Method of Making Visible the Structure of Heat-resistant Alloys in Electron Microscopic Investigations

S/032/60/026/06/19/044
B010/B016

amperage decrease with the ageing time of the alloy. There are 4 figures, 1 table, and 4 Soviet references.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy kotloturbinnyy institut im. I. I. Polzunova (Central Scientific Research Institute of Boilers and Turbines imeni I. I. Polzunov)

Card 2/2

MEL'NIKOVA, Irina Sergeyevna, inzh.; LEVIN, Ya.Ya., kand. tekhn.nauk, red.; SHILLING, V.A., red. izd-va; BLOGUROVA, I.A., tekhn. red.

[Methods of electron-microscope examination of heatproof alloys] Metody elektronnomikroskopicheskogo issledovaniia zharoprochnykh splavov; stenogramma doklada. Leningrad, 1961. 38 p. (MIRA 14:7)

(Electron microscopy) (Alloys)

MIKHAYLOV-MIKHEYEV, Prokopiy Borisovich, doktor tekhn. nauk; PROSVIRIN, V.I., doktor tekhn. nauk, prof., retsenzent; LEVIN, Ye.Ye., kand. tekhn. nauk, red.; VASIL'YEVA, V.P., red. izd-va; MITARCHUK, G.A., red. izd-va; PETERSON, M.M., tekhn. red.

[Handbook of metal materials used in the manufacture of turbines and engines] Spravochnik po metallicheskim materialam turbino- i motorostroeniia. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 838 p. (MIRA 14:9)
(Metals) (Turbines) (Engines)

34531
S/659/61/007/000/018/044
D217/D303

18.1130

AUTHORS: Levin, Ye.Ye., and Masaleva, Ye.N.

TITLE: Structure and properties of 12 % chromium steel for cast turbine and armature components

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam, v. 7, 1961, 178 - 187

TEXT: Articles of complicated shape (e.g. massive flanges, variable wall thickness etc.) made of steel Х11Л-Б (Kh11L-B) were used for studying the influence of heat treatment on the structure and properties of this steel. It was found that efficient heat treatment will result in securing the required mechanical properties of cast components having a wall thickness of up to 450 mm. A satisfactory structure can be ensured by normalizing the casting at 1050 - 1100°C and cooling at 300°C/hour or more rapidly. By means of high temperature heating, it is possible to regulate the α(δ)-ferrite content of the steel structure, to influence the shape and distribution of particles of this phase, and particularly to reduce the

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Structure and properties of 12 % chro-...

anisotropy of properties and increase the structural stability when too much α(δ)-phase is present and its distribution is unfavorable. An α(δ)- phase content of up to 17 % has virtually no effect on the high temperature strength of Kh11L-B. The advantages of a steel, treated to ensure a high yield point, are lost if the time of thermal soaking is prolonged and the testing temperature raised. There are 5 figures, 5 tables and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc.

X

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34540
S/659/61/007/000/028/044
D217/D303

18.9400

AUTHORS: Levin, Ye.Ye., and Gugelev, B.M.

TITLE: Applying the technique of high temperature vacuum metallography

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam, v. 7, 1961, 245 - 249

TEXT: A number of examples are described which illustrate the main directions in which high-temperature vacuum metallography is applied at the TsKTI. Ye.M. Pivnik and Ye.N. Masaleva participated in this work. A study of the deformation of nickel base alloys, carried out at 760° and 900°C for fracture times of 0.5 to 14 hours, has shown that during deformation intercrystalline cracks begin to develop from the surface. Gradual polishing-away of successive layers of the deformed specimens, in which cracks had developed which did not extend throughout the section, has shown that the number of cracks decreases considerably on reaching the inner layers of the metal, but the nature of the cracks remains the same. Microcracks form main-

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Applying the technique of high ...

ly along the grain boundaries, the initial opening-up of the boundary proceeding intermittently. In the deformation of specimens of variable grain size at 760°C, the first intergranular cracks form and propagate, as a rule, in the regions of coarser grains and along the boundaries between grains of different size. In order to study the influence of grain size on the nature of intergranular cracks forming during deformation, two specimens of varying grain size were investigated at 700°C at approximately identical rates of deformation (time to fracture approximately 3.5 hours). It was found that deformation of fine-grained metal was accompanied by formation of a large number of fine cracks, whereas in coarse-grained material, individual cracks of considerable length developed. Meeting points of three grains can act not only as points of crack formation, but also as obstacles to their propagation. A study of the kinetics of surface crack development during creep (900°C, time to fracture, 15 hours) has shown that opening-up of grain boundaries occurs at the very beginning of the second stage at meeting points between three grains. Hence, the number and size of cracks continue to grow during the entire deformation process until fracture occurs.

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S/659/61/007/000/028/044
D217/D303

Applying the technique of high ...

In the case of heterogenous joints (basis metal - carbon steel 30, fused-on metal - austenitic steel EI395), a layer of intermediate composition exists along the fusion boundary. There are 3 figures.

Card 3/3

SPIVAK, G.V.; VERTSNER, V.N.; LUK'YANOVICH, V.M.; LEVIN, Ye.Ye.; SKAKOV, Yu.A.

Third All-Union Conference on Electron Microscopy. Radiotekh. i elektron. 6 no.5:852-862 My '61. (MIRA 14:4)
(Electron microscopy—Congresses)

STANYUKOVICH, A.V., kand.tekhn.nauk; LEVIN, Ye.Ye., kand.tekhn.nauk

Causes of the deterioration of steam superheaters made from 1X18N12T steel. Energomashinostroenie 7 no.10:27-30 O '61. (MIRA 14:10)

(Steel, Heat resistant--Brittleness)
(Steampipes--Testing)

LEVIN, Ye.Ye., kand.tekhn.nauk; MASALEVA, Ye.N., inzh.

Use of cast heat-resistant steel as material for power machinery parts with an operating temperature up to 600°C. Energomashinostroenie 8 no.5:24-27 My '62. (MIRA 15:5)
(Steam turbines--Design and construction)
(Steel, Heat resistant)

LEVIN, Ye.Ye.; PIVNIK, Ye.M.

Effect of structure on the deformability of nickel-base high alloys steels. Issl.po zharopr.splav. 8:242-250 '62. (MIRA 16:6)

(Nickel steel--Metallography) (Deformations (Mechanics))

LEVIN, Ye.Ye., kand.tekhn.nauk; MASALEVA, Ye.N., inzh.

Development and application of austenite steel for cast components of power systems with superhigh parameters. Teploenergetika 10 no.6:6-10 Je '63. (MIRA 16:7)

1. TSentral'nyy kotloturbinnyy institut.
(Steel castings) (Electric power plants)

LEVIN, Ye.Ye., kand.tekhn.nauk; ZEMZIN, V.N., kand.tekhn.nauk; MASALEVA, Ye.N., inzh.; SNITKO, M.N., inzh.; BABAYEVA, Ye.V., inzh.; SOLDATOVA, A.S., inzh.

Economically alloyed EI402M-L cast steel for turbines and equipment operating with metal temperatures up to 650°C. Energomashinostroenie 9 no.1:30-33 Ja '63. (MIRA 16:3)
(Steel) (Gas turbines)

LEVIN, Yevgeniy Yefimovich, kand. tekhn.nauk; PIVNIK, Yelena Markovna, kand. tekhn. nauk; MIKHAYLOV-MIKHEYEV, P.B., red.; FREGER, D.P., red.izd-va; BELGUROVA, I.A., tekhn. red.

