BABARIN, V. I., and A. IA. CHERKEZ.

Issledovanie i novyi metod rascheta reaktivnogo vykhlopnogo kollektora. Moskva, TSIAM, 1946.

Title tr.: Investigation and a new method of calculating the jet exhaust collector.

NCF

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

BABARIN, V. I., and A. IA. CHERKEZ.

O vliianii protivodavleniia na vykhlope na moshchnost' aviatsionnogo dvigatelia i rasklod vozdukhz. Moskva, Oborongiz, 1947.

Title tr.: Effect of counter-pressure in the exhaust stroke upon the the capacity of an aircraft engine and on air consumption.

NCF

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

PALACWSKI, W.

PALACWSKI, W. Organization of transportation and forwarding in the coal industry. p. 355.

Vol. 10, No. 12, Dec. 1955
PAŃSTWOWE WYDAWNICTWO
TECHNICZNE
Warszawa, Poland

So: East European Accession, Vol. 5, No. 5, May 1956

CA [illegible]

20

Increasing the output of kilns. I. P. Habaryka. *Tsement* 17, No. 1, 15-16(1951).—Greater kiln efficiency was obtained by closely controlling the mineralogical compn. of the feed and its moisture content. Best results were obtained when the celite content of the clinker was 18-19%.

M. Hosch

BABARYKA, I.F., inzhener

The choice of chain screens for 150 meter rotary kilns.
TSement 21 no.2:15-18 Mr-Ap '55. (MLRA 8:8)
(Kilns, Rotary)

L 56492-65
ACCESSION NR: AP5017800

UR/0286/65/000/011/0031/0031
631.859.12.002.2

4
B

AUTHOR: Karatayev, I. I.; Mel'nik, B. D.; Repenkova, T. G.; Sviridova, A. G.; Doktorov, N. I.; Nazarov, G. N. Raygorodskiy, I. M.; Vasil'yev, B. T.; Bystrov, M. V.; Babaryka, I. F.; Kuzyak, F. A.; Fel'dman, M. V.; Soverchenko, D. A.; Buslakova, L. P.; Toroptseva, N. P.; Lyubimov, S. V.; Ul'yanov, A. T.; Andres, V. V.; Sobchuk, Yu. I.; Tsetlina, M. M.; Andreyev, V. V.; Kramer, G. L.

TITLE: A method for producing phosphoro-potassium fertilizers. Class 16, No. 171-409

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 11, 1965, 31

TOPIC TAGS: fertilizer, phosphate, potassium

ABSTRACT: This Author's Certificate introduces a method for producing phosphoro-potassium fertilizers using cement dust (waste from cement production) as the potassium raw material. The process of adding potassium to the product is simplified and evaporation is prevented by using a 20% excess of an acid which directly neutralizes the cement dust for breaking down the phosphate raw material.

Card 1/2

L 58492-65

ACCESSION NR: AP5017800

ASSOCIATION: none

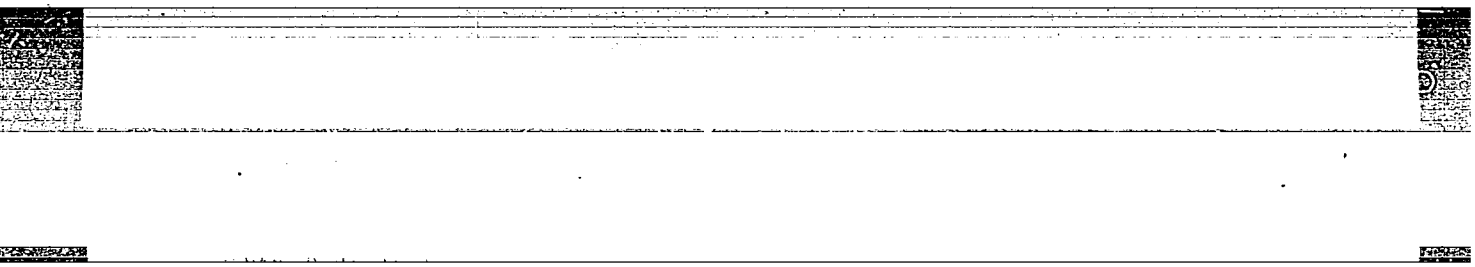
SUBMITTED: 29Mar62	ENCL: 00	SUB CODE: GC, LS
NO REF SOV: 000	OTHER: 000	

Card 2/2

BABARYKIN, G.T.

Disassembly of short-circuited aluminum windings of the rotor of electric motors. Koks i khim. no.1:59 '63. (MIRA 16:2)

1. Zhdanovskiy koksokhimicheskiy zavod.
(Electric motors—Windings)



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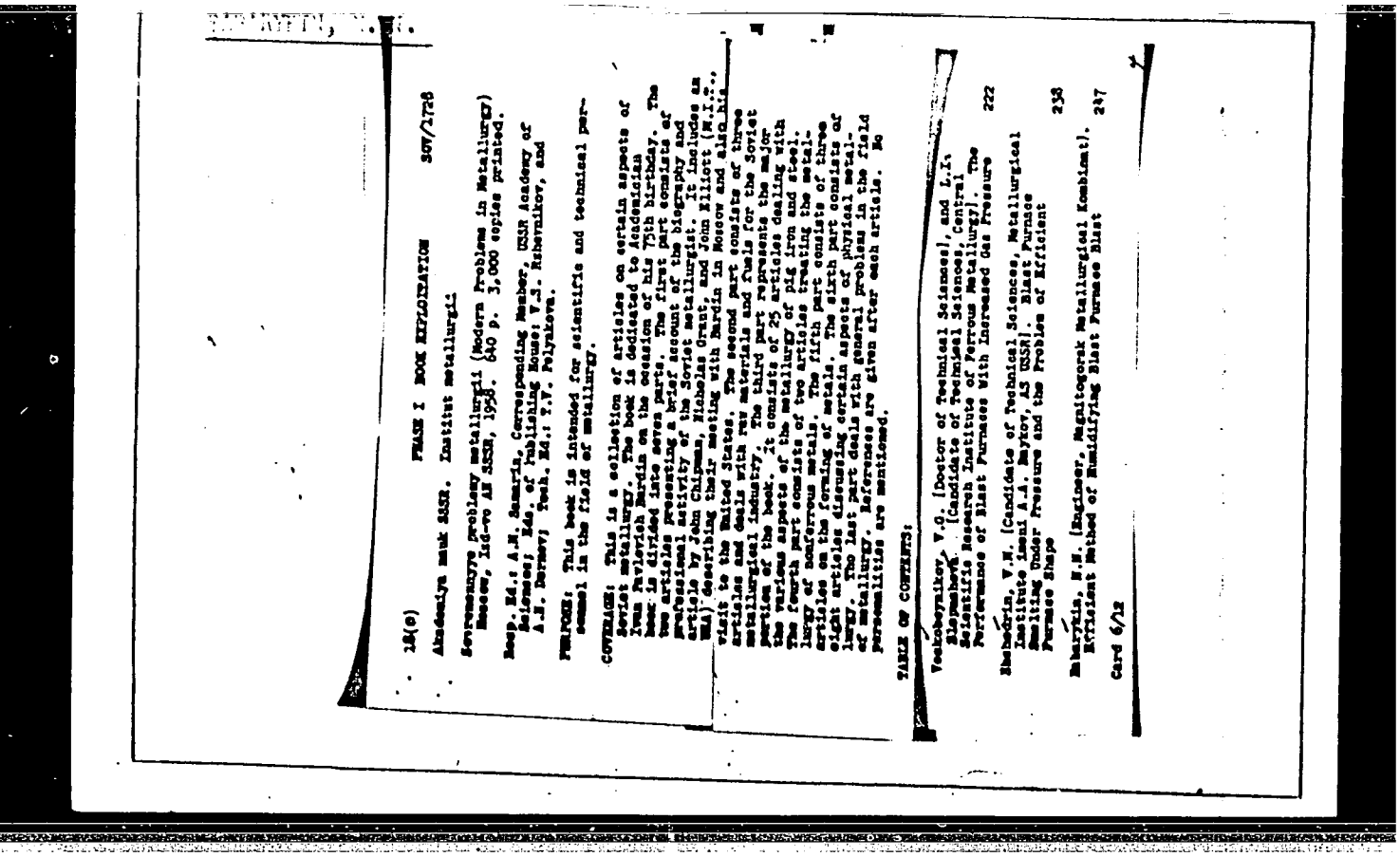

SOV/2728

18(6)

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Institut metallurgii

Sovremennyye problemy metallurgii (Modern Problems in Metallurgy) Moscow, Izd-vo AN SSSR, 1956. 240 p. 3,000 copies printed.

Resp. Ed.: A.M. Samarin, Corresponding Member, USSR Academy of Sciences; Eds. of Publishing House: V.S. Koberniker, and A.F. Dorner; Tech. Ed.: T.V. Polyakova.

