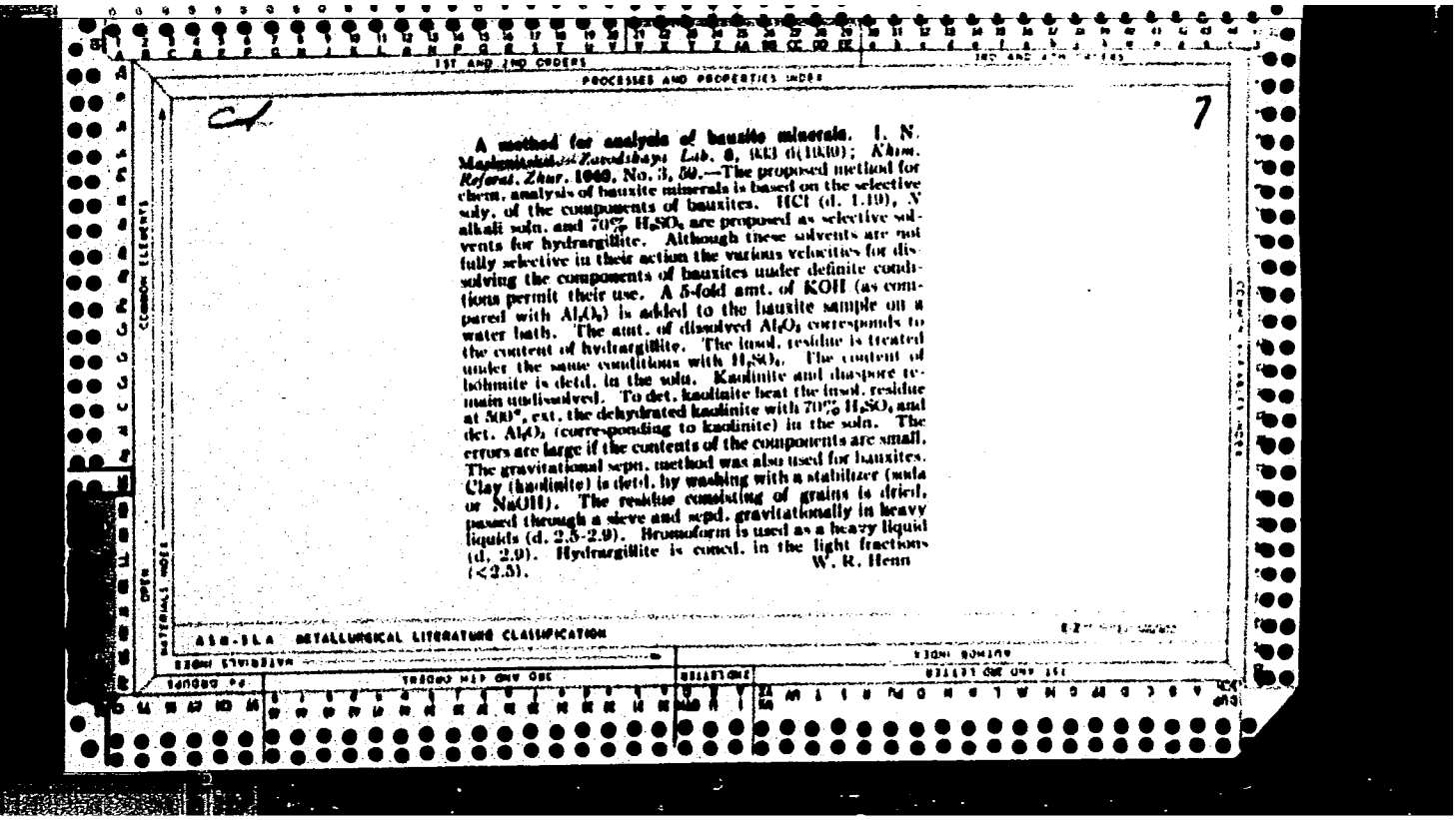
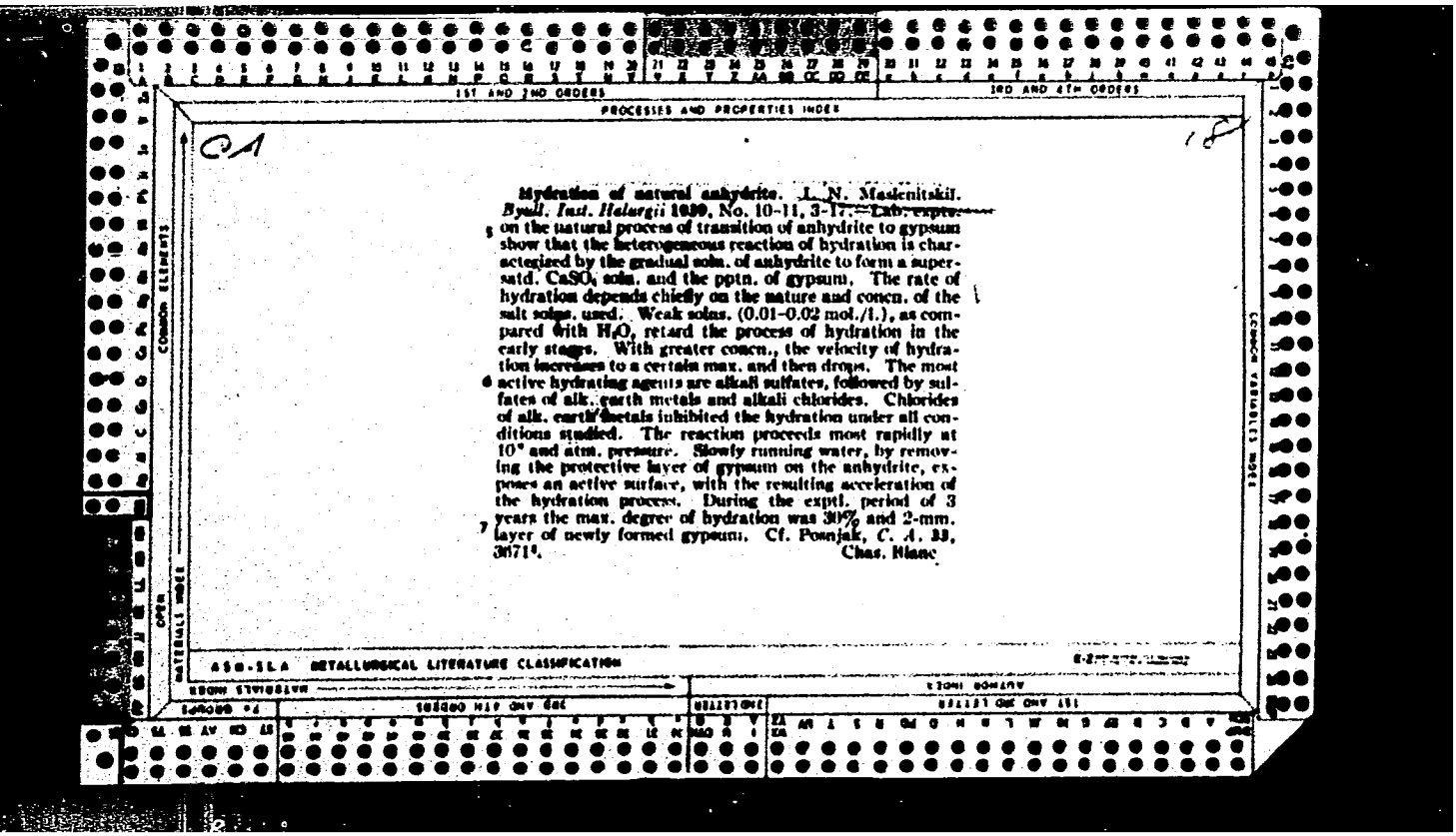


A method for analysis of bauxite minerals. I. N. Maslenitskii and Zavodskaya *Lab.* **8**, 883 d(1939); *Khim. Referat. Zhur.* **1940**, No. 3, 50.—The proposed method for chem. analysis of bauxite minerals is based on the selective solv. of the components of bauxites. HCl (d. 1.19), N alkali soln. and 70% H_2SO_4 are proposed as selective solvents for hydrargillite. Although these solvents are not fully selective in their action the various velocities for dissolving the components of bauxites under definite conditions permit their use. A 5-fold amt. of KOH (as compared with Al_2O_3) is added to the bauxite sample on a water bath. The amt. of dissolved Al_2O_3 corresponds to the content of hydrargillite. The insol. residue is treated under the same conditions with H_2SO_4. The content of bohmite is detd. in the soln. Kaolinite and diaspore remain undissolved. To det. kaolinite heat the insol. residue at 500°, ext. the dehydrated kaolinite with 70% H_2SO_4 and det. Al_2O_3 (corresponding to kaolinite) in the soln. The errors are large if the contents of the components are small. The gravitational sepn. method was also used for bauxites. Clay (kaolinite) is detd. by washing with a stabilizer (soda or NaOH). The residue consisting of grains is dried, passed through a sieve and sepd. gravitationally in heavy liquids (d. 2.5–2.9). Bromoform is used as a heavy liquid (d. 2.9). Hydrargillite is concd. in the light fractions (<2.5).

W. R. Henn



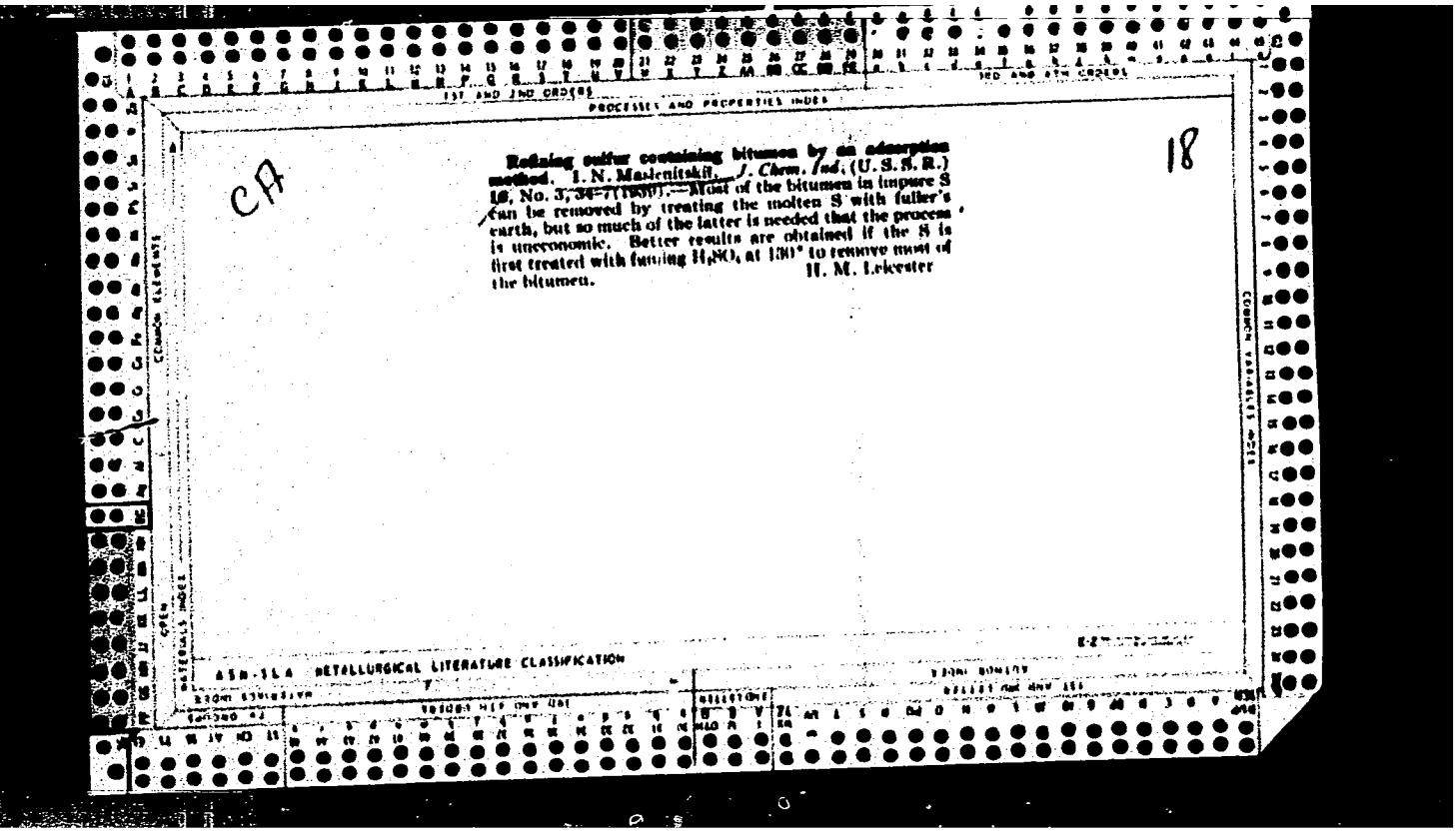
PROCESSES AND PROPERTIES INDEX

CA

1

Hydration of natural anhydrite. L. N. Maslenitskii. *Byull. Inst. Halurgii* 1939, No. 10-11, 3-17.—Lab. expts. on the natural process of transition of anhydrite to gypsum show that the heterogeneous reaction of hydration is characterized by the gradual soln. of anhydrite to form a supersatd. $CaSO_4$ soln. and the pptn. of gypsum. The rate of hydration depends chiefly on the nature and concn. of the salt solns. used. Weak solns. (0.01–0.02 mol./l.), as compared with H_2O, retard the process of hydration in the early stages. With greater concn., the velocity of hydration increases to a certain max. and then drops. The most active hydrating agents are alkali sulfates, followed by sulfates of alk. earth metals and alkali chlorides. Chlorides of alk. earth metals inhibited the hydration under all conditions studied. The reaction proceeds most rapidly at 10° and atm. pressure. Slowly running water, by removing the protective layer of gypsum on the anhydrite, exposes an active surface, with the resulting acceleration of the hydration process. During the exptl. period of 3 years the max. degree of hydration was 30% and 2-mm. layer of newly formed gypsum. Cf. Posnjak, *C. A.* **33**, 3071⁹. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

