SAMSONOV, G.V., otv. red.; GRIGOR'YEVA, V.V., kand. tekhn. nauk, red.; YEREMENKO, V.N., red.; NAZARCHUK, T.N., kand. khim. nauk, red.; FEDORCHENKO, I.M., akademik, red.; FRANTSEVICH, I.N., akademik, red.; YAROTSKIY, V.D., red.; GILELAKH, V.I., red.

[High-temperature inorganic compounds] Vysokotemperaturnye neorganicheskie soedineniia. Kiev, Naukova dumka, 1965. 471 p. (MIRA 18:12)

1. Akademiia nauk URSR, Kiev. Instytut problem materialoznavstva.
2. Chlen-korrespondent AN Ukr.SSR (for Yeremenko, Samsonov).
3. Akademiya nauk Ukr.SSR (for Fedorchenko, Frantsevich).

FRANTSEVICH, I.N.; GNESIN, G.G.; SEMENOV, Yu.N.; BORODULIN, P.Ya.; ANTIPIN, L.N.; VAZHENIN, S.F.; MAKSIMENKO, V.M.; MASHNITSKIY, A.A.

Lining material for aluminum electrolytic cells. TSvet. met. 38 no.6:49-54 Je '65. (MIRA 18:10)

ACC NR: AR6005799 SOURCE CODE: UR/0137/65/000/010/G033/G033

IJP(c) JD/RM

AUTHOR: Frantsevich, I. N.; Teodorovich, O. K.; Boyko, Ye. B.

53
52
B

TITLE: Structural powder-metal products based on iron and copper

SOURCE: Ref. zh. Metallurgiya, Abs. 10G234

REF SOURCE: Sb. Poroshk. metallurgiya i metalloobrabotka. Yerevan, 1965, 35-49

TOPIC TAGS: powder alloy, iron base alloy, copper base alloy, porosity, FABRICATED STRUCTURAL METAL

ABSTRACT: The results of an investigation of the processes of producing Fe-Cu powder alloys treated with Zn, Mn and C by the infiltration method are presented. The structure of Fe-Cu alloys is characterized by the presence of macro- and microscopic defects (porosity, looseness, etc.). These defects are of diffusion origin and are associated with imperfections of intercrystalline boundaries. Treatment with Zn, Mn and C affects beneficially the structure of these alloys. Data on the physical and mechanical properties of the infiltrated alloys following various types of heat treatment are presented. The principal considerations regarding an improved utilization of structural Fe-Cu materials with defect-free structure for the fabric-

Card 1/2 UDC: 669.1'3:621.762.001

L 42040-66

ACC NR: AR6005799

ation of strong and plastic machine parts are described. I Brokhin. [Translation of abstract]

SUB CODE: 11, 13

Card 2/2

ACC NR: AP6029978 SOURCE CODE: UR/0000/66/000/000/0086/0090

AUTHORS: Frantsevich, I. N.; Tul'chinskiy, L. N.

ORG: none

TITLE: Investigation of the electrical properties of magnesium-manganese ferrites

SOURCE: Vsesoyuznoye soveshchaniye po ferritam. 4th, Minsk. Fizicheskiye i fiziko-khimicheskiye svoystva ferritov (Physical and physicochemical properties of ferrites); doklady soveshchaniya. Minsk, Nauka i tekhnika, 1966, 86-90

TOPIC TAGS: ferrite, magnetic permeability, magnetic coercive force, electric conductivity, magnesium compound, manganese compound

ABSTRACT: Electrical properties of 11 compositions of $Mg_xMn_{1-x}Fe_2O_4$ (where x = 0, 0.1, 0.2, ...,1) were studied in detail and were related to the magnetic properties of these materials in order to clarify their phase composition and mechanism of electroconductivity. The following determinations were performed on sample material: coercive force H_c, saturation magnetization $4\pi I$, Curie temperature θ, initial magnetic permeability μ_0, specific volume resistance ρ as function of temperature. Dependence of electrical and magnetic properties upon the composition of ferrites is shown in Fig. 1. It was established that, during the slow cooling of annealed samples, the region of solid solutions occurs when x = 0.3--1.0. Ferrites with a higher manganese content ($x \leqslant 0.3$), prepared by the tempering process, also have a one-phase character. Variations of the cationic composition of ferrites have a

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ACC NR: AT6028978

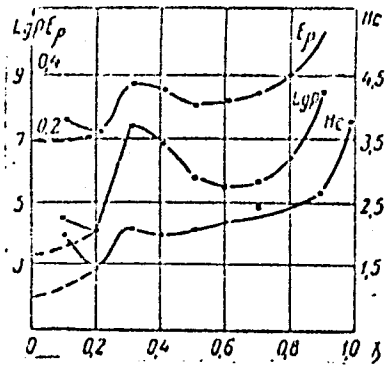

Fig. 1. Electrical and magnetic properties (lg ρ, Eρ, H_c) of magnesium-manganese ferrite as function of temperature

considerably smaller effect upon their electrical properties than the phase composition. Orig. art. has: 4 figures and 2 equations.

SUB CODE: 11/ 20/ SUBM DATE: 22Dec65/ ORIG REF: 005/ OTH REF: 003

PINKHASIK, M.I.; FRANTSEVA, N.I.

Vitamin D_2 therapy of osteoarticular tuberculosis in children. Probl. tuberk., Moskva No.6:68-69 Nov-Dec 51. (CIML 21:4)

1. Prof. Pinkhasik. 2. Of Sverdlovsk Children's Tuberculosis Sanatorium No.1.

PINKHASIK, M.I., professor; FRANTSEVA, N.I.; KOLOSOVA, A.M.; YELOKHINA, N.P.; SHEFER, M.Z.; YARUSHIN, G.M., glavnyy vrach.

Para-aminosalicylic acid in combined therapy of osteoarticular tuberculosis in children. Probl.tub. no.3:88-89 My-Je '53. (MLRA 6:7)

1. Sverdlovskiy gorodskoy detskiy tuberkuleznyy sanatoriy No.1.
(Bones--Tuberculosis) (Joints--Tuberculosis) (Para-aminosalicylic acid)

TRISVYATSKIY, A.Ya.; TSUKANOVA, Yu.A.; GEL'FAND, M.R.; MYTNIK, A.I.; PASHNIKOVA, Yu.A.; FRANTSEVA, Ye.N.; TOLKUYEVA, F.A.; FOMIN, M.I.; STARKOV, N.Ye., red.; KOLOMIYETS, K.A., tekhn. red.

[Economy of Kursk Province; a statistical manual] Narodnoe khoziaistvo Kurskoi oblast; statisticheskii sbornik. Orel, Gosstatizdat, 1958. 198 p. (MIRA 11:12)

1. Kursk(Province). Oblastnoye statisticheskoye upravleniye.
2. Nachal'nik Statisticheskogo upravleniya Kurskoy oblasti(for Starkov).
3. Rabotniki Statisticheskogo upravleniya Kurskoy oblasti(for all except Fomin, Starkov, Kolomiyets)
(Kursk Province--Economic conditions--Statistics)

FRANTSEVICH, L.I.

Negative photomicrography. Priroda 44 no.10:108 O'55. (MLRA 8:12)

1. Kiyevskiy gosudarstvennyy universitet
(Photomicrography)

FRANTSEVICH, L.I.; KORDYUM, V.A.; AKIMOV, I.A.

A simple adaptation of the ordinary microscope for use as a polarizing microscope. Lab. delo 5 no.3:56-57 My-Je '59. (MIRA 12:6)

1. Iz Kiyevskogo gosudarstvennogo universiteta.
(MICROSCOPY)

FRANTSEVICH, L.I.; VIKTOROV-NABOKOV, O.V.

Administering small quantities of venom with a calibrated capillary tube. Lab. delo 8 no.4:58-59 Ap '62. (MIRA 15:5)

1. Laboratoriya entomologii (zav. G.I. TSiryanin) Kiyevskogo gosudarstvennogo universiteta.
(TOXICOLOGY--EQUIPMENT AND SUPPLIES)

FRANTSEVICH, L.I. [Frantsevych, L.I.]

Interesting new species of lepidopterans in the fauna of the Ukraine. Visnyk Kyiv.un. no.5. Ser.biol. no.2:141-142 '62. (MIRA 16:5)

(KANEV REGION—MOTHS)

KLYUCHKO, Z.F.; FRANTSEVICH, L.I.

Light traps for collecting insects. Vop. ekol. 4:115-118 '62. (MIRA 15:11)

1. Gosudarstvennyy universitet, Kiyev.
(Insect traps)

VIKTOROV-NABOKOV, O.V.; FRANTSEVICH, L.I.

Development of adaptation to poisons in the populations of arthropods. Vop. ekol. 7:24-25 '62. (MIRA 16:5)

1. Kiyevskiy gosudarstvennyy universitet.
(Resistance to insecticides)

MAZEPA, I.I.; FRANTSEVICH, L.I.

Characteristics of the late autumn flight of night insects. Vop. ekol. 7:103-104 '62. (MIRA 16:5)

1. Kiyevskiy gosudarstvennyy universitet.
(Kanev Preserve—Insect traps)

MAZEPA, I.I.; FRANTSEVICH, L.I. [Frantsevych, L.I.]

Mass flight of insects in the late fall of 1960. Visnyk. Kyiv. un. no. 4.Ser. biol. no.2:93-95'61. (MIRA 16:6)
(KANEV PRESERVE—MOTHS)

FRANTSEVICH, L.I.

