SOV/177-58-11-22/50

17(8)

AUTHORS: Polyak, B.L., Professor, Colonel of the Medical Corps, Zav'yalov, I.A., Lieutenant-Colonel of the Medical Corps

TITLE: A New Powerful Electromagnet for Field Use

PERIODICAL: Voyenno-meditsinskiy zhurnal, 1958, Nr 11, pp 65 - 68 (USSR)

ABSTRACT: The Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo instrumentariya i oborudovaniya (All-Union Scientific-Research Institute for Medical Instruments and Equipment) and the Tsentral'noye konstruktorskoye byuro Minzdrava SSSR (Central Design Office of the USSR Ministry of Public Health), in cooperation with Professor B.L. Polyak, designed a new powerful electromagnet which is able to extract magnetic foreign bodies from the eye even when they are already fixed in the eye's tissues. In such cases it will be used instead of the "Magniko" type magnet. The new magnet was tested in the eye clinic of the

Card 1/3

A New Powerful Electromagnet for Field Use

Voyenno-meditsinskaya ordena Lenina akademiya imeni S.M. Kirova (Military-Medical Academy of the Lenin Order imeni S.M. Kirov) [Ref 1]. The new magnet can be dis-assembled and put into 2 special cases. This makes it suitable for use in the field. The electromagnet (Figure 1) consists of the following fundamental parts: the base of the support with a column (1), the suspension system of the magnet (2), counterweight (3), electromagnet (4), pedal (5) with a power switch and a switch, and a box with feeding block (6). The support of the electromagnet can be fastened to the head of an operation table. The authors carried out a relative evaluation of the capacity of three magnets: the powerful field electromagnet, the powerful interpolar electromagnet and the constant "Magniko" type magnet. The results (Table 1) show that the new electromagnet in its capacity considerably surpasses the Magniko and does not lag behind the interpolar electromagnet.

A New Powerful Electromagnet for Field Use

The authors suggest to use the "Magniko" in any eye operation in the field and only if it does not produce (desired) results to use the new powerful electromagnetic. There is 1 diagram and 2 tables, and 1 Soviet reference.

VOLKOV, V.V., kand.meditsinskikh nauk; GORBAN', A.I., kand.meditsinskikh nauk; ZAV'YALOV, I.A., vrach; ZAKHAROV, V.A., vrach

Some proposals concerning the technic of plastic dacryocystorhinostomy. Oft. zhur. 15 no.5:278-280 '60. (MIRA 13:9)

1. Iz kafedry oftal'mologii (nachal'nik - prof. B.L. Polyak) Voyenno-meditsinskoy ordena Lenina akademii im. S.M. Kirova.
(DACRYOCYSTORHINOSTOMY)

ZAVYALOV, I. A.

EXCERPTA MEDICA Sec.12 Vol.11/9 Ophthalmology Sept 57

1438. ZAVYALOV I.A. * Surgical treatment of 'incurable' epiphora

14.38 CONT

in obliteration of the lacrimal ducts and the lacrimal sac (Russian text) VESTN. OFTAL. 1957, 1 (6-8) illus. 1

A modification of Arruga's canaliculi-rhinotomy operation was done by introducing several hair threads, through the junction of the canaliculi into the nasal meatus. These threads were fixed at the cheek from the nose and from the lower canaliculus to the brow. They were left in situ for 14 to 21 days. If remnants of the mucosa of the sac were encountered during the operation, then a dacryo-cystorhinotomy was performed. A special knife with a double cutting edge was used for the incision of the canaliculi. Twenty-seven patients were operated on; of these, in 13, the colour tear-nose test was positive for the period of observation from 9 months to 4.5 yr. In some of the patients in whom the above test was negative, a laco-rhinotomy was done with a permanent insertion of a cannula.

Sitchevska - New York, N.Y.

ZAV'YALOV, I.A., kand. med. nauk

Methodology of construction of lacrimal prostheses using plastics. Vestn. oftal. 76 no.4:49-53 Jl-Ag'63 (MIRA 17:1)

1. Kafedra oftal'mologii (nachal'nik - prof. B.L. Polyak) Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.

ZAV'YALOV, I.A.

Surgery for incurable lacrimation in a case of lacrimaal duct and lacrimal sac obliteration. Vest. oft. 70 no.1:6-8 Ja-F '57 (MLRA 10:5)

1. Kafedra oftalmologii (zav.-prof. B.L. Polyak) Voyenno-meditsinskoy akademii imeni S.M. Kirova.
(LACRYMAL APPARATUS, dis.
obliteration of lacrimal sac & duct with incurable lacrimation, surg.) (Rus)

ZAV'YALOV, I. A. (Leningrad)

Surgical restoration of lacrymal organs with application of a permanent lacrimal cannula prosthesis. Vest.oft. 34 no.1:22-25 Ja-F '55 (MLRA 8:4)

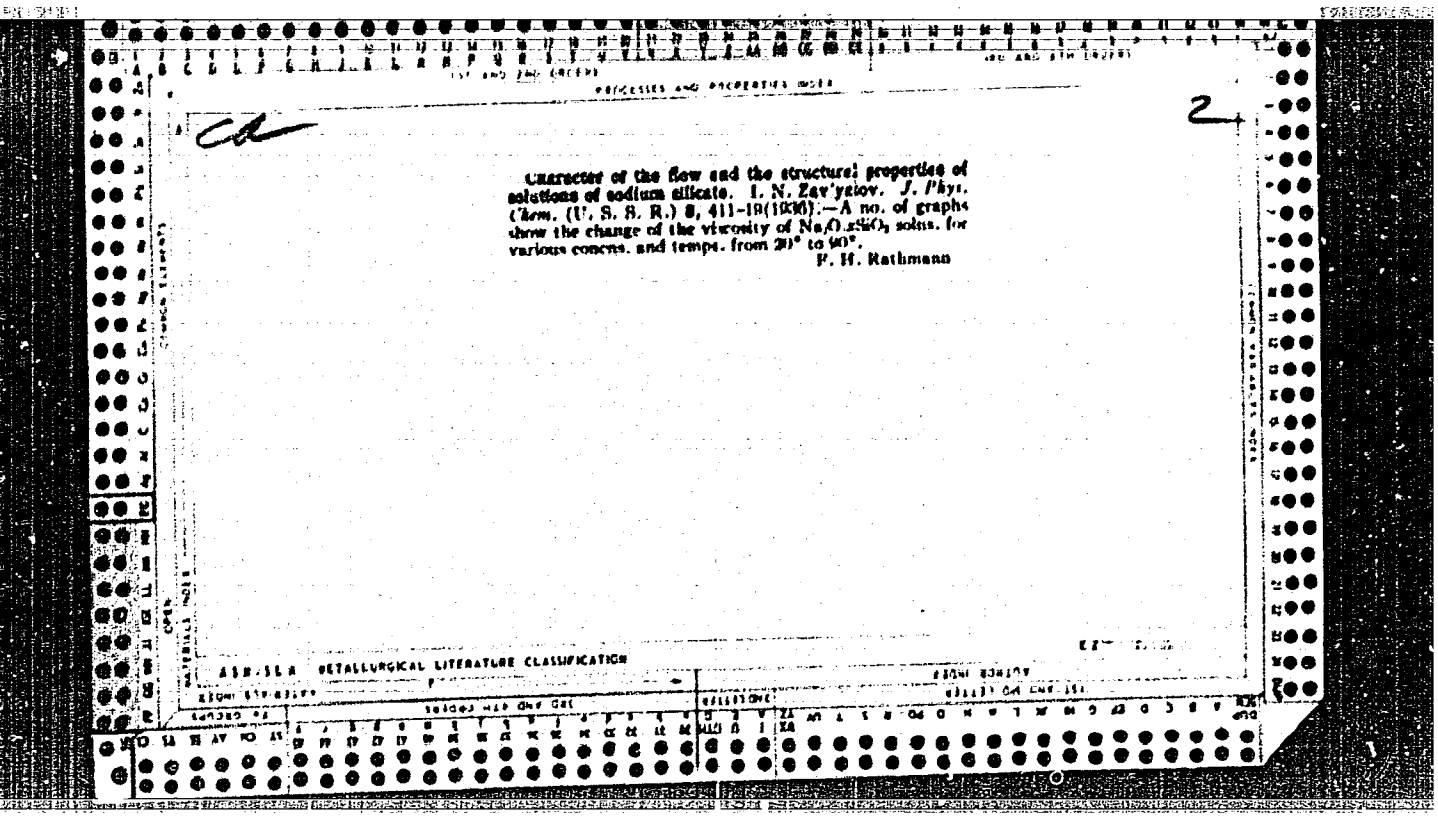
(LACRIMAL APPARATUS, diseases,
epiphora, surg. lacrimotomy with permanent lacrimal cannula)

ZAV'YALOV, I.A., kand. med. nauk, podpolkovnik meditsinskoy sluzhby

Comparative evaluation of the results of examination of binocular vision. Voen. med. zhur. no.10:65-67 O '65.
(MIRA 18:11)

