FILIPPOV, A.M.

Measurement methods for locating cable damages. Avtom., telem. i sviaz' 7 no.11:8-9 N '63. (MIRA 16:12)

1. Starshiy inzh. Nauchno-issledovatel'skogo instituta gorodskoy i sel'skoy telefonnoy svyazi.

FILIPPOV, A.M.

The UAVA mechanical fertilizer spreader. Biul.tekh.-ekon.inform. no.2:55-56 '60. (MIRA 13:6)
(Fertilizer spreaders)

FILIPPOV, A.M., inzh.; OLESHKEVICH, E.M., inzh.

UAVA ammonia water fertilizer. Trakt. i sel'khozmash. 31 no.11:30 N '61. (MIRA 14:12)

1. Gosudarstvennoye seriyno-konstruktorskoye byuro po khlopku.
(Ammonia as fertilizer)

FILIPPOV, A.N., kand. ekon. nauk.

Some problems of the further development of the mixed feed industry of the U.S.S.R. Trudy MTIPP no.7:66-72 '57. (MIRA 10:12)
(Feeding and feeding stuffs)

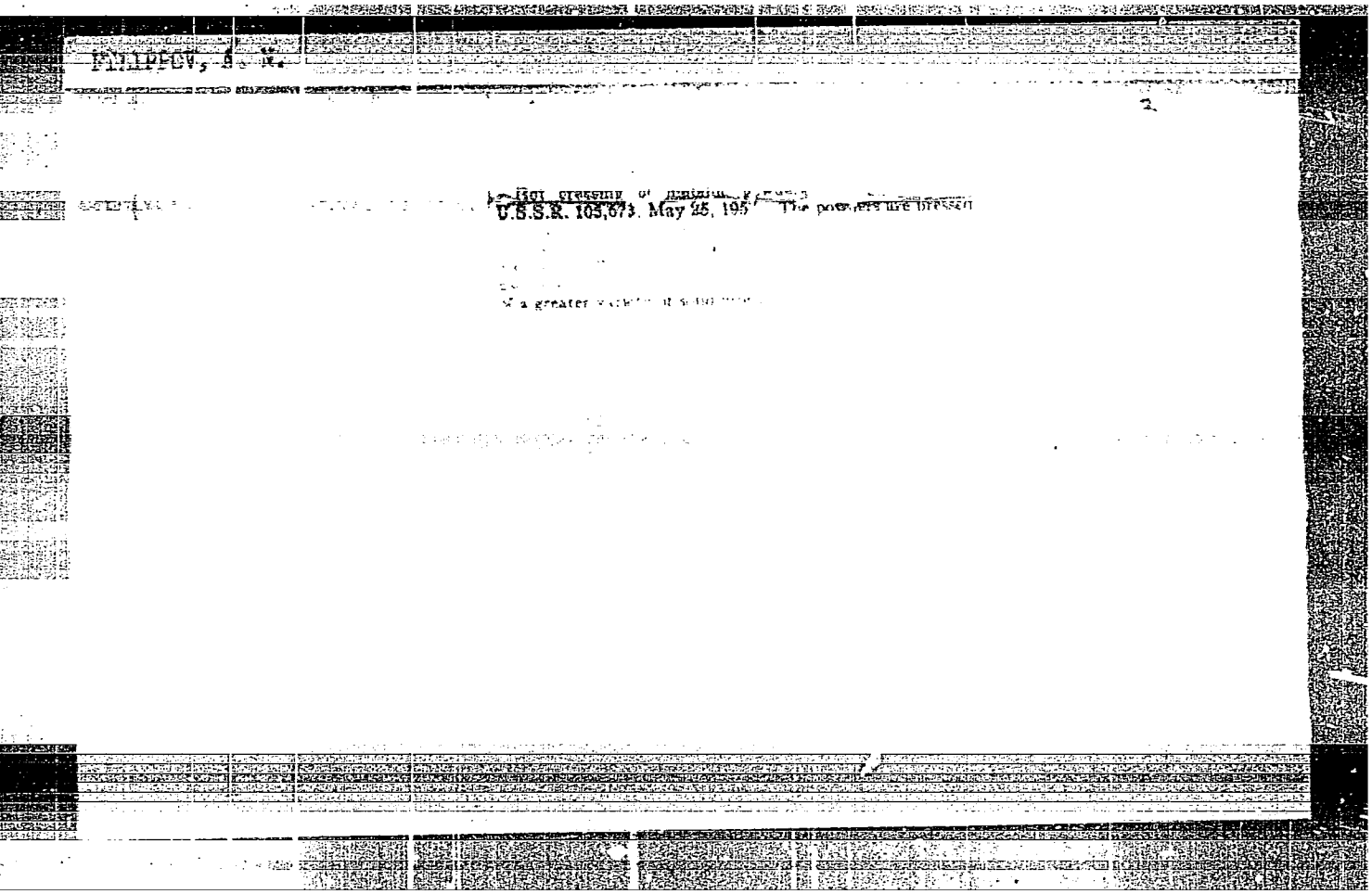
TYNYANOV, V.N., inzh.; FILIPPOV, A.N., inzh.

Selecting the diameter of a turret feed socket. [Nauch. trudy] ENIKMASHa. 3:109-116 '60. (MIRA 14:1)
(Power presses)

FILIPPOV, A.N.

Full utilization of production potentialities in mixed feed mills. Izv. vys. ucheb. zav.; pishch. tekh. no.5:7-12 '61. (MIRA 15:1)

1. Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti. Kafedra organizatsii i planirovaniya proizvodstva.
(Feed mills)



U.S.S.R. 105,673, May 25, 195[illegible]

SOV/137-58-11-22279

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 62 (USSR)

AUTHOR: Filippov, A. N.

TITLE: A New Process of Hot Compacting of Cermet Powders, and its Future (Novyy protsess goryachego pressovaniya metallokeramicheskikh poroshkov i yego vozmozhnosti)

PERIODICAL: V sb.: Materialy Soveshchaniya glavn. metallurgov z-dov i in-tov avtomob. prom-sti. Nr 5. Moscow, 1958, pp 43-47

ABSTRACT: Samples of an Al alloy containing 3.5-4% Fe, 1% Cu, 0.3% Mg and 1% Cr were used to check out the following flowsheet for product manufacture: Cold compaction of the porous blank, graphitizing (heating to 110°C and short-term immersion in colloidal graphite), hot compacting at 400° and 7 t/cm^2 in 3KhV8 St compacting molds with external electric heating and minimum holding time. Part dimensions are of Class II tolerance. The method described may be used to make parts of Ni, Cu, and other metals (Me), as well as of the so-called metal plastics (plastic powders infiltrated into a mechanical mixture of Me powders) and of products of alloy-steel powder. This method provides a high

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SOV/137-58-11-22279

A New Process of Hot Compacting of Cermet Powders, and its Future degree of homogeneity in the physical-chemical and mechanical respects.

A. M.

Card 2/2

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77163
SOV/129-60-1-11/22

AUTHOR: Filippov, A. N. (Engineer)

TITLE: Aluminum Metalceramic Materials

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 1, pp 36-38 (USSR)

ABSTRACT: As a result of preliminary tests on wear-resistant Al-base alloys, three alloys, of the following chemical composition, were chosen for preparation of powders: (1) AN 2.5 (2.5% Ni); (2) NAMI (6.5% Sn + 1% Cu + 2% Si); (3) alloy with 3.5% Fe + 2% Cr + 1% Cu + 0.3% Mg +.2% Ti. The average size of particles of all three powders ranged between 0.2 and 0.4 mm. To improve the antifriction properties and to prevent the welding of powders to the metal die, 3% of pencil graphite A, with maximum ash content of 1%, was added. In the process of investigation it was established that only alloy Nr (3) meets the requirements. Hot pressing of 11.3 mm diam and 15.5 mm height samples was carried out at temperatures corresponding to the recrystallization temperature of

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aluminum (300-400° C). Figure 1 shows the changes of hardness, compression strength, and contraction depending on temperatures of hot pressing. At 400° C the samples have maximum strength and contaction. The time of pressing has practically no influence on mechanical properties of samples. Figure 2 shows the changes in hardness, strength, and contraction, depending on the specific compacting pressure. As a result of investigations the following rates were selected: (1) Specific compacting pressure, 7,000-8,000 kg/cm^2; (2) Temperature of pressing, 400-410° C; (3) Time of pressing, 30 to 60 sec (depending on size of the product pressed). These rates allow production of metalceramic materials as a result of sintering in metal die at comparatively low temperatures and without a protective atmosphere. The sintered material was tested on piston rings (for the internal combustion engine) designed by P. F. Zubets, A. N. Filippov (Authors' Certificate Nr 80453). The selected alloy has good wear resistance and a low coefficient of

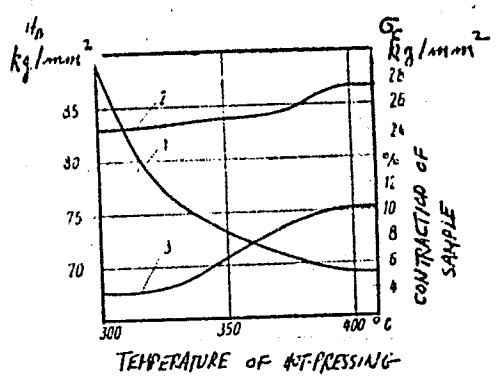

Fig. 1. Dependence of hardness (1); compression strength (2); and degree of contraction (3) on the temperature of hot pressing at 10^4 kg/cm² pressure (pressing time, 5 min). H_B is Brinnel hardness; σ_c is compression stress.

