"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

S/115/61/000/004/005/010
B129/B206

21.8100

AUTHORS: Yudin, M. F. and Filippov, O. A.

TITLE: Tissue-equivalent dosimeter for fast neutrons

PERIODICAL: Izmeritel'naya tekhnika, no. 4, 1961, 37-42

TEXT: This study deals with the development of a dosimeter which would permit measuring the doses produced by fluxes of fast neutrons of the density of 20-30 $n/cm^2.sec$ and above. The dependence of the indications on the neutron energy is also to be investigated. In this group of instruments, the tissue-equivalent ionization chambers by Failla and Rossi and the tissue-equivalent proportional counter by Hurst have the best characteristics. The difficulty of separating the gamma-ray dose from the neutron dose was a drawback of the first type of instruments; the instruments of the second type do not record the protons, the energy of which lies below the discrimination threshold. The average, soft, biological tissue of the composition $(C_5H_{40}O_{18}N)_n$ can be represented for the fast neutrons by a material containing, for instance, 10% by weight of hydrogen and 90% by weight of carbon. This material can be obtained by

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Tissue-equivalent dosimeter...

mixing graphite with polyethylene. The tissue-equivalent chambers of the dosimeter are produced from pressed, carefully mixed powder consisting of 2.4 parts by weight of polyethylene and 1 part by weight graphite. The surface is homogeneous and smooth, which is important because of the reduction of adsorption of gases on the chamber walls. The conduction of the material was good; that of the surface, however, was irregular in various parts of the chamber. The calibration of the chambers in the field of the Co^{60} gamma rays showed that this fact was of no noticeable effect on the quantity of the ion current. In order to obtain the radiation equilibrium and to exclude the diffusion of the gas through the wall, the latter was made 5-mm thick, and the volume of the chamber was 953 ($\pm$ 3) cm^3. The central electrode of the chamber was made from the same plastic and mounted in the center of the chamber fixed by means of a polished insulator from polystyrene. The leakage currents through it were small compared with the ion currents to be measured. Fig. 1 shows the scheme of the ionization chamber. The body of the chamber consists of two parts which are glued together by a mixture of epoxy resin and polyamine. This mixture polymerized quickly at room temperature and was used for

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Tissue-equivalent dosimeter...

mounting the inner electrode in the insulator and the insulator in the body of the chamber. A device was provided to produce a vacuum, fill the chamber with gases of required composition and seal the content hermetically from the ambient medium. An electric measuring device built by the "Etalon" Plant served for measuring the ionization current during irradiation of the chamber with neutrons. This circuit is shown in Fig. 3. It is a quadrant electrometer which is supplied with a stabilized voltage of 300 v. This electrometer was used for measuring either the potential at the condenser plates or the potential drop in the resistance. In the first case, the indication was proportional to the total dose, in the second case, proportional to the power of the dose. The calibration of the instrument, calculation of the current caused by the neutrons and the practical measurement with the instrument described are dealt with next. As a result of the studies, a tissue-equivalent dosimeter for fast neutrons was elaborated, which permits measurements of from 0.5 to some hundredths microrad/sec with an error of 7-12%. There are 10 figures, 2 tables, and 14 references: 4 Soviet-bloc and 10 non-Soviet-bloc. The four references to English language publications read as follows: Rossi H. H., Failla G. Nucleonics, 1956, 14 (no.2); Hughes D. J.,

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Tissue-equivalent dosimeter...

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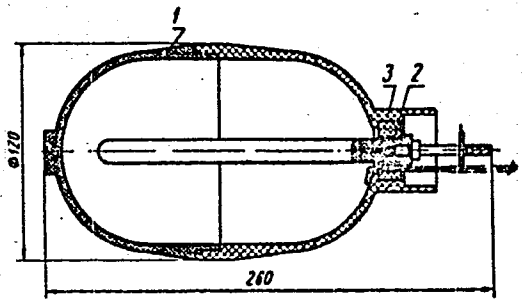
B129/B206

Harvey I. A. Neutron cross sections, N-Y, Toronto, London 1955; Baum I.W. Neutron dosimetry - a review, 1955; Snyder W. S., Neufeld J. Brit. J. Radiology, 1955, 28 (no.331).

Legend to Fig. 1: 1) Body;
2) insulated electrode;
3) insulation material.



Фиг. 1

Fig. 1

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FILIPPOV, G. A.

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PHASE I BOOK EXPLOITATION SOV/6333

Bochkarev, V. V., ed.

Tekhnika izmereniye radioaktivnykh preparatov; sbornik statey (Techniques for the Measurement of Radioactive Preparations; Collection of Articles) Moscow, Gosatomizdat, 1962. 4600 copies printed.

Eds.: A. M. Smirnova and M. A. Smirnov; Tech. Ed.: S. M. Popova.

PURPOSE: This book is intended for specialists in nuclear instrumentation.

COVERAGE: The book is a collection of articles on recent developments in 1) measurement of the activity and 2) analysis of the composition of emissions of radioactive preparations. The methodology and apparatus used in these studies are described in detail. References are given at the end of each article.

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SOV/6333

Techniques for the Measurement (Cont.)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, O.K.; YAROSLAVSKIY, N.G.

Transmission of long-wave infrared radiation (40-200 μ) by heated crystalline and molten quartz. Opt. i spektr. 15 no.4:558-561 O '63. (MIRA 16:11)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

ACCESSION NR: AP4020968 S/0051/64/016/003/0522/0525

AUTHOR: Filippov, O.K.; Pivovarov, V.M.

TITLE: Radiation of the PRK-4 mercury discharge tube in the far infrared

SOURCE: Optika i spektroskopiya, v.16, no.3, 1964, 522-525

TOPIC TAGS: PRK-4 discharge tube, mercury vapor discharge tube, mercury plasma radiation, electron density, infrared source, spectroscopy source

ABSTRACT: Knowledge of the characteristics of different light sources for spectroscopy is important in many investigations. In the present work there was studied the spectral distribution in brightness of the PRK-4 mercury-vapor discharge tube in the far infrared, namely in the interval from 33 to 75 cm^{-1}. The measurements were performed with the aid of a spectrometer with small echelette gratings (replicas with d = 0.5 and d = 0.85). The radiation detector was an optico-acoustic OAP-2 detector with a quartz window. The main results are shown in the figure (Enclosure 01). Another figure in the text gives the variation in intensity with discharge current. Evaluation of the electron density in the plasma yielded 10^{16} cm^{-1}. It is concluded that for the frequency region below 70 cm^{-1} the optimum discharge current

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ACCESSION NR: AP4020968

is 3-4 amp. "In conclusion, the authors express their gratitude to N.G.Yaroslavskaya and S.I.Sevikova for their interest and assistance in the work." Orig.art. has: 4 formulas, 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 29Apr63 DATE ACQ: 02Apr64 ENCL: 01

SUB CODE: PH, SD NR REF SOV: 002 OTHER: 009

Card 2/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

L 9196-66 EWT(1)/EPF(n)-2/ETC/EWG(m) IJP(c) AT

ACC NR: AR6000114 SOURCE CODE: UR/0058/65/000/008/D032/D032

72
13

SOURCE: Ref. zh. Fizika, Abs. 8D257

AUTHORS: Filippov, O. K.; Pivovarov, V. M.

ORG: none

TITLE: Radiation from the plasma of a PRK-4 lamp in the long-wave IR region

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR. M., t. 2, vyp. 1, 1964, 360-367

TOPIC TAGS: IR spectroscopy, plasma arc, mercury vapor lamp, plasma radiation, plasma density, bremsstrahlung

TRANSLATION: The authors measured the energy brightness of the plasma of a high-pressure mercury lamp PRK-4 in the 33--77 cm^{-1} region. The radiation of the plasma was separated from that of the wall by means of special energy calibration. The value of the effective plasma temperature was found to be 6000K. In the frequency region 33--65 cm^{-1}, the plasma radiation is well described by the Rayleigh-Jeans curve, whereas in the 65--77 cm^{-1} region a noticeable discrepancy is observed between the plasma and black-body radiation. The electron density of the plasma is calculated and it is shown that its radiation is of bremsstrahlung origin.

SUB CODE: 20

Card 1/1 ada

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

L 15937-66 EPF(n)-2/EWT(1)/ETC(f)/EWG(m) IJP(c) AT

ACC NR: AP6005474 SOURCE CODE: UR/0368/66/004/001/0064/0065

AUTHOR: Filippov, O. K.; Pivovarov, V. M.

71
69
B

ORG: none

TITLE: Use of long-wave spectral analysis for determining electrical conductivity in the positive column of an arc discharge

SOURCE: Zhurnal prikladnoy spektroskopii, v. 4, no. 1, 1966, 64-65

TOPIC TAGS: arc discharge, discharge plasma, electric conductivity, far IR, plasma physics

ABSTRACT: The authors propose a method for determining the electrical conductivity of a high pressure arc discharge by studying the discharge plasma in the far infrared region of the spectrum. An expression is derived for determining the electrical resistance of the plasma in terms of brightness, electron density and discharge temperature. The formula is applicable only in the transparent region of the plasma. A curve is given showing the electrical resistance of the plasma as a function of collision frequency. The electrical conductivity of the plasma in the mercury arc

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ACC NR: AP6005474

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of a high pressure PRK-4 lamp is calculated from the energy brightness of radiation measured in the far infrared region of the spectrum. The results are compared with the data of other authors. In conclusion we thank I. V. Podmoshenskiy and N. G. Yaroslavskiy for assistance with the work. Orig. art. has: 1 figure, 4 formulas.

