105-58-6-19/33

AUTHOR: Pavlov, N. N., Candidate of Technical Sciences

TITLE: Using Natural Grounding for Machines (Izpol'zovaniye yestestvennogo zazemleniya mashin)

PERIODICAL: Elektrichestvo, 1958, Nr 6, pp. 74-77 (USSR)

ABSTRACT: The resistance of a round plate resting on the surface of the ground against deliquescence is determined according to formula (1), This, However, does not consider the specific pressure on the plate nor the completeness of the contact of the plane with the ground. In order to investigate the dependence of the resistance of the plate against deliquescence on the specific pressure on the plate, corresponding experiments were made. A 10 x 10 cm metal plate was used. Different weights were put on it. According to the eyperiments the following facts were stated: 1) In order to ground movable machines it is sufficient to confine to their natural grounding which is caused by the resting surface of the machine on the ground. In this case a protective switch (in the form of a protection against single-phase grounding) is necessary in order to guarantee safety, and the amperage of the single-phse grounding must not exceed the

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values determined by the curves $I_{admissible\ grounding\ current} = f(t)$. 2) In order to decrease the amperage of the single-phase grounding a compensation of capacitive currents or a division of the electric net should be used. The use of compensation renders the arrangement a little more complicated but makes it possible to confine to the natural grounding of the machine. 3) The predeterminations that were made in the coal ground sections of the "Korkinugol' " trust (Kombinat "Chelyabinskugol' ") showed that in this case besides the increase of electric safety an economic advantage is reached. The installation and performance of groundings for excavators are simplified and thenumber of breakdowns is decreased. There are 4 figures and 2 tables.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Institute for Power Engineering)

SUBMITTED: November 18, 1957

Card 2/2 1. Machines--Electrical factors 2. Electric circuits--Performance

AUTHOR: Pavlov, N.N. (Candidate of Technical Sciences) 94-2-22/27

TITLE: On the selection of neutral conditions for transformers (K voprosu o vybore rezhima neytrali transformatorov)

PERIODICAL: Promyshlennaya Energetika, 1958, Vol.13. No.2. pp.34-35 (U.S.S.R.)

ABSTRACT: This is a further letter to the editor, discussing articles by Manoylov, Glazenap & Grigor'ev and by E.F. Tsapenko, and stating that the optimum condition in the neutral has been discussed for many years, but no single answer can be given to the question, because each case differs. Reference is made to German practice. The author does not agree with the circuits suggested in the articles. There is 1 literature reference (German)

AVAILABLE: Library of Congress.

1. Power transformers-Installations

Card 1/1

SOV/94-58-8-3/22

AUTHOR: Pavlov, N. N., Candidate of Technical Science

TITLE: ~~Protective~~ Gaps (O probivnykh predokhranitelyakh)

PERIODICAL: Promyshlennaya Energetika, 1958, Nr 8, pp 8-10 (USSR)

ABSTRACT: There are various ways in which high voltage may come to be applied to a medium voltage circuit. The extent to which this is dangerous depends on whether the neutral of the medium voltage circuit is earthed or not. If the neutral is earthed, the danger is not very great. If the neutral is insulated special protecting earthing gaps are installed in the transformer neutral with an indicator as shown in Fig.1. The technical conditions that are supposed to apply to these protective gaps are stated. For example, if the rated voltage is 300 V the breakdown voltage of the protective device should be between 351 and 500 V and it should allow 200 A to pass for 30 minutes without damage. It has been observed that these protective devices are often badly maintained. Because of failure of the devices, systems that should be working with insulated neutral are often in fact working with earthed neutral which can be very dangerous. The circuit for checking the conditions of these protective devices illustrated in Fig.1 includes

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two voltmeters which should both give the same reading if the device is not conducting. In fact, because of leakage currents false readings are often obtained. Tests were made in the Laboratories of the Moscow Power Institute (Moskovskiy energeticheskiy institut) with the participation of E. Bazelyan, S. Kulakova and Candidate of Technical Science Ye. Ya. Ryabkova to determine the characteristics of protective earthing gap type PP-3-A. Tests were made to determine the breakdown voltage under 50 c/s and impulse stress and also to determine the current that caused welding between the plates of the device. This particular device consists of an air gap formed by placing a perforated mica liner between two electrodes. Tests were made on ten samples of the device for a rated voltage of 350 V and breakdown voltage results are given in Tables 1 and 2. The breakdown voltage lay between 600 and 800 V on impulse test and 380 to 400 V at 50 c/s. It was found that welding occurs immediately after operation with a current of only 1A. Welding is caused by power frequency current and not by impulse alone. It is obvious

 from this result that protective earthing gap type PP3A is

Protective Earthing Gaps SOV/94-58-3-7/22

quite unfit for use and must be replaced. A number of available low voltage dischargers were tested to see if they could be used for this purpose including various types of carbon dischargers and gas filled barium dischargers, details of which are given in Table 3 and performance characteristics in Figs. 2 and 3. None of the dischargers was entirely satisfactory but some of them may be used under particular conditions. The gas filled barium dischargers have satisfactory electrical characteristics but inadequate mechanical strength. An editorial note suggests that the Moscow Transformer Works should do something about this matter.
There are 3 figures and 3 tables.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Institute)

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L 58816-65 EWT(d)/EED-2/EWP(1) Pq-4/Pg-4/Pk-4 IJP(c) BB/GG

ACCESSION NR: AR5000580 S/0271/64/000/009/B037/B038

681.142.67

SOURCE: Ref. zh. Avtomat., telemekh. i vychisl. tekhn. Sv. t., Abs. 9B220

37
B

AUTHOR: Pavlov, N. N.

TITLE: Elements intended for medium-high-speed (up to 150 kc) digital computers

CITED SOURCE: Sb. Poluprovodnik. elementy tsifr. vychisl. mashin malogo i sredn. bystrodeystviya. Kiyev, 1964, 5-25

TOPIC TAGS: digital computer, medium high speed computer, Dnipro computer

TRANSLATION: Elements have been developed (for the "Dnipro" control machine) which have the same input and output parameters as those of P16B typical elements used in the machine but which employ less critical and cheaper P16 transistors. The elements operate reliably and preserve their electric parameters within 0-250 kc, ambient temperatures of 0-50C, and a supply-voltage variation of ± 10%. The elements used in the typical units are tabulated. A trigger unit comprises the trigger proper, output inverters, input delay lines, and an input logical circuit designed with AND, OR gates which starts the trigger. Structural and principal diagrams of the trigger unit are given. Its advantage lies in the absence of the classical counter input which cannot ensure high reliability. The delay line is

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L 58816-65

ACCESSION NR: AR5000580

included for eliminating the ambiguity of operation, which considerably enhances the trigger reliability not only at its counter input but also in the shift-register and adder circuits. The unit is based on the saturated trigger which has a higher static reliability and a higher noise immunity than the unsaturated one. For lack of suitable industrial models of miniature delay lines, a 2-section delay line was developed. Each section is actually a T-filter with an autotransformer coupling between the inductances of its arms; the filter is designed with 1000?x4x2 mm ferrite cores (6 turns). A saturated inverter is used as an isolator in the trigger unit. To improve the output-voltage parameters of the trigger unit, an additional 20-v supply source and a diode 12.6-v cutoff are used. Principal parameters and typical characteristics of the trigger unit are given. Amplifier units are used in the digital computer for signal restoration and for ensuring the specified branching. Two types of such amplifier units were developed: the potential type, for amplifying long-duration signals and the pulse type, for amplifying 0.5--1.5 microsec signals. Structural and principal diagrams of the potential unit are given, its operation described, and its principal parameters specified. Two types of the pulse amplifier differ by their output power; each comprises an input logical circuit and an amplifying stage. Principal diagrams of the amplifier units are given, as is the diagram of two interconnected diode-transformer trunks; principal parameters of single- and two-state pulse amplifiers, their amplitude

Card 2/3

L 58916-65

ACCESSION NR: AR5000580

and shaping characteristics, and their transformer data are also given. A signaling unit is provided for visual observation of the computer performance. A principal circuit diagram of the signaling unit is given, as well as recommendations for using semiconductor diodes and ferrite rings according to their parameters. Examples of use of the above units are cited. Operation of the above units in several computers has exhibited high degree of matching between their elements. Eight illustrations. Bibliography: 4 titles.

