BOKOKI, G.; FENYVES, E.; FRENKEL, A.; GOMBOSI, Eva

On the quasi-elastic character of inelastic two-prong π^- - p interactions at 7 and 16 GeV/c. Acta phys Hung 16 no. 4:355-360 '64.

1. Central Research Institute of Physics, Budapest. Presented by Lajos Janossy.

IVANOV, N., starshiy ekonomist; FRENKEL', A., starshiy ekonomist

Why payments for planning and engineering research work are so complicated. Fin. SSSR 22 no.10:63-65 O '61. (MIRA 14:9)

1. Giprokholod.
(Industrial plants--Design and construction)

KUZNETSOV, M.D.; EYDEL'MAN, Ye.Ya.; ADLER, Yu.P.; FRENKEL', A.A.

Useful book for the chemical engineers of the coke industry.
Koks i khim. no.3:61-64 '64. (MIRA 17:4)

1. Donetskiy politekhnicheskiy institut (for Kuznetsov, Eydel'man).
2. Gosudarstvennyy nauchno-issledovatel'skiy proyektnyy institut redkometallicheskoy promyshlennosti, Moskva (for Adler, Frenkel').

FRIEDMAN, A. A.

Using mathematical statistical methods and electronic computers in the analysis and planning of labor productivity and cost of manufacture. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh. inform. 18 no.5:48-51 My '65. (MIRA 18:6)

FRENKEL', A.B.

Inoculation of cast iron by boric acid. Lit.proizv. no.9:49 S '62. (MIRA 15:11)

(Cast iron--Metallurgy)

HRASKO, Peter; FRENKEL, Andor

Time reversal characteristics in quantum mechanics. Koz fiz kozl MTA 12 no.1:57-84 '64.

ACCESSION NR: AP4042392 S/0056/64/047/001/0221/0223

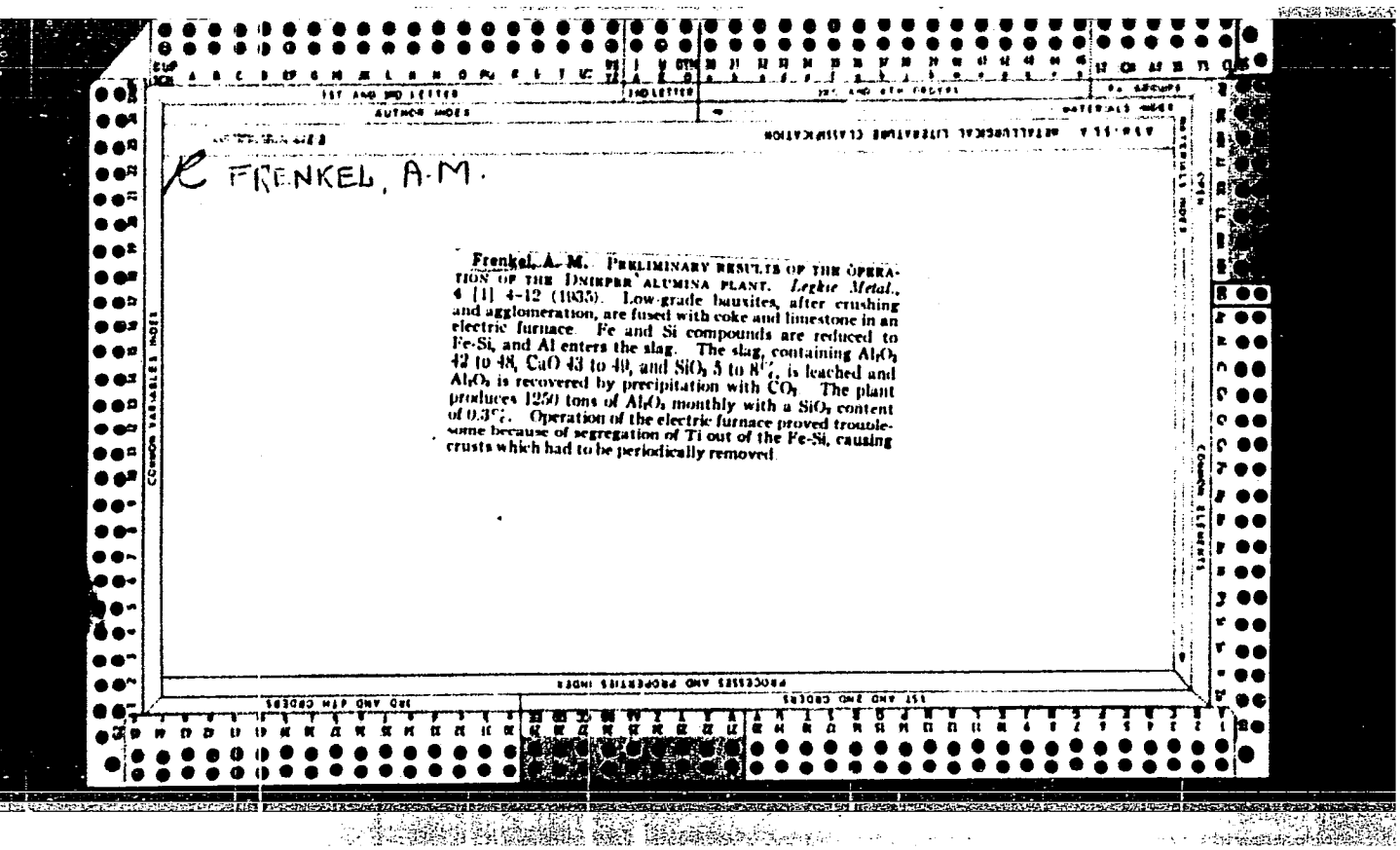
AUTHOR: Frenkel', A.

TITLE: On the choice of invariant variables for the amplitudes of particle production processes

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 1, 1964, 221-223

TOPIC TAGS: particle production, variational calculus, scattering amplitude

ABSTRACT: The method used differs from that proposed by V. Ye. Asribekov (ZhETF v. 42, 565, 1962) in that the author first chooses 3n - 6 geometrically independent invariants, and expresses all the remaining ones in terms of the selected ones with the aid of geometrical relations which leads to the vanishing of the determinant. This is followed by imposition of kinematic constraints on the vectors, reducing the number of independent invariants to 3n - 10, and



FRENKEL, A.M.

Frenkel, A. M. PRELIMINARY RESULTS OF THE OPERATION OF THE DNIEPER ALUMINA PLANT. *Legkie Metal.*, 4 [1] 4-12 (1935). Low-grade bauxites, after crushing and agglomeration, are fused with coke and limestone in an electric furnace. Fe and Si compounds are reduced to Fe-Si, and Al enters the slag. The slag, containing Al_2O_3 42 to 48, CaO 43 to 49, and SiO_2 5 to 8%, is leached and Al_2O_3 is recovered by precipitation with CO_2. The plant produces 1250 tons of Al_2O_3 monthly with a SiO_2 content of 0.3%. Operation of the electric furnace proved troublesome because of segregation of Ti out of the Fe-Si, causing crusts which had to be periodically removed.

Reconditioning grinding wheels and altering hardness. A. B. FRENKEL. *Stanki i Instrument*, 15 [6] 21–22 (1944); *Inst. Technol. Rev.* 6 [65] 111 (1946). To economize in grinding wheels, Z.I.S. in Russia has introduced methods of producing wheels of smaller diameter and thickness from used wheels. The reduction of diameter and thickness, the opening up of the bore, and the profiling are performed on lathes with cup-shaped tools. The bore of the grinding wheel can be reduced to some extent by filling it with liquid sulfur. To increase the hardness of the bond of used grinding wheels, they can be impregnated with Bakelite dissolved in acetone; the harder the required bond, the higher should be the specific gravity of the solution. 2 illustrations. P.G.

FRENKEL', A. B., Engineer

"The Machinability of the Aluminum Alloy, Silumin." Stanki I Instrument Vol. 15, No. 12, 1944

BR 52059019

FRENKEL', A. B., Engineer

"Production of a Welded Tool," Stanki i Instrument, 16, Nos. 4-5, 1945

BR-52059017

FRENKEL', A. B., Engineer

"A New -design Checking and Measuring Instrument for Precision Linear Measurements," Stanki I Instrument, 16, Nos. 10-11, 1945 (From Machinery, No. 1637, 1944)

Br-52059019

FRENKEL', A. B., Engineer

"The Cutting Tool and Machining Regime for Magnesium Alloys," (The Machinist, Nos. 1, 10, and 16, 1945) Stanki I Instrument, 17, No. 6, 1946

BR-52059019

FRENKEL', A. B., Engineer

Mbr., ZIS (-1946-)

"An Improved Design of Arbor for Machining Bushings," Stanki Instrument, 17, Nos 10-11, 1946.