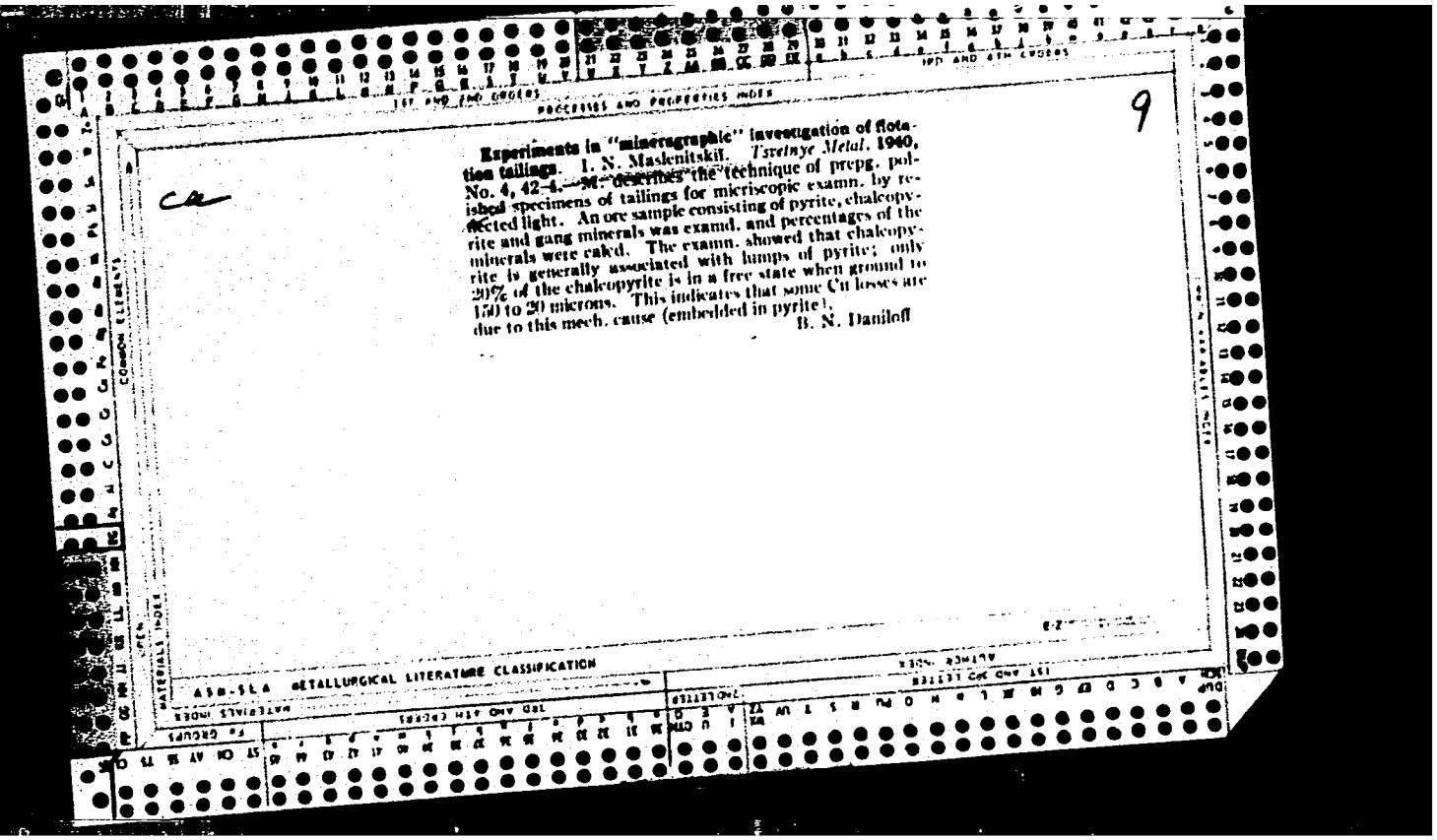


CA

18

Refining sulfur containing bitumen by an adsorption method. I. N. Maslenitskii. *J. Chem. Ind.* (U. S. S. R.) 16, No. 3, 36–7 (1939).—Most of the bitumen in impure S can be removed by treating the molten S with fuller's earth, but so much of the latter is needed that the process is uneconomic. Better results are obtained if the S is first treated with fuming H_2SO_4 at 130° to remove most of the bitumen.
H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



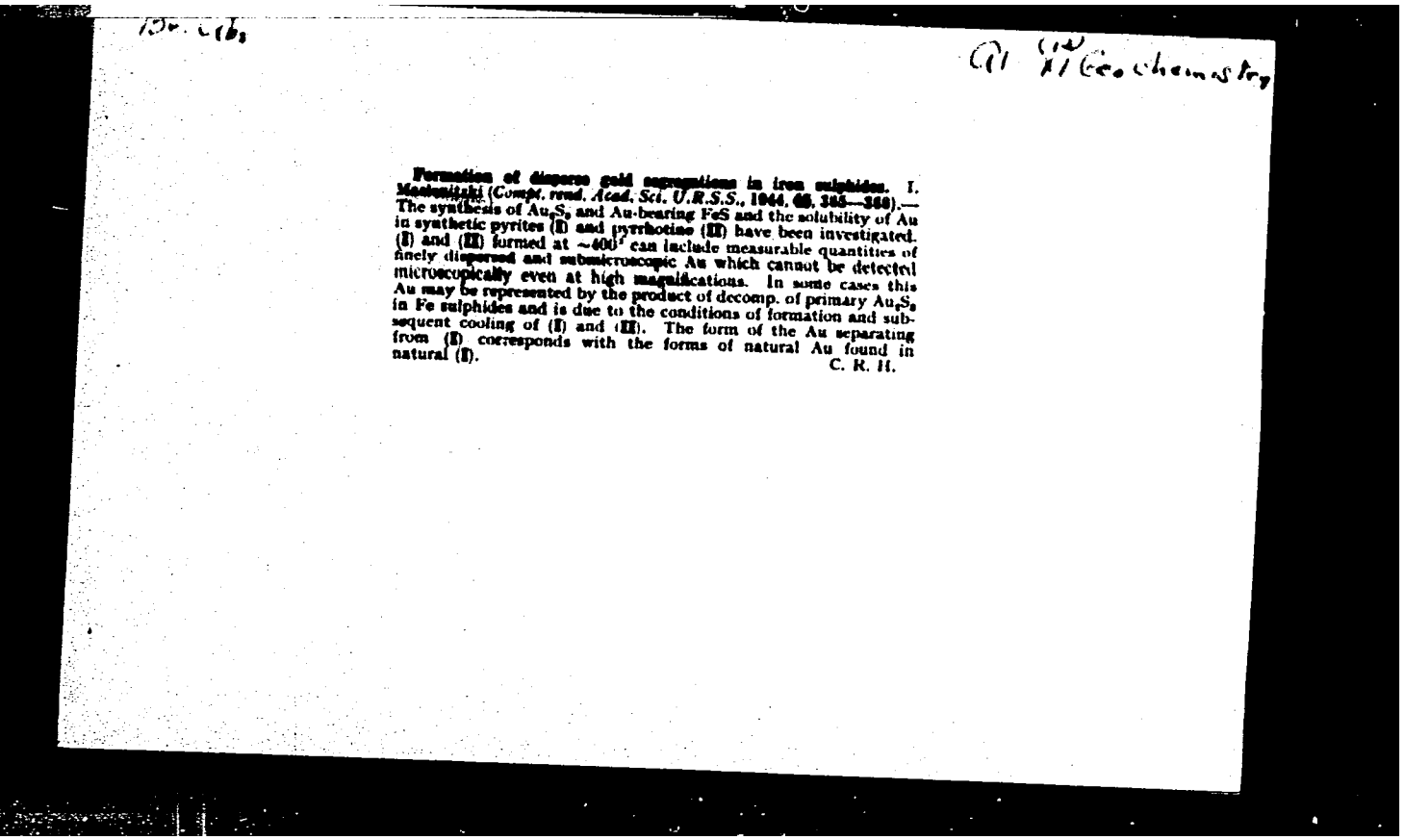
Experiments in "mineragraphic" investigation of flotation tailings. I. N. Maslenitskii. *Tsvetnye Metal.* 1940, No. 4, 42–4.—M. describes the technique of prepg. polished specimens of tailings for micriscopic examn. by reflected light. An ore sample consisting of pyrite, chalcopyrite and gang minerals was examd. and percentages of the minerals were calcd. The examn. showed that chalcopyrite is generally associated with lumps of pyrite; only 20% of the chalcopyrite is in a free state when ground to 150 to 20 microns. This indicates that some Cu losses are due to this mech. cause (embedded in pyrite).

