KRUPICKA, V.

24(2,4) PHASE I BOOK EXPLOITATION CZECH/2433

International Polarographic Congress. 1st, Prague, 1951

Sborník I. Mezinárodního polarografického sjezdu. Díl 3: Hlavní referaty prednesene na sjezdu. Proceedings...Vol 3: Reviews Read at the Congress. Praha, Přírodovědecke vyd-vi [1952] 774 p. 2,000 copies printed.

Resp. Ed.: Jiří Koryta, Doctor; Chief Ed. of Publishing House: Milan Skalník, Doctor; Tech. Ed.: Oldřich Dunka.

PURPOSE: The book is intended for chemists, chemical engineers, and physicists.

COVERAGE: The book is a collection of reviews and original papers read at the International Polarographic Congress held in Prague in 1951. Uses of polarography in organic and inorganic analysis, biochemistry, medicine, and industrial chemistry are discussed. In the section, Reviews Read at the Congress, Russian and either German or English translations of each review are presented. In the section, Original Papers Read at the Congress, only those translations in Russian, German, and English which have not been published in Volume I are presented. The following scientists participated in the opening of the Congress: Professor Wiltor Kemula, Dean of the Faculty of Sciences, Warsaw; Doctor Jaromir Dolansky, Minister of Planning; Professor Jaroslav Heyrovsky, Chairman of the Congress; and Professor Jaroslav Pukatko, Chairman of the Center for Scientific Research and Technical Development. References follow each paper.

Card 11/14

GOSTOV, R.; FRIC, B.; KRUPICKOVA, J.;

Two years of milk banks in Prague. Pediat. listy 6 no.2:118-120 Mar-Apr 1951. (CLML 20:9)

1. Of the First Children's Clinic of Charles University and of the Health Referat of UNV.

KRUPICZ, A.

Researches on the endurance of concrete-ceramic compressed elements. (To be contd.) p. 345. Plan of instruction concerning safe lengths and the method of anchoring cables, and the standards of concrete in cable concrete elements. p. 348.

INZYNIERIE I BUD..NICTWO Vol. 12, No. 10, Oct. 1955

(Naczelna Organizacja Techniczna i Polski Zwiazek Insynierow i Technikow Budowlanych) Warzawa.

SOURCE: EAST EUROPEAN ACCESSIONS LIST. Vol. 5, No. 1 Jan. 1956

KRUPICZ, Jozef; BARTOSZEWSKI, Adam; MODZELEWSKA, Irena

Trichomonal and other non-gonorrheal forms of urethritis in males.
Wiad. parazyt. 8 no.2:243-246 '62.

1. Klinika Dermatologiczna Akademii Medycznej i Klinika Poloznicza-Ginekologiczna Akademii Medycznej, Lublin.
(TRICHOMONAS INFECTIONS epidemiol) (URETHRITIS epidemiol)

POLAND

KWIPICZ, Jozef and CHILEWSKA, Aleksandra, Dermatology Clinic (Klinika Dermatologiczna) (Director: Prof. Dr. Czeslaw RILL-NARUSZEWSKI [deceased]) and the Department of Radiology (Zaklad Radiologiczny) (Director: Prof. Dr. Kazimierz SKORZYNSKI), both at the AM [Akademia Medyczna, Medical Academy] in Lublin

"Triple Abdominal Luetic Aneurysm of the Thoracic Aorta. Case Report."

Warsaw, Polski Tygodnik Lekarski, Vol 17, No 48, 26 Nov 62, pp 1376-1378.

Abstract: [Authors' English summary] A case of triple abdominal luetic aneurysm of the thoracic aorta is reported. Anterior fragments of the right 3rd and 4th ribs were destroyed. Attention is drawn to the size of the aneurysm, signless course of the disease, and coexistence of three aneurysms of the thoracic artery. The aneurysm appeared because of the insufficient treatment of a luetic infection 30 years ago. Of the eight references, one is English, one German, one Russian, and five Polish.

1/1

WOJTKIEWICZOWA, Jadwiga; KRUPICZ, Jozef

Cholesterol level of the blood serum in psoriatic patients. Pol. tyg. lek. 19 no. 40:1528-1529 5 O '64

1. Z Kliniki Dermatologicznej Akademii Medycznej w Lublinie (Kierownik Kliniki: doc. dr. med. Roman Michalowski).

KRUPICZKA R

POLAND / Chemical Technology. Chemical Products. H
Processes and Apparatuses of Chemical Technology.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 67693.

Author : Hobler T., Krupiczka R.
Inst : Not given.
Title : Hydrodynamics of Grid Trays.

Orig Pub: Chem. stosow., 1957, 1, No 2, 105-122.

Abstract: Hydrodynamics of the grid type trays was investigated using an air-water system in the range of air velocities, w_g = 3-10 m/sec, water velocities of w_c = 0.0009-0.84 m/sec (w_g and w_c are related to the tray free area), water temperature of 7-15°, air temperature of 15-28°, and the slot area s =

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POLAND / Chemical Technology. Chemical Products. H
Processes and Apparatuses of Chemical Technology.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 67693

Abstract: = (1.85 to 4) 10^{-3} m. The relationship between the depth of water layer on a tray (h_o,m) and the basic variables: $h_o = 1.85 \cdot 10^{-6} w_c^{0.4} w_g^{1.5} s^{-1.6}$ and $Eu' = 2.5 \cdot 10^{-4} Re_c^{0.6} Re_g^{0.5} (L/S)^{1.5}$, where $Eu' = h_o g (w_g w_c)$ is a midified Eiler's critarion, Re_c and Re_g are the Re criteria for liquid and gas and L = 1m; were established. Equations were found valid in the range of $w_c^{0.5} w_g^{1.5} h_o^2 < 0.86 \cdot 10^{-2}$. Thickness of the water layer including foam on a tray (h,m) is expressed by the h_o equations: $h(w_o)^{0.25} = 2.35 (h_o - 0.01)^{0.9}$ when $h_o < 0.05$ m and $h(w_o)^{0.25} = 1.23 (h_o - 0.1)^{0.7}$ when $h_o > 0.05$ m. In the latter equations w_o is air velocity based on the total cross-sectional area of a column (in m/sec). Characteristic pressure drop data for the gas stream based on h_o are also given.

Card 2/2

HOBLER, T., dr., prof.; KRUPICZKA, R.; CZAJKA, J.

Hydraulics of turbogrid and sieve trays. Magy kem lap 19 no. 2:89-92 F '64.

1. Lengyel Tudomanyos Akademia Muszaki Kemiai es Keszulekszerkesztesi Kutato Kozpontja.

HOBLER, Tadeusz; KRUPICZKA, Roman

Hydraulics of the turbogrid tray. Chemia stosow 3 no.3:293-319 '59.

1. Zaklad Inzynierii Chemicznej i Konstrukcji Aparatury, Polska Akademia Nauk, Gliwice.

KRUPIN, A.A.

Newly built building materials plants in the Chelyabinsk Economic Region. Stroi. mat. 7 no. 1:9-12 Ja '61. (MIRA 14:1)

1. Nachal'nik Upravleniya promyshlennosti stroitel'nykh materialov Chelyabinskogo sovnarkhoza.
(Chelyabinsk Province—Building materials industry)

BUDNIKOV, P.P.; ALEKPEROV, M.S.; BAKLANOV, G.M.; BOLDYREV, A.S.; BOS'KO, K.D.; VOLZHENSKIY, A.V.; GROKHOTOV, N.V.; ZHUKOV, A.V.; ZABAR, L.B.; KITAYEV, Ye.N.; KOSHKIN, V.G.; KRUPIN, A.A.; MUROMSKIY, P.G.; POPOV, A.N.; SUKHOTSKIY, S.F.; USPENSKIY, V.V.; KHINT, I.A.; SHVAGIREV, M.P.; YUSHKEVICH, M.O.

Conference on increasing the durability of corrugated roofing sheets. Stroi.mat. 8 no.1:p.3 of cover Ja '62. (MIRA 15:5)
(Roofing)

VOROB'YEV, Kh.S.; KRZHEMINSKIY, S.A.; KRUPIN, A.A.; MAZUROV, D.Ya.; NIKITIN, A.A.

Burning lime in suspension. Stroi. mat. 11 no.1:4-8 Ja '65. (MIRA 18:6)

1. KRUPIN, A.A., INSAROV, A.S.

2. USSR (600)

4. Ceramics

7. Fence from ceramic stones. Engs. A.A. Krupin, A.S. Insarov, Biul.stroi.tekh. 10 no. 8, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

B[illegible], L.M.[illegible], Yu.M.; VORONTSOV, Kh.S.; KRYPIK, A.A.

[illegible]tion and properties of lime-belite binders. Stroi. mat. 11 no.8:29-31 Ag '65. (MIRA 18:9)

KRUPIN, A. F.

KRUPIN, A. F. -- "Investigation of Metallization Coverings." Min Higher Education USSR. Tomsk Order of Labor Red Banner Polytechnic Inst imeni S. M. Kirov. Tomsk, 1955. (Dissertation for the Degree of Candidate in Technical Sciences)

SOURCE Knizhnaya Letopis', No 6 1956

KRUPIN, A.F.; BOYKOV, G.P.

Cooling of particles in the spray cone during electric metal spraying. Izv.TPI 85:321-325 '57. (MIRA 10:12)

1.Predstavleno prof. doktorom tekhn.nauk A.N. Dobrovidovym i prof. doktorom tekhn.nauk G.I. Fuks.
(Metal spraying)

KRUPIN, A.F.; BOYKOV, G.P.

