On a high-speed problem without switching for ....

then the problem reduces to the preceding one by a linear transformation of the variables. The second part of the paper is devoted to the problem, unrelated to the former one, of applying the general principles of mechanics to the setting up of the equations of motion of unholonomic systems. If upon a mechanical system of n material points, whose position is defined by the coordinates x_1, x_2, ..., x_{3n} one imposes one constraint of the form

$$f\left(t, x_i, x_i^1, \ldots, x_i^{(\sigma)}\right) = 0; \quad i = 1, 2, \ldots, 3n,$$

which may be integrated once, then the equations of motion will be the same regardless of whether one uses the given constraint or the constraint obtained after integrating it in setting up these equations.

A.G. Butkovskiy

[Abstracter's note: Complete translation]

Card 3/3

FILATOV, A. N.

"On the application of Lie series to the problems of nonlinear mechanics."

Paper presented at the Intl. Symposium on Nonlinear Vibrations, Kiev, USSR, 9-19 Sep 61

Institute of Mechanics of the Academy of Sciences of the Uzbekian SSR, USSR

31061
S/166/61/000/006/002/010
B112/B138

3,2200 (1121,1132,1080)

AUTHOR: Filatov, A. N.

TITLE: General solution of the problem of motion of a heavy body around a fixed point

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 6, 1961, 23 - 33

TEXT: The author solves the system

$$\begin{aligned}
\frac{dp}{dt} &= \frac{B-C}{A}qr + \frac{Mg}{A}(y_0\gamma - z_0\beta)\\
\frac{dq}{dt} &= \frac{C-A}{B}rp + \frac{Mg}{B}(z_0\alpha - x_0\gamma)\\
\frac{dr}{dt} &= \frac{A-B}{C}pq + \frac{Mg}{C}(x_0\beta - y_0\alpha) \qquad (1)\\
\frac{d\alpha}{dt} &= r\beta - q\gamma, \qquad \frac{d\beta}{dt} = p\gamma - r\alpha\\
\frac{d\gamma}{dt} &= q\alpha - p\beta
\end{aligned}$$

Card 1/4

General solution of the problem of ...

by the series expansions

$$\left.\begin{aligned} p(t) &= \sum_{n=0}^{\infty} \frac{t^n}{n!} D^n p_0, \quad q(t) = \sum_{n=0}^{\infty} \frac{t^n}{n!} D^n q_0 \\ r(t) &= \sum_{n=0}^{\infty} \frac{t^n}{n!} D^n r_0, \quad \alpha(t) = \sum_{n=0}^{\infty} \frac{t^n}{n!} D^n \alpha_0 \\ \beta(t) &= \sum_{n=0}^{\infty} \frac{t^n}{n!} D^n \beta_0, \quad \gamma(t) = \sum_{n=0}^{\infty} \frac{t^n}{n!} D^n \gamma_0 \end{aligned}\right\} \quad (3),$$

where the differential operator D is defined by

General solution of the problem of ...

$$D=\left[\frac{B-C}{A}q_0r_0+\frac{Mg}{A}(y_0\gamma_0-z_0\beta_0)\right]\frac{\partial}{\partial p_0}+$$
$$+\left[\frac{C-A}{B}r_0p_0+\frac{Mg}{B}(z_0\alpha_0-x_0\gamma_0)\right]\frac{\partial}{\partial q_0}+$$
$$+\left[\frac{A-B}{C}p_0q_0+\frac{Mg}{C}(x_0\beta_0-y_0\alpha_0)\right]\frac{\partial}{\partial r_0}+ \qquad (4).$$
$$+(r_0\beta_0-q_0\gamma_0)\frac{\partial}{\partial\alpha_0}+\left(p_0\gamma_0-r_0\alpha_0\right)\frac{\partial}{\partial\beta_0}+\left(q_0\alpha_0-p\beta_0\right)\frac{\partial}{\partial\gamma_0}.$$

The cases $x_0 = y_0 = z_0 = 0$ (Euler - Poinsot), $A = B$, $x_0 = y_0 = 0$ (Lagrange - Poisson), $A = B = 2C$, $y_0 = z_0 = 0$ (S. V. Kovalevskaya), $A = B = C$ (complete kinetic symmetry), $B = 2A$, $x_0 = z_0 = 0$, $r = 0$ (Bobylev - Steklov), $A = B = 4C$, $y_0 = z_0 = 0$ (Goryachev - Chaplygin), and $y_0 = 0$, $x_0\sqrt{A(B-C)} + z_0\sqrt{C(A-B)} = 0$ (Hess - Appelrot) are considered.

There are 2 Soviet references.

Card 3/4

31061
S/166/61/000/006/002/010
B112/B138

General solution of the problem of ...

ASSOCIATION: Institut mekhaniki AN UzSSR (Institute of Mechanics AS Uzbekskaya SSR)

SUBMITTED: August 5, 1961

Card 4/4

FILATOV, A. (Simferopol')

Changes in temperature in the elastic deformation of bodies. Fiz. v shkole 21 no.3:64 My-Je '61. (MIRA 14:8)
(Deformations (Mechanics))

S/166/62/000/001/003/009
B104/B102

AUTHOR: Filatov, A. N.

TITLE: The motion of a solid body in an ideal incompressible liquid

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 1, 1962, 25 - 32

TEXT: The motion of a solid body in an unbounded incompressible nonviscous liquid, at rest in infinity, is studied. External forces are neglected; the liquid is in an irrotational flow. The problem leads to the solution of a Kirchhoff system of equations from which the motions of the solid body and of the liquid can be determined:

$$T=\frac{1}{2}\left\{\sum_{i=1}^{3}a_iP_i^2+\sum_{i=1}^{3}b_iR_i^2+2\sum_{i=1}^{3}c_iR_iP_i+\sum_{i=1}^{3}\sum_{k=1}^{3}a_{ik}P_iP_k+\right.$$
$$\left.+\sum_{i=1}^{3}\sum_{k=1}^{3}b_{ik}R_iR_k+2\sum_{i=1}^{3}\sum_{k=1}^{3}c_{ik}R_kP_i\right\}. \qquad (2),$$

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$$\left.\begin{aligned} \frac{dR_1}{dt} &= rR_2 - qR_3 & \frac{dR_2}{dt} &= pR_3 - rR_1 \\ \frac{dR_3}{dt} &= qR_1 - pR_2 & \frac{dP_1}{dt} &= rP_2 - qP_3 + wR_2 - vR_3 \\ \frac{dP_3}{dt} &= pP_3 - rP_1 + uR_3 - wR_1 & \frac{dP_2}{dt} &= qP_1 - pP_2 + vR_1 - uR_2 \end{aligned}\right\} \quad (3).$$

In the present paper the solutions are obtained by means of Lie series (W. Gröbner, Die Lie Reihen und ihre Anwendungen, Berlin, 1960), i. e., the Kirchhoff integral of the system of equations is obtained by means of Lie series. The Clebsch problem and the Steklov problem are discussed. There are 5 references: 2 Soviet and 3 non-Soviet.

ASSOCIATION: Institut mekhaniki AN UzSSR (Institute of Mechanics AS Uzbekskaya SSR)

SUBMITTED: March 10, 1961

40492

S/208/62/002/003/003/011
I040/I219

AUTHOR: Filatov, A. N.

TITLE: On an algorithm for solving the Cauchy problem for equations with first order partial derivatives

PERIODICAL: Zhurnal vychislitel'noy matematiki i matematicheskoy fiiziki, v. 2 no. 3, 1962, 411-417

TEXT: Given the linear system

$$\frac{\partial \phi_i}{\partial t} = \sum_{j=1}^{n} \sum_{k=1}^{m} a_{jk}^{i} \frac{\partial \phi_k}{\partial x_j} + \sum_{k=1}^{m} b_k^i \phi_k + C_i \qquad i = 1,\ldots, m \tag{1}$$

with the initial conditions $\phi_i(0, x_1, \ldots, x_n) = \psi_i(x_1, \ldots, x_n)$ where $a_{jk}^i, b_k^i, c_i, \psi_i$, are analytic functions of $x_1, \ldots, x_n$ and t in the domain $|t| \leq \tau$, $|x_j| < \alpha_j$, $j = 1, 2, \ldots, n$ there is constructed a solution of the form

$$\phi_i = \sum_{s=0}^{\infty} \mu_{is} \frac{t^s}{s!}$$

Card 1/2

FILATOV, A.N.

Integral representation of the dynamic field vector in infinite space. Izv. vys. uch.zav.; mat. no.5:107-114 '62. (MIRA 15:9)

1. Tashkentskiy institut irrigatsii i mekhanizatsii sel'skogo khozyaystva.
(Vector analysis) (Integral equations)

FILATOV, A.N.

Multidimensional generalized Lie series and their properties. Sbor. nauch.-issl. rab. TTI no.15:45-52 '62. (MIRA 16:9)

L 16718-63 EWT(d)/FCC(w)/BDS AFFTC/IJP(C)

S/124/63/000/004/024/064

53

AUTHOR: Filatov, A. N.

TITLE: On the application of a Lie series to the study of nonstationary oscillations in nonlinear systems

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 4, 1963, 20, abstract 4A109 (Tr. in-ta matem. AN UzSSR, vyp. 24, 1962, 163-172)

TEXT: For a nonlinear system with one degree of freedom, the possibility of presenting a solution of the equations in first approximation, derived by asymptotic methods, in the form of Lie series was demonstrated. The result can be extended to the subsequent approximations and to systems with n degrees of freedom. Orig. art. has: 3 biblio. refs.