B. N. Daniloff

CA

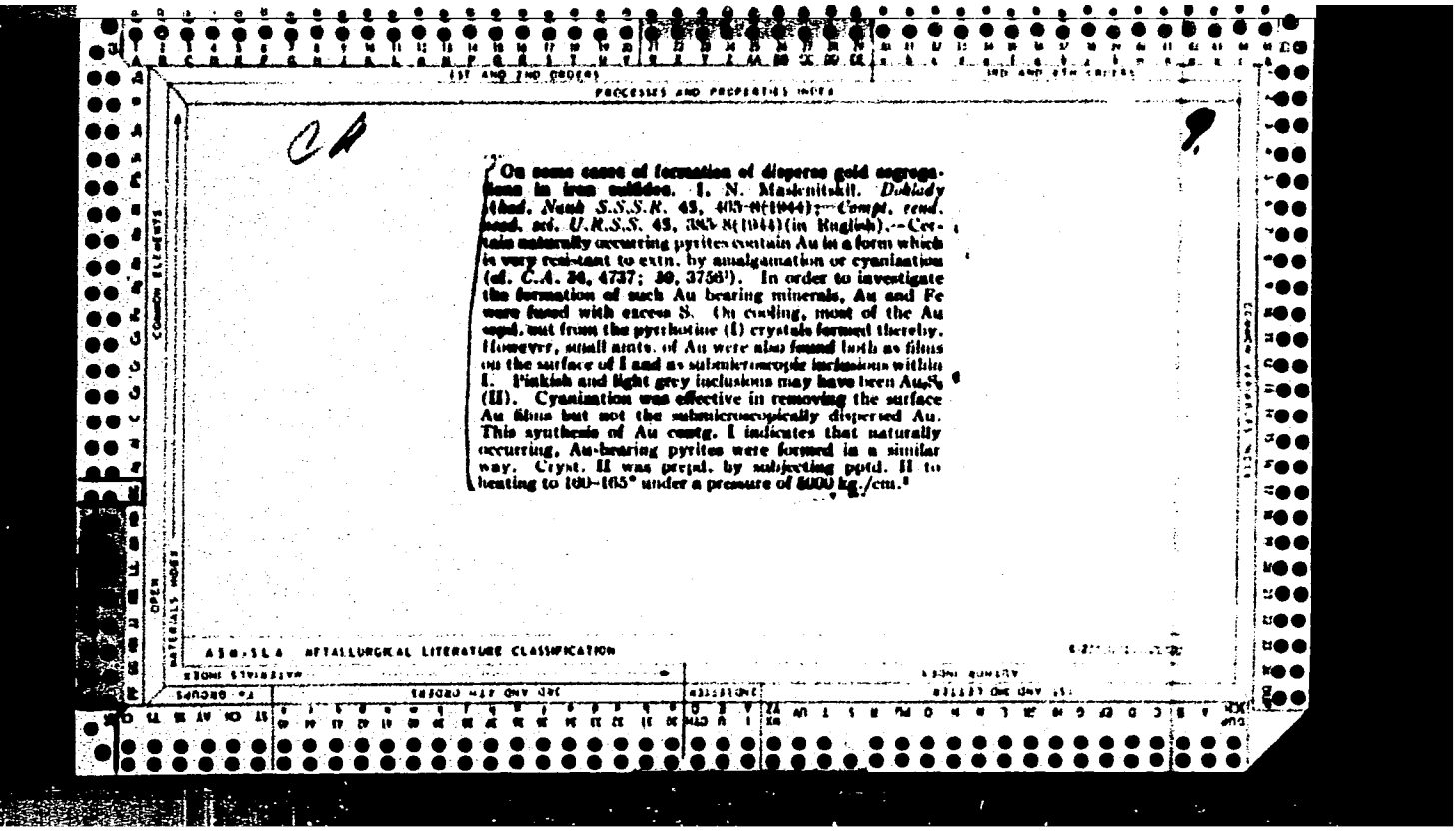
1

Determination of bitumens in lump sulfur. I. N. Madenitskii. *Zavodskaya Lab.* 9, No. 1, 104-6(1940).—The paper compares the methods of Fresenius and Beck, of Vinti-Salvatore and of Renald Fleck and Ward for the detn. of bitumens. All existing methods are for tech. analysis and their accuracy is sufficient for practical purposes. The method of Fresenius-Beck is the least accurate. The deviations reached 40-60%. This is explained by the formation of stable S compds. which are not distd. off at 200° (owing to the prolonged contact of fused S with liquid bitumens). Optimum results are obtained from the method of Fleck and Ward which gives reproducible results, especially in detg. bitumens in lump and retort S. M. modified this method by replacing Na_2SO_3 and Na_2S with 5% NaOH to accelerate the soln. of S. By the modified method, the deviation from the true contents of bitumens usually were 2-3%, although in single instances they reached 13-19%. These large deviations are explained by exptl. errors. The method of Fleck and Ward is suitable for practical purposes, is simple and as accurate as any other known method. Four references. W. R. H.



Formation of disperse gold segregations in iron sulphides. I. Maslennitski (*Compt. rend. Acad. Sci. U.R.S.S.*, 1944, 45, 385—388).— The synthesis of Au_2S_3 and Au-bearing FeS and the solubility of Au in synthetic pyrites (I) and pyrrhotine (II) have been investigated. (I) and (II) formed at ~400° can include measurable quantities of finely dispersed and submicroscopic Au which cannot be detected microscopically even at high magnifications. In some cases this Au may be represented by the product of decomp. of primary Au_2S_3 in Fe sulphides and is due to the conditions of formation and subsequent cooling of (I) and (II). The form of the Au separating from (I) corresponds with the forms of natural Au found in natural (I).

C. R. H.



On some cases of formation of disperse gold segregations in iron sulfides. I. N. Maskenitskii. *Doklady Akad. Nauk S.S.S.R.* 45, 403-6(1944).—*Compt. rend. acad. sci. U.R.S.S.* 45, 385-8(1944)(in English).—Certain naturally occurring pyrites contain Au in a form which is very resistant to extn. by amalgamation or cyanidation (cf. *C.A.* 36, 4737; 39, 3756⁵). In order to investigate the formation of such Au bearing minerals, Au and Fe were fused with excess S. On cooling, most of the Au segd. out from the pyrhotine (I) crystals formed thereby. However, small amts. of Au were also found both as films on the surface of I and as submicroscopic inclusions within I. Pinkish and light grey inclusions may have been AuS_2 (II). Cyanidation was effective in removing the surface Au films but not the submicroscopically dispersed Au. This synthesis of Au contg. I indicates that naturally occurring, Au-bearing pyrites were formed in a similar way. Crystn. II was prepd. by subjecting powd. II to heating to 160–165° under a pressure of 8000 kg./cm.²

CA

8

Tin-bearing minerals of the platinum group in sulfide copper-nickel ores. I. N. Masloitskii, P. V. Palcev, and R. V. Ivkyni (Leningrad Mining Inst.). *Doklady Akad. Nauk S.S.S.R.* **36**, 1137-40 (1937). Examn. of the ore conglomerate from Cu-Ni-sulfide recovery showed ferroplatinum to be the most common mineral; it is usually associd. with stannopalladinite and occasionally with minerals of unknown nature. Of these, ferroplatinum is the hardest (4–4.5) and forms cubic and platelike aggregates. The Sn-bearing mineral is distributed throughout its structure in a regular fashion and its analysis indicates the compn. Pd_3Sn_2. One of the unknown minerals appears to be a solid soln. of stannoplatinite in stannopalladinite.

G. M. Kondratieff

MASLENITSKIY, I. N.

MASLENITSKIY, I. N. "New platinum minerals in sulfide copper-nickel ores", Zapiski Leningr. gornogo, in-ta, Vol. XXII, Part 2, 1948, p. 199-205.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

MASLENITSKIY, I.N., prof.; KRICHEVSKIY, L.A.

Separation of copper-nickel converter mattes by mechanical concentration. TSvet.met. 28 no.3:6-10 My-Je '55. (MIRA 10:11)
(Flotation) (Copper--Metallurgy) (Nickel--Metallurgy)

137-58-6-11331

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 11 (USSR)

AUTHOR: Maslenitskiy, I.N.

TITLE: Flotation Separation of Copper-nickel Mattes (Flotatsionnoye razdeleniye medno-nikelevykh faynshteynov)

PERIODICAL: Materialy Soveshchaniya po vopr. intensifik. i usoversh. dobychi i tekhnol. pererabotki medno-nikelevykh i nikelevykh rud. 1956 g. Moscow, Profizdat, 1957, pp 222-230

ABSTRACT: A study is made of the relationship between the results of the separation of mattes (M) by flotation and the Fe contents thereof and the rate of cooling of the material to be separated. It is shown that in order to derive high-quality results in the separation of M under ordinary factory conditions, the Fe contents should be <1%. When Fe contents are >3%, the separation criteria are markedly impaired. The question of separating ferrous M was successfully solved by changing the rate at which it was cooled prior to pulverization. A slowing of the rate of cooling makes for satisfactory crystallization of the phase constituents and permits separation thereof in the subsequent flotation. Thus, the rate of cooling should be

Card 1/2

137-58-6-11331

Flotation Separation of Copper-nickel Mattes

determined in accordance with the Fe contents of the M. In order to produce an Ni concentrate with minimum Cu contents, there is no need that all the material be ground until 80% is -40 microns, inasmuch as the Cu content of the Ni concentrate diminishes to a definite level when pulverized until 50% is -40 microns, but remains constant thereafter, regardless of the finer grinding. It is recommended that materials be cooled more slowly before concentration and multi-stage flotation.

A.Sh.

1. Copper-nickel ores--Flotation 2. Copper-nickel ores--Separation 3. Copper-nickel ores--Properties

Card 2/2

MASLENITSKIY, I. N.

Maslenitskiy, I. N. and V. V. Dolivo-Dobrovol'skiy (Mekhanobr)

"The rendering harmless of waste water from beneficiation plants"

report presented at the 4th Scientific and Technical Session of the Mekhanobr Inst, Leningrad, 15-18 July 1958

MASLENITSKIY, I. N.

By Maslenitskiy, I.N. and P.N. Perlov

"The present state of the autoclave-soda process of treating tungsten-ore beneficiation products in the USSR;"

report presented at the 4th Scientific and Technical Session of the Mekhanobr Inst, Leningrad, 15-18 July 1958

AUTHOR: Maslenitskiy, I. N. SOV/163-58-2-16/46

TITLE: The Method of the Autoclave Treatment of Platinum Containing Mud Formed in the Nickel Electrolysis (Metod avtoklavnoy pererabotki platinosoderzhashchikh shlamov elektroliza nikelya)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 2, pp. 98-103 (USSR)

ABSTRACT: The treatment of the anode mud formed in the nickel electrolysis without acid was carried out in autoclaves at higher temperatures. In this treatment the sulfides of copper and nickel are oxidized to the corresponding sulfates at constant oxygen pressure; these sulfates can be separated from the mud. The oxygen pressure at a temperature of 70-145°C is 15-20 atmospheres excess pressure. From the results obtained may be seen that the oxidation rate of the sulfides increases with the increase in temperature. After a two hours treatment of the mud in autoclaves copper is completely oxidized and nickel almost to 90%; either of them passes into solution. The rare metals of the anode mud are concentrated to a high degree by a combined autoclave and hydrometallurgical treatment of the anode mud employing also mechanical concentration. The content of the

Card 1/2

The Method of the Autoclave Treatment of Platinum Containing Mud Formed in the Nickel Electrolysis

noble metals gold, silver and platinum in the concentrate amounts to 50%. Based on these investigations an efficient scheme for the treatment of the anode mud was suggested. All processes take place rapidly without the use of sulfuric acid, and an efficient concentration of the platinum metals is obtained. There are 5 figures, 1 table, and 3 references, 3 of which are Soviet.

ASSOCIATION: Leningradskiy gornyy institut (Leningrad Mining Institute)

SUBMITTED: October 1, 1957

AUTHOR: Maslenitskiy, I.N. SOV/149-58-4-14/26

TITLE: Autoclave Oxidation of Auriferous Sulphide Concentrates Before the Cyaniding Treatment (Opyt avtoklavnogo okisleniya sul'fidnykh zoloto~soderzhashchikh kontsentratov pered tsianirovaniyem)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, 1958, Nr 4, pp 103-108 (USSR)

ABSTRACT: Recovery of gold from sulphide ores and concentrates presents in many cases considerable difficulties owing to the extremely small particle size of the metal which is present in the minerals (mainly pyrite) in such a finely dispersed state that it remains unexposed (i.e. inaccessible to the cyanide solution) in material ground to contain 90% of -325 mesh particles. Oxidising roasting treatment is often used to overcome this difficulty but unavoidable losses of gold in dust formed during roasting, and the fact that a thin layer of low melting point mixtures formed sometimes by certain ore constituents and enveloping the gold particles may defeat the purpose of the roasting process,

Card 1/5

Autoclave Oxidation of Auriferous Sulphide Concentrates Before the Cyaniding Treatment

detract from the value of this method. The hydrometallurgical process of autoclave oxidation appears to be a more promising solution and caustic soda or ammonia have been recommended (Ref.1-2) as suitable leaching reagents. However, these solvents are of little practical value owing to their high cost. On the other hand, it has been shown that sulphides (particularly pyrites) can be completely oxidised in water at 120°C, and the subject of the present investigation was to examine the feasibility of utilising this fact for developing an efficient and economical method of pre-treating the sulphide concentrates containing finely dispersed gold. The gold content of the five different concentrates used in the experiments varied between 6 and 43 g/ton. (The complete chemical analysis is given in Table 1.) The results of determination of the gold content in various fractions of the concentrates with the particle size varying from -5 to +74μ (Fig.1) showed that all samples

Autoclave Oxidation of Auriferous Sulphide Concentrates Before the Cyaniding Treatment

could easily contain 5-10 g/ton of finely dispersed metal. This was confirmed by tests in which all the experimental samples were roasted at various temperatures and subjected to the cyaniding treatment, after which the gold content of the tailings was determined. Even under optimum roasting conditions the recovery of gold did not exceed 70-80%, while the amount of the metal left in the tailings reached sometimes a value as high as 10 g/ton. (It was shown incidentally that maximum recovery of gold is attained after roasting at 600°C. See Fig.2.) As regarding autoclave oxidation, both the published data and the present Author indicate, under various conditions by the pressure are the that temperature and partial oxygen rate of the reaction and main factors determining the degree of oxidation. At 140°C and under partial oxygen pressure of 20 atm, pyrite is completely oxidised in 2 hrs (Fig.3). Although arsenopyrite is also ra... oxidised under these conditions (Fig.3), on...

