YEL'YASHKEVICH, Samuil Abramovich; PEVZNER, I.M., inzh., retsenzent; BABUK, G.V., inzh., retsenzent; PEVZNER, I.N., red.; ZHITNIKOVA, tekhn. red.

[Elimination of faults in television receivers] Ustranenie neispravnostei v televizore. Izd.3., perer. i dop. Moskva, Gos. energ. izd-vo, 1961. 205 p. (Massovaia radiobiblioteka, no. 387)
(Television—Repairing)

PEVZNER, I.S.

Clinical aspects of cardiac tamponade. Zdrav. Belor. 6 no.4:67-68 Ap '60. (MIRA 14:5)

1. Minskaya oblastnaya klinicheskaya bol'nitsa (glavnyy vrach G.A.TSgoyev).

(HEART—DISEASES)

PEVZNER, I.S.

Hardness of abrasive tools. Standartizatsiia 25 no.6:34-60 Je '61. (MIRA 14:6)
(Grinding wheels--Standards)

IVANOV, I.T., kandidat tekhnicheskikh nauk, otvetstvennyy redaktor; ANTONOV, K.K., redaktor; VOLZHENSKIY, A.V., redaktor; GORNOV, V.N., redaktor; KUZNETSOV, G.P., redaktor; PEYZNER, I.V., inzhener, redaktor; ROTERT, P.P.; FRIDBERG, G.V., redaktor; PECHKOVSKAYA, T.V., tekhnicheskiy redaktor

[Skyscraper designs; experience in design and construction] Konstruktsii vysotnykh zdanii; iz opyta proektirovaniia i vozvedeniia. Red. kollegiia I.T.Ivanov, K.K.Antonov, A.V.Volzhenskii i dr. Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1952. 103 p. [Microfilm] (MLRA 7:10)

1. Chlen-korrespondent Akademii arkhitektury SSSR (for Antonov, Volzhenskiy, Gornov, Kuznetsov, Rotert) 2. Akademiya arkhitektury SSSR, Moscow. Institut stroitel'noy tekhniki.
(Skyscrapers)
(Architecture--Designs and plans)

PEVZNER, I.Ya.

Diagnosis of auricular infarct. Terap. arkh. 29 no.7:48-51 Jl '57. (MIRA 11:4)

1. Iz kliniki propedevtiki vnutrennikh bolezney (zav.-prof. S.V. Shestakov) Kuybyshevskogo meditsinskogo instituta.
(MYOCARDIAL INFARCT, diagnosis,
auric. (Rus)

PEVZNER, I.Ya. (Chapayevsk)

Rupture of the right ventricle of the heart. Kaz. med. zhur.4: 60 Jl-Ag'63 (MIRA 17:2)

PEVZNER, I.Ya. (Kuybyshev)

Nature of various conduction disorders in myocardial infarct. Pat. fiziol. i eksp.terap. 3 no.6:62 N-D '59. (MIRA 13:3)

1. Iz kliniki propedevtiki vnutrennikh bolezney (zaveduyushchiy - prof. S.V. Shestakov) Kuybyshevskogo meditsinskogo instituta.
(MYOCARDIAL INFARCT pathology)

ZHEVNOVATYY, A.I.; VOLKOV, V.N.; PEVZNER, I.Z.; Prinimali uchastiye: KRUK, O.P.; KRUTITSKIY, V.M.; KOL'TSOV, I.M.; TSVETKOV, F.A.

Effect of elastic ultrasonic waves on reducing the speed of scale formation. TSvet. met. 35 no.3:48-53 Mr '62. (MIRA 15:4)

(Ultrasonic waves--Industrial applications)

ABRAMOV, V.Ya.; PIVNER, I.I.

Analysis of the performance of primary carbonation towers in alumina production. Tsvet. met. 35 no.4:[illegible] Ap '62.

(MIRA 15:3)

Pevzner, K. S.

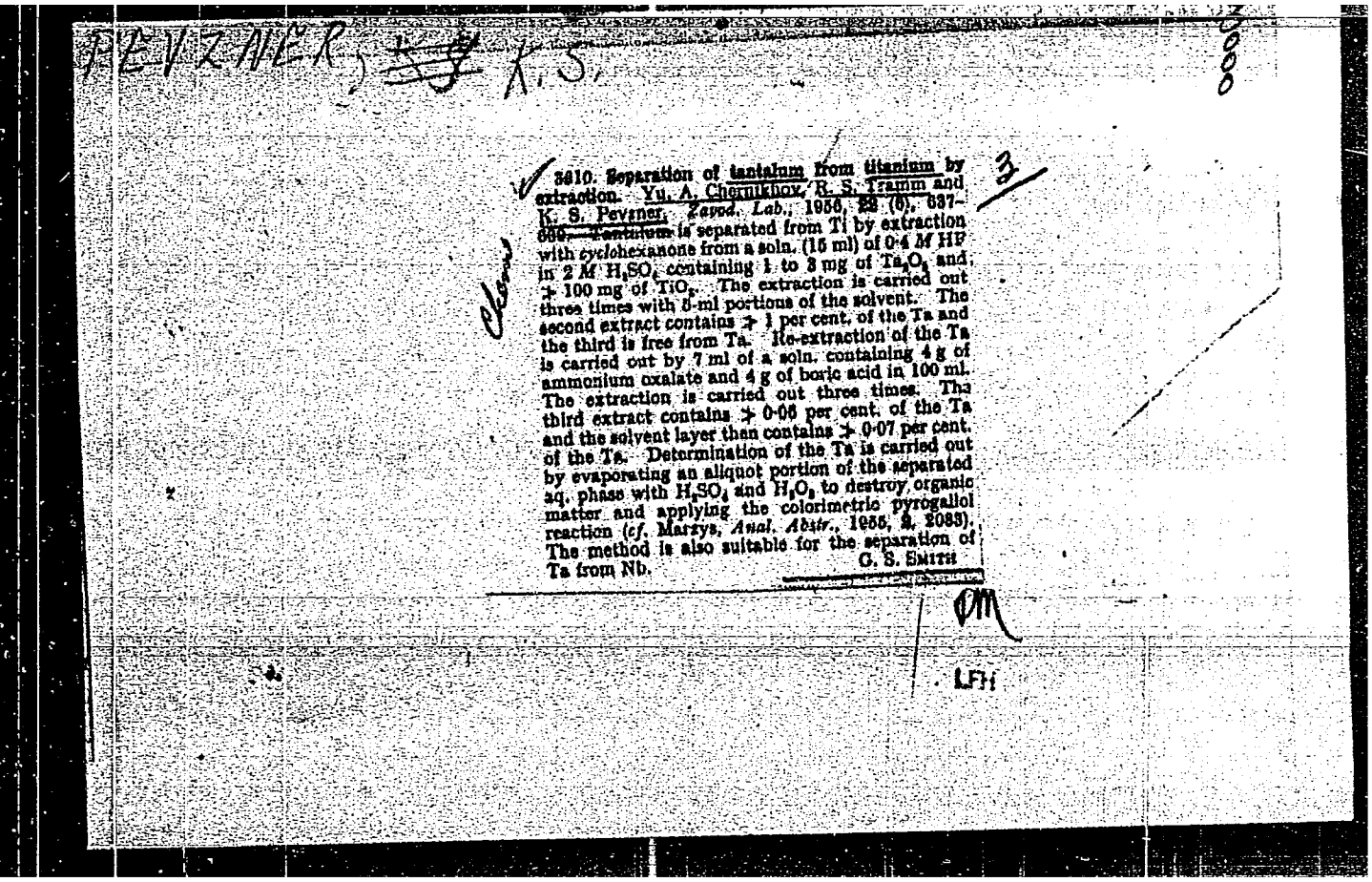
27

27 1-4E2C

4

The determination of niobium in titanium tetrachloride. K. S. Tramm and K. S. Pevzner. *Zavodskaya Lab.* 22, 1025-7(1950).—Two methods are recommended for the detn. of Nb in $TiCl_4$, where the ratio of concns. may reach 1-25,000. (1) Most of the $TiCl_4$ can be sepd. by volatilization at a pressure of 50 mm. (at which pressure $TiCl_4$ boils at 60°), and Nb is then detd. colorimetrically in an aliquot of the residue with CNS^-. (2) Nb can be detd. by pptn. with tannin from a soln. contg. $TiCl_4$. Metallic Cd was best for reduction. The sensitivity of either method is around 0.001% Nb, and can be increased by the detn. of Ti in the Nb residue.

W. M. Sternberg



PEVZNER, I. S.

3810. Separation of tantalum from titanium by extraction. Yu. A. Chernikhov, R. S. Tramm and K. S. Pevzner. *Zavod. Lab.*, 1956, 22 (6), 687-688. Tantalum is separated from Ti by extraction with *cyclo*hexanone from a soln. (15 ml) of 0·4 *M* HF in 2 *M* H_2SO_4 containing 1 to 3 mg of Ta_2O_5 and + 100 mg of TiO_2. The extraction is carried out three times with 8-ml portions of the solvent. The second extract contains + 1 per cent. of the Ta and the third is free from Ta. Re-extraction of the Ta is carried out by 7 ml of a soln. containing 4 g of ammonium oxalate and 4 g of boric acid in 100 ml. The extraction is carried out three times. The third extract contains + 0·06 per cent. of the Ta and the solvent layer then contains + 0·07 per cent. of the Ta. Determination of the Ta is carried out by evaporating an aliquot portion of the separated aq. phase with H_2SO_4 and H_2O_2 to destroy organic matter and applying the colorimetric pyrogallol reaction (*cf.* Marzys, *Anal. Abstr.*, 1955, 2, 2083). The method is also suitable for the separation of Ta from Nb.

G. S. SMITH

5(2)

SOV/32-25-4-4 71

AUTHORS: Chernikov, Yu. A., Ivanov, K. S., Revzner, K. S.

TITLE: Determination of Tantalum in Niobium (Opredeleniye tantala v niobii)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 4, pp [illegible] (USSR)

ABSTRACT: As the niobium is used for heat-resisting alloys, the content of tantalum in it is strictly limited. A method is described by which tantalum in niobium is determined according to the reaction with pyrogallol in a mixture of sulphuric and oxalic acid on the photoelectrocolorimeter FEK-N with a light filter Nr [illegible]. The tantalum is extracted from the main quantity of the niobium by cyclohexanone from a hydrofluoric-sulphuric-acid mixture before the determination (Ref 1). The present method was completed in 1957, i.e. before the publication of a similar method (Ref 2). It was ascertained that at a concentration of hydrofluoric acid of 0.4 - 1.2 moles and sulphuric acid 3 tantalum practically passes completely into the cyclohexanone layer (Table 1). The reliability of the described method was examined by the method of adding Nb_2O_5 samples (Table 3).

Card 1/2

SOV/32-25-4-4[illegible]

[illegible]termination of Tantalum in Niobium

The determination can be carried out with a sensitivity of 0.02% and an accuracy of ± 10% which is usual in the analysis for traces of impurities. It is recommended for analysis of niobium to transfer the niobium into the oxide before the [illegible]. There are 3 tables and 4 references, 3 of which are [illegible].

ASSOCIATION: [illegible] Nauchno-issledovatel'skiy institut redkikh metallov (State Scientific Research Institute of Rare Metals)

Card 2/2

ACCESSION NR: AP4015321 S/0032/64/030/001/0020/0022

AUTHORS: Tramm, R. S.; Pevzner, K. S.

TITLE: Photometric determination of niobium content in ores with the use of acid chromoviolet pigment K

SOURCE: Zavodskaya laboratoriya, v. 30, no. 1, 1964, 20-22

TOPIC TAGS: niobium, niobium ore, chromoviolet pigment, K pigment, Nb detection, B pigment, SF 10 spectrophotometer, FEK N 54 photoelectrocolorimeter

ABSTRACT: The formula for the chromoviolet pigment K is identical to that for the anthracene-chromoviolet die B previously used for photometric determination of Nb in ores. Pigment B (a sodium salt 5-sulfo-2-oxybenzene-azo-β-naphthol) is applicable for detecting Nb in the presence of large quantities of Ti. Both pigments have similar absorption curves, but the specific absorption intensity of K is somewhat lower. The B pigment is soluble in water while K is soluble in the water-acetone solution. The red-violet reaction of Nb with K takes place in hydrochloric acid and is not affected by tartaric acid added to prevent the hydrolysis of Nb. The maximum color intensity is obtained in 40 minutes at room

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ACCESSION NR: AP4015321

temperature and in 5-10 minutes after warming in hot water to 60-70C. The optical density of the solutions of Nb with the pigment is directly proportional to the Nb concentration. The light-absorption curves of the K solutions and of the K combination with Nb were registered by the SF-10 spectrophotometer. The experiments were performed in the photoelectrocolorimeter FEK-N-54. The results obtained are shown on Fig. 1 of the Enclosure. The minimum Nb quantity detected was 2 micrograms in 10 milliliters. "T. F. Kuznetsova and L. P. Savel'yeva participated in the experimental work." Orig. art. has: 2 tables and 1 figure.

ASSOCIATION: Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut redkometallicheskoy promy*shlennosti (State Scientific Research and Design Institute of Rare Metals Industry)

SUBMITTED: 00

DATE ACQ: 03Feb64

ENCL: 01

SUB CODE: MM

NO REF SOV: 004

OTHER: 001

Card 2/2

L 29982-65 EWT(m)/EPF(n)-2/EPR/EWP(t)/EWP(b) Ps-4/Pu-4 IJP(c) JD/JW/JG

ACCESSION NR: AP5005473 S/0032/65/031/002/0163/0163

AUTHORS: Tramm, R. S.; Pevzner, K. S. 27 26 B

TITLE: Titrimetric determination of zirconium and aluminum in binary alloys 27

SOURCE: Zavodskaya laboratoriya, v. 31, no. 2, 1965, 163

TOPIC TAGS: zirconium, aluminum, titrimetry, alloy, hydrochloric acid, thorium compound, chemical reaction, complexone

ABSTRACT: The large difference of the pH values in titrating zirconium and aluminum makes it possible to determine the amounts of these elements consecutively in one solution. The mean quadratic error of the determination is up to 0.7% for zirconium and 1.3% for aluminum. Zirconium is titrated in 2-N hydrochloric acid with xylenol orange indicator; aluminum is determined by reverse titration of the excess complexone III with a thorium solution, using the same indicator. The process consists of melting the alloy with potassium pyrosulfate, treating it with hydrochloric acid, filtering out the sesquioxides and dissolving them in hydrochloric acid. Xylenol orange is then added to the hot solution, and zirconium is titrated with complexone III. After the bright magenta color changes to pink, the solution is heated to boiling, and complexone is added in drops until the color

Card 1/2

L 29982-65

ACCESSION NR: AP5005473

turns yellow. The solution is then cooled, treated with more complexone, and left to stand at room temperature. Next, the solution is neutralized with ammonia, diluted with water, and mixed with monochloroacetic acid, sodium acetate, and xylenol orange. The excess of complexone is then titrated with thorium nitrate until the yellow coloration changes to red. The amount of aluminum present is determined from the amount of complexone used.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti (State Scientific Research and Design Institute of the Rare Metal Industry)

SUBMITTED: 00 ENCL: 00 SUB CODE: IC, GC

NO REF SOV: 001 OTHER: 000

Card 2/2

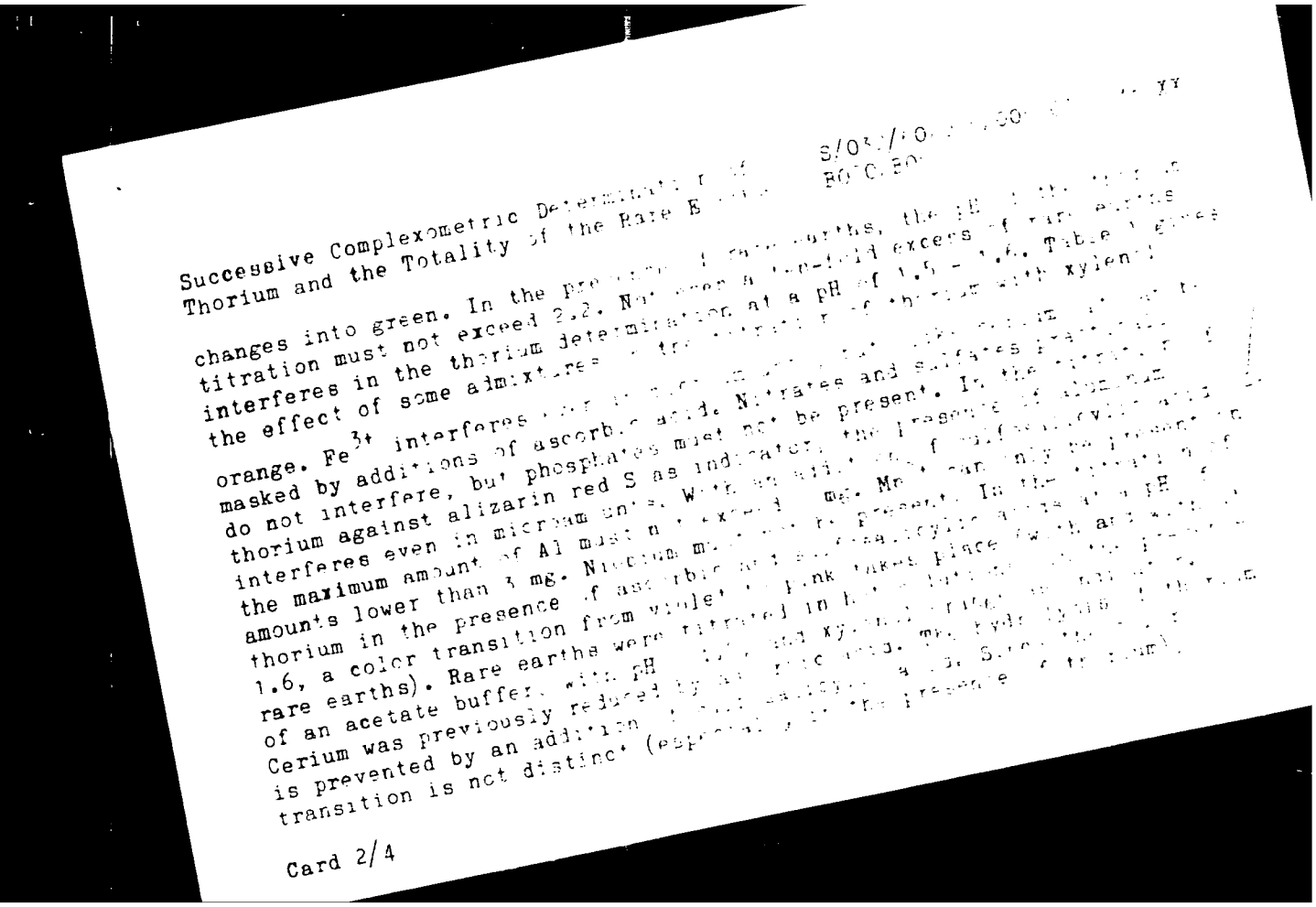
AUTHORS: Chernikov, Yu. A.