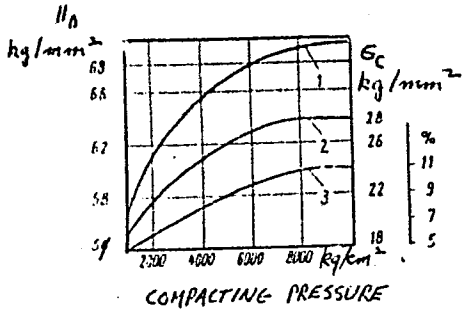

Fig. 2. Changes in hardness (1); compression strength (2); and the degree of contraction (3), versus specific compacting pressure.

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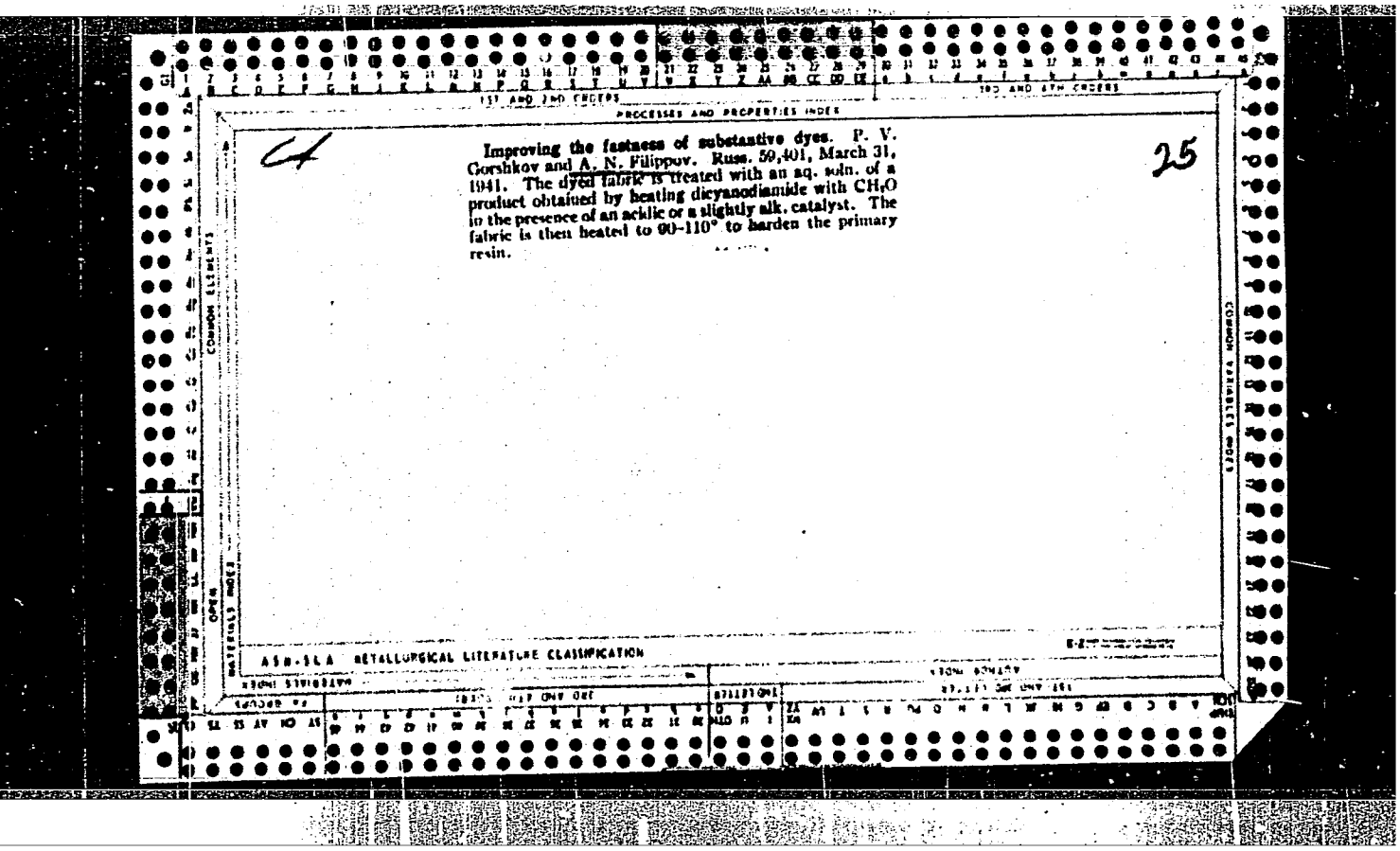
friction, 0.02 to 0.03. There is 1 table; 2 figures; and 1 Soviet reference.

ASSOCIATION: State All-Union "Order of Labor Red Banner" Automobile and Automobile Engine Scientific Research Institute (NAMI)

FILIPPOV, A.N. (Yaroslavl'); BASHLACHEV, A.A. (Yaroslavl')

Improving the system of revenue distribution and the principles of price formation. Zhel. dor. transp. 47 no.9:82-83 S '65. (MIRA 18:9)

1. Zamestitel' nachal'nika finansovoy sluzhby Severnoy dorogi (for Filippov). 2. Nachal'nik finansovogo otdela Yaroslavskogo otdeleniya Severnoy dorogi (for Bashlachev).



4

25

Improving the fastness of substantive dyes. P. V. Gorshkov and A. N. Filippov. Russ. 59,401, March 31, 1941. The dyed fabric is treated with an aq. soln. of a product obtained by heating dicyanodiamide with CH_2O in the presence of an acidic or a slightly alk. catalyst. The fabric is then heated to 90–110° to harden the primary resin.

MOCHALINA, K.N.; FILIPPOV, A.N.

Bleaching color-woven zephyr with hydrogen peroxide. Obm. tekh.opyt [MLP] no.10:4-7 '56. (MIRA 11:11)
(Bleaching) (Hydrogen peroxide)

ARIFOV, U.A.; KLEYN, G.A.; ABLYAYEV, Sh.A.; VASIL'YEVA, Ye.K.; FILIPPOV, A.N.; SLEPAKOVA, S.I.; GETSONOK, B.I.; ZAUROV, R.I.

Studying gamma-ray effects in natural silk. Izv. AN Uz. SSR. Ser. fiz.-mat.nauk no.4:5-11 '58. (MIRA 11:11)

1. Fiziko-tekhnicheskiy institut AN Uz. SSR.
(Silk) (Gamma rays)

ARIFOV, U.A., akademik; KLEYN, G.A.; ABLYAYEV, Sh.A.; VASIL'YEVA, Ye.K.; FILIPPOV, A.N.; SLEPAKOVA, S.I.; GETSOHOK, B.I.; ZAUROV, R.I.

Effect of gamma rays on the properties and structure of natural silk. Dokl. AN Uz. SSR no.6:5-9 '58. (MIRA 11:9)

1.AN UzSSR (for Arifov). 2.Fiziko-tekhnicheskiy institut AN UzSSR, Institut yadernoy fiziki AN UzSSR i Uzbekskiy nauchno-issledovatel'skiy institut shelkovoy promyshlennosti.
(Gamma rays) (Silk)

S/166/60/000/02/11/013

AUTHORS: Arifov,U.A., Member of the AS Uz SSR, Kleyn, G.A., Filippov,A.N., Slepakova, S.I., Zaurov, R.I. and Kordub, N.N.

TITLE: The Variation of Properties of Natural Silk in Different Media and the Synthetic Nitron Fiber in the Air by Gamma Radiation

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1960, No.2, pp.89-95

TEXT: The authors communicate the results of the investigation of the variation of several mechanic, physical and chemical properties of the raw silk during a radiation with the gamma rays of Co^{60} in distilled water, benzol, hydrogen and air. For a comparison the variations of the synthetic acrylonitile nitron fiber are considered. It is stated that the synthetic fiber especially for a strong radiation has a greater power of resistance than the natural raw silk. There are 6 figures and 2 Soviet references.