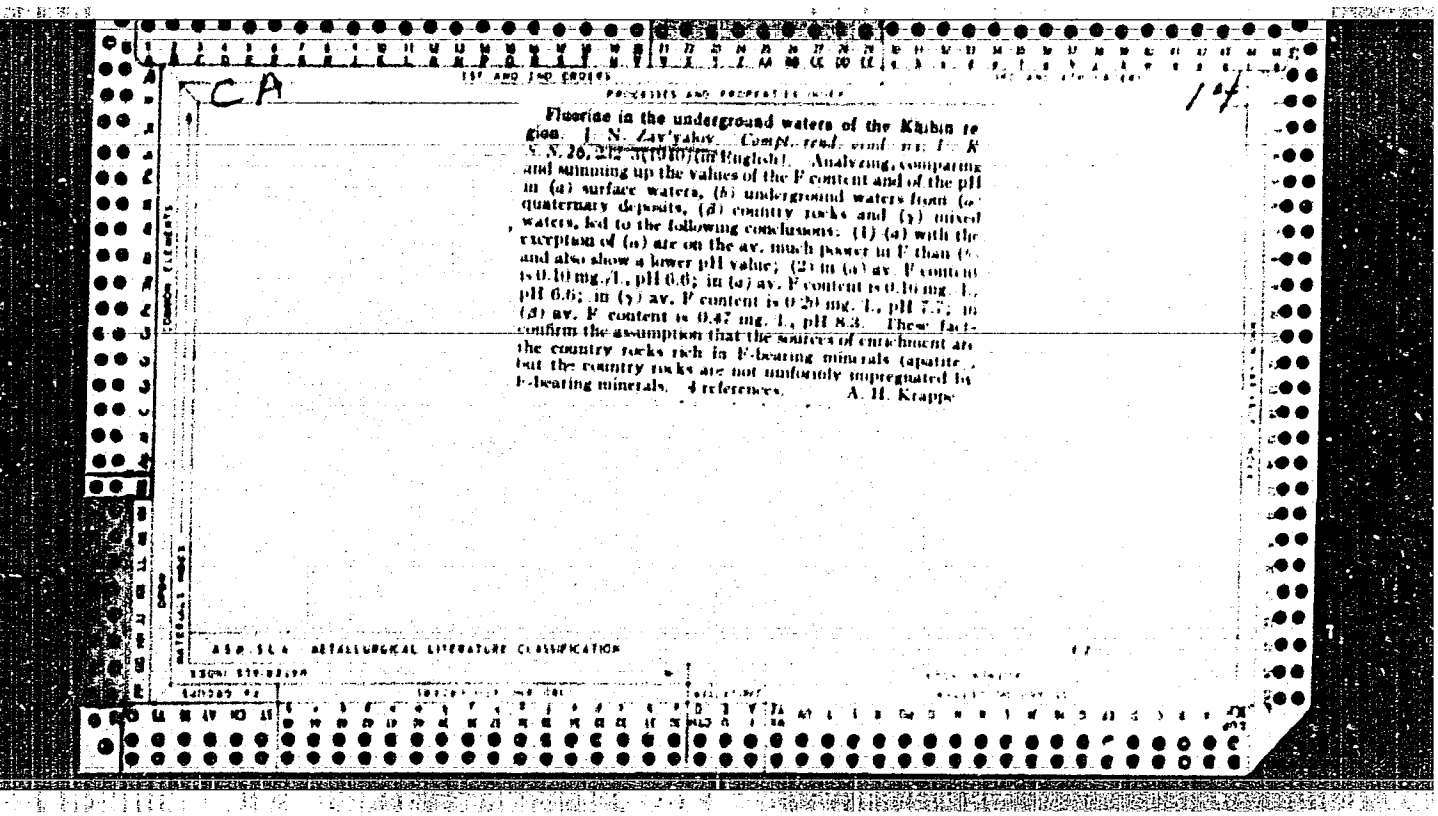
ZAV'YALOV, Ivan Grigor'yevich, general-mayor; MOROZOV, B.N., polkovnik, red.

[Speed, time, and space in modern warfare] Skorost', vremia i prostranstvo v sovremennoi voine. Moskva, Voenizdat, 1965. 190 p. (MIRA 18:8)



Character of the flow and the structural properties of solutions of sodium silicate. I. N. Zav'yalov. *J. Phys. Chem.* (U. S. S. R.) 8, 411–19(1936).—A no. of graphs show the change of the viscosity of $Na_2O.xSiO_2$ solns. for various concns. and temps. from 20° to 90°.

P. H. Rathmann

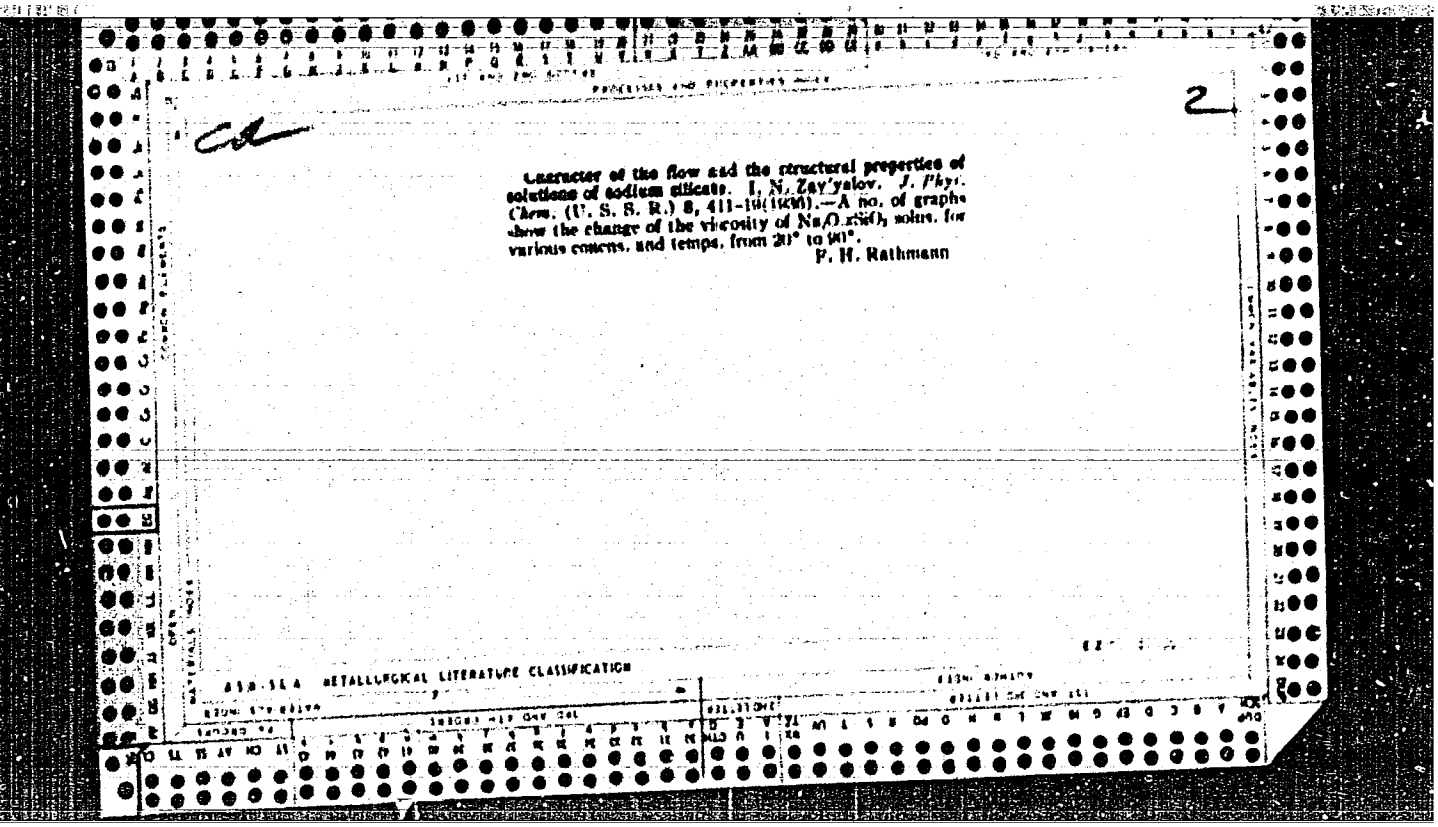


CA

14

Fluorine in the underground waters of the Khiva re gion. I. N. Zav'yalov. *Compt. rend. acad. sci. U. R. S. S.* 26, 212–3(1940)(in English). Analyzing, comparing and summing up the values of the F content and of the pH in (*a*) surface waters, (*b*) underground waters from (*a*) quaternary deposits, (*d*) country rocks and (*γ*) mixed waters, led to the following conclusions: (1) (*a*) with the exception of (*a*) are on the av. much poorer in F than (*b*) and also show a lower pH value; (2) in (*a*) av. F content is 0.10 mg./l., pH 6.6; in (*a*) av. F content is 0.10 mg. l., pH 6.6; in (*γ*) av. F content is 0.25 mg. l., pH 7.5; in (*δ*) av. F content is 0.47 mg. l., pH 8.3. These facts confirm the assumption that the sources of enrichment are the country rocks rich in F-bearing minerals (apatite), but the country rocks are not uniformly impregnated by F-bearing minerals. 4 references. A. H. Krapps

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



2

Character of the flow and the structural properties of solutions of sodium silicate. I. N. Zay'yalov. *J. Phys. Chem.* (U. S. S. R.) 8, 411–16(1936).—A no. of graphs show the change of the viscosity of $Na_2O.xSiO_2$ solns. for various concns. and temps. from 20° to 90°.
P. H. Rathmann

A13-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZAVYALOV, I. N.

LEYRIKH, V. E. Inzhener i ZAVYALOV, I. N. Inzh, BISHNEVSKIY, YE. YE. Inzh, GRINGAUZ, R. I. Inzh., ZATSEPIN, K. S. Inzh.

Nauchno-issledovatel'skiy institut po stroitel'stvu Ministerstva neftyanoy Promyshlennosti

RAZRABOTKA I VNEDRENIYE PROMYSHLENNOY TEKHNOLOGII POLUCHENIYA TEPLOIZOLYATSIONNYKH BEZOBZHIGOVYKH DINATEMOVYKH MATERIALOV Page 111

SO: Collections of Annotations of Scientific Research Work on Construction, completed in 1950. Moscow, 1951

Sand-Lime Brick

Carbonization of lime-sand products by boiler exhaust gases. Biul. stroi.tekh. 9 No. 16 1952

Monthly list of Russian Accessions, Library of Congress, November 1952 Unclassified

ZAV'YALOV, I. N.

"Fluorine in the Underground Waters of the Chibina Region," Dok. AN, 26, No.3, 1940. Kola Base; Acad. of Sci., c1940-.

ZAV'YALOV, I.P., aspirant; PLANEL'YES, Kh.Kh., nauchnyy rukovoditel' raboty

Treating paratyphoid fever in young pigs with monomycin and mycerin. Veterinariia 42 no.11:41-42 N '65. (MIRA 19:1)

1. Kazanskiy veterinarnyy institut. 2. Chlen-korrespondent AMN SSSR (for Planel'yes).

VARTANOVA, N.S.; ZAV'YALOVA, I.V.; FISHKIN, M.Yu.

