

BOBROV, V.A.; KOTLYAR, G.V.

Sediments of the Kazan stage in eastern Transbaikalia and north-eastern Mongolia. Dokl. AN SSSR 149 no.5:1141-1144 Ap '63.
(MIRA 16:5)

1. Geologorazvedochnoye upravleniye Mongol'skoy Narodnoy Respubliki i Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut. Predstavleno akademikom A.L.Yanshinym.
(Transbaikalia—Geology, Stratigraphic)
(Mongolia—Geology, Stratigraphic)

BOBROV, V.A.; MODZALEVSKAYA, Ye.A.

New data on the Middle Devonian of eastern Mongolia. Dokl.
AN SSSR 159 no.4:793-795 D '64 (MIRA 18:1)

1. Geologorazvedochnoye upravleniye pri Sovete Ministrov
Mongol'skoy Narodnoy Respubliki i Vassoyuznyy nauchno-issledo-
vatel'skiy geologicheskoy institut. Predstavleno akademikom
D.V. Nalivkinym.

L 46594-66 EWT(d)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/ETI/EWP(k)/EWP(l) JIP(e) JD/HW
ACC NR: AP6012586 SOURCE CODE: UR/6314/66/000/004/0033/0036

AUTHOR: Bobrov, V. A. (Engineer); Khimchenko, N. V. (Candidate of technical sciences)

ORG: none*

TITLE: Nondestructive methods for the testing of chemical equipment made of two-layer metals

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 4, 1966, 33-36

TOPIC TAGS: ultrasonic flaw detector, metal test, flaw detection, CHEMICAL PLANT EQUIPMENT

ABSTRACT: One of the basic defects found in chemical equipment made of two-layer metals is the separation of the cladding layer from the base. The article discusses nondestructive methods for the testing of such equipment, surveys the available ultrasonic equipment, *describes the experience with ultrasound accumulated at the NIKhim mash, and outlines the procedure for color defectoscopy of two-layer metals by means of dyes developed at the same institute (N. V. Khimchenko, L. I. Podlesnaya, Author's certificate No.150690 dated

Card 1/2

UDC: 620.179:621.9-419.

Card 2/2 ajs

ACC NR: AP7000351

SOURCE CODE: UR/0413/66/000/022/0117/0117

INVENTOR: Bobrov, V. A.; Khimchenko, N. V.

ORG: none

TITLE: Method for ultrasonic quality control of bimetallic parts. Class 42, No. 188740 [announced by the All-Union Design and Scientific Research Institute of Chemical Machine Building (Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo mashinostroyeniya)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 22, 1966, 117

TOPIC TAGS: clad metal, ~~clad metal~~ quality control, ultrasonic quality control, *ultrasonic inspection, ultrasonic waves, metal cladding*

ABSTRACT: This Author Certificate introduces a method for ultrasonic quality control of bimetallic parts based on the excitation of ultrasonic waves in the checked part and recording of signals. To increase the efficiency and improve quality control, interference-type ultrasonic waves are excited in the clad layer at an incidence angle of cross waves larger than the reflection angle.

SUB CODE: 1390/SUBM DATE: 17Aug65

Card 1/1

UDC: 620.179.16

L 23011-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)
ACC NR: AP6007668

SOURCE CODE: UR/0413/66/000/003/0040/0040

AUTHOR: Zorin, D. Ye.; Bobrov, V. B.; Ivanov, M. V.

ORG: none

25
B

TITLE: Automatic machine¹⁴ for shielded welding. Class 21, No. 178427
[announced by the Plant Elektrik (Zavod Elektrik)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3,
1966, 40

TOPIC TAGS: automatic welding, welding equipment

ABSTRACT: An Author Certificate has been issued for an automatic shielded-welding machine using both continuous and intermittent welds (primarily for disk wheel rims), containing a holder, welding heads, a mechanism for their adjustment, a wheel-rotation mechanism, a blocking device, and remote controls. To increase the degree of automation in producing welded wheels, the holder is equipped with a mechanism for feeding the wheels into the welding position; it is designed as a pneumatic drive coupled with a revolving device which, in turn, is equipped with a stationary pneumatic cylinder and a rod with a spring retainer for actuating the rotation of the wheel to be welded (see Fig. 1). Orig. art. has: 1 figure.

Card 1/2

UDC: 621.791.753.9.03

[LD]

2

L 23011-66

ACC NR: AP6007668

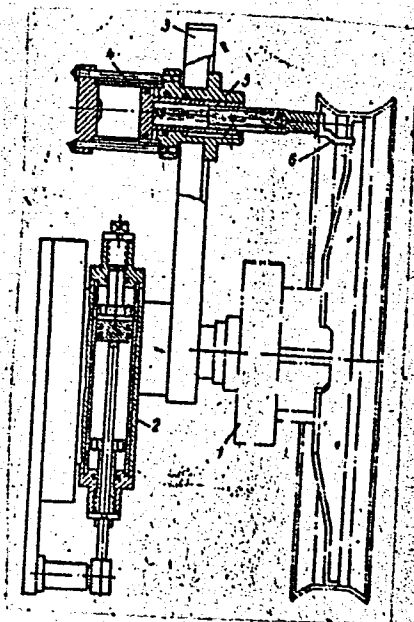


Fig. 1. Automatic machine for shielded welding.

- 1 - holder; 2 - pneumatic drive;
- 3 - revolving device; 4 - pneumatic cylinder; 5 - rod; 6 - retainer

SUB CODE: 13/

SUBM DATE: 11May64/

Card 2/2 *fla*

ACCESSION NR: AP3002719

S/0120/83/000/003/0055/0057

AUTHOR: Bobrov, V. D.; Varlamov, V. G.; Grashin, Yu. M.; Dolgoshein, B. A.; Kirillov-Ugryumov, V. G.; Roganov, V. S.; Samoylov, A. V.

TITLE: Use of threshold Cerenkov counter for separation of μ - and π -mesons in meson beams

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1963, 55-57

TOPIC TAGS: μ -meson separation, threshold Cerenkov counter

ABSTRACT: A Cerenkov counter has been used for the separation of μ - and π -mesons. The counter consists of a 100-mm cube of polished organic glass 2 mm thick filled with distilled water containing 2-aminonaphthalene-6,8-disulfonic acid, which serves as the spectrum transformer. This cube is placed inside another cube with walls 4 mm thick. The space of 3 mm between the cubes is filled with MgO powder. Two FEY-33 photomultipliers connected to a common load are in optical contact with the water radiator. The radiator

Card 1/3

ACCESSION NR: AP3002719

and the photomultiplier are enclosed in a steel casing with foil windows for particle passage. A block diagram of the arrangement is shown in Fig. 1 of the Enclosure. A 260-Mev/sec pulsed meson beam was used in experiment. Resolution time of the coincidence circuits is 5-8 nanosec, and the efficiency of anticoincidence, 99.93%. It was found that the use of the Cerenkov counter makes it possible to reduce the contents of π -mesons in a μ -meson beam by a factor of 10. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 25Jun62

DATE ACQ: 12Jul63

ENCL: 01

SUB CODE: 00

NO REF SOV: 001

OTHER: 001

Card 2/3

ACCESSION NR: AP3002719

ENCLOSURE: 01

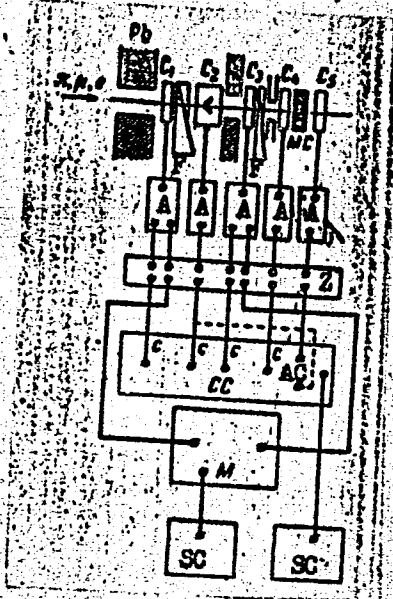


Fig. 1. Location of counters and block diagram of electronic circuit

Pb - 70 x 70 mm lead collimator; C₁ and C₃ - scintillation counters with Φ 100 x 10 mm plastic scintillators; C₄ - Φ 80 x 3 mm; C₂ - Φ 200 x 10 mm; C₂ - Cerenkov counter; F₁ and F₂ - variable thickness filters; Mc - 3 gr/cm² carbon target; A₁ through A₅ - amplifiers with gain of 5; Z - variable delay lines; CC - coincidence and anticoincidence circuits; C - coincidence inputs; AC - anticoincidence inputs; M - coincidence monitoring circuit; SC - scales

Card 3/3

BOBROV, V.D.; VARLAMOV, V.G.; GRASHIN, Yu.M.; DOLGOSHEIN, B.A.; KIRILLOV-
UGRYUMOV, V.G.; ROGANOV, V.S.; SAMOYLOV, A.V.

Use of a threshold Cherenkov counter in separating π - and K -
mesons in meson beams. Prib. i tekhn. eksp. 8 no.3:55-57 My-Je
'63. (MIRA 16:9)

L 52965-65 EWT(m)/I/EWA(m)-2

ACCESSION NR: AP5010519

UR/0056/65/048/004/1197/1199

AUTHOR: Bobrov, V. D.; Varlanov, V. G.; Grashin, Yu. N.; Dolgoshein, E. A.;
Kirillov-Ugryumov, V. G.; Roganov, V. E.; Samoylov, A. V.; Semov, S. V.