Cooling rate and laminar structure in metal spraying. Izv.TPI 101:51-54 '58. (MIR 13:5)

1. Predstavleno prof. A.N. Dobrovidovym i prof. G.I.Fuks.
(Metal spraying)

25(1) SOV/135-59-5-7/21

AUTHOR: Krupin, A. F., Candidate of Technical Sciences

TITLE: The Question of the Physico-Chemical Processes in Metal Spraying

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 5, pp 17-20 (USSR)

ABSTRACT: The article describes experiments carried out by the author and others into the non-metallic impurities immediately in the metallized layer and after their liberation from the layer, depending on the chemical composition of the steels and the conditions of the electro-metallization. A quantitative analysis was carried out by electrolytic diffusion in the medium of the electrolyte. The investigations were carried out on 6 kinds of steel (10, 50, U8A, U12A, 65G and ShKh6). The metallization was carried out by an EM-6 electro-metallizer under conditions given in Table 2. Distance from the nozzle to the surface being metallized was 120 mm and working pressure was 5 atmospheres. The results are contained in tables and graphs and the conclusions drawn are as follows: 1) complex metallographic, petrographic

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The Question of the Physico-Chemical Processes in Metal Spraying

and other investigations show that the basic mass of oxides consists of Fe_3O_4. The content of oxides in steel metallization coatings depends both on the chemical content of the steels and on the electrometallization conditions. As carbon reacts best to oxygen, the amount of oxides in the layer decreases with an increase in the content of carbon and other elements of the deoxidizing group. Increase of the arc voltage and the output of the apparatus reduces the oxides in the metallization layers. As a result of the high temperature of the electric arc at the smelting point, and the impossibility of deoxidizing the liquid metal by specially introduced deoxidizers, the processes of deoxidation and restoration in the pulverization of metals can only be carried out by elements present in the basic metal. The electrolytic iron-sulfate method is the most reliable for the liberation and analysis of oxides and other non-metallic impurities from metallization layers. To reduce the oxidation of metal during pulverization, wires with an increased content of the elements of the deoxidizing group must be used and pulveri-

The Question of the Physico-Chemical Processes in Metal Spraying

zation carried out in an atmosphere of inert gases. There are 4 tables, 2 graphs, 1 photo and 7 Soviet references.

ASSOCIATION: Tomskiy politekhnicheskiy institut im. S.M. Kirova (Tomsk Polytechnical Institute imeni S. M. Kirov).

NAZAROV, S.T.; PENKEVICH, Ye.M.; IL'YUSHCHENKO, I.P.; YERMOLOV, I.N.; [illegible], M.P.; KRUPIN, A.E.; KRYGOV, B.A.; SHNEYDER, A.S., doktor

Survey of dissertations on the problems of flaw detection.
Defektoskopiia no.1: 4-96 '65. (MIRA 18:6)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche imeni Baumana (for Nazarov, Penkevich). 2. Moskovskiy oblastnoy pedagogicheskiy institut (for Il'yushchenko). 3. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya (for Yermolov, Denin). 4. Moskovskiy institut stali i splavov (for Krupin).

KRUPIN, Aleksey Nikolayevich; SUFTIN, G.I., red.; BOL'SHAKOVA, L.A., tekhn. red.

[Transformed region; socialist transformation of the Nenets National Area during the years of the Soviet regime] Preobrazhennyi krai; sotsialisticheskie preobrazovaniia v Nenetskom natsional'nom okruge za gody sovetskoi vlasti. [Arkhangel'sk] Arkhangel'skoe knizhnoe izd-vo, 1957. 67 p. (MIRA 11:5)

1. Sekretar' Nenetskogo okruzhnogo komiteta Kommunisticheskoy partii Sovetskogo Soyuza (for Krupin)
(Nenets National Area--Economic conditions)

МИХАЙЛОВ, Ф. С.

MIKHAYLOV, Sergey Sergeyevich; MAKSIMENKOV, A.N., professor, redaktor; KRUPIN, A.S., redaktor; RULEVA, M.S., tekhnicheskiy redaktor.

[V.A.Karavaev; life and work, 1811-1892] V.A.Karavaev; zhizn' i deiatel'nost', 1811-1892. [Leningrad] Gos.izd-vo med.lit-ry, 1954. 270 p. (MLRA 8:5)

1. Chlen-korrespondent AMN SSSR(for Maksimenkov).
(Karavaev, Vladimir Afanas'evich, 1811-1892)

KRUPIN, A.S., kand.med.nauk (Leningrad)

New technic and health of workers. Zdorov'e 6 no.8:21-22 Ag '60.
(MIRA 13:8)

(INDUSTRIAL HYGIENE)

KRUPIN, A.S.

With concern for the patient. Med.sestra 19 no.1:37-39 Ja '60.
(MIRA 13:5)

(BALUDINA, FAINA IL'INICHNA)

IVANOV, Ye.M., general-mayor meditsinskoy sluzhby; KRUPIN, A.S., polkovnik meditsinskoy sluzhby v otstavke

The oldest in the navy. Voen. med. zhur. no.10:43-47 O '65. (MIRA 18:11)

KHRIN, A.V., Cand Tech Sci — (diss) " Study of defects in metal as stress concentrators." Mos, 195?. 14 pp (Min of Higher Education USSR. Mos Order of Labor Red Banner Inst of Steel im I.V.Stalin), 120 copies (KL,24-58, 11?)

AUTHORS: Pavlov, I. M., Krupin, A. V. SOV/163-58-1-21/53

TITLE: Investigation of the Influence of the Defects in Metals on the Distribution of Tension (Issledovaniye vliyaniya defektov v metalle na kontsentratsiyu napryazheniy)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1, pp 111-116 (USSR)

ABSTRACT: The following influences on the distribution of tension were found:
1) Shape, dimensions and the ratio between the dimensions of the defects
2) The orientation of the defects with respect to the effective forces
3) The elastic properties of the fillers
4) The interaction of the concentrations
5) The character of the applied external forces.
The individual actions were discussed in detail. With regard to point 1) it was found that various geometrical shapes of the defects cause different concentrations of tension. The experimental results show that the coefficient of the tensional con-

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Investigation of the Influence of the Defects in Metals on the Distribution of Tension

centration C is equal to $\frac{\sigma_m}{\sigma_n}$, i.e., that this coefficient increases according to the increase in the length of the defect in the direction vertical to the effective force.

The influence exerted by the fillers of the groups 1, 2, 3, and 4 on the tensional concentration of the defects of various geometrical shapes was investigated. The coefficient of the tensional concentration with fillers of the first group at $E_1 > 0$; C = 6,5.

The coefficient of the tensional concentration with fillers of the fourth group at $E_4 > E_0$; C = 2,6.

The character of the fillers influences the tensional state of the bodies. There are 3 figures and 6 references, 6 of which are Soviet.

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ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: October 4, 1957

7(6)

AUTHORS: Prigorovskiy, N. I., Professor, Doctor of Technical Sciences, Krupin, A. V.

SOV/32-24-11-33/37

TITLE: Conference on Polarizational Optical Methods of Testing Tensions (Konferentsiya po polyarizatsionno-opticheskomu metodu issledovaniya napryazheniy)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 11, pp 1422-1423 (USSR)

ABSTRACT: The above conference which had been proposed by the Leningradskiy universitet (Leningrad University) and the Leningradskoye otdeleniye NTO mashinostroyeniya (Leningrad NTO Department of Machine Manufacturing) was held in Leningrad in March, 1958. Members of the Leningradskiy gosudarstvennyy universitet (Leningrad State University), of the institut nefti (Petroleum Institute , the fiziko-tekhnologicheskiy institut AN SSSR (Institute of Physical Technology of the AS USSR), the Vsesoyuzno nauchno-issledovatel'skiy institut Gidrotekhniki (All-Union Scientific Research Institute of Hydraulic Engineering), the Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machine Manufacturing , the Moskovskiy

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Conference on Polarizational Optical Methods of Testing Tensions

institut inzhenerov transporta (Moscow Transport Engineering Institute), and others participated in the conference, as well as experts from the German Democratic Republic, Poland, Czechoslovakia , and the Chinese People's Republic. More than 60 contributions were submitted. Amongst others, the following subjects were discussed: The improvement of existing and the development of new transparent materials, as well as their testing under different testing and stress conditions. The development of polarizational optical measuring methods of elastic transparent models. The development of methods of investigation and their application in testing elastic deformations. The investigation of deformations and tensions in the field of elastic and plastic materials in relaxation and creeping. Transparent materials already developed were mentioned: Styrene alkyde resin "NIKhM-IMASh", the material ED6-M (basing on epoxy resin), the optically inactive material ONS , and "elastopleks" which was developed in Czechoslovakia. New apparatus were explained, such as e.g. the polariscope for direct transillumination and determination in dispersed light, e.a. In the contributions of the visitors

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from abroad the results of research in their countries were reported. A color film of the Lennau-film for universities was shown, which dealt with the qualities and investigation possibilities of various methods.

SOV/137-58-11-22333

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 69 (USSR)

AUTHORS: Pavlov, I. M., Krupin, A. V.

TITLE: An Investigation of Defects in Metals by Photoelastic Means (Issledovaniye defektov v metalle metodom fotouprugosti)

PERIODICAL: Sb. Mosk. in-t stali, 1958, Vol 38, pp 307-325

ABSTRACT: Results are presented of an investigation of the influence of microscopic inclusions (sizes, shapes and orientation) upon stress concentrations in bodies subjected to loads. The investigation was by photoelasticity, specimens of optically active material being used in which the value of a line was $\tau_o^{1.0}=6.1$ kg/cm^2. The instrument used was the PPU-4, developed by the Institute of Mathematics and Mechanics of Leningrad University. It is established that defects in the metal are stress concentrators which reduce the strength of alloys of low ductility. The concentration of stresses increases with increase in defect length in a direction normal to the line of action of a load. The relative positions of the defects, their geometrical shapes and dimensions, and the properties of the material with which the defect is filled, all affect the stress concentration. If the E of the filler

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An Investigation of Defects in Metals by Photoelastic Means

is higher than the E of the specimen, the concentration of the stresses diminishes.

M. Z.

PHASE I BOOK EXPLOITATION SOV/4782

Moscow. Institut stali

Proizvodstvo i obrabotka stali i splavov (Production and Treatment of Steel and Alloys) Moscow, Metallurgizdat, 1960. 462 p. (Series: Its: Sbornik, 39) 2,100 copies printed.

Ed.: Ye. A. Borko; Ed. of Publishing House: S. L. Zinger; Tech. Ed.: M. R. Kleyman; Editorial Council of the Institute: M. A. Glinkov, Professor, Doctor of Technical Sciences; R. N. Grigorash, Docent, Candidate of Technical Sciences; V. P. Yelyutin, Professor, Doctor of Technical Sciences; A. A. Zhukhovitskiy, Professor, Doctor of Chemical Sciences; I. N. Kidin, Professor, Doctor of Technical Sciences; B. G. Livshits, Professor, Doctor of Technical Sciences; A. P. Lyubimov, Professor, Doctor of Technical Sciences; I. M. Pavlov, Corresponding Member, Academy of Sciences USSR; and A. N. Pokhvisnev, Professor, Doctor of Technical Sciences.