SUB CODE: DP ENCL: 00

Card 3/3 ADP

L 57081-65 EWT(m)/EPF(c)/EPR/EWP(j) Pc-4/Pr-4/Ps-4 WW/JAJ/RM

ACCESSION NR: AP5014529 UR/0069/65/027/003/0441/0445
539.43

AUTHOR: Slyusarskiy, L. K.; Pavlov, N. N.; Dogadkin, B. A.

TITLE: Some aspects of sulfur vulcanization in the presence of dicumyl peroxide

SOURCE: Kolloidnyy zhurnal, v. 27, no. 3, 1965, 441-445

TOPIC TAGS: rubber mixture, rubber property, dicumyl peroxide, sulfur, diphenylguanidine

ABSTRACT: The vulcanization of polyisoprene rubber in the presence of dicumyl peroxide, sulfur, and diphenylguanidine was studied in nonpigmented stocks. The formation of cross-links was determined from data on swelling of the vulcanizates in benzene. The number of cross-links was calculated by means of nomograms. Dicumyl peroxide joins sulfur to the rubber in the form of groups of various structures. At the ratio 1 g-at S:1 mol dicumyl peroxide, the vulcanizates contain strong carbon-carbon and monosulfide bonds as well as polysulfide bonds. Sulfur in the stock has no effect on the decomposition of dicumyl peroxide. The effectiveness of the cross-linking of rubber by dicumyl peroxide in the presence of sulfur decreases, apparently because of the formation of intramolecular cyclic sulfides and because of process-

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L 57081-65

ACCESSION NR: AP5014529

es of degradation of the polymer. Diphenylguanidine inhibits the cross-linking of rubber by accelerating the decomposition of dicumyl peroxide, both when the peroxide is present alone and when sulfur is present with it. Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomono-sova (Moscow Institute of Fine Chemical Technology); Politekhnicheskiy institut, Lodz', Pol'skaya Narodnaya Respublika (Polytechnic Institute, Lodz, Polish People's Republic)

SUBMITTED: 29Sep64 ENCL: 00 SUB CODE: MT

NO REF SOV: 006 OTHER: 007

Card 2/2

KUZNETSOV, A.R.; VASENIN, R.M.; PAVLOV, N.N.

Kinetics of swelling of SKS-30-1 latex films. Koll. zhur. 26 no.6:692-696 N-D '64 (MIRA 18:1)

1. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti.

LEVCHENKO, N.A.; PAVLOV, N.N., kand.tekhn.nauk

Logical elements of digital computers equipped with seignetto-electrics. Avtom.i prib. no.4:26-28 O-D '62. (MIRA 16:1)

1. Institut kibernetiki AN UkrSSR.
(Electronic digital computers)

PAVLOV, N.N., kand.tekhn.nauk

P20 and P21 switch-type transistors. Avtom.i prib. no.1:35-36 Ja-Mr '63. (MIRA 16:3)

1. Institut kibernetiki AN UkrSSR.
(Transistors)

L 35021-65 EWP(e)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(b)/EWA(c)/EWP(k) Pf-4
JD/HW

ACCESSION NR: AT4047712 S/2563/64/000/238/0025/0033

AUTHOR: Pavlov, N. N.

TITLE: Investigation of the physical and mechanical properties of metal powders and rolled powder strip

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 238, 1964. Obrabotka metallov davleniyem (Metalworking by pressure), 25-33

TOPIC TAGS: granular material, flow rate, compactibility, mechanical property, sintering rate, powder strip, orifice diameter

ABSTRACT: The author discusses the weight of 1 cubic meter of dry granular material, the flow rate, compactibility, mechanical properties and the rate of sintering of powder strip. All investigations were conducted with the assistance of Sosedkova, V. S.; Tyntarev, A. M.; Nakonechnaya, A. E. The weight of one cubic meter of dry granular material was determined from

$$\rho = \frac{P_2 - P_1}{V} = \frac{P_3}{V}$$

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ACCESSION NR: AT4047712

where ρ is the weight of metal powder in gm/cm^3, P_1 - the weight of the empty vessel, in gm; P_2 - the weight of a powder-filled vessel, in gm; P_3 - the weight of powder, in gm; V - the volume of the inner plane of the vessel in cm^3. The optimal height of charging lies between 60 and 70 mm. A vessel whose id and height are equal provided a more uniform filling because of the minimum ratio of the internal surface to volume. A vessel volume of 100 cm^3 is recommended for Fe, Ni + Mo (Si, W, Ti, Fe, Al) and other powders. Fine powders with a developed specific surface are characterized by a lower flow rate than coarser grains. The presence of an oxide film enhances the flow rate lowering the surface friction coefficient. Since the diameter of the orifice through which the powders flow has a decisive effect, a given characteristic of the flow rate cannot be accepted as universal and, therefore, the author suggests further study of this coefficient. The volume of the powder being pressed greatly affects quality and should be considered along with the effect of specific pressure, the properties of the initial powder, specific pressing rate and the size of the specimens. The most sensitive characteristic of the mechanical properties was found to be the shear stress. The green specimens were tested by uniaxial tensile stress. The decrease in the

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L 35021-65
ACCESSION NR: AT4047712

ultimate strength as the strip was narrowed is attributed to the non-uniformity of density in the cross-sections of the specimens. Density was enhanced by lowering the strip thickness. Continuous sintering gave good results with a minimum holding period of 5 seconds and at a temperature range of 900 to 1000C. A 70% compacting lends the heat treated strip the density of a compact metal. Orig. art. has: 10 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NR REF SOV: 000 OTHER: 000

Card 3/3

RZHANOV, A.V.; PAVLOV, N.M.; SELEZNEVA, M.A.

Effect of temperature on the parameters of surface recombination centers in germanium. Fiz. tver. tela 3 no. 3:832-840 Mr '61.
(MIRA 14:5)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR, Moskva.
(Crystal lattices) (Germanium)

PAVLOV, N.M., inzh.

Shortcomings of the standard designs of the electrical equipment of dwellings and public buildings. Prom. energ. 17 no.3:48-50 Mr '62. (MIRA 15:2)

(Electric wiring, Interior)

PAVLOV, N.M., prof. (Stavropol, SSSR)

Conditions of the aqueous humor in patients with glaucoma in various stages of disease. Khirurgiia 15 no.5/6:437-442 '62.

(GLAUCOMA pathol) (AQUEOUS HUMOR)

PAVLOV, N.N.; KOZYREVA, Z.M.

Synthetic polyester fiber terylene. Kauch.i rez.16 no.9:36-39 S '57. (MIRA 10:12)

(Rayon)

PAVLOV, N.N., inzh.; KHAL'FIN, V.N., inzh.

Automation and mechanization at a spinning and weaving factory.
Mekh.i avtom.proiz. 14 no.6:12-18 Je '60. (MIRA 13:7)
(Textile industry--Technical innovations)
(Automation)

PAVLOV, N.N.

AID P - 277

Subject : USSR/Engineering

Card : 1/1

Authors : Shreyner, L. A. and Pavlov, N. N.