PURPOSE: This book is intended for scientific and technical personnel in the field of metallurgy.

COVERAGE: This is a collection of articles on certain aspects of Soviet metallurgy. The book is dedicated to Academician Ivan Petrovich Bardin on the occasion of his 75th birthday. The book is divided into seven parts. The first part consists of two articles presenting a brief account of the biography and professional activity of the Soviet metallurgist. It includes an article by John Chipman, Nicholas Grant, and John Elliott (M.I.T., Mass) describing their meeting with Bardin in Moscow and also his visit to the United States. The second part consists of three articles and deals with raw materials and fuels for the Soviet metallurgical industry. The third part represents the major portion of the book. It consists of 25 articles dealing with the various aspects of the metallurgy of pig iron and steel. The fourth part consists of two articles treating the metallurgy of nonferrous metals. The fifth part consists of three articles on the forming of metals. The sixth part consists of eight articles discussing certain aspects of physical metallurgy. The last part deals with general problems in the field of metallurgy. References are given after each article. No personalities are mentioned.

TABLE OF CONTENTS:

Card 6/12

SOV/133-58-12-2/19

AUTHOR: Babarykin, N.N., Engineer, and Yushin, F.A.

TITLE: Changes in the Blast Furnace Process when Operating with Fluxed Sinter (Izmeneniya domennogo protsessa pri rabote na oflyusovannom aglomerate)

PERIODICAL: Stal', 1958, Nr 12, pp 1057-1065 (USSR)

ABSTRACT: An investigation of the blast furnace process during operation with fluxed sinter was carried out on three furnaces A, B and V in the Magnitogorsk Works and the results obtained compared with previous similar investigations. The working volumes of the furnaces: A - 1180 m^3, B and V - 1371 m^3. The profiles of the furnaces and the position of levels at which sampling and measurements were carried out are given in Fig 1, and main operating data in Table 1. Sampling of the burden, the determination of temperature and composition of gas on the second and third levels were carried out on furnace B, a study of the composition of materials and gases along the bosh radius on furnace A, and of the composition and temperature of gases in the upper part of the stack and in the hearth on furnace V. Sampling of materials from the stack and the bosh was carried out

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Changes in the Blast Furnace Process when Operating with Fluxed Sinter

with uncooled tubes of internal diameter 51 and 57 mm as was previously described (Ref 1). Materials from the tuyere zone were sampled with a special water cooled probe with a number of parallel cylindrical pockets (Fig 2). The temperature measurements in the stack were done with uncooled chromelalumel thermocouples. In the bosh and tuyere zone, thermocouples were cooled and on the lowest level molybdenum-tungsten thermocouples with quartz, graphite, molybdenum and berylium oxide sheaths were tested. The pressure, temperature and the composition of gas along the height of the burden column were determined as in Ref 1. Changes in the content of carbon dioxide (A) and temperature (B) along the furnace radius on I - IV levels are shown in Fig 3 (a - measurements in 1955, b - in 1956-57); the distribution of isotherms (A; °C) and lines of equal concentration of carbon dioxide (B; %) in the furnaces - Fig 4; changes in the static pressure along the height of the furnace - Table 2 and Fig 6 (a - 1956, b - 1957); the distribution of temperatures along the height of the furnace - Fig 5;

Changes in the Blast Furnace Process when Operating with Fluxed Sinter

chemical composition of burden materials on various furnace levels - Table 3; lines of equal mean degree of reduction - Fig 7 (results for 1956-57 A; for 1955 - B); mean chemical composition of metal beads collected from 3rd and 4th levels - Table 4; mean chemical composition of metal and slag from tuyere zone - Tables 5 and 6 respectively. It is concluded that: 1) the largest non-uniformity in the degree of reduction of iron oxides along the diameter was observed in the upper part of the stack. This non-uniformity decreases as the burden descends towards lower levels. Mean degree of reduction of iron oxides for successive levels I-IV amounted to: % I - 22.6; II - 32.5; III - 57.6; IV - 85.7.
An increase in the development of the reducing processes in the zone of moderate temperatures leads to a considerable improvement in the operating indices of a blast furnace. The analysis of changes in the content of sulphur on various levels supports the supposition that it circulates in the lower part of the burden column.
Card 3/5 The temperature range within which fluxed sinter attains

Changes in the Blast Furnace Process when Operating with Fluxed Sinter

a softened state decreases with increasing degree of reduction of iron oxides. In order to secure an even and stable furnace operation the zone of softening of the burden (which forms an additional resistance to the passage of gas) should be maintained on the level of the bosh or the bottom part of the stack. The formation of droplets of a liquid phase is preceded by a steady separation of metal and slag inside lumps of sinter. With a good burden preparation the content of ferrous oxide in the primary slag is low and does not present any difficulties to an intensification of the rate of furnace driving. The presence of liquid slag in the mass of "dry" burden can be apparently explained by its being blown from lower furnace levels, as well as by considerable differences in the level of heat requirements of lumps of burden with an unequal degree of chemical preparation. The maximum gas temperature in the tuyere level (about 1990°C) was established to be at a distance of 0.4 m from the tuyere nozzle. A partial transfer of sulphur from metal and

Changes in the Blast Furnace Process when Operating with Fluxed Sinter

slag into the gaseous phase takes place in the oxidising zone. The main mass of metal and slag flows down into the hearth through a peripheral zone the width of which does not exceed 2m from the furnace wall.

There are 7 figures, 6 tables and 4 references (all Soviet).

ASSOCIATION: Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)

SOV/133-59-2-2/26

AUTHOR: Babarykin, N.N., Engineer

TITLE: The Distribution of the Gas Stream in the Blast Furnace Stack (Raspredeleniye gazovykh potokov v shakhte domennoy pechi)

PERIODICAL: Stal', 1959, Nr 2, pp 101-107 (USSR)

ABSTRACT: The distribution of gas streams in the blast furnace of the Magnitogorsk Metallurgical Combine, based on measurements of static and dynamic pressures, temperature and composition of gases is discussed. The measurements were carried out with a water cooled probe (Fig.1) pushed into the burden at a level about 2 m below the stock line. The tube used for pressure measurements was calibrated in the blast furnace throat above the stock level and in the cold blast main. It was established that 10-12° deviation from the direction of the gas flow had no substantial influence on the indications of the tube. It was assumed that the free space available for the flow of gas in the upper part of the blast furnace is only slightly higher than the natural

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The Distribution of the Gas Stream in the Blast Furnace Stack

porosity of the charge. It was also assumed that at elevated pressures the free cross-sectional area of the stack is about 50% of its total cross-section. The pressure drop in a layer of burden materials in the upper part of the stack in the moment of charging is shown in Fig.3. The experimental results, namely the distribution of temperature, concentration of CO_2 and gas velocities along the furnace diameter are given in the form of graphs: furnace A (1951) - Fig.4; furnace B (1950) - Fig.5; furnace V (1954) - Fig.6; furnace G (1956) - Fig.7 and the table. An increase in the top pressure of the MMK furnaces was accompanied by a shift of the minimum temperature and maximum of CO_2 content towards the centre on both the top (Fig.8) and middle (Fig.9) levels of the stack. The influence of top pressure on the distribution of gas velocities along the throat diameter is shown by the following average data:

Distance from wall, m	0.05	0.40	0.85	1.40	2.20	3.30
Gas velocity, m/sec at a top pressure 0.1 - 0.3 atm	11.7	7.7	6.2	6.5	8.1	10.2

The distribution of the Gas Stream in the Blast Furnace Stack

Gas velocity, m/sec at a top pressure						
0.7 - 0.8 atm	7.7	5.5	4.7	5.2	7.0	9.4
% decrease in gas velocity	34	29	24	20	14	8

An increase in the gas velocity at the centre of the furnace at increased top pressure was also confirmed by the size distribution of samples of burden materials, collected from the top part of the burden column in furnaces A and G during investigations carried out in 1955-1958 (Fig.10). Although the size of materials was somewhat distorted by crushing of sinter during sampling (with probes) nevertheless the data obtained indicate that the content of fines 0-5 mm was the highest at a distance of 1.5 m from the wall, the proportion of +10 mm fraction increases from the periphery towards the centre (probably due to segregation), the proportion of -1 mm fraction increases from the wall towards the centre

The Distribution of the Gas Stream in the Blast Furnace Stack

and then sharply decreases at the centre. The highest CO_2 concentration corresponds to the highest ore load with the maximum content of fines. On an increase in the top pressure the relative increase in the gas velocity in the central part of the burden column was accompanied by a similar increase in the rate of descent of materials measured (with weights on a cable) on a few furnaces:

Distance from wall, m	0.25	1.25	2.25	3.25
Rate of descent, mm/min at top pressure of				
0.1 - 0.2	88	79	72	76
0.5 - 0.8	89	84	80	84
% increase in the rate of descent	1.1	6.3	11.1	10.5

With increasing pressure the rate of descent of burden materials increased at all points along the radius due to a 5.7% increase in the driving rate. Static pressure at

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The Distribution of the Gas Stream in the Blast Furnace Stack

various points along the radius remains practically constant (irrespective of top pressure). Thus pressure measurements at the wall are sufficient for the determination of pressure drop along the furnace stack. In view of a low value of the dynamic pressure of gas (1-2 mm Hg) the conclusions regarding the constancy of static pressure along the furnace radius can be taken as valid also for the total gas pressure. The minimum residence time of gas in MMK furnaces calculated at low and increased top pressures is 1.8 and 2.1 sec respectively, the maximum 4.5 and 4.7 sec and mean 2.6 and 4.3 sec respectively. There is 1 table, 10 figures and 3 references of which 2 are English and 1 Soviet.

