

NIKITIN, A.A., Doc Techn Sci -- (diss) "Study of elementary and  
differential mechanisms (problems of their theory and method  
for selecting their type)." Len, 1958, 32 pp with ~~sketches~~,  
6 sheets of tables (Min of Higher Education USSR, Len Polytechnic  
Inst im G.I. Kalinin) 110 copies (PL, 27-57, 1 7)

100/1137010002-6

AUTHOR: Nikitin, A.A., Candidate of Technical Sciences

TITLE: Selection of the Variant of a Planetary Infinitely Variable Transmission (Vybor modifikatsii planetarnogo variatora)

PERIODICAL: Vestnik Mashinostroyeniya 1978, Nr 3, pp 28-31 (USSR)

ABSTRACT: The type of infinitely variable transmission is examined in which two or more conical pulleys with axes set at an angle are mounted as satellites and an encircling ring driven by friction on its inside by both pulleys forms one of the sun members (Graham transmission). The conical pulleys are so set that their outward edges are parallel. According to the position of the friction ring along the pulleys, the transmission ratio varies. A number of layouts are possible - two layouts which differ in the arrangement of the inner sun member (internal or external gear) are shown in fig. 1. The analytical study is based on kinematic designs. The simple kinematics, large output range, compactness and relatively high efficiency are praised. The kinematics are considered, assuming a slip of 2% to the friction.

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Selection of the Variant of a Planetary Infinitely Variable Transmission

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pair. Formulae are given for the torque ratios. Cases of self-locking are considered. Table I gives transmission efficiencies and torque ratios for each of the two directions of power transmission and, in each case, for each of the three characteristic ranges of transmission ratios. The basic requirements are: 1) an adequate level of efficiency; 2) a good sensitivity to control; 3) a minimum tangential force transmitted by the friction pair; 4) a large speed reducing ratio to allow the use of a fast electric drive. Table II shows the fulfillment of each requirement by the various combinations of direction of power drive and transmission ratio ranges. Each combination is denoted by an order number and called a "variant." The table shows that no variant fulfils all demands and some variants are possible only around a 1:1 ratio with change of direction; near the 1:1 ratio, without change of direction, the transmission has its highest range of efficiency and the smallest tangential force transmitted.

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Selection of the Variant of a Planetary Internally Variable Transmission

by friction; the control sensitivity, however, is small; 2) a control range which includes a range of direction can only be accomplished in those variants where the power flows from the planet carrier to the sun gear and not in the opposite direction. Some numerical examples are given to illustrate the use of the tables and formulae. The mechanical efficiency of the transmission developed by Isidoro MASO is shown to have a substantially larger range of control than for the friction transmission. Another example shows that the planetary friction transmission can be used to provide a drive with an input speed of 100 RPM and an output speed controllable from 0 to 100 RPM. There are 3 figures, 3 tables and 2 Sverdrup relations.

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AUTHOR: Nikitin, A.A. SOV/122-59-3-35/42

TITLE: Investigation of Planetary and Differential Mechanisms  
(Issledovaniye planetarnykh i differentsial'nykh  
mekhanizmov)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 3, p 87 (USSR)

ABSTRACT: Author's summary of a dissertation, submitted to the Leningrad Polytechnic Institute (Leningradskiy Politekhnicheskiy Institut) Imeni M.I. Kalinin, for the attainment of the Degree of Doctor of Technical Sciences. The identical nature of all existing methods of the force analysis of differential (or planetary) mechanisms is established. Assumptions are formulated on which they are based. The inadequacy of these methods for a refined force analysis is shown. A method of force analysis of differential mechanism is developed which permits taking into account the presence of centrifugal inertia forces and gyroscopic effects of the satellite assemblies. A new method has been developed for selecting the number of teeth in the pinion of a differential mechanism. The physical

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Investigation of Planetary and Differential Mechanisms

significance of the phenomenon of power circulation is shown up and the conditions for its existence are established. Examining reduction gear schemes has made it possible to select the most suitable which is recommended for practical application.

Card 2/2

S. 45/630 1/000/011/014  
D262/D304

AUTHOR: Nizetin, A. A., Candidate of Technical Sciences, D. 40'

TITLE: Permissible cutting speed under varying conditions of cutting

PERIODICAL: Izvestiya vysshikh inzhnykh shkol. Mashinostroyeniye, no. 6, 1966, 116-117.

TEXT: The mean cutting speed under varying cutting conditions is determined by applying a known empirical formula, which can be written by

$$V_T = \frac{V}{x} \frac{1}{y} \left( \frac{I_H}{S} \right)^K K_1 \text{ and}$$

and

but with the addition of a new term that affects  $K_{21}$  which is defined by the author.

Card 1 of 1

Permissible cutting speed under ...  $S_{max}$  ...  
D.60 D60

$k$  and  $l$  denote the first and all subsequent sections of the shaft respectively). The method of applying the proposed formula for turning of cylindrical, conical and flat shapes is explained in detail. Comparison of theoretical and experimental values for  $K_{ad}$  shows that the errors are negligible. Here are table 4 figures and 7 Soviet references.

ASSOCIATION: Dnepropetrovskiy institut inzhenerov i naukovirovaniya  
go transporta (Dnepropetrovsk Institute of Railroad  
Engineers)

SUBMITTED: December 8, 1964

Card 4.4



NIKITIN, A.A., kand.tekhn.nauk, dotsent

Commutating closed differential variable-speed drive. Izv. vys.  
ucheb. zav.; mashinostr. no. 3:11-25 '61. (MIRA 14:5)

1. Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo transporta.  
(Gearing)

NIKITIN, A.A.

Electromechanical speed variator with a wide regulation  
range. Teor. mash. i mekh. no.92/93:5-16 '62.  
(MIRA 16:11)

NIKITIN, A.A., kand.tekhn.nauk, dotsent

Cutting off with a blade under varying cutting conditions.  
Vest.mashinostr. 42 no.9:73-77 S '62. (MIRA 15:9)  
(Cutting machines)

NIKITIN, A.A., kand. tekhn. nauk

Uniformity of the existing methods of power calculations  
for differential and planetary mechanisms. Trudy DIIT no.24:  
226-274 '54. (MIRA 16:11)

NIKITIN, A.A., kand. tekhn. nauk dots.; SERGEYEVA, I.N., red.

[Specialized machine-tools of the wheel shop] Spetsializirovannye stanki koleasnogo tsekha. Moskva, Vses. zaochnyi in-t inzhenerov zheleznodorozhnogo transporta. No.2. 1964. 62 p. (MIRA 19:1)

4625460 (1) GW  
ACC NR: AP6027325 SOURCE CODE: UR/0043/66/000/002/0146/0149

AUTHOR: Nikitin, A. A.; Yakubovskiy O. A.

ORG: none

TITLE: Lines of forbidden transitions involving the first excited configurations  $sp^2$  in the isoelectronic sequence of the (solar) corona. Part III: The forbidden transitions  $sp^2 \ ^4P + s^2p^2P$

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 2, 1966, 146-149

TOPIC TAGS: forbidden transition, solar corona, ionization

ABSTRACT: The results of approximate calculations of the probabilities of transition between the metastable term  $sp^2 \ ^4P$  and the ground state  $s^2p^2P$  are presented. As in previous papers in this series, special attention is directed to the two isoelectronic sequences BI, CII, NIII, ... ( $2s2p^2$  configuration) and AlI, SiII, PIII, ... ( $3s3p^2$  configuration). A knowledge of these probabilities is needed in order to study the intensities of the lines in the basic multiplets of the two sequences mentioned above, and are also necessary for a study of step ionization processes which take place via the metastable intermediate state  $sp^2 \ ^4P$ . The calculated transition probabilities are compared with the relative intensities of the lines observed experimentally. Agree-

UDC: 523.77

Cord 1/2

ACC NR: AP6027325

ment with experimental data is found to be good if the two lines correspond to one and the same upper level, but is somewhat reduced if the two transitions start with upper levels having different  $J$ . Because of the present lack of sufficiently pure samples of the atoms considered, experimental data for purposes of comparison is available only for a few of the lines. It is found that "step ionization" processes occurring via the metastable  $^4P$  state can be most significant in the  $2s2p^2$  series for CII and NIII. The lines of the forbidden multiplet  $sp^2 \ ^4P + s^2p^2P$  are most intense in the  $3s3p^2$  series; these lines can be seen both in the laboratory and also in the spectra of some stars. Transition probabilities are presented in tabular form. Orig. art. has: 5 tables, 3 formulas.

SUB CODE: ~~20/~~ 03/

SUBM DATE: 17May65/

ORIG REF: 004/

OTH REF: 005

Card 2/2 *adh*

L 46123-66 EWT(1) CW

ACC NR: AP6027324

SOURCE CODE: UR/0043/66/000/002/0142/0145

45  
B

AUTHOR: Nikitin, A. A.; Yakubovskiy, O. A.

