atm. and a temperature of 535 °C. The nozzle boxes consist of four separate segments wherein milled blades were mounted on machined rims and welded. The parts were made of forgings of steel grade 15Х11МФ (15Kh11MF). After welding, the duct sizes were corrected by hand fitting. To economise in cost, labour and metal the Leningrad Metal Works introduced the lost-wax method of casting nozzle-box sections. The cast segments have the ends cut off and are then butt-welded together. The patterns for the blade holders are made of a mixture of 96% technical urea and 4% boric acid. Those for

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Casting of Nozzle Segments of Steam Turbine Type VPT-50 by the Lost-wax Method

the blades are made in a presstool with a mixture of 50% paraffin wax and 50% stearine. When the pattern has been assembled in the mould the urea part can be dissolved out with water.
The wax surface is treated with a ceramic paint consisting of 33% by weight hydrolised ethylsilicate and 67% marshalite, which is natural quartz dust. Six layers of ceramic paint are applied to the pattern. It is then dried, first in air and then in an ammonia chamber. Next, the wax pattern is melted out of the mould in hot water at 80 - 90 °C. The mould is then dried at 200 °C in an electric furnace. The mould is reinforced with sand and hardened by heating in an electric furnace for six hours.
The nozzle segments are cast of steel grade 15Х11МФЛ (15Kh11MFL) which is of sorbitic structure. After preliminary cleaning up the castings are heat-treated by a process which

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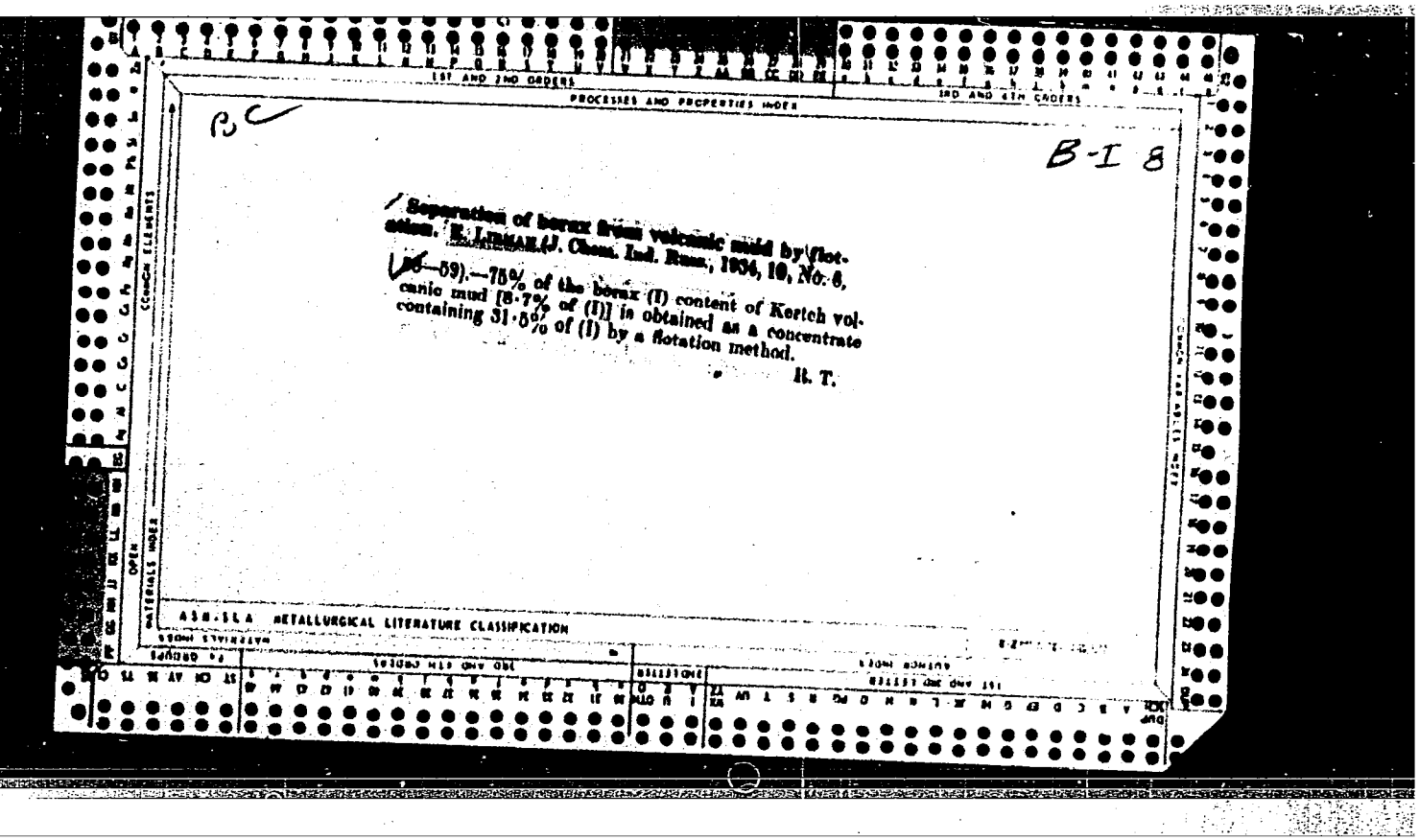