Title : Mechanism of destruction of hard rocks and new types of cutter drills

Periodical : Neft. Khoz., v. 32, #4, 9-15, Ap 1954

Abstract : The author discusses the mechanism of destruction of soft and hard rocks in relation to the contact surface, specific pressure of cutter drills and velocity of drilling. The following characters of destruction are considered: (1) Surface destruction, (2) fatigue destruction and (3) normal (volumetric) destruction. The operation of a new type of cutter drill with semispheric teeth is described and illustrated with test data. 2 tables, 7 charts, 7 references 2 Russian, (1947-52)

Institution : None

Submitted : No date

SOV/138-58-9-3/11

AUTHORS: Pavlov, N. N., Yaminskaya, Ye. Ya., Krymov, B. M.

TITLE: The Use of Strain Gauges for Investigation of the Behaviour of Cord Threads at High Rates of Extension (Primeneniye tenzodatchikov dlya issledovaniya povedeniya kordnykh nitey pri bol'shikh skorostyakh rastyazheniya)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 9, pp 12 - 16 (USSR)

ABSTRACT: The strength and durability of tyre cord material is assessed by repeated extension tests. The strength of the individual cords is measured by sudden application of a load, and the energy of rupture by loss of potential energy of a pendulum. In order to know the true character of the material on rupture at various rates of loading, it is necessary to obtain load/extension curves, as well as to know the total energy. Fig.1 illustrates two possible curves for different rates of loading on similar specimens. The authors describe apparatus constructed at NIIShP (National Institute for Tyre Production) designed to give load/extension curves for threads stretched at the rate of 1.5 m/second. At this rate, the duration of the test to rupture of the specimen is from one hundredth to one fiftieth of a second. The me nanical part

Card 1 4

The Use of Strain Gauges for Investigation of the Behaviour of Cord Threads at High Rates of Extension

of the apparatus, loading the specimen, is described in Ref.3 (Zhurnal Tekh. Fiz. 25. sect.6, 933. (1955). Measurement of the force acting on the thread as it is loaded is made by means of the steel beam depicted in Fig.3. Deflection of the beam is measured by four strain gauges bonded to it. The basic circuit diagram for the strain gauge connections is shown in Fig.4; the circuit, however, is fed with an a.c. carrier frequency of 5000 cycles/second to permit amplification of current flow in the detector circuit through unbalance of the bridge on loading the beam which changes the resistance of the top and bottom gauges. The detector is described as a magneto-electric oscillograph, Type MPO-2. This produces a trace at a natural vibration frequency of 3000 cycles/second which can be recorded directly onto 35 mm film with a sensitivity of 1 mm/ma, or onto a screen with a sensitivity of 4 mm/ma. The movement of the trace is of the order of 1 mm for 100 g load on the steel beam. The beam deflects 1.2 to 1.4 hundredths of a millimeter at the moment of rupture of the thread

The Use of Strain Gauges for Investigation of the Behaviour of Cord Threads at High Rates of Extension

according to the speed of deformation. Deflection, or extension of the thread is measured by a separate, rheostatic, gauge system. (Indicated by part 5 in the general schematic illustration of the whole system in Fig.7). Calibration curves for the gauge system measuring force, and the gauge system measuring deflection, are shown in Figs. 5 and 6 respectively. The two measuring systems combine to produce a trace on x -- y axes as shown in Fig.9. A time scale trace is superimposed. Interpretations of traces taken at rates of deflection varying from .005 m/second to 1.5 m/second give load/extension curves as in Fig.10 for standard nylon cord material, Fig.11 for nylon after boil in water for three hours (curve 1 unboiled, curves II and III boiled), or Fig.12 for "imported" Terylene. Good reproducability is obtained with the apparatus, with respect to both force and deflection measurements, not more than 4% departure from average measurement occurred in tests with 25 - 30 similar specimens. The curves indicate that increasing rates of deflection lead to a sharp decrease in the extension at rupture. Changes in the modulus of the material with respect to rate of deflection must be

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The Use of Strain Gauges for Investigation of the Behaviour of Cord Threads at High Rates of Extension

attributed to relaxation processes. A table is given relating the energy of rupture for nylon (kapron) and Terylene to rates of deflection from 0.041 to 1.5 m/second. It is stated that the apparatus can give readable traces at rates of deflection up to 5 m/second. There are 1[illegible] Figures and 1 Table, 12 References: 6 English, 1 German and 5 Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tyre Industry)

Card 4/4

PAVLOV, N. N., Cand Tech Sci -- (diss) "Modification of polyamide film coatings applicable in the production of leather with the use of compounds of trivalent chromium,"Moscow, 1960. 15 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Inst of Fine Chemical Technology im M. V. Lomonosov); 150 copies; price not given; (KL, 52-60, 121)

DOGADKIN, B.A.; PAVLOV, N.N.; Prinimala uchastiye: RUMYANTSEVA, F.A.

Spectral study of the vulcanization of rubber. Vysokom.soed. 3 no.4:613-617 Ap '61. (MIRA 14:4)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.

(Vulcanization--Spectra)

S/020/61/138/005/016/025
B103/B215

AUTHORS: Dogadkin, B. A. and Pavlov, N. N.

TITLE: Thermal decomposition of diphenyl guanidine and its interaction with sulfur at vulcanization temperature

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 5, 1961, 1111-1114

TEXT: Although diphenyl guanidine (DPG) is one of the most used accelerators of vulcanization guaranteeing high dynamic properties of the vulcanizates, its mechanism so far has not been explained. The authors therefore studied its thermal decomposition at vulcanization temperatures, and its reaction with sulfur. (A) Decomposition of DPG in the melt. Publications reveal that ammonia is liberated by heating DPG at 140°C in argon atmosphere, and that aniline, tetraphenyl melamine, and small amounts of triphenyl dicarbamide are formed. The separation of ammonia is noticeable at vulcanization temperature (136°C) and its rate remains constant up to 145°C. Within the range of 157-180°C, this process is expressed by a reaction equation of the first order. The apparent energy of activation of ammonia formation at these three temperatures is 25.7 kcal.

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Thermal decomposition of diphenyl...

These data show that within 30 min approximately 50 % of the used DPG decompose at 140°C. During the vulcanization of natural rubber (Wistinghausen, Ref. 2: Kautschuk, 5, 57, 75 (1929)), the DPG loss was 40 % after 30 min, and approximately 50 % after 90 min. The zinc oxide in the system considerably affected the rate of DPG consumption. (B) Decomposition of DPG in solution. High-boiling hydrocarbons with different dipole moments were used as solvents: naphthalene 0, xylene 0.62, isopropyl benzene 0.65, glycerin 2.96. The kinetic curves of ammonia formation in melt and solution, at 140°C within 5-6 hr have a similar character. In the initial stage, the individual solvents showed hardly any differences in the rate of ammonia formation. The authors consider this to be an indirect proof of the possible decomposition of DPG following the homolytic mechanism. Furthermore, they assume that no interaction takes place between DPG and the intermediates of its decomposition on the one hand, and polymer molecules on the other. The amounts of ammonia formed by the DPG decomposition in rubber-xylene solution and in the solution of DPG and pure xylene are approximately equal. Measurements of viscosity showed that longer heating of rubber solutions in DPG at 140°C did not change the structure of the polymer. (C) Interaction of DPG with sulfur.

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Thermal decomposition of diphenyl...