Accesory minerals in granitoids of Ust'-Karsk District in eastern Transbaikalia. Geol. i geofiz. no.7:60-79 '60. (MIRA 13:9)

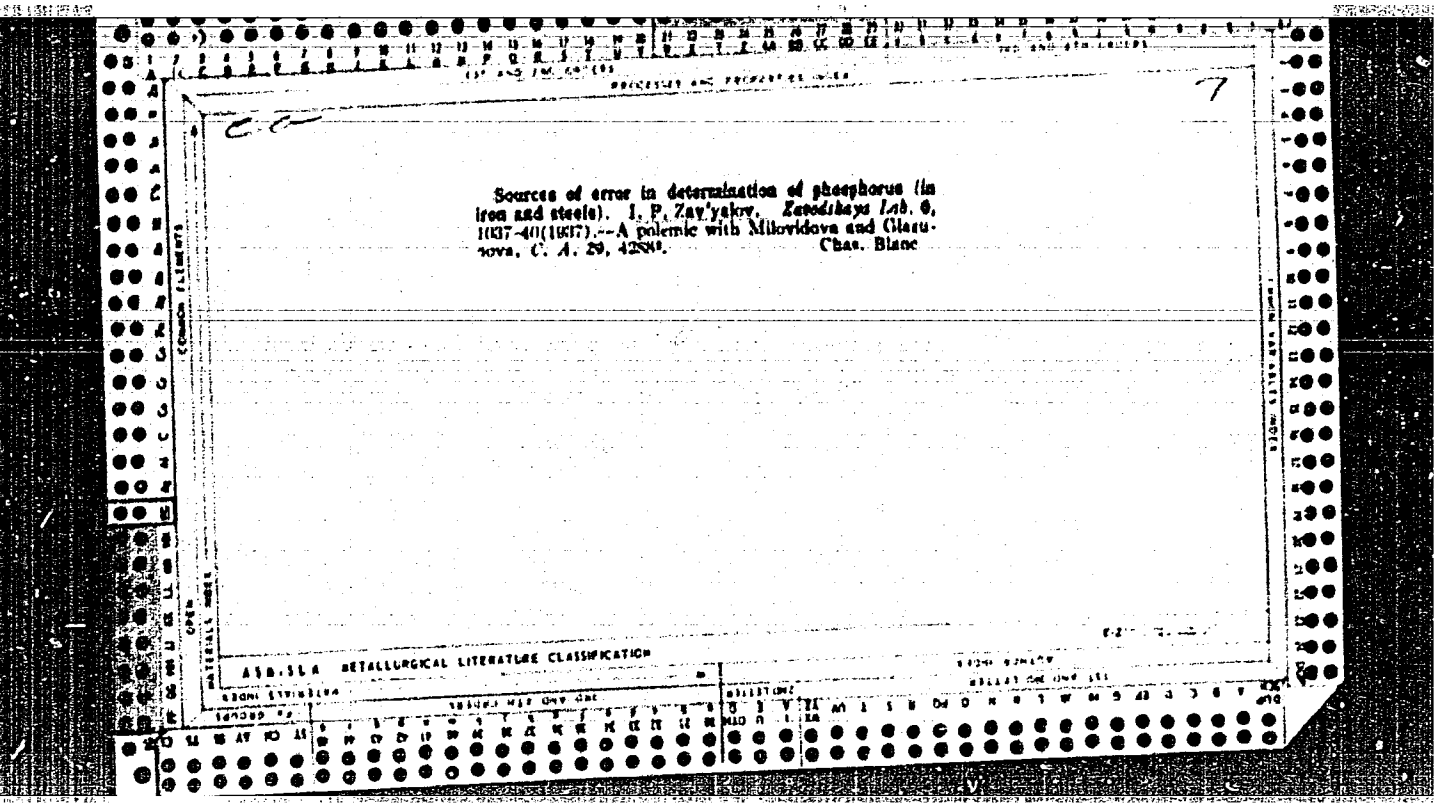
1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR i L'vovskiy gosudarstvennyy universitet.
(Transbaikalia--Mineralogy)

ZAV'YALOV, I.V.

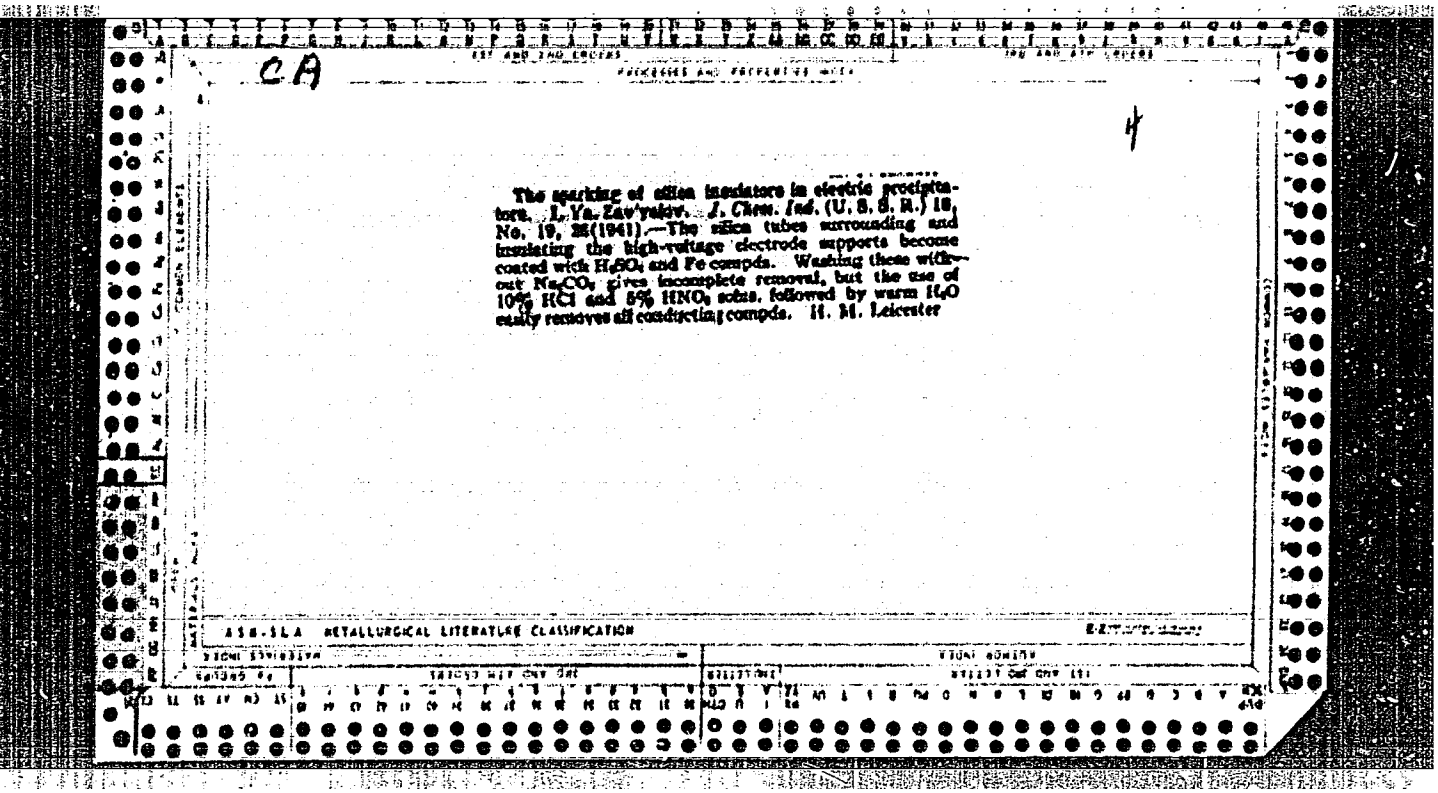
Plastic surgery for large granulating surfaces in children following burns and injuries. Vest.khir.76 no.8:71-74 S '55. (MLRA 8:11)

1. Iz kafedry khirurgii detskogo vozrasta (zav.--prof. A.V. Shatskiy) Leningradskogo pediatricheskogo meditsinskogo instituta Leningrad, Kantemirovskaya ul., d. 16, kv.78.

(SKIN, surg.
plastic surg. of large granulating surfaces in child. after burns & trauma)
(BURNS, plastic surg.
plastic surg. of large granulating surfaces in child)
(WOUNDS AND INJURIES,
skin, plastic surg. of large granulating surfaces in child)



Sources of error in determination of phosphorus (in iron and steels). I. P. Zav'yalov. *Zavodskaya Lab.* 6, 1037-40(1937).--A polemic with Milovidova and Glazunova, *C. A.* 29, 4288⁸. Chas. Blanc



CA

4

The sparking of silica insulators in electric precipitators. L. Ya. Zav'yalov. *J. Chem. Ind.* (U. S. S. R.) 18, No. 19, 28(1941).—The silica tubes surrounding and insulating the high-voltage electrode supports become coated with H_2SO_4 and Fe compds. Washing these without Na_2CO_3 gives incomplete removal, but the use of 10% HCl and 5% HNO_3 solns. followed by warm H_2O easily removes all conducting compds. H. M. Leicester

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZAV'YALOV, K.D.; BURTSEV, P.N.; BYSTROVA, Ye.S.

Results of tests of hydrometric weights in mountain rivers. Trudy GGI no.106:123-130 '63. (MIRA 16:8)
(Hydrometer--Testing)

ZAV'YALOV, K.D.

Maximum-minimum wave measuring beacons. Trudy GGI no.77:116-121 '60. (MIRA 13:5)
(Wave) (Beacons)

ZAV'YALOV, K.D.

Long-range water level recorder. Trudy GGI no.84:46-51 '60.
(MIRA 13:11)
(Liquid level indicators)

ZAV'YALOV, [illegible]

Recording device for the remote water-level recorder. Trudy GGI no.70:67-70 '58. (MIRA 11:11)
(Hydrology--Measurement)

ZAV'YALOV, K. D., (Editor)

"Problems of the Construction of Hydrological Apparatus," Trudy Gosudarstvennogo gidrologicheskogo instituta (Transactions of the State Hydrological Institute) No. 64, 1957, 58 pp.

AUTHOR: Zav'yalov, K. D. 50-58-7-14/20

TITLE: The Transportable Water Gauge With a Damping Device (Vodomernaya perenosnaya reyka s uspokoitelem)

PERIODICAL: Meteorologiya i gidrologiya, 1958, Nr 7, pp. 54 - 55 (USSR)

ABSTRACT: The water level is read from a post by means of a transportable water gauge which is mounted in the middle of the front of the post. The measurements of the water level are to a great extent inaccurate in the case of high waves. This inaccuracy becomes the greater the higher the waves are. For this reason it has been tried since long to construct a water gauge with a Damping device. The water gauge proposed by the author is shown (Fig 1). It is mounted vertically with its broad side parallel to the current on a nail-head or on a peg at the top of the post. Then the container of the water gauge must fill with water. In the case of waves the level within the container will reach the average height thanks to damping effect. When the waves are very high the mean value between the upper and lower limit must be determined. In the dark the water level is read with the aid

Card 1/2

of the middle of the floating cork ball. It must be pointed out that the water gauge with the damping device is not suited for negative readings. For this reason the reading must be carried out on a post, the top of which is lower than the wave trough. The experiments carried out with the transportable water gauge with a damping device showed that its use renders work in the case of waves much easier and also furnishes more accurate results than do the measurements with the usual measuring rod. There is 1 figure.