Card 3/5

Autoclave Oxidation of Auriferous Sulphide Concentrates Before the Cyaniding Treatment

insignificant proportion of arsenic passes into the solution, since practically all As is absorbed by iron hydroxide formed as the result of hydrolysis of iron sulphate. In the experiments carried out by the present Author, all iron, 95% arsenic and 50% sulphur were precipitated in the form of basic salts, in which a small amount of free sulphur liberated during the oxidation process was present. After removing the sulphuric acid solution, the precipitate-treated with a lime solution to remove the last traces of acid and to extract free sulphur in the form of soluble calcium sulphide - was subjected to the usual cyaniding treatment, the results of which are given in Table 3, side by side with those obtained in cyaniding the roasted concentrates of the same composition. In the latter case, the maximum recovery of gold was 87.5% with the maximum gold content in the tailings equal 10 g/ton. The corresponding figures for the concentrate oxidised by the wet process were 96% and 3.5 g/ton.

Autoclave Oxidation of Auriferous Sulphide Concentrates Before the Cyaniding Treatment

These results confirmed the view that in some cases the gold-bearing sulphide concentrates can be effectively and economically prepared for cyaniding by autoclave oxidation. There are 3 figures, 2 tables and 2 references of which 1 is English and 1 Soviet.

ASSOCIATION: Leningradskiy Gornyy Institut, Kafedra Metallurgii Tsvetnykh i Blagorodnykh Metallov (Leningrad Mining Institute, Chair for Metallurgy of Non-Ferrous and Noble Metals)

SUBMITTED: 16th February 1958.

MASLENITSKIY, I.N., prof.

Place of autoclave hydrometallurgy in the flowsheet of copper-nickel ore conversion. TSvet. met. 31 no.4:1-5 Ap '58. (MIRA 11:5)

1. Leningradskiy gornyy institut.
(Nonferrous metals) (Autoclaves) (Hydrometallurgy)

SOV/136-59-7-7/20

AUTHOR: Maslenitskiy, I.N.

TITLE: Flotation-Autoclave Method for Treating Nickel-Electrolysis Anode Slimes

PERIODICAL: Tsvetnyye metally, 1959, Nr 7, pp 36-40 (USSR)

ABSTRACT: The author points out that Soviet and foreign practice for primary treatment of nickel-electrolysis anode slimes are extravagant in plant size and reagents. Drawbacks remained in the gravitation-hydrometallurgical method developed in 1940 by the Leningradskiy gornyy institut (Leningrad Mining Institute) and applied at a Soviet works. After research on this a gravitation-autoclave method was recommended by the author (Ref 1) (Figs 1 and 2 show sulphide oxidation as a function of temperature and oxygen consumption as a function of time, respectively). It was later decided to use flotation instead of gravity concentration, work abroad (Ref 2) having proved promising. In contrast to this work (Ref 2) the author dealt with materials containing considerable quantities of sulphides

Card 1/3

Flotation-Autoclave Method for Treating Nickel-Electrolysis Anode Slimes

and some nickel ferrite. Preliminary experiments showed that in acid solution flotation of sulphides, selenides, tellurides and noble metals is very active; part of the copper and nickel went into solution while the nickel ferrite and nickelous oxide were mechanically entrained in the concentrate. Optimum H_2SO_4 concentration in the pulp was found to be 20%, though 3-5% and 250 g/ton of reagent gives satisfactory results. Alcoholic IM-68 was used as frothing agent. With re-purification of the flotation concentrate its recovery was about 60%. To improve its quality wet electromagnetic separation was used, the product (mainly sulphides of nickel and of copper) being subjected to autoclave treatment. A flowsheet (Fig 3), based on these results, used to treat several portions of slime; the combined products showed a high concentration (Pt + Pd > 56%) and recovery of platinoids in the final concentrate (Table), whose yield is about 3%. Further improvement is obtained by roasting at 800 - 900°C. The magnetic product and flotation tailings can be smelted

Flotation-Autoclave Method for Treating Nickel-Electrolysis Anode Slimes

under sulphiding conditions to give a platinoid-enriched product for retreating with the feed slime: overall platinoid recovery can then rise to 99%. Losses of rare platinoids in autoclave solutions were small, but the author mentions the possibility of precipitation from sulphate solution. The flowsheet provides for recovery of selenium and, in some cases, tellurium, a separate method for their recovery, developed at the Leningrad Mining Institute by T.N. Greyver (Ref 3), is also available. The author recommends the large-scale testing of this flowsheet. There are 3 figures, 1 table and 3 references, 2 of which are Soviet and 1 English

ASSOCIATION: Leningradskiy gornyy institut (Leningrad Mining Institute)

MASLENITSKIY, I.N. and PERLOV, P.P.

"Development of the Autoclave-soda Process for the Treatment of Tungsten Concentrates."

report to be presented at the Intl. Mineral Processing Congress, London, England, 6-9 Apr 60.
All-Union Scientific Reasearch Institute for Mechanical Processing of Minerals, Leningrad.

MASLENITSKIY, I.N.; POLIYEVSKIY, L.N.

Assaying materials containing a large amount of iron or chromium oxides. Izv. vys. ucheb. zav.; tsvet. met. 4 no.5: 139-144 '61. (MIRA 14:10)

1. Leningradskiy gornyy institut, kafedra metallurgii tyazhelykh tsvetnykh i blagorodnykh metallov.

(Tailings (Metallurgy))--Analysis)
(Slag--Analysis)
(Metallic oxides--Analysis)

ACCESSION NR: AT4043065 S/2834/63/042/003/0025/0034

AUTHOR: Maslenitskiy, I. N., Zverevich, N. V.

TITLE: Amalgamation of Fe-Ni alloys

SOURCE: Leningrad. Gorny*y institut. Zapiski, v. 42, no. 3, 1963. Khimiya, metallurgiya, obogashcheniye (Chemistry, metallurgy, ore concentration), 25-34

TOPIC TAGS: nickel iron alloy, permalloy, kovar, alloy EI996, platinum, Armco iron, nickel iron alloy amalgamation, zinc amalgam, alloy surface wettability, oxide film effect, amalgamation

ABSTRACT: Amalgamation of Permalloy, Kovar (18% Co, 29% Ni, 53% Fe), alloy EI996 (2% Be, 98% Ni), platinum and "Armco" iron was studied by measuring wettability by mercury under various conditions calculated to prevent formation of oxide films. These included hydrogen reduction of the test plates and wetting under an acid layer following electrolytic reduction of oxide films. Surface preparation and experimental techniques are described. Other experiments involved effects of temperature, environment, hydrogen pressure and the Hg-Pd contact period on solubility of Pd coatings in mercury, as well as the wetting of these metal and alloy surfaces by zinc, ammonium and sodium amalgams. The results indicate that amalgamation of iron-nickel alloys cannot be effected

Card 1/2

ACCESSION NR: AT4043065

by standard methods, as wetting of the metal surface by mercury is obstructed by the instantaneous formation of oxide films. Hydrogen reduction of oxides was ineffective due to immediate reoxidation and even contacts in a hydrogen atmosphere did not insure good results in most cases. However, exposure of the metal surface to zinc amalgam in an acid medium insured good amalgamation. Orig. art. has 1 table, 5 graphs, 3 chemical equations and 1 diagram.

ASSOCIATION: Leningradskiy ordenov Lenina i Trudovogo Krasnogo Znameni gorny*y institut im. G. V. Plekhanova (Leningrad Mining Institute)

SUBMITTED: 00 ENCL: 00

SUB CODE: MM NO REF SOV: 005 OTHER: 006

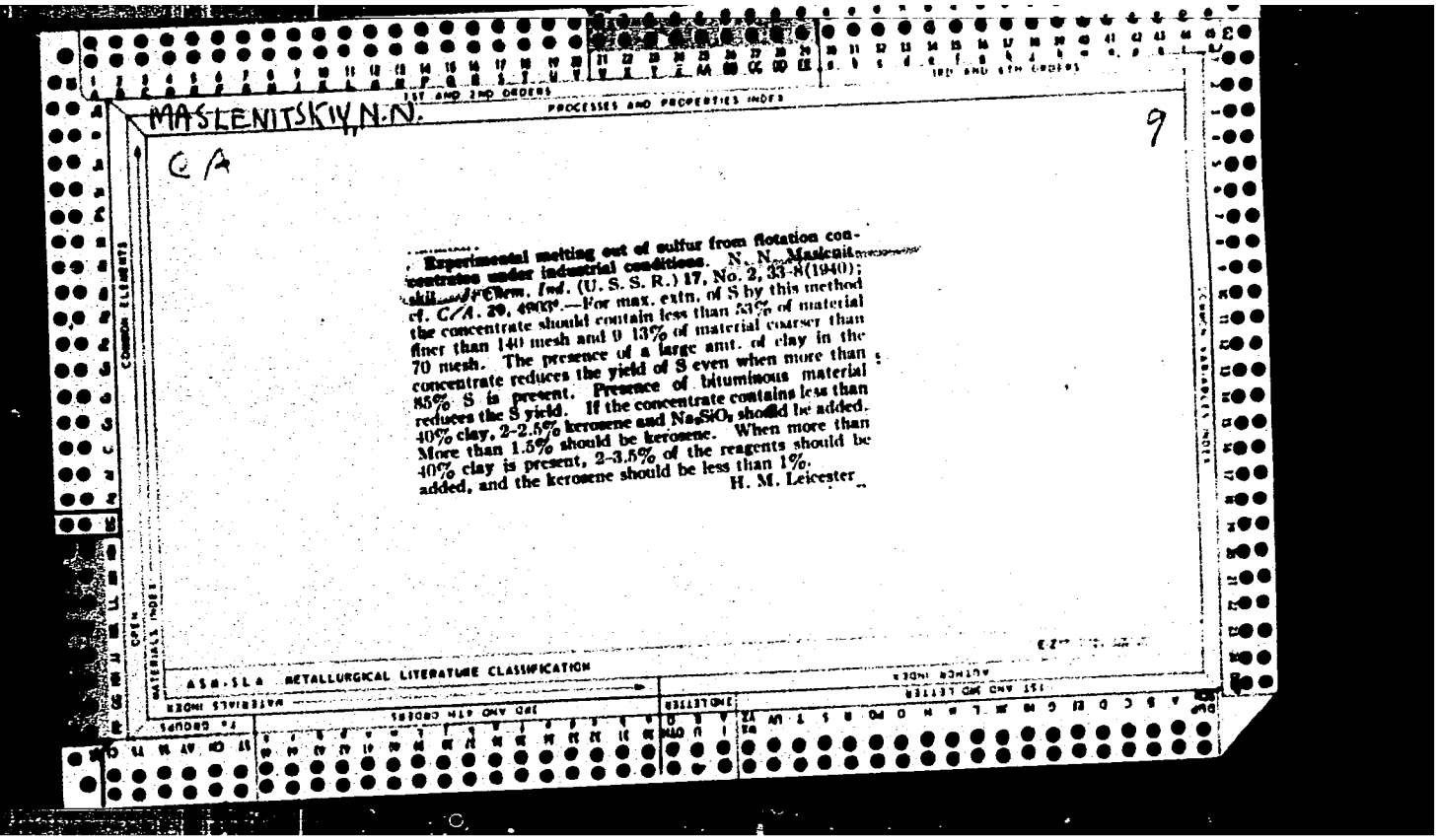
Card 2/2

MASLENITSKIY, I.N.; ZVEREVICH, N.V.

Hydrometallurgical separation of metallized copper-nickel matte. Tsvet. met. 38 no.1:46-47 Ja '65 (MIRA 18:2)

MASLENITSKIY, I.N.; CHUGAYEV, L.V.

Autoclave processing of intermediate products of converter matte flotation separation. TSvet. met. 38 no.4:35-39 Ap '65. (MIRA 18:5)



SOV/137-58-9-18748

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 85 (USSR)

AUTHOR: Maslenitskiy, N.N.