ORG: none

TITLE: Lines of forbidden transitions involving the first excited configuration  $sp^2$  in the isoelectronic sequence of the (solar) corona. Part II: Magnetic-dipole transitions between terms  $sp^2$

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 2, 1966, 142-145

TOPIC TAGS: solar chromosphere, forbidden transition, magnetic dipole, solar corona

ABSTRACT: Estimates are given for the probability of magnetic-dipole transitions between the  $sp^2$  terms  $^2P$ ,  $^2S$ ,  $^2D$  and  $^4P$  of the two isoelectronic sequences BI, CII, Nii, ...( $2s2p^2$ ) and AII, SiII, PIII, ...( $3s3p^2$ ). It is found that for elements with large  $Z$ , the magnetic-dipole transitions between the  $sp^2$  terms  $^2S$ ,  $^2P$ ,  $^2D$ , and  $^4P$  dominate heavily over the quadrupole transitions between those same terms. However, for elements standing at the beginning of the isoelectronic sequences, the allowed quadrupole transitions are more important. The results presented in tabular form, are compared with the earlier calculations of Garstang. The agreement is good for Si X and not as good for Fe XIV. It is found that there are important transitions which termi-

UDC: 523.77

Card 1/2



NIKITIN, A.A.; LOKSHIN, V.S.; KORNEYEV, F.I.; GODASS, V.O.

Treatment of titanium-zirconium sands of sea origin. TSvet.  
met. 36 no.2:8-15 F '63. (MIRA 16:2)  
(Ore dressing)                      (Placer deposits)

SEDOVA, G.A.; NIKITIN, A.A.

Methods of determining the content of minerals in placers. TSvet.  
met. 36 no.9:8-11 S '63. (MIRA 16:10)

NIKITIN, A.A.; DOKSHIN, V.S.

Increase the output of ore dressing plants by reorganization and expansion. TSvet. met. 36 no.11:6-8 N '63. (MIRA 17:1)

NIKITIN, A.A.; DOKSHIN, V.S.

Electrostatic separation as a progressive method of ore dressing.  
Obog. rud 9 no.4:17-21 '64. (MIRA 18:5)

VOROB'YEV, K.F.S.; KRHEMINSKIY, S.A.; KRUPIN, A.A.; MAZHROV, D.Ya.;  
NIKITIN, A.A.

Burning lime in suspension. Stroi. r t. ll no.1:4-8 Ja '65.  
(MIRA 18:6)

MAMKIN, A.M., insh.; NIKITIN, A.A., insh.

BDPN-2,2 semimounted heavy harrow. Trakt.1 sel'khozmasb.  
no.1:36-37 Ja '60. (MIRA 13:4)  
(Harrow)

NIKITIN, A.A., inzh.

Automatic temperature regulation in autoclaves. Stroim. mat.  
5 no.8:9-10 Ag '59. (MIRA 12:12)  
(Autoclaves) (Temperature regulators)

NIKITIN, A.A., inzh.

Coveyor for making cement and lime-sand roofing tiles.  
Stroi.mat. 6 no.4:23-24 Ap '60. (MIRA 13:6)  
(Conveying machinery) (Tiles, Roofing)



VARLAMOV, A.S.; MIKHAYLOV, I.N.; NIKITIN, A.A.; PUCHKOV, Ye.P.;  
TARKHOV, A.G.

Some features of the method of processing the results of geo-  
physical research in direct prospecting for diamonds in the  
Yakut A.S.S.R. Izv. vys. ucheb. zav.; geol. i razv. 3 no.12:88-  
97 D '60. (MIRA 14:5)

L. Moskovskiy geologorazvedochnyy institut imeni S. Ordzhonikidze.  
(Yakutia--Diamonds)  
(Prospecting--Geophysical methods)

NIKITIN, A.A., inzh.; GALITSKIY, B.A.; KOGAN, A.B.; SAMOKHIN, G.F.

Programmed control of the steaming process in autoclaves.  
Sbor. trud. ROSNIIMS no.17:39-54 '60. (MIRA 14:12)  
(Automatic control)  
(Autoclaves)

NIKITIN, A.A., kand. tekhn.nauk, dots.; KARINSKAYA, L.P., red.;  
SERGEYEVA, I.N., red.

[Machine tools for the machining of wheel pair axles; text-book on the subjects "Study of metals, technology of metals and special machines," "Study of metals, technology of metals and building materials" for the fifth and sixth year and graduating students specializing in "Car construction, operation and maintenance" and "Diesel locomotive operation, maintenance and repair"] Stanki dlia obrabotki osei kolesnykh par; uchebnoe posobie po distsiplinam "Metallovedenie, tekhnologiia metallov i spetsstanki," "Metallovedenie, tekhnologiia metallov i konstruksionnykh materialov" dlia studentov V, VI kursov i diplomnikov spetsial'nostei: "Vagonostroenie i vagonnoe khoziaistvo" i "Teplovozy i teplovozhnoe khoziaistvo." Moskva, Vses. zaochnyi in-t inzhenerov zheldor. transporta, 1963. 79 p. (MIRA 17:3)

IZRAITEL', S.A., otv. red.; SKURAT, V.K., otv. red.; ZUBAREV,  
S.N., otv. red.; MOISEYEV, S.L., otv. red.; ASTAF'YEVA,  
A.V., kand. tekhn. nauk, red.; VAS'KOVSKIY, Ye.L., red.;  
VISHNEVSKIY, Ye.L., red.; KRIVTSOV, B.S., red.; KOROTKIN,  
I.N., red.; MITROFANOV, S.I., doktor tekhn. nauk, red.;  
NORKIN, V.V., kand. tekhn. nauk, red.; NIKITIN, A.A., red.;  
RUDNEV, A.P., red.; SLASTUNOV, V.G., red.; TKACHEV, F.A.,  
red.; RAUKHVARGER, Ye.L., kand. tekhn. nauk, red.;  
FEOKTISTOV, A.T. [deceased], red.; ZAYTSEV, A.P., red.

[Safety regulations for the dressing and sintering of fer-  
rous and nonferrous metal ores] Pravila bezopasnosti pri  
obogashchenii i aglomeratsii rud tsvetnykh i chernykh me-  
tallov. Moskva, Nedra, 1964. 106 p. (MIRA 18:4)

1. Russia (1917- R.S.F.S.R.) Gosudarstvennyy komitet po  
nadzoru za bezopasnym vedeniyem v promyshlennosti i gor-  
nomu nadzoru.

NIKITIN, A.A.

Determining the resultant of reactive soil resistances in the vertical  
projection plane during the operation of disk tools. Trakt. 1  
sel. zamash. no.9:28-29 S '65. (MIRA 18:10)

L 11650-66 EPA/EWF(w)/EWF(f)/ETC(m) WW/EM  
ACC NR: AT6001025 SOURCE CODE: UR/2563/65/000/247/0086/0093

AUTHOR: Nikitin, A. A.; Seleznev, K. P.; Shkarbul', S. N. 50  
B+

ORG: Leningrad Polytechnic Institut im. M. I. Kalinin (Leningradskiy politekhnicheskiy institut)

TITLE: Some results of studies of centrifugal compressor inlets

SOURCE: Leningrad. Politekhinicheskiy institut. Trudy, no. 247, 1965. Turbo-mashiny (Turbomachines), 86-93

TOPIC TAGS: compressor, centrifugal compressor, jet engine, turbojet engine

ABSTRACT: In designing centrifugal-compressor inlets, it is desirable to select a geometry in which losses are minimal and the flow field is uniform. The calculation of inlet geometry, however, presents several difficulties, since it involves flow deflection from the radial to the axial direction and the effect on flow structure of the wake caused by the shaft. At the Leningrad Polytechnic Institute im. M. I. Kalinin, the flow of an inviscid incompressible fluid was studied by an electro-hydrodynamic-analog method using a wooden model impregnated with paraffin, copper plate electrodes, graphite probes, and diluted  $H_2SO_4$  as an electrolyte for determining the flow field. The results showed that the velocity field was highly nonuniform so that an inlet designed according to present design recommendations is inadequate. Further experiments were made with an annular inlet having the form of a helical chamber. From the total and static pressure measure-

