"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

PROCESSES AND PROPERTIES INDEX

10

Acetylation of isoeugenol and isochavibetol. M. A. Vyazkova. Russ. 42,074, Mar. 31, 1935. Acetylation is effected with Ac_2O in the cold and in the presence of small admixts. of H_3PO_4.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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CA

10

Acetylation of isoeugenol and isocharibetol. M. A. Vyazkova. Russ. 42,074, Mar. 31, 1935. Acetylation is effected with Ac_2O in the cold and in the presence of small admixts. of H_3PO_4.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

Ca

10

The synthesis of β-aryl-β-ureaminopropionic acids and their phenyl and naphthyl derivatives. V. M. Rodionov and S. A. Vyashova. *J. Gen. Chem.* (U. S. S. R.) 9, 1236-35(1939).—A soln. of 2 g. β-phenylalanine (I) in 40 cc. hot H_2O heated on a water bath for 4 hrs. with 1.5 g. KCNO gave on cooling, filtering, acidification of the filtrate with HCl to Congo red paper, and standing for 10-12 hrs., 80% of *β-phenyl-β-ureaminopropionic acid* (V), m. 190° from hot EtOH. β-Piperonylalanine (II) (5 g.) and 2.5 g. KCNO similarly gave 97% of *β-piperonyl-β-ureaminopropionic acid* (VIII), m. 170°, from EtOH. Addn. of 2 g. PhNCO with const. cooling and stirring to a soln. of 4 g. I in 32 cc. of 1 *N* NaOH (the addit. is allowed to react until the odor of PhNCO and the superficial scum has disappeared) and acidification with HCl to Congo red gave 97% of *β-phenyl-β-phenylureaminopropionic acid* (VII), m. 176° from EtOH, insol. in H_2O, Et_2O and $CHCl_3$. II (5 g.) in 50 cc. of 1 *N* NaOH and 3.2 g. PhNCO similarly gave 98% of *β-piperonyl-β-phenylureaminopropionic acid* (III), m. 165° from EtOH. III (3 g.) in 18 cc. abs. EtOH satd. with HCl and warmed at 40-50° for 0.5 hr. gave a viscous yellow soln. which on dilg. with H_2O gave 57% of the Et ester of III, m. 65°. An excess of C_6H_5NCO added with const. shaking to 3 g. I in 120 cc. H_2O and 30 cc. 1 *N* NaOH gave after 0.5 hr. a ppt. of $(C_6H_5NH)_2CO$ which was filtered out. Acidification of the filtrate with HCl gave *β-phenyl-β-naphthylureaminopropionic acid*, m. 180° from EtOH. II (3 g.) in 180 cc. H_2O and 30 cc. 1 *N* NaOH and 3.2 g. C_6H_5NCO similarly gave *β-piperonyl-β-naphthylureaminopropionic acid* (IV), m. 176° from hot EtOH. The *Et ester* of IV was prepd. in 81% yield, m. 105°. Attempts to esterify V resulted in the formation of *6-phenyl-4,5-dihydropyrimidine* (VI). V (1 g.) in 350 g. HCl, d. 1.124, heated 0.5 hr. on cooling, gave VI, m. 218° from EtOH. By concg. the mother liquor a quant. yield of VI is obtained. VII (1 g.) in 400 g. concd. HCl, heated for 0.5 hr., on cooling gave 83% of *1,6-diphenyl-dihydropyrimidine*, m. 234° from hot EtOH. The C_6H_5 deriv. did not give dihydropyrimidine. VII (2 g.) in 15 cc. cold abs. EtOH satd. with HCl and heated on a water bath for 2 hrs. gave on standing *6-piperonyl-4,5-dihydropyrimidine*, m. 225°. Lewis W. Butz

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

GRIB, A. A.; BAUSH, G.; VYAZ'MENSKAYA, L. M.

Some characteristics of hypersonic gas motion. Vest. LGU 18 no.1:96-105 '63. (MIRA 16:1)

(Aerodynamics, Hypersonic)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

BROVER, A.V.; VYAZ'MENSKIY, A.S.

Drop forging and sizing of form steel castings. Kuz.-shtam.proizv. 1 no.7:5 Jl '59. (MIRA 12:10)
(Forging) (Steel castings)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

SOV/124-58-3-3338

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 3, p 112 (USSR)

AUTHOR: Vyaz'menskiy, S. P.

TITLE: Basic Equations of the Nonlinear Theory of Small Deformations of Thin Three-dimensional Beams (Osnovnyye uravneniya nelineynoy teorii malykh uprugikh deformatsiy tonkikh prostranstvennykh sterzhney)

PERIODICAL: V sb.: 15-ya nauchn. konferentsiya Leningr. inzh.-stroit. in-ta, Leningrad, 1957, pp 367-371

ABSTRACT: A system of 12 nonlinear differential equations is presented characterizing the stress and strain conditions of an open-profile thin-walled beam, which represents the effect of the beam under restrained torsion upon the aggregate stress-strain conditions. This system of equations replaces the Klebsch- Kirchhoff equations in the theory of small strains.

V. V. Vlasov

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MENSKIY, S.P., kand. tekhn. nauk

Dimensional deformations of elastic thin-walled rods. Sbor. nauch. trudov LISI no.26:270-313 '57. (MIRA 12:1)
(Elastic rods and wires)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

SOV/124-58-11-13244

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 194 (USSR)

AUTHOR: Vyaz'menskiy, S. P.

TITLE: On the Three-dimensional Deformation of Flexible Thin-walled Beams (O prostranstvennoy deformatsii gibkikh tonkostennykh sterzhney)

PERIODICAL: Sb. nauchn. tr. Leningr. inzh.-stroit. in-t, 1957, Nr 26, pp 270-313

ABSTRACT: A general theory is proposed for the calculation of the strain distribution in thin-walled beams of open profile at small elastic deformations. The author obtains a system of nonlinear differential equations which describe the problem of the calculation of the strain distribution in thin-walled beams of open profile under the action of virtually any conceivable type of loading. In view of the difficulty of the integration of these equations for generic external loadings the author picks out three types of more characteristic load relationships and arrives at substantially simplified differential equations for each individual type; the author provides examples of the solution of specific problems of the three-dimensional deformation of beams and then proceeds to compare them with corresponding solutions obtained by other

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SOV/124-58-11-13244

On the Three-dimensional Deformation of Flexible Thin-walled Beams

authors on the basis of linear and nonlinear theory.

A. K. Mroshchinskiy

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

DALIN, M.A.; SPIVAK, R.Ye., BURMISTROV, Ye.F.; VYAZ'MITINOVA, L.M.

Combined production of iso-amylenes and para-tert-amylphenol. Khim.prom. no.3:169-172 Mr '61. (MIRA 14:3)
(Butene) (Phenol)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZNIKOVA, A. M.

PROCESSES AND PROPERTIES INDEX

The molecular surface properties of binary mixtures of soaps in water solution. N. N. Petrova and A. M. Vyaznikova. *Vsesoyuznaia Nauch.-Issledovatel. Inst. Zhirov, Untersuchungen über Physikochemie der Waschwirkung* 1935, 126-37. In mixts. of tallow oil soap with resinate or naphthenate soaps the surface-active properties of the tallow oil soap predominate. Similarly, sunflower oil soap predominates over the same 2 soaps. In very dil. solns. the 2nd component activates the dominant soap, raising its emulsifying and foaming power. This occurs if the adsorption layer is not satd. by the dominant soap. If the concn. of the latter is great enough to sat. the adsorption layer, the 2nd component deactivates the mixt. At 40° the action of the 2nd component is greater than at 20°, but at 80° only the properties of the dominant soap are shown by the soln. H. M. Leicester

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

USSR / Diseases in Animals. Diseases Caused by Protozoa R

Abs Jour: Ref Zhur-Biologiya, No 16, 1958, 74226

Author : Vyazkova, S. F.; Bernadskaya, Z. M.; Stepanov, A. M.

Inst : Not given

Title : Chlorten in Prophylaxis of Hemosporidiosis in Cattle

Orig Pub: Veterinariya, 1957, No 6, 58-59

Abstract: Bathing young cattle stock every seven days in a bath with 0.7 percent emulsion of chlorten prevented attacks of Boophilus calcaratus and assured prophylaxis of piroplasmosis, tularemia, and anaplasmosis, and significantly decreased the number of attacks on the animals of Hyalomma detritum. No harmful effect was noted on the animals' organi-

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZKOVA, S.F.; LAPIDUS, S.S.

Developing a method for controlling ectoparasites in poultry houses. Trudy VNIIVSE 11:236-259 '57. (MIRA 11:12)
(Poultry houses and equipment--Disinfection)
(Poultry--Diseases and pests)

All Union Sci Res Inst Veterinary Sanitation & Ectoparasitology

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

KARAKHODZHAYEV, B., dotsent; VYAZIKOV, F.S., assistent

Combined antibiotic treatment of acute dysentery in young children. Med.zhur.Uzb. no.1:66 Ja '59. (MIRA 13:2)
(DYSENTERY) (ANTIBIOTICS)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

USSR/Diseases in Farm Animals. Diseases Caused by Arachno-Entoms. R-2

Abd Jour: Ref Zhur-Biol., No 12, 1958, 54960.