ASSOCIATION: Magnitogorskiy Metallurgicheskiy Kombinat (Magnitogorsk Metallurgical Combine)

SOV/133-59-4-1/32

AUTHORS: Babarykin, N.N., Agashin, A.A., and Yushin, F.A., Engineers

TITLE: Determination of the Active Weight of Burden in an Operating Blast Furnace (Opredeleniye aktivnogo vesa shikhty v deystvuyushchey domennoy pechi)

PERIODICAL: Stal', 1959, Nr 4, pp 289-291 (USSR)

ABSTRACT: It is understood that the active weight of burden (kg/cm^2) means the difference between the vertical pressure of the burden and the gas pressure supporting the burden: $Qa = Qr - Pg$. An analytical method of determining vertical pressure of the blast furnace burden based on Jansen's formula is proposed. Experimental determinations of the active weight of the burden at various furnace levels (down to 14.5m from the stock level) in an operating furnace were carried out. The measuring method was based on introducing a probe tube into the burden to a required level and measuring with a dynamometer (fig 1) the force required to retain the tube in the stationary state. The experimental set up is shown in Fig 2. The results of the determinations of static pressure of gas

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Determination of the Active Weight of Burden in an Operating Blast Furnace

and active weight of the burden as well as calculated values for vertical pressure of the layer of burden material at various furnace levels are assembled in the table. The experimental and calculated values for the vertical pressure of the burden within the limits of the "dry" zone agreed well (fig 3). The experimental data on changes in the degree of participation of the active weight in the vertical pressure of burden characterising the degree of driving of the blast furnace (the amount of passing gases) indicate that under conditions of a high top pressure operation the upper half of the furnace could be driven harder. This reserve of driving capacity of the upper part of the furnace can be utilised by blowing into the furnace

Determination of the Active Weight of Burden in an Operating Blast Furnace

stack some reducing gases. There are 3 figures, 1 table and 1 Soviet reference.

ASSOCIATION: Magnitogorskiy Metallurgicheskiy Kombinat (Magnitogorsk Metallurgical Combine)

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77444
SOV/133-60-1-5/30

AUTHORS: Babarykin, N. N., Zborovskiy, A. A., Potapov, A. I. (Engineers), Rabinovich, Ye. I. (Candidate of Technical Sciences)

TITLE: Investigation of Movement of Cast Iron and Slag in the Blast Furnace Hearth

PERIODICAL: Stal', 1960, Nr 1, pp 19-23 (USSR)

ABSTRACT: This is an investigation of physicochemical and mechanical processes taking place in the blast furnace hearth, with the purpose of improving the technological control of the blast furnace process and for the development of reliable methods of control of the hearth and hearth bottom condition. A. A. Agashin, L. K. Strelkov, and A. G. Rogovoy (Engineers) participated in the work. The tests were conducted in 1958 on a 1,371 m^3 blast furnace with 16 tuyeres, a hearth 8 m in diameter, producing the low-manganese conversion cast iron from a charge containing 93% of fluxed sinter. The radioactive isotopes P^{32} and Fe^{59}, of 150-200 and 50-60

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microcurie respectively (in steel ampules) were used. The radiation sources were introduced through an iron tube into the oxidizing zone of tuyeres Nr 2, 5, and 8 (through the inspection hole), 15, 60, and 120 minutes after the closing of cast iron notch. The metal was tapped every 3 hours. The duration of tapping was 35 to 45 minutes. The investigation was based on the assumption that (in the presence of substantial convective flows of cast iron and slag) the radioactive indicator introduced into the hearth should distribute relatively uniformly, over the entire volume of metal.

Therefore, in the course of tapping no essential variations of composition of cast iron or slag should be expected. The radioactivity of samples was measured by a block of eight counters connected with an installation of B-2 type (Ref. 4: V. Ye. Iudin, M. L. Sazonov, and A. I. Osipov, Zavodskaya laboratoriya, 1955, Nr 11). An 11 m^3 ladle was used. The change in radioactivity of cast iron after the introduction of radioactive indicator into the 8th tuyere is given in Fig. 1.

Investigation of Movement of Cast Iron and Slag in the Blast Furnace Hearth

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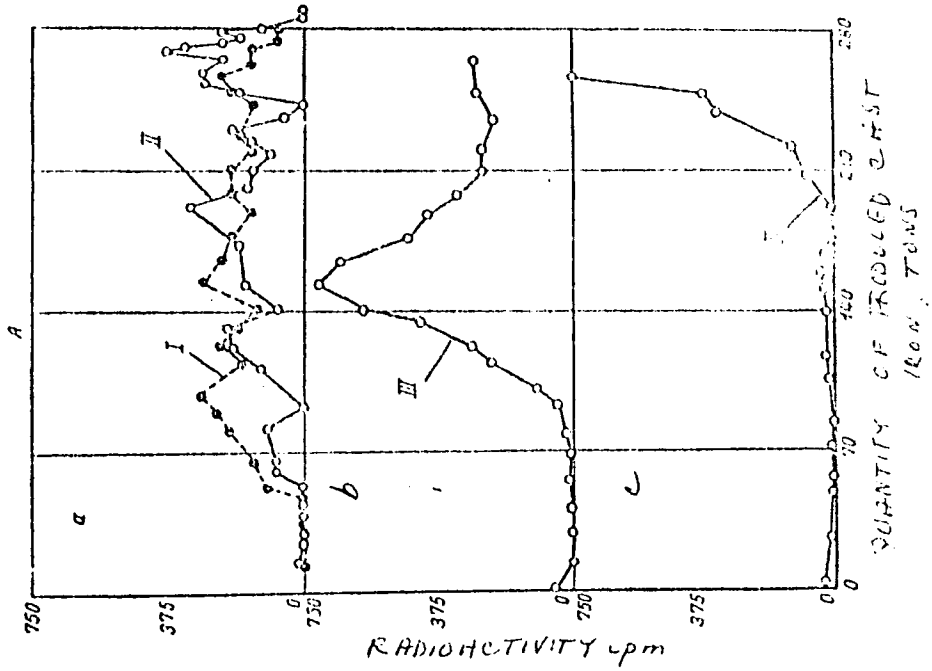
SOV/133-60-1-5/30



Card 3/7

Investigation of Movement of Cast Iron and Slag in the Blast Furnace Hearth

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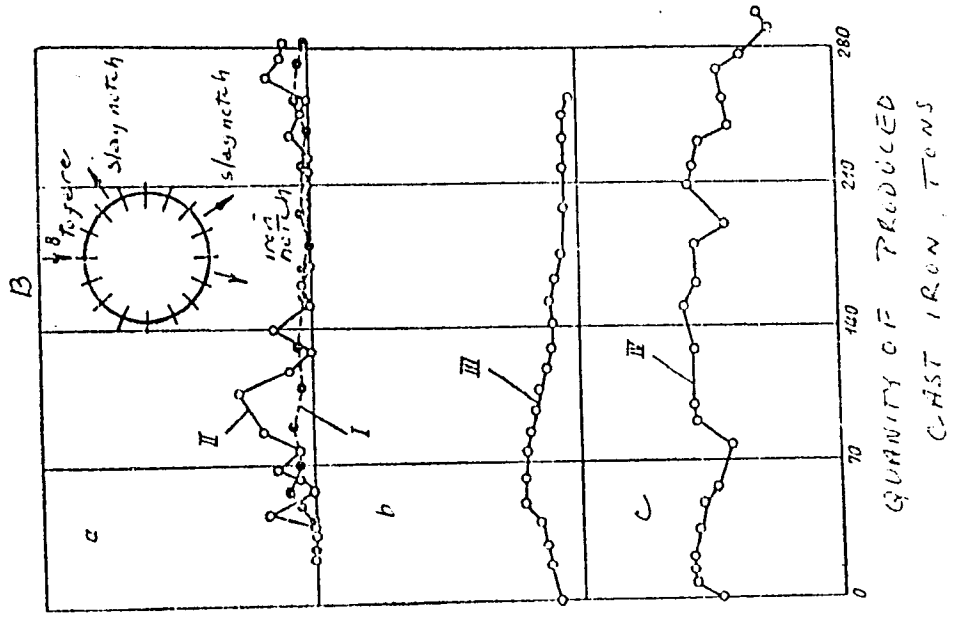

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Fig. 1. Change in radioactivity of cast iron at first (A) and second (B) tapping after the introduction of radioactive indicator through the 8th tuyere. (a) Fe^{59} was introduced 15 minutes after closing of tap hole (curves I and II); (b) P^{32} was introduced 1 hour after closing of tap hole (curve III); (c) Fe^{59} was introduced 2 hours after closing of tap hole (curve IV).