PURPOSE: This book is intended for technical personnel in industry, scientific institutions and schools of higher education, dealing with open-hearth and electric-furnace steelmaking, metal rolling, physical metallurgy, metallography, and heat treatment. It may

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also be used by students specializing in these fields.

COVERAGE: The book contains results of theoretical and experimental investigations of metallurgical and heat-engineering processes in open-hearth and electric furnaces. Data are included on the following: desulfurizing of pig iron outside the blast furnace, interaction of oxides of the carbide-forming metals with solid carbon, the change of content of gases in the bath of the open-hearth furnace in various periods of melting, intensification of the electric melting of steel, etc. Other articles deal with the nonuniformity of deformation in rolling, the study of the continuous rolling process, the dependence of the friction — slippage coefficients in rolling on a number of factors, and other problems in the pressworking of metals. Articles on physical metallurgy and the theoretical principles and techniques of the heat treatment of steel are also included. No personalities are mentioned. References accompany most of the articles. There are 207 references, both Soviet and non-Soviet.

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77687
SOV/148-60-1-10/34

AUTHORS: Pavlov, I. M., and Krupin, A. V.

TITLE: The Effect of Defects in Metal on Concentration of Stresses

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1960, Nr 1, pp 60-65 (USSR)

ABSTRACT: This is an analytical study of the effect of relative dimensions of main semiaxes (a and b) of defects on coefficient of concentration K. The study is based on the fact that the defects in metal are acting as concentrators of stresses and they affect the concentration of elastic and plastic deformations in metal. The authors state that for the defects of elliptical shape, and within the limits of elasticity, the coefficient K can be determined by Kolosov formula (G. V. Kolosov. Concerning One Application of Functions of Complex Variable to Plane Problem of the Mathematical Theory of Elasticity. Yur'yev University, 1909):

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$$K = 1 + 2\frac{a}{b},$$

where a and b are main semiaxes. The formula can be used when the defects have a less curved surface than the crystallites, in other words when the radius of defect's curvature is sufficiently large in comparison with the dimensions of crystallites. Therefore, the stresses which depend on boundary conditions change over a wide range and the structure of the substance has no influence on coefficient of concentration. The formula holds for definite values of α and θ when

$$\alpha = 0^\circ \quad \theta = \frac{\pi}{2}; \frac{3\pi}{2}$$

$$\alpha = 90^\circ \quad \theta = 0; \pi,$$

where α = an angle formed by the large semiaxis of defect and the direction of acting force; θ = an angle formed by the same semiaxis and the radius-vector of a given point on the contour of the defect. It follows

(from Kolosov's equation) that there can be various cases of change of K depending on the change of a and b: (1) a = const; b ≠ const; (2) a ≠ const; b = const; (3) a and b change simultaneously in the same direction (increase or decrease); (4) a and b change simultaneously but in the opposite direction. These cases are illustrated by the following tables and figures. The first two cases show a linear relation of coefficient K and a/b ratio. The linear relation does not give the means of tracing the rate of changes of K depending on changes of a and b. To solve this problem the authors used a conception that the maximum rate of change of a function takes place in the direction of vector gradient K. (see Table 2 and Figure 2). Rewriting the original Kolosov's equation $K = 1 + 2\frac{a}{b}$ as $K - 1 = 2\frac{a}{b}$ and substituting m for K - 1, the authors derive a surface equation of hyperbolic paraboloid: a = 1/2 mb, shown in Fig. 3. The calculated and experimental values of coefficient K are given in Table 3. The values of this Table were used for

The Effect of Defects in Metal on Concentration of Stresses

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Table 1. Values K When a = const and b = const.

	a = const; b = const					a = const; b = const				
a	4,0	4,0	4,0	4,0	4,0	2,0	4,0	7,26	9,8	12,0
b	2,0	4,0	7,26	9,8	12,0	4,0	4,0	4,0	4,0	4,0
$\frac{a}{b}$	2,0	1,0	0,55	0,41	0,33	0,5	1,0	1,82	2,45	3,0
K	5	3	2,10	1,82	1,66	2,0	3,0	7,61	5,9	7

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The Effects of Defects in Metal on Concentration of Stresses

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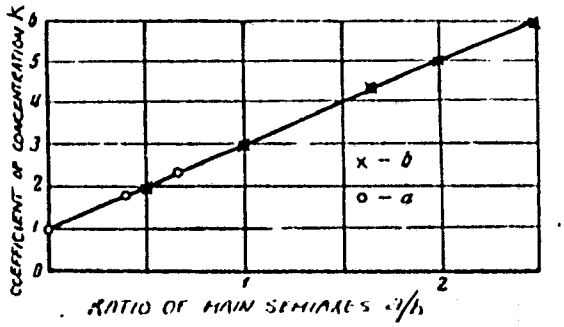

Fig. 1. Linear relation of coefficient K and a/b. a = const; b = const.

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Table 2. Values of partial derivatives for various values of a and b.

$2a$	$2b$	$\frac{\partial K}{\partial a}$	$\frac{\partial K}{\partial a}$
0,5	4,0	—	0,125
4,0	4,0	—	1,0
7,26	4,0	—	1,81
9,8	4,0	—	2,45
12,0	4,0	—	3,0
4,0	0,5	8,0	—
4,0	4,0	1,0	—
4,0	7,26	0,55	—
4,0	9,8	0,41	—
4,0	12,0	0,33	—

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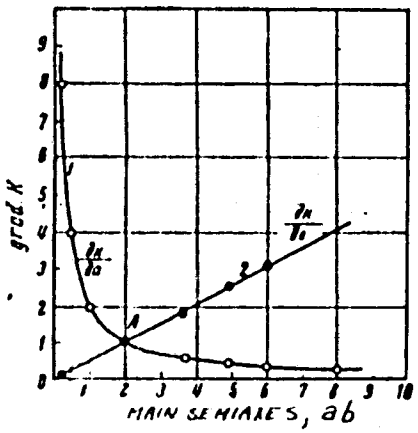

Fig. 2. Curves of rate of changes for coefficient of concentration K.

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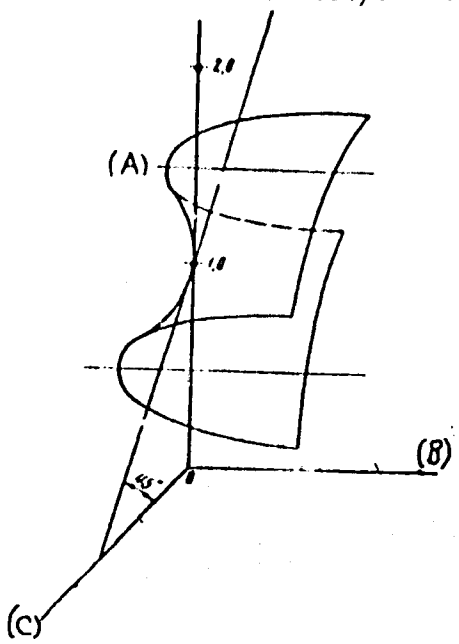

Fig. 3. Geometrical interpretation of the relation a = 1/2 mb: (A) coefficient of concentration of stresses; (B) large semiaxis of defect a; (C) small semiaxis of defect b.

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Table 3. Calculated and experimental values K.

$2a$	$2b$	$\frac{2a}{2b}$	$K = 1 + 2\frac{a}{b}$	$2a$	$2b$	$\frac{2a}{2b}$	$K = 1 + 2\frac{a}{b}$
0,5	2,0	0,25	1,5	2,0	2,0	1,0	3,0
4,0	2,0	2,0	5,0	2,0	4,0	0,5	2,0
7,26	2,0	3,68	8,26	2,0	7,26	0,27	1,54
9,8	2,0	4,9	10,8	2,0	9,8	0,20	1,40
11,0	2,0	5,5	12,0	2,0	12,0	0,17	1,34
12,0	2,0	6,0	13,0				
0,5	4,0	0,125	1,25	4,0	2,0	2,0	5,0
4,0	4,0	1,0	3,0	4,0	4,0	1,0	3,0
7,26	4,0	1,82	4,64	4,0	7,26	0,55	2,1
9,8	4,0	2,45	5,9* / 5,5	4,0	9,8	0,41	1,82* / 1,8
12,0	4,0	3,0	7,0	4,0	12,0	0,33	1,66

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Table 3. (cont'd)

0,5	6,0	0,08	1,16	6,0	2,0	3,0	7,0
4,0	6,0	0,66	2,32	6,0	4,0	1,5	4,0
7,26	6,0	1,21	3.42*/3,5	6,0	7,26	0,83	2,66*/2,8
9,8	6,0	1,63	4,26	6,0	9,8	0,61	2,22
12,0	6,0	2,0	5,0	6,0	12,0	0,5	2,0
0,5	8,0	0,06	1,12	8,0	2,0	4,0	9,0
4,0	8,0	0,5	2,0	8,0	4,0	2,0	5,0
5,5	8,0	0,67	2,38	8,0	7,26	1,1	3,2
7,26	8,0	0,91	2,82	8,0	9,8	0,81	2,62
9,8	8,0	1,25	3,5	8,0	12,0	0,66	2,32
12,0	8,0	1,6	4,0	8,0	—	—	—

*Denominator--experimental values of coefficients of concentration.