Author : Vyazkova, S. F., Lapidus, S. S.
Inst : All-Union Scientific Research Institute of Veterinary Sanitation and Ectoparasitology.
Title : Devising Methods for the Control of Ectoparasites in Poultry Yards.

Orig Pub: Tr. Vses. n.-i. in-t. vet. sanitarii i ektoparazitol., 1957, 11, 236-259.

Abstract: Experiments were carried out in order to find means for the control of the Deramanyssus gallinae chicken mites and of capsid bugs under laboratory as well as under industrial conditions. Cracks and openings in the walls, cages, etc., were closed with putty (consisting of 1 part

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

USSR/Diseases in Farm Animals. Diseases Caused by Arachno-Entoms.

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54960.

of creolin and 2-3 parts of chalk). The 3.5 percent water emulsion of a creolinic concentrate of DDT or of hexachloran (H) is the most effective desinfectant. However, practical utilization of H compounds should be avoided, since they have a harmful effect on poultry. A water emulsion with 3 percent SK-9 and 3 percent creolin is an effective insecticide for bugs. Perches, roosting places, nests and other equipment in poultry yards infected by mites and bugs may be most reliably treated by a 3-4 minutes lasting immersion of the implements into a 3 percent water emulsion of creolinic DDT concentrate. Also, these objects can be treated with a 3.5 percent creolin emulsion (they can be spurted or washed from a hydrostand), or by being sponged with

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USSR/Diseases in Farm Animals. Diseases Caused by Arachno-Entoms. R-2

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54960.

very wet mops or shower brushes, and sprayed (after drying) with a 5 percent water emulsion of a creolinic DDT concentrate. The walls of the infested premises may be treated with the same emulsion. During the process of desinfection, the birds should be removed from the premises, and care should be taken that the insecticide does not come into contact with feed and water. The possibility was demonstrated by experimental treatments that bugs can be eliminated from premises from which the hens have been removed, after applying aerosol bombs twice, which were made from a 10 percent DDT solution and a 4 percent hexachloran emulsion in diesel oil. Thirty ml. per 1 square meter were used with an interval of 6 days, after

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

USSR/Diseases in Farm Animals. Diseases Caused by Arachno-Entoms.

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54960.

which the premises were aired for another 6days.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZKOVA, S.F., kandidat veterinarnykh nauk; BERNADSKAYA, Z.M., nauchnyy sotrudnik; STEPANOV, A.M., veterinarnyy vrach.

Chlorothen in the prevention of haemosporidia invasions in cattle. Veterinariia 34 no.6:58-59 Je '57. (MLRA 10:7)
(Pyridine) (Haemosporidia) (Cattle--Diseases and pests)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

LYASHENKO, A.F.; VYAZKOVA, Ye.A.; NAZAROVA, K.G.

Separate determination of the calcium salts in additives by the potentiometric method. Khim. i tekh. topl. i masel 9 no.9:62-65 S '64. (MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gazov i polucheniyu iskusstvennogo zhidkogo topliva.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MENSKIY, A. S., and SHANSKIY, K. I.,

"Casting of Crane Drums From Cast Iron With Reduced Allowances for Machining," p. 120. in book Mechanization and Automatic Control of Founding Processes, Leningrad, 1957, 224pp.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

SHANSKIY, K.I.; VYAZ'MENSKIY, A.S.

Founding cast-iron crane drums. Lit.proizv.no.2 supplement:42-44 '56.
(Iron founding) (MLRA 9:7)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

COMMON ELEMENTS

MATERIALS INDEX

Chemical composition and pharmacological action of ginseng root. K. S. Vyaz'menskii. *Farmakol. i Toksikol.* 10, No. 3, 51-61(1947).—A crit. survey of literature on ginseng reveals gaps, contradictions, and inadequately supported conclusions. 92 references. J. F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZMENCKIY, E. S.

USSR/Medicine - Pharmacology May/Jun 1947
Medicine - Panax ginseng

"The Chemical Composition and the Pharmacological Action of Panax Ginseng," E. S. Vyazmenckiy, 11 pp

"Farmakol i Toksikol" Vol X, No 3

Gives description and chemical composition of ginseng. Discusses general symptons of poisoning, blood reaction, respiratory reaction, reaction of mice, effect on chemical exchange, and effect on growth. It is concluded that present data are unsatisfactory and that close study is needed. Three pages of bibliography.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MENSKIY, A.S., inzhener; BUYNOVSKIY, A.P., inzhener.

Use of electric signals in casting cylinders in shell molds. Lit. proizv. no.5:31-32 My '57. (MLRA 10:6)
(Foundry machinery and supplies)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MENSKIY, E.S.

Chemical composition and pharmacological action of Panax ginseng roots. Farm.i toks.10 no.3:51-61 My-Je '47. (MLRA 7:2)
(Ginseng)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MENSKIY, E.S., kandidat meditsinskikh nauk (Leningrad).

Medicinal arsenal of Chinese folk medicine. Apt.delo no.4:50-54 Jl-Ag '53. (MLRA 6:8)

(China--Drugs) (Drugs--China)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZEMSKIY, O.V.

F

L

5073. INCLINATION OF VERTICAL WATER TURBINE SHAFTS ON COMPRESSIBLE FOUNDATIONS. Vyazemsky, O. V. and Veselov, V. V. (Gidrotechnicheskoye Stroitelstvo, 1948, (9), 21-23; Engrs' Dig., Mar. 1949, vol. 10, (3), 74-75). (L).

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MENSKIY, S.P. (Leningrad)

Stability of the rectilinear form of equilibrium of an elastic rod subjected to compression and torsion. Inzh. sbor. 25:164-173 '59. (MIRA 13:2)

(Elastic rods and wires)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

Report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

35. S. M. Darodzhiy (Minsk): On the solution of the dynamic contact problem for a half-space under conditions of axial symmetry.

36. J. Brilla (Bratislava). Anisotropic plates with discontinuous supports.

37. I. M. Bryuko (Moscow): On the essential non-linearity of certain problems on column stability.

38. I. A. Burlov (Kiev), S. V. Serensen (Moscow): On the determination of safety factors under alternating random loads.

39. A. V. Burlakov (Kharkov): An experimental investigation of creep of turbine diaphragm models.

40. I. F. Burmistrov (Saratov): On the stability of constructionally anisotropic circular ring plates.

41. Th. Belea, V. Petru, S. Sorin (Bucharest): The field of application of chronoplasticity.

42. I. R. Baiskerg (Kiev): The state of stress of lamellar systems of regular configuration.

43. I. V. Balashov (Moscow): Thixotropic properties of lubricants as basis of their rheological characteristics.

44. A. A. Yan-Fa-Ei, G. M. Syrin (Kiev): Application of matrix functions to the investigation of shells.

45. I. M. Yarevk (Kiev): Determination of stresses and deformations in massive bodies.

46. I. V. Bakanov (Gorkii): The flow of bitumen and filled bitumens in pipes.

47. I. I. Vekua, V. V. Mushkelishvili (Tbilisi): Applications of analytic functions in the theory of elasticity.

48. L. Ia. Vlasov (Tbilisi), V. V. Fomichkin (Brovna): Experimental investigation of the behavior of axentrically compressed short columns for long loading times.

49. A. V. Vlasovskiy (Moscow), A. A. Pomelov (Kazan), V. P. Parlay (Moscow): Investigation of soft plastic bodies under combined states of stress.

50. A. V. Vlasovskiy, V. P. Parlay (Moscow): Rate peculiarities of the mechanical properties of plastic lubricants.

51. A. I. Vlachov (Leningrad): Fundamentals of the linear theory of visco-elastic impact.

52. I. I. Vlodavec (Kharkov): The solution of dynamic contact problem for foundations using a simplified model.

53. A. F. Vlasov (Moscow): On the equilibrium equations of thick elastic plates.

54. L. P. Vodinovskii (Leningrad): The creep of ice and frozen soils under combined stresses.

55. N. P. Volarovich, G. Ia. Voronkov, N. P. Ryzhovskii, G. I. Bakhmat (Moscow): Studies of visco-elastic properties of porous bodies (e.g. peat) by the ultrasonic pulse method.

56. N. P. Volarovich (Moscow), A. Kh. Kim (Minsk): The plane flow of a visco-plastic medium between two planes forming an acute angle.

57. N. P. Volarovich, L. N. Opalin (Moscow): Kinematics and dynamics of the flow of visco-plastic dispersed media past bodies of different shapes.

58. L. S. Volkov (Moscow): On the analysis of a short closed cylindrical shells.

59. S. D. Volkov, N. A. Kilasonia (Sverdlovsk): On the determination of elastic constants in quasi-isotropic polycrystalline media.