Analysis of data on light traps. Dop. AN URSR no.8:1087-1090 '61. (MIRA 14:9)

1. Kiyevskiy gosudarstvennyy universitet. Predstavleno akademikom AN USSR A.P. Markevichem [Markevych, O.P.].
(Insect traps)

ZHIVLYUK, Yu.N.; FRANTSEVICH, L.I.

Mode of the "[redacted]action" interdependence. Prim. mat. metod. v biol. no.2:202-205 '63. (MIRA 16:11)

FRANTSEVICH, L.I. [Frantsevych, L.I.]; LOSKOT, V.M.

Effect of temperature on the toxicity of insecticides to larvae of Aedes aegypti L. Dop. AN URSR no.3:401-404 '64. (MIRA 17:5)

1. Kiyevskiy gosudarstvennyy universitet. Predstavleno akademikom AN UkrSSR A.P. Markevichem [Markevych, O.P.].

KOSTYUK, P.G., otv. red.; ANTOMONOV, Yu.G., kand. tekhn. nauk, red.; FRANTSEVICH, L.I., kand. biol. nauk, red.; YANKOVSKAYA, Z.B., red.

[Studies in bionics] Issledovaniia po bionike. Kiev, Naukova dumka, 1965. 113 p. (MIRA 18:9)

1. Chlen-korrespondent AN Ukr.SSR (for Kostyuk). 2. Institut kibernetiki AN Ukr.SSR (for Antomonov).

BODRYAGIN, V.I.; LEVCHENKO, I.A.; FRANTSEVICH, L.I.; SHELIMOV, I.I.

Sounds produced by honeybees during their signal movements.
Dokl. AN SSSR 166 no.3:753-756 Ja '66.
(MIRA 19:1)

1. Institut zoologii AN UkrSSR. Submitted March 10, 1965.

DONETS, Z.S.; DASHKINA, N.G.; LOSKOT, V.M.; FRANTSEVICH, L.I.; TSARICHKOVA, D.B.

Larval nutrition and some physiological indices of bloodsucking mosquitoes. Med. paraz. i paraz. bol. 34 no. 5:518-521 S-O '65 (MIRA 19:1)

1. Laboratoriya arakhnoentomologii Kiyevskogo universiteta. Submitted June 13, 1964.

L 05119-67 EWT(1) RU

ACC NR: AP6027592 SOURCE CODE: UR/0238/66/012/004/0503/0509

23
22
B

AUTHOR: Frantsevich, L. I.

ORG: Institute of Zoology, Academy of Sciences URSR, Kiev (Institut zoologii Akademii Nauk URSR)

TITLE: Study of the physiological mechanism of DDT action

SOURCE: Fiziolohichnyy zhurnal, v. 12, no. 4, 1966, 503-509

TOPIC TAGS: insecticide, insecticide poisoning, physiologic parameter, central nervous system

ABSTRACT: DDT poisoning occurs in two phases: the first is distinguished by convulsive reflex spasms in response to pathogenic series of repeated discharges from the intoxicated receptors and sensory fibers. The first phase appears at 15—17C and vanishes at 30—35C. Increased poisoning produces the second irreversible phase, typified by muscular tremors and remains after isolation of the peripheral neuromuscular apparatus from the central nervous system. Intensified autonomous tremor accompanies a rise in temperature. The primary

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L 05119-67

ACC NR: AP6027592

mechanism of intoxication (breakdown of neural fibers) evidently has a positive temperature coefficient. But the processes occuring in the central nervous system alter so much when the temperature decreases that, despite the decrease in normal afferent impulses, uncoordinated movements and disordered convulsions appear. Experiments were conducted on bluebottles (Calliphora erythrocephala), intact and with removed thoracic ganglia. The motor activity was recorded kymographically. The autonomous tremor of the limbs may be blocked or suppressed by insecticide carbamates, nicotine, and pyrethrum. Orig. art. has: 4 figures and 1 table. [Author's abstract] [W.A. 50] [KS]

SUB CODE: 06/ SUBM DATE: 07Dec64/ ORIG REF: 004/ OTH REF: 010/

Card 2/2

FRANTSEVICH, N.

Instrument for determining the amount of deformation of a can in an autoclave. Mias.ind. SSSR. 25 no.5:20-22 '54. (MLRA 7:11)

1. Ukrglavmyaso.
(Canning and preserving) (Containers)

KOSTRZHEVA, Yelena Ippolitovna, inzh.; BUZHIYEVSKIY, Ivan Iosifovich, inzh.; PILIPENKO, Yelizaveta Antonovna, inzh.; SABASHNIKOVA, Galina Petrovna, inzh.; FRANTSEVICH, N.N., inzh., retsenzent; BONDARENKO, O.P., inzh., red.izd-va; STARODUB, T.A., tekhn. red.

[Norms for the output, normal losses and expenditure of raw products and materials in the processing of cattle, poultry and rabbits, and in the manufacture of sausage products in the meat processing enterprises of the Ukrainina S.S.R.] Normy vykhodov, estestvennoi ubyli, raskhoda syr"ia i materialov pri pererabotke skota, ptitsy, krolikov i vyrabotke kolbasnykh izdelii na miasopererabatyvaiushchikh predpriiatiiakh Ukrainskoi SSR. Kiev, Gostekhizdat USSR, 1962. 130 p. (MIRA 16:5)
(Ukraine—Meat industry—Production standards)

FRANTSEVICH, V.M.; FRIDMAN, L.A.

Automatic coercive force meter. Zav.lab. 22 no.5:590-592 '56. (MLRA 9:8)

1. Institut fiziki metallov Ural'skogo filiala Akademii nauk SSSR.
(Magnetic measurements)

FRANTSEVICH, V.M.; FRIDMAN, L.A.

Device for the rapid reading of static hysteresis loops. Fiz. met. i metalloved. 16 no.2:316-318 Ag '63. (MIRA 16:8)

1. Institut fiziki metallov AN SSSR.
(Hysteresis) (Magnetometer)

FRIDMAN, L.A.; FRANTSEVICH, V.M.; MOCHALOVA, G.L.

Metal probe magnetometer with self-adjustment by a magnetic amplifier. Fiz. met. i metalloved. 16 no.6:921-923 D '63. (MIRA 17:2)

1. Institut fiziki metallov AN SSSR.

GURTSOV, V.M.; FRANTSEVICH, V.M.; SHTURKIN, D.A.

Transistor circuit diagram for magnetic probe flaw detectors.
Defektoskopiia no. 5:67-73 '65 (MIRA 19:1)

1. Institut fiziki metallov AN SSSR.

L 36101-66 EWT(d)/EWP(c)/EWP(k)/T/EWP(v)/EWP(1) IJP(c)

ACC NR: AP6014425 SOURCE CODE: UR/0381/65/000/005/0067/0073

AUTHORS: Ogurtsov, V. M.; Frantsevich, V. M.; Shturkin, D. A.

ORG: Institute of the Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR)

TITLE: A transistor circuit for an iron probe flaw detector

SOURCE: Defktoskopiya, no. 5, 1965, 67-73

TOPIC TAGS: transistorized circuit, quality control, test instrumentation, electronic test equipment, flaw detector

ABSTRACT: A transistorized circuit for an automatic iron probe flaw detector was developed to correct the defects of electronic tube instruments. The design emphasizes the reliable detection of defects and the stability of instrument operation. The instrument can be used on assembly lines for automatic quality control of steel items which have the shape of bodies of rotation. The iron probe, with longitudinal excitation (used as the magnetic sensing element), detects and measures the field gradient of defects of circularly magnetized items. An emf with enriched even harmonics arises in the measurement winding, characterizing the magnitude of the defect. A refined excitation oscillator producing a sinusoidal current guarantees the necessary power for various probes, suppresses the even harmonics in the output voltage, and minimizes the load influence on the oscillator frequency stability. A

UDC: 620.179.14

Card 1/2

L 36101-66

ACC NR: AP6014425

shaping device was added which converts the bell-shaped signal to a square wave by means of a trigger. This provides increased reliability of the final stage. A selector separates the defect signal from noise on the basis of signal duration by using a square wave generator and a coincidence circuit. In addition to the detailed schematic and parts list for the flaw detector, the tuning procedure using a "calibration defect" is described. Orig. art. has: 1 table and 4 figures.

SUB CODE: 09, 13/ SUBM DATE: 26Aug65/ ORIG REF: 002

LS

Card 2/2

ACC NR: AR6027567 SOURCE CODE: UR/0272/66/000/C05/0175/0175

50
B

AUTHOR: Shturkin, D. A.; Frantsevich, V. M.; Ponomarev, Yu. F.

TITLE: Electronic circuit of an automatic ferroprobe flaw detector with increased stability

14

SOURCE: Ref. zh. Metrologiya i izmeritel'naya tekhnika, Abs. 5.32.1274

REF SOURCE: (Tr.) In-ta fiz. metallov. AN SSSR, vyp. 24, 1965, 128-130

TOPIC TAGS: flaw detection, flaw detector, ferroprobe flaw detector, automatic flaw detector, electronic circuit

ABSTRACT: The electronic circuit of a ferroprobe flaw detector with increased stability in automatic control of parts is described. The flaw detector was used for automatic control of steel rollers in bearings. Roller flaws were detected using a sensitive ferroprobe which is a gradient meter responding to the local fields of the defects in rollers with remanent magnetization. Orig. art. has: 1 figure and a bibliography of two reference items. [Translation of abstract] [P. Agaletskiy] [FM]

SUB CODE: 09/

Card 1/1 UDC: 621.317.44:620.179

FRANTSEVICH-ZABLUDOVSKAYA, T. F. C/1963 1964

CHEMISTRY

DECEASED

[illegible] EWT(m)/EWP(1)/[illegible] [illegible] AP5011812 [illegible] [illegible] 541.130+546.3-14'72'77

AUTHOR: Frantsevich-Zabludovskaya, T. F.; Sharafan, G. I.