TITLE: Major Trends in the Investigation of the Soda Process of Treatment of Scheelite-molybdenum Concentrates (Osnovnyye napravleniya issledovaniya sodovogo protsessa pererabotki sheyelito-molibdenovykh kontsentratov)

PERIODICAL: Obogashcheniye rud, 1957, Nr 4, pp 3-10

ABSTRACT: A discussion is presented of the two fundamental operations in a flowsheet developed by the Mekhanobr Institute for a soda autoclave process of treating W-ore concentrates: Autoclave leaching (AL) and separation of the W and Mo. The conditions for maximum extraction of the metal in solution and the methods used to reduce Na_2CO_3 consumption in AL and of reacting Na_2CO_3 with $CaWO_4$ are examined, as is the efficiency of the introduction of balls into the pulp in AL and examples of AL of products high in W and Mo. The Mekhanobr investigations have established, and industrial practice has confirmed, the possibility of high recovery of W and oxidized Mo in solution when the

Card 1/2

Major Trends in the Investigation of the Soda Process (cont.)

temperature of the soda solution is 200-225°C. The highest level of W and Mo separation is attained when Mo is precipitated by Na_2S. Pilot-plant tests of a flowsheet for the treatment of crude scheelite concentrates with delivery of WO_3 and MoS_3 yielded an average monthly extraction rate of 90.4% of the W (94% technical recovery). The properties of the WO_3 derived satisfy current technical specifications. The treatment of rich scheelite-molybdenite concentrates by AL yielded an Mo product containing 30-40% Mo. The Mo/WO_3 ratio came to >10, i.e., the product was quite well suited to the needs of the ferroalloys industry. The artificial scheelite obtained contained 69-72% WO_3, 0.1-0.2% Mo, 0.008-0.018% P, and 0.5-0.8% SiO_2. The soda autoclave process has been adopted for use in hydrometallurgical plants under construction and the hydrometallurgical shops of dressing plants treating W and W-Mo concentrates.

N.P.

1. Ores--Processing 2. Molybdenum--Separation 3. Sterilizers--Performance

Card 2/2

MASLENITSKIY, N.N.

TITLE: Conference on Autoclave Processes

PERIODICAL: Tsvetnyye metally, 1959, Nr 7, pp 84-87 (USSR)

ABSTRACT: On 23-26 February 1959 a conference was held in Moscow for summing-up and coordinating work on autoclave processes in the metallurgy of heavy, non-ferrous, rare and noble metals. The conference heard reports as follows: D.M. Yukhtanov, Gintsvetmet, on progress throughout the world on the use of hydrometallurgical, particularly autoclave, methods for non-ferrous and rare metal production; G. N. Dobrokhotov, Gipronikel', on nickel leaching practice at some Soviet works; N. I. Onuchkina and G. N. Dobrokhotov on the thermodynamics and kinetics of the selective reduction by hydrogen and carbon monoxide under pressure of nickel and cobalt from solution; I. Yu. Leshch and K. M. Shelepova, Gipronikel', on design decisions on the application of the flowsheets dealt with by G. N. Dobrokhotov at the Yuzhuralnikel' and Severonikel Combines and the Ufaleyskiy (Ufa) Nickel Works; I. N. Maslenitskiy, Leningradskiy gornyy institut (Leningrad Mining Institute) on the advantages of a combined flotation-autoclave method for nickel-electrolysis of slimes containing platinum-group metals; V. B. Zhilkin, Severonikel' combine, and S. I. Sobol', Gintsvetmet, on the essentials of the neutral method of oxidizing leaching of nickel concentrate from converter-matte flotation; S. I. Sobol' on preliminary investigations on the development of a sulphurous-sulphuric method for leaching nickel and cobalt from oxidized nickel ores; N. N. Maslenitskiy, Mekhanobr, on the main results of investigations of the autoclave-soda process for treating tungsten-ore beneficiation products:

Card 1/5

V. I. Paprukaylo, Mekhanobr, and D. A. Malakhov, Skopinskaya (Skopinsk) TsOF, separately, on problems in the application of an autoclave-soda flowsheet to scheelite and wolframite raw material; G. A. Meyerson, K. Ya. Shapiro, E. E. Kharskiy, R. A. Pavlyuk and A. P. Sadol'skiy, Krasnoyarskiy institut tsvetnykh metallov (Krasnoyarsk Non-Ferrous Metals Institute) on the treatment of tungsten concentrates in hermetical, heated ball-mills with acids or caustic alkalies; V. I. Spiridonova, S. I. Sobol', Ye. I. Gulyayeva, Z. L. Berlin, I. M. Nelen' and B. I. Budenko, Gintsvetmet, on the treatment of prepared and unprepared sulphide molybdenum raw material by oxidizing autoclave alkaline leaching; I. M. Nelen' and S. I. Sobol' on the kinetics of oxidizing autoclave leaching; A. N. Zelikman and Z. M. Lyapina, Krasnoyarsk Non-Ferrous Metals Institute, on the results of a study of conditions for the selective separation of lower oxides of tungsten and molybdenum from their salt solutions by hydrogen under pressure; M. V. Darbinyan, Gornometallurgicheskiy institut (Mining-Metallurgical Institute)

Card 2/5

of the Sovnarkhoz (economic council) of the Armyanskaya SSR (Armenian SSR), on his investigations of ammoniacal autoclave leaching under oxygen pressure of molybdenum concentrates; S. I. Sobol' on technical-economic factors of ammoniacal leaching; A. I. Sinel'nikova and I. N. Plaksin, Krasnoyarsk Non-Ferrous Metals Institute, on an oxidizing autoclave process for gold-containing raw material; N. G. Tyurin, Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institute) on the behaviour of noble metals in oxidizing autoclave leaching in thiosulphate solutions; A. L. Tseft and D. A. Taraskin and A. Yu. Dadabayev, Institut metallurgii i obogashcheniya AN Kaz SSR (Metallurgy and Beneficiation Institute of the AS Kaz SSR), respectively, on the physicochemical fundamentals and on works' trials of autoclave salt leaching of polymetallic materials; I. Yu. Leshch, Gipronikel', on the unsuitability of autoclave leaching for lime-containing materials; V. A. Bernshteyn, VAMI, on industrial experience of a continuous autoclave leaching process for bauxites; V. G. Tronev, IONKh AN

Card 3/5

SSSR (IONKh AS USSR), on compounds of some rare elements in various valency states under oxygen and hydrogen pressure in the presence of anhydrous ammonia; Z. L. Berlin, Gintsvetmet, on autoclave design and operation; P. G. Yakovlev, Gipronikel', and N. Ye. Vishnevskiy, VNII neftekhim, on model studies on autoclaves and the development of mixers; K. A. Polyanov, K. B. Giredmet, on the design of an experimental high-pressure pulp pump. G. L. Shvarts, NIIKhIMMASh, on the selection of steel for acid leaching of cobalt matte and matte-flotation concentrate; Yu. I. Archakov, VNIIneftekhim, on corrosion of types 1Kh18N9T, 12KhGN, 10KhSND and 10GND steels in soda and alkaline solutions in the presence of metal salts and oxygen at 5 - 15 kg/mm^2; V. I. Deryabina and N. N. Kalgatin, VNIIneftekhim, separately, on mechanical properties of hydrogen-affected steels. The conference made recommendations aimed at the extension and improve-

Card 4/5

L 20712-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG

AR5013292 S/0081/63/000/012/0438/0438

B

Khimiya, Abs. 12L90

AUTHOR: Tuslenitskiy, N. N.; Perlov, P. M.

TITLE: The autoclave-soda process for the treatment of the enrichment products of tungsten ores

CITED SOURCE: Tr. 4 Nauchno-tekhn. sessii in-ta Mekhanobr., 1958. L., 1961, 342-[illegible], 400-409

TOPIC TAGS: tungsten refining, tungsten molybdenum separation, tungsten ore, wolframite, huebnerite, scheelite, ferberite, soda extraction

TRANSLATION: The authors studied the stages of the leaching out of tungsten by [illegible] ions from the W-containing minerals scheelite, ferberite, huebnerite and [illegible], >98% of the W was extracted into solution if the amount of [illegible]% of the stoichiometric, except that there was poor extraction [illegible] limite even with a large excess (8-12 mol) of soda. When [illegible] introduced into the pulp, 94.5% extraction of W was also achieved [illegible] soda consumption of only twice the stoichiometric amount. Addition [illegible] increased the consumption of soda. During the treatment of W-Mo

L 21712-65

ACCESSION NR: AR3010292

concentrates, Mo was removed from the solutions by the sulfide method; the pH of the solution, and to a lesser extent the Mo concentration and the Mo:W ratio, [illegible] have a decisive effect on the separation of W and Mo. An industrial [illegible] been worked out for the autoclave-soda treatment of tungsten pro- [illegible] V. Matveyev

SUB CODE: MM, IE ENCL: 00

Form [illegible]

MASLENITSKIY, N.N.; LEONCHENKOVA, Ye.T.

Interrelation of nickel and pyrrhotite in sulfide copper-nickel ores.
Obog. rud 7 no.2:21-23 '62. (MIRA 16:4)
(Pyrrhotite—Analysis) (Nickel—Analysis)

FILIPPOVA, Nina Aleksandrovna; MASLENITSKIY, N.N., kand. tekhn. nauk, retsenzent; ARKHANGEL'SKAYA, M.S., red. izd-va; DOBUZHINSKAYA, L.V., tekhn. red.

[Phase analysis of nonferrous metal ores and the products of their processing] Fazovyi analiz rud tsvetnykh metallov i produktov ikh pererabotki. Moskva, Metallurgizdat, 1963. 211 p. (MIRA 16:8)
(Nonferrous metals--Analysis) (Ore dressing)

PLOTNIKOVA, Ye. N., assistent; MASLENKINA, A. M., vrach

Functional characteristics of anomalies of the maxillodental system according to data from physiologic masticatory tests and mastication graphs. Trudy KGMI no.2:215-220 '60.
(MIRA 15:7)

1. Iz kafedry ortopedicheskoy stomatologii - zav. kafedroy dotsent M. A. Solomonov.

(MASTICATION)

MASLENKINA, A.M.

Kalinin Province conference of stomtologists. Stomotologiia 40 no.2: 106 Mr-Ap '61. (MIRA 14:5)

(KALININ PROVINCE—STOMATOLOGY)

MASLENKO, A., instruktor-obshchestvennik.

Restoring compression in model airplane engines. Kryl.rod.5 no.2:15 F '54. (MLRA 7:2)
(Airplanes--Models)

MASLENKO, A.

PHASE I BOOK EXPLOITATION SOV/4020

Aviamodelizm; sbornik statey. Posobiye dlya rukovoditeley aviamodel'-nykh kruzhkov i uchiteley (Aircraft Modeling; Collection of Articles. Textbook for Instructors of Model Aircraft Clubs and Teachers) Moscow, Uchpedgiz, 1960. 141 p. 12,000 copies printed.

Compilers: E.B. Mikirtumov, Candidate of Technical Sciences, and M.S. Lebedinskiy, Candidate of Technical Sciences; Ed.: A.Ye. Stakhurskiy; Tech. Ed.: V.I. Korneyeva.

PURPOSE: This book is intended for instructors and directors of model airplane clubs sponsored by DOSAAF (All-Union Voluntary Society for Promotion of the Army, Navy, and Air Force).

COVERAGE: The book consists of 47 articles covering various aspects of model aircraft design, construction and operation. The text contains many illustrations and diagrams. No personalities are mentioned. There are 185 references, all Soviet.