SUB CODE: 20/ SUBM DATE: 15Feb65/ ORIG REF: 001/ OTH REF: 004

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

RASSKAZOV, I.D.; MESHCHERYAKOV, L.I.; RAYEVSKIY, N.A.; FILIPPOV, O.N., inzh.

Assembling prestressed reinforced concrete beams with the K-451M cranes. Transp. stroi. 14 no.10:13-16 O '64.
(MIRA 18:3)

1. Glavnyy inzh. Mostostroya No.3 (for Rasskazov).
2. Glavnyy tekhnolog Mostostroya No.3 (for Meshcheryakov).
3. Nachal'nik tekhnicheskogo otdela Mostostroya No.3 (for Rayevskiy).

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P. (Murmansk); KHMELEVA, V. (Murmansk)

They sit at the sea shore and wait for good weather. Okhr. truda i sots. strakh. 5 no.9:33-34 S '62. (MIRA 16:5)

1. Spetsial'nyy korrespondent zhurnala "Okhrana truda i sotsial'noye strakhovaniye" (for Khmeleva).
(MURMANSK—FISHERMEN—MEDICAL CARE)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV,P.; MEL'TSER,L.; MINKUS,B.

Using knurled pipes in ammonia condensers. Khol.tekh.32 no.2: 42-44 Ap-Je '55. (MLRA 8:10)
(Condensers (Vapors and gases))

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P., inzh.; SHMYGLYA, A., inzh.

Making bimetallic tube grids for condensers. Khol. tekh. 34 no.4: 34-36 O-D '57. (MIRA 11:1)

(Condensers (Vapors and gases))

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

BEREZOVSKIY, Konstantin Ivanovich[Berezovs'kyi, K.I.], nauchn. sotr.; FILIPPOV, Prokofiy Anan'yevich[Filipov,P.A.]; VINNITSKIY, S.P.[Vinnits'kyi, S.P.], red.

[Early vegetables grown outdoors; tomatoes, cabbage, cucumbers, eggplants] Ranni ovochi u vidkrytomu hrunti; pomidory, kapysta, ohirky, baklazhany. Odesa, Maiak, 1964. 58 p. (MIRA 18:1)

1. Odesskaya sel'skokhozyaystvennaya issledovatel'skaya stantsiya (for Berezovskiy). 2. Direktor sovnarkhoza "Druzhba narodov", Odesskaya oblast' (for Filippov).

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

SOV/122-58-7-17/31

AUTHORS: Polovnikov, V.V., Candidate of Technical Sciences and Filippov, P.F., Engineer

TITLE: The Accuracy of Gear Wheels Produced by Hot and By Cold Rolling Technique (Tochnost' zubchatykh koles, izgotovlennykh goryachey i kholodnoy prokatkoy)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 7, pp 57-58 (USSR)

ABSTRACT: Some 50 gearwheels, 5 mm module and between 250 and 197 mm dia. were measured directly after hot rolling and a similar number after cold rolling their teeth, the teeth having previously been formed either by milling or by hot rolling in the latter case. A further 50 gears were measured after milling and gear shaving the teeth which had been previously formed by hot rolling.
The statistical distribution of errors in pitch of the hot rolled gears (without further work on them) is shown in Figure 1, where the percentage of the total number checked is shown against pitch error in microns (.001 mm). Errors in hot rolled gears which had been subsequently milled or shaved (with allowance for this of 0.15 - 0.2 mm on the hot rolled gear) are shown in Figure 2.

Card1/2 Taking account of the overall increase in tooth chord

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

The Accuracy of Gear Wheels Produced by Hot and by Cold Rolling Technique

resulting from cementation and hardening and the work-hardening effect of cold rolling, it was found desirable to aim for an allowance of -0.3 mm on mean centre distance of gears before these latter operations are effected. Cold-rolled gears were tested with the object of clarifying the possibility of substituting this process for gear shaving. Error in mean centre distance on rotation through one tooth $\delta_{\gamma}a$ and error on complete rotation $\delta_{o}a$ are shown in Figure 3 for a group of gears which were cold-rolled after forming the teeth by milling. The contact area and smoothness of the cold-rolled gears was superior to that of the shaved gears, apart from the considerable improvement in profile error δf and cumulative pitch error δt_{Σ} shown in Figure 4 where full lines are for gears after milling and broken lines for gears after cold rolling. Cold rolling reduces profile errors to a tenth of the errors found after milling. There are 4 figures and 2 Soviet references.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

PHASE I BOOK EXPLOITATION SOV/5688

Polovnikov, Viktor Viktorovich, Pavel Fedorovich Filippov, Vyacheslav Aleksandrovich Bodazhkov, and Genrikh Gavrilovich Semibratov

Izgotovleniye tsilindricheskikh zubchatykh koles prokatkoy (Rolling of Spur Gears) Moscow, Mashgiz, 1961. 187 p. Errata slip inserted. 8000 copies printed.

Ed. (Title page): V.S. Smirnov, Corresponding Member, Academy of Sciences USSR.

Reviewer: K.S. Ginzburg, Engineer; Ed. of Publishing House: T.L. Leykina: Tech. Ed.: A.A. Bardina; Managing Ed. for Literature on Machine-Building Technology (Leningrad Department, Mashgiz): Ye.P. Naumov, Engineer.

PURPOSE: This book is intended for process engineers and designers concerned with the production of toothed gears and the pressworking of metals.

COVERAGE: A brief description is given of experiments in the roll forming of gears carried out primarily at the Khar'kovskiy traktornyy zavod (KhTZ) -- Khar'kov Tractor Plant -- and at the Nauchno-issledovatel'skiy institut tokov vysokoy chastoty (NIITVCh) -- Scientific Research Institute of High-Frequency Currents. Experiments in the development of roll-forming machines are also

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Rolling of Spur Gears SOV/5688

included. The following are discussed: special features of metal deformation and of induction heating during rolling; results of experiments in comparing the quality of rolled and cut gears; calculations of economic efficiency in gear rolling; and roll-forming processes in Soviet plants. The last item includes a discussion of the sequence in the development and introduction of combined hot-and-cold rolling, by which precision gears can be obtained without machining. Particular attention is given to the hot-rolling process; cold-rolling is considered only as a finishing operation in the KhTZ-NIITVCh process. The book was written as follows: Ch. I and Sec. 6 of Ch. III, by P.F. Filippov; Ch. II, by V.V. Polovnikov and P.F. Filippov; Secs. 7 and 8 of Ch.III, and Chs. V and VII, by V.V. Polovnikov and G.G. Semibratov; Secs. 10 and 11 of Ch. IV, by V.A. Bodiazhkov; and the remainder and introduction, by V. V. Polovnikov. There are 47 references: 36 Soviet, 4 Czech, 3 English, 2 Hungarian, 1 German, and 1 unidentified.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

SOV/120-58-4-8/30

AUTHORS: Medvedev, M. N., Sokolova, Ye. S., Filippov, P. I. and Tsislyak, O. N.

TITLE: Time Characteristics of Photo-Multipliers (Vremennyye kharakteristiki fotoumnozhiteley)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 4, pp 37-39 (USSR)

ABSTRACT: An investigation was made of the rise times of the leading edges of pulses from the following photomultipliers developed by N. S. Khlebnikov: FEU-1V, FEU-2V, FEU-1B2V. Photomultipliers FEU-1V and FEU-2V have semitransparent photocathodes 40 mm in diameter, and differ from each other only in the number of dynodes. The photocathode is made of SbCs and its maximum spectral sensitivity is at 4000 Å. The amplification coefficient for the FEU-1V is about 5×10^5 and for the FEU-2V about $2\text{-}3 \times 10^6$. The FEU-1B2V has a larger cathode, namely, 80 mm diameter and an amplification coefficient of about 10^6. The photomultipliers are so constructed that the electron collection from the photocathode is 100%. Experiments have shown that the rise time (0.1÷0.9)

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Time Characteristics of Photomultipliers

of the leading edges of pulses from the 3 photomultipliers are 3.5×10^{-9} for the first two and 4.5×10^{-9} for the third one. The photomultipliers may be used in scintillation counters and Cerenkov counters in fast coincidence circuits. It is necessary to screen the counters from external electromagnetic fields by means of appropriate electromagnetic screens. N. S. Khlebnikov, A. Ye. Melamid and A. M. Potapov are thanked for supplying the photomultipliers and taking part in discussions. There are 4 figures, 4 tables and no references.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (United Institute for Nuclear Studies)

SUBMITTED: October 30, 1957.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

BULOVSKIY, P.I.; MES'KIN, V.S., otvetstvennyy redaktor; AKSENOV, D.D., red.; BLINOV, V.I., red.; VORONOVSKAYA, Ye.V., red.; GOLOVCHANSKIY, P.M., red.; ZAVALISHIN, D.A., red.; EPSHTEYN, M.O., red.; BORKHVARDT, G.K., red.; PAVLOV, V.A., red.; POVALYAYEV, A.V., red.; SIVERS, A.P., red.; FILIPPOV, P.I., red.; MISHIN, V.I., red.; EL'KIN, Ye.G., tekhn.red.

[Theoretical bases for the technology of assembling aeronautical instruments] Teoreticheskie osnovy tekhnologii sborki aviatsionnykh priborov. Leningrad, 1956. 122 p. (Leningrad. Institut aviatsionnogo priborostroeniia. Trudy no.15) (MIRA 10:11)

(Aeronautical instruments)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P.I.