TITLE: Electrodeposition of iron-molybdenum alloys from fluoride electrolytes

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 4, 1965, 954-956

TOPIC TAGS: molybdenum alloy, tungsten alloy, iron alloy, electrodeposition, refractory alloy

ABSTRACT: An iron-molybdenum alloy (in the form of powder containing up to 5% Mo, the same amount of oxygen, and 0.2% nitrogen) and an iron-tungsten alloy (in the form of sponge containing up to 6% W and the same amount of gas impurities) were electrodeposited from a solution of iron fluoborate containing 25 g/ℓ ferrous iron, 2-5 g/ℓ molybdenum (as sodium molybdate) or 1-5 g/ℓ tungsten (as sodium tungstate), pH 1.8-2.5. In addition, an Fe-Mo alloy was electrodeposited from a fluoride electrolyte of the following composition: ferric iron (as chloride) 28 g/ℓ, molybdenum (as ammonium molybdate) 4 g/ℓ, ammonium fluoride 89 g/ℓ, pH 1.2-1.3. The Fe^{3+}/Fe^{2+} ratio could not be determined in this electrolyte; for this reason, electrolytes

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L 58470-65

ACCESSION NR: AP5011819

containing (1) only lower or (2) only higher valence forms of the components to be codeposited were used in subsequent experiments, in which the catholyte contained [illegible] ferrous iron (as sulfate) 28, pentavalent Mo (reduced electrolytically from ammonium molybdate) 4, ammonium fluoride 60.5, boric acid [illegible], ammonium sulfate [illegible], the catholyte contained 66 g/l ammonium sulfate at pH 1. Electrolysis in [illegible] vessels produced cathodic deposits containing up to 10% Mo, but the current efficiency did not exceed 7%. Fluoride electrolytes are not recommended for the [illegible] of iron-molybdenum and iron-tungsten alloys both because of the low content of the refractory element in the alloy and because of the low current efficiency. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: none

SUBMITTED: 11Apr63 ENCL: 00 SUB CODE: GC, MM

NO REF SOV: 005 OTHER: 009

Card 2/2

BIRO, Attila, inzh.; FRANTSIA, Yozhef [Francia, Jozsef], inzh.

Modernization of soaking pits with bottom heating. Stal' 23 no.7:659-663 Jl '63. (MIRA 16:9)

1. Vengerskaya Narodnaya Respublika.
(Hungary—Furnaces, Heating)

L [illegible] EWT(1)/EEC(m)/EEC(k)-2/EWA(h)

[illegible] AR5[illegible]1

SOURCE Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika. Sv. t., Abs. 12B324

AUTHOR. Yakubaytis, E. A.; Vayvars, M. P.; Frantsis, T. A.

TITLE: Discrete indication of the maximum value of product of two continuous voltages

CITED SOURCE: Izv. AN LatvSSR. Ser. fiz. i tekhn. n., no. 3, 1964, 77-87

TOPIC TAGS: voltage product indicator

TRANSLATION: The advantages are noted of discrete indicators of two-voltages prod[illegible] as compared to purely analog devices. The indicator does not contain any voltag[illegible]-code converter; it is based on the principle of determining a multiplier [illegible] known value of the multiplicand that ensures the maximum product. The [illegible] are determined by a number of series-connected [illegible] Zener diodes. The turn-on Zener-diode voltages correspond to various powers [illegible]. The diodes are switched by a logical circuit. A calculation method is given which permits to design a required-accuracy circuit on the basis of a specified maximum voltage and

Card 1/2

L 03219-65

ACCESSION NR: AR5005501

a maximum possible voltage ratio by the end of the first step. An example of calculation is given. Five illustrations.

SUB CODE: DP EXCL: 00

Card 2/2

L 04193-67

ACC NR: AT6019744 SOURCE CODE: UR/3192/65/000/011/0119/0132

AUTHOR: Yakubaytis, E. A.; Vayvars, M. P.; Frantsis, T. A.; Laksa, Ya. Ya. 56 B+1

ORG: none

TITLE: An automaton which determines the breakdown voltage of high-voltage power diodes

SOURCE: Akademiya nauk Latviyskoy SSR. Institut elektroniki i vychislitel'noy tekhniki. Avtomatika i vychislitel'naya tekhnika, no. 11, 1965, 119-132

TOPIC TAGS: semiconductor diode , silicon diode, dielectric breakdown, automaton

ABSTRACT: The authors describe an automaton capable of determining the breakdown voltage of diodes in the 150 to 2,000 v range and of inverse currents up to 200 ma. The paper presents the basic equations, a description of the device (a block diagram of the automaton, a diagram of the high-voltage voltage-to-binary code converter, logical scheme, decoder scheme, and automatic power and counter control diagram), and the logic of its operation. The load curves of the nonlinear block, the volt-ampere characteristic of diodes, and limiting values of voltage increments are also given. Orig. art. has: 14 formulas, 9 figures, and 4 tables.

SUB CODE: 09, 20/ SUBM DATE: Nov64/ ORIG REF: 003

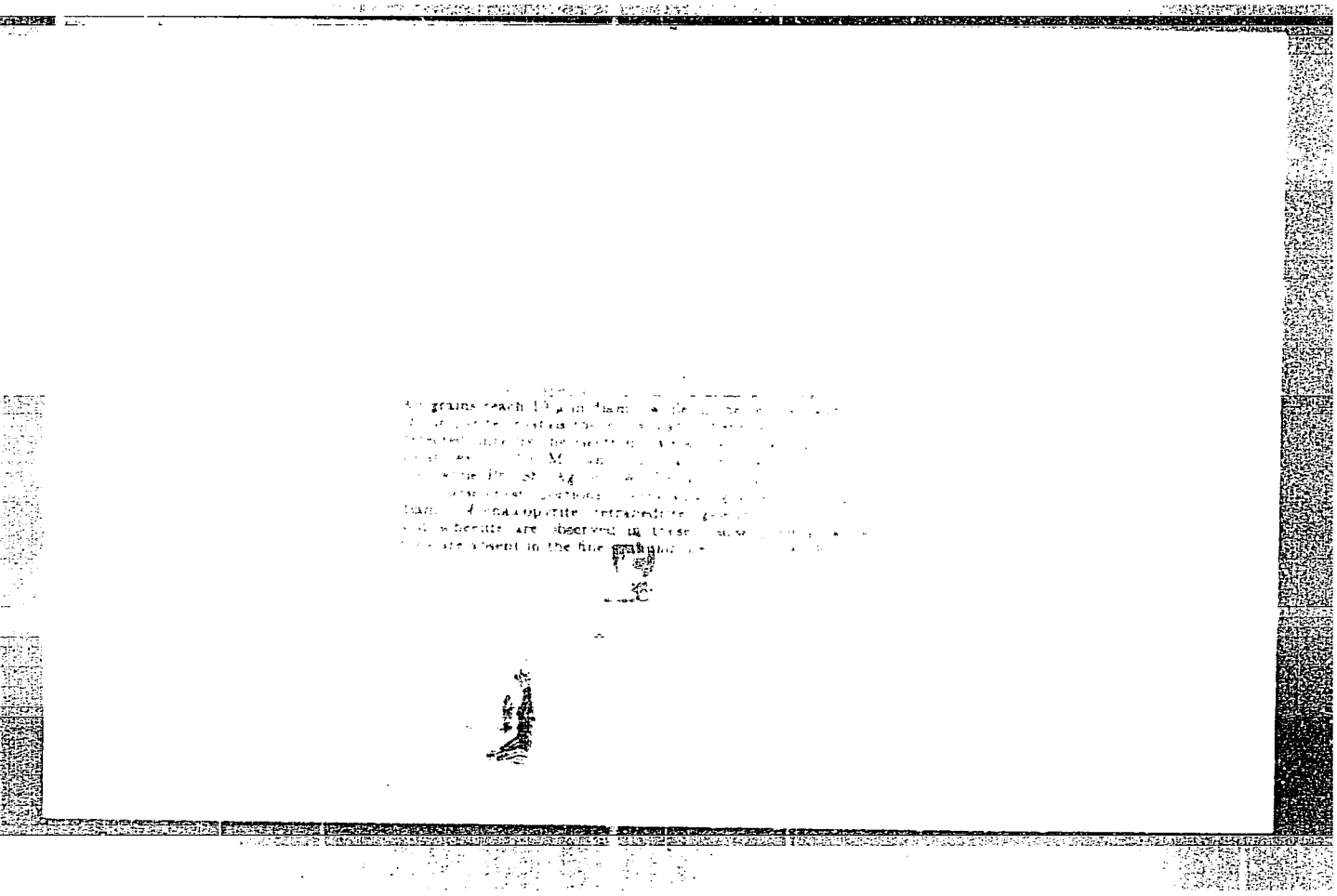
Card 1/1 UDC: 621.382.2: 621.317-52

FRANTSIZ, A.G.