TITLE: Capture of negative muons by atoms in a chemical compound

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 4, 1965, 1197-1199

TOPIC TAGS: muon, muon capture, effective affinity, mesic atom

ABSTRACT: The authors measured the relative probabilities of captured negative muons by atoms in several chemical compounds, with an aim at extracting information necessary for the interpretation of other experiments with muons. The results show that for the compounds investigated (LiCl, CsCl, ZnO, ZnS, and AlCu) the Fermi-Teller Z-law does not describe the experiment satisfactorily. An analysis of the available data shows that compared with the prediction of the Z-law, mesic atoms of the elements which have relatively large electron-affinity energy are produced with some preference. The results show that in most cases the tendency to preferred formation of the mesic atoms of the element with the larger electron affinity

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L 52965-65

ACCESSION NR: AP5010519

is violated only in five of 31 cases. Four out of the five violations are in compounds of carbon, and this is apparently connected with very complicated spatial configuration of these molecules. The measurement procedure and a detailed discussion of the results will be published later. Orig. art. has: 3 tables.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering Physics Institute)

SUBMITTED: 26Dec64

ENCL: 00

SUB CODE: NP

NR REF SOV: 001

OTHER: 008

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gard

BOBROV, V. F.

36701. Opred Eleniye Razmerov Vpadiy Zub'ev Protyazhek Ia Osnovani Izucheniya Usadki Strukhki Trudy Tul. Mekhan. In-Ta, Vyp. z, 1949, S. 64-78 - Bibliogr: 7 Nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 50, Moskva, 1949

BOBROV, V.F., dots., kand. tekhn. nauk

Using the method of dividing grids in investigating areas of deformations caused by cutting metals. Izv. vys. ucheb. zav.; mashinostr. no. 2:116-123 '58. (MIRA 11:12)

1. Tul'skiy mekhanicheskiy institut.
(Deformations (Mechanics)) (Metal cutting)

SOV/123-59-15-59506

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 15, pp 89 - 90
(USSR)

AUTHOR: Bobrov, V.F.

TITLE: On the Nature of Growth at Metal Cutting

PERIODICAL: Tr. Tul'sk. med. in-ta, 1958, Nr 8, pp 3 - 10

ABSTRACT: There are two basic hypotheses on the causes of the occurrence of growth. According to the first, growth is formed of metallic particles which are cut off by the tool from the cutting surface and squeezed by the pressure of the chips coming off. According to the second hypothesis growth represents the dead zone of the metal of the chips which is formed in front of the face of the tool under certain temperature conditions. Both hypotheses give rise to a number of objections. The investigations of the grasping of the metals at their joint plastic deformation does much for the comprehension of the nature of growth. It was found out by tests that the grasping of metals, i.e. the formation of stable temporary connections between touching surfaces can take place at room temperature

Card 1/2

On the Nature of Growth at Metal Cutting

SOV/123-59-15-59506

and at higher ones. Obviously the grasping of metals is based on diffusion. It can be assumed that the formation of growth takes place as a result of the grasping of materials of the tool and that of the chips interlocking at their plastic deformation during the cutting process. 6 figures, 10 references.

P.V.A.

Card 2/2

BOBROV V.F.

KRISHAL, M.A., kand. tekhn. nauk, dots.; FOMINYKH, I.P., kand. tekhn. nauk, dots.;
BOBROV, V.F., kand. tekhn. nauk, dots.; TSEYTLIN, A.Ya., inzh.

Characteristics of the surface structure of decarburized malleable
iron castings and their machinability. Trudy TMI no.11:66-77 '59.
(MIRA 12:12)

(Cast iron--Heat treatment) (Metal cutting)

S/145/60/000/008/012/014/XX
D212/D304

AUTHOR: Bobrov, V.E., Candidate of Technical Sciences, Docent

TITLE: A study of the deformation of the layer during free cutting by a tool with the angle of inclination of the main cutting edge not equal to zero

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye, no. 8, 1960, 105 - 109

TEXT: N.N. Zorev (Ref. 3: Voprosy mekhaniki protsessa rezaniya metallov (Problems of Mechanics of the Process of Metal Cutting), Mashgiz, 1956) supposed that the displacement of elementary layers along the cutting edge does not cause any additional deformation of these layers in the direction perpendicular to the plane of displacement. To verify this, the author has carried out experiments of free cutting of carbon steel; the velocity of cutting was 2 m/min. In the scheme I the sides of the specimen formed an angle $\xi = 45^\circ$ with the vector of velocity which was normal to the cutting edge. The angle of inclination of the main cutting edge in the scheme II

Card 1/2

A study of the deformation of ...

S/145/60/000/008/012/014/XX
D212/D304

was $\lambda = \xi$. A graph of the results of measurements is given. The degree of longitudinal deformation of the chip in the direction normal to the edge and the angles of displacement are found to be equal in both schemes. The author concludes that the assumption referred to above is correct. Suitability of several coefficients of the chip for the estimation of its deformation is also discussed. There are 6 figures and 7 Soviet-bloc references.

ASSOCIATION: Tul'skiy mekhanicheskiy institut (Tula Mechanical Institute)

SUBMITTED: December 22, 1959

Card 2/2

BOBROV, V.F., inzh.

Investigating the effect of the wear of plunger pairs on fuel injection. Trudy KHIIT no.35:33-49 '60. (MIRA 13:10)
(Diesel engines--Fuel systems)

BOBROV, V.F., inzh. (g.Khar'kov); KUZNETSOV, T.F., kand. tekh.nauk
(g.Khar'kov)

Effect of the wear of the fuel system on the operation of the
D50 diesel locomotive. Elek. i tepl. tiaga 5 no.5:26-28 My
'61. (TR. 14:7)

(Diesel locomotives)

15.6700

1.1100

29559
S/122/61/000/005/009/013
D221/D304

AUTHOR: Bobrov, V.F., Candidate of Technical Sciences, Docent

TITLE: The importance of lubricating and cooling fluids during machining of titanium

PERIODICAL: Vestnik mashinostroyeniya, ⁴¹no. 5, 1961, 62 - 63

TEXT: Practice of machining titanium and its alloys demonstrates that the effects of coolants are greater although different from the case of carbon and alloyed steels. The article quotes the results of experiments on determining the effect of some coolants on main component of cutting force, P , force of advance P_x and mean coefficient of friction μ due to free cutting of titanium BT 1 (VT 1) with a broad tool made in steel P 18 (R 18). The mechanical properties of metal and conditions of machining are indicated. The average coefficient of friction was assessed as the ratio of force of friction to the normal force. Forces on the back surface of tool were not taken into consideration. Twelve coolants were tested and the results tabulated. The figure illustrates average
Card 1/3

X

The importance of lubricating ...

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S/122/61/000/005/009/013
D221/D304

coefficients of friction, obtained during machining in various media. Observation on chip formation revealed that pure titanium is not apt to build up, although intensive adherence of its particles on the front edge of tool was noticed. Notwithstanding the high plasticity of titanium, deformation of the chip in air is small which may be accounted for by the low average coefficient of friction. Data allow the following deductions to be made. In contrast to carbon and alloyed steels, watered coolants do not reduce friction coefficient of titanium, but do increase it. The average coefficient of friction when cutting steel 20X (20Kh) in water coolant reduces former by half as compared to machining in air. A similar decrease was noticed when using emulsions and other fluids. The application of mainly lubricating fluids which reduce friction when machining steel, has little effect on cutting titanium. Olein acid and fluid no. 2, which contain a surface activating additive relatively reduce little the average friction coefficient, whereas such activated fluids as petrol or fluid no. 1, cause its increase. The most effective fluids for reducing friction are mineral graphitized oil, fluid no. 2, spindle oil and "sul'fofrezol", i.e. lubricants

Card 2/3

The importance of lubricating ...

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S/122/61/000/005/009/013
D221/D304

with high viscosity. Popular coolants that produce minimum coefficient of friction are water solution of sodium nitrate and citric acid. These fluids possess good cooling properties as well. Data demonstrate that the main component of cutting force increases only when using water, emulsion, citric acid and water solution of sodium nitrate. The other lubricating fluids reduce the main component, carbon tetrachloride being the best. There are 1 figure, 1 table and 2 Soviet-bloc references.

Card 3/3

BOBROV, Vsevolod Fomich, kand. tekhn. nauk; GRANOVSKIY, G.I.,
doktor tekhn. nauk, prof., retsenzent; BALANDIN, A.F., red.
izd-va; UVAROVA, A.F., tekhn. red.

[Effect of the angle of inclination of the main cutting edge
of cutters on the process of metal cutting] Vliianie ugla na-
klona glavnoi rezhushchei kromki instrumenta na protsess re-
zaniia metallov. Moskva, Mashgiz, 1962. 151 p. (MIRA 15:7)
(Metal cutting)

BOBROV, V.F.

