On Certain Properties of Functions With Limited Boundary Rotation. II.

Three theorems have been derived. Theorem Nr 1. - When depicting the unit circle by functions represented by (1), the curvative fluctuation $\omega K(ze^{i\vartheta})$ at any value ϑ from the segment $[-\pi,\pi]$ satisfies the inequalities

$$\omega K(r)_{min} \leqslant \omega K(ze^{i\vartheta}) \leqslant \omega K(r)_{max}$$

Theorem Nr. 2 - When depicting the unit circle by functions (1), the value of $[f'(z)]+[f(-z)]$ satisfies the inequalities

$$\frac{2(1-z^2)^{\frac{\alpha}{2\pi}-1}}{(1+z)^{\frac{\alpha}{2\pi}+1}} \leqslant [f'(z)]+[f(-z)] \leqslant \frac{(1-z)^{\frac{\alpha}{2\pi}-1}}{(1+z)^{\frac{\alpha}{2\pi}+1}} \cdot \frac{(1+z)^{\frac{\alpha}{2\pi}-1}}{(1-z)^{\frac{\alpha}{2\pi}+1}}$$

Card 3/5

SOV/21-59-10-3/26

On Certain Properties of Functions With Limited Boundary Rotation. II.

Theorem Nr. 3 - When depicting the unit circle by functions represented by (1), the length of the circumference countour $|z| = r$ satisfies the inequality

$$L < 2\pi \cdot \frac{(1+z)^{\frac{\lambda}{2\pi}-1}}{(1-z)^{\frac{\lambda}{2\pi}+1}}, \quad 0 < z < 1.$$

Card 4/5 There are 4 references, 2 of which are Soviet, 1 Rumanian and 1 Finnish.

SOV/21-59-10-3/26

On Certain Properties of Functions With Limited Boundary Rotation. II.

ASSOCIATION: Zaporiz'kyy Mashynobudivnyy Instytut (Zaporozh'ye Machine Building Institute)

PRESENTED: By B.V. Hnyedenko, Member of the AS UkrSSR

SUBMITTED: February 24, 1959

Card 5/5

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031610013-5

MAKMAK, K.M.

(MIRA 18:4)

BALAKIRSKAYA, R.R.; BATALIK, B.S.; NEL'SON, R.A.; MAKMENKO, V.V.

Investigating the influence of chilling on the phase composition and structure of clinkers. Nauch. trudy PermNIUI no.5:95-102 '63. (MIRA 18:3)

CA MAKO, E.

11B

A new method for the preparation of lung thrombokinase. Béla Fiam and Éva Makó. (Univ., Budapest, Hung.). *Kisérletes Orvostudomány* 2, 155–6(1950).—Grind 100 g. fresh cattle lung with an ordinary meat grinder, shake with 100 ml. physiol. NaCl soln. for 30 min., filter through gauze, press out juice, with cryst. $CaCl_2$ adjust to a 0.35 satn., place on water bath at 60°, cool with 0.5 g. liquid CO_2, centrifuge after 30 min., and filter. The product is about 50 ml. liquid with an 18–25 sec. thrombokinase activity, storable at room temp. for 24 hrs., and suitable for the detn. of prothrombin time. István Pinály

FIAM, B.; KEMENY, T.; MAKO, E.

Effect of thrombin preparations upon tissues. Orv.hetil. 91 no.18: 553-555 30 Ap '50. (CLML 19:2)

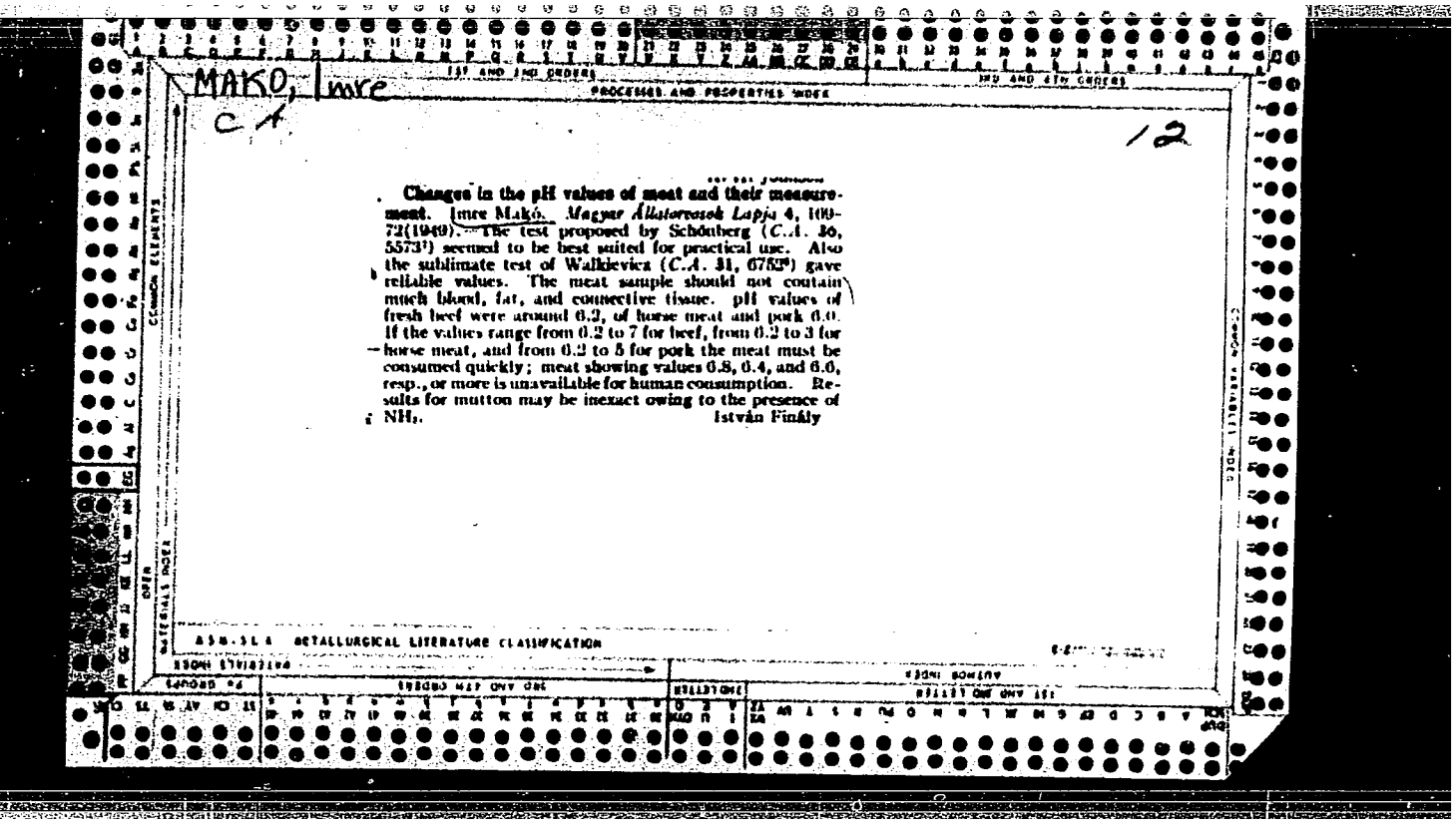
1. Pathophysiological Institute, Budapest University.

MAKO, E. 1951

(Pathophysiol Inst. U. of Budapest)

"The Thrombin Cycle."

Acta Physiol (Budapest), 1951, 2/1 suppl (22)
No. Abst. in Exc. Med.



MAKO, Imre

C A

12

Changes in the pH values of meat and their measurement. Imre Makó. *Magyar Állatorvosok Lapja* 4, 109-72(1949). The test proposed by Schönberg (*C.A.* 36, 5573[3]) seemed to be best suited for practical use. Also the sublimate test of Walkievica (*C.A.* 31, 6782[9]) gave reliable values. The meat sample should not contain much blood, fat, and connective tissue. pH values of fresh beef were around 6.2, of horse meat and pork 6.0. If the values range from 6.2 to 7 for beef, from 6.2 to 3 for horse meat, and from 6.2 to 5 for pork the meat must be consumed quickly; meat showing values 6.8, 6.4, and 6.6, resp., or more is unavailable for human consumption. Results for mutton may be inexact owing to the presence of NH_3. István Finály

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

FD-1571

USSR/Agriculture

Card 1/1 : Pub. 42-3/11

Author : Redei, D; D'yerffi, B.; Mako, I.; and Barotsi, Ye.

Title : Transformation of winter wheat into spring [wheat]

Periodical : Izv. AN SSSR. Ser. biol. 5, 46-54, Sep-Oct 1954

Abstract : Reviews Hungarian literature (1842 to present) in this field and gives results of experimental investigation of possibility of transforming winter wheat into spring wheat by planting seeds of winter wheat (previously sown only in fall) each spring and also sowing each spring thereafter seeds obtained in previous harvests. Two varieties of winter wheat were used: Bankuti 1201 and Al'ton. Experiments lasted from 1948 to 1953. Tables; photographs; sketches. Eight references, all USSR (1 since 1940).