1. Oceanography 2. Water--Measurement 3. Gages--Operation 4. Gages--Control

ZAV'YALOV, K.D.

Portable water-level measuring rod equipped with a damper. Meteor. i gidrol. no. 7:54-55 Jl '58. (MIRA 11:7)
(Hydrology--Measurements)

ZAV'YALOV, K.D.

Modernized "Valdai" water level recorder. Trudy GGI no.36:103-110 '52. (MIRA 11:6)
(Hydrology--Measurements)

ZAV'YALOV, K. D.

PA 162T54

USSR/Hydrology - Measurements
Instruments

May/Jun 48

"New Hydrometering Winches 'Neva' and 'Luga'," K. D. Zav'yalov

"Meteorol i Gidrol" No 3, pp 62-66

Hydrometering Div State Hydrographic Inst, in 1946 designed two types of winches for hydrometering work on rivers. Several samples were produced, tested, and made ready for series production. Riga Hydrometeorol Instr Plant produced first series of these winches in 1947.

FDD

162T54

ZAV'YALOV, K.I., inzhener.

High-efficiency caterpillar tractor. Torf.prom.33 no.6:20-22 '56.
(MLRA 9:10)

1.Chelyabinskiy traktornyy zavod.
(Caterpillar tractors)

ZAV'YALOV, K.I., inzhener

The S-80 tractors for use with mounted equipment. Mekh.stroi.12 no.8:24-26 Ag'55. (MLRA 8:10)

(Tractors)

ZAV'YALOV, K.I., inzh.

S-100B bog tractor. Trakt.i sel'khozmash. 31 no.2:3-5 F '61.
(MIRA 14:7)

1. Chelyabinskiy traktornyy zavod.
(Crawler tractors)

VIL'KOVETSKIY, G.; ZAV'YALOV, L.

"Ekho" is in operation. Znan.sila 35 no.10:28-29 O '60.
(MIRA 13:11)

(Founding) (Metals--Pickling)

SOV/137-57-11-22695D

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 294 (USSR)

AUTHOR: Zav'yalov, L. A.

TITLE: Investigation of Working Properties of Some Bearing Alloys for Narrow-gage Logging-railroad Rolling Stock (Issledovaniye ekspluatatsionnykh kachestv nekotorykh antifriktsionnykh splavov v vagonnykh podshipnikakh uzkokoleynogo lesovoznogo transporta)

ABSTRACT: Bibliographic entry on the Author's dissertation for the degree of Candidate of Technical Sciences, presented to the Mosk. lesotekhn. in-t (Moscow Lumber Engineering Institute), Moscow, 1957

ASSOCIATION: Mosk. lesotekhn. in-t (Moscow Lumber Engineering Institute)

Card 1/1

ZAV'YALOV, L.A., inzhener.

Over-all mechanization of tree-felling operations. Mekh.trud.rab. 8 no.7:38-41 O-N '54. (MLRA 8:1)
(Tree felling)

ZAV'YALOV, L.A.

The Krestets Forest Industry Establishment is bravely introducing new work methods. Mekh. trud.rab 9 no.11:29-31 N '55. (MLRA 9:2)

1.Direktor Krestetskogo lespromkhoza.
(Lumbering--Machinery)

ZAVGORODNIY, Viktor Konstantinovich; ZAV'YALOV, L.G., inzh., retsenzent; ALAVERDOV, Ya.G., inzh., red.; MODEL', B.I., tekhn.red.

[Mechanization and automation of plastics industry processes] Mekhanizatsiia i avtomatizatsiia pererabotki plasticheskikh mass. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 338 p. (MIRA 13:12)
(Plastics industry--Equipment and supplies)
(Automatic control)

ZAV'YALOV, L. N.

Zav'yalov, L. N.

"Investigation of the Hot-Drilling of Holes Using an Oxygen Torch." Min Higher Education USSR. Moscow Mining Inst imeni I. V. Stalin. Moscow, 1955. (Dissertations for the Degree of Candidate in Technical Sciences).

SO: Knizhnaya Letopis', No 27, 2 July 1955

ZAV'YALOV, L.N., kand. tekhn. nauk; MAKAROV, N.I., inzh.

Organizing underground laboratory work. Izv. vys. ucheb. zav.; gor. zhur. no.8:139-141 '58. (MIRA 12:5)

1.Dal'nevostochnyy politekhnicheskiy institut.
(Mining research)

LINDKVIST, B.A., inzhener; ZAV'YALOV, M.A., inzhener

Welding tool chuck for pin welding. Svar. proizv. no.4:31 Ap '55.
(Electric welding) (MIRA 8:9)

PLOTNIKOV, M.A.; YEVSTIFEYEVA, T.V.; TAUBER, B.A.; PETROV, V.Ye.; ZAV'YALOV, M.A.; NAZAROV, V.V.; ANOPOL'SKIY, M.G.; OBRAZTSOV, S.A.; BAMM, A.I.; GATSKEVICH, V.A.; CHEVAZHEVSKIY, A.P.; DRANISHNIKOV, L.G., retsenzent; ALKEYEV, N.F., otv. red.; SLUTSKER, M.Z., red. izd-va; VDOVINA, V.M., tekhn. red.

[Lumbering camps; mechanization of work at lower timber landings. A handbook] Lesozagotovki; mekhanizatsiia rabot na nizhnikh skladakh. Spravochnik. Moskva, Goslesbumizdat, 1962. 441 p. (MIRA 16:6)

(Lumbering)

ZAV'YALOV, M.A., inzhener; LINDKVIST, B.A., inzhener.

Machine for welding impact mill hammers by the submerged-melt process.
Elek.sta.28 no.8:8-9 Ag '57. (MIRA 10:10)
(Crushing machinery) (Welding)

ZAV'YALOV, M.A.

27169 ZAV'YALOV, M.A. - Trelevka lebe okami v rovkinskom lesprombhoze. (Trest dvinoles). - Podpis': M. ya. (!) Zav'yalov. Les. prom-st; 1949, No. 6, s. 7-8.

SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949

ZAV'YALOV, M. A.

Dissertation: "Resistance to Motion on Curves in Transportation of Timber on Four-Axle Flat Cars by Narrow-Gauge Railroads." Cand Tech Sci, Moscow Forestry Engineering Inst, Archangel, 1952. (Referativnyy Zhurnal--Mekhanika, Moscow, A r 54)

SO: SUM 243, 19 Oct 1954

1. ZAV'YALOV, M. A.; URTAEV, G. T.

2. USSR (600)

4. Lumbering

7. New textbook on land transport of timber ("Land transport of timber." Prof. V. V. Buvert, Docent B. D. Lonov, Docent M. I. Kishinskiy, Docent S. A. Syromyatnikov. Reviewed by M. A. Zav'yalov, G. T. Urtaev.) Les. prom., 13, no. 4, 1953.

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

ZAV'YALOV, M.A., kandidat tekhnicheskikh nauk; YANUBITSKIY, V.A., inzhener.

New work technology for lumber yards and landings in floating tree-length logs. Mekh.trud.rab. 9 no.2:38-43 F '55. (MIRA 8:4)
(Lumbering)

ZAV'YALOV, M.A., kandidat tekhnicheskikh nauk.

Cranes for stacking and loading lumber on low storage space. Mekh. trud.rab. 10 no.6:23-26 Je '56. (MLRA 9:8)
(Lumber--Storage) (Cranes, derricks, etc.)

ZAV'YALOV, Mikhail Aleksandrovich [deceased]; YAKUNIN, A.G., red.

[Cranes and loaders for lumbering operations; their design, use, and repair] Krany i pogruzchiki dlia lesozagotovitel'nykh rabot; ustroistvo, ekspluatatsiia i remont. Moskva, Lesnaia promyshlennost', 1964. 303 p. (MIRA 17:11)

VORONITSYN, K.I., kand. tekhn. nauk, red.; TIZENGAUZEN, P.E., kand. tekhn. nauk, red.; NADBAKH, M.P., red.; TANTSEV, A.A., starshiy nauchnyy sotr., red.; ABRAMOV, S.A., kand. tekhn. nauk, red.; ABRAMOV, D.A., red.; BOGDANOV, N.I., starshiy nauchnyy sotr., red.; VINOGOROV, G.K., kand. tekhn. nauk, red.; GAVRILOV, I.I., starshiy nauchnyy sotr., red.; GUSARCHUK, D.M., starshiy nauchnyy sotr., red.; D'YAKONOV, A.I., red.; ZAV'YALOV, M.A., kand. tekhn. nauk, red.; ZARETSKIY, M.S., starshiy nauchnyy sotr., red.; KACHELKIN, L.I., starshiy nauchnyy sotr., red.; KISHINSKIY, M.I., kand. tekhn. nauk, red.; KOLTUNOV, B.Ya., starshiy nauchnyy sotr., red.; OSIPOV, A.I., kand. tekhn. nauk, red.; SHINEV, I.S., kand. ekon. nauk, red.

[Materials of the enlarged session of the Scientific Council of the Central Scientific Research Institute for Mechanization and Power Engineering in Lumbering on problems concerning power engineering and the electrification of the lumber industry] Materialy rasshirennoi sessii Uchenogo soveta TsNIIME po voprosu energetiki i elektrifikatsii lesnoi promyshlennosti. Moskva, 1961. 75 p. (MIRA 15:4)

(Continued on next card)

VORONITSYN, K.I.---(continued) Card 2.

1.Khimki.TSentral'nyy nauchno-issledovatel'skiy institut mekhanizatsii i energetiki lesnoy promyshlennosti. 2. Nachal'nik TSentral'nogo byuro tekhnicheskoy informatsii lesnoy promyshlennosti (for Nadbakh). 3. Direktor TSentral'nogo nauchno-issledovatel'skogo instituta mekhanizatsii i energetiki lesnoy promyshlennosti (for Voronitsyn). 4. Uchenyy sovet TSentral'nogo nauchno-issledovatel'skogo instituta mekhanizatsii i energetiki lesnoy promyshlennosti (for D'yakonov). 5. Nachal'nik otdeleniya energetiki i sredstv avtomatizatsii TSentral'nogo nauchno-issledovatel'skogo instituta mekhanizatsii i energetiki lesnoy promyshlennosti (for Zaretskiy).