ASSOCIATION: Institut yadernoy fiziki AN Uz SSR (Institute of Nuclear Physics AS Uz SSR) Uzbekskiy n.-i. institut shelkovoy promyshlennosti (Uzbekskiy Scientific Research Institute of Silk Industry)

SUBMITTED: February 16, 1959

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S/166/60/000/004/004/008
0111/0222

AUTHORS: Arifov, U.A., Academician of the Academy of Sciences Uzbekskaya SSR, Kleyn, G.A., Filippov, A.N., Amirova, N.Yu., Adilkhodzhayeva, G.A., Okun', G.S. and Osipova, L.Kh.

TITLE: The Radiation-Induced Graft Copolymerization of Natural Silk, Capron and Viscose

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR. Seriya fiziko-matematicheskikh nauk, 1960, No.4, pp.59-64.

TEXT: Continuing the authors' investigations (Ref.1-7) the processes mentioned in the title were investigated, whereby it was stated: By radiation it is possible to obtain graft polymeres of natural silk, of capron and of viscose for an immediate contact with the monomers and their solutions. The reaction of the graft copolymerization of the mentioned fibre materials with styren and methylmetacrylate is more extensive than their reaction with vinyl acetate. The synthesis of the graft copolymeres takes easily place in presence of methyl alcohol; often the reaction is accelerated by water; the role of the water seems to be complicated. If the graft of styren and methylmeta-

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S/166/60/000/004/004/008
C111/C222

The Radiation-Induced Graft Copolymerization of Natural Silk, Capron and Viscose

crylate takes place under conditions where no strong γ-radiation[19] is necessary, then it improves the dynamometric properties of the modified fibres. The copolymerization of the fibre materials with styren and methylmetacrylate (graft 50-80%) takes place in the fibre. There are 15 references: 10 Soviet, 4 Polish and 1 Swiss.

ASSOCIATION: Institut yadernoy fiziki AN Uz SSR (Institute of Nuclear Physics of the Academy of Sciences Uzbekskaya SSR)

SUBMITTED: May 24, 1960

Card 2/2

S/844/62/000/000/080/129
D423/D307

AUTHORS: Arifov, U. A., Klein, G. A., Filippov, A. N., Amirova, N. Yu., Adilkhodzhayeva, G. A., Okun', G. S. and Osipova, L. Kh.

TITLE: Radiation grafting of vinyl monomers to certain natural and chemical fibers

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 470-475

TEXT: The present work is a continuation of previous investigations by Arifov and Klein, with the object of obtaining grafted copolymers of styrene, methylmethacrylate and vinyl acetate with raw silk, caprone and viscose. Irradiation was carried out with a Co^{60} source at a γ dosage of 10^5 to 5×10^6 rep on solutions of the monomers in various organic solvents. Grafted polymers of natural silk, caprone and viscose with styrene and methylmethacrylate were formed more readily than with vinyl acetate; and grafting with sty-

Card 1/2

Card 2/

...stitute of

S/844/62/000/000/080/129
D423/D307

AUTHORS: Arifov, U. A., Klein, G. A., Filippov, A. N., Amirova, N. Yu., Adilkhodzhayeva, G. A., Okun', G. S. and Osipova, L. Kh.

TITLE: Radiation grafting of vinyl monomers to certain natural and chemical fibers

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 470-475

TEXT: The present work is a continuation of previous investigations by Arifov and Klein, with the object of obtaining grafted copolymers of styrene, methylmethacrylate and vinyl acetate with raw silk, caprone and viscose. Irradiation was carried out with a Co^{60} source at a γ dosage of 10^5 to 5×10^6 rep on solutions of the monomers in various organic solvents. Grafted polymers of natural silk, caprone and viscose with styrene and methylmethacrylate were formed more readily than with vinyl acetate, and grafting with sty-

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Radiation grafting of ... S/844/62/000/000/080/129
D423/D307

rene took place on direct contact of fibers with pure styrene and with a solution of styrene in methanol. Grafting with methylmethacrylate took place by conditioning the fibers in the presence of substances which dissolve polymethylmethacrylate, i.e. acetone and acetoacetic ester. The extent of grafting was increased with increase of dosage up to defined limits, after which it is sharply retarded. Methylmethacrylate grafted to viscose produced material which could be dyed with basic dyestuffs and by grafting styrene and methylmethacrylate to the various fibers it was found that their dynamometric properties were improved. It was also found that copolymerization of fibrous materials with styrene and methylmethacrylate with up to 50 - 80% grafting, took place within the fiber. There are 5 figures.

ASSOCIATION: Institut yadernoy fiziki AN UzbSSSR (Institute of Nuclear Physics, AS UzSSR).

Card 2/2

KOCHETOV, M.N.; SHCHERBAKOV, G.V.; FILIPPOV, A.N.

Using various methods to determine the mean values of the parameters of a layer. Trudy VNII no.36:188-197 '62. (MIRA 15:11)
(Oil sands--Permeability)

GOLOSKOKOV, Ye.G. (Khar'kov); FILIPPOV, A.F. (Khar'kov)

Nonstationary bending and torsional vibrations of the engine-rotor system. Izv. AN SSSR. Mekh. i mashinostr. no. 2:153-157 Mr-Ap '64. (MIRA 17:5)

FILIPPOV, A. P. (Khar'kov)

"Vibrations of a beam under the action of moving loads".

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

VOROBYEV, Yu.S.; FILIPPOV, A.P. (Khar'kov)

"Free vibrations of rotating bars without the hypothesis of plane sections"

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

FILIPPOV, A.P.

Use of the IKS-12 spectrometer for investigating spectra of gases. Zav.lab. 29 no.11:1379-1380 '63. (MIRA 16:12)

1. Lisichanskiy filial gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta azotnoy promyshlennosti i produktov organicheskogo sinteza.

SVINAREV, Georgiy Andreyevich; FILIPPOV, A.P., otv. red.

[High-pressure axial-flow Kaplan turbines] Vysokonapornye povorotnolopastnye gidroturbiny osevogo tipa. Kiev, Izd-vo AN USSSR, 1964. 134 p. (MIRA 17:5)

1. Chlen-korrespondent AN Ukr.SSR (for Filippov).

KANEVSKIY, Ye.A.; FILIPPOV, A.P.

Effect of the ionic composition of solutions of iron (III) on the dissolution of uranium dioxide. Radiokhimiia 5 no.5:602-608 '63. (MIRA 17:3)

PETROV, N.P., kand. tekhn. nauk; TROSHKIN, I.T., inzh.; FILIPPOV, A.P., inzh.

Heat treatment of 30KhGSA, 30KhGSNA, 38Kh[illegible], and 40KhNVA steels in an endothermic atmosphere. Vest. mashinostr. 43 no.10: 61-63 O '63. (MIRA 16:11)

S/0179 /64/000/002/0153/0157

ACCESSION NR: AP4035065

AUTHOR: Goloskokov, Ye. G. (Khar'kov); Filippov, A. P. (Khar'kov)

TITLE: Nonstationary bending-twisting oscillations of a motor-rotor system

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniye, no.2, 1964, 153-157

TOPIC TAGS: rotor, motor-rotor system, flexible shaft, MPT-9 modelling machine

ABSTRACT: The nonstationary transition through the critical state is considered for a motor-flexible rotor system under the assumption that the moment characteristic of the motor is independent of the acceleration and that its power is of the same order as the power required by the system in the critical velocity zone. The presence of an elastic bond between the motor and the rotor is also assumed. This bond can yield to twisting, but does not

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ACCESSION NR: AP4035065

have bending rigidity.

