

KOSOY, I.M.(Stupino)

Out-of-town session of the editorial board of "Meditsinskaja
sestra." Med.sestra 16 no.5: My '57. (MLRA 10:7)
(NURSES AND NURSING--PERIODICALS)

KABLUKOVSKIY, A.F.; KOSOY, L.F., red.; ROZENTSVEYG, Ya.D., red.izd-va;
KLEYNMAN, M.R., tekhn.red.

[Experts in electric smelting; from practices of the Elektrostal'
Plant] Mastersa elektroplavki; iz opyta zavoda "Elektrostal'."
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi
metallurgii, 1960. 75 p. (MIRA 13:5)
(Electrometallurgy)

Rosoy, C.F.

AUTHORS:

Tolony, S.G., Candidate of Technical Sciences; Kozlov, V.P.,
A.M., Engineer; Petrov, A.E., Engineer; Krasnikova, L.I.,
Engineer; Khabalova, A.I., Engineer; Gavrilova, L.I.,
date of Technical Sciences; Kozlov, V.P., Engineer; Kozlov,
Nov, O.M., Engineer; Maslov, V.M., Engineer.

8/133/ja/001/001/016

TITLE: The Refining of Alloy Steels by Molten Slags
PERIODICAL: Steel, 1960, No. 7, pp. 611 - 618

ABSTRACT: Experiments of refining alloy steels by molten slags in the
laboratory were made to improve this process. In experimental settings were
carried out in 10-t and 20-t basic arc furnaces, with ball bearing, micro-
alloy and stainless steels. The slag was prepared in a 10-t arc furnace
(with a 2500 kva transformer) from a mixture of 95% lime and 5% fluo-
spar (with a 2500 kva transformer). The synthetic slag poured into the ladle was a
mixture of lime, fluo-spar and basic flux. The ladle was equipped with a
berth 5 - 6% of the metal weight. The kind of slag used was basic (B - 3),
bearing steel (A - A) and oxid. (the indicators indicate the values before,
with the following composition: the indicators indicate the values before,
the denotation after the treatment of the metal):

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Slag	CaO	Al ₂ O ₃	SiO ₂	MnO	P ₂ O ₅
A	51.3	44.4	1.42	1.22	0.16
B	49.5	43.2	3.54	3.46	0.25
	51.6	43.8	1.31	1.46	0.18
	50.4	42.5	4.32	3.81	0.27

The temperature of the slag varied between 1950°C and 1950°C. The elec-
tric power used in preparing the slag was 100 kWh per 1 ton of furnace spe-
cial value, however, it may be higher. The electrical consumption in the melting spe-
cially depended on the composition of the slag. In the experiments the following steel
types were used: UH1315 (1315), UH1517 (1517), UH1550 (1550), UH1551 (1551), UH1552 (1552),
UH1553 (1553), UH1554 (1554), UH1555 (1555), UH1556 (1556), UH1557 (1557), UH1558 (1558),
UH1559 (1559), UH1560 (1560), UH1561 (1561), UH1562 (1562), UH1563 (1563), UH1564 (1564),
UH1565 (1565), UH1566 (1566), UH1567 (1567), UH1568 (1568), UH1569 (1569), UH1570 (1570),
(in 10-t electric furnaces). Several compositions of refining arc described
under basic and oxidizing slag with different amounts of ferrochrome and
aluminum with and without desoxidation of the metal and with varying dura-

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The Defining of Alloy Steels by Wilson Spence's Sliver
8/13/56/06/06/007/007/06

... of the process, normally it was found that the refining time was ...
... for 1.6 times and twice higher than those for the conventional type of this
... It was also found that the amount of the ...
... revealed the relation of values for 0.2% (of the conventional steel) to
... longitudinal specimens ...
... of the ... of variant I and II ...
... of the ... was raised from 0.55 to 0.71 and 0.74 respectively. ...
... is also ... to the ... of ...
... take the ... in the ... and the ...
... of ... and ...
... for the ...

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ASSOCIATION: Fairbairn, J. (Ed.), (1956) ...

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S/133/61/000/001/004/016
A054/A033

AUTHORS: Voinov, S.G., Candidate of Technical Sciences; Kosoy, L.F., Engineer

TITLE: Improving the Melting Technology of Structural Alloy Steel

PERIODICAL: Stal', 1961, No. 1, pp. 34 - 38

TEXT: The technology currently applied for structural alloy steels is not sufficiently economical as regards the productivity of arc furnaces; nor can the required properties of the steel be obtained, because they largely depend on the composition of the refining slag which cannot be fully controlled. To eliminate the deficiencies of the conventional technology, engineers of the TsNIICHM in cooperation with a team of the Zlatoustovskiy metallurgicheskiy zavod (Zlatoustovsk Metallurgical Plant) consisting of A.K. Petrov, J.A. Vachugov, O.M. Chekhomov, A.I. Markelov et al. have developed a new process which fully allows for the important factor of the metal properties, greatly affected by the non-metallic impurities, submicroscopic siliciumoxide phase and hydrogen. In the electric arc furnace of the ZMZ 25 experimental meltings were carried out with 30XГСА (30XГСА), 60X2H1,5 (60Xh2N1.5), C65A (S65A) and C65ГA (S65ГA) grade steels. The charge consisted of carbon steel and railway scrap, while, in accordance with the modified

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Improving the Melting Technology of Structural Alloy Steel

technology, no forge pig was added; 0.2 - 0.3% C was used for oxidation during boiling and lime up to 1.5% of the charge weight was added. 60Kh2N1.5 was produced by remelting, using low-carbon and chromium-nickel steel scraps. Another feature of the new process was that dephosphorization was combined with the melting of the charge in order to obtain a phosphorus content not exceeding 0.015% during fusion while the P-content of the charge was calculated for 0.040 - 0.055%. Moreover, preliminary deoxidation of the metal was effected by adding electrode chips, lumps of aluminum (0.4 kg/ton for 30KhGSA and 60Kh2N1.5 and 0.5 kg/ton for S65A and S65GA steels), furthermore by lumps of 75% ferrosilicium (2.2 kg/ton) and ferromanganese. The deoxidation of the bath was carried out in three batches, containing crushed ferrosilicium, at 10 min intervals, while, before the third batch, lumps of aluminum (0.3 kg/ton) were added. For the 30KhGSA steel the third batch consisted of ferrosilicium lumps for alloying. Ferrochromium was added after the second and ferromanganese after the third addition of ferrosilicium. About 7 - 8 min before tapping the slag, the furnace being switched off, a mixture was sprayed on the slag, consisting of 1 kg/ton aluminum, 2 - 3 shovels of crushed lime and 0.2 kg/ton charcoal, to reduce the amount of sulfide and oxide inclusions and for the scorification of siliciumoxide. A final deoxidation of

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the bath is effected by adding 0.4 kg/ton aluminum lumps (for the 30KhGSA type steel 0.2 kg/ton). The refining slag was composed of 500 kg lime, 90 kg fluorite and quartzite, respectively, 60 kg crushed fireclay and, depending on the conditions of the furnace, 25 - 35 kg crushed coke. In one of the meltings of 30KhGSA steel, at the end of the refining period and before the deoxidation of the slag by aluminum powder, a synthetic slag mixture was charged, containing 100 kg lime, 40 kg fluorite, 40 kg calcined soda and 20 kg pan salt. Before charging, this mixture was roasted at 1,000°C in a heating furnace on iron plates for 4 - 8 h. The above-mentioned modifications of the conventional process improve the technological indices of melting. Decarbonization takes place at a high rate, for 30KhGSA at 0.71% C/h, for S65GA 0.58% C/h (average values). The process ensures a high rate of dephosphorization. At a calculated P-content of the charge of 0.04 - 0.045%, the P-content for 30KhGSA during fusion was 0.011%, at the end of boiling 0.005% (see table). The refining slag possesses a high deoxidizing capacity. The average FeO content of slag during fusion for the 30KhGSA steel was 0.56%, while it was 0.38, 0.22, 0.33% for the S65GA steel. The rate of desulfurization is also increased: the S-content of the finished 30KhGSA, S65GA and 60Kh2N1.5 steels is not more than 0.008, 0.007 and 0.007%, respectively. The

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melting time is shortened (Table 2). With regard to metal properties see Table 3. The new metal types are free of non-metallic impurities to a high degree. The characteristic values for S65GA steel with regard to impurities are the following (in the numerator: for the experimental technology and in the denominator: for the conventional):

sulfides:	$\frac{1.71}{2.09}$	oxides:	$\frac{1.50}{1.80}$
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The new technology made it possible to increase the productivity of arc furnaces by 15%. There are 3 figures and 1 table.

ASSOCIATION: TsNIICM

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VOINOV, Semen Georgiyevich; SHALIMOV, Anatoliy Georgiyevich; KOSOY,
Leonid Fineasovich; KALINNIKOV, Yevgeniy Sergeyevich;
VENETSKIY, S.I., red. izd-va; MIKHAYLOVA, V.V., tekhn. red.

[Steel refining in the ladle by means of liquid synthetic slag]
Rafinirovanie stali v kovshe zhidkim sinteticheskim shlakom. Mo-
skva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metal-
lurgii, 1961. 110 p. (MIRA 15:1)
(Steel--Metallurgy)

VOINOV, S.G.; MALINNIKOV, Ye.S.; TOPII'SKIY, P.V.; BOBKOVA, O.S.;
KURINOV, V.G.; ZAYCO, V.P.; KOSOY, L.F.; SHALIMOV, A.G.;
Prinimali uchastiye: IOFFE, Y.N.; CHABCHENKO, N.I.;
FRANCHELLI, G.; KOSLOVA, N.A.