Card 10/12

The Effects of Defects in Metal on Concentration of Stresses

77687
SOV/148-60-1-10/34

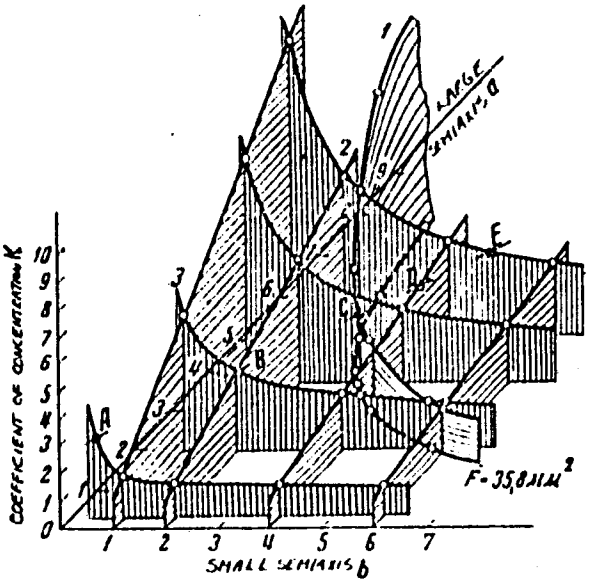


Fig. 4. A volumetric diagram of relation of coefficient K and the values of a and b semiaxes of the defect: (1) a ≠ const, b ≠ const; (2) a ≠ const, b = const; (3) a = const, b ≠ const.

Card 11/12

plotting the volumetric diagram shown in Fig. 4. The calculated K values were obtained for elliptical shape defects with area F = πab. The authors refer to the previous work on the subject and conclude that the character of curves of K changes show that notwithstanding the equality of defect's area the concentration of stresses, caused by them, is not identical and depends on a number of factors (shape, ratio of axes, orientation, etc). Therefore the defects equal by the area but different by their geometric shape cannot be put in the same class. This should be considered when developing the corresponding specifications. There are 5 figures; 4 tables; and 5 Soviet references.

ASSOCIATION: Moscow Steel Institute (Moskovskiy institut stali)

SUBMITTED: February 10, 1959

18(7)

SOV/163-59-2-27/48

AUTHORS: Pavlov, I. M., Krupin, A. V.

TITLE: The General Case of Dependence of Stress Concentration on Metal Defects (Obshchiy sluchay zavisimosti kontsentratsii napryazheniy ot defektov metalla)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 2, pp 150 - 157 (USSR)

ABSTRACT: Metal defects (hollows, nonmetallic inclusions) act as concentrators of stress. In a previous paper (Ref 3), the influence of the principal application directions $\alpha = 0^{\circ}$ and $\alpha = 90^{\circ}$ of the deforming force P was investigated (α = angle between principal axis of an oval defect and the direction of force). The present paper investigates the effect of application directions between 0° and 90° for determining the coefficient K_{max} in dependence on α and θ (θ = angle between principal axis of the defect and the radius vector of the force on the outline of the defect, simultaneously determining the spot most endangered by the maximum stress K_{max}). The influence of an oval defect (Fig 1) with a ratio of the semiaxes

Card 1/2

The General Case of Dependence of Stress Concentration SOV/163-59-2-27/48
on Metal Defects

$R = \frac{b}{a} = 0.41$ was investigated by the method of photoelasticity by means of the projector-polarizing apparatus PPU-4. Figure 2 shows the stress distribution near the defect outline according to the angle of application α. The computation was carried out by the formulas derived by G. V. Kolosov (Ref 4) and G. N. Savin (Ref 5). The values for K obtained are given in table 1 for different values of α. Figure 3 shows the values graphically, K_{max} being the envelope of the family of curves $K = f(R,\Theta,\alpha)$. The change of K_{max} is computed (Table 2) and represented in figure 5. Figure 4 shows that the computations on the basis of the formulas of the two authors mentioned are in good agreement with the experimental values. There are 5 figures, 2 tables, and 5 Soviet references.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: August 12, 1958

Card 2/2

PHASE I BOOK EXPLOITATION SOV/4042

Leningrad. Universitet

Polyarizatsionno-opticheskiy metod issledovaniya napryazheniy; trudy konferentsii 13-21 fevralya 1958 goda (Optical Polarization Method for Stress Analysis; Transactions of the Conference of February 13-21, 1958). [Leningrad] Izd-vo Leningradskogo univ., 1960. 451 p. Errata slip inserted. 2,400 copies printed.

Resp. Ed.: N.P. Shikhobalov; Ed.: Ye.V. Shchemeleva; Tech. Ed.: S.D. Vodolagina; Editorial Board: S.G. Dutman, L.M. Kachanov, V.M. Krasnov, T.D. Makrutova, N.I. Prigorovskiy, V.M. Proshko, N.S. Rozanov, and Ye.I. Mal'shtoyn.

PURPOSE: This collection of 58 articles is intended for scientists and engineers concerned with experimental stress analysis of machine parts and structural components.

COVERAGE: The collection contains reports presented at the conference on optical polarization methods in stress analysis held February 13 - 21, 1958, in Leningrad and attended by 324 delegates including representatives of the People's Republic of China, the Polish People's Republic, the German Democratic Republic, and the Republic of Czechoslovakia. The reports discuss general theoretical problems and new methods of investigation and describe apparatus and materials used in the optical method. Solutions of specific two-dimensional and three-dimensional problems occurring in shipbuilding, aircraft design, engine construction, in various branches of heavy and precision machine design, in mining, metallurgy, hydraulic structures, railroad transport, in structural mechanics, geodynamics, in the control of stresses in products of the glass and electronic industry, etc., are given. Solution of the three-dimensional problem by means of the method of photoelasticity is introduced and the use of this method for the solution of problems associated with plasticity, creep, dynamics, hydrodynamics, etc., is demonstrated. Reports previously published elsewhere are printed here in abbreviated form. No personalities are mentioned. References are found at the end of 47 of the reports.

Optical Polarization Method (Cont.) SOV/4042

XI. VARIOUS FIELDS OF APPLICATION OF THE OPTICAL POLARIZATION METHOD

AVAILABLE: Library of Congress

Card 12/12

AC/rn/mas
8-19-60

Krupin, A. V.

18 8200

22741
S/509/60/000/007/002/014
E193/E483

AUTHORS: Pavlov, I.M. and Krupin, A.V.

TITLE: An Approximate Graphical Method of Determining the Defect-Induced Stress Concentration in Metals

PERIODICAL: Akademiya nauk SSSR. Institut metallurgii. Trudy, No.7. Moscow, 1960. pp.15-19. Metallurgiya metallovedeniye, fiziko-khimicheskiy metody issledovaniya

TEXT: Defects in the form of discontinuities (voids) in metals act as stress risers. The stress concentration due to such a defect is always less if the defect is completely filled with another substance (subsequently referred to as "filler"), the existence of a bond between the filler and the parent metal being a necessary condition for this decrease in the stress concentration to occur. The results of photo-elastic studies, conducted by the present authors on thin flat test pieces, showed that in the case of hard and notch-sensitive metals the defect-induced stress concentration depends on the shape of the defect and on the nature of the filler, the quantitative measure of the influence of these two factors being given by the, so-called, shape coefficient K_ϕ

Card 1/4

An Approximate Graphical Method ...

and filler coefficient K_3. It was shown also that the integrated coefficient of stress concentration due to any defect is given by $K = K_\Phi K_3$. The magnitude of K_Φ of a filler-free defect can be determined experimentally or analytically; in the case of an elliptical or circular hole it can be calculated from a formula derived by G.Kolosov $K = 1 + 2a/b$, where a and b are the main semi-axes of the ellipse. K_3 can be found from an empirical formula

$$K_3 = \frac{1}{0.62\frac{E_3}{E_0} + 1}.$$

where E_3 and E_0 are elastic moduli of the filler and parent metal respectively. Thus the integrated coefficient of any defect-induced stress concentration can be calculated from

$$K = \frac{K_\Phi}{0.62\frac{E_3}{E_0} + 1}.$$

The approximate values of K can be found with the aid of the nomogram, reproduced in Fig.2, which consists of a $K_3 (E_3/E_0)$ curve

(left-hand side diagram) and a set of lines passing through the origin of the coordinate system and corresponding to various values of K_ϕ (right-hand diagram). The following procedure is used: (1) the E_β/E_o ratio is calculated for the given case and the corresponding value of K_β is found from the left-hand curve; (2) from the point determined by these two coordinates, a horizontal line is drawn to intersect a line corresponding to K_ϕ of the given defect, the appropriate magnitude of K_ϕ having been determined experimentally or analytically; (3) a vertical line is drawn from the point of intersection to intersect the axis of abscissae on which the sought value of K is read off. The method proposed is illustrated by various numerical examples. There are 3 figures and 1 table.

Card 3/4

PAVLOV, I.M.; KHUPIN, A.V., kand.tekhn.nauk

Influence of the orientation of metal defects on stress concentration. Sbor.Inst.stali no.39:161-172 '60.
(MIRA 13:7)

1. Kafedra prokatki Moskovskogo ordena Trudovogo Krasnogo Znameni instituta stali im. I.V.Stalina. 2. Chlen-korrespondent AN SSSR (for Pavlov).
(Metals--Defects) (Strains and stresses)

S/509/62/000/009/008/014
D207/D308

AUTHORS: Pavlov, I. M. and Krupin, A. V.

TITLE: Investigation of stress concentration due to defects in materials

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Trudy, no. 9, Moscow, 1962. Voprosy plasticheskoy deformatsii metalla, 121-131

TEXT: The authors investigated the effect of occlusions and defects in metals acting as stress concentrators. Metals were modelled by phenol aldehyde sheet and stress distribution was investigated by the standard photoelastic method. Four types of defects were studied: (I) Circular and oval holes; (II) square and rectangular holes; (III) rhombic holes; (IV) holes of triangular, hexagonal and other shapes. The authors found that the defects (holes) which were elongated or had sharp corners produced higher stress concentrations than those of circular or oval shape. The most harmful orientation of defects was that with their long axes at right

Card 1/2

angles to the applied stress. If the holes were filled with some other materials, simulating foreign bodies in a metal sheet, the stress concentration was found to depend on the geometry of the defect, elastic properties of the filler (foreign body) and on whether the filler was attached rigidly to the rest of the material or whether it was filling the defect loosely. Defects closely spaced to one another produced higher stress concentrations than those which were widely spaced. There are 10 figures and 1 table.

POLUKHIN, P. I., prof., dekter tekhn. nauk; FEDOSOV, N. M., prof.; KRUPIN, A. V., kand. tekhn. nauk; TARASEVICH, Yu. F., inzh.