Paleogeography of the southern part of the Don and Medveditsa dislocations. Uch. zap. Volg. gos. ped. inst. no.10:75-92 '59. (MIRA 14:11)

(Don Valley--Paleogeography)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

BUTSLOV, M.M.; MEDVEDEV, M.N.; FILIPPOV, P.I.; CHUVILO, I.V.; SHESHUNOV, V.M.

Recording of a Vavilov-Cherenkov radiation cone from isolated particles. Atom. energ. 12 no.5:412 My '62. (MIRA 15:5)
(Cherenkov radiation)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P.I.

Teplo-i massoobmen v merzlykh tolshchakh zemnoy kory (Heat and Mass Transfer in the Frozen Strata of the Earth's Crust) Moscow, Izd-vo AN SSSR, 1963 213p.
Research by the staff of the Heat-and Mass-Transfer Division of the Institute of Permafrost Study, Siberian Branch, AS USSR

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

CHULKIN, Sergey Grigor'yevich, doktor tekhn. nauk, prof.; MARTYNOVSKIY, Vladimir Sergeyevich, doktor tekhn. nauk, prof.; MEL'TSER, Leonid Zinov'yevich, kand. tekhn. nauk, dots.; Prinimali uchastiye: ALEKSEYEV, V.P., kand. tekhn. nauk, dots.; FILIPPOV, T.K., dots.; CHICHKOV, N.V., red.; BRODSKIY, M.P., tekhn. red.

[Refrigerating units] Kholodil'nye ustanovki. Moskva, Gos. izd-vo torg. lit-ry, 1961. 472 p. (MIRA 14:12)
(Refrigeration and refrigerating machinery)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P.K., inzh.

"Repairing refrigerating machines and units," by A. M. Zhavoronkov. Reviewed by P. K. Filippov. Khol. tekh. 38 no.5:67-69 S-O '61. (MIRA 15:1)

(Refrigeration and refrigerating machinery--Maintenance and repair)
(Zhavoronkov, A.M.)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P.K., dotsent; MOSKOVCHENKO, V.V., inzh.

Investigating icemaking machines for layer freezing of block ice. Khol. tekh. i tekh. no.1:73-76 '65. (MIRA 18:9)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P.P.

Bottling diphtheria anatoxin. Fel'd. i akush. 22 no.11:63 N '57.
(MIRA 11:2)

1. Zaveduyushchiy fel'dsherskim punktom poselka Volchevka g. Nizhniy Tagil.
(DIPHTHERIA--PREVENTIVE INOCULATION)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

BUDAVEY, V.Yu.; PEREL'SON, Ye.M.; FILIPPOV, P.R.; FEDYASHIN, N.I.

Problems in the amortization of basic funds in the petroleum refining industry. Khim.i tekh.topl.i masel 5 no.8:40-46 Ag '60.
(MIRA 13:8)

1. Gosudarstvennyy nauchno-issledovatel'skiy ekonomicheskiy institut Gosplana SSSR i Giproneftezavod.
(Petroleum industry--Equipment and supplies)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P.R., starshiy prepodavatel'

Induced thermoelectromotive force and the resilience modulus of metals. Trudy VSTI no.1:19-25 '62.

(MIRA 17:11)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P.V.

Some laws governing connections in central and parallel projecting. Zap. LGI 36 no.3:156-165 '58. (MIRA 16:5)
(Projection)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, P.V.

Conjugate projections. Zap. LGI 36 no.3:166-183 '58. (MIRA 16:5)
(Projection)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

ACC NR: AR6020786 SOURCE CODE: UR/0044/66/000/002/B168/B168

AUTHOR: Filippov, P. V.

TITLE: Graphic analytic method for the solution of the fundamental problem of linear programing

SOURCE: Ref zh. Matem, Abs. 2B685

REF SOURCE: Sb. Vopr. teorii i prakt. prilozh. nachert. geometrii, risunka i tsvetoved. Dokl. k XXIII Nauchn. konferentsii Leningr. inzh.-stroit. in-ta. L., 1965, 15-19

TOPIC TAGS: linear programing, graphic technique

ABSTRACT: A graphic-analytical method for the solution of the basic problem of linear programing with four independent variables has been proposed. It is based on the vector principle of pattern representation within a four-dimensional space as presented by the author in earlier publications. The possible solutions of the problem are found by graphical means whereas the optimum solution is determined analytically by substituting the obtained permissible solutions into the equation of the linear form. The method is studied on the example of the solution of the typical transport problem of the linear programing reduced to the basic problem. [Translation of abstract] V. Metelkina

SUB CODE: 12

Card 1/1 UDC: 518.3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

L 44684-66

ACC NR: AP6005381 (A) SOURCE CODE: UR/0413/66/000/001/0124/0124

AUTHORS: Filippov, P. V.; Pavlov, V. Ye.

ORG: none

TITLE: A hydraulic drive of reciprocating motion. Class 47, No. 177731

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 124

TOPIC TAGS: hydraulic device, hydraulic equipment, hydraulic liquid, clutch

ABSTRACT: This Author Certificate presents a hydraulic drive of reciprocating motion, containing a working cylinder, a jet tube for consecutive feeding of working liquid into the chambers of the hydraulic cylinder, and a mechanical feedback for directing the jet tube according to the position of the piston of hydraulic cylinder (see Fig. 1). To simplify its construction and to increase its productivity, the feedback mechanism is made in the form of a two-shoulder lever rigidly fixed to the shaft attached to the shank of the jet tube through a friction clutch. One end of the lever is connected to a spring-loaded rod, while the other end is connected to a key-like protrusion formed on the rod, and insuring a passing of the jet tube from one position into another.

Card 1/2

UDC: 621.226

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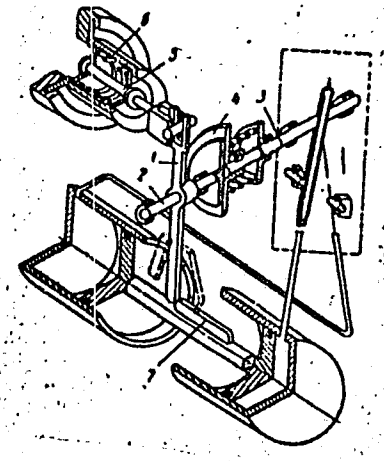
L 44684-66
ACC NR: AP6005381

Fig. 1. 1 - two-shoulder lever; 2 and 3 - shafts; 4 - friction clutch; 5 - rod; 6 - spring; 7 - protrusion



Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 30Dec63

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Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

AUTHORS: Tyrsin, S.M. and Filippov, P.Ye., Mining Engineers SOV/127-58-11-5/16

TITLE: Drainage Works at the Sokolovskoye Deposit (Osushitel'nyye raboty na Sokolovskom mestorozhdenii)

PERIODICAL: Gornyy zhurnal, 1958, Nr 11, pp 21 - 24 (USSR)

ABSTRACT: The Sokolovskoye deposit was to a large extent water logged, and had to be drained before stripping operations could be started. Special bore holes were drilled and pumps of the types ATN-14 and 12-AP were installed and operated in conjunction with special drainage ditches. In seven months the water level in the stripping layers was lowered by 23 m, and 1,220,000 cubic m of sand, which covered the deposit could be stripped. There is 1 table, 1 map and 2 Soviet references.

ASSOCIATION: Sokolovsko-Sarbayskiy gorno-obogatitel'nyy kombinat (Sokolovskoye - Sarbay Mining and Concentrating Kombinat)

Card 1/1 1. Mining engineering--USSR

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

GRAUR, I.F.; FILIPPOV, P.Ye.

Drainage operations. Gor.zhur. no.2:10-14 F '64. (MIRA 17:4)

1. Glavnyy geolog Sokolovskogo-Sarbayskogo kombinata (for Filippov).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

14(3)

SOV/176-58-7-7/17

AUTHOR: Filippov, R., Colonel

TITLE: Arranging Cover by Means of an Underground Excavation (Ob ustroystve ukrytiy sposobom podkopa)

PERIODICAL: Voyenno-inzhenernyy zhurnal, 1958, Nr 7, pp 19-21 (USSR)

ABSTRACT: The author describes digging trenches and covers in advanced positions by using entrenching tools, in the event of the enemy using atomic weapons. An example of a unit commanded by the officer Gal' is given. The cover was built without using timber or other material. Two sketches of covers and underground galleries are given. A cover was tested by running a tank over it. the layer of earth above it was 110 cm thick and the ceiling arch was no less than 25% of the width of the span. The author refers to the experience of these underground passages during the defence of Stalingrad. There are 2 diagrams.

Card 1/1

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, R.D.

Stability of saturated sand foundations subjected to dynamic actions. Osn., fund. i mekh. grun. no.2:14-16 '59.
(MIRA 12:7)

(Soil mechanics) (Foundations)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, R.

Centralized transportation of fish and fish products. Avt.transp. 32 no.4:8-9 Ap '54. (MLRA 7:6)

1. Direktor avtobazy Mosrybkombinata.
(Fishes--Transportation) (Transportation, Automotive)
(Fishery products--Transportation)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S. (Leningrad)

Unusual turret clock. Znan.ta pratsia no.5:13 My '59.
(MIRA 12:10)

(Astronomical clocks)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

NOVOSELOV, K. (Moskva); FILIPPOV, S. (Moskva)

Timing device. Sov.foto 20 no.1:39 Ja '60.
(MIRA 13:5)
(Clocks and watches)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.