Developing a procedure for the making of limestone and alumina
semifinished products for the preparation of synthetic slag.
Stal' 22 no.2:128-132 F '62. (MIRA 15:2)

(Slag)
(Electric furnaces)

S/133/62/000/003/001/008
A054/A127

AUTHORS: Voinov, S. G., Kosoy, L. F., Shumov, M. M., Shalimov, A. G.,
Chekhomov, O. M., Andreyev, T. B., Afanas'yev, S. G., Kalinnikov,
Ye. S.

TITLE: Refining converter steel with liquid synthetic slag in the ladle

PERIODICAL: Stal', no. 3, 1962, 226 - 232

TEXT: The good results obtained in refining electric steels with liquid lime-aluminous slag led to pilot-plant tests with converter steels, using the same method. 111 heats were smelted in a basic 8-ton converter; 45 of them were refined in the ladle with liquid synthetic slags of the following composition (in %):

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Refining converter steel with...

Steel grade	Number of heats	CaO	Al ₂ O ₃	SiO ₂	MgO	FeO	Cr ₂ O ₃
ШХ15 (ШкХ15)	6	<u>55.26</u>	<u>42.73</u>	<u>1.90</u>	<u>0.79</u>	<u>0.82</u>	<u>0.30</u>
		53.04	41.47	3.85	0.80	0.90	0.17
12ХН3А, 06Н3 (12ХН3А), (06Н3)	5	<u>52.49</u>	<u>42.45</u>	<u>2.02</u>	<u>0.78</u>	<u>0.90</u>	<u>0.94</u>
		49.82	36.94	5.06	0.82	7.69	0.92
СГБ (СГВ) (deep drawing steel)	7	<u>53.10</u>	<u>44.22</u>	<u>2.19</u>	<u>0.75</u>	<u>0.65</u>	<u>0.23</u>
		51.37	38.34	4.52	0.93	4.05	0.23
И (I) (tool, carbon, cable, rail, axle steel)	14	<u>53.58</u>	<u>44.08</u>	<u>2.06</u>	<u>0.69</u>	<u>0.70</u>	<u>0.15</u>
		52.51	40.92	3.61	0.72	1.75	0.13

(numerator: composition prior to metal treatment; denominator: composition after the treatment). The slag was melted in a 3-ton arc furnace, with hearth and banks of carbon blocks and carbon packing. The slags differed from those used for electric steels in that they contained more silica, ferrous oxides and

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chrome oxides. To maintain the fluidity and reactivity of the slag under the test conditions, its quantity was increased to 6.5% of the metal weight, the temperature of the liquid slag in the furnace was raised to 1,750 - 1,850°C and the interval between pouring the slag and tapping the metal was reduced (to 2 min. 5 sec. on the average). The ladle was preheated to 600 - 800°C prior to slag tapping. The basic slag forming additives were common open-hearth lime (with up to 0.2% S), bauxite and in some cases (for medium-carbon and high-carbon steel grades) fluorite. Lime was added in two batches: prior to pouring the cast iron and 4 - 5 minutes after blowing started; the other two components were added together with lime. The quantity of the latter used for alloy and high-grade steels was 8 - 9%, for rail and axle steel 6 - 7% of the charge weight. SiK_{15} , $12KN3A$, $05N3$ grades, deep-drawing steel and carbon (tool) steels were cast with fluorite (0.3 - 0.8% of the charge weight; the slag was tapped twice.) To determine the optimum cast iron composition, cast irons with components varying greatly in amount were used (0.28 - 0.78% Si, 0.50 - 1.80% Mn, 0.025 - 0.095% S, 0.085 - 0.220P). The slags were very active already at the beginning of blowing. The basicity of slags ($CaO:(SiO_2+P_2O_5)$) increased progressively (5 - 5 1/2 minutes after blowing started it was 2.0, at the end of blowing: 3.0 - 4.0). The synthetic slag refining method in converters with oxygen top blast results in a

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high degree of desulfuration. When cast irons are processed with a high (0.085 - 0.095%) sulfur content, this could be reduced to 0.030 - 0.042% during blowing and to 0.009 - 0.013% after slag treatment. Desulfuration is most effective in the Y10-Y134 (U10-U13A) grades (up to 72.8%), in axle steel (71.9%) and ShKh15 steel grade (67.8%). The final phosphorus content of steel can also be reduced to 0.020 - 0.030% by slag treatment, even if made of cast iron containing 0.22% phosphorus. The synthetic slag method reduces the content of oxygen and non-metallic inclusions (sulfides, oxides) of the steel. Converter structural steel grades, refined by synthetic slag, have a greater ductility and notch toughness (mainly across the fibre), than conventional converter, open-hearth and electric steels. Most probably, the ductility is improved by the effect of the synthetic slag emulsion on the metal which reduces the sulfur content and non-metallic inclusions; a sub-microscopic silicium-oxygen phase may also have some effect. Slag-refined converter axle steels displayed a high ductility at -20°, -40° and -60°C, the new refining method imparts the 06N3 cold-resistant converter steel at 150 - 183°C the same degree of frost-resistance as found in electric steels. The tests were carried out with A. N. Korneyenkov, G. V. Gurskiy, Ya. M. Bokshitskiy, A. K. Petrov, Ye. D. Mokhir, R. I. Kolyasnikova, G. A. Khasin, V. P. Danilin,

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Refining converter steel with...

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P. S. Plekhanov, A. I. Mazun, and A. A. Markin participating. There are 3 figures, 9 tables and 2 Soviet-bloc references.

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VOINOV, S.G.; KOSOY, L.F.; SHUMOV, M.M.; SHALIMOV, A.G.; CHEKHOMOV, O.M.;
ANDREYEV, T.B.; AFANAS'YEV, S.G.; KALINNIKOV, Ye.S.; Primali
uchastiye: KORNEYENKOV, A.N.; GURSKIY, G.V.; BOKSHITSKIY, Ye.M.;
PETROV, A.K.; MOKHIR, Ye.D.; KOLYASNIKOVA, R.I.; KHASIN, G.A.;
DANILIN, V.P.; PLEKHANOV, P.S.; MAZUN, A.I.; MARKIN, A.A.

Refining converter steel in the ladle with liquid synthetic slag.
Stal' 22 no.3:226-232 Mr '62. (MIRA 15:3)
(Steel--Metallurgy)

ACCESSION NR: AP4041866

S/0133/G4/000/007/0599/0604

AUTHOR: Voinov, S. G., Kosoy, L. F., Morozenskiy, A. I., Savel'yev, D. F.,
Shalimov, A. G., Kalinnikov, YG. S., Shatunov, S. F., Kireyev, B. A., Okhapkin, S. I.
Davy*dova, L. N., Izmanova, T. A.

TITLE: Refining of 100-ton open-hearth melts by liquid synthetic slag in the ladle

SOURCE: Stal', no. 7, 1964, 599-604

TOPIC TAGS: steel manufacture, ore refining, alloy steel, carbon steel, open hearth
melt refining, ladle refining, synthetic slag, liquid synthetic slag

ABSTRACT: The authors describe a technique for the ladle treatment of 100-ton open-
hearth melts by means of synthetic liquid slag under industrial conditions which make it
possible to produce high-quality alloy and carbon steel, including ball-bearing steel,
equal to electric steel in terms of the content of non-metallic admixtures, mechanical
properties (along and across the fiber) and other criteria. Experiments were conducted
by TsNIIChM with 60 melts from two 100-ton basic open-hearth furnaces operating with a
hard charge by the scrap method and heated by mazut with steam sprinkling at a tempera-
ture of 200-300C and a pressure of 10-12 atmospheres. The synthetic slag was smelted
in a redesigned 18-ton arc-type electric furnace (DST-12) with a special carbon vat lining.

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ACCESSION NR: AP4041866

The slag was obtained by melting together industrial alumina and lumpy annealed lime. The electric power consumption required to smelt one ton of the synthetic slag was 1,495 kilowatt-hours, corresponding to an additional expenditure of electric power of 56.8 kilowatt-hour/ton of steel. Before releasing the melt into the ladle, the liquid synthetic slag was poured off in the amount of 3-4% of the weight of the metal (the mean consumption of slag per ton of steel was 3.7%), after which, with as little delay as possible, the melt was released into the same ladle. Meanwhile, the oxidized furnace slag was removed from the metal in the spout of the open-hearth furnace by means of a special device described and illustrated schematically in the text. The mean temperature of the liquid synthetic slag in the furnace before slagging was 1,670-1,640C. Before the refinement of the steel the slag contained 40-41% Al_2O_3 , 54-56% CaO, 1.5-2.0% SiO_2 , 1-3% MgO and 0.2-0.4% FeO. In the industrial tests that were carried out, steels 30KhGSA, 40KhNMA, 40KhFA, 50KhFA, U7-8A and ShKh15 were smelted in 100-ton furnaces and teemed. The metal was held in the ladle 8-15 minutes before pouring. In order to provide a proper comparison of the test metal with conventional metal, 32 melts were made according to the conventional technology in 100-ton, 40-ton open-hearth and 18-ton arc furnaces. The tests indicated that the refining of large open-hearth melts in the ladle by liquid synthetic slag involves no difficulties. The normal smelting procedure according to the new

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ACCESSION NR: AP4041866

technology provided a metal of the prescribed chemical composition. A high degree of desulfuration was achieved. The sulfur content in the metal so refined was reduced from 0.030-0.040 to 0.006-0.012%. Open-hearth ball-bearing steel ShKh15 refined by synthetic slag had a higher degree of purity with respect to non-metallic admixtures than the electric steel of Plant No. 1 and of other metallurgical plants. The quality of the open-hearth structural alloy and instrument-carbon steels, refined by the synthetic slag, was equal to that of electric steel, and was even superior to it in terms of plasticity and resiliency across the fiber. Experiments in the preparation of the synthetic slag in an arc-type electric furnace for the processing 10-ton open-hearth melts indicated that in order to obtain 1 ton of the liquid slag 1500 kw-hours of electric power is sufficient with a specific transformer power of 1200 kva per ton of hourly productivity of a slag-smelting furnace. The production of high-quality open-hearth steel in 100-ton furnaces by the new method results in a considerable cost reduction in comparison with conventional electric steel. The results of the refining of 100-ton open-hearth melts by means of liquid synthetic slag point to the advisability of putting this method into operation in the open-hearth shops of high-quality metallurgical plants having furnaces of 100- to 200-ton capacity. "A. M. Svistunov (Deceased), S. Motveychuk, Ye. N. Vasil'yev, A. S. Mikhaylov, I. F. Yefimov, A. A. Kuz'min, K. S. Obokmov, Yu. N. Gorbunov, V. G. Kuklev, N. I. Kazakova and others also took part in the work." Orig. art. has: 4 figures and 4 tables.