TITLE:

PERIODICAL: Zavodskaya Laboratoriya, 1960, Vol. 26, No. 8, pp. 913-915 (USSR)

TEXT: In the present paper the possibility is examined of successively determining thorium and the total content of rare earths by complexometric titration at different pH values without preceding separation. The selectivity of the method is attained at low pH values, therefore, xylenol orange, alizarin red S, and arsenazo were used as indicators. The composition of the rare earth mixture is such: 25% of La_2O_3, 13% of Nd_2O_3, 5% of Pr_6O_{11}, and 0.5% of Sm_2O_3. All remaining 1% of the yttrium group was present; the average molecular weight of the mixture was 392. First, thorium was titrated with complexon III at a pH less than 3. At a pH = 1.5 - 2.5, a distinct color transition from red to lemon takes place when xylenol orange is used. With alizarin red S red

Card 1/4



Successive Complexometric Determinations [illegible]
Thorium and the Totality of the Rare E[illegible]

S/03[illegible]/0[illegible]/00[illegible] [illegible] yy
B0[illegible]B0

changes into green. In the pr[illegible] rare earths, the pH [illegible] the titration must not exceed 2.2. Not [illegible] a ten-fold excess of rare earths interferes in the thorium determination at a pH of 1.5 - 1.6. Table 1 gives the effect of some admixtures [illegible] thorium with xylenol orange. Fe^{3+} interferes [illegible] masked by additions of ascorbic acid. Nitrates and sulfates [illegible] do not interfere, but phosphates must not be present. In the [illegible] thorium against alizarin red S as indicator, the [illegible] interferes even in microgram quan[illegible]. With an [illegible] the maximum amount of Al must not [illegible] mg. Mn [illegible] amounts lower than 3 mg. Niobium [illegible] thorium in the presence of ascorbic [illegible] 1.6, a color transition from violet [illegible] rare earths). Rare earths were titrated in [illegible] of an acetate buffer, with pH [illegible] Cerium was previously reduced by [illegible] is prevented by an addition [illegible] transition is not distinct (especially [illegible]

Card 2/4

Successive Complexometric Determination of Thorium and the Totality of the Rare Earths

methylene blue is added. Titration of the sum of the elements in the titration of the rare earths. The time for the titration amounts of up to 70 mg for 150 ml. Mn has to be removed by a double oxidation by ch. form with pH = 5. Aluminum of the rare earths may be bound by an addition of sulfosalicylic acid. If aluminum is added in an amount of up to 5 mg. rare earths can be titrated with [illegible]. If aluminum is used as indicator, not more than 30 mg of Th are allowed to be present. In the titration of rare earths against arsenazo I, only a transition only takes place at a pH of 5.5 while in the presence of Th a color transition was observed. Since the titration of arsenazo I complex with is more stable than the complex with [illegible] red S may be used for the titration [illegible] suited best. Successive [illegible] mercial semi-trade [illegible] approximately 10% [illegible] analysis is described [illegible] Lur'ye are mentioned. There are [illegible] 2 Czech, 1 Austrian, 1 Swiss, 1 US, and 1 [illegible]

Card 3/4

Successive [illegible] Thorium and the Totality [illegible]

ASSOCIATION [illegible] institut redkometallicheskoy promyshlennosti [illegible] State Design and Planning Scientific Research Institute of the Rare Metals Industry]

Card 4/4

MALYUTIN, T.M.; TRAM, R.S.; PEVZNER, K.S.

Differential spectrophotometric determination of titanium with diantipyrylmethane. Zav.lab. 31 no.9:1054-1057 '65. (MIRA 18:10)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti.

TRAMM, R.S.; PEVZNER, K.S.

Complexometric determination of zirconium and aluminum in binary alloys. Zav. lab. 31 no.2:163 '65. (MIRA 18:7

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti.

TRAMM, R.S.; PEVZNER, A.S.

Photometric [illegible]
chrome violet K. Zav. lab. 30 no. [illegible]

1. Gosudarstvennyy [illegible]
institut [illegible]

S/137/62/000/003/178/191
A160/A101

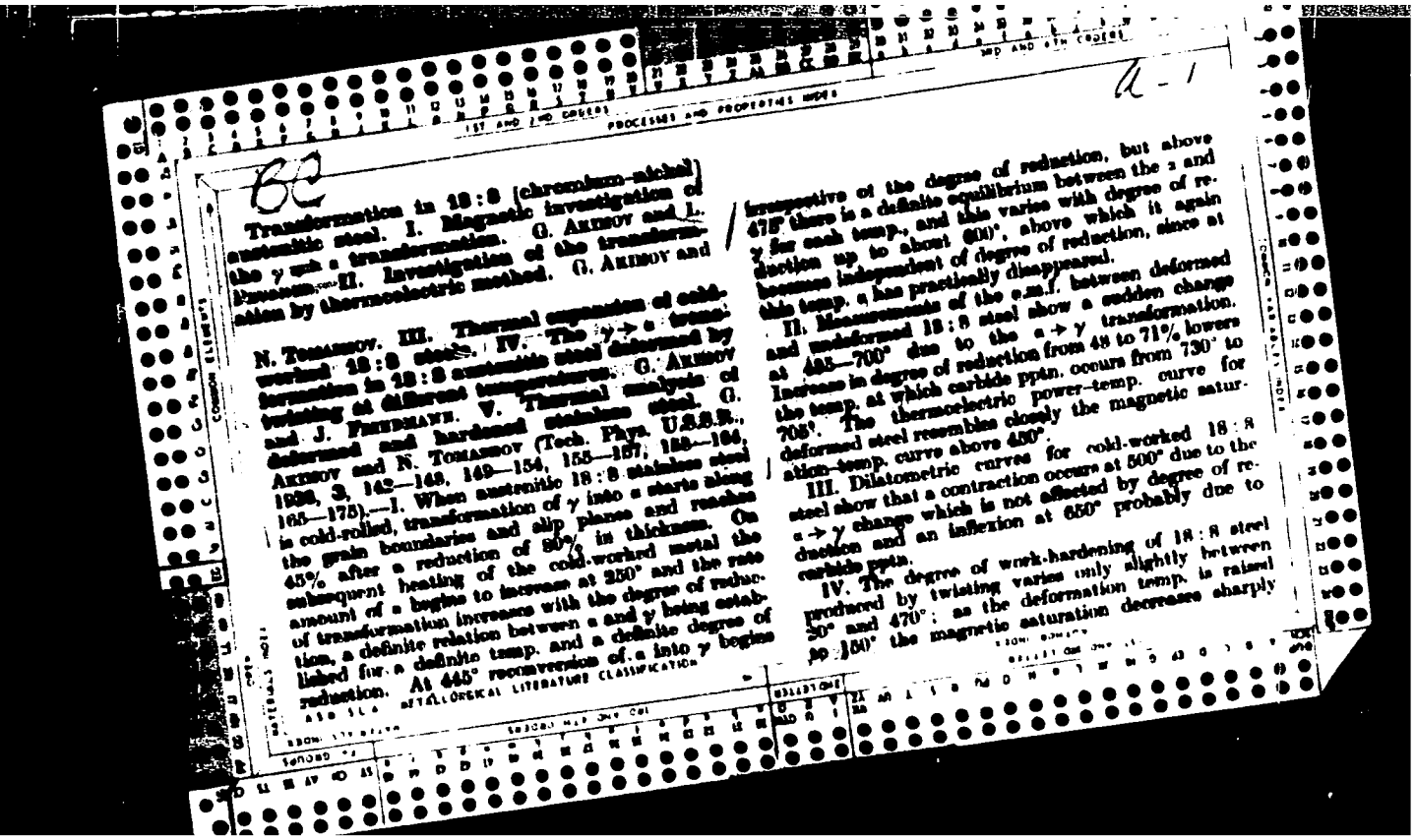
AUTHORS: Chernikov, Yu. A.; Dobkina, B. M.; Tramm, R. S.; Pevzner, K. S.

TITLE: Determining tantalum and niobium in mineral raw materials by colorimetric analysis

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 2 - 3, abstract 3 K6 ("Khim., fiz., khim. i spektr. metody issled. rud redk. i rasseyan. elementov", Moscow, Gosgeoltekhizdat, 1961, 108 - 115)

TEXT: Conditions have been developed required for determining Ta in columbite and tantalite concentrates containing Nb $\geq$ 48 % and Ta $\leq$ 50 %. For eliminating the effect of Ti, an appropriate amount of it is introduced into the index solutions. When Ta is analyzed by the photometric means within the visible region of spectrum, Ti is separated-off in advance, by using tannin. The photometric analysis of Ta is carried out at 325 mμ right after the fusion of the assay with K pyrosulfate and leaching of the melt with an $(NH_4)_2C_2O_4$ solution, without separating it in advance, from other elements. The presence of < 30 Ti does not hinder the determination of Ta. The photometric analysis of Ta is performed on Specker's colorimeter within a concentration range of 0.4 - 0.7 mg/

Card 1/2



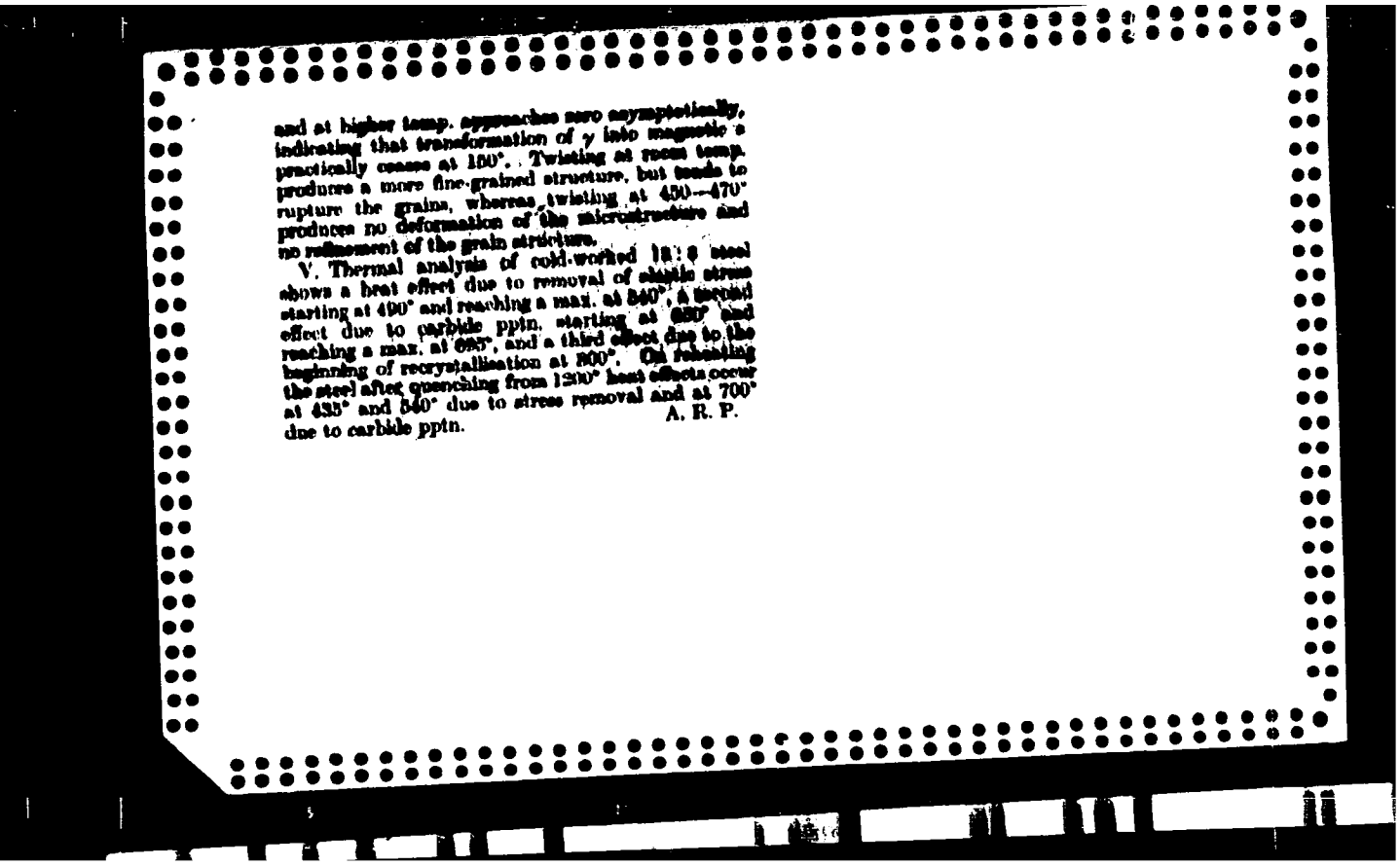
62

**Transformation in 18 : 8 (chromium–nickel) austenitic steel. I. Magnetic investigation of the γ → α transformation. G. Arnfelt and L. Persson.—II. Investigation of the transformation by thermoelectric method. G. Arnfelt and N. Tomassov. III. Thermal expansion of cold-worked 18 : 8 steels. IV. The γ → α transformation in 18 : 8 austenitic steel determined by twisting at different temperatures. G. Arnfelt and J. Freedman. V. Thermal analysis of deformed and hardened stainless steel. G. Arnfelt and N. Tomassov (Tech. Phys. U.S.S.R., 1936, 3, 142—148, 149—154, 155—157, 158—164, 165—175).—I. When austenitic 18 : 8 stainless steel is cold-rolled, transformation of γ into α starts along the grain boundaries and slip planes and reaches 45% after a reduction of 80% in thickness. On subsequent heating of the cold-worked metal the amount of α begins to increase at 250° and the rate of transformation increases with the degree of reduction, a definite relation between α and γ being established for a definite temp. and a definite degree of reduction. At 445° reconversion of α into γ begins irrespective of the degree of reduction, but above 475° there is a definite equilibrium between the α and γ for each temp., and this varies with degree of reduction up to about 600°, above which it again becomes independent of degree of reduction, since at this temp. α has practically disappeared.

II. Measurements of the e.m.f. between deformed and undeformed 18 : 8 steel show a sudden change at 425—700° due to the α → γ transformation. Increase in degree of reduction from 48 to 71% lowers the temp. at which carbide pptn. occurs from 730° to 705°. The thermoelectric power–temp. curve for deformed steel resembles closely the magnetic saturation–temp. curve above 450°.

III. Dilatometric curves for cold-worked 18 : 8 steel show that a contraction occurs at 500° due to the α → γ change which is not affected by degree of reduction and an inflexion at 650° probably due to carbide pptn.

IV. The degree of work-hardening of 18 : 8 steel produced by twisting varies only slightly between 20° and 470°; as the deformation temp. is raised to 580° the magnetic saturation decreases sharply



and at higher temp. approaches zero asymptotically, indicating that transformation of γ into magnetic α practically ceases at 150°. Twisting at room temp. produces a more fine-grained structure, but tends to rupture the grains, whereas twisting at 450—470° produces no deformation of the microstructure and no refinement of the grain structure.

V. Thermal analysis of cold-worked 18:8 steel shows a heat effect due to removal of elastic stress starting at 490° and reaching a max. at 540°, a second effect due to carbide pptn. starting at 630° and reaching a max. at 695°, and a third effect due to the beginning of recrystallisation at 800°. On reheating the steel after quenching from 1250° heat effects occur at 435° and 540° due to stress removal and at 700° due to carbide pptn.

A. R. P.

PETROV, G., doktor tekhnicheskikh nauk; PEVZNER, L., kandidat tekhnicheskikh nauk; DORONENKOV, I., inzhener; YEZERSKIY, A., inzhener.

Facing slabs made of phenolite. Stroi.mat., izdel.i konstr. 2 no.5:33-34 My '56. (MLRA 9:8)
(Floors) (Walls)

IORISH, Yu.I.; ANTSIFEROV, V.S., kand. fiz.-mat. nauk, retsenzent; BRANOVSKIY, V.A., kand. tekhn.nauk, red.; BRATANOVSKIY, V.A., red.; BYKHOVSKIY, I.I., inzh., red.; VASIL'YEVA, K.V., inzh., red.; KOLITYSSKIY, Yu.I., kand. tekhn. nauk, red.; KUSHUL', M.Ya., doktor tekhn. nauk, red.; PEVZNER, L.A., inzh., red.; SHMELEV, V.A., kand. tekhn. nauk, red.; BYSTROVA, V.V., red.izd-va; ANOVA, A.F., tekhn. red.

[Vibrometry, measurement of vibrations and shocks, general theory, methods and devices; Vibrometriia; izmerenie vibratsii i udarov. Obshchaia teoriia, metody i pribory. Izd..., pererab. i dop. Moskva, 1962. 771 p. (MIRA 17:2)

PEVNEVA, L. A.

Absorption spectra of colored beryls and topazes. S. V. Grum-Grshimailo and L. A. Pevneva. *Trudy Inst. Krist., Akad. Nauk S.S.S.R.* 1956, No. 12, 85–92; cf. *C.A.* 42, 7667g).—Beryl crystals from the Ural, and topaz from Volhynia were investigated by spectrophotometric measurements in the range $\lambda = 350$ to 1100 mμ. The comparison of the absorption spectra of beryl and topaz shows a strong displacement of the characteristic peaks towards longer waves for beryl, evidently a structural polarization effect.

W. Eitel

2

GHUN- GRZHIMAYLO, S.V.; PEVNEVA, L.A.

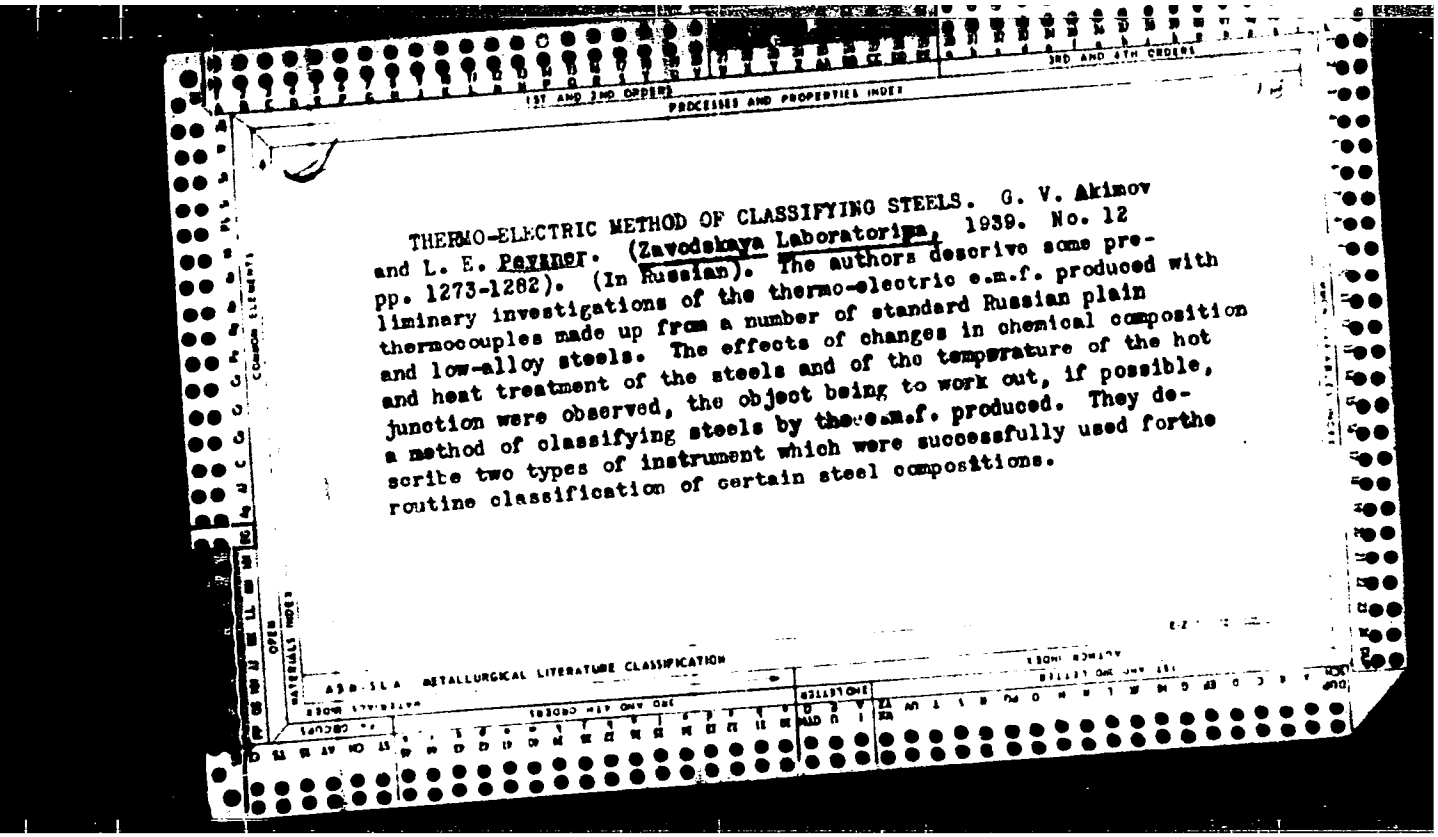
Absorption spectra curves for beryls and topazes of different coloration. Trudy Inst.Krist.no.12:85-92 '56. (MLRA 10:2)
(Topaz crystals) (Beryl crystals) (Absorption spectra)

PEVZNER, L.B.