60. I. I. Vorovich (Rostov-na-Donu): A statistical method in the stability theory of shells.

61. I. I. Vorovich (Rostov-na-Donu), A. S. Kosmodamianskii (Kharkov): On stress concentration in a plane with an infinite number of holes.

62. S. P. Timoshenko (Leningrad): Foundations of the general engineering theory of elastic bodies.

63. S. S. Vialov (Moscow): The laws of deformation of ice.

64. S. S. Vialov (Moscow): The laws of motion of ice crusts and the theory of visco-plastic flow based on research in the Antarctic.

65. M. B. Galilov (Leningrad): A method of obtaining polynomial stress and displacement functions.

66. K. I. Galimov (Kazan): A contribution to the theory of the finite deformations of thin shells.

67. N. P. Galin (Moscow): The propagation of elastic-plastic bending and shear waves in the antisymmetrical deformations of shells.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MENSKIY, S. P. —

"Calculation of Thin-Walled Rods in the Deformed State for Small Elastic Deformation." Cand Tech Sci, Leningrad Construction-Engineering Inst, Leningrad, 1954. (RZhMekh, Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

TKACHENKO, Pavel Grigor'yevich; TIMCHENKO, Boris Sevast'yanovich; VYAZ'MIN, Gennadiy Ivanovich; YANKELEVICH, V.M., otv. red.; KAMINSKIY, L.N., red. izd-va; ANDREYEV, S.P., tekhn. red.

[Organization and planning of the operation and maintenance of automatic measurement and control equipment] Organizatsiia i planirovanie rabot sluzhby KIP i avtomatiki; spravochnoe i prakticheskoe rukovodstvo. Moskva, Metallurgizdat, 1963. 247 p. (MIRA 16:6)

(Measuring instruments--Maintenance and repair)
(Automatic control--Handbooks, manuals, etc.)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MIN, I

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Osnovnoy ekonomicheskiy zakon sotsializma (Outline of the economic laws of socialism) Moskva, Moskovskiy Rabochiy, 1953. 42 p. Bibliographical footnotes.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

1. VYAZ'MIN, N. K.

2. USSR (600)

4. Fertilizers and Manures

7. Simple assembly for making granulated fertilizer.
Dost. sel'khoz. No. 1, 1952.

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

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MIN, P. K.

Farm Buildings

Building livestock shelters in the collective farms of Bogorodsk district. Sots. zhiv. 14, No. 5, 1952.

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

2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

ARMAND, G.B.; VYAZ'MIN, N.A.; GRINSHTEYN, L.M.; GOL'DBERG, G.I.; GOLUBEV, B.S.; KASHLAKOV, M.V.; KRASNOPEVTSEV, M.P.; KUZNETSOV, S.I.; KURAYEV, A.V.; KAYUKOV, G.I.; MASHATIN, V.I.; MOLOTILOV, V.I.; NERUSH, A.R.; PRAL', G.I.; RAGUSKAYA, L.F.; RUBINSHTEYN, S.M.; SEMENKOV, P.L.; TARASOV, L.A.; FEDOROVA, A.A.; TSEPKIN, M.F.; SHAYEVICH, A.G.; ZARUBIN, A.G., otv.red.; VASIL'YEVA, I.A., red. izd-va; SOKOLOVA, T.F., tekhn.red.

[ZIL-157 motortruck; operation and service] Avtomobil' ZIL-157; instruktsiia po ekspluatatsii. Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1958. 235 p. (MIRA 11:12)

1. Moskovskiy avtomobil'nyy zavod.
(Motortrucks)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MIN, V.A.

KURAYEV, A.V.; SEMENKOV, P.L.; BLEYZ, N.G.; PULAVA, V.P.; VYAZ'MIN, V.A.; GOLUBEV, B.S.; DYSHMAN, B.M.; KARELIN, B.S.; KAYUKOV, G.I., KUGEL', N.V.; MASHATIN, V.I.; RAGUSKAYA, L.F.; RUBINSHTEYN, S.M.; SMYRANOV, A.B.; TARASOV, L.A.; FEDOROVA, A.A.; FEDOROV, L.N.; TSEPKIN, M.F.; SHAYEVICH, A.G.; VASIL'YEVA, I.A., red. izd-va; TIKHANOV, A.Ya., tekhn. red.

[ZIL-158 and ZIL-158A motorbuses; instructions for operation] Avtobusy ZIL-158 i ZIL-158A; instruktsiia po ekspluatatsii. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 193 p. (MIRA 11:7)

1. Moskovskiy avtomobil'nyy zavod.
(Motorbuses)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

ACC NR: AP6002802 SOURCE CODE: UR/0237/60/000/002/0026/0028

AUTHOR: Galant, Ye. I.; Vyaz'mina, N. A.

ORG: none

TITLE: The problem of platinum inclusions in some glasses

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 2, 1960, 26-28

TOPIC TAGS: optic glass, glass property, SILICATE GLASS, PLATINUM, GLASS MANUFACTURING MACHINERY

ABSTRACT: The presence of platinum inclusions in lanthanum borosilicate glasses batch-melted in platinum crucibles was investigated. It was found that the limit of solubility of the inclusions depends both on the composition of the medium (solvent) and on the temperature. Three series of experiments confirmed the hypothesis that irrespective of whether or not the initial glass contains Pt inclusions, no such inclusions are formed when the batch is heated to 1200°C, while with subsequent holding and cooling to 1000°C the inclusions appear in large quantities. It is therefore assumed that dissolved Pt is present in all glass which has been made in Pt vessels. In the investigated glasses, increased additions of As_2O_3 and Sb_2O_3, as well as increased melting temperatures, lead to a rise in the concentration of Pt in the glass and to the probability of its precipitation. The precipitation of

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ACC NR: AP6002802

the inclusions is reversible, taking place at temperatures ranging between 1150 and 1190°C. The experiments demonstrate the necessity for rapid cooling, which assures glass without Pt inclusions. Another possible solution to the problem is the use of fused-quartz crucibles instead of Pt crucibles. Orig. art. has: 3 figures and 1 table.

SUB CODE: // / SUBM DATE: 29Aug59/ ORIG REF: 002/ OTH REF: 004

Card 2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

ACC NR: AP7002724 SOURCE CODE: UR/0237/66/000/012/0044/0050

AUTHOR: Galant, Ye. I. (Candidate of sciences); Vlasova, N. I.; Vyaz'mina, N. A.

ORG: none

TITLE: Effect of coloring additives on the light absorption of lanthanum glass

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 12, 1966, 44-50

TOPIC TAGS: glass property, light absorption, optic glass, optic density, color additive

ABSTRACT: In order to find ways of reducing the absorption of type STK and TBF lanthanum glass, the authors measured the specific-absorption spectral curves of lanthanum glass colored with oxides of Nd^{3+}, Pr^{3+}, Cr^{3+}, Cr^{6+}, Cu^{2+}, Fe^{3+}, Ni^{2+}, Co^{2+}, Mn^{3+}, and Ce^{4+}, to determine which of these additives are responsible for the high absorption of such glasses. The test method used was that described by V. V. Vargin and T. I. Veynberg (Steklo i keramika [Glass and Ceramics], 1958, no. 5, p. 25), using a modified SF-4 spectrophotometer. The specific absorption curves were obtained by determining the difference between the optical density of the spectral curves of the glasses with the specially introduced dye and without it. The results have shown that the specific spectral absorption increases on going from silicate to lanthanum-boron-silicate glasses, with larger degree of alkalinity. The calculations yielded the specific light-absorption coefficients due to each of the coloring oxides. The coefficient of light absorption in glass colored with 0.001% of coloring

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ACC NR: AP7002724

agent ranges from 0.001 to 13.4% and increases in the sequence $Ce^{4+} \rightarrow Fe^{3+} \rightarrow Pr^{3+} \rightarrow Nd^{3+} \rightarrow Cr^{6+} \rightarrow Cu^{2+} \rightarrow Ni^{2+} \rightarrow Cr^{3+} \rightarrow Mn^{3+} \rightarrow Co^{2+}$. Limits of maximum concentrations were established for the raw materials used to manufacture the lanthanum glass. These should not exceed 5×10^{-2} of Ce, 2×10^{-3} of Fe, 1×10^{-4} of Nd or Pr, 1×10^{-5} of Cr, Cu, Ni, and 1×10^{-6} of Co and Mn. It is indicated that the test results should be used in conjunction with chemical, spectrochemical, and spectrophotometric analyses to determine the composition of coloring impurities in glasses. Orig. art. has: 4 figures and 5 tables.

SUB CODE: 11, 20/ SUBM DATE: 11Dec65/ ORIG REF: 004

Card 2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

MANUKHIN, B.N.; VYAZ'MINA, N.M.

Regularities in the hyperglycemic action of adrenaline. Probl. endok. i gorm. 11 no.5:81-88 S-O '65. (MIRA 19:1)

1. Laboratoriya obshchey i sravnitel'noy fiziologii imeni Kh.S. Koshtoyantsa (zav. - doktor biol. nauk T.M. Turpayev) Instituta morfologii zhivotnykh imeni A.N. Severtsova AN SSSR, Moskva. Submitted November 18, 1964.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZMITINOVA, E. I.