Resistance to deformation in rolling carbon and chromium steels. Sbor. Inst. stali i splav. no.40:84-99 '62. (MIRA 16:1)

(Rolling(Metalwork))
(Deformations(Mechanics))

POLUKHIN, P. I., prof., dekter tekhn. anuk; FEDOSOV, N. M., prof.;
KRUPIN, A. V., kand. tekhn. nauk; MATEROV, V. A., inzh.;
SHILKOV, B. N., inzh.; MAKSIMOV, B. M., inzh.

Increase in width during rolling with drawing dies. Sbor. Inst. stali i splav. no.40:100-106 '62. (MIRA 16:1)

(Drawing(Metalwork))

43267

S/848/62/000/040/001/005
E191/E481

1.1300

AUTHORS: Fedosov, N.M., Professor; Astakhov, I.G. and Krupin, A.V., Candidates of Technical Sciences; Arkhangel'skaya, K.Yu., Arkhangel'skiy, A.V., Yelin, I.I., Kontsevaya, Ye.M., Engineers

TITLE: Investigation of the specific pressure in the cold rolling of high alloy steel

SOURCE: Moscow. Institut stali i splavov. Sbornik. no.40, 1962. Protsessy prokatki. 107-129

TEXT: Investigations are reported on the effect of lubrication, initial thickness of the sheet, number of passes and reduction factor upon the specific pressure in the cold rolling of stainless steels 1Х21Н5Т (ЭИ811) [1Kh21N5T (EI811)] and 1Х18Н2Г5Н (ЭП26) [1Kh18N2G5N (EP26)]. The former belongs to the ferritic-austenitic class, is a substitute for 1Х18Н9Т (ЭЯ1Т) [1Kh18N9T (EYa1T)] stainless steel and contains 0.1 to 0.16% C, 0.8% Si, 0.4 to 0.8% Mn, 22 to 20% Cr, 4.5 to 5.8% Ni, 0.7% Ti, 0.03% S and 0.035% P. Heat treatment is not required after welding. The steel possesses increased strength combined with adequate ductility and weldability. 1Kh18N2G5N steel contains

Card 1/3

Investigation of the specific ...

0.09% C, 0.45% Si, 4.93% Mn, 18.85% Cr, 2.08% Ni, 0.19% Ti, 0.012% S, 0.03% P, 0.19% N, and belongs to the stainless steels of the transition class with unstable austenite, which after cold rolling and sub-zero treatment partially disintegrates, forming martensite. The rolling was carried out in the four-high laboratory mill having 180 mm diameter cylindrical working rolls and 360 mm diameter back-up rolls. The surface speed of the working rolls was 0.565 m/sec. Universal load cells with strain gauge elements measured the pressure on the rolls. The strain gauges connected in compensating bridges had their signals electronically amplified and recorded by electromagnetic oscillographs. The specific pressure was computed from the measured load. The effect of the reduction factor on the tensile strength and elongation and on the magnetization at saturation was examined for the two steels investigated and the steel they replace. The behaviour of all three is similar. The differences in mechanical properties are discussed in detail. The low nickel steel reaches magnetizations up to 13000 gauss after reductions of 30% and over. The effect of the initial thickness of the hot

strip, in the range between 0.5 and 2.0 mm and reduction factors between 10 and 50%, on the specific pressure was examined, showing a consistent reduction as the initial thickness increases. Lubrication with machine oil and castor oil has a substantial effect on the cold rolling pressure, the latter giving consistently lower values. Both steels behave similarly. The effect of splitting up the total reduction between different passes is shown in graphs plotted from numerous measurements. The effect is shown to be very small for both steels investigated throughout the range of strip thicknesses, reduction factors and lubricating oils examined. There are 14 figures and 4 tables.

Card 3/3

43268

11300

S/848/62/000/040/002/005
E191/E481

AUTHORS: Krupin, A.V., Astakhov, I.G., Candidates of Technical Sciences; Artem'yev, A.V., Masterov, V.A., Kontsevaya, Ye.M., Engineers

TITLE: Warm rolling of ЭИ100 (EI100) stainless steel

SOURCE: Moscow. Institut stali i splavov. Sbornik. no.40, 1962. Protsessy prokatki. 138-151

TEXT: Rolling at a temperature intermediate between room and hot rolling temperatures (warm rolling) was examined with special reference to the effects of the number of passes, reduction factor and initial strip thickness as applied to ЭИ100 (Х13Н4Г9) [EI100 (Kh13N4G9)] steel, which belongs to the austenitic-martensitic class. For comparison, the cold rolling behaviour of the same steel was also examined. To determine the optimum temperature range, specimens were also tested in a tensile machine at temperatures between 20 and 400°C. A four-high laboratory mill with working rolls of 180 and back-up rolls of 360 mm diameter and a working length of roll of 800 mm was used operating at a surface speed of 0.5 m/sec. Sheets of 2 x 45 x 250 mm were furnace heated slightly above the test temperature, measured by a

Card 1/2

thermocouple feeder. The rolling pressure was measured with universal load cells and automatically recorded. The temperature range for minimum rolling pressure coincides with that of the minimum tensile strength and extends from 130 to 310°C. The lower limit is preferable under shop conditions. Rolling from various thicknesses in a single pass and split into 10% passes has shown that warm rolling in several passes can increase the reduction by 15% compared with the maximum in cold rolling without intermediate anneal. The specific rolling pressure diminishes with increasing initial sheet thickness. Examinations of the metallographic structure, the hardness and the magnetic saturation flux density have shown that much less martensite forms in warm rolling and the cold work effect is substantially reduced. There are 12 figures.

L 11072-63 EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD

ACCESSION NR: AP3001377 S/0148/63/000/005/0129/0135

AUTHOR: Astakhov, I. G.; Krupin, A. V.; Fedosov, N. M.; Shilkov, V. B.; Pustovalov, U. V.; Kontsevaya, Ye. M.

TITLE: Specific pressure during cold rolling of alloy E1602 and steel E1962

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1963, 129-135

TOPIC TAGS: cold rolling, austenite (E1602), martensite (E1962), deformation, gage of flat product, lubrication characteristics, hardening temperature, cogging, yield strength, relative elongation

ABSTRACT: The change in specific pressure of austenite (E1602) and martensite (E1962) steel during cold rolling are examined as a function of deformation, gage of flat product, and lubrication characteristics. The influence of hardening temperature on cogging characteristics are studied at various specific pressures, and as a function of yield strength and relative elongation. Traditional rolling production practice and theory was confirmed quantitatively in measurements of change of specific pressure during cold rolling in relation to gage of flat product. Orig. art. has: 2 tables, 7 figures, and 4 references.

Moscow Inst. of Steel and Alloys

Card 1/2

T/EWP(t)/EWP(k)/EWP(b) ... AFFTC-3/ASD

AR4048249

Ref. zh. Metallurgiya, Abs. ...

Krupin, A. V.; Bernshteyn, M. L.; ...

...ffect of thermomechanical treatment on properties of ...

SOURCE: Tr. Mosk. in-ta metallurgii, Mosk. energ. in-ta i ... stali i splavov, vyp. ...

thermomechanical treatment, titanium, rolling, ...

TRANSLATION: The effect of hot rolling (300 and 500°) in conjunction with low temperature annealing on the properties of technical grade ... was studied. Samples were ... was carried out ... with shrinkage of 5, 10, and 15%. The rolled samples

1/2

[30 cited in original Ref. Zh.]

ACCESSION NR: AR4048249

were annealed for 1 hr at 250, 350, and 500°. As a result of
[illegible] mechanical treatment the strength [illegible] increased
[illegible] its properties after not [illegible] were
[illegible] not decreased. Thus, after [illegible] with shrinkage of [illegible] at 250° for
[illegible] increased from 79.5 [illegible]
[illegible] annealed. The [illegible]
[illegible] with shrinkage of [illegible] annealing at

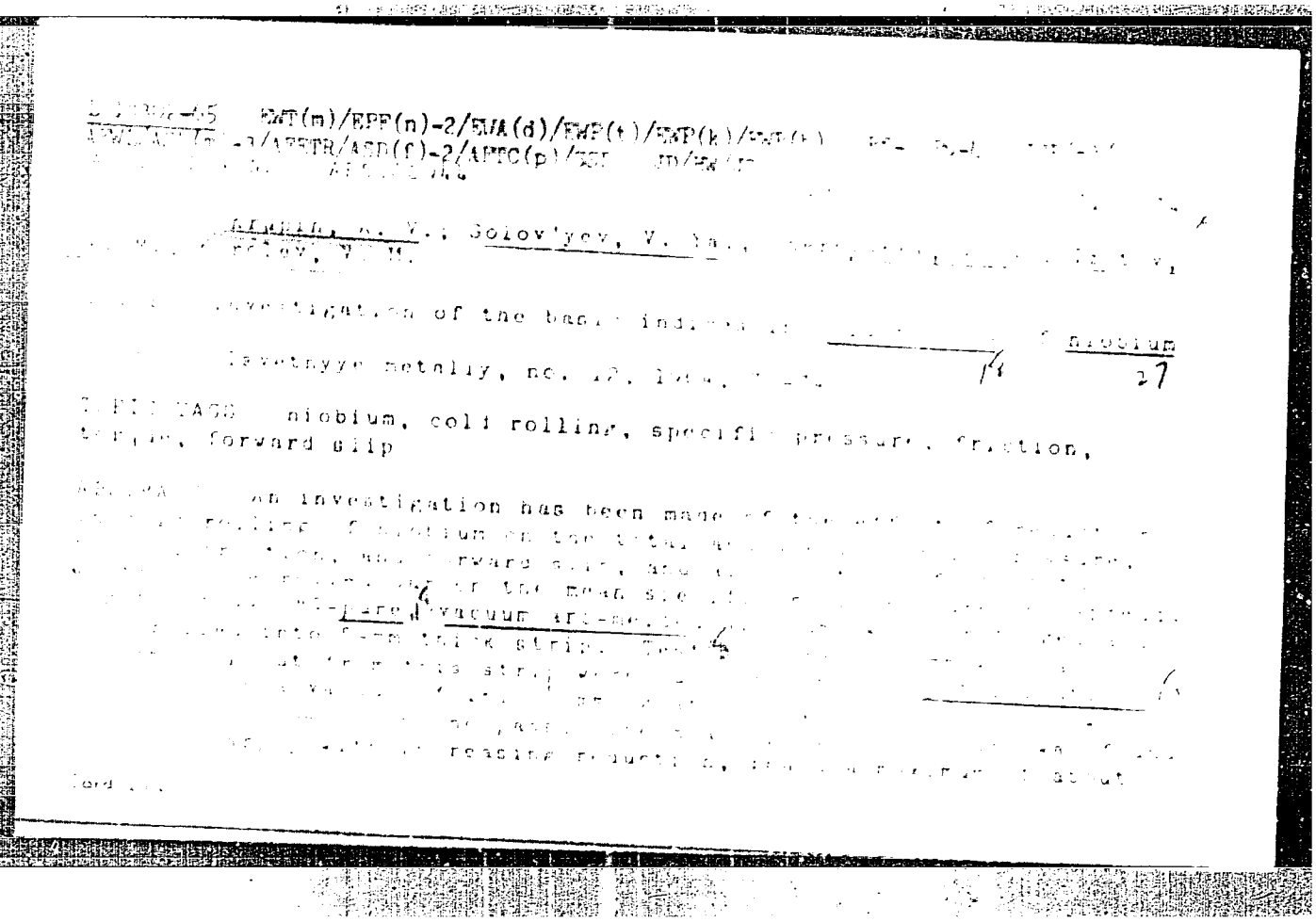
SUB CODE: MM ENCL: 00

Card 2/2

ANDRIN, A.V.; ASTAKHOV, I.G.; [illegible], V.A.; ARTEMOV, A.V.