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ACCESSION NR: AP4041866

ASSOCIATION: None

SUBMITTED: 00

SUB CODE: MM

ENCL:00

NO REF SOV: 003

OTHER: 000

Card 4/4

SHALIMOV, A.G., kand. tekhn. nauk; VOINOV, S.G., doktor tekhn. nauk;
KOSOY, L.F.

Improving the quality of alloy steel by refining it with a
liquid synthetic slag. Met. i gornorud. prom. no.4:16-19
Jl-Ag '64. (MIRA 18:7)

GABUYEV, G.Kh.; YEL'TSOV, K.S.; SHUL'TE, Yu.A.; MIKHAYLOV, P.A.; GAREVSKIKH, I.A.;
LEYBENZON, S.A.; TSIVIRKO, E.I.; MEDOVAR, B.I.; LATASH, Yu.V.; FRANTSOV,
V.P.; PAKHOMOV, A.I.; KAGANOVSKIY, G.P.; VOINOV, S.G.; SHALIMOV, A.G.;
KALINNIKOV, Ye.S.; SMOLYAKOV, V.P.; KOSOY, L.F.

Improving the quality of electric-slag-refined bearing steel. Stal'
24 no.7:640-642 J1 '64. (MIRA 18:1)

1. Zavod "Dneprospetsstal", Zaporozhskiy mashinostroitel'nyy institut,
Institut elektrosvarki im. Ye.O.Patona i Tsentral'nyy nauchno-issledo-
vatel'skiy institut chernoy metallurgii imeni I.P.Bardina.

VOINOV, S.G.; KOSOY, L.F.; MOROZENSKIY, A.I.; SAVEL'YEV, D.F.; SHALIMOV, A.G.;
KALINNIKOV, Ye.S.; SHATUNCV, S.F.; KIREYEV, B.A.; OKHAPKIN, S.I.;
DAVYDOVA, L.N.; IZMANOVA, T.A.

Refining a 100-ton open-hearth heat with a liquid synthetic slag
in the ladle. Stal' 24 no.7:599-604 J1 '64.

(MIRA 18:1)

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AP4041869

S/0133/64/000/007/0640/0642

AUTHOR: Gabuyev, G. Kh.; Yel'tsov, K. S.; Shul'te, Yu. A.; Mikhaylov, P. A.; Garevskikh, I. A.; Leybenzon, S. A.; Tsivirko, E. I.; Madovar, B. I.; Latash, Yu. V.; Frantsov, V. P.; Pakhomov, A. I.; Kaganovskiy, G. P.; Voinov, S. G.; Shalimov, A. G.; Kalinnikov, Ye. S.; Smolyakov, V. P.; Kosoy, L. F.

TITLE: Improvement of the quality of electroslag-melted ball-bearing steel

SOURCE: Stal', no. 7, 1964, 640-642

TOPIC TAGS: ball bearing steel, electroslag melted steel, high purity steel, steel electroslag melting

ABSTRACT: Several variants of electroslag melting have been tested in an attempt to improve the quality of ball-bearing steel. The analysis of electroslag-melted steel showed that nitrides and carbonitrides constitute the greatest part (up to 75%) of the nonmetallic inclusions present in the steel. These nitrides derive from the initial material. The electroslag process eliminates large nitrides over 20 μ in diameter, but does not eliminate the smaller ones.
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ACCESSION NR: AP4041869

Therefore, the nitrogen and titanium contents of the initial metal must be reduced to a minimum. This can be done, for example, by refining the metal in the ladle with synthetic slag. Electroslag melting of open-hearth steel refined with synthetic slag eliminated all the inclusions larger than 10 μ and reduced the number of smaller inclusions by more than 50% and the nitrogen and oxygen contents to 0.0053 and 0.0020%, respectively. To produce ultra-high purity ball-bearing steel, the double electroslag melting was applied with a combination of various fluxes. The use of ANF-6-ANF-6 fluxes in double electroslag melting or of AN-29-ANF-6 fluxes produced best results. Ultra-high purity steel, fully satisfying requirements for critical ball bearings, was obtained. Orig. art. has: 2 figures.

ASSOCIATION: Dnepropetsstal' (Dnepropetsstal' plant); Zaporozhskiy mashinostroitel'nyy institut (Zaporozh Machine-Building Institute); Institut elektrosvarki in Ye. O. Patona (Electric Welding Institute); TsNIICHM

Card 2/3

L 52082-65 ENT(m)/EWP(t)/EWP(b) JD

ACCESSION NR: AT5012936

UR/2776/64/000/037/0135/0140

14
13
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AUTHOR: Izmanova, T.A.; Kosoy, L.F.

TITLE: Study of the changes in the gas content of steel in the course of refining with synthetic slag in the ladle

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov, no. 37, 1964. Novyye metody ispytaniy metallov; khimicheskiy kontrol' y metallurgii (New methods in the analysis of metals; chemical control in metallurgy), 135-140

TOPIC TAGS: steel gas content, steel production, synthetic slag refining, carbon steel, alloy steel, lime alumina slag, open-hearth steel

ABSTRACT: Various brands of carbon and alloy constructional steel and carbon tool steel were refined in the ladle with liquid synthetic slag at the Izhevskiy metallurgicheskiy zavod (Izhevsk Metallurgical Works) in 1962; for comparison, electrical steels and open-hearth steels were prepared by the usual process. The steels were analyzed for oxygen, hydrogen, and nitrogen. The large number of determinations permitted a reliable estimate of the effect of slag refining on the gas content of the steels. Synthetic slag decreased the oxygen content by deoxidizing the metal and

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L 52082-65

ACCESSION NR: AT5012936

coagulating the inclusions, thus promoting the elimination of various oxides from the metal into the slag. The nitrogen content was not appreciably affected. The higher content of hydrogen was not due to the slag, but to the process of melting. It is concluded that the use of synthetic lime-alumina slag for the refining of open-hearth steel in the ladle promotes an effective decrease in oxygen content to a level corresponding to that of the best electrical steels, without affecting the final nitrogen and hydrogen content. Orig. art. has: 20 figures and 2 tables.

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

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 003

OTHER: 000

ooh
Card 2/2

L 12972-65 EWT(m)/EWA(d)/EWP(s)/EWP(z)/EWP(b) 370
ACCESSION NR: AP5008709 S/0133/65/000/003/0232/0235

AUTHOR: Lubenets, I. A.; Zhukov, D. G.; Voinov, S. G.; Shalimov, A. G.; Kosov, L. P.; Kalinnikov, Ye. S.; Chernyakov, V. A.; Yartsev, M. A.; Golikov, Ye. S.; Mysina, G. Ye

TITLE: Synthetic slag refining of steel from large-capacity arc ovens

SOURCE: Stal', no. 3, 1965, 232-235

TOPIC TAGS: steel refining, synthetic slag, ball bearing steel, chromium steel, low impurity steel, arc oven steel

ABSTRACT: During the second half of 1963, one of the electrical steel-smelting enterprises started introducing the refining of steel by means of synthetic lime-alumina slag into industrial use. The present article reports on the preliminary findings concerning the efficiency of this new process. Tests were carried out with a slag-melting OKB-284 converter having an internal diameter of 5350 mm and a 4500 kVA transformer. The wall and cover were made of chromomagnesite while the tank was lined with carbon blocks; the smelting chamber had a diameter of 3000 mm and was 800 mm deep. All pertinent construction and operational data are given

Card 1/2

L 42972-65
ACCESSION NR: AP5008709

in considerable detail. Specifically, 1) the oven produced 2.5 metric tons/hr. of slag; 2) during production of ball-bearing and construction chromium steel, the slag consumption amounted to 2.8-5.0% of the mass of processed metal; 3) the oven consumed about 1420 kWh per metric ton of slag produced; 4) the shortened refining operation decreased the consumption of electrical energy by 30-40 kWh per metric ton of metal, which compensated fully for the energy requirements for the production of slag; and 5) the productivity of the large-capacity electrical ovens was increased by 10-15%. The new method markedly reduced (as shown in several tables presenting the results of impurity determinations) the amount of nonmetallic impurities and improved the plastic properties of the finished product. The technological procedures described should be able, in the future, to improve the quality of the above-mentioned special steels even more and reduce the impurity content even further. "In this work, carried out in conjunction with TsNIICM, N. V. Keys, V. G. Pegov, Ye. B. Men'shenin, M. A. Barnovalov, G. B. Shirer, M. I. Shatalov, A. A. Molchanova, M. Ye. Anisimova, and others also took part." Orig. art. has: 5 tables.

ASSOCIATION: None

SUBMITTED: 00

NO REF SOV: 001

ENCL: 00

OTHER: 000

SUB CODE: MM

Card 2/2 S/1

VOINOV, Semen Georgiyevich; SHALIMOV, Anatoliy Georgiyevich;
KOSOY, Leonid Georgiyevich; KALINNIKOV, Yevgeniy
Sergeyevich

[Refining metals with synthetic slags] Rafinirovanie me-
tallov sinteticheskimi shlakami. Moskva, Metallurgiya,
1964. 279 p. (MIRA 17:12)

KOSOY, M.