BR-52059019

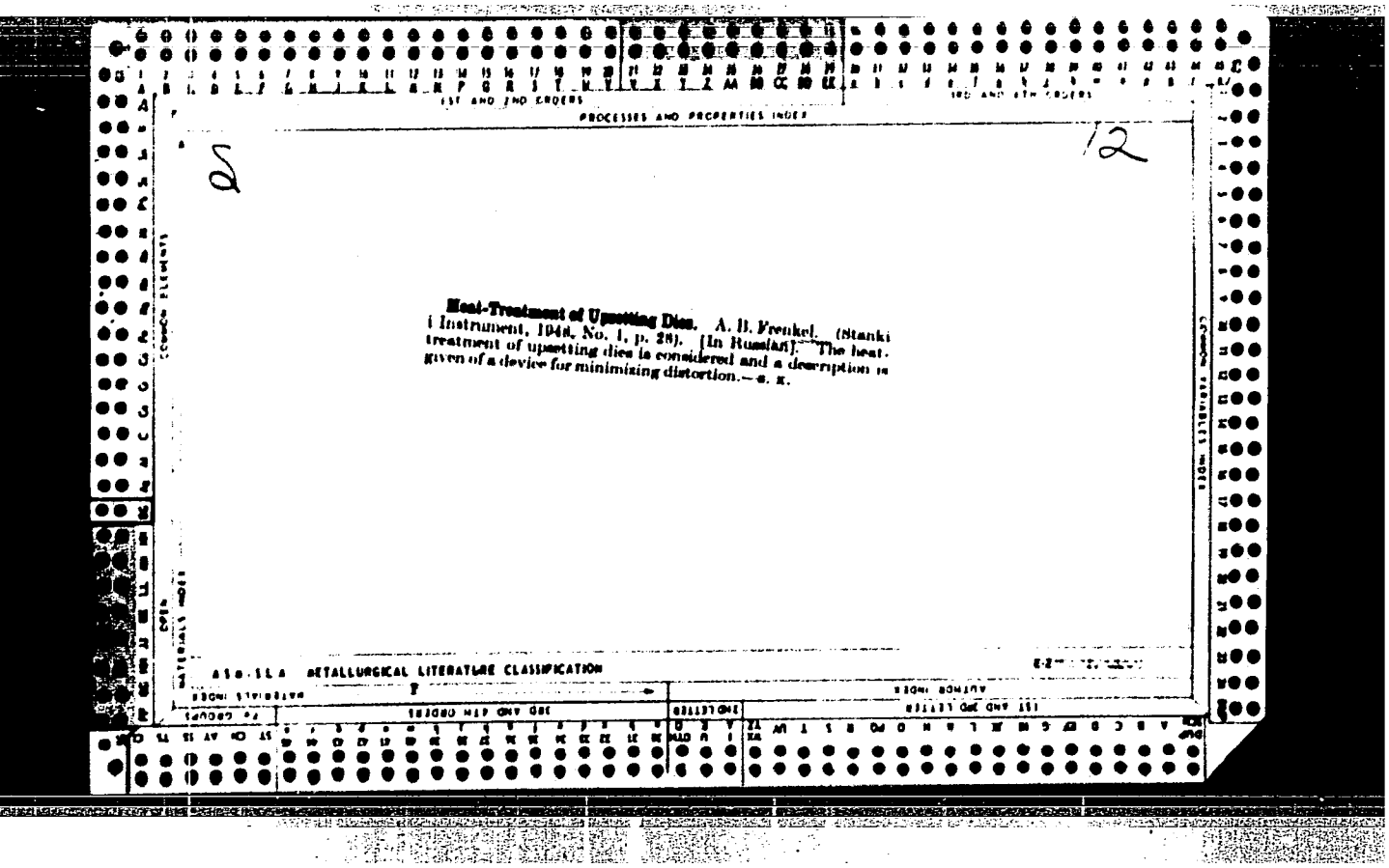
FRENKEL' A. B., Engineer

"An Attachment for Drilling Holes in a Shaft" (from Machinist, October, 1945) Stanki I Instrument, 17, No. 12, 1946

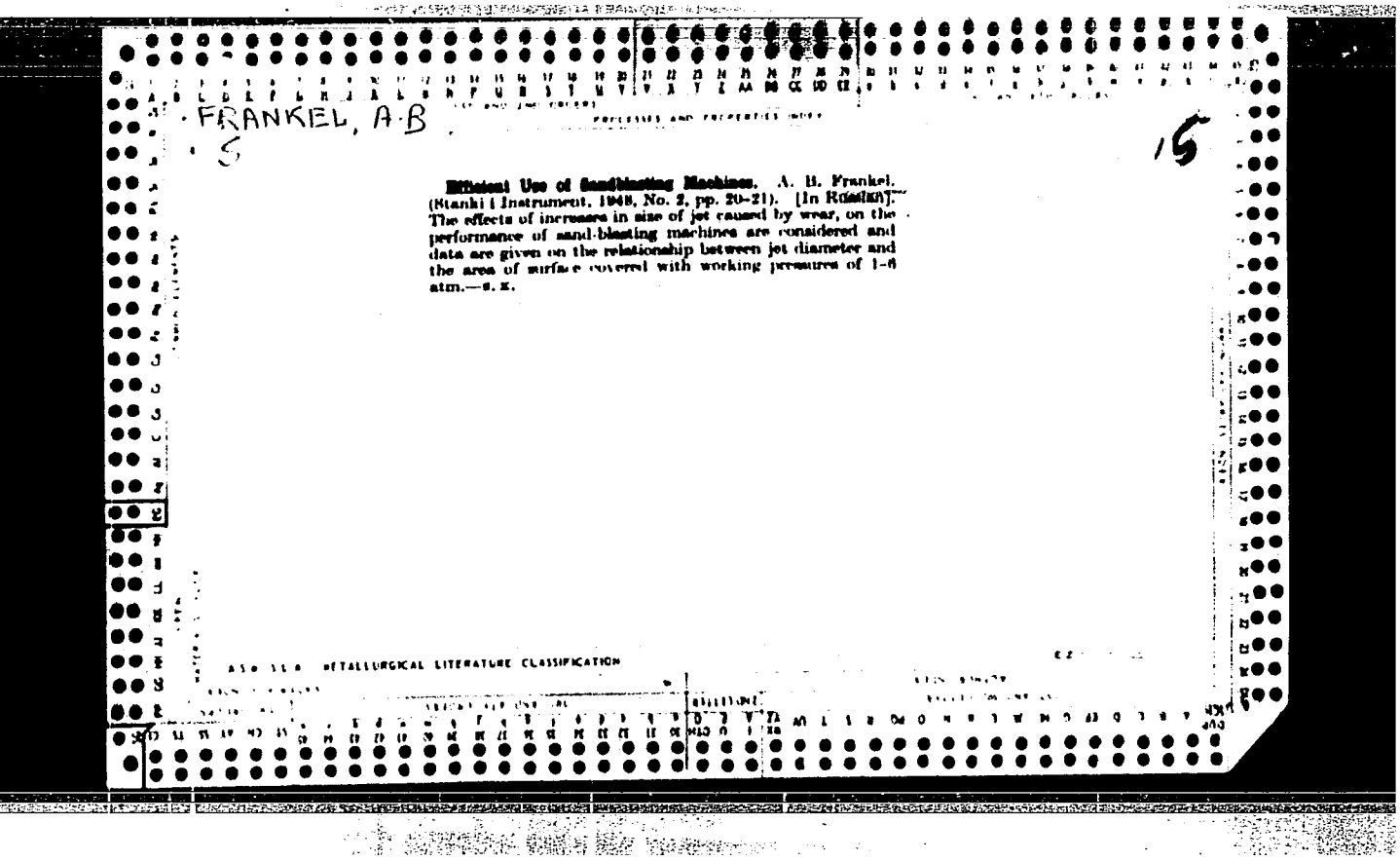
BR-52059019

FRENKEL', A.B., inzhener.

A new continuous method for the heat treatment of rapid-steel cutting tools. Stan.i instr. 18 no.9:26-27 S '47. (MLRA 9:1)
(Cutting tools--Heat treatment)



Heat-Treatment of Upsetting Dies. A. B. Frenkel. (Stanki i Instrument, 1948, No. 1, p. 28). [In Russian]. The heat-treatment of upsetting dies is considered and a description is given of a device for minimizing distortion.—S. K.



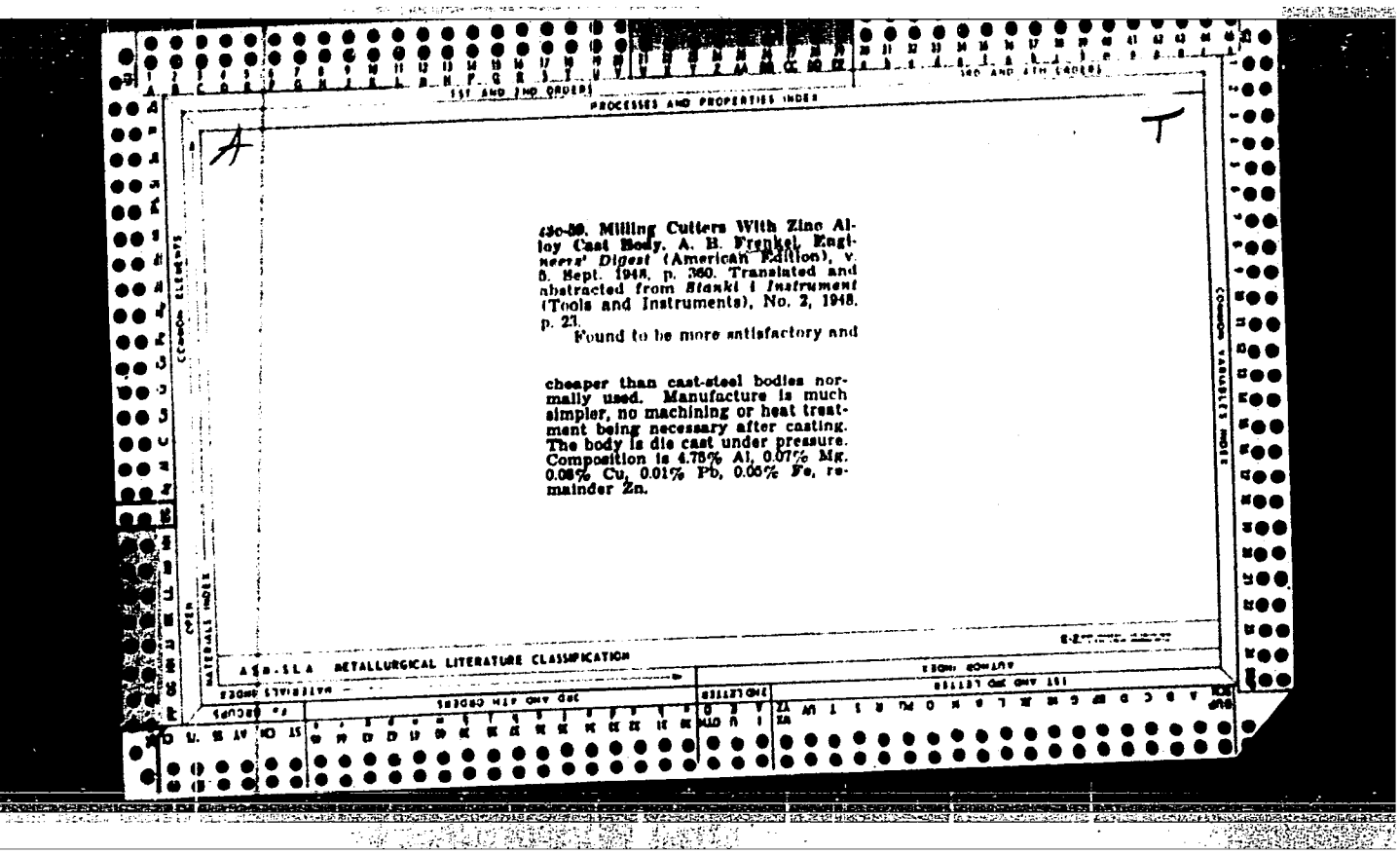
FRANKEL, A.B

S

15

Efficient Use of Sandblasting Machines. A. B. Frankel. (Stanki i Instrument, 1948, No. 2, pp. 20–21). [In Russian]. The effects of increases in size of jet caused by wear, on the performance of sand-blasting machines are considered and data are given on the relationship between jet diameter and the area of surface covered with working pressures of 1–6 atm.—s. k.

ASM METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

A

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430-89. Milling Cutters With Zinc Alloy Cast Body. A. B. Frenkel. *Engineers' Digest* (American Edition), v. 5, Sept. 1948, p. 360. Translated and abstracted from *Stanki i Instrument* (Tools and Instruments), No. 2, 1948, p. 21.

Found to be more satisfactory and cheaper than cast-steel bodies normally used. Manufacture is much simpler, no machining or heat treatment being necessary after casting. The body is die cast under pressure. Composition is 4.75% Al, 0.07% Mg, 0.08% Cu, 0.01% Pb, 0.05% Fe, remainder Zn.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

FRENKEL', A. B.