Measuring and recording temperatures during warm rolling.
Izv. vys. ucheb. zav.; chern. met. 6 no.3:132-134 '63.
(MIRA 16:4)

1. Moskovskiy institut stali i splavov.
(Rolling (Metalwork)) (Thermocouples)



EWT(m)/EPF(n)-2/EWA(d)/EWP(t)/EWP(k)/EWT(l)

-2/APTR/ASD(f)-2/APTC(p)/ASF

Grishin, A. V.; Solov'yev, V. Ya.

Solov'yev, V. M.

Investigation of the basic indices of

niobium

Tsvetnyye metally, no. 27, 1[illegible]. 18 27

TOPIC TAGS: niobium, cold rolling, specific pressure, friction, [illegible], forward slip

ABSTRACT: An investigation has been made of the [illegible] of niobium on the basis of [illegible], and forward slip, and of the mean specific [illegible] vacuum arc-melted [illegible] into 4-mm thick strip. The [illegible] of the strip [illegible] reasing frequency [illegible]

Card [illegible]

L 18332-65

ACCESSION NR: AP5000944

kg/mm² at a reduction of 20%, and then [illegible] of the maximum value at a reduct[illegible] friction coefficient for [illegible] rolls was determined as [illegible] strip was found to have an insi[illegible] pressure. The absolute magnitude [illegible] with increasing reducti[illegible] reduction. Orig. art. has[illegible] formulas.

[illegible]: none

[illegible] 00 ENCL: 00 [illegible]: AM

[illegible] SOV: 005 OTHER: 003 ATD PRESS: 3156

Card 2/2

KRUPIN, A.V.; GORELIK, S.S.; LYASOTSKIY, I.N.

Effect of warm rolling on the structure and properties of transformer steel. Izv. vys. ucheb. zav.; chern. met. 7 no.9:137-142 '64. (MIRA 17:6)

1. Moskovskiy institut stali i splavov.

KRUPIN, A.V.; SOLOV'YEV, V.Ya.; CHERNYSHEV, V.N.; IZOTOV, V.M.; KOROLEV, V.M.

Study of basic characteristics in the process of cold rolling of niobium. TSvet. met. 37 no.12:71-74 D '64 (MIRA 18:2)

AUTHOR: Krupin, A. V.; Pavlov, I. M.; Chernyshev, V. N.;
[illegible]

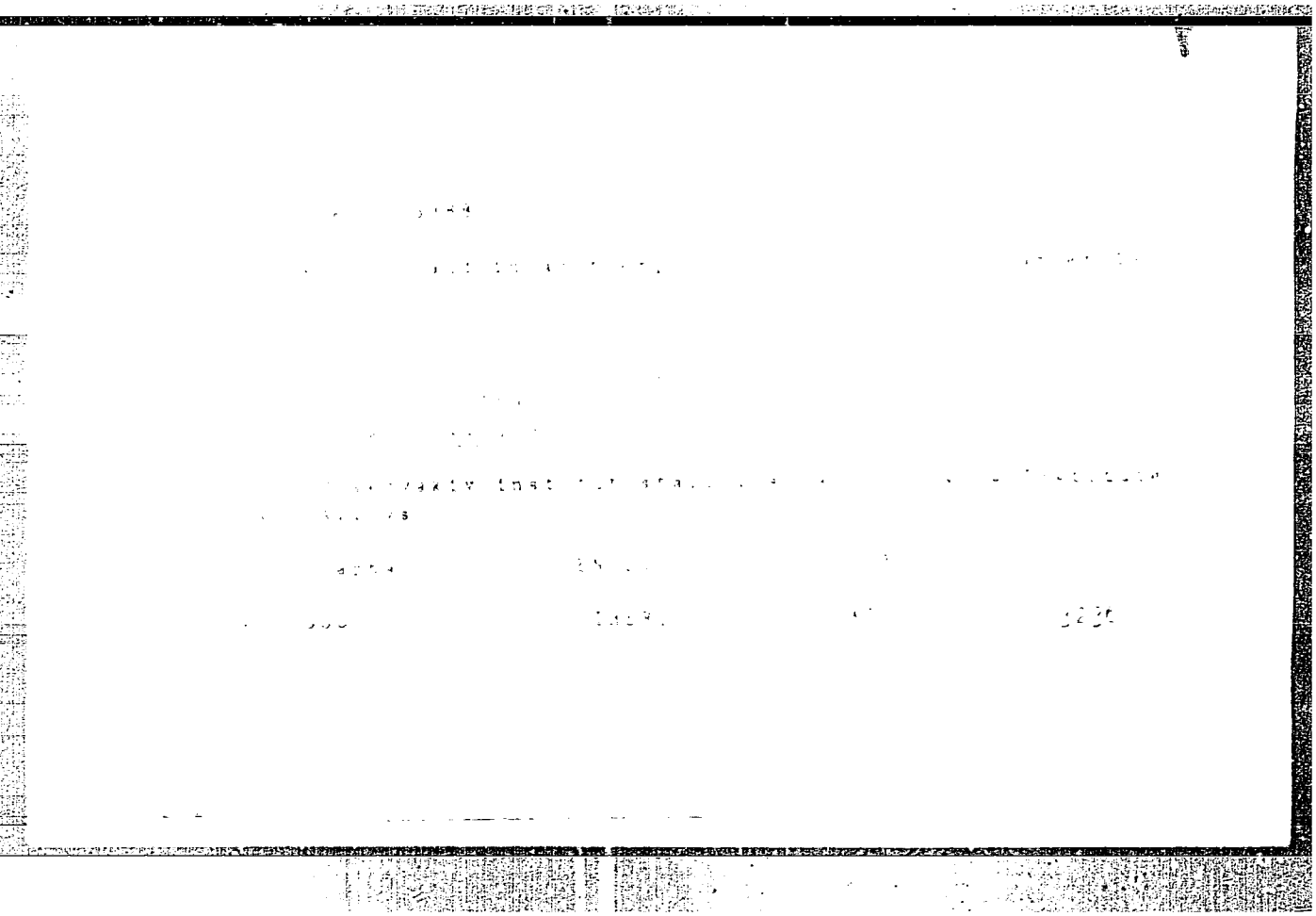
[illegible] rolling mill 210

[illegible] metallurgy [illegible]

[illegible]

ABSTRACT: The vacuum rolling plant 210 has been designed and built [illegible] Institute for Steel and [illegible] consists of [illegible], which makes it possible to heat, roll, and heat-treat metals [illegible] in a vacuum or in a [illegible]

[illegible] tested it [illegible]



L 20731-66 EWP(k)/EWA(m)/T/EWP(w)/EWP(t)/ETI IJP(c) DJ/JD/RM/JG
ACC NR: AP6017300 (A, N) SOURCE CODE: UR/0136/66/000/005/0093/0094

AUTHOR: Krupin, A. V.; Pavlov, I. M.; Linetskiy, B. L.; Chernyshev, V. N.; Zarapin, Yu. L.; Starkov, V. N.; Korchagin, P. A.; Vinogradov, V. V.; Tyukalov, T. V.

ORG: none

TITLE: Rolling of tungsten and molybdenum under conditions of low partial pressures of oxygen

SOURCE: Tsvetnyye metally, no. 5, 1966, 93-94

TOPIC TAGS: tungsten, molybdenum, hot rolling, tungsten rolling, molybdenum rolling, vacuum rolling

ABSTRACT: Tungsten and molybdenum plates (8 x 40 x 150 mm) preforged or prerolled from sintered ingots were hot rolled in air, argon containing 0.03% O_2 and 0.01% N_2, or in a vacuum of 0.1—0.005 mm Hg. Tungsten was rolled at 1200, 1300, and 1450C with reductions of 10, 20, and 30% per pass; molybdenum was rolled at 950, 1050, and 1150C with reductions of 10, 20, 30, 50, and 55% per pass. A sharp increase in the roll pressure, torque, forward slip, and friction coefficient was observed with change from air atmosphere to a pressure of 0.1 mm Hg. This was caused by increased friction. Lowering the pressure from 0.1 to 0.005 mm Hg had little or no additional effect. Increasing the rolling temperature in vacuum of 0.01 mm Hg had an insignificant effect on the specific pressure in rolling molybdenum, but appreciably

 UDC: 669.27/.28:621.771

L 29920-66

ACC NR: AP6017300

decreased the specific pressure in rolling tungsten, e.g., from 74 at 1200C to 64 and 60 kg/mm^2 at 1300 and 1450C, respectively. The specific pressure increased with increasing reduction. In rolling tungsten in a vacuum of 0.1 mm Hg, increasing the reduction from 20 to 30% led to a specific pressure increase from 74 to 91 kg/mm^2 at 1200C and from 60 to 69 kg/mm^2 at 1450C. In rolling molybdenum the specific pressure increased from 44 to 96.5 kg/mm^2 with increasing reduction from 10 to 45% at 1050C. In vacuum rolling at high temperatures and reductions a sticking of metal to the rolls was observed. In rolling of tungsten at 1450C with a reduction of 35%, an intensive sticking resulted in splitting of metal. Little or no sticking was observed at 1200C. Noticeable sticking was observed in rolling molybdenum at 1150C. [MS]

SUB CODE: 11,13/ SUBM DATE: none/ ORIG REF: 001/ ATD PRESS: 5011

Card 2/2 1E

L 45294-66 EWP(e)/EWP(v)/EWT(d)/EWT(m)/T/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l) IJP(c)
ACC NR: AR6017489 JD/HW/JG/AT/WH SOURCE CODE: UR/0137/66/000/001/D024/D024

AUTHORS: Pavlov, I. M.; Krupin, A. V.; Chernyshev, V. N.; Bogolyubov, V. S.; Linetskiy, B. L.