Determining the depth of a shaving groove in broaches
with inclined teeth. Stan. i instr. 34 no. 1:37-38 Ja '63.
(MIRA 16:2)

(Broaching machines)

KUZNETSOV, T.F., dotsent, kand. tekhn. nauk; BOBROV, V.F., kand.
tekhn. nauk; SURZHENKO, Z.I., inzh.

Investigating the fuel system of the type D50 engine in
connection with the increase of its power and economic
efficiency. Sbor. nauch. st. KHIIT no.63:21-26 '62.

(MIRA 16:11)

L 43538-65 EWT(m)/EWP(k)/EWP(b)/EWP(t) - PP-4 JD

ACCESSION NR: AR5009344

S/0276/65/000/002/B199/B199

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya. Sv. t., Abs. 2B1379

AUTHOR: Bobrov, V. F.

TITLE: Analysis of the operation of tools with a travelling cutting edge

CITED SOURCE: Sb. Materialy Nauchno-tekhn. konferentsii Tul'sk. politekh. in-ta 1964. Tula, 1964, 6-8

TOPIC TAGS: rotating cutter, secondary cutter motion, cutter operation analysis, cutter rotation angle, cutting edge wear, chip formation, travelling lathe

TRANSLATION: The process of chip formation and the conditions of chip deformation are altered significantly when a secondary motion, longitudinal in relation to the cutting edge and at speed W_T , is imparted to a tool whose primary motion is defined by the vector of cutting speed V . This is related to the change produced by the speed ratio W_T/V in the static angle γ . The author cites results of geometric and experimental analysis of the operation of rotating lathe tools which travel lengthwise in relation to their edges. It was established that the back rake angle decreases during the cutting operation as the static angle γ increases.

Card 1/2

L 43538-65

ACCESSION NR: AR5009344

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this decrease intensifying with the depth of the cut. The thickness of the removed layer of material increases and the effective length of the cutting edge decreases. Overall relative shear intensifies, which increases the amount of heat emitted and intensifies the thermal stress on the cutting edge point. Hence, the selected angle of cutter axis rotation relative to the axis of the machined piece should be minimal and calculated so as to insure a stable rotation of the cutter. Dynamically speaking, the operation of rotating cutters is characterized by lower magnitudes of forces P_z and P_y , in contrast to non-rotating cutters, and higher magnitudes of force P_x . The superior wear resistance of rotating cutters, when compared to non-rotating tools, is attributed to the fact that the work performed by each point of the cutting edge in a rotating cutter is less by several factors of ten over a period of time than the work performed by the same point on a non-rotating tool. The author presents formulas for calculating the descent angle of the chip and the overall relative shear governing the level of deformation in the removed chip. L. Tikhonova.

SUB CODE: IE

ENGL: 00

Card 2/2 *mb*

BOBROV, V.F., kand.tekhn.nauk, dotsent

Electric elastic dynamometers for the measurement of cutting-
force components in turning. Izv.vys.ucheb.zav.; mashinostr. no.
7:197-200 '63. (MIRA 16:11)

1. Tul'skiy mekhanicheskiy institut.

L 41159-65 EWT(m)/EWP(t)/EWP(k)/EWP(b) Pr-4 JD

ACCESSION NR: AP5007176

S/0286/65/000/003/0043/0043

AUTHOR: Vinichenko, G. G.; Tarasenko, V. A.; Shtan'ko, V. M.; Panvushkin, A. V.; Bobrov, V. G.; Komogorov, N. N.

TITLE: A cutting fluid for hot finishing of metals. Class 23, No. 167940

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 3, 1965, 43

TOPIC TAGS: cutting fluid

ABSTRACT: This Author's Certificate introduces a cutting fluid for hot finishing of metals. The fluid is based on common salt, graphite, mineral oil and sawdust. In order to avoid surface carburization, the fluid also contains zinc sulfate, a mixture of ferrous and ferric hydroxides and potassium sulfate.

ASSOCIATION: none

SUBMITTED: 30Mar64

ENCL: 00

SUB CODE: MT

NO REF SOV: 000

OTHER: 000

Card 1/1

REZNICHENKO, V.A.; BOBROV, V.I.; REYAKIN, A.V.; SOLOV'YEV, V.I.

Smelting titanium in a DVP-200-500 furnace. Titan i ego splavy
no.9:255-263 '63. (MIRA 16:9)
(Titanium--Electrometallurgy)

BOBROV, V.M.; VORONOV, A.A.; GLEBOV, I.A.; IVANOV, V.I.; KARPOV, G.V.;
~~KASHTELYAN, V.Ye.~~; SEMENOV, V.V.; SIROTKO, V.K.; SIRYY, N.S.;
SUKHANOV, L.A.; URUSOV, I.D.; FETISOV, V.V.; FOMINA, Ye.N.;
KOSTENKO, M.P., akademik, red.; DOLMATOV, P.S., red.izd-va;
SMIRNOVA, A.V., tekhn.red.

[Electrodynamic modeling of power engineering systems] Elektro-
dinamicheskoe modelirovanie energeticheskikh sistem. Pod red.
M.P.Kostenko. Moskva, 1959. 406 p. (MIRA 13:2)

1. Akademiya nauk SSSR. Institut elektromekhaniki.
(Electric networks--Electromechanical analogies)

BOBROV, V.M.; GLEBOV, I.A.

Use of an electrodynamic model for studying an ionic self-excitation system of large synchronous generators. Sbor. rab. po vop. elektromekh. no.6:116-132 '61. (MIRA 14:9)
(Turbogenerators)

BOBROV, V.M., inzh.; GLEBOV, I.A., kand.tekhn.nauk; KASHTELYAN, V.Ye.,
inzh.; SIRYY, N.S., inzh.; GERTSENBERG, G.R., kand.tekhn.nauk

Effect of excitation systems on the stability of the parallel
operation of large turbogenerators. Elektrichestvo no.7:7-13
Jl '61. (MIRA 14:9)

1. Institut elektromekhaniki AN SSSR (for Bobrov, Glebov,
Kashatelyan, Siryy). 2. Vsesoyuznyy elektrotekhnicheskii
institut (for Gertsenberg).
(Turbogenerators)

BOBROV, V.M.; GLEBOV, I.A.; SKOSYREVA, T.N.

Determination of currents and losses in the damper winding of an auxiliary synchronous generator with independent electronic excitation. Sbor.rab.po vop.elektromekh.no.8:181-189 '63.

(MIRA 16:5)

(Electric generators)

BOBROV, V. N.

PA 77T24

USSR/Engineering
Tools, Cutting
Machines, Drilling

Apr 1948

"Light Cutting and Drilling Machine LES-1," V. N.
Bobrov, Engr, 2 p

"Mekh Trud i Tyazh Rabot" No 4

Describes new machine produced by Tomsk Works imeni
Vakhrushev, GlavVostokUgleMash. Machine is capable
of drilling vertically, horizontally, or at any inter-
mediate angle. It will effectively replace heavier
SEM-3 and SEM-1 drilling machines.

77T24

BOBROV, Vasilii Nikolayevich; DANCHICH, Valeriy Valeryanovich; KUZNETSOV, Aleksandr Aleksandrovich; LOKHANIN, Konstantin Anatol'yevich; SAVIN, M.M., redaktor; SABITOV, A., tekhnicheskiy redaktor

[Work practice with the mining grab-loader] Opyt primeneniia prokhodcheskogo greifernogo agregata. [Moskva] Ugletekhizdat, 1955.
36 p. (MIRA 9:3)

(Mining machinery)

Bobrov V. N.

117-58-5-24/24

AUTHOR: None Given

TITLE: Conference on Construction and Utilization of Casting Equipment (Konferentsiya po konstruirovaniyu i ekspluatatsii liteynogo oborudovaniya)

PERIODICAL: Mashinostroitel', 1958, Nr 5, p 48 (USSR)

ABSTRACT: In December 1957, a scientific-research conference took place in Gor'kiy dealing with the construction and utilization of casting equipment. It was organized by the department of casting of the NTO MASHPROM. At the conference were 900 representatives from machine building plants, casting equipment plants, scientific research institutes, universities, etc. A total of 28 reports were given. I.P. Yegorenko, Candidate of Technical Sciences (NIILITMASH) reported on the actual state and development of the casting technique. P.N. Aksenov, Doctor of Technical Sciences (MAMI) reported on automated lines of sand-blowing moulding. L.M. Mariyenbakh, Doctor of Technical Sciences (MVMI) reported on the subject "Mechanized Drying Kilns". G.S. Zelichenko, Engineer (Leningrad Branch of Soyuzprommekhanizatsii) reported on "Automatic Lines of Molding in Casting Shops". A.D. Ginzburg (LF VPTI tyazhmash) reported on a self-constructed automatic machine for the pro-

Card 1/2

117-58-5-24/24

Conference on Construction and Utilization of Casting Equipment

duction of shell moulds. V.N. Bobrov (NIILITMASH) talked about automatic machines for moulding. A.V. Ódinokov, Engineer, reported on modern sand blasting devices. G.S. Taburinskiy, Engineer (NIITLITMASH) reported on "Automatic Machines for the Production of Shell Molds and Cores". Z.D. Levin (Plant KATEK) spoke on "Projects and Utilization of Equipment for Mechanized Casting". I.V. Yefimov, Engineer, spoke on "Mechanization and Automation of the Technological Process of Casting With Melttable Models". G.R. Nikol'skiy, Engineer (NIILITMASH) spoke on hydraulic and sand-hydraulic cleaning of castings. B.G. Shpital'nyy (NIILITMASH) talked about the automatic moulding machine Nr 962b4.