Caption for Fig. 1, shown on Cards 3/7 and 4/7.

Similar curves are given for the tests when the radioactive indicator was introduced to the 5th and 2nd tuyeres. The change of temperature of upper slag; the change of basicity of upper and lower slag; the change of temperature of case iron during tapping; and the change of sulfur content in upper and lower slag were recorded. The change of chemical composition of cast iron during tapping is given in Fig. 7. The authors arrived at the following conclusions. The data of

Investigation of Movement of Cast Iron and Slag in the Blast Furnace Hearth

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SOV/133-60-1-5/30

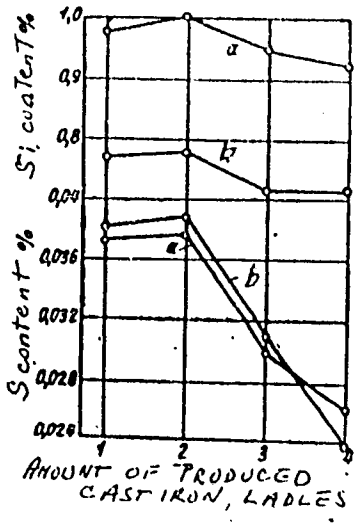

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Fig. 7. Change in chemical composition of cast iron during tapping according to experiments: (a) February 1959; (b) September 1957.

present investigation, as well as a number of previous studies, show that there is no significant mixing during the period of accumulation of metal (and slag) in the hearth of blast furnace. As a result, the metal and the slag accumulate and are discharged as separate layers, which should be taken into account in conducting the blast furnace process. The conclusions of I. G. Polovchenko (Ref 2: I. G. Polovchenko, Stal', 1957, Nr 1.2) regarding the considerable mixing of metal in blast furnaces were not confirmed. There are 8 figures; and 9 references, 6 Soviet, 2 German, 1 U.K. The U.K. reference is: A. T. Burgess and B. Baldwin, Journal of the Iron and Steel Institute, Vol 186, June 1957, pp 237-238.

BARDIN, I.P., akad. [deceased]; KULIKOV, I.S; ZUDIN, V.M.; TSYLEV, L.M.; SOKOLOV, G.A.; GALATONOV, A.L.; BABARYKIN, N.N.; GUL'TYAY, I.I.

Making low-sulfur cast iron at the Magnitogorsk Combine. Stal' 20 no.10:865-869 O '60. (MIRA 13:9)
(Magnitogorsk--Blast furnaces) (Cast iron--Metallurgy)

BABARYKIN, N.N., kand.tekhn.nauk; GALEMIN, I.M., kand.tekhn.nauk
LEPIKHIN, L.A., inzh.

Temperature and composition of the cast iron in the broken-down part of a blast furnace hearth bottom [with summary in English]. Stal' 21 no.3:198-200 Mr '61. (MIRA 14:6)

1. Magnitogorskiy metallurgicheskiy kombinat i Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.
(Blast furnaces--Maintenance and repair)

ZUDIN, V.M.; BABARYKIN, N.N.; GALATONOV, A.L.; KULIKOV, I.S.

Effect of magnesium on the desulfurizing properties of blast furnace slags. Stal' 21 no.5:385-391 My '61. (MIRA 14:5)

1. Magnitogorskiy kombinat i Institut metallurgii AN SSSR.
(Desulfuration)

RUDNEVA, A.V.; MALYSHEVA, T.Ya.; SOKOLOV, G.A.; GUL'TYAY, I.I.;
Prinimali uchastiye: GALATONOV, A.L.; GAMAYUROV, A.I.;
BABARYKIN, N.N.; KOSTIN, I.M.

Changes in the material composition of industrial sinter along the cake height. Stal' 22 no.1:5-9 Ja '62. (MIRA 14:12)

1. Institut metallurgii imeni A.A. Baykova (for Rudneva, Malysheva, Sokolov, Gul'tyay). 2. Magnitogorskiy metallurgicheskiy kombinat (for Galatonov, Gamayurov, Babarykin, Kostin).
(Sintering)

ZUDIN, V.M.; SAGAYDAK, I.I.; YAKOBSON, A.P.; BABARYKIN, N.N.; DORMAN, V.G.; GALATONOV, A.L.; LEKIN, P.V.

Preparation of screened sinter and its use in blast furnace smelting. Stal' 22 no.8:675-679 Ag '62. (MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Sintering)
(Blast furnaces--Equipment and supplies)

BABARYKIN, N.N., kand.tekhn.nauk

Charge and gas pressure in blast furnaces. Stal' 22 no.9: 777-782 S '62. (MIRA 15:11)

(Blast furnaces)

LEPIKHIN, L.A., inzh.; Prinimali uchastiye: STEFANOVICH, M.A., doktor tekhn.nauk; BABARYKIN, N.N., kand.tekhn.nauk; NEYASOV, A.G., kand.tekhn.nauk; SHPARBER, L.Ya., inzh.; BOGDANOV, V.V., inzh.; ZHARKOV, P.N., master pechi; PANIN, O.G., master pechi; FEDOTOV, V.G., master pechi; FEOFANOV, N.M., master pechi;SAGAYDAK, I.I., inzh., rukovoditel'raboty

Evaluating the effect of various methods of charging a blast furnace on the state of the gas flow in its upper part. Stal' 23 no. 3:198-204 Mr '64. (MIRA 17:5)

1. Magnitogorskiy metallurgicheskiy kombinat (for Lepikhin).

BABARYKIN, N.N.

Effect of preheating the blast on the consumption of coke and the degree of indirect reduction of iron oxide in a blast furnace. Stal' 24 no.9:773-778, S '64. (MIRA 17:10)

YUSHIN, F.A.; BALARYKIN, N.N.

Studying the reduction processes in a blast furnace stack.
Stal' 24 no.11:968-975 N '64.

(MIRA 18:1)

BABARYKIN, N.N.; GALATONOV, A.L.; SAGAYDAK, I.I.; SHPARBER, L.Ya.; TSVERLING, A.L.; YAKOBSON, A.P.; BORTS, Yu.M.; ZHILO, N.L.; KOPYRIN, I.A.; OSTROUKHOV, M.Ya.

Experimental smelting with a reduced slag output. Stal' 24 no.12:1069-1075 D '64. (MIRA 18:2)

1. Magnitorskiy metallurgicheskiy kombinat i Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

CHERNYATIN, A.N.; OSTROUKHOV, M.Ya.; GIMMEL'FARB, R.A.; VOLKOV, Yu.P.; BABARYKIN, N.N.; SHPARBER, L.Ya.; GALATONOV, A.L.

Mastering of MMK [Magnitogorsk Metallurgical Combine] blast furnace operations with the use of natural gas. Metallurg 10 no.8:12-13 Ag '65. (MIRA 18:8)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii i Magnitogorskiy metallurgicheskiy kombinat.

AGASHIN, A.A.; BABARYKIN, N.N.; VOLKOV, Yu.P.; GALATONOV, A.L.; KRYUKOV, N.M.; MALIKOV, K.V.; OSTROUKHOV, M.Ya.; PISHVANOV, V.L.; CHERNYATIN, A.N.; YUSHIN, F.A.

Experimental operation of blast furnaces on mazut and natural gas. Stal' 25 no.5:393-400 My '65. (MIRA 18:6)

1. Magnitogorskiy metallurgicheskiy kombinat; Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki i Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

CHERNOGOROV, P.V.; BOBROV, A.V.; Prinimali uchastiye: BABARYKIN, N.V.; MONOYENKO, I.P.; MOREV, V.P.; KUTUYEVA, F.S.; OKUL'SKIY, M.K.; GAL'PERIN, I.B.; VASINA, Z.M.; BERNSHTEYN, S.I.; BALINSKIY, V.R.

Effect of foundry iron prepared by a non-blast-furnace method on the quality of foundings. Lit.proizv. no.7:9-12 Je '60. (MIRA 13:7)

(Cast iron--Metallurgy)
(Foundries--Quality control)

BABARYKIN, S.P.

Effect of temperature and breaks in the insulation on the performance of the MSP-55 well device. Razved. i prom. geofiz. no.40:55-60 '61. (MIRA 15:7)
(Oil well logging, Electric--Equipment and supplies)

BABARYKIN, S.P.