Machine for nylon hosiery repairing. Mest.prom.i khud.promys. 3 no.4:29 Ap '62. (MIRA 15:5)

1. Zamestitel' nachal'nika upravleniya metalloobrabatyvayushchey promyshlennosti Mosgorispolkoma.
(Hosiery, Nylon—Repairing)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

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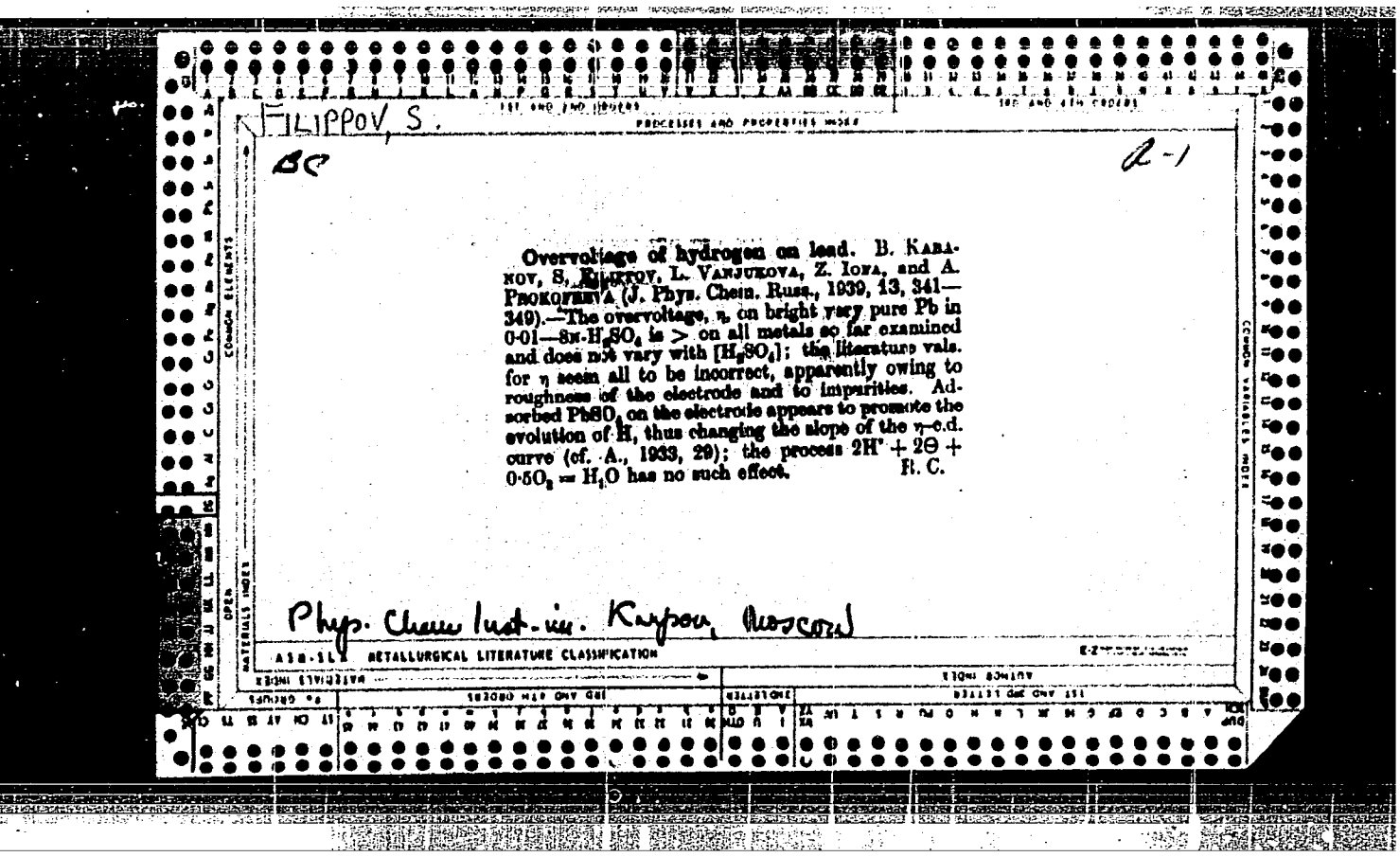

FILIPPOV, S.

BC

A-1

Overvoltage of hydrogen on lead. B. KABANOV, S. FILIPPOV, L. VANJUKOVA, Z. IOFA, and A. PROKOFIEVA (J. Phys. Chem. Russ., 1939, 13, 341—349).—The overvoltage, η, on bright very pure Pb in 0·01—8N-H_2SO_4 is > on all metals so far examined and does not vary with $[H_2SO_4]$; the literature vals. for η seem all to be incorrect, apparently owing to roughness of the electrode and to impurities. Adsorbed $PbSO_4$ on the electrode appears to promote the evolution of H, thus changing the slope of the η–c.d. curve (cf. A., 1933, 29); the process $2H^+ + 2\Theta + 0{\cdot}5O_2 = H_2O$ has no such effect. R. C.

Phys. Chem. Inst.-im. Karpova, Moscow

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.; ZONOV, V.

Central Industrial Laboratory of a machinery construction plant. Zav.lab. 27 no.9:1168-1170 '61. (MIRA 14:9)

1. Nachal'nik TSentral'noy laboratorii mashinostroitel'nogo zavoda (for Filippov). 2. Otdel glavnogo metallurga Tsental'noy laboratorii mashinostroitel'nogo zavoda (for Zonov).
(Machinery--Testing)

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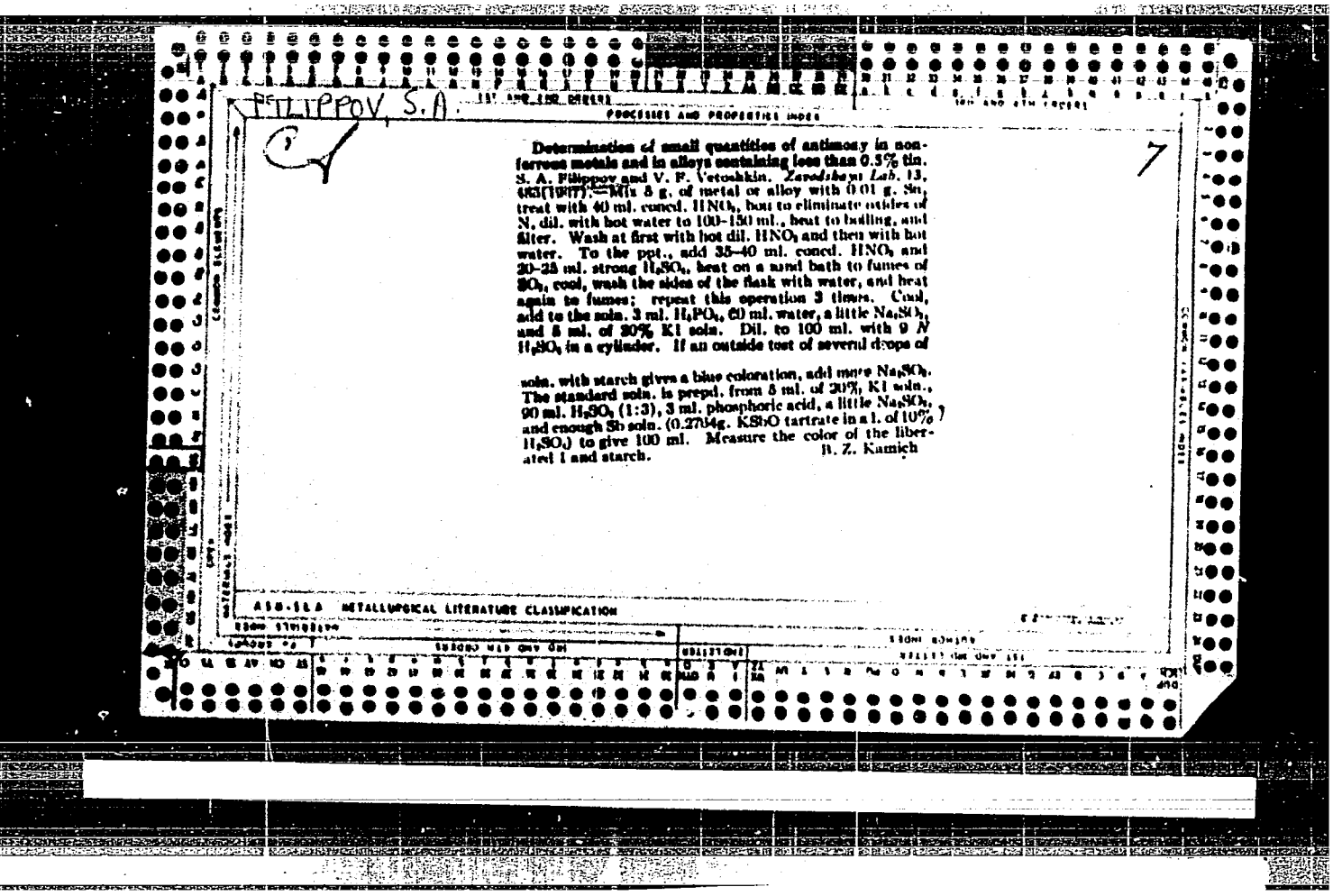

FILIPPOV, S.A.