The equations for t system are set up and the results of the integration done on the MPT-> modeling machine are given. An analysis is made of the solution for various values of the parameters.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 20May64 ENCL: 00

SUB CODE: IE, GP NO REF SOV: 003 OTHER: 000

Card 2/2

L 27593-65 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Pu-4 IJP(c) ES/JD/WW/JG

ACCESSION NR: AP5001644 S/0186/64/006/006/0732/0737

AUTHOR: Kanevskiy, Ye. A.; Filippov, A. P. 21 18 B

TITLE: Factors determining the oxidizing activity of nitric acid during the reaction with uranium dioxide 27

SOURCE: Radiokhimiya, v. 6, no. 6, 1964, 732-737

TOPIC TAGS: uranium dioxide, uranyl nitrate, uranium oxidation, nitric acid oxidizing activity

ABSTRACT: An attempt was made to examine the principal factors determining the oxidizing activity of nitric acid in sulfuric acid solutions in the interaction with uranium dioxide and to offer an explanation for the regularities observed. The effect of nitric and sulfuric acid concentrations was established. Temperature was found to be a decisive factor in enhancing the oxidative properties of nitric acid, and its effect was studied together with the rate of stirring of the reaction mixture. It was postulated that some of the products of decomposition of nitric acid are strong oxidants. The authors also studied the kinetics of establishment of oxidation-reduction potentials in the system UO_2 - HNO_3 - H_2SO_4 - H_2O and the kinetics of the simultaneous dissolution of UO_2. No direct relation

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ACCESSION NR: AP5001644

was found to exist between these two phenomena, but the authors conclude that the dissolution of UO_2 is probably related to an acceleration of the decomposition of HNO_3 under the catalytic influence of the products of reduction of this acid. "The experimental part of the work was done in collaboration with Ye. D. Fedorov." Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 04Dec63 ENCL: 00 SUB CODE: IC

NO REF SOV: 003 OTHER: 006

Card 2/2

FILIPPOV, A.P., otv.red.; DEDUSENKO, Yu.M., red.; NAGORNAYA, N.K., red.; BULGAKOV, V.N., red.; SYTNIK, N.K., red.; SHALAYEVA, S.A., mlad. red.

[Operating processes in turbomachines and the stability of their elements] Rabochie protsessy v turbomashinakh i prochnost' ikh elementov. Kiev, Naukova dumka, 1965. 172 p. (MIRA 18:6)

1. Akademiya nauk URSR, Kiev. Instytut mekhaniky. Khar'kovskiy filial. 2. Chlen-korrespondent AN Ukr.SSR (for Filippov).

FILIPPOV, A. P., Candidate Tech Sci (diss) -- "The solubility of nitrogen in liquid iron and melts of iron and silicon". Moscow, 1959. 9 pp (Acad Sci USSR, Inst of Metallurgy im A. A. Baykov), 150 copies (KL, No 24, 1959, 142)

FILIPPOV, A.P., kand.tekhn.nauk; PRIVALOV, Yu.Ya., aspirant

Mining of thick coal-seam outcrops in the area of Tom'-Usa mines. Ugol' 35 no.9:29-32 S '60. (MIRA 13:10)

1. Glavnyy inzhener tresta Tomusaugol' (for Filippov). 2. Tomskiy politekhnicheskiy institut (for Privalov).
(Kuznetsk Basin--Coal mines and mining)
(Strip mining)

FILIPPOV, A.P., kand.tekhn.nauk

Using the usual methods and equipment and hydromechanical means in looking for an efficient system of mining thick flat seams of the Tom'-Usa area. Izv. vys. ucheb. zav.; gor. zhur. no.8:22-30 '61. (MIRA 15:5)

1. Kemerovskiy gornyy institut. Rekomendovana kafedroy razrabotki mestorozhdeniy poleznykh iskopayemykh Kemerovskogo gornogo instituta.
(Kuznetsk Basin--Coal mines and mining)

FILIPPOV, A.P., kand.tekhn.nauk

Hydraulic mining of a thick flat seam in the "Tomusinskaia 1 - 2" Mine. Ugol' 36 no.5:27-31 My '61. (MIRA 14:5)

1. Glavnyy inzh.tresta Tomusaugol'.
(Kuznetsk Basin--Hydraulic mining)

FILIPPOV, A.P., kand.tekhn.nauk; KUZNETSOV, S.T., kand.tekhn.nauk; BUBLIK, F.P., kand.tekhn.nauk

Rock pressure manifestations in cases of mining thick seams in the Tom'-Usa deposit with the chamber-pillar method and use of hydraulic machinery. Ugol' 36 no.10:33-35 O '61. (MIRA 14:12)

1. Trest Tomusaugol' (for Filippov). 2. Vsesoyuznyy nauchno-issledovatel'skiy marksheyderovskiy institut (for Kuznetsov, Bublik).

(Kuznetsk Basin--Coal mines and mining--Hydraulic equipment)
(Rock pressure)

YATSIMIRSKIY, K.B.; FILIPPOV, A.P.

Kinetics of molybdenum (VI)-catalyzed reaction of 9-naphthylamine oxidation with bromate. Kin. i kat. 6 no.4:674-681 Jl-Ag '65. (MIRA 18:9)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

FILIPPOV, A.P.; KANEVSKIY, Ye.A.; TIMOFEYEVA, N.V.

Reaction of uranium dioxide with nitrous acid in a sulfuric acid solution. Zhur.prikl.khim. 38 no.3:658-660 Mr '65. (MIRA 18:11)

1. Submitted May 24, 1964.

YATSIMIRSKIY, K.B.; FILIPPOV, A.P.

Kinetic method for determining microquantities of molybdenum. Zhur. anal. khim. 20 no.8:815-819 '65.

(MIRA 18:10)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR, Kiyev.

PENTSOV, V.M.; FILIPPOV, A.P.

Passage through the resonance of a nonlinear system with one degree of freedom. Trudy Lab.gidr.mash.AN USSR no.11:34-39 '64.
(MIRA 17:10)

FILIPPOV, Anatoliy Petrovich. Prinimal uchastiye [illegible]; SYTNIK, M.K., red.

[Vibrations of mechanical systems] Kolebaniia mekhanicheskikh sistem. Kiev, Naukova dumka, 1965. 713 p. (MIRA 18:3)

FILIPPOV, A. P.

At the plenary meeting of the conference of the Power Establishments of the Academies of Sciences of the Union Republics and of the Affiliates of the Academy of Science, USSR, the following paper was presented by Corresponding Member of the Academy of Sciences, Ukrainian SSR, A. P. Filippov on "The problems of precision in the parts of gas turbines".

SO: Elekrichestvo, No. 9 Moscow, Sept. 1947 (U-5534)

FILIPPOV, A. P.

Filippov, A. P. - "The stresses in the revolving discs of turbines when calculating creep," Sbornik trudov (Akad. nauk Ukr. SSR, Laboratoriya problem bystrokhodnykh mashin i mekhanizmov), Issue 1, 1949, p. 75-103, - Bibliog: p. 103

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949.)

FILIPPOV, A. P.

Filippov, A. P. T[illegible] of an elliptic plate with simply supported [illegible] der the action of concentrated loads. A[illegible] R. Inženernyĭ Sbornik 5, no. 2, 71–82 (1949). [illegible]

Analytically, the bo[illegible] lue problem considered in this paper consists in [illegible] mination of a real-valued function $w(x, y)$ (deflec[illegible] plate) defined on an ellipse in the (x, y)-plane, su[illegible] tha[illegible] (a) in the interior of the ellipse w satisfies, save [illegible] a f[illegible] te number of points of the interior (where concent[illegible] ted [illegible] ds normal to the plane of the plate are present), [illegible] pa[illegible] al differential equation

$$\left(\frac{\partial^2}{\partial x^2}+\frac{\partial^2}{\partial y^2}\right)\left(\frac{\partial^2 w}{\partial x^2}+\frac{\partial^2 w}{\partial y^2}\right)=\frac{1}{D}f(x,y),$$

where $f(x, y)$ is a given f[illegible] ctio[illegible] the distributed load normal to the plane of the ell[illegible] ic pl[illegible] e) and D is an elastic constant; at each of the exc[illegible] ption[illegible] set of points w behaves like $Cr^2 \log r$ plus a regular [illegible] unc[illegible] a, where C is a given real number (proportional [illegible] the [illegible] ensity of the given concentrated load at the poi[illegible] an[illegible] is the Euclidean distance from the point. (b) On [illegible] ellip[illegible] cal boundary w satisfies the conditions (simply supp[illegible] ted [illegible] ate) $w=0$,

$$M = -D\nu\left(\frac{\partial^2 w}{\partial x^2}+\frac{\partial^2 w}{\partial y^2}\right)$$

$$-D(1-\nu)\left([illegible] \theta [illegible] \sin^2\theta\frac{\partial^2 w}{\partial y^2}+\sin 2\theta\frac{\partial^2 w}{\partial x\partial y}\right)=0,$$

where D and ν are ela[illegible] c[illegible] nts and θ is the angle between the outer norma[illegible] th[illegible] oundary and the positive x axis. The boundar[illegible] [illegible] lem is first formulated in terms of elliptic coordi[illegible] [illegible] onal solution is then given, expressed as an infin[illegible] seri[illegible] whose coefficients may be determined numer[illegible] all[illegible] y [illegible] ng linear equations, in the special case of two con[illegible] tr[illegible] loads, of equal magnitude and direction, symmet[illegible] ly [illegible] ed with respect to the major axis of the ellipse. The [illegible] ca[illegible] case of a concentrated load at the center of the pl[illegible] is [illegible] t with numerically.

[illegible] (College Park, Md.).