(Lumbering) (Electric power)

ZAV'YALOV, Mikhail Aleksandrovich; KONOL'TSEV, K.A., retsenzent; STOLPNIK, P.S., red.; POLTEVA, B.Kh., red.izd-va

[Truck cranes and loaders] Avtomobil'nye krany i pogruzchiki. Moskva, Goslesbumizdat, 1959. 213 p. (MIRA 15:5)
(Cranes, derricks, etc.)
(Fork lift trucks)

ZAV'YALOV, M.A., kand.tekhn.nauk

Loading timber in large piles in loggings. Mekh.i avtom. proizv. 14 no.9:36-39 S '60. (MIRA 13:9)
(Lumber--Transportation)

KOMOL'TSEV, Kronid Aleksandrovich; ZAV'YALOV, M.A., kand.tekhn.nauk, retsenzent; KUTS, K.I., inzh., retsenzent; NOVOSEL'TSEV, N.V., red.; POLTEVA, B.Kh., red.izd-va; BACHURINA, A.N., tekhn.red.

[Forest products and lumberyard management] Osnovy lesnogo tovarovedeniia i lesoskladskogo khoziaistva. Moskva, Goslesbumizdat, 1960. 392 p. (MIRA 13:12)
(Forest products) (Lumberyards)

ZAV'YALOV, M.A., kand.tekhn.nauk

Mechanizing the loading of short-cut timber in closed freight cars. Mekh.i avtom.proizv. 14 no.3:46-47 Mr '60. (MIRA 13:6)
(Timber--Transportation)
(Railroads--Freight cars)

ZAV'YALOV, Mikhail Aleksandrovich; GOVOR, V.A., red.; KHOT'KOVA, Ye.S., red. izd-va; KORNYUSHINA, A.S., tekhn. red.

[Central control system on logging roads; textbook for forestry and lumbering schools] Dispetcherizatsiia na lesovoznykh dorogakh; posobie dlia lesotekhnicheskikh shkol. Moskva, Goslesbumizdat, 1960. 143 p. (MIRA 14:7)

(Lumber—Transportation)

SUDNITSYN, Ivan Ivanovich; ORESHKIN, Sergey Ivanovich; ROGOZKIN, Aleksandr Vladimirovich; OSIPOV, Aleksandr Ivanovich; GORBACHEVSKIY, Viktor Andreyevich; ZAV'YALOV, Mikhail Aleksandrovich; GATSKEVICH, Vladimir Antonovich; PATSIORA, Pavel Pavlovich; SOLOV'YEV, N.S., red.; POLTEVA, B.Kh., red.izd-va; PARAKHINA, N.L., tekhn.red.

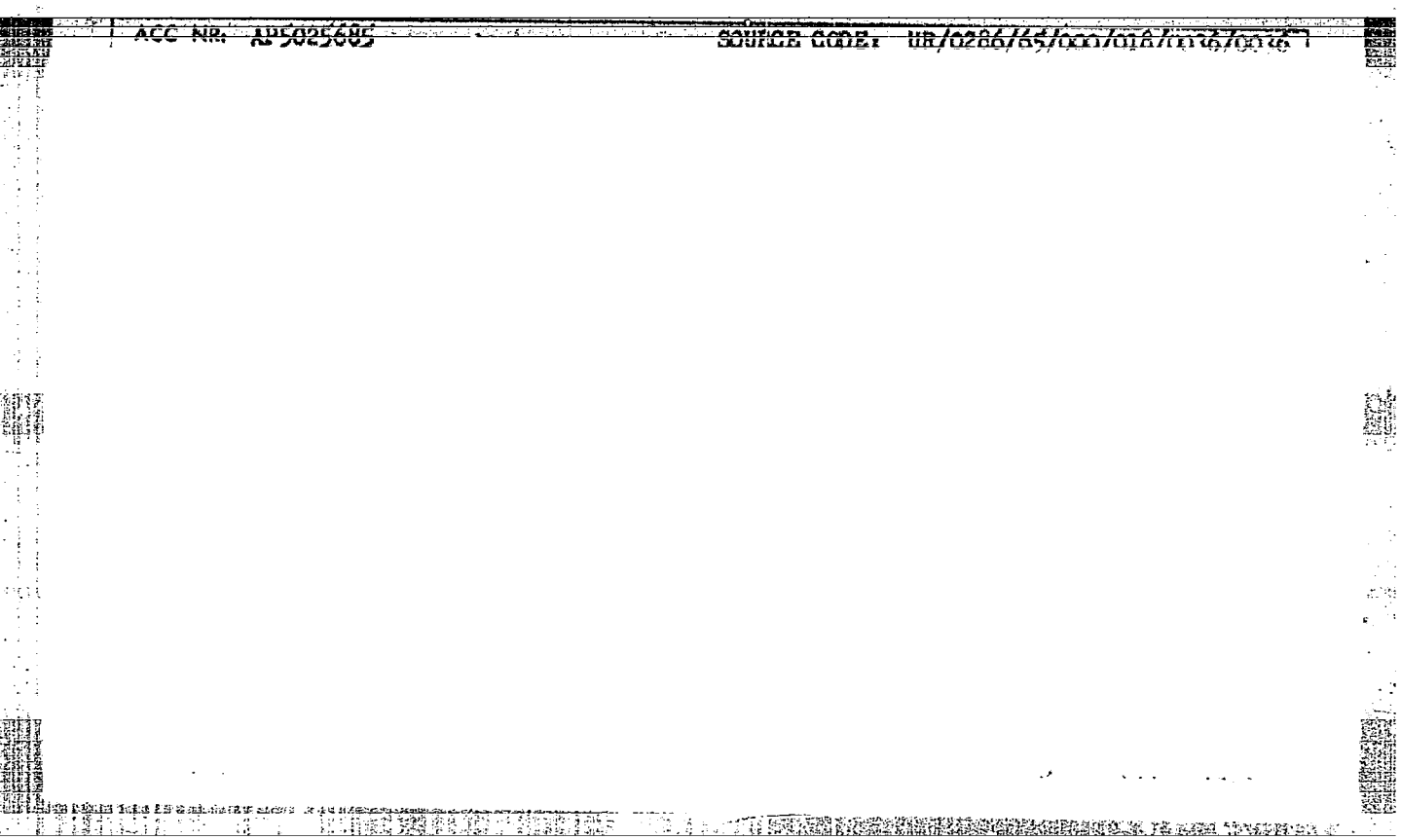
[Problems of mechanizing lumbering] Problemy mekhanizatsii lesozagatovok. Moskva, Goslesbumizdat, 1960. 194 p. (MIRA 14:6)

(Lumbering--Machinery)

MYASNIKOV, M.V., inzh.; DEGTYAREV, V.V., inzh.; ZAV'YALOV, M.Ya.

The work of suction dredge with a mechanical digger. Mech. trans. 18 no.8:48-49 Ag '59. (MIRA 12:12)

1.Irtyshskoye basseynovoye upravleniye puti (for Myasnikov, Degtyarev). 2.Komandir zemlesosa "Sormovskiy-10" (for Zav'yalov).
(Dredging machinery)



L 5168-66

ZAV'YALOV, M. Z.

ZAV'YALOV, M. Z.: "Sharpening a cutting tool as a condition for the stability of a technological process." Min Higher Education USSR. Gor'kiy Poytekhnic Inst imeni A. A. Zhdanov. Gor'kiy, 1956 (Dissertation for the degree of doctor in Technical Sciences)

SO: Knizhnaya Letopis', No 36, 1956, Moscow

ZAV'YALOV, M.Z., kand. tekhn. nauk, dotsent

Effect of grinding conditions on the strength of metal-cutting tools. Trudy GPI 17 no.4:5-14 '61. (MIRA 16:12)

SOV/122-58-12-15/32

AUTHOR: Zav'yalov, M.Z., Candidate of Technical Sciences, Docent

TITLE: The Influence of Cutting Tools on the Productivity of Automatic Machining Processes (Vliyaniye rezhushchikh instrumentov na proizvoditel'nost' avtomatizirovannykh protsessov mekhanicheskoy obrabotki)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 12, pp 43-46 (USSR)

ABSTRACT: Variable tool life influences the productivity of automatic lines, and it is necessary to establish maximum rates of cutting consistent with minimum tool lives. The way in which the tool is ground has an important bearing on its life. A series of tests was made in which tools were ground with different depths of material removed per traverse from 0.5 to 1.27 mm on first traverse, and .08 to 0.5 mm on subsequent traverses. These revealed that the ratios of maximum to minimum life of the tools varied from 1.45 to 11.3, when cutting with constant regime and material, according to the rate at which the tool was ground when sharpening it. It was found that when tools were ground with maximum depth of material removed per traverse of 0.5 mm on first passes and 0.25 mm on final passes the ratios of maximum to

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The Influence of Cutting Tools on the Productivity of Automatic Machining Processes

minimum tool life dropped to about 1.5 and average tool life increased up to 135%. Further tests on samples of high speed tool steel hardened and tempered to 60 - 61 Rockwell C showed that heating during grinding gives rise to structural change creating internal stress leading to crack formation. Fig 2 compares the surface of a sample ground with 0.1 mm depth of material removed per traverse with a feed of 0.4 mm per traverse, with a sample where the depth of cut was 0.5 mm and the feed 2 mm. A series of tools were ground with depth of material removed per traverse varying from 0.1 mm to 0.5 mm, and feed from 0.4 mm to 2 mm. These were proved cutting steel at 45 metres/min with 4 mm depth of cut and 0.256 mm/rev feed. Table 2 shows variation in life from 56 minutes to 12 minutes according to the manner in which the tools were ground. The grinding wheel was dressed and the tools resharpened and similar cutting was made, but with rate of feed 0.488 mm. Table 3 shows tool life varying from 41 minutes to 6.9 minutes. Measurements were made with thermocouples to determine the relationship between speed

The Influence of Cutting Tools on the Productivity of Automatic Machining Processes

of cutting (for given tool life) and regime while grinding the tool. Three sets of 25 tools were ground with the 5 different depths of material removed per traverse, and 5 different feeds per traverse, given above. Each tool was tested at cutting speeds from 12 to 31.7 m/min with 4 mm depth of cut and 0.265 mm feed. Curves showing temperature (millivolts) against speed (m/min) are given in Figs 3a and 3b for the different combinations of tool grinding conditions. On the basis of these tests the relationship

$$v_{90} = \frac{8.65}{t_p^{0.42} s_p^{0.5} t_z^{0.43} s_z^{0.25}} \text{ metres/min}$$

where v_{90} is speed of cutting consistent with 90 minutes life; t_p is depth of cut in mm; s_p is feed in mm/rev; t_z is depth of material removed per traverse when grinding the tool; s_z is feed per traverse when grinding the tool: was established.

SOV/122-58-12-15/32

The Influence of Cutting Tools on the Productivity of Automatic Machining Processes

It is recommended that high speed steel tools should be ground with t_z not more than 0.1 mm and s_z not more than 0.4 mm in final grinding. With normal tool wear, structural change in the tool will occur to a depth of 0.5 to 0.7 mm, and this material must be removed with preliminary grinding with t_z not more than 0.5 mm and s_z not more than 2 mm. By establishing a consistent tool grinding regime, and by grinding the tools in good time, consistent productivity can be achieved.