[illegible] electronographic study of thin [illegible]

Bublik, E. I. Vyazmitinova, and B. Ya. Pines. Uchenye Zapiski Khar'kov Univ. 49, Trudy Fiz. Odel. Fiz-Mat. Kakultet No. 4, [illegible] 49 [illegible]

[illegible]

In very thin films [illegible]

[illegible]

layers. Thermodynamic conditions [illegible] thin films. A. I. Bublik and B. Ya. [illegible] given for an electronographic study of [illegible] obtained by evapg. the metal in [illegible]. Just [illegible] and Cr films that are deposited by rapid evapn. there is a relation between the structure and the thickness. In films

[illegible] thickness of [illegible] cm the same crystal structure [illegible] as with massive samples. With thicknesses [illegible] another structure is [illegible] plex [illegible] α-Mn. On the electronograms for films deposited by slow evapn. of the metal, the interference max. are enlarged. Thermodynamic conditions for phase equil. in thin layers are [illegible] and has the [illegible] thickness [illegible] is possible [illegible]

[illegible] the metal in a massive sample [illegible]

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZ'MOV, A.

Hydraulic conveyer. Mashinostroitel' no.8:26 Ag '62. (MIRA 15:8)

(Conveying machinery)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

MIKHAYLOV-MIKHEYEV, Prokopiy Borisovich, doktor tekhnicheskikh nauk; MES'KIN, V.S., doktor tekhnicheskikh nauk, retsenzent; [redacted] N.F., kandidat tekhnicheskikh nauk, redaktor; VASIL'YEVA, V.P., redaktor izdatel'stva; POL'SKAYA, R.G., tekhnicheskiy redaktor; SYCHEVA, O.V., tekhnicheskiy redaktor

[Thermal brittleness of steel] Teplovaia khrupkost' stali. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 114 p. (MIRA 9:10)
(Steel--Brittleness)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

1. VYAZNOVSKIY, A. YU. , PROF.

2. USSR (600)

4. Epilepsy

7. Treatment of epilepsy. Zhur. nevr. i pasikh. 52 no. 11. 1952.

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

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZANITSYN, V.P.

Vyazanitsyn, V. P. "The sun," in symposium: Astronomiya v SSSR za tridtsat' let, Moscow-Leningrad, 1948, p. 103-11

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

MIKHAYLOV-MIKHEYEV, Prokopiy Borisovich, doktor tekhn.nauk; BOLKHOVITINOV, N.F., prof., doktor tekhn.nauk, retsenzent; VYAZNIKOV, kand.tekhn. nauk, red.; VASIL'YEVA, V.P., red. izd-va; SPERANSKAYA, O.V., tekhn. red.

[Metals for gas turbines] Metall gazovykh turbin. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 350 p. (MIRA 11:12)
(Gas turbines) (Heat-resistant alloys)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

DAVYDOV, A.I., inzh.; VYAZNIKOV, A.K., inzh.

New pickup balers. Trakt. i sel'khozmash no. 6:34-37 Je '58. (MIRA 11:7)

(Hay--Harvesting)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

KARAKHODZHAYEV, B., dotsent; VYAZIKOV, F.S., assistent

Treatment of chronic dysentery in children by the combined method. Med.zhur.Uzb. no.5:27-29 My '58. (MIRA 13:6)

1. Iz kafedry detskikh bolezney (zav. - dotsent M.A. Mirzamukhamedov) Samarkandskogo gosudarstvennogo meditsinskogo instituta imeni I.P. Pavlova.
(DYSENTERY) (ANTIBIOTICS)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

PROCESSES AND PROPERTIES INDEX

Growth and heat resistance of cast iron. N. F. Vyatnikov. *Trans. Leningrad Ind. Inst. No. 8, Sect. Mech Eng.* No. 1, 27-40(in English 40)(1936). The property of irreversible growth or increase in vol. of cast Fe on prolonged heating was investigated in a series of expts. The growth is pronounced when the metal is heated above 400-450° and particularly on repeated heating from room temp. to 750-900°. Growth is inversely proportional to the Cr content in the interval 0.8-2.8%; however, in the presence of 1% Mn and 2% Si, the Cr, in excess of 1%, produces a white non-workable cast iron. Variation of Ni content in Ni cast iron from 0.6 to 1.8% produces no effect on growth when the cast iron is heated at 800-950°, but when heated for 25 hrs. at 650°, increase of Ni content produces a slight decrease in growth. With Ni-Cr iron, increase of Ni from 0.6 to 1.8% increases growth on heating the metal at 800-950° and decreases growth when heated at 650°. In all the expts. ordinary cast iron showed the greatest growth and Ni cast iron was next in the series. Khalila Cr-Ni cast iron showed the least growth and addi-

other side

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES OF FE

Mechanical properties of synthetic chrome-nickel and natural Khalila cast iron. N. R. Vyzenikov. *Trans. Leningrad Ind. Inst.* No. 8, *Sect. Mech. Eng.* No. 1, 41-50 (in English 50)(1936).—Hardness of cast iron increases (20-25%) with increase of Ni content up to 0.7%, while further increase up to 1.8% produces a very small effect. Increase of Cr content 0.8-2.8% produces a continuous increase in hardness. A 5-hr. heating of all Cr-Ni synthetic and Khalila cast Fe samples at 950° resulted in greater hardness than when heating took place at 800°. Synthetic Cr-Ni cast Fe heated for 5 hrs. at 950° lost about 30% of its tensile strength while Khalila samples were little affected. Cast iron contg. 0.6-1.8% Ni has about the same tensile strength as ordinary cast Fe. Increasing the Ni content from 0.7 to 1.8% in Cr-Ni cast Fe had no effect on non-heated samples and decreased the tensile strength of samples heated for 5 hrs. at 950°. Heating for 5 hrs. at 650 or 800° decreased the resistance to crushing of all samples, but heating at 950° for 5 hrs. decreased the resistance with ordinary and Ni cast Fe and increased it with Ni-Cr and Khalila samples. All samples gave a higher bending test when heated for 5 hrs. at 950° than when heated at 650 or 800°. Increase of Ni up to 1.8% increases somewhat the bending test of ordinary cast Fe. In Cr-Ni cast Fe, increasing the Ni content from 0.7 to 1.8% had no affect on the bending test. Fifteen references. S. L. Madorsky

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PROCESSES AND PROPERTIES INDEX

Decarburization of tool steel at high temperatures.

N. T. Gudtzov and N. P. Vyazmikov. *Metallurg* 11, No. 2, 26-35(1936).—Eutectoid steels begin to decarburize in air at a lower temp. than hypereutectoid steels. Addn. of 2% Cr hinders decarburization. Decarburization is more rapid in a reducing atm. than in a neutral atm.

H. W. Rathmann

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

Casehardening with calcium cyanide. N. F. Vyazni-kov and P. K. Mikhalev. *Metallurg* 11, No. 10, [illegible] (1936). - Specimens were carburized at 800-875° in a bath contg. 2% $Ca(CN)_2$. A 0.3-0.4 mm. case was obtained at 825° in 40 min. H. W. Rathmann

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

18

Stainless Steel of the 18/8 Type with High Carbon Content and Additions of Titanium and Beryllium. N. F. Vyaznikov and E. I. Andreeva. (Metallurg, 1938, No. 7–8, pp. 40–44). (In Russian).

Three steels of the 18/8 type, but with 0·39–0·46% of carbon and additions of 0·09% of beryllium and 0·11% of titanium, respectively, were investigated in connection with the development of steel for surgical instruments. The macrostructure and the microstructure of the cast steel, its dilatometric analysis, mechanical properties and corrosion resistance (loss of weight in tap-water, sea-water, 10% nitric acid, 10% hydrochloric acid, 5% alcoholic iodine solution and 1% mercuric chloride solution) are briefly reported. Both titanium and beryllium additions were found to exert a grain-refining effect on the cast steel, and they also increased its hardness by the formation of a second phase. This latter fact, however, at the same time slightly reduced the corrosion resistance, as compared with the steel containing no beryllium or titanium.