29059-Konstruktsiya Sbornykh Chervyachnykh Frez I tekhnologicheskiy Prots ess Ikh Proizvodstva. Avtomob. Prom-st', 1949 No. 7, S., 20-21

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

FRENKEL', A. B. I BARYLOV, G. I.

No. 3[illegible]353- Plavayushchaya razvertka na sharikakh. Stanki i instrument, 1949, No. 12, s. 22.

So: Letopis' Zhurnel'nykk Statey, Vol, 7, 1949.

[redacted], A.N., inzhener.

Adjusting the hardness of abrasive discs. Vest.mash. 33 no.5:62-63 My '53.
(MLRA 6:5)
(Grinding wheels)

FRENKEL', A.B.

4519 FRENKEL', A. B. Prisposobleniye dlya obrabotki konusov narevol'vernom starke. M., 1954. 2 s. s chert. 22 sm. (M-vo avtomob., Trakt. i s.-kh. mashinostroyeniya SSSR. Gos. vsesoyuz. in-t avtomob. tykhnologii "ORGAVTOPROM". Inform.-tekhn.-listok- No. 10).500 ekz. b. ts.- Cost. ukazan v vyp. dan. - (54-15656zh) (21.941. 232-2

SO: Knizhnaya Letopis', Vol. 1, 1956

USSR/ Engineering - Tools

Card 1/1 Pub. 128 - 12/34

Authors : Frenkel', A. B.

Title : An experiment on reusing worn-out grindstones

Periodical : Vest. mash. 12, 47-48, Dec 1954

Abstract : A narrative report is presented concerning methods, adopted by the Stalin Automobile Factory in Moscow, for restoring worn-out and discarded grindstones. Drawings; table.

Institution : .....

Submitted : .....

USSR/Engineering - Technology

Card : 1/1

Authors : Frenkel', A. B., Engineer

Title : Technologist's notes

Periodical : Vest. Mash., 34, Ed. 6, 91 - 93, June 1954

Abstract : The notes cover the following subjects:
Organization of punch-press work,
Punch-press chart,
Increasing the life of cut-off dies,
Mechanical cleaning of calibrated metal rods, and
Instrument for factory check on bolts, screws and pins. Drawings.

Institution : ...

Submitted : ...

FRENKEL', A.B.

Efficient design of a nozzle for compressed air. Lit.proizv. no.2:13 F '55. (MLRA 8:4)
(Sandblast)

FRENKEL', A.B., inzhener

Milling machines of an improved design. Der.prom.4 no.4: 23-24 Ap '55. (MLRA 8:6)
(Woodworking machinery)

FRENKEL', A.B., inzhener.

Improved pushing device for slashers. Der.prom. 4 no.11:22 N '55.
(Woodworking machinery) (MLRA 9:2)

FRENKEL, A.

Expérience with the use of worn-out grinding wheels. Tr. from the Russian. p. 315

TECHNICKA PRACA. Czechoslovakia, Vol. 7, No. 7, July 1955

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959
Uncl.

FRENKEL', A.B., inzhener

Butt welding of cutting tools with rods. Svar.proizv. no.9:27-29 S '55. (MLRA 8:11)

(Cutting tools--Welding)

FRENKEL', A.B.

Measures for economizing hard alloys for cutting tool application.
Sel'khozmashina no.10:25-26 0'55. (MLRA 8:12)
(Cutting tools)

USSR/ Engineering - Machineshop practice

Card 1/1 Pub. 128 - 25/35

Authors : Frenkel', A. B., Engineer

Title : Notes of a technologist

Periodical : Vest. mash. 35/3, 80 - 81, Mar 1955

Abstract : A supposedly more rational way of setting up molding forms for planing is demonstrated. A new nozzle for sand and shot blasting is described. A simplified method for measuring small diameters of a cone is explained. Illustrations; diagrams; graphs.

Institution : .....

Submitted : .....

FRENKEL', A.B., inzhener.

A highly efficient cutting tool. Vest.mash.35 no.9:64-66 S '55
(Cutting tools) (MLRA 9:1)

FRENKEL', A.B., inzhener.

Efficient use of board tails left after layout. Der.prom.5 no.12:24 D '56. (MLRA 10:1)

(Wood waste)

FRENKEL', A.B.

Control and measuring instruments and gauges. Izm.tekh. no.1: 67-68 Ja-F '56. (MLRA 9:5)
(Measuring instruments) (Gauges)

AID P - 4321

Subject : USSR/Engineering

Card 1/1 Pub. 128 - 21/26

Author : Frenkel', A. B., Engineer

Title : Chucks for turret lathe tap borers and threading dies

Periodical : Vest. mash., #3, p. 70-71, Mr 1956

Abstract : A new design of a chuck for turret lathe attachments is presented. Diagrams.

Institution : None

Submitted : No date

FRENKEL', A.B.

Powdered metal and steel draw plates for drawing steel wire.
Sel'khozmashina no.4:30-32 '56. (MIRA 9:7)
(Drawing (Metalwork))

FRENKEL', A.B.

Controlling and measuring tools in workshops. Izm.tekh. no.4:70 Jl-Ag '56. (MLRA 9:11)

(Measuring instruments)

FRENKEL', A.B., inzhener.

Increasing the strength of woodworking tools. Der.prom.5 no.4:22 Ap '56. (Cutting tools) (MLRA 9:7)

FRENKEL', A.B.

Using a hard alloy instead of a diamond in hardness testers. Zav. lab. 22 no.6:748-749 '56. (MLRA 9:8)

1. Moskovskiy avtomobil'nyy zavod.
(Hardness-Testing) (Tungsten alloys)

FRENKEL', A.B., inzhener.

Improved forging trimming dies. Vest. mash. 36 no.6:53-54 Je '56. (MLRA 9:10)

(Dies (Metalworking)) (Forging machinery)

FRENKEL', A.B., inzhener.

Making dies used in cold upsetting. Vest.mash.36 no.12:71-74 D '56.
(Dies (Metalworking)) (MLRA 10:2)

FRENKEL', A.B.

Standardization of equipment in forging and stamping work.
Sel'khozmashina no.5:25-27 My '57. (MLRA 10:5)
(Forging machinery)

FRENKEL', A.B., inzhener.

Simply designed attachments. Mashinostroitel' no.7:33-35 Jl '57.
(Machine tools--Attachments) (MLRA 10:8)

SOV/121-58-8-16/29

AUTHOR: Frenkel' A.B.

TITLE: A New Method of Grinding Gear Hobbing Cutters (Novyy metod zatochki chervyachnykh frez)

PERIODICAL: Stanki I Instrument, 1958, Nr 8, pp 35-36 (USSR)

ABSTRACT: To improve the output and endurance of gear hobbing cutters, the top rake angles at the side cutting edges should be made larger. To this end, the Tool Shop of the Plant imeni Ikhautdinov applies lateral relieving of teeth in built-up hobbing cutters. In doing so, the relieving motion perpendicular to the axis of the ground cutter is utilised only in grinding the tips of the cutter tooth. The lateral edges and radii at the tooth tip are ground by a relieving motion accomplished under an angle of 60° to the axis of the hob as a result of a rotation of the relieving tool support of the tool grinder. In consequence, hobs with a 20° tooth profile receive tip rake angles of 8-10° on their lateral cutting edges. The sharpening of a blunted cutter is carried out by a repeated grinding of the profile with the same directions of relieving motion. Thus the

Card 1/2

A New Method of Grinding Gear Hobbing Cutters

precision of a built-up cutter is the same as that of an integral cutter because the dismantling of the racks is unnecessary. The labour of sharpening by lateral relieving is the same as that of ordinary profile grinding on a relieving machine. The endurance of a cutter laterally relieved is stated to be 3 times greater. Multi-start hobbing cutters were previously ground on the front surface. Grinding along the profile with lateral relieving increases the life before final rejection by a factor of 1.5. One reason for the greater endurance is a different blunting criterion, namely wear at the tip corners of the rack tooth profile such that the machined gear wheel has an increased transition curve from the bottom of the gap to the tooth profile and the undercut necessary for the subsequent shaving disappears.

AUTHOR: Frenkel', A. B., Engineer 507/119-58-9-9/18

TITLE: Automatic Counting Device (Avtomaticheskoye schetnoye ustroystvo)

PERIODICAL: Priborostroyeniye, 1958, Nr 9, pp. 21-22 (USSR)

ABSTRACT: This automatic counting device is used with particular advantage where the finished parts processed by the automatic machine tools are to be counted. The device was to be tested at the office of electric automation of the technology department of the Automobil' Factory imeni Likhachev. For generating the count trigger pulse an insulated contact support is used which is mounted on insulation on the automatic or semiautomatic. For producing the counting device, the following components are connected (with wiring diagram given):

1. Insulated contact support.
2. Electric pulse counter.
3. Contactor for electric motor of the machine tool.
4. Lighting of working place.
5. Distribution box.
6. Terminal strip.
7. Distributor cylinder.

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8. Material bar.
9. Intermediate relays.
10. Limit switches.

The limit **switches** and intermediate relays cause finished parts to be counted only, thus excluding any counting error. The counting device can be used with automatic lathes also where a closed circuit is obtained at the moment the bar is fed as far as the electric support, and is maintained until the finished part is cut off by the parting-off tool. At this instant the circuit is interrupted, and the counter advances by one unit.

There are 2 figures.

FRENKEL', A.B., inzh.

Control and measuring instruments for shops. Trakt. i sel'khozmash. no.9:43-45 S '58. (MIRA 11:10)
(Measuring instruments)

AUTHOR: Frenkel', A.B., Engineer SOV/133-59-5-30/31

TITLE: Metallocceramic and Steel Dies for Cold Drawing of Steel (Metallokeramicheskiye i stal'nyye voloki dlya kalibrovki stali)

PERIODICAL: Stal', 1959, Nr 5, pp 468 - 471 (USSR)

ABSTRACT: It is pointed out that the accuracy of dimensions and cleanliness of the surface considerably decrease the need for machining and, in many cases, machine parts can be produced simply by cutting. A brief outline of methods of preparation of dies for cold drawing is given. Main parameters of dies from hard alloys and methods of their setting into holders are given in Table 1 and Figure 1, dimensions of steel dies - Table 2, Figures 2 and 3, the durability of cyanated and non-cyanated steel dies - Table 3. There are 5 figures and 4 tables.

Card1/1

25 (1)

AUTHOR: Frenkel', A. B., Engineer SOV/119-59-6-12/18

TITLE: An Automatic Device for the Periodic Measurement of the Current Direction in Galvanic Processes (Avtomaticheskoye ustroystvo dlya periodicheskogo izmereniya napravleniya toka pri gal'vanicheskikh protsessakh)

PERIODICAL: Priborostroyeniye, 1959, Nr 6, p 25 (USSR)

ABSTRACT: In the armature workshop of the avtozavod im. Likhacheva (Automobile Works imeni Likhachev) the direction of the direct current in galvanic copperplating baths is periodically reversed. This has led to an increase in output and to the improvement of copper platings. The periodic current reversal takes place through an automatic device, the circuit diagram of which is depicted. A synchronous motor operates the switching contacts. [Abstracter's Note: In the original text there is no mention whatever of measurements, but only of a reversal in the current direction. Hence, the word izmereniye (measurement) used in the title is a printing error; it should be izmeneniye (reversal).] There is 1 figure.