Work of the rheumatic fever section. Zdravookhranenie 2 no.4: 9-11 Jl-Ag '59. (MIRA 14:6)

1. Iz 1-oy detskoy bol'nitsy Kishineva (glavnyy vrach - K.I. Lokhvinskaya).

(RHEUMATIC FEVER)



THERMO-ELECTRIC METHOD OF CLASSIFYING STEELS. G. V. Akimov and L. E. Pavlinov. (Zavodskaya Laboratoriya, 1939. No. 12 pp. 1273-1282). (In Russian). The authors describe some preliminary investigations of the thermo-electric e.m.f. produced with thermocouples made up from a number of standard Russian plain and low-alloy steels. The effects of changes in chemical composition and heat treatment of the steels and of the temperature of the hot junction were observed, the object being to work out, if possible, a method of classifying steels by the e.m.f. produced. They describe two types of instrument which were successfully used forthe routine classification of certain steel compositions.

PEVZNER, L. E.

AKIMOV, G.V. AND L.E. PEVZNER C.A. Vol. 29, Nov. [illegible] - Dec. 20, 1935

"The Anisotropy of Sheet Steel". F.V. Akimov and L.E. Pevzner. J. Tech. Phys. (U.S.S.R.) 4, 1935-44, 1945-50(1934).

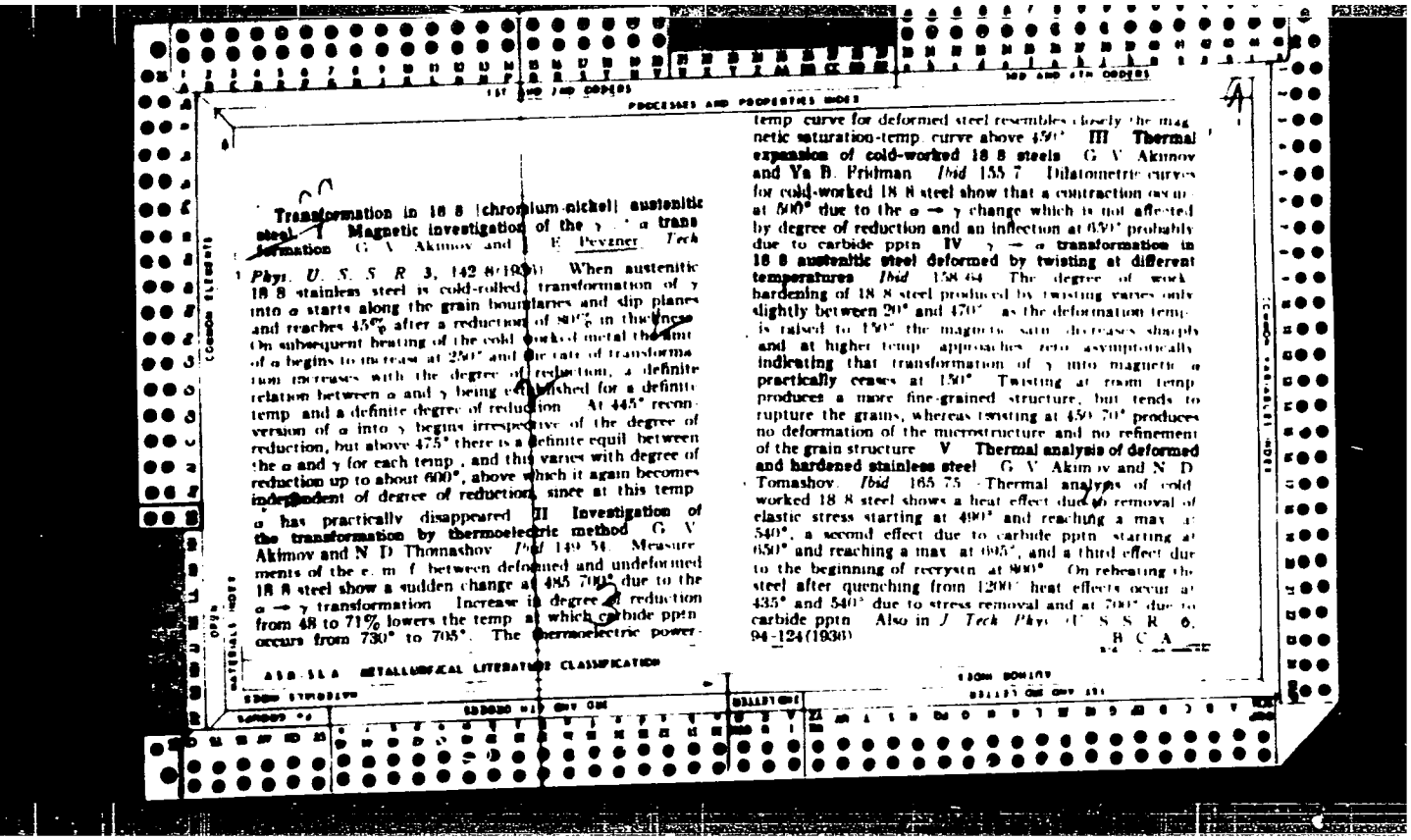
Data on the anisotropy of various carbon steels are given [illegible] by the magnetic method carbon steels are given as detd. by the magnetic method. An investigation of the distribution of the α-phase in 18/8 stainless steel is reported. The phase transformation $\gamma \rightarrow \alpha$ as a consequence of deformation proceeds first on the grain boundaries and along the slip planes. Carbide sepn. also occurs first along the grain boundar

AKIMOV, G. V. C. A. Vol. 26, Aug. 20, 1932 - Nov. 20, 1932

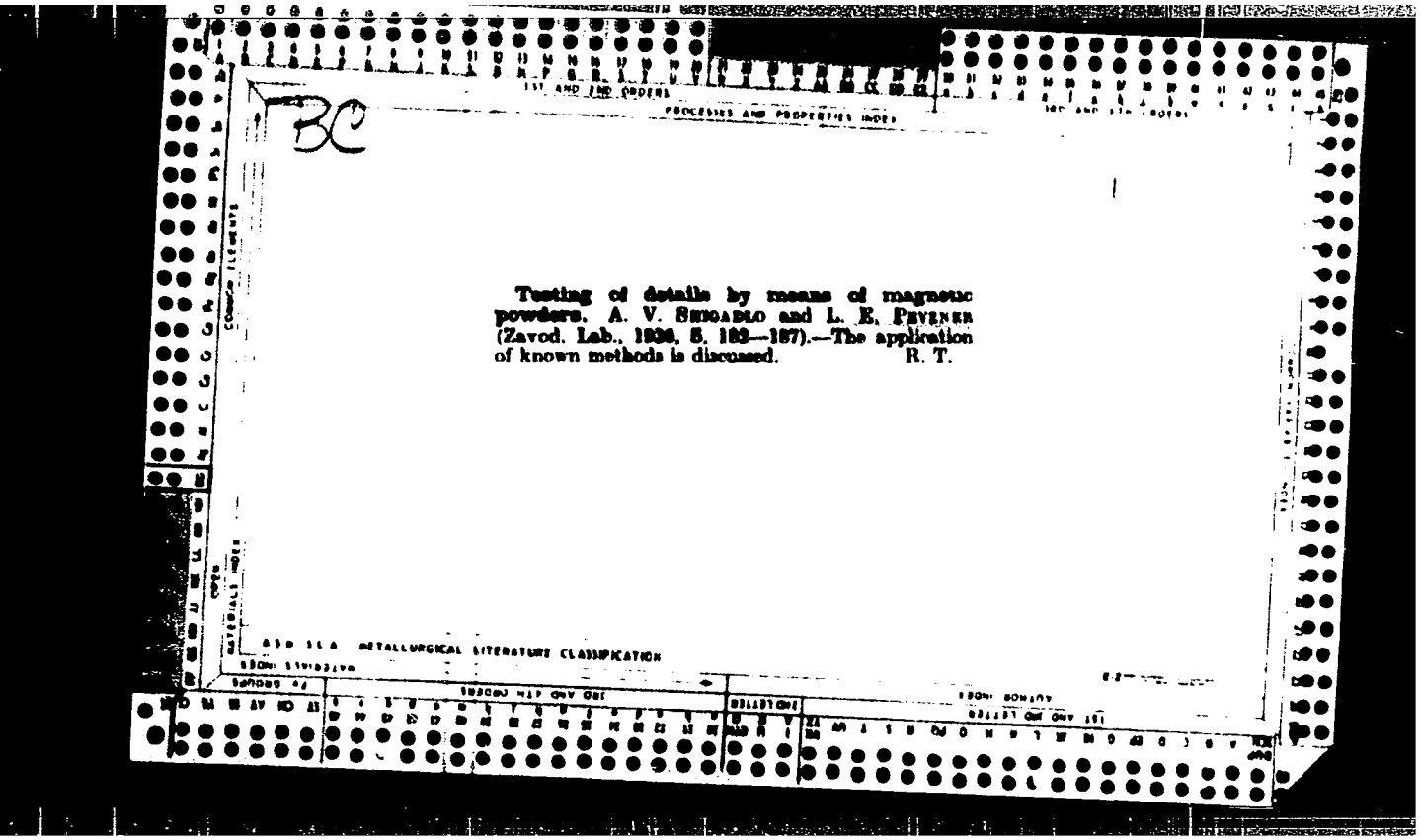
L.E. PEVZNER

The anisotropy of sheet steel. G. V. Akimov and L. E. Pevzner. *J. Tech. Phys.* (U. S. S. R.) 6, 1935-44, 1945 (in Russian).—Data on the anisotropy of various carbon steels are given as detd. by the magnetic method. An investigation of the distribution of the σ-phase in 18-8 stainless steel is reported. The phase transformation $\gamma \rightarrow \sigma$ as a consequence of deformation proceeds first on the grain boundaries and along the slip planes. Carbide sepn. also occurs first along the grain boundaries.
F. H. Rathmann

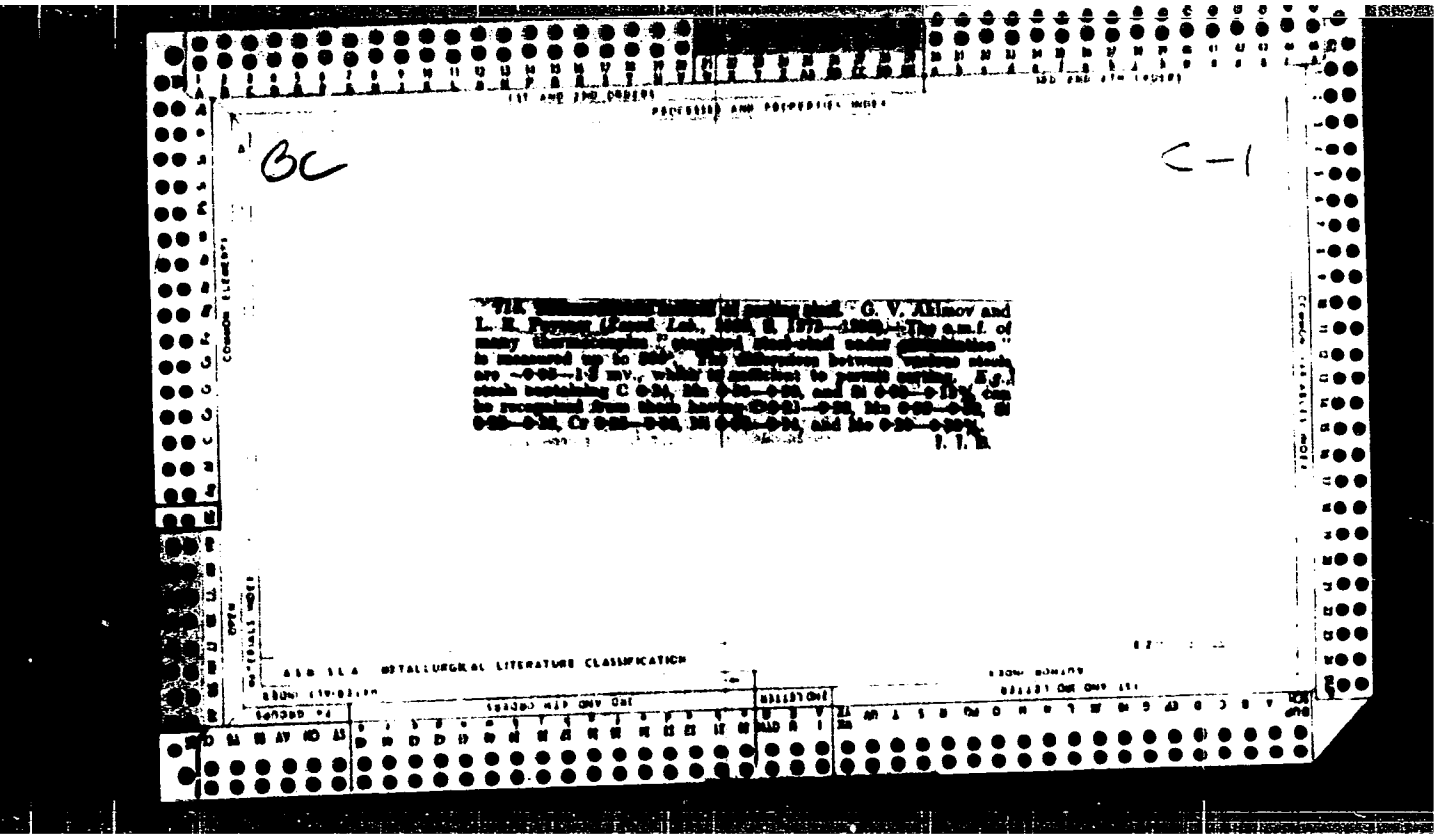
ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

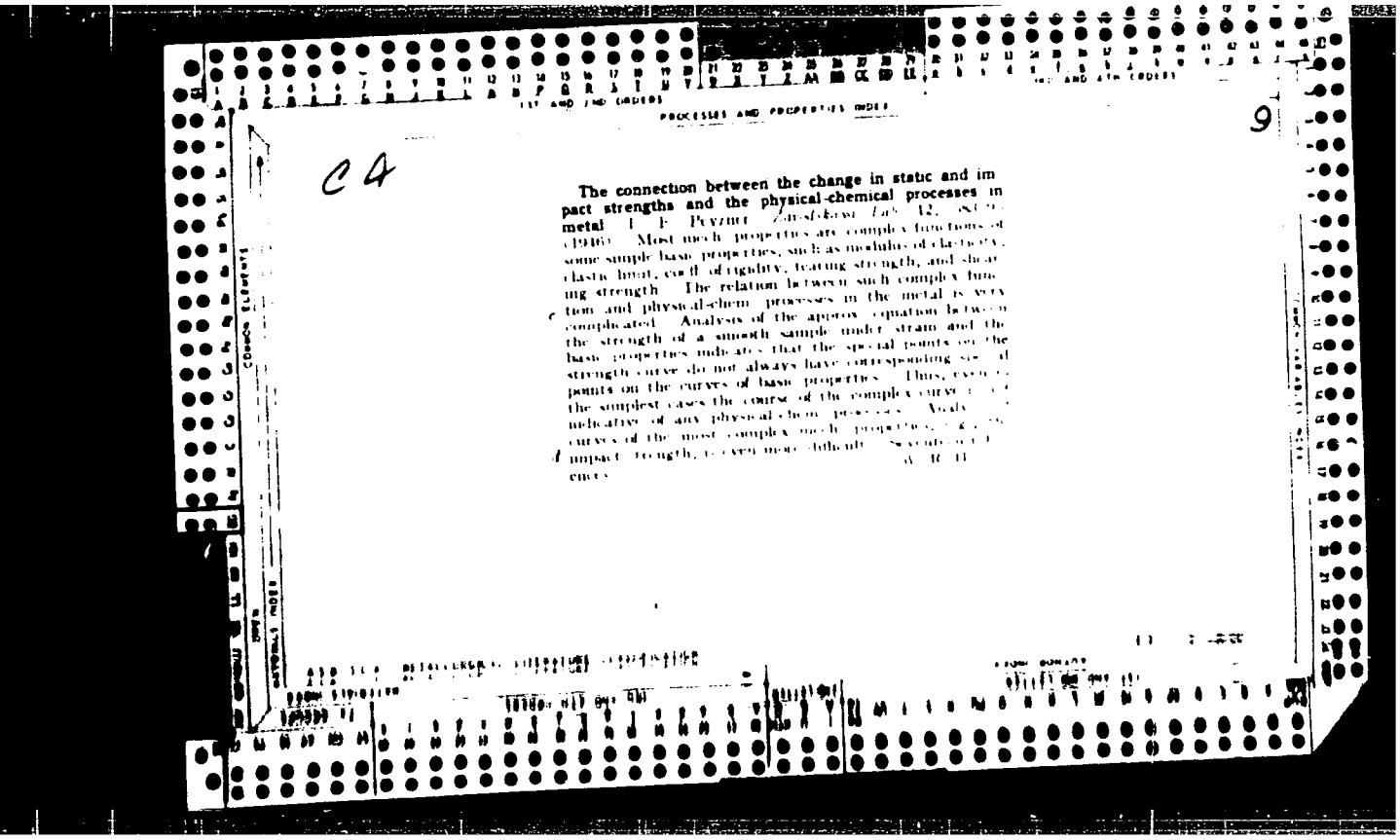


Transformation in 18 8 [chromium-nickel] austenitic steel. I **Magnetic investigation of the γ → α transformation** G V Akimov and E Deyzner *Tech Phys. U. S. S. R* 3, 142-8(1936) When austenitic 18 8 stainless steel is cold-rolled, transformation of γ into α starts along the grain boundaries and slip planes and reaches 45% after a reduction of 80% in thickness On subsequent heating of the cold worked metal the amt of α begins to increase at 250° and the rate of transformation increases with the degree of reduction, a definite relation between α and γ being established for a definite temp and a definite degree of reduction At 445° reconversion of α into γ begins irrespective of the degree of reduction, but above 475° there is a definite equil between the α and γ for each temp, and this varies with degree of reduction up to about 600°, above which it again becomes independent of degree of reduction, since at this temp α has practically disappeared II **Investigation of the transformation by thermoelectric method** G V Akimov and N D Thomashov *Ibid* 149-54 Measurements of the e m f between deformed and undeformed 18 8 steel show a sudden change at 485-700° due to the α → γ transformation Increase in degree of reduction from 48 to 71% lowers the temp at which carbide pptn occurs from 730° to 705°. The thermoelectric power-temp curve for deformed steel resembles closely the magnetic saturation-temp curve above 450° III **Thermal expansion of cold-worked 18 8 steels** G V Akimov and Ya B Pridman *Ibid* 155-7 Dilatometric curves for cold-worked 18 8 steel show that a contraction occurs at 500° due to the α → γ change which is not affected by degree of reduction and an inflection at 650° probably due to carbide pptn IV **γ → α transformation in 18 8 austenitic steel deformed by twisting at different temperatures** *Ibid* 158-64 The degree of work hardening of 18 8 steel produced by twisting varies only slightly between 20° and 470° as the deformation temp is raised to 150° the magnetic satn decreases sharply and at higher temp approaches zero asymptotically indicating that transformation of γ into magnetic α practically ceases at 150° Twisting at room temp produces a more fine-grained structure, but tends to rupture the grains, whereas twisting at 450-70° produces no deformation of the microstructure and no refinement of the grain structure V **Thermal analysis of deformed and hardened stainless steel** G V Akimov and N D Tomashov *Ibid* 165-75 Thermal analysis of cold worked 18 8 steel shows a heat effect due to removal of elastic stress starting at 490° and reaching a max at 540°, a second effect due to carbide pptn starting at 650° and reaching a max at 695°, and a third effect due to the beginning of recrystn at 800° On reheating the steel after quenching from 1200° heat effects occur at 435° and 540° due to stress removal and at 700° due to carbide pptn Also in *J Tech Phys U S S R* 6, 94-124(1936) B C A



Testing of details by means of magnetic powders. A. V. SHEGABLO and L. E. PEVENER (Zavod. Lab., 1936, 5, 183—187).—The application of known methods is discussed. R. T.