Device for checking the MSP-55 well device. Razved. i prom. geofiz. no.40:61-63 '61. (MIRA 15:7)
(Oil well logging, Electric--Equipment and supplies)

ACCESSION NR: AP4040707 S/0203/64/004/003/0458/0463

AUTHOR: Babary*kin, V. K.; Bayarevich, V.V.; Stozhkov, Yu. I.; Charakhch'yan, T.N.

TITLE: Latitudinal measurements of cosmic-ray intensity in the stratosphere

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 3, 1964, 458-463

TOPIC TAGS: cosmic ray intensity, stratosphere, equatorial belt, sounding flight, geomagnetic latitude, extrapolation, communication coefficient

ABSTRACT: The intensity of cosmic rays in the stratosphere was measured on board the steamship "Estoniya," which sailed from Leningrad to the shores of Antarctica. At the same time, observations with identical instruments were carried out at Murmansk, Moscow, and Alma Ata. Data obtained at these places and in the equatorial belt in December 1962 are represented graphically. The curves are similar. The sounding flights reached heights of 27—30 km, from which the intensity of cosmic rays could be determined at low pressures and at various geomagnetic latitudes. Attempts to determine the intensity

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ACCESSION NR: AP4040707

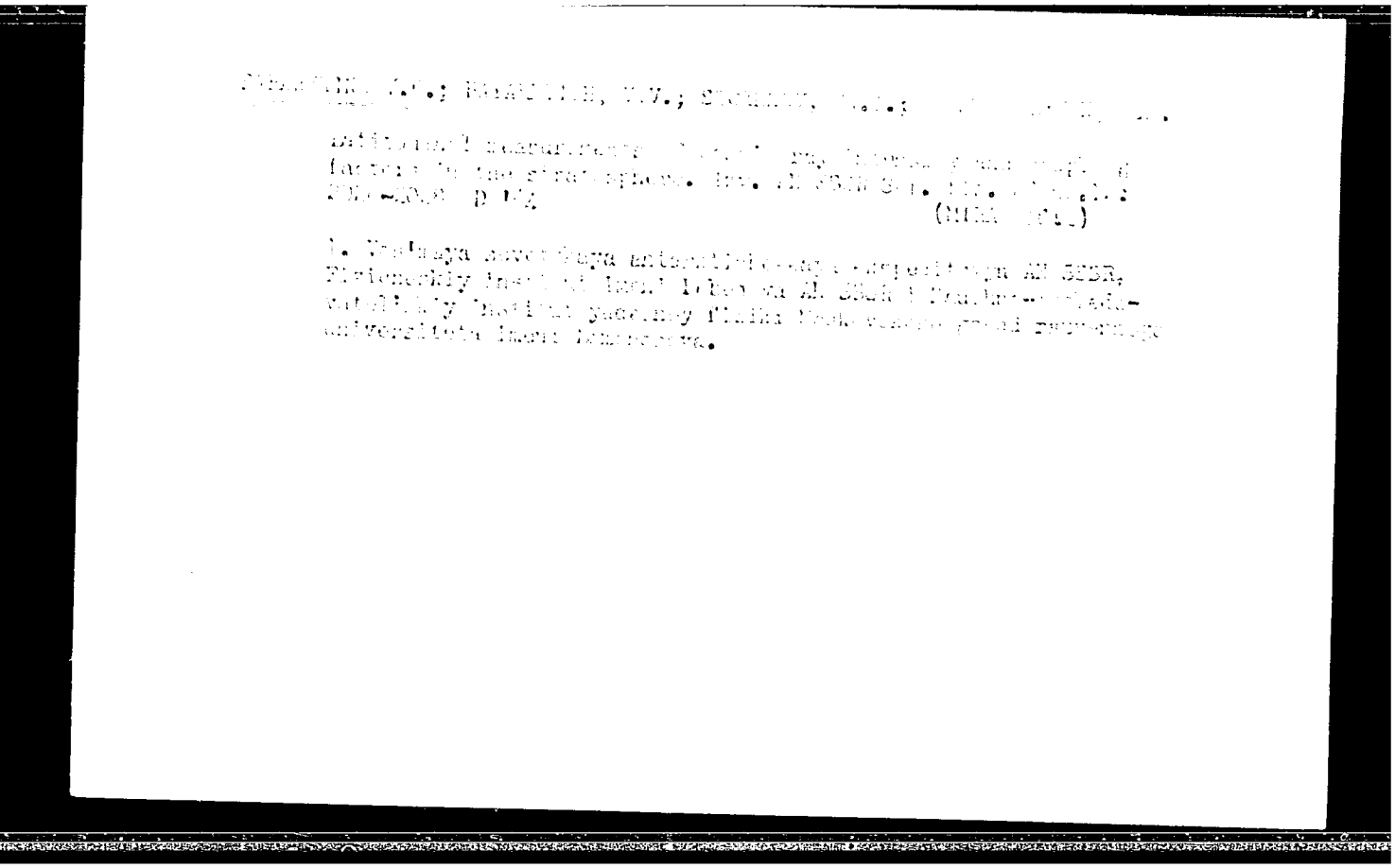
of cosmic rays at the upper boundary of the atmosphere by extrapolation yielded exaggerated results. Data on the latitudinal distribution of cosmic-ray intensity are used for computing the coupling coefficients. Numerical values of the coupling coefficients for all stations are given in a table. Orig. art. has: 4 figures, 2 tables, and 6 formulas.

ASSOCIATION: Vos'maya Sovetskaya Antarkticheskaya ekspeditsiya AN SSSR (Eighth Soviet Antarctic Expedition, AN SSSR); Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Institute of Physics, AN SSSR); Moskovskiy gosudarstvenny*y universitet, Institut yadernoy fiziki (Moscow State University, Institute of Nuclear Physics)

SUBMITTED: 140ct63 ATD PRESS: 3041 ENCL: 00

SUB CODE: AA NO REF SOV: 008 OTHER: 002

Card 2/2



BABARYKIN, V.K.; BARANOV, G.I., mladshiy nauchnyy sotrudnik; BARDIN, G.I., mladshiy nauchnyy sotrudnik; SAKUNOV, G.G., mladshiy nauchnyy sotrudnik

Albedo of the Antarctic ice surface. Inform.biul.Sov.antark.eksp. no.48:22-24 '64. (MIRA 18:2)

1. TSentral'naya aerologicheskaya observatoriya, Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut i Glavnaya geofizicheskaya observatoriya.

L 3646-66 EWT(1)/FCC/EWA(h) GW

ACCESSION NR: AP5026222 UR/0048/65/029/010/1805/1806

AUTHOR: Vernov, S. N.; Charakhch'yan, A. N.; Babarykin, V. K.; Bayarevich, V. V.; Stozhkov, Yu. I.; Charakhch'yan, T. N. 35 32 B

TITLE: Measurements of the intensity of cosmic rays in the stratosphere above Antarctica

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 10, 1965, 1805-1806

TOPIC TAGS: cosmic ray, primary cosmic ray, outer radiation belt, artificial radioactivity, critical energy, proton 12

ABSTRACT: Simultaneous measurements of the intensity of cosmic rays in both hemispheres are of great importance for investigating low-energy primary cosmic radiation, temperature effect, disturbances in the earth's outer radiation belt, and artificial radioactivity in the stratosphere. Although the critical energy in Murmansk is about 100 Mev and in Mirnyy about 10 Mev, measurements are carried out in atmospheric layers above both places with a pressure of 10 g/cm^2, which can be penetrated by protons with energies above 100 Mev. Data obtained simultaneously in Murmansk and Mirnyy are obtained at different seasons, and they arrive from different directions in the atmosphere. Sounding takes place in all stations at a given time. Four times a week cosmic rays are measured with a