Algorithm for image recognition. Izv. AN SSSR. Tekh. kib. no.5:74-84 S-O '65. (MIRA 18:11)

Forbidden mineral associations in the basalts of the eastern Sayan. A. P. Korzhinskii and E. V. Frantskaya. *Doklady Akad. Nauk S.S.S.R.* 104, 291-3(1955).—A. G. Betekhtin (1953) described evident contradictory occurrences of metal ores in basic and ultrabasic rocks which should be expected in acidic types and their placers. The Tertiary and Quaternary basalts of E. Sayan are typical plateau formations over an area of about 50 sq. km., with 20 flows one above the other, in a thickness of about 180 m. The upper portions of the flows are vitrophyric and vesicular, the lower very dense, of dibasic structure (with olivine and andesine Ab_{55} to Ab_{65}). Besides normal mineral assocns. in the heavy concentrates, K. and F. found galena, scheelite, molybdenite, zircon, and rounded, spindle-shaped grains of native Pb and Sn. These cannot be human artifacts since the samples were taken from the original rock. The anomalous occurrences also cannot be explained by an assimilation of siliceous rocks; nowhere were intrusions of granites, or any xenoliths of this type observed. The reducing medium in the last stages of the crystn. in the basalts which caused the formation of native Pb and Sn is connected with the crystn. of ore minerals like magnetite, magnesioferrite, and pyrrhotite. W. Eitel

Inst. Geol., Eastern Siberian affil., AS USSR
Lab. Petrography, Inst. Geol., Irkutsk



KORZHINSKIY, A.F.; FRANTSKAYA, Ye.V.

Late segregation of molybdenite in the Buluktay deposits of southwestern Transbaikalia. Izv. Sib. otd. AN SSSR no.6:46-53 '58. (MIRA 11:9)

1.Vostochno-Sibirskiy filial AN SSSR.
(Buluktay Valley--Molybdenite)

FRANTSKEVICH, A.V.

Character of the glycemic curve in patients operated on more than once for gastric and duodenal ulcer. Zdrav. Belor. 6 no.9:31-33 S '60. (MIRA 13:9)

1. Iz gospital'noy khirurgicheskoy kliniki (zaveduyushchiy - dotsent I.M. Sterl'mashonok) Minskogo meditsinskogo instituta i 1-oy klinicheskoy bol'nitsy (glavnyy vrach A.I. Shuba).
(BLOOD SUGAR) (PEPTIC ULCER)

BORODIN, I.F.; FRANTSKEVICH, A.V.

Strangulation of Meckel's diverticulum in a femoral hernia. Zdrav.Bel. 8 no.11:87 N '62. (MIRA 16:5)

1. Iz kafedry gospital'noy khirurgii (zav. - dotsent I.M. Stel'mashonok) Minskogo meditsinskogo instituta.
(GROIN—HERNIA) (ILEUM—DIVERTICULA)

FRANTSKEVICH, A. V.

Cand Med Sci - (diss) "Comparative evaluation of remote results of repeated operations in connection with ulcer of the stomach and duodenum." Smolensk, 1961. 17 pp; (Ministry of Public Health RSFSR, Smolensk State Med Inst); 200 copies; price not given; (KL, 7-61 sup, 263)

FRANTSKEVICH, A.V.

Two perforating gastric ulcers in combination with a torsion of the small intestine. Zdrav. Bel. 9 no.7:87-88 Jl'63 (MIRA 17:4)

1. Iz kliniki gospital'noy khirurgii (zav. - dotsent I.M. Stel'mashonok) Minskogo meditsinskogo instituta.

FRANTSKIY, I. V.

FRANTSKIY, I. V. -- "THEORY AND PRACTICE OF THE SOLUTION OF SOME OF THE BASIC PROBLEMS OF GEOLOGICAL MINE SURVEYING IN THE MINING OF NON-FERROUS ORE DEPOSITS." SUB 21 MAY 59, MOSCOW MINING INST IMENI I. V. STALIN (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCE)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1959

FRANTSKY, MINDAK

H

POLAND / Chemical Technology. Ceramics, Glass, cement, materials, concrete.

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 40401,11.

Author : Frantsky, Mindak.
Inst : ~~Institut of Heat~~ Resistant Materials
Title : A Multi-Compartment Kiln for Ceramic Baking.

Orig Pub: Pol'sk pat. 38102, 20.06.56.

Abstract: A multi-compartment kiln for baking ceramic articles is suggested. It is distinguished by two-story windows which serve a dual purpose: location of burners and provision for a sinusoidal movement of gases in the kiln compartments. The bottoms are movable and can be pushed in or pulled out of the kiln after baking together with a charge. The doors, equal in size to the cross section of the compartments, are also movable and can be pulled

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H

POLAND / Chemical Technology. Ceramics, glass, cement, materials, concrete.

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 40401,11.

Abstract: out of the kiln with the bottoms. Because of such an arrangement, an equal distribution of gases in the kiln is possible along its height. The need for under-bottom channels for gases is also eliminated since the gas feeding channels are installed in movable bottoms.

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SHTEYNS, K.[Steins, K.]; DIRIKIS, M.[Dirikis, M.]; FRANTSMAN, Yu. [Francmans, J.]

Accuracy of photographic observations of artificial earth satellites. Biul. sta. opt. nabl. isk. sput. Zem. no.30: 15-19 '62. (MIRA 16:6)

1. Astronomicheskaya observatoriya Latviyskogo gosudarstvennogo universiteta, Riga.
(Artificial satellites--Tracking)

S/169/62/000/012/093/095
D228/D307

3.5120

AUTHOR: Frantsman, Yu. L.

TITLE: Observations of noctilucent clouds in Latvia in 1961

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 12, 1962, 28, abstract 12G186 (Tsirkulyar Vses. astron.-geod. o-va, no. 5, 1962, 26-28)

TEXT: Photographic observations of noctilucent clouds were carried out by the Latviyskoye otdeleniye VAGO (Latvian Branch, VAGO) in 1961 at Riga and Sigulda in order to find the heights and velocities of noctilucent clouds. A table is given for the following: the dates and the hours when noctilucent clouds appeared; their brightness (initial, final, peak); the state of the dawn sector and the changes that occurred during the phenomenon; and the maximum and minimum negative elevations of the sun when the clouds were present.
[Abstracter's note: Complete translation]

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FRANTSMAN, Yu.L.

Determining coordinates of planetary nebulae from photographs of their spectra taken with an objective prism. Astron.zhur. 39 no.2:256-259 Mr-Ap '62. (MIRA 15:3)

1. Gosudarstvennyy astronomicheskiy institut im. P. K. Shternberga.

(Nebulae)

34511
S/169/62/000/002/066/072
D228/D301

3,5/20

AUTHORS: Dirikis, M. A. and Frantsmanis, Yu. L.

TITLE: Determining the heights of noctilucent clouds

PERIODICAL: Referativnyy zhurnal. Geofizika, no. 2, 1962, 24, abstract 2G152 (Tr. VI Soveshchaniya po serebristym oblakam, 1959, Riga, AN LatvSSR, 1961, 157-162)

TEXT: A simplified method of determining the height of noctilucent clouds has been developed for the general case when the conditions necessary for stereophotogrammetry are not realized. Simultaneous photography, the existence of general details suitable for measurement, and the presence of star images are required in the general case for the determination of the heights of noctilucent clouds from base photographs. The essence of the applied method is as follows. Suppose there are two observation points A and B at which simultaneous photographs of noctilucent clouds with a general detail C were successfully obtained. If one constructs a geocentric equatorial system of coordinates with the x-axis directed to the

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point of intersection G of the Greenwich meridian with the equator, the y-axis directed to the point of intersection of the equator and longitude 90°E, and with the z-axis directed towards the North Pole P_N, then the coordinates of the observation points A and B in this system will respectively equal: x_A, y_A, z_A; and x_B, y_B, z_B; suppose there are also topocentric systems of coordinates x', y', z' and x'', y'', z'' with axes parallel to the x-, y-, and z-axes and with a point of origin respectively at points A and B. If the direction to the point of spring equinox is γ, then the angle γOx will be equal to the Greenwich Stellar Time S at the moment of observation. The equatorial coordinates of the noctilucent-cloud point C represent the straight ascension α and declination δ. The topocentric coordinates of point C will be respectively:

$$x' = \rho' \cos \delta' \cos (\alpha' - S)$$
$$y' = \rho' \cos \delta' \sin (\alpha' - S)$$

$$z' = \rho' \sin \delta'$$
$$x'' = \rho'' \cos \delta'' \cos (\alpha'' - S)$$
$$y'' = \rho'' \cos \delta'' \sin (\alpha'' - S)$$
$$z'' = \rho'' \sin \delta''$$

(All quantities relating to point A are designated by one dash, those relating to point B being denoted by two dashes.) Here the only unknowns in the right parts of these expressions are the distances ρ' and ρ'' from the observation points to point C. Designating

$$\cos \delta' \cos (\alpha' - S) = X'$$
$$\cos \delta' \sin (\alpha' - S) = Y'$$
$$\sin \delta' = Z'$$
$$\cos \delta'' \cos (\alpha'' - S) = X''$$

$$\cos\delta''\sin(\alpha'' - S) = Y''$$
$$\sin\delta'' = Z''$$

and changing to geocentric coordinates, the following system of equations is obtained for determining the coordinates of point C in the geocentric equatorial system:

$$x = x_A + \rho' X'$$
$$y = y_A + \rho' Y'$$
$$z = z_A + \rho' Z'$$
$$x = x_B + \rho'' X''$$
$$y = y_B + \rho'' Y''$$
$$z = z_B + \rho'' Z''$$