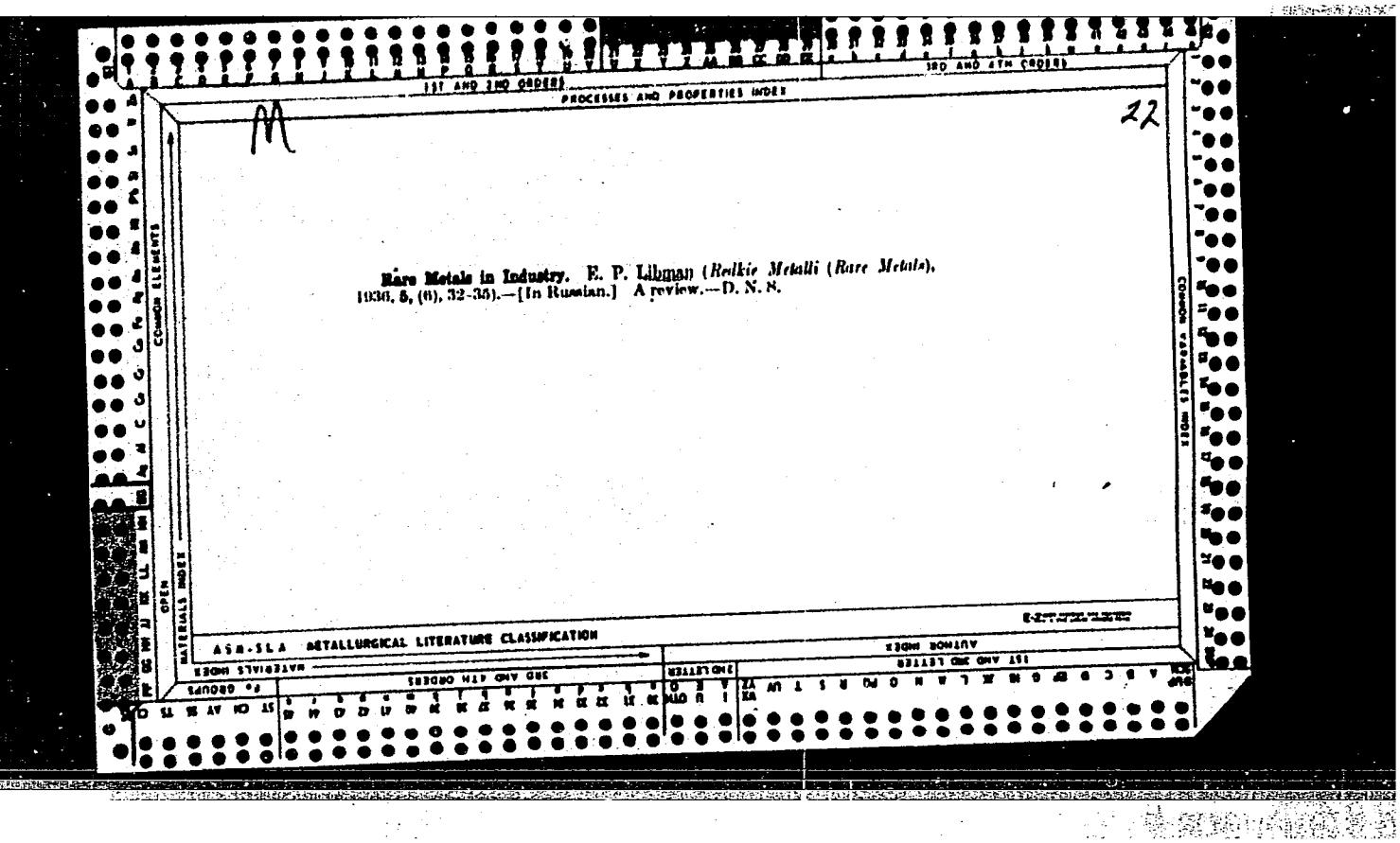