[Abstracter's note: Complete translation.]

Card 1/1

AM4016116 BOOK EXPLOITATION S/

Filatov, Aleksandr Nikolayevich

Generalized Lie series and their application (Obobshchenny*ye ryady* Li i ikh prilozheniya) Tashkent, Izd-vo AN UzSSR, 1963. 105 p. 1000 copies printed. Sponsoring Agency: Akademiya nauk Uzbekskoy SSR. Institut mekhaniki.

TOPIC TAGS: generalized Lie series, theorem, operations, ordinary differential equation, partial differential equation, mechanics canonical equation, Jacobian multiplier, Cauchy's problem, elasticity theory

PURPOSE AND COVERAGE: The book is intended for specialists in the field of mathematical analysis and mechanics, scientific workers, aspirants, and senior students of mechanico-mathematical faculties at schools of higher education. The application of generalized Lie series to the integration of systems of ordinary and partial differential equations and to various problems in mechanics is discussed.

TABLE OF CONTENTS:

~~Card 1/5~~

SAGITOV, M.S.; FILATOV, A.N.

System of first integrals in the problem of the motion of a solid around a fixed point in a central Newtonian force field. Izv. AN Uz. SSR. Ser. tekh. nauk 7 no.4:31-36 '63. (MIRA 16:11)

1. Institut mekhaniki AN UzSSR.

FILATOV, A. N. (Tashkent)

"Poincaré -Lie series and their application to the problems of analytical mechanics"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

FILATOV, A. N. (Tashkent)

"Uber nichtlineare Schwingungen in konservativen Systemen."

report submitted for 3rd Conf on Nonlinear Oscillations, E. Berlin, 25-30 May 64.

L 42409-65 EWT(d) Pg-4 IJP(c)
ACCESSION NR: AP5006267 S/0040/65/029/001/0173/0175

AUTHOR: Segitov, M. S. (Tashkent); Filatov, A. N. (Tashkent)

TITLE: Concerning Lyapunov stability in the critical case where the determinant possesses an even number of zero roots

SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 1, 1965, 173-175

TOPIC TAGS: Lyapunov stability, applied mathematics, ordinary differential

ABSTRACT: The authors consider the following system of ordinary differential

$$\frac{dx_s}{dt} = p_{s1}x_1 + \ldots + p_{s,\,n+2m}x_{n+2m} + X_s(x_1, x_2, \ldots, x_{n+2m}) \qquad s = 1, \ldots, n+2m \qquad (1.1)$$

under the assumption that the corresponding determinant equation

$$\begin{vmatrix} p_{11}-\lambda & p_{12} & \cdots & p_{1,\,n+2m} \\ \cdots & \cdots & \cdots & \cdots \\ p_{n+2m,\,1} & p_{n+2m,\,2} & \cdots & p_{n+2m,\,n+2m}-\lambda \end{vmatrix} = 0 \qquad (1.2)$$

possesses an even number 2m ($m \geq 1$) of zero roots, to which correspond n groups of solutions to the following equations of the first approximation

Card 1/3

$$\frac{dx_s}{dt} = p_{s1}x_1 + \ldots + p_{s,\,n+2m}x_{s,\,n+2m} \quad (s = 1, \ldots, n+2m) \tag{1.3}$$

All the remaining (i.e. non-zero) roots of equation (1.2) are assumed to possess negative real roots; in addition,

$$\overline{X}_s \quad (\overline{X}_s(0,0,\ldots,0) \equiv 0)$$

are taken to be holomorphic functions of the quantities

$$x_1, x_2, \ldots, x_{n+2m}$$

whose expansion in powers of these quantities begins with terms no lower than that of the second order. The problem posed is to determine those conditions that make the solution

$$x_1 = x_2 = \ldots = x_{n+2m} = 0 \tag{1.4}$$

of equations (1.1) stable or nonstable in the sense of Lyapunov. The case where equation (1.2) possesses two zero roots (m = 1) was investigated in detail by A. M. [illegible] Issledovanive odnogo iz osobennykh sluchayev zadachi ob ustoychivosti [illegible] (M, 1963) and G. V. Kamenkov (Ob ustoychivost' [illegible]

L 40409-65

ACCESSION NR: AP5006267

[illegible] inst. in-ta. 1939, no. 9). The present authors, following the ideas of [illegible] der the case where the determinant (1.2) possesses an [illegible] number [illegible] and find certain restrictions [illegible] in addition to those above. Orig. art. has: 17 formulas

ASSOCIATION: none

SUBMITTED: 24Sep64 ENCL: 00 SUB CODE: MA, ME

NO REF SOV: 004 OTHER: 000

Card 3/3

L 31047-66 EWT(l)/EWP(m) IJP(c) GW

ACC NR: AR5028205 SOURCE CODE: UR/0044/65/000/008/B032/B032

AUTHOR: Filatov, A. N

TITLE: First integral of the problem of the motion of a heavy solid around a stationary point

SOURCE: Ref. zh. Matematika, Abs. 8B178

REF SOURCE: Tr. Mezhvuz. konferentsii po prikl. teorii ustoychivosti dvizheniya i analit. mekhan., 1962. Kazan', 1964, 53-56

TOPIC TAGS: differential equation system, solid kinetic equation, motion equation

ABSTRACT: The application of the so-called Lie-series (Lie-Reihen) for presenting the first integrals of systems of common differential equation, in particular of the canonical Hamilton equation, as well the motion of a solid with a fixed point under effect of gravity is given. It is noted that all the previously found holomorph integrals of such a system satisfy this concept. As an example, the verification on an integral of kinetic moment relative to a vertical is given. The abstractor thinks that the facts disclosed by the author deserve attention, and are of particular interest for general theory of differential equation, as well as for the problem of the motion of a solid around a fixed point. It can be said that a certain approach has been found to calculate the first integrals in a finite form. [V. Dobronravov]

SUB CODE: 12/ SUBM DATE: none

Card 1/1

UDC: 517:933

NR: A...9313 UR/0124/65/000/.../.../A007

Mekhanika, Abs. 7A...

...Iloto..., A. N.

...integrals in a problem on the motion of ... point

... did motion, fixed ...

...

TRANSLATION: The report discusses a normal system of n differential equations, for ... independent first integrals are formulated in ... As a ... example, ... considers a complete system of inde...ndent ... equations from the problem on the motion of ... point ... in the latter case that express ... first integ...

SUB CODE: ME ENCL: 00

Card 1/1

KURDENKOV, V.I., inzh.; FILATOV, A.P., inzh.

Mechanical device for grading crushed stone according to strength. (MIRA 12:1)
Avt. dor. 21 no.12:27-28 D '58.
(Road machinery) (Stone, Crushed--Grading)

KURDENKOV, Boris Ivanovich; POLYAKOVA, Antonina Ivanovna; FILATOV, Anatoliy Petrovich; RUDENKO, K.G., red.; GANYUSHIN, A.I., red.izd-va; DONSKAYA, G.D., tekhn.red.

[Beneficiation of stone material for road construction] Obogashchenie kamennogo materiala dlia dorozhnogo stroitel'stva. Moskva, Avtotransizdat, 1962. 59 p. (MIRA 15:4)

(Road construction) (Stone, Crushed)

L [illegible] EWT(l)/EEC-4/EEC(t)/EEC(b)-2/EED-2/FCS(k) [illegible]

[illegible] active member); Filatov, A.

[illegible]: Planar switched antennas

SOURCE: Radiotekhnika, v. 20, no. 5, 1965, 25-34

TOPIC TAGS: planar antenna, switched antenna, scanning antenna

ABSTRACT: [illegible] further investigation of the switching method of [illegible] scanning [illegible] planar switched antenna [illegible]

Card 1/2

L 53650-65
ACCESSION NR: AP5014052

... for an ideal array (with strictly ...

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo r... (Scientific and Technical Society of Radio Engineering ...)

SUBMITTED: 22Mar63 ENCL: 00 SUB CODE: EC

NO REF SOV: ... OTHER: ...

Card 2/2

ZIMIN, D.B.; FILATOV, A.P.; DOLZHENKOV, A.A.

Flat-top switching antennas. Radiotekhnika 20 no.5:25-34 My '65. (MIRA 18:10)

1. Deystvitel'nyye chleny Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.

SAGITOV, M.S.; FILATOV, A.N. (Tashkent)

Liapunov-type stability in the critical case when the determining equation has an even number of zero roots. Prikl. mat. i mekh. 29 no.1:173-175 Ja-F '65. (MIRA 18:4)

FILATOV, A. S., Engineer

"Electric Drive and Regulation Systems of Continuous Cold-Rolling Mills." Sub 22 Jun 51, Moscow Order of Lenin Power Engineering Inst imeni V. M. Molotov

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

USSR/ Engineering - Metal drawing

Card 1/1 Pub. 128 - 7/31

Authors : Son'kin, M. A., and Filatov, A. S., Cand. Tech. Sc.

Title : High speed drawing mill

Periodical : Vest. mash. 35/5, 14-17, May 1955

Abstract : The technical and structural characteristics of a high-speed metal-drawing mill, capable of drawing 15 - 17 m/sec, are described. The operations of the mill in question are controlled by means of a SS-195/150 selsyn. Graphs; drawings.

Institution : .....

Submitted : .....

FILATOV, A.S., kand. tekhn. nauk.

Automatic control of the strip thickness on cold rolling mills.
[Trudy] TSNIITMASH 73:127-157 '55. (MIRA 11:3)
(Electronic control) (Rolling (Metalwork))

KOGOS, A.M., inzhener; FILATOV, A.S., inzhener.