This is a system of six equations with five unknowns x, y, z, ρ', and ρ''. When there are n observation points, there will be 3n equations but n + 3 unknowns. They can be found from the solution of the system by the method of least squares. Having thus obtained the coordinates of point C of the noctilucent-cloud field in the system xyz, the geographic coordinates of the projection of this point onto the ground surface and its height above sea-level may easily be found. /Abstracter's note: Complete translation./

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S/133/61/000/004/004/015
A054/A127

18 3200

AUTHORS: Shul'te, Yu. A., Doctor of Technical Sciences, Professor; Garevskiy, I. A., Engineer; Leybenzon, S. A., Engineer; Maksimenko, V. D., Engineer; Tregubenko, A. F., Engineer; Speranskiy, B. S., Engineer; Frantsov, V. P., Engineer, and Smolyakov, V. F., Engineer

TITLE: Nature of flaws in steel ingots produced by the electro-slag method

PERIODICAL: Stal', no. 4, 1961, 322 - 326

TEXT: The technology of electro-slag remelting was established by the Institut elektrosvarki im. Ye. O. Patona (Institute of Electrowelding im. Ye. O. Paton). A three-phase electroslag furnace (2250 kW) which can smelt ingots 750 kg in weight and 300 mm in diameter simultaneously in 3 crystallizers has now been in operation for more than 2 years. In order to improve the process, the nature of the flaws occurring in electroslag-remelted steel was studied and tests were carried out on ingots produced on an industrial scale, whereas an A-550 (A-550) laboratory plant, designed by

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the same institute was used for the purpose of reproducing the defects. The crystallizer of this equipment was 100 mm in diameter, 600 mm in length, the ingots weighed 30 kg, remelting took about 35 minutes (at 40 v and 1.2 ka). In this process the ingot surface is not in contact with the atmosphere. The slag bath is rising at the same rate at which the ingot is smelting, while a thin slag layer forms on the crystallizer wall, the relief of which is closely reproduced by the ingot surface. Three zones can be distinguished in the smelting process. A non-uniform structure, having a serrated surface develops in the bottom zone during heating of the ingot. The metal contains slag inclusions and flux, at the place of inoculation. This zone could be reduced by applying a thermite mix (20% saltpeter, 20% aluminum and magnesium powder, 60% AM-1-6 /AN-F-6/ flux) at the exact centre of the electrode. The slag bath develops more rapidly in the heating period when maximum power is applied. By controlling the feed of the electrodes manually, any fluctuations in current intensity could be eliminated. At about 1600°C a homogeneous slag bath is formed, while at the same time the smelting of the second zone of the ingot also starts; the thickness of the slag lining on the crystallizer wall decreases to 1.0 - 1.5 mm. In this phase

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the electric system of the crystallizer is switched to automatic operation. The electrode is fed into the slag bath at a rate corresponding with the optimum current intensity. Under these stabilized conditions the slag bath is regularly rising, leaving a smooth lining behind. The third, liquid-slag zone is the actual smelting zone, both in respect of electric power and physico-chemical effects. Here takes place the smelting of the electrode and the refining of the metal flow. The height and volume of this zone are the most important factors of the entire process. The slag content for all three zones was established. The greater the crystallizer-diameter, the less slag was found in the lining (Table 1). The ingot surface in the second zone is flawless, smooth and does not require any finishing. This is one of the greatest advantages of this method, which, however, can be obtained only by a stable electric system, faultless operation of the automatic furnace control as the slightest disturbance in any of these factors results in surface defects. These appear in the macrostructure and are similar to the impurities usually found in electrosteel. In 1959 data were compiled for ball bearing steel, showing the relation between the crystallizer height, diameter and amount of defects (Table 2). Thus, the greater the diameter of the crystallizer, the more flaws could be observed in

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the ingot. As regards the smelting time, it was found that the first and the last periods produced the greatest number of defects. Metallographic study of faulty rods revealed sickle and spider-shaped cracks, lenticular inclusions, differing in colour from the flawless parts of the metal, in some templates occupying more than 50% of the total surface. In microhardness tests it was observed that in the impurified zones the hardness coefficients displayed a wide range of values. It could also be observed that the flaws penetrate fairly deeply, indicating that the factors impurifying the casting are active a long time (Fig. 5). Petrographic tests proved that the inclusions are similar to those forming in free crystallization and contain mainly calciumfluorite globules, needle-shaped corundum crystals, aluminum-calcium compounds. Among the impurities slag-inclusions, 1 - 2 mm in size, were found in irregular arrangement. Inclusions were present in the low-temperature zones of the metal, promoting the mixing of slag particles in the liquid metal. The lower the crystallization temperature, the more flaws were found. The viscosity of the metal increases due to intensive cooling and this promotes the capturing of slag particles. Based on the tests with the A-550 equipment the permissible minimum length of the

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bottom part of the ingot was defined. It was also possible to prevent the formation of impurities in the top of the ingot by ensuring stable electric operational conditions until the end of the process. The optimum power was obtained with 55 v instead of 40 and 6 ka. However, even the optimum electric parameters only yield flawless casting provided the power conditions are very stable throughout the entire process. By applying these new electrical parameters the impurities could be decreased from 31.6% to 0.7%. In some tests Ya. I. Spektor took part.

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L 08184-67 EWT(d)/EWP(e)/EWP(v)/EWP(k)/EWP(h)/EWP(1)

ACC NR: AP6011685 (A) SOURCE CODE: UR/0309/66/000/003/0025/0028

AUTHOR: Frantsuzov, F. (Engineer)

ORG: None

36
B

TITLE: "Cosmic"-like training of locomotive engineers

SOURCE: Nauchno-tekhnicheskiye obshchestva SSSR, no. 3, 1966, 25-28

TOPIC TAGS: railway transportation, locomotive, [redacted], industrial medicine, applied psychology, [redacted], CIVIL ENGINEERING PERSONNEL, CONDITIONED REFLEX

ABSTRACT: The article, written in a popular style, deals with the psychological examinations of locomotive engineers and their behavior under conditions peculiar to rapid-transit transportation. The article is composed on the basis of experiments conducted by members of a psychophysiological laboratory headed by Dr. Yu. S. Borover. Various studies of biological processes and human reactions were made by using psychophysiological monitoring instruments on locomotives and in a special laboratory equipped with devices simulating various locomotive driving conditions. It is mentioned that during one drive the engineer was responsive to 10,000 sensory stimuli of which about 900 were caused by numerous traffic lights and railway signaling. Various kinds of sense-perception, reflex movements, quickness and acutenous of apprehension, emotional capacities, tiresomeness, and drowsiness are generally reviewed. A simulated drive performed by the author in Dr. Borover's laboratory is described, and various experimental measurements are discussed.

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ACC NR: AP6011685

including the preliminary aptitude tests. A special circular diagram shown and explained in the text is used for aptitude tests and for qualifying engineers for driving high-speed locomotives. A set of four graphs is presented for the demonstration of reactions responded by two engineers to various stimuli. After preliminary tests, the engineers undergo tests in an electric locomotive simulator provided with the usual control equipment and an imitating motion picture arrangement. The speed is simulated up to 200 km/hr. The testing procedure applied to two different groups of engineers is generally outlined and some results are compared.

SUB CODE: 05, 06, 13/ SUBM DATE: None

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S/133/62/000/009/002/009
A054/A127

AUTHORS: Frantsov, F.P., Moshkevich, Ye.M., Smolyakov, V.F.

TITLE: At the Elektrometallurgicheskiy zavod "Dneprospetsstal'" im. A.N. Kuz'mina (Electrometallurgical Plant "Dneprospetsstal'" imeni A.N. Kuz'min)

PERIODICAL: Stal', no. 9, 1962, 808

TEXT: Two versions of the smelting technology for stainless maximum 0.03% carbon-containing steel have been developed: a) by smelting soft iron (0.03% C) or vacuum-treated soft iron (0.01% C) with special highly refined ferrochrome and nickel in an acid 8-ton induction furnace; b) in a medium-capacity basic arc furnace on pure carbon charge with the application of oxygen. In the second version the metal is oxidized by oxygen in 25 - 35 minutes, until a 0.02% carbon content is obtained; the slag is then tapped, the metal is reduced by the sedimenting process with the addition of 0.35% Si, 0.5% Mn and 0.10% Al and 0.2% calcium silicate is added to the slag. Then highly refined ferrochrome and an increased amount of slag (4 - 5%) are added. Titanium metal is fed into

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the ladle. Pouring takes place with the addition of magnesium alloy chips; the riser head is sprinkled with white slag. During processing the metal displays sufficient ductility and other properties, only its strength is lower than in the 1X18H9T (1Kh18N9T) grade. The tests were carried out in cooperation with the Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute).

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AUTHORS: Frantsov, V.P., Moshkevich, Ye.I., Smolyakov, V.F.