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Accelerated Annealing for the Production of Granular Pearlite in Cold-Rolled Strip. N. T. Gudtsov, N. F. Vyazmikov, and M. I. Poyzikhis. (Metallurg, 1939, No. 4-5, pp. 63-75). (In Russian). It is desirable to obtain granular pearlite in the intermediate annealing of cold-rolled strip, as this structure corresponds to the maximum ductility of the metal. The experimental work was done on plain carbon steel strip containing carbon 1·04%, manganese 0·25%, silicon 0·37%, sulphur 0·017%, phosphorus 0·010%, and a silicon steel with carbon 0·67%, manganese 0·65%, silicon 1·45%, sulphur 0·016%, phosphorus 0·007% and chromium 0·37%. After determination of the critical points the effect of subjecting both steels to the following heat treatments was investigated: (a) Normal quenching (in lead bath from 800–900° C. to 275–375° C. for 20 secs. followed by air-cooling and tempering at 650–700° C. for 15–120 min.). In some experiments with the silicon steel the lead-bath quenching was replaced by air quenching from higher temperatures; (b) normalising followed by high-temperature tempering; (c) super-cooling of the austenite by quenching in a lead bath followed by short-period isothermal transformation at a higher temperature and finally high-temperature tempering (spheroidising); (d) short-period austempering, followed by spheroidising; (e) ordinary annealing with subsequent spheroidising; and (f) repeated annealing

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(alternate heating to 650-700° C. and cooling) below the A_1 point. With the cold-rolled carbon-steel strip the best results were obtained by method (d). The steel thus treated had a tensile strength of not more than 65 kg. per sq. mm. and an elongation of not less than 20%. The best treatment for the silicon steel was that of holding at 850° C. for 15 min., quenching to 500° C. and holding for 2 min., followed by spheroidizing at 710° C. for 1 hr. In this case the steel had a tensile strength of 77 kg. per sq. mm. and an elongation of 17%. The possibility of applying the above treatments to the strip by a continuous process is mentioned.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZNIKOV, N.F., kandidat tekhnicheskikh nauk.

Heat treatment of 5ChGM steel dies. Stal' 7 no.2:168 '47. (MLRA 9:1)

1.Leningradskiy politekhnicheskiy institut.
(Dies (Metalworking)) (Steel--Heat treatment)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZNIKOV, N.F.; YELISEYEVA, E.A.; POPANDOPULO, A.N.

Electric arc welding of rapid steel plates to cutter holders.
Trudy LPI no. 251:35 :39 '65 (MIRA 19:1)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZNIKOV, N.F.; PAVLOV, N.N.; ODYNETS, G.L.

Obtaining bimetal bands with a magnetic ceramic metal layer on a nonmagnetic base. Trudy LPI no. 251:40-43 '65 (MIRA 19:1)

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A L 13016-66 EWP(e)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c)

ACC NR: AT6000928 SOURCE CODE: UR/2563/65/000/251/0040/0043

IJP(c) MJW/JD/WW/HW/JG/WH

AUTHOR: Vyaznikov, N. F.; Pavlov, N. N.; Odynets, G. L.

ORG: Leningrad Polytechnic Institute imeni Kalinin (Leningradskiy politekhnicheskiy institut)

TITLE: Production of bimetallic strips with cermet magnetic layers on nonmagnetic cores

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy. no. 251, 1965. Metallovedeniye (Metal science), 40-43

TOPIC TAGS: cermet, austenitic steel, powder metallurgy, metal bonding, metal grain structure

ABSTRACT: A method was developed for producing nonmagnetic strips of 2-3 mm thickness with highly coercive magnetic layers (0.08-0.10 mm) applied by powder methods. 20N24Kh2 austenitic nickel steel with an average composition of 0.20% C, 24% Ni and 2% Cr was selected for the nonmagnetic core. ANKOTI, a carbon-free dispersion hardening alloy, was chosen for the magnetic layer. This alloy had an average composition of 9% Al, 14% Ni, 30% Co, 4% Cu and 4% Ti (remainder Fe). 20N24Kh2 steel was melted in a high frequency furnace, poured into 10 kg ingots, hot-rolled and cold-rolled into strips 30 mm width and 2-3

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ACC NR: AT6000928

mm thickness. Due to the brittleness of ANKOTI at both high and low temperatures, powder processing was used. The powder (0.01-0.05 mm diameter) was purified and degreased and applied to the core by cold-rolling and subsequently sintered to bond the layer by diffusion. The sintering was done at 1100, 1150, 1200 and 1250°C for 2, 4, 6 and 8 hrs in a hydrogen atmosphere, in vacuo, in argon and in sealed iron tubes. The surface conditions of the respective treatments were compared metallographically. The surfaces of the powder particles formed films of oxides which are hard to reduce upon heating which hindered the sintering process. The microstructure of ANKOTI showed dispersed γ'-$Ni_3(TiAl)$ within the grains of solid solution and as a fine network along the grain boundaries. The structure of the cermet form of ANKOTI (sintered powder) had grains of solid solution with separated inclusion of the γ' phase. Low magnification micrographs were shown of the bimetallic strip after sintering at 1100, 1200 and 1250°C. At 1100°C, the layer showed much porosity and had low strength. Equations are presented for the experimental parameters of each process. The best bonding of the powder to the core was attained by using an average unit pressure of 40 to 50 kg/mm^2. Orig. art. has: 7 figures.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZNIKOV, N.F.; POPANDOPULO, A.N.

Effect of structural transformations on the red hardness of high-cobalt, high-speed steel. Trudy LPI no.234:31-34 '64. (MIRA 17:11)

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VYAZNIKOV, Nikolay Filippovich, kand. tekhn. nauk; POPANDOPULO, A.N., kand. tekhn. nauk; MIKHAYLOV-MIKHEYEV, P.B., red.; SHILLING, V.A., red.izd-va; GVIRTS, V.L., tekhn. red.

[Modern high-speed steel and its heat treatment] Sovremennaia bystrorezhushchaia stal' i ee termicheskaia obrabotka. Leningrad, 1963. 21 p. (Leningradskiy dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Metallovedenie i termicheskaia obrabotka, no.5) (MIRA 16:12)

(Tool steel—Heat treatment)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

S/737/61/000/000/009/010

AUTHORS: Vyaznikov, N. F., Cand'date of Technical Sciences, Popandapulo, A. N., Engineer.

TITLE: The ratio of the O and V contents in high-speed steels.

SOURCE: Stal', shornik statey. Ed. by A. M. Yampol'skiy. Moscow. 1961, 469-477.

TEXT: The ratio of the C and V contents in CoV high-speed steels currently produced in the USSR, USA, and East and West Germany requires prolonged holding or soaking during final heating (from 10 to 20 sec/mm) to achieve entry of the carbides into the solid solution, whereupon the tool becomes brittle under any impacts that might occur during cutting operations. The dissolution of the carbides would be facilitated and accelerated if the V content were decreased or the C content increased. The existing relationship between the C content (C) and the V content (V) is shown to be C = 0.2V + 0.5. One such CoV steel, the Р10Ф5К5 (R 10 F 5 K 5), basically designated as ЭИ931 (EI931), requires a pre-quench holding of 20 sec/mm (instead of the ordinary 10 sec/mm) to improve the dissolution of the carbides and the red-brittleness resistance. Unfortunately, the long high-temperature holding evokes growth of the austenite grain, enlargement of the carbides, and their precipitation along the grain boundaries during cooling and, hence, loss in strength and toughness, as well as appreciable decarbonization, so that the tool is no longer usable for impact cutting. To find a high-speed steel that could be heated quickly

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The ratio of the C and V contents in high-speed steels. S/737/61/000/000/009/010

to quench temperature, 20 melts were prepared with various % contents: C 0.9-1.8, V 1.2-5.0, W 16.0-18.0, Cr 4.0-4.5, Co ~8.0, Mo ~1.2. 50-kg ingots were cast from a HF induction furnace and forged into rods; all melts, except for that containing 1.8%C, were well suitable for forging. It was found that a relationship $\overline{C} = 0.225\overline{V} + 0.675$ yields well-dissolved carbides with short holdings. The best alloy contained (%): C 1.54, W 17.54, V 3.18, Cr 4.17, Co 7.93, Mo 1.23%. Holding was done for 3-4 sec/mm. The microstructure of the 850°-tempered steel consists of perlite and carbides. H_B=277-293. Small grain is retained up to 1240°C. After quench and triple tempering at 560° and 1-hr holding, the structure consists of nonacicular martensite, bainite, and carbides. Hardness specimens were oil-quenched at 700-1260°; when reheated to from 760° to 820°C, the R_C rose sharply from 35 to 52, which is explained by the dissolution of the eutectoid carbides. This is designated as the critical interval A_{c1}. Maximum hardness (68) is obtained at 1100°. The lowering of R_C (to 63.5) at 1260° is explained by the presence in the structure of a large amount of retained austenite (up to 60%). Specimens of PI8Ф3K3M (R18F3K3M) quenched at 1240°C and tempered three times at 560° attain R_C=70, an unusual value for high-speed steel. The heating was performed quickly, at 4 sec/mm. The repeated tempering was found (by microstructural and magnetic analysis) to have eliminated virtually any retained austenite. Red-brittleness specimens were quenched at 1240° (holding for 4 sec/mm), triple-quenched at 560°, and soaked at 600-650° for 4 hours. Steel tested at 650° exhibited an R_C=60. The

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The ratio of the C and V contents in high-speed steels . . S/737/61/000/000/009/010

mechanical properties resulting from various forms of heat treatment are detailed. Rapid cooling in oil after each tempering is found to be advantageous for both improved toughness and increased strength. Chemical carbide analysis is explained in detail; the alloying qualities of the solid solution appear extremely satisfactory both qualitatively and quantitatively. The cutting properties were tested for continuous cutting and for impact cutting, including lathe cutting, planing, and milling. The extremely abbreviated heating before quench (at 3 sec/mm) of the R 18 F 3 K 8 M steel has created amazement among specialists. Yet, the newly introduced C/V relationship ensures the complete dissolution of the carbides and, hence, an elevated hardness and red-brittleness resistance, while preserving the fine-grain structure of the steel which is indispensable in obtaining the high strength and toughness which are essential in impact cutting; this is further ensured by oil cooling after tempering. The chemical composition of the Soviet R10F5K5, the USA T15, and 3 versions of the German EV4Co is tabulated, and it is recommended that the V content of the R10F5K5 steel be reduced to 3-3.5%. It is noted that alterations in that sense have been made in the German EV4Co steels with an increase of the C content from 1.3 to 1.4% and a reduction in V content from 5 to 3.75%. There are 5 figures, 2 tables, and 7 references (4 Russian-language Soviet, 1 English-language, 2 German). The Editor comments that the authors' proposal to increase the C content in high-speed steel by 0.2-0.3% and to reduce the pre-quench holding to 3-4 sec/mm requires verification:

ASSOCIATION: Leningrad politekhnicheskiy institut (Leningrad Polytechnical Institute).