Source: Mathematical Reviews, Vol 13 No. 1

FILIPPOV, A. P.

"Stresses in Rotating Disks of Turbomachines," by A. P. Filippov (Khar'kov), Inzh Sbor, Vol 9, pp 167-176, 1951

Gives method of calcg rotating disks of turbomachines with help of integral equations. The obtained integral eqs make possible the finding of stresses in a disk of variable profile taking temp into account, and also variability of modulus of elasticity - which is dependent on temp. Submitted 22 Oct 48.

257T56

FILIPPOV, A.P.

FILIPPOV, A.P.

Deformations and stresses in cylindrical shells. Sbor.trud.lab. probl.bystr.mash. no.4:15-30 '53. (MLRA 7:12)

1. Chlen-korrespondent AN URSR.
(Elastic plates and shells)

FILIPPOV, A.P.

Forced transverse vibrations in turbine blades taking into account attenuation. Sbor.trud.lab.probl.bystr.mash. no.4: 3-14 '54. (MLRA 7:12)

1. Chlen-korrespondent AN URSR.
(Blades--Vibration)

Filippov, A.P.

3

[illegible]. Filippov, A. P., The load-carrying capacity of compressed-bent columns with residual stresses (in Russian), Tr. Kharkovsk. politekhn. in-ta 5, 103–120, 1955; Ref. Zh. Mekh. 1956, Rev. 5[illegible]

A determination of the limiting [illegible] column of rectangular section according [illegible] eccentricity, and also the maximum [illegible] results of tests with [illegible] without initial stresses are given.

Courtesy Referativnyi Zhurnal [illegible]

FILIPPOV, Anatoliy Petrovich, professor; PROSKURA, G.F., otvetstvennyy redaktor; LISENBART, D.K., redaktor izdatel'stva; KRYLOVSKAYA, N.S., tekhnicheskikh redaktor.

[Vibrations of elastic systems] Kolebaniia uprugikh sistem. Kiev, Izd-vo Akademii nauk USSR, 1956. 321 p. (MIRA 9:8)

1. Chlen-korrespondent AN USSR (for Filippov) 2. Deystvitel'nyy chlen AN USSR (for Proskura)
(Vibration)

SOV/124-57-4-3913

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 11 (USSR)

AUTHOR: Filippov, A. P.

TITLE: The Forced Oscillations of Linear Systems During Their Passage Through a Resonance Condition (Vynuzhdennyye kolebaniya lineynykh sistem pri prokhozhdenii cherez rezonans)

PERIODICAL: V sb.: Kolebaniya v turbomashinakh. Moscow, AN SSSR, 1956, pp 5-20

ABSTRACT: The author adduces a solution of the problem of the passage through a resonance condition for a linear system with one or an arbitrary number of degrees of freedom; the computations are reduced to tabulated functions. For the case of a system with a single degree of freedom the author examines the equation

$$\frac{d^2y}{dt^2} + \mu\frac{dy}{dt} + \omega^2 y = \frac{H}{M}\cos\left(\frac{at^2}{2} + \phi_o\right) \qquad (1)$$

where μ, H, M, c, and a are constants, and $\omega^2 = c/M$. If the initial conditions $y(0) = y'(0) = 0$, the solution of Equation (1) reduces

Card 1/2

The Forced Oscillations of Linear Systems During Their Passage (cont.)

to a Fresnel integral expressed in terms of Bessel functions. Also examined in a passage through a resonance condition when the perturbing force has a variable amplitude, e.g.,

$$H = P_0 (\alpha t / \omega)^m \qquad (2)$$

and it is shown that in such case the integral of Equation (1) can be expressed by means of a Lommel function. The results obtained can be applied for the investigation of a transition through a resonance condition in systems having many degrees of freedom. Also investigated are transverse vibrations of bars while passing through a resonance condition with due account for damping.

Yu. A. Mitropol'skiy

Card 2/2

124-58-9-10388

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 141 (USSR)

AUTHOR: Filippov, A. P.

TITLE: Influence of Creep on the Stress Concentration in a Plate With a Circular Hole (Vliyaniye polzuchesti na kontsentratsiyu napryazheniy v plastinke s kruglym otverstiyem)

PERIODICAL: V sb.: Issledovaniya po vopr. ustoychivosti i prochnosti. Kiyev, AN UkrSSR, 1956, pp 58-69

ABSTRACT: An examination of the creep of an infinite plate with a circular hole, subjected to one-directional tension by distributed forces. The deformation law assumed (theory of aging in the deformed shape) takes into account the elastic component of the strain, but does not include the strain represented by the first portion of the creep curve. The "modulus of creep" ψ appears as an exponential function of the stress intensity τ_n and a linear function of the time t:

$$\psi = A t \tau_n^{p-1}$$

Card 1/2

124-58-9-10388

Influence of Creep on the Stress Concentration in a Plate (cont.)

The nonlinear differential equation for the stress function obtained in the work is solved by the minor parameter method. The parameter therein is represented by a quantity that is proportional to the time elapsed since the start of the deformation. Second-approximation calculations of the stress function (the first approximation corresponds to the elastic problem) are adduced for values p=3 and p=5. Examples of the calculation of the stress-concentration factor are given for some special cases.

A. G. Kostyuk

1. Plates--Properties 2. Plates--Creep 3. Plates--Stresses

Card 2/2

FILIPPOV, A.P. (Kharkiv)

Review of investigations on the theory of vibration in bars. Prikl. mekh.2 no.2:117-132 '56. (MLRA 9:10)

1.Laboratoriya gidravlichnikh mashin Akademii nauk URSR.
(Girders--Vibration)

SOV/24-58-12-7/27

AUTHOR: Filippov, A.P. (Khar'kov)

TITLE: Forced Oscillations in a Linear System on Passing Through a Resonance at a Non-linear Rate of Frequency Change (Vynuzhdennyye kolebaniya lineynoy sistemy pri prokhozhdenii cherez rezonans s nelineyno izmenyayushcheysya chastotoy)

PERIODICAL: Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 12, pp 47-52 (USSR)

ABSTRACT: 1. The equations are derived on the assumption that the frequency p varies as $at + bt^2$, where t is time, and that the amplitude of the forcing oscillation H is constant. Eq.1.1 gives the perturbing force; Eq.1.2 is the differential equation for a system with one degree of freedom. The solution is Eq.1.3 or 1.4 to 1.6 .
2. The equations are transformed to a form suitable for calculations; μ/k is assumed small and therefore its square is neglected; μ = attenuation coefficient; $k = \sqrt{\omega^2 - \mu^2/4}$ where ω is a constant coefficient in Eq.1.2 . Eq.2.10 and 2.11 are obtained, with the symbols given by Eq.2.12 .

Card 1/2

Forced Oscillations in a Linear System on Passing Through a Resonance at a Non-Linear Rate of Frequency Change

3. The integrals are calculated using Lommel functions, in their asymptotic form, i.e. Eq.3.5, or in the series form of Eq.3.4 .
4. Eq.3.13 is used to construct amplitude vs. time curves (Fig.1-3). Fig.4 gives how β (the deformation coefficient) varies with rate of frequency variation for the first maximum. Fig.5 gives the time when the first maximum is reached.
5. The amplitude of the perturbing force is assumed to be proportional to the square of the frequency. The effects near resonance are slight. There are 5 figures and 3 references of which 2 are Soviet and 1 a translation from English into Russian.

SUBMITTED: 23rd October 1957.

Card 2/2

Filippov, A. P.

SOV/24-58-10-33/34

AUTHOR: Panovko, Ya. G.

TITLE: A Conference on Elastic Vibrations at the Institute of Mechanical Engineering of the Academy of Sciences of the Latvian SSR (Soveshchaniye po voprosam uprugikh kolebaniy v Institute mashinovedeniya Akademii nauk Latviyskoy SSR)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 10, pp 158-159 (USSR)

ABSTRACT: This Conference took place on June 11-15, 1958, in Riga. Altogether over 70 people took part in the conference (apart from those normally based at Riga). Eleven papers were read:
1) "The effect of vibration on systems with dry friction", by I. I. Blekhman and G. Yu. Dzhanelidze (Leningrad),
2) Two papers on dynamic problems in the nonlinear theory of plates and the shells by V. V. Bolotin and A. S. Vol'mir (Moscow),
3) "A qualitative study of the form and frequencies of natural vibrations of thin elastic shells", by A. L. Gol'denveyzer (Moscow),
4) "Some problems in connection with vibrations of elastic rods in the case of large displacements", by Yu. S. Shkenev (Moscow),
5) "Coupled vibrations of vanes and discs in turbines" and

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"Passage through resonance of a linear system with non-linearly varying frequency". by A. P. Filippov (Khar'kov),
6) "Some problems in the dynamics of [illegible] elastic stretched thread", by V. A. Svetlitskiy (Moscow),
7) "On the similarity of dynamic processes in solid bodies", by A. G. Nazarov (Yerevan),
8) "The problem of constructional hysteresis", by Ya. G. Panovko (Riga),
9) "Constructional hysteresis in resin-metallic shock absorbers", by G. I. Strakhov (Riga).
The conference was closed with a speech by M. M. Filonenko-Borodich (Moscow).