Mill for rolling very thin steel strips. Vest.mash.36 no.7:28-32 Jl '56. (Rolling mills) (MLRA 9:9)

FILATOV, A. S.

"Automatic control of engines on the pressure components of cold rolling equipment" page 146., "The basic principles of regulating the tension in cold rolling mills" page 166.

Rolling Mills-Research on Electrical Drive and Automatics in Rolling Mills, Book no 80, 1956, TsNIITMASH

SOV/137-57-6-9904

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 84 (USSR)

AUTHOR: Filatov, A.S.

TITLE: The Major Principles of the Regulation of Tension as a Function of Tension in a Cold-rolling Mill (Osnovnyye printsipy regulirovaniya natyazheniya v funktsii natyazheniya v stane kholodnoy prokatki)

PERIODICAL: V sb.: Prokatnyye stany. Nr 7. Moscow, Mashgiz, 1956, pp 166-185

Trudy TSNIITMASH

ABSTRACT: In conversion to high rolling speeds on continuous cold rolling mills (M), the necessity arose to develop reliable systems of automatic control of tension between stands so as to assure satisfactory M operation during acceleration and deceleration. As a result of analysis, the influence of individual parameters of the system consisting of the electric drive and the M upon transient conditions is established, and the primary relationships required to choose and analyze automatic control systems are discovered. Experimental investigations conducted in the rolling laboratory of TsNIITMash (Central Scientific Research Institute for Technology and Machinery) point to the satisfactory operation of the system for automatic

Card 1/2

The Major Principles of the Regulation of Tension (cont.)

control of tension. The existence of reliable instruments for measuring tension makes it possible for similar systems to be developed for industrial M.

B.Ye.

Card 2/2

FILATOV, A.S.

SON'KIN, M.A., kandidat tekhnicheskikh nauk; FILATOV, A.S., kandidat tekhnicheskikh nauk.

Specific power consumption as a basis for computing drawing forces and the capacity of motors driving draw bench drums. [Trudy] TSNIITMASH no.80:186-193 '56. (MLRA 10:1)
(Drawing (Metalwork)) (Electric driving)

SOV/137-57-6-10007

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 94 (USSR)

AUTHORS: Son'kin, M.A., Filatov, A.S.

TITLE: The Electric Drive of a High-speed Wire-drawing Machine (Elektroprivod stana skorostnogo volocheniya)

PERIODICAL: V sb.: Prokatnyye stany. Nr 7. Moscow, Mashgiz, 1956, pp 194-200

Trudy TSNIITSMASh

ABSTRACT: Continuous wire-drawing (D) machines with back tension are aggregates the output and quality of the product of which is essentially governed by the quality of the electrical equipment. Tests of a high-speed machine with an operating speed (S) of 20 m/sec have been completed in the rolling laboratory of the TsKBMM of the TsNIITMash (Central Scientific Research Institute for Technology and Machinery). A new electric drive system is advanced, in which control of the tension on the wire (W) is by changing the field of the motor with the aid of power selsyns. In the case of machines in which the S can be cut down very considerably, a system is under examination for supplying the motors from separate 2-coil generators. In that event control of tension is by means of selsyns which

Card 1/2

The Electric Drive of a High-speed Wire-drawing Machine

are connected into the generator field circuit. Both circuits were tested on a 5/250 laboratory wire-drawing machine. In continuous wire-drawing machines with back tension, D is performed simultaneously in several dies, and this governs the major specifications that have to be met by the electric drive of the mill and its system of control, namely, the maintenance of stable W tension between blocks and maintenance of a prescribed ratio of block-rotation S. The W tension is created by a system of levers and springs with a tension roller at the end of a lever. The S is regulated by changing the length of the loop. Experimental investigation has confirmed the desirability of using selsyns as pick-ups for the system of S control for the blocks. The control system used with this machine makes it possible for the drives and the machine as a whole to function at D S of up to 20 m/sec on the finishing block. However, it is difficult to attain a stable servicing S at high D S. This makes necessary a further improvement in the design of control of high-speed D machines.

B.Ye.

Card 2/2

SOV/137-57-10-19083

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 94 (USSR)

AUTHOR: Filatov, A.S.

TITLE: Experimental Characteristics of a Low-power Magnetic Amplifier (Eksperimental'nyye kharakteristiki magnitnogo usilitelya moshchnosti)

PERIODICAL: V sb.: Prokatnyye stany. Nr 7. Moscow, Mashgiz, 1956, pp 201-204 TRUDY TSNIITMASH

ABSTRACT: A magnetic amplifier (A) to be used in investigating systems of automatic control of strip thickness in cold-rolling mills has been developed and is being made in the TsNIITMASh laboratories. Magnetic A attain reliability through the absence of moving parts or parts sensitive to vibration. They possess a significant amplification constant and the capability of totaling a large number of signals. The core of the magnetic A is made of 80NKhS steel (permalloy). The thickness of the sheet is 0.2 mm, and the height of the pile is 20 mm. When the feedback-winding parameters are properly selected, the amplification factor may attain 200. The high amplification constants made it possible to use this A to

Card 1/2

Experimental Characteristics of a Low-power Magnetic Amplifier

amplify the impulse of a flying micrometer in a system for the automatic control of strip thickness in cold-rolling mills. The results of experimental investigations show that low-power magnetic A with cores of 80NKhS steel display satisfactory characteristics and high operating-performance-indices.

B.Ye.

FILATOV, A.S., kandidat tekhnicheskikh nauk; ZHURAVSKIY, Yu.V., kandidat tekhnicheskikh nauk.

Automatic liquid level control in hydraulic machinery. [Trudy] TSNIITMASH no:205-210 '56. (MLRA 10:1)
(Liquid level indicators) (Hydraulic machinery)

TSELIKOV, A.I.; DRUZHININ, N.N., kandidat tekhnicheskikh nauk;
FILATOV, A.S., kandidat tekhnicheskikh nauk.

Automatization of new rolling mills. Mashinostroitel' no.2:
1-11 F '57. (MLRA 10:5)

1. Chlen-korrespondent AN SSSR (for TSelikov).
(Rolling mills) (Automatic control)

FILATOV, A.S., kandidat tekhnicheskikh nauk.

Automatization of cold rolling mills. Vest. mash. 37 no.7:15-18 Jl '57. (MLRA 10:8)

(Rolling mills) (Automatic control)

PHASE I BOOK EXPLOITATION SOV/5471

Moscow. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii.

Prokatnyye stany. [Sbornik] 1 ([Metal] Rolling Mills. [Collection] 1) Moscow, 1959. 272 p. 2,000 copies printed.

Sponsoring Agencies: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR. Akademiya nauk SSSR.

Ed.: Ye. S. Rokotyan, Doctor of Technical Sciences; Tech. Eds.: G. A. Shevchenko and N. G. Goncharov.

PURPOSE: This collection of articles is intended for technical personnel in rolling mills, educational institutes, and design offices.

COVERAGE: The collection contains articles dealing with the present status of methods used in metal rolling. Attention is given to the design and operation of sheet and planetary mills, electric drives of equipment used in rolling shops, and instruments for

Card 1/3

measuring metal-rolling process parameters. D. P. Morozov, Doctor of Technical Sciences, and I. S. Pobedin, Candidate of Technical Sciences, edited some parts of the book. References accompany each article. There are 131 references, Soviet and non-Soviet.

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Foreword 3

1. Rokotyan, Ye. S. [Doctor of Technical Sciences]. Modern Sheet Mills 4

2. Bur'yanov, V. F. [Candidate of Technical Sciences]. Planetary Mills 79

3. Filatov, A. S. [Candidate of Technical Sciences]. Modern Electric Drive for the Basic Equipment of Rolling Mills 126

[Metal] Rolling Mills (Cont.) SOV/5471

4. Zhuravskiy, Yu. V. [Candidate of Technical Sciences]. Electric Equipment for the Auxiliary Mechanisms of Rolling Mills 187

5. Meyerovich, I. M. [Candidate of Technical Sciences]. Instruments for Measuring the Force Parameters of Rolling Mills 217

AVAILABLE: Library of Congress (TS340.M67)

Card 3/3

VK/wrc/jw
9-14-61

28 (1), 28 (5)

S/119/60/000/02/008/015
B014/B014

AUTHORS: Klimov, I. P., Engineer
Filatov, A. S., Engineer

TITLE: Application of a Selsyn for the Measurement of Mechanical Quantities

PERIODICAL: Priborostroyeniye, 1960, Nr 2, pp 19 - 20 (USSR)

ABSTRACT: This article gives a description of the application of a selsyn for the measurement of strip stress in continuously operating strip-rolling mills. The design of such a selsyn was suggested by the Laboratoriya avtomatiki TsNIITMASh (Laboratory of Automation, TsNIITMASh). Figure 2 shows that the selsyn of the type BD-404A is perpendicularly housed within a jacket. Its rotor is actuated when the position of the roll driven by the strip changes (Fig. 1). The resultant alternating voltage is rectified by semiconductors, and is fed into a pointer instrument calibrated in either metric tons or kilograms according to its specific purposes. There are 3 figures.

Card 1/1

FILATOV, A. S., kand. tekhn. nauk

Automatic rolling mills. NTO 2 no.2:37-38 F '60. (MIRA 13:5)

(Rolling mills) (Automatic control)

[redacted] 2209

11.2214
11.2131

32819

S/020/62/142/001/017/021
B103/B110

AUTHORS: Ginsburg, V. A., Yakubovich, A. Ya., Filatov, A. S., Shpanskiy, V. A., Vlasova, Ye. S., Zelenin, G. Ye.