Institution : Institute of Genetics, Hungarian Academy of Sciences, Budapest

Submitted : April 5, 1954

HUNGARY / General and Specialized Zoology. Insects. Pests of Products and Manufactured Articles of Animal and Vegetable Origin. P

Abs Jour : Ref Zhur - Biologiya, No 16, 1958, No. 73710

Author : Mako, Imre; Mehes, Gyorgy; Hertelendy, Gyorgy
Inst : Not given
Title : Control of Arthropoda with Ethylene Oxide in a Sausage Factory

Orig Pub : Magyar allatorv. lapja, 1957, 12, No 4 - 5, 121-124

Abstract : In order to destroy Tyroglyphus siro mites which had greatly propagated because smoked sausage was kept too long and had produced damage, fumigation with ethylene oxide was used.

Card 1/1

HUNGARY

MEHES, Gyorgy, Dr, director-chief veterinary, MAKO, Imre, Dr, veterinary specialist in charge of the laboratory; Veterinary Control Service of the Meat Industry (director: MEHES, Gyorgy, Dr) (Husipari Allatorvosi Ellenorzo Szolgalat).

"Reconstructions in Slaughterhouses II."

Budapest, Magyar Allatorvosok Lapja, Vol 22, No 1, Jan 67, pages 35-39.

Abstract: [Authors' English summary modified] The water used in slaughterhouses must be of drinking quality. Thermal fountains are advantageous both from the hygienic and economic point of view. Because of infection and a high organic material content, the collection and treatment of waste water is a great problem in the slaughterhouses. Mechanical, chemical or biological methods, or a combination of these must be used to purify it. Good illumination is essential to prevent accidents, for meat control, cleanliness and effective work. In addition to daylight, artificial lighting should be strong and free of disturbing shadows, it must be reliable, uniform and its spectral composition must approach that of daylight. Natural and mechanical ventilation as well as favorable climatic conditions are also important in the interest of the workers' health and of meat control. Automatically adjusted air conditioning equipments have already been introduced in foreign countries. Slaughterhouse workers must of course be subjected to a special examination from the standpoint of public health in accordance with the requirements for such type of work. No references.

Rédei, G.

Spring wheat from winter wheat. G. Rédei, B. Győrffy, V. Mako, and K. Jarocky (*Növénytermelés*, 1953, **2**, 217–237).—Experiments with winter wheat sown in spring for several years are described. Most of the winter varieties sown in spring ripened in autumn, and the % of successfully wintering plants from generations sown in spring decreased gradually showing loss of winter wheat characteristics. Changes of characteristics and morphological differences between the spring and autumn generations of the same varieties are discussed. (63 references.)

S. K. Lachowicz.

(3)

TOMASCHEK, Zoltan, a muszaki tudomanyok kandidatusa; MAKO, Zoltan; MAGYAR, Laszlo; VAMBERI, Lorinc; KONCZ, Istvan

Properties of the titanium getter and its use in electronic tubes of great specific loading; also, remarks by Z.Mako and others. Muszaki kozl MTA 26 no.1/4:219-220 '60. (EEAI 9:10)

1. Hiradastechnikai Kutato Intezet (for Tomaschek)
(Electron tubes) (Titanium)

MAKO, Zoltan

Formation of the Sopron Scientific Society for Telecommunication.
Hir techn 14 no.5:183 O '63.

1. "Hiradastechnika" szerkeszto bizottsagi tagja.

KOZLIK, Vl.; MOUCKA, J.; MAKOC, Z.

Some pharmacological properties of d-cycloserine and dl-cycloserine. II. Cesk. farm. 12 no.2:78-84 F '62.

1. Statni ustav pro kontrolu leciv, Praha -- Ustav leteckeho zdravotnictvi, Praha.
(CYCLOSERINE) (PHARMACOLOGY) (MICE) (RATS)
(GUINEA PIGS) (DOGS) (ELECTROCARDIOGRAPHY)

BORODYNYA, I.V., kand. veter. nauk; MAKODA, N.G., veterinarnyy vrach

Tactile-cervical method of artificial insemination of cows. Veterinariia 42 no.12:75-77 D '65. (MIRA 19:1)

1. TSentral'naya opytnaya stantsiya iskusstvennogo osemeneniya sel'skokhozyaystvennykh zhivotnykh Ukrainskoy SSR.

MAKODZEBA, I. A. ; YANITSK, I.Y.V.I.

42441. Uglubleniye pakhotnogo slo. ya pochvy v travopol'nom sevooborote V SB: Osnovnyye vyvody po polevym opytham ZA 1945-1947 GG (Ukr. Nauch.-Issled. In-T Zernovogo Khoz-Va Im. kuybysheva. Ernst opyt. pole.) Dnepropetrovsk, 1948, S. 31-35.

MAKODZEBA, Ivan Afans'yevich

[Deep plowing of Chernozem soils] Glubokaia vspashka chernozemnykh pochv. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1956. 107 p.
(Plowing) (Chernozem soils) (MLRA 10:2)

MAKODZEVA, I.A., kandidat sel'skokhozyaystvennykh nauk; PODOPRIGORA, V.S.

A promising preparation for controlling weeds of the grass family. Zemledelie 4 no.5:119-120 My '56. (MLRA 9:8)

1. Ukrainskiy nauchno-issledovatel'skiy institut zernogo khozyaystva.

(Herbicides) (Carbanilic acid)

USSR/Weeds and Weed Control. N

Abs Jour : Ref Zhur Biol., No 18, 1958, 82638

Author : Larionov, D.K., Makodzeba, I.A.
Inst : -
Title : Weeds and Their Control.

Orig Pub : Kiiv, Derzhsil'gospvidav, URSR, 1957, 236, stor., il., 8 r 50 k.

Abstract : No abstract.

Card 1/1

AUTHORS: Kudzin, Yu. K., Makodzeba, I. A. 20-119-3-60/65

TITLE: The Content and Dynamics of the Soluble Carbohydrates in the Organs of the Vegetative Propagation of the Pinkred Succory (Acroptilon picris Cam) (Soderzhaniye i dinamika rastvorimykh uglevodov v organakh vegetativnogo razmnozheniya gorchaka rozovogo (Acroptilon picris CAM))

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 3, pp. 606-608 (USSR)

ABSTRACT: The pinkred succory is one of the worst species of the weed flora and occurs in several southern and southeastern districts of the USSR (Ref. 1,3). So far there are no effective control measures against it. The applied methods (ref. 2-7) do not always offer satisfying success. For the purpose of improving the control measures the data mentioned in the title ought to be known, which are lacking in publications. The authors carried out their investigations in the region of Kherson in the years 1955-1956 in the following variants: 1) The piece of land uncultivated in the experimental year; 2) Fallow ground with normal cultivation; 3) Fallow ground, on which prospering rosettes of succory were extirpated. The succory in the underground organs accumulates a considerable quantity of carbohydrates

Card 1/3

which convert into alcohol and hot water extract. Starch is lacking. The quantity and relation of these carbohydrates is not constant and depends on the season. (Table 1). The relative quantity of the soluble carbohydrates increases to a certain degree with deeper penetration of the roots. Table 2 brings data on the distribution in this respect. The results of analyses to a certain degree explain the causes for the succory's tenacity of life, its capability of developing overground organs even after a very deep cutting through of the roots and they give evidence of a very good storage of carbohydrates by the plants during winter. The measures of cultivating the piece of landovergrown with weeds have a great influence on the dynamics of the storage. Without cultivation (figure 1) 2 peaks are clearly distinguished, in which the soluble carbohydrates are stored in the roots: a) before the blossom, b) toward the begin of the hibernation. A systematical exstirpation of the prospering rosettes leads to a rapid decrease of the content of soluble carbohydrates in the roots, not though to their complete exhaustion. Therefore the systematical soil cultivation against the succory can never become

The Content and Dynamics of the Soluble Carbohydrates in the Organs of the Vegetative Propagation of the Pinkred Succory (Acroptilon picris Cam) 2o-119-3-6o/65

effective enough. At the same time it is recognized that even a very intensive soil cultivation lasting for 1 year does not lead to a complete exhaustion of the underground organs of the succory. There are 1 figure, 3 tables, and 7 references all of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V. I. Lenina (All-Union Scientific Research Institute for Corn of the All-Union Academy of Agricultural Sciences imeni V. I. Lenin)

PRESENTED: December 2o, 1957 by A. L. Kursanov, Member, Academy of Sciences, USSR

SUBMITTED: March 1, 1957

AVAILABLE: Library of Congress

Card 3/3

MAKODZEBA, I.A., kand. sel'skokhoz. nauk; PODOPRIGORA, V.S.