AVAILABLE:
Card 2/2

Library of Congress

1. Casting equipment-Development 2. Casting equipment-Application

BOBROV, V.N.

AUTHOR: Bobrov, V.N. 37-11-4/18
TITLE: Effect of Moisture on the Readings of Magnetic Instruments (O vliyani vlazhnosti na pokazaniya magnitnykh priborov)
PERIODICAL: Trudy Nauchno-issledovatel'skogo instituta zemnogo magnetizma, 1957, Nr 11(21), pp. 87-100 (USSR)
ABSTRACT: The article deals with shifts and "jumps" in readings caused by moisture, the Edelman and Schultz Z-variometers, and the Yanovskiy H-variometer. The following authors are cited: Popruzhenko, S., and Kokovkin, P.F. There are 11 figures and 2 references, both USSR.
AVAILABLE: Library of Congress
Card 1/1

Bobrov, V. N.

37-12 -1/12

AUTHOR: Bobrov, V. N.

TITLE: Distribution of Electrical Conductivity in the Interior of the Earth (K voprosu o raspredelenii elektricheskoy provodimosti vnutri zemli)

PERIODICAL: Trudy Nauchno-issledovatel'skogo instituta zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln, 1957, Nr 12 (22), pp. 3-19 (USSR)

ABSTRACT: The electrical conductivity of a model of the Earth with a uniform conductivity core depends on the longitude and depth of penetration. Maximum conductivity calculated from various harmonics is observed in the western hemisphere and minimum conductivity in the western portion of the eastern hemisphere. Conductivity increases with depth; the increase is particularly great within the 500-600 km depth zone and continues further though at a lower rate. A similar longitudinal relation is evident in calculating the thickness of the non-conductive earth crust, with the maximum thickness in the western hemisphere, and the minimum thickness in the eastern portion of the eastern hemisphere. The article propounds a mathematical

Card 1/2

Distribution of Electrical Conductivity in the Interior of the Earth (Con't) ^{37-12-1/12}

theory of electromagnetic induction in a spherical model of the Earth, composed of a uniformly conductive core and a non-conductive shell, and a theory of induction in a thin conductive shell. An experimentally determined ratio of amplitudes and phase differences between extreme initial fields is given. Errors of observation are insignificant, particularly at high values of conductivity. The treatment throughout is mathematical. The authors mentioned in the article are N. P. Ben'kova and A. N. Tikhonov. There are 4 figures, 4 tables and 3 references, of which 2 are Russian.

AVAILABLE: Library of Congress

Card 2/2

BORBOV, V. N., Cand of Phys-Math-Sci --- (diss) "Some Problems of the theory of
of Electromagnetic Induction and the Distribution of Electrical Conductivity Inside
the Earth,"

Moscow, 1959, 7 pp (Institute of the Physics of the Earth imeni O. Yu. Shmidt,
Academy of Sciences USSR) (KL, 6-60, 120)

89783

S/169/61/000/002/038/039
A005/A001

24.2500 (1144, 1143, 1402)
9.9700

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 2, pp. 53-54,
20366

AUTHOR: Bobrov, V. N.

TITLE: The Theory of Electromagnetic Induction Within Leads Having Inhomogeneous Conductivity, and Its Application to the Calculation of Electric Conductivity Within the Earth

PERIODICAL: "Tr. N.-i. in-ta zemn. magn. ionosfery i rasprostr. radiovoln",
1959, No. 15 (25), pp. 3-28

TEXT: The author considers the problem of determining electric conductivity in a limited region of the Earth on the basis of the theory of electromagnetic induction within an inhomogeneous lead. The problem is solved for the case when χ (conductivity) increases with the depth, and the special case of $\chi = \text{const.}$. The solution is carried out in rectangular and cylindric coordinate systems. In rectangular coordinates, the conductivity is given by the relation: $\chi = \chi_0 \exp[-2m(z-z_1)/z_0]$, where m is an integer > 0 , $\chi_0 = \text{const.}$, z_1 is the plane separating the lead from the dielectric; z_0 is a plane tangential to the Earth's surface.

Card 1/3

89783

S/169/61/000/002/038/039
A005/A001

The Theory of Electromagnetic Induction Within Leads Having Inhomogeneous Conductivity, and Its Application to the Calculation of Electric Conductivity Within the Earth

The potential of the field of magnetic variations in a dielectric is presented in the form:

$$V = \sum_n \sum_m \left\{ E_n^m \exp [\lambda_n^m (z - z_0)] + J_n^m \exp [-\lambda_n^m (z - z_0)] \right\} \cos (\gamma_n x + \varphi_{1n}) \sin (\delta_m y + \varphi_{2m}),$$

where $E(t)$ and $y(t)$ are complex numbers characterizing the external and internal parts of the field; λ , γ , δ are the gradients of magnetic variations along the coordinate axes; φ_1 and φ_2 are the phase angles. Within the lead is $B = \text{rot } A_1$, where A_1 is the vector potential. From the condition of continuity of the field in the interface between lead and dielectric, a system of equations containing E and J is obtained, and their ratio is determined:

$$E/J = (E_0/J_0) \exp [i(\epsilon - \tau)],$$

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A005/A001

The Theory of Electromagnetic Induction Within Leads Having Inhomogeneous Conductivity, and Its Application to the Calculation of Electric Conductivity Within the Earth

where E/J_0 is the ratio of the amplitudes of the external field and the internal field, $(\epsilon - \tau)$ is their phase difference. Hence the expressions for χ and $z_0 - z_1$ (thickness of the non-conducting layer) are obtained. The special case of the homogeneous distribution of conductivity, $m = 0$, is considered. The values of E/J are obtained for the different special cases depending on the product of the penetration depth of the alternating current by the vertical gradient of the field. The approximate formulae for the calculation of χ and $z_0 - z_1$ coincide practically with the exact formula. The solution of the induction problem in cylindrical coordinates leads to formulae analogous to those obtained in rectangular coordinates. Formulae are derived for the partition of the field of magnetic variations observed at the Earth's surface into the external and internal parts. From the data of 12 observatories on S_0 of variations in summer 1933, the conductivity and depth of the non-conducting layer were calculated. The results (see Table 1) point out the inhomogeneity in the distribution of conductivity within the Earth. There are 10 references.

N. Rotanova

Translator's note: This is the full translation of the original Russian abstract.
Card 3/3

89784

24.2500 (1143, 1144, 1482)
9.9700

S/169/61/000/002/039/039
A005/A001

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 2, p. 54, # 2G367

AUTHOR: Bobrov, V. N.

TITLE: Electromagnetic Induction Within a Thin Spherical Shell With Inhomogeneous Conductivity, and Its Application to the Calculation of Electric Conductivity Within the Earth

PERIODICAL: "Tr. N.-1. in-ta zemn. magn. ionosfery i rasprostr. radiovoln", 1959, No. 15 (25), pp. 29-56

TEXT: The author considers the problem on the effect of inhomogeneous distribution of conductivity of the Earth on the induced geomagnetic field. In the solution, an idealized model of the Earth is used, and it is assumed that the Earth consists of a non-conducting sphere covered with an infinitely thin spherical shell having inhomogeneous conductivity χ' . The fundamental equations of the electromagnetic induction theory within a spherical shell are considered. The solution of the problem is presented for some special cases of distribution of conductivity: 1) homogeneous distribution of conductivity; 2) the inducing field is represented by one harmonic

Card 1/4

89784

S/169/61/000/002/039/039
A005/A001

Electromagnetic Induction Within a Thin Spherical Shell With Inhomogeneous Conductivity, and Its Application to the Calculation of Electric Conductivity Within the Earth

$$E_n^m \exp(i \omega_m t),$$

and the distribution of conductivity depends only on coordinate θ , $\chi = 1/\rho$ and $\rho = \rho_0(1 + \epsilon \cos \theta)$; 3) the inducing field is represented by several harmonics, and the distribution of ρ is analogous to the aforementioned case; 4) the inducing field is represented by an arbitrary number n^1 of harmonics of the same order m , and the distribution of conductivity is given by an arbitrary number (s) of zonal harmonics

$$\rho = \rho_0 \sum_{s=0}^s \epsilon_s P_s^0(\cos \theta).$$

The formulae are considered for the transformation of spherical harmonics at the transition from one coordinate system to another. These formulae are necessary for determining the induced field when the inducing field is expressed in spherical harmonics relative to a coordinate system with one symmetry axis, and the distribution of conductivity has axial symmetry relative to another coordinate system.