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L 11650-66

ACC NR: AT6001025

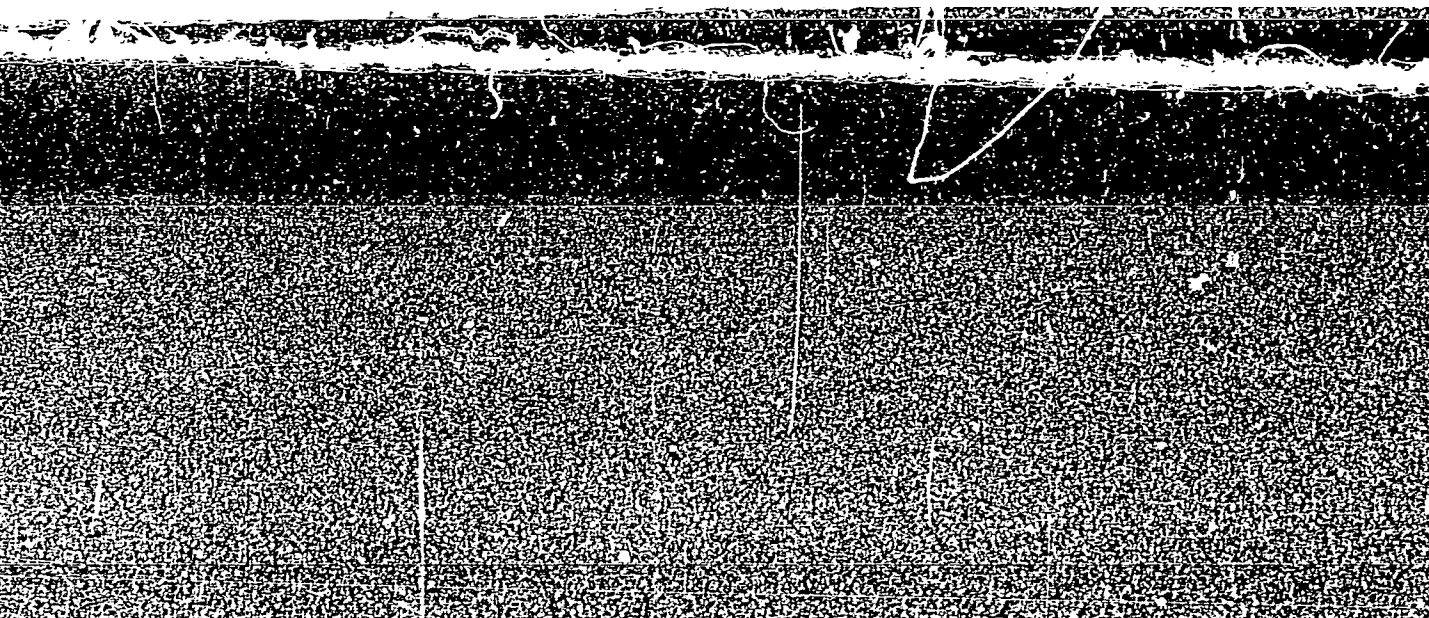
ments, pressure distribution curves were obtained and several conclusions concerning  
the inlet geometry were drawn. Orig. art. has: 4 figures. [PV]

SUB CODE: 21/ SUBM DATE: none/ ORIG REF: 002/ ATD PRESS: 4175

Card 2/2

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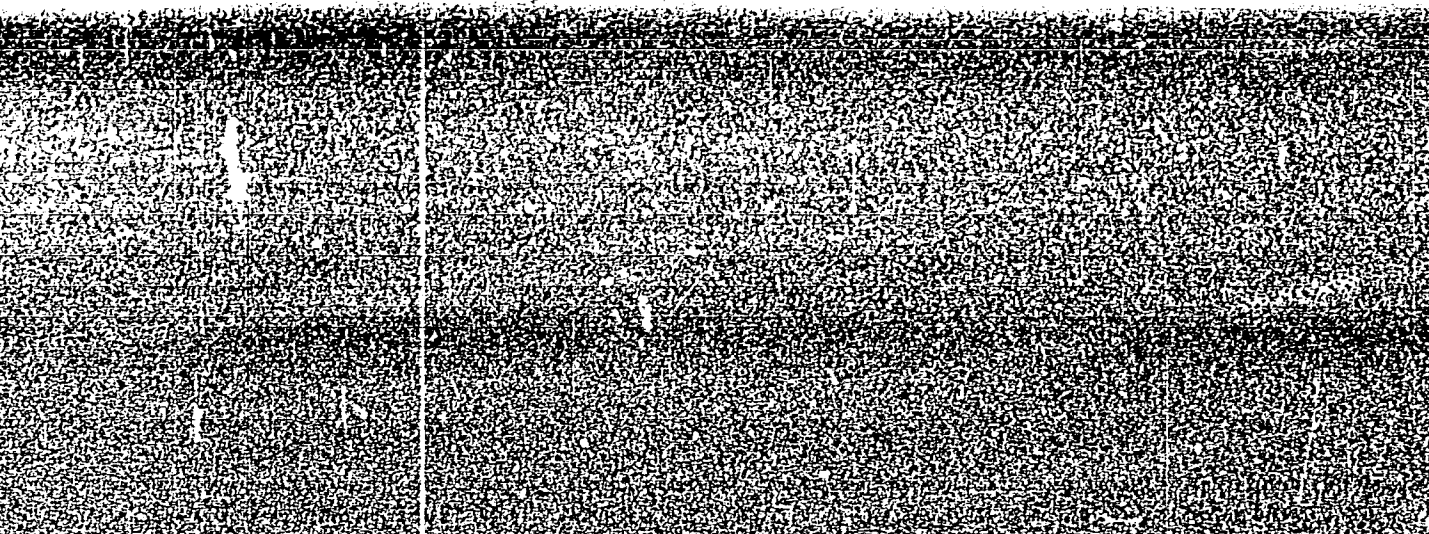
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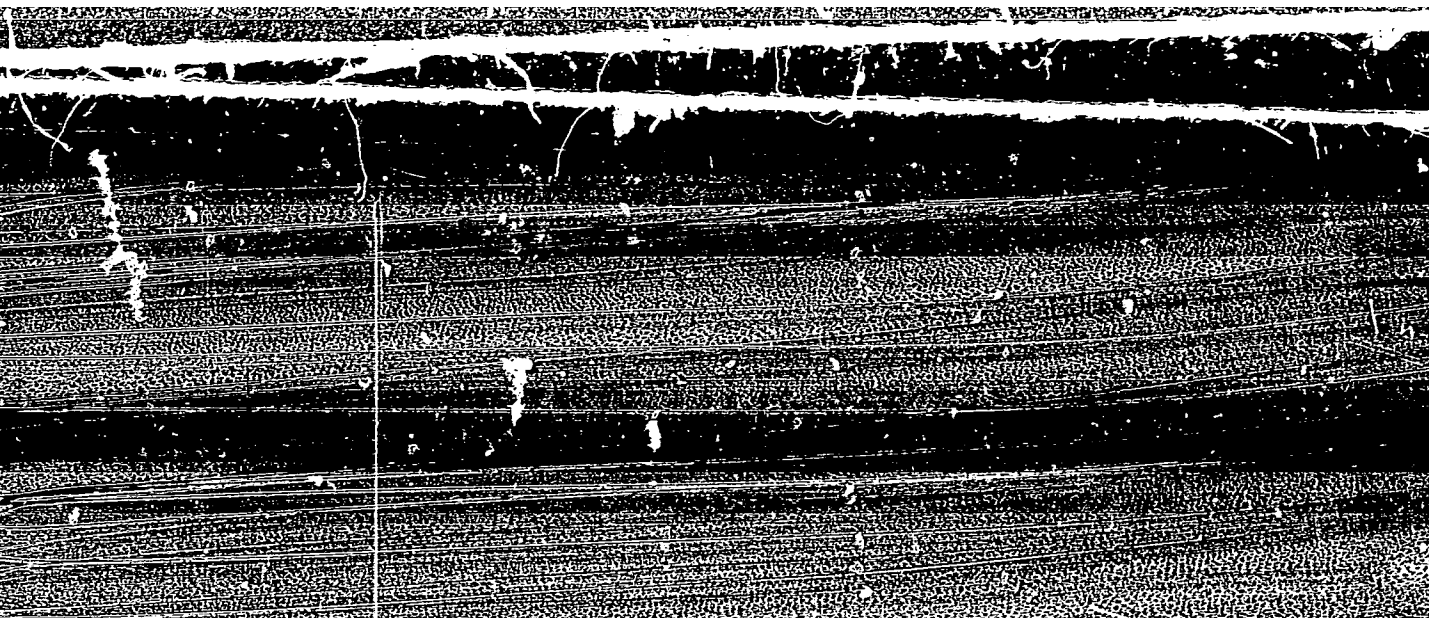


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SOV/124-58-1 .38

Translation from: Referativnyi zhurnal, Mekhanika, 1958, Nr 1, p 92 (USSR)

AUTHOR: Nikitin, A. D.

TITLE: On the Resistance Forces Encountered in the Forcing of a Concrete Mixture Through a Pipe (O silakh soprotivleniya protalkivaniyu betonnoy smesi po trubam)

PERIODICAL: V sb.: 15-ya nauchn. konferentsiya Leningr. inzh. stroit. in-ta, Leningrad, 1957, pp 337-339

ABSTRACT: The flow of a concrete mixture is considered to be a creeping motion of layers lying in planes that are perpendicular to the axis of the pipe. It is assumed that the friction of a layer with respect to an adjacent one impedes displacements so effectively that inertial motions may be disregarded. The author adduces the fundamental equations of creeping motions, an expression for the force that retards the motion of the lubrication layers, and a final expression for the viscous friction force as a function of the cement-particle dimensions, the speed of motion of the plunger, the viscosity coefficient of the concrete paste, and the thickness of the lubrication at the plunger.

V. I. Gotovtsev

Card 1 of 1

NIKITIN, A.F., polkovnik; BELIKOV, M.A., podpolkovnik, redaktor; KAZAKOVA, V. Ye.,  
tehnicheskii redaktor

[Political activity in the army company] Politicheskie zaniatia v  
rote. Moskva, Voen. izd-vo Ministerstva obor. SSSR, 1954. 103 p.  
[Microfilm] (MIRA 9:3)  
(Russia--Army--Education, Nonmilitary)

NIKITIN, A.F., prof. (Leningrad)

*Origins of Russian medicine; medicine in Scythia.* *Sov. med.* 21  
no.9:129-134 S '57. (MIRA 11:1)

(HISTORY, MEDICAL

in Russia, origins in ancient Scythia)

KABENKIN, V.V., tekhn.; NIKITIN, A.F.