PROCESSES AND PROPERTIES INDEX

Determination of small quantities of antimony in non-ferrous metals and in alloys containing less than 0.5% tin. S. A. Filippov and V. F. Vetoshkin. *Zavodskaya Lab.* 13, 483(1947).—Mix 5 g. of metal or alloy with 0.01 g. Sn, treat with 40 ml. concd. HNO_3, boil to eliminate oxides of N, dil. with hot water to 100–150 ml., heat to boiling, and filter. Wash at first with hot dil. HNO_3 and then with hot water. To the ppt., add 35–40 ml. concd. HNO_3 and 20–25 ml. strong H_2SO_4, heat on a sand bath to fumes of SO_3, cool, wash the sides of the flask with water, and heat again to fumes; repeat this operation 3 times. Cool, add to the soln. 3 ml. H_3PO_4, 60 ml. water, a little Na_2SO_3, and 5 ml. of 30% KI soln. Dil. to 100 ml. with 9 *N* H_2SO_4 in a cylinder. If an outside test of several drops of soln. with starch gives a blue coloration, add more Na_2SO_3. The standard soln. is prepd. from 5 ml. of 30% KI soln., 90 ml. H_2SO_4 (1:3), 3 ml. phosphoric acid, a little Na_2SO_3, and enough Sb soln. (0.2764g. KSbO tartrate in a l. of 10% H_2SO_4) to give 100 ml. Measure the color of the liberated I and starch. B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

U

USSR/General Problems of Pathology - Immunity.

Abs Jour : Ref Zhur Biol., No 5, 1959, 22632

Author : Filippov, S.A.

Inst : Military Medical Academy

Title : The Influence of Pentoxyl on the Processes of Immunogenesis.

Orig Pub : Tr. Voyen.-med. akad., 1957, 77, 117-154

Abstract : Rabbits (6) were immunized with 3 subcutaneous injections of tetravaccine (TV) and tetanus anatoxin (TA). At the same time, the experimental animals received each daily 40 mg/kg of pentoxyl (I). In the serum of experimental and control animals, the agglutinin titer (AT) of O,H and Flexner-C and of tetanus antitoxin, was determined as well as phagocytic activity (PA) of leucocytes with the cultures of typhoid and dysentery bacilli and Staphylo-

Card 1/2

CIA-RDP86-00513R000413120

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.A.

Correct methods for determining the tasks of reducing production costs. Tekst. prom. 20 no. 12:4-5 D '60. (MIRA 13:12)
(Costs, Industrial)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

MIKHEYEV, M. N., KUZNETSOV, I. A., TOMILOV, G. S., AND FILIPPOV, S. D.

Magnetic Control of the Depth of the Hardened Layer and of the Hardness of Steel Tools Hardened by High-Frequency Currents

A mobile coercivity meter of M. N. Mikheyev's design for magnetic control of the depth of the hardened layer, treated by high frequency currents, is described. Experiments proved that the depth of the hardened layer, its hardness as well as that of the core are in constant ratio with the readings of the coercivity meter. (RZhFiz, No. 8, 1955)
Tr. in-ta Fiziki Metallov Uralsk Fil. AN SSSR, No. 14, 1954, 43-47.

SO: Sum. No. 744, 8 Dec 55 - Supplementary Survey of Soviet Scientific Abstracts (17)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

DOMRYNIN, G.K.; KONSTANTINOVA, N.A., inzh., retsenzent; FILIPPOV, S.D., inzh., red.; KUTNEKOVA, G.M., tekhn.red.

[Painting machinery for delivery to tropical countries; experience of the Ural Heavy Machinery Plant] Okraska mashinnogo oborudovaniia, postavliaemogo v strany s tropicheskim klimatom; iz opyta Ural'skogo zavoda tiazhelogo mashinostroeniia. Sverdlovsk, TSentr.biuro tekhn.informatsii, 1959. 38 p. (MIRA 14:4)

1. Russia (1917- R.S.F.S.R.) Sverdlovskiy ekonomicheskiy administrativnyy rayon. Sovet narodnogo khozyaystva.
(Sverdlovsk--Painting, Industrial)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

ERLIKH-MELAMED, G.M.; FILIPPOV, S.F.

Remote control system for limited conductor lines of centralized traffic control in underground mines. Gor.zhur. no.8:50-52 Ag '65. (MIRA 18:10)

1. Konstruktorskoye byuro TSvetmetavtomatika.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S. F.

Filippov, S. F. "The problem of planning the development of young cattle", Trudy Kirgiz. nauch.-issled. in-ta zhivotnovodstfa, Issue 9, 1948, p. 161-74 /Animal Husbandry
Bibliog: 10 items

So: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

HUNGARY/Nuclear Physics - Structure and Properties of Nuclei C-

Abs Jour : Ref Zhur Fizika, No 3, 1960, 5329

Author : Dav"dov, A.S., Filippov, S.F.

Inst : Moscow State University.

Title : Collective Excited States of Even-Even Atomic Nuclei

Orig Pub : Acta phys. Acad. scient. hung., 1958, 9, No 1-2, 169-176

Abstract : The energy of collective excited states is calculated under the assumption that the nuclei have an axial symmetry. Conditions are obtained under which the collective excitations can be separated into rotational and vibrationa. See also Referat Zhur Fizika, 1958, No 6, 12634 .

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

12(3) SOV/127-59-3-5/22

AUTHOR: Yermolayev, V.I. and Filippov, S.F., Engineers

TITLE: The Remote Control of Electric Locomotives in Places Where Trolleys are Loaded and Unloaded (Distantsionnoye upravleniye elektrovozami v mestakh pogruzki i razgruzki sostavov)

PERIODICAL: Gornyy zhurnal, 1959, Nr 3, pp 19-24 (USSR)

ABSTRACT: The Konstruktorskoye byuro Tsvetmetavtomatika (Design Office Tsvetmetavtomatika) developed a system for the remote control of electric locomotives in mines. Reverse "forward" and "backward" contactors are switched on alternately into a power circuit (figure 1) according to the "ordered" movement of the locomotive. The "Stop" order is executed by switching off the previously isolated zone of the contact cable from the contact circuit. The system was developed for electric locomotives 7KR and 10 KR. It works on voltages from 135 to 300 v and at not less than 3,000 ohm resistance of the insulat-

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

The Remote Control of Electric Locomotives in Places Where Trolleys are Loaded and Unloaded.

ion of the contact cable. A detailed description of the system is given. It was tried out under industrial conditions in the Degtyarka copper mine, and in 1958 was put into normal exploitation. The Nal'chik Plant Tsvetmetpribor is organizing the serial production of the equipment. There is 1 scheme and 2 Soviet references.

ASSOCIATION: (Tsvetmetavtomatika) Moscow.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

ANFILOV, A.A., inzh ; BAKALEYNIK, Ya.M., inzh.; BIRGER, G.I., inzh.; BRUK, B.S., inzh.; BUROV, A.I., inzh.; GINZBURG, V.L., inzh.; ZABELIN, V.L., inzh.; ZAPLECHNYY, Ye.G., inzh.; ISAYEV, D.V., inzh.; KLIMOVITSKIY, A.M., inzh.; KRYUCHKOV, V.V., inzh.; KOTOV, V.A., inzh.; LEYDERMAN, A.Ye., inzh.; PODGOYETSKIY, M.L., inzh.; SAZHAYEV, V.G., inzh.; SEVASTYANOV, V.V., inzh.; FILIPPOV, S.F., inzh.; FROMBERG, A.B., inzh.; SHNEYEROV, M.S., inzh.; ERLIKH, G.M., inzh.; VERKHOVSKIY, B.I., red.; ZUBKOV, G.A., red.; KARKLINA, T.O., red.; OVCHARENKO, Ye.Ya., red.; ANTONOV, B.I., ved. red.

[New means of automatic and centralized control for nonferrous metal mines] Novye sredstva avtomatizatsii i dispetcherskogo upravleniia dlia rudnikov tsvetnoi metallurgii. Moskva, Nedra, 1965. 93 p. (MIRA 18:4)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

KRYUCHKOV, V.V.; FILIPPOV, S.F.; ERLIKH-MELAMED, G.M.

Automatic control system for railroad signaling with the control of switches from the cabin of an electric train's engineer. Gor.zhur. no.8:53-55 Ag '65. (MIRA 18:10)