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SOV/124-59-9-9697

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Translation from: Referativnyy zhurnal, Mekhanika, 1959, Nr 9, p 18 (USSR)

AUTHORS: Filippov, A.P., Goloskokov, Ye.G.

TITLE: On the Problem of Passage Through Resonance in Elastic Systems 26

PERIODICAL: Tr. Khar'kovsk. politekhn. in-ta, 1958, Vol 14, pp 7 - 21

ABSTRACT: The problem of passage through resonance for a linear system having one degree of freedom is described by the equation

$$\ddot{\varphi} + \mu\dot{\varphi} + \omega^2\varphi = P(t)\cos(1/2\, a\, t^2 + \varepsilon_0) \qquad (1)$$

where μ is the attenuation coefficient, ω is the natural frequency of the system, a t is the instantaneous frequency of the perturbing force, P(t) is the amplitude of the perturbing force, φ is the coordinate, ε_0 is the initial phase of the perturbing force; for the initial conditions $\varphi(0) = \dot{\varphi}(0) = 0$ the problem is reduced to the determination of the integral:

$$\varphi(t) = \frac{1}{k}\int_0^t P(\tau)\cos\left(\frac{a\tau^2}{2} + \varepsilon_0\right)e^{-1/2\mu(t-\tau)}\sin k(t-\tau)\,d\tau \qquad (2)$$

Card 1/2

On the Problem of Passage Through Resonance in Elastic Systems

where $k^2 = \omega^2 - \frac{1}{4}\mu^2$.

It turns out that the determination of the integral (2) does not represent difficulties when using the tables of functions in the complex domain

$$W_1(z) = e^{-z^2}\left(1 + \frac{2i}{\sqrt{\pi}}\int_0^z e^{t^2}\,dt\right) \quad W_2(z) = e^{-z^2}\int_0^z e^{t^2}\,dt \qquad (3)$$

The passage through resonance of a three-mass system performing torsional vibrations is discussed at an example. For this case, the following equation of vibrations of a rod is studied taking into account the internal damping:

$$EI\left(1 \pm i\frac{\psi}{2\pi}\right)\frac{\partial^4 y}{\partial 4} + m\frac{\partial^2 y}{\partial t^2} + m\frac{\partial^2 f(t)}{\partial t^2} = 0 \qquad (5)$$

wherein EI is the rod rigidity, m is the mass of the length-unit of the rod, ψ is the coefficient of the internal damping.

Yu.A. Mitropol'skiy

Card 2/2

KOVALENKO, A.D.; KORNOUKHOV, M.V. [deceased], akademik; PEN'KOV, O.M.; PISARENKO, G.S. [Pysarenko, H.S.]; SAVIN, G.M. [Savin, H.M.], akademik; SERENSEN, S.V., akademik; FILIPPOV, A.P.

Development of the problem "Scientific fundamentals of force and plasticity" by the institutes of the Academy of Sciences of the Ukrainian S.S.R. Prykl. mekh. 4 no. 3:356-358 '58. (MIRA 13:8)

1. Institut stroitel'noy mekhaniki AN USSR, chlen-korrespondent AN USSR (for Kovalenko). 2. Laboratoriya gidravlicheskikh mashin AN USSR, chlen-korrespondent AN USSR (for Filippov). 3. AN USSR i Institut stroitel'noy mekhaniki AN USSR (for Kornoukhov). 4. Institut metallokeramiki i spetssplavov AN USSR, chlen-korrespondent AN USSR (for Pisarenko). 5. AN USSR i Institut mashinovedeniya AN USSR (for Serensen). 6. Institut gornogo dela AN USSR, chlen-korrespondent AN USSR (for Pen'kov). 7. AN USSR i Institut matematiki AN USSR (for Savin).
(Plasticity)

FILIPPOV, A.P.

report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

268. L. N. Stavraki (Kuibishev): Strain design and general stability of structures.

269. L. N. Stavraki (Kuibishev): A general method of solving non-linear problems of structural mechanics.

270. R. D. Stepanov (Moscow): A contribution to the non-linear problem of plate flutter.

271. L. G. Stepanskii, N. P. Onkaov (Moscow): On the use of variational principles for the approximate solution of some problems of plastic equilibrium.

272. A. I. Strelbitskaia (Kiev): Experimental investigation of the oblique bending of steel beams beyond the elastic limit.

273. A. S. Stroganov (Moscow): Strength and visco-plastic flow of soils.

274. G. I. Ter-Stepanian (Erevan): The relation between pore pressure and rate of creep of slopes.

275. L. A. Tolokonnikov (Tula): Finite plastic strains of non-linearly deformed bodies.

276. A. D. Tomlenov (Moscow): Piercing of metals by a spherical punch considering contact friction.

277. Ia. L. Tarshiashvili (Moscow): An asymptotic method of designing flexible blades of variable pitch at high speeds of rotation.

278. N. V. Tomnov (Moscow): Application of similarity methods to the analysis of the flow of rubber compounds.

279. A. A. Trapeznikov, T. G. Shalopalkina (Moscow): Dependence of the maximum elastic and discontinuous strains of aluminum-naphtenate gels on strain rates.

280. S. A. Tumarkin (Moscow): An asymptotic method for the design of toroidal shells.

281. V. K. Turkin (Moscow): Some problems of soil dynamics.

282. N. V. Tiabin (Kazan): The flow in the boundary layer of an elastic, visco-plastic medium.

283. A. S. Uzdetskov (Gorkii): Some problems concerning the analysis of stresses in shrink fits.

284. S. V. Uzhik (Moscow): On strength and rupture criteria for metals in the presence of stress concentrations.

285. I. I. Ulitskii (Kiev): Some problems of non-linear creep.

286. A. A. Umanskii (Moscow): Analogy and model methods in problems of structural mechanics concerning bars and thin-walled structures.

287. M. T. Urazbaev (Tashkent): The problem of seismic strength of fluid supported hydraulic structures.

288. Ia. S. Ufliand (Leningrad): Application of integral transformations to the solution of some problems concerning an elastic wedge.

289. Ia. S. Fadeeva (Moscow): Deformations of plastic clays in moulding.

290. I. V. Fadeeva (Moscow): Elastic-plastic equilibrium of an acute granular wedge.

291. M. L. Fal'dman (Dnepropetrovsk): Stability and vibrations of orthotropic plates of variable thickness.

292. A. P. Filippov (Kharkov): Extensional vibrations of turbine discs.

293. M. M. Filonenko-Borodich (Moscow): On the possibility of generalizing the Mohr and Huber-Mises-Hencky theories of rupture.

294. N. P. Fleishman (Lvov): Some problems concerning the bending of plates and shells with stiffeners.

295. L. M. Flitman (Moscow): On the impact of a wave on a heavy rigid sphere embedded in an elastic medium.

296. V. A. Florin (Leningrad): Some problems concerning rock formations of hydraulic structures.

297. V. A. Florin (Leningrad): Present state and problems of soil mechanics.

298. V. A. Florin (Leningrad): Flow conditions for saturated sands.

299. N. V. Florina (Leningrad): Experimental study of real and apparent friction in vibrating soils.

300. D. M. Fradlin, N. M. Shakhnovskii (Kiev): On the construction of Green's functions for the equilibrium problem of shallow shells.

301. S. S. Fraifeld (Kharkov): Further development of the initial rheological equation.

302. V. M. Frolov (Moscow): Temperature stresses in cantilever plates and their effect on stiffness.

3

DEDUSENKO, Yuriy Mitrofanovich; FILIPPOV, A.P., otv.red.; REMENNIK, T.K., red.izd-va; LISOVETS, A.N., tekhn.red.

[Regenerative networks and regenerators in gas-turbine systems] Regenerativnye skhemy i regeneratory gazoturbinnykh ustanovok; teoriia i raschet. Kiev, Izd-vo Akad.nauk USSR, 1960. 267 p. (MIRA 14:4)

1. Chlen-korrespondent AN USSR (for Filippov).
(Gas turbines)

MUSHTARI, Kh.M., red.; ALUMYAE, N.A., red.; BOLOTIN, V.V., red.; VOL'MIR, A.S., red.; GANIYEV, N.S., red.; GOL'DENVEYZER, A.L., red.; ISANBAYEVA, F.S., red.; KIL'CHEVSKIY, N.A., red.; KORNISHIN, M.S., red.; LUR'YE, A.I., red.; SAVIN, G.N., red.; SACHENKOV, A.V., red.; SVIRSKIY, I.V., red.; SURKIN, R.G., red.; FILIPPOV, A.P., red.; ALEKSAGIN, V.I., red.; SEMENOV, Yu.P., tekhn. red.