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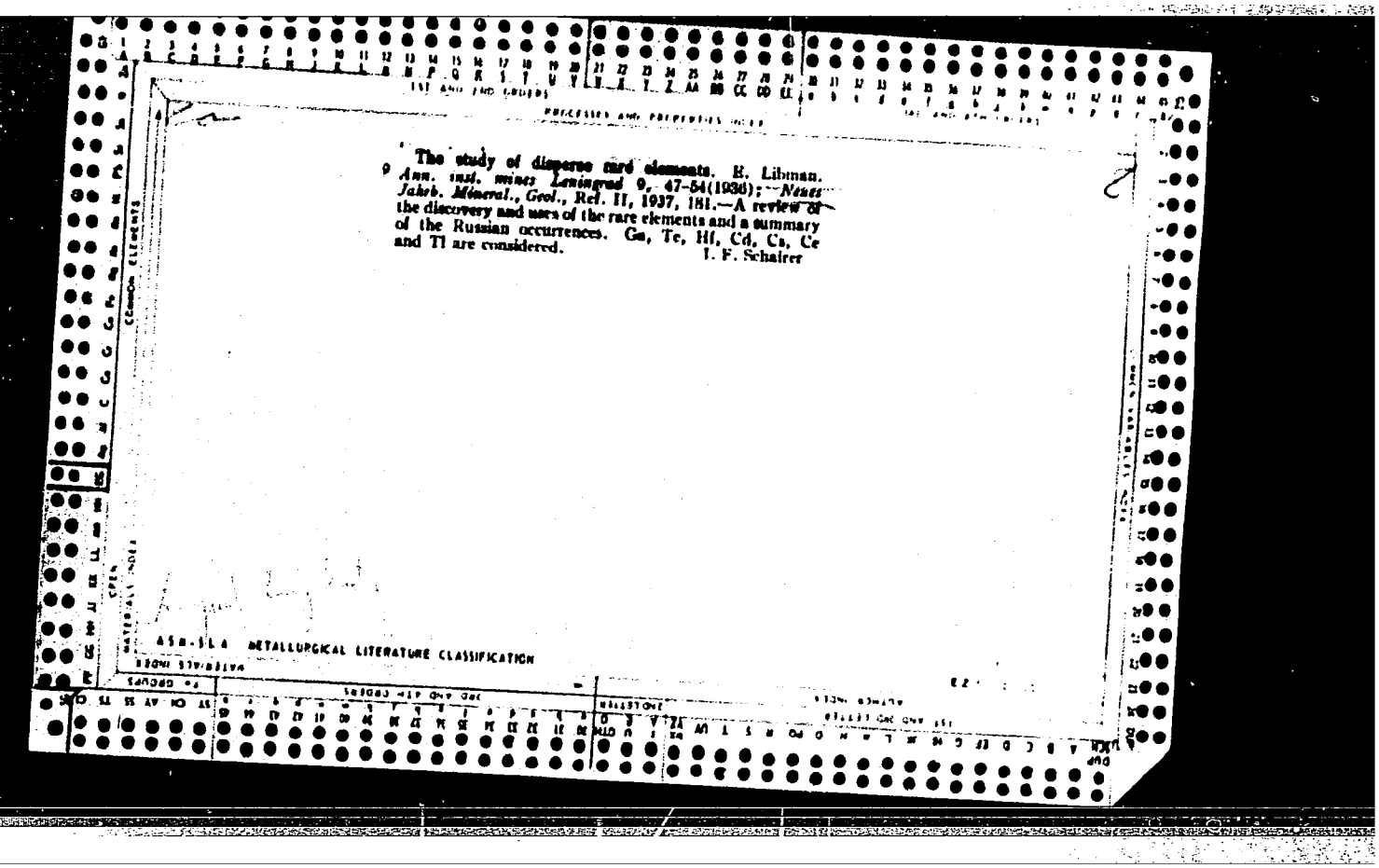