TITLE: At the Elektrometallurgicheskiy zavod "Dneprospetsstal'" im. A.N. Kuz'mina (Electrometallurgical Plant "Dneprospetsstal'" im. A.N. Kuz'min)

PERIODICAL: Stal', no. 9, 1962, 812 - 813

TEXT: 1) Studies of industrial-scale heats of ЭИ962 (EI962) [10 Х 12 НВФМА (10Kh12NVFMA)] grades showed that the cracks in slabs depend on the chemical composition and mainly on the C-content. Heats containing 0.09 - 0.13% carbon could be given an index of 2.85 as to surface condition, but only 1.8 at a 0.13 - 0.18% C-content. The chemical composition affects the phase structure. If the C-content is increased beyond 0.13% the amount of ferrite phase decreases to 5 - 7% at rolling temperature. The metal then shows satisfactory ductility. Reducing the temperature in the ladle to 1,570 - 1,590°C and raising the temperature of slabs during placing them in the furnace have favorable effects. Blowing argon into the furnace did not change the metal ductility. The optimum C-content is 0.13 - 0.16%. 2) The use of single rotameters during the pouring of the ЭИ437Б (EI437B) grade alloy and the determination of the

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optimum time of argon blowing into the mold improved the surface of ingots and reduced the marginal defects on the fracture surface from 6.8 to 3.8%. 3) The application of precipitation reduction of the metal by means of the AMC (AMS) alloy (3.5 kg/ton) and 45-% ferrosilicon lumps (to obtain a 0.1% Si-content), and the addition of ferrochrome before the formation of the refining slag were studied. The slag was reduced by coke and ferrosilicon powder. Refining time was shortened by 30 minutes, the slag composition was improved and the service life of furnace lining was prolonged. The ductility of the metal improved slightly. The quality of the metal at the fracture surface of hardened samples and in samples studied for gradual machining was also better. There was no change in the amount of nonmetallic inclusions. 4) Lacquers with various degrees of viscosity and containing diverse amounts of volatile matter were tested with the addition of 5 - 15% lacquer oil and 5 - 15% resin separately and with the addition 5 - 10% of both lacquer oil and resin. The larger amount of volatile matter, when coating at 100°C, promoted the edge formation of the metal. The lacquer used for coating ingot molds for structural steels should contain 0.5 - - 1.0% volatile matter at 50°, 1.5 - 2.5% at 70°, 3 - 5% at 90° and 6 - 15% at 100°C; its viscosity should be 2.8 - 3.2°E at 70°C. 5) To improve the macro-structure of stainless steel ingots under the riser-head, dozzles with a widened

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bottom were used and the amount of "lunkerite" applied in sprinkling the riser--head was raised to 3 kg/ton. These measures increased the output of serviceable castings by 3%, raised the efficiency of the grinding shop and decreased the losses of stainless steel in chips. 6) To reduce porosity and nonmetallic inclusions in rolled steels of the roughing mill, three kinds of ingots (2.6 tons, with double conicity, 2 and 1 ton) were tested. No changes were found in the quality of 2.6- and 2-ton ingots, in the 1-ton ingots porosity was reduced by an index of 0.73, the oxide content by an index of 0.18, sulfide inclusions by an index of 0.31 and spheroidal inclusions by an index of 0.13. The serviceable product in 1-ton ingots, passing the first check for macrostructure amounted to 90% and for nonmetallic inclusions: 100%. 7) Carbon and ball-bearing steels are smelted as follows: lime (2.5 - 5 kg/t) and iron ores are fed into the furnace, then metal scrap and after closing the furnace, liquid iron (50% of the total charge) is poured in through a spout. Cast iron contains 4 - 4.4% C, 1.7 - 1.9% Mn, 0.7 - - 0.8% Si, 0.1 - 0.12% P and 0.03 - 0.035% S and is fed from a mixer into a special ladle. After 85 - 90% of the charge is smelted, oxygen is blown through a 37-mm diameter tuyere, under 7 - 8 atmospheres pressure at a 1,400 - 1,700 m^3/hour rate. During smelting the slag is flowing off by gravity, lime (2.5 - 3 kg/ton) and iron ore (1 - 1.5 kg/ton) are added, while oxygen blowing is being continued. The

average rate of decarburization for the ШХ15 (ShKh15) and Ст.3 (St.3) grades was 0.54 and 0.96% per hour. Upon obtaining the required C-content, the conventional technology was applied. When liquid charge is used the P-(0.015%) and S-content (0.009%) are lower than with solid charge. Moreover, the new technology requires less electric power (by 23.5%) and a shorter smelting time, it increases slightly the costs of the metal, however. 8) A new technology for casting stainless steel has been developed in cooperation with the Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute). The new method restricts the feed of oxygen to a minimum during the smelting period; slag is reduced in advance by coke and silicon powder, the basicity of slag is raised to 1.5 - 1.6 by adding 60 - 70 kg/ton lime. The metal is reduced by the precipitation process after the bath has been blown through by oxygen; mixed reducing agents are used to obtain 0.5% Mn, 0.3 - 0.35% Si and 0.15% Al. The slag is reduced after addition of ferrochrome by 45- and 75-% pulverous ferrosilicon. When casting 1Х18Н9Т (1Kh18N9T) steel the new method saves 20 - 25 kg/ton ferrochrome. 9) In smelting 1Kh18N9T stainless steel, ferrotitanium is replaced by titanium metal scraps, processed in the form of briquetted powder and chips. Prior to feeding titanium into the furnace, the slag has to be removed completely. After addition of fresh slag (lime + spar), it is reduced by 3 - 4 kg/ton aluminum powder. When titanium is

added in the ladle, slag is refreshed and reduced by 2 - 3 kg/ton aluminum powder. The metal temperature prior to adding titanium is lowered by 20°C as compared to the conventional method. The absorption of titanium when added in the furnace amounts to about 45%, when added in the ladle in the form of briquettes or chips, however, utilization increased to 62 and 57%, respectively.

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AUTHORS: Frantsov, V.P., Moshkevich, Ye.I., Smolyakov, V.F.

TITLE: At the Elektrometallurgicheskiy zavod "Dneprospetsstal'" im. A.N. Kuz'mina (Electrometallurgical Plant "Dneprospetsstal'" im. A.N. Kuz'min)

PERIODICAL: Stal', no. 9, 1962, 861

TEXT: 1) Tests of reducing the cropping at the top by 1% and at the bottom of ingots by 0.5% showed that for the 20 - 50 steels topping can be decreased to 15%, for the 12-20 ХН3А (12-20KhN3A), 12-20 Х2Н4А (12-20Kh2N4A) and 30 ХГСА(30KhGSA) grades to 16% and for the 18 ХНВА (18KhNVA) grade to 18%. Bottom cropping can be reduced for the "20-50" grades to 1%, for the 50 ХГСА (50KhGSA) grade, 9 ХС (9KhS), ШХ15 (ShKh15), 12-20Kh2N4A, 12-20KhN3A and 30KhGSA grades to 1.5%. 2) For better utilization of the heating elements the ShKh15 grade steel slabs are cut into pieces 5.8 m in length instead of 3.5 m; cutting to the standard size [ГОСТ 801-47 (GOST 801-47)] takes place before they become white hot. This measure increased the output of the heat treatment

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unit by 60 - 70%, and reduced that of the heating furnaces by 15 - 20%. The losses caused by cropping were reduced by 25%. 3) The possibility of reducing the normal amount of carbon in the decarburized layer of ШХ9 (ShKh9), ShKh15, ХВГ (KhVG), Р9 (R9), Р18 (R18), 60 С2А (60S2A) and У12 А (U12A) grades was studied during heating in a muffle furnace, while a protective atmosphere of dissociated ammonia and natural gas was produced. As the reduction of bars takes place non-uniformly, the consumption ratio between natural gas and protective medium must be kept at 1/7 - 1/8, to reduce only the decarburized parts and to avoid recarbonization. These values ensure an equilibrium between the carbon potential of the furnace atmosphere and the required carbon content of the steel. Carbon reduction takes place during bright annealing while natural gas is intermittently fed into the furnace. Due to the reduction of their carbon content, decarburized layers must not be polished. 4) To obtain a higher notch toughness in large sections of 30 ХГСНА (30KhGSNA) steel a new annealing process has been developed: heating to 950 - 1,000°C, holding time 12 hours, cooling at a rate of 30°/hour to 700°C, followed by cooling in air. 5) The white spots of vacuum-remelted ShKh15 grade were examined by x-rays. The defective zones were found to have a lower (0.7 - 0.8%) carbon content, finer grains and an increased

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parameter of the ferrite lattice. These changes are caused by the special conditions of crystallization of the external metal layers at the water-cooled ingot mold walls. Calcium fluoride was found in the skin of electro-remelted steel. The skin forms during the cooling of some parts of the molten metal due to CaF_2 particles being entrained while the metal passes through the slag layer. 6) The x-ray check of decarburization and carburization of steels has been considerably simplified by application of the ionizing effect. The new method uses УРС-55 (URS-55) type x-ray apparatus, a special camera, an МСТР -4 (MSTR-4) type counter, a БАМБУК (BAMBUK) type computer and an ЭПП-09 (EPP-09) type potentiometer.

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FRANTSOV, V.P., inzh.; MALIKOV, G.P.; RATNER, Z.M.; MOSHKEVICH, Ye.I.

Pouring of stainless steel with addition of magnesium alloy chips. Stal' 22 no.3:238-239 Mr '62. (MIRA 15:3)
(Steel, Stainless—Electrometallurgy)

FRANTSOV, F.P.; MOSHKEVICH, Ye.M.; SMOLYAKOV, V.F.