TITLE: Production, pyrolysis, and photolysis of polyfluorinated azo compounds of the aliphatic series

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 1, 1962, 88-91

TEXT: Further methods of synthesizing polyfluoro azoalkanes (PFAA) and their derivatives were elaborated. It was found that PFAA were formed: (a) when reducing azoxy compounds by PCl_3 vapor in the vapor phase and in N_2 atmosphere at 100-150°C: $R_fN{=}N(O)R_f \xrightarrow{PCl_3} R_fN{=}NR_f + POCl_3$; (b) when oxidizing hydrazo compounds containing R_fNH groups: (R_f=CF_3, CF_2H, and others); these compounds are synthesized by reducing azoxy compounds. Among others, the following were used as oxidizers of hydrazo derivatives: Cl_2, Br_2, nitric oxides, chromate mixtures, potassium permanganate in acetic acid; (c) when fluorinating linear or cyclic

Card 1/5

azines by CoF_3 in a carbon fluoride medium at 90-120°C, or by elementary F (diluted with N_2) at -10°C; (d) when fluorinating nitriles of polyfluoro carboxylic acids and HCN in the vapor phase on CoF_3 at 100-150°C. Some PFAA derivatives were synthesized: (e) by chlorinating in the vapor phase in ultraviolet light (UV) at 300°C, or by fluorinating hydrogenous azo compounds on CoF_3 at 50-80°C:

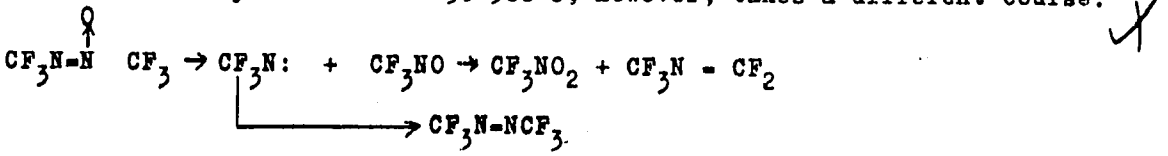
$$R_f\text{-}NCH_3 \xrightarrow[UV]{Cl_2} R_fN\text{=}NCHCl_2, \text{ or } R_fN\text{=}NCH_3 \xrightarrow{CoF_3} R_fN\text{=}NCHF_2, \text{ and others;}$$

(f) by the usual conversion of functional groups. The initial azo compounds used in reactions (e) and (f) were obtained by condensation of polyfluorinated nitroso alkanes with the corresponding amines. The constants of the substances obtained are tabulated. PFAA are yellow liquids or gases which explode when heated, but are much more stable than their non fluorine-containing analogs. Pyrolysis: It was found that hexafluoro azo methane was slowly pyrolyzed in a copper tube at 400°C: $CF_3N\text{=}NCF_3 \longrightarrow N_2 + CF_3 - CF_3$. Similarly polyfluorinated homologs of hexafluoro azo methane also decompose. This decomposition can be used as a method of synthesizing PFAA. At 600-700°C, tetrafluoro methane, tetra-

fluoro ethylene, and lamp black are formed among others. This suggests the thermal decomposition of intermediate forming trifluoro methyl radicals. The low temperature coefficient, $E_{act} = \sim 5$ kcal/mole, proves the chain radical nature of the decomposing reaction in a high concentration of azo compounds. The free radical nature of the PFAA decomposition was also proved in their photolysis in UV: hexafluoro azo methane decomposes to form perfluoro tetramethyl, perfluoro hexamethyl hydrazine, and perfluoro hexamethyl tetrazine. Polyfluorinated hexaalkyl tetrazines are stable and do not decompose below 350-400°C:
$(CF_3)_2N \cdot N(CF_3)N(CF_3) \cdot N(CF_3)_2 \rightarrow (CF_3)_2N \cdot N(CF_3)_2 + CF_3N{=}NCF_3$. When photolyzing trifluoro and pentafluoro azo methane, substituted hydrazines and tetrazines were isolated. Due to a mass-spectrometric investigation carried out by S. S. Dubov and A. M. Khokhlova, and due to chemical conversions, it was proved that the active free radical in asymmetrical azo compounds of the $CF_3N{=}NR$ type was predominantly accumulated on the N atom of the azo group next to the less electrophilic group. The free radical nature of the above PFAA conversions is proved by their reaction

Production, pyrolysis, and ...

in UV in the presence of acceptors of free radicals. Thus, hexafluoro azo methane, in the presence of chlorine, changes into trifluoro chloro methane, when photolyzed, and into trifluoro nitroso methane in the presence of nitric oxide or methyl nitrite. The aliphatic-aromatic azo compounds of the $R_fN{=}NC_6H_5$ type are resistant to high temperatures and UV. Thus, PFAA show a general tendency toward homolytic dissociation into free polyfluorinated radicals and into an N_2 molecule. Thus, N_2^+ is produced in the case of an electronic impact. Pyrolytic decomposition of hexafluoro azoxy methane at 250-300°C, however, takes a different course:



There are 2 tables and 5 references: 1 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: Ref. 3: D. Clark, H. O. Pritshard, J. Chem. Soc., 1956, 2136; Ref. 4: J. R. Dacey, D. M. Young, J. Chem. Phys., 23, 1302 (1955); Ref. 5: J. O.

Card 4/5

32819
S/020/62/142/001/017/021
B103/B110

Production, pyrolysis, and ...

Pritchard, H. O. Pritchard, A. F. Trotman-Dickenson, Chem. and Ind., 1955, 564; Trans. Farad. Soc., 52, No. 6 (1956).

PRESENTED: June 1, 1961, by Academician I. L. Knunyants and M. I. Kabachnik

SUBMITTED: June 1, 1961

Card 5/5

32839

5.3610 2209

11.2214

S/020/62/142/002/020/029
B106/B101

AUTHORS: Ginsburg, V. A., Yakubovich, A. Ya., Filatov, A. S., Zelenin, G. Ye., Makarov, S. P., Shpanskiy, V. A., Kotel'nikova, G. P., Sergiyenko, L. F., and Martynova, L. L.

TITLE: Heterolytic transformations of polyfluorinated azoalkanes

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 2, 1962, 354-357

TEXT: A number of heterolytic transformations of polyfluorinated azoalkanes was discovered for the first time. The said azoalkanes, while being highly resistant to oxidizing agents, easily react with reducers (HI, H_2S, H_3P) in polar media (ether, methanol) at low temperatures, whereby the azo group is converted into the hydrazo group. Hexafluoro hydrazomethane presents acid properties and is relatively stable in the solvate form in ether or acetone. The etherate reacts with ketene, and the normal diacyl derivative is formed as a result. Hydrogen fluoride is readily separated from hexafluoro hydrazomethane under the action of bases:

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Heterolytic transformations of...

$$CF_3NH\,NHCF_3 \xrightarrow{C_6H_5NH_2} (C_6H_5NH)_2C{=}N{-}N{=}C(NHC_6H_5)_2$$
$$CF_3NH\,NHCF_3 \xrightarrow{C_6H_5SH} (C_6H_5S)_2C{=}N{-}N{=}C(SC_6H_5)_2$$

Hexafluoro hydrazomethane reacts with aluminum chloride to form the dimer of tetrafluoro formazine, and, if oxidized in anhydrous media ($KMnO_4$ + CH_3COOH), it passes over to the intensively yellow cis-form of hexafluorazo methane, which readily takes the almost colorless trans-form under the action of light, alkali lyes, or metals. In the reduction of azoalkanes which contain the groups CF_2Cl or R_fCF_2, the corresponding hydrazo compounds cannot be isolated, due to hydrolysis. The compound $CF_3NHNHC_6H_5$ can be distilled in vacuo (b.p.56°C/1 mm Hg), and passes over to indazole under the action of hydrogen iodide. Under the action of strong acids, the azo group of polyfluorazo alkanes is able to add one proton which, in the case of asymmetric azoalkanes, is added to the nitrogen atom adjoining the more electronegative substituent. These reactions take place most readily in anhydrous hydrofluoric acid, whereby polyfluorazo alkanes are dimerized into benzidine derivatives. Poly-

Card 2/4

fluorinated azo compounds are particularly sensitive to nucleophilic reagents. The reaction rate with amines grows with the amine basicity, and the reactivity in azo compounds of the type $CF_3N{=}NR$ drops in the sequence $R{=}CF_3 > CF_2H > CH_3$. With secondary amines, mercaptans, and sulfinic acids, the azo compounds react as follows:

$$CF_3N{=}NCF_3 \begin{cases} \xrightarrow{HNR_2} [CF_3NHN(CF_3)NR_2] \xrightarrow{HNR_2} (R_2N)_2C{=}N{-}N(CF_3)NR_2 \\ \xrightarrow{HSR} [CF_3NHN(CF_3)SR] \xrightarrow{HSR} CF_3NHNHCF_3 + RSSR \\ \xrightarrow{C_6H_5SO_2H} [CF_3NHN(CF_3)SO_2C_6H_5] \rightarrow CF_2{=}NN(CF_3)SO_2C_6H_5 \end{cases}$$

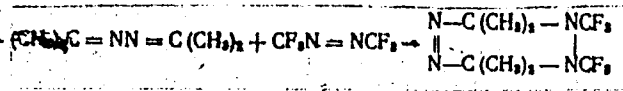
(A)