CA

9

The connection between the change in static and impact strengths and the physical-chemical processes in metal [illegible] Peyzner [illegible] (1946). Most mech properties are complex functions of some simple basic properties, such as modulus of elasticity, elastic limit, coeff of rigidity, tearing strength, and shearing strength. The relation between such complex functions and physical-chem processes in the metal is very complicated. Analysis of the approx equation between the strength of a smooth sample under strain and the basic properties indicates that the special points on the strength curve do not always have corresponding special points on the curves of basic properties. Thus, even in the simplest cases the course of the complex curve [illegible] indicative of any physical-chem processes. Analysis of curves of the most complex mech properties, e.g., impact strength, is even more difficult [illegible] curves.

CA

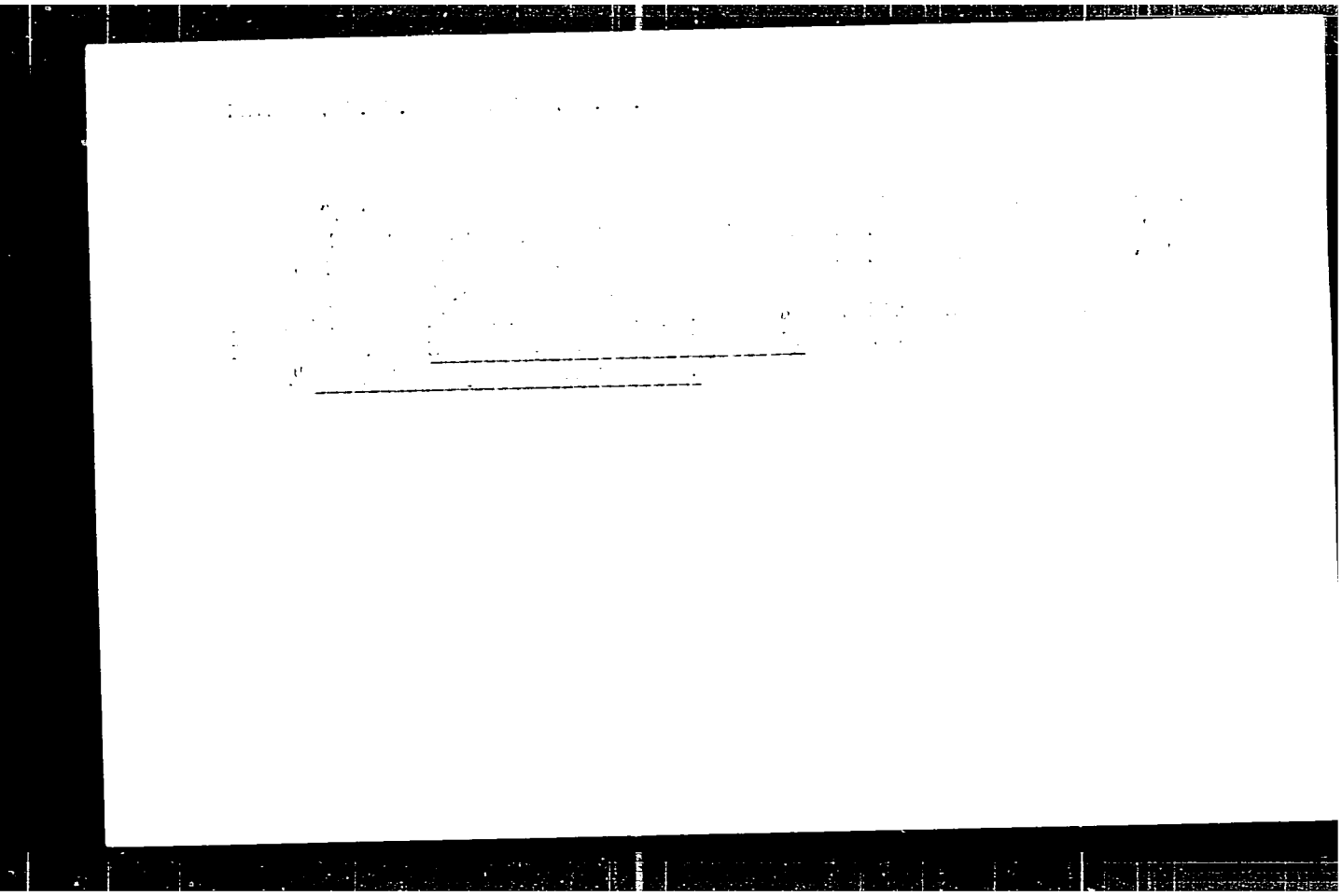
Investigation of the residual austenite in hardened structural steels. L. E. Pevzner. *Vestnik Inzhenerov Tekh.* 1947, 55-9; *Chem. Zentr.* (Russian Zone Ed.) 1949, I, 829; cf. *C.A.* 41, 1886b.—Investigations made on 4 Cr-Ni steels indicated that the amt. of residual austenite present in alloyed, substructoid steels was practically unchanged by increasing the hardening temp. The notch-impact strength in the range of lower annealing temps. can be changed in various ways by increasing the hardening temp. In individual cases it may show a slight increase for fine-grained steels; in coarse-grained steels it is reduced. In no case, however, is such a change a function of the amt. of residual austenite. Detn. of residual austenite by the magnetic method is inaccurate for supereutectoid steels having large amts. of carbide. Various phases are present in such steels, including martensite with a high magnetic satn. (in the neighborhood of the satn. of Fe), various carbides with essentially slight satn. or paramagnetic carbides, and paramagnetic austenite. The change in the magnetic satn. of the mixt. has previously been regarded as assocd. only with changes in the amt. of residual austenite. Actually, however, the change in austenite is ordinarily accompanied by processes of sepn. or soln. of carbides, which, in turn, affect the magnetic satn. of the mixt.

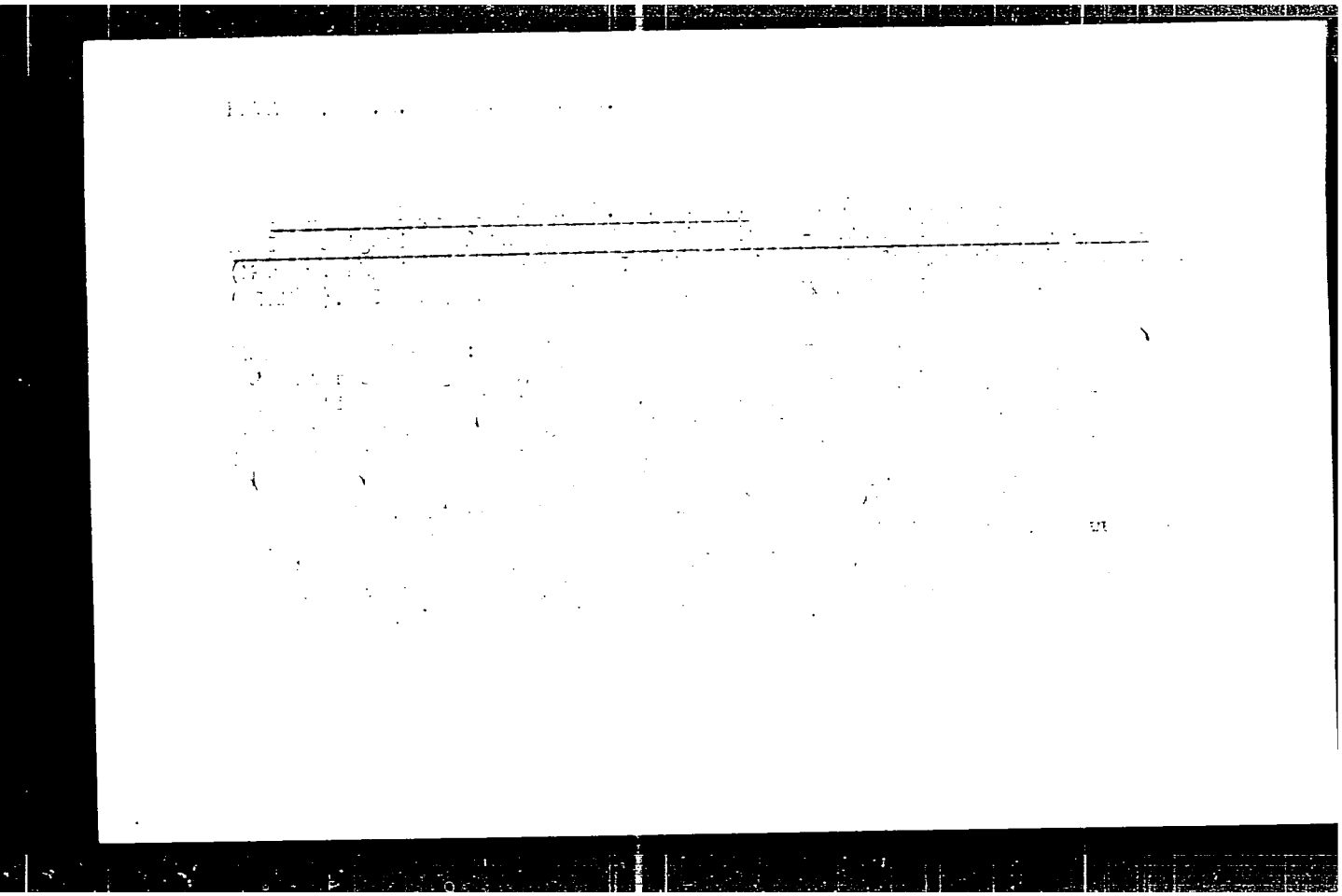
M. G. Moore

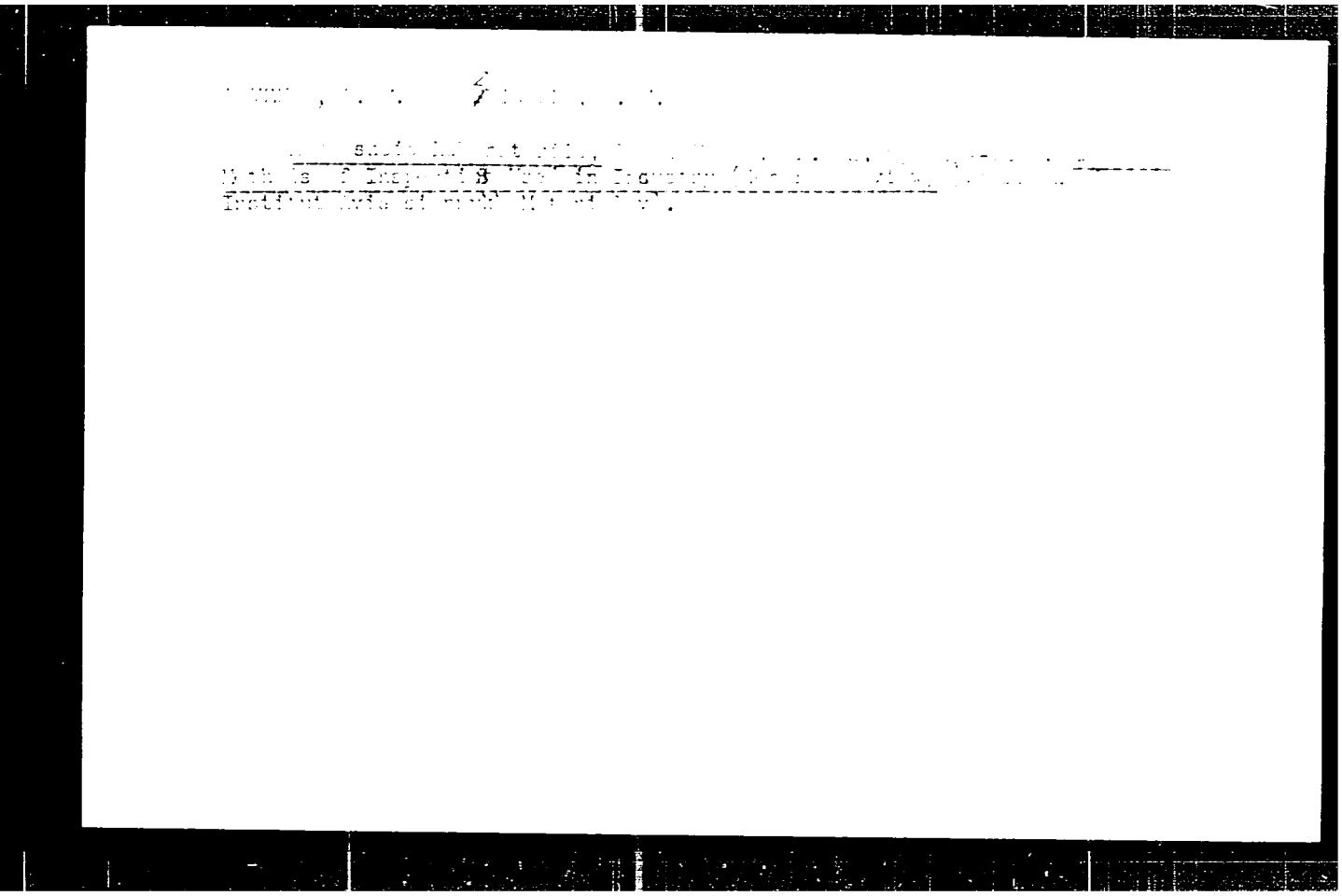
MUKHAMEDZHANOV, M.V.; UL'DZHABAYEV, T.U.; MAMEDOV, M.T.; RODICHEV, S.D.; FIRSOV, B.P. Prinimali uchastiye: PROTASOV, P.V.; POLEVSHCHIKOVA, V.N.; MAL'TSEV, A.M. PEVZNER, L.I., red.; BONDARENKO, M., red.; BAKHTIYAROV, A., tekhred.

[On cotton plantations of the U.S.A.] Na khlopkovykh plantatsiiakh SShA. Tashkent, Gos.izd-vo Uzbekskoi SSR, 1959. 172 p. (MIRA 13:10)

(United States--Cotton growing)