The reaction was conducted in o-xylene at a ratio DPG : sulfur = 1 : 0.25 to 1 : 4. Resinous, nonvolatile products were formed, and H_2S was liberated. The rate of this process is only constant at a molar ratio of DPG : S. The reduction of the S concentration down to 0.25-0.5 moles initiated an induction period. An increase in the S concentration of up to 4 moles causes considerable changes in the kinetic curve of H_2S formation. The authors assume a relation between the two latter phenomena and the formation of $C_{13}H_{13}N_3 \cdot H_2S$ salt complexes if the initial stage of the reaction in the system shows an excess of undecomposed DPG. The equilibrium of formation and decomposition reactions of the complex is shifted towards higher yields of liberated H_2S with increasing sulfur concentration. Two moles of DPG are used for the formation of one mole of H_2S. Nonvolatile reaction products were chromatographically separated on aluminum oxide, and, after purification, individual fractions were spectroscopically examined in the infrared and ultraviolet ranges. The evaluation of infrared spectra is somewhat difficult. Ultraviolet spectra indicate the presence of sulfur-containing groups in the substances

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obtained. The curves are similar to those obtained for low-molecular linear sulfides. Clear absorption maxima in the range of 300-380 mμ are probably characteristic of linear polysulfides with 2-5 sulfur atoms. The bands at 1480-1490 cm^{-1} in infrared spectra, and those at 590-620 mμ in ultraviolet spectra, are assumed to belong to the C=S group. Absorption at 1335-1355 cm^{-1} is probably due to $C_6H_5NH_2$. Absorption at 1480-1490 cm^{-1} and 590-620 mμ corresponds to the thicketo group. The authors therefore assume that an interaction of H_2S with the DPG molecule causing the formation of a thiourea derivative takes place besides the decomposition of DPG and the formation of polysulfides. The formation of the derivative may be represented in a similar way as the interaction of guanidine with water. There are 4 figures and 2 non-Soviet-bloc references.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

PRESENTED: January 28, 1961, by A. A. Balandin, Academician

SUBMITTED: January 26, 1961

Card 4/4

S/190/62/004/001/008/020
B101/B110

AUTHORS: Dogadkin, B. A., Pavlov, N. N.

TITLE: Study of vulcanization in the presence of diphenyl guanidine. II. Thermal decomposition of diphenyl guanidine and its interaction with sulfur at vulcanization temperature

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 1, 1962, 52-57

TEXT: The authors studied the formation kinetics of NH_3 during thermal decomposition of the vulcanization accelerator, diphenyl guanidine (DPG), the effect of dipole moments of solvents on the kinetics, and the reaction of DPG with S at 140°C. Tetraphenyl melamine, aniline, triphenyl dicarbamide, and NH_3, starting at 136°C, were obtained after 5-6 hr decomposition of DPG in the melt in an argon atmosphere. NH_3 forms at a constant rate at 136 and 145°C. Between 157 and 180°C, this process follows a first-order equation. The activation energy is 25.7 kcal/mole. Pure DPG loses about 50% of its weight after 300 min heating at 140°C. Decomposition of DPG dissolved in naphthalene, xylene, isopropyl benzene, or glycerin at 140°C in an argon stream (5-6 hr) showed that the NH_3 forma-

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S/190/62/004/001/008/020
B101/B110

Study of vulcanization in ...

tion was not affected by the dipole moment of the solvent, but had the same course as in the melt. The amount of NH_3 formed during decomposition of DPG in a xylene solution of rubber was the same as without rubber addition, and the viscosity of the rubber solution remained constant. Hence, DPG and its decomposition products do not react with rubber molecules. DPG and S reacted in o-xylene at various DPG : S ratios and in the presence of stearic acid (SA) (Fig. 3). The induction period observed with a low S content is explained by formation of $C_{13}H_{13}N_3 \cdot H_2S$.

The formation of larger amounts of H_2S in the presence of SA is due to the pH change. 2 moles of DPG are used to obtain 1 mole H_2S. Nonvolatile decomposition products were chromatographically separated (Al_2O_3 column) and their IR and UV spectra were taken and interpreted as follows The absorption band 300-380 mμ corresponds to polysulfides $R\text{-}S_x\text{-}R$ ($x \approx 2\text{-}5$); the 1335-1355 cm^{-1} band is probably due to aniline. The 1480-1490 cm^{-1} and 590-620 mμ bands correspond to the thioketo group Hence, DPG is assumed to react with S under formation of diphenyl thiourea. There are 4 figures, 1 table, and 9 references. 3 Soviet and 6 non Soviet. The two references to English-language publications read as follows. W. I. Hickinbottom. J. Chem. Soc., 1932, 2646; 1934, 1981; 1935, 1279; H.

Card 2/3

Study of vulcanization in ...

S/190/62/004/001/008/020
B101/B110

B. Adams, B. L. Johnson, Industr. and Engng. Chem., 45, 1539, 1953.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

SUBMITTED: January 27, 1961

Fig. 3. Effect of the ratio DPG : S and the presence of SA on the formation of H_2S in o-xylene at 140°C. (1) 1 : 1; (2) 2 : 1; (3) 1 : 4; (4) 1 : 0.25; (5) 1 : 1 + 1 mole of SA; (6) 1 : 1 + 3 moles of SA.
Legend: Abscissa: time, hr; ordinate: $C_{H_2S} \cdot 10^2$ g/liter.

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NYURENBERG, Vladimir Arkad'yevich; PAVLOV, N.N., otv. red.;
KONDRAT'YEVA, V.P., red.; [illegible], V.A., tekhn. red.

[Technological control in sound broadcasting] Tekhnicheskii kontrol' v zvukovom veshchanii. Moskva, Sviaz'izdat, 1963. 119 p. (MIRA 16:8)
(Wire broadcasting)
(Sound—Recording and reproduction)

SHTERN, I.A.; KIPNIS, Yu.B.; PLOTNIKOV, I.V.; PAVLOV, S.A.; PAVLOV, N.N.; VTOROV, G.N.; PROKURAT, R.E.; GLAGOLEVA, K.I.; KOCHERZHINSKAYA, Ye.L.; FEDOROVA, L.V.; MININ, I.T.

Artificial carbocylate leather. Kozh.-obuv. prom. 6 no.2:32-34 F'64. (MIRA 17:5)

DOGADKIN, B.A.; PAVLOV, N.N.; SHVARTS, A.G.

Effect of cumenyl peroxide on the properties of sulfur vulcanizates based on polyisoprene rubber SKI-3. Koll. zhur. 26 no.4:431-435 Jl-Ag '64. (MIRA 17:9)

1. Institut tonkoy khimicheskoy tekhnologii imeni Lomonosova i Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moskva.

KIPNIS, Yu.B.; SHTERN, I.A.; PLOTNIKOV, I.V.; PAVLOV, N.N.; PAVLOV, S.A.

Use of modified polyamides for the finishing of artificial leather based on rubber. Kozh.-obuv. prom. 6 no.5:31-34 My '64. (MIRA 17:12)

PAVLOV, N.N.

PHASE I

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 391-I

CALL NO.: AF640256

BOOK

Authors: SMIRNOV, V. S., POKOYAVLENSKIY, K. N., PAVLOV, N. N.

Full Title: GROOVING OF ROLLS BY USING MAPS OF EQUIVALENT CROSS SECTION AREA

Transliterated Title: Kalibrovka prokatnykh valkov po metodu soovtetstvennoy polosy

PUBLISHING DATA

Originating Agency: None

Publishing House: State Scientific and Technical Publishing House of Literature on Ferrous and Nonferrous Metallurgy (Metallurgizdat)

Date: 1953 No. pp.: 326 No. of copies: 4,500

Editorial Staff

Editor: SMIRNOV, V. S., Prof. Dr. of Tech. Sci.,

Technical Editors: Prokhorova, A. S. and Vaynruk, G. I.

PURPOSE: The book is intended for engineers and technologist of rolling mills and for graduate students specializing in rolling.

TEXT DATA

Coverage: This book discusses roll pass design on the basis of the theory of Prof. A. F. Golovin set forth in his book Prokatka, Ch. III. Kalibrovka, ONTI, 1936 (Rolling, p. III, Grooving). According to the authors, Golovin suggests a new and original method of calculating the

1/

Kalibrovka profilnykh valkov po metodu
sootvetstvennoy polosy

AID 191-I

grooving of rolls by using bars of equivalent cross-section area. In this method, a bar of a given section and a bar with a rectangular cross-section are called equivalent when their areas and the ratio between the basic dimensions of their cross section are equal. For precise calculation it was necessary to determine correction factors by means of experiments, taking into account the effect of the shape of grooves on the widening of the rolled bar. The widening is calculated by using the formula of S. I. Gubkin (Teoriya obrabotki metalla davleniyem (Theory of Pressure Metal Working), Metallurgizdat, 1947), corrected in conformity with the results of experiments in laboratories and rolling mills. The authors assert that the methods of calculating roll passes of Western scientists, e.g., Tafel, Geuze and Kirchberg, are obsolete. Generalizations from the experience of Soviet rolling mills are made, and the results of the authors' experimental investigations are described. Examples of calculations are given. The book contains tables, diagrams and nomograms.