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZNIKOV, Nikolay Filippovich; BERLIN, Ye.N., red.izd-va; ISLENT'YEVA, P.G., tekhn. red.

[Alloyed steels]Legirovannaia stal'. Moskva, Metallurgizdat, 1963. 271 p. (MIRA 16:4)

(Steel alloys)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

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42437

S/563/62/000/218/003/004
E193/E383

18.1120

AUTHORS: ~~Vyaznikov, N.F. and~~ Popandopulo, A.N.

TITLE: New high-speed cutting steels for machining alloys for high-temperature service

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy. no.218. Moscow. 1962. Metallovedeniye. 66 - 73

TEXT: The present paper is concerned with the heat-treatment, structure and mechanical properties of four new, high-speed cutting steels developed at the Leningradskiy politekhnicheskiy institut im. M.I. Kalinina (Leningrad Polytechnical Institute im. M.I. Kalinin). The differential feature of these steels, whose composition is given in Table 1, is their increased C, V and Co contents and the presence of Mo. No steels of similar composition and requiring similar heat-treatment have been used in industrial practice in the Soviet Union or abroad, and three of them have been granted Author's Certificate. The steels are annealed by heating to 850 - 870 °C, cooling to 730 - 750 °C, holding at this temperature for 3-4 hours and furnace-cooling to 450 - 400 °C. After this treatment the steels contain 40% carbides, i.e. in this

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respect they approach the constitution of cemented carbides. After hardening and tempering, the carbide content is not less than 20 - 30%, which ensures high hot-hardness of the steel and outstanding wear-resistance. The objective of combining high strength and toughness of the steels with high wear-resistance and stability at high temperatures was attained by reducing the V/C ratio from the generally recommended value of 3.0-3.2 to 2.2-2.7. As a result, it was possible to lower the hardening temperature and to reduce the holding time at the temperature. Thus, steel R18F4K8M is hardened by pre-heating to 840-860 °C, transferring it to a salt bath at 1 240-1 260 °C, holding in the bath for a time calculated on the basis of 4-5 sec per each 1 mm of the specimen thickness and quenching in oil. Tempering of steel hardened in this manner consists of 2-3 hours at 580-600 °C. The properties of the steels studied after various heat-treatments are given in Table 3. The fact that the steels under consideration can be effectively hardened under conditions described above is demonstrated in Fig. 2, where the hardness (HRC) of a steel R18F4K8M specimen (measuring 27 x 27 x 40 mm), oil-quenched from 1 240 °C, is plotted against the distance (mm) from the centre of the specimen, the number by

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each curve indicating the time (sec/mm) in the salt bath at 1 240 °C. The results of dilatometric studies showed that when steel R18F4K8M was air-cooled after tempering at 550-560 °C a bainitic transformation took place at 350 - 250 °C, the martensitic transformation occurring at much lower temperatures (140-150 °); the bainitic transformation could be suppressed by oil-quenching the steel from the tempering temperature. Further experiments showed that accelerated cooling after tempering brought about an increase in the impact and transverse-bending strength of the steel. A similar increase in the impact strength of hardened and tempered specimens was attained by a second tempering at 300 - 400 °C, which relieved internal stresses set up during the first tempering treatment. The wear-resistance of the new steels was tested in the next series of experiments, both under laboratory and industrial conditions. These experiments consisted of machining tests on several austenitic steels and similar, difficult-to-machine alloys. The results showed that tools made of the new steels were two to three times more durable than those made of conventional materials. This is demonstrated in Fig. 12, where the durability (min) of cutting steels made of various materials

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and tested in turning (without coolant) steel ЭИ617 (EI617) is plotted against the cutting speed (m/min); the experimental conditions were s = 0.1 mm/rev; t = 2 mm; h_3 = 0.5 mm; blocks nos. 1-5 relate to tools made of the following alloys: Р9К5 (R9K5); Р9К10 (R9K10). There are 12 figures and 4 tables.

Key to Table 3: Main physicochemical properties of the new high-speed cutting steels with carbide-particle size ranging from 2-4

1 - Type of steel; 2 - After annealing; 3 - After hardening and tempering; 4 - Quantity of residual austenite, %; 5 - Hardness, HB; 6 - Weight of carbide residue, %; 7 - Impact strength, kgm/cm^2; 8 - Transverse bending strength, kg/mm^2; 9 - Impact strength, kgm/cm^2; 10 - Hardness, HRC; 11 - Temperature at which the steel begins to soften, °C; 12 - Hot hardness at 600 °C, HRC; 13 - After hardening; 14 - After tempering; 15 - Less than; 16 - ditto

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S/563/62/000/218/003/004

New high-speed cutting steels E193/E383

Table 3:

(1) Марка стали	(3) Состояние стали после отжига			(2) Состояние стали после закалки и отпуска					Количество остаточного аустенита, % (4)	
	Твердость HB (5)	Вес карбидного осадка, % (6)	Ударная вязкость, кГм/см² (7)	Предел прочности при изгибе, кГ/мм² (8)	Ударная вязкость, кГм/см² (9)	Твердость HRC (10)	Красностойкость, °С (11)	Горячая твердость при 600° HRC (12)	после закалки (13)	после отпуска (14)
Р9Ф4К8М	241—255	26—30	4,0—5,0	235—250	1,0—1,5	65—66	635	54—56	50	(15) Меньше 5
Р18Ф2К8М	255—269	33—38	2,0—2,5	240—260	0,8—1,3	65—67	650	58—60	45	То же (16)
Р18Ф3К8М	255—277	38—42	1,8—2,0	200—220	0,8—1,3	68—70	650	58—60	55	•
Р18Ф4К8М	255—277	38—42	1,8—2,0	210—230	0,8—1,3	66—68	650	58—60	55	•

Table 1:

(TYPE OF STEEL) Марка стали	C	Cr	W	V	Co	Mo
Р9Ф4К8М (R9F4K8M)	1,3—1,45	3,8—4,2	9—10	3,0—3,6	7,5—8,5	0,8—1,0
Р18Ф2К8М (R18F2K8M)	0,95—1,05	3,8—4,2	17—19	2,0—2,5	7,5—8,5	1,0—1,2
Р18Ф3К8М (R18F3K8M)	1,45—1,55	3,8—4,2	16—18	2,8—3,2	7,5—8,5	1,0—1,2
Р18Ф4К8М (R18F4K8M)	1,25—1,40	4,4—5,0	16,5—17	3,2—3,8	7,5—8,5	1,2—1,5

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

S/563/62/000/218/003/004
New high-speed cutting steels E193/E383

Fig. 2:

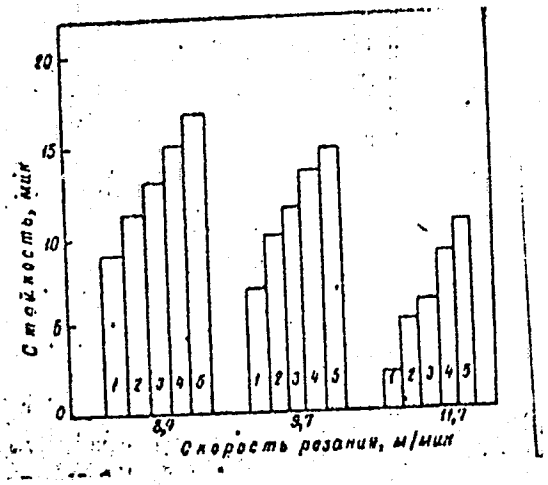
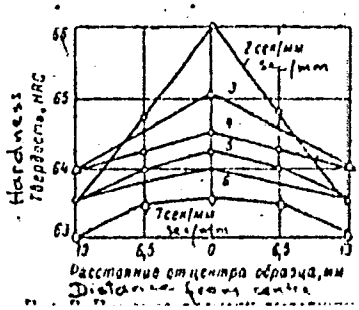


Fig. 12:



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VYAZNIKOV, N.F., kand. tekhn. nauk, inzh., red.; FREGER, D.P., red. izd-va; BOL'SHAKOV, V.A., tekhn. red.