There are 3 figures and 2 tables.

Card 4/4

ZAV'YALOV, N.

A factory remembers a hero. Voen. znan. 40 no.2:8 F '64.
(MIRA 17:2)

1. Zavod imeni Maslennikova, Kuybyshev.

ZAV'YALOV, N., gvardii general-mayor

A step forward. Voen.vest. no.9:51-54 S '60. (MIRA 14:7)
(Russia--Army--Officers)

ZAV'YALOV, N. (Kuybyshev)

Friendship is strong. Voen. znan. 42 no.2:30-31 F '66. (MIRA 19:1)

ZAV'YALOV, N.A., polkovnik; UDALOV, F.P., inzh.-mayor

Office of tape recording. Vest.protivovozd.obor. no.1:64-66 Ja '61.
(MIRA 14:2)

(Radio in aeronautics)

ZAV'YALOV, N.D.

Ridding farms of brucellosis. Veterinariia 40 no.11: 31-33 N '63. (MIRA 17:9)

1. Direktor Vladimirskoy oblastnoy veterinarnoy laboratorii.

ZAV'YALOV, N.I., inzh.

Nozzle for welding in carbon dioxide. Svar. proizv. no.10:39-40 O '63. (MIRA 16:11)

1. Chelyabinskiy filial instituta "Promstal'konstruktsiya".

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

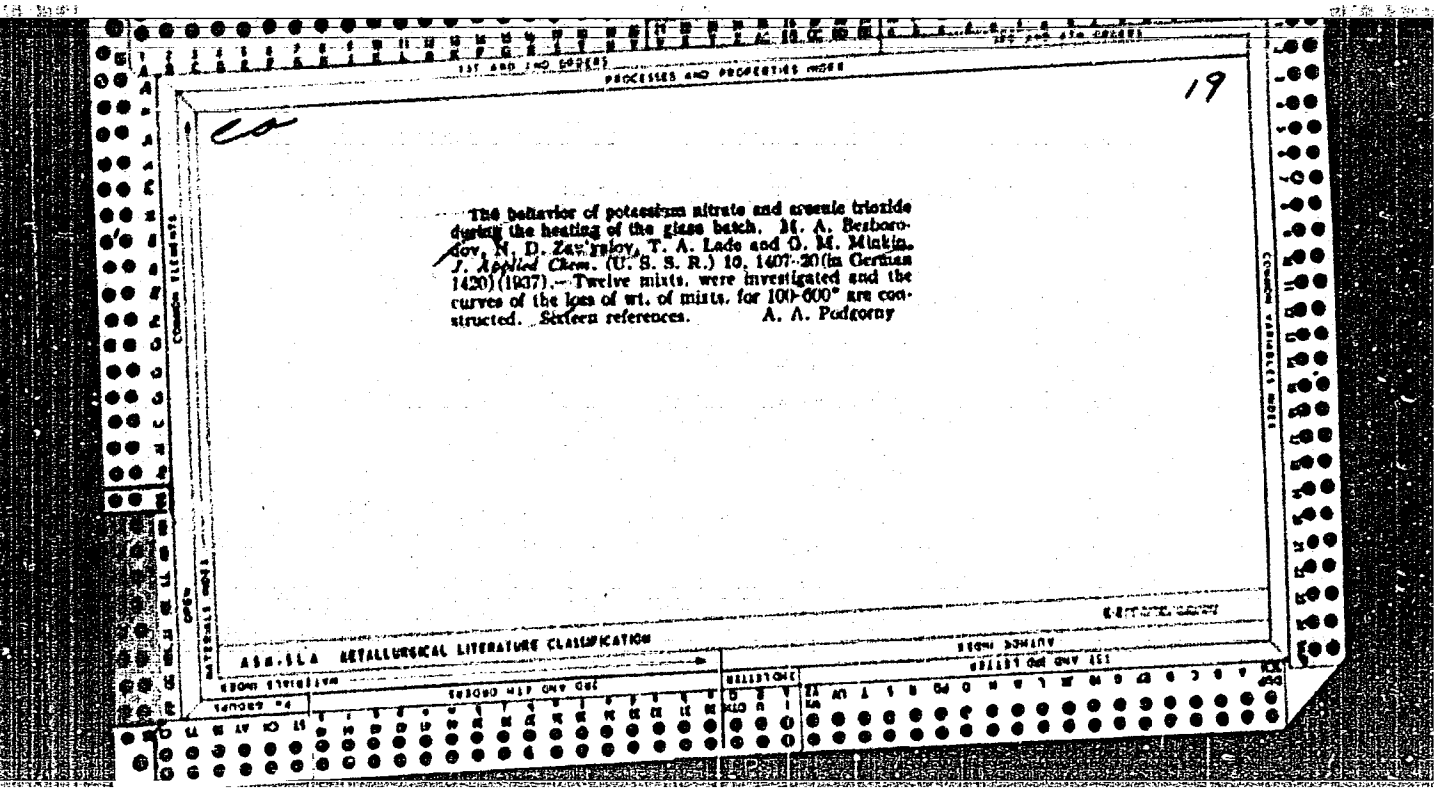
CA

19

Effect of heat treatment on the mechanical strength of transparent quartz glass. M. A. Bezborodov, N. D. Zav'yalov, and A. A. Sokolova. *J. Tech. Phys.* (U.S.S.R.) 5, 1103-8(1935).—Quartz-glass rods 3.3 mm. in diam. having a bending strength of 11.3 kg./sq. mm. were heated for 1 and 3 hrs. at temps. of 1100°, 1300° and 1500° (1 hr.). The temp. factor has a greater influence on the mechanical strength than time of heat treatment.

P. H. Rathmann

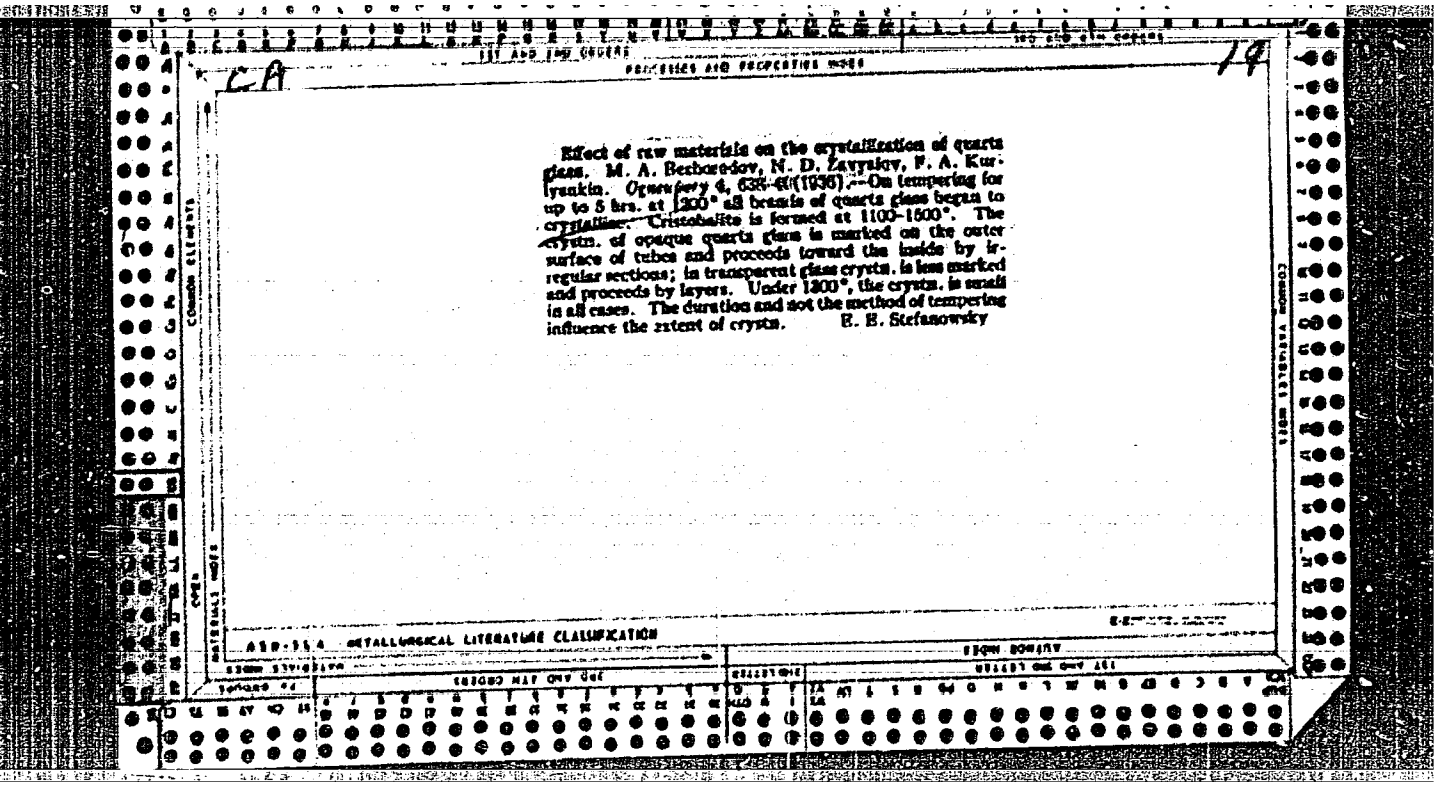
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