[Progressive methods of heat treatment for heat-resistant alloys high in addition elements] Progressivnye metody termicheskoi obrabotki vysokolegirovannykh zharoprochnykh splavov. Leningrad, 1963. 30 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Metallovedenie i termicheskaia obrabotka, no.4)
(Heat-resistant alloys--Heat treatment) (MIRA 16:10)

L 12895-63 BDS/EWP(q)/EWT(m) AFFTC/ASD JD/JG

ACCESSION NR: AP3000677 S/0096/63/000/006/0006/0010

AUTHOR: Levin, Ye. Ye. (Candidate of technical sciences); Masaleva, Ye. N. (Engineer)

TITLE: Use of austenite steel in cast parts of power plants utilizing ultra-high temperatures and pressures

SOURCE: Teploenergetika, no. 6, 1963, 6-10

TOPIC TAGS: austenite-ferrite cast steel, steam pipe, LA-3 steel, EI-402M-L steel

ABSTRACT: Since 1954 the Cherepet' power plant, operating at 560-575C and at 170 absolute atm., has conducted systematic external inspections (made by staff members of the plant and of TsKTI (Central Boiler and Turbine Institute) of cast steam fittings made of steel LA-3. Sections of steel LA-3 pipes (removed after certain periods of service) were tested mechanically at TsKTI to determine the influence of sustained high temperature on mechanical properties, structure, and heat resistance of this material. The maximum soaking time for samples in the process of aging at 550, 600, and 650C was 50,000 hours. Tests of sustained strength were continued for 73,000 hours. As a result of this work, a new steel, EI-402M-L, was developed for use in cast parts and fittings of turbines. The per cent composition of this steel is: C up to 0.12, Si up to 0.40, Mn 3.5-4.5, Cr 16-18, Ni 9.5-11.0, Mo 0.9-

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L 12895-63

ACCESSION NR: AP3000677

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1.2, Nb 0.7-1.1, S up to 0.025, P up to 0.025. This steel preserves its high plasticity and impact strength under continuous high temperature. The authors conclude that the study of steel LA-3 provided basic data necessary for the production of heat-resistant, weldable, austenite-ferrite steel EI-402M-L, an economical, dependable, and technically effective material, well adapted to one-piece casting of fittings. Orig. art. has: 4 tables and 5 figures.

ASSOCIATION: Tsentral'ny*y kotloturbinny*y institut (Central Boiler and Turbine Institute)

SUBMITTED: 00 DATE ACQ: 21Jun63 ENCL: 00

SUB CODE: 00 NO REF SOV: 004 OTHER: 000

Card 2/2

L 12943-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD/HW-2

ACCESSION NR: AP3003165 S/0096/63/000/007/0039/0041

64
60

AUTHOR: Getsov, L. B. (Candidate of technical sciences); Levin, Ye. Ye. (Candidate of technical sciences)

TITLE: Experience with use of EI-607A alloy for gas-turbine parts

SOURCE: Teploenergetika, no. 7, 1963, 39-41

TOPIC TAGS: alloy EI-607A, composition, heat treatment, strength, ductility, notch toughness, rupture strength, grain size, nonuniformity, notch sensitivity, forging, casting, rolled bar, nozzle, vane, disk, gas turbine, reliability

ABSTRACT: The Ni-base alloy EI-607A (0.08% max C; 0.8% max Si; 1.0% max Mn; 15.0—17.0% Cr; 1.0—1.5% Nb; 1.4—1.8% Ti; 0.5—1.0% Al; 0.02% max S; 0.02% max P) has found rather wide use in gas-turbine parts. It is melted mostly in induction furnaces, but more recently also in arc furnaces. After multistage heat treatment (annealing at 1080C for 5 hr, air cooling, annealing at 1000C for 2 hr, at 900C for 1 hr, at 850C for 2 hr, and aging at 750C for 20 hr and at 700C for 48 hr) the alloy has rather widely scattered mechanical properties: tensile strength of 90—115 kg/mm^2, yield strength of 47—83 kg/mm^2, elongation of 22—40%, reduction of area of 23—50%, and notch toughness of 7—21%. Nozzles and blades

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L 12943-63
ACCESSION NR: AP3003165

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are cast, die-forged, or machined from special rolled stock; disks are forged. Depending on the melting method and following processing (casting, forging, or rolling), the 10,000-hr rupture strength at 650C varies from 26 to 33 kg/mm^2 and at 700C from 18 to 23 kg/mm^2, and the 1000-hr rupture strength at 750C, from 15 to 18 kg/mm^2. The reduction of area in stress rupture tests is 1.5—4% at 650C and 4—16% at 700C. The remainders of cast structure were found in the central part of flat-die forged turbine disks. These remainders lower strength and ductility in short-time tests at room temperature but do not appear to have any effect on rupture strength and on notch sensitivity of the forged alloy. However, microscopic examination of the failed stress-rupture test specimens revealed intergranular surface cracks at a distance from the fracture. The cracks were attributed to a coarse, nonuniform grain size. The reliability of the alloy was confirmed in experimental operation of small turbines for more than 2000 hr. Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: Zavod "Ekonomayzer" ("Ekonomayzer" Plant); Tsentral'ny*y kotloturbinny*y institut (Central Boiler-Turbine Institute)

SUBMITTED: 00 DATE ACQ: 23Jul63 ENCL: 00

SUB CODE: ML NO REF SOV: 004 OTHER: 000

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L 23362-65 EWT(m)/EWP(w)/EWA(d)/EPR/T/EWP(t)/EWP(b) Pad/Ps-4 IJP(c) MJW/JD/HW

ACCESSION NR: AR5000591 S/0137/64/000/008/I019/I020

SOURCE: Ref. zh. Metallurgiya. Sv. t., Abs. 8I118

AUTHOR: Levin, Ye. Ye., Pivnik, E. M.; Karasik, N. Ya.

TITLE: Effect of degree of alloying on the phase transitions, structure, and properties of nickel base alloys

CITED SOURCE: Sb. Legirovaniye staley. Kiyev, Gostekhizdat USSR, 1963, 104-115

TOPIC TAGS: nickel base alloy, alloying, metal phase transition, metal structure, metal property, metal aging, metal homogenizing, alloy EI617, alloy EI607A

TRANSLATION: Two modifications (A and B) of alloy EI617 were investigated: A is distinguished from EI617 by a high content of aluminum while in B part of the nickel is replaced by cobalt. The cheapest alloy of Nimonic type EI607A was taken for purposes of comparison. A study was made of the structure of the alloys after homogenizing and after various aging conditions; an X-ray structural analysis was made of the residues separated out electrolytically and

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L 23362-65
ACCESSION NR: AR5000591

18

the change in the mechanical properties of the alloys in the aging process was compared. As opposed to alloy EI607A, the gamma' phase 18 in an amount of 22 and 31% was already present in A and B in the state after homogenizing. In A and B, an unknown X-phase and double carbides appear during the aging process: in A, $Ni_2(W,Mo)_2C$ with a face-centered cubic lattice, in B, $(Ni,Co)_3(W,Mo)_3C$, and also in B there appears a Co_7W_6 intermetallic phase with a rhombohedral lattice. With a change in temperature and duration of aging, the relation between the amount of carbides and the Co_7W_6 in the structure of the X-phase changes. After homogenizing, A has a value of σ_b equal to 104 kg/mm^2. On aging alloy A for 500 hrs at 750°, the strength increases, and contrary to the case of EI607A, ductility and a_k decrease sharply. In alloy B, strength changes very little during the process of aging at 800° (σ_b is 130 kg/mm^2). At 900°, there occurs a weakening of the alloy and a sharp drop in ductility and a_k. Contrary to the case of A and EI607A, ductility and a_k in B decrease continuously on prolonged aging, and this appears to be connected with the formation of a Co_7W_6 phase. 3 figures. 8 tables. 8 literature titles. E. Bolin

SUB CODE: MM ENCL: 00
Card 2/2

ACCESSION NR: AT4013965 S/2659/63/010/000/0275/0283

AUTHOR: Levin, Ye. Ye.; Gugelev, B. M.