67
B

TITLE: Devices for working refractory metals in vacuum and in inert media

SOURCE: Ref. zh. Metallurgiya, Abs. 1D170

REF SOURCE: Tr. Mosk. in-ta stali i splavov i Mosk. energ. in-ta, vyp. 61, ch. 2, 1965, 89-94

TOPIC TAGS: physical metallurgy, metal rolling, rolling mill, refractory metal

ABSTRACT: Problems associated with rolling some metals in a vacuum are discussed. Special types of mills used in vacuum rolling and the technique of rolling some refractory metals are described. A. Leont'ev [Translation of abstract]

SUB CODE: 11

Card 1/1

UDC: 669.621.771.27

L 07979-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/JG/WB

ACC NR: AT6022710 SOURCE CODE: UR/2848/66/000/041/0196/0204

AUTHORS: Krestovnikov, A. N.; Krupin, A. V.; Linetskiy, B. L.; Chernyshev, V. N.; Bogolyubov, V. S. 7/10

ORG: Moscow Institute of Steel and Alloys, Department of Technology and Automation of the Rolling Industry (Moskovskiy institut stali i splavov, Kafedra tekhnologii i avtomatizatsii prokatnogo proizvodstva)

TITLE: Thermodynamic analysis of the conditions of nonoxidizing rolling of tungsten in a vacuum at high temperatures 27

SOURCE: Moscow. Institut stali i splavov. Sbornik, no. 41, 1966. Fizicheskaya khimiya metallurgicheskikh protsessov i sistem (Physical chemistry of metallurgical processes and systems), 196-204

TOPIC TAGS: tungsten, tungsten compound, tungsten containing alloy, tungsten alloy, THERMODYNAMIC ANALYSIS, METAL ROLLING, METAL OXIDATION

ABSTRACT: Thermochemical calculations of tungsten behavior at various temperatures and residual pressures and conditions under which oxidation cannot occur are presented. The thermodynamic calculations for the oxidation reactions which form WO_3, W_2O_5, and WO_2 are given for temperatures 1200--1600C, and the thermodynamic characteristics (as well as enthalpy and entropy) are tabulated for the tungsten oxides over the temperature range 1473--1873K. The characteristic temperatures of the oxides are given and

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the Debye functions for tungsten and oxygen in W_2O_5 are tabulated. Based on this data, curves of the isobaric potentials for oxide formation and of the equilibrium pressures of oxygen as a function of temperature are constructed as shown in Figs. 1 and 2.

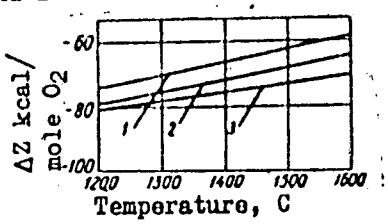


Fig. 1. Isobaric potentials of oxide formation: 1 - WO_3; 2 - WO_2; 3 - W_2O_5.

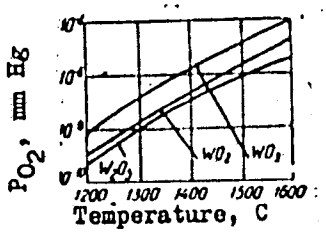


Fig. 2. Dissociation constants of tungsten oxides.

It is concluded that rolling of tungsten in a vacuum to prevent oxidation is feasible. Orig. art. has: 9 tables, 12 formulas, and 2 figures.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 003

L 07979-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/JW/WB

ACC NR: AT6022710 SOURCE CODE: UR/2648/66/000/041/0196/0204

AUTHORS: Kreatovnikov, A. N.; Krupin, A. V.; Linetskiy, B. L.; Chernyshev, V. N.; Bogolyubov, V. S. 71 70 B+1

ORG: Moscow Institute of Steel and Alloys, Department of Technology and Automation of the Rolling Industry (Moskovskiy institut stali i splavov, Kafedra tekhnologii i avtomatizatsii prokatnogo proizvodstva)

TITLE: Thermodynamic analysis of the conditions of nonoxidizing rolling of tungsten in a vacuum at high temperatures 27

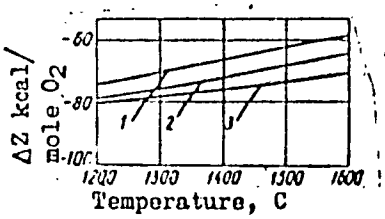
SOURCE: Moscow. Institut stali i splavov. Sbornik, no. 41, 1966. Fizicheskaya khimiya metallurgicheskikh protsessov i sistem (Physical chemistry of metallurgical processes and systems), 196-204

TOPIC TAGS: tungsten, tungsten compound, tungsten containing alloy, tungsten alloy, THERMODYNAMIC ANALYSIS, METAL ROLLING, METAL OXIDATION

ABSTRACT: Thermochemical calculations of tungsten behavior at various temperatures and residual pressures and conditions under which oxidation cannot occur are presented. The thermodynamic calculations for the oxidation reactions which form WO_3, W_2O_5, and WO_2 are given for temperatures 1200--1600C, and the thermodynamic characteristics (as well as enthalpy and entropy) are tabulated for the tungsten oxides over the temperature range 1473--1073K. The characteristic temperatures of the oxides are given and

Card 1/2

the Debye functions for tungsten and oxygen in W_2O_5 are tabulated. Based on this data, curves of the isobaric potentials for oxide formation and of the equilibrium pressures of oxygen as a function of temperature are constructed as shown in Figs. 1 and 2.



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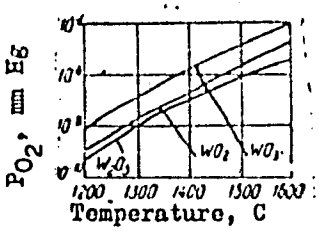

Fig. 2. Dissociation constants of tungsten oxides.

It is concluded that rolling of tungsten in a vacuum to prevent oxidation is feasible. Orig. art. has: 9 tables, 12 formulas, and 2 figures.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 003

Card 2/2

[redacted], A. T.

Mechanical equipment for enterprises of the dairy industry Moskva, Pishchepromizdat, 1953. 594 p. (55-20676)

SF247.K7

KRUPIN, G.V., kand. tekhn. nauk.

Thermal effects in a homogenizer. Trudy LTIKHP 5:128 '54.
(Liquids) (Dairy industry--Equipment and supplies) (MIRA 11:3)

KHUPIN, G.V., kand.tekhn.nauk, dots.

Technical and economic analysis of mechanical systems in plants of the milk industry. Trudy LTIKHP 6:110-116 '54. (MIRA 11:5)
(Milk industry--Equipment and supplies)

KR[illegible], G.V., kandidat tekhnicheskikh nauk.

Standardization of the Maleshin butter making process. Trudy LTIKHP 7:65-70 '55. (MLRA 10:9)

1. Kafedra oborudovaniya predpriyatiy molochnoy promyshlennosti. (Butter)

KRIPIN, G. V., kandidat tekhnicheskikh nauk.

First stage in the organization of the dairy industry of the U.S.S.R. (1917-1924). Moloch. prom. 18 no.6:3-6 '57. (MLRA 10:6)
(Dairy industry--History)

G. W. Krupin, "On the Production from Machines."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.

KRUPIN, G.V.; BELYAYEV, I.T.; LAPSHIN, A.A.; GORDEYEV, N.I.; MAR'YANOV-SKIY, I.M.; PAVLOV, B.V.; ZHILOV, S.N.; TSYPKIN, S.I.; ANDREYEV, N.N.; KAZIMOROVA, V.F.; KURANOVA, I.L.; PIGULEVSKIY, G.V.

Annotations of the scientific research work performed at the institute in 1957. Trudy LTIKHP 15:213-227 '58.
(MIRA 13:4)

1. Leningradskiy tekhnologicheskiy institut kholodil'noy promyshlennosti. 2. Kafedra tekhnologicheskogo oborudovaniya pishchevykh proizvodstv (for Krupin, Lapshin, Pavlov). 3. Kafedra ekonomiki i organizatsii proizvodstva (for Belyayev). 4. Kafedra detaley mashin i pod"yemno-transportnykh mashin (for Gordeyev). 5. Kafedra grafiki (for Mar'yanovskiy). 6. Kafedra promyshlennoy teplotekhniki (for Zhilov). 7. Kafedra fiziki (for TSypkin). 8. Kafedra fizicheskoy kolloidnoy i organicheskoy khimii (for Andreyev, Kazimirova, Kuranova, Pigulevskiy).
(Refrigeration and refrigerating machinery)
(Chemistry, Technical)

PHASE I BOOK EXPLOITATION SOV/4535

Vsesoyuznoye soveshchaniye po osnovnym problemam teorii mashin i mekhanizmov. 2d, Moscow, 1958

Teoriya mashin avtomaticheskogo deystviya i teoriya tochnosti v mashinostroyenii i priborostroyenii; sbornik statey (The Theory of Automatic Machines and the Theory of Precision in the Manufacture of Machinery and Instruments; Collection of Articles) Moscow, Mashgiz, 1960. 218 p. (Series: Its: Trudy [tom 3]) Errata slip inserted. 3,000 copies printed.

Sponsoring Agency: Institut mashinovedeniya Akademii nauk SSSR.