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89784

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A005/A001

Electromagnetic Induction Within a Thin Spherical Shell With Inhomogeneous Conductivity, and Its Application to the Calculation of Electric Conductivity Within the Earth

The calculation of the induced field with a distribution of conductivity with axial symmetry is exemplified. The analysis of the effect of distribution of conductivity, inhomogeneous in latitude, on the induced field is carried out. The distribution of conductivity over the surface of a spherical shell is given in the form: $\chi = \chi_0 / (1 + \cos \theta)$, where χ_0 is the average conductivity from the data of S_q -variations for harmonics P_2^1 and P_3^2 . When inhomogeneous conductivity exists, a series of harmonics in the induced field corresponds to every harmonic in the inducing field. The results of analysis show that for a sufficiently large value of χ_0 the inhomogeneous distribution of conductivity over the latitude does not affect the induced field, i. e., the same harmonic in the induced field corresponds to every harmonic of the inducing field. The amplitudes of the other harmonics are so small that they can practically be neglected. For smaller values of χ_0 , the inhomogeneity in distribution of conductivity affects noticeably the induced field, and it is necessary to take into account in calculations a series of other harmonics in addition to the basic harmonic. Numerical values

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S/169/61/000/002/039/039 ✓
A005/A001

Electromagnetic Induction Within a Thin Spherical Shell With Inhomogeneous Conductivity, and Its Application to the Calculation of Electric Conductivity Within the Earth

of amplitudes and phase angles of the induced field are presented for various distributions of conductivity. There are 11 references.

N. Rotanova

Translator's note: This is the full translation of the original Russian abstract.

Card 4/4

BOBROV, V.N.

Temperature compensation of magnetic instruments by the use of
antiparallel magnets. Trudy NIZMIR no.16:107-116 '60.

(Magnetic instruments)

(MIRA 14:3)

BOBROV, V.N.

Temperature compensation of quartz Z-variometers and the effect of humidity on their readings. Trudy NIZMIR no.16:117-143 '60.

(Magnetic variometer)

(MIRA 14:3)

BOBROV, V.N.

The quartz Z-variometer. Trudy NIZMIR no.16:164-169 '60.

(MIRA 14:3)

(Magnetic variometer)

BOBROV, V.N.

Instrument for determining magnetic moments and temperature
co-efficients of magnets. Trudy NIZMIR no.16:178-184 '60.

(Magnetic instruments)

(MIRA 14:3)

S/570/61/000/³¹⁶⁵⁹018/003/004
B116/B108

3.9110

AUTHOR: Bobrov, V. N.

TITLE: Quartz T-variometer

SOURCE: Akademiya nauk SSSR. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln. Trudy, no. 18(28), 1961, 50 - 54

TEXT: Construction and mounting of a new quartz variometer for measuring the total intensity T of the terrestrial magnetic field in magnetic observatories is briefly described in this paper. The author gives a detailed description of the sensing element in the present periodical, p. 55. The first experimental type of the apparatus was developed and produced in 1959 by the kvartsevaya laboratoriya IZMIRAN (Quartz Laboratory of the IZMIRAN). In 1960, the mentioned laboratory produced the first experimental lot of such variometers in cooperation with the otdel opytного priborostroyeniya IZMIRAN (Department of Experimental Instrument Construction of the IZMIRAN). The universal sensing element (Fig. 1) is the basis of the apparatus. The quartz system is adjusted such that the temperature coefficient of the element equals zero, and that rotation axis and mag-

Card 1/A 3

31659

Quartz T-variometer

S/570/61/000/018/003/004
B116/B108

netic axis of the suspension system lie in a plane parallel to the upper casing surface, the light spots of the movable mirror and of the fixed mirror being bound to coincide on the recorder. The temperature coefficient of the adjusted apparatus is $\pm 0.2\gamma$ per 1° , and may be neglected. The adjusted element is attached to the support so that the rotation axis of the suspension system is perpendicular to the rotation axis of the support. The upper casing surface has to be perpendicular to T in order to direct the element properly to the direction of the total intensity T. The zero point can be varied up to $\pm 5000\gamma$ with the aid of additional magnets (Vicalloy, temperature coefficient $5 \cdot 10^{-5}$). The first experimental variometer was mounted at a distance of 3.5 m from the recorder in the variation pavilion of the Tsentral'naya magnitnaya observatoriya (TsMO) (Central Magnetic Observatory (TsMO)). The scale graduation was 1.33 γ per 1 mm, the temperature coefficient $\mu_T \approx 0.2\gamma$ per 1° . The stability of the fundamental values was controlled first by comparing the readings of the variations obtained directly with the T-variometer to the T-

Card 2/4³

Quartz T-variometer

31659
S/570/61/000/018/003/004
B116/B108

variations calculated from the data of H- and Z-variometers. Since February 1960, a nuclear precession magnetometer has been used at the TsMO for absolute observation of T; its readings are used to control those of the T-variometer. The checkings showed that the fundamental values of the T-variometer did not change within 4 months. Advantages of the apparatus are: independence of temperature and humidity of air, high stability of the fundamental values, and simple construction. G. V. Seleznev and S. V. Samokhvalov, mechanics, are thanked for producing the experimental apparatus, and N. D. Kulikov, quartz blower, for adjusting the quartz system. There are 3 figures and 1 Soviet reference. ✓

Fig. 1. Sensing element for T-variometer. Legend: (1) Casing, (2) quartz frame, (3) suspension, (4) ring, (5) prism, (6) beveled disk, (7) rod, (8) slide with additional magnet for zero adjustment and adjustment of scale, (9) ring with guides, (10) nut.

Card 3/43

38244
S/169/62/000/005/066/093
D228/D307

9.6130
AUTHOR:

Bobrov, V. N.

TITLE:

Universal high-stability sensing element with a zero temperature coefficient for magnetometers, variometers, and microvariometers recording any component of the earth's magnetic field

PERIODICAL:

Referativnyy zhurnal, Geofizika, no. 5, 1962, 3, abstract 5G18 (Tr. In-ta zemn. magn., ionosfery i rasprostr. radiovoln, AN SSSR, 18 (28), 1961, 55-67)

TEXT: Starting from 1957, experimental research on different versions of quartz systems for recording the vertical component of the earth's magnetic field was carried out in the quartz laboratory of the IZMIRAN (Institute of Terrestrial Magnetism, the Ionosphere, and Radiowave Propagation, A'S USSR). As a result of this research the author designed a high-stability sensing element with a zero temperature coefficient for magnetometers, variometers, and microvariometers recording any component of the earth's magnetic field. The article considers: a) A short history of the question, b) a
Card 1/3

Universal high-stability ...

S/169/62/000/005/066/093
D228/D307

new magnetic suspension system for quartz frames, c) the universal sensing element's design, and d) three ways of compensating for the temperature of the quartz systems. The essence of the first method of obtaining a zero temperature coefficient consists of the fact that the axis on which the magnet is mounted on the quartz bar shifts to the side of the magnet's south pole for a certain distance l ; this distance is chosen in such a way that the changes in the suspension system's position, occurring at the expense of the magnetic moment's change and the magnet's linear expansion, are mutually compensated. This method is suitable only for the vertical component Z and the total strength T of the earth's magnetic field. The second, classical method of temperature compensation is attained at the expense of an additional compensating magnet and is applicable for quartz systems, recording any component of the earth's magnetic field with a normal sensitivity. The essence of the third way consists in the fact that two antiparallel magnets, whose summary field completely compensates the field of the component being recorded, are fastened on the quartz frame; the due selection of the temperature coefficients of these magnets ensures

Card 2/3

Universal high-stability ...

S/169/62/000/005/066/093
D228/D307

that the compensating field's value remains constant when the temperature changes. The alignment of the suspension system on an untwisted thread in the zero field ensures the high ($\sim 0.1\%$) sensitivity of the system, which is of substantial significance in the recording of microvariations. The data about the work of the sensing element, established at the Tsentral'naya magnitaya observatoriya (Central Magnetic Observatory) for recording variations in the total force T, have been previously stated in detail (see RZhGeofiz, 1962, 4G20). 12 references. [Abstracter's note: Complete translation.]

4

Card 3/3

42138

S/203/62/002/002/014/017
1046/1246

9.6130

AUTHOR: Bobrov, V.N.

TITLE: Quartz magnetic variometers

PERIODICAL: Geomagnetizm i aeronomiya, v.2, no. 2, 1962, 348-356

TEXT: V.N. Bobrov's sensitive quartz elements (Ref. 1: V.N. Bobrov. Universal'nyi vysokostabil'nyy kvartsevyy chuvstvitel'nyy element s nulevym temperaturnym koeffitsientom dlya magnitometrov, variometrov i mikrovariometrov, registruyushchikh lyubuyu sostavlyayushchuyu zemnogo magnitnogo polya /A universal high-stability sensitive quartz element of zero temperature dependence for magnetometers, variometers and microvariometers registering any component of the geomagnetic field/. Voprosy zemnogo magnetizma. Tr. IZMIRAN, 1961, no. 18 (28), 55, are used in D-, H-, Z-, and T-variometers measuring variations in declination, in the horizontal and the vertical components, and in the total force of the geomagnetic field, respectively. The readings are highly stable and are virtually independent of temperature and air humidity. The device can be adjusted to work in steps of $0.5 \mu/\text{mm}$ over the entire span of the magnetogram (20 cm). As the variometers are dispensed with detailed specification tables,

Card 1/2

Quartz magnetic...