TITLE: Kinetics of the deformation of biphasic cast alloys investigated by the method of high-temperature metallography

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya po zharoprochny*m splavam, v. 10, 1963, 275-283

TOPIC TAGS: high temperature alloy, casting, biphasic alloy, alloy deformation, power equipment, deformation kinetics, metallography, shear, polygonization

ABSTRACT: Modern power equipment requires heat-resistant materials which are easily machined and reliable when working. The present investigation describes the vacuum metallographic method of studying the deformation of 11% chromium-martensite-ferrite and chromium-nickel austenite-ferrite steel castings. It was found that in the process of deformation of chromium steel the visible shear lines and the shear proper are along the martensite flakes and their length may be compared with the length of the martensite crystals. Second, the grains of free α (δ) ferrite are strained along smoothly bending interference lines. Only under high strain are separate shear lines observed in the α (δ)-ferrite. Third, this deformation of free α (δ)-ferrite shows that it is the main process

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ACCESSION NR: AT4013965

strengthening the steel. Fourth, rupture at a high degree of deformation is developed very slowly and has little effect on steel failure. Fifth, in contrast to chromium steel, the lines in the austenite phase during the deformation of biphasic austenite-ferrite steel develop linearly. Sixth, deformation is accompanied by polygonization of the austenite grains. During the initial deformation the shear between the grains is along the boundary perpendicular to the tensile axis. Orig. art. has: 2 formulas and 6 figures.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy AN SSSR)

SUBMITTED: 00 DATE ACQ: 27Feb64 ENCL: 00

SUB CODE: MM NO REF SOV: 003 OTHER: 001

Card 2/2

LEVIN, Ye.Ye.; PIVNIK, Ye.M.; KARASIK, N.Ya.

Development and identification of structure elements in nickel-based heat resistant alloys. Zav. lab. 29 no.9:1085-1088 '63. (MIRA 17:1)

1. TSentral'nyy nauchno-issledovatel'skiy kotloturbinnyy institut imeni I.I. Polzunova.

LEVIN, YE.Ye.; LUK'YANOVICH, V.M.

All-Union Conference on Electron Microscopy. Zav. lab. 29 no.10:1276-1277 '63. (MIRA 16:12)

L 15659-65 EWT(m)/EWP(w)/EWA(d)/EWP(t)/EWP(b) ASD-3/AFFTC/ASD(m)-3 MJW/JD/MLK

ACCESSION NR: AT4046857 S/0000/64/000/000/0291/0298

AUTHOR: Levin, Ye. Ye. ; B. M. Gugelev 8+1

TITLE: Effect of structure on the deformation and failure of EI-402M austenitic-ferrite heat-resistant cast steel 18 18 18 18

SOURCE: AN SSSR. Nauchny*y sovet po probleme zharoprochny*kh splavov. Issledovaniya staley i splavov (Studies on steels and alloys). Moscow, Izd-vo Nauka, 1964, 291-298

TOPIC TAGS: austenitic steel, austenite ferrite steel, heat resistant steel, cast steel, steel structure, steel plasticity/steel EI-402M

ABSTRACT: Two EI-402M steel melts, with 0.08% C, 0.31 and 0.57% Si, 4.44 and 3.71% Mn, 19.4 and 17.6% Cr, 10.3 and 10.67% Ni, 1.26 and 1.04% Mo, 0.02 and 0.01% S, and 0.015 and 0.021% P, respectively, were used in a study of structural changes associated with phase transformations occurring during the deformation of austenitic-ferrite steels. A high-temperature vacuum IMASh-5U unit was used to produce deformation, at 20-1150C and varying stretching rates, in samples of 3 x 3 mm working cross section, normalized at 1180C for 8 hrs, tempered from 750C for 16 hrs, and chemically polished. Qualitative

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L 15659-65
ACCESSION NR: AT4046857

observation of structural changes was made with an MVT high-temperature microscope, and an MII-4 interferential microscope was used for the quantitative analysis and photography. From the results obtained, it is concluded that: a) the density of visible slide traces in austenite kernels is proportional to the total amount of deformation; b) the mean displacement along a slide strip increases in proportion to test temperature, reaching maxima of 0.06μ at 20C, 0.12μ at 850C, and 0.17μ at 900C; c) at 950C and beyond, visible slide traces occur only at deformation of 12-15% and above; d) samples containing 8-10% ferrite develop cracks primarily in the kernels of disintegrated ferrite, during comparatively short tests at temperatures below 700-750C, a ferrite phase of less than 3% having no crack-promoting effect at all; and e) at 800C and above, the plasticity of kernels of a decomposed ferrite sharply increases. "I. S. Mel'nikova took part in the electron microscopic studies." Orig. art. has: 4 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 16Jun64 ENCL: 00 SUB CODE: MM

NO REF SOV: 009 OTHER: 002

Card 2/2

ACC NR: AT6034454 (N) SOURCE CODE: UR/0000/66/000/000/0183/0189

AUTHOR: Levin, Ye. Ye.; Pivnik, Ye. M.

ORG: none

TITLE: Intercrystal strength and phase composition of nickel-chromium base alloys

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 183-189

TOPIC TAGS: nickel base alloy, chromium base alloy, phase diagram, metal aging

ABSTRACT: The article starts with tables, based on literature data, which show the mechanical properties and the long term strength of alloys Types EI617 and EI826. In the present work, black and white photographs were made, in which the intermetallic phase $Ni_3(AlTi)$ is distinguished from the carbide phases by its form and its position in the solid solution. Increased alloying of the above alloys with cobalt (up to 5%) and an increase in the chromium content up to 20% promotes heterogenization at high aging temperatures. A table shows the mechanical properties of the alloys after long term aging at 800-900°. The following conclusions were drawn: 1) with high temperature aging, the carbide phases of the $Me_{23}C_6$ and Me_nMe_mC types, as well as the intermetallic phase of the Co_7W_6 type, are preferably distributed along the grain

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ACC NR: AT6034454

boundaries, and are characterized by a larger lattice constant than the main hardened phase $Ni_3(Al,Ti)$, and a less perfect lattice. In the process of deformation at high temperatures, it is precisely in these phases that cracking first appears; 2) in this case, when the particles of these phases are broken up by cracking, there is a sharp decrease in the ductility and the toughness of the alloy; 3) at high experimental temperatures, under conditions where the ductility of the solid solution increases, discrete cracks develop; 4) thus, the appearance of cracks in the process of plastic deformation is observed primarily in the coarse grained carbide phases or in the intermetallic phase of the Co_7W_6 type at high experimental temperatures, but the nature of further development of cracking depends on the ratio of the strength and the ductility of these phases and of the solid solution. Orig. art. has: 2 figures and 4 tables.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ORIG REF: 007

Card 2/2

ACC NR: AP7006936 (A) SOURCE CODE: UR/0129/67/000/001/0002/0005

AUTHOR: Levin, Ye. Ye.; Gugelev, B. M.