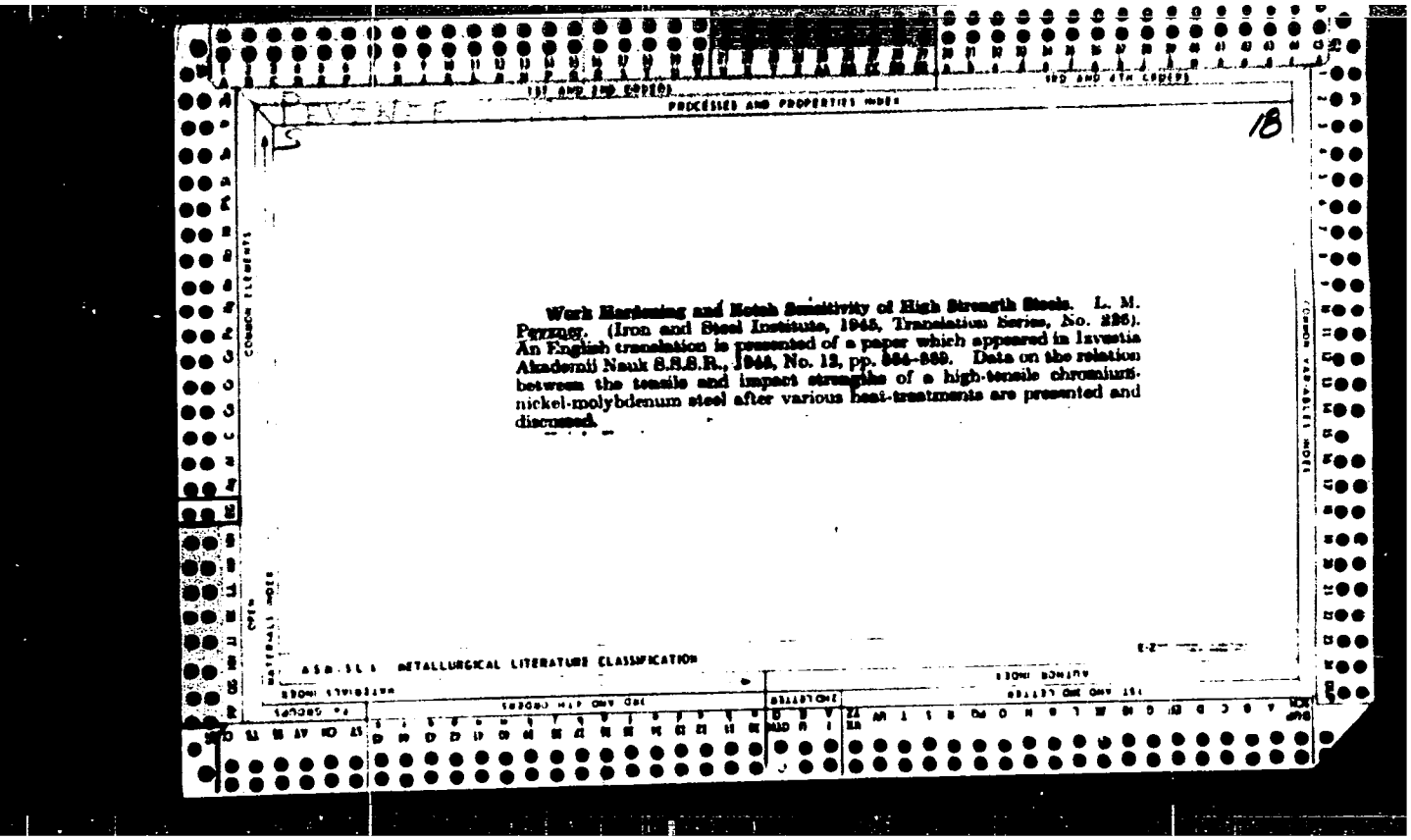




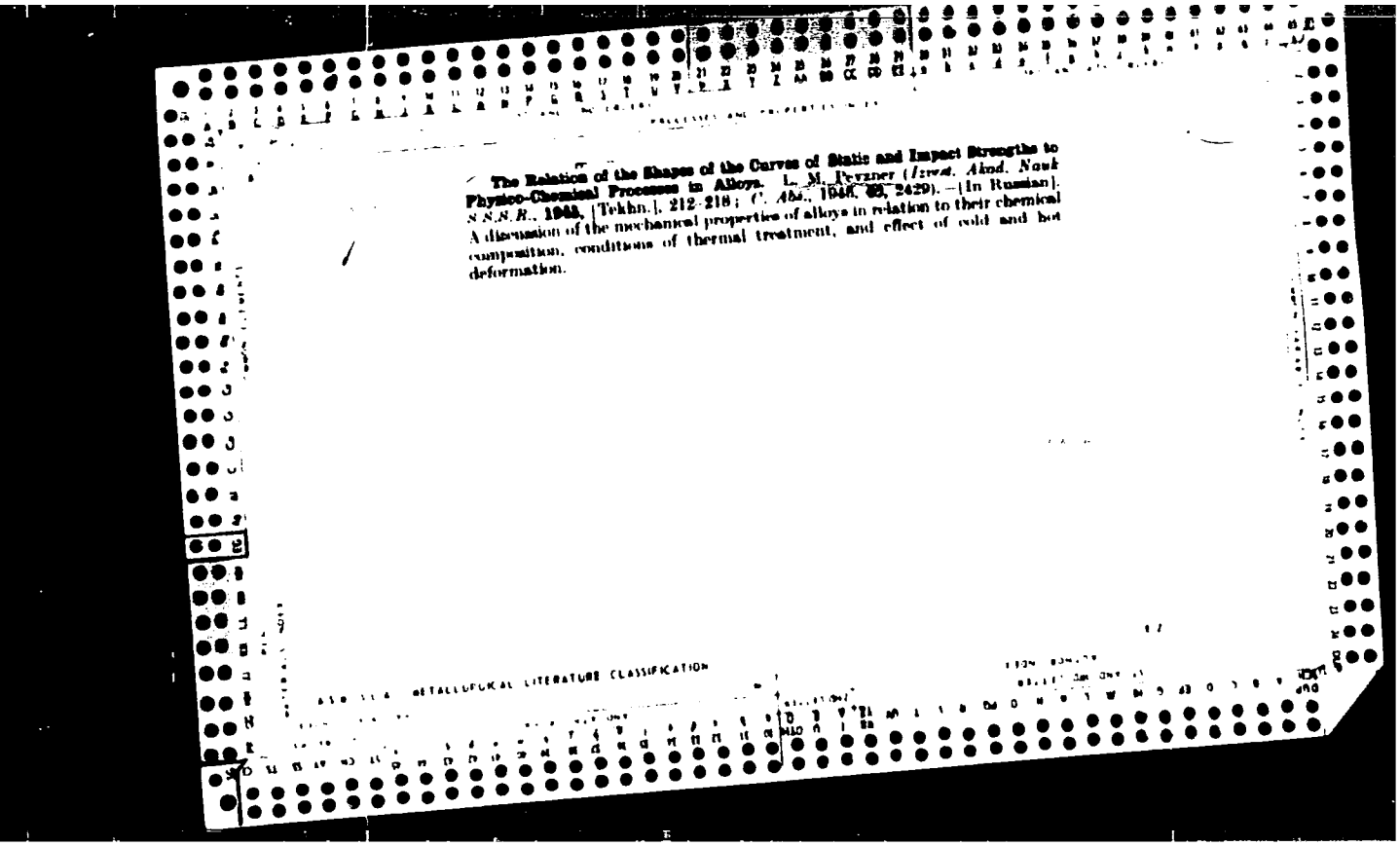
PEVZNER, L. M. and AKIMOV, G. V.

Zavodskaia Laboratoriia, 1939, Vol 8, Nr 12, pp 1273-1282, Thermoelectric Method of Sorting Steel (Vsesiouznyi Institut Aviatsionnykh Materialov).

"The e. m. f. of many thermocouples 'standard steel-steel under examination' is measured up to 500 . The differences between various steels are 0.05--1.3 mv., which is sufficient to permit sorting. E.g., steels containing C 0.24, Mn 0.46--0.99, and Si 0.05--0.13% can be recognized from those having C 0.31--0.33, Mn 0.52--0.82, Si 0.25--0.32, Cr 0.85--0.86, Ni 0.07--0.14, and Mo 0.20--0.30%."



Work Hardening and Notch Sensitivity of High Strength Steels. L. M. Pavzuy. (Iron and Steel Institute, 1945, Translation Series, No. 236). An English translation is presented of a paper which appeared in Izvestia Akademii Nauk S.S.S.R., 1944, No. 12, pp. 884-889. Data on the relation between the tensile and impact strengths of a high-tensile chromium-nickel-molybdenum steel after various heat-treatments are presented and discussed.



The Relation of the Shapes of the Curves of Static and Impact Strengths to Physico-Chemical Processes in Alloys. L. M. Pevzner (*Izvest. Akad. Nauk S.S.S.R.*, 1948, [Tekhn.], 212–218; *C. Abs.*, 1948, **42**, 2429).—[In Russian]. A discussion of the mechanical properties of alloys in relation to their chemical composition, conditions of thermal treatment, and effect of cold and hot deformation.

A.S.T.M. METALLOGRAPHICAL LITERATURE CLASSIFICATION

PEVZNER, L. M.

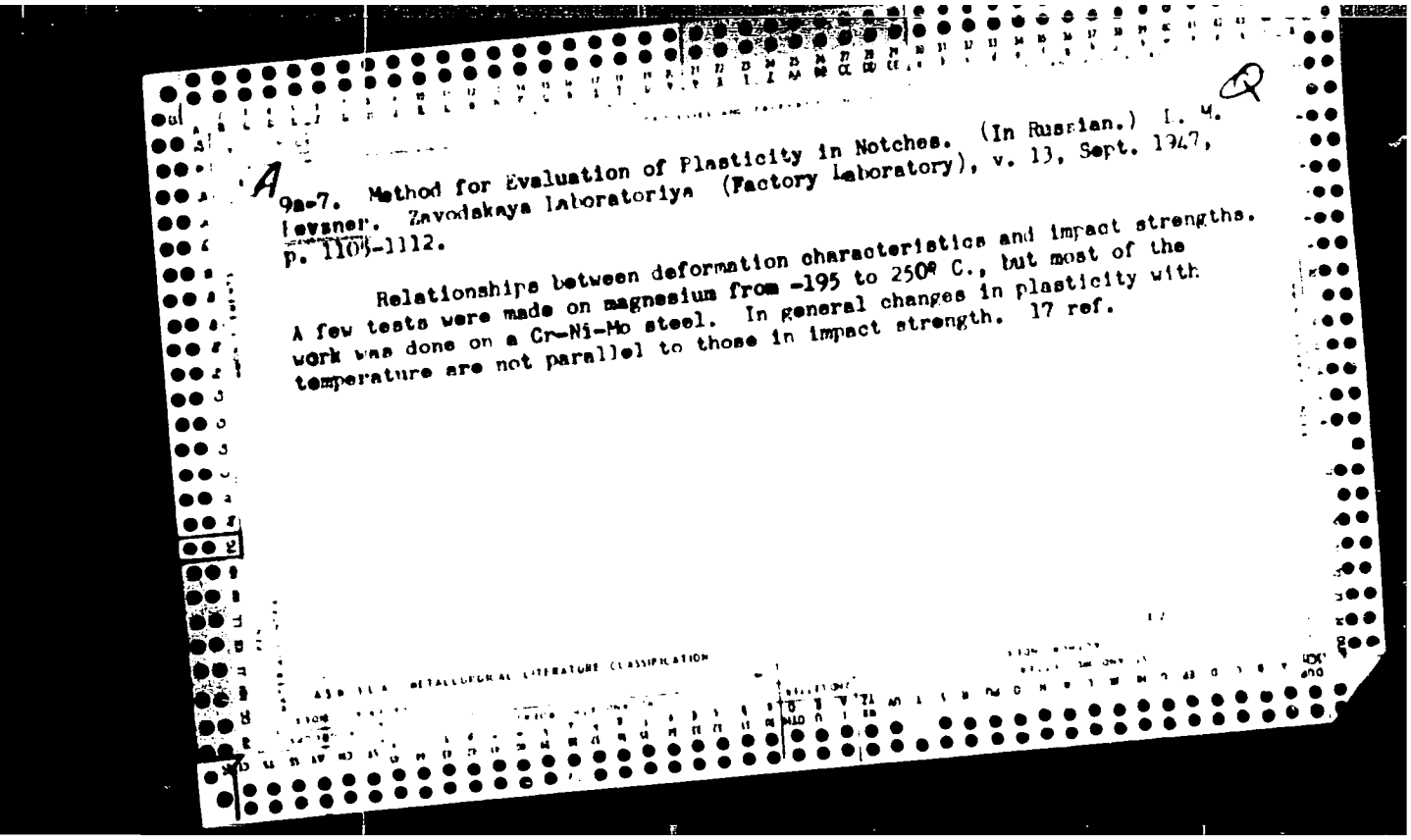
Zavodskaia Laboratoriia, 1946, Vol 12, Nr 6, pp 583-595, The Connection Between the Change in Static and Impact Strengths and the Physical-Chemical Processes in Metal (Vsesiouznyi Institut Aviatsionnykh Materialov).

"Most mech. properties are complex functions of some simple basic properties, such as modulus of elasticity, elastic limit, coeff, of rigidity, tearing strength, and shearing strength. The relation between such complex function and physical-chem. processes in the metal is very complicated. Analysis of the approx. equation between the strength of a smooth sample under strain and the basic properties indicates that the special points on the strength curve do not always have corresponding special points on the curves of basic properties. Thus even in the simplest cases the course of the complex curve is not indicative of any physical-chem. processes. Analysis of curves of the most complex mech. properties, e.g., the impact strength, is even more difficult. Seventeen references."

PEVZNER, L. M.

Vestnik Inshenerov i Tekhnikov, 1947, Nr 2, pp 55-58, Investigation of the Residual Austenite in Hardened Structural Steels.

"Investigations made on 4 Cr-Ni steels indicated that the amt. of residual austenite present in alloyed, subeutectoid steels was practically unchanged by increasing the hardening temp. The notch-impact strength in the range of annealing temps. can be changed in various ways by increasing the hardening temp. In individual cases it may show a slight increase for fine-grained steels; in coarse-grained steels it is reduced. In no case, however, is such a change a function of the amt. of residual austenite. Detn. of residual austenite by the magnetic method is inaccurate for supereutectoid steels having large amts of carbide. Various phases are present in such steels, including martensite with a high magenetic satn. (in the neighborhood of the satn. of Fe), various carbides with essentially slight satn. or paramagnetic carbides, and paramagnetic austenite. The change in the magnetic satn. of the mixt. has previously been regarded as assocd. only with changes in the amt. of residual austenite. Actually, however, the change in austenite is ordinarily accompanied by processes of sepn. or soln. of carbides, which, in turn, affect the magnetic satn. of the mixt."



A

9a-7. Method for Evaluation of Plasticity in Notches. (In Russian.) L. M. Levaner. Zavodskaya Laboratoriya (Factory Laboratory), v. 13, Sept. 1947, p. 1105-1112.

Relationships between deformation characteristics and impact strengths. A few tests were made on magnesium from -195 to 250° C., but most of the work was done on a Cr-Ni-Mo steel. In general changes in plasticity with temperature are not parallel to those in impact strength. 17 ref.

ASM METALLURGICAL LITERATURE CLASSIFICATION

PEZIK, M.O.

Bin charging device for grinding cylindrical parts like 1.5 to 5 mm. diameter rollers. Mod.metallorezh.stan. no.2:7-9 '58. (MIRA 13:5)

(Grinding machines)

PEZIK, M.S.

Modernizing the drive of the RA-11 type turret lathe made by the Hasse and Wrede Company. Mod.metallorezh.stan. no.10:3-4 '59. (MIRA 13:5)
(Lathes--Electric driving)

PEZIK, M.O.

Standard plans for the modernization of machine tools developed by the Central Design Bureau of the Machinery Department of the Moscow City Economic Council (continued). Mod.metallorezh.stan. no.10:33-37 '59. (MIRA 13:5)
(Machine tools--Technological innovations)

VECSERNYES, Lajos (Budapest); PERSGAY, Gyergyi (Budapest)

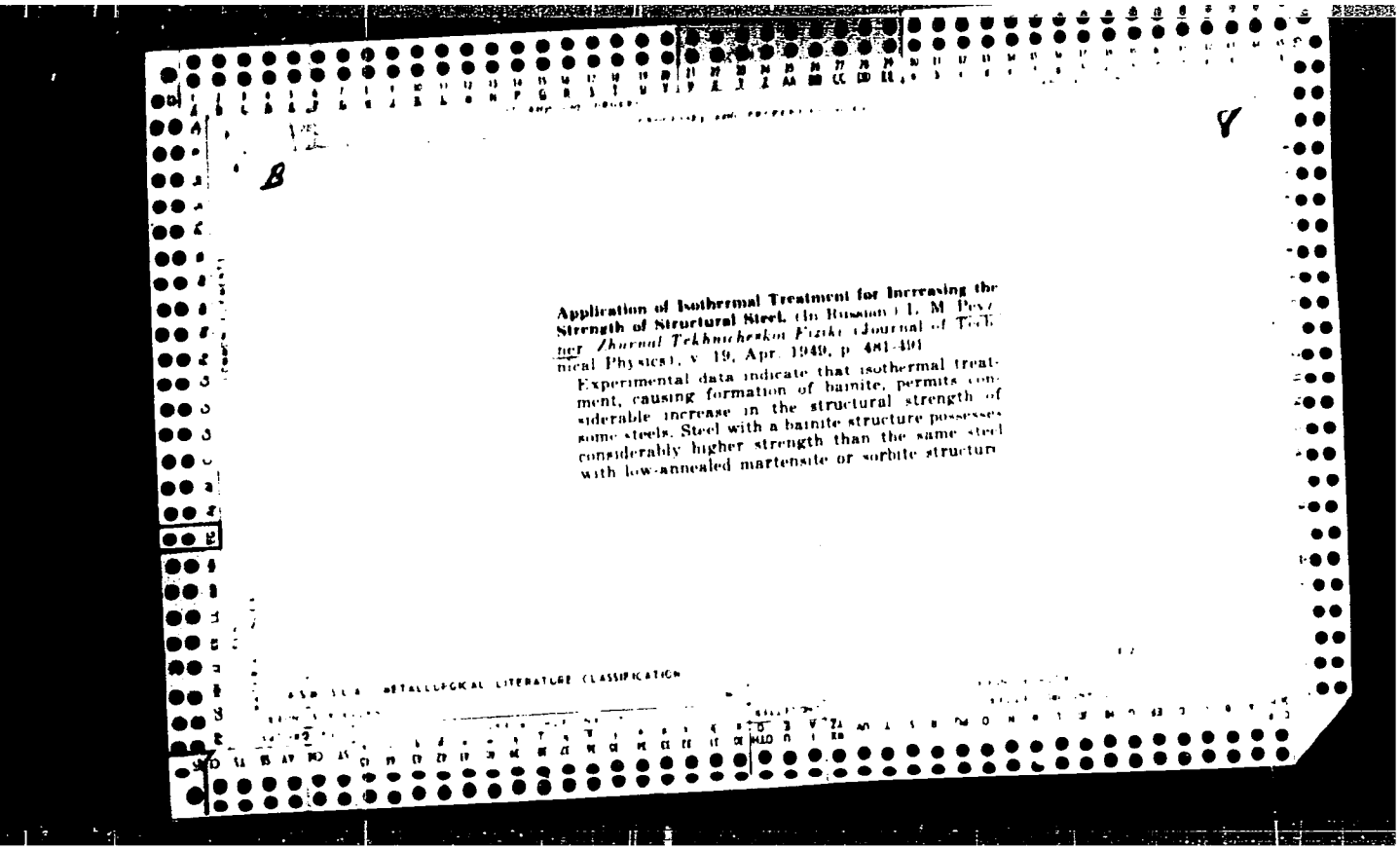
Spectrochemical analysis of superficial adhesive films of zinc-sulfide microcrystalline layers. In German. Acta chimica Hung. 21 no.2:123-129 '59. (KRAI 9:4)

1. Research Institute for Telecommunication, Budapest.
(Spectrum analysis) (Films) (Zinc sulfide)

[redacted]

[redacted], L. M.

"Methods of Increasing the Construction Strength of Steel [redacted]," Dok. AN, 56, No. 3, 1947



Application of Isothermal Treatment for Increasing the Strength of Structural Steel. (In Russian.) L. M. Pevzner. *Zhurnal Tekhnicheskoi Fiziki* (Journal of Technical Physics), v. 19, Apr. 1949, p. 481-491

Experimental data indicate that isothermal treatment, causing formation of bainite, permits considerable increase in the structural strength of some steels. Steel with a bainite structure possesses considerably higher strength than the same steel with low-annealed martensite or sorbite structure

PA 169T54

Pevzner, L. M.;

USSR/Metals - Testing

Sep 50

"Influence of the Soft Surface Layers on the Mechanical Properties of Notched Specimens," Ya. B. Fridman, L. M. Pevzner

"Zavod Lab" Vol. XVI, No 9, pp 1074-1077

Reviews and discusses literature on subject and makes conclusions: Distribution of plastic deformations in notched section is nonuniform. Surface layers are deformed more greatly than inner layers. Plasticity in notch may be considerably increased by softening of comparatively thin surface layer. Surface decarburization of 0.1-0.15 mm in depth increases impact strength of steel from 5-6 to 9-10 kg/sq cm.