These conversions probably begin with the formation of a transition complex of the type of a π-complex, e. g., $CF_3N{=}NCF_3$ with $\uparrow \ddot{H}NR_2$ coordinated to the N=N bond. This assumption is backed by the fact that the transition complex, in the reaction of hexafluorazo methane with trialkyl phosphites, can be isolated under mild

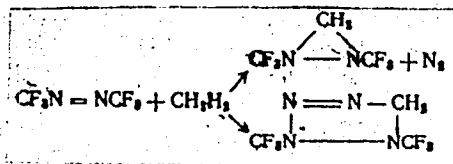
Card 3/7
5

Heterolytic transformations of...

conditions (cooling with dry ice). On heating, the adduct decomposes to nitrogen, tetrafluoro ethylene, diethyl ether, ethyl fluoride, diethyl fluoro phosphite, and diethyl ethane phosphinate. In analogy to azodicarboxylic acid esters, hexafluorazo methane with dienes readily yields the Diels-Alder addition, reacts with azines according to the scheme:



and with diazomethane as follows:



Hexafluorazo methane reacts smoothly with organo-magnesium compounds at low temperatures and forms the hitherto unknown acid fluorides of

Card 4/5

Heterolytic transformations of...

polyfluoro alkyl-(aryl)-hydrazine carboxylic acids $CF_3N(R)NHCOF$, from which a number of further derivatives was obtained:

$$CF_3N(R)NHCOF \xrightarrow{NH_3} CF_3N(R)NHCONH_2$$
$$CF_3N(R)NHCOF \xrightarrow{C_6H_5NH_2} CF_3N(R)NHCONHC_6H_5$$
$$CF_3N(R)NHCOF \xrightarrow{NaOCH_3} CF_3N(R)NHCO_2CH_3$$
$$CF_3N(R)NHCOF \xrightarrow{HCl,H_2O} RNHNH_2 + 2CO_2 + 4HF$$

There are 1 table and 3 references: 2 Soviet and 1 non-Soviet.

PRESENTED: June 1, 1961, by I. L. Knunyants, Academician, and M. I. Kabachnik, Academician

SUBMITTED: June 1, 1961

Table 1. Compounds synthesized for the first time.
Legend: (a) compound; (b) boiling point; (c) melting point; (d) does not melt below 300°C.

Card 5/7

MAKAROV, S.P.; YAKUBOVICH, A.Ya.; GINSBURG, V.A.; FILATOV, A.S.; ENGLIN, M.A.; PRIVEZENTSEVA, N.F.; PRIVEZENTSEVA, N.F.; NIKIFOROVA, T.Ya.

Reactions of polyfuorinated nitrosoalkanes with amines. Dokl. AN SSSR 141 no.2:357-360 N '61. (MIRA 14:11)

1. Predstavleno akademikami I.L.Knunyantsem i M.I.Kabachnikom.
(Nitroso compounds) (Amines)

FILATOV, A.S.

11,1135
5.2420
11.2131

3,750
S/020/62/142/003/017/027
B106/B110

AUTHORS: Makarov, S. P., Shpanskiy, V. A., Ginsburg, V. A., Shchekotikhin, A. I., Filatov, A. S., Martynova, L. L., Pavlovskaya, I. V., Golovaneva, A. F., and Yakubovich, A. Ya.

TITLE: Reactions of polyfluorinated nitroso-alkanes with unsaturated compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 3, 1962, 596 - 599

TEXT: Trifluoronitroso methane is used as an example of some reactions of polyfluorinated nitroso-alkanes with unsaturated compounds. These addition reactions take place easily (in an autoclave at -70 to 0°C). Monomers and polymers containing 1 mole of nitroso compound per olefin mole, form. Styrene and trifluoronitroso methane also form a compound with the molar ratio 1 : 2 which decomposes into 1 mole of nitroso compound, formaldehyde, and the corresponding imine when heated to 70 - 80°C. Therefore it has the structure $C_6H_5CH(CF_3-N-O)-CH_2-O-N-CF_3$. Trifluoronitroso methane adds to diphenyl

Card 1/5

Reactions of polyfluorinated...

ketene even more easily under the formation of $(C_6H_5)_2\underset{|}{C}-\underset{|}{CO}$ / $O-NCF_3$ which decomposes when heated to 300°C mainly forming trifluoromethyl isocyanate (Bp. 33°C, yield 35%) and traces of trifluoronitroso methane. The latter also reacts with $R_FC{\equiv}CX$ alkines ($X = Cl, Br; R_F = CF_3, CF_2Cl, CFCl_2$) at room temperature in an autoclave. $\underset{|}{O}-\underset{|}{N}CF_3$ / ROOCN-NCOOR forms on heating trifluoronitroso methane with azodicarbonic acid esters to 100 - 150°C under pressure. Diazomethane and trifluoronitroso methane react at -70°C to give a polymeric nitron $[CF_3N(O)CH_2]_n$ under nitrogen separation. Phosphazines and trifluoronitroso methane react violently at -70°C following the scheme $(C_6H_5)_3P{=}N{-}N{=}CH_2 + CF_3NO \longrightarrow CH_2O + [(C_6H_5)_3P{=}N{-}N{=}NCF_3] \xrightarrow{-N_2} (C_6H_5)_3P{=}NCF_3$. The product of this reaction also forms from triphenyl phosphine and trifluoromethyl azide under the same conditions. Trifluoronitroso methane and methyl isocyanide react

Card 2/6

Reactions of polyfluorinated...

vigorously when heated to 25°C in an autoclave to form $CH_3N{=}C(-NCF_2)-C{=}NCH_3$ which decomposes into trifluorinated dimethyl carbodiimide and methyl isocyanate when heated to 350 - 400°C in vacuo. These reactions demonstrate the great tendency of the N=O groups of trifluoronitroso methane to addition reactions with nucleophilic and electrophilic compounds. For comparison, some additions similar to the above reactions were conducted with polyfluorinated azomethines: $CF_3N{=}CF_2$ (Bp. -33°C) and $CF_3N{=}CFCl$ (Bp. -5°C). In all cases, the additivity of the C=N groups of these compounds was much lower. On reaction of $CF_3N{=}CF_2$ with diphenyl ketene (autoclaved for 12 hrs at 180°C), not addition, but dimerization of the initial substance took place. The dimer also formed in almost quantitative yields by reaction between $CF_3N{=}CF_2$ and pyridine at -70 - 50°C. With aniline, the dimer converts into the anilide of the monomer, when subjected to pyrolysis (> 500°C) it dissociates into the monomer ($CF_3N{=}CF_2$). Unlike the polyfluorinated azomethines above, difluoro formimine easily

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Reactions of polyfluorinated...

reacts with diphenyl ketene to form the adduct $(C_6H_5)_2CCO \cdot 2CF_2NH$.

Addition reactions with hydrogen fluoride, hydrogen chloride, and mercuric fluoride following the schemes

$$CF_2N{=}CF_2 \begin{cases} \xrightarrow{HF} (CF_3)_2NH \\ \xrightarrow{HCl} (CF_3)CF_2ClNH \xrightarrow{ClNO} (CF_3)_2NNO \ (\beta.p.\ -3°) \\ \xrightarrow{HgF_2} [(CF_3)_2N]_2Hg \xrightarrow{ClNO_2} (CF_3)_2NNO_2 \ (\beta.p.\ +17°) \end{cases}$$

are very characteristic for the polyfluorinated azomethines in question. The tendency of polyfluorinated substances with double bonds to addition reactions with olefins therefore decreases as follows: N=O > N-H > N=C. Table 1 shows the physical constants of the compounds synthesized for the first time. There are 1 table and 12 references: 4 Soviet and 8 non-Soviet. The three most recent references to English-language publications read as follows: E. E. Griffin, R. N. Haszeldine, Proc. Chem. Soc., 1959, 369; 1960, 1151 - 1155; O. E. Griffin, R. N. Haszeldine, J. Chem. Soc., 1960, 1398; J. Crawford, J. Polym. Sci., 45, No. 145, 261 (1960).

Card 4/6

S/020/62/142/003/017/027
B106/B110

Reactions of polyfluorinated...

PRESENTED: June 1, 1961, by M. I. Kabachnik, Academician

SUBMITTED: May 30, 1961

Table 1. Compounds synthesized for the first time.

Legend: (a) Compound; (b) Bp. (Fp.), °C/mm; (c) determined, %; (d) calculated, %; (e) Fp. *Non-distillable yellow oil; ** molecular weight (in acetic acid): determined 580, calculated for the pentamer 565.

Card 5/6

DUBOV, S.S.; GINSBURG, V.A.; KADINA, M.A.; RODIONOVA, N.P.; RODKIN, S.A.; MAKAROV, S.P.; FILATOV, A.S.; YAKUBOVICH, A.Ya.

Appearance of the azo group in vibration and electron spectra.
Zhur.VKHO 6 no.5:596-597 '61. (MIRA 14:10)
(Azo compounds--Spectra)

KULIKOV, Aleksandr Aleksandrovich; BELEN'KIY, Aleksandr Abramovich; RAPUTOV, Boris Mikhaylovich; FILATOV, A.S., kand.tekhn.nauk, retsenzent; SON'KIN, M.A., kand.tekhn.nauk, retsenzent; TUBMAN, M.L., inzh., retsenzent; KISELEVA, T.I., red. izd-va; VAYNSHTEYN, Ye.B., tekhn. red.