ORG: TsKTI im. Polzunov

TITLE: Nature of the variation in high-temperature ductility of precipitation-hardened alloys

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 1, 1967, 2-5

TOPIC TAGS: precipitation hardening, ductility, nickel base alloy

ABSTRACT: The authors study the mechanism of deformation and fracture in KhN80TBYu nickel alloy with the following composition: 0.03% C, 0.51% Si, 0.62% Mn, 16% Cr, 1.49% Ti, 1.48% Nb, 0.76% Al, 1.02% Fe, 0.008% S and 0.006% P. The metal structure contains a considerable quantity of precipitation hardening phase (10% by volume) of the Ni(Ti, Al) type after heat treatment at 1000°C 2 hr+900°C 1 hr+800°C 2 hr+750°C 48 hr+700°C 48 hr. The size of the hardening phase in the grain is 0.03-0.04 μ and along the boundaries is 0.2-0.4 μ. The experimental results show that intergranular slip in alloys of this type is not a unique function of temperature. Intergranular slipping increases with temperature up to the beginning of coagulation and dissolution of the precipitation phase (first maximum). Intergranular slip decreases in the coagulation and dissolution region. When the precipitation phase is completely dissolved,

Card 1/2 UDC: 669.14.018.85:539.214

ACC NR: AP7006936

intergranular deformation again increases with temperature (second maximum). The formation and degree of development of intergranular cracks during deformation is determined by the extent to which the grains slip with respect to one another. Maximum slippage coincides with maximum damage. The ductility of the metal increases with grain migration during high-temperature deformation. Two maxima in ductility are observed during high-temperature deformation of precipitation-hardened alloys. Each of these maxima is associated with a maximum in the development of intergranular slip. Orig. art. has: 2 figures.

SUB CODE: 11/ SUBM DATE: None/ ORIG REF: 008/ OTH REF: 001

Card 2/2

LEVIN, Yu.A., kandidat meditsinskikh nauk .

Prevention of diseases is the basis of the Soviet medicine. Nauka i shizn' 22 no.12:29-32 D '55. (MLRA 9:2)
(MEDICINE, PREVENTIVE)

LEVIN, Yu.A., kand.med.nauk (Leningrad)

On the fifth revision of Soviet nomenclature of diseases. Vrach. delo no.6:627-628 Je '58 (MIRA 11:7)
(NOSOLOGY)

LEVIN, Yu.A.

[Nervousness in children; its cause and prevention] Detskaia nervnost', ee prichiny i preduprezhdenie. Leningrad, 1956. 50 p. (MLRA 10:5)

(NERVOUS SYSTEM--DISEASES)

LEVIN, Yu.A.; KAMINSKIY, L.S., prof., nauchnyy red.; VOROB'YEV, G.S., red.izd-va; GURDZHIYEVA, A.M., tekhn.red.

[Soviet public health in the seven-year plan] Sovetskoe zdravookhranenie v semiletnem plane. Leningrad, Ob-vo po raspr. polit. i nauchn.znanii RSFSR, Leningr.otd-nie, 1960. 48 p. (MIRA 14:4)

(PUBLIC HEALTH)

LEVIN, YU B. 168T1

USSR/Astronomy - Binary Stars Sep/Oct 50
Clusters

"Formation of Binary Stars," L. E. Gurevich; B. Yu. Levin, Geophys Inst, Acad Sci USSR, Leningrad State U imeni Zhdanov

"Astron Zhur" Vol XXVII, No 5, pp 273-284

Discusses: kinetics governing establishment of statistical equilibrium of binaries; stellar pairs in rotating clusters. Affirms generation of stars in stellar associations.

[redacted] 168T1

KHACHIYAN, A.S., kand. tekhn. nauk; LEKHOVITSER, M.A., inzh.; LEVIN, Yu.D., inzh.; DRONOV, V.G., inzh.

The GDGA-43 automated engine-generator system with an 80 hp. 6DCh 12/14 gas motor. Energomashinostroenie 11 no.4:28-30 Ap '65. (MIRA 18:6)

67504

SOV/155-59-1-7/30

~~16(1)~~ 16.5600

AUTHOR: Levin, Yu.I.

TITLE: On ~~Projectively~~ Plane Spaces With an Almost Simplectic Connection

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1959, Nr 1, pp 42 - 47 (USSR)

ABSTRACT: Spaces with an almost simplectic connection are introduced by V.G. Lemmleyn [Ref 1,2], they are spaces of affine connection free of torsion and with an even dimension in which there exists a non-degenerated skew-symmetric tensor a_{ij} with the property that $\nabla_k a_{ij} = T_{ijk}$, where $T_{ijk} = \frac{1}{3} \frac{\partial a_{ij}}{\partial x^k}$ is the tensor of the outer derivative. The author considers projectively plane spaces, i.e. such ones which can be mapped onto an affine space so that the geodesics change to straight lines.
Theorem 1 : All projectively plane spaces of almost simplectic connection are spaces of equiaffine connection.
Theorem 2 : Every projectively plane space of almost simplectic

Card 1/2

On Projectively Plane Spaces With an Almost Simplectic Connection

SOV/155-59-1-7/30

connection can be given by

$$(5) \quad a_{ij} = e^{\sigma}(\varkappa_{ijk} x^k + \beta_{ij}) \ , \quad \gamma_{ijk} = 0 \ .$$

Theorem 7 : The transformation group of the coordinates of a projectively plane space which lets invariant the form (5) of the tensor a_{ij}, γ_{ijk} is a broken linear group.

In further theorems the author treats invariant volumes, projectively plane spaces with an equiaffine connection and symmetric projectively plane spaces with an affine connection. There are eight theorems and a series of conclusions. There are 5 references, 4 of which are Soviet, and 1 American.

ASSOCIATION: Moskovskiy gorodskoy pedagogicheskiy institut imeni V.P. Potemkina (Moscow Municipal Pedagogical Institute imeni V.P. Potemkin)

SUBMITTED: January 29, 1959

Card 2/2

16(1)

AUTHOR: Levin, Yu.I. SOV/20-128-4-8/65

TITLE: Affine Connectivities Adjoined to a Skew-Symmetric Tensor

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 4, pp 668-671 (USSR)

ABSTRACT: The author considers spaces L^n_μ with an affine connection in which there exists a non-degenerated skew-symmetric tensor a_{ij} (fundamental tensor) which satisfies the condition

(1) $\nabla_k a_{ij} = \mu T_{ijk}$ $(i,j,k=1,\ldots,n;\ n$ - even),

where $\frac{1}{3}\left(\frac{\partial a_{ij}}{\partial x^k} + \frac{\partial a_{jk}}{\partial x^i} + \frac{\partial a_{ki}}{\partial x^j}\right)$ and μ is a real number. The spaces L^n_μ $(\mu \neq 0)$ are equiaffine (i.e. $R_{ij,k}{}^k = 0$) then and only then if

(5) $$v_{ij} \equiv \frac{\partial b_i}{\partial x^j} - \frac{\partial b_j}{\partial x^i} = 0,$$

where $b_i = \frac{1}{2} a^{jk} T_{ijk}$.

Card 1/3

Theorem 1: A non-degenerated skew-symmetric tensor a_{ij} is conformally closed (i.e. representable in the form $e^{\sigma} c_{ij}$, c_{ij} = const) then and only then if $V_{ij} = 0$ and

(6) $$T_{ijk} = \frac{2}{2-n} b_{(k} a_{ij)} .$$

Theorem 2: If in a semisymmetric L^n_μ $(n > 2)$ it is $\mu = 1$ or $b_i = 0$, then it is a space free of torsion. For $\mu \neq 1$, $n > 4$ the fundamental tensor of a semisymmetric L^n_μ is conformally closed.

Theorem 4: Every space of affine connection which admits a covariantly constant skew-symmetric tensor, is a space of equiaffine connection.

Theorem 6: Every non-degenerated skew-symmetric tensor a_{ij} can be represented in the form $a_{ij} = c_{ij} \varphi_i \varphi_j$, where c_{ij} are

Affine Connectivities Adjoined to a Skew-Symmetric Tensor SOV/20-128-4-8/65

skew-symmetric constants.
The author mentions V.G.Lemleyn.
There are 2 Soviet references.