New herbicides for controlling weeds on corn fields. Dokl. Akad. sel'khoz. 24 no.4:19-23 '59. (MIRA 12:6)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy. Predstavlena chlenom-korrespondentom Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I. Lenina D.S. Filevym.
(Herbicides) (Corn (Maize)—Diseases and pests)

MAKODZEBA, I.A., kand.sel'skokhoz.nauk; FISYUNOV, A.V., aspirant

Sensitivity of corn to simazine. Zashch.rast.ot vred.i bol. 5 no.7:30 Jl '60. (MIRA 16:1)

1. Vsesoyuznyy institut kukuruzy, g. Dnepropetrovsk.
(Corn (Maize)) (Triazine)

PROKAPALO, I.S., kand. sel'khoz. nauk; TREGUBENKO, M.Ya. [Trehubenko, M.IA.], kand. sel'khoz. nauk; ARTYUKHOV, Y.K., kand. sel'khoz. nauk; KRYACHKO, P.G.[Kriachko, P.H.], st. nauchn. sotr.; MAKODZEBA, I.O., kand. sel'-khoz. nauk; SIDENKO, I.O., kand. biol. nauk; SUSIDKO, P.I., kand. biol. nauk; REPIN, A.M.[Riepin, A.M.], kand. sel'khoz. nauk; LOGACHOV, M.I.[Lohachov, M.I.], kand. sel'khoz. nauk; OSTAPOV, V.I., kand. sel'khoz. nauk; ZAPOROZHCHENKO, O.L., kand. sel'kh.nauk; FLYAGIN, A.D.[Fliahin, A.D.], kand. ekon. nauk; KANIVETS', I.D., st. nauchn. sotr.; SKRIPNIK, P.S.[Skrypnyk, P.S.], red.; GULENKO, O.I. [Hulenko, O.I.], tekhn. red.

[Advanced practices in growing corn] Peredovi metody vyroshchuvannia kukurudzy. 2., perer. i dop. vyd. Kyiv, Derzhsil'hospvydav, URSR, 1962. 231 p. (MIRA 17:1)

MAKODZEBA, I.A.; FISYUNOV, A.V.

Fecundity of some weeds. Bot. zhur. 47 no.9:1358-1362 S '62.
(MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy, Dnepropetrovsk.

(Weeds)

BEREZOVSKIY, M.Ya., kand.sel'skokhoz.nauk; ABRAMOVA, K.A., aspirantka; MAKODZEBA, I.A., kand.sel'skokhoz.nauk; SHAMKIY, I.F., aspirant

Controlling Acroptilon picris. Zashch. rast. ot vred. i bol. 8 no.9:45-47 S '63. (MIRA 16:10)

1. Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya im. Timiryazeva (for Berezovskiy, Abramova). 2. Vsesoyuznyy institut kukuruzy, Dnepropetrovsk (for

MAKODZEBA, I.A., kand. sel'skokhoz. nauk; MORDOVETS, A.A.; SULIMA, A.G., kand. sel'skokhoz. nauk

Hoary cress and its control. Zemledelie 26 no.12:42-43 D '64. (MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy (for Makodzeba). 2. Genicheskaya opytnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta kukuruzy (for Mordovets, Sulima).

MAKOGON, A.G. (selo Gnilitsa, Chernigovskoy oblasti)

Apparatus for demonstrating the distillation of petroleum.
Khim. v shkole 13 no.1:45-46 Ja-F '58. (MIRA 10:12)
(Distillation apparatus)
(Petroleum--Refining)

NEGOVSKIY, N.A., doktor biologicheskikh nauk; MAKOGON, A.M.

Using forms with sterile pollen n breeding sugar beets.
Agrobiologiia no.5:700-704 S-O '63. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sakharnoy svekly, Kiyev.

MAKOGON, F. YA.

dynamos

Switching in generators by autosynchronization. Rab. energ., 2, no. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, May 1952. Unclassified.

MAKOGON, I.Ye.; TEREShKOV, P.I.

Semidry pressing of kaolin products. Ogneupory 26 no.1:8-10 '61.
(MIRA 14:2)

1. Belokamenskiy shamotnyy zavod.
(Kaolin) (Firebrick)

MAKOGON, I.Ye.; ISAYEV, B.P.; IL'ICHEV, V.I.

Redesign of the ejection assembly of a CM 143 press. Ogneupory 30 no.9:43-44 '65. (MIRA 18:9)

1. Belokamenskiy shamotnyy zavod.

1. PETROV, S.G., PROF., MAKOSON, L. A., KOCHUNOVSKAYA, T. K.

2. USSR (600)

4. Eggs-Production

7. Increasing hens' egg laying in winter. Ptitsevodstvo no. 3, 1952.

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

KALASHNIKOV,Ya.I.; KRYLOV,V.S.; MAKOGON,L.A.; SAMOLETOV,A.I.; NIKULITSKIY, I.V.

The introduction of an intensive poultry breeding system. Mias. ind. SSSR 26 no.3:26-29 '55. (MIRA 8:9)

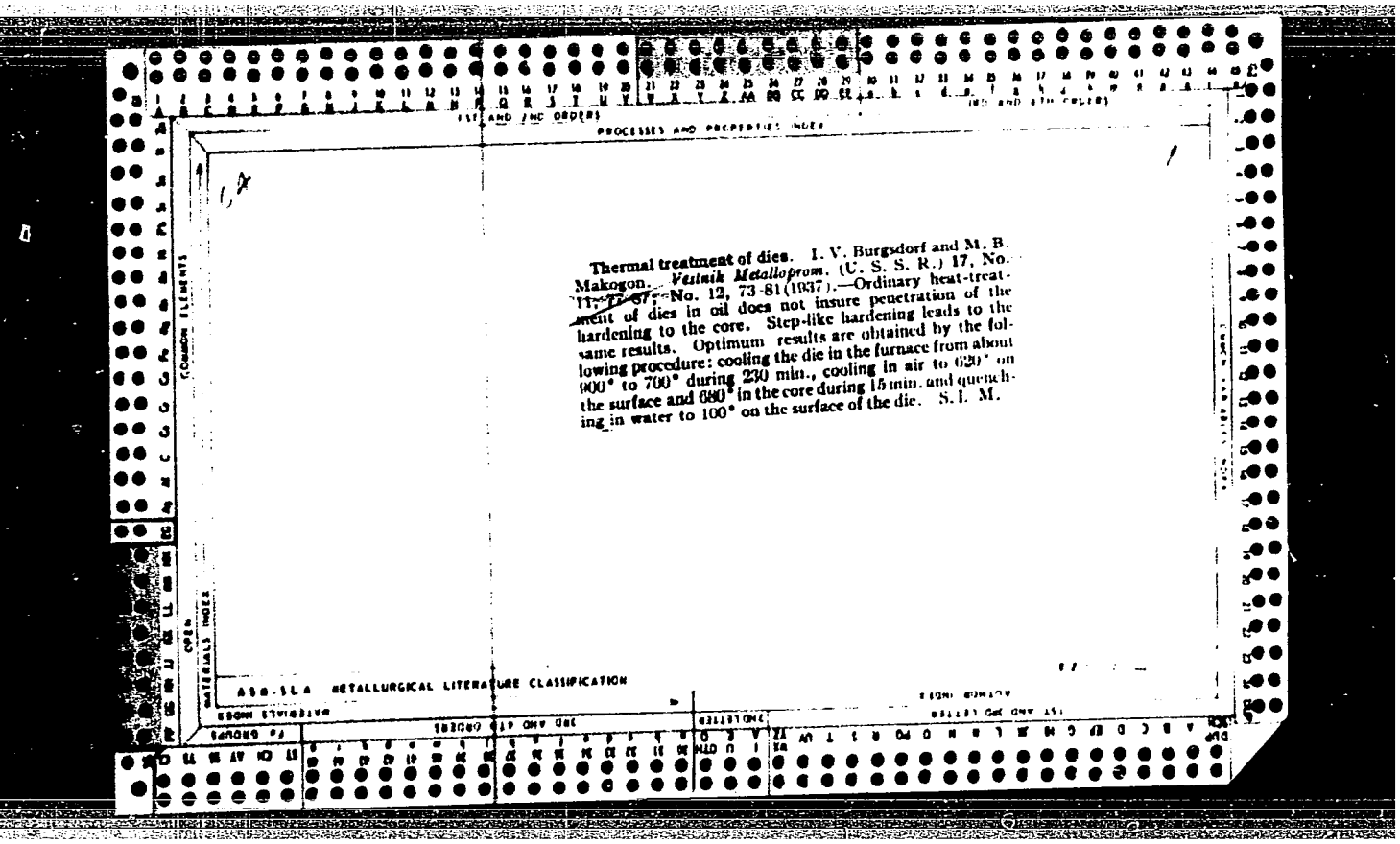
1. Zamestitel' ministra promyshlennosti myasnykh i molochnykh produktov RSFSR (for Kalashnikov). 2. Tekhnoruk Kuntsevskoy ptitsefabriki (for Krylov). 3. Tekhnoruk Glebovskoy ptitsefabriki (for Makogon). 4. Tekhnoruk Tomilinskoy ptitsefabriki (for Samoletov). 5. Direktor Brattsevskoy ptitsefabriki (for Nikulitskiy)

(Poultry industry)