[Electrical equipment of enterprises of nonferrous metallurgy] Elektrooborudovanie predpriiatii tsvetnoi metallurgii. Pod obshchei red. A.A.Kulikova. Moskva, Metallurgizdat, 1962. 600 p. (MIRA 15:7)
(Nonferrous metal industries--Electric equipment)

GINSBURG, V.A.; YAKUBOVICH, A.Ya.; FILATOV, A.S.; SHPANSKIY, V.A.; VLASOVA, Ye.S.; ZELENIN, G.Ye.; SERGIYENKO, L.F.; MARTYNOVA, L.L.; MAKAROV, S.P.

Production, pyrolysis, and photolysis of polyfluorinated azo compounds of the aliphatic series. Dokl. AN SSSR 142 no.1:88-91 Ja '62. (MIRA 14:12)

1. Predstavleno akademikami I.L. Knunyantsem i M.I. Kabachnikom.
(Azo compounds) (Fluorination)

MAKAROV, S.P.; SHPANSKIY, V.A.; GINSBURG, V.A.; SHCHEKOTIKHIN, A.I.; FILATOV, A.S.; MARTYNOVA, L.L.; PAVLOVSKAYA, I.V.; GOLOVANEVA, A.F.; YAKUBOVICH, A.Ya.

Reaction of polyfluorinated nitroso alkanes with unsaturated compounds. Dokl. AN SSSR 142 no.3:596-599 Ja '62. (MIRA 15:1)

1. Predstavleno akademikom M.I.Kabachnikom.
(Paraffins) (Unsaturated compounds)

MEYEROVICH, Isaak Markovich; FILATOV, Aleksey Sergeyevich; GOLUBCHIK, R.M., red.; DOBUZHINSKAYA, L.V., tekhn. red.

[Measuring pressures in rolling] Izmerenie usilii pri prokatke. Moskva, Metallurgizdat, 1963. 226 p. (MIRA 16:6)
(Rolling mills) (Strain gauges)

MEYEROVICH, I.M.; MIKHAYLOV, Yu.P.; FILATOV, A.S.

Measuring of stresses during metal rolling. Priborostroenie no.3:21-22 Mr '63. (MIRA 16:6)

(Rolling(Metalwork))
(Strains and stresses—Measurement)

L 23952-66 EWT(d)/EWT(m)/EWP(v)/T/EWP(k)/EWP(h)/EWP(l) DS

ACC NR: AP6009819 SOURCE CODE: UR/0413/66/000/004/0008/0009

AUTHOR: Mun'os, M. V.; Filatov, A. S.; Romanchikov, B. F.; Zaytsev, A. P.; Privedentsev, V. P.

ORG: none

TITLE: An electrohydraulic system for automatically controlling strip thickness on cold rolling mills. Class 7, No 178773

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 8-9

TOPIC TAGS: industrial automation, hydraulic equipment, cold rolling

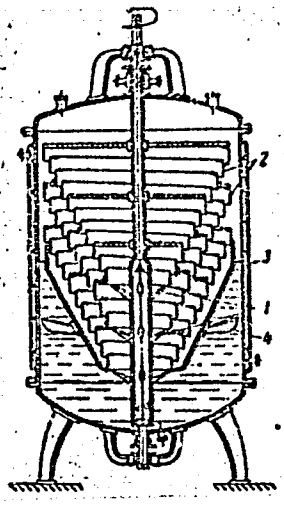
ABSTRACT: This Author's Certificate introduces: 1. An electrohydraulic system for automatically controlling strip thickness on cold rolling mills. The device is operated by signals from a thickness meter. The quality of thickness control is improved by using a discrete system for automatic control of a hydraulic pressure device. This control system consists of a step-servo power motor, a circuit for controlling this motor and a regulator which has a zone of insensitivity with boundaries which are automatically changed by an amount equal to the motion of the pressure device and by a time interval equal to the transportation and measurement delay of the system. 2. A modification of this electrohydraulic system in which the speed is increased and the need for using roller position indicators is eliminated. The hydraulic pressure device

UDC: 621.771.237.016-523.3

Card 1/2

L 3952-66

ACC NR: AP6009819



1--actuating cylinder; 2--control valve; 3--feedback lever; 4--master screw; 5--step-servo motor; 6--thickness gauge; 7--hydraulic pressure device; 8--step-servo motor; 9--control circuit for the step-servo motor; 100-regulator; a--generators; b--phase-sensitive power amplifier; c--unit for selecting the zone of insensitivity; d--code-to-voltage converter; e--divider; f--master unit

consists of an actuating cylinder for setting the roller span, a control valve with lever-controlled motion feedback and a master screw which is moved by the step-servo motor to control the roller span.

SUB CODE: 13/ SUBM DATE: 24Feb64/ ORIG REF: 000/ OTH REF: 000

Card 2/2

FILATOV, A.T.

Clinical and pathophysiological data on the treatment of chronic alcoholism with antabuse. Vrach.delo no.12:1291-1293 D '59. (MIRA 13:5)

1. Kafedra psikhiatrii (zav. - prof. N.P. Tatarenko) Khar'kovskogo meditsinskogo instituta.

(ALCOHOLISM) (DISULFIDE)

FILATOV, A.T.

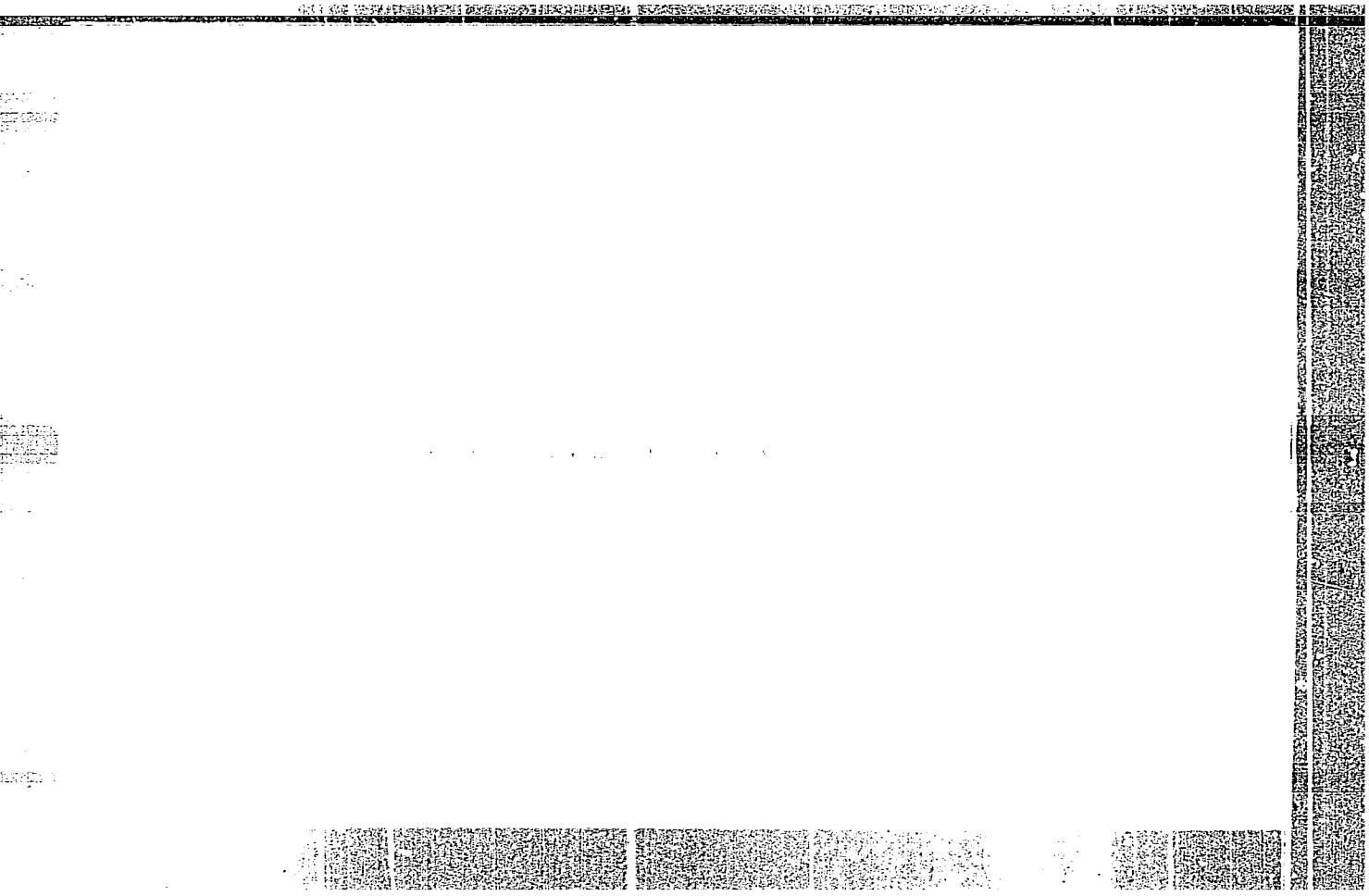
Pathophysiological mechanisms of the alcohol-antabuse reaction.
Zhur.nevr.i psikh. 61 no.3:446-448 '61. (MIRA 14:7)