No. of References: 31 Russian (1929-1950)

Facilities: Leningrad Polytechnic School im. M. I. Kalinin; "Plastic Metal Working" Department; Leningrad plants, particularly the Kirov Plant.

2/2

PAVLOV, N.N.

PAVLOV, N. N. : "The principles of calculating [illegible]
[illegible],"
Leningrad Elektricheskiy Institut imeni V. I. [illegible].
Leningrad, 1956.
(Dissertation For the Degree of Candidate in Technical Sciences)

So: [illegible]

SOV/124-58-1-1255

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 156 (USSR)

AUTHOR: Pavlov, N. N.

TITLE: Calculation of the Rolling Pressures Occurring in the Grooved Passes of a Merchant Mill (Raschet davleniy pri prokatke v kalibrakh sortovykh stanov)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1956, Nr 185, pp 109-118

ABSTRACT: Bibliographic entry

Card 1/1

SOV/124-58-2-2151

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 2, p 92 (USSR)

AUTHORS: Bogoyavlenskiy, K. N., Pavlov, N. N

TITLE: Roll Pressures Arising in the Rolling of Copper and Its Alloys (Davleniye na valki pri prokatke medi i yeye splavov)

PERIODICAL: Tr. Leningr. politekhn. in-ta., 1956, Nr 185, pp 123-128

ABSTRACT: Tests have yielded data on the specific pressures arising in the rolling of copper and its alloys, also data on the rolling temperature from pass to pass.

Reviewer's name not given

Card 1/1

SMIRNOV, V.S., prof., doktor tekhn.nauk, otv.red.; PAVLOV, N.N., red.

[Conference of institutions for higher education on the topic: "Recent achievements in metal rolling."] Trudy Mezhvuzovskoi nauchno-tekhnicheskoi konferentsii na temu: "Sovremennye dostizheniia prokatnogo proizvodstva." Pod red. V.S.Smirnova. Leningrad, 1958. 250 p. (MIRA 12:8)

1. Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya na temu: "Sovremennyye dostizheniya prokatnogo proizvodstva." 2. Leningradskiy politekhnicheskiy institut im. M.I.Kalinina (for Smirnov).

(Rolling (Metalwork))

PAVLOV, N.N.

PHASE I BOOK EXPLOITATION SOV/3226

Nauchno-tekhnicheskaya konferentsiya po tsvetnoy
"Sovremennyye dostizheniya prokatnogo proizvodstva."

Trudy...(Transactions of the Intercollegiate Scientific and Technical Conference on Recent Achievements in the Rolling Industry) Leningrad, 1958. 251 p. 1,000 copies printed.

Sponsoring Agencies: Leningradskiy politekhnicheskiy institut im. M.I. Kalinina, Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy, Leningradskoye otdeleniye, and Nauchno-tekhnicheskoye obshchestvo tsvetnoy metallurgii, Leningradskoye otdeleniye.

Resp. Ed.: V.S. Smirnov, Doctor of Technical Sciences, Professor; Ed.: V.N. Pavlov.

PURPOSE: These proceedings of the conference are intended for specialists in the rolling industry.

COVERAGE: The articles of this collection cover various theoretical and practical problems of rolling, such as: pressure, spread, efficiency of rolls, determination of deformation, forces required, pass design, optimum conditions for rolling, experiences of various plants, modernization of equipment, aluminum-clad steel, and rolling of nonferrous metals. No personalities are mentioned. References appear after each article.

SOV .37-58-.2-244.3

Translation from Referativnyy zhurnal Metallurgiya, 1958, Nr 12, p 66 (USSR)

AUTHOR: Pavlov N N.

TITLE: Calculation of Rolling Forces in Grooved Passes by the "Equivalent-strip" Method (Raschet usiliy pri prokatke v kalibrakh po metodu sootvetstvennoy polosy)

PERIODICAL: Tr. Mezhvuz nauchno-tekhn. konferentsii na temu "Sovrem. dostizh. prokatn. proiz-va" Leningrad 1958, pp 91-94

ABSTRACT: The complex problem of calculating the total pressure (P) between the metal and the rolls in rolling shaped strip in grooved passes (GP) is significantly simplified by the use of a matching strip, in which, thanks to introduction of correction coefficients for spread and P, the conditions of deformation of shaped strip in GP are rendered similar to the simple case of rolling of rectangular strip on plain-bodied rolls. The theoretical and experimental investigations performed made it possible to determine the relationship between the P and the contact surfaces, and between the reduction ratios in the rolling of shaped strip in GP and in the rolling of the equivalent strips in plain-bodied rolls. Substitution of the relationships found

Card 1/2

Calculation of Rolling Forces in Grooved Passes by the "Equivalent-strip" (cont.)

in the formula for the total P on rolling in grooved passes yields an expression, the solution of which yields results very close to the experimental, the difference being not greater than 10%.

V. D.

Card 2/2

SOV/137-58-10-20866

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 74 (USSR)

AUTHORS: Smirnov, V.S., Pavlov, N.N., Mochalov, A.Ya.

TITLE: Grooving for Steel Angles by the Equivalent-strip Method (Kalibrovka uglovoy stali po metodu sootvetstvennoy polosy)

PERIODICAL: Prokatnoye i trubnoye proizvodstvo (prilozheniye k zhurnalu "Stal' "), Metallurgizdat, 1958, pp 147-167

ABSTRACT: A communication is presented on the results of the development of the rolling of steel angles when the rolls are grooved by the method of an equivalent strip. A presentation is made of the overall course of the calculation of grooving for angle sections by this method. Prior to the calculation, the relationship of the spread-ratio correction coefficient to the axial ratio is determined, since a change in this relationship induces a change in the effect of the pass walls on the spread. The ratio of the index of spread to reduction for the rolling conditions on the given mill (a 470 mill at one of the Leningrad plants) is determined. It is found that the fluctuating value of the spread ratio correction coefficient renders impossible any further correction of pass dimensions if it is found that they do not properly

Card 1/2

SOV/137-58-10-20866

Grooving for Steel Angles by the Equivalent-strip Method

fill with metal. The pass-grooving calculation is adduced. Since 1952 grooving for several angle sections calculated by the method of the equivalent strip has been successfully employed at that plant. An investigation for the purpose of determining roll-separating pressure was conducted during the rolling of angle steel Nr 5 on the 470 mill, and the nature of the distribution of the pressure through the grooves was determined.

B.Ts.

1. Angle bars--Production 2. Rolling mills--Design 3. Rolling mills --Operation

Card 2/2

Pavlov, N. N.
P. 3

PHASE I BOOK EXPLOITATION SOV/3546

Leningrad. Politekhnicheskiy institut

Obrabotka metallov davleniyem (Metal Forming) Moscow, Mashgiz, 1959. 175 p. (Series: Its: Trudy, No. 203) Errata slip inserted. 3,200 copies printed.

Sponsoring Agency: RSFSR. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya.

Resp. Ed.: V.G. Podporkin, Candidate of Technical Sciences, Docent; Ed.: V.S. Smirnov, Doctor of Technical Sciences, Professor; Tech. Ed.: L.V. Shchetinina; Managing Ed. for Literature on the Design and Operation of Machines (Leningrad Division, Mashgiz): F.I. Fetisov, Engineer.