TABLE OF CONTENTS:

Smirnov, E. Choice of Propeller and Rubber Band Propulsion for Flying Model Airplanes 21

Smirnov, E. Special Features of Flight of Models With Reduced Rubber Band Propulsion 25

Kraslavskiy, B. Theory of Soaring for Model Airplanes 27

Valentinov Yu. Calculating High-Speed Models for Rectilinear Flight 32

PART TWO. CONSTRUCTING AND LAUNCHING MODEL AIRPLANES

Ch. I. Gliding Models 39
Fuselage Model (Kruchra, Yu.) 39
Record-Making Model of A. Aynadinov (Vintin, G.) 39
Model With a Turbulator (Zhemak, Kh.) 44
Control of Soaring Models (Sokolov, Yu.) 46

Ch. II. Rubber-Band Propelled Model Airplanes 47
Designing Models (Matveyev, V.) 47
Rubber-Band Propulsion for Model Airplanes 49
Airplane Models With Rubber-Band Propulsion (Matveyev, V.) 50
Indoor Flying Model "Malyutka" (Kirillov, I.) 52
Fuselage Model Airplane (Tvorozov, I.) 55
High-Speed Model (Kmanin, V.) 58
High-Speed Model of the "Flying Wing" Type (Kmanin, V.) 61
Model Airplane Maker on the Take-Off Stand (Kmanin, V.) 64

Ch. III. Aircraft Models With Piston Engines 66
Soaring Model (Pavlov, P.) 66
Soaring Model (Yermakov, A.) 70
Model Airplane of the "Flying Wing" Type (Kupfer, M.) 73
High-Speed, Free-Flight Models (Martynov, B.) 77
Cable Control, Contour Model of the Yak-18 (Malinovskiy, G.) 80
Cable Control, High-Speed Model 82
Controlled-Flight Model (Vasil'chenko, M.) 84
Designing Cable Control High-Speed Models (Sladki, I.) 86
Control Technique for Cable Control Model Airplanes (Vasil'-chenko, V.) 91

Ch. IV. Piston Engines and Fuels for Flying Models 95
Model Airplane Engine "Vikhr'" (Sukhov, Ye.) 95
Model Airplane Engine MK-09 Designed by V. Petukhov (Gayev-skiy, O.) 99
Model Airplane Engines MB-05-F and MKS-05-F (Gayevskiy, O.) 101
Fuel Tanks for Model Airplanes 103
Fuels for Model Airplane Engines (Gayevskiy, O.) 106
Restoration of Compression in Model Airplane Engines (Maslenko, A.) 109
Manufacture of Piston Rings for Model Airplane Engines (Gayevskiy, O.) 110
Mounting an Incandescent Plug on the MK-12S Compressor Engine (Dem'yanenko, N.) 113
Needle-less Carburetor (Tatsiturnov, V.) 114
Operation Timer for Model Airplane Engines (Grigorenko, A.) 115

ACC NR: AR6026523 SOURCE CODE: UR/0372/66/000/004/G008/G008

AUTHOR: Pechenenko, V. I.; Maslenko, Ye. A.

TITLE: A method of engineering calculation of nonlinear automatic systems

SOURCE: Ref. zh. Kibernetika, Abs. 4G63

REF SOURCE: Avtomatiz. proizv. protsessov v mashinostr. i priborostr. Mezhved. resp. nauchno-tekhn. sb., vyp. 2, 1965, 12-18

TOPIC TAGS: nonlinear automatic control system, harmonic oscillation, servomotor, friction

ABSTRACT: An approximate graph-analytic frequency method of determining the parameters of the natural oscillations of nonlinear systems is proposed. The method is based on the harmonic balance method. The stability of the derived periodic solutions is investigated. Further, the article presents an example of the determination of natural oscillations in a system with three nonlinearities which are determined by backlash in the transmission from the servomotor to the control unit and by dry friction in the servomotor and measuring-amplifying element. 4 illustrations. Bibliography of 4 titles. V. S. [Translation of abstract]

SUB CODE: 09

Card 1/1 UDC: 62-501.3

1. MASLENKOV, F. N.

2. USSR (600)

4. Sawmills

7. Sawing and chopping unit for the preparation of wooden chunks for a gas generator., Les.prom., 12, No.11, 1952.

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

MASLENKOV, F.N., kandidat tekhnicheskikh nauk; BUKKOV, V.I., redaktor; KOLESNIKOVA, A.P., tekhnicheskiy redaktor.

[Production of crate boards, staves, and lathes in lumber camps] Proizvodstvo tarnoi doshchechki, klepki i drani v lespromkhozakh. Moskva, Goslesbumizdat, 1953. 74 p. (MLRA 7:12)
(Lumber) (Lathing)(Staves and stave trade)

MASLENKOV, P.M.; TARASOV, I.A., redaktor; MILENKO, L.A., redaktor; TARASIK, N.P., tekhnicheskiy redaktor.

[Single-chain wood-splitting machines and their operation.] Odnotsepnye drovokol'nye stanki i rabota na nikh. Moskva, Goslesbumizdat, 1954. 15 P. (MLRA 8:3)
(Lumbering--Machinery)

MASLENKOV F.N.

AFANAS'YEV, P.S., kandidat tekhnicheskikh nauk; MASLENKOV, F.N., kandidat tekhnicheskikh nauk, retsenzent; MAKOVSKIY, N.V., kandidat tekhnicheskikh nauk, redaktor; TIKHONOV, A.Ya., tekhnicheskiy redaktor

[Designs of woodworking tools] Konstruktsii derevoobrabatyvaiushchikh stankov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry. Vol. 2. [Specialized tools] Stanki spetsializirovannye. 1954. 443 p. (MLRA 7:10)
(Woodworking machinery)

AFANAS'YEV, Pavel Semenovich, kand. tekhn. nauk.; MANZHOS, F.M., prof., doktor tekhn.nauk, retsenzent.; MASLENKOV, F.N., inzh., retsenzent.; YANYSHEVSKIY, A.F., inzh., red.; PROKOF'YEVA, L.G., red. izd-va.; TIKHANOV, A.Ya, tekhn.red.

[Woodworking machinery] Konstruktsii derevoobrabatyvaiushchikh stankov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry. Vol. 3. [Installation, repair, and operation] Montazh, remont i ekspluatatsiia. 1958. 566 p. (MIRA 11:12)
(Woodworking machinery)

SIROTOV, I.I., dots.; SIROTOV, V.I., inzh.; MASLENKOV, F.N., dots.; STUPNEV, G.K., ofitsial'nyy retsenzent; SULIMOV, A.N., red.; PLESKO, Ye.P., red. izd-va; SHIBKOVA, R.Ye., tekhn. red.; GRECHISHCHEVA, V.I., tekhn. red.

[Forest exploitation]Lesoekspluatatsiia. Moskva, Goslesbumizdat, 1962. 359 p. (MIRA 15:11)

1. Direktor Krestetskogo lesopromyshlennogo khozyaystva TSentral'nogo nauchno-issledovatel'skogo instituta mekhanizatsii i energetiki lesnoy promyshlennosti (for Stupnev).
(Lumbering)

STOGOV, Boris Nikolayevich, dots.; SIROTOV, Ivan Ivanovich, dots.; MASLENKOV, Fedor Nikolayevich, dots.; SHALAYEV, S.A., retsenzent; SULIMOV, A.N., red.; PITERMAN, Ye.L., red.izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Technology, mechanization, and planning of the landings of lumbering enterprises]Tekhnologiia, mekhanizatsiia i proektirovanie nizhnikh skladov lesozagotovitel'nykh predpriiatii. Moskva, Goslesbumizdat, 1962. 414 p. (MIRA 15:11)

1. Direktor Oleninskogo lesopromyshlennogo khozyaystva TSentral'nogo nauchno-issledovatel'skogo instituta mekhanizatsii i energetiki lesnoy promyshlennosti (for Shalayev).
(Lumbering)

MASLENKOV, I.

"New mechanization and organization of the gallery entrance in drilling tunnels in solid and very solid ground." p. 29.
"Apparatus for luminescent analysis of fruits and potatoes." p. 34.
"Innovation in the work of construction long-distance electric lines with high and low tension" p. 35. Vol. 5, no. 3/4, Mar./Apr. 1954, Elektroenergiia, Sofiya

SO: Eastern European Accessions List, Vol 3, No. 11, Nov. 1954, L.C.

MASLENKOV, I.

"Methods and conditions for faster drilling of tunnels for water-power plants."
Vol. 5, no. 5/6, May/June 1954 p. 7 Elektroenergiia, Sofiya.

SO: Eastern European Accessions List, Vol 3, No. 11, Nov. 1954, L. C.

MASLENKOV, I.

"Overexcavation of muck in construction of hydraulic tunnels."

p. 7 (Elektroenergiia) Vol. 8, no. 7, July 1957

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

AUTHOR : Maslenkov, M.Yu, (Engineer).
TITLE : Modernisation of (diesel) engine 8ДР30/50. (Modernizatsiya dvigatelya 8 ДР 30/50). 114-7-12/14
PERIODICAL: "Energomashinostroyeniye" (Power Machinery Construction) 1957, No.7, Vol.3, pp.33-36. (U.S.S.R.)

ABSTRACT : Since 1948 the "Russkiy dizel'" works has been making engines of the families Д and ДР 30/50 with outputs of 400, 600 and 800 h.p. at 300 r.p.m. which have been widely used. The most extensively used are models 6 ДР 30/50 and 8 ДР 30/50 which are used as the main engines in ships with direct drive of the screw. Engine ДР 30/50 is two-stroke, trunk type, compressorless reversing engine working on solar oil or diesel fuel. The principal data of engines Д and ДР 30/50 are given in Table 1. Engines Д and ДР 30/50 are simple and convenient in operation and repair and cheap to produce. They are very reliable but they have a number of defects such as the appearance of cracks in the pistons of engines made before 1951, contamination of the lubricating oil system by fuel and high wear of the universal joints of the lubricator drive and various other defects. Therefore, the Russkiy dizel' works, in 1955, worked out a project of modernisation of engine 8 ДР 30/50-2, a general view of which is given in Fig.1. A most important item in the modernisation is the introduction of oil cooling for the main pistons. This makes the

1/3

engine more reliable and affords the possibility of increasing the output of the engine by increasing the speed and using super-charging. The construction of pistons with supply of cooling oil through the crankshaft and connecting rod is illustrated in Fig.2. The use of oil cooling made it possible to reduce the temperature of the piston head from 600 - 635 C to 400 C. The piston rings and particularly the oil control rings were altered and are now of longer life. With the introduction of piston cooling a greater quantity of oil is required and the output of the oil pump, filter and cooler have been increased. The design of the super-charger pump, illustrated in Fig.3, has been considerably altered. The driving mechanism of this pump has also been simplified and improved. The compressor cylinder, which is little used, has been removed from the engine, which simplifies servicing and improves reliability. The governor has been improved. A new main starting valve has been designed and is illustrated in Fig.4. It is more reliable than the previous design. In order to cut down the time required to approve the modernised engine as a whole, most of the parts were tried out for considerable periods in standard engines.

The complete modernised engine 8 ДР-30/50-2 has been tested for 3000 hours including an 800 hour acceptance test and this

Modernisation of (diesel) engine 8 AP 30/50. (Cont.)

confirmed the reliable operation of the various modernised parts. The main parameters of the engine, which are tabulated in Table 2, were of satisfactory stability. The operating economy of the engine has been improved. The fuel consumption has been reduced by 4 grams per horse power hour and is on an average 178 grams per horse power hour, the oil consumption has also been reduced. The works has now turned over to regular production of the modernised engine. By increasing the speed of the modernised engine to 375 r.p.m. it can develop 1000 h.p. With the use of supercharging, using the energy of the exhaust gases and relatively moderate pressures of blowing air, the engine power can be increased to 1250 - 1300 h.p. The factory is carrying out work on the application of a closed cooling system for the engine using fresh water. The closed cooling system is particularly effective on the modernised engine which is capable of using cooling water with an outlet temperature of 70 - 80 C. The fuel consumption is
3/3 then reduced by 3 - 4 grams per horse power hour. 114-7-12/14
There are 4 figures, 2 tables, no literature references.