Editorial Board: I.I. Artobolevskiy, Academician, (Resp. Ed.), S.I. Artobolevskiy, Professor, Doctor of Technical Sciences, G.G. Baranov, Professor, Doctor of Technical Sciences, A.P. Bessonov, Candidate of Technical Sciences, V.A. Gavrilenko, Professor, Doctor of Technical Sciences, A. Ye. Kobrinskiy, Doctor of Technical Sciences, N.I. Levitskiy, Professor, Doctor of Technical Sciences, and L.N. Reshetov, Professor, Doctor of Technical Sciences, Ed.: V.V. Bystritskaya, Engineer; Tech. Ed.: B.I. Model'; Managing Ed. for Literature on General Technical and Transport Machine Building (Mashgiz): A.P. Kozlov, Engineer.

PURPOSE: This collection of articles is intended for engineers and designers, workers at scientific-research institutes, and instructors at schools of higher technical education.

COVERAGE: The collection contains discussions of precision problems in the manufacture of machines and instruments, the general theory of automatic production machines, and calculation methods for automatic production machines with programmed control. The conference at which these reports were presented was called by the Institute of the Science of Machines of the Academy of Sciences, USSR, and was held in Moscow March 24-28, 1958. The transactions of this conference have been published in 4 volumes of which the present collection is the third. No personalities are mentioned. There are no references, all Soviet.

4.	Kanyavskyy, S.I., M.V. Medvid', and V.F. Preys [Candidates of Technical Sciences]. Problems in the Theory of Automatic Loading of Machine Tools and Presses by Piecework Intermediate Products	42
5.	Kletanov, M.K. Kinematic and Dynamic Investigations of Mechanisms for Feeding Rods to Automatic Machines	71
6.	Klusov, I.A. Investigation of the Incompatibility of the Cycle Diagrams of a Six-Position Automatically Controlled Sorter	80
7.	Krupin, G.V. [Candidate of Technical Sciences]. Some Problems in the Productive Capacity of Machines	88
8.	Trenaner, G. [Doctor, Professor, Dresden]. Theory and Investigations of Automatically Operating Machines	94
9.	Shekhvits, E.I. [Candidate of Technical Sciences]. Systems for Controlling and Driving Mechanisms with Periodic Adjustments in Automatic Machines	104
11.	Glatilin, A.G. [Engineer]. Calculation of Tolerances for a Given Precision of a Device	135
12.	Golinkevich, T.A. [Candidate of Technical Sciences] Some Problems in Calculating the Precision of Complex Computing Devices	152
13.	Dostupov, B.G. [Doctor of Technical Sciences]. On Estimating the Accuracy of Analog Computers Designed for the Solution of Ordinary Differential Equations	158
14.	Tranlain, A.I. [Candidate of Technical Sciences]. Problems of Measuring Technique in Machine Manufacture Which Can be Solved on the Basis of the Theory of Precision of Mechanisms	169
15.	Mikhaylov, Ye. A. [Engineer]. On Increasing the Accuracy of Mechanisms by the Method of Adjustment	183
16.	Livshits, G.A. [Candidate of Technical Sciences]. Defects in Turbine Reduction Gears as Exciters of Vibration and Noise in Turbogear Assemblies	197
17.	Sergeyev, V.I. [Candidate of Technical Sciences]. On the Design of Automatized Bridge Computers	208

AVAILABLE: Library of Congress (TJ1185.V8 1958)

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12-30-60

KRUPIN, G.V.

KRUPIN, Grigoriy Vasil'yevich, prof.; VASIL'YEV, P.V., inzh., retsenzent; BOUSHEV, T.A., kand. tekhn. nauk, red.; SIMONOVSKIY, N.Z., red. izd-va; PETERSON, M.M., tekhn. red. (MIRA 15:10)

[Processing equipment for the manufacture of protein dairy products]Tekhnologicheskoe oborudovanie dlia proizvodstva belkovykh molochnykh produktov. Moskva, Mashgiz, 1962. 256 p. (MIRA 15:10)

(Dairy plants—Equipment and supplies)

KRUPIN, G.V., prof.; LUK'YANOV, N.Ya., dots.; TARASOV, F.M., dots.; BOUSHEV, T.A., dots.; SHUVALOV, V.N., dots.; VASIL'YEV, P.V., inzh.; KUZNETSOV, V.I., inzh., retsenzent; SURKOV, V.D., prof., retsenzent;

[Technological equipment of dairy industry enterprises] Tekhnologicheskoe oborudovanie predpriiatii molochnoi promyshlennosti. [By] G.V Krupin dr. Izd. 3., perer. Moskva, Izd-vo "Mashinostroenie," 1964. 355 p. (MIRA 17:8)

1. Kafedra tekhnologii moloka Moskovskogo tekhnologicheskogo instituta myasnoy i molochnoy promyshlennosti (for Surkov).

KRUPIN, Grigoriy Vasil'yevich, prof.; KHAN, Kharlampy Kharitonovich, inzh. Prinimali uchastiye: RYABIKOV, V.F.; LEVIN, B.K.; DEDYULIN, N.D., retsenzent; GATILIN, N.F., retsenzent; KUZ'MINA, V.S., red.

[Designing enterprises of the dairy industry] Proektirovanie predpriiatii molochnoi promyshlennosti. Moskva, Pishchevaia promyshlennost', 1964. 399 p. (MIRA 18:3)

KRUPIN, I. P.

Krupin, I. P.

"The theoretical principles and methods of carrying out a single technological process in river transportation." Min River Fleet USSR. Administration of Educational Institutions. Gor'kiy Inst of Water Transport Engineers. Gor'kiy, 1956. (Dissertation for the Degree of Candidate in Technical Sciences).

Knizhnaya letopis'
No. 25, 1956. Moscow

KHUPIN, L.

Improve the design and manufacture of the No. 7 blower and the sluice. Muk.-elev. prom. 21 no.5:31 My '55. (MLRA 8:9)

1. Kirovogradskiy oblmel'trest. (Pneumatic-tube transportation)

14(5) SOV/127-59-2-6/21

AUTHORS: Pisanets, Ye.P., Engineer at the Lebedinskiy Mine, Krupkin, L.V. and Unkovskaya, N.F.

TITLE: On the Experiences of Mine-Drainage at Lebedinskiy Mine (Opyt vodoponizheniya na Lebedinskom rudnike)

PERIODICAL: Gornyy zhurnal, 1959, Nr 2, pp 27-34 (USSR)

ABSTRACT: The article is divided into 5 subtitles: introduction; geological structure and hydrogeological conditions; work projects and drainage scheme; hydrogeological conditions resulting from drainage operations; conclusions. The conclusions of the authors are as follows: 1) the experience in the Lebedinskiy mine (operations started in 1956; drainage operations at the end of October 1957) proved the success of the deep-drainage system which is followed by the utilization of the water collected in drainage shafts for useful work in exploitation work; 2) floating dredgers must only help remove water covering the open space of the foundation pit, and must not work to remove stationary subsoil

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On the Experiences of Mine-Drainage at Lebedinskiy Mine

waters; 3) floating dredgers proved inconvenient in the final period of operations; 4) the drainage system must not be installed on the very flanges of the open pit; 5) hydrogeological service must be intensified. The Lebedinskiy ore area covers 2.5 km^2. The deposit lies 55 to 110 m underground and its mean thickness is 21 m. There are 2 wet strata, one of them standing under 10 to 12 atm pressure. The filtration coefficient of the ore stratum is about 1.0 m/24 hours. Depth-pumps used at the Lebedinskiy mine are of the ATN-10 type. Drain shafts form a complete ring around the ore deposit and are bored 32 m from each other. An underground pump station will be equipped with 10 pumps of the 10-NMK-2 type having 10,000 cu m/h capacity each. Quaternary sediments are being moved by GMN-250 monitors and by 12-R-7 hydromonitors. Their common front of operations is about 900 m long. The excavators operating on the site are of the EKG-4 type, one is of the ESh-4/40

On the Experiences of Mine-Drainage at Lebedin[redacted]

type. The authors complain that drainage operations are much too slow in comparison with other work. Forty-five drain shafts were working at the end of June 1958. The efficiency of these shafts was 55 to 60 cu m/h, for a combined total of 2,600 cu m/h. Two dredgers are working in the pit. The capacity of the first is 500 to 800 cu m/h. The total volume of pumped-out stationary waters was 1.77 million cu m. Actual operations induced the engineers to introduce rather serious changes into the original plans, e.g. the work done by the drain shafts took 8 months instead of 2 as had been scheduled. There are 2 graphs, 1 table, 1 schematic diagram, 1 chart and 1 Soviet reference.

ASSOCIATION: Institut gornogo dela AN SSSR (Institute of Mining attached to the Soviet Academy of Sciences)

KRUPIN, N. V.

"The Boxes of the Glass and Paper Instead of Petri Dishes," Zhur. Mikrobiol., Epidemiol. i Immunobiol., Nos.1-2, 1944

Sverdlovsk Inst. Epdiemiol. and Microbiol.

KRUPIN, N. V.

PA 44/49T68

USSR/Medicine - Microbiology Jul/Aug 48
Medicine - Gramicidin S, Effect

"Influence of Gramicidin S on the Morphology and Physiology of Microbes: II, Influence of Gramicidin S on Pigment Formation in Staphylococci," N. V. Krupin, Inst of Microbiol and Epidemiol, Chair of Microbiol, Med Inst, Sverdlovsk, 2½ pp

"Mikrobiologiya" Vol XVII, No 4

Reveals that gramicidin in subbacteriostatic doses does not inhibit pigment formation in staphylococci, but on the contrary this process becomes very active in presence of smaller

[redacted]

44/49T68

USSR/Medicine - Microbiology (Contd) Jul/Aug 48

quantities of gramicidin. Stimulating influence of subbacteriostatic doses of gramicidin on pigment formation is apparently indirect. This is characterized by an indirect action which inhibits reproduction microbes. Table shows effect of gramicidin on pigment formation. Submitted 28 Feb 48.

For 44/49T69: last page!

[redacted]

44/49T68

KRUPIN, P.

Disseminating information through the lecture method in the all-Union Volunteer Society for Assistance to the Army. Voen. znan 25 no.1:16-17 Ja '49. (MIRA 12:12)

(Military education)