Card 1/1

15(7) SOV/119-59-7-10/16

AUTHOR: Frenkel', A. B., Engineer

TITLE: A Progressive Method for Painting Machine Parts

PERIODICAL: Priborostroyeniye, 1959, Nr 7, p 25 (USSR)

ABSTRACT: The efficiency experts of the elektrolaboratoriya Moskovskogo avtozavoda im. Likhacheva (Electrical Laboratory of the Moscow Automobile Factory imeni Likhachev) carried out experiments in painting of metal automobile parts in the electric high-voltage field. The spraying of the paint was carried out by means of a pneumatic turbine in a high-voltage field. The high-voltage field is composed of parts of the spraying unit, which act as electrodes, the voltage field being a high-voltage transformer with 130,000 v. Rectification of the voltage is carried out by means of a kenotron, the nominal amperage is 10 ma. There is 1 figure.

Card 1/1

FRENKEL', A.B.

Cutting square and rectangular holes with combination drills.
Der. prom. 8 no.7:24 Jl '59. (MIRA 12:9)
(Drilling and boring)

16(1), 25(1) SOV/115-59-9-10/37

AUTHOR: Frenkel', A.B.

TITLE: A Dividing Head With a Sine Rule

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 9, p 21 (USSR)

ABSTRACT: At ZIL, a dividing head was designed (by Privalov) consisting of a dividing disk, a special sine rule, mounted on a mandrel, which is installed in two stocks. At one end of the mandrel, the dividing disk is mounted, while the other end is used for fastening the part to be machined or measured. Angles which are multiples of 5° are directly read from the dividing disk which has 72 notches. Angles within the intervals of 5° are determined by the sine rule. There is 1 diagram.

Card 1/1

18 (5) SOV/128-59-11-20/24

AUTHOR: Frenkel', A.B., Engineer

TITLE: Hot Blast in Cupolas

PERIODICAL: Liteynoye proizvodstvo, 1959, Nr 11, p 43 (USSR)

ABSTRACT: The Automobile Plant imeni Likhachev began, at the end of last year, operating a new installation for heating the cupola blast up to 500-550°C. The fire chamber is provided with 6 multi-nozzle jets ensuring heating up to 1100°-1200°C. The cupola gases enter, at a temperature of 600°C, the tubular heater, give away their heat and pass, at a temperature of 100°C, through the exhaust fan into the atmosphere. The blast air passes through the heater in the opposite direction and is heated up to 400°-500°C. The new heater was in operation for 3 months and proved a success. The cupola output was raised by 25%; consumption of coke was cut from 150 kg per 1 ton of metal, when using cold blast, to 110-100 kg, when hot blast with a temperature of 400°C was used, and to 90-70 kg at a temperature of 500°C.

Card 1/1

SOV/122-59-3-18/42

AUTHOR: Frenkel', A.B. (Engineer)

TITLE: Machining with External Broaches (Raboty naruzhnymi protyazhkami)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 3, pp 61-62 (USSR)

ABSTRACT: The paper is based on the experience gained at the Moscow Automobile Factory imeni Likhachev. External broaches should be set to take fairly heavy cuts, from 0.5 to 1 mm for roughing. This avoids frequent re-setting. With the 'progressive' system of broaching, the broaches are divided into five groups. The teeth of the first group cut narrow 60° pyramidal slots, cutting about 0.4 mm per tooth. The remaining groups widen the slots, taking a similar depth of cut. For cutting wide surfaces, the teeth are arranged so that they each cut narrow strips, and are disposed in chequer-board fashion. The leading teeth of the broach are heavier and protect the following teeth from overload. Finishing operations are performed by teeth working across the full width of the cut, taking off 0.03 to 0.04 mm per tooth. Side and face broaching may be performed simultaneously as shown in Fig 1, the side broaches being packed by narrow wedges so that wear may be taken up after re-grinding. When cutting

Card 1/4

accurate slots (Fig 3) the leading part of the broach cuts to full depth but a little less than full width. The sizing part of the broach enlarges the slot to full width but does not quite cut to full depth, leaving a slight step in the corner of the slot which can usually be accommodated by chamfering the mating component to clear the step. The multiple broach shown in Fig 4 is split in the centre section and is packed with a wedge so as to maintain the required tolerance on the width dimension of the slot. To obtain a high degree of surface finish, the teeth of the broach should slant alternately at 15° to 20° to the transverse line to the direction of motion. This angle may be increased to 45° if the teeth are cutting across an interrupted surface, or one with holes in it. Broaches cutting narrow slots in steel parts should not have any slant, and teeth should be transverse. Front cutting angle varies from 15° when cutting steel of Brinell hardness 195, to 6° to 8° for steel with Brinell hardness 320 or over. With aluminum the front angle should be 15°, with brass or bronze 2° and with cast iron 6° to 8°. Flank angle should be 2° to 3° for roughing

teeth and 1° to 1½° for finishing or sizing teeth. The pitch of all teeth in external broaches should be calculated from pitch, $t = 1.75\sqrt{L}$, where L is the length of the surface being broached. There should not be less than 8 to 10 sizing teeth. Broaching speed is usually from 1 to 2 metres/minute for steel, and up to 3 metres/minute for cast iron, bronze or aluminium. The life of a broach between re-grinding, cutting at 1 to 3 metres/minute, should be from 3 to 4 hours with steel, bronze or aluminium, and 5 to 6 hours with cast iron if the allowable wear is reckoned to be 0.2 to 0.3 mm. Re-grinding should be performed in two stages, using 175 to 220 grain grinding wheels for final setting. Broaches cutting steel should be lubricated with a sulphurized mineral oil, and when cutting cast iron with an emulsion of vegetable oil, green soap and soda. For cutting aluminium paraffin is the best lubricant, and when cutting brass, bronze or other essentially brittle

Machining with External Broaches SOV/122-59-3-18/42

materials external broaches can be used without lubricant or coolant.
There are 4 figures.

Card 4/4

FRENKEL', A.B.

Automatic control of the diameters of ground studs. Priboro-stroenie no.3:22 Mr '60. (MIRA 13:6)
(Grinding and polishing) (Electronic control)

FRENKEL', A.B., inzh.

Heat treatment of dies for cold upset forging. Metalloved. i term. obr. met. no. 5:55-57 My '60. (MIRA 13:12)
(Dies (Metalworking))

S/128/60/000/005/004/004
A104/A133

AUTHOR: Frenkel', A. B.

TITLE: Patterns made of plastics

PERIODICAL: Liteynoye proizvodstvo, no. 5, 1960, 39

TEXT: The author describes experiments carried out at the Tsentral'naya liteynaya laboratoriya (Central Foundry Laboratory) in cooperation with the pattern workshop of the Avtozavod im. Likhacheva (Automobile Plant im. Likhachev) on the production of cast plastic patterns. Gypsum molds are made from metal or wooden patterns, dried, coated with pyroxilin lacquer and with a separating agent. The plastic material is made of viscous epoxy resin mixed with oleic acid as plasticizer and aluminum or iron powder as filler. It is heated to 40 - 50°C and poured into the mold. The hardener, usually hexatetramine tailings, is added shortly before pouring. The filled molds are placed in a vacuum chamber for 15 minutes, then held for approximately 24 hours and later subjected to special heat treatment. The laboratory has also developed a technology for the casting of plastics inserts for core boxes for cylinder blocks. For this purpose a metal frame is placed in the caliber,

Card 1/2

Patterns made of plastics

covered with plastics and then heat-treated. Cast plastics inserts require no further processing. Encouraged by these good results the plant has established a special section for the production of patterns made of plastics.

Card 2/2

FRENKEL', A.B.

Manufacturing bearing bushings. Mashinostroitel' no.8:21 Ag '60. (MIRA 13:9)
(Bearing industry)

FRENKEL', A.B.

All-purpose drill. Der.prom. 9 no.10:29 O '60. (MIRA 13:10)
(Drilling and boring machinery)

FRENKEL', A.B.

Dividing head with a sine rule. Mashinostroitel' no.1:21 Ja '61.
(MIRA 14:3)
(Dividing engine)

FRENKEL', A.B.

Casting iron and steel in water-cooled shells. Lit. proizv. no.1: 36 Ja '61. (MIRA 14:1)

(Shell molding (Founding))

FRENKEL', A.B.

Automation of power systems. Prom.energ. 17 no.2:5 F '62.
(MIRA 15:3)
(Electric power distribution) (Automatic control)

FRENKEL', A. B.

FRENKEL', A. B. "Gunshot abscesses of the spine during the Great Patriotic War", In the collection: Boyevaya travma nervnoy sistemy, Khar'kov, 1948, p. 40-78.

SO: U-3261, 10 April 53 (Letopis - Zhurnal 'nykh Statey No. 11, 1949)

FRENKEL', A. B.

FRENKEL', A. B. "Convulsive attacks in gunshot injuries of the brain and posttraumatic epilepsy", In the collection: Boyevaya travma nervnoy sistemy, Khar'kov, 1948, p. 79-107.

SO: U-3261, 10 April 53 (Letopis - Zhurnal 'nykg Statey No. 11, 1949)

FRENKEL', A. B.

FRENKEL', A. B. "A new method of objective analysis of the disturbance of sensitivity in traumatic damage to the peripheral nerves", In the collection: Boyevaya travma nervnoy sistemy, Khar'kov, 1948, p. 260-63.

SO: U-3261, 10 April 53 (Letopis - Zhurnal 'nykh Statey No. 11, 1949)

FRENKEL', A.

"Bibliography on conditioned reflexes" N.K. Kleshchova. Reviewed by A. Frenkel. Zh. vys. nerv. deiat. 5 no.6:927-929 N-D '55. (MLRA 9:3)

(BIBLIOGRAPHY--CONDITIONED RESPONSE) (KLESHCHOVA, N.K.)

FRENKEL', A. B.

USSR/ Physics - Biophysics

Card 1/1 Pub. 22 - 15/ 50

Authors : Frenkel', A. B.

Title : Regarding the question of the differential diagnosis of color vision

Periodical : DOK. AN SSSR, 100/1, 57-60, Jan. 1, 1955

Abstract : Various methods and devices for determining the degree of color sensitivity of the eye are discussed. The use of new anomaloscope, in which strict colorimetric peculiarties of the differentiating visual analyzer (according to the Kriss classification) are taken into account, together with polychromatic tables by Rabkin, is considered the best method for that purpose. Three USSR references (1946-1951). Table; diagram.

Institution : .....