Research carried out at the "Dneprospetsstal'" electro-metallurgical plant. Stal' 22 no.9:808, 812-813, 861 S '62. (MIRA 15:11)

(Zaporozhye--Metallurgical research)

KELER, V.R., otv. red.; MILLIONSHCHIKOV, M.D., akademik, red.; BLOKHIN, N.N., red.; BLOKHINTSEV, D.I., red.; GNEDENKO, B.V., akademik, red.; ZAYCHIKOV, V.N., red.; KELDYSH, M.V., akademik, red.; KIRILLIN, V.A., akademik, red.; KORTUNOV, V.V., red.; MONIN, Andrey Sergeyevich, prof., doktor fiz.-matem. nauk, red. (1921); NESMEYANOV, A.N., akademik, red.; PARIN, V.V., red.; REBINDER, P.A., akademik, red.; SEMENOV, N.N., akademik, red.; FOK, V.A., akademik, red.; FRANTSOV, G.P., akademik, red.; ENGEL'GARDT, V.A., akademik, red.; KREMNEVA, G., red.; BALASHOVA, A., red.; BERG,A.I.,akademik,red.

[Science and mankind, 1964; simple and precise information about the principal developments in world science] Nauka i chelovechestvo, 1964.; dostupno i tochno o glavnom v mirovoi nauke. Moskva, Izd-vo "Znanie," 1964. 424 p. (MIRA 18:1)

1. Deystvitel'nyy chlen AMN SSSR (for Blokhin, Parin). 2. Chlen-korrespondent AN SSSR (for Blokhintsev). 3. Akademiya nauk SSSR Ukr.SSR (for Gnedenko).

FRANTSEV, Yu.P., rektor, otv. red.; IVAN'KOVICH, N.F., red.; VLADIMIRTSEV, V.S., red.; STEPANYAN, TS.A., prof., red.; CHANGLI, I.I., starshiy nauchnyy sotr., kand. ekonom. nauk, red.; YESELEV, N.Kh., red.; GUSEV, K.V., red.; BONAREV, N., red.; GRINGAUZ, S., red.; SPITSYNA, A., red.; KUZNETSOVA, A., tekhn. red.

[Standard-bearers of communist labor] Znamenostsy kommunisticheskogo truda. Moskva, Moskovskii rabochii, 1961. 322 p. (MIRA 14:12)

1. Akademiya obshchestvennykh nauk pri TSentral'nom komitete Kommunisticheskoy partii Sovetskogo Soyuza i Chlen-korrespondent AN SSSR (for Frantsev). 2. Zaveduyushchiy sektorom Instituta filosofii AN SSSR (for Stepanyan). 3. Institut filosofii AN SSSR (for Changli).
(Labor and laboring classes)

FRANTSEV, Yu. P.

Lenin's ideas on the development of communist labor. Vop. ekon. no.4:4-14 Ap '61. (MIRA 14:3)

1. Chlen-korrespondent AN SSR.
(Lenin, Vladimir Il'ich, 1870-1924)
(Labor and laboring classes)

G P FRANTSEV

ARZUMANYAN, A.A., akademik; BERG, A.I., akademik; ZHUKOV, Ye.M., akademik; SEMENOV, N.N., akademik; VINOGRADOV, V.V., akademik; FRANTSEV, Yu.P.; SHCHERBAKOV, D.I., akademik; ANISIMOV, I.I.; GATOVSKIY, L.M.; IOVCHUK, M.T.; FEDOSEYEV, P.N., akademik; ROMASHKIN, P.S.; KONSTANTINOV, F.V.; MITIN, M.B., akademik; YELYUTIN, V.P.; PLOTNIKOV, K.N.; PRUDENSKIY, G.A.; YUDIN, P.F., akademik; RYBAKOV, B.A., akademik; KONSTANTINOV, B.P., akademik; KHVOSTOV, V.M.; KEDROV, B.M.; MARKOV, A.A.; BAISHEV, S.B., akademik; ALEKSEYEV, M.N., prof.; SKAZKIN, S.D., akademik; ALEKSANDROV, A.D.; POSPELOV, P.N., akademik

Discussion of L.F. Il'ichev's rreport. Vest. AN SSSR 32 no.12:19-50 D '62. (MIRA 15:12)

1. Chleny-korrespondenty AN SSSR (for Aleksandrov, Frantsev, Anisimov, Gatovskiy, Iovchuk, Romashkin, Konstantinov, Yelyutin, Plotnikov, Prudenskiy, Khvostov, Kedrov, Markov). 2. AN Kazakhskoy SSR (for Baishev).

(Research)

FRANTSEV, Yu. P.

"Materialisticheskiye traditsii issledovaniya religioznykh yavleniy."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences, Moscow, 3-10 Aug 64.

FRANTSOV, V. P.

USSR/Metals Nov 48
Steel Titanium
Steel Ingots

"Subsurface Porosity of Titanium Steels," M. I. Zuyev, V. S. Kultygin, V. P. Frantsov, N. A. Shiryayev, Engineers, ElektroStal', 7 pp

"Stal'" No 11

Discusses subsurface porosity of titanium steel dingots, with 13 illustrations of macro- and microstructure. Porosity is caused by molten metal splashing and spattering. Suggests siphon method of teeming into 400-kg ingots on six-mold bottom plates or pouring 1,000-kg ingots through 50-60 mm diameter funnel.

PA 19/49T80

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413610015-0"

FRANTSOV, V. P.

GNUCHEV, S.M.;FRANTSOV, V.P.;MORENKO, G.F.;KOMISSAROV, G.K.;KLOCHKOVA, Z.V.

Electric furnace smelting of structural steel with an oxygen lance. Stal' 17 no.3:228-232 Mr '57. (MLRA 10:4)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii i zavod "Dneprospetsstal'".
(Steel--Electrometallurgy) (Oxygen--Industrial applications)

S/133/61/000/006/007/017
A054/A129

AUTHORS: Gnuchev, S. M., Candidate of Technical Sciences, Trakhimovich, V. I., Tregubenko, A. F., Frantsov, V. P., Bobkov, T. M., Engineers

TITLE: Melting steel in arc-furnace with electromagnetic stirring of the bath

PERIODICAL: Stal', no. 6, 1961, 519-522

TEXT: Electromagnetic stirring was first applied in the USSR, in 1956, to a ДСВ-18 (DSV-18) type furnace (diameter of the working area: 3,070 mm, depth of the bath: 605 mm, tranformer capacity: 8,000 kw); further equipment for stirring was installed in 1959. Tests were carried out to determine the effect of electromagnetic stirring on the oxygen and sulfur content during the reduction period and to examine the efficiency of this process. The metal was stirred in such a way, (Fig. 1a) that after rising from the lower layers at the outlet opening it spread over the bath surface while two rotation centers were forming at the bridge. In the present series of tests the maximum rate of metal movement was 0.25 - 0.40 m/sec at the rear furnace banks and 0.14 - 0.25 m/sec at the frontal furnace banks, with a frequency of 0.95 - 1.0 cps. During the

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S/133/61/000/006/007/017
A054/A129

Melting steel in arc-furnace ...

tests the electromagnetic stirring went on for the entire period of refining. Based on the results obtained for the electromagnetic stirring of low-carbon structural steels, (12XH3A = 12KhN3A, 15XM = 15KhM) it was found that this process compared with the conventional method accelerated deoxidation considerably, viz. by 30 - 40 minutes. When deoxidizing took place for the usual period, electromagnetic stirring resulted in a more thorough deoxidation (0.003 - 0.005% oxygen content before tapping instead of 0.005 - 0.007% when applying the conventional method). Increased deoxidation by electromagnetic stirring was also recorded for stainless low-carbon steels (0.0035 - 0.0070% oxygen instead of 0.007 - 0.013% in the old process). The distribution coefficient of sulfur during reduction when applying the electromagnetic stirring method was higher, whereas the sulfur-content in the metal was lower than in the usual castings. No increase in hydrogen and nitrogen content was observed, nor did the furnace bottom display any increased wear and tear when electromagnetic stirring was applied. It was possible to accelerate the skimming of slag by 5-10 minutes, which increased the furnace capacity by 10%; moreover, manual labor could be entirely eliminated from this process. The temperature of the metal reached an average value more quickly and could be controlled more easily than in the usual manner. The bath also had a more uniform chemical composition. All these factors

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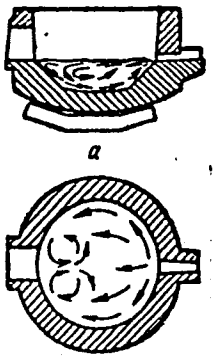
improved the quality of the metal considerably. It was found that the waste decreased in electromagnetically stirred molten metals. This could be established for 18ХНВА (18KhNVA), 12ХН3А (12KhN3A), 40ХНМА (40KhNMA) steels. The waste in ball bearing steel decreased also, as a result of the drop in globular inclusions, whereas the oxide and sulfide impurities occur in about the same amounts in both processes. The drawbacks of the electromagnetic stirring equipment are: 1) the air-cooling of the stators is insufficient and does not prevent their overheating; 2) on account of the slow motion of the metal at the bath surface it is not possible to mechanize the stirring of slag. For this purpose it would be necessary to raise the current intensity in the stator above the nominal value and to intensify cooling suddenly; 3) in the present construction the bath must first be removed when repairs are necessary, when the stator has to be mounted or dismantled. There are 3 figures, 4 tables and 2 Soviet-bloc references.



a

Fig. 1a: Scheme of the metal-circulation in the bath applied in the tests

SHUL'TE, Yu.A., doktor tekhn.nauk, prof.; GAREVSKIKH, I.A., inzh.; LEYBENZON, S.A., inzh.; MAKSIMENKO, V.D., inzh.; TREGUBENKO, A.F., inzh.; SPERANSKIY, B.S., inzh.; FRANTSOV, V.P., inzh.; SMOLYAKOV, V.F., inzh.