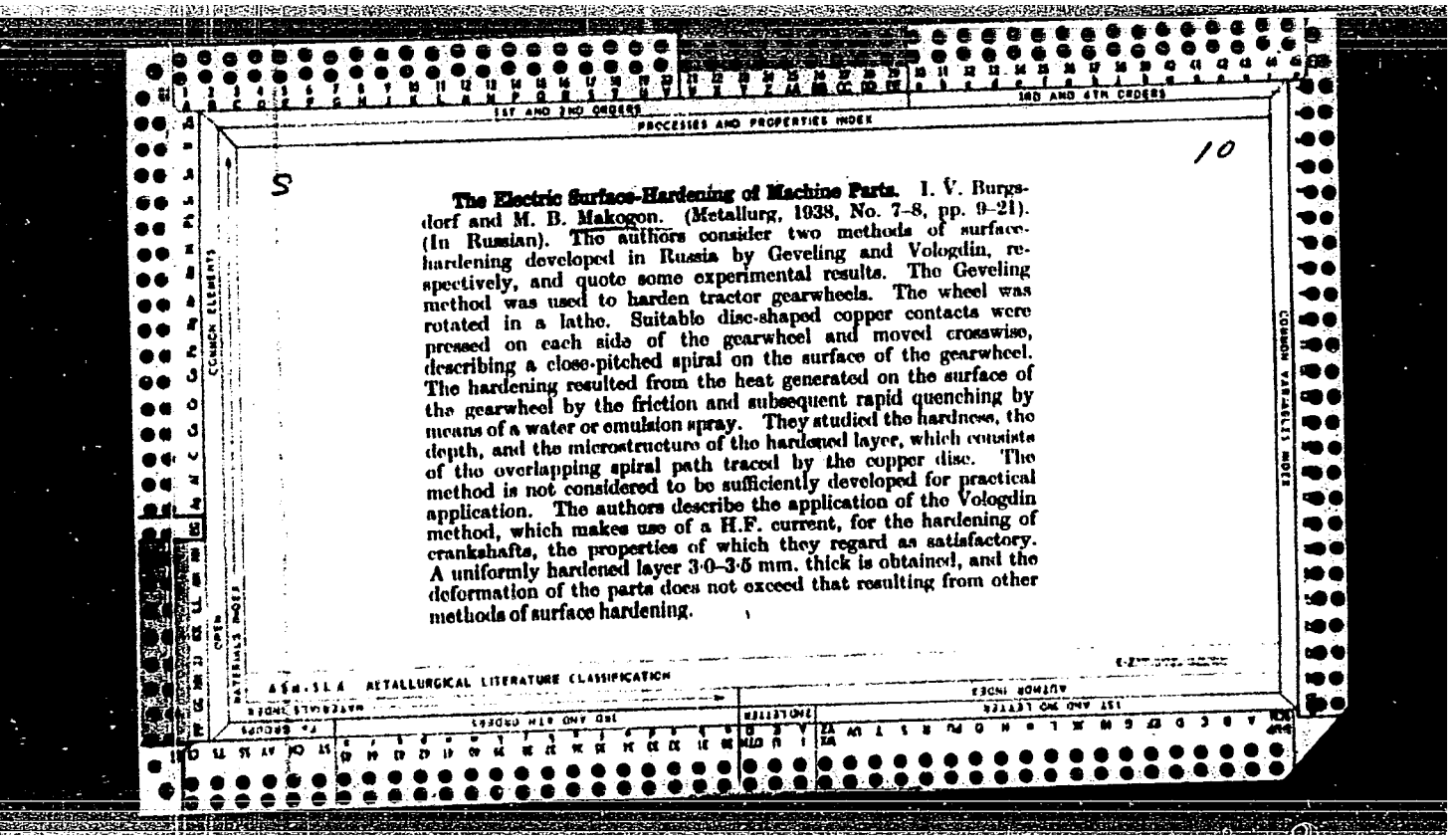
PIGAREV, M.V., kand. sel'skokhozyaystvennykh nauk,; MAKOGON, L.A.; NIKOLOTOVA, M.V.

Reproductive capacities of hens during their first year of laying. Ptitsevodstvo 8 no. 7:28-32 Jl '58. (MIRA 11:8)

1. Tekhnoruk Glebovskoy ptitsefabriki (for Makogon). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut ptitsepererabatyvayushchey promyshlennosti i Glebovskaya ptitsefabrika.
(Poultry breeding)



Thermal treatment of dies. I. V. Burgsdorf and M. B. Makogon. *Vestnik Metallopromy.* (U. S. S. R.) 17, No. 11-12, 67-; No. 12, 73-81 (1937).—Ordinary heat-treatment of dies in oil does not insure penetration of the hardening to the core. Step-like hardening leads to the same results. Optimum results are obtained by the following procedure: cooling the die in the furnace from about 900° to 700° during 230 min., cooling in air to 620° on the surface and 680° in the core during 15 min. and quenching in water to 100° on the surface of the die. S. L. M.



1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

10

S

The Electric Surface-Hardening of Machine Parts. I. V. Burysdorf and M. B. Makogon. (Metallurg, 1938, No. 7–8, pp. 9–21). (In Russian). The authors consider two methods of surface-hardening developed in Russia by Geveling and Vologdin, respectively, and quote some experimental results. The Geveling method was used to harden tractor gearwheels. The wheel was rotated in a lathe. Suitable disc-shaped copper contacts were pressed on each side of the gearwheel and moved crosswise, describing a close-pitched spiral on the surface of the gearwheel. The hardening resulted from the heat generated on the surface of the gearwheel by the friction and subsequent rapid quenching by means of a water or emulsion spray. They studied the hardness, the depth, and the microstructure of the hardened layer, which consists of the overlapping spiral path traced by the copper disc. The method is not considered to be sufficiently developed for practical application. The authors describe the application of the Vologdin method, which makes use of a H.F. current, for the hardening of crankshafts, the properties of which they regard as satisfactory. A uniformly hardened layer 3·0–3·5 mm. thick is obtained, and the deformation of the parts does not exceed that resulting from other methods of surface hardening.

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

KAKOSH, M. B.

"The Effect of Deformation Velocity on the Mechanical Properties of Alloys." Cand Chem Sci, Tomsk U, Tomsk, 1954. (RZhKhim, No 22, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

MAKOGON, M. B.

6644* Problem of Deformability of Alloys in a Metastable State. K voprosu o deformiruemosti splavov v metastabil'nom sostoianii. (Russian.) M. B. Makogon. *Fizika Metallov i Metallovedenie*, v. 1, no. 2, [illegible]-250.

Effect of rate of plastic deformation on resistance to deformation by duralumin in quench-hardened, annealed, and aged states, at temperatures of +20 and -50 C. Relaxation and aging with respect to the effect of plastic deformation. Conditions of plastic deformation of alloys in the metastable state affect properties of the metal after aging. Graphs. 15 ref.

MAKOGON, M.B.

Effect of the conditions of deformation of duralumin in a freshly hardened state on the mechanical properties of duralumin following aging. Fiz.met.i metalloved. 1 no.3:546-552 '55. (MLRA 9:6)

1.Sibirskiy fiziko-tekhnicheskiy institut.
(Duralumin--Heat treatment)

SOV/137-58-10-21669

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 174 (USSR)

AUTHORS: Bol'shanina, M.A., Makogon, M.B., Panin, B.Ye.

TITLE: Resistance-to-deformation Properties of Copper and its Alloys as a Function of Temperature and Rate of Deformation (Temperaturno-skorostnaya zavisimost' soprotivleniya deformatsii medi i yeye splavov)

PERIODICAL: Dokl. 7-y Nauchn. konferentsii, posvyasch. 40-letiyu Velikoy Oktyabr'skoy sots. revolyutsii. Nr 2. Tomsk, Tomskiy un-t, 1957, pp 55-57

ABSTRACT: Resistance to compressive deformation of Cu and its Ni, Al, and Zn alloys (5, 10, and 15 atom-%) which have been subjected to various degrees of work hardening (with reductions of up to 40%) was studied at different strain rates (6, 0.05, and 0.005 mm/min) at seven different temperatures ranging from 20 to 600°C. The results of the investigation demonstrated the complete applicability of theory of hardening and recovery to a wide range of temperatures and rates of deformation. An analogy, established for laws governing the deformation of low-melting metals and Cu alloys, makes it possible to carry out

Card 1/2

SOV/137-58-10-21669

Resistance-to-deformation Properties of Copper and its Alloys (cont.)

research on physical principles of high-temperature plasticity of metals (as applied to the problem of heat-resistant properties) on modelling materials.

P.N.

1. Copper--Deformation 2. Copper alloys--Deformation

Card 2/2

67077

SOV/124-59-1-1028

18.5100

Translation from: Referativnyy zhurnal. Mekhanika, 1959, Nr 1, p 143 (USSR)

AUTHORS: Makogon, M.B., Legkova, M.L., Tabatarovich, A.K.