[Proceedings of the Conference on the Theory of Plates and Shells] Trudy Konferentsii po teorii plastin i obolochek, Kazan', 1960. Kazan', Akad. nauk SSSR, Kazanskii filial, 1960. 426 p. (MIRA 15:7)

1. Konferentsiya po teorii plastin i obolochek, Kazan', 1960. 2. Moskovskiy energeticheskiy institut (for Bolotin). 3. Kazanskiy khimiko-tekhnologicheskiy institut (for Ganiyev). 4. Institut mekhaniki Akademii nauk USSR (for Kil'chevskiy). 5. Kazanskiy gosudarstvennyy universitet (for Sachenkov). 6. Kazanskiy filial Akademii nauk SSSR (for Svirskiy).
(Elastic plates and shells)

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E191/E181

AUTHORS: Goloskokov, Ye.G., and Filippov, A.P. (Khar'kov)

TITLE: Forced Non-Stationary Oscillations in Linear Systems with Periodically Varying Parameters

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960 No 4, pp 129-131

TEXT: The problem of finding vibration amplitudes in passing through resonance has been solved for linear systems with constant coefficients for disturbing forces varying linearly or parabolically. The vibrations of bars, plates and shells excited by longitudinal periodic forces are described by Mathieu equations. The behaviour at resonance of such a system with a disturbing force is examined in the present work. This covers the case wherein, apart from a longitudinal force with a frequency 2Ω, a transverse force of variable frequency is acting on the bar, plate, or shell. The equation of a system with a single degree of freedom disturbed by a force with a linearly varying frequency is stated. The disturbing amplitude may be constant or a function of time. By substitution of variables, a simplified form (Eq 1.2) is obtained. By the method of variation of arbitrary constants, under the assumption of zero

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Forced Non-Stationary Oscillations in Linear Systems with Periodically Varying Parameters

initial conditions, the solution is formulated (Eq 1.5) in terms of the particular solution of the corresponding homogeneous equation. By further substitution of variables, the form of the solution is modified for convenience of computation, distinguishing the two cases when the period of auxiliary functions formed from the particular solutions is either π or 2π. As always, in systems with variable parameters, there is an infinite number of resonances, of which only a few have practical importance. The MPT-9 simulator (analogue computer) was used to obtain a numerical solution. For this purpose, the basic equation was suitably transformed and the variable parameter function was introduced by means of a low frequency generator and a multiplying unit. The results of the computation are given in the form of graphs of the dynamic amplitude factor plotted against time when the system passes through the first few resonances. In a Table, maximum amplitude factors are given for five resonant conditions obtained by numerical computation and with the simulator, showing good agreement.
There are 4 figures, 1 table and 5 Soviet references.
SUBMITTED: February 24, 1960

FILIPPOV, A.P. (Khar'kov)

Tangential vibrations of turbine blades taking into consideration the disk vibrations in its plane. Prykl. mekh. 6 no.3:251-262 '60. (MIRA 13:8)

1. Laboratoriya gidravlicheskikh mashin AN USSR.
(Blades--Vibration)

FILIPPOV, A.P. (Khar'kov)

Steady vibrations of an infinitely long beam supported by an elastic semispace under the action of a moving force. Izv.AN SSSR.Otd.-tekh.nauk.Mekh.i mashinostr. no.6:97-105 N-D '61. (MIRA 14:11)
(Beams and girders--Vibration)

FILIPPOV, A.P.

Passing through resonance with nonlinear velocity of a system having one degree of freedom. Sbor.trud.Lab.gidr.mash. no.9:37-47 '61. (MIRA 15:3)

(Oscillations)

ANDREYEV, A.G.; FILIPPOV, A.P.

Bending of a cantilever sector-shaped plate with variable rigidity.
Sbor.trud.Lab.gidr.mash. no.9:58-63 '61. (MIRA 15:3)
(Elastic plates and shells)

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S/198/61/007/006/002/008
D299/D301

26.2120

AUTHOR: Filippov, A. P. (Kharkiv)

TITLE: Vibrations of a rotating disc of constant thickness with vanes

PERIODICAL: Prykladna mekhanika, v. 7, no. 6, 1961, 601-607

TEXT: The effect is considered of disc rotation on the frequency of vibration of the vanes. The results obtained are compared with those for a disc at rest. The effect of the pliability of the disc is also taken into account. The solution of the problem is obtained in Bessel functions. Setting

$$\theta = \Psi \sin pt; \quad V = v \sin pt; \quad \rho = R \cos pt \qquad (1.2)$$

one obtains the differential equations for vibrations:

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Vibrations of a rotating ...

$$\psi'' + \frac{3}{r}\psi' + \lambda^2\psi + 2k\lambda^2 \frac{1}{r} R = 0,$$

$$R'' + \frac{1}{r} R' + \left[(1 + k^2)\mu^2 - \frac{1}{r^2}\right] R + 2k\mu^2 r\psi = 0 \qquad (1.3)$$

where

$$k = \frac{\omega}{p}\ ;\ \lambda^2 = \frac{\gamma}{gG} p^2;\ \ \mu^2 = \frac{1-\sigma}{2}\lambda^2 = \frac{1-\sigma}{2}\frac{\gamma}{gG} p^2 \qquad (1.4)$$

$\Theta = V/r$ is the angular displacement with respect to the disc center, V - the tangential displacement, ρ - the radial displacement. These equations are derived from Grammel's differential equations (Ref. 5: Ing.-Arch., 22, 1954). Eqs. (1.3) are transformed into

Card 2/ 5

Vibrations of a rotating ...

$$(\Delta + \alpha^2)(\Delta + \beta^2)v = 0, \text{ for } k^2 > \frac{1}{3}$$

$$(\Delta + \alpha^2)(\Delta - \beta_1^2)v = 0, \text{ for } k^2 > \frac{1}{3} \qquad (1.9)$$

where α and β are given by expressions. The solution to Eq. (1.9) is

$$v = AJ_1(\alpha r) + BN_1(\alpha r) + CJ_1(\beta r) + DN_1(\beta r) \text{ for } k^2 < \frac{1}{3}$$

$$v = AJ_1(\alpha r) + BN_1(\alpha r) + CI_1(\beta r) + DI_1(\beta r) \text{ for } k^2 > \frac{1}{3} \qquad (1.11)$$

Card 3/5

Vibrations of a rotating ...

where I and K are Bessel functions. Thereupon, the radial displacements R and the stresses σ are found. Further, the boundary conditions and the compatibility conditions are set up. For simplicity, the effect of centrifugal forces on the vanes is neglected. After computations, one obtains the frequency equation for a rotating disc with vanes:

$$E(s)\left[1 - 2N\lambda^2 k \frac{R(a)}{\psi'(a)}\right] - \left\{S(s)\left[1 + \frac{a\psi'(a)}{\psi(a)}\right] + 2\frac{a}{l}\,sA(s)\right\} \times$$

$$\times \frac{I(1+\sigma)Z}{2\pi a y_a} \frac{s^2}{l^2} \frac{1}{a} \frac{\psi(a)}{\psi'(a)} = 0 \qquad (2.16)$$

where E(s), A(s) and S(s) are tabulated functions, and ψ, ψ' and R are determined from previous expressions. A numerical example is given for a disc with external radius a = 66 cm and length of

Card 4/5

Vibrations of a rotating ...

vane l = a/2. A table shows for comparison the frequency values for a rotating disc and those for a disc at rest. From the table it is evident that disc rotation increases the vibration frequencies by 20% approximately. There are 1 table and 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc (including 2 translations). The reference to the English-language publication reads as follows: K. Yamada, Proc. Sec. Japan Nat. Congr. Appl. Mech., 1952.

ASSOCIATION: Laboratoriya hidravlichnykh mashyn AN URSR (Laboratory of Hydraulic Engines of the AS UkrRSR)

SUBMITTED: November 17, 1960

Card 5/5

X

BULGAKOV, Vadim Nikolayevich; FILIPPOV, A.P., otv. red.; LABINOV, S.D., nauchnyy red.; YEFIMOVA, M.I., tekhn. red.