ASSOCIATION: Moskovskiy gorodskoy pedagogicheskiy institut imeni V.P. Potemkina (Moscow City Pedagogical Institute imeni V.P. Potemkin)

PRESENTED: May 29, 1959, by P.S.Aleksandrov, Academician

SUBMITTED: May 29, 1959

Card 3/3

SMOGORZHEVSKIY, Aleksandr Stepanovich; STOLOVA, Yelena Samsonovna; LEVIN, Yu.I., red.; GAVRILOV, S.S., tekhn.red.

[Handbook on the theory of plane curves of the third order] Spravochnik po teorii ploskikh krivykh tret'ego poriadka. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1961. 263 p. (MIRA 14:3)

(Curves)

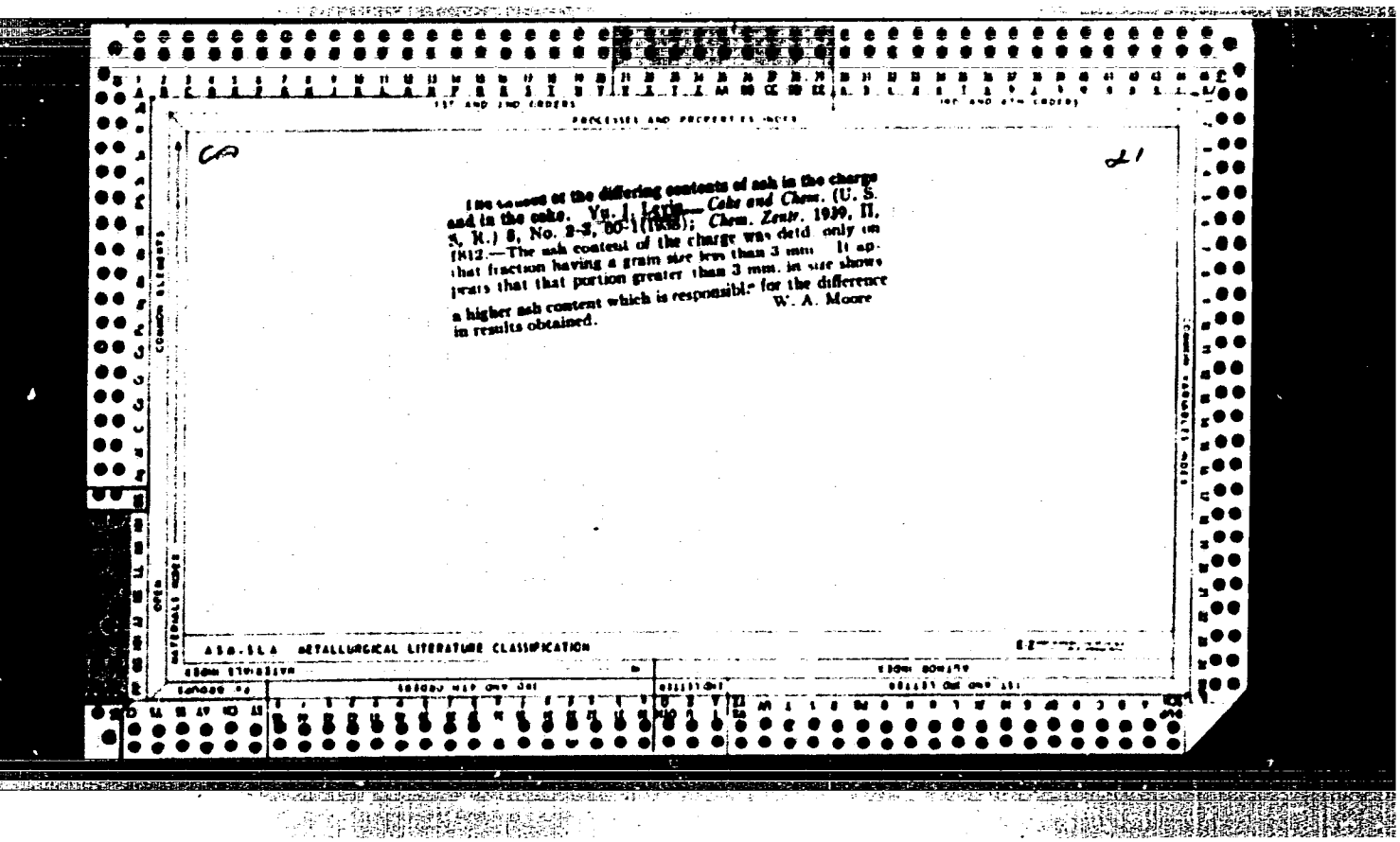
SAVELOV, Aleksey Aleksandrovich; NORDEN, A.P., prof., red.; LEVIN, Yu.I., red.; GAVRILOV, S.S., tekhn.red.

[Plane curves: systematization, properties, application; reference book] Ploskie krivye: sistematika, svoistva, primeneniia; spravochnoe rukovodstvo. Pod red. A.P.Nordena. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1960. 293 p. (MIRA 13:7)

(Curves, Plane)

LEVIN, Yu.I. (Moskva)

Mathematics and the language. Mat.v shkole no.5:5-11 S-O '62.
(MIRA 15:12)
(Mathematical linguistics)



the causes of the differing contents of ash in the charge and in the coke. Yu. I. Lavin. *Coke and Chem.* (U. S. S. R.) 8, No. 2-3, 60-1(1938); *Chem. Zentr.* 1939, II, 1812.—The ash content of the charge was detd only on that fraction having a grain size less than 3 mm. It appears that that portion greater than 3 mm. in size shows a higher ash content which is responsible for the difference in results obtained.

W. A. Moore

LEVITSKIY, O.D.; LEVIN, Yu.I.

Extrusion press for porcelain insulators. Patent U.S.S.R. 76,469, Dec.31, 1949.
(CA 47 no.19:10194 '53)

NIKOLAYEVSKIY, Ye.Ya., inzh.; LEVIN, Yu.I., inzh.

Mechanizing bricklaying processes in constructing coke ovens.
Stroi.prom. 35 no.10:38-40 O '57. (MIRA 10:10)
(Bricklaying) (Coke ovens)

SOV/137-58-9-18597

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 61 (USSR)

AUTHORS: Krylov, V.A., Levin, Yu.I.

TITLE: Installation of Equipment in Open-hearth Shops (Opyt montazha oborudovaniya martenovskikh tsekhov)

PERIODICAL: Novaya tekhn. i peredov. opyt v str-ve, 1958, Nr 2, pp 1-6

ABSTRACT: A brief description of heavy-duty equipment employed in modern open-hearth shops. The process of setting up an open-hearth shop consisting of nine furnaces with capacities ranging from 250 to 500 tons necessitates the installation of more than 1000 tons of equipment including more than 6000 tons of crane equipment. Operations on installation of crane equipment begin with progressive assembly of components, the weight of assembled units varying from 50 to 110 tons. As an illustration the sequence of operations during the erection of framework, crane trolleys, and associated equipment of casting and ladle cranes is described and diagrams and photographs are included. Also described briefly is the procedure which was employed by the Magnitogorsk Direction of the Vostokmetallurgmontazh Trust during the erection of 375/75/15-ton cranes by means of a

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SOV/137-58-9-18597

Installation of Equipment in Open-hearth Shops

single tower. The authors comment upon the successful employment of a derrick crane and a telpher at one of the construction sites, a procedure which eliminated the necessity of labor-consuming operations connected with rigging and installation of an assembly tower and a number of electrical winches. Examples of successful erection of cranes with the aid of a tower crane (OKhMK) as well as with the aid of hoisting tackles secured to the frame work of a building (Zaporozhstal') are also given. The authors emphasize the fact that the time required for the installation of cranes has been considerably reduced within recent years. A brief description of methods of installation of other auxiliary steel-smelting equipment (charging machines, mixers, etc.) is given.