TITLE: On the Problem of the Correspondence Between the Velocity-Coefficients of the Yield Curves and the Rates of Creep and Relaxation

PERIODICAL: V sb.: Issled. po fiz. tverdogo tela. Moscow, AS USSR, 1957, pp 159-169

ABSTRACT: Commercial tin and tin of the 01-grade were employed as test material. Cylindrical casts of a diameter of 16 mm were pressed through a die of a diameter of 4 mm, and the obtained wire was subsequently drawn to a thickness of 1.82 ± 0.02 mm. A part of the specimens was examinated immendiately after the drawing, another part was tempered. The gage length of the specimens was 50 mm. Three series of tests were carried out: 1) Stretching with constant velocities of deformation of 0.06, 2.7 and 27 min^{-1}. 2) Stretching with a constant velocity of 2.7 min^{-1} up to a determined degree of deformation with a following relaxation of the stress with time. 3) Stretching with a constant velocity up to a determined degree of deformation with a following stretching at a constant load equal to 1.1 - 1.2 of the instantaneous yield point. A qualitative relation between the coeffi-

Card 1/2

On the Problem of the Correspondence Between the Velocity-Coefficients of the Yield Curves and the Rates of Creep and Relaxation

cients of velocity and relaxation and the characteristics of creeping is obtained. It is shown that the coefficients of velocity, the creeping rates and the relaxation characteristics of the deformed and non-tempered tin have higher values than those of the tempered tin.

G.A. Tulyakov

Card 2/2

SOV/124-58-10-11902

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 160 (USSR)

AUTHORS: ~~Makogon, M. B.~~, Panin, V. Ye., Konyushina, G. G., Landa, A. L., Sidorova, T. S., Shilina, G. V.

TITLE: Influence of the Strain Conditions During Compression on the State of Copper - Copper-alloy Solid Solutions (Vliyaniye usloviy deformirovaniya pri szhatii na sostoyaniye medi i yeye splavov - tverdykh rastvorov)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Fizika, 1957, Nr 1, pp 23-31

ABSTRACT: A comparison is offered of data on the variation in the hardness of strained alloys during anneal with the values of the rate coefficients of said alloys at various strain temperatures.

From the résumé

Card 1/1

SOV/137-58-10-21531

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 154 (USSR)

AUTHORS: Makogon, M. B., Panin, V. Ye., Sidorova, T. S., Konyushina, G. G., Landa, A. L., Shilina, G. V.

TITLE: The Effect of Conditions of Preliminary Cold Hardening on the Recovery of Cu and its Alloys as a Function of Temperature (Vliyaniye usloviy predvaritel'nogo naklepa na temperaturnuyu zavisimost' vozvrata medi i yeye splavov)

PERIODICAL: Dokl. 7-y Nauchn. konferentsii, posvyashch. 40 letiyu Velikoy Oktyabr'sk. sots. revolyutsii, Nr 2. Tomsk, Tomskiy un-t, 1957, pp 57-58

ABSTRACT: Investigations were performed in order to establish how temperature and rate of deformation (D) (the degree of D remaining constant) affect the progress of recrystallization curves of Cu and its alloys containing 10 atom-% Ni and Al. It was established that the increase in recrystallization temperature of Cu and its alloys is directly proportional to the degree of D; it is therefore assumed that for each temperature of D there is a corresponding field of D distortions, the temperature stability of which increases with increasing temperatures of D. It is

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The Effect of Conditions of Preliminary Cold Hardening (cont.)

pointed out that the temperature stability of the cold-hardening of the Cu-base solid solutions investigated is a function of the nature of the allo··. Compared with Al, the addition of which tends to reduce the strength of cohesive bonds, introduction of Ni increases the cohesive forces in the Cu lattice and results in a greater rate of increase in temperature stability of the work-hardened regions.

Z. F.

1. Copper--Crystallization 2. Copper alloys--Crystallization
3. Copper--Temperature factors 4. Copper alloys--Temperature factors

SOV/137-58-10-21523

Translation from: Referativnyy zhurnal, Metallurgiya 1958 Nr 10, p 152 (USSR)

AUTHORS: Makogon, M. B., Panin, V Ye., Kitayeva L. P., Korotayev A. D., Sukhovarov, V. F., Shcherbakova N. I.

TITLE: The Effect of Annealing and Intermediate High temperature Deformation on Compression Curves of Copper and its Alloys (Vliyaniye otzhiga i promezhutochnoy vysokotemperaturnoy deformatsii na krivyye szhatiya medi i yeye splavov)

PERIODICAL: Dokl. 7-y Nauchn konferentsii, posvyashch 40 letiyu Velikoy Oktyabr'sk sots revolyutsii Nr 2 Tomsk Tomskiy un-t, 1957, pp 59 60

ABSTRACT: The effect of plastic deformation (D) on the progress of recovery processes in Cu and its alloys with Ni (5, 10, 15 atom-%), Al (5, 10, 15 atom-%), and Zn (5 atom-%) was investigated. Mechanical properties of metal which had been subjected to deformation at room temperature were compared after the metal had been annealed as well as subjected to slight deformation under identical temperature conditions. It was established that application of stress stimulates the recovery processes; this is manifested by the fact that mechanical

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The Effect of Annealing (cont.)

properties of work-hardened specimens (S) which have been subsequently subjected to mild deformation at elevated temperatures are lower than the properties of S's which have been annealed only at identical temperatures. A drop in secondary reduction curves of S's which have been preliminarily subjected to deformation at room temperature is observed at elevated temperature. The stimulating effect of loading, which becomes greater with increasing temperatures, begins to diminish as the T_p point is approached and, finally, goes down to zero. It is shown that the D of work-hardened S at temperatures beyond the recrystallization threshold contributes to complete relief of work-hardening stress achieved at room temperature and, at the same time, produces new distortions which cannot be completely relieved during D at the given temperature. Compared with pure Cu, other conditions being equal, the intensity of recovery processes under load is lower in the Cu alloys investigated. As the concentration of Ni is increased and the concentration of Al in the Cu alloy is reduced, the intensity of recovery diminishes. In alloys with relatively small cohesive bonds (Cu-Al), the recovery processes occur more intensively than in the case of alloys in which the cohesive forces are greater (Cu-Ni).

1. Copper--Heat treatment 2. Copper alloys--Heat treatment
3. Copper--Deformation 4. Copper--Mechanical properties

V. N.

Card 2/2

MAKOGON, M.B.

AUTHOR: Makogon, M. B. 126-2-16/35

TITLE: On the character of the dependence of mechanical properties of solid solutions on their concentrations. (O kharaktere zavisimosti mekhanicheskikh svoystv tverdykh rastvorov ot ikh kontsentratsii).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.2, pp. 318-325 (USSR)

ABSTRACT: The fundamental types of the diagram "state-properties" which are determined by the character of the interaction of the individual components were first established for binary alloys by Kurnakov, N.S., and Zhemchuzhnyy, S.F. (Refs.1 and 2); for systems forming a continuous series of solid solutions the dependence of the above mentioned properties on the composition are expressed by a curve which is convex if viewed from the top, whilst for two-phase mixtures the isotherms of these properties are nearly straight lines. In systems with limited solubility the properties of the alloys in the range of the solid solution change with increasing concentration in accordance with monotonously increasing curves. This general character of the "property-composition" curves was confirmed by numerous authors for many systems of

On the character of the dependence of mechanical properties of solid solutions on their concentrations.

predominantly high melting point alloys but considerable deviations were observed which increase with increasing test temperatures. On the basis of analysis of available experimental data, A. A. Bochvar (Ref.6) arrived at the conclusion that there is no unequivocal relation between the composition and the properties, pointing out the necessity for detailed experimental investigation of the dependence "composition-properties" which should be extended into investigating the more complex problem of "properties-composition-structure-external conditions" (Ref.10). The aim of the here described work was to elucidate the influence of the speed and the degree of deformation on the shape of the "resistance to deformation by compression-composition" curves for a number of high melting point and low melting point alloys forming solid solutions. The author also expresses certain views on the limits of validity of the Kurnakov law in studying the mechanical properties of solid solutions.
V. P. Shishokin and his team determined the influence of the deformation speed on the relations between the chemical composition and the hardness for eutectic type

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On the character of the dependence of mechanical properties of solid solutions on their concentrations.

systems (Ref.11), for solid solutions of the system Pb-Hg (Ref.12) and for solid solutions of the systems Pb-Bi, Pb-Sn, Cd-Hg (Ref.13). The author of this paper investigated high melting point alloys of the system Cu-Ni and low melting point alloys of the systems Pb-Hg and Pb-Bi. The copper-nickel alloys were smelted in a high frequency furnace, homogenized and forged into 10-11 mm dia. rods. The lead alloys were cast into ingots of 22 mm dia. which, after some forging, were extruded through a hole of 7.00 $\pm$ 0.01 mm. From both alloys specimens were prepared for compression tests which were annealed under optimum conditions. The Cu-Ni alloys contained 23.9, 44.0, 61.8 and 75.3 at.% nickel and pure copper and pure nickel specimens were also tested. The lead alloys contained 3.2, 10.3, 15.4 and 20.0 at.% Hg and also 3.0, 9.8, 14.5 and 19.6 at.% Bi as well as pure lead. All these alloys belong to the solid solution types. The results are plotted in graphs and entered in tables. The obtained experimental results indicate that the shape of the curves "resistance to deformation-composition" for low melting point alloys depends to a considerable extent

BOL'SHANINA, M.A.; MAKOGON, M.B.; PANIN, V.Ye.