169T54

FDD

PA 169T54

PA 227T33

USSR/Metallurgy - Steel, Structural Analysis 1 Aug 52

"Redistribution of Carbon During Transformation
in the Transition Zone," L.M. Pevzner, G.M.
Rovenskiy, T. D. Kubyshkina

"Dok Ak Nauk SSSR" Vol 85, No 4, pp 811-814

Determines C concn in residual austenite in
hypoeutectoid alloy steels after isothermic
decompn in transition zone, particularly in
its lower part. Transformation begins in re-
gions impoverished with respect to C. In proc-
ess of needle troastite formation enrichment
of residual austenite with C occurs, and its

227T33

concn reaches 1.2 - 1.5%, i.e., 3 -4 times av
C content in investigated steels. High C con-
tent in residual austenite explains its high
stability, which decreases when C concn de-
creases with rising isothermal temp in transi-
tion zones. Submitted by Acad P.A. Rebinder
6 Jun 52.

227T33

PEVZNER, L. M.

PEVZNER, L. M.

Liteinoe Proizvodstvo, 1953, pp 11-13, Production of Bronze Castings by the Vacuum-Suction Method.

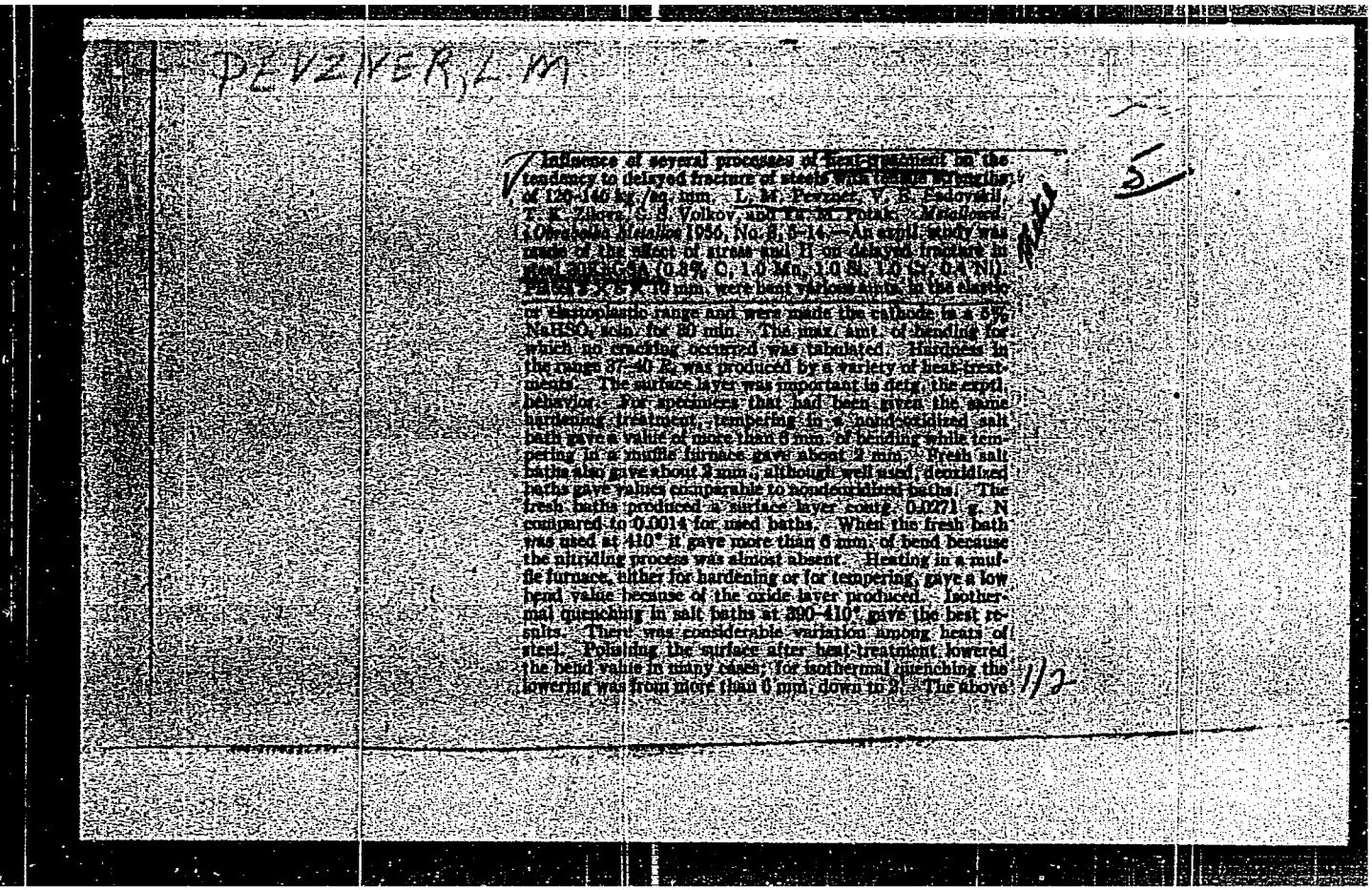
"Prodn. of bronze busnes and journal bearings using a watercooled mould into which the molten metal is introduced by suction is described. The castings manufactured by this method have shown superior mech. properties (nardness, yield strengtn, ductility, and wear resistance) to those obtained by casting in sand."

PEVZNER, L. M.

Liteinoe Proizvodstvo, 1954, Nr 8, pp 31-32, Review of B. M. Kaenofontov's Book "Casting by the Method of Vacuum Suction."

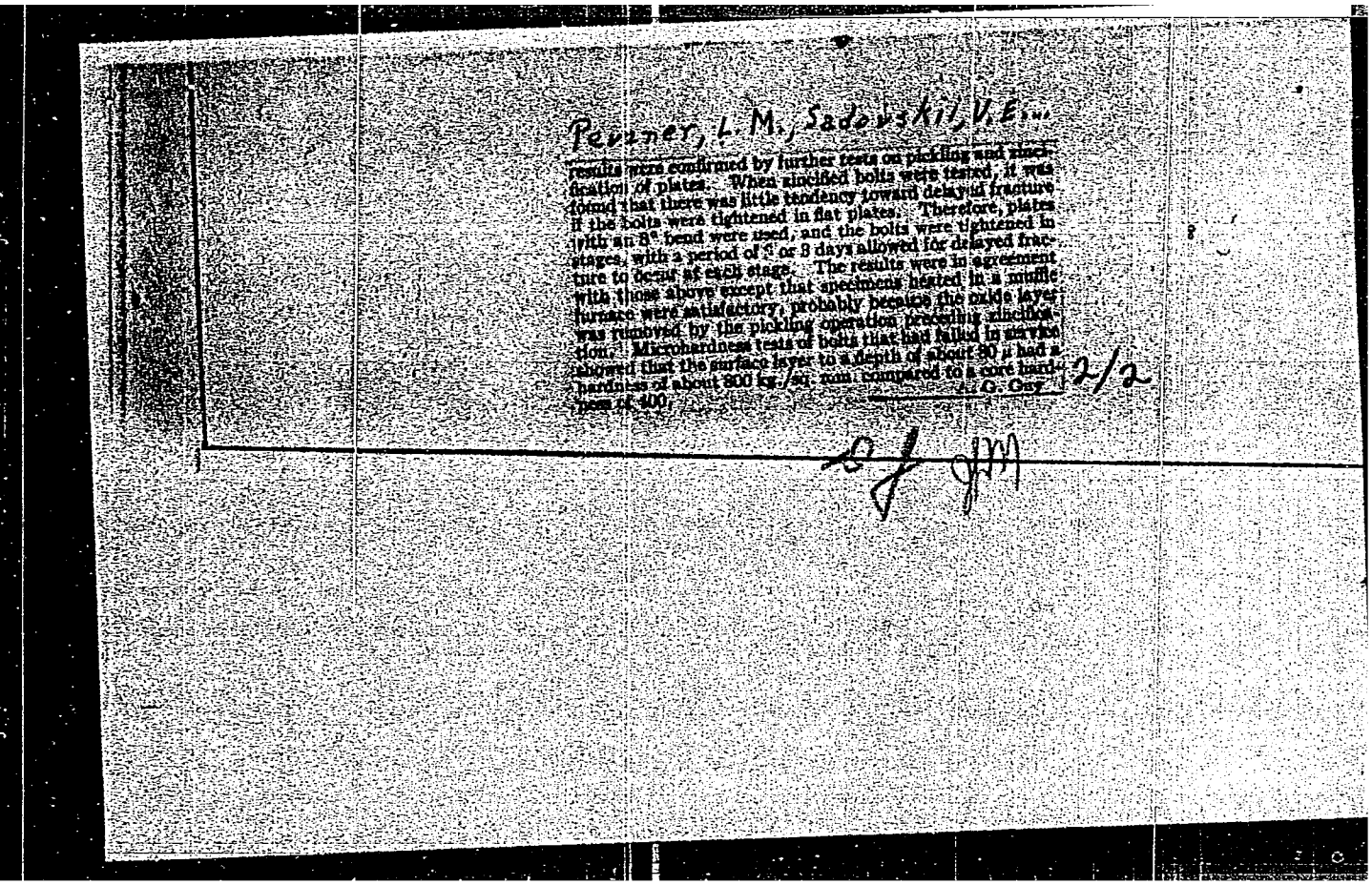
PEVZNER, L. M.

In Physical Metallurgy and Heat Treatment, State Scientific-Technical Publishing House for Machine-Construction Literature, Moscow, 1955, 320 pp, 74-106, Structure and Properties of Steel During Tempering.



PEVZNER, L. M.

Influence of several processes of heat-treatment on the tendency to delayed fracture of steels with ultimate strengths of 120-140 kg/sq. mm. L. M. Pevzner, V. S. Fedorovskii, T. K. Zikova, G. S. Volkov, and Ya. M. Potak. *Metallovedenie i Obrabotka Metallov* 1956, No. 8, 5-14.—An experimental study was made of the effect of stress and H on delayed fracture in steel 30KhGSA (0.3% C, 1.0 Mn, 1.0 Si, 1.0 Cr, 0.4 Ni). Test specimens, 10 mm. were heat-treated in the austenitic or thermoelastic range and were made the cathode in a 5% $NaHSO_4$ soln. for 60 min. The max. amt. of bending for which no cracking occurred was tabulated. Hardness in the range 37-40 Rc was produced by a variety of heat-treatments. The surface layer was important in delg. the crit. behavior. For specimens that had been given the same hardening treatment, tempering in a nitrided salt bath gave a value of more than 6 mm. of bending while tempering in a muffle furnace gave about 2 mm. Fresh salt baths also gave about 2 mm., although well used, denitrided baths gave values comparable to nondenitrided baths. The fresh baths produced a surface layer contg. 0.0271 g. N compared to 0.0014 for used baths. When the fresh bath was used at 410° it gave more than 6 mm. of bend because the nitriding process was almost absent. Heating in a muffle furnace, either for hardening or for tempering, gave a low bend value because of the oxide layer produced. Isothermal quenching in salt baths at 390-410° gave the best results. There was considerable variation among heats of steel. Polishing the surface after heat-treatment lowered the bend value in many cases; for isothermal quenching the lowering was from more than 6 mm. down to 2. The above

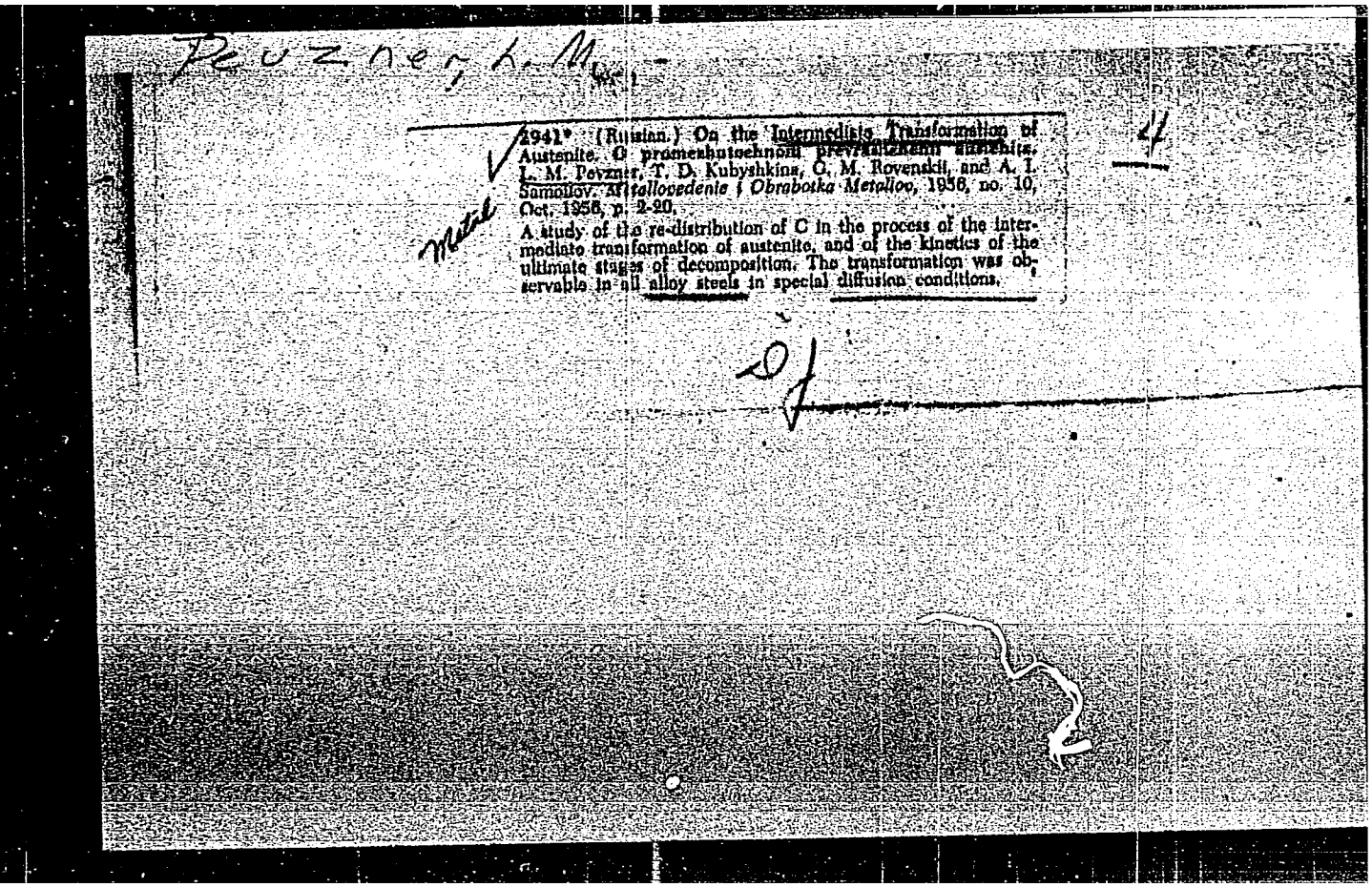


Pevzner, L. M., Sadovskii, V. E., ...

results were confirmed by further tests on pickling and mach-
ination of plates. When zincified bolts were tested, it was
found that there was little tendency toward delayed fracture
if the bolts were tightened in flat plates. Therefore, plates
with an 8° bend were used, and the bolts were tightened in
stages, with a period of 2 or 3 days allowed for delayed frac-
ture to occur at each stage. The results were in agreement
with those above except that specimens heated in a muffle
furnace were satisfactory, probably because the oxide layer
was removed by the pickling operation preceding zincifica-
tion. Microhardness tests of bolts that had failed in service
showed that the surface layer to a depth of about 90 μ had a
hardness of about 800 kg./sq. mm. compared to a core hard-
ness of 400.

G. Gez

2/2



Peuzner, L. M.

2941* (Russian.) On the Intermediate Transformation of Austenite. O promezhutochnom prevrashchenii austenita. L. M. Peyzner, T. D. Kubyshkina, G. M. Rovenskii, and A. I. Samoilov. *Metallovedenie i Obrabotka Metallov*, 1958, no. 10, Oct. 1958, p. 2-20.

A study of the re-distribution of C in the process of the intermediate transformation of austenite, and of the kinetics of the ultimate stages of decomposition. The transformation was observable in all alloy steels in special diffusion conditions.

ACCESSION NR: AP4037065 S/0129/64/000/005/0021/0028

AUTHOR: Drozdovskiy, B. A.; Pevzner, L. M.; Tarantova, A. S.; Fridman, Ya. B.; Kishkin, S. T.

TITLE: Effect of carbon content on the tensile strength of structural steel sheets

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1964, 21-28

TOPIC TAGS: high strength steel, superstrength steel, medium alloy steel, VKS-1 steel, solid fuel rocket, rocket case, rocket case material, steel notch sensitivity

ABSTRACT: The effects of carbon content, melting conditions, and heat treatment conditions (primarily tempering temperature) on the strength and ductility (in conventional tensile tests and under biaxial tension), and notch sensitivity of two superstrength steels VKS-1 and [AISI]4137-Co are investigated. Four grades of VKS-1 (0.30, 0.39, 0.45, or 0.53% carbon; 0.89% manganese; 1.2% silicon; 1.87% chromium; 0.72% nickel; 0.49% molybdenum; .05% vanadium; 0.011% sulfur; and 0.008%

Cord 1/4

ACCESSION NR: AP4037065

phosphorus) were melted in an open atmosphere induction furnace. The 4137-Co (0.40% carbon, 0.84% manganese, 1.02% silicon, 1.32% chromium, 0.36% molybdenum, 0.19% vanadium, and 1.1% cobalt) was melted either in an open atmosphere induction furnace or in a consumable electrode vacuum arc furnace. Both steels were rolled into sheets 1 mm (VKS-1) or 1.5 mm (4137-Co) thick. Special care was taken to prevent surface decarburization. Tests revealed that tensile and yield strength of VKS-1 steel increased steadily with increased carbon content up to 0.45%. Steel with 0.45% carbon tempered at 150C has a tensile strength of 240—245 kg/mm^2 but low ductility and a high notch sensitivity. When tempered at 220C the steel had a tensile strength of 220—230 kg/mm^2, yield strength of 180 kg/mm^2, and elongation 6.5%. Further increase of carbon content brings about premature brittle failures. Elongation remains almost unaffected by increase of carbon content from 0.30 to 0.45% but notch sensitivity increases very sharply. Under conditions of biaxial tension the strength of VKS-1 increased with higher carbon content only up to 0.39%. With 0.30—0.39% carbon the fracture is ductile and the strength is higher than that in uniaxial tension. As the carbon content is increased to 0.45% the fracture becomes brittle, the

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ACCESSION NR: AP4037065

strength drops and goes below the level noted in uniaxial tension. Generally, the maxima on the strength-carbon content or strength-tempering temperature curves for biaxial tension do not coincide with those for uniaxial tension but occur at carbon contents and tempering temperature at which the strength in uniaxial tension amounts to about 200 kg/mm^2. The behavior of 4137-Co steel followed a similar pattern. It was found, however, that vacuum arc melting improved ductility, especially in biaxial tension, and lowered notch sensitivity. No brittle failures were observed even at tempering temperature as low as 150C. No correlation between the strength in biaxial tension and any characteristics in uniaxial tension was found in either steel. It is concluded that the problem of improvement of structural strengtn is closely related to the prevention of brittle fracture at higher uniaxial strength. This can be achieved by complex alloying with a minimum segregation of components; improved metallurgical processes ensuring higher purity of metal; control of solidification processes to prevent microsegregation and improve the strength of interdendritic boundaries; and finally by thermomechanical treatment with a maximum grain refinement.