M.Kh.

1. Foundries 2. Industrial equipment--Installation

Card 2/2

LEVIN, Yu.I., inzh.; POGREBINSKIY, M.M., inzh.

New methods for assembling drum screens of ore bins. Nov. tekh. mont. i spets. rab. v stroi. 21 no.2:15-18 F '59. (MIRA 12:1)

1.Proyektno-konstruktorskaya kontora Mekhanomontazhproyekta Ministerstva stroitel'stva RSFSR.
(Blast furnaces)

LEVIN, Yu. I., Cand Phys-Math Sci -- (diss) "Spaces of affine connectivity, augmented to a skew-symmetrical tensor." Moscow, 1960. 5 pp; (Ministry of Education RSFSR, Moscow State Pedagogical Inst im V. I. Lenin); 150 copies; price not given; (KL, 25-60, 126)

81710
S/020/60/133/01/05/069
C 111/ C 333

AUTHOR: Levin, Yu. J.

TITLE: Affine Connectivity Spaces Adjoint to n Vector Fields

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 1, pp. 24-27

TEXT: Let n vector fields $a_i^{(\alpha)}(\alpha, i = 1,\ldots,n)$, $|a_i^{(\alpha)}| \neq 0$ be given on an n-dimensional differentiable manifold B_n; let $a_{i(\alpha)} a^{i}_{(\beta)} = \delta^{\alpha}_{\beta} \cdot a_i^{(\alpha)} a^{j}_{(\alpha)} = \delta^{j}_{i}$. A torsionless affine connectivity which satisfies the conditions $\nabla_k a_i^{(\alpha)} = \frac{1}{2} \partial a^{(\alpha)}_{[i} / \partial x^{k]}$ is denoted as B-connectivity.

Theorem 1: An affine connectivity is a B-connectivity if and only if the equations of the geodesics have the form

$$\frac{dx^i}{dt} = c^{\alpha} \xi^{i}_{(\alpha)} \qquad (2)$$

where t is an affine parameter, c^{α} are arbitrary constants, $\xi^{i}_{(\alpha)}$ are n vector fields.

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S/020/60/133/01/05/069
C 111/ C 333

Affine Connectivity Spaces Adjoint to n Vector Fields

Let denote $S_{ij}^{k} = \frac{1}{2} a^{k} \frac{\partial a_{ij}^{(\alpha)}}{\partial x^{i}}$ and $S_{i} = S_{ik}^{k}$. The space B_n with the property $\nabla_k a = 0$ ($a = \det \| a_i^{(\alpha)} \|$) is called space with invariant volume.

Theorem 2: B_n is equiaffine if and only if $\nabla_{[i} S_{j]} = 0$. B_n has an invariant volume if and only if $S_i = 0$.

The space $\{ \tilde{a}_i^{(\alpha)} \}$ is called conformal to the space $\{ a_i^{(\alpha)} \}$, if $\tilde{a}_i^{(\alpha)} = c^{\sigma} a_i^{(\alpha)}$ if $\sigma = \text{const}$, then the spaces are called similar.

Theorem 3: Among all equiaffine spaces B_n conformal to each other there is (up to similarity) exactly one space with invariant volume.

In further theorems the author investigates plane and projectively plane B_n. He introduces and proves conformal gradient spaces.

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S/020/60/133/01/05/069
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Affine Connectivity Spaces Adjoint to n Vector Fields

Theorem 6: B_n is conformal gradient if and only if S_i is gradient and $S^k_{ij} = \frac{1}{n-1} S_{[i} \delta^k_{j]}$. The author considers motions of the spaces B_n.

Theorem 9: All motions of the spaces B_n are translations.

Theorem 10: The groups of motions of conformal gradient spaces are subgroups of the affine group. Its order is equal to the number of parallel fields of contravariant vectors which is admitted by a space which has the same type, however, the conformity factor of which is taken in the square.

There are 3 references: 1 Soviet and 2 American.

ASSOCIATION: Velikolukskiy pedagogicheskiy institut (Velikiye Luki Pedagogical Institute)

PRESENTED: March 12, 1960, by P. S. Aleksandrov, Academician

SUBMITTED: March 11, 1960

Card 3/3

LEVIN, Yu.I.

Some spaces of affine connectivity admitting of motion. Dokl.AN SSSR 137 no.6:1295-1298 Ap '61. (MIRA 14:4)

1. Orekhovo-Zuyevskiy pedagogicheskiy institut. Predstavlenc[illegible] akademikom P.S.Aleksandrovym.
(Abelian groups)

LEVIN, Yu.I., inzh.; ANTONOVA, V.M., inzh.

Assembly of the technical equipment of large-capacity blast furnaces. Mont. i spets. rab. v stroi. 24 no.6:3-6 Je '62. (MIRA 15:6)

1. Proyektno-konstruktorskaya kontora Mekhanomontazhproyekt.
(Blast furnaces)

AFONIN, Igor' Aleksandrovich; LEVIN, Yu.I., nauchn. red.

[Building of higher capacity steel smelting plants] Stroitel'stvo staleplavil'nykh tsekhov bol'shoi proizvoditel'nosti. Moskva, Stroiizdat, 1965. 220 p. (MIRA 18:4)

SOV/137-59-3-7162

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 317 (USSR)

AUTHORS: Krasnikov, A. S., Levin, Yu. L.

TITLE: Mechanized Cleansing of Tin by Means of the Udovenko Machine (Mekhanizirovannaya ochistka zhesti pri pomoshchi mashiny Udovenko)

PERIODICAL: Byul. nauchno-tekhn. inform. Ukr. n-i. in-t metallov, 1958, Nr 5, pp 61-64

ABSTRACT: In order to protect the Sn on a strip from oxidation the tin-plated metal is passed through a layer of hot oil. The layer of oil retained on the surface of the tin-plated metal after this operation impedes the work of stamping presses during their processing in canneries. To remove this oil the tin-rolling plants use cleansing machines (M). M used on the "Zaporozhstal'" plant for some time past have produced uniform and tightly wound rolls of tin, but the technique of removal of oil was not developed there. In the newly designed Udovenko M the green powder consisting of the rubbed-off Sn mixed with dust and the residue of oil on the tin strip are removed with bran fed in by two reciprocating blades. Each strip of tin-plated metal passes first between three pairs of horizontal surfaces and

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Mechanized Cleansing of Tin by Means of the Udovenko Machine

felt-sheathed wedges. The moving strip tightens the wedge and is jammed in. Thus the strip is subjected to great tension and friction which cleanse it of the oil and of a portion of the top layer of Sn. After this operation the strip emerges covered with a green layer which is removed with bran in another part of the M. The bran is transported in a special box equipped with two canting blades. The strip is cleansed mainly by friction when it is squeezed between the blocks and wedges covered with felt. In the second box the moving blades remove the oil and chiefly the green dust. Because the surface of the strip is now without oil and with its coating film disrupted its anticorrosion properties are reduced. In order to protect it against corrosion the strip is passed through oiled bran, and is again cleansed and coated with a film of fresh oil.

G. K.

Card 2/2

LEVIN, Yu.M., Cand Med Sci -- (diss) "Change in sensitivity to caffeine and strophantain in animals revived after clinical death." Novosibirsk, 1959, 14 pp (Irkutsk State Med Inst) (KL, 34-59, 117)

LEVIN, Yu.M.