Modernizing the system of pneumatic flux feed to the semi-  
automatic PDSM-500 welding machine. Svar.proizv. no.8:32  
Ag '60. (MIRA 13:7)

1. Belorusskiy avtomobil'nyy zavod.  
(Welding—Equipment and supplies)

NIKITIN, A.G.

Small trolley and cable electric locomotive. Gor. zhmr. no.1:67 Ja '57.  
(MLRA 10:4)

1. Glavnyy konstruktor instituta VNIlgormet.  
(Electric locomotives) (Mine railroads)

NIKITIN, A.G.

Machine for steel shot manufacture. Gor.zhur. no.6:75 Je 12,  
(1975 10:0)

1.Glavnyy konstrukt for Vsesoyuznogo nauchno-issledovatel'skogo  
instituta Gornemash.

(Metalworking machinery)



VOLODARSKIY, V.Ya.; NIKITIN, A.G.

Using standard 100 kc radio frequency. Izv.tekh. no.9:53-54  
S '60. (MIRA 13:9)  
(Radio frequency)

KISLENKO, Nikolay Trofimovich; YASKIN, Ivan Vasil'yevich;  
ZABLITSKIY, Valentin Titovich; NIKITIN, A.G., rev.

[Repair of the ZIL motor trucks. Report. Gruzovyye avto-  
mobile' ZIL. Moskva, Transport, 1961. 32 p.  
(ZIL 131)]

NIKITIN, A.G., inzh.; NAGNIZOV, G.I., inzh.

Melioration work in the German Democratic Republic. Glav. 1 ser.  
16 no.10:55-62. 1964. (RDP 17:12)

1. Severnyy nauchno-issledovatel'skiy institut gidrotehniki i  
melioratsii.

VASIL'YEV, Mikhail Vasil'yevich; NIKITIN, Aleksandr Grigor'yevich;  
KUSOVNIKOV, Ye.N., red.; BARANOVA, L.G., takhn. red.

[Practices in land improvement on the "Detskosel'skii"  
State Farm] Opyt melioratsii zemel' v sovkhوزه "Detskosel'-  
skii." Leningrad, Sel'khozizdat, 1962. 77 p. (MIRA 16:5)

1. Glavnyy agronom sovkhوزه "Detskosel'skiy", Prinevskaya niz-  
mennost' Leningradskaya oblast' (for Vasil'yev). 2. Glavnyy  
inzhener sovkhوزه "Detskosel'skiy", Prinevskaya nizmennost'  
Leningradskaya oblast' (for Nikitin).  
(Reclamation of land)

NIKITEN, Aleksey Georgiyevich;KLENNIKOV, V.M., red.; GALAKTIONOVA, Ye.N.,  
tekh. red.

[Maintenance of GAZ automobiles] Regulirovka legkikh avtomobilei  
GAZ. Izd.2., perer. i dop. Moskva, Nauchno-tekhn. izd-vo M-va  
avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1961. 93 p.  
(MIRA 15:3)

(Automobiles--Maintenance and repair)

L 33488-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6012732

SOURCE CODE: UR/0136/66/000/004/0084/0086

AUTHOR: Belyayev, A. I.; Fisher, A. Ya.; Nikitin, A. G.

ORG: none

TITLE: Liqutation-electrolytic method of refining aluminum alloys

SOURCE: Tsvetnyye metally, no 4, 1966, pp 84-86

TOPIC TAGS: aluminum alloy, magnesium alloy, electrolytic refining, filtration/V95  
aluminum alloy, MGS5 magnesium alloy

ABSTRACT: The Al alloys melted from scrap and wastes usually contain a high Fe content which must be reduced to (for most of the deformable alloys) 0.3-0.5% before they can be fit for use. This is usually accomplished by the magnesium method of refining, which, however, has inherent technical limitations. In this connection, the authors discuss a modification of this method, which they first had patented in 1964 (A. I. Belyayev, A. Ya. Fisher, A. G. Nikitin, Byull. izobr. 1964, no 9, avt. svid. 162323), based on the electrolytic separation of Mg on the principle that the electrode potential of Mg is more electronegative than that of Al and other components of the alloy. The following optimal process parameters have been experimentally determined:

313

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UDC: 669.715.47

L 33488-66

ACC NR: AP6012732

electrolyte composition (in wt.%): 10-18  $MgCl_2$ , 35-50 KCl, 35-40 NaCl, 10-20  $BaCl_2$  and 1-2  $CaF_2$ ; electrolysis temperature 700-720°C; cathode and anode current density 1 a/cm<sup>2</sup>. During the electrolysis a nearly total (up to 99.95%) recovery of Mg from the anodic alloy is possible. The possibility of the electrolytic separation of Mg from the filter-residues of magnesium refining is also established. The complete cycle of refining reduces the impurity content as follows (in %): Fe, from 1.0-2.5 to 0.05-0.3; Si, from 0.9-1.0 to 0.15-0.25; Ni, from 0.5 to 0.25-0.40; Mn, from 0.4 to 0.15-0.20; the content of Cu and Zn remains the same. The Mg separated at the cathode is retreatable (Fig. 1). The advantages of the liquation-electrolysis method compared with the conventional refining by means of Mg are as follows: 1) the electrolyzers operate continuously, by contrast with vacuum furnaces, thus assuring a higher productivity and hence also lower capital investments and lower manpower and overhead expenditures; 2) consumption of hydrogen is eliminated; the electrolyzers can be tended without any risk of explosion; 3) by contrast with the Mg condensate of vacuum furnaces, cathodic Mg may, after treatment, be utilized as a Mg alloy (MGS5) or metal. Economic calculations show that the production cost of the deformable Al alloys produced by this method from low-grade secondary raw materials is 55% lower than the production of the same alloys melted from primary Al. The electrolytic separation of Mg from the alloys is more economical than the currently practiced elimination of Mg

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L 33488-66

ACC NO. AP6012732

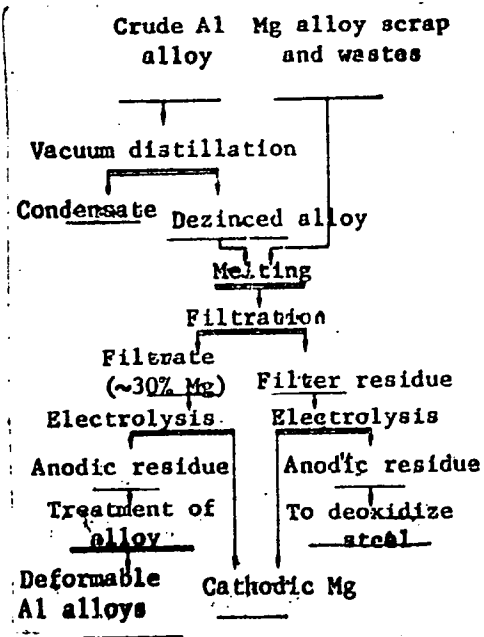


Fig. 1. Flowsheet of the combined method of refining crude Al alloys

Card 3/4



L 10396-66 EWT(1)/EEC(k)-2/EPF(n)-2/EWA(h) WW/AT

ACC NR: AP5026900 SOURCE CODE: UR/0109/65/010/010/1809/1813

AUTHOR: <sup>44,55</sup> Basov, N. G.; <sup>44,55</sup> Strakhovskiy, G. M.; <sup>44,55</sup> Nikitin, A. L.; <sup>44,55</sup> Nikitina, T. F.;  
Tatarenkov, V. M.; <sup>44,55</sup> Uspenskiy, A. V.

ORG: <sup>44,55</sup> Institute of Physics, AN SSSR (Fizicheskiy institut AN SSSR)

TITLE: <sup>44,55</sup> Quantum generator with hydrogen-atom beam

SOURCE: <sup>25</sup> Radiotekhnika i elektronika, v. 10, no. 10, 1965, 1809-1813

TOPIC TAGS: quantum generator, atomic hydrogen ~~quantum generator~~

ABSTRACT: Construction of two <sup>21,44,55</sup> atomic-hydrogen quantum generators (QG) designed after H. M. Goldenberg, D. Kleppner, and N. F. Ramsay (Phys. Rev. Let., 1960, 5, 8, 361; and Phys. Rev., 1962, 126, 2, 603) is reported. Atomic hydrogen from gas-discharge source 1 passes ( $10^{11}$  -  $10^{12}$  particles per sec) through diaphragm 2 and is focused by magnet 3. The sectionalized vacuum

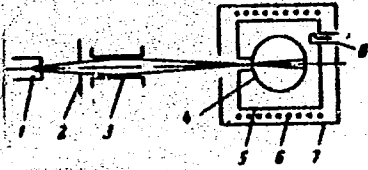
Card 1/2

UDC:  
2

L 10396-66

ACC NR: AP5026900

27



system uses ordinary N5SM pumps in the first sections and an ion-sorption titanium pump in the last section to achieve a vacuum of  $10^{-7}$  torr. Other parts of QG are: 4 - quartz teflon-lined bulb; 5 - resonator; 6 - solenoid for building an axial

magnetic field; 7 - magnetic shield ; 8 - coupling loop. A 0.01-0.02-sec pumping pulse, at a frequency corresponding to  $\lambda = 21$  cm transition, produced a post-radiation for 0.2-0.5 sec. The total estimated and measured relaxation constant was about 2 per sec, which corresponds to a lifetime of 0.5 sec. Data on frequency stability and shift is also given.