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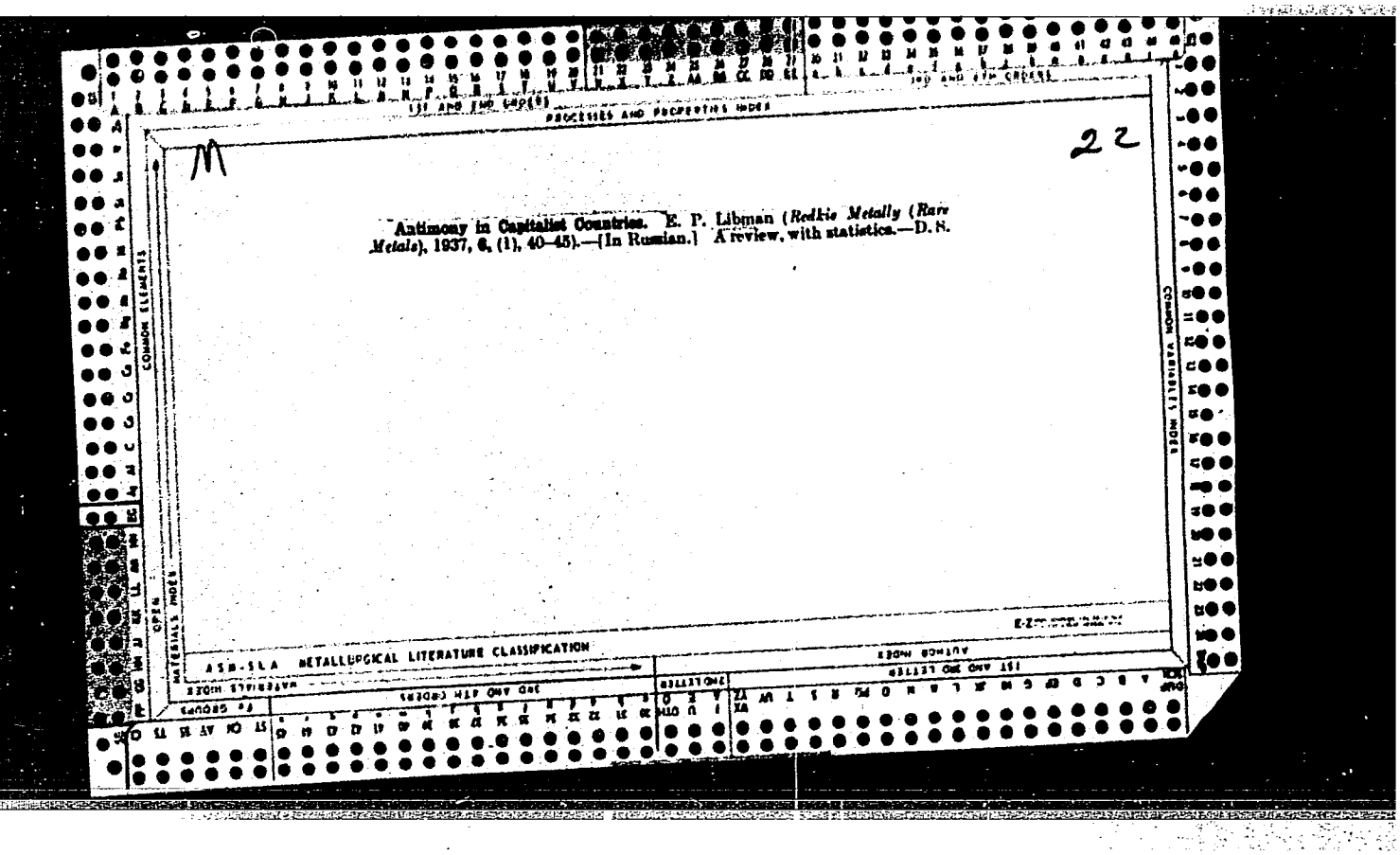

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