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ACCESSION NR:: AP5026222

3

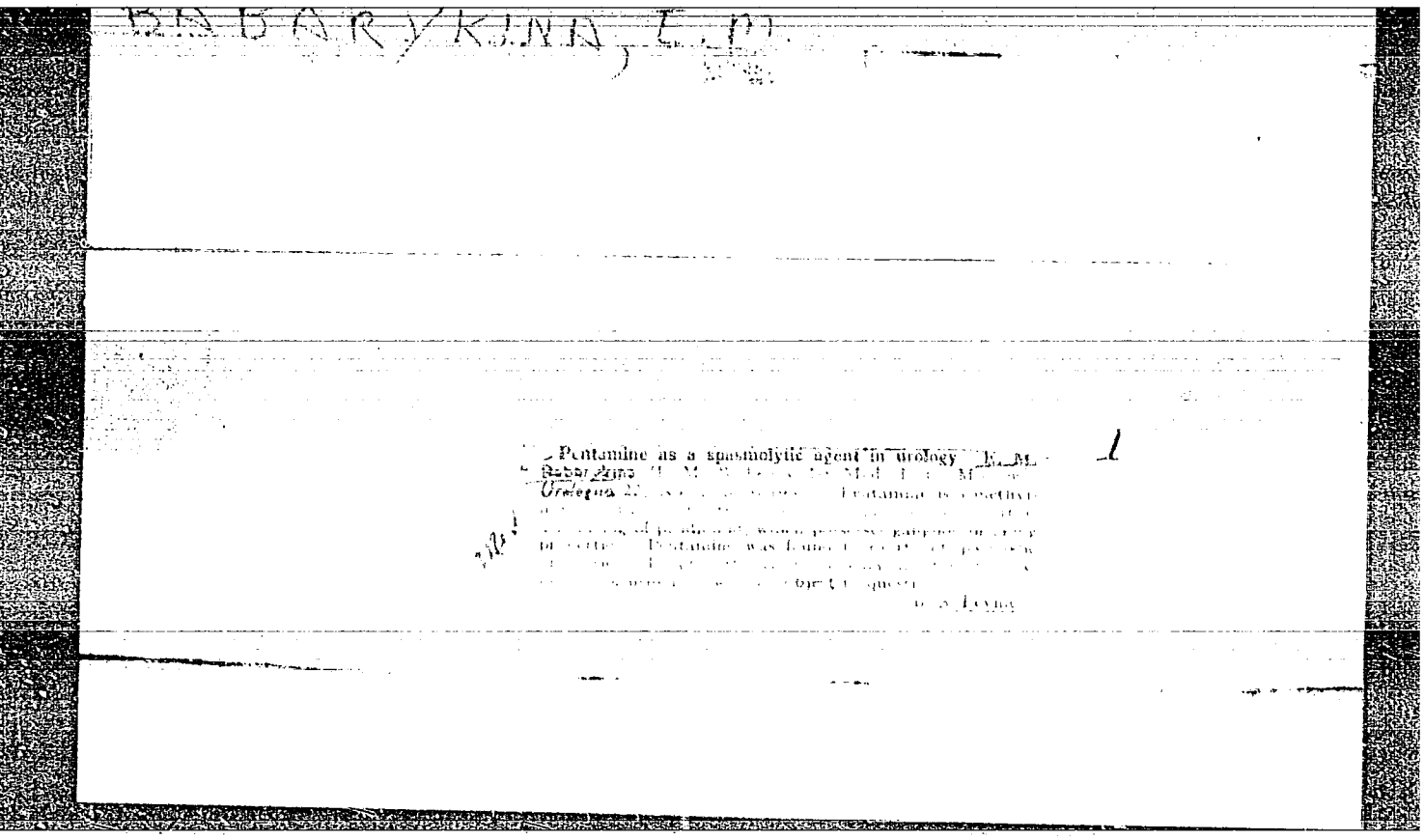
single counter and two times with a special telescope. Results of measurements are represented graphically. The difference between Murmansk and Mirnyy varies, depending upon the season of the year. The difference is small when the pressure is between 20 and 200 g/cm^2. The difference increases at other pressures. Orig. art. has: 2 figures. [EG]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics, Academy of Sciences, SSSR); Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics, Moscow State University); VIII Sovetskaya antarkticheskaya ekspeditsiya (VIII Soviet Antarctic Expedition)

SUBMITTED: 00 ENCL: 00 SUB CODE: AA,ES

NO REF SOV: 001 OTHER: 000 ATD PRESS: 4116

Card 2/2



BABORYKIN, E.P.

Pentamine as a spasmolytic agent in urology. [illegible]

BABAJEVA, Y. P.

MEL'NIK, M.I.; NIKITINA, T.A., kandidat meditsinskikh nauk; BABASEVA, Ye.P.; FOKINA, A.I.; KONONOV, O.K.; SEVERIN, A.V.

Treatment of mycoses of the scalp with Lesovykh solutions No.1 and No.2 without using X rays. Vest. ven. i derm. no.5:21-22 S-O '54. (MLRA 7:11)

1. Iz Kiyevskogo dermato-venerologicheskogo instituta (dir. G.Ye. Koryakin) i Kiyevskogo gorodskogo dispansera (glavnyy vrach A.S. Ivanov)

(HEAD, diseases,
fungus dis., chemother.)
(FUNGUS DISEASES,
scalp, chemother.)

MEL'NIK, M.A.; IVANOV, A.S.; PODGAYETSKAYA, M.G., kandidat meditsinskikh nauk; BABASEVA, Ye.P.; LESTOVETSKAYA, G.I.; MITSINSKIY, N.V.

Treating mycoses of the scalp with "Lesovaia" liquids nos 1 and 2 without using X rays. Report No.2. Vest.ven. i derm. 30 no.4:52-53 Jl-Ag '56. (MLRA 9:10)

1. Iz mikologicheskogo otdeleniya Kiyevskogo gorodskogo kozhno-venerologicheskogo dispansera.
(ANTISEPTICS) (DERMATOMYCOSIS) (SCALP—DISEASES)

DRYGA, A.I., inzh.; BABASH, V.G., inzh.

Drilling inserted metal elements in reinforced-concrete parts of machines. Mashinostroenie no.3:115-116 My-Je '63. (MIRA 16:7)

1. Nauchno-issledovatel'skiy i proyektno-tekhnologicheskiy institut mashinostroyeniya Donetskogo soveta narodnogo khozyaystva.

(Drilling and boring)

DRYGA, A.I., inzh.; BABASH, V.G., inzh.

Investigating the strength of reinforced-concrete base parts. Mashinostroenie no.4:110-112 Jl-Ag '63. (MIRA 17:2)

1. Nauchno-issledovatel'skiy i proyektno-tekhnologicheskiy institut mashinostroyeniya, g. Kramatorsk.

DRYGA, A.I., inzh.; BABASH, V.G., inzh.

Lateral rigidity of reinforced-concrete beds for heavy machine tools. Mashinostroenie no.5:15-18 S-O '63. (MIRA 16:12)

1. Nauchno-issledovatel'skiy i proyektno-tekhnologicheskiy institut mashinostroyeniya, Kramatorsk.

DRYGA, A.I., inzh.; BABASH, V.G., inzh.

Investigating the strength and rigidity of the fastening in concrete of metal inlaid parts of reinforced-concrete base components of machines. Vest.mashinostr. 43 no.11:18-20 N '63. (MIRA 17:2)

BABASHEV, B.S.

Clinical aspects of pulmonary echinococcosis. Trudy Inst.klin.i eksp.khir. AN Kazakh.SSR 5:86-93 '59. (MIRA 13:5)
(LUNGS--HYDATIDS)

BABASHEV, B.S.

Comparative experimental evaluation of some methods for anesthesia in acute radiation sickness. Trudy Inst. klin. i eksp. khir. AN Kazakh. SSR 6:3-57 '60. (MIRA 13:12)
(RADIATION SICKNESS) (ANESTHESIA)

BABASHEV, B. S., Cand Med Sci -- (diss) "Comparative experimental evaluation of some anesthetizing methods in acute radiation sickness." Alma-Ata, 1960. 16 pp; (Inst of Physiology, Inst of Kray Pathology and Inst of Clinical and Experimental Surgery of the Academy of Sciences Kazakh SSR); 300 copies; price not given; (KL, 17-60, 167)

BABASHEV, B.S.

Cancer of the lungs in Kazakhstan. Trudy Inst.klin. i eksp. khir. AN Kazakh. SSR 8:56-65 '62. (MIRA 17:7)

BABASHEV, B.S.; ROZHKOVA, A.P.; GUT, V.A.; SEMENOV, G.V.

Prolapse of the heart from the pericardium into the pleural cavity following a pulmonectomy. Trudy Inst. klin. i eksp. khir. AN Kazakh. SSR 9:100-103 '63. (MIRA 17:12)

MOGUTOV, S.I.; BARASHEVA, N.A.

Expand the production of Siberian pine immersion oil. Gidroliz.i lesokhim.prom. 9 no.3:19-20 '56. (MLRA 9:8)

1. Barnaul'skiy kanifol'no-terpentinnyy zavod.
(Gums and resins) (Oils and fats)

BABASHKIN, G.

They are fulfilling the obligations they assumed. Prom. koop. no.9: 8-9 S '57. (MLRA 10:9)

1. Predsedatel' pravleniya Mosoblpromsoveta.
(Moscow Province--Cooperative societies)

BABASHKIN, G.

We improve industrial management. Prom.koop. 13 no.3:6-7 Mr '59.
(MIRA 12:4)

1. Predsedatel' pravleniya oblpromsoveta, Moskva.
(Moscow Province--Cooperative societies)

BABASHKIN, I.M.

Shifts and working-hours of telegraph operators should be properly arranged. Vest. sviazi 19 no.7:22-24 Jl '59. (MIRA 13:8)

1. Starshiy inzhener normativnoy gruppy TSentral'nogo telegrafa SSSR.

(Telegraph—Employees) (Hours of labor)

BABASHKIN, I.M.