[Statics of toroidal shells] Statika toroidal'nykh. Kiev, Izd-vo Akad. nauk USSR, 1962. 99 p. (MIRA 15:4)

1. Chlen-korrespondent Akademii nauk USSR (for Filippov).
(Elastic plates and shells)

SAVIN, G.N., otv.red.; ADADUROV, R.A., red.; ALUNYAE , N.A., red.; AMBARTSUMYAN, S.A., red.; AMIRO, I.Ya., red.; BOLOTIN, V.V., red.; VOL'MIR, A.S., red.; GOL'DENVEYZER, A.L., red.; GRIGOLYUK, E.I., red.; KAN, S.N., red.; KARMISHIN, A.V., red.; KIL'CHEVSKIY, N.A., red.; KISELEV, V.A., red.; KOVALENKO, A.D., red.; MUSHTARI, Kh.M., red.; NOVOZHILOV, V.V., red.; UMANSKIY,A.A., red.; FILIPPOV, A.P., red.; LISOVETS, A.M., tekhn. red.

[Proceedings of the Second All-Union Conference on the Theory of Plates and Shells]Trudy Vsesoiuznoi konferentsii po teorii plastin i obolochek.2d,Lvov, 1961.Kiev, Izd-vo Akad.nauk USSR, 1962. 581 p. (MIRA 15:12)

1. Vsesoyuznaya konferentsiya po teorii plastin i obolochek. 2, Lvov, 1961.

(Elastic plates and shells)

37145
S/179/62/000/001/015/027
E114/E181

24.4200

AUTHORS: Kantor, B.Ya., and Filippov, A.P. (Khar'kov)

TITLE: Analysis of bending of a circular segment shaped plate of variable thickness clamped along a portion of its arcuate edge, utilising a fast computer

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.1, 1962, 121-124

TEXT: Making the usual assumptions for a thin plate, a plate of variable thickness is assumed to be subjected to a distributed load, to be clamped along a portion of its arcuate edge, and to be free over the remainder of the arcuate edge. The potential energy of the bent plate is expressed in polar coordinates, and a set of equations is derived in terms of the local thickness and pressure. Three sets of functions have to be solved, and the methods employed were specifically adapted for use with the computer "Strela". The sub-programme of differentiation was framed in terms of powers of polynomials,

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which led to exact solutions. Since it is convenient to express the thickness of the plate and its loading in the form of a Table, the programme included approximate integration over the area of the plate utilising R. Cotes' formula. To obtain an adequate accuracy of integration, a sufficiently fine grid was drawn by dividing each of the three sections of the plate radially into ten equal parts. By proving that certain terms are equal to zero the computer time was significantly reduced. The computer was next used to calculate deflections and stresses in the plate by feeding into it a matrix of the thickness of the plate and of its loading, as well as the information about the coordinate functions. The programme was in three parts. The first part calculated the top right portion of the matrix and the right part of the system, and recorded the information on a magnetic tape. Next, the computer solved systems of equations for each nodal point of the grid. In the third part of the programme, the computer calculated the deflections and stresses. With sixty nodal points and a computer speed of 2000 operations per second, the first part of the programme required one hour and fifty

minutes, the second six minutes, and the third four minutes. It follows from a quoted example that sixty nodal points give adequate accuracy, and that little or nothing is gained from a finet grid.
There are 6 figures.

SUBMITTED: August 2, 1961

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FILIPPOV, A.P.

Development of the study of hydraulic machinery and transmissions in the Department of Technology of the Academy of Sciences of the Ukrainian S.S.R. Prykl.mekh. 8 no.5:465-469 '62. (MIRA 15:9)

(Hydraulic machinery) (Oil hydraulic machinery)

KANEVSKIY, Ye.A.; FILIPPOV, A.P.; TIMOFEYEVA, N.V.;
Prinimal uchastiye VEL'MATKIN, M.I.

Composition of gases produced in the interaction between uranium dioxide and nitric acid. Atom. energ. 13 no.5:484-486 N '62. (MIRA 15:11)

(Nuclear reactions) (Uranium dioxide)
(Nitric acid)

FILIPPOV, A.P.; VOROB'YEV, Yu.S.

Free fending and torsional bibrations of naturally twisted blades of turbomachines. Sbor.trud.Lab.gidr.mash.AN URSR no.10:3-18 '62. (MIRA 15:12)

(Turbomachines—Blades—Vibration)

GOLOSKOKOV, Ye.G., FILIPPOV, A.P.

Steady vibrations of a beam on an elastic foundation due to uniform motion of a load. Sbor.trud.Lab.gidr.mash.AN URSR no.10:19-26. '62.
(MIRA 15:12)

(Beams and girders—Vibration)

FILIPPOV, A.P.

Using electronic digital computers for the solution of strength and dynamics in the manufacture of machinery. Sbor.trud.Lab.gidr.mash.AN URSR no.10:44-57 '62 (MIRA 15:12)
(Electronic digital computers) (Machinery industry)

GONTKEVICH, Vladimir Sevast'yanovich; FILIPPOV, A.P., otv. red.; GILELAKH, V.I., red.

[Natural vibrations of shells in a liquid] Sobstvennye kolebaniia obolochek v zhidkosti. Kiev, Naukova dumka, 1964. 101 p. (MIRA 17:11)

1. Chlen-korrespondent AN Ukr.SSR (for Filippov).

L 0396-65 EWT(m)/EWP(k)/EWP(r) Pf-4 SSD/AFWL/ESD(dp)
ACCESSION NR: AP4048725 S/0179/64/000/004/0120/0125

AUTHOR: Filippov, A. P. (Khar'kov)

TITLE: Dynamic effect of a load and harmonic forces moving with constant speed on a beam with bearing-supported ends

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniye, no. 4, 1964, 120-125

TOPIC TAGS: motion mechanics, load distribution

Abstract: A method of solution is briefly proposed and results are given of calculations for the case of a heavy load moving along a suspended beam and for load motion along an unsupported beam (Stokes case). Data calculated for a moving force (Krylov-Timoshenko case) are presented for comparison (TIMOSHENKO, S. P. Kolebaniya v Inzhenernom Dele. Fizmatgiz, 1959). Numerical calculation of the Stokes problem is made for a wide range of variation of [illegible] dimensionless value in the Stokes equation which is dependent on the speed of the load and beam rigidity, for the purpose of determining the pre-

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ACCESSION NR: AP4048725

cision of results, in comparison with the general case--load motion over a suspend-
ei beam. Calculations for these cases of motion were performed on a Ural electronic
computer.

ASSOCIATION: none

SUBMITTED: 09Jul63 ENCL: 00 SUB CODE: ME

NO REF SOV: 003 OTHER: 003 JPRS

Card 1/2

GONTKEVICH, Vladimir Sevast'yanovich; FILIPPOV, A.P., red.

[Natural vibrations of plates and shells; handbook] Sobstvennye kolebaniia plastinok i obolochek; spravochnik. Kiev, Naukova dumka, 1964. 287 p. (MIRA 17:9)

1. Chlen-korrespondent AN Ukr.SSR (for Filippov).

FILIPPOV, A.P. (Khar'kov)

Dynamic action of a load and harmonic force moving with a constant speed on a hinged beam. Izv. AN SSSR Mekh i mashinostr. no.4:120-125 Jl-Ag '64 (MIRA 17:8)

KANEVSKIY, Ye.A.; FILIPPOV, A.P.

Factors determining the oxidative activity of nitric acid in the reaction with uranium dioxide. Radiokhimiia 6 no.6:732-737 '64.
(MIRA 18:2)

GOLOSKOKOV, Ye.G. (Khar'kov); FILIPPOV, A.P. (Khar'kov)

Special case of direct precession of a flexible rotor. Prikl. mekh. 1 no.6:38-41 '65. (MIRA 18:7)

1. Khar'kovskiy filial Instituta mekhaniki AN UkrSSR.

[illegible] EWT(m)/EPF(c)/EWP(j)/EWA(c) RPL JD/JW

[illegible] SION NR: AP5020984

TITLE: Study of reaction kinetics in the oxidation of alphanaphthylamine with bromate, catalyzed by molybdenum (VI)

SOURCE: Kinetika i kataliz, v. 6, no. 4, 1965, 674-681

TOPIC TAGS: oxication kinetics, catalysis, bromate, [illegible] molybdenum

ABSTRACT: The experimental reaction was carried out in a 20% aqueous solution of ethanol. This concentration assures a sufficient concentration of alpha-naphthylamine (approximately 10^{-2} moles liter) [illegible]

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...e non-

of acidity and temperatures. The low energy of activation indicates a radical

...Catalysis with ...

ENCL ...

KANEVSKIY, Ye.A.; FILIPPOV, A.P.

Kinetics of the reaction of UO_2 and $Fe^{(III)}$ in perchloric acid solutions. Radiokhimiia 7 no.2:207-214 '65. (MIRA 18:6)