S/203/62/002/002/014/017
I046/I246

they can be mounted with comparative ease in any magnetic observatory without highly trained specialists. There are 6 figures.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln
AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere and
Propagation of Radiowaves AS USSR)

SUBMITTED: January 9, 1962

Card 2/2

24.2200

43167
S/203/62/002/003/019/021
1023/1250AUTHOR: Bobrov, V.N.

TITLE: A device for measuring the temperature coefficients of small magnets

PERIODICAL: Geomagnetizm i Aeronomiya, v.2, no.3, 1962, 550-552

TEXT: A device for measuring the low temperature coefficients μ of small magnets should satisfy the following requirements: 1) measurement of μ of magnets with a moment $M < 1$ CGS; 2) measurement of the order 10^{-6} ; 3) precise results obtained rapidly. The main part of the instrument is a sensitive element of quartz which is located in a hermetically sealed enclosure. Magnets are used to fix the scale and to calibrate the instrument. The sensitivity is generally 1γ /division, but it can be raised to $< 0.05\gamma$ /division. The magnet investigated is immersed in cold, and afterwards in hot water. The difference of readings of the instrument ΔH is recorded.

$$\mu = \frac{\Delta H}{H \Delta t} \quad \text{where } \Delta t \text{ is the difference of temperature of the hot and cold water.}$$

Card 1/2

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I023/I250

A device for measuring...

The measurement is very fast (~ 10 sec), the time being determined by the time it takes the magnet to reach thermal equilibrium with the water. Because of the short time any changes in the geomagnetic field occurring during the measurement can be neglected. The changes in those parts of the instrument that are exposed to different temperatures can be estimated and the results corrected correspondingly. In future some of the metal parts will be replaced by parts made of quartz. There is 1 figure, 3 references.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln Akademii nauk SSSR (Institute of Terrestrial Magnetism, Ionosphere and Radiowave Propagation, Academy of Sciences USSR)

SUBMITTED: January 19, 1962

Card 2/2

S/203/62/002/004/015/018
I046/I242

AUTHOR: Bobrov, V.N.

TITLE: Faults of apparatus used for registration of magnetic variations

PERIODICAL: Geomagnetizm i aeronomiya, v.2, no.4, 1962, 767-770

TEXT: The common magnetic variometers are incapable of reproducing accurately rapid changes in the geomagnetic field; there is no accurate method for aligning the instrument with the magnetic-field component in question; the readings depend on air temperature and humidity; the weight of each graduation unit and the basic values are quite unstable; the weight of graduation units depends on the ordinate. It is suggested that conventional variometers be replaced with quartz variometers (Ref.5: V.N.Bobrov. Geomagn. i aeronomiya, 1962, 2, no.2, 348) which are free of all these deficiencies and thus greatly facilitate the operational procedures and the processing of magnetograms. There are 2 figures. ✓

Card 1/2

S/203/62/002/004/015/018
I046/I242

Faults of apparatus used for registration...

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostra-
neniya radiovoln AN SSSR (Institute of the Terrestri-
al Magnetism, the Ionosphere and Propagation of Radio
Waves, AS USSR) ✓

SUBMITTED: March 20, 1962

Card 2/2

BOBROV, V.N.

Checking the accuracy of variometers in magnetic observatories.
Geomag. i aer. 2 no.4:771-776 JI-Ag '62. (MIRA 15:10)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya
radiovoln AN SSSR.

(Magnetic variometer)

~~BOBROV, V.N.~~

Single-component magnetic variation stations. Geomag. i aer.
2 no.5:1001-1007 S-0 '62. (MIRA 15:10)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya
radiovoln AN SSSR.
(Magnetism, Terrestrial--Observatories)

BOEROV, V.N., kand.fiz.-matem.nauk

Quartz geomagnetic apparatus. Vest.AN SSSR 33 no.2:82-84 F '63.

(MIRA 16:2)

(Magnetic variometer)

L 24475-65 EWT(1)/FCC/BEC(t) Po-4/Pi-4 GW

ACCESSION NR: AP5000534

8/0203/64/004/006/1136/1139

AUTHOR: Bobrov, V. N.

TITLE: Three-component magnetic variation station, IZMIRAN-1

28
25
B

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 6, 1964, 1136-1139

TOPIC TAGS: magnetograph, variometer, Helmholtz coil, magnetic field

ABSTRACT: IZMIRAN-1, a portable three-component magnetic variation station (magnetograph), is described by its designer. Experimental models have been used on expeditions to the Pamirs and the Chukotskiy Peninsula. Several stations were produced in 1961 and several are now in operation. Its three main sections are: the station proper with three variometers, the recorder, and the control panel (see Fig. 1 (a and b) of the Enclosure). The D variometer is also described and illustrated (see Fig. 2 of the Enclosure). The H and Z variometers are briefly described. Assembly and installation of the IZMIRAN-1 are explained. The recorder is separate and uses 50 x 20 cm photopaper with 24-hr rotation. The control panel provides for checking the accuracy of D and E variometer mounting with respect to recorder components. The principal differences between this

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L 24475-65

ACCESSION NR: AP5000534

3

station and others is that its D and H variometers are equipped with aligning coils, whose magnetic axes are mutually perpendicular. This permits accurate adjustment of the station even under field conditions. "In conclusion, the author thanks N. D. Kulikov for constructing the first experimental model of the station and A. T. Kalmykov for providing the technical documentation." Orig. art. has: 2 figures.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere and Radiowave Propagation, AN SSSR)

SUBMITTED: 26 Nov 62

ENCL: 03

SUB CODE: ES, EM

NO REF SOV: 004

OTHER: 000

Card 2/5

U-41328-85 EWT(1)/FCC/ECG(t) Po-4/P1-4 GW

ACCESSION NR: AP5005206

AUTHOR: Bobrov, V. N.

S/0203/65/005/001/0200/0202

TITLE: The IZMIRAN-2 three-component magnetic-variation station 12

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 1, 1965, 200-202

TOPIC TAGS: magnetic variation station, Geomagnetic field /IZMIRAN 2 21
E

ABSTRACT: In 1962, the quartz laboratory of the Institute of Terrestrial Magnetism, the Ionosphere, and Radio Wave Propagation developed the IZMIRAN-2 magnetic-variation station for magnetic observatories. The apparatus is shown schematically in Fig. 1 of the Enclosure. It consists of a rectangular box 1 within which there are three housings, 2, 3, and 4, with quartz sensing elements for recording variations in declination D, the horizontal component H, and the vertical component Z of the earth's magnetic field. In the front wall of the station there are three spherical lenses 5 with identical focal lengths. On the rear wall, there are three bars 6 with movable carriages 7 and compensating magnets 8, which are used for changing the zero point and the graduations of the corresponding sensing elements. Desiccator 9 is mounted at the top of the device. The housing of the Z variometer is attached to the floor of the station, the D variometer, to the side wall, and the

Cord 1/2

L 41328-65

ACCESSION NR: AP5005206

H variometer, on a special support. The housing of the variation station is constructed in such a way that when the D, H, and Z housings are installed within the station the upper planes of the housings form three mutually perpendicular planes. On the rear wall of the station, opposite the D housing, there is a rotating mirror 10 with a magnet 11. During adjustment of the station, this magnet is used for compensating the magnetic fields created by the H and Z sensing elements at the center of the D sensing element. On the bottom of the station there can be an additional magnet 12 for compensating the necessary part of the field of the horizontal component H. Current is supplied through plug 13. The IZMIRAN-2 can be adapted for recording magnetic storms, ordinary variations, and micropulsations with graduations from 50 to 0.2 γ/mm . Orig. art. has: 2 figures. [08]

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln, AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere and Radio Wave Propagation, AN SSSR)

SUBMITTED: 05Mar63

ENCL: 01

SUB CODE: ES

NO REF SCV: 005

OTHER: 000

ATD PRESS: 3216

Card 2/3

L 9779-66 EWT(1)/EWP(e)/EWT(m)/FCC/EWP(b) WH

ACC NR: AP5025480

SOURCE CODE: UR/0203/65/005/005/0892/0895

AUTHOR: Bobrov, V. N.
44.55

58
B

ORG: Institute of Earth Magnetism, Ionosphere and Radio Wave Propagation, AN SSSR
(Institut zemnogo magnetizma ionosfery i rasprostraneniya radiovoln AN SSSR) 44.55