Use of broad estimates for establishing the number of teletype operators. Vest. sviazi 22 no.12:21-22 D '62. (MIRA 16:1)
(Telegraph--Employees) (Telegraph--Accounting)

BABASKIN, A.V.

BABASKIN, A.V.

Aftereffects of disconnecting the receptory apparatus in the sino-auricular ganglion in the heart of dogs by means of extirpation of the intervertebral ganglia of the first five thoracic segments. Medych. zhur. 23 no.2:27-32 '53. (MLRA 8:2)

1. Osipenkivsk'kiy uchitel's'kiy institut (Zaporiz'ka obl.)
(NERVOUS SYSTEM, SYMPATHETIC) (RECEPTORS (NEUROLOGY))
(HEART--INNERVATION)

[illegible], [illegible]

"Af[illegible] Innervation of the Aortic Arch (Histological Investigation)." Dr Biol Sci, Moscow Veterinary Acad, Min Higher Education USSR; Chair of Natural Sciences, [illegible] Inst, [illegible], 195[illegible]. (KL, No 1[illegible], Apr [illegible])

SO: Sum. No. [illegible], [illegible] Nov [illegible] - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (17).

BABASKIN, A. V.

USSR/ Medicine - Neurology

Card 1/1 Pub. 22 - 49/49

Authors : Babaskin, A. V.

Title : Histological changes in dorsal intervertebral ganglions after inflicting chemical trauma on the skin innervated by D_1 - D_6 intervertebral ganglions

Periodical : Dok. AN SSSR 101/3, 581-584, Mar 21, 1955

Abstract : Experiments were conducted on dogs and guinea pigs to observe the histological changes occurring in the dorsal intervertebral ganglions after inflicting chemical trauma (formaline emulsion) on the skin innervated by the D_1 - D_6 intervertebral ganglions. The results obtained are described in detail. Illustrations.

Institution : State Pedagogical Institute, Osipenko, Zaporozhe Region

Presented by : Academician A. I. Abrikosov, August 26, 1954

USSR/Morphology of Man and Animals - Vascular System. S-5

Abs Jour : Ref Zhur - Biol., No 6, 26494

Author : Babaskin, A.V.
Inst :
Title : Perineural Sheaths of the Cardiovascular System.

Orig Pub : Nauk. zap. Melitopol'sk. derzh. ped. in-t, 1956, 3, 151-168.

Abstract : Perineural sheaths (PS), morphologically not connected with the elements of lymphatic system, were revealed in the aorta, the pulmonary artery, the venae cavae and other vessels in canine and feline hearts. PS cover certain intramural ganglia and fibers as well. The system of PS ends blindly and the myelin sheath fails to penetrate through the end of PS. PS consist of the inner epithelial membrane and a thick outer layer of argyrophile cells rich in fibrillae;

Card 1/2

BABASKIN, A.V.

Pathology of the intercostal ganglia in healthy dogs. Fiziol.zhur. [Ukr.] 4 no.1:131-132 Ja-F '58. (MIRA 11:3)

1. Melitopol'skiy pedagogichniy institut.
(NERVOUS SYSTEM--DISEASES)

ANMOSOV, I.I.; BABASHKIN, B.G.; GRECHISHNIKOV, N.P.; YEREMIN, I.V.; KALMYKOV, G.S.; PRYANISHNIKOV, V.K.

[Industrial and genetic classification of U.S.S.R. coals; basis for classification] Promyshlenno-geneticheskaia klassifikatsiia uglei SSSR; osnovy klassifikatsii. Moskva, Nauka, 1964. 174 p. (MIRA 17:11)

L 05080-67 EWT(d)/FSS-2

ACC NR: AP6013306 SOURCE CODE: UR/0413/66/000/008/0098/0098

49
B

AUTHORS: Izhin, M. I.; Alekseyev, L. A.; Babashkin, V. I.

ORG: none

TITLE: A method for discrete summation of signals. Class 42, No. 180858

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 98

TOPIC TAGS: signal coding, signal processing

ABSTRACT: This Author Certificate presents a method for discrete summation of signals associated with the encoding of information with a fixed weight. The method increases the interference-free nature of the process. Binary symbols of the code group, which are accepted simultaneously on N channels, are linearly added with subsequent limitation of the sum to N levels by clippers of the sum. The solution in regards to the transmitted code group is taken by detecting the specific number of the largest (based on the number of ones) or smallest (based on the number of zeros) values of the sum.

SUB CODE: 09/ SUBM DATE: 10May65

Card 1/1 fv

UDC: 681.142.621.374

GLAZKOV, P.G., inzh.; SLADKOSHTEYEV, V.T., kand.tekhn.nauk; TELESOV, S.A., inzh.; OFENGENDEN, A.M., inzh.; STRELETS, V.M., kand.tekhn.nauk; MURZOV, K.P., inzh.; Prinimali uchastiye: MALAKHA, A.V.; DRUZHININ, I.I.; YELISOF, A.V.; YEVTUSHENKO, V.B.; OSIPOV, V.G.; BABASKIN, Yu.Z.; SLIN'KO, A.N.; ZELENOV, S.N.; GENKIN, V.Ya.; PITAK, N.V.; VYSOTSKAYA, T.M.

Investigating the operation of multiple-pit continuous steel casting arrangements. Trudy Ukr. nauch.-issl. inst. met. no.7:133-142 '61. (MIRA 14:11)

(Continuous casting--Equipment and supplies)

SHAPOVALENKO, V.G.; BABASKIN, Yu.Z.

Bottom pouring of steel without stoppers. Lit.proizv. no.4:43 Ap '63. (MIRA 16:4)

(Foundries—Equipment and supplies)

FIKSEN, N.V., kand.tekhn. nauk; BABAKIN, Yu.Z., inzh.

Improving the technology of casting IKh18N9Ti steel. Mashino-stroenie no.1:59-60 Ja-F '64. (MIRA 17:7)

FIKSEN, N.V., kand. tekhn. nauk; BABASKIN, Yu.Z., inzh.; ZHILYAYEV, A.P., inzh.; TUROVSKIY, V.P., inzh.

Selecting optimum temperature conditions for smelting and teeming of Kh18N9TL steel. Mashinostroenie no.5:28-29 S-O '64 (MIRA 18:2)

ACCESSION NR: AP4044249 S/0128/64/000/008/0041/0042

AUTHOR: Fiksen, N. V., Babaskin, Yu. Z., Zhulyayev, A. F., Shapovalenko, V. G., Turovskiy, V. P.

TITLE: Manufacture of Kh18N9TL steel in an induction furnace by resmelting with oxygen

SOURCE: Liteynoye proizvodstvo, no. 8, 1964, 41-42

TOPIC TAGS: steel manufacture, induction furnace, Kh18N9TL steel, steel smelting, oxygen resmelting, decarbonization, blast furnace, tuyere blowing

ABSTRACT: The technique of blowing oxygen into the metal, the oxygen pressure, and the composition and temperature of the metal as factors in decarbonization and chromium burn-up were investigated in an attempt to develop an optimum technology for manufacturing low-titanium, high-quality Kh18N9TL stainless steel (with a carbon content not above 0.06%) from the plant's steel wastes and rolled scrap by remelting in a 250-kg oxygen-blast induction furnace. By varying the proportion of stainless steel wastes and high-carbon scrap in the material from 0 to 100% and the pre-blowing temperature from 1580 to 1660C, with a post-blowing temperature of 1800C, an efficient technique was developed in which the pre-blowing charge contains 47% of carbon steel scrap, to which 27% of

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ACCESSION NR: AP4044249

stainless steel wastes (with respect to the melt weight) is added after blowing. Both of the two tested blast procedures - tuyere blowing and blowing through a submerged pipe - were found to be effective, the latter being more economical. Remelting with oxygen gives a better product than remelting without oxygen. Orig. art. has: 1 table.