Presented by: Academician K. M. Bykov, October 20, 1954

EXCERPTA MEDICA SEC. 12 Vol. 12/8 Ophth. Aug. 58

FREKKEL, A.B.

1318. EMPLOYMENT OF JUSTUS' TABLES FOR EXAMINATION OF COLOUR VISION (Russian text) - Frekkel A. B. - BIOFIZIKA 1956, 1/8 (708-712)

The employment of Justus' tables permits a relatively rapid and easy detection of persons with various forms of colour blindness. The diagnostic properties of the tables were tested on 29 patients having one or another form of colour vision abnormality, as determined previously by means of a GOI anomaloscope. A non-differentiation of the tables began to appear at a threshold irritability of the colour distinguishing system which was four or more times the normal. A further improvement of the tables may achieve a qualitative characterization of colour blindness.

(S)

FRANKEL', A.B., doktor. med.nauk, BRAYLOVSKIY, Ya.Z., starshiy nauchnyy sotrudnik

Changes in skin pain reaction and the pupil pain reflex in acute otitis media. Vest.oto.-rin. 20 no.3:102-103 My-Je '58 (MIRA 11:6)

1. Iz 30-y klinicheskoy bol'nitsy bolezney ukha, gorla i nosa Khar'kov.
(REFLEXES)
(EAR--DISEASES)

KARELI, L. G., laureat Leninskoy premii; SARYCHEV, N. K.; FRENKEL', A. L.

Assembly of bridge spans over the Southern Bug River. Transp. stroi. 13 no.4:13-18 Ap '63. (MIRA 16:4)

1. Nachal'nik mostopoyezda No. 444 Tresta mostostroyeniya No. 1 (for Kareli).

(Nikolayev—Bridge construction)

L 00739-66 EWT(m)/EPF(c)/T BW/DJ

ACCESSION NR: AP5021989 UR/0286/65/000/014/0064/0064
621.892.09

AUTHOR: Cheremukhin, I. K.; Semanov, N. G.; Frenkel', A. L.; Grankina, L. G.; Dyrova, V. I.

TITLE: Hydraulic brake fluid. Class 23, No. 172944

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 14, 1965, 64

TOPIC TAGS: brake fluid, anticorrosion additive, antifreeze

ABSTRACT: This Author's Certificate introduces a hydraulic brake fluid based on xylithane, methanol fraction, anticorrosion additives and thickening agents. The fluid is made more resistant to freezing, the rate of corrosion in the sleeves is reduced and a wider selection of raw materials is provided by adding 300 wt. % furfural to a 1:1 mixture of xylithane and methanol fraction.

ASSOCIATION: none
SUBMITTED: 12Jul62 ENCL: 00 SUB CODE: FP
NO REF SOV: 000 OTHER: 000

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VOLODKOVICH, S.D.; VOL'FSON, L.G.; CHEKALINA, V.I.; TREML', A.G.; FRENKEL', A.M.

New nematocides - polyhalo derivatives of hydrocarbons and esters of haloacetic acids. Khim.prom. no.9:648-650 S '62. (MIRA 15:11)
(Nematocides)

OKSMAN, I.M.; POGODINA, A.A.; FRENKEL', A.N.

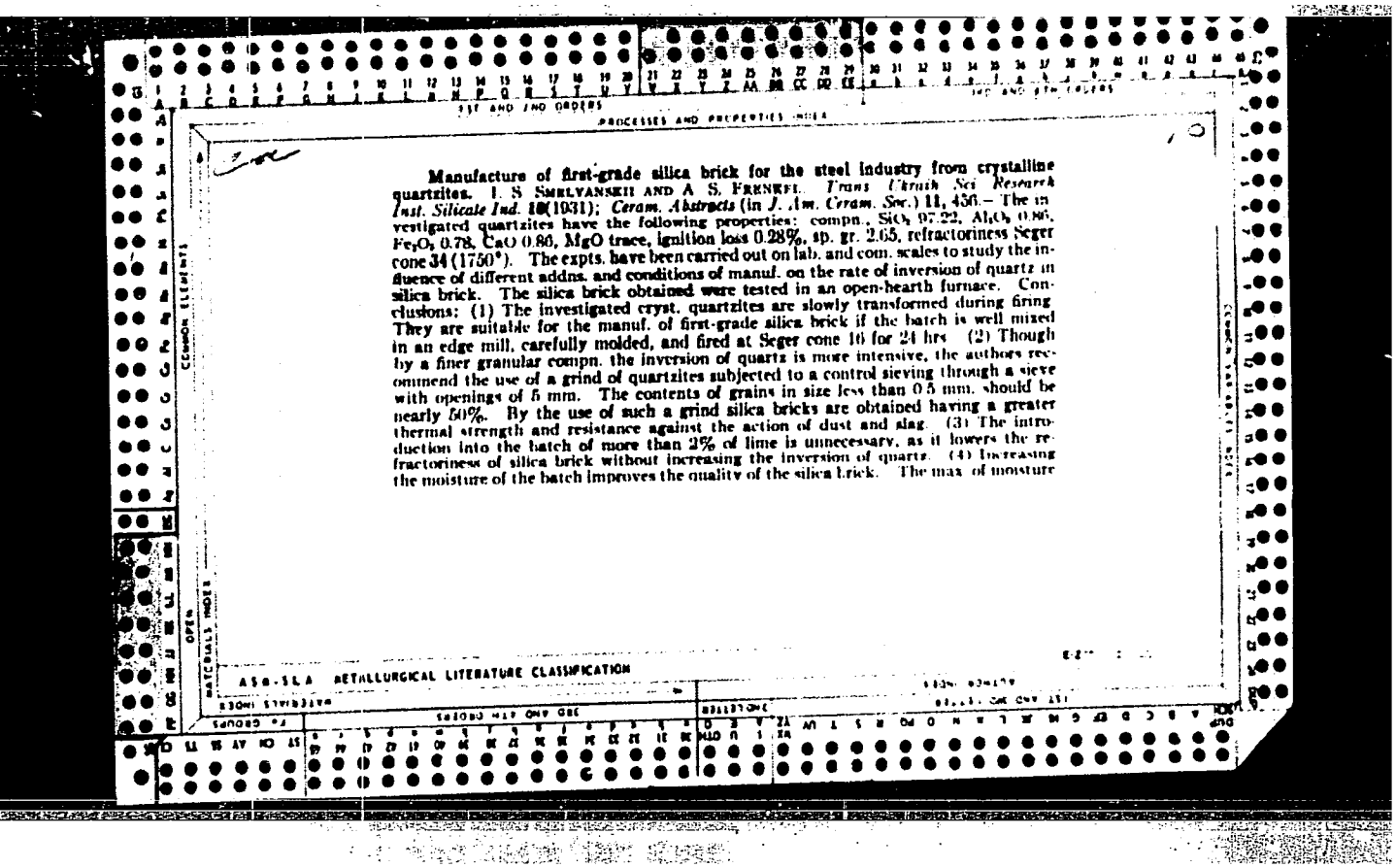
Teeth - Abnormities and Deformities

Clinical observation and treatment of first class abnormal occlusion (Katz's classification). Stomatologiia No. 2 1952.

9. Monthly List of Russian Accessions, Library of Congress, ~~October 1952~~ 1953, Uncl.

FRENKEL', A.S.; SHMUKLER, K.M.; ANTONOV, G.I.; MINKOVICH, B.D.; SHAPOVALOV, V.S.

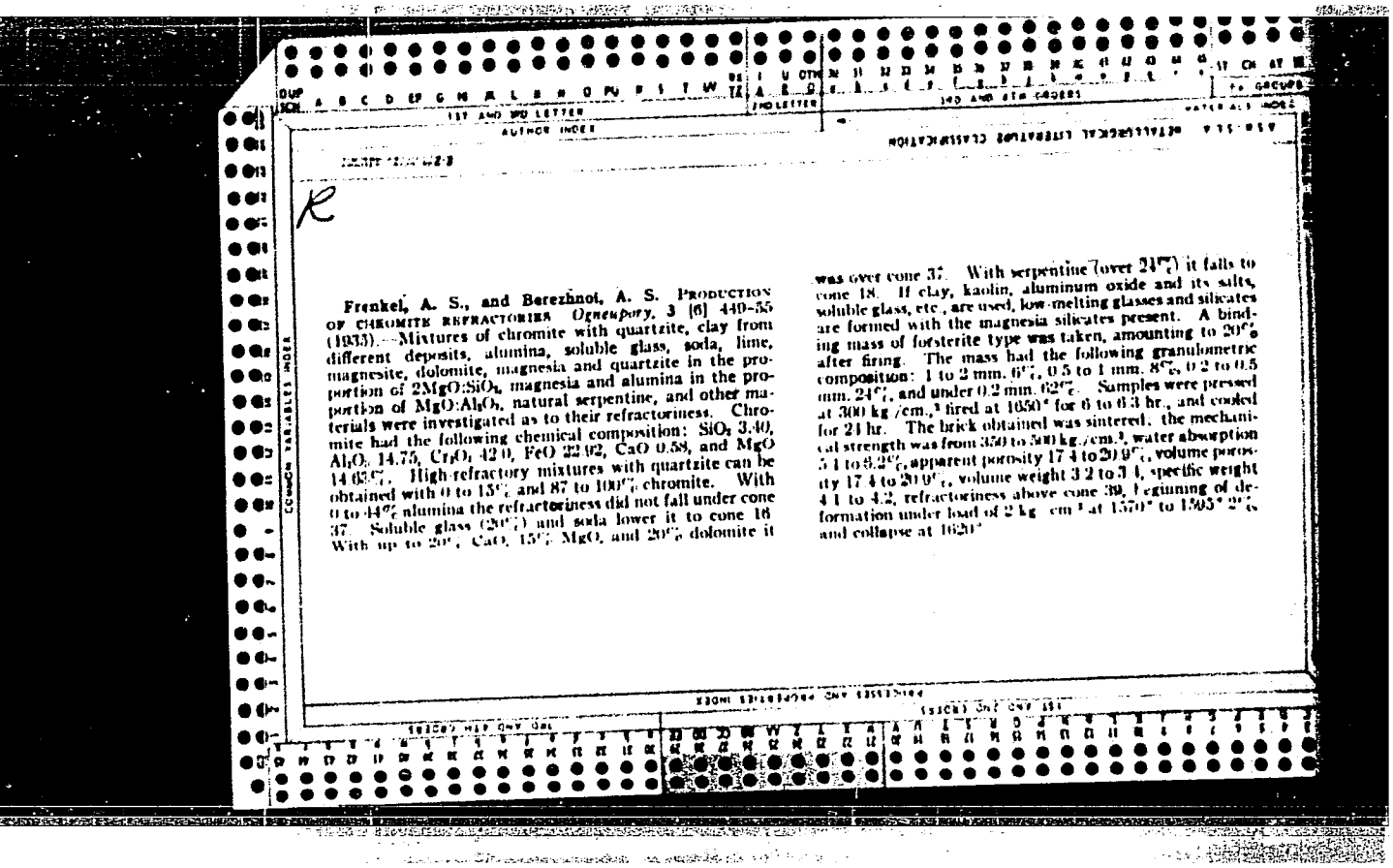
Use of synthetic forsterite brick for the checkerwork in open-hearth furnace gas regenerators. Sbor.nauch.trud. UNIIO no.5:168-180 '61. (MIRA 15:12)
(Firebrick) (Open-hearth furnaces—Design and construction)