PURPOSE: This book is intended for students taking advanced engineering courses, production engineers, and personnel at schools of higher technical education and scientific research establishments studying rolling and other metal-forming processes.

Card 1/6

SOV/3546

Metal Forming

COVERAGE: This is a collection of articles presenting the results of a series of investigations conducted by the metal-forming department of the Leningradskiy politekhnicheskiy institut imeni M.I. Kalinina (Leningrad Polytechnical Institute imeni M.I. Kalinin). The subjects covered include problems in the theory and practice of rolling, tube drawing, extrusion and making of compound dies. The first paper complements the work of N.I. Tselikov and Ye. P. Unksov. References accompany most of the articles.

TABLE OF CONTENTS:

Card 2/6

An approximate method, based on the theory of small elastic-plastic strains, for determining residual stresses in cross rolling is described.

19. Pavlov, N.N. Determining Mechanical Properties of a Steel Band in Relation to the Degree of Work Hardening '6'

20. Ginzburg, K.S., Deformation Beyond the Focus in Nicking a Bar by a Block of Triangular Cross Section '63

An investigation was made of the deformation resulting from nicking a lead rectangular bar by a block of triangular cross section with various angles.

AVAILABLE: Library of Congress

VK/lsb
5-16-60

SMIRNOV, V.S., prof., doktor tekhn. nauk, otv. red.; PAVLOV, N.N., red.

[Proceedings of the Scientific Technical Conference of Institutions of Higher Learning on the Subject "Recent Achievements in Metal Rolling."] Trudy mezhvuzovskoi nauchno-tekhnicheskoi konferentsii na temu: "Sovremennye dostizheniia prokatnogo proizvodstva," Leningrad, 1958. Pod red. V.S. Smirnova. Leningrad, Vol.2. 1959. 445 p. (MIRA 14:7)

1. Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya na temu: "Sovremennyye dostizheniya prokatnogo proizvodstva," Leningrad, 1958.
2. Leningradskiy politekhnicheskiy institut im. M.I.Kalinina (for Smirnov)

(Rolling (Metalwork))

S/148/6[illegible]/000/001/014/015
A[illegible]/A133

AUTHORS: Smirnov, V. S.; Simasheva, N. P.; Pavlov, N. N., and Sokolova, L. T.

TITLE: Investigation of the recrystallization process of the ЭИ654 (EI654) alloy

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. [illegible], 1961, 176 - 180

TEXT: The investigation purpose was to find the recrystallization threshold of ЭИ654 (EI654) steel [Abstracter's note: The chemical composition is not given.] 1) Imprints by a 10 mm diameter ball under 6,000 kg load; heating to different temperature, soaking for 40 min, then cooling in open air; 2) Imprints with the same ball under 6,000 kg pressure; heating to different temperatures, soaking for 40 min, cooling; 3) Rolling at different temperatures with 80% reduction. The recrystallization diagram (Fig. 5) was plotted using forged half cylinders 30 mm in diameter and 25 mm high, with a coordinate network traced on the parting surface of one

Card 1/[illegible]

Investigation of the recrystallization process

of the half-cylinders. The pairs of specimens (i.e. the split cylinders) were placed into ring shells from 1Kh18N9T (1Kh18N9T) steel with 7.5 mm wall and heated in electric two-chamber furnaces in two stages: preliminary heating to 800°C in 30 min, then to the finally required forging temperature in 15 min. The heated specimens were upset in a crank press at [illegible] 2.0 m/sec, and cooled in air. The total deformation was 20, 40 and 60%. The deformation of one of the specimens is illustrated (Fig. 4). The etching fluid consisted of [illegible]00 g $CuSO_4$; [illegible]00 cm^3 HCl; [illegible]25 cm^3 H_2SO_4; 400 cm^3 H_2O. The specimens deformed at [illegible],050°C [illegible],100°C were difficult to etch and covered with a light brown film. It was stated that austenite in these specimens was highly workhardened. Relaxed for 15 - 60 hours they etched in 60 sec without any film. The quantity of flat grains was determined using Saltykov's method (Ref. 1: Introduction to stereometric metallography, Published by AN Arm. SSR, 1950), and the quantity of nodule points in 5 to 10 fields. Prior to deformation the mean austenite grain size was 652 μ^2, and no great difference in grain size was observed. The grain size increased on account of collective crystallization at higher temperatures and higher deformations, particularly at the critical degree of deformation. The

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Investigation of the recrystallization process...

exception was at 1,180°C when the size reduced instead of increasing, not only at the critical deformation but at high deformation degrees, too. At 1,150°C the grain size was 600 μ^2, and at 1,180° - 500 μ^2; the maximum size was 5,550 and 2,250 μ^2 respectively. At 1,250°C the grain size at the critical deformation was 5850 μ^2, and at high deformation degrees 1200 μ^2. At reductions of over 12% the grain size did not depend on the deformation degree at any temperature. No second maximum of grain size could be stated in diagrams despite upsetting to nearly 90% at high temperature. Conclusions: 1) The plotted recrystallization diagrams cover a wide range of deformations that occur in practice in specimen tests. 2) The EI661 steel grain grows with the raising temperature. The exception is at 1,180°C where the grain size decreases at critical and higher deformation degrees. 3) A reduced grain size at 1,180°C, is accompanied with an increased plasticity of the EI661 steel in pressure working. 4) The grain size does not depend on the degree of deformation at compression above 12%. 5) The temperature of the recrystallization threshold depends on the deformation degree: it is about 1,000°C, at low deformation degrees near the critical; at higher deformation degrees it is lower. 6) No second maximum forms on the recrystallization diagram. This is due to the peculiar deformation conditions at up-

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Investigation of the recrystallization process...

setting in shells. There are 6 figures and 1 Soviet-bloc reference.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

SUBMITTED: August 15, 1960

Fig. 4.

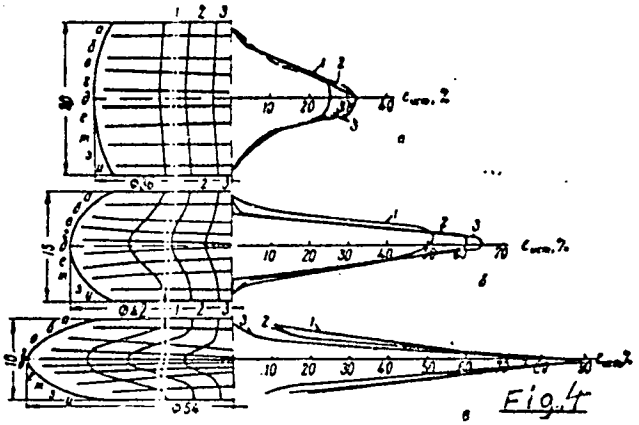

Fig. 4

Card 4/5

SMIRNOV, V.S.; PAVLOV, N.N.; CHUDNOVSKIY, A.F.; SEMENKOVICH, S.A.

Obtaining semiconductor thermoelements by the plastic deformation method. Trudy LPI no.222:5-7 '63. (MIRA 16:7)
(Semiconductors) (Metal powder products)

SMIRNOV, V.S.; CHUDNOVSKIY, A.F.; PAVLOV, N.N.; ANDREYEVA, A.N.

Effect of ultrasonic waves on the crystallization and physical properties of alloys. Trudy LPI no.222:8-14 '63. (MIRA 16:7)
(Alloys--Metallography) (Crystallization)
(Ultrasonic waves--Industrial applications)

SMIRNOV, V.S.; CHUDNOVSKIY, A.F.; PAVLOV, N.N.; ANDREYEVA, A.N.

Effect of vibration on the crystallization of thermoelectric alloys. (MIRA 16:7)
Trudy LPI no.222:15-19 '63.
(Alloys--Thermoelectric properties) (Crystallization)

PAVLOV, N.N.