1. Konstruktorskoye byuro TSvetmetavtomatika.

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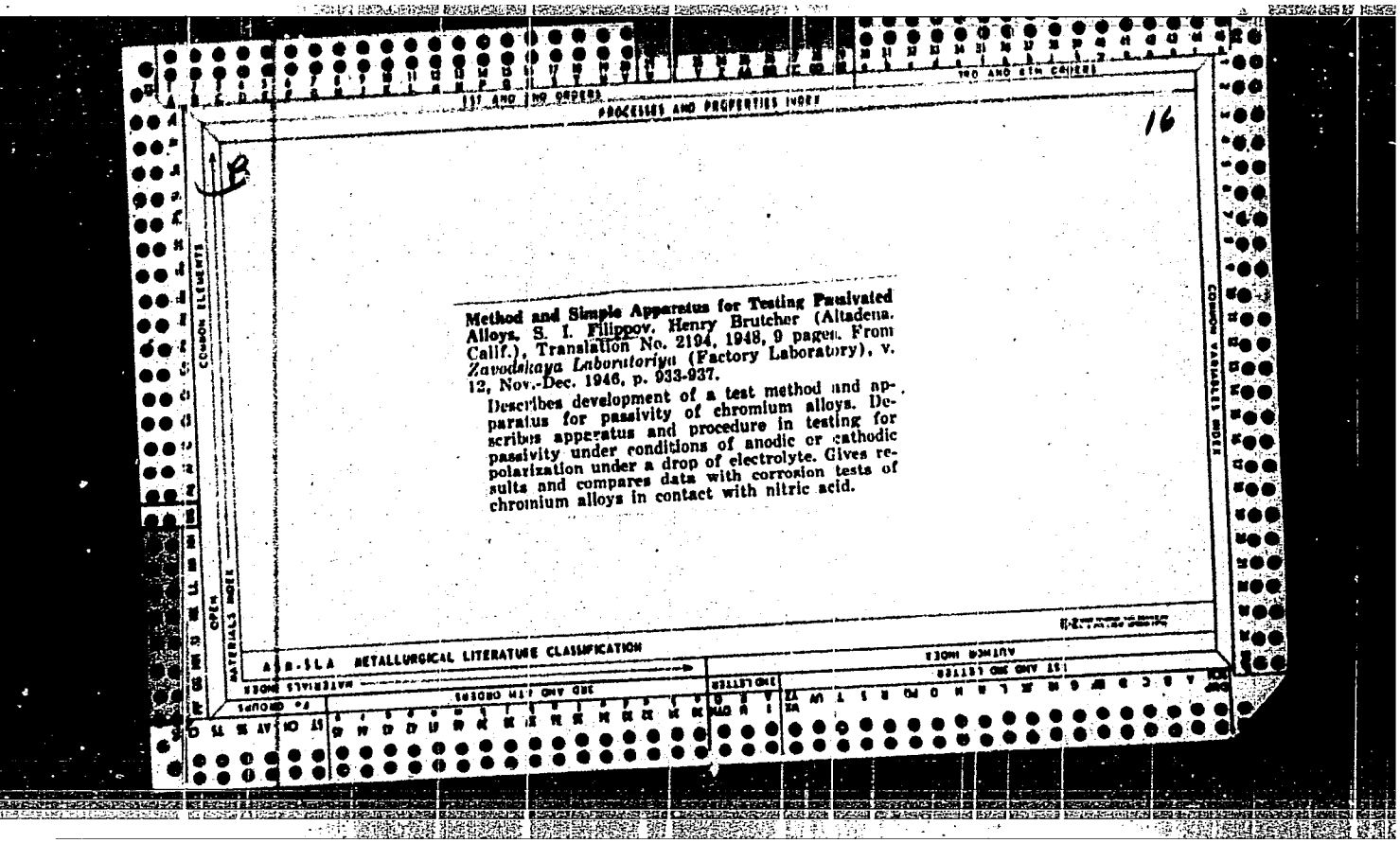

PROCESSES AND PROPERTIES INDEX

16

Method and Simple Apparatus for Testing Passivated Alloys. S. I. Filippov. Henry Brutcher (Altadena, Calif.), Translation No. 2194, 1948, 9 pages. From *Zavodskaya Laboratoriya* (Factory Laboratory), v. 12, Nov.-Dec. 1946, p. 933-937.

Describes development of a test method and apparatus for passivity of chromium alloys. Describes apparatus and procedure in testing for passivity under conditions of anodic or cathodic polarization under a drop of electrolyte. Gives results and compares data with corrosion tests of chromium alloys in contact with nitric acid.

A.S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

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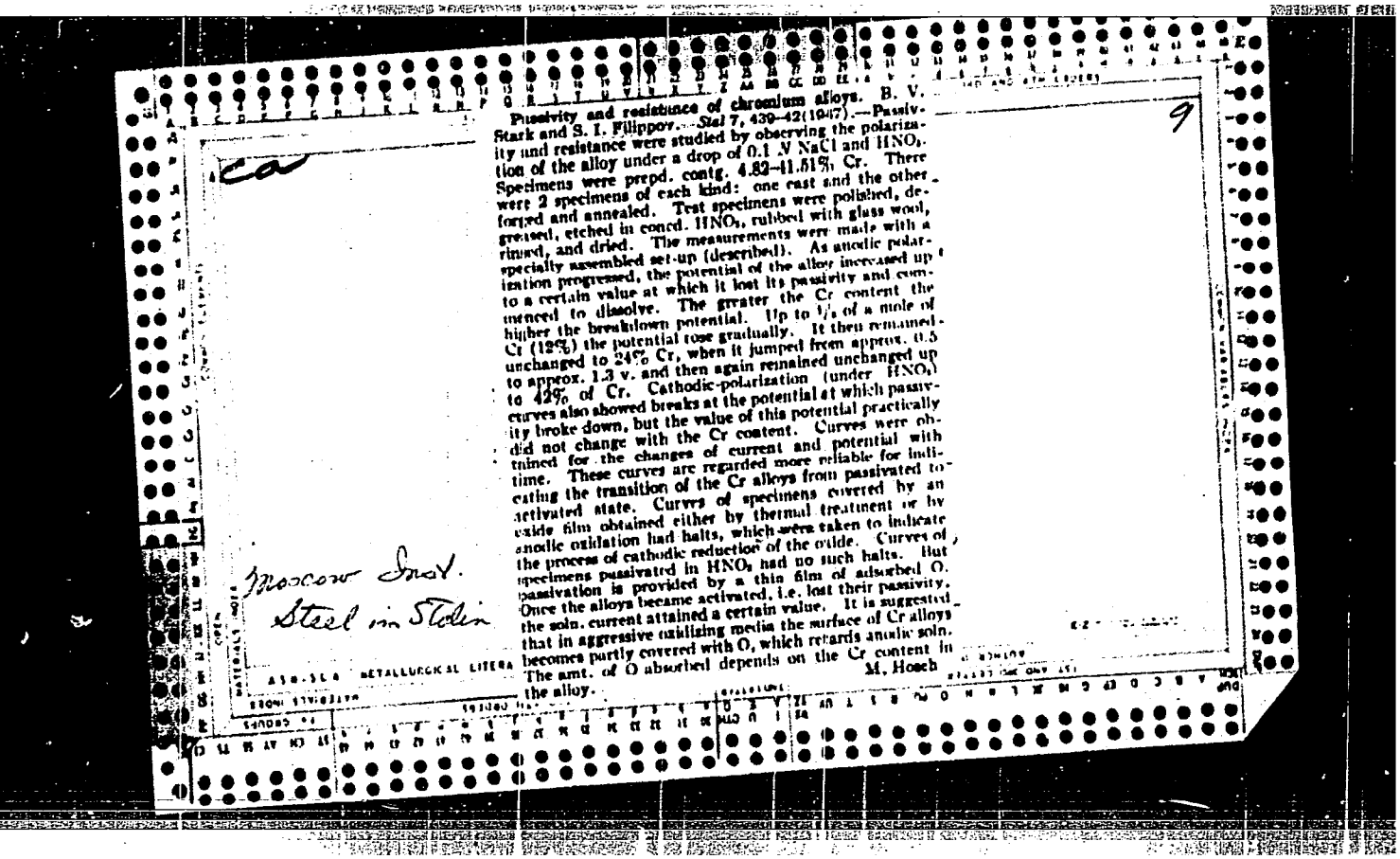

Passivity and resistance of chromium alloys. B. V. Stark and S. I. Filippov. *Stal* 7, 439–42(1947).—Passivity and resistance were studied by observing the polarization of the alloy under a drop of 0.1 *N* NaCl and HNO_3. Specimens were prepd. contg. 4.82–11.51% Cr. There were 2 specimens of each kind: one cast and the other forged and annealed. Test specimens were polished, degreased, etched in concd. HNO_3, rubbed with glass wool, rinsed, and dried. The measurements were made with a specially assembled set-up (described). As anodic polarization progressed, the potential of the alloy increased up to a certain value at which it lost its passivity and commenced to dissolve. The greater the Cr content the higher the breakdown potential. Up to 1/8 of a mole of Cr (12%) the potential rose gradually. It then remained unchanged to 24% Cr, when it jumped from approx. 0.5 to approx. 1.3 v. and then again remained unchanged up to 42% of Cr. Cathodic-polarization (under HNO_3) curves also showed breaks at the potential at which passivity broke down, but the value of this potential practically did not change with the Cr content. Curves were obtained for the changes of current and potential with time. These curves are regarded more reliable for indicating the transition of the Cr alloys from passivated to activated state. Curves of specimens covered by an oxide film obtained either by thermal treatment or by anodic oxidation had halts, which were taken to indicate the process of cathodic reduction of the oxide. Curves of specimens passivated in HNO_3 had no such halts. But passivation is provided by a thin film of adsorbed O. Once the alloys became activated, i.e. lost their passivity, the soln. current attained a certain value. It is suggested that in aggressive oxidizing media the surface of Cr alloys becomes partly covered with O, which regards anodic soln. The amt. of O absorbed depends on the Cr content in the alloy.

M. Hoseh

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S. I.

Stark, B. V., and Filippov, S. I., "Surface Phenomena in the Processes of Extracting Carbon From Steel." Symposium, "Properties of Steel." Metallurgizdat, 1949.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

C-11

Adsorption phenomena on the surface of liquid steel. B. V. Stark and S. I. Filippov. *Inst. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1949, 413–20.—Surface tension of steel melts was detd. in an 8-kg. induction furnace by passing N_2 through a capillary inserted in the melt. An increase in the C or O content of the melt decreased the surface tension, indicating that C and O were surface-active elements. Adsorption of C and O on the phase boundaries was calcd. from the surface tension data. When C and O were in equil. in the melt, the surface tension curve passed a max. which corresponded to equal adsorption of C and O. An excess of O was required in the melt for decarburization to proceed; this excess was a max. when C adsorption was at a max., and at a min. when C and O adsorption were equal. H. W. Rathmann

Moscow Inst. of Steel im Stalin -

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.I., dotsent.

Kinetics of the reduction of metal oxides. Sbor.Inst.stali no.31: 5-13 '53. (MLRA 9:9)

1.Kafedra teorii metallurgicheskikh protsessov.
(Reduction, Chemical) (Chemistry, Metallurgic)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, Sergey Ivanovich

Academic degree of Doctor of Technical Sciences, based on his defense, 24 March 1955, in the Council of the Moscow Order of Labor Red Banner Institute of Steel imeni Stalin, of his dissertation entitled: "A Study of the Regularity of the Process of Decarbonization in Liquid Steel."