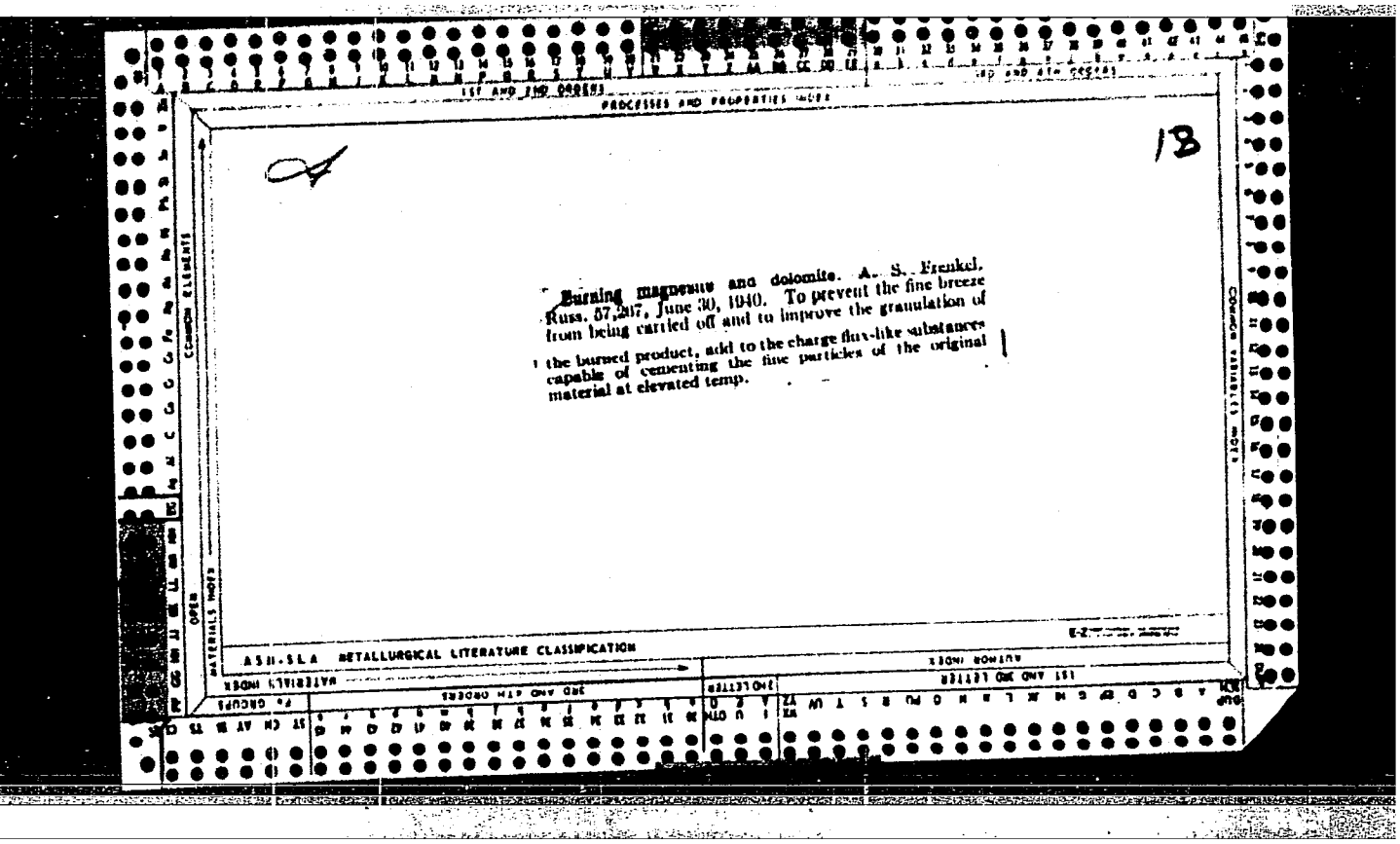
Manufacture of first-grade silica brick for the steel industry from crystalline quartzites. I. S SHELYANSKII AND A. S. FRENKEL. *Trans Ukrain Sci Research Inst. Silicate Ind.* **10**(1931); *Ceram. Abstracts* (in *J. Am. Ceram. Soc.*) **11**, 456.— The investigated quartzites have the following properties: compn., SiO_2 97.22, Al_2O_3 0.86, Fe_2O_3 0.78, CaO 0.86, MgO trace, ignition loss 0.28%, sp. gr. 2.65, refractoriness Seger cone 34 (1750°). The expts. have been carried out on lab. and com. scales to study the influence of different addns. and conditions of manuf. on the rate of inversion of quartz in silica brick. The silica brick obtained were tested in an open-hearth furnace. Conclusions: (1) The investigated cryst. quartzites are slowly transformed during firing. They are suitable for the manuf. of first-grade silica brick if the batch is well mixed in an edge mill, carefully molded, and fired at Seger cone 10 for 24 hrs. (2) Though by a finer granular compn. the inversion of quartz is more intensive, the authors recommend the use of a grind of quartzites subjected to a control sieving through a sieve with openings of 5 mm. The contents of grains in size less than 0.5 mm. should be nearly 50%. By the use of such a grind silica bricks are obtained having a greater thermal strength and resistance against the action of dust and slag. (3) The introduction into the batch of more than 2% of lime is unnecessary, as it lowers the refractoriness of silica brick without increasing the inversion of quartz. (4) Increasing the moisture of the batch improves the quality of the silica brick. The max. of moisture

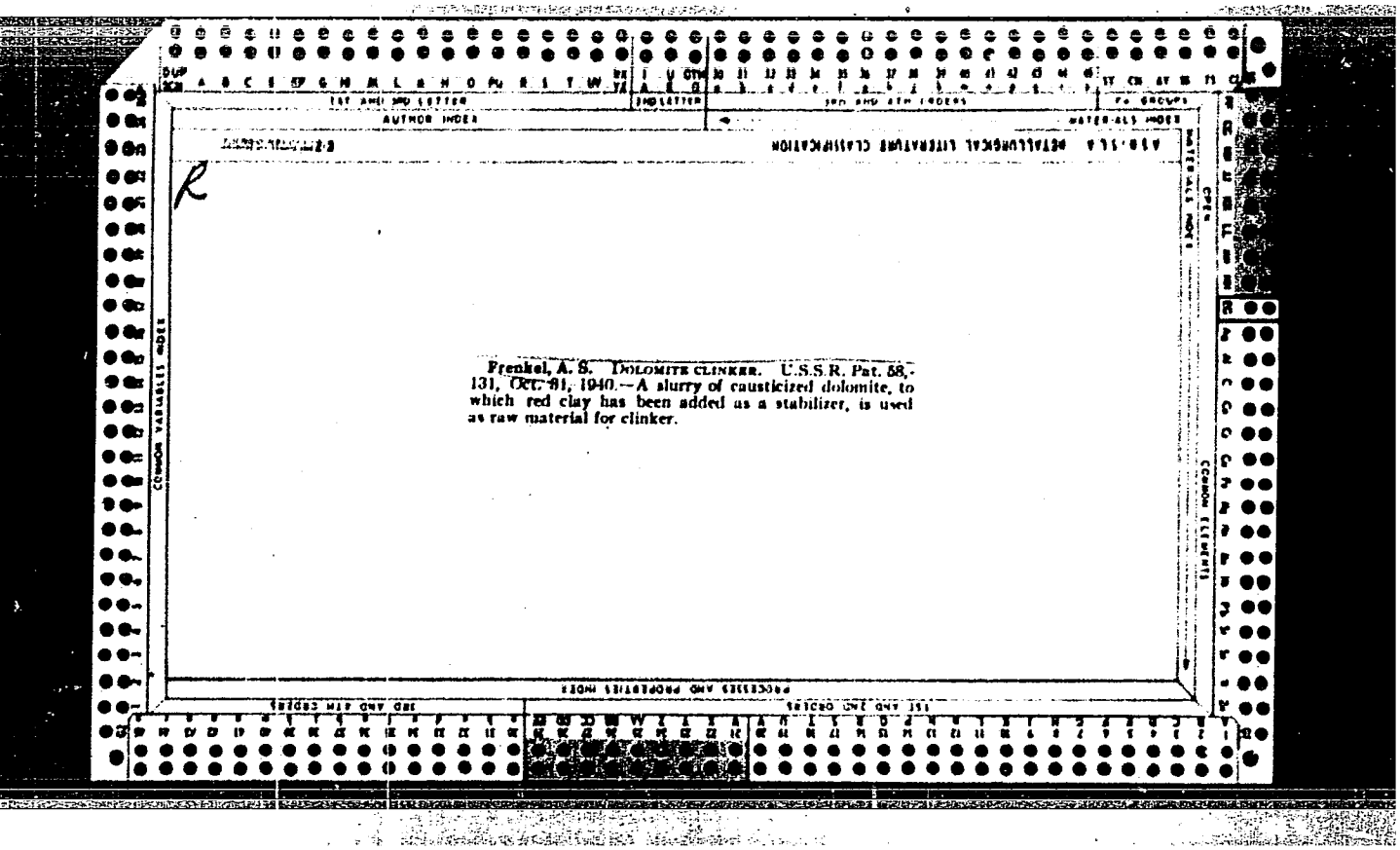
(by hand molding) should be limited by the ability to retain the regularity of shape of the green brick. (5) The addn. of 25% of sand does not lower the quality of the silica brick. (6) The addn. of previously fired quartzites in the quantity of 30 to 50% increases, in some measure, the inversion of quartz. For the manuf. of brick not of intricate shapes or great size, however, such an addn. is unreasonable from the economic point of view and only complicates the process of manuf. (7) The blast furnace throat dust is a good mineralizer for the inversion of quartz into tridymite. By its introduction into the batch, if the other conditions remain const., well tridymitized silica brick are obtained. The optimum quantity of this addn. is 2%. One advantage of this mineralizer is that being a dust it need not be ground. Its disadvantage is its fluctuating chem. compn. depending on the phys. state of the materials charged in the blast furnace and of the work of the furnace. (8) Well tridymitized silica brick are obtained with welding slags as mineralizers. The optimum quantity of this addn. is 2%. Their advantage is that nearly all of the Fe present is in the form of suboxide. The disadvantage is the necessity of fine grinding complicated by their high hardness. (9) The addn. of molasses does not influence the inversion of quartz, although its introduction in the quantity of 0.25% is desirable, as it considerably decreases the waste of green brick and aids in retaining true corners and edges of the brick. (10) The addn. of reducing agents such as coke and charcoal considerably promotes the inversion of quartz into tridymite; especially good results are obtained with charcoal. The introduction of these addns. (when ferruginous mineralizers are used) is also necessary to increase the porosity of the silica brick, its thermal strength being influenced. The quantity of these addns. should be from 1.5 to 2.0%. An increase in their quantity increases the difficulty of molding.