Toward new milestones. Pozh.delo 7 no.6:15 Je '61.

(MIRA 14:6)

1. Starshiy inspektor Upravleniya pozharney okhrany, g. Kuybyshev.
(Kuybyshev Province—Fire departments)

KOSOY, M.

School desks in a fire department. Pozh. delo 8 no.2:21 F '62.
(MIRA 15:2)

1. Starshiy inspektor Upravleniya pozharnoy okhrany, g. Kuybyshev.
(Kuybyshev--Fire prevention--Study and teaching)

KOSOY, S.N.; MELAMED, M.Z.

Standardization of means of automation. Standartizatsia 26
no.6:41-43 Je '62. (MIRA 15:7)
(Automatic control--Standards)

KOSOY, S. N.

Standardization and unification section at the Kiev Economic
Council. Standartizatsiia 26 no.10:64 0 '62.

(MIRA 15:10)

(Kiev--Standardization)

KOSOY, Vul'f Mikhaylovich; MAYZEL', N.P., inzh., red.; SLOBODKINA, G.N.,
red.; LEBEDEVA, L.V., tekhn.red.

[Heating blocks of hydraulic structures in laying concrete
in winter] Obogrev blokov gidrotekhnicheskikh sooruzheni² pri
proizvodstve betonnykh rabot v zimnee vremia. Moskva, Orgenergo-
stroi, 1959. 53 p. (MIRA 14:2)

(Hydraulic structures)

(Concrete construction--Cold weather conditions)

VLADIMIROV, V.S., inzh; KOSOY, Yu.M., inzh.

Choice of voltage and power rating for pole pairs of pulsating
current motors. Vest. elektroprom 34 no.6:20-24 Je '63.
(MIRA 16:7)

(Electric railway motors)

Kosoyan, Zh. A.

AKOPYAN, A.Ye.; KOSOYAN, Zh.A.; VARDANYAN, V.V.

The chlorination of dichlorohexadiene and the dehydrochlorination
of the reaction products, Zhur.ob.khim. 25 no.6:1621-1625 Je '56.
(MIRA 11:1)

(Hexadiene) (Chlorination)

Kosoyan, Zh. A.

Chlorination of dihydrocarbazole and
study of the products of the reaction. *Zh. Khim.
Sovyan. and V. V. Yardanyan. J. Gen.
Chem. USSR 31(1958) (English translation),
1519.*

hydrochlorina-
Akopyan, Zh. A.
Chem. USSR 31,
See C.A. 51,
B.M.R.

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4

LETOKHOV, V.S.; VATSURA, V.V.; PUKHLIK, Yu.A.; FEDOTOV, D.I.; KOSOZHICHIN,
A.S.; ZHABOTINSKIY, M.Ye.; DASHEVSKAYA, Ye.I.; KOZLOV, A.N.;
RUVINSKIY, L.G.; VASIN, V.A.; YURGENEV, L.S.; NOVOMIROVA, I.Z.;
PETROVA, G.N.; SHCHEDROVITSKIY, S.S.; BELYAYEVA, A.A.; BRYKINA,
L.I.; GLEBOV, V.M.; DRONOV, M.I.; KONOVALOV, M.D.; TARAPIN, V.N.;
MIKHAYLOVSKIY, S.S.; ZHEGALIN, V.G.; ZHABIN, A.I.; GRIBOV, V.S.;
MAL'KOV, A.P.; CHERNOV, V.N.; RATNOVSKIY, V.Ye.; VOROB'YFVA, L.M.;
MILOVANOVA, M.M.; ZARIPOV, M.F.; KULIKOVSKIY, L.F.; GONCHARSKIY,
L.A.; TYAN KHAK SU

Inventions. Avtom. i prib. no.1:78-80 Ja-Mr '65.

(MIRA 18:8)

L 4811-65 EWT(d)/EWT(m)/EWP(w)/EWP(f)/T-2/EPA(bb)-2 AFWL/AEDC(b)/
BSD/SSD/ASD(p)-3/AFTC(a)/RAEM(a)/RAEM(c)/ESD(ga)/ESD(t) EM
ACCESSION NR: AP4048518 S/0147/64/000/004/0126/0131

AUTHOR: Fedotov, D. I.; Kosozhikhin, A. S.

TITLE: Spectral analysis of gas-turbine-engine vibrations

SOURCE: IVUZ, Aviatsionnaya tekhnika, no. 4, 1964, 126-131

TOPIC TAGS: gas turbine, vibration, vibration analyzer, vibration spectral analysis, gas turbine testing

ABSTRACT: Various methods for recording vibrations and the difficulties encountered in applying such recordings to the study of gas-turbine vibration are discussed. The wider use of a method involving the analysis of vibration spectra is suggested and a gas-turbine-vibration analyzer, invented and built by the author (Author Certificate No. 164967, Class 42, 2 August 1964), is described. The most important feature of this analyzer is its production of amplitude-frequency spectrograms requiring no further processing. Orig. art. has: 2 figures.

ASSOCIATION: none

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L 14811-65

ACCESSION NR: AP4048518

SUBMITTED: 06Nov63

ENCL: 00

SUB CODE: PR, OP

NO REF SOV: 006

OTHER: 000

ATD PRESS: 3140

Card 2/2

KOSP, I.

"Some Methods of Examining Eyesight." p. 74. (Voinovremenniki Period. Military-Medical Review, Vol. 10, no. 1/2, Jan/Feb. 1953, Beograd)

SO: Monthly List of East European Accessions. Vol. 3, no. 3. Library of Congress. March 1954.
Uncl.

Country : USSR
Category: Forestry. Forest Management.

K

Abs Jour: RZhBiol., No 11, 1958, No 48739

Author : Kospikov, M.V.
Inst : Kirov Academy of Forest Technology.
Title : On Improvement Cuttings in Spruce-Deciduous Young Growth On Clear Cuttings.

Orig Pub: Lesn. kh-vo, 1957, No 7, 23-26

Abstract: Studies on improvement cuttings in spruce-deciduous young growth to prevent the replacement of spruce by deciduous species in clear cuttings, were conducted in the Vologdskaya Oblast (1955) at the Kirov Academy of Forest Technology. It was found that all possible cases of the formation of coniferous-deciduous young growth in the cuttings can

Card : 1/4

Country : USSR
Category: Forestry. Forest Management.

K

Abs Jour: RZhBiol., No 11, 1958, No 48739

ferous-deciduous young growth in the cuttings can be reduced to the following variants: 1) the plantation consists of the 15-25 year old spruce undergrowth remaining from the cutting, and of deciduous species appearing after felling. In this case, spruce will surpass the deciduous species in regard to growth in height not only for the next 20 years, but obviously for the rest of its life-span; 2) at the time of cutting, spruce has a growth increment of 8-15 years. In this variant, the birch and the aspen become level in height with spruce at the age of 20-25. The improvement cuttings in one operation are expedient when the deciduous species reach the age of 25-30 years; 3) by the time

Card : 2/4

Card : 3/4

KOSS, A.

"Economic Problems Of General Management In The Building Industry" p. 45.
(Przegląd Budowlany, Vol. 25, no. 2, Feb. 1953, Warszawa)

SO: Monthly List of ^{East European} ~~RUSSIAN~~ Accessions, Vol. 3, No. 2, Library of Congress, February, 1954 ~~1953~~, Uncl.

KOCU, A.

On the threshold of great starts. *Kryl. rod.* 15 no.3:11 M. '64.
(MIRA 18:8)

1. Predsedatel' Samoletnogo komiteta Federatsii aviatsionnogo
sporta SSSR.

KOSS, F.

A concrete production plant with a continuous mixer.

P. 28. (MECHANISACE.) (Praha, Czechoslovakia) Vol. 5, No. 1, Jan. 1958

SO: Monthly Index of East European Accession (EEAI) LC. Vol. 7, No. 5, 1958

ACC NR: AR6035559

SOURCE CODE: UR/0044/66/000/009/B045/B045

AUTHOR: Koss, M. Sh.

TITLE: Investigation of the structure of linear couplings causing small fluctuations of conservative systems

SOURCE: Ref. zh. Matematika, Abs. 9B222

REF SOURCE: Nauchn. tr. Tashkentsk. politekhn. in-za, vyp. 20, 1965, 58-73

TOPIC TAGS: linear coupling, potential energy, kinetic energy, conservative system, equilibrium configuration

ABSTRACT: The stability of the equilibrium configuration of a free conservative system in space E^n is characterized by two real quadratic forms:

$$A(x, x) = \sum_{i,k} a_{ik} x_i x_k \quad \text{and} \quad B(x, x) = \sum_{i,k} b_{ik} x_i x_k,$$

corresponding to the potential and kinetic energies of the system. The characteristic equation $\det(A - \lambda B) = 0$ has n real roots of $\lambda_1, \dots, \lambda_n$; the number m ($m \leq n$) of negative roots, the remaining being positive, roughly deter-

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UDC: 517.933

ACC NR: AR6035558

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825130005-7"

mines the degree of instability of the system. Necessary and sufficient conditions are derived for the stabilization of such a system by the superposition of m of linearly-independent linear couplings

$$\sum_k c_{ik} x_k = 0 \quad (i=1, \dots, m).$$

A case is also analyzed where zero characteristic roots are available. B. Demidovich. [Translation of abstract] [NT]

SUB CODE: 12/

Card 2/2

KOES, M. Sh.

Stabilizing mechanical systems by additional connections. Izv.
AN Uz. SSR. Ser. tekhn. nauk 9 no. 6:51-53 '65 (MIRA 19:1)

1. Institut mekhaniki i Vychislitel'nyy tsentr AN UzSSR.
Submitted April, 8, 1965.

3

SEC NR: AP6030864

SOURCE CODE: UR/0365/66/002/005/0576/0580

AUTHOR: Zemskov, G. V.; Kogan, R. L.; Dombrovskaya, Ye. V.; Kostenko, A. V.; Shevchenko, I. M.; Koss, Ye. V.; Fadeyeva, E. V.; Khmelevskaya, M. Ye.; Mikotina, N. F.