"The authors wish to thank A. M. Prokhorov and A. N. Orayevskiy for discussing the results and valuable advice; and L. P. Yelkina, G. A. Yelkin, A. N. Ponomarev, A. A. Ul'yanov, L. M. Zak, N. A. Begun, and O. S. Lyubogorov for their assistance in the project." Orig.

art. has: 5 figures and 6 formulas.

SUB CODE: 20 / SUBM DATE: 10Jul64 / ORIG REF: 000 / OTH REF: 004

jw

Card 2/2

*Nikitin, A. I.*

✓ Defects in Sinter-Plant Design. A. I. Nikitin. (Star, 1935, (5), 294-308). [In Russian]. Sintering practice at two sinter plants in the U.S.S.R. is described in detail in assembly defects, but design and operation. These and general ideas of sintering practice are discussed, and suggestions for improvements are made. —A. R.

*MG*

*of*

NIKITIN, A.I.; ARIKHAYEV, Ye.V.

Equipment shortcomings at the sintering shop at "Azovstal'" plant.  
Stal' 16 no.1:15-19 '56. (MLRA 9:5)  
(Zhdanov--Steel industry) (Sintering)

NIKITIN, Aleksey Ivanovich; ARBUZOV, Vladimir Antonovich; BAZANOV, F.M., red.;  
YABLONSKAYA, L.V., red.izd-va; EVENSON, I.M., tekhn.red.

[Sintering iron ores] Aglomeratsiia zheleznykh rud. Moskva, Gos.  
nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957.  
195 p. (MIRA 11:4)  
(Sintering)

S/103/60/021/06/11/016  
B012/B054

AUTHORS: Glushkov, V. M., Dashevskiy, L. N., Nikitin, A. I. (Kiyev)

TITLE: Utilization of Electron Computers for the Automation of  
the Bessemer Process

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 6,  
pp. 877 - 883

TEXT: The authors describe the automation of the control and regulation of the Bessemer process achieved after long experimental investigations which were carried out by the Dneprodzerzhinskiy vecherniy metallurgicheskii institut (Dneprodzerzhinsk Evening Institute of Metallurgy) and the zavod im. Dzerzhinskogo (Works imeni Dzerzhinskiy). The latter two establishments investigated the available nonautomatic controlling methods of the Bessemer process, and worked out new methods suitable for automation on the basis of high-speed electron computers. A system has to be worked out by which it is possible to interrupt the blowing of rail steel at a carbon content of 0.48 - 0.58%. In consideration of the burning rate of carbon of 0.007 - 0.008% per second, the instant of

Card 1/2

NIKITIN, Aleksy Ivanovich; CHUMACHENKO, T.I., red.; SYCHUGOV, V.O., tekhn.  
red.

[Pelletizing of iron ores] Pelletirovanie zheleznykh rud. Kiev,  
Gos. izd-vo tekhn. literatury USSR, 1961. 178 p. (MIRA 14:9)  
(Sintering) (Briquets)

ACCESSION NR: AT4019738

S/0000/63/000/000/0077/0080

AUTHOR: Nikitin, A. I.; Sergiyenko, I. V.

TITLE: Problems of control automation by several single-type entities using electronic computers

SOURCE: AN UkrRSR. Insty\*tut kibernety\*ky\*. Obchy\*slyuval'na matematy\*ka i tekhnika (Computer mathematics and engineering). Kiev, Vy\*d-vo AN UkrRSR, 1963, 77-80

TOPIC TAGS: control algorithm, machine memory estimate, machine speed estimate, Ressemer converter

ABSTN CT: The author raises questions on how to create algorithms for control by n units of the same type. Formulas are given for estimating the machine's memory and speed since these formulas are necessary in order to realize such control algorithms on electronic computers.

Also, numerical data are given for the calculation of the computer's parameters in creating algorithms for control in Ressemer converters at the Dzerzhinskiy metallurgical factory. Orig. art. has: 3 equations.

Card 1/2



ACCESSION NR: AT4019738

ASSOCIATION: none

SUBMITTED: 19Sep63

DATE ACC: 06Jan64

ENCL: 00

SUB CODE: MM

NO REF SCV: 000

OTHER: 000

Card 2/2

NEVEL'SON, M.I.; NIKOLIN, A.I.; YANISHEVSKIY, V.V.; BOYKO, G.G.; KUZNETSOV,  
N.I.; BULANOVA, T.A.; GOSHAPOV, V.I.; KATSMAN, I.A.; KUKAYEVA, Ye.V.;  
RYZHOVA, V.V.; TUROBOVA, V.I.; CHEREDEYEVA, Ye.M.; KOSHELKIN, M.V.

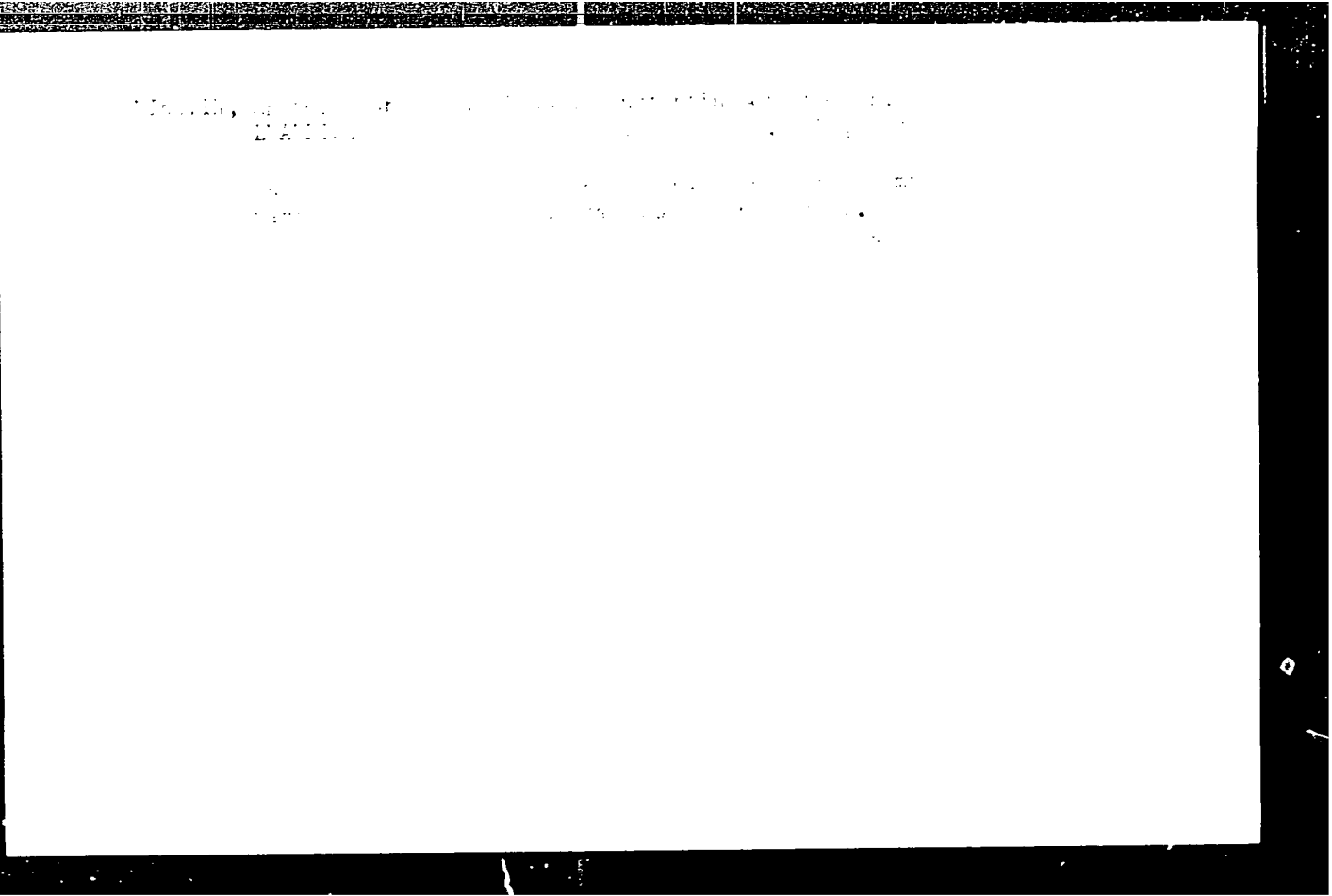
Development of highly efficient ventilator models ORGRES operating  
according to a 0.68-161° system for electric power plants. Prom.  
energ. 18 no.7:8-9 JI '63. (MIRA 16:9)

(Electric power plants—Electric equipment)  
(Fans, Electric)

GARBER, K.S., dotsent; NIKITIN, A.I.; LYAUDIS, B.V.; MALINOVSKIY,  
B.N., kand. tekhn.nauk; BEL'SKIY, O.I.; VOLKOV, L.G.;  
KUZNETSOV, M.P.; KUTSENKO, A.D., SOROKIN, A.A.; STAKHURSKIY,  
A.D.; TPEBITSYN, L.M.; TRUSEYEV, A.I.; SHAFRAN, I.K., inzh.;  
SHESTAK, P.I.; UL'YANOV, D.P.