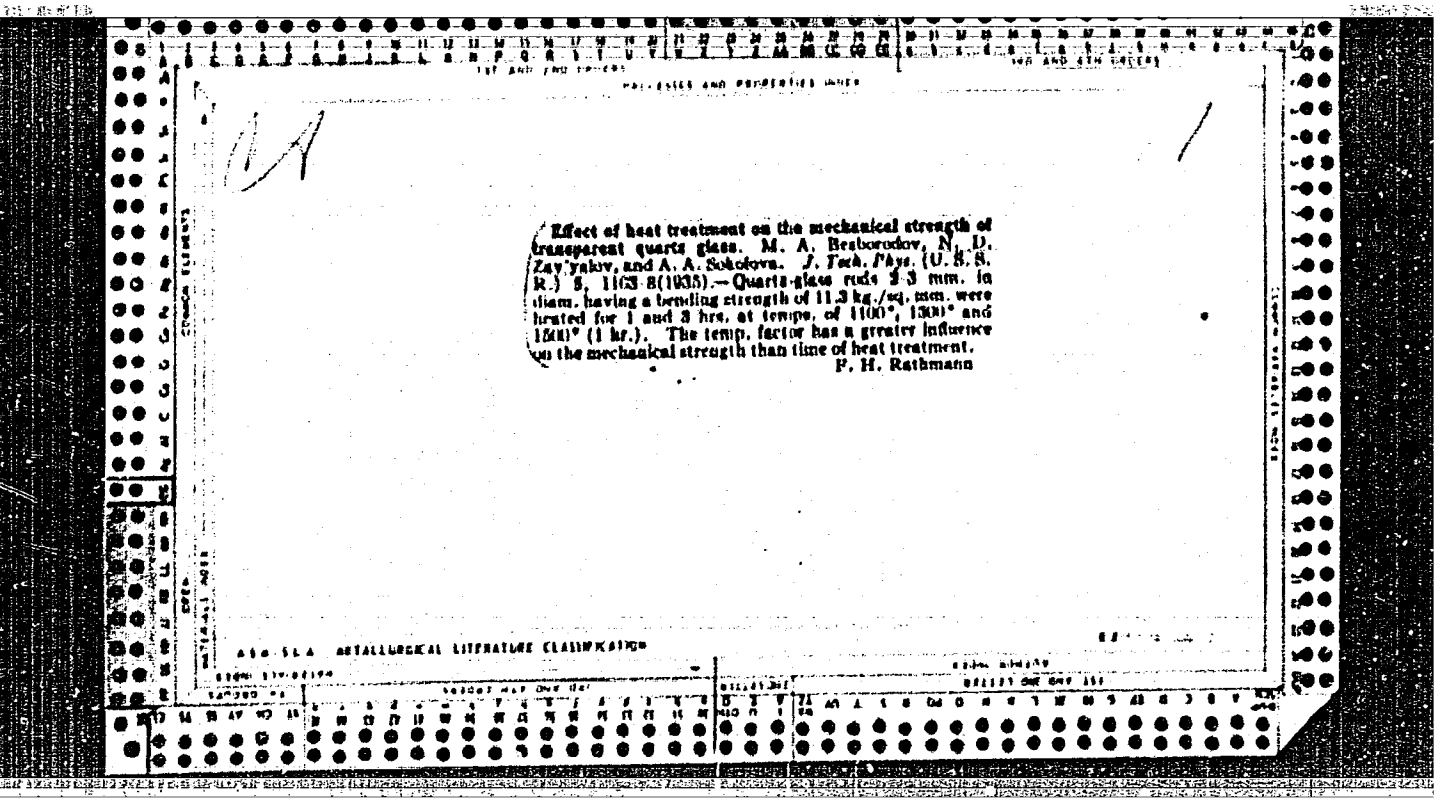
19

Ca

The behavior of potassium nitrate and arsenic trioxide during the heating of the glass batch. M. A. Bezborodov, N. D. Zav'yalov, T. A. Lado and O. M. Minkin. *J. Applied Chem.* (U. S. S. R.) 10, 1407-20 (in German 1420) (1937).—Twelve mixts. were investigated and the curves of the loss of wt. of mixts. for 100-600° are constructed. Sixteen references. A. A. Podgorny



Effect of raw materials on the crystallization of quartz glass. M. A. Berberedov, N. D. Zavyalov, F. A. Kuz-lyankin. *Ogneupory* 4, 635-41(1936).—On tempering for up to 5 hrs. at 1200° all breeds of quartz glass began to crystallize. Cristobalite is formed at 1100-1500°. The crystn. of opaque quartz glass is marked on the outer surface of tubes and proceeds toward the inside by irregular sections; in transparent glass crystn. is less marked and proceeds by layers. Under 1300°, the crystn. is small in all cases. The duration and not the method of tempering influence the extent of crystn. E. E. Stefanowsky



Effect of heat treatment on the mechanical strength of transparent quartz glass. M. A. Bezborodov, N. D. Zav'yalov, and A. A. Sokolova. *J. Tech. Phys.* (U.S.S.R.) 5, 1163-8(1935).—Quartz-glass rods 2.3 mm. in diam. having a bending strength of 11.3 kg./sq. mm. were heated for 1 and 3 hrs. at temps. of 1100°, 1300° and 1500° (1 hr.). The temp. factor has a greater influence on the mechanical strength than time of heat treatment.
P. H. Rathmann

ZAV'YALOV, N.M., inzh.

In reference to the article by the engineer V.I. Kuranov. Vest. elektroprom. 30 no.3:75 Mr '59. (MIRA 12:4)
(Electric cables)
(Kuranov, V.I.)

SOV/110-59-3-23/25

AUTHOR: ~~Zavlyalov, N.M.,~~ Engineer

TITLE: Concerning the Article by Engineer V.I.Kuranov (Po povody stat'i inzh.V.I.Kuranova)

PERIODICAL: Vestnik Elektropromyshlennosti, 1959, Nr 3, pp 75 (USSR)

ABSTRACT: This brief note discusses an article on the method of utilising reserve equipment in the cable industry published in Vestnik Elektropromyshlennosti, 1958, Nr 11. It is stated that cable making machinery cannot be speeded up as Kuranov suggests because the limiting factor is not centrifugal force. The author considers that Kuranov's suggestions are in general inapplicable.

Card 1/1

BONDARENKO, Ye.N., inzh.; ZAV'YALOV, N.N., inzh.

Production of foamed slag using a granulating drum. Stroi. mat. 10 no.3:32-33 Mr '64. (MIRA 17:6)

ZAV'YALOV, N.P.; RYBIN, D.A.

Increasing the service life of lubricants in 3D6 engines. Proizv.-tekh. sbor no.1:50-63 '59. (MIRA 13:9)

1. Moskovskoye parokhodstvo.
(Marine engines--Lubrication)

AUTHOR: Zav'yalov, N.P. SOV-128-58-10-14/19

TITLE: Experience in the Application of Steel Alloyed with Aluminum (Opyt primeneniya stali legirovannoy alyuminiyem)

PERIODICAL: Liteynoye proizvodstvo, 1958, Nr 10, p 30 (USSR)

ABSTRACT: To avoid the use of scarce high alloy steel and alloys for hearth bottoms and other parts, the foundry of NATI (NATI) used low carbon steel alloyed with aluminum, the alloy being composed of 0.8% C, 0.6% Mn, 0.29% Si, 0.038% Pm, 0.027% S and 1.95% Al. The hearth bottom made of this alloy was used for 10 months at a furnace temperature of 900 to 930°. It had to be removed due to warping, but the surface oxidation was minimal and no cracks had appeared. There are 2 photos.

1. Aluminum alloys--Applications 2. Aluminum alloys--Performance
3. Furnaces--Equipment

Card 1/1

ZAV'YALOV, N. S.

Grokhochenie rud. Sverdlovsk, Metallurgizdat, 1942. 40 p. illus. (V pomoshch' rabochim massovykh professii)

Ore screening.

DLC: TN515.Z3

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953

ZAV'YALOV, N. S.

The screening of ores. Sverdlovsk, Gos. nauch.-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1942. 40 p. V pomoshch' rabochim massovykh professii. (50-40614)

TN515.Z3

USSR/Cultivated Plants - Potatoes, Vegetables, Melons. H.

Abs Jour : Ref Zhur - Biol., No 16, 1958, 74119

Author : Mav'yalov, N.V.
Inst : -
Title : Application of Bacterial Fertilizers to the Tomatoes.

Orig Pub : Sad i ogorod, 1957, No 4, 27-29.

Abstract : The Effect of nitrogen bacterine, phosphorus bacterine and silicate bacteria on the tomato crops on an unirrigated plot in Odessa was studied during 1954-1955 experiments. Applying granules of organic mineral fertilizers into the planting holes and dipping the roots of the seedlings in the water solution of nitrogen, phosphorus and silicate bacteria increased the yield by 45-46%. Bacterial fertilizers slightly accelerated the ripening of the fruit and prolonged the vegetation of the plants. -- L.N. Chernmykh

Card 1/1

SOV/20-128-2-14/59

24(5)

AUTHOR: Zav'yalov, O. I.

TITLE: Dispersion Relations and the Perturbation Theory

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 273-275 (USSR)

ABSTRACT: In articles recently published by Y. Nambu (Ref 1) and K. Simanzik (Ref 2) as well as in several other papers, the analytic properties of the scattering amplitudes of various processes were investigated in the so-called α-representation by the majorant method. By this method it is possible to complement any complicated diagram by a simpler one with a more narrow range of analyticity. In this way, it is possible to reduce all diagrams contributing to the matrix element of the process under investigation to a definite number of irreducible diagrams. The section of the range of analyticity of these diagrams is part of the range of analyticity of the scattering amplitude. However, in the process of majorization part of information is lost, and since the finite irreducible diagrams are nonphysical, the results of their investigations cannot include all the data contained in the perturbation

Card 1/4

theory. When applying this method directly, information also is lost because the physical non-Euclidean totality of the momenta of the incoming and escaping particles is replaced by nonreal Euclidean totality. This replacement is an essential need of the method. The above shortcomings may be eliminated by unifying the perturbation theory with the method of the general theory of dispersion relations (Refs 3,4). The greatest difficulty arising from this method is the analytic continuation with respect to the fictitious variable τ up to the real value $\tau = \mu_k^2$. The possibility of this continuation is easily proved by Simanzik's method. However, part of information on the analyticity of the scattering amplitude with respect to the variable τ is lost again, yet in this case not the whole information is required. As an example, the author investigated the scattering (forward) of K-mesons by nucleons. It is assumed that $\vec{p}$ denotes the momentum of the incoming nucleon, $\vec{p}'$ - the momentum of the escaping nucleon, $\vec{k}'$ - the momentum of the incoming meson, and $\vec{k}$ - the momentum of the escaping meson. The investigation is carried out within the usual system of relations.