Temperature-rate relation in the resistance to deformation of copper and its alloys. Issl. po zharopr. splav. 3:189-205 '58.
(MIRA 11:11)
(Copper alloys--Testing) (Deformations (Mechanics))
(Metals at high temperature)

SOV/58-59-5-10712

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 5, pp 119 - 120 (USSR)

AUTHOR: Makogon, M.B.

TITLE: Effect of the Rate of Deformation on the Resistivity to Compression of Some Metallic Solid Solutions

PERIODICAL: Tr. Sibirsk. fiz. tekhn. in-ta, 1958, Nr 36, pp 3 - 20

ABSTRACT: The article is a qualitative discussion of the limits of applicability of Kurnakov's rules for determining the composition dependence of the mechanical properties of solid solutions. It is shown that this dependence is determined in the general case by the conditions of mechanical testing, in particular by the rate and degree of deformation. The effect of these conditions is especially noticeable in the case of fusible alloys, in the deformation of which softening processes play an essential role. As a rule, the dynamic coefficient characterizing the degree of the rate dependence drops when a transition is effected from the pure component to its solid solution alloy. The rate coefficients of the intermetallic phases have a still lower value than those of ordinary solid solutions based on the pure components. This can be ex-

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Effect of the Rate of Deformation on the Resistivity to Compression of Some Metallic Solid Solutions

plained by the still greater interaction of various atoms in these phases. The author gives a qualitative explanation of the role that individual alloying admixtures play in the variation of the mechanical properties of Pb for various deformation rates. It turns out that the effect of the admixtures is all the more telling, the less the components being alloyed are chemically related, and the greater the variation in the parameter of the crystal lattice of the base metal when the solid solution is being formed. Indirect evidence for the correctness of the view that plastic deformation exerts a stimulating effect on the aging and dissociation of solid solutions is afforded by the study of the effect of the non-equilibrium condition of the alloys on the shape of the flow curve.

From the author's résumé

18(6)

AUTHORS: ~~Makogon, M. B.,~~ Panin, V. Ye., Sukhovarov, V. F., Abramets, L. P., Korotayev, A. D., Shcherbakova, M. A.

SOV/20-122-2-15/42

TITLE: On the Rôle of External Stress in the Weakening During a Plastic Deformation (O roli vneshnego napryazheniya v razuprochnenii pri plasticheskoy deformatsii)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 2, pp 219-221 (USSR)

ABSTRACT: It was interesting experimentally to detect a stimulating influence of external stress on the intensity of recovery immediately during the plastic deformation itself, and to investigate the influence of the nature of the material and of the deformation conditions (velocity, temperature) on the intensity of the recovery. The measurements were carried out on samples of electrolytic copper and their alloys with Ni, Al (5; 10; 15 atomic %) and with Zn (5 atomic %). All these samples (d = 11.00 ± 0.01 mm, h = 7.00 ± 0,01 mm) were deformed by compression up to 30 % at room temperature with an average velocity of 4,3 %/min. The deformations and the tempering were carried out at various temperatures. A figure

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shows the curves of the flowing for one of the investigated alloys. According to these curves, the stress weakens the samples so intensely that resistance against deformation is diminished by this deformation. If the temperature of the deformation increases, the decrease of the resistance becomes more noticeable. If other conditions are equal, this decrease is more intense for the alloys of the systems Cu-Al, Cu-Zn than for the alloys of the system Cu-Ni. The curves of the third contraction of the samples tempered after a cold deformation are always higher than the curves of samples which were deformed at the temperature of the first series of samples. The plastic deformation, therefore, caused an additional weakening. The nature of the alloy has no influence on the value of the relaxation coefficient K, if the percentage of the admixture is lower than 5 %. However, for higher percentages of admixture, this influence is well noticeable. The alloys of the system Cu-Al relaxate noticeably more intensely than the corresponding alloys of the system Cu-Ni. The results of this paper are an experimental proof of the weakening caused by the deformation and of the stimulating influence of the external stress on the intensity of this weakening.

SOV/2o-122-2-15/42

On the Rôle of External Stress in the Weakening During a Plastic Deformation

Weakening depends on the conditions of the deformation (temperature, velocity) and on the nature of the deformed alloy. There are 2 figures, 1 table, and 14 references, 12 of which are Soviet.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy nauchno-issledovatel'skiy institut pri Tomskom gosudarstvennom universitete im. V. V. Kuybysheva
(Siberian Physical-Technical Scientific Research Institute at Tomsk State University imeni V. V. Kuybyshev)

PRESENTED: May 7, 1958, by G. V. Kurdyumov, Academician

SUBMITTED: April 29, 1958

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MAKOGON, M.B.; PANIN, V.Ye.; SUKHOVAROV, V.F.

Stimulating effect of straining on softening during the deformation process. Issl.po zharopr.splav. 4:50-57 '59.
(MIRA 13:5)

(Metals--Cold working) (Deformations(Mechanics)

S/139/60/000/03/026/045
E073/E314

AUTHORS: Panin, V.Ye and Makogon, M.B.

TITLE: Anomaly of the Temperature-speed Dependence of the Resistance to Deformation of Aluminium Bronze

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, Nr 3, pp 142 - 145 (USSR)

ABSTRACT: The aim of the work described in this paper was to elucidate the influence of hardening processes on the progress of plastic deformation of aluminium bronze at various temperatures and deformation speeds. Investigations were carried out on an aluminium bronze Cu+ 15.9 at.% Al, which is a solid solution nearing the boundary of solubility. The investigations were carried out at various temperatures using various speeds of compression. The curve of the temperature dependence of the resistance to deformation shows an anomaly, namely, with increasing temperature the resistance to deformation drops slightly at first then increases to a maximum which is followed by a sharp drop. The temperature of the beginning of the

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S/139/60/000/03/026/045
E073/E335

Anomaly of the Temperature-speed Dependence of the Resistance to Deformation of Aluminium Bronze

intensive softening depends on the conditions of deformation; increase in the speed of deformation brings about a shift in this temperature towards elevated temperatures, whilst an increase in the degree of deformation brings about a decrease in the observed effect and may even lead to its cessation. In the range of anomalous temperature dependence of the mechanical properties, the deformation is in jumps and there is an anomaly in the dependence of the resistance-to-deformation on the deformation speed. Such anomalous temperature-speed dependence of the resistance-to-deformation was also observed to a lesser extent in the alloy Cu + 10 at.% Al. There are 3 figures and 13 references, 1 of which is international, 1 English, 1 Japanese (in English) and 10 are Soviet.

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S/139/60/000/03/026/045
E073/E335

Anomaly of the Temperature-speed Dependance of the Resistance to Deformation of Aluminium Bronze

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva (Siberian Institute of Physics and Technology of Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: July 6, 1959

Card 3/3

S/123/62/000/015/004/013
A052/A101

AUTHORS: Makogon, M. B., Tukhfatulin, A. A.

TITLE: The effect of the initial state of ЭИ437 (EI437) alloy on its mechanical properties under different conditions of deformation as to temperature and rate

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 15, 1962, 25, abstract 15A145 (In collection: "Issled. po zharoprochn. splavam". T. 7, Moscow, AN SSSR, 1961,97 - 105

TEXT: The character of the effect of rates of deformation at compression (v_1 = 0.005, v_2 = 0.05 and v_3 = 6 mm/min.) on mechanical properties of EI437 alloy (yield curves) at 600, 700, 800 - 850 and 900°C in a vacuum (about 10^{-3} mm Hg) has been established on samples in a hardened and aged state. It is pointed out that the samples aged at 700°C prove to be more strengthened than the samples hardened at deformation temperatures not exceeding the aging temperature. At 800°C and over a preliminary aging at 700°C does not affect practically the mechanical properties, which is explained by an intensive aging of a hardened

The effect of the initial state of...

alloy at high temperatures in the process of deformation. After 45-hour aging at 800°C the mechanical properties decrease considerably, which is ascribed to the decomposition of the solid solution and coagulation.

[Abstracter's note: Complete translation]

Card 2/2

MAKOGON, M.B.; KITAYEVA, L.P.

Study of the kinetics of ordering and some mechanical properties of the Mg_3Cd alloy. Ukr. fiz. zhur. 8 no.2:233-238 F '63. (MIRA 16:2)

1. Sibirskiy fiziko-tekhnicheskiy institut AN SSSR, Tomsk.
(Magnesium-cadmium alloys)

L 18552-63 EWP(q)/EWT(m)/BDS AFFTC/ASD Pad JD/WB

ACCESSION NR: AP3001695 S/0126/63/015/005/0703/0709

AUTHORS: Sukhovarov, V.F.; Popov, L.Ye; Karavayeva, V.V.; Panova, L.M.; Kharlova, R.P.; Makogon, M. B.