ASSOCIATION: Donetskiy zavod sel'skokhozyaystvennogo mashinostroyeniya (Donets Agricultural Machinery Plant)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 000

Card 2/2

ACCESSION NR: AP4045806 S/0128/64/000/009/0003/0005

AUTHOR: Fiksen, N. V.(Candidate of technical sciences); Babaskin, Yu. Z. (Engineer)

TITLE: Effect of titanium on structure formation and pressure tightness of armature castings made of Kh18N9TL steel

SOURCE: Liteynoye proizvodstvo, no. 9, 1964, 3-5

TOPIC TAGS: titanium, titanium alloy steel, steel casting, pressure tightness, steel casting pressure tightness, armature casting, steel structure formation, Kh18N9TL steel

ABSTRACT: The development of modern branches of engineering has increased the requirements for thin-walled armature castings made of Kh18N9TL stainless steel which can be used in aggressive gaseous media under pressures of 5 atm. and more. However, the usual production methods do not ensure the required properties, the main defect being high porosity. It is known that porosity in stainless steel depends on the metal shrinkage, dendritic structure, and the high content of gas and flaws in the liquid metal at casting temperatures. Addition of titanium affects these properties in various ways. The present authors investigated the relationship between macrostructure formation, pressure tightness of castings and technological factors (casting temperature and titanium content). Castings were

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ACCESSION NR: AP4045806

made in a 430-kg induction furnace with magnesite lining using ladles pre-heated to 800-900C. The effect of metal temperature and titanium content on the frequency of macroinclusions is shown in Figs. 1 and 2 of the Enclosure. Increasing the metal temperature from 1580 to 1620C lowers the inclusions in the castings somewhat, while between 1620 and 1660C the frequency does not change. The titanium content has the opposite and greater effect than metal temperature, and the castings have no inclusions only at 0.3-0.5% Ti. In contrast, the oxygen and nitrogen content in the steel drops as the titanium content increases. All data indicate that an increase in titanium leads to a higher porosity and lower density in the castings as well as to lower plasticity at high temperatures. The unfavorable effect of titanium on castings was confirmed by studies on the relative elongation. Lowering the titanium content to 0.30-0.50% thus increases the pressure tightness greatly. Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 01 SUB CODE: MM

NO REF SOV: 008 OTHER: 000

Card 2/3

ACCESSION NR: AP4045806

ENCLOSURE: 01

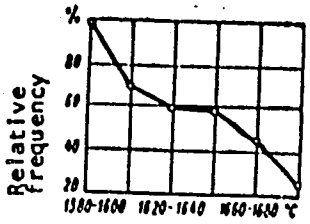

Fig. 1. Incidence of inclusions in relation to temperature. Ordinate = relative frequency of inclusions in %.

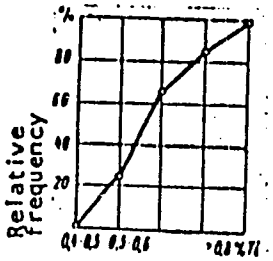

Fig. 2. Incidence of inclusions in relation to Ti content. Ordinate = relative frequency of inclusions in %.

Card 1 3/3

TUROVSKIY, V.P., inzh.; MOSKALENKO, A.P., inzh.; NADACKIY, [illegible], inzh; SOKIYKO, L.A., inzh.

Molding sand for casting stainless steel. Mashinostroenie no.1: 51-52 Ja-F '65. (MIRA 18:2)

MOROZOV, V.N., inzh.; BABASKIN, Yu.Z., inzh.; TUFOVSKIY, V.P., inzh.; SOKIRKO, L.A., inzh.; MOSKALENKO, A.F., inzh.; MURAV'YEV, V.N., inzh.

Obtaining compact stainless steel castings. Mashinostroenie no.3:29-30 My-Je '65. (MIRA 18:6)

FIKSEN, N.V.; BADASKIN, Yu.Z.

Effect of titanium on the formation of the structure and airtightness of Kh18N9TL steel pipe pipe fitting castings. Lit. proizv. no.9:3-5 S '64. (MIRA 18:10)

FIKSEN, N.V.; BABASKIN, Yu.Z.; ZHILYAYEV, A.P.; SHAPOVALENKO, V.G.; TUROVSKIY, V.P.

Making Kh18N9TL steel in an induction furnace by the remelting process with the use of oxygen. Lit. proizv. no.8:41-42 Ag '64. (MIRA 18:10)

ACC NR: AT7000964 SOURCE CODE: UR/0000/66/000/000/0122/0133

AUTHOR: Babaskin, Yu. Z. (Candidate of technical sciences); Murav'yev, V. N.

ORG: Institute of Casting Problems, AN UkrSSR (Institut problem lit'ya AN UkrSSR); Donetsk Institute of Ferrous Metals (Donetskiy institut chernykh metallov)

TITLE: Improvements in the technology of fabrication of thinwalled stainless steel section castings

SOURCE: AN UkrSSR. Poroki stal'nykh otlivok i metody ikh ustraneniya (Defects in steel castings and methods of their elimination). Kiev, Naukova dumka, 1966, 122-133

TOPIC TAGS: stainless steel, metal casting, titanium, nonmetallic inclusion / Kh18N9TL stainless steel

ABSTRACT: The experience of the foundry shops of a number of plants in the Ukrainian SSR showed that the adopted method of melting Kh18N9TL steel in induction furnaces (the remelting method) does not assure the density of thinwalled section castings designed for the transportation of gases under high pressure, as demonstrated by their pneumatic tests, which pointed to the presence of three types of microflaws: shrinkage porosity, accumulation of nonmetallic

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inclusions along crystalline grain boundaries, and "titanium porosity" (Fig. 1). This is attri-

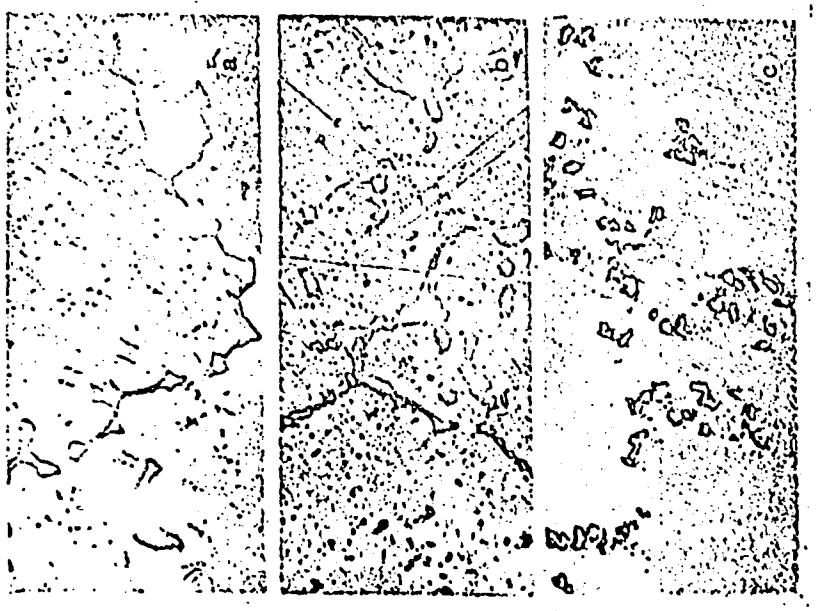

Fig. 1. Types of structural defects of castings, manifested at sites of density discontinuities: a – shrinkage porosity (x120); b – accumulation of nonmetallic inclusions along crystalline grain boundaries (x120); c – local clustering of titanium nitrides (x400)

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ACC NR: AT7000964

butable to the contamination of these castings by gases and refractory nonmetallic inclusions the bulk of which forms as a result of the secondary oxidation of metal during casting. Owing to their considerable lengthwise dimensions, these inclusions determine the probability of instances of that mutual alignment of microscopic defects of metal which disturbs the continuity of the entire cross sectional area of the casting. Hence structural defects in stainless steel castings can be largely eliminated by reducing the amount and changing the nature of nonmetallic inclusions. In this connection the authors investigated the effect of the teeming temperature and titanium content of the metal on the casting of stainless steel fittings with wall thickness of ~10 mm and found that the percentage of inclusions along grain boundaries varies insignificantly with temperature and significantly with titanium content (as the latter increases from 0.10-0.25 to 0.80 and higher). Ti produces this effect because it reduces chromites and silicates and forms compounds (oxides and nitrides) with soluble oxygen and nitrogen; the resulting nitrides of titanium, in particular, may, owing to their tiny dimensions, act as crystallization nuclei and become ingrown in the crystals of the metal during solidification. The accumulation of nonmetallic inclusions along crystalline grain boundaries is chiefly due to the fragments of shattered films that had formed on the surface of the jet of metal during pouring, with the intensity of formation of these films being a function of Ti content. The reduction or more rigorous regulation of the Ti content of stainless steel reduces the intensity of the film-forming process and hence also leads to improvements in the physico-mechanical properties of castings.

Card 3/4

ACC NR: AT7000964

Compared with the regular method of remelting in induction furnaces, partial remelting with the use of oxygen (Fiksen, N. V., Babaskin, Yu. Z., et al. Liteynoye proizvodstvo, 1964, 8) is preferable, since this process assures a high stability of the C and Ti content of the metal. Orig. art. has: 8 figures, 3 tables.

SUB CODE: 13, 11, 20/ SUBM DATE: 23Jul66/ ORIG REF: 016/ OTH REF: 002

Card 4/4

MAKHNOVSKIY, I., kand. sel'skokhoz. nauk; GUZEYEV, G., nauchnyy sotrudnik; GALINSKIY, V.; OCHERETENKO, Ye.; VOLGINA, T.; MULLIN, S.; SAFIULLIN, M., aspirant; BABASYAN, A.

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