Automatic control of converter smelting by means of computers.  
Stal' 23 no. 7:608-610 J1 '63. (MIRA 16:9)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz im. M.I.  
Arsenicheva (for Garger). 2. Institut kibernetiki AN UkrSSR  
(for Malinovskiy). 3. Zavod im. Dzerzhinskogo (for Shafran).



YURICHENKO, Yekaterina Logvinovna; MALINVSKIY, Boris Nikolayevich;  
POLISHCHUK, Galina Andreyevna; YADRENKO, Engelina  
Konstantinovna; MILIKH, Andrey Ivanovich;

[The "Enipro" mini-1 computer with a wide range of applica-  
tions and its programming programme programmer's manual]  
Spravochnik dlya nazhno shirokogo naznacheniya "Enipro"  
i programirovaniya dlya programy k nei; spravochnik prog-  
ramista. Moskva, 128-ye "Kutkova sumka," 1964. 279 p.  
(MIRA 17:8)

GARGER, K.S.; LYAUDIS, B.V.; NIKITIN, A.I.

Algorithm for determining the moment to stop the bessemer converter blowing of the heat at a prescribed carbon content with the help of a digital control computer. Report No.1. Izv. vys. ucheb. zav.; chern. met. 7 no.3:47-52 '64. (MIRA 17:4)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz.

GARGER, K.S.; LYAUDIS, B.V.; NIKITIN, A.I.

Algorithm to determine the moment for stopping the blowing  
of a Bessemer converter heat at a given temperature with  
the help of a controlling machine. Report no.2. Izv. vys.  
ushch. zav.; Chern. met. 7 no.7:53-57 '64 (MIRA 17:8)

1. Dneproderzhinskiy metallurgicheskiy zavod-vtuz.

MALINOVSKIY, M.N., otv. red.; NIKITIN, A.I., otv. red.;  
BELEZINETS, L.P., red.

[Cybernetic technology] Kiberneticheskaya tekhnika.  
Kiev, Naukova dumka, 1965. 165 p. (MIRA 18:9)

1. Akademiya nauk URSR, Kiev.



NIKITIN, A.I.; VASYUTINSKIY, N.N.; DNEPROVSKIY, V.Ya.

Devices for noncontact measurements of wall thickness of very thin-walled pipes. Avtom. i prib. no.2:34-36 Ap-Je '65. (MIRA 18:7)

NIKITIN, A.I.

Use of cytochemical methods in the examination of smears from the cervix uteri. Lab. delo no.8:474-476 '65. (MIRA 18:9)

1. Institut akusherstva i ginekologii dir.- chlen-korrespondent AMN SSSR prof. M.A. Petrov-Maslakov AMN SSSR i kafedra obshchey biologii (zav.- doktor med. nauk Ye. S. Gerlovin) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

ACC NR: AP6033286

SOURCE CODE: UR/0141/66/009/005/0923/0931

AUTHOR: Nikitin, A. I.; Strakhovskiy, G. M.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR (Vizicheskiy institut AN SSSR)

TITLE: Characteristics of a hydrogen beam maser 25

SOURCE: IVUZ. Radiofizika, v. 9, no. 5, 1966, 923-931

TOPIC TAGS: maser, hydrogen maser, hydrogen atom maser, hydrogen atom beam maser, HYDROGEN

ABSTRACT: A number of characteristics of a hydrogen beam maser were measured and the results discussed. Generated signal strength plotted against the intensity of the atom beam showed a sinusoidal pattern with a maximum at about 2/3 shutter opening, which is close to the theoretical calculated by D. Kleppner and others (Phys. Rev., 126, 1962, 603). Signal strength as a function of current in the focusing electro-magnet showed an asymptotically flattening pattern, which was highest for a medium beam density. Higher beam densities brought about a slump at about half the maximum signal strength. This slump was caused by the character of the dependence of the effective capture angle on the field strength at the pole. The downbend of the capture angle at higher

Card 1/2

UDC: 621.378.33

ACC NR: AP6033286

field strength coincided with the slump in the signal strength at higher currents. The signal strength as a function of the axial magnetic field strength of the resonator solenoid showed a very steep beginning with a maximum at  $2 \times 10^{-5}$  oe and a relatively slow drop at low (up to  $6 \times 10^{-5}$  oe) field strength range. The curve is the result of different factors whose effects become pronounced at different magnitudes of the field strength. The relaxation rate of atoms, signal strength at high field strength range of the solenoid, and the dependence of frequency on the beam density under various resonance conditions, field inhomogeneity, and field strength are discussed at some length. Orig. art. has: 14 figures and 5 formulas.

SUB CODE: 20/ SUBM DATE: 18Jan66/ ORIG REF: 005/ OTH REF: 002

Card 2/2

ACC NR: AP6033263 SOURCE CODE: UR/0109/66/011/010/1881/1885

AUTHOR: Nikitin, A. I.; Strakhovskiy, G. M.

ORG: none

TITLE: Transient processes in an H-atom-beam maser

SOURCE: Radiotekhnika i elektronika, v. 11, no. 10, 1966, 1881-1885

TOPIC TAGS: maser, gaseous state maser

ABSTRACT: The establishment of amplitude and phase of oscillations in an H-maser was investigated by means of an ENO-1 oscillograph. With stronger beams, the maser dead time was shorter and amplitude fluctuation was observed. The atom lifetime was 0.85 sec; average amplitude-fluctuation period, 1.8 sec. Oscillograms of the maser-starting process, with an overexcitation parameter  $\beta = 10, 7, 5.4, \text{ and } 2.7$  are shown, as is an oscillogram of oscillation collapse

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ACC NR: AP6033263

upon turning-off the beam. The phase establishment was studied by photographing the Lissajous ring on the oscillograph screen by a moving-picture camera (8 frames per sec). Phase fluctuation dies out during the period of amplitude build-up; amplitude fluctuation lasts longer. "The authors wish to thank A. V. Uspenskiy for his comments and discussion." Orig. art. has: 5 figures and 9 formulas.

SUB CODE: 20 / SUBM DATE: 29Jan66 / ORIG REF: 003 / OTH REF: 002

Card 2/2

S/193/60/000/009/008/013  
A004/A001AUTHORS: Trunin, V.G., Nikitin, A.I., Grishko, S.P.TITLE: The T $\beta$  (TV)-4 Thickness Gage ✓PERIODICAL: Byulleten' tekhniko-ekonomicheskoi informatsii, 1960, No. 9,  
pp. 38-40

TEXT: The Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (UkrNITI)  
(Ukrainian Scientific Research Institute for Tubes) has developed in 1959 the  
TV-4 thickness gage for the measurement of the wall thickness and nonuniformity  
in thickness of tubes of nonmagnetic metals. With the corresponding graduation,  
the device can be used for the measurement of tube and rod diameters. The  
operating principle of the thickness gage is based on eddy currents. The device  
is composed of the tube generator, pick-ups, amplifier, indicator, automatic  
switch-off unit of the tube-drawing mechanism and power unit. The automation  
unit is represented by two trigger circuits, of which one acts on thinning, the  
other on thickening, while simultaneously signal lamps are lighted and the motor  
of the tube-drawing mechanism is switched off. For the connection of a recorder,  
a cathode follower is included in the device. A number of outside factors affect

Card 1/2

S/263/62/000/011/005/022  
1007/1207

AUTHOR Trunin V. G. and Nikitin, A. I.

TITLE Wall thickness measurements in austenitic steel pipes by attachable induction-coils

PERIODICAL Referativnyy zhurnal, otdel'nyy vypusk. 32. Izmeritel'naya tekhnika, no. 11, 1962, 16, abstract 32.11.97 In collection: "Proiz-vo trub" Kharkov, Metallurgizdat, no. 5, 1961, 175-181

TEXT: Results of investigation of wall-thickness measurements by eddy currents created in an attachable induction-coil, are reported and a device of the TB-5 (TV-5) type, designed on the basis of these results, is described. The device is intended for one-side measurement of wall thickness differences in austenitic steel pipes of the size of 8-60 x 0.2-0.6 mm, with a maximum measuring error of 1%, and a measuring rate of 1-3 m/min. The thickness gage contains a current generator, two induction transducers, an amplifier, an electric indicating device and an automatic unit for disconnecting the pipe-feeding mechanism and for control of the optical signaling system. Alternating voltage is applied to the primary (winding) of the transducers, whose magnetic flux induces in the walls of the pipe to be measured, eddy currents that weaken the intensity of the primary magnetic flux. The self-induction electromotive force generated in the secondary windings is proportional to the wall thickness of the pipe. The difference between the opposite-connected secondary windings is amplified and fed to the indicating device. There are 7 figures and 4 references.

[Abstracter's note: Complete translation.]

Card 1/1



N - 7 12, 6.]