On modifications in the reactions of animals, resuscitated following clinical death, to intravenous administration of caffeine and strophanthin. Biul.eksp.biol.i med. 48 no.9:93-97 S '59. (MIRA 13:1)

1. Iz kafedry patofiziologii (zaveduyushchiy - dotsent G.L. Lyuban) Novosibirskogo meditsinskogo instituta (direktor - prof. G.D. Zaleskiy). Predstavlena deystvitel'nym chlenom AMN SSSR V.N. Chernigovskim.
(STROPHANTHIN pharmacol.)
(CAFFEINE pharmacol.)
(RESUSCITATION)

FUKS, B.B.; LEVIN, Yu.M.

Histochemical and biochemical study of enzymes of the succinic oxidase system of the cortex and the medulla oblongata in a hemorrhagic collapse. Vop. pat. i reg. org. krov. i dykh. no.1:133-138 '61. (MIRA 18:7)

LEVIN, Yu.M.

Measuring the minute volume of the blood under conditions of an acute experiment. Biul.eksp.biol.i med. 58 no.10:122-124 O '64. (MIRA 18:12)

1. Kafedra patologicheskoy fiziologii (zav. - Yu.M.Levin) Kemerovskogo meditsinskogo instituta. Submitted July 27, 1962.

L 56463-65
ACCESSION NR: AP5018602 UR/0219/64/0058/012/0027/0031

AUTHOR: Levin, Yu. M.; Slovikov, B. I. 14 B

TITLE: Oxygen supply and hemodynamics of the brain during fatal blood loss and subsequent resuscitation

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 58, no. 12, 1964, 27-31

TOPIC TAGS: oxygen, blood circulation, brain, encephalology, cardiovascular system

ABSTRACT: The content of free oxygen and the rate of blood flow in cerebral vessels were studied in cats subjected to fatal blood loss and subsequently resuscitated. Acute blood loss led to a slowing of the blood flow and a drop in the oxygen supply in the brain, but the two were not correlated. Body blood pressure fell sharply: to 20-30% of its initial level after 1-2 minutes, and to zero after 6-8 minutes. The rate of cerebral blood flow stayed at the 90-80% level for 60-80 seconds and then fell rapidly. In the 3rd minute it was 50% and in the 4th minute about 25% of its initial level. The oxygen supply in the first 2 minutes dropped more slowly than the blood pressure but faster than the cerebral blood flow
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ACCESSION NR: AP5018602

rate. The latter fact is apparently explained by increased oxygen consumption in the f rat 1½-2 minutes. After resuscitation, no oxygen was supplied to some cerebral areas for as much as 5-60 minutes or even longer, even when blood pressure, cardiac output, and general cerebral blood flow had been fully restored. A possible cause of this is occlusion of small blood vessels and hampered penetration of oxygen into areas remote from functioning capillaries. This phenomenon could explain focal necroses in verse tissue, and in some cases it may be the cause of irreversibility. Microcirculation and oxygen consumption in the liver (and other organs) did not parallel the shifts noted in the brain during the experiments.

Orig. art. has: 3 graphs.

ASSOCIATION: Novosibirskiy nauchno-issledovatel'skiy institut travmatologii i ortopedii (Novosibirsk Scientific Research Institute of Traumatology and Orthopedics); Kemerovskiy meditsinskiy institut (Kemerov Medical Institute)

SUBMITTED: 03Mar64 ENCL: 00 SUB CODE: LS

NR REF SOV: 007 OTHER: 003 JPRS

Card 2/2

TSVETKOV, G.S.; LEVIN, Yu.M.

Construction of the Abakan-Tayshet railroad line. Zhel.dor.transp. 47 no.4:82-84 Ap '65. (MIRA 18:6)

1. Zamestitel' nachal'nika Glavnogo upravleniya zheleznodorozhnogo stroitel'stva Urala i Sibiri (for TSvetkov). 2. Nachal'nik tekhnicheskogo otdela Glavnogo upravleniya zheleznodorozhnogo stroitel'stva Urala i Sibiri (for Levin).

LEVIN, Yu.S.

RADIO TELEGRAPHY

"On Noise Rejection in Various Methods of Radio Telegraphy" by Yu.S. Lexin, Elektrosvyaz', No 4, April 1957, pp 40-47.

The author considers noise rejection during reception, using sampling of signals that are manipulated by amplitude, frequency, and phase, and that are subject to the action of fluctuation noise.

The noise rejection provided by various types of radio telegraphy is compared to determine the power gain of a radio transmitter converted from amplitude and frequency modulated radio telegraphy to phase modulated radio telegraphy.

Card 1/1

ZHUKOV, V.G.; LEVIN, Yu.S.; RYBIN, I.A.

Energy analysis of the electrical activity of the human eye.
Biofizika 8 no.4:498-501 '63. (MIRA 17:10)

1. Ural'skiy gosudarstvennyy universitet imeni Gor'kogo, Sverdlovsk.

LEVIN, Yu.V.

Immediate and late results of surgical treatment in chronic ulcers of the cardia. Kaz.med. zhur. no.3:72-73 My-Je '63. (MIRA 16:9)

1. Klinika obshchey khirurgii (zav. - prof. A.A. Polyantsev) Volgogradskogo meditsinskogo instituta na baze oblastnoy klinicheskoy bol'nitsy (glavnyy vrach - A.I.Gusev).
(STOMACH—ULCERS) (STOMACH—SURGERY)

LEVIN, Yu.V.

Immediate results of surgical treatment in echinococcosis of the liver. (MIRA 18:7)
Zav. med. 27 no.11:17-22 N '64.

1. Klinika obshchey khirurgii (zav. - prof. A.A.Polyantsev [deceased]) Volgogradskogo meditsinskogo instituta i khirurgicheskoye otdeleniye oblastnoy klinicheskoy bol'nitsy (glavnyy vrach A.I.Gusev).

DIK, V.; LEVIN, Z.; LOMOVSKIY, A.

Drift mining with use of shields. Mast. ugl. 7 no. 6:10-11 Je '58.

1. Normativno-issledovatel'skaya stantsiya No. 14 Tul'skogo sovnarkhoza.
(Coal mines and mining--Equipment and supplies)

DIK, V., inzh.; LEVIN, Z., inzh.

Mastic floors are inexpensive, pratical and beautiful. Na stroi. Ros. 4 no.1:9-10 Ja '63. (MIRA 16:3)

(Floors)

LEVIN, Z.; LAPIDUS, M.

Readers suggest. Fin. SSSR 37 no.7:89-90 Jl '63. (MIRA 16:8)

1. Upravlyayushchiy Vasileostrovskim otdeleniyem Stroybanka Leningrada (for Lapidus).
(Construction industry--Finance) (Tax accounting)

LEVIN, Z.A.

Develcping equipment and a tool for controlling azimuthal deflection of holes. Razved. i okh. nedr 28 no.2:47-48 F '62. (MIRA 15:3)

1. Zapadno-Sibirskoye geologicheskoye upravleniye.
(Boring--Equipment and supplies)

LEVIN, Zh., inzh.

Calculated expenditure of water in the design of drainage networks for peat works in White Russia. Torf. prom. 37 no. 3:6-9 '60. (MIRA 14:1)

1. Lengiprotorf.
(White Russia—Peat industry) (White Russia—Drainage)

LEVIN, Z. D. (Eng.); LIKHACHEV, A. A. (Cand. Tech. Sci.); PELIKHOV, [illegible]
GRIGOR'YEV, B. V. (Cand. Tech. Sci.); SHNEYDER, Yu. G. (Cand. Tech. Sci.); and
GORYSHIN, V. V. (Eng.);

XIV. "Examples of Mechanization and Automation of Instrument-parts manufacturing Processes," Automation and Mechanization of Production Processes in Instrument Manufacturing, Moscow, Mashgiz, 1958. 591 p.