TITLE: Three-component magnetic variational field station "Ismiran-4" 2

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 5, 1965, 892-895

TOPIC TAGS: electronics, electronic equipment, earth magnetism

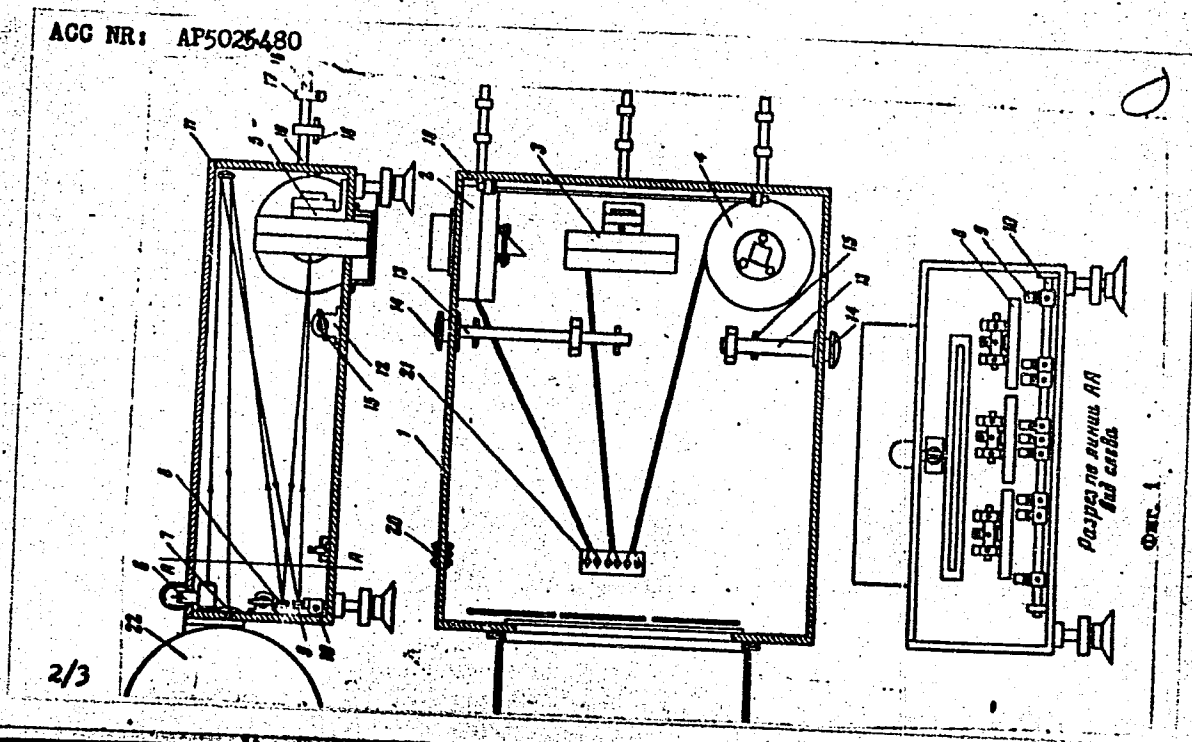
ABSTRACT: The station "Ismiran - 4" consists of a rectangular, lightproof housing (1), with inside booths (2, 3 and 4), corresponding to D-, H-, and Z-variometers, and angle bracket (5). Booths with sensitive quartz cells are located inside the station so that their top surfaces form 3 reciprocally perpendicular surfaces. The booths can be used with or without stopping devices. There is an inside light

1/3

UDC: 537.74

L 9779-66

ACG NR: AP5025480



L 9779-66

AGC NR: AP5025480

Fig. 1. Section on line Aa, view from left.

(6), a cylindrical lens (7), and speculas (8, in 3 pieces, and 9 in 9 pieces), specula (9) can be moved along a stationary shaft (10), a big speculum 11 is fixed on the back wall. Bearings (12) pivot with grip (13) and (14). The equipment includes also compensation magnets (15 and 18), bars with carriers (16 and 17), a supplementary magnet (19), a plug (20), a terminal (21), and a recording device (22). The design of the "Izmiral-4" station is simple and can be set up quickly for production in series. In spite of its simplicity it is a versatile station, recording many different magnetograms either with an integrated recorder or a separate one. The advantage of the station are: easy parts replacement; high precision of adjustment; high reading stability; independence of temperature and humidity; low electric energy consumption and simplicity of adjustment. Orig. art. has: 2 figures.

SUB CODE: 20,09/ SUBM DATE: 11Sep64/

NR REF SOV: 005/ OTHER: 000


3/3

L 2636-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) JD

ACCESSION NR: AP5025492

UR/0203/65/005/005/0961/0963
537.74

AUTHOR: Bobrov, V. N.

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B

TITLE: Magnets with zero temperature coefficients

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 5, 1965, 961-963

TOPIC TAGS: magnetic moment, permanent magnet material, temperature characteristic, metal heat treatment

ABSTRACT: The temperature coefficients of permanent magnets made of Vicalloy are studied as functions of annealing temperature. Preliminary experiments showed a very close relationship between temperature coefficient and annealing temperature for magnets of this type. It was also found that a certain annealing temperature produces magnets with zero temperature coefficients. Due to a strong temperature gradient in the annealing oven, the reading given by the thermocouple does not always correspond to the actual temperature of the magnets being annealed. Therefore, a considerable scatter was observed in temperature coefficients even for magnets in the same batch. A simple method was developed for manually controlling the

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temperature in the annealing oven to within $\pm 2-3^\circ$. The instrument used for determining the temperature coefficients of the annealed magnets was especially designed for high-speed measurements of low temperature coefficients in magnets with small magnetic moments. It was found that an annealing temperature of $\sim 600^\circ$ gives a maximum magnetic moment. The curve for temperature coefficient as a function of annealing temperature passes through zero at $680-690^\circ$. At higher temperatures, the coefficient takes on positive values. Similar results were obtained for Vicalloy cylinders, flat bars, and wires. Measurement of the temperature coefficient a year after the experiments confirmed that the effect is permanent. The magnetic moments of Vicalloy magnets with zero temperature coefficients are extremely stable. It was found that the magnet loses 30-35% of the value of the magnetic moment as a result of the heat treatment. Orig. art. has: 3 figures. [14]

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere, and Radio Wave Propagation, AN SSSR)

SUBMITTED: 23Nov64

ENCL: 00

SUB CODE: EM, TD

NO REF SOV: 003

OTHER: 000

ATD PRESS: 4/24

Card 2/2. *AP*

L 14189-66 EWT(1)/FCC GW

ACC NR: AP6002768 (N)

SOURCE CODE: UR/0203/65/005/006/1132/1133

AUTHOR: Kanonidi, Kh. D.; Bobrov, V. N.

ORG: Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation AN SSSR (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR)

TITLE: A remote magnetograph with visible recording on an IZMIRAN system

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 6, 1965, 1132-1133

TOPIC TAGS: geomagnetism, earth science instrument

ABSTRACT: The authors describe a magnetograph (developed in 1962) in which the pickup is a quartz sensing element. The magnet is made from Vicalloy, is 16 mm long with a diameter of 1.2 mm and has a magnetic moment of 10-12 CGS units. The magnet weighs 170 mg, and the weight of the entire suspension system is 270 mg. The mirror measures 12 x 6 mm. Light from the source of illumination passes through the condenser lens and is directed to the movable mirror of the sensing element from which it is reflected in the form of a rectangular spot to two photoresistors connected in a differential circuit. A variation in the magnetic field causes the

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UDC: 537.74

LEVENSHTEYN, M.I.: BOBROV, V.P.

Potassium salts in the lower Permian halogen sediments of the
Donets Basin. Lit. i pol. iskop. no.3:53-65 My-Je '64

(MIRA 17:11)

I. Trest "Artemgeologiya", Artemovsk.

BOEROV, V. P. (ENGR)

BOBROY, V. P. (ENGR) -- "INVESTIGATION OF THE MOVEMENT OF ARTICLES IN MACHINE TOOL CHARGING DEVICE PANS." SUB 11 JUN 52, MOSCOW MACHINE-TOOL AND TOOL INST IMENI I. V. STALIN (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCES)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

BOBROW, V.P.

Compressed-air suction for cast-iron chip removal. Stan. 1
instr. 26 no.5:11-12 My '55. (MIRA 8:8)
(Machinery--Safety appliances)

BOBROV, V.P.

Chip removing conveyers. Stan.i instr. 28 no.3:20-23 Mr '57.
(Conveying machinery) (Metal cutting) (MLRA 10:5)

AUTHOR: Bobrov, V.P., Candidate of Technical Sciences SOV-118-58-9-8/19

TITLE: Transportation Means for the Removal of Metal Shavings (Transportery dlya udaleniya metallicheskoj struzhki)

PERIODICAL: Mekhanizatsiya trudoyemkikh i tyazhelykh rabot, 1958, Nr 9 pp 26-28 (USSR)

ABSTRACT: The removal of twisted metal shavings is a very disagreeable process. At the Pervyy Gosudarstvennyy podshipnikovyy zavod (First State Bearing Plant) this problem has been solved in introducing special one and multi-worm transporters installed at the automatic roller and ball bearing production lines. For the removal of cast iron shavings and because of their friability, one-worm transporters are used; multi-worm transporters are recommended for steel shavings. The article gives a detailed description of the shaving transportation scheme. The productivity of one shaving transporter amounts to 300 kg of shavings or approximately 3 cu m per hour. The total distance of transportation is 65.5 m. There are 4 schematic drawings.

1. Metals--Handling 2. Metals--Disposal

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BOBROV, V.P.

"Automation and Mechanization in Planning by Metal Working Machines," in book
Complex Automation and Mechanization in Mechanical Engineering, State Scientific-
Technical Publishing Office for Machine Building Literature, Moscow, 1959.

BOBROV, V.P.

"Transport Systems of Automatic Lines," in book Complex Automation and Mechanization in Mechanical Engineering, State Scientific-Technical Publishing Office for Machine Building Literature, Moscow, 1959.