ORG: Odessa Polytechnical Institute (Odesskiy politekhnicheskiy institut)

61
B

TITLE: Protective diffusion coatings of nickel alloy

SOURCE: Zashchita metallov, v. 2, no. 5, 1966, 576-580

TOPIC TAGS: ^{alloy}nickel chromium alloy, aluminum containing alloy, titanium containing alloy, tungsten containing alloy, ~~alloy~~ protective coating, ~~alloy~~ corrosion resistance, diffusion coating alloy, alloy oxidation resistance/ZhS6-K alloy

6
B

ABSTRACT: A series of ^{fb}diffusion coatings were tested for protection of ZhS6-K nickel base alloy (0.13-0.20% carbon, 10.5-12.5% chromium, 5-6% aluminum, 2.5-3% ~~titanium~~, 2.5-3% tungsten, 4.5-5.5% molybdenum, 0.13-0.20% boron) against gas corrosion in a mixture of products of sulfurous fuel combustion and sea water vapors after all attempts to improve alloy oxidation resistance by alloying failed. Alloy specimens were diffusion coated with one or two elements used simultaneously or one after the other. The coating was done by a pack cementation at 900-1000C for 10 hr. ²Chromium, aluminum, ¹silicon, ¹titanium, ¹boron, ¹cerium, ¹beryllium and ¹magnesium were used as single-element coatings. Chromium with titanium, silicon, aluminum, or boron; aluminum with boron, cerium, or titanium; titanium with silicon or boron; manganese with boron;

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UDC: 621.793.4

L 44977-66

ACC NR: AP6030864

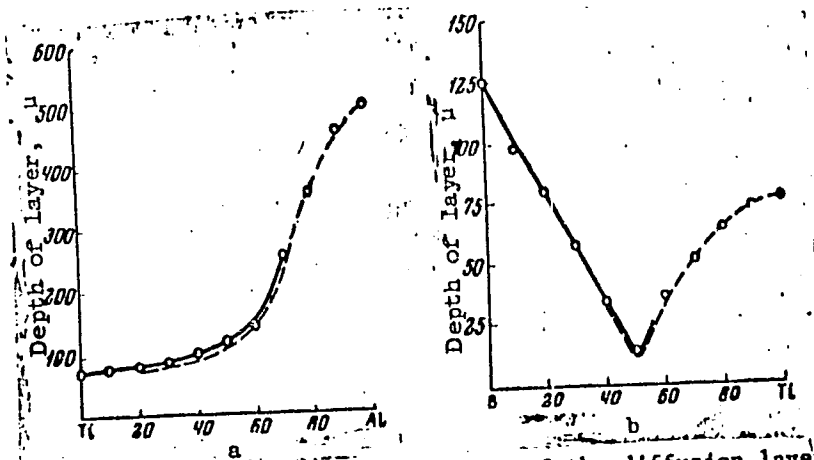


Fig. 1. Dependence of the change of the diffusion layer depth upon the content of elements in the mixture

a - Aluminum-silicon impregnation; b - boron-titanium impregnation.

a

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ACC NR: AP6030864

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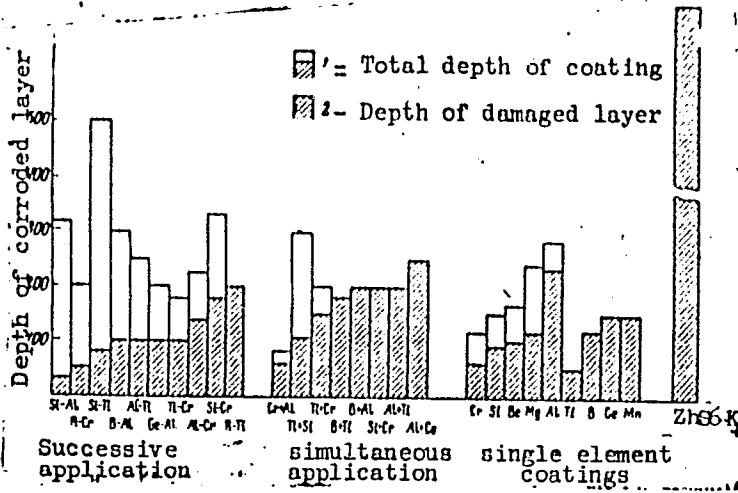


Fig. 2. Depth of corrosion in coated and uncoated ZhS6-K alloy.

cerium with boron; and silicon with aluminum were used for binary coatings. Corrosion tests were done in combustion products containing 0.74% and 0.11% sea water at 900C for 15 hr. It was found that all the coatings tested have a higher corrosion resistance than the uncoated alloy (see Fig. 1). Binary coatings protect the alloy more efficiently than single-element coatings, especially with the consecutive method of

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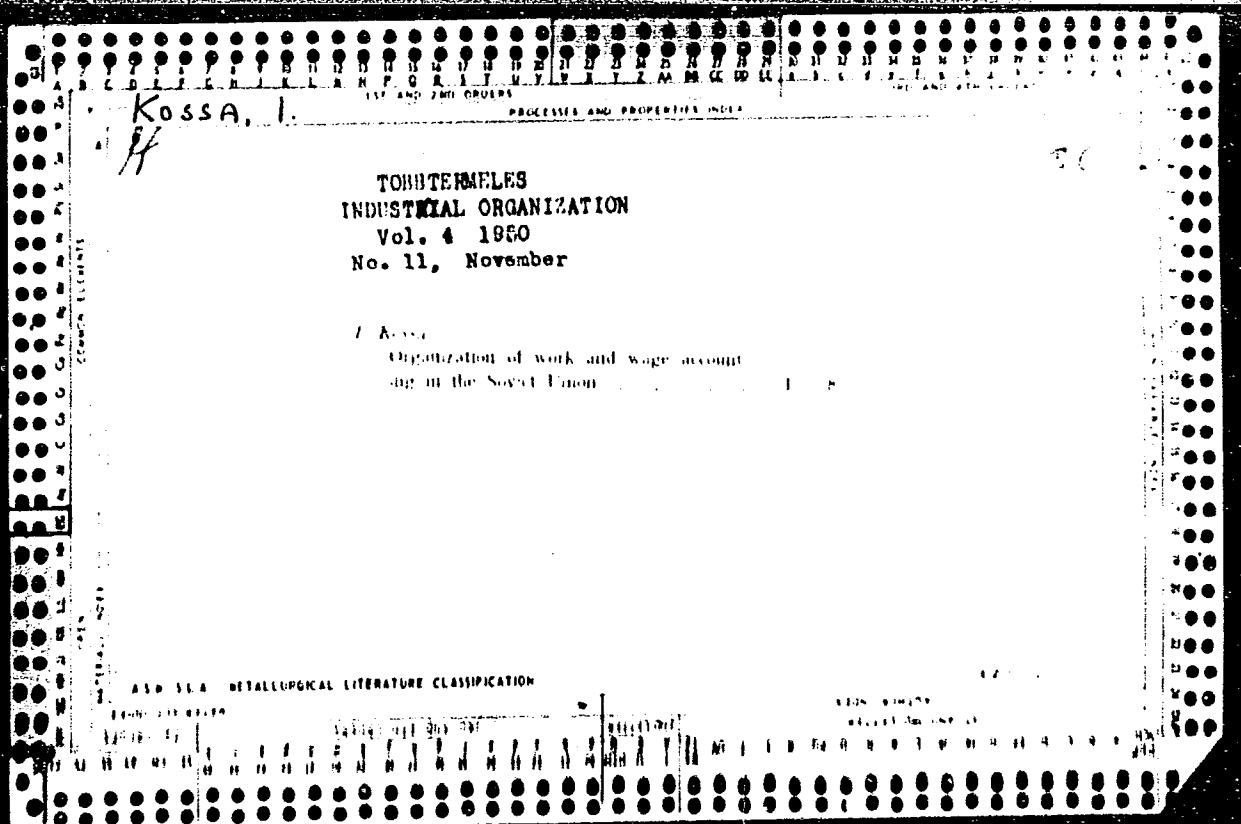
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ACC NR: AP6030864

application. Coatings obtained by this method have a higher concentration of elements and a more uniform structure of the surface layer than the coatings applied by other methods. Orig. art. has: 5 figures. [ND]

SUB CODE: 11, 13/ SUBM DATE: 13Jul65/ ATD PRESS: 5077

sum
Card 4/4



Kossá István
KOSHSHA, ISHTVAN [Kossa, István] (Budapest)

1. Chlen Vengerskogo Revolyutsionnogo raboche-krest'yanskogo pravitel-
Railroad transport in the Hungarian People's Republic and its
prospects for development. Zhel.dor.transp. 39 no.11:98-102
N '57. (MIRA 10:10)

1.Chlen Vengerskogo Revolyutsionnogo raboche-krest'yanskogo pravitel-
stva, ministr putey soobshcheniya i svyazi.
(Hungary--Railroads)

KOSSA, Istvan; SZEPLAKI, Janos (Madaras)

More automobiles, more problems. Auto motor 16 no.22:
3-4 21 N '63.

1. Kozlekedes- es postaugyi miniszter, Budapest (for Kossa).

KOSHSZA, Ishtvan [Kossa, Istvan] (Budapesht)

The transportation of the Hungarian People's Republic on the
upswing. Zhel.dor.transp. 44 no.9:5-8 S '62. (MIRA 15:9)

1. Ministr putey soobshcheniya i svyazi Vengerskoy Narodnoy
Respubliki.

(Hungary--Transportation)

KOSSA, Istvan; LEKAI, Elek

Work competition for eliminating backlog and fulfilling the yearly plan. Auto motor 16 no.15:3 6 Ag. '63.