AVAILABLE:

SOV/126-7-1-20/28

AUTHORS: Maslenkov, S.B., Skakov, Yu.A. and Ya.S. Umanskiy

TITLE: Structural Changes in Aluminium Bronze Under the Action of Cold Plastic Deformation and Annealing (Strukturnyye izmeneniya v alyuminiyevoy bronze pod deystviyem kholodnoy plasticheskoy deformatsii i otzhiga)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1959, Vol 7, Nr 1, pp 137-141 (USSR)

ABSTRACT: The structural changes after deformation and annealing of monophase aluminium bronze containing 8.02 wt % (17.1 at %) Al (alloy 1) have been investigated electron-optically and by X-rays. In order to solve auxiliary problems of the investigation an alloy known to be two-phased, containing 12 wt % (25.0 at %) Al (alloy 2), was cast. The ingots were hot forged and were given a homogenizing anneal (900°C, 10 hrs). After annealing alloy 1 at 600°, it was found that $a = 3.645_1$ = kX; this result, as well as that for the lattice parameter of the α-phase in alloy 2 (a = 3.652) agrees well with data on the relationship a = f (at % Al) (Ref.6). Thus alloy 1 is in the monophase α-region of

Card 1/4

Structural Changes in Aluminium Bronze Under the Action of Cold Plastic Deformation and Annealing

the existing constitutional diagram. According to electronographic data (Fig.1a and Table on p 140) the lattice parameter of the face-centred cubic solid solution of a specimen of alloy 1, annealed at 600°C, is 3.75 kX. An electron microscope analysis has shown that in this specimen there are, in the vicinity of the grain boundaries, regions rising above the surface of the micro-section, having a width of 0.3 to 0.4 microns, which are difficult to etch (Fig.2a). These regions represent a solid solution (α') with an increased concentration of aluminium and possible other impurities. Comparing this result with the known relationship a = f (at % Al), it can be assumed that the concentration of aluminium in the grain boundary regions of the solid solution is close to the composition of the γ-phase. Deformed specimens give different diffraction pictures, according to the etchant used. After etching in aqua regia, a system of lines of the α solid solution can be seen in the X-ray picture, having a sharply defined texture (Fig.1b). Etching in a mixture of alkalis

Structural Changes in Aluminium Bronze Under the Action of Cold Plastic Deformation and Annealing

leads to the appearance of a system of diffuse lines, instead of textured ones, in the X-ray photograph (Fig.1c). The interplanar distances are close to those given for the γ-phase (see Table). The electronographic data on the appearance of the γ-phase as a result of cold deformation are in agreement with the photomicrograph shown in Fig.2b. On the basis of microhardness tests after 30 minute annealing at various temperatures (Fig.3a), the authors have chosen for their further investigations a temperature range of 275-300°C for annealing. Annealing at these temperatures leads to a pronounced ordering effect. Microhardness measurements after various annealing times at 275°C (Fig.3b) have shown that the hardness of the alloy is not fully removed after very lengthy soaking (up to 100 hrs). Structural changes on annealing consist, firstly, in an increased structural non-uniformity, and in an increase in the volume of the γ-phase. This is evident from the microstructure. In Fig.2c new slip lines are visible. These are regions in which the γ-phase, or the solid solution of increased aluminium concentration, has separated out.

SOV/126-7-1-20/28

Structural Changes in Aluminium Bronze Under the Action of Cold Plastic Deformation and Annealing

Secondly, a basic change in the fine crystalline structure of the solid solution occurs. The lattice parameters of the α-solution in specimens which have been aged for up to 100 hours at 275°C, as well as for 5 hours at 325 - 350°C, differ negligibly from the lattice parameter of an undeformed specimen. There are 3 figures, 1 table and 6 references, of which 5 are Soviet and 1 English.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: April 1, 1957

Card 4/4

28 (5), 18 (7)

AUTHORS: Estulin, G. V., Maslenkov, S. B. SOV/32-25-9-22/53

TITLE: An Investigation of the Structure of Fractures Under the Electron Microscope

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 9, pp 1087-1089 (USSR)

ABSTRACT: In the case under review impressions out of carbon (Refs 3, 4) were used for examining the structure of fractures (F) in alloys. The carbon was applied in vacuum of at least 10^{-4} mm Hg. The carbon film was removed by electrolysis with a current density of 0.5-1 a/cm^2. For steel an electrolyte (75 g of potassium chloride and 5 g of citric acid in 1 liter of water) and for the nickel alloy an electrolyte (3.5 g NaCl, 3 g $FeSO_4$, 10 ml H_2SO_4 in 100 ml solution) were used. The (F) of 20KhG2 steel and of nickel alloy were examined. Comparison of the micro-photographs obtained (Figs 1-3) shows that the structure of the (F) of the nickel-base casting alloy is in a few details different from that of the steel fractures. This is attributed to the fact that the alloy is cast and the main component of the alloy has a kind of crystal lattice different from that of steel. There are 3 figures and 4 references, 1 of which is Soviet.

Card 1/2

An Investigation of the Structure of Fractures Under the Electron Microscope SOV/32-25-9-22/53

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute for Ferrous Metallurgy)

Card 2/2

ESTULIN, G.V.; MASLENKOV, S.B.

Studying the fine structure of fractures in heat-resistant alloys.
Issl. po zharopr. splav. 6:314-317 '60. (MIRA 13:9)
(Heat-resistant alloys--Metallography)

S/032/60/026/009/004/018
B015/B058

AUTHORS: Maslenkov, S. B., Demkin, Yu. I.

TITLE: Methods of the Metallographic Investigation of Molybdenum

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 9, p. 1093

TEXT: A new method of visibilizing the molybdenum structure is described. After having been mechanically polished, the metal surface is electrolytically polished in an electrolyte with 95 ml H_2SO_4 + 5 ml methanol at 14 v. The sample is then rinsed in water and etched in a solution of the following composition: 10 g KOH, 10 g $K_3Fe(CN)_6$, 100 ml H_2O. For cast samples, the etching takes 40-50 sec, and 90 sec for sintered ones. The method produced good results for cast and forged molybdenum samples (Fig. microstructure), as well as for samples produced by powder metallurgy. The time required for visibilizing the structure could be reduced to 5-10 min. There are 1 figure and 2 references: 1 Soviet and 1 US.

Card 1/2

Methods of the Metallographic Investigation of Molybdenum

S/032/60/026/009/004/018
B015/B058

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

Card 2/2

34552

S/659/61/007/000/041/044
D205/D303

18.1V13

AUTHORS: Maslenkov, S.B., and Estulin, G.V.

TITLE: Investigating mosaic structure changes on the ageing of nickel alloys

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam, v. 7, 1961, 342 - 348

TEXT: The changes of the physical and mechanical properties accompanying the decomposition of a supersaturated solid solution were investigated. Alloys on a Ni base alloyed with Al (I), Ti (II), Cr and Al (III), Cr and Ti (IV) were investigated. These alloys also contained minute amounts of Fe and S. The alloys were smelted from pure materials in an induction furnace of 30 kg capacity. 4 ingots of each composition were prepared and forged at 1200°C into 20-mm diameter cylinders. Rings of ~7 mm thickness were cut and used as test specimens. The specimens were hardened by heating at 1150° - 1200°C for 5-8 hours, etched with 1 : 1 HCl : H_2O_2, electropolished on one side and annealed in the presence of titanium hydride at

Card 1/3

X

Investigating mosaic structure ...

10^{-2} mm Hg total pressure. X-ray diffraction patterns were taken at not more than 600 imp/min while the specimens revolved at 60 rpm. The reflection intensity from the (111) planes was measured. The ageing was performed at 600°, 700° and 800°C for periods of 0.25 to 50 hours. Along with the intensity changes, changes in the hardness were also measured. The ageing of all 4 alloys resulted in strength increase. The changes of both the intensity and hardness depend upon the ageing temperature, but are not parallel. Thus, the intensity of reflection does not always increase in the initial stages of ageing as does the hardness. At relatively low ageing temperatures the strengthening is not accompanied by appreciable changes in the mosaic structure which contradicts the data of Pivovarov et al (Ref. 7: Nauchn. dokl. ryssh. shkoly, no. 4, 1959). Ti hinders the change in the mosaic structure and gives finer grain before and after ageing treatment as compared with Al. Introduction of Cr levels off this difference in the influence of Al and Ti. Strength of the samples, corresponding to the same development of mosaic structure attained at high- and low-temperature ageing, differs since the strengthening is related to the amount of the second

Card 2/3

Investigating mosaic structure ... S/659/61/007/000/041/044
D205/D303

phase and the degree of dispersion. The ageing of the Ni-Cr-Al alloy was similar to that of the Ni-Al alloy, but the change in the substructure was less pronounced. The Ni-Cr-Ti alloy showed similar ageing, to that of Ni-Ti, the process being slower. It is concluded that the strengthening during ageing cannot be ascribed to the changes in the mosaic structure alone. The contribution of Ya.S. Umanskiy to the field is stressed. There are 4 figures, 1 table and 17 references: 13 Soviet-bloc and 4 non-Soviet-bloc.

Card 3/3

S/032/61/027/001/013/037
B017/B054

AUTHORS: Maslenkov, S. B. and Demkin, Yu. I.

TITLE: Investigation of Molybdenum Fractures by Parallel Electron-microscopic and Microscopic Examinations of Film Replica of the Destroyed Surface

PERIODICAL: Zavodskaya laboratoriya, 1961, Vol. 27, No. 1, p. 62

TEXT: Film replica were separated from the fracture by a solution of 25 ml of H_2SO_4 in 175 ml of methyl alcohol. A chrome nickel lamina was used as cathode. Samples were etched for 20-35 sec, and films were separated by increasing the voltage from 2 to 14 volts. Molybdenum fractures showed a transcrystalline character under the light microscope.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy)

Card 1/1

KRYLOVA, A.R., ZHARKOVA, D.N., MASLENKOV, S.B.

Kinetics of exidation, compesition and structure of the oxide films of refractory steels and alloys.

SPECIAL STEELS AND ALLOYS (SPETSIAL'NYYE STALI I SPLAVY), Collection of Studies, Issue 27, 240 pages, published by the State Scientific and Technical Publishing House for Ferrous and Non-Ferrous Metallurgy, Moscow, USSR, 1962.

MASLENKOV, S.B., ESTULIN, G.V.

Aging changes occuring in the fine structure of binary nickel alloys.

SPECIAL STEELS AND ALLOYS (SPETSIAL'NYYE STALI I SPLAVY), Collection of Studies, Issue 27, 240 pages, published by the State Scientific and Technical Publishing House for Ferrous and Non-Ferrous Metallurgy, Moscow, USSR, 1962.

40988

18.1151

S/659/62/009/000/023/030
I003/I203

AUTHORS: Krylova, A. P., Maslenkov, S. B., and Zharkova, D. N.

TITLE: The kinetics of oxidation and the structure of oxides of some industrial heat-resisting alloys

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam. v. 9. 1962. Materialy Nauchnoy sessii po zharoprochnym splavam (1961 g.), 162–164

TEXT: The purpose of this work is to investigated the kinetics of oxidation and the phase composition of the oxide layers formed on the surfaces of ЭИ-813, and ЭИ-835 steels and of ЭИ-559A and ЭИ-652 alloys when they are heated in the air from 1 to 100 hours at 900°, 1000°, 1100° and 1200°C. The high corrosion resistance of these alloys is due to the formation of oxide layers of the spinel type on their surface. The EI-813 and EI-835 steels have a high heat-resistance up to 1000–1050°C due to their high chromium content. The authors refrain from explaining all the experimental data obtained as they consider their investigation to be unfinished. In the discussion, Prokoshkin D. A. pointed out the inconsistency of the data on the position of the Cr_2O_3 layer,. There is 1 figure.

Card 1/1

39762

S/126/62/013/006/006/018
E193/E383

18.1151

AUTHORS: Maslenkov, S.B. and Estulin, G.V.

TITLE: The effect of heat-treatment on the properties and variation in the fine structure of a nichrome-base heat-resistant alloy

PERIODICAL: Fizika metallov i metallovedeniye, v. 13, no. 6, 1962, 869 - 874

TEXT: Lack of direct experimental data on the relationship between the strength of metals and alloys and the mosaic structure as well as anomalous dependence of the creep strength of the alloy Х20Н80Т (Kh20N80T) ("Nimonic 80") on the solution-treatment temperature prompted the authors to undertake the present investigation, in the course of which the effect of heat-treatment (quenching followed by ageing) on the fine structure and mechanical properties of alloys of this type was studied. The code marks and chemical analysis of the experimental alloys are given in Table 1. The experimental specimens, cut from hot-forged rod, were held for 8 hours at 1 030, 1 080 or 1 130 °C, water- or air-quenched and then aged at 700 or 750 °C for various periods. One face of

Card 1/0 4

The effect of heat-treatment....

each specimen after quenching was descaled and electrolytically polished and since the dimensions of the block of the mosaic structure of quenched material were large, their variation during subsequent ageing in vacuum could be studied by determining the intensity of low-angle scattering of X-rays. The ratio I/I_{M03}, where I is the intensity of scattering from specimens studied, and I_{M03} is the intensity of scattering from a specimen deformed plastically by polishing and characterized by the smallest block dimensions, was taken as the relative measure of the block dimensions. In addition, the microstructure of alloy A was examined with the aid of an electron microscope, creep tests were carried out at 700 °C under a stress of 30 kg/mm^2, hardness measurements were taken and the 0.2% proof stress of alloys after various heat-treatments was determined. The results for alloy ЭИ437А (EI437A) are reproduced in Fig. 1, where I/I_{M03}, hardness (HB) and 0.2% proof stress

The effect of heat-treatment....

($\sigma_{0.2}$, kg/mm^2) are plotted against time (hours) of ageing at 750 °C (circles) and 700 °C (triangles), graphs a, б and B relating, respectively, to material quenched from 1 030, 1 080 and 1 130 °C. The results of creep tests for the same alloy are given in Table 3. Several conclusions were reached.