SOV/13-59-3-5/22

28(1)

AUTHOR:

Bobrov, V.P., Candidate of Technical Sciences

TITLE:

Automatic Storing Device for Components (Avtomaticheskiy nakopitel' detaley)

PERIODICAL:

Mekhanizatsiya i avtomatizatsiya proizvodstva, 1959, Nr 3, pp 15-18 (USSR)

ABSTRACT:

The storing device automatically performs the following functions: receives the components from the preceding work bench and transmits the parts to the following bench, with equal or different speeds. It can have the form of barrels or chain conveyers, the latter being preferred. The cabin conveyer can be manufactured with two or four cylinders. The construction of the cabin conveyer is more complicated and expensive, but it allows the loading and unloading of the conveyer from many points. It also allows an increase in volume, although not in height, which is very important for saving production space. The four cylinder storing conveyers

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Automatic Storing Device for Components

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are used, when a big amount of components has to be packed. The construction of this storing device allows for loading and unloading it from one or many points, by rolling or sliding of different forms of components. There are 1 photograph, 5 graphs and 1 table.

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25(1), 28(1)

SOV/118-59-9-3/20

AUTHOR: Bobrov V.P., Candidate of Technical Sciences

TITLE: Automatic Supply of Metal-Cutting Machines with Materials at IGP3 Plant

PERIODICAL: Mekhanizatsiya i avtomatizatsiya proizvodstva, 1959, Nr 9, pp 11-16 (USSR)

ABSTRACT: Automation of the IGP3 plant has been accomplished by the introduction of several conveyor lines performing the movement of work pieces and their inter-operational distribution among separate machines. The general layout of a conveyor line is given in Fig. 1. Its operation comprises, on the whole, the following stages: The work pieces are taken from the bunker (1) and delivered by the lifter (2) to the conveyor-distributor (3) from where they go to the metal-cutting machines (4). The inter-operation movement is carried out by outleading conveyors (5) located beside the machines. Fig. 2 shows the charger having 150 cm in diameter; its operation consists, essentially, of the following stages: The

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Automatic Supply of Metal-Cutting Machines with Materials at
1GP3 Plant

parts are taken from the bunker (8) by a conical rotating device and brought to the tray (10) from where they are taken by the claws (16) and transferred to trays (17 and 18); thereupon they are hoisted by a lifter and placed on the conveyor belt. The lifter is shown in Fig. 3. Distributing conveyor (Fig. 4) consists of a case (1) inside of which there is a cavity for placing of parts; under the case special trays (4) through which the work pieces come to machines are provided. In Fig. 5, a diagram of receiving device is given; its purpose is to grab the work pieces and to deliver them to trays. The speed of work pieces movement along the conveyor line is determined by formula $V_i = \frac{v\eta}{2}$ where v is the belt movement speed, and η is the coefficient of slip = 0.9-0.92. The length of conveyor is 35 m; required drive power - 1 kw. There are 7 diagrams.

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BOBROV, V.P., inzh.

Disk friction-feed bins. Mashinostroitel' no.10:8-10 O '59.
(Conveying machinery) (MIRA 13:2)

28(1)

AUTHOR:

Bobrov, V. P., Candidate of Technical Sciences

SOV/119-59-10-10/19

TITLE:

A Hydraulic Brake for Feeder Troughs

PERIODICAL:

Priborostroyeniye, 1959, Nr 10, pp 19 - 20 (USSR)

ABSTRACT:

Hydraulic braking devices for workpieces moved by their own weight in inclined feeder troughs, are described in the paper under review. These inclined feeder-troughs are described generally in the introduction, and a construction example is shown. The fact that the workpieces moving under the influence of gravity obtain too great speeds, and deformations of the workpieces occur, is mentioned as the main fault. Belts used as brakes cause a stoppage of the movement, while the hydraulic brakes described here only slow down the movement. Drawing of two brakes of that kind are shown in figures 2 and 3, with the actual braking cylinders being practically identical. The operating principle of these hydraulic brakes is the following: During their movement, the workpieces meet a lever arm, which is connected to the pistons in the brake cylinder by a suitably designed system

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A Hydraulic Brake for Feeder Troughs

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of lever rods. The movement of the workpieces is transmitted by the lever rods to the piston, which is braked by the oil in the brake cylinder. The own weight of the lever rods or a weight placed on the lever arm, always returns the braking device back to its initial position. These brakes showed good results when used in the automatic device 1GPZ. There are 3 figures and 1 table.

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BOBROV, V.P.

TABLE I BOOK EXPLANATION 32V/1718

Sovremennyye tekhniko- i upravleniye mashinnoy tekhnologiyey i priborostroyeniye (Present State of the Machine-Constructing Processes in the USSR, 1960, 363 p. 5,000 copies printed. Moscow, Voenizdat).

Ka.1. Annotiyu Khimicheskaya Zavodov, Doctor of Technical Sciences, Professor, Moscow; Ka.2. Annotiyu na Mashinnoy Tekhnologii i Instrument Constructing Engineers, Tech. Ed.: V.D. Kh. Khud and A.Ye. Ikhonov.

PURPOSE: This book is intended for technical and scientific personnel in the machine and instrument industries and for students and teachers of schools of higher education.

CONTENTS: The book deals with current theory and practice in the manufacturing process of the machine and instrument industries and includes discussion on trends for development. The physical nature of the processes and their social-economic features and possibilities are considered. Particular attention is given to new and promising processing (superplastic materials, electric machining, cold chamber die casting, precision pressing, new methods of welding, etc.). The book consists of papers presented at the All-Union Card V/11

Scientific-Industrial Conference on "Advanced Machine and Instrument Constructing Processes" held in 1960. The papers have been revised in the light of recent developments in the field. The book is written for the education and mechanization of the industry. Soviet and non-Soviet references accompany some of the chapters.

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BOBROV, V.P., kand. tekhn. nauk

Pneumatic trays for automatic loading devices. Mekh.i avtom.proizv.
14 no.3:7-9 Mr '60. (MIRA 13:6)
(Conveying machinery)

S/118/60/000/010/002/008
A161/A026

AUTHOR: Bobrov, V. P., Candidate of Technical Sciences

TITLE: Transportation Systems of Automated Machining Lines

PERIODICAL: Mekhanizatsiya i avtomatizatsiya proizvodstva, 1960¹⁴ No. 10, pp.7-12

TEXT: A general review is made of the design principles of transportation systems for automated transfer machine lines used in the USSR, with a few comparisons with foreign designs. The review includes the transportation system of a piston machining line (Fig. 1) and of a line machining shafts (Fig. 2); the transfer principle of the "rotary lines" of L. N. Koshkin (Fig. 4); of Morozov "group line" (Fig. 6); the N. M. Knyaz'kov system (Fig. 7); the A. A. Sigodzinskiy system (Fig. 8); and V. P. Bobrov system (author of the article). The Koshkin lines belong to the synchronous type, i. e. all working and transferring drums arranged in two staggered lines working simultaneously, including the rotors doing ancillary work (inspection), the entire system driven from one transmission shaft with bevel gears, or other combinations. The work rotors of the Koshkin line are cylinders with grooves on the outside designed for holding tool blocks (punch and die, or other). The shank of each tool is connected to a roller that

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enters a curved groove on a stationary copying drum (6 in Fig. 4), so as to lift or lower the tools when the work rotor turns. Blanks are fed from an automatic loading device into the grips of the first transfer rotor, then they go into the tool blocks on the work rotor, and the tool in the tool block performs all its work motions during one revolution of the work rotor. Then the blank goes on to the next transfer rotor and into the next operation, and so on. The duration of one operation cycle can be varied by the number of tool blocks or positions on the work rotor. Koshkin lines are presently used mostly for stamping, inspection, thermo-chemical and combination operations, and some for machining. In stamping lines with high pressure needed for punches, special hydraulic heads are used. These lines are stopping when one rotor in the system fails; this is their drawback. But such lines can be set up from rotary machines (Bullard-Continuous 128, or "Krasnyy proletariy" machines) and a flexible transfer system. The tool blocks are easily replaced during idle runs, and attempts have been made to automate the replacement. A line may have machines arranged in-line (Fig. 5) with non-synchronous transfer, or in groups, with single machines working into the hopper of the next and with transfer by conveyers. The workpieces will accumulate in the hopper of a stopped machine, but the other machines need not stop. The 1ПЗ (1GPZ) plant uses several transfer systems, the oldest of which is the Morozov system

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(Fig. 6) with a multitray conveyer (1) running along the entire line and having branches to every machine; inside the trays the blanks are moved by cross pieces fixed between two endless chains and fall through holes on the branch conveyers. The transfer system is electrically blocked to prevent crowding of a tray at a stopped machine. Another system (at 1GPZ) is the Knyaz'kov system (Fig. 7) with a conveyer and longitudinal trays above it and one lift (5) between a pair of machines (2). Another transfer system, by Sigodzinskiy (Fig. 8), has one way leading to different machine groups. Its conveyer has separate numbered zones for each workpiece, and the zones repeat periodically. The loading station of this system (1) is a group of skip hoists with numbers for the different workpieces being machined. In its top position the feeder skips the blank on the distributing conveyer (5). (Similar lifts are placed between machines). The distributing conveyer is placed overhead and has a cam chain (7) and an angle tray with cams (8) moving the blanks; another chain (9) on top is moved reciprocally by hydraulic pistons (10) and engages constantly with all lifts on the line. The ratchet stops (11) by which this chain grips the chain (7) slip over the cams in backward motion. Blanks are fed to machines through a window with shutter in the tray. This system is not fully flexible, too, and has to stop when the conveyer stops and blanks are cut in trays. Still, it is relatively simple and suitable for multiple-nomenclature

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