Card 3/4

ACCESSION NR: AP4037065

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 05Jun64	ENCL: 00
SUB CODE: MM	NO REF SOV: 004	OTHER: 004

Card 4/4

18 (7)

AUTHORS: Tarantova, A. S., Solov'yeva, G. S., Pevzner, L. M. SOV/32-25-9-23/53

TITLE: Methods for the Metallographic Analysis of Stainless Steels of the Transition-type

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 9, pp 1089-1091 (USSR)

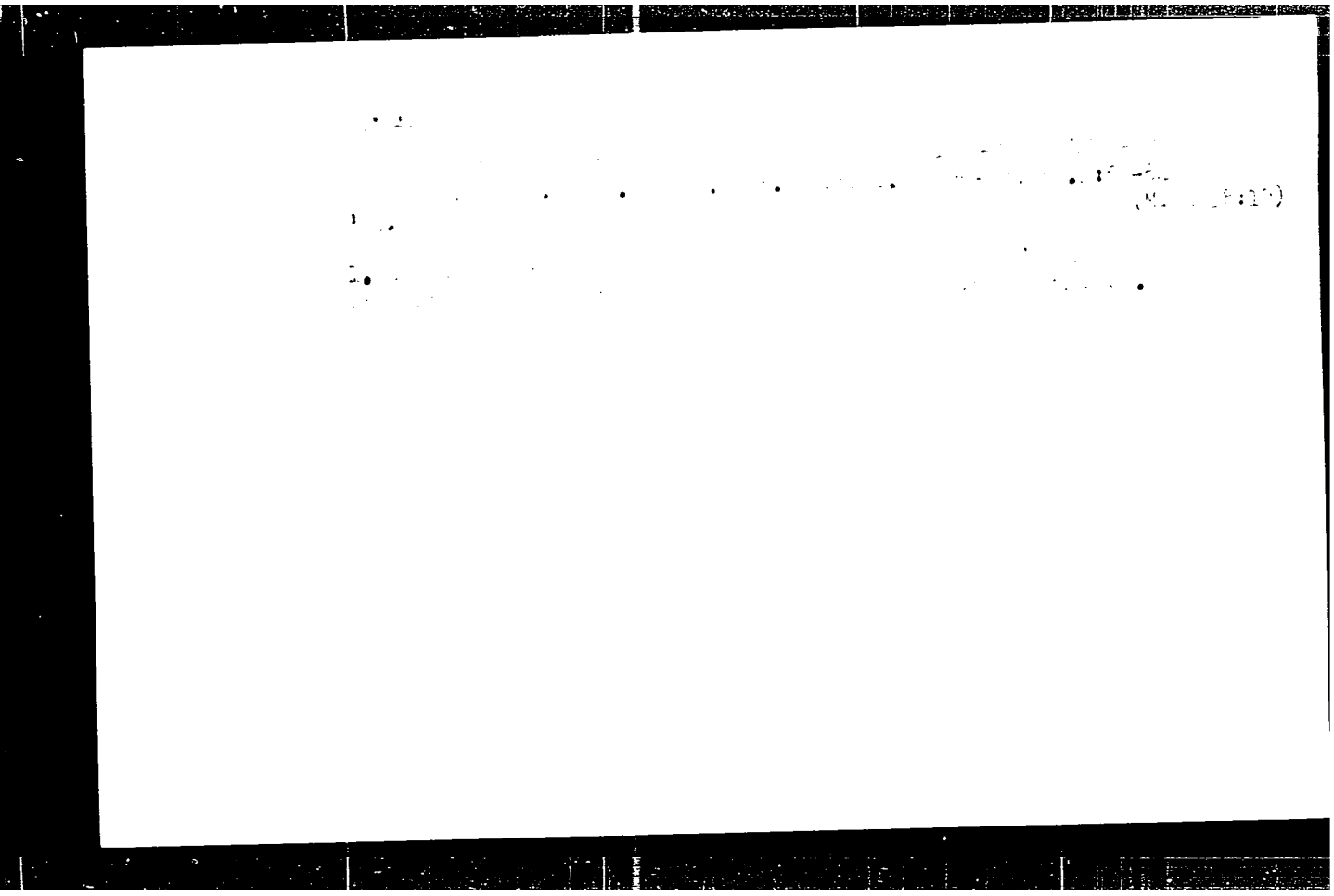
ABSTRACT: During recent years the transition-type stainless steel of the austenite-martensite class (BAM) (EI904, EI925 grades and others) have found wide application. The basic structure of these steels is austenitic, sometimes with fairly large quantities of martensite, all steels of this sort (except EI904) containing 5-20% of δ-ferrite. As these steels differ from the standard types of austenitic steels (such as steel Kh18N9 etc) in having a lower stability of the austenite, electropolishing must be employed for obtaining ground-metal surfaces. Various electrolytes were tried out (Ref 1), and on the basis of the results obtained a method for the make of ground sections was developed. The following electrolyte is recommended: 55 g of citric acid, 5.5 ml of sulphuric acid (1.84), 25 ml of distilled water. Temperature of the electrolyte: 80-90°, current density: 1.5-2 a/dm², duration: 3-5 minutes.

Card 1/2

Methods for the Metallographic Analysis [illegible]
Steels of the Transition-type

A layer 0.05 mm thick is [illegible] removed. Stainless steel Kh18N9T is used as a cathode. The main structure of (BAM)-steels (austenite, martensite, carbides, and δ-ferrite) can be made visible by anodic etching in 10% aqueous oxalic acid at room temperature and a current density of 0.5-0.8 a/cm² for a period of 45-120 sec. Some examples of differently treated (BAM)-steels are given with corresponding microstructure photographs. The occurrence of an increased amount of martensite in the surface layer of the ground-metal sections which could be observed in several cases is explained by the hypothesis of Ya. M. Golovchiner and S. D. Mo[illegible]va, i.e. that the energy conditions for the formation of martensite are more favorable on the surface than in the interior of the metal. To make δ-ferrite visible, etching in a hot solution of 10 g KOH + 10 g $K_3Fe(CN)_6$ + 100 ml H_2O for 5-10 min is recommended. To make δ-ferrite visible, the method of magnetic metallography can also be used (Ref 2). There are 4 figures and 3 references, 2 of which are Soviet.

Card 2/2



KUVYRKIN, N.I., inzh.; [illegible], [illegible], [illegible]

[Instructions for the major repair of [illegible] construction] Ukazaniia po kapital'nomu remontu mashin, zaniatykh v stroitel'stve (US-62). Moskva, Gosstroiizdat. No. 3. [illegible] p. (MIA 15:4)

1. Moscow. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.

KUVYRKIN, N.I., inzh.; PEVZNER, L.M., inzh.; SILOTSKIY, [illegible]

[Instructions on the overhauling of machinery used in [illegible] tion (U5-64)] Ukazaniia po kapital'nomu remontu mashin, za-niatykh v stroitel'stve (U5-64). Moskva, Stroiizdat. No.11. 1965. 194 p. (MIRA 18:6)

1. Moscow. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.

DROZDOVSKIY, B.A.; PEVZN[illegible], L.[illegible]; TA[illegible]OVA, A.S.; F[illegible]MAN, Ya.[illegible]; KISHKIN, S.T.

Effect of carbon content on the strength of structural sheet steel under the effect of tension. Metalloved. i term. obr. met. no.5:21-28 My '64. (MIRA 17:7)

Pevzner, L. M.

AID Nr. 975-2 29 May

AUSFORMING OF STRUCTURAL STEELS (USSR)

Pevzner, L. M., I. N. Roshchina, T. D. Kubyshkina, and L. V. Zaslavskaya. Metallovedeniye i termicheskaya obrabotka metallov, no. 4, Apr 1963, 13-20. S/129/63/000/004/004/014

The effect of the low-temperature thermomechanical treatment "ausforming" on the structure, phase composition, and mechanical properties of low-alloy structural steels containing 0.47-0.58% C, 1.67-1.97% Cr, 2.15-2.44% Ni, 0.80-1.12% W, 0.40-0.46% Mo, and 0.9-0.28%V has been studied. Test specimens 90 x 35 x 22 mm, enclosed in 1X18H9T steel [AISI 321] envelopes, were austenitized at

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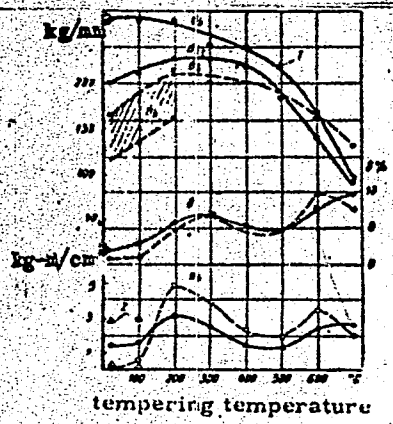
AID Nr. 979-2 29 May

AUSFORMING OF STRUCTURAL STEELS [Cont'd] S/129/63/000/004/004/014



1 - 0.58% C; 2 - 0.47% C.
——— ausformed
----- conventionally hardened

1000°C, cooled to 500-530°C in a saltpeter bath, rolled at this temperature in several passes with a total reduction of 90%, oil quenched, and tempered at 100-550°C for 3 hrs or at 600-700°C for 1 hr. The maximum effect of ausforming, compared with conventional hardening, was observed in steels, as quenched or tempered at 100°C. [see illustration]. The optimum combination of strength and ductility was obtained in a steel containing 0.48% C, 1.15% Mn, 1.60% Si, 1.97% Cr, 2.15% Ni, 1.12% W, 0.45% Mo, and 0.28% V, which after tempering at 100° C

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AID Nr. 979-2 29 May

AUSFORMING OF STRUCTURAL STEELS [Cont'd]

S/129/63/000/004/C04/014

had a tensile strength σ_b = 280-290 kg/mm² and impact strength a_k = 3 kg-m/cm². With an increase in C content to 0.58%, a_k decreased to 1.5-2 kg-m/cm². With tempering at 200 to 600°C, the advantages of austempering over conventional hardening become less pronounced; e.g., the impact strength of ausformed steel drops even below that of conventionally hardened steel. Ausforming brings about considerable anisotropy of mechanical properties and structure: the tensile strength of transverse specimens is considerably higher and the ductility considerably lower than those of longitudinal specimens. Crystals of ausformed martensite shaped like small plates parallel to the sheet plane were found to be oriented in the direction of rolling. X-ray diffraction patterns showed that the substructure, too, becomes anisotropic as a result of ausforming; the martensite blocks of coherent spattering acquire the shape of flakes parallel to the sheet plane and has a thickness only ~1/3 that of conventional martensite. No difference in phase composition between ausformed and conventionally hardened steels was found. Ausformed martensite at temperatures up to 500-550°C appears to be more stable than martensite of conventionally hardened steel; tempering of the former proceeds at a lower rate than that of the latter. At temperatures over 550°C the opposite is true.

[MS]

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AID Nr. 985-2 7 June Pevzner L.M.

AUSFORMING OF CHROMIUM STEELS (USSR)

Kubyshkina, T. D., L. M. Pevzner, L. S. Fedotova, and M. F. Alekseyenko.
Metallovedeniye i termicheskaya obrabotka metallov, no. 4, Apr 1963, 32-35.
S/129/63/000/004/008/014

The effect of ausforming on mechanical properties of complex alloyed steels 1Х12НВМФА or ЭИ961 (0.12% C, 11.3% Cr, 1.77% Ni, 1.60% W, 0.43% Mo, 0.27% V) and ВНС-6 (0.25% C, 12.3% Cr, 1.54% Ni, 1.74% W, 1.96% Mo, 0.23% V) was investigated. Steel specimens 90 x 35 x 22 mm were austenitized at 1020°C, furnace-cooled to 550°C, rolled with 90% reduction to a thickness of 2.5 mm, and immediately oil-quenched. The table shows tensile strength σ_b, yield strength $\sigma_{0.2}$, elongation δ, and notch toughness a_k of ausformed and conventionally hardened steels in as-quenched condition and after tempering at 500°C for 2 hrs.

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AID Nr. 985-2 7 June

AUSFORMING OF CHROMIUM STEELS [Cont'd] S/129/63/000/004/008/014

Steel	Condition	σ_b, kg/mm^2	$\sigma_{0,2}$, kg/mm^2	δ, %	a_k, kg-m/cm^2
1X12HBMΦA	Ausformed	180.5	170.0	15.2	6.4
	Ausformed and tempered	173.5	167.0	13.9	8.6
	Quench hardened	147.0	127.5	15.8	
	Quench hardened and tempered	142.0	131.5	13.2	
BHC-6	Ausformed	231.5	150.5	10.9	4.1
	Ausformed and tempered	220.5	171.0	13.5	6.8
	Quench hardened	191.0	151.5	11.5	4.5
	Quench hardened and tempered	183.5	150.5	11.5	3.4

Thus, compared to conventional hardening, ausforming increases tensile and yield strength by approximately 20% without lowering ductility. It also makes

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AID Nr. 985-2 7 June

AUSFORMING OF CHROMIUM STEELS [Cont'd] S/129/63/000/004/008/014

the steel structure more stable; the softening of ausformed steels begins at temperatures well over 500°C. Both steels after conventional hardening are susceptible to temper brittleness; for example, tempering at 400-500°C lowers the notch toughness of BHC-6 steel to 2.5-3.0 kgm/cm^2. In the ausformed BHC-6 steel, however, notch toughness increases steadily with increasing tempering temperature up to 7 kgm/cm^2 at 500°C. Another special advantage of ausformed steels is high notch toughness at subzero temperatures; BHC-6 ausformed and tempered at 500°C has an average notch toughness at -70 to -196°C of over 7 and 4.0 kgm/cm^2, respectively. In conventionally hardened steel, notch toughness dropped to 1-1.5 kgm/cm^2 at -70°C. [WW]

Card 3/3

PEVZNER, L.M.; Prinimali uchastiye: IVANOVA, A.K.; PALIADIYEVA, M.V.; RYNDINA, A.A.; ROGOVSKIY, N.M., otv. red.; LYSYY, A., otv. za vypusk; MALEK, Z., tekhn. red.

[Excursions around Moscow, its suburbs and museums]Ekskursii po Moskva, prigorodam i muzeiam. Moskva, Profizdat, 1947. 103 p. (MIRA 15:12)

1. Vsesoyuznyy tsentral'nyy sovet professional'nykh soyuzov. Turistsko-ekskursionnoye upravleniye.
(Moscow--Guidebooks)

POTAK, Ya.M., kand.tekhn.nauk; ORZHEKHOVSKIY, Yu.F., kand.tekhn.nauk; PEVZNER, L.M., kand.tekhn.nauk; ROSHCHINA, I.N., inzh.; YERMAKOV, V.N., inzh.

Thermal and mechanical treatment of steel for higher strength. Metalloved. i term. obr. met. no.5:2-9 My '61. (MIRA 14:5)
(Steel, Structural—Hardening)

POTAK, I. M.[Potak, Ya.M.]; ORJEHOVSKI, I. F.[Orzhekhovskiy, Yu. F.]; PEVZNER, L. M.; ROSCINA, I. N.[Roshchina, I. N.]; ERMAKOV, V.N. [Yermakov, V. N.]

Thermomechanical treatment of steel for the obtainment of a high mechanical resistance. Analele metalurgie 15 no.4:114-123 O-D '61.

(Steel—Heat treatment)

22545

Chizhikhovskiy, Yu.P., Candidate of Technical Sciences
Levzner, L.M., Candidate of Technical Sciences
Roshchina, I.N., Engineer and
Yermakov, V.N. Engineer.

TITLE: Thermal-mechanical treatment of steel to [illegible] strength

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov 1961, No.5, pp. 2-9

TEXT: The authors point out that recently much attention has been given to combined mechanical and head treatment, by two possible methods. In one method the steel is rapidly deformed in the austenite-stable temperature range and quenched. While this improves the steel in many ways it fails to increase tensile strength. In the second method the steel is deformed at a temperature between the martensite point M_d and the recrystallization temperature, and quenched. This gives increased strength with satisfactory plasticity. Results of thermal-mechanical

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22545

S/129/61/000/005/001/003
E111/E152

Thermal-mechanical treatment of steel to give high strength

treatment are not universally successful, and there are no reliable data on the practical use of the "ausform" or "ausforming" treatment widely advertised in the USA. The object of the present work was the study of thermal-mechanical treatment of alloy structural steels to a high strength and the structure produced by the treatment. The composition of the steels was as shown in Table 1, steels A-Г being melted in induction and Д and E in arc furnaces; the first group were austenitized at 1000, the second at 900 °C After cooling in a nitrate bath to the deformation temperature the steels were rolled in 4-5 passes (reduction 90%), oil-quenched and tempered. To reduce cooling the work was reheated between passes and other measures taken, e.g. rolls were preheated to 100 °C A portable magnetic instrument (developed by G Yu Sila-Novitskiy and T D Kubyshkina) was used to detect isothermal-decomposition products; if found the specimen was rejected. After treatment specimens had a hardness R_c of 58-64 and mechanical-test pieces were prepared by spark machining and removal by grinding (temperature kept below 100 °C)

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Thermal-mechanical treatment of steel to give high strength

of a 0.5 mm deep surface layer. Fig.2 shows tensile strength kg/mm^2 and relative elongation as functions of carbon content for steels A, B, Г and E after treatment (90% deformation at 550 °C, 4 hours tempering at 100 °C); for steel A tempering at 100 and 200 °C is shown by points 1 and 2 respectively, steels E and Г indicated by point 3. Fig.3 shows for steel Г tensile strength and elongation in relation to the 90% deformation temperature (tempering at 100 °C). The effect of variation in austenitization temperature with 90% deformation and tempering at 100 °C of steel A on tensile strength, Rockwell hardness and elongation is shown in Fig.4. Fig.5 shows the effect of tempering temperature on these properties of the normally thermomechanically treated alloys B and [illegible] (left- and right-hand graphs respectively). The treatment enabled a tensile strength of 280-300 kg/mm^2 and elongation of 6% to be obtained for the steels tested, which is better than with ordinary or stepwise hardening followed by low-temperature tempering. As carbon content rises to about 0.5% strength of thermomechanically treated steels rises and falls with higher

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22545
S/129/61/000/005/001/003
E111/E152

Thermal-mechanical treatment of steel to give high strength

C content due to semi-brittle or brittle fracture. The best strength/plasticity combination was obtained with tempering at 100 °C. In some experiments on steel F the deformation was decreased to 50%. the results were less favourable than with the 90% deformation as regards strength, but gave high plasticity. The advantage of 50% deformation is that it can be effected at relatively high temperatures, even above the recrystallization temperature. Bend tests on 60 x 10 x 2 mm plates of steel F heated in various ways were also carried out. Electron-microscopic study of the fine structure of thermomechanically treated steel A showed a pronounced texture and considerable refinement of martensite plates. X-ray diffraction by rotating specimens was also studied (with a [illegible]-50 (URS-50I) ionization apparatus with automatic recording of intensity distribution in Fe_{K_α} radiation); block size of the thermomechanically treated steel was one half to one quarter that obtained with ordinary hardening. The authors conclude that structure refinement is one factor in the effectiveness of the treatment.

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22545

S/129/61/000/003/001/003
E111/E152

Thermal-mechanical treatment of steel to give high strength

V.V. Chugunov, K.S. Medvedeva, G.G. Solov'yeva, Ye.S. Fal[illegible], T.D. Kubyshkina, V.V. Bol'shakova and Yu.N. Kabanov participated in the work.