Academic degree and/or title: Doctor of Tech Sciences

SO: Decisions of VAK, List no. 25, 10 Dec 55, Byulleten' MVO SSSR, Uncl. JPRS/NY 548

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, Sergey Ivanovich; KAZACHKOV, Ye.A., redaktor; ZINGER, S.L., redaktor izdatel'stva; PETROVA, N.S., tekhnicheskiy redaktor

[Theory of the process of steel decarburization] Teoriia protsessa obezuglerozhivaniia stali. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 166 p. (MLRA 9:9)
(Steel--Metallurgy)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

Filippov, S.I.

Theory of a Deterioration in the Properties of Steamer

MIT

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.I., doktor tekhnicheskikh nauk; PILICHKIN, I.F., inzhener; ARSENT'YEV, P.P., dotsent, kandidat tekhnicheskikh nauk; YAKOVLEV, V.V., kandidat tekhnicheskikh nauk.

Technological characteristics of bessemer smelting and properties of soft steel. Sbor. Inst. stali no.35:70-101 '56. (MLRA 10:8)

1. Kafedra teorii metallurgicheskikh protsessov.
(Bessemer process) (Steel--Metallography)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

Filippov, S.I.

GOMOZOV, L.I., inzhener; REYTBLAT, V.L., inzhener; FILIPPOV, S.I., doktor tekhnicheskikh nauk.

Using models for the study of processes in steel teeming equipment. Sbor. Inst. stali no.35:201-211 '56. (MLRA 10:8)

1. Kafedra teorii metallurgicheskikh protsessov.
(Smelting--Equipment and supplies)
(Dimensional analysis)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.I., ARSENTYEV, P.P.

"Admixtures, Concentration Ratios and Properties of Iron,"
lecture given at the Fourth Conference on Steelmaking, A.A. Baikov Institute of Metallurgy, Moscow, July 1-6, 1957

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.I., YAKOVLEV, V.V.

"The Laws of Nitrogen Absorption By Liquid Iron,"
lecture given at the Fourth Conference on Steelmaking, A.A. Baikov Institute of Metallurgy, Moscow, July 1-6, 1957

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

Filipov, S.I.

18(5) PHASE I BOOK EXPLOITATION SOV/2295

Moscow. Institut stali

Primeneniye kisloroda v staleplavil'nom proizvodstve (Use of Oxygen in Steelmaking) Moscow, Metallurgizdat, 1957. 418 p. (Series: Its: Sbornik, 37) Errata slip inserted. 3,500 copies printed.

Ed.: Ye. A. Borko; Ed. of Publishing House: Ya. D. Rozentsveyg; Tech. Ed.: Ye. B. Vaynshteyn; Editorial Board of the Institute: M.A. Glinkov, Doctor, Professor; R.N. Grigorash, Candidate of Technical Sciences, Docent; N.T. Gudtsov, Academician; V.P. Yelyutin, Doctor, Professor; A.A. Zhukhovitskiy, Doctor, Professor; I.N. Kidin, (Resp. Ed.) Doctor, Professor; B.G. Livshits, Doctor, Professor; A.P. Lyubimov, Doctor, Professor; I.M. Pavlov, Corresponding Member, Academy of Sciences, USSR; K.G. Trubin, Doctor, Professor; and A. N. Pokhvisnev, Doctor, Professor

PURPOSE: This collection of articles is intended for scientific, industrial, chemical, and metallurgical engineers, physicists

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

and students.

COVERAGE: This book is a collection of scientific research papers on the utilizations of oxygen in steelmaking. The use of oxygen blast for the intensification of fuel combustion and the introduction of oxygen into liquid metal in order to oxidize admixtures are among the topics discussed. The use of oxygen in scrap-ore processes for making steel from pig iron with a high phosphorus content is also discussed. Several articles deal with the heating and processing fundamentals of steelmaking in a recirculation steel-melting furnace. Individual articles deal with the economics of steelmaking with oxygen-blast and the optimum conditions for effective utilization of oxygen. No personalities are mentioned. References follow each article.

TABLE OF CONTENTS:

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

The authors study the possibilities of shortening heat time by forced decarbonization, and by reheating metal during the rimming period with oxygen blast.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

This article deals with the thermal and technical aspects of a 10-ton industrial recirculation steel-melting furnace with simultaneous fuel feed from both ends accompanied by the application of oxygen-enriched air.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

Filippov, S.I.

137-1958-1-368

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 57 (USSR)

AUTHORS: Arsent'yev, P.P., Yakovlev, V.V., Filippov, S.I., Filichkin, I.F.

TITLE: Bessemer Process Technology and the Quality of Converter Produced Metal (Tekhnologiya bessemerovskogo protsessa i kachestvo konverternogo metalla)

PERIODICAL: V sb.: Fiz.-khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 21-27; Diskus. pp 160-187

ABSTRACT: Melts in bottom-blown and side-blown converters and in open hearth furnaces have been used to study the effect of [P], [N], and [O] on the properties of Bessemer steel. In comparing the properties of rimmed steel smelted in a side-blown converter and in an open hearth furnace it was established that an increase in [P] from 0.014 to 0.070% results in only a decline in the viscosity of the metal at room temperatures and does not affect its tendency to age. By comparing the properties of steel smelted in side-blown and bottom-blown converters with different amount of pig, and those of rimmed open hearth metal with elevated [P], it was found that an increase from 0.006 to 0.025% of the [N] in the metal induces a decline in the a_k of steel at room temperature. The appearance

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137-1958-1-368

Bessemer Process Technology (cont.)

of a joint effect of [O] and [N] revealed by comparison of the mechanical properties of rimmed and killed Bessemer steel shows that an increase in the content thereof promotes increased susceptibility to aging, while on deoxidation of steel all [O] and [N] are bound into stable compounds and do not call forth any aging tendency.

E.T.

1. Bessemer converters--Operation 2. Open hearth furnaces--Operation 3. Steel--Properties--Effects of phosphorus 4. Steel --Properties--Effects of nitrogen 5. Steel--Properties--Effects of oxygen

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.I.

137-1958-1-213

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 33 (USSR)

AUTHOR: Filippov, S. I.

TITLE: An Experimental Study of the Reaction Equilibrium of Carbon and Oxygen in Molten Iron (Eksperimental'noye izucheniye ravnovesiya reaktsii ugleroda i kisloroda v zhidkom zheleze)

PERIODICAL: V sb.: Fiz.-khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 220-225. Diskus, pp 332-334

ABSTRACT: The equilibrium of the oxidation of C in solution in molten Fe is studied. The investigations employ the static method. The design of the vacuum equipment for experimental study of the reaction equilibrium of C and O in liquid Fe is adduced. An optical pyrometer was used to determine the temperature of the metal (M). The data obtained embrace a 0.02 - 1.2 percent C content range and a pressure interval from 0.23 to 1.00 at. The following was found to hold for the oxidation reaction of C dissolved in molten Fe:

$\log K = \log [C][O]/p_{CO} = 1070/T - 3.075$; $\Delta H = 4900$;

$\Delta F^0 = -48934 + 14.06\ T$.

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137-1958-1-213

An Experimental Study of the Reaction Equilibrium of Carbon (cont.)

The reaction between carbon dissolved in liquid Fe and the O is endothermic at temperatures > 1510°. In the light of experimental data adduced for 1 at pressure and 1550° temperature, the relationship between O and C content of liquid Fe is expressed by an equilibrium curve having two different parts. The curve segment for > 0.5 percent C content in the M is very nearly an equilateral hyperbola, and this renders superfluous any concepts on the activities of components dissolved in Fe. The magnitude of the produce of $[C] \cdot [O]$ for these conditions has the constant value 0.00323. When the C content of the M is <0.5 percent, the curve deviates from the hyperbolic, and this is intimately related to the laws governing surface phenomena.

I. P.

1. Carbon--Oxidation reaction--Analysis 2. Iron (Liquid)--Carbon --Oxidation reaction

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.I., prof., doktor tekhn.nauk.

Oxidation kinetics of charge elements during the oxygen blow in the metal bath. Sbor. Inst. stali no.37:5-21 '57.
(MIRA 11:3)

1.Kafedra teorii metallurgicheskikh protsessov Moskovskogo instituta stali im. I.V. Stalina.
(Oxidation) (Smelting)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

SOV/137-58-7-14230

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 38 (USSR)

AUTHOR: Filippov, S.I.