1) The room-temperature strength of alloys of type Kh20N80T in the age-hardened condition depends mainly on the quantity and degree of dispersion of the second phase $Ni_3(Al, Ti)$.

2) The resistance of the alloy to plastic deformation and fracture at elevated temperatures depends not only on the degree of homogeneity of the solid solution and on the quantity and degree of dispersion of the second phase but also on the mosaic structure of the matrix; the lower the block dimensions the greater should be the high-temperature strength of the alloy.

3) The variation in the mosaic structure during age-hardening depends both on the initial state of the matrix and on the composition of the alloy. The results of age-hardening can be considerably affected by the presence of small quantities of

S/126/62/013/006/006/018
E193/E383

The effect of heat-treatment ....

elements such as B, Ce or Nd. There are 2 figures and 3 tables.

ASSOCIATION: Institut kachestvennykh staley TsNIIChM
(Institute of High-grade Steels of TsNIIChM)

SUBMITTED: July 21, 1961

Table 1: (расч = nominal)

Alloy Сплав	C	Si	Mn	Cr	S	P	Al	Ti	Fe	B	Nd
ЭИ437А (A) . . .	0,03	0,13	0,28	20	0,005	0,001	1,1	2,68	0,45	—	—
ЭИ437Б (B) . . .	0,06	0,3	0,125	20,2	0,005	0,005	0,86	2,55	0,63	0,01 (расч.)	—
ЭИ437+Nd (C) . .	0,06	0,05	0,09	20,8	0,006	0,001	1,2	2,53	0,21	—	0,1 (расч)

Card 4/4

MASLENKOV, S. B.; MOLOTILOV, B. V.

Microwave X-ray spectroscopy of Fe-Al-C alloys. Fiz. met. i metalloved. 14 no.4:633-635 O '62. (MIRA 15:10)

1. Institut kachestvennykh staley i Institut pretsizionnykh splavov Instituta novoy metallurgicheskoy tekhnologii imeni I. P. Bardina.

(Iron-aluminum alloys--Metallography)
(X-ray spectroscopy)

MASLENKOV, S. B.; ZHARKOVA, D. N.

Phase constitution of the diffusion layer on boron-saturated nickel. Fiz. met. i metalloved. 14 no.4:638-640 O '62. (MIRA 15:10)

1. Institut kachestvennykh staley TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii.

(Protective coatings)
(Phase rule and equilibrium)

MASLENKOV, S.B.; DEMKIN, Yu.I.

Method of studying fractures by optical and electron microscopy.
Sbor. trud. TSNIICHM no.24:254-260 '62. (MIRA 15:6)
(Metallography) (Electron microscopy)

MASLENKOV, S.B.; ESTULIN, G.V.

Changes in fine crystal structure during the aging of binary nickel alloys. Sbor.trud.TSNIICHM no.27:149-155 '62.
(MIRA 15:8)
(Nickel alloys--Metallography) (Phase rule and equilibrium)

KRYLOVA, A.R.; ZHARKOVA, D.N.; MASLENKOV, S.B.

Kinetics of oxidation, composition, and structure of oxide films on heat-resistant steels and alloys. Sbor.trud.TSNIICHM no.27: 169-178 '62. (MIRA 15:8)
(Heat-resistant alloys) (Oxidation)

S/032/62/028/012/003/023
B124/B101

AUTHORS: Maslenkov, S. B., and Yegorshina, T. V.

TITLE: Application of microspectroscopic X-ray analysis in metallographic studies

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 12, 1962, 1443 - 1446

TEXT: A device developed by R. Castaign (Rech. Aéronaut. 23, 41 (1951); ONERA, 55, 1(1952)) was used for the microspectroscopic analysis. Castaign's microprobe was used to study the dendritic liquation of silicon in 55C2 (55S2) spring iron (3.5 tons) containing 1.66% silicon. The liquation degree is very high in the axial part where the dendrites are especially large; the ratio between maximum concentration in the interaxial region and minimum content in the axes is 2.0. When the steel is rolled, regions of low and high silicon concentrations appear in the form of thin bands which, after homogenized annealing for 12 hrs at 1200°C, at some places leave a broad, blurred band. Data obtained by X-ray spectrum analysis on the distribution of nickel in the diffusion layer resulting after 5-hr boration of metals and alloys at 900°C, were in good

agreement with the data calculated. Examination of ЭИ811 (EI811) steel heated to 1100°C showed redistribution to occur between the α-phase and γ-phase of 24.4 and 20.7% Cr and 4.47 and 6.85% Ni, respectively. The change in composition of the solid solution and phases separating on the ageing of alloys were investigated. ЭИ 726 (EI726) alloys were studied in the initial state and after 20.000-hr ageing at 700°C. In the initial state, only an excess phase (phase I) can be seen on the screen, whereas after ageing small and large bluish segregations (phase II) appear. In solid solutions, ageing causes a decrease in tungsten and niobium contents owing to the precipitation of an intermetallic phase with a high content of these elements (phase II). An Fe_2W-type lattice was determined by X-ray analysis. Phase I containing 71% Nb appears to be a niobium nitride or niobium carbonitride. Carbide contains no tungsten and does not change its composition even after long-time ageing; other carbide-forming elements are probably not contained in niobium carbide. In the Fe-Cr-Ni alloy type ЭИ 787 (EI787), primary carbides form a solid solution of titanium monocarbide and tungsten monocarbide (55% Ti and 20% W). The X-ray spectrum analysis showed that the cubic $Ni_3(Mo, Cr, W)_3C$ is deposited along the

Application of microspectroscopic ...

S/032/62/028/012/003/023
B124/B101

grain boundary on ageing of complex alloys. There are 3 figures and 2 tables.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

Card 3/3

MALINOCHKA, Ya.N.; MASLENKOV, S.B.; YEGORSHINA, T.V.

Investigating the microsegregation of silicon in cast iron with the help of an electron probe. Lit. proizv. no.1:22-25 Ja '63. (MIRA 16:3)

(Cast iron—Metallography)

MASLENKOV, S.B., inzh.; ESTULIN, G.V., doktor tekhn.nauk

Effect of a fine crystal structure on the hardening of nickel alloys. Metalloved. i term. obr. met. no.1:25-29 Ja '63. (MIRA 16:2)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.

(Nickel alloys—Hardening)
(Metallography)

KALENOV, A.D.; ANIKEYEVA, V.I.; MASLENKOV, S.B.

Germanium minerals in pyritic copper ores. Dokl.AN SSSR 149 no.3:675-676 Mr '63. (MIRA 16:4)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut redkometallicheskoy promyshlennosti. Predstavleno akademikom V.I. Smirnovym.

(Germanium)

MALINOCHKA, Ya.N.; MASLENKOV, S.B.; YEGORSHINA, T.V.

Investigating the dendritic liquation of silicon in spring steel with the help of an electronic probe. Stal' 23 no.10:937-939 O '63. (MIRA 16:11)

1. Institut chernoy metallurgii v g. Dnepropetrovske i TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.

MASLENKOV, S.B.

X-ray microspectroscopy methods. Sbor. trud. TSNIICHM no.32: 142-145 '63. (MIRA 16:12)

MASLENKOV, S.B.; YEGORSHINA, T.V.

Using the X-ray spectroscopy for the study of metals in micro-volumes. Sbor. trud TSNIICHM no.35:154-163 '63. (MIRA 17:2)

AUTHOR: Kidin, I. N.; Andryushechkin, V. I.; Maslenkov, S. B.; Yegorshina, T. V.

Concentration gradients after saturation by chromium during rapid heating

[illegible]Z, Chernaya metallurgiya no. 11, 1964, 174-179

TAGS: chromium diffusion, chromium saturation, galvanic chromium coating, clad steel

[illegible] The diffusion of chromium from a galvanic coating into Armco iron (0.2% C) and [illegible] (0.82% C) under varying conditions of heating was studied. Preparation, heat [illegible]

[redacted]

ACCESSION NR: AP4049073

solution with the chromium was impervious to nitric acid. Heating at [illegible] deg/min,

NO REF SOV: 012 OTHER: 002

Card 2/2

BUROVA, N.N.; MASLENKOV, S.B.; ESTULIN, G.V. [deceased]

Studying the nature of niobium and niobium alloy layers underlying scale. Fiz. met. i metalloved. 17 no.6:898-902 Je '64. (MIRA 17:8)

1. Institut kachestvennykh staley TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii imeni I.P. Bardina.

ACC NR: AP5027710 SOURCE CODE: UR/0129/65/000/011/0037/0038

AUTHOR: Semenova, G. A.; Minkevich, A. N.; Panchenko, Ye. V.; Maslenkov, S. B.;

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov) 61

TITLE: Titanium carbide coatings deposited on steel B

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 11, 1965, 37-38, and top half of insert facing p. 41

TOPIC TAGS: metal coating, carbide, titanium compound, metal bonding, metal diffusion, steel, annealing

ABSTRACT: A study of the deposition of TiC coatings on steel is presented. Specimens of 08 kp steel were coated with TiC in a current of H_2, vapors of $TiCl_4$ and benzene, in a tubular furnace, at 1100°C for 0.5 hr. To improve the adhesion of the coating to the steel, the specimens were subsequently diffusion-annealed in H_2 atmosphere for 6 hr. After this, measurements of microhardness and micro-thermo-e.m.f. as well as laminar X-ray spectral chemical analysis were carried out. Findings: Fe was discovered in the TiC layer in the amount of 12% at the depth of 3 μ from the coating-base metal boundary and in the amount of 0.8% at 6 μ depth. Ti, on the other hand, penetrated into steel to a depth of more than 5 μ from the interface. Some limited decrease in microhardness of the coating with depth was detected. Since, intermediate coatings of

Card 1/2 UDC: 621.357.76:669.14.018

L 9639-66

ACC NR: AP5027710

galvanically deposited metals greatly affect the bonding of deposited coating to the base metal, corresponding experiments also were performed. In this case it was found that the hardness of TiC does not vary with depth. This may be attributed to the formation of TiCr at the TiC-Cr boundary. Below that line hardness gradually decreases owing to the change in the solid-solution concentration of Cr in Fe. The visible interface corresponds to the boundary between the α- and γ-phases at annealing temperature (1000°C in this case). Thus, the deposition of TiC on steel and subsequent diffusion annealing result in a redistribution of elements in the boundary regions, which contributes to a stronger bonding of coating to base. The micro-thermo-e.m.f. method is a good complement to the regular methods of investigating diffusion processes. Orig. art. has: 2 figures.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 000

Card 2/2

L 20626-66 EWT(m)/T/EWA(d)/EWP(w)/EWP(t) IJP(c) JD/HW

ACC NR: AP6010101 SOURCE CODE: UR/0129/66/000/003/0064/0065

AUTHOR: Lebedev, D. V.; Maslenkov, S. B.; Ovsyannikov, B. M.

ORG: TsNIIChERMET

TITLE: Mechanical properties of EI827 alloy at low temperatures

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1966, 64-65

TOPIC TAGS: nickel alloy, chromium containing alloy, tugsten containing alloy, molybdenum containing alloy, aluminum containing alloy, alloy property, low temperature property / EI827 alloy

ABSTRACT: The tensile and yield behavior of EI827 nickel alloy (0.03%C, 9.85% Cr, 5% W, 5.65% Mo, 4.35% Al) at 20C to -253C has been investigated. The alloy was annealed at 1170C for 6 hr and water quenched. It was found that the strength characteristics increase linearly with decreasing temperature. At room temperature the tensile and yield strengths are 108 and 70 kg/mm^2; at -120C, 119 and 80 kg/mm^2; and at -253C, 140 and 82 kg/mm^2. The ductility changes insignificantly with a drop in temperature, the elongation remains around 47%, and the reduction of area, around 40—44%. The deformation along the gage length was uniform; no necking was observed at any temperature tested. The yielding at temperatures as low as -253C was smooth, and the stress-strain curve showed no serrations as observed in some metals and alloys at low temperatures. At room temperature the alloy is prone to deformation aging, which

Card 1/2 UDC: 620.17:669.14.013.45

L 20626-66

ACC NR: AP6010101

does not occur at the temperatures of liquid nitrogen or liquid hydrogen. The deformation aging increases the quantity of the precipitated secondary phase by 3%. Orig. art. has: 1 table. [ND]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001/ ATD PRESS: 4224

Card 2/2