$\vec{p} + \vec{p}' = 0$, $\vec{p}^2 = \Delta^2 = 0$, $\frac{\vec{k} + \vec{k}'}{2} = \lambda\vec{e}$, $\vec{e}^2 = 1$, $\lambda = \sqrt{E^2 - \vec{\Delta}^2 - \tau}$, $\vec{k} = -\vec{p} + \lambda\vec{e}$, $\vec{k}' = \vec{p} + \lambda\vec{e}$, $k^0 = E$. $T^c(E,\tau) \approx \langle p',k'|S|p,k\rangle$ holds for the scattering amplitude. The spin- and isospin structure of the scattering amplitude are not taken into account. The author considered the fact that the lowest energy level contributing to the continuous spectrum T^{ret} and T^{adv}, is a level with one Λ-hyperon and one pion. In this case it holds: $T^{ret}(E) - T^{adv}(E) = 0$ at $|E| < E_1$, $|E| \neq E_{2,3}$ with $E_1 = \frac{(M_\lambda + \mu_\pi)^2 - M^2 - \tau}{2M}$, and the energies $E_{2,3}$ correspond to the pole terms of one single particle. The author then investigates a certain diagram of the series of the perturbation theory for the process $K + N \rightarrow K' + N'$. The functions $T^c(E + i\varepsilon) = T^{ret}$ and $T^c(E - i\varepsilon) = T^{adv}$, respectively, are analytic for all $\tau < 2M\mu_\pi + \mu_\pi^2$, especially for $\tau = \mu_k^2$ in the upper and lower semiplane, respectively. The result can easily be generalized

for all momentum transfers unequal to zero. The author thanks N. N. Bogolyubov, A. A. Logunov, and M. K. Polivanov for their interest and assistance in the present investigation. There are 2 figures and 4 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: May 20, 1959, by N. N. Bogolyubov, Academician

SUBMITTED: May 6, 1959

KADYSHEVSKIY, V., student; ZAV'YALOV, O., student

Fifth dimension. Tekh.mol. 28 no.7:35-36 '60. (MIRA 13:8)

1. Fizicheskiy fakul'tet Moskovskogo gosudartvennogo universiteta.

(Particles (Nulcear physics))

81685

S/029/60/000/07/21/024
B013/B058

24.6100

AUTHORS: Kadyshevskiy, V., Zav'yalov, O., Students of the Department of Physics of the MGU

TITLE: Scientific Society of Students of Physics of the MGU. Fifth Dimension. Superconductivity and Memory Cells

PERIODICAL: Tekhnika molodezhi, 1960, No. 7, pp. 35-36

TEXT: V. Kadyshevskiy and O. Zav'yalov, students of the fizicheskiy fakul'tet MGU (Department of Physics of the MGU), give under the heading "Fifth Dimension" a short report on the theory of the calculation of the mass of elementary particles with the aid of the fifth dimension developed by them. They point out that experiments for the introduction of the 5th dimension have already been made previously. The additional micro-dimension could, however, not be used for the calculation of the mass of elementary particles, since it was impossible to obtain a quantity with the dimension of the mass from the obtainable "world constants". This difficulty can be overcome by the fact that the radius of the fifth micro-circle coordinate is considered as a new "world quantity" which was lacking

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S/029/60/000/07/21/024
B013/B058

Scientific Society of Students of Physics of the MGU. Fifth Dimension. Superconductivity and Memory Cells

for setting up the formula for the mass of particles. A simple formula for the determination of masses can be found by assuming the radius of the fifth coordinate to be equal to $5.6.10^{-13}$ cm and by introducing an additional variable into the equations of the new theory: $m = 68.5\ m_e n$, m_e = electron mass, n = integer which characterizes the "number" of the particle. The exact content of the laws which will describe the phenomena taking place over short distances has not yet been clarified. The purely mathematical idea of the fifth dimension is, however, already of advantage because it eliminates a number of difficulties in the physics of the microcosmos. The theory of the fifth dimension does not give rise at all to the problem of the infinity of the mass. Still more, it offers an equation for calculating the mass of almost any known elementary particle. A. Rastorguyev, student of the Department of Physics of the MGU, reports on the creation of a model of a memory cell for computers using superconductive material (colored insert). The operating time of such a cell, immersed in liquid helium of a temperature of -269°C, was 1-3 microseconds, i.e., it was much shorter than that of a ferrite ring. It turned out that the smaller the cell, the

Card 2/3

81685

Scientific Society of Students of Physics of the MGU. Fifth Dimension. Superconductivity and Memory Cells

S/029/60/000/07/21/024
B013/B058

more quickly it operates. The operating time of the cell would be shortened to one-tenth or even one-hundredth of a microsecond in the case of a ring with 1 mm diameter which is absolutely realizable. These cells give the possibility of building computers which could carry out up to 10 million operations per second. There are 5 figures.

ASSOCIATION: Moskovskiy universitet (Moscow University)

4

Card 3/3

S/020/60/133/01/17/070
B014/B011

AUTHOR: Zav'yalov, O. I.

TITLE: "Nonphysical" Thresholds in the Perturbation Theory

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 1, pp. 64-67

TEXT: By way of introduction, the author refers, among other things, to papers by S. Mandelstam (Ref. 3), G. Tarsky (Ref. 4), and V. S. Vladimirov (Ref. 6), in which the "nonphysical" thresholds were investigated. The most important result yielded by the investigation under review is the formulation of a sufficient condition for the existence of an anomalous threshold for diagrams of any complicacy. On the strength of Fig. 1, the author illustrates the concepts "physical" and "nonphysical" thresholds, and the quadratic form of the outer momenta is derived. Four theorems on the existence and behavior of an anomalous threshold are set up and demonstrated. The theorems are explained by the phase diagrams shown in Figs. 2 to 4. Inequalities (4) are obtained for the existence of an anomalous threshold for these diagrams. These inequalities coincide for the case

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"Nonphysical" Thresholds in the Perturbation Theory

S/020/60/133/01/17/070
B014/B011

r = 2 with the conditions set up by Karplus, Sommerfield, and Wichman (Ref. 2). The author finally thanks N. N. Bogolyubov, V. S. Vladimirov, A. A. Logunov, M. K. Polivanov, and other participants in N. N. Bogolyubov's seminar for their valuable discussions. There are 4 figures and 7 references: 1 Soviet and 6 American.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: February 10, 1960, by N. N. Bogolyubov, Academician

SUBMITTED: February 5, 1960

Card 2/2

25478 S/020/61/139/001/010/018
B104/B231

24,6700

AUTHORS: Zav'yalov, O. I. and Pavlov, V. P.

TITLE: Matrix element of the reaction $\gamma + N \to \gamma + \gamma + N$ at low energies

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 1, 1961, 79 - 82

TEXT: The authors had two aims in mind when investigating the reactions mentioned in the title: to find expressions for the matrix elements, on the one hand, and, on the other hand, good results serve as argument for the primary conditions on the analytic behavior of the amplitudes in these processes. As is shown by the present work, well verified formulas are obtained by considering the closest singularities of the S-matrix. In addition, prospects are outlined for improving these formulas. The three reactions

$$\pi^- + p \longrightarrow \pi^+ + \pi^- + n; \qquad (1)$$

$$\pi^- + p \longrightarrow \pi^0 + \pi^0 + n; \qquad (2)$$

$$\pi^- + p \longrightarrow \pi^- + \pi^0 + p. \qquad (3)$$

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Matrix element of the reaction...

are examined and for simplifying the kinematic computations the nucleons are assumed to be scalar particles. p_1, p_2, p_3, p_4, and p_5 are the momenta of the π^+-meson, of the $\bar{\pi}$-meson (at the end of the reaction), of the neutron, of the π^--meson (at the initial stage of the reaction), and of the proton. The reaction (1) is described symbolically by $\hat{S} = \hat{1} + iA_1\delta(\sum p)/2\pi(\omega_1\omega_2\omega_3\omega_4\omega_5)^{1/2}$. The amplitude A_1 only depends on invariant combinations of the p_i. 15 invariants $u_{ik} = u_{ki} = (p_i + p_k)^2$ can be composed. The diagonal elements of the matrix u are related to the masses of the particles participating in the reaction by $u_{ii} = 4\,m_i^2$. The conservation of momentum imposes 5 relations on the remaining 10 invariants: $\sum_{T\neq k} u_{ik} = m_k^2 + \sum_1 m_1^2$ $(k = 1,2,3,4,5)$. Thus 5 among 10 variables u_{ik} turn out to be independent. For an independent variable the authors choose the energy $s_1 = u_{23}$ in the center-of-mass system neutron -$\bar{\pi}$-meson, the energy $s_3 = u_{12}$ in the center-of-mass system of the π^+- and $\bar{\pi}$-meson, the energy

Matrix element of the reaction...

$s_3 = u_{13}$ in the center-of-mass system neutron and π^+-meson; u_{35} is chosen for the momentum transfer between the nucleons, and u_{14} for that between the mesons. As of late, the energy in the main channel of the reaction has been designated as $u_{45} = W$. In case of the threshold energy $W = (M + 2\mu)^2$ the following applies: $s_1^0 = s_2^0 = (M + \mu)^2$, $s_3^0 = 4\mu^2$. M and μ denote the masses of nucleons and mesons. If W exceeds the threshold energy the following applies: $s_{1,2} \geqslant (M + \mu)^2$, $s_3 \geqslant 4\mu^2$ and $s_1 + s_2 + s_3 = W + M^2 + 2\mu^2$ is positioned within the region marked in Fig. 1 by broken lines. It is moreover the authors' aim to obtain linear terms of a matrix element expansion according to relative momenta of such particles as are participating in the reaction. It is assumed that expression

$$A_1(s_1 s_2 s_3) = A_1(s_1^0 s_2^0 s_3^0) + \frac{s_1 - s_1^0}{\pi} \int_{(M+\mu)^2}^{\infty} \frac{\sigma_1(s')\,ds'}{(s' - s_1^0)(s' - s_1 - i\varepsilon)} + \tag{4}$$

$$+ \frac{s_2 - s_2^0}{\pi} \int_{(M+\mu)^2}^{\infty} \frac{\sigma_2(s')\,ds'}{(s' - s_2^0)(s' - s_2 - i\varepsilon)} + \frac{s_3 - s_3^0}{\pi} \int_{4\mu^2}^{\infty} \frac{\sigma_3(s')\,ds'}{(s' - s_3^0)(s' - s_3 - i\varepsilon)},$$

Card 3/7

Matrix element of the reaction...

represents a good approximation of A_1 near the threshold. σ_1, σ_2, and σ_3 are determined from the unitarity condition. In (4) the closest singularities are taken into account; not however the pole terms of the form $(s_1 - s_1^0)/(s_1 - M^2)(s_1 - M^2)$ nor the dependence of A_1 on the momentum transfer u_{ik}, which is, however, admissible in the approximation wanted in this case. It is shown that the assumption of A_1 being analytic with respect to the variables u_{ik} in the range of their values is justified. Finally the authors obtain

$$A_1(s_1s_2s_3) = A_1(s_1^0s_2^0s_3^0) + I\sigma_1(s_1) + I\sigma_2(s_2) + I\sigma_3(s_3) + \sum_{l=1}^{3} \frac{s_l - s_l^0}{\pi} \int \frac{\sigma_l(s')}{(s' - s_l^0)} \mathcal{P} \frac{ds'}{s' - s_l}. \quad (5)$$

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