PURPOSE: This book is intended for engineers, technicians, and scientific personnel concerned with mechanization and automation of production processes in instrument manufacturing, and for students and teachers of this subject in vuzes.

LEVIN, Z.D.

Unit for briquetting cast iron chips. Mashinostroitel' no.12:9 D '63. (MIRA 17:1)

LEVIN, Z. D.

"Projects and Utilization of Equipment for Mechanized Casting."

report presented at Conference on Construction and Utilization of Casting Equipment. Gor'kiy, Dec 1957.
Mashinostroitel', 1958, No. 5, p. 48.

(Plant KATEK)

LEVIN, Z.D., insh.

Semiautomatic shot-peening machine for cleaning small parts.
Mashinostroitel' no.10:5-7 O '59. (MIRA 13:2)
(Shot peening)

S/117/60/000/009/002/015
A004/A001

AUTHOR: Levin, Z. D.

TITLE: Automatics and Semi-Automatics for Finish Operations

PERIODICAL: Mashinostroitel', 1960, No. 9, pp. 5-9

TEXT: The author describes a number of high-efficiency automatics and semi-automatics developed and put in production at the Kuybyshev KATEK Plant. 1) The automatic slot-cutter for screw heads is designated for screws of 3-6 mm diameter and 3-60 mm length. It is composed of the conveyer with bunker and feeding disk, spindle for the clamping of the milling cutter, worm-type reducer and bed. The author gives a description of the operation of the machine, which has the following overall dimensions: 1,400 x 600 x 1,600 mm, and a weight of 800 kg. Its capacity exceeds manual slot-milling by 4-5 times. 2) The rivet drilling automatic is used for the drilling of apertures in the stems of rivets required for the fastening of Getinaks and textolite components. Instead of 3 - 3.5 thousand rivets per shift - the production capacity of hand-operated machine tools - the new automatic possesses a capacity of 10,000 rivets per shift. The mode of operation is given by the author. The overall dimensions

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Automatics and Semi-Automatics for Finish Operations

of the automatic are 1,060 x 500 x 1,550 mm, the weight amounts to 500 kg. Using this new automatic, labor efficiency has increased by 100% and the durability of drills was doubled. 3) The author gives a description of a four-spindle double-end chamfering automatic which is able to chamfer 6,000 nuts per hour, if the two pairs of spindles operate simultaneously. This automatic possesses the following allover dimensions: 800 x 600 x 1,400 mm, its weight is 350 kg. The operation of three such automatics at the factory resulted in savings of 30,000 rubles within one year. 4) A description is given of a threading automatic for stamped nuts, the efficiency of which amounts to 1,800 nuts per hour. Three such automatics operating at the factory are attended by one worker. The introduction of the automatics in production resulted in savings of 50,000 rubles. 5) The author describes the design and mode of operation of a bunker-fed threading automatic for circular nuts. Savings between 40,000 and 50,000 rubles could be achieved per year since 4 such automatics were introduced at the factory. 6) Instead of using rating plates for electric machines, the application of which was always connected with labor-consuming operations, the basic machine parameters are now rolled on the housing by a special semi-automatic branding machine, the overall dimensions of which are

Automatics and Semi-Automatics for Finish Operations

1,000 x 800 x 1,600 mm, the weight being 1,200 kg. The branding roll pressure can be regulated in the range of 0 - 4,000 kg. The main parts of the machine, a description of which is given by the author, are: spindle head, buffer device and bed. 7) The semi-automatic A-150 (L-150) thread roller with circular rolls is designated for the threading of shafts, screws and hollow bushings. Threads of between 4 and 40 mm diameter, a length of up to 60 mm and pitches in the range of 0.8 - 3 mm can be rolled. The overall dimensions of the machine amount to 1,300 x 1,300 x 1,200 mm, the weight is 1,200 kg. The author describes the operation and design of the machine. 8) A description is given of a mechanical thread checking machine for male and female threads in the range of M3 to M20, the use of which increased the labor-efficiency by 3-4 times. There are 10 figures.

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21097
S/117/61/000/003/002/011
A004/A101

1.1110 1968

AUTHOR: Levin, Z. D.

TITLE: Anode-mechanical shaping of sintered carbide tools

PERIODICAL: Mashinostroitel', no. 3, 1961, 7

TEXT: The "Katek" Plant together with the scientific workers of the Kuybyshevskiy industrial'nyy institut (Kuybyshev Industrial Institute) has developed and fabricated a semi-automatic for anode-mechanical profiling of sintered carbide tools. A diagram of the installation is shown in the illustration. Cast iron profile disk 1 is the cutting tool of the machine. The disk is connected to the negative pole of a d-c source of 30 v. The positive pole is connected to tool blank 2. An electrolyte - water glass - is supplied to the contact zone of disk and tool blank. The water glass is fed by the disk itself, which during operation acts like a centrifugal force, is carried to the disk periphery. Through holes and slots in the disk the electrolyte is fed to the contact zone. The cast iron disk is preliminarily profiled by a special dressing master tool. After the roughing of the tool blanks the disk is dressed again (removal of 1.5 - 2 mm), and a second time prior to the lapping operation (removal of 0.3 - 0.5 mm from the

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Anode-mechanical shaping of sintered carbide tools

diameter). During the profiling operation the disk rotates at a speed of 1,500 rpm During roughing the circuit voltage amounts to 24 v, current strength 45 - 60 amp. During the finishing operation the voltage is reduced to 16 - 18 v, the current strength to 20 - 30 amp. Lapping is effected with the aid of a boron carbide paste. The machine table carries out reciprocating motions. The cast iron disk can machine 50 - 60 sintered carbide tools before being replaced. The following technical data are given: disk diameter - 250 - 320 mm; peripheral velocity - 30 m/sec; table length - 1,200 mm; table travel - 450 mm; maximum productivity during the machining of T 5K10 (T5K10) sintered carbide alloy - 1,200 mm^3/min; power: of driving motor - 2.8 kw; of d-c source - 3 kw; overall dimensions of the semi-automatic - 2,000 x 1,700 x 1,600 mm; weight - 2,000 kg. There is 1 figure.

LEVIN, Z.D.

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1. Iz Belorusskogo nauchno-issledovatel'skogo instituta okhrany materinstva i detstva.
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GONCHAROVA, M.N., professor; KRYSHOVA, N.A., professor; LYANDERS, Z.A., doktor meditsinskikh nauk; LEVIN, I.M., kandidat meditsinskikh nauk; GOLOVINSKAYA, N.V., kandidat meditsinskikh nauk; POLONSKIY, M.N., kandidat meditsinskikh nauk; OLOTOVA, Ye.I., kandidat meditsinskikh nauk; ZELENINA, Ye.V., kandidat meditsinskikh nauk

Treatment of children with afteroffects of poliomyelitis. Vop.okh. mat. i det. 1 no.1:43-52 Ja-F '56. (MLRA 9:9)

1. Iz Nauchno-issledovatel'skogo detskogo ortopedicheskogo instituta imeni G.I.Turnera, Leningrad.
(POLIOMYELITIS)

LEVIN-L'VINSKIY, S.M., inzh.

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(Commerce)

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(MIRA 11:2)

1.Starshiy inspektor Ministerstva prosveshcheniya RSFSR (for Tarasova). 2.Inspektor zhilishchno-bytovogo otdela vsesoyuznogo tsentral'nogo soveta profsoyuzov (for Khromov). 3.Korrespondenty zhurnala "Rabotnitsa" (for Zhurbina, Levina)
(Kindergartens)
(Day nurseries)

LEVINA, A.

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(MIRA 12:2)
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LEVINA, A.

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(Kursk Magnetic Anomaly--Iron ores)