1. Kafedra psikhiatrii (zav. - prof. N.P.Tatarenko) Khar'kovskogo meditsinskogo instituta.
(DISULFIDE)

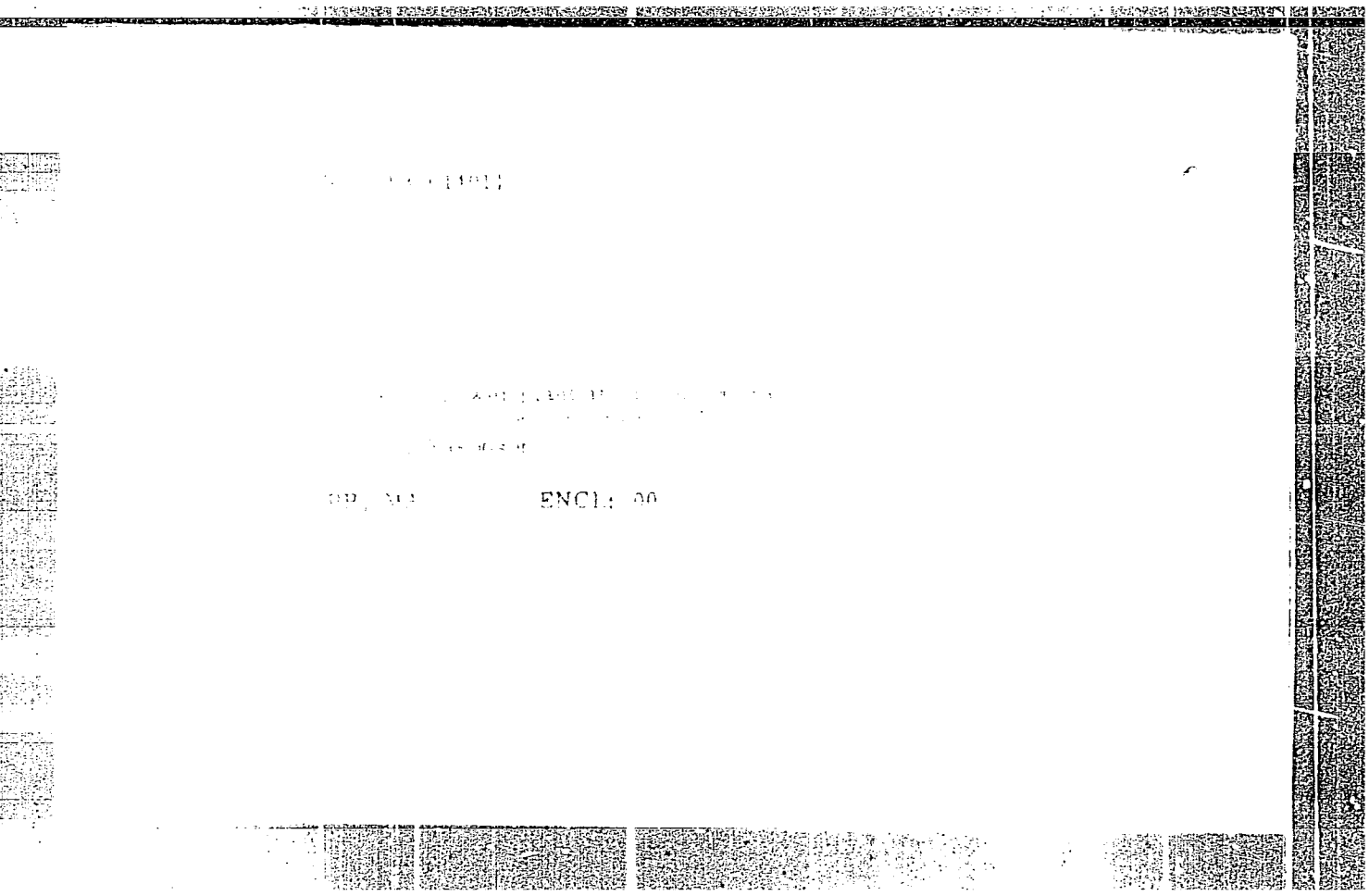
FILATOV, A., engineer

Outpatient treatment of chronic alcoholism. Fel'd. i akush. no.5:33-34 '62. (MIRA 19:1)

1. Kafedra psikhiatrii (zav. - prof. M.I.Tatarenko) Khar'kovskogo meditsinskogo instituta.



APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413020010-0"



ENCL: 00

FILATOV, A. Ye.

Resection of the ureter in connection with a tumor. Urologiia 28 no.5:56 S-O'63 (MIRA 17:4)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. I.D. Korabel'nikov) Chelyabinskogo meditsinskogo instituta na baze bol'nitsy mediko-sanitarnoy chasti Traktornogo zavoda.

FILAIOV, D.

"Twin calculating machines. (To be contd.)", p. 32 (Geodetski List, Vol. 7, no. 1/4, Jan./Apr. 1953, Zagreb)

SO: Monthly List of East European Accessions, Vol. 2, No 9 Library of Congress, September 1953, Uncl.

FILIPOW, . .

"Equalisation of the levelling network by the method of progressive approximation." p. 152, (GEODETSKI LIST, Vol. 8, No. 5/6, May/Aug. 1954, Zagreb, Yugoslavia)

SO: Monthly List of East European Accessions, (EEAL,) LC, Vol. 4, No. 4, Apr 1955, Uncl.

FILATOV, B.

The Brunswick 183 double calculating machine with three basic sections. p. 207. GECDETSKI LIST. Zagreb. Vol. 10, no. 7/8, July/Aug. 1956.

SOURCE: East European Accessions List, (EEAL), Library of Congress Vol. 5, no. 11, Nov., 1956.

FILATOV, B.

Advantages are confirmed by the practice. Stroitel' 2 no.7:15 Jl '56. (MLRA 10:1)

1. Starshiy proizvoditel' rabot stroytresta no.130, g.Ivanovo.
(Ivanovo--Building)

ACC NR: AP6027885 (N) SOURCE CODE: UR/0390/66/029/004/0413/0417

AUTHOR: Aleksandrova, A. Ye.; Filatov, B. N.

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TITLE: H cholinolytic activity of new bis-ammonium compounds

SOURCE: Farmakologiya i toksikologiya, v. 29, no. 4, 1966, 413-417

TOPIC TAGS: bis ammonium compound, cholinolytic activity, myorelaxant, pharmacology, MYOLOGY, DRUG EFFECT

ABSTRACT:

The selective action of recently synthesized myorelaxants on cholino-reactive muscle systems depends on the presence in the molecule of two onium groups located about 13—15 Å apart. Lower homologs of this series with a methylene chain of 5 or 6 carbon atoms primarily display ganglionic blocking action. Peak curare-like activity is found in a compound with 10 carbon atoms owing to the optimum fit of the spatial arrangement of the nitrogen atoms in the drug molecule with the receptors in the myoneural tissue. The electron shells of the myorelaxant substance, and not the nitrogen atoms themselves,

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react with H-cholinoreactive structures. It is considered that if the distance between nitrogen atoms of the compound were less than 13 Å, the partial positive charge created would be delocalized resulting in a compound with a curare-like activity significantly greater than that of the starting compound. Hexonium derivatives containing nitro- and dinitrophenyl radicals in two of their methyl groups were synthesized. These derivatives were obtained as iodides and chlorides. Their structural formulas follow.

Their curare-like and ganglionic blocking activities were studied and compared. Hexonium, in 35—40 mg/kg doses, causes the "drooping head" phenomenon. All its derivatives possess greater curare-like activity than hexonium itself. Introduction of a phenyl radical without nitro-groups (preparation no. 1) causes a marked increase in curare-like activity. A 3.3 mg/kg dose of this compound produces the "drooping head" syndrome as compared with 35 mg/kg of the parent compound. Compound no. 3 with a nitrogroup in the ortho-position requires 1.2 mg/kg to produce this result. The higheat curareform effect was produced by compound no. 4 which has a nitrogroup in the para-position of the phenyl radical. A 0.6 mg/kg dose of this compound produces the optimum effect. Adding nitrogroups at the ortho- and para-positions of the phenyl radical (no. 2) reduces the curare-like effect of the compound, since a 2 mg/kg dose is needed to produce the "drooping head" phenomenon.

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In general, increased curareform activity parallels decreased ganglionic blocking activity. Similar doses produce both parasympathetic and neuromuscular blockage while larger doses are needed to block sympathetic ganglia. [WA-50; CBE No. 11]

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Card 3/3

PILATOV, B.P.