G. G.

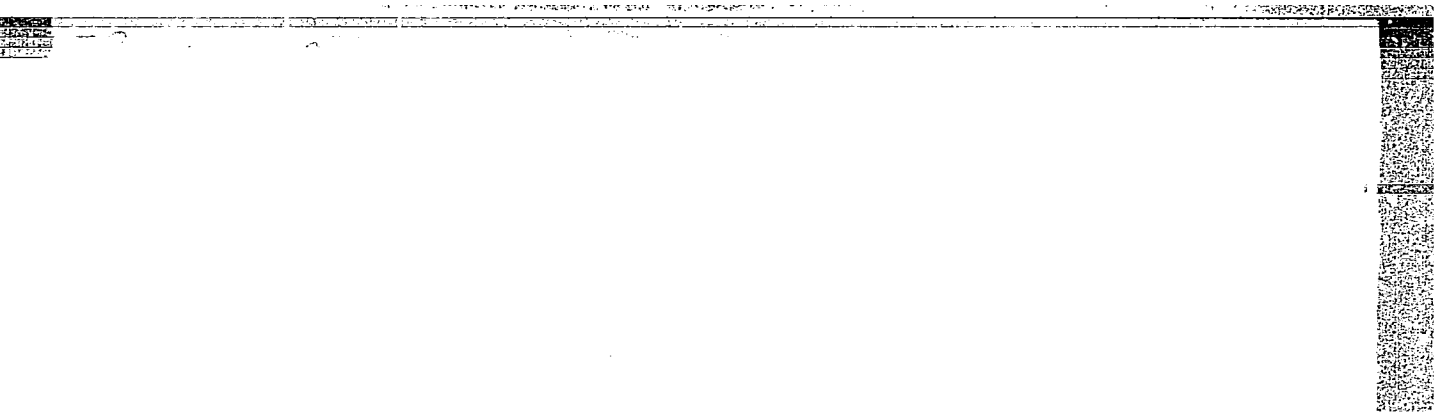


Frenkel, A. S., and Berezhnoi, A. S. PRODUCTION OF CHROMITE REFRACTORIES *Ogneupory*, 3 [6] 449–55 (1933).—Mixtures of chromite with quartzite, clay from different deposits, alumina, soluble glass, soda, lime, magnesite, dolomite, magnesia and quartzite in the proportion of $2MgO:SiO_2$, magnesia and alumina in the proportion of $MgO:Al_2O_3$, natural serpentine, and other materials were investigated as to their refractoriness. Chromite had the following chemical composition: SiO_2 3.40, Al_2O_3 14.75, Cr_2O_3 42.0, FeO 22.92, CaO 0.58, and MgO 14.63%. High-refractory mixtures with quartzite can be obtained with 0 to 15% and 87 to 100% chromite. With 0 to 44% alumina the refractoriness did not fall under cone 37. Soluble glass (20%) and soda lower it to cone 16. With up to 20% CaO, 15% MgO, and 20% dolomite it was over cone 37. With serpentine (over 21%) it falls to cone 18. If clay, kaolin, aluminum oxide and its salts, soluble glass, etc., are used, low-melting glasses and silicates are formed with the magnesia silicates present. A binding mass of forsterite type was taken, amounting to 20% after firing. The mass had the following granulometric composition: 1 to 2 mm. 6%, 0.5 to 1 mm. 8%, 0.2 to 0.5 mm. 24%, and under 0.2 mm. 62%. Samples were pressed at 300 kg./cm.^{2}, fired at 1650° for 6 to 6.3 hr., and cooled for 24 hr. The brick obtained was sintered, the mechanical strength was from 350 to 500 kg./cm.^{2}, water absorption 5.1 to 8.2%, apparent porosity 17.4 to 20.9%, volume porosity 17.4 to 20.9%, volume weight 3.2 to 3.4, specific weight 4.1 to 4.2, refractoriness above cone 39, beginning of deformation under load of 2 kg./cm.^{2} at 1570° to 1595°, and collapse at 1620°.





Frenkel, A. S. DOLOMITE CLINKER. U.S.S.R. Pat. 58,-131, Oct. 31, 1940.—A slurry of causticized dolomite, to which red clay has been added as a stabilizer, is used as raw material for clinker.



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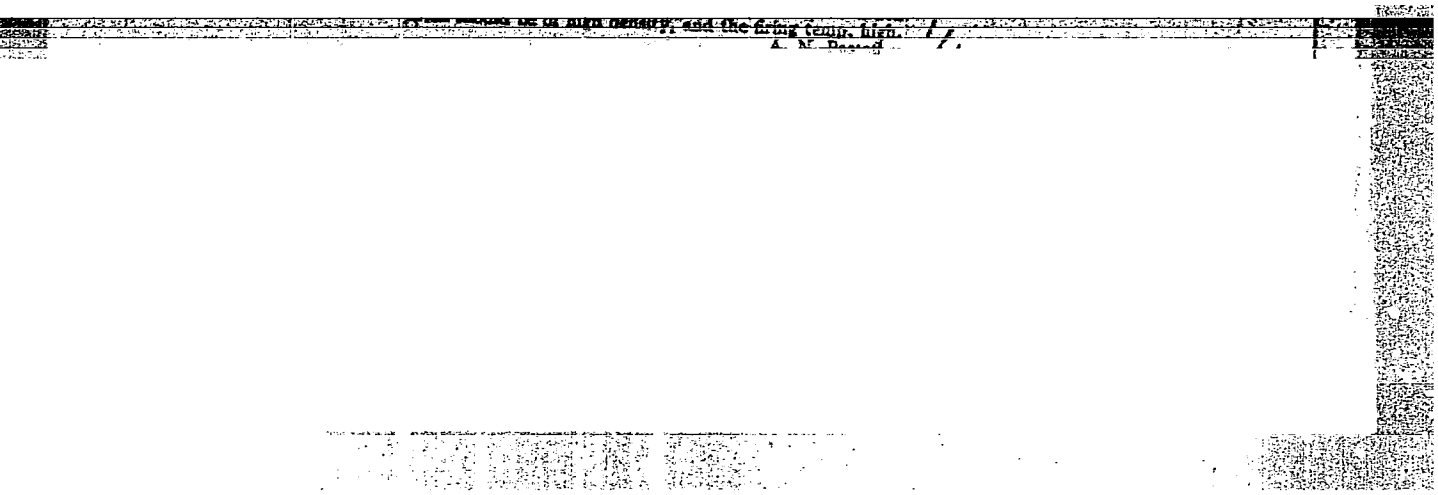

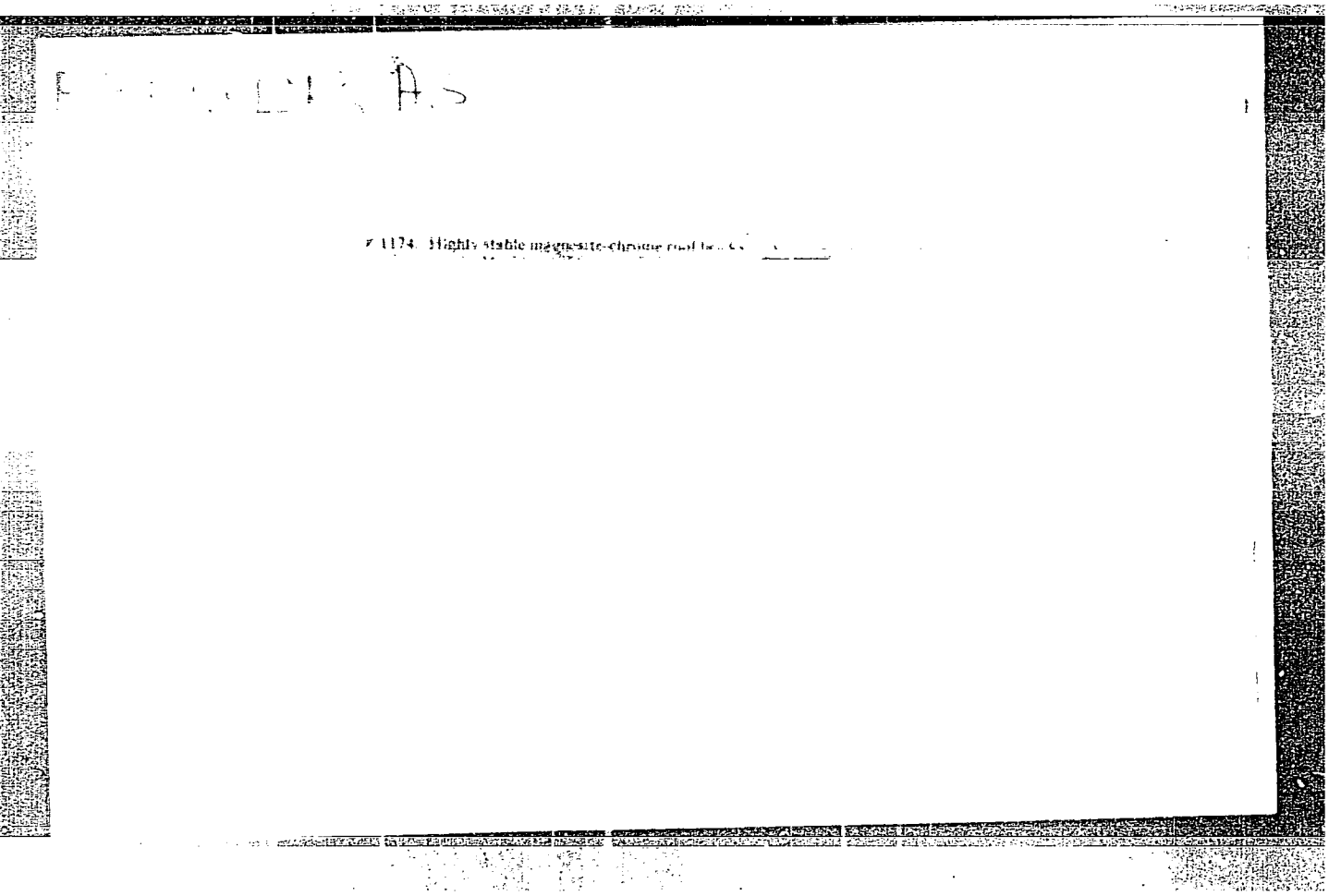

SOV/137-58-11-21919

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 11, p 12 (USSR)

AUTHORS: Frenkel', A.S., Slonimskaya, Ye. Z.