[Modern problems in physical metallurgy] Sovremennye voprosy fizicheskogo metallovedeniia; materialy seminara, provedennogo v Leningradskom Dome nauchno-tekhnicheskoi propagandy 9-11 maia 1961 g. Leningrad, 1962. 60 p. (MIRA 15:6)
(Physical metallurgy)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

S/137/62/000/001/147/237
A006/A101

AUTHORS: Vyaznikov, N.F., Popandopulo, A.N.

TITLE: The ratio of the carbon and vanadium content in high-speed steels

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 1, 1962, 39, abstract 1I266 (V sb. "Stal'", Moscow, Metallurgizdat, 1961, 469 - 477)

TEXT: In high-speed C-V steels, used in practice, the following relation between the C and V content is observed: C = 0.7 + 0.2(V - 1). In this case, extended holding times are required for heating for quenching, to assure carbide dissolving and high red-hardness; holding time attains up to 10 sec/mm or, according to some recommendations, up to 20 sec/mm of the work piece thickness (diameter). This causes growth of austenite grains in the carbide and the separation of carbide along the grain boundaries, simultaneously reducing strength and ductility. Investigations were made with 20 heats with a large range of alloying element contents (0.9 - 1.8% C; 1.2 - 5.0% V) and it was established that the best technological properties, which make it possible to reduce holding down to 3 - 4 sec/mm, are attained at a C content raised by 0.2 - 0.3%, or by reducing V correspondingly to relation C = 0.9 + 0.25(V-1). Grade Р18Ф3К8М (R18F3K8M)

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A006/A101

steel (1.54% C, 3.18% V) when oil-quenched from 1,240°C and triple-annealed at 560°C, by 1 hour holding, shows high R_C (up to 70, during 4-hour tests at 650°C, R_C does not drop below 60. The steel structure is fine-grained and consists of non-acicular martensite, bainite and carbides. The steel is suitable for the machining of hard-to-deform alloys under impact cutting conditions. There are 7 references.

Ye. Bukhman

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

GULYAYEV, A.P., doktor tekhn.nauk, prof.; DELLE, V.A., doktor tekhn.nauk, prof.; YUR'YEV, S.F., doktor tekhn.nauk, prof.; BORZDYKA, A.M., doktor tekhn.nauk; VYAZNIKOV, N.F., kand.tekhn.nauk

"Principles of steel alloying" by [prof.] V.S.Mes'kin. Reviewed by A.P.Guliaev and others. Stal' 21 no.5:454-455 My '61. (MIRA 14:5)

(Steel alloys--Metallurgy)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

S/122/60/000/002/015/018
A161/A130

AUTHORS: Vyaznikov, N. F.; Khoroshavylov, V. G.; - Candidates of Technical Sciences; Popandopulo, A. N., Engineer

TITLE: The heating of turbine blades in a salt bath

PERIODICAL: Vestnik mashinostroyeniya, no. 2, 1960, 71 - 72

TEXT: Heating in a salt bath is being used for heat treatment of steel but not for forging. One of the reasons is the salt film left on metal. But heating in a salt bath gives quick and even heating, the metal surface is not oxidized, and automatic accurate heat control is possible. These advantages are particularly important for turbine blades. Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad Polytechnical Institute im. M. I. Kalinin) jointly with Nevskiy zavod im. V. I. Lenina (Neva Plant im. V. I. Lenin) have found means for removing the salt film after salt bath - by quick and brief immersion of the billet into cold water. The film instantaneously turned into a solid crust and separated leaving the metal surface perfectly free from salt. A worker of average skill easily completed the immersion in 2 - 3 sec, and the billets heated to 1,250°C cooled not more than 20 - 25°C. The experiment material were turbine blade billets

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from heat resistant 2X13 (2Kh13), 15X11MФ (15Kh11MF) and ЭИ726 (EI726) steel, 60 to 75 mm in diameter and 200 to 350 mm length, of the following chemical composition (Table 1):

(%)	C	Si	Mn	Cr	Ni	Mo	W	V	Nb
2Kh13	0.20	0.6	0.06	14.0	0.6	-	-	-	-
15Kh11MF	0.16	0.5	0.6	11.5	0.6	0.6	0.4	-	-
EI726	0.10	0.8	1.5	14.0	20.0	-	-	2.5	1.0

The billets were heated to 1,230 - 1,250°C in СП-2-35 (SP-2-35) salt bath, and in an electric furnace with silite heaters for comparison. The temperature of both the bath and the furnace was controlled with a platinum/platinum-rhodium thermocouple. Heating time in the furnace was 25 - 30 sec per 1 mm billet diameter, and in the salt bath only 10 - 12 sec/mm. To cut down the heating time further and to prevent moisture from getting into the salt bath, billets were preheated in a chamber furnace with 200 - 700° temperature. Billets preheated to 600° were heated finally in a salt bath, at 3 - 4 times faster rate than in the furnace. Heating to higher temperature in the furnace was avoided to prevent oxidization of metal. Salt of two different compositions was tried - a) 100% barium chloride, and b) 78% barium chloride + 22% sodium chloride. The second composition developed intense

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fuming at 1,250°C, therefore, preference was given to 100% barium chloride. It is concluded that salt-bath heating is practically nonoxidizing. Billets needed no cleaning after immersion into cold water. The method is recommended for application. There are 2 tables.

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VYAZNIKOV, N.F., kand.tekhn.nauk; KHOROSHAYLOV, V.G., kand.tekhn.nauk, POPANDOPULO, A.N., inzh.

Heating steel billets in salt baths for stamping. Vest.mash. 40 no.2:71-72 F '60. (MIRA 13:5)
(Machine-shop practice)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZNIKOV, Nikolay Filippovich; BERLIN, Ye.N., red. izd-va; KARASEV, A.I., tekhn. red.

[Thermal treatment of steel] Termicheskaia obrabotka stali. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 349 p. (MIRA 14:7)
(Steel—Heat treatment)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

PHASE I BOOK EXPLOITATION SOV/4024

Vyaznikov, Nikolay Filippovich, and Sergey Stepanovich Yermakov

Primeneniye izdeliy poroshkovoy metallurgii v promyshlennosti (Use of Powder-Metallurgy Products in Industry) Moscow, Mashgiz, 1960. 187 p. Errata slip inserted. 5,000 copies printed.

Reviewer: P.B. Mikhaylov-Mikheyev, Professor; Ed.: M.I. Koryukov, Docent, Candidate of Technical Sciences; Ed. of Publishing House: M.A. Chfas; Tech. Ed.: A.I. Kontorovich; Managing Ed. for Literature on Machinery Manufacturing (Leningrad Division, Mashgiz): Ye. P. Naumov, Engineer.

PURPOSE: This book is intended for technical personnel in machine and instrument manufacturing industries. It may also be useful to students at schools of higher technical education.

COVERAGE: The authors describe methods of producing powders from various ferrous and nonferrous metals and the manufacture of rare and refractory metals by powder metallurgy. The theory and methods of manufacturing powdered-metal products and the properties of such

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products (friction and antifriction materials, carbides and heat-resistant alloys, filters, magnets and other machine parts, etc.) are presented. No personalities are mentioned. There are 83 references: 63 Soviet, 12 English, 7 German, and 1 Polish.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZNIKOV, N.F.; YERMAKOV, S.S.; SOLDATOVA, N.N.

Cementation of chromium stainless steel. Trudy LPI no.202:87-90 '59. (MIRA 12:12)
(Steel, Stainless) (Cementation (Metallurgy))

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

VYAZNIKOV, N.F.; YERMAKOV, S.S.; POPANDOPULO, A.N.

Cracking during the gas cutting of steel. Trudy LPI no.202:91-92 '59. (MIRA 12:12)

(Gas welding and cutting)

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78124
SOV/129-60-3-3/16

AUTHORS: Vyaznikov, N. F., Yermakov, S. S., Soldatova, N. N. Candidates of Technical Sciences)

TITLE: Case Hardening of Chromium Stainless Steel

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 3, pp 11-13 (USSR)

ABSTRACT: This is a report concerning the determination of a method of case hardening of steels 1Kh13 and 1Kh17, with the purpose of increasing the surface hardness of products made from them. Low-chromium stainless steel does not have a sufficient hardness in hardened state and therfore cannot be used for products subject to abrasion and compression wear, etc. The chemical composition of investigated steels is given in Table 1.

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Case Hardening of Chromium Stainless Steel

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Table 1.

Distribution of Steel	Chemical Composition of Steel				
	C	Si	Mn	Cr	Ni
1X13	0,12	0,75	0,66	13,3	0,20
1X17	0,10	0,80	0,90	18,0	0,60

Case hardening was done in a solid carburizing agent, containing 85% of birch charcoal, 10% of sodium carbonate, and 5% of barium carbonate. The 20 x 20 x 60 mm samples were packed in iron boxes, heated for 12 hr at 900°, 950°, 1,000°, and 1,050° C and cooled in the air. The hardness of samples, quenched from 1,000° C after case hardening for

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Case Hardening of Chromium Stainless Steel 78124
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4-12 hr at various depths of case hardened layer, is illustrated in Figure 1.