1. Kozlekedes- es postaugyi miniszter (Kossa). 2. Kozlekedes- es Postaugyi Miniszterium partbizottsaga titkara (for Lekai).

20914

P/009/61/011/002/001/001
D227/D303

9.9000 (also 1036, 1041, 1103)

AUTHOR: Kossacki, K.

TITLE: On the magnetogravitational instability of a homogeneous infinite, viscous and rotating medium with finite electrical conductivity

PERIODICAL: Acta astronomica, v. 11, no. 2, 1961, 83-86

TEXT: The author generalizes the results of research by A.G. Pacholczyk and J.S. Stodólkiewicz (Ref. 1: 1959, Bull. Acad. Polon. Sci. Série des sci. math. astr. et phys. 7, 429), (Ref. 2: Op.cit. 1959, 7 689), (Ref. 3: 1960, Acta Astr. 10, 1), who investigated, separately, the magnetogravitational instability of a viscous medium and a medium with finite electrical conductivity. The article considers the latter medium and first gives the system of the hydromagnetic equations of the problem under consideration, after a linearization (analogically as in Ref. 3 (Op. cit.)):

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On the magnetogravitational ...

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X

$$\dot{u}_1 - (4\pi\rho)^{-1} H_3 h_{1,3} - v u_{1,33} = 0 \quad (1.1)$$

$$\dot{u}_2 - (4\pi\rho)^{-1} H_3 h_{2,3} - v u_{2,33} - 2 u_3 \Omega = 0 \quad (1.2)$$

$$\dot{u}_3 + (4\pi\rho)^{-1} H_2 h_{2,3} - \frac{4}{3} v u_{3,33} + 2 u_2 \Omega + \rho^{-1} \delta p_3 - \delta \psi_{,3} = 0 \quad (1.3)$$

$$\dot{h}_1 - H_3 u_{1,3} - v_m h_{1,33} = 0 \quad (1.4)$$

$$\dot{h}_2 - H_3 u_{2,3} + H_2 u_{3,3} - v_m h_{2,33} = 0 \quad (1.5)$$

$$\dot{\delta\rho} + \rho u_{3,3} = 0 \quad (1.6)$$

$$\delta\psi_{,33} + 4\pi G \delta\rho = 0 \quad (1.7)$$

$$\delta p = v_s^2 \delta\rho. \quad (1.8)$$

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On the magnetogravitational ...

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Considering a wave solution of Eqs. (1.1) and (1.8), the author obtains:

$$\bar{u} = \bar{u}^* \exp i(\sigma t + kz) \quad (2.1)$$

$$\bar{h} = \bar{h}^* \exp i(\sigma t + kz) \quad (2.2)$$

$$\delta \rho = \delta \rho^* \exp i(\sigma t + kz) \quad (2.3)$$

$$\delta \psi = \delta \psi^* \exp i(\sigma t + kz). \quad (2.4)$$

Substituting (2.1) to (2.4) into (1.1) to (1.8), he has

$$i\sigma u_1^* - ik(4\pi\rho)^{-1} H_3 h_1^* + vk^2 u_1^* = 0 \quad (3.1)$$

$$i\sigma u_2^* - ik(4\pi\rho)^{-1} H_3 h_2^* + vk^2 u_2^* - 2u_3^* \Omega = 0 \quad (3.2)$$

$$i\sigma u_3^* + ik(4\pi\rho)^{-1} H_2 h_2^* + \frac{1}{2} vk^2 u_3^* + 2u_2^* \Omega + ik\rho^{-1} V_3^2 \delta\rho^* - ik\delta\psi^* = 0 \quad (3.3)$$

$$i\sigma h_1^* - ikH_3 u_1^* + v_m k^2 h_1^* = 0 \quad (3.4)$$

$$i\sigma h_2^* + ikH_2 u_3^* - ikH_3 u_2^* + v_m k^2 h_2^* = 0 \quad (3.5)$$

$$i\sigma \delta\rho^* + ik\rho u_3^* = 0 \quad (3.6)$$

$$-k^2 \delta\psi^* + 4\pi G \delta\rho^* = 0. \quad (3.7)$$

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On the magnetogravitational ...

Finally, substituting $\delta\phi^*$ and $\delta\psi^*$ from (3.6) and (3.7), the author obtains a homogenous system of algebraic equations for amplitudes:

$$i\sigma u_1^* - ik(4\pi\rho)^{-1} H_3 h_1^* + vk^2 u_1^* = 0 \tag{4.1}$$

$$i\sigma u_2^* - ik(4\pi\rho)^{-1} H_3 h_2^* + vk^2 u_2^* - 2u_2^* \Omega = 0 \tag{4.2}$$

$$i\sigma u_3^* + ik(4\pi\rho)^{-1} H_2 h_2^* + \frac{1}{2} vk^2 u_3^* + 2u_3^* \Omega - i\sigma^{-1} (V_s^2 k^2 - 4\pi G \rho) u_3^* = 0 \tag{4.3}$$

$$i\sigma h_1^* - ik H_3 u_1^* + v_m k^2 h_1^* = 0 \tag{4.4}$$

$$i\sigma h_2^* + ik H_2 u_2^* - ik H_3 u_2^* + v_m k^2 h_2^* = 0. \tag{4.5}$$

It is pointed out that this system has non-trivial solutions if the following dispersion equation is satisfied:

$$\begin{vmatrix} i\sigma + vk^2 & 0 & 0 & -ik(4\pi\rho)^{-1} H_3 & 0 \\ 0 & i\sigma + vk^2 & -2\Omega & 0 & -ik(4\pi\rho)^{-1} H_3 \\ 0 & 2\Omega & i\sigma + \frac{1}{2} vk^2 - i\sigma^{-1} (V_s^2 k^2 - 4\pi G \rho) & 0 & ik(4\pi\rho)^{-1} H_2 \\ -ik H_3 & 0 & 0 & i\sigma + v_m k^2 & 0 \\ 0 & -ik H_3 & ik H_2 & 0 & i\sigma + v_m k^2 \end{vmatrix} = 0.$$

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On the magnetogravitational ...

In the case of $\Omega_L = \Omega_R = 0$, the author indicates, we have two Alfvén waves running along the Z axis in two opposite directions which cannot cause an instability state as the frequency is always imaginary. Further, the presence of terms in Eqs. (6.1)-(6.2) with Ω_L and Ω_R describes the damping caused by viscosity and electrical resistance of the medium under consideration. Consequently, the solutions of (5.1) always describe the stable state of the considered medium. $\Omega_A, \Omega_B, \Omega_L$ and Ω_R are always positive. If Ω_J^2 is also positive, all coefficients of Eq. (5.2) are positive. (5.2) as an equation with positive real coefficients can have no positive real roots, and, therefore in the case of $\Omega_J^2 > 0$ the solutions of (5.2) describe the stable state of the medium. In all cases

$$\omega_1 \cdot \omega_2 \cdot \omega_3 \cdot \omega_4 = \Omega_J^2 (\Omega_L \Omega_R + \Omega_A^2)$$

must be satisfied by the roots of equation (5.2). Therefore, if

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$\Omega_j^2 < 0$, at least one of the real roots must be positive and the considered medium is unstable. If Eq. (5.2) has complex roots, an equation may be obtained that must be satisfied by real parts of the roots. Where $\Omega_j^2 > 0$ all coefficients of the equation are positive and complex roots with positive real parts cannot, consequently, exist. The medium, thus, must be stable. The author shows, therefore, that the medium is stable in regard to small perturbations if Ω_j^2 is positive, and unstable if Ω_j^2 is negative, i.e. the criterion for instability is the same as for the non-viscous medium with infinite electrical conductivity. There are 3 Soviet-bloc references. [Abstractor's note: This is slightly abridged version of the original article].

X

ASSOCIATION: Warsaw University.

SUBMITTED: June 1960

Card 7/7

KOSSACKI, K.

Fragmentation possibilities of large clouds. Postepy astronom
11 no.4:285-289 '63.

KOSSACKI, K.M.

New suggestion concerning the instability mechanism of gaseous clouds. Postepy astronom 12 no.1:35-38 '64.

KOSSACKI, K.M.

Magnetogravitational instability of an infinite, homogenous,
viscous medium with finite conductivity, subject to the Coriolis
force. Postepy astronomii 9 no.3:169-170 J1-S '61.

KOSSACKI, K.M.

Magnetogravitational instability of the infinite homogeneous
viscous center of finite conductivity being under the influence
of Coriolis' forces. Postepy astronom 9 no.3:169-170 '61.

KOSSACKI, K.M.

Origination of protostars as a result of actions of center
HII upon a neutral center. Postepy astronom 10 no.3:281-286
'62.

KOSZKOWI, W.

Gravitational instability of regular in the condensation process
as a result of external pressure. Vestny astronom 12 no.2:121
1964.

CZECHOSLOVAKIA / Chemical Technology. Chemical Products. H
Processes and Apparatuses of Chemical Technology.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 67695.

Author : Kossaczky E., Bena J., Jesenak V., and Ilavsky J.
also Singer D.

Inst : Not given.

Title : Discussion of Singer's Article "Theoretical Bases
of Processes Involving Pseudoliquidification" and
Answers to the Discussions by Beranka and Klumper.

Orig Pub: Chem. prumysl, 1956, 6, No 10, 430-433.

Abstract: Ref to Ref. Zhur-Khimiya, 1958, 25349. No abstract.

Card 1/1

KOSSACZKY E.