TITLE: A Method of Testing Chemically-bonded Magnesite Chrome Refractories for Resistance to Iron Oxides (Metodika ispytaniya khromomagnezitovykh ogneuporov na ustoyichivost' k vozdeystviyu okislov zheleza)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. in-t ogneuporov, 1956, Nr 1, pp 112-119

ABSTRACT: A method of determining the resistance of chemically-bonded magnesite chrome refractories (MR) to Fe oxides by change in the volume of a sample subjected to scale action on all sides resulting from heating in a magnesite crucible/specified porosity has been developed to replace estimation of MR resistance to Fe oxides by increase in the diameter of an MR test specimen upon contact with the scale after heating. The volume of the specimen after the test is determined by calculation, based on the change in the Fe oxides contents. This method is distinguished by being reproducible, by the fact that it allows for the influence of the density of the specimen upon its resistance to Fe oxides, and by the fact that it provides satisfac ory agreement of test results.

Ya.G.

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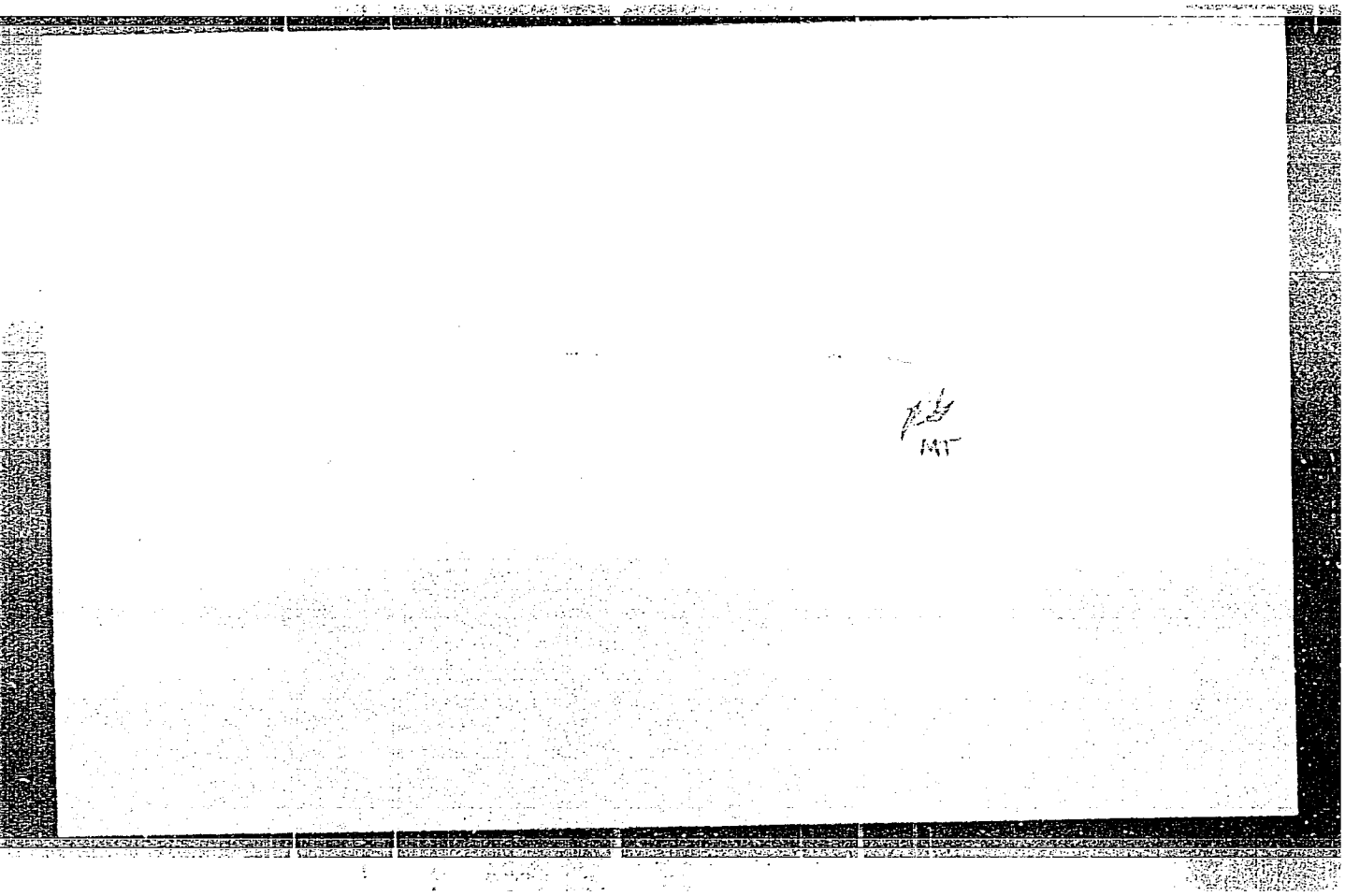

137-58-6-11407

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 23 (USSR)

AUTHORS: Frenkel', A.S., Shmukler, K.M.

TITLE: Increasing the Service Life of Magnesite-chromite Roof Brick (Povysheniye stoykosti svodovogo magnezitokhromitovogo kirpicha)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. in-t ogneuporov, 1957, Vol 2, pp 39-45

ABSTRACT: Bibliographic entry. Ref. RzhMet, 1957, Nr 7, abstract 11535

1. Refractory materials--Processing

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137-58-6-11404

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 22 (USSR)

AUTHOR: Frenkel', A.S.

TITLE: High-heat-duty Refractories for the All-basic Open-hearth Furnace, and Methods of Increasing Their Service Life (Vysokogneupornyye izdeliya dlya tsel'noosnovnoy martenovskoy pechi i puti povysheniya ikh stoykosti)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii. M-vo chernoy metallurgii SSSR. 1957, Nr 12, pp 62-84. Diskus. pp 153-169

ABSTRACT: The history of the development in the USSR of manufacture of heat-stable magnesite-chromite brick (since 1940) and the use of magnesite-chrome (MC) and chrome-magnesite (CM) roofs in basic metal furnaces is set forth. The stability of CM is 2-3 times as great as that of conventional silica brick. In 1955 service life in the 360-t furnaces of the Kuznetsk Metallurgical Kombinat reached 481 heats, while it was 624 in the 185-t furnaces, and 895 at the 55-t furnaces of the Zlatoust Plant. An analysis of changes in the properties of chrome-magnesite and magnesite-chrome brick relative to

High-heat-duty Refractories (cont.)

manufacturing practice is made, also an analysis of the causes of failure. Data on the successful employment of forsterite refractories in the checkers of all-basic metallurgical furnaces are adduced. At the Zaporozhstal' Plant, the life of forsterite checkers has been brought to 3 runs per roof (1300-1400 heats), with replacement during this period only of the 2 or 3 top rows during shutdowns. A number of measures are advanced for further increase in the outputs of metallurgical furnaces with MC and CM to reduce unit consumption of fuel and increase the life of the refractories.

S.G.

1. Refractory materials--Production 2. Refractory materials--Effectiveness
3. Open hearth furnaces--Materials

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FRENKEL', A. S.

25(1) PHASE I BOOK EXPLOITATION SOV/1788

Ogneupory dlya chernoy metallurgii; sbornik statey (Refractories in Ferrous Metallurgy; Collection of Articles) Moscow, Metallurgizdat, 1958. Errata slip inserted. 4,000 copies printed.

Ed.: D. I. Gavrish, Engineer; Ed. of Publishing House: I. P. Kirsanov; Tech. Ed.: A. I. Karasev.

PURPOSE: This book is intended for engineers and technicians working in ferrous metallurgy.

COVERAGE: The book consists of 20 articles on the development and use of refractories in the Soviet metallurgical industry. D. I. Gavrish, in the first paper, presents the prospects for development and research projects for the period 1959-1965. He emphasizes development of refractory plants in the eastern part of the USSR. In general the articles deal with recent developments in basic and acidic refractories for blast and open hearth furnaces, and for the lining of ladles and special equipment used in continuous casting and in vacuum treatment of steel. A. S. Berezhnoy discusses the technology of manufacturing magnesite and forsterite refractories which frequently replace Dinas brick and fire clay. Several authors state that good results were obtained with

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periclase-spinell brick and with bricks made of magnesium and chromite compounds. The application of new refractories, insulating materials, high-temperature mortars, binding media, and cements, combined with advanced techniques in lining furnaces, are said to have more than doubled the time intervals between relining and overhauling furnaces. O. M. Margulis and A. G. Karaulov discuss the use of "tagged atoms" to determine the degree of contamination of steel by refractory-lining particles. N. S. Lesnyak describes the production of refractories by the semidry pressing method employed at the Nizhne-Tagil' plant, and I. S. Kaynarski and V. D. Tsigler cover the use of lightweight Dinas bricks in industrial furnaces. The last paper written by A. R. Makarychev compares and evaluates the physical properties and service life of fireclay bricks, forsterite bricks, Dinas bricks and bricks with high alumina content. Graphs, diagrams, and photographs accompany the papers. For references, see Table of Contents.

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Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 7, p 348 (USSR)

AUTHORS: Frenkel', A.S., Shmukler, K.M., Minkovich, B.D.

TITLE: High-Alumina Articles on the Base of Commercial Alumina

PERIODICAL: Sb. nauchn. tr. Vses. n.-i. in-ta ogneuporov, 1958, Nr 2 (49), pp 100 - 158

ABSTRACT: The results were laid down of investigations on the problem of obtaining dense high-alumina products for lining the reservoir of bath furnaces intended for melting heavy-duty boro-silicate glasses. It was established that: 1) An increase in the dispersion of commercial alumina which was burnt at 1,550°C (in briquets) considerably improves sintering. 2) The introduction of 1% of caustic magnesite into the charge decreases the sintering temperature of chamotte by 100°C, decreasing its refractoriness by 20°C only. 3) In the case of burning in a revolving furnace, it is possible to obtain sintered chamotte even at an Al_2O_3 content of up to 90%, but in this case material is lost with the waste gases. Preliminary calcination of the

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High-Alumina Articles on the Base of Commercial Alumina

briquet at 600°C with a holding time of 4 hours reduces the loss by ~4 times. 4) The porosity of high-alumina products from the charge with 2% binding clay or without it, in the case of application of granulated chamotte, decreases approximately twice. 5) A favorable effect on the sintering of high-alumina products is obtained by the replacement of clay in their charge by thin chamotte fractions. 6) The growth of mullite-corundum products in burning is the result of the formation of mullite from corundum and clay. 7) The properties of high-alumina products, even in the case of their equal final porosity, are different if the porosity of the raw material is different. If at high burning temperatures dense products are obtained from a raw material with increased porosity, a large number of shrinkage cracks are formed between the grains of the chamotte and the binding material, which decreases the resistance of the products to aggressive melts of low viscosity. 8) The application of high-density raw material, especially in the case of introducing granulated chamotte with a simultaneous increase in the content of its thin fractions, permits the burning of these products to be carried out even in furnaces on solid fuel at temperatures of the order of 1,450°C and does not require the