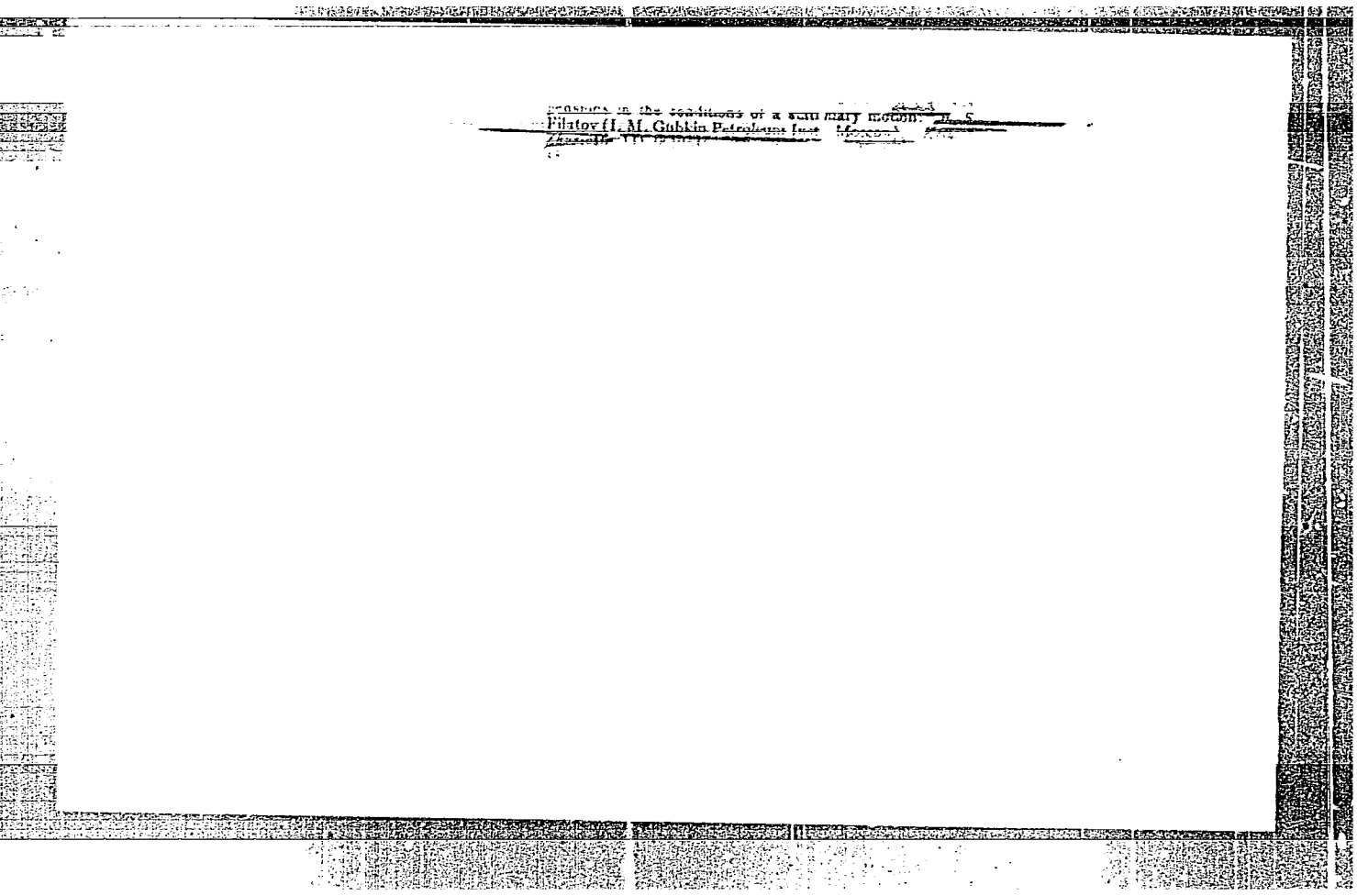
Automatic control of the level in auxiliary condensers. Neftianik 1 no.9:7-8 S '56. (MLRA 9:11)

1. Starshiy inzhener tsekha Groznenskogo kreking-zavoda.
(Condensers (Vapors and gases)) (Automatic control)

FILATOV, B.S.

(2)

Flow of clay suspensions in pipes. B. S. Filatov (I. M. Gubkin Naphtha Inst., Moscow). *Kolloid. Zhur.* 16, 65–71(1954).—Clay suspensions were pumped through pipes (4–7 cm. in diam.), and the mean vol. velocity v of flow and the pressure drop P along the pipe length L were detd. The results for 4 suspensions and H_2O can be represented by one curve for which λ is plotted against Re^*. $\lambda = 2PD/Lv^2\gamma$; γ is d. of the liquid, and D is pipe diam.; $(1/Re^*) = (1/Re) + (\tau_0/6\gamma v^2)$; Re is Reynold's no.; τ_0 is the dynamic yield stress. The flow is turbulent when Re^* is greater than 2500–4000. J. J. Bikerman



FILATOV, B. S.

AID - P-188

Subject : USSR/Engineering

Card : 1/1

Author : Filatov, B. S.

Title : Computation of Pressure Head Losses in Drilling Pipes, Couplings and Bitts. (Part I).

Periodical : Neft. khoz., v. 32, #2, 19-22, F 1954

Abstract : The study of losses in the pressure head in pipes and couplings is presented with formulas of the investigators Tsarevich, Shishchenko and Shumilov. These formulas were developed from equations of Darcet and of Bord-Carnot corrected on experimental values of the Reynold's coefficient "Re". (For Part II, see next issue #3, p. 10).

Institution : Moscow Petroleum Inst. im. Gubkin.

Submitted : No date

FILATOV, B. S.

AID P - 201

Subject	:	USSR/Engineering
Card	:	1/1
Author	:	Filatov, B. S.
Title	:	Computation of Pressure Head Losses in Drilling Pipes. Couplins and Bits (Part II)
Periodical	:	Neft. khoz., v. 32, #3, 10-14, Mr 1954
Abstract	:	Discussion of pressure head losses through drilling bits and summary of all computed losses in pipes and couplings discussed in part I (See #2, p. 19). Two charts, 2 tables; 6 Russian references (1943-51).
Institution	:	None
Submitted	:	No date

FILATOV, B.S.; SAVINA, Z.A.; TROFIMOV, A.V., tekhnicheskiy redaktor.

[Petroleum and gas well drilling] Burenie neftianykh i gazovykh skvazhin. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1955. 338 p. (MLRA 8:2)
(Oil well drilling) (Gas, Natural)

FILATOV, B.S.

Hydraulic calculation of the circulating system of wells.
Trudy MGRI 30:81-91 '56. (MLRA 9:11)
(Boring) (Oil well drilling fluids)

BRANTLY, John Edward; MAL'KOV, I.A. [translator]; FILATOV, B.S., red.

[Rotary drilling handbook] Spravochnik po vrashchatel'nomu bureniiu. Izd.5. Pod red. B.S.Filatova. Moskva, Gos. nauchno-tekhn.izd-vo neft.i gorno-toplivnoi lit-ry, 1957. 405 p. Translated from the English. (MIRA 13:5)
(Oil well drilling)

VOZDVIZHENSKIY, Boris Ivanovich, prof.; VOLKOV, S.A., dots.; FILATOV, B.S., dots.; LYUBIMOV, N.I., kand.tekhn.nauk; TRUSOV, I.A., inzh.; BORAVLEV, V.A., nauchnyy red.; NEKRASOVA, N.B., red.; GUROVA, O.A., tekhn.red.

[Core drilling in prospecting] Razvedochnoe kolonkovoe burenie. Pod obshchei red. B.I.Vozdvizhenskogo. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr, 1957. 591 p. (MIRA 11:4)
(Boring)

KULIYEV, Saftar Mekhti ogly, prof.; FILATOV, Boris Semenovich; YERSHOV, P.R., vedushchiy red.:

[Drilling oil and gas wells] Vurenie neftianykh i gazovykh skvazhin. Moskva, Gos.nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1958. 505 p. (MIRA 11:2)
(Oil well drilling)

MAKURIN, N.S.; FILATOV, B.S.

Using hard alloy bits for air drilling. Izv.vys.ucheb.zav.; geol. i razv. 2 no.9:111-122 S '59. (MIRA 13:4)

1. Moskovskiy geologorazvedochnyy institut im. S.Ordzhonikidze.
(Boring machinery)

14(5) SOV/132-59-6-4/16

AUTHORS: Makurin, N.S. and Filatov, B.S.

TITLE: Aerodynamic Features of the Circulation System of the Air-Flushed Bore-Holes in Prospecting Core Drilling

PERIODICAL: Razvedka i okhrana nedr, 1959, Nr 6, pp 18 - 27 (USSR)

ABSTRACT: The authors find the graphics and formulas proposed by J.O. Scott (U.S.) far too cumbersome for determining losses of air pressure in air-flushed bore-holes in function of dimensions of bits, tubes and the depth of the bore-hole. The plotting of graphics was based on formulas derived from the Bernoulli equation. These formulas were calculated for the whole length of tubing, and did not take into consideration local losses of air pressure at tube junctions, rings etc. The authors cite from Soviet technical literature the method of calculating air-pressure losses by degrees (stages), using the Darcy equation for non-condensable liquids. The formulas are as follows: a / for

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annular space:

$$\Delta P = \lambda \frac{L}{d_э} \cdot \frac{\gamma v^2}{2} + \gamma L;$$

b / for bore-hole tubes:

$$\Delta P = \left(\frac{\lambda L}{d_э} + \sum \xi \right) \frac{\gamma v^2}{2g} - \gamma L$$

where: P - losses of pressure in kg/sq m; L - the tubes length in m; - thedimensionless resistance factor calculated from the Weymouth (Veymaut) equation

$$\lambda = \frac{0{,}009407}{\sqrt[3]{d_э}}$$

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Aerodynamic Features of the Circulating System of the Air-Flushed Bore-Holes in Prospecting Core Drilling

where d_g is the effective diameter (in case of tubes of round section equal to their internal diameter in m); v - the volumetric speed of the gas flow in tubes in m/sec; ξ - dimensionless factor of local resistance in tube junctions; γ - gas density in kg/cubic m. The authors give a detailed description of calculations of air pressure losses for different parts of the bore holes, tubes, annular junctions, etc. They also describe the practical applications of these calculations. There are 5 tables, 1 diagram, 1 graph and 5 references, 3 of which are Soviet and 2 American.

ASSOCIATION: MGRI

BRONZOV, Anatoliy Samsonovich; VASIL'YEV, Yuriy Sergeyevich; SHETLER, Georgiy Arvidovich; FILATOV, B.S., red.; PETROVA, Ye.A., vedushchiy red.; MUKHINA, E.A., tekhn.red.

[Turbodrilling slant holes] Turbinnoe burenie naklonnykh skvazhin. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1960. 144 p. (MIRA 13:7)

(Boring)