Defects in steel ingots made by the electric slag process. Stal' 21 no. 4:322-326 Ap '61. (MIRA 14:4)

(Steel ingots—Defects)
(Steel—Electrometallurgy)

S/032/61/027/004/008/020
B110/B215

AUTHORS: Shul'te, Yu. A., Garevskikh, I. A., Makeimenko, V. D., Leybenzon, S. A., Frantsov, V. P., Smolyakov, V. F., and Stetsenko, M. A.

TITLE: Scale for estimating nonmetallic inclusions in electroscoriaceous steel

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 4, 1961, 422-424

TEXT: A high-purity metal is obtained by the electroscoriaceous method of melting. Inclusions in electroscoriaceous steel differ from those in ordinary steel in kind and character of their distribution. Traditional scales, therefore, cannot be used for the correct estimation of impurities, especially oxidic inclusions. The examination of nonmetallic inclusions in a large number of melts of electroscoriaceous steel allowed the development of a new scale (Fig.) in which the total area of disoriented inclusions, their number within the field of vision, and the admissible dimensions of the individual inclusions are taken into account (Table 1). Oxidic and sulfidic inclusions are shown in the photographs

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of the new scale. Large globular, oxidic inclusions are measured with an eyepiece micrometer. The degree of impurities in the ground face is estimated according to the field of vision with the largest number of impurities. The authors tested the scale and controlled 682 specimens of 200 electroscoriaceous melts of ball-bearing steel types ШХ15 (ShKh 15) and ШХ15СГ (ShKh15SG). At the same time, the specimen was estimated by the traditional ГОСТ 801-47 (GOST 801-47) scale (Table 2). The indices of estimation by both scales differed but slightly, although the estimations of the individual melts differed largely from the control. Examinations of nonmetallic inclusions showed that the scale can also be used for other steels melted out by the electroscoriaceous method and for estimating melts in the vacuum arc containing the same type of inclusions. Ye. I. Boyko's collaboration is mentioned. [Abstracter's note: Complete translation]. There are 1 figure, 2 tables, and 2 Soviet-bloc references.

ASSOCIATION: Zaporozhskiy mashinostroitel'nyy institut (Zaporozh'ye Machine-building Institute); zavod "Dneprospetsstal'" ("Dneprospetsstal'" Plant)

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FRANTSOV, V. P.

S/133/62/000/009/003/009
A054/A127

AUTHORS: Chuyko, N.M., Doctor of Technical Sciences, Rutkovskiy, V.B., Danichek, R.Ye., Perevyazko, A.T., Poredulin, G.M., Trofimenko, A.P., Shamil', Yu.P., Frantsov, V.P., Volevich, V.G., - Engineers

TITLE: Blowing inert gases through the metal in the ladle under vacuum

PERIODICAL: Stal', no. 9, 1962, 809 - 811

TEXT: Vacuum treatment of liquid steel promotes the removal of gases and reduces the amount of nonmetallic inclusions. Tests were carried out (in cooperation with I.M. Ioffe, M.I. Lavrent'yev, G.P. Parkhomenko, V.I. Demidenko, Ye.M. Rysin, and T.M. Vorob'yeva, Engineers) to determine the optimum methods of blowing inert gases through the liquid metal in the ladle in combination with the vacuum treatment. The method established does not require special refractory materials, the apparatus used (designed by N.M. Chuyko, Professor and Ye.I. Lavreyev, Engineer) is of a simple design and metal losses through the spout can be prevented. The argon feed can be controlled very closely by means of 3 rotameters [PC-7 (RS-7) type], having 30 standard m^3/h capacity and supplied with

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needle valves. The test steel [ШХ15 (ShKh15)] was smelted in four versions: I. blowing through the reduced metal in the ladle under atmospheric pressure; II. the same, under vacuum; III. vacuum treatment of non-reduced metal, containing less than 0.05% Si, in the ladle and reduction with ferrosilicon and aluminum at the end of the process; IV. blowing through non-reduced metal in the ladle under vacuum, with addition of ferrosilicon and aluminum at the end of blowing. Ferrosilicon was added in an amount to ensure 0.27 - 0.28% Si content in the metal, the amount of aluminum added was 0.5 kg/ton. The technically pure argon gas contained 0.003 - 0.009% oxygen and maximum 0.01% nitrogen. The hydrogen content of the metal (both in reduced and non-reduced condition) could most efficiently be removed when argon gas was blown through at residual pressures of 10 - 12 mm mercury column in the vacuum chamber, with a blowing time of at least 8 min. A maximum reduction of the oxygen content can be obtained by blowing gas into the ladle through non-reduced metal under vacuum (IV). With regard to nonmetallic inclusions the best results are attained by versions III and IV. Some of the heats were entirely without spheroidal inclusions. The amount of oxygen and of impurities also depends on the degree of reduction of the slag, in view of the intensive mixing of metal and slag during blowing. The

lowest oxygen content (0.0019%) and the smallest number of oxide and spheroidal inclusions are ensured when argon is blown in amounts of 0.05 - 0.06 m^3/ton, under vacuum, at remanent pressures of 18 - 30 mm Hg. The intense stirring of the metal caused by the argon gas blown into the ladle also causes a uniform distribution of silicon in the bottom part of the ladle and its complete adsorption. There are 3 figures. The English-language reference is: Iron and Steel Engineer, 1959, v. 36, no. 9 (September), 192.

KHITRIK, S.I., doktor tekhn. nauk; KADINOV, Ye.I., inzh.; BORODULIN, G.M., inzh.; TREGUBENKO, A.F., inzh.; YATSKEVICH, I.S., inzh.; DEMIDOV, P.V., inzh.; FRANTSOV, V.P., inzh.; SMOLYAKOV, V.F., inzh.; MALIKOV, G.P., inzh.; DOVGIY, M.M., inzh.; MOSHKEVICH, Ye.I., inzh.; RABINOVICH, A.V., inzh.

Reducing chromium losses in the manufacture of acid-resistant and stainless steels in electric arc furnaces. Met. i gornorud. prom. no.1:17-20 Ja-F '62. (MIRA 16:6)
(Steel, Stainless—Electrometallurgy)

CHUYKO, N.M., doktor tekhn.nauk; RUTKOVSKIY, V.B., inzh.; DANICHEK, R.Ye., inzh.; PEREVYAZKO, A.T., inzh.; BORODULIN, G.M., inzh.; TREGUBENKO, A.F., inzh.; SHAMIL', Yu.P., inzh.; FRANTSOV, V.P., inzh.; VOLOVICH, V.G., inzh.; Prinimali uchastiye: IOFFE, I.M., inzh.; LAVRENT'YEV, M.I., inzh.; PARKHOMENKO, G.P., inzh.; DEMIDENKO, V.I., inzh.; RYSIN, Ye.M., inzh.; VOROB'YEVA, T.M., inzh.

Inert gas blowing of metal in the ladle in vacuum. Stal' 22 no.9:809-811 S '62. (MIRA 15:11)
(Vacuum metallurgy) (Protective atmospheres)

FRANTSOV, V.P.; MOSHKEVICH, Ye.I.; SMOLYAKOV, V.F.

At the A.N. Kuz'min "Dneprospetsstal'" Electrometallurgical Plant. Stal' 22 no.10:946 O'62. (MIRA 15:10)
(Zaporozhye--Electrometallurgy)

ALEKSEYENKO, M.F.; BANAS, P.S.; BOBKOV, T.M.; NATAPOV, B.S.; RYABTSEV, S.I.; SKLYAROV, P.I.; FRANTSOV, V.P.; YUDOVICH, S.Z.; PRONIN, V.Ye.

DI-1 stainless steel. Stal' 23 no.2:159-162 F '63. (MIRA 16:2)
(Steel, Stainless)

ACCESSION NR: AP4019472 S/0133/64/000/003/0228/0228

AUTHORS: Frantsov, V. P. (Engineer); Moshkevich, Ye. I. (Candidate of technical sciences); Khitrik, A. I. (Engineer)

TITLE: /Osvoyeniye...stali 23Kh13NVFMA.../ Production of steel 23Kh13NVFMA (EP65) for sheet metal

SOURCE: Stal', no. 3, 1964, 228

TOPIC TAGS: steel 23Kh13NVFMA (EP65), sheet metal, phosphorus, ferrochrome, tungsten, ferrotungsten, electromagnetic mixing, one phase structure, austenite, ferrite component

ABSTRACT: In order to lower the phosphorus content of steel below 0.02% fresh charge was smelted under oxygen with the use of phosphorus-free scrap and ferrochrome. The absorption of tungsten from ferrotungsten was increased from the usual 86.5% to 94.5% when electromagnetic mixing was applied. The steel was found to be austenitic, and only at 1250-1300C was up to 5% of ferrite observed. The absence of the second phase made it possible to roll large ingots. Dilato-

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ACCESSION NR: AP4019472

metric investigations determined the beginning and the end of phase transformations at 715 and 820C in heating and at 780 and 650C in cooling. Because the steel was susceptible to cracking, ingots had to be carried to rolling mills while hot.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 27Mar64 ENCL: 00

SUB CODE: ML NO REF SOV: 000 OTHER: 000

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