Homogeneous fluidized layers of spherical particles.
 Bedá, J. Ilavský, E. Kossaczký, and O. Zákutý (Slovak
 vyzk. škola tech., Bratislava, Czech.). Chem. zvesti
 13, 170-86 (1959) (German summary).—The expansion of
 homogenous fluidized layers of spherical particles was meas-
 ured at low Archimedes' nos. 3.4 to 223. Evaluation of
 the results showed that in the case of homogeneous fluidized
 layers it is necessary to divide the region of flow, generally
 designated as laminar, into typical laminar and pseudo-
 laminar. In the typical laminar region, in agreement with
 laws of hydraulics, the resistance does not depend on the d.
 of the liquid. Such a case occurs only if the particles,
 forming a homogeneous fluidized layer, at const. speed of
 free fall in a medium of unlimited viscosity, are affected by
 the resistance as expressed by Stokes' law, that is, at Archi-
 medes' nos. lower than 7.2. If the Archimedes' nos. are
 higher than 7.2, the resistance during flow in a homogeneous
 fluidized layer is affected by the d. of the fluid, even at
 Reynold's nos. considerably lower than 0.4 to 1.0, regarded
 as an upper limit for the laminar region of flow. For
 that reason a region of flow was designated as pseudo-
 laminar. For a typical laminar and pseudolaminar char-
 acter of liquid flow in a homogeneous fluidized layer, the
 expansion of the layer can be expressed by the equation:
 $12.8 \cdot Re = Ar(Ar + 19)^{0.14}$, the validity of which is
 limited by the condition that: $Re \leq Re_k = \{(Ar + 34) /$
 $109.6\}^{1/0.14}$. ρ_s is the sp. vol. of the homogeneous fluidized
 layer.
 Jan Mírka

7
453

BENA, J.; ILAVSKY, J.; KOSSAGZKY, E.; VALTYNI, J.

Fluidizing-point velocities of nonspherical particles. Coll Cz
Chem 28 no.3:555-569 Mr '63.

1. Chemical Faculty, Technical Institute, Bratislava.

3
BENA, J.; ILAVSKY, J.; KOSSACZSKY, E.; NEUZIL, L.

CSSR

Slovak Technical University, Bratislava, and Institute of Chemical
Technology, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications, No. 2, 1963,
pp 293-309

"Changes in the Flow Character in a Fluidized Bed"

5

BENA, J.; ILAVSKY, J.; KOSSACZSKY, E.; NEUZIL, L.

Changes of the flow character in a fluidised bed. Coll Cz
Chem 28 no.2:293-309 F '63.

1. Slovak Technical University, Bratislava and Institute of
Chemical Technology, Prague.

BENA, J.; ILAVSKY, J.; KOSSACZSKY, E.; NEUZIL, L.

CSSR

Slovak Technical University, Bratislava, and Institute of Chemical
Technology, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 2, 1963,
pp 293-309

"Changes in the Flow Character in a Fluidized Bed"

(4)

KOSSACZKY, Elemir

Research and development of heat exchangers with a moving layer of solid heat carrier. Ropa a uhlie 5 no. 9:265-267 S '63.

1. Slovnaft National Enterprise, Research Institute of Crude Oil and Hydrocarbon Gases, Bratislava.

KOZŁOWSKI, W.; RACZYŃSKI, S.; TAUBENFLIGEL, W.; KOSSAK, J.; LEWINSKI, A.;
BANASIK, Z.

Experimental studies on the insertion of an electronic pacemaker
of the heart of our construction in the dog. Preliminary commu-
nication. Kardiol. Pol. 8 no.2:125-128 '65.

1. Z III Kliniki Chorob Wewnętrznych (Kierownik: prof. dr.
M. Gamski) i z III Kliniki Chirurgicznej AM w Gdansk (Kierownik:
prof. dr. Z. Kieturakis).

SENYK, Jerzy; KOSSAK, Jerzy

Use of crossed flaps in traumatic surgery. Pol. przegl. chir.
35 no.10/11:1064-1066 '63.

1. Z III Kliniki Chirurgicznej AM w Gdansk Kierownik: prof.
dr Z. Kieturakis.

(SKIN TRANSPLANTATION) (SURGERY, PLASTIC)
(WOUNDS AND INJURIES)

1/1

POLAND

MIGDALSKA-KASSUROWA, B. and KOSSAKIEWICZ, B., of the Observation Ward, No 1 Infectious Diseases Hospital (Oddzial Obserwacyjny Szpitala Zakaznego Nr 1) Warsaw. Dr. Doc. Migdalska-Kassurowa, Superintendent.

"The Clinical Picture in 32 Cases of Weil's Disease (Leptospirosis Icterohaemorrhagiae)"

Warsaw, Przegląd Epidemiologiczny, Vol 20, No 3, 1966, pp 285-292.

Abstract: Thirty-one cases of Weil's disease in patients ranging in age from 7 to 58 years are reported, with emphasis on the altered clinical picture and consequent diagnostic difficulties. In only three patients of the present series the course of the disease was typical; in the remaining cases symptoms of encephal meningitis predominated, sometimes resembling meningitis tuberculosa. The symptoms resembling other diseases are described. The results of the agglutination - lysis test are given. Contains a summary in English and 18 references (2 Polish, 7 Western, 1 Yugoslav and 2 German-language).

1/1

TITENKOV, D.P., glavnyy vrach; LOSKUTOV, D.P., zamestitel' glavnogo vracha;
VINOGRADOV, S.G., vrach; KIRBITSKAYA, A.V., vrach; KOSSAKOVSKAYA, A.T.,
vrach; PYL'TSOVA, A.M., vrach; SOLONOVICH, A.G., vrach; CHEKHAYA, A.V.,
vrach; SAPUNOVA, Ye.A., medsestra.

Overcome shortcomings in hospital construction. Gor.khoz.Mosk. 27 no.11:4-5
N '53. (MLRA 6:11)

1. Moskovskaya 2-ya klinicheskaya infektsionnaya boi'nitsa.
(Moscow--Hospitals)

RAKOVSKAYA, M.; KOSSAKOVSKAYA, M.

Study of the degree of mineralization of the bones of rats by
the use of the densimetric method of interpreting roentgensgrams.
Vop. pit. 18 no. 6: 42-47 N-D '59. (MIRA 14:2)

1. Iz Gosudarstvennogo instituta gigiyeny, Varshava, Pol'sha.
(BONES—RADIOGRAPHY)

ACCESSION NR: AT4007049

S/2598 /63/000/010/0262/0264

AUTHOR: Gulyayev, A. P., Shelest, A. Ye.; Mishin, V. I., Kossakovskaya, N. N., Pavlov, I. M.

TITLE: Effect of furnace atmosphere on notch toughness of commercial grade titanium

SOURCE: AN SSSR. Institut metallurgii. Titan i yego splavy*, no. 10, 1963. Issledovaniya titanovy*kh splavov, 262-264

TOPIC TAGS: titanium, titanium property, titanium notch toughness, titanium embrittlement, titanium heat treatment, heat treating furnace, furnace atmosphere, oxidizing atmosphere, protective atmosphere, protective coating

ABSTRACT: Specimens of hot-rolled titanium sheet with an initial impact toughness of 6 kg-m/cm² were heated in quartz ampules in an atmosphere of air, oxygen or nitrogen or in a vacuum (0.01 mm Hg) at temperatures of 700-1200C for 10, 60 or 120 minutes, after which the specimens were tested for impact toughness, microhardness and weight of oxide film formed. Heating in a vacuum had no significant effect on either weight or impact toughness. Determination of sample weight after removal of the scale showed that oxidation increases with time and increasing temperature, and is markedly decreased in a

Card 1/3

ACCESSION NR: AT4007049

nitrogen atmosphere, especially at high temperatures. However, as shown in Fig. 1 of the Enclosure, prolonged heating in nitrogen at 900C or above reduces the impact toughness, so that nitrogen atmospheres also cannot be recommended. The impact toughness, which increased somewhat on heating at low temperatures due to recrystallization, decreased sharply at 800-1200C in all media. Measurements of the depth of the gas-saturated layer, evaluated from the microhardness, showed that the depth increased uniformly with time and temperature in all media. In alpha-titanium (below 900C), however, nitrogen diffused less rapidly than oxygen, while after transformation to beta-titanium (above 900C) the opposite was true. Orig. art. has: 3 figures.

ASSOCIATION: Institut metallurgii AN SSSR (Metallurgical Institute, AN SSSR)

SUBMITTED: 00

DATE ACQ: 27Dec63

ENCL: 01

SUB CODE: MM

NO REF SOV: 006

OTHER: 000

Card 2/3

6918g

SOV/137-59-12-27205

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 12, pp 205 - 206 (USSR)

18.1250 18.7100

AUTHORS: Livshits, B.G., Kossakovskaya, N.N., Ibragimov, Sh.Sh., Avraamov, Yu.S.

TITLE: Investigation Into Phase and Structure Transformations of "EI437" Alloy

PERIODICAL: Tr. Sektsii metalloved. i term. obrabotki metallov, Tsentr. pravl. Nauchno-tekhn. o-va mashinostroit. prom-sti, 1958, Nr 1, pp 140 - 154

ABSTRACT: The authors carried out investigations of "EI437" alloy subjected to various types of heat treatment and having the following composition (in %): C 0.05, Si 0.43, Mn 0.24, S 0.003, P 0.005, Ce 0.02, Cr 20.55, Ti 2.44, Al 0.79, Cu 0.004, Fe 0.56; the remainder was Ni. Electric resistance was measured on "UPN3/2" and "UTV-2" machines during the heating process and at room temperatures; measurements were made on a capacity dilatometer; the temperature dependence of heat capacity was determined by the Sykes (Sayks) method; the phase composition of electrolytically separated deposits was determined by the roentgenographical, microscopical and electron-microscopical methods. Moreover, endurance tests were performed. Heat treatment of specimens consisted of quench-hardening with subsequent controlled cooling-off at various rates. Highest

Card 1/2

6918g

SOV/137-59-12-27205

Investigation Into Phase and Structure Transformations of "EI437" Alloy

hardness values were obtained if the cooling rate was 160 degrees/hour, corresponding to a sufficiently complete isolation of the separating phases and to not too excessive a coagulation. The electron-microscopical investigations showed that the separation and coagulation of the strengthening γ' -phase was more intensive during continuous cooling-off from high temperatures than during tempering of a supercooled solution; the particle dimensions depended on the cooling rate. In slow cooling a hexagonal phase was revealed together with the γ' -phase. Measurement of the temperature dependence of specific heat capacity and measurements of electric resistance and dilatometrical data, showed that two processes took place: namely, within the 700 - 900°C temperature range, a process connected with the formation of a phase in the solid solution, and a process of developing a K-state below 700°C; whose thermal effect was equal to 1.35 cal/g. The first process shifted the maximum of the K-state formation slightly towards the lower temperature side. It is assumed that the origination of the K-state is due to the formation of Guinier-Preston type zones in areas with increased concentration of alloying elements; it is characterized by the occurrence of a specific micro-relief. There are 12 bibliographical titles.