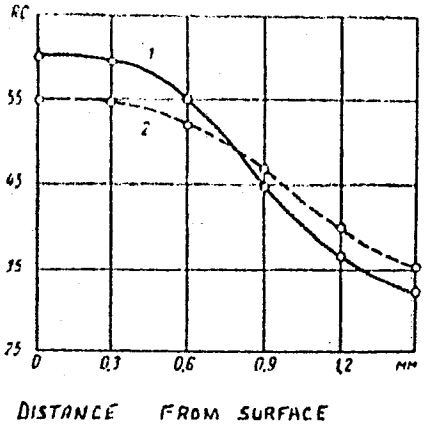

Fig. 1. Hardness of samples, hardened from 1,000° C, at various depths of case hardened layer: (1) steel 1Kh13; (2) steel 1Kh17.

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The conducted tests proved that the maximum hardness of stainless steel (without case hardening) after quenching from 1,000-1,500° C is not over 30 RC, while after case hardening it increases to 55-60 RC. The steel which was case hardened at 950° C differs very little (in hardness) from the steel case hardened at 1,000° C. Therefore, the authors recommend case hardening components made from stainless steels 1Kh13 and 1Kh17 at 950° C and quenching them from 1,000° C. There are 2 figures; and 5 tables.

ASSOCIATION: Leningrad Polytechnic Institute imeni M. I. Kalinin (Leningradskiy Politekhnicheskiy institut imeni M. I. Kalinina)

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VYAZNIKOV, N.F. ; YERMAKOV, S.S.

Investigating steels for bore bits. Trudy LPI no.202:93-98 '59. (MIRA 12:12)

(Tool steel--Testing) (Boring machinery)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

PETRASH, Leonid Vasil'yevich; VYAZNIKOV, N.F., kand.tekhn.nauk, retsenzent; ZAMYATNIN, M.M., kand.tekhn.nauk, red.; BORODULINA, I.A., red.izd-va; SHCHETININA, L.V., tekhn.red.

[Tempering agents] Zakalochnye sredy. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1959. 111 p. (MIRA 12:7)
(Tempering)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320016-2

Leningrad. Politekhnicheskiy institut imeni M. I. Kalinina

Metallovedeniye (Physical Metallurgy) Moscow, Mashgiz, 1959. 107 p. (Series: Its: Trudy, vyp. 202) 2,300 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Resp. Ed.: V. S. Zairnov, Doctor of Technical Sciences, Professor; Ed.: G. A. Kashchenko, Professor; Tech. Ed.: L. V. Shchetinina; Managing Ed. for Literature on the Design and Operation of Machinery (Leningrad Division, Mashgiz): F. I. Fetisov, Engineer.

PURPOSE: This collection of articles is intended for engineers, technicians, and research workers in the fields of physical metallurgy and the heat treatment of metals.

COVERAGE: The papers in this collection contain the results of experimental work dealing with the study of constitution diagrams of metal systems, the nature of solid solutions, aging of complex alloys, processes occuring during the heating and cooling of alloys, and the thermochemical treatment of steel.

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Vyazmikov, N. P., S. S. Yermakov, and N. N. Soldatova. Carburizing of Chrome Stainless Steel 87

Regimes are given for carburizing, quenching, and tempering, and results of a determination of the hardness and chemical stability of the case are given.

Vyazmikov, N. P., S.S. Yermakov, and A. N. Popandopulo. Cracks in the Gas Cutting of Steel 91

Results are given of a metallographic investigation of the causes of crack formation in the cut zone of case-hardened alloy steel cut with an oxyacetylene flame. Methods of controlling this problem are presented.

Vyazmikov, N. P., and S.S. Yermakov. Investigation of Steel for Drill Bits 93

Data are given on the testing of three types of case-hardened steel under conditions approximating those under which drill bits made of these steels operate. A method of heat treating these bits is outlined.

Nazarenko, G. T. Decomposition of Residual Austenite During the Tempering of Carbon Steel 99

This article and the one following give the results of an investigation of the dependence of magnetic saturation on tempering temperature in the case of carbon steels having a carbon content of 0.2 to 1.7 percent. It can be concluded from an analysis of the curves that the decomposition of residual austenite is independent of the carbon content and begins at 100° C.

Nazarenko, G. T., and N. V. Rozhdestvenskaya. Investigation of the Tempering of Steels by the Magnetic Method 102

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mechanical properties of three spring alloys, tin-phosphorus, beryllium-bronze, and German silver. The elastic limit and elastic aftereffect, little studied characteristics, are assumed to be of basic importance. It is shown that heat treatment is decidedly helpful in improving the alloys with respect to these properties.

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SOV/129-59-6-9/15

AUTHORS: Vyaznikov, N.F., Yermakov, S.S., Candidates of Technical Sciences

TITLE: Residual Stresses in the Hardened and the Case-hardened Layer (Ostatochnyye napryazheniya v zakalennom tsementovannom sloye)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1959, Nr 6, pp 41 - 45 (USSR)

ABSTRACT: The aim of the work described in this paper was to establish the influence of the steel composition and also of the depth and the structure of the carburized layer on the magnitude and the character of the distribution of the residual stresses in carburized components. The influence of alloying elements and of the carbon contents on the residual stresses in carburized and heat-treated specimens was investigated on alloy and carbon steels with compositions as given in the table on p 42. Cylindrical specimens of 12 mm dia, 150 mm length, were investigated after being carburized in a mixture of 85% charcoal, 10% sodium carbonate and 5% barium carbonate at 910-920 °C for durations of 3-20 hours. Immediately after removal from the carburization boxes, the specimens were quenched in oil and quenched for a second time in oil from 780-800 °C. Following that, the specimens were tempered for 1 hour at 200 °C and

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Residual Stresses in the Hardened and the Case-hardened Layer

cooled in air. For one of the steels the specimens were subjected to intermediate tempering at 560-680 °C for a duration of 4 hours prior to the second quenching. On the basis of the obtained results, the following conclusions are arrived at.
1) The magnitude of the residual stresses and the character of their distribution along the cross-section of the quenched, carburized specimen depends on the depth of the carburized layer, as well as on the chemical composition of the steel.
2) On increasing the depth of the carburised layer from 0.6-2.2 mm, the magnitude of the residual surface stresses changes greatly. In the case of relatively shallow carburization depths, there are compression stresses at the surface of the specimens which increase with increasing depth of carburization up to carburization depths of 1.2 mm. Further increase of the carburization depth leads to a reduction in the compression stresses and in the case of carburization depths exceeding 2 mm, residual tensile stresses will be present at the specimen surfaces.

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Residual Stresses in the Hardened and the Case-hardened Layer

3) In accordance with the changes in the residual surface stresses, there will also be changes in the magnitude and the character of the stresses along the cross-section of the carburized specimens. If the depth of carburization does not exceed 1.2 mm, there will be a continuous change in the residual stresses along the cross-section. However, if the carburization depth exceeds 2 mm, the curve representing the distribution of the residual stresses will show a discontinuity in the compression stresses.

4) The magnitude and the character of the residual stresses are greatly dependent on the presence in the structure of a hardened layer of excess carbides and of residual austenite.

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Residual Stresses in the Hardened and the Case-hardened Layer

There are 2 figures, 1 table and 3 Soviet references.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

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AUTHORS: Vyaznikov, N. F., Yermakov, S. S. SOV/163-58-3-39/49

TITLE: Residual Stresses in Steels at Chemical and Thermal Treatment (Ostatochnyye napryazheniya v stali pri khimiko-termicheskoy obrabotke)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 236 - 241 (USSR)

ABSTRACT: The influence exerted by the composition of the steel on the extent and the character of the distribution of the residual stresses in cementite samples was investigated, and the extent and the character of the distribution of the residual tension in the subsurface region and the structure of the cementite layer were determined. The investigations were carried out with the steel samples 25Kh2GT and 25Kh2GN2T. To investigate the influence exerted by carbon on the extent and the distribution character of the residual stress carbon steels of the types 20, 30 and 40 were cemented at depths of 1,5 - 1,6 mm. The cementation of the samples was carried out in the carbonizer at temperatures of 910-920° within 3-20 hours. Then the samples were again hardened in oil at 780-800°. From

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the investigations carried out may be seen that with a cementation layer of a thickness of up to 1,6 mm in all samples the residual tension decreases, which is also the case when the carbon content of the steel is increased. When the diameter of the samples increases and the thickness of the layer of cementite remains the same the extent of the surface compression stress is increased. Until the optimum thickness of the cementite layer is reached the change of the residual stress proceeds on the melting curve. With a thicker cementite layer a removal of the residual tension is observed. There are 3 figures, 2 tables, and 6 references, all of which are Soviet.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

SUBMITTED: October 1, 1957

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