112-2-3739

Translation from: Referativnyy Zhurnal, Elektrotehnika, 1957,  
Nr 2, p. 177 (USSR)

AUTHORS: Tsyss, V. N., Drobnin, V. F., Nikitin, A. I., Savchenko, A.I.

TITLE: An Instrument for Measuring the Electrical Conductivity  
of Fused Salts (Pribor dlya opredeleniya elektroprovodnosti  
rasplavlennykh soley)

PERIODICAL: Sb. nauch. tr. Kazakhsk. gorno-metallurg. in-t., 1956,  
Nr 11, pp. 166-170

ABSTRACT: The instrument consists of a Kohlrausch bridge fed by  
an audio-frequency oscillator and a zero-adjustment  
instrument consisting of an amplifier and a visual tuning  
indicator. A micro-screw and a signal device consisting  
of an auxiliary electrode and an indicating lamp ensure  
accurate submersion of the two operating electrodes.  
Circuit diagrams are given and operating procedure is  
described.

N.I.V.

Card 1/1

NIKITIN A.I.

Unsolved problems in the mechanization of lumbering operations.  
Mekh.trud.rab.10 no.11:8-10 N '56. (MLRA 10:1)

1. Nachal'nik kombinata Gor'kles.  
(Lumbering--Machinery)

DUGANOV, G.V., doktor tekhn.nauk; SPEKTOR, B.V., kand.khim.nauk;  
RYAZANTSEV, V.I., inzh.; NIKITIN, A.I., inzh.

Using the TP-1 device for rapid determining of the thermal  
characteristics of coals and rocks. Ugol'.prom. no.4:69-70  
Jl-Ag '62. (MIRA 15:8)

1. Dnepropetrovskiy gornyy institut im. Artema i Nauchno-issledo-  
vatel'skiy institut stroitel'nykh materialov Akademii stroitel'stva  
i arkhitektury UkrSSR.  
(Rocks---Thermal properties) (Electronic instruments)

KONSTANTINOV, V.V., inzh.; VOROB'YEV, A.A., inzh.; NIKITIN, A.I., inzh.;  
RAN'KOVSKAYA, N.N., inzh.; SHEVCHENKO, V.I., inzh.

Using granulated slags in making high-strength concretes for  
prestressed floor panels. Bet. 1 zhel.-bet. no.6:234-235 Je '58.  
(MIRA 11:6)

(Kishinev--Concrete)

USSR / General and Specialized Zoology. Insects. The P  
Biological Method for the Control of Harmful  
Insects and Acarids.

Abs Jour: Ref Zhur-Biol., No 13, 1958, 59228.

Author : Nikitin, A. I.  
Inst : The Moscow Society for Nature Research.  
Title : Predatory and Parasitic Insects as Regulators of  
the Destructive Activity and of the Propagation  
of the Conifer-Forest Beetles.

Orig Pub: Byul. Mosk. o-va ispyt. prirody. Otd. Biol.,  
1957, 62, No 2, 51-55.

Abstract: The most effective natural enemies of the bark  
beetles are the predatory beetles, then the para-  
sitic Hymenoptera and, finally, the parasitic  
Diptera. The parasites *Lonchaea seitneri* (Lon-  
chaeidae) and *Medetera infumata* (Delichopodidae)

Card 1/4

23

USSR / General and Specialized Zoology. Insects. The P  
Biological Method for the Control of Harmful  
Insects and Acarids.

Abs Jour: Ref Zhur-Biol., No 13, 1958, 59228.

Abstract: infest the ducts of the engraver, the steno-  
grapher, and the minor and major forest garden  
bark beetles. The relative numbers of the  
parasitic diptera are not great: Lonchaea,  
not more than 15%; Medetera, not more than 4.5%  
of all the entomo phages. However, their role  
as destroyers of the conifer-forest bark beetles  
is quite considerable. The Lonchaea larva des-  
troys not only the larvae but also the imagoes  
of the bark beetles. The greatest numbers of  
the Lonchaea larvae were found in the ducts of  
the engraver - the elm bark beetle. The larva  
of the fly devours from 2 (at 15°) to 3.5 (at  
27°) barkbeetles' larvae. The duration of the  
Lonchaea development is from 32-34 days (at 27°)

Card 2/4

USSR / General and Specialized Zoology. Insects. The P  
Biological Method for the Control of Harmful  
Insects and Acarids.

Abs Jour: Ref Zhur-Biol., No 13, 1958, 59228.

Abstract: to 64-66 days (at 15°). The larvae of the fly appear in the beginning of June and are met with in the second half of August. The diptera larvae destroy twice as many bark beetles as they do their larvae. The Lonchaea avoids dense shady plantations without a grass cover. The Medetera larvae are found almost exclusively on the lower part of the trunk and feed on ectoparasitic larvae of the bark beetles. One Medetera larva destroys, during the period of its development, up to 6 bark-beetle larvae. The puparia hibernate. The adult flies emerge at the end of May. Phaonia laeta and Botanobia dubia

Card 3/4

24

BASOV, N.S.;                     , I.M.;                     , A.S.; NIKITINA, T.F.; YATANENKOV, V.M.;  
                    , A.I.

Radio operator in a lab. of the organization. Radiotekhn. i elektron.  
18:10:1800-1810 V.S. (MIRA 18:10)



L 23061-65 EWA(k)/EWT(1)/EEC(k)-2/T/EEC(b)-2/EWP(k)/TWA(m)-2, PF-4/P1-4/P1-4/

Fo-4 IJP(c) JHB/WQ

ACCESSION NR: AP5001858

S/0056/6/007/006/2314/2316

AUTHOR: Basov, N. G.; Nikitin, A. I.; Strakhovskiy, G.M.; Uspenskiy, A. V.

TITLE: The possibility of determining relaxation rates by means of a hydrogen-atom beam maser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2314-2316

TOPIC TAGS: maser, hydrogen beam maser, relaxation rate

ABSTRACT: The authors present some characteristics obtained at FIAN with a hydrogen atom beam maser ( $\lambda = 21$  cm) and show how a study of these characteristics can be used to deduce the relaxation rates of various processes that lead to the loss of active atoms (escape of active particles from the vessel, wall losses, relaxation due to magnetic field inhomogeneities, and spin re-orientation upon collision of two hydrogen atoms). An oscillogram of the time dependence of the power of stimulated emission of an underexcited maser under the influence of a light pulse yielded for the FIAN equipment a relaxation rate  $\gamma_0 = 3 \text{ sec}^{-1}$ . Information on the relaxation rate was also obtained

Card 1/2

L 23061-65

ACCESSION NR: AP5001858

by plotting the output power of an operating maser against the intensity of the active-area beam. This yields the constant characterizing the relaxation due to collision of two hydrogen atoms with spin exchange. The value obtained was in the range  $(1-6) \times 10^{-10}$  cm<sup>3</sup>/sec/particle, which agreed with published data. A value of 2 sec<sup>-1</sup>, obtained for  $\gamma_0$  by plotting the resonance curve of the cavity and using a formula for the frequency pulling of the maser by the generator is in good agreement with the value obtained from the stimulated-emission oscillogram. Orig. art. has: 3 figures and 1 formula. [02]

ASSOCIATION: Fizicheskiy Institut im. P. N. Lebedeva Akademi nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 10JUL64

ENCL: 00

SUB CODE: EC, EM

NO REF SOV: 000

OTHER: 003

AID PRESS: 3173

Card 2/2

NIKITIN, A. K.

3000

Nikitin, A. K. On certain properties of the trajectories of  
 a conservative system. Akad. Nauk SSSR. Prikl. Mat.  
 Mech. 12, 23-28 (1948). (Russian)  
 Elementary results concerning the behavior of the char-  
 acteristics of the Hamilton-Jacobi equation in the neighbor-  
 hood of a point. G. A. Hedlund (New Haven, Conn.).

SMITH  
1948

Source: Mathematical Reviews,

Vol.

No.

NIKITIN, A.K.

Nikitin, A. K. Singularities of the canonical equations of  
dynamics. Rostov, Gos. Univ. Uč. Zap. Fiz.-Mat. Fak.  
18 (1953), no. 3, 43-48. (Russian)

2  
I-FW  
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*ell*

NIKITIN, A.K.

Date: 4/1/57  
Nikitin, A. K. On stability of steady motion of a canonical system. Rostov. Gos. Univ. Uč. Zap. Fiz.-Mat. Fak. 18 (1953), no. 3, 49-54. (Russian) 4-1-FEW

NIKITIN, A.K.

NIKITIN, A. K. Nonlinear oscillations of a system with a disturbing force consisting of two harmonics. Rostov Gos. Univ. Uch. Zap. Fiz.-Mat. Fak. 18 (1953), no. 3, 55-63. (Russian)

The equation  $m\ddot{x} + f(x) = e(t)$  where  $e(t)$  consists of two harmonics is solved approximately. The author assumes  $x$  to be a linear combination with varying coefficients of harmonics with the same frequencies as  $e(t)$  and obtains a system for the coefficients in which he replaces all periodic terms by their mean values over a period. The stability of these periodic solutions is also discussed. As an example, the case  $f(x) = \alpha x + \beta x^3$  is worked out.

