AUTHORS: Zegenesku, E., Engineer, Belya, K., Engineer SOV/29-58-9-11/30

TITLE: From the Work of an Institute (Iz rabot odnogo instituta)

PERIODICAL: Tekhnika molodezhi, 1958, Nr 9, pp 18 - 19 (USSR)

ABSTRACT: 1)An Instrument for Measuring Mechanical Stress: An instrument was developed in the RPR (Rumanian People's Republic) which permits to measure by optical methods the distribution, the direction and the magnitude of stress in models subjected to external stresses. This instrument was designed by the Engineers V.Goran and E.Nikolau.
2)A "CAU-1" Simulator:The "CAU-1" is the first type of an alectronic simulator which was designed and built in the RPR. It permits to solve two problems simultaneously. It was built by a collective of scientists, consisting of S.Shekhter, Candidate of Technical Sciences, F. Muntyanu, Engineer, F. Konstantinesku, Engineer, T.Torsan, Engineer, and I.Endesh, Engineer.
3)Aerodynamical Supersonic Tunnel: Two years ago the first

Card 1/2

aerodynamic tunnel was constructed at the Institute of Applied Mechanics, AS RFh. A second, perfected tunnel was put into operation in 1958. This tunnel was designed by a collective. Among others, P. Ibanid, Candidate of Technical Sciences, and the Engineers E.Tsurkam and Ye.Moisey assisted in the work. There are 4 figures.

SOV/4-58-11-28/31

AUTHORS: Avetesyan, A., Engineer, and Zeger, K.

TITLE: The Bubbling Layer (Kipyashchiy sloy)

PERIODICAL: Znaniye - sila, Nr 11, 1958, p 36 (USSR)

ABSTRACT: By several examples the authors explain the nature of the "bubbling layer" and the advantages it affords. The bubbling layer gives the possibility to utilize the "unyielding" solid material in the form of powder possessing many of the properties of liquid which makes it much easier to conduct large industrial processes. The transportation of liquid is easier, a flow of liquid can be better controlled and it is simpler to warm and to cool liquid. The authors explain the role which the bubbling layer plays in industry: in gas production, cracking of petroleum, catalytical cracking, calcination of sulfur pyrite in a bubbling layer, production of dyes, etc. The bubbling layer is only beginning to be brought into use in the chemical industry forcing out old labor-consuming processes and increasing manifold the productivity of labor. There are 3 drawings.

Card 1/1

AVETESYAN, A., inzh.; ZEGER, K.

Fluidized bed. Znan.sila 33 no.11:36 N '58. (MIRA 11:12)
(Fluidization)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220003-4"

ACC NR: AP7002570 (A, N) SOURCE CODE: UR/0413/66/000/023/0062/0062

INVENTOR: Ivanov, K. I.; Zeger, K. Ye.; Chmovzh, V. Ye.; Polyakovskaya, V. I.; Kudryavova, G. V.

ORG: none

TITLE: Method of improving the antiwear and anticorrosion properties of heavy liquid fuels. Class 23, No. 189110 [announced by All-Union Heat Engineering Institute im. F. E. Dzerzhinskiy (Vsesoyuznyy teplotekhnicheskiy institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 62

TOPIC TAGS: fuel additive, antiwear additive, anticorrosion additive

ABSTRACT:

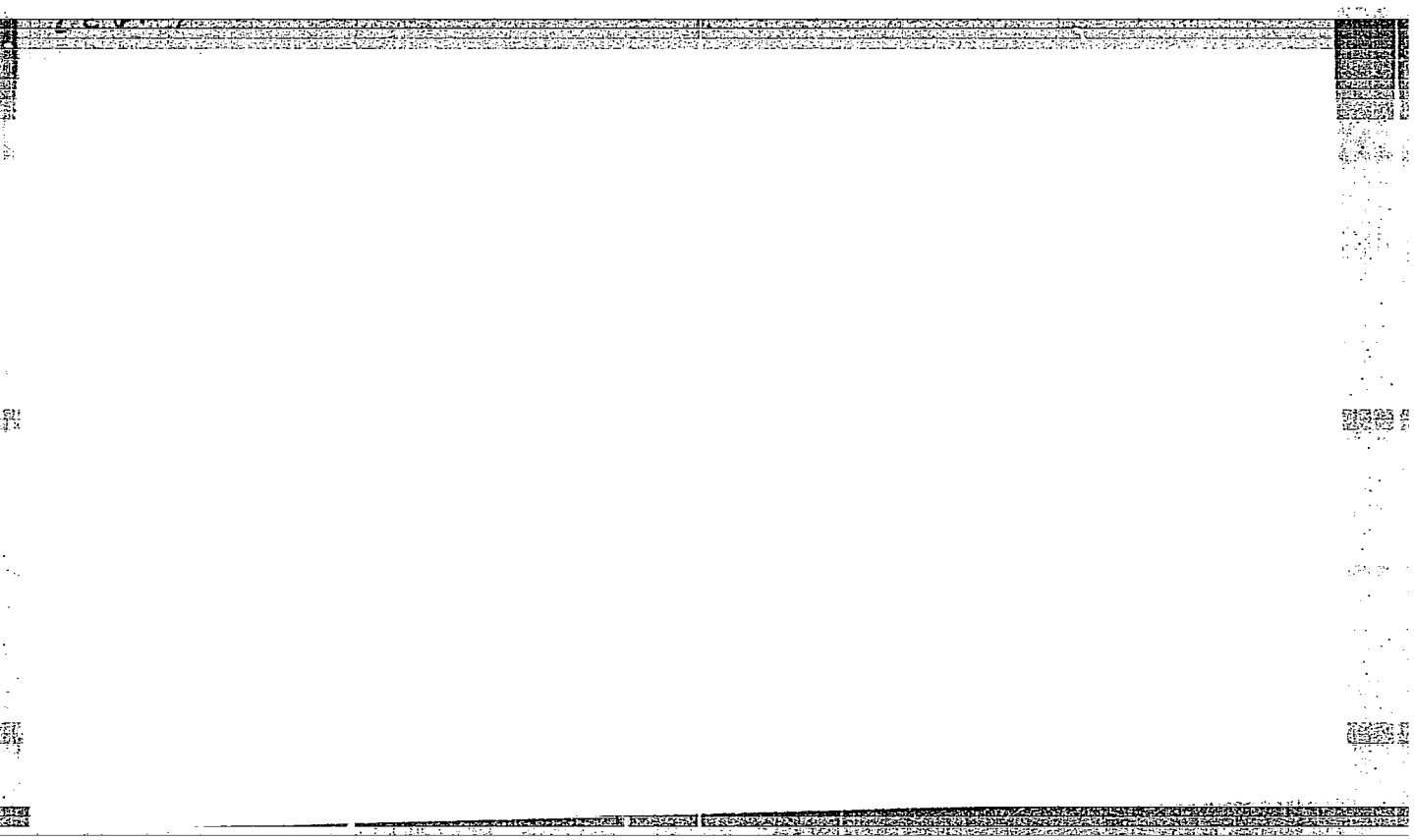
An Author Certificate has been issued for a method of improving the antiwear and anticorrosion properties of heavy liquid fuels [unspecified], involving the introduction of additives based on compounds, soluble in water or organic media, of the type $MeX_1 + AlX_2$, where Me is Ca, Mg, or Zn, and X_1 and X_2 are anions or functional groups, taken in quantities such that the Al/Me ratio be 0.05 to 0.95.

SUB CODE: 11/ SUBM DATE: 05Apr65/ ATD PRESS: 5112

Card 1/1 UDC: 546.27'261:620.197

GORBANENKO, A.D.; ZEGER, K.Ye.; ZERNOVA, T.A.; IVANOV, K.I.; LIPSHTEYN, R.A.; LUZHETSKIY, A.A.; POVOLOTSKIY, L.I.

Importance of ash content in boiler fuels for electric power plants. Standartizatsiia 28 no.1:24-25 Ja '64. (MIRA 17:1)



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