66
62

TITLE: Investigation of the atomic redistribution process in Ni + 10 at.% Mo alloy

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 5, 1963, 703-709

TOPIC TAGS: atomic redistribution, Ni-Mo alloy, nickel-molybdenum alloy

ABSTRACT: The thermal capacity and electrical resistivity of the alloy Ni + 10 at.% Mo was measured in studying formation of the K-state and its influence on the mechanical properties of the alloy. It is believed that short-range order formation is the necessary condition for K-state origin. The alloy was a homogeneous solid solution, the thermal treatment of which caused a variation in the degree of the short-range order. The difference between Ni and Mo atomic radii affects the activation energy of the formation and movement of vacancies which bring about the formation of K-state. A continuous heating of the specimen showed an uninterrupted increase in thermal capacity up to 330°C. At this point

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L 18552-63

ACCESSION NR: AP3001695

4

a decrease began and lasted to 390°. This phenomenon is explained by formation of the K-state and by its subsequent destruction at 400C where the thermal capacity resumed its increase. The tests showed that formation of K-state increases the magnitude of electrical resistivity. "We express our sincere appreciation to Professor M. A. Bol'shanina for drawing our attention to the Ni-Mo system and to Engineer L. K. Novikova for the hydrogen annealing of the samples". Orig. art has: 5 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy nauchno-issledovatel'skiy institut (Siberian Physicotechnical Scientific Research Institute)

SUBMITTED: 07Jul62	DATE ACQ: 11Jul63	ENCL: 00
SUB CODE: ML	NO REF SOV: 020	OTHER: 015

Card 2/2

BUTKEVICH, L.M.; GORBACHEV, F.Ya.; GRIDNEV, M.P.; MAKOGON, M.B.; PYATNICHUK, G.K.

Apparatus for creep tests of manometer tubular springs. Zav.lab. 29 no.12:1500-1501 '63. (MIRA 17:1)

1. Sibirskiy fiziko-tekhnicheskiy nauchno-issledovatel'skiy institut.

BUTKEVICH, L.M.; MAKOGON, M.B.; OSUKHOVSKIY, V.E.

Effect of external stresses during the annealing of cold-worked L62 brass on its mechanical properties. Fiz. met. i metalloved. 16 no.4:583-588 O '63. (MIRA 16:12)

1. Sibirskiy fiziko-tekhnicheskiy institut.

BOL'SHANINA, M.A.; MAKOGON, M.B.

Effect of short-range order and various concentration inhomogeneities on the mechanical and physical properties of alloys--solid solutions. Izv. vys. ucheb. zav.; fiz. no.5:45-55 '64. (MIRA 17:11)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.

L 43858-65 EWT(l)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP4048769 S/0126/64/018/004/0535/0539

AUTHOR: Makogon, M. B.; Tukhfatullin, A. A.; Kitayeva, L. P.

TITLE: Investigation of the kinetics of the domain growth in the Mg_3Cd alloy

SOURCE: Fizika metallov i metallovedeniye, v. 18, no. 4, 1964, 535-539

TOPIC TAGS: domain growth, magnesium cadmium alloy, electric conductivity, kinetics

ABSTRACT: The authors have investigated the kinetics of the domain growth in the Mg_3Cd -alloy by x-ray diffraction and by the measurement of electric conductivity. The experiments were conducted at 60-80, and 100 C after the disorder-order transition. A linear relationship between the electrical conductivity and the inverse of the domain size was found (the latter being larger than 100 Å). The time-dependence of the domain size is given by the equation

$$\xi = kt^{0.3}$$

The authors are grateful to L. S. Bushney for help. Orig. art. has: 3 figures, 1 table, and 6 equations.

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L 43658-65
ACCESSION NR: AP4048769

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut im. V. D. Kuznetsova (Siberian Physicotechnical Institute)

SUBMITTED: 07Dec63 ENCL: 00 SUB CODE: MM, SS

NR REF SOV:006 OTHER: 009

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L 40739-65 EWT(m)/EWP(w)/EWA(d)/EPR/T/EWP(t)/EWP(b)/EWA(c) Ps-4 IJP(c)
ACCESSION NR: AP5005887 JD S/0020/65/160/003/0582/0585

AUTHORS: Kitayeva, L. P.; Makogon, M. B.; Kobytev, V. S.

TITLE: Mechanical properties of the ordered alloy Mg_3Cd

SOURCE: AN SSSR. Doklady, v. 160, no. 3, 1965, 582-585

TOPIC TAGS: ordered alloy, magnesium alloy, ultimate strength, yield point, domain size

ABSTRACT: The authors investigated the effect of ordering on the mechanical properties and on the character of deformation in an Mg_3Cd alloy having a hexagonal close packed (hcp) structure. The procedure for preparing the alloy and the samples was described in detail elsewhere (Fiz. met. i metalloved. v. 18, no. 5, 1964). The samples were stretched at a rate of 0.23% per minute, and the stretching curve was automatically recorded on photographic paper. To obtain different domain sizes, the samples were quenched from 220° and soaked for vari-

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ous times at 80°, after which they were deformed at room temperature. The domain dimension was determined by x-ray diffraction. Metallographic tests of the sample surfaces were made after 5% deformation on samples that were either fully ordered, quenched from 220°, with domain dimension ~625 Å, and with a degree of order that is at equilibrium at 80°, and samples deformed at temperatures 130° and above. Like other ordered alloys, Mg_3Cd exhibited an increase in the ultimate yield with decreasing degree of order and a large strengthening coefficient in the ordered state. The ultimate strength decreased with increasing domain size, and the plasticity differed greatly in the ordered and disordered states at room temperature. Explanations are offered for these phenomena. The metallographic investigations have shown that in both the ordered and disordered states coarse slip predominates after 5% deformation. From a comparison of the hardening coefficients and the character of the deformation it is concluded that the main cause of the low value of the hardening coefficient in the disordered state with domain size 625 Å is the pre-

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031610013-5"

L 40739-65
ACCESSION NR: AP5005687

sence of mechanical polygonization and tuning along with the slip. This report was presented by G. V. Kurdyumov. Orig. art. has: 4 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut im. V. D. Kuznetsova (Siberian Physicotechnical Institute)

SUBMITTED: 05Aug64 ENCL: 00 SUB CODE: MM

NR REF SOV: 009 OTHER: 011

Card 3/3

L 4915-66 EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD

ACCESSION NR: AP5025321 UR/0126/65/020/003/0379/0383
539.22:661.846

AUTHOR: Tukhfatullin, A.A.; Makogon, M.B.; Kitayeva, L.P.

TITLE: Study of the character of order-disorder transformation in alloy Mg_3Cd

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 3, 1965, 379-383

TOPIC TAGS: metal heat treatment, metal analysis, x ray diffraction, crystal structure, magnesium base alloy, cadmium containing alloy

ABSTRACT: X-ray diffraction studies of ordering in Mg_3Cd alloys (22-30 atom% Cd) during slow cooling from above-critical temperatures, made by A. Moore and G.V. Raynor (Acta met., 1957, 5, 10, 601), revealed the coexistence of ordered and disordered regions in the samples. The present study was made to determine if this coexistence was an equilibrium state or an effect of the unbalanced state of the alloy. The X-ray diffraction study of the Mg-Cd alloy (25.2 atom% Cd) was made after annealing at 350C for 1 hour, followed by ordering, consisting of annealing at 275C for 2 hours, slow cooling during 5 hours to 130 C, annealing for 72 hours at 130C, and subsequent cooling to room

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0901 0253

ACCESSION NR: AP5025321

temperature at the rate of 5 degrees per hour. The changes in the width of the main (202) and superstructure (112) lines in the X-ray diffraction patterns, taken of the quenched samples, were measured and plotted in the graph as functions of the quenching temperatures. The equilibrium coexistence of 2 phases (ordered and disordered) was proven at the definite temperature interval (18-20C) after quenching from temperatures >150C. At temperatures >170C the Mg_3Cd alloy was entirely in the disordered state. The destruction of long-range order occurred by the formation of disordered regions in an ordered matrix. The volume of disordered regions increased with increased quenching temperature, and at temperatures >170C the entire sample was converted into the disordered state. It was shown by Z. A. Matysina, A. I. Nosar, and A. A. Smirnov (Ukr. fiz. zhurnal, 1963, 8, 3, 339) that electric resistivity of alloys was directly proportional to the value of $(1-S^2)$, where S was the degree of long-range order. The degree of long-range order of the samples after quenching from temperature T was determined by the authors from the ratios of intensities $(I_s : I_m)$ of the superstructure (112) and main (202) lines by taking the S of the ordered sample as S=1 and calculating the S of quenched samples by using the formula:

$$S_T = \sqrt{(I_s/I_m)_{S=S_T} \; (I_s/I_m)_{S=1}},$$

L 4915-66

ACCESSION NR: AP5025321

The comparison of obtained data agreed well with the corresponding calculated and measured resistivities. Orig. art. has: 4 figures, 3 formulas, and 1 table.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut (Siberian Physicotechnical Institute)

SUBMITTED: 18May64/--Sep65 44

ENCL: 00 SUB CODE: MM, SS

NO REF SOV: 004 OTHER: 005

Card 3/3

EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD

ACC NR: AP5027146 UR/0126/65/020/004/0587/0591 45

AUTHOR: Kitayeva, L. P.; Bushnev, L. S.; Makogon, M. B. 44

ORG: Physicotechnical Institute im. V. D. Kuznetsov (Sibirskiy fiziko-tekhnicheskiy institut)