V.R.

Card 2/2

KOSSAKOVSKAYA, N.N., kand.tekhn.nauk; ZEL'BET, B.M., kand.tekhn.nauk

Investigating conditions for the heat treatment of R14F4 steel.
Metalloved. i term. obr. met. no.6:53-54 Je '62. (MIRA 15:7)

1. Moskovskiy vecherniy mashinostroitel'nyy institut i Vtoroy
Gosudarstvennyy podshipnikovyy zavod.
(Steel—Heat treatment)

LIVSHITS, B.G., prof., doktor tekhn. nauk; KOSSAKOVSKAYA, N.N., kand. tekhn. nauk.

Investigating the kinetics of dissociation and the heat-resistance of KhN80T alloys. Sbor. Inst. stali no.38:433-450 '58.

(MIRA 11:8)

1. Kafedra metallografii Moskovskogo instituta stali im. Stalina.
(Chromium-nickel-titanium alloys--Metallography)
(Heat-resistant alloys)

S/129/62/000/006/007/008
E193/E383

AUTHORS: Kossakovskaya, N.N. and Zel'bet, B.M., Candidates
of Technical Sciences

TITLE: Study of the heat-treatment procedure for steel
R14F4 (R14F4)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka
metallov, no. 6, 1962, 53 - 54

TEXT: The steel R14F4, containing 1.2% C, 4.05% Cr, 15.0% W and 5.45% V, is a high-speed cutting steel. The object of the present investigation was to study the effect of a) quenching temperature and b) time at quenching temperature on the room-temperature hardness of this steel in the hardened and hardened and tempered condition and on its hot-hardness in the tempered condition. The quenching temperature varied between 1 250 and 1 260 °C and the holding time between 6 and 18 sec per 1 mm of the thickness of the specimen. Quenching was followed by triple tempering at 560 or 580 °C. The hot-hardness was measured at 600 - 700 °C. The durability of heat-treated milling cutters of the steel studied was compared with that of similarly
Card 1/3

Study of the heat-treatment S/129/62/000/006/007/008
E193/E383

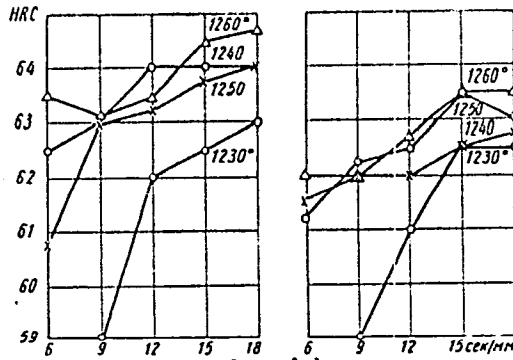
heat-treated cutters made of steel R18 (R18). The results can be summarized as follows: 1) hardness of the steel studied in the quenched condition (63-64 HRC) is not significantly affected by variation in the quenching temperature or holding time. 2) Both these factors affect the hardness of steel in the tempered condition. This is demonstrated in Fig. 2, where the hardness (HRC) of test pieces after triple tempering at 560 °C (graph a) and 580 °C (graph b) is plotted against the holding time (sec/mm) at quenching temperatures indicated by each curve. 3) The highest values of hot-hardness "Kp.60" = 625-655 are attained after treatment entailing heating the steel to 1 260 °C, holding at the temperature for 15 - 18 sec/mm, quenching in oil and triple tempering at 560 °C. 4) The life of cutting tools made of steel R14F4 and heat-treated under the optimum conditions is 40% higher than that of tools made of steel R18. Milling cutters (22 x 2 mm) made of both steels were used for cutting the thread in bushings of radial bearings under the following conditions: speed 0.204 - 0.223 m/min; 332 r.p.m.; feed - 201.9 - 219.4 mm/rev. The number of bushings threaded between dressing operations was 340 for R14F4 and 244 for R18 steel. Card 2/3

Study of the heat-treatment S/129/62/00C/0C6/007/008
E1.93/E383

There are 2 figures and 1 table.

ASSOCIATION: Moskovskiy vecherniy mashinostroitel'nyy institut
(Moscow Evening Machine-building Institute)
2-y GPZ (2nd GPZ)

Fig. 2:



Card 3/3

KOSSAKOVSKIY, V., arkhitektor; RZHEKHINA, O., arkhitektor

Common rooms and service areas of student dormitories. Zhil.
strci. no.4:29-32 '62. (MIRA 15:5)

(Dormitories)

KOSSAKOVSKIY, V., arkhitektor; RZHEKHINA, O., arkhitektor

Planning of multistory houses in regions with a hot climate. Zhil.
stroi. no.2:28-29 '63. (MIRA 16:3)
(Apartment houses--Design and construction)

KALISH, V.G.; KOSSAKOVSKIY, V.A.; RZHEKHINA, O.I.; MOROZOVA, G.V., red.;
GOLOVKINA, A.A., tekhn.red.

[Houses and apartments in foreign countries; multi-story housing
construction] Tipy domov i kvartir za rubezhom; mnogoetazhnoe
zhitel'skoe stroitel'stvo. Moskva, Gos.izd-vo lit-ry po stroit.,
arkhit. i stroit.materialam, 1959. 207 p.

(MIRA 14:1)

(Apartment houses)

KOSSAKOVSKIY, V.A.; RZHEKHINA, O.I.; PAVLENKO, M.V., red.; GOLOVEKINA,
A.A., tekhn.red.

[Row houses in foreign countries] Blokirovannye doma za rubezhom.
Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam,
1960. 177 p. (MIRA 13:6)

(Apartment houses)

KOSSAKOVSKIY, V.A.; RZHEKHINA, O.I.; OSELEDETS, Z.M., red.;
NAUMOVA, G.D., tekhn. red.

[Student dormitories abroad] Studencheskie obshchezhi-
tiia za rubezhom. Moskva, Gos.izd-vo lit-ry po stroit.,
arkhit. i stroit. materialam, 1963. 80 p. (MIRA 16:4)
(Dormitories--Design and construction)

KOSSAKOWSKA, Halina

A case of impetigo herpetiformis. Przegl. dermat. 48 no.5:423-428 '61.

1. Ze Szpitala im. dr E. Sonnenberga w Lodzi Kierownik naukowy i
ordynator: prof. dr M. Mienicki.

(IMPETIGO in pregnancy) (PREGNANCY compl)

KOSSAKOWSKA, Halina

Considerations on the palliative treatment of late radiodermal
ulcerations. (Preliminary report). Przegl. dermat. 49 no.6:541-544
'62.

1. Z Oddziału Skorno-Wenerycznego Szpitala im. E. Sonenberga w Łodzi
Kierownik nauk: prof. dr M. Mienicki.

(RADIATION INJURY) (SKIN ULCER) (NICOTINAMIDE)
(RIBOFLAVIN) (ASCORBIC ACID) (IRON) (VITAMIN K)

KOSSAKOWSKA, Halina

Pyoderma gangrenosa (terebrans). Przegl.derm. 48 no.6:515-519
'61.

1. Ze Szpitala im. dr. E.Sonenberga w Lodzi Kierownik naukowy
i ordynator: prof. dr M.Mienicki.
(PYODERMA compl) (GANGRENE etiol)

MIENICKI, Marian; KOSSAKOWSKA, Halina

On therapeutic problems in scleroderma. Przegl. dermat. 48 no.9/10:
267-272 '61.

1. Ze Szpitala im. E. Sonenberga w Lodzi, Oddzialu Dermatologiczny
Ordynator: Prof. dr med. M. Mienicki.
(SCLERODERMA ther)

KOSSAKOWSKA, J.; GRZYBOWSKA, B.

Observations on avertin anesthesia in children. *Pediat. polska* 26
no1:51-59 Jan 1951. (CJML 21:1)

1. Of the Surgical Department (Head -- Docent Jan Kossakowski, M.D.)
of the First Pediatric Clinic (Director -- Prof. M. Michalowicz, M.D.)
Warsaw Medical Academy.

SZCZYGIEL, Aleksander; KOSSAKOWSKA, Maria

Food and tooth decay. Pt.5. Roczn panstw zakl hig 14. no.1:85-91
'63.

CHWALINSKI, Stanislaw; MIKULSKI, Andrzej; KOSSAKOWSKA, Maria

Fluid scintillation method for the measurement of tritium in the determination of total water content in rats. Acta physiol. Pol. 16 no.1:141-149 Ja-F'65.

1. Zaklad Patofizjologii Instytutu Reumatologicznego w Warszawie (Kierownik: doc. dr. J. Ryzewski; Dyrektor Instytutu: dr. W. Brahl).

KOSSAKOWSKA, Stanisława

Surgical diseases of the umbilicus in newborn and older infants.
Pediat. polska 31 no.7:791-795 July 56.

1. Z Kliniki Chirurgii Dziecięcej A.M. w Warszawie Kierownik:
prof. dr. med. J. Kossakowski, Warszawa, Litewska 16.
(UMBILICUS, diseases,
surg. in inf. (Pol))