TITLE: Mechanisms of Oxidation of Impurities During Oxygen Blowing Through a Liquid Metal (Zakonomernosti okisleniya primesey pri produvke zhidkogo metalla kislorodom)

PERIODICAL: V sb.: Primeneniye kisloroda v metallurgii. Moscow, Metallurgizdat, 1957, pp 138-145

ABSTRACT: Experiments were conducted in a magnesia crucible in a high-frequency furnace. It was determined that under the action of O_2 the rate of oxidation of the impurities increases, and it is greater during the blowing of O_2 through the metal than with surface action. The oxygen blown through is spent mainly on the oxidation of Si and Mn. C has a comparatively high rate of oxidation when the quantities of Mn and Si in the original metal are low or when the contents of these elements in the liquid bath are considerably lowered at the end of the smelting stage. The effectiveness of the action of O_2 manifests itself only during the time of the blow. During the intervals between blows the behavior of the impurities in the liquid metal corresponds

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

Mechanisms of Oxidation of Impurities During Oxygen Blowing (cont.)

to their oxidation by the action of air or slag on the metal and there is no noticeable effect of the O_2. This is attributable to the fact that during the blowing O cannot be absorbed in the metal in noticeable quantities. The rates of oxidation of impurities grow with an increase of their concentration up to certain critical amounts above which they are independent of the concentration of the elements. With an increase in the blow rate of O_2 per unit time the rate of oxidation of Mn and Si increases considerably and their critical concentrations are displaced towards higher values. The effect of the rate of blowing upon the oxidation of C is found to be small, owing to the concurrent effect on the rate of its oxidation of the temperature and the intensity of the burning of Si and Mn; with an increase of the input of O_2 the processes of oxidation of Mn and Si are quickened to the detriment of the reaction of oxidation of C. It is demonstrated theoretically that the independence of the rates of oxidation from the composition of the metallic bath at impurity concentrations higher than certain critical values and the acceleration of the rate of reaction with increased rate of blowing are related to the development of an interaction of O with the liquid melt in the diffusion region of reaction; the retarding factor in the process is the transfer of O from the oxidizing phase into the reaction zone. The limiting factor in the presence of a lower than critical concentration becomes the transfer of the element from

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Mechanisms of Oxidation of Impurities During Oxygen Blowing (cont.)

the metal into the reaction zone; hence, the rate of oxidation processes is found to be a function of the composition of the bath.

V.M.

1. Liquid metals--Purification 2. Chemical impurities--Oxidation 3. Oxygen --Applications

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

FILIPPOV, S.I.

LEONIDOV, N.K.

25(5) PHASE I BOOK EXPLOITATION SOV/1497

Akademiya nauk SSSR. Institut nauchnoy i tekhnicheskoy informatsii

Metallurgiya SSSR, 1917-1957, t. 1 (Metallurgy of the USSR, 1917 - 1957, Vol. 1) Moscow, Metallurgizdat, 1958. 745 p. 3,000 copies printed.

Ed. (Title page): I. P. Bardin, Academician; Ed. (Inside book): G. V. Popova; Tech. Ed.: O. G. Bakher.

PURPOSE: The book is intended for scientific workers and engineers in metallurgical plants and in the machine-building industry. It may also be used by students in advanced courses in metallurgical vuzes.

COVERAGE: This collection of articles covers extensively practical and theoretical developments in Soviet metallurgy during the last 40 years. The material deals with the discovery and development of the major ore deposits and the growth of the metal industry in various parts of European and Asiatic USSR. Research institutes, laboratories, their location, and the names of the scientists and engineers involved are listed. Many papers contain so many references and names of various personalities that it was considered beyond the scope of the coverage of each article to list them. The authors claim that the processes, methods and theories described in this book reflect the most recent developments in Soviet metallurgy.

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Metallurgy of the USSR (Cont.) SOV/1497

kinetic behavior of slags and metal has also been studied. The present trend is to apply new scientific achievements in physics and electronics to control and check steel making processes by a fully automatic system on an industrial scale. There are 50 Soviet references.

Filippov, S.I. Development of the Science of the Kinetics of Steel Making Processes in the USSR 361

It is stated that the study of metallurgical processes in the USSR is based on the classic principles of thermodynamics. The author gives numerous equations, formulas and graphs to illustrate his point. Some of these calculations explain certain regularities of oxidizing reactions. For general application of these formulas it is necessary first to obtain empirically the constants for the rate of the chemical reactions. There are 34 references, 24 Soviet, 7 English, and 3 German.

Krasnykh, I.F., and F.A. Bakharuk. The Technology of Producing Ferroalloys 381

A description is given of a number of ferroalloys currently produced in the USSR. The most important is said to be ferrosilicon which requires 52 percent of electric power used in the ferroalloy industry. Other alloys

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FILIPPOV, S.I.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

AUTHOR: Filippov, S. I. SOV/163-58-1-6/53

TITLE: The Critical Concentration in the Kinetics of Steel Melting Processes (Kriticheskiye kontsentratsii v kinetike stale-plavil'nykh protsessov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1, pp 26-30 (USSR)

ABSTRACT: The oxidation process in steel melting is a process of several stages with diffusion character. In the transfer of the components to be alloyed in the steel melting in diffusion processes the so-called inter-phase limit is of special interest. The concentration of the components to be alloyed at which a maximum surface tension occurs is termed the critical concentration. The isothermal lines of the surface tension in iron-carbon alloys were plotted in respect to carbon. The greatest change in the specific free surface energy was found at a carbon concentration of 0,20 %. The oxidation process in steel melting is under certain conditions hampered by the components to be alloyed. At the critical concentration the diffusion current of the components to be alloyed is balanced. The following equation

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The Critical Concentration in the Kinetics of Steel Melting Processes

was suggested for the calculation of the critical concentration of various elements:

$$\frac{(C_K)_1}{(C_K)_2} = \frac{(C_p)_1}{(C_p)_2}$$

$(C_p)_1$ and $(C_p)_2$ are equilibrium concentrations of the elements to be oxidized.

The oxidation process of the elements to be alloyed is determined by the metal analysis and the measurement of the surface tension. The kinetic curves of the oxidation of carbon and manganese as well as the change of the surface tension of the alloy in the oxidation of silicon and manganese were plotted. From the course of the kinetic oxidation of manganese and carbon it may be seen that the oxidation of C and Mn up to a certain concentration in the melt takes place at a constant rate, and that afterwards a considerable deviation in the kinetic curve is found. In the case of a simultaneous combustion of the elements to be alloyed a change of the extent of surface tension is regularly observed. The hypo-

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The Critical Concentration in the Kinetics of Steel Melting Processes

thesis of the critical concentration mentioned above has to be taken into account in the investigation of the mechanism and the kinetics of steel melting processes. There are 4 figures and 2 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy institut stali
(Moscow Steel Institute)

SUBMITTED: October 12, 1957

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

SOV/163-58-2-4/46

AUTHORS: Filippov, S. I., Yakovlev, V. V., Arsent'yev, P. P.

TITLE: The Importance of the Temperature Factor in Converter Processes (Znacheniye temperaturnogo faktora dlya konverternykh protsessov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 2, pp. 24-28 (USSR)

ABSTRACT: The investigation of the converter processes as dependent upon temperature was carried out. When comparing the combustion of carbon in the converter with the temperature applied it may be seen that an intense decarbonization in metals occurs only from 1500°C on. The change of the carbon, silicon and magnesium content in the metals when blowing through the Bessemer converter was investigated according to time and temperature. The comparison of the combustion curves of carbon with those of silicon and magnesium showed that some dependence exists between the beginning of the intense decarbonization and the content of silicon and magnesium. At a temperature of the metallic melt of about 1500°C an intense decarbonization occurs, and at higher temperatures this process becomes even more intense. The

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

The Importance of the Temperature Factor in Converter Processes

character of the decarbonization does not depend on the concentration of carbon in the melt and is not affected by the interaction between carbon and silicon and magnesium; it most probably only depends on the temperature. The authors assume that at the critical temperature of the iron-carbon melts a change of the properties of the alloys occurs. The comparative investigations of the carbon content and the temperature displayed that it is not the thermodynamics or the concentration ratio of the components but only the oxidation conditions on the occasion of blowing through the converter as well as the temperature factor that determine the decarbonization process of the metallic melt. There are 3 figures and 3 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: December 10, 1957

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

AUTHORS: Filippov, S. I., Antonenko, V. I. SOV/163-58-3-1/49

TITLE: Characteristic Features of the Oxidation Kinetics of Carbon at a Low Content of Carbon in the Metal Melt (Osobennosti kinetiki okisleniya ugleroda pri nizkikh soderzhaniyakh yego v metallicheskoy vanne)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 5 - 9 (USSR)

ABSTRACT: The characteristic kinetic features of the decarburization of low-carbon steel were investigated. The investigations were carried out in quartz test tubes by means of high-frequency furnaces in an argon atmosphere. The velocity of the addition of the oxidizing agents to the metals and the yield of the gaseous products after the reaction were determined by means of capillary rheometers. The course of the oxidation of the carbon was traced during the reaction, and is given in figure 1. The curve of the separation of carbon monoxide specifies the kinetics of the process; it consists of three parts. The de-

Card 1/4 carburization process limits the oxygen transfer in the

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

reaction zone to the critical concentration of the carbon in metals. When the addition of the oxidizing agent is increased the curve takes an rising course. The horizontal part of the curve points to the constancy of the process. The critical concentration of carbon in dependence on the intensity of the addition of the oxidizing agent was investigated. The rate of the decarburization process decreases constantly and is determined by the following equation:

$$-\frac{dC}{d\tau} = S/V \cdot K \cdot [C]$$

$$K = \frac{K_x \cdot \gamma}{K_x + \gamma} ,$$

where S/V denotes the ratio between the reaction surface and the volume of the melt, [C] the carbon content of the metal, and K_x and γ the constants of reaction velocity and the carbon transfer. The carbon content

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

in the metal melt is determined for any point by means of the content of the carbon monoxide formed; it is useful to represent it by the following equation:

$$[C] = [C]_0 + \sum_n^0 (v\tau).$$

The constants of the decarburization velocity were determined at different carbon contents in the metals, the mean temperature having been 1560° C. From the results obtained may be concluded that the decarburization process in the case of an intense action of gaseous oxidizing agents on the liquid metal takes place much more slowly than in the case of its moderate action. There are 5 figures and 3 references, which are Soviet.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413120006-4

Characteristic Features of the Oxidation Kinetics of Carbon at a Low Content of Carbon in the Metal Melt

SOV/163-58-3-1/49

SUBMITTED: April 5, 1958

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