TITLE: Microscopic study of deformation in an Mg_3Cd alloy

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 4, 1965, 587-591

TOPIC TAGS: crystal deformation, magnesium alloy, cadmium alloy, twinning

ABSTRACT: The study was made on an alloy with a composition of magnesium + 25.2 at % cadmium. Samples with a diameter of 1 mm and a calculated length of 50 mm were stretched on a UPR machine at a rate of 0.23%/min. The elongation curve was recorded automatically. For electron microscope investigations, samples were produced by rolling to a thickness of 0.27 mm. After annealing and deformation by stretching, the samples were thinned down in an electrolyte (methyl alcohol and nitric acid in a 2:1 ratio). The thin foils were examined in a UEMB-100 electron microscope at an

Card 1/3

UDC: 539.292;548.4

accelerating voltage of 85 kilovolts. The grain size of all the samples was about 20 microns. To obtain an ordered state, the samples were subjected to prolonged heat treatment under the following conditions: holding at 270° for 1 hour cooling to 170° in the furnace, cooling to 130° at a rate of 10 degrees/hour and holding at 130° for 72 hours, and finally cooling to room temperature at a rate of 5 degrees/hour. The deformation chart was studied after 0.2 and 5% deformation, and the dislocation distribution after 2-5% deformation. A figure shows the dependence of the strength coefficient K on the degree of deformation for the ordered and the unordered state. The strength coefficient is determined as the difference in the flow stresses with a 1% change in the deformation. At $\varepsilon = 1\%$

$$K_1 = \frac{\sigma_1 - \sigma_{0.2}}{0.8}, \qquad (1)$$

where $\sigma_{0.2}$ and σ_1 are the flow stresses at $\varepsilon = 0.2$ and 1%, respectively. The value of $\sigma_{0.2}$ is taken beyond the yield point. According to the authors, the large coefficient of strain hardening in the ordered alloy is connected with the existence of superdislocations and with a breaking up of the antiphase domains during

L 8936-66

ACC NR: AP5027146

the deformation. This mechanism is applicable also to the Mg_3Cd alloy, since the superdislocations observed in the ordered state have a domain structure. The sharp drop in K with an increase in the degree of deformation in the unordered alloy is probably bound up with the development of mechanical polygonization and twinning, the intensity of which depends on ε. At = 0.2% polygonization or twinning were not observed. Orig. art. has: 1 formula and 6 figures.

SUB CODE: MM, IC/ SUBM DATE: 30Sep64/ ORIG REF: 008/

OTH REF: 006

Card 3/3

MAKOGON, M. G.; LEGKOVA, M. L.; and TABATAROVICH, A. K.

"Correlation of the Velocity Coefficients of Flow Curves with Creep and Relaxation Rates" p. 159-169, in the book Research in the Physics Solids, Mosocw, Izd-vo AN SSSR, 1957, 277 p. Ed. Bol'shanina, M. A., Tomsk Universitet, Siberskiy fiziko-tekhnicheskiy institut.

Personalities: Vasil'yev, L. I.; Spevak, L. A.; and Kulikova, K., Material studied: tin. There are 4 figures, 2 tables, and 9 references, 8 of which are Soviet.

This collection of articles is meant for metallurgical physicists and for engineers of the metal-working industry. This book contains results of research in the field of failure and plastic deformation of materials, mainly of metals. Problems of cutting, abrasion, friction, and wear of solid mateirials (metals) are discussed.

MAKOGON, N.S., referent; YEREMENKO, A.K.

New apparatus for cleaning coal and ores (from "Mines," no.5. 1958). Koks i khim. no.1:60-61 '60. (MIRA 13:6)
(Grenoble, France--Coal preparation--Equipment and supplies)

MAKOGON, N.S.; YEREMENKO, A.K.

Use of petroleum bitumen for briquetting coal fines in the United States (from "Revue de l'Industrie Minerale," no.1, 1960). Ugol' Ukr. 5 no.2:40 F '61. (MIRA 14:3)
(United States—Briquets(Fuel))

MAKOGON, N.S., inzh.

Coal preparation in a heavy medium. Ugol' Ukr. 5 no.12:14-15 D '61. (MIRA 14:12)

(Coal preparation)

MAKOGON, N.S.; YEREMENKO, A.K.

Coal preparation in India. Ugol' Ukr. no.6:44 Je '61.
(India—Coal preparation)

MAKOGON, N.S.; ZHUK, V.A.

Preparation of fine coals in the U.S.A. Ugol.prom. no.5:90-95 S-O '62. (MIRA 15:11)
(United States--Coal preparation)

MAKOGON, N.S.; YEREMENKO, A.K.

Coal drying by means of vibration (from "Colliery Guardian," May, 1961; "Annales des Mines, "March, 1962). Ugol' Ukr. 6 no.8:45 Ag '62. (MIRA 15:11)
(Coal drying) (Vibrators)

MAKOKHA, N.S., dotsent

Causes of lethality and infrequent complications following radical surgery on pancreaticoduodenal cancer. Trudy OMI no.54:117-129 '64. (MIRA 18:9)

1. Iz kafedry gospital'noy khirurgii (zav.- dotsent N.S. Makokha) Omskogo meditsinskogo instituta.

MAKOGON, S.

Soviet

Soviets of workers' deputies are the political foundation of the U.S.S.R. Mosk. prav. 7, No. 1, 1953.

Monthly List of Russian Accessions, Library of Congress June 1953. UNCL.

CHETVERIKOV, A.V., kand.tekhn.nauk; PAVLENKO, N.A., inzh.; MAKOGON, V.F.

Effect of a protective atmosphere on current efficiency and the quality of the coating in sheet steel tinning from fused salts. Sbor. trud. TSNIICHM no.34:51-57 '63. (MIRA 17:4)

L 22440-66 EWT(m)/EWP(t) IJP(c) JD

ACC NR: AP6006404 SOURCE CODE: UR/0413/66/000/002/0146/0146

AUTHOR: Delimarskiy, Yu. K.; Chetverikov, A. V.; Makogon, V. F. 30 B

ORG: none

TITLE: Electrochemical method of aluminizing metals. Class 48, No. 178257 4,44,57

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 146

TOPIC TAGS: electrolysis, electrochemistry, aluminum plating, aluminum chloride, sodium chloride

ABSTRACT: An electrochemical method of aluminizing metals from aluminum chloride- and sodium chloride-base melts is described. In order to produce high-quality plating and raise the operational stability of the electroltye, the process is conducted in the presence of ions of other metals (lead, tin, iron, and manganese) introduced by auxiliary anodes with differential current supply and a protective inert atmosphere above the electrolyte surface. The electrolysis is conducted with a current density of 3--5 amps/dm^2 and temperatures ranging from 150 to 200C. [LD]

UDC: 621.793.52:669.718:621.357.77

SUB CODE: 11,07 SUBM DATE: 21Sep64/

Card 1/1 Hal

MAKOGON, V.G.

Mills for continuous output of steel strips in rolls. Biul.tekh.-ekon.inform. no.7:11-13 '58. (MIRA 11:9)
(Hydraulic presses) (Forging machinery)

MAKOGON, V.G.

The 2500-type mill for continuous hot sheet rolling combined with the 1150-type slabbing mill. Biul.tekh.-ekon.inform. no.11:17-20 '58. (MIRA 11:12)

(Rolling mills)

MAKOGON, V.G.

The 1200 strip-rolling mill with reels in furnaces. Biul. tekh.-ekon. inform. no.5:13-16 '59. (MIRA 12:8)
(Rolling mills)

MAKOGON, Vladimir Gerasimovich; BUR'YANOV, Viktor Fomich; GOLYATKINA, A.G., red.izd-va; DOBUZHINSKAYA, L.V., tekhn. red.

[Continuous hot rolling mills for wide strip] Nepreryvnye shirokopolosnye stany goriachei prokatki. Moskva, Metallurgizdat, 1963. 216 p. (MIRA 16:5)

(Rolling mills)

L 23574-66 EWT(d)/EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP6002596 (A) SOURCE CODE: UR/0286/65/000/023/0092/0093
IJP(c) JD

AUTHORS: Nosulo, L. V.; Makogon, V. G.; Olazkov, V. S.

ORG: none

TITLE: Device for transferring loads, principally hot-rolled rolls, from one conveyer with chains on fixed supporting rollers to another. Class 81, No. 176819

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 23, 1965, 92-93

TOPIC TAGS: conveying equipment, conveyer

ABSTRACT: This Author Certificate presents a device for transferring loads, principally hot-rolled rolls, from one conveyer with chains on fixed supporting rollers to another. The device is in the form of an intermediate multichain conveyer with independent drive. For stable transfer of rolls without damaging their edges, the chain sprocket wheels of the intermediate conveyer are mounted on rollers which are displaced parallel relative to the rollers of the connected conveyers, all lying in one plane. The chains of the intermediate and connected conveyers alternate and overlap along the length of each other. To provide for

Card 1/2 UDC: 621.876.1