H. A. Antosiewicz (Washington, D.C.)

Math

(62)

NIKITIN, A. K.

1-FW

✓ Nikitin, A. K. On the motion of viscous fluid between pin and bearing. *Inžen. Sb.* 23 (1956), 173-185.

plan

(Russian)  
Zukovskii et Chaplygin (*Trudy Otd. Fiz. Nauk Obshch. Lyubitel. Estest.* 13 (1906), 24-23; Zukovskii Oeuvres collectives, t. 3, Gostehizdat, Moscow-Leningrad, 1949, pp. 132-151) ont donné une solution de ce problème en considérant le cas plan et en négligeant les forces d'inertie. I. M. Fisman (*Prikl. Mat. Meh.* 14 (1950), 593-610; MR 12, 763) a donné une solution en introduisant en deuxième approximation les forces d'inertie.

L'auteur reprend le problème dans le plan en coordonnées polaires en introduisant dans les équations les forces d'inertie. En développant la fonction du courant suivant les puissances croissantes d'un petit paramètre (l'excentricité relative) l'auteur arrive à déterminer cette fonction avec une approximation aux termes du 3ème ordre près en utilisant les fonctions de Bessel.

M. Kivelitch (Paris).

CHEBRYAYEV, M.P.; BARKHIN, G.S.; NIKITIN, A.K.; MOERISHCHEV, K.K.

Nikolai Mikhailovich Nestorovich; obituary. Usp.mat.nauk 11  
no.4:117-118 J1-Ag '56. (MLRA 9:11)  
(Nestorovich, Nikolai Mikhailovich, 1891-1955)



NIKITIN, A.K.

Steady motion of a viscous incompressible fluid between a pin  
and a bearing. Dokl.AN SSSR 108 no.3:405-408 My '56.(MLBA 9:8)

1. Rostovskiy na Donu gosudarstvennyy universitet imeni V.M.  
Molotova. Predstavleno akademikom A.A. Dorodnitsynym.  
(Fluid mechanics) (Viscosity) (Friction)

NIKITIN, Aleksey Konstantinovich for Doc Phys-Math Sci on the basis of dissertation defended 26 Dec 58 in Council of Kazan' Order of Labor Red Banner State Univ in Ul'yanov (Lenin), entitled "Certain problems of the hydrodynamic theory of lubrication." (BMVISO USSR, 1-61, 25)

10(3); 1(2); 1(9)

PHASE I BOOK EXPLOITATION

SOV/2538

Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze

Issledovaniya v oblasti teoreticheskoy i prikladnoy aerogidrodinamiki; sbornik statey (Research in Theoretical and Applied Aero-and Hydrodynamics ; Collection of Articles) Moscow, Oborongiz, 1959. 92 p. (Series: Its: Trudy, vyp. 111) 2,650 copies printed.

Ed. (Title page): N.S. Arzhanikov, Honored Worker of the RSFSR in Science, Professor; Ed. (Inside book): A. S. Ginevskiy, Candidate of Technical Sciences; Ed. of Publishing House: E. A. Shekhtman; Tech. Ed.: V.I. Oreshkina; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This collection of articles is intended for scientific workers, engineers, and students of advanced specialized courses.

COVERAGE: This collection of six papers is concerned with the aerodynamics of wings and shrouded propellers, hydrodynamic lubrication of bearings, and such fundamental problems as the viscosity of fluids and pressure losses due to local drags.

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## Research in Theoretical and Applied (Cont.)

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1. Biryukov, Ye.A., Engineer. Damping Due to Lag of the Downwash Behind a Wing of Finite Span 5  
This article investigates the effect of a nonstationary vortex sheet on the amplitude and lag of the downwash of a flow behind a wing of finite span. References: 2 Soviet.
2. Sadekova, G.S., Candidate of Technical Sciences. Calculation of the Aerodynamic Characteristics of a Sweptback Wing in a Bounded Flow 14  
This article investigates the effect of the flow boundaries on aerodynamic characteristics of sweptback wings of arbitrary plan form. References: 2 Soviet and 2 German.
3. Nikitin, A.K., and V.S. Korchagin, Candidates of Technical Sciences. Twodimensional Nonlinear Problem of the Motion of the Lubricant in a Journal Bearing in the Case of Uniform Rotation and Constant Load 29  
This article discusses the problem of the motion of a journal bearing under the assumption of constant load and uniform

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rotational velocity, the entire space between journal and bearing being assumed to be filled by the lubricant. References: 4 Soviet.

4. Shaydakov, V.I., Engineer. Aerodynamic Investigations of a "Shrouded-Propeller" System for Hovering 41  
This article attempts to obtain a theoretical solution for the load-supporting characteristics of a shrouded propeller. The paper is of great practical interest because a shrouded rotor-propeller is both the load-carrying and propelling element of a new type of aircraft--the so-called "flying platform". Aerodynamic investigations made by F.P. Kurochkin, Candidate of Technical Sciences at MAI are mentioned.
  
5. Levkoyeva, N.V., Engineer. On the Problem of Determining Pressure Losses Due to Local Drags 71  
This paper presents a critical synopsis of current knowledge regarding pressure losses due to local drags in aircraft hydraulic systems. References: 17 Soviet, 5 German, 2 English, 1 French. 84

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17

16(1), 16(2), 10(4)

AUTHOR: Nikitin, A.K.

SOV/140-59-3-18/22

TITLE: On the Instationary Motion of a Tenacious Incompressible Fluid in a Bearing

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 3, pp 186-199 (USSR)

ABSTRACT: The author investigates the motion of a round pivot in a round bearing; the space between the pivot and the bearing is filled up with a tenacious incompressible fluid. It is assumed that the motions of the pivot and the bearing are known; the weight of the fluid is neglected. The author establishes the motion equations of the fluid; the solutions are set up as power series in a small parameter  $\epsilon$ , where the boundary conditions on the bearing are satisfied only by the terms up to  $\epsilon^2$  inclusively, while the boundary conditions on the pivot are satisfied exactly. Then the influence of the fluid to the bearing and the pivot is determined.

There are 2 references, 1 of which is Soviet, and 1 American.

ASSOCIATION: Rostovskiy gosudarstvennyy universitet (Rostov State University)

SUBMITTED: April 15, 1958

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15(5)

AUTHOR: Nikitin, A. K. (Rostov-na-Donu) 30V/179-59-4-2/40

TITLE: ~~Plane Nonlinear Problem of Uniform Motion of the Lubricant~~  
Plane Nonlinear Problem of Uniform Motion of the Lubricant  
Between Pivot and Bearing

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk.  
Mekhanika i mashinostroyeniye, 1959, Nr 4, pp 11 - 21 (USSR)

ABSTRACT: The case where the entire room between pivot and bearing is filled by the liquid is investigated. For a sufficiently small range taken by the lubricant, it is proved that a solution of the nonlinear problem exists, and that this solution is unique. This leads to the conclusion of a convergence in the development of the solution to a positive power series of the Reynolds number if the latter is sufficiently small. The solution itself is found in bipolar coordinates. The papers by N. Ye Zhukovskiy and S. A. Chaplygin (Ref 3), N. V. Kudryavtsev (Ref 4) and Ya. S. Uflyand (Ref 5) are referred to. The effect of the lubricant on the pivot is determined with an accuracy up to the terms of third order with respect to the Reynolds number. The influence of the nonlinear inert terms is pointed out. It is shown that, by investigating not only the three terms of the series but the whole series of the current function  $\psi$ , the

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Plane Nonlinear Problem of Uniform Motion of the  
Lubricant Between Pivot and Bearing

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projection of the main vector  $P$  on the center line ( $Ox$ -axis) appears as a series of odd powers of the Reynolds number, and the projection on the  $Oy$ -axis and the principal moment  $L$  appear as series with even powers of the Reynolds number. The influence of the inert terms in the differential equations of motion is expressed by the fact that one component of the main vector of the lubricant forces acting on the pivot works along the center line (i. e. the main vector, in contrast to the linear problem, is not perpendicular to the center line). In addition to the component of the main vector perpendicular to the center line, and to the principal moment of the linear problem, there are: the additional force  $P_{y1}$  and the additional moment  $L_1$ , both of which show the second order of an infinitesimal with respect to the Reynolds number. Part of the results put forward have already been published in the author's paper (Ref 1). There are 1 figure and 6 Soviet references.

SUBMITTED: February 13, 1959  
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NIKITIN, A. K.

Motion of a viscous fluid in a bearing in the case of a uniformly  
rotating constant load. Uch. zap. RGU 43 no.6:147-156 '59.  
(MIRA 13:10)

(Lubrication and lubricants) (Fluid dynamics)

VOYSENYA, V. S. ; NIKITIN, A. K.

Snow drifts around semicircular cylindrical obstacle. Uch. zap.  
RGU 43 no.6:157-167 '59. (MIRA 13:10)

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"On the Theory of Spherical Bearings."

report presented at the First All-Union Congress on Theoretical and Applied  
Mechanics, Moscow, 27 Jan - 3 Feb 1960.

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Two-dimensional problem of waves on the surface of a viscous liquid of infinite depth. Zhurn. vych. mat. i mat. fiz. 4, 66-74 (suppl.):326-344 '64. (MIRA 1964)