Determining the plasticity of heat-resistant alloys. Trudy LPI no.22:20-27 '63. (MIRA 16:7)
(Heat-resistant alloys--Testing) (Plasticity)

SMIRNOV, V.S.; SIMASHEVA, N.P.; PAVLOV, N.N.

Investigating the recrystallization process of the high-alloy EI696 steel. Trudy LPI no.222:28-30 '63. (MIRA 16:7)
(Steel alloys—Heat treatment) (Crystallization)

SMIRNOV, V.S.; PAVLOV, N.N.

Rolling and sintering of metal powders. Trudy LPI no.222:31-39 '63. (MIRA 16:7)

(Rolling (Metalwork)) (Powder metallurgy)

ACCESSION NR: AR4018327 S/0137/64/000/001/D019/D019

SOURCE: RZh. Metallurgiya, Abs. 1D106

AUTHOR: Smirnov, V. S.; Pavlov, N. N.

TITLE: Study of the process of rolling nickel and molybdenum powders

CITED SOURCE: Tr. Kuyby*shevsk. aviats. in-t, vy*p. 16, 1963, 85-92

TOPIC TAGS: powder metallurgy, molybdenum, nickel, metal powder rolling

TRANSLATION: An industrial method has been developed for obtaining compact bands with high-precision thickness out of Mo and Ni powders with various inclusions, by means of horizontal rolling. The influence of the engagement conditions, the clearance between rolls, and the width of the feeder on the widening of the Me in the rolls have been studied here. A method has been worked out for determining the forces on the rolls, the power, the moments, and other power parameters in the process of rolling metal powders. Interrelationships have been established between power parameters, band thickness, and band width and its density during the horizontal rolling of powders. An oblique method has been worked out for determining the density of unfinished bands in microvolumes according to microhardness. This

Card 1/2

SMIRNOV, V.S.; PAVLOV, N.N.; LUNEV, V.A.

Determining pressure on rolls during rolling with the help of dimensional analysis. Trudy LPI no.222:96-101 '63. (MIRA 16:7)
(Rolling (Metalwork)) (Dimensional analysis)

ACCESSION NR: AT3007206 S/2563/63/000/222/0181/0185

AUTHOR: Pavlov, N. N.

TITLE: Effect of lubricant on die pressure in pressure working of hard-to-form alloys

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 222, 1963. Obrabotka metallov davleniyem, 181-185

TOPIC TAGS: pressure working, metal pressure working, metal pressure working lubricant, glass lubricant, glass 13, no. 13 glass, glass 3S11, 3S11 glass lubricant, no. 13 lubricant, extrusion pressure, flashless die forging pressure, EI617 alloy extrusion, EI617 alloy flashless die forging EI617 alloy

ABSTRACT: The effect of several lubricants on high-temperature pressure working of EI617 heat-resistant nickel-base alloy [0.08% max C, 15% Cr, 2% Ti, 7% W, 3% Mo, 0.5% V, 2% Al] has been investigated. The pressure working was done by open die extrusion, closed die extrusion, or flashless closed-die forging. The lubricants tested

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ACCESSION NR: AT3007206

included wax, glasses 13 and LK4, wax, a mixture of graphite and oil and mixtures of glasses 13 and 3S11, 3S8 and FS6, nos. 1 and 2, nos. 2 and 3, nos. 6, 7 and 8, wax, and glasses 13 and LK4. Glass lubricants, especially the mixture of the 13 and 3S11 glasses, were found to be the most effective (see Fig. 1 of the Enclosure); they lower the average pressure 13—25% more than the other lubricants tested. Orig. art. has: 6 figures.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 14Oct63	ENCL: 01
SUB CODE: ML	NO REF SOV: 005	OTHER: 000

PAVLOV, N. N. and YAZEVIM, I. I.

"Determination by Radiotelegraphy of the Difference in Longitude Between Nikolayev and Pulkovo," Leningrad, 1933

PAVLOV, N. N.

"Systematic Variations in Correction Determined by the Pulkovo Time Service," Astron. zhur., 11, No.1, 1934

PAVLOV, N.N., inzh.; ARBUZOV, G.A., doktor tekhn.nauk, prof.; PANTELEYEVA, D.S., inzh.

Studying the effect of aluminum and iron (III) salt additives on the properties of polyamide films. Izv.vys.ucheb.zav.; tekh.leg. prom. no.3:20-25 '61. (MIRA 14:7)

1. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti. Rekomendovana kafedroy neorganicheskoy i analiticheskoy khimii.
(Polyamides) (Leather, Artificial)

PAVLOV, N. N.

"Use of Photocells in Determining Stellar Positions and Correcti[illegible]
Astron. Zhur. 15, No 1, 1941

U-1515, 23 Oct 51

PAVLOV, I. I.

"In Destroyed Pulkovo," Vest. Ak. Nauk SSSR, No. , 1944.

PAVLOV, N. N.

"Photoelectric "ecording of Astral Movements," Leningrad, 1946

PAVLOV, N. N.

Pavlov, N. N. "Age," in symposium; Astronomiya v SSSR za tridtsat' let, Moscow-Leningrad, 1948, p. 39-49

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

1. PAVLOV, N. N.

2. USSR (600)

4. Physics and Mathematics

7. Course in Spherical Astronomy, S. N. Blazhko.
(Moscow-Leningrad, State Technical Press, 1948)
Reviewed by N. N. Pavlov, Sov. Kniga No. 2, 1949.

9. [redacted] Report U-3081, 16 Jan. 1953. Unclasified.

PAVLOV, N. N.

Pavlov, N. N.-"Some problems of astrometry," Trudy Yubileynoy nauch. sessii (Leningr. gos. un-t), Sektsiya matem. nauk, Sektsiya astronomii, Leningrad, 1947, p. 42-46

SO: U-3600, 10 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949).

PAVLOV, N. N.

N. N. Pavlov

Concerning the Study of First Integrals of a Variable Parameter

Bulletin, The Main Astronomical Observatory
Pulkovo, Leningrad
Vol. 18, No. 5 (146) 1951, pp. 82-104

From Monthly List of Russian Accessions
December 1951, Vol. 4, No. 9, p. 26

1. PAVLOV, N. N.

2. USSR (600)

4. Astronomical Instruments

7. Difference in systems of star declinations identified on the vertical circles of Ertel and Repsold. Astron. zhur. 30, No. 2, 1953.

Existence of temp difference between upper and lower halves of tube of Ertel's circle was established. Difference of temp between original and copy of Repsold's circle may be ascribed to difference in thermal conductivity of their construction steel. Derives formulas for corrections. Received 8 Aug 52/

251T9

9. **Monthly List of Russian Accessions**, Library of Congress, April 1953. Unclassified.

USSR/Astronomy - Transit Instrument Jan/Feb 53

"Thermal Effects in Reversible Transit Instruments," N.N. Pavlov, Main Astron Observatory, Acad Sci USSR

"Astron Zhur" Vol 30, No 1, pp 85-92

Investigations proved that thermal effects produced by thermal radiation of instrument may introduce noticeable errors mostly of systematic character. Best protection against these effects is coating of instrument with infrared-reflecting material, e.g., gold, aluminum, nickel, etc. In case of particularly accurate measurements a thermocouple or thermistor should be used. Received 8 Aug 52.

246T45

PAVLOV, N.N.

New shifting transit instrument. Izv.GAO 20 no.1:99-103 '55. (MIRA 13:5)
(Transit instruments)

[redacted], M. A.

"New Type Transit for the Main Astronomical Observatory," a report presented at the Conference of Commission on Astronomical Instruments Construction of the Astronomical Council, AS USSR, [redacted] Feb [redacted].

Sum. No. 147, 31 Aug [redacted]

NEMIRO, A.A.; PAVLOV, N.N.