There are 6 figures, 4 tables and 21 references: 15 Soviet and 6 English. The four latest English language references read:

Ref.8: E.B. Kula, J.M. Dhosi, "TASM", v. 52, 1960.

Ref.11: D.J. Schmatz, V.F. Zackay, "TASM", v. 51, 1959.

Ref.12: D.J. Schmatz, J.C. Shyne, V.F. Zackay, "Metal Progress", v.76, No.5, 1959.

Ref.13: J.C. Shyne, V.F. Zackay, D.J. Schmatz, "TASM", v.[illegible]

Card 5/8

KUPRIYANOVA, T.D., inzh.; PEVZNER, L.M., kand.tekhn.nauk; POTAK, Ya.M., kand. tekhn.nauk

Martensite transformation in the austenite-martensite class of stainless steels. Metall. ved. i term. obr. met. no.8:9-17 Ag '60. (MIRA 13:8)
(Steel, Stainless--Metallography)
(Phase rule and equilibrium)

18 7100
18 1130

81876
S/129/60/000/08/003/009
E073/E135

AUTHORS: Kubyshkina, T.D. (Engineer); and Pevzner, L.M. and Potak, Ya.M (Candidates of Technical Sciences)

TITLE: Martensitic Transformation in Austenite-Martensite Class Steels

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, No 8, pp 9-17

TEXT: The work described in this paper was devoted to studying the kinetics of the martensitic transformation during cooling and isothermal heating. The investigations were carried out on steel Kh15N9Yu (composition 0.07% C, 15% Cr, 8.5% Ni, 1% Al) The results of this paper relate to heats for which the quantity of martensite after quenching with cooling to room temperature did not exceed 1-4% The kinetics of martensite transformation were investigated magnetically by means of an improved anisometer The martensite quantity was determined by measuring the magnetic saturation in strong fields using a ballistic method In addition to that, a method described by Auerbach and Cohen (Ref 4) was also used for some of the specimens Furthermore optical, electron metallography studies and separation of the anodic precipitate followed by chemical and X-ray analysis (Ref 6) were also applied The influence of the

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Martensitic Transformation in Austenite-Martensite Class Steels

heating temperature on the quantity of martensite in the case of quenching to +20 °C and to -70 °C is plotted in Fig 1. The quantity of martensite was determined after cooling from 1050 °C down to room temperature in air (point II) and subsequent soaking at -70 °C for 2 hours (point I). After quenching from 1050 °C a series of specimens were subjected to reheating at temperatures between 20 and 1050 °C for a duration of one hour and then cooled in air down to 20 °C and the quantity of martensite was determined (curve 1); following that, cold treatment was applied at -70 °C for 2 hours with subsequent heating to room temperature, and the quantity of martensite was measured again (curve 2). It was established that heating to 525-950 °C after austenisation at 1050 °C leads to an appreciable decrease in the austenite stability Destabilization of the austenite is attributed to the fact that the solid solution combines with chromium and carbon due to rejection of chromium carbide. Long-duration storage at room temperature after austenisation, and also heating to temperatures up to 500 °C, lead to stabilization of the austenite

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91876

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E073/E135

Martensitic Transformation in Austenite-Martensite Class Steels

Martensite transformation after thermal stabilization has the following characteristic features: super-cooling of austenite can be achieved without transformation down to any temperature (down to -196 °C) at relatively low cooling speeds; austenite to martensite transformation proceeds isothermally after a certain incubation period. The dependence of the speed of transformation on the temperature of the isotherm and also on the duration of the isothermal holding can be expressed by a curve which shows a maximum (Fig 3). These relations do not extend to ordinary martensitic transformations of unstabilized austenite. After thermal stabilization relations of the martensitic transformation were detected which indicate that in this case the kinetics of transformation are determined by the thermal oscillations of the atoms. The thermal stabilization is linked with changes in the fine structure of the lattice, the nature of which is not clear. It is possible that there is a relaxation of stress peaks in small sections or that there is an annihilation of particular sections of the lattice which are prepared for transformation.
There are 8 figures and 19 references: 10 Soviet, 8 English and 1 German.

Card 3/3

BLINOVSKIY, A.A.; BUSLOVA, N.A.; YEROKHOV, N.F.; IVANOV, K.A.; KITAYEVA, G.V.; LEYBOSHITS, L.M.; NEDELYAYEV, I.A.; PALLADIYEVA, M.V.; PEVZNER, L.M.; PETROVA, Ye.D.; ROGOVSKIY, N.M.; RUDNYY, M.M.; SMIRNOV, B.F.; DENISOVA, I.S., red.; RAKOV, S.I., tekhn.red.

[Through our land; tourist sites and itineraries of the Moscow Interprovince Tour Administration of the All-Union Central Council of Trade Unions] Po rodnoi zemle; turistskie bazy i marshruty Moskovskogo mezhoblastnogo turistsko-ekskursionnogo upravleniia VTsSPS. Moskva, Izd-vo VTsSPS Profizdat, 1959. 154 p. (MIRA 13:4)

1. Moskovskoye mezhoblastnoye turistsko-ekskursionnoye upravleniye Vsesoyuznogo tsentral'nogo soveta profsoyuzov (for all, except Denisova, Rakov).

(Tourism) (Steamboat lines)

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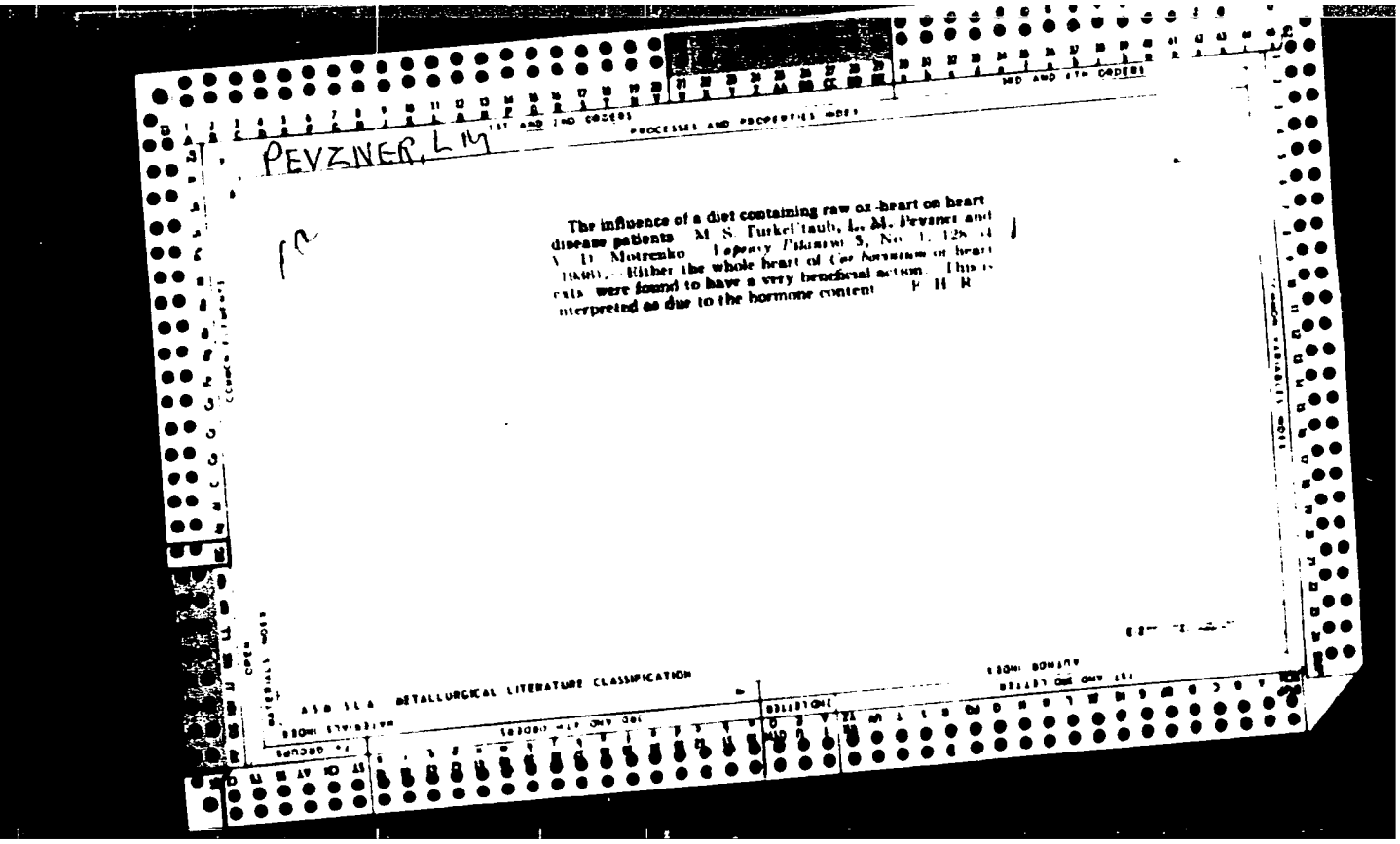
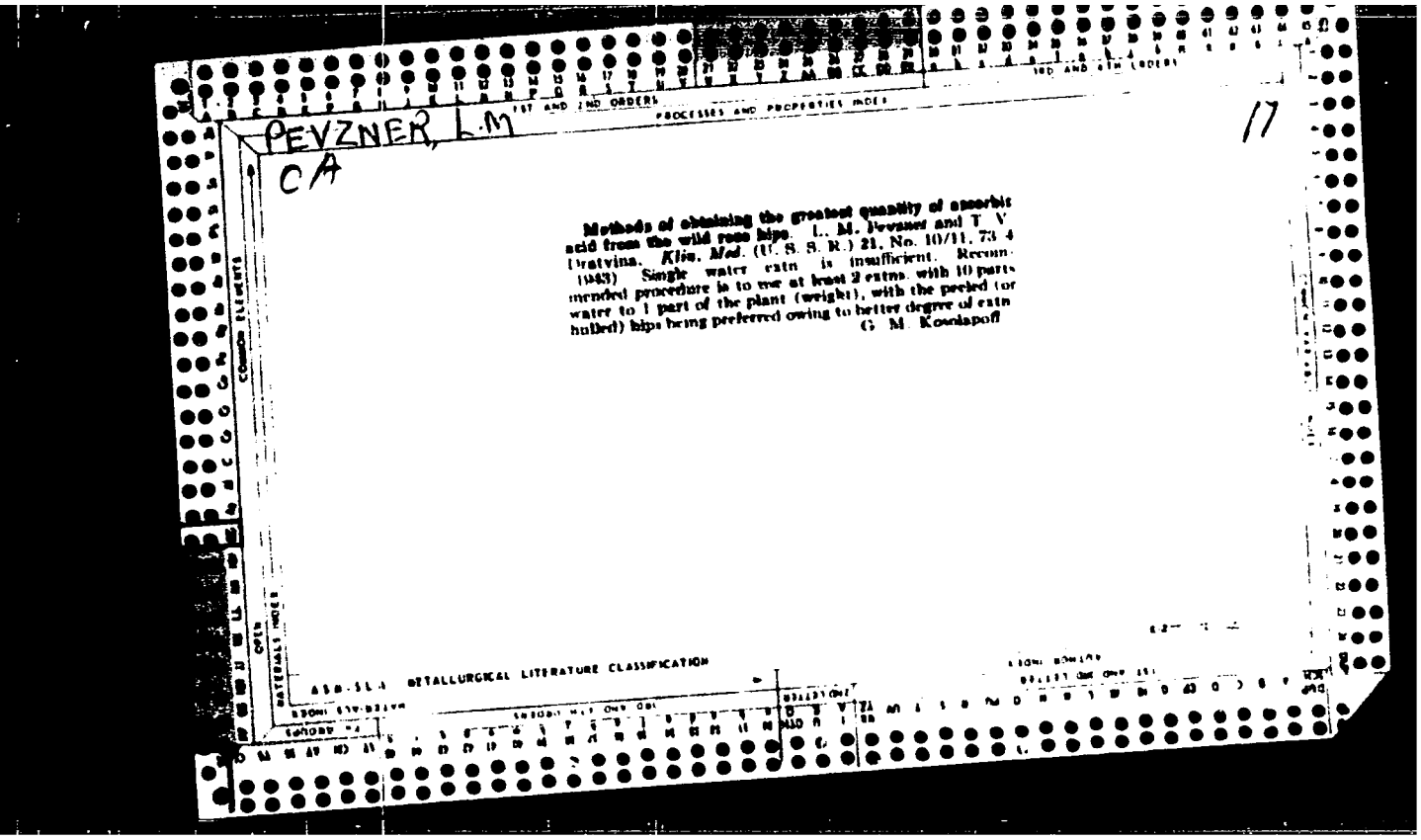
TARANTOVA, A.S.; SOLOV'YEVA, G.G.; PEVZNER, L.M.

Methods for the metallographic analysis of stainless steels of the transition class. Zav.lab. 25 no.9:1089-1091 '59. (MIRA 13:1)

(Steel, Stainless--Metallography)





PEVZNER, L.M
CA
17

Methods of obtaining the greatest quantity of ascorbic acid from the wild rose hips. L. M. Pevzner and T. V. Gratvina. *Klin. Med.* (U. S. S. R.) 21, No. 10/11, 73-4 (1943). Single water extn. is insufficient. Recommended procedure is to use at least 2 extns. with 10 parts water to 1 part of the plant (weight), with the peeled (or hulled) hips being preferred owing to better degree of extn.
G. M. Kondrapoff

METALLURGICAL LITERATURE CLASSIFICATION

PEVZNER, L. R.

Pevzner, L. R. "Works of national scientific school on the theory and designing of ship screw propellers," Trudy Vses. nauch. inzh.-tekhn. o-va sudostroyeniya, Vol. V, Issue 4, 1948, pp. 136-144

SO: U-3264, 10 April 53 (Letopis 'Zhurnal 'nykh Statey, No,.4, 1949).

L 01008-66 EWT(m)/EPF(c)/EWP(j) RM

ACCESSION NR: AP5019566 UR/0191/65/000/008/0013/0017
678.63—9:678.743.22

AUTHOR: Pevzner, L. V.; Kolodyazhnyy, V. Z.; Karyakina, K. N.; Ravich, G. B.

TITLE: Study of combination products of phenolformaldehyde resins with polyvinyl chloride

SOURCE: Plasticheskiy massy, no. 8, 1965, 13-17

TOPIC TAGS: copolymer, polyvinyl chloride, phenolformaldehyde, resin, polyformaldehyde plastic

ABSTRACT: The purpose of this work was to investigate in detail the interaction of phenolformaldehyde resins with polyvinyl chloride to produce phenolates. The investigation consisted of thermogravimetric and thermomechanical measurements. For thermomechanical measurements specimens were produced by pressing. A polarizing microscope with a heated stage was used for microstructural analysis of specimens. A comparison of thermographic and thermomechanical properties of the starting resins and their combination products indicates that the combination of polyvinyl chloride with phenolformaldehyde resins in the presence of hexamethylenetetramine results in cross linking of phenolformaldehyde resins with polyvinyl chloride by methylene

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ACCESSION NR: AP5019566

groups. This conclusion is verified by the solubility data and spectroscopic analysis. "The experimental part of this work was conducted with the participation of Ye. A. Dubrovina." Orig. art. has: 10 figures.

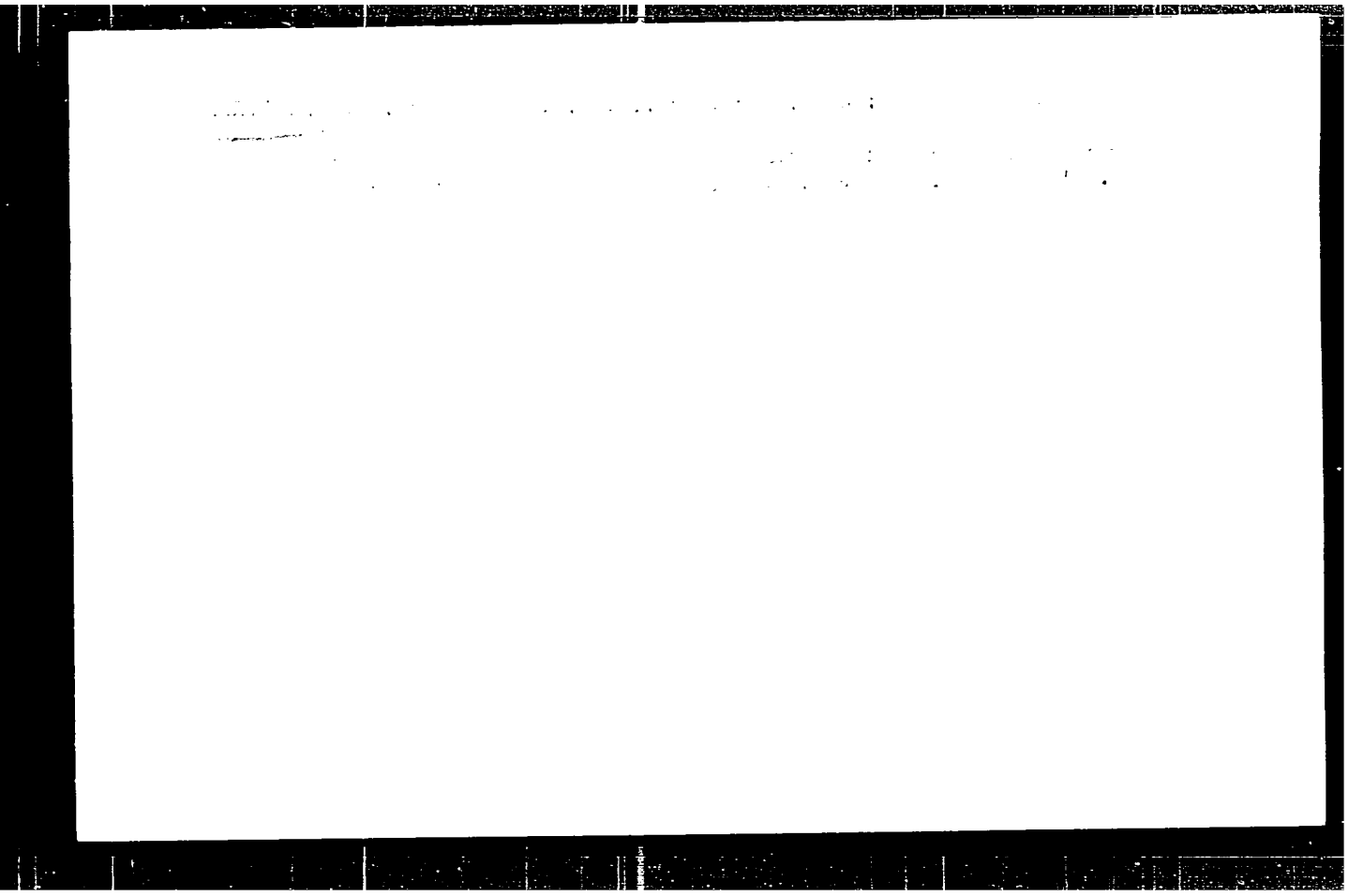
44,55

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 005 OTHER: 000

Card 2/2



APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240710018-7"