The necessity for taking into account the $\Delta\frac{1^{\alpha}}{\alpha}$-type corrections of the FK3 in the time service [in Russian and English]. Astron. zhur. 33 no.3:404-409 My-Je '56. (MLRA 9:10)

1.Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR.
(Stars--Catalogs)

PAVLOV, N. N. and NEMIRO, A. A.

"Systematic Errors of FK3 of the Type and Their Influence of Time Determinations." (Section III) - paper submitted at 11th General Assembly of International Union of Geodesy and Geophysics, 3-14 Sep 57, Toronto, Canada.

C-3,800,146

PAVLOV, N. N.

"Recent Results of Photoelectrical Observations of Pulkovo Time Service" (Section III) - paper submitted at 11th General Assembly of International Union of Geodesy and Geophysics, 3- 14 Sep 57, Toronto, Canada.

C-3,800,146

PAVLOV, N. N.

"Recent Results of Photoelectric Observations of the Pulkovo Time Service," The International Association of Geodesy; Abstracts of the Reports of the XI General Assembly of the International Union of Geodesy and Geophysics, Moscow, Izd-vo AN SSSR, 1957, 63 p.

Recent (1955-56) observations of the right ascension of stars made with a new 100 mm Zeiss transit instrument show much greater accuracy than those made with previous photoelectrical instruments. The probable observations error for one star, reduced to the equator, and the probable error of hourly corrections for ten stars was much smaller than in the past. I_t is proposed to organize at Pulkovo, during the IGY, observations by two transit instruments covering more than 500 stars.

PAVLOV, N. N., and NEMIRO, A. A.,

"Systematic $\Delta\alpha$ $\Delta\delta$ errors of the FK3 Type and Their Influence of the Determination of Time," The International Association of Geodesy; Abstracts of the Reports of the XI General Assembly of the International Union of Geodesy and Geophysics, Moscow, Izd-vo AN SSSR, 1957, 63 p.

The comparison of fundamental and new absolute catalogues with FK3 permits findings in the latter considerable systematic errors of the type Δ . Tables give comparative values for FK3 with Nikolayev (N30), GC and Pulkovo (Pu α 1) with respect to $\Delta\alpha$ $\Delta\delta$. The observed errors have a tangible effect on the correction of time. It is pointed out that Washington determinations of time corrections are distinguished by their high accuracy.

3(0) PHASE I BOOK EXPLOITATION SOV/2205

Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy

Izmereniye vremeni; sbornik (Measurement of Time; Collection of Articles) Moscow, Standartgiz, 1958. 115 p. (Series: Its: Trudy, /vyp./ 1) Errata slip inserted. 2,000 copies printed.

Additional Sponsoring Agency: USSR. Komitet standartov, mer i izmeritel'nykh priborov.

Resp. Ed. of this vol: A.I. Konstantinov; Editorial Board: G.D. Burdun, A.L. Dukler, V.I. Yermakov (Deputy Chairman), M.K. Zhokhovskiy, L.M. Zaks, A.I. Konstantinov, V.P. Lubentsov (Chairman), M.P. Orlova, L.M. Pyatigorskiy, I.G. Rusakov, N.A. Sorokin (Resp. Secretary), V.N. Titov; Ed. of Publishing House: S.M. Davydova; Tech. Ed.: M.A. Kondrat'yeva.

PURPOSE: This book is intended for astronomers, geodesists, and other scientific personnel interested in the precise determination of time.

COVERAGE: This is the first of a series of periodicals to be published by the

All-Union Scientific Research Institute of Physical-Technical and Radio-Technical Measurements. The present volume is concerned with the measurement of time and represents some of the work of the Central Scientific Research Bureau of the Unified Time Service during the years 1947-1951. References accompany each article.

TABLE OF CONTENTS:

A complete description of the design and principles of operation of photo chronoscope is given. The description is well illustrated with diagrams and photographs.

Konstantinov, A.I. and A.I. Solov'yev. Basic Determination of the Longitude of the Astronomic Station in Irkutsk During 1947-1948 72

This article describes the program used in the precise determination of the difference in longitude Moscow-Irkutsk. This work served to give the Irkutsk Time Service a precise longitude value and to establish a base for determining personal equations of astronomers.

Dolgov, P.N. The Work of the Time Service of the Soviet Union During 1948, 1949, and 1950 103

This article evaluates the results of the time services of the USSR for the years cited based on the analysis of the monthly bulletins of moments of time signals and moments of standard time.

AVAILABLE: Library of Congress (QB 213.V9)

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SOV/35-59-11-8789

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1959, Nr 11, p 15, (USSR)

AUTHOR: Pavlov, N.N.

TITLE: The Present State and Perspectives of the Photoelectric Method of Astrometrical Observations

PERIODICAL: Tr. 13-y Astrometr. konferentsii USSR, 1956, Moscow-Leningrad, AS USSR, 1958, pp 62-63 (Russ), pp 64-65 (Engl.) Discus. p 65.

ABSTRACT: It is noted that the photoelectric registration of the transit of stars is being successfully used in the Pulkovo, Moscow (TsNIIGAIK) and Leningrad (University) times services. Trial observations have commenced in Irkutsk and Nikolayevo. Due to the utilization of a mirror sighting grating and replacement of photocells by photo-multipliers, the sensitivity of the installation has increased considerably and the accuracy of observations heightened. The deficiency of the photoelectric method, in the

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PAVLOV, N.N., prof.

V.IA. Struve's opinion on the evaluation of the precision of interpolation and extrapolation of clock corrections. Trudy VNIIFTRI no.1:13-24 '58. (MIRA 12:4)
(Time measurements)

PAVLOV, N.N.

Observations of the general catalog of stars for the time service of the U.S.S.R. and its processing. Izv.GAO 21 no.2:2-12 '58. (MIRA 13:4)
(Stars--Catalogs) (Time)

PAVLOV, N N

PHASE I BOOK EXPLOITATION SOV/4374

Astronomiya v SSSR za sorok let 1917 - 1957; sbornik statey (Forty Years of Astronomy in the USSR, 1917-1957; Collection of Articles) Moscow, Fizmatgiz, 1960. 728 p. 2,000 copies printed.

Ed.: L. V. Samsonenko; Tech. Ed.: [illegible] A. Tumarkina; Editorial Board: A. A. Mikhaylov (Resp. Ed.), N. S. [illegible], P. [illegible] Kulikovskiy, A. G. Masevich, E. R. Mustel'; V. V. Sobolev, and M. F. Subbotin.

PURPOSE: This book is intended for astronomers, astrophysicists, and others interested in the history of astronomy in the USSR.

COVERAGE: This major work on the history of astronomy in the USSR consists of two parts, review articles and bibliographies. Part I contains a collection of articles on various facets of astronomical research written by leading Soviet specialists in the field. Chief emphasis is placed on developments of the last ten years. The research activities and equipment of 23 Soviet observatories and institutes are described, and the leading scientific personalities of each mentioned. The geographic coordinates and elevations of 41 astronomical centers are listed. Individual articles discuss problems dealing with

PART II. BIBLIOGRAPHY

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A001/A101

AUTHOR: Pavlov, N. N.

TITLE: Report of the Subcommission on the problem of time determination

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 4, 1961, 16, abstract, 4A202 ("Tr. 14-y Astrometr. konferentsii SSSR, 1958". Moscow-Leningrad, AN SSSR, 1960, 27-28. Discus. 28, Engl. summary)

TEXT: Members of the commission took part in a number of conferences on time service, called in connection with IGY, which approved instructions and observational programs during the IGY. The general list of stars of the USSR Service of Time, compiled in the Main Astronomical Observatory, was also accepted. The ITA, Institute of Theoretical Astronomy, calculates for these stars daily ephemeris of visible positions. Proposals of the Soviet delegation were prepared for the session of the special committee of IGY, and the report for the 10th Congress of the International Astronomical Union was compiled.

D. P.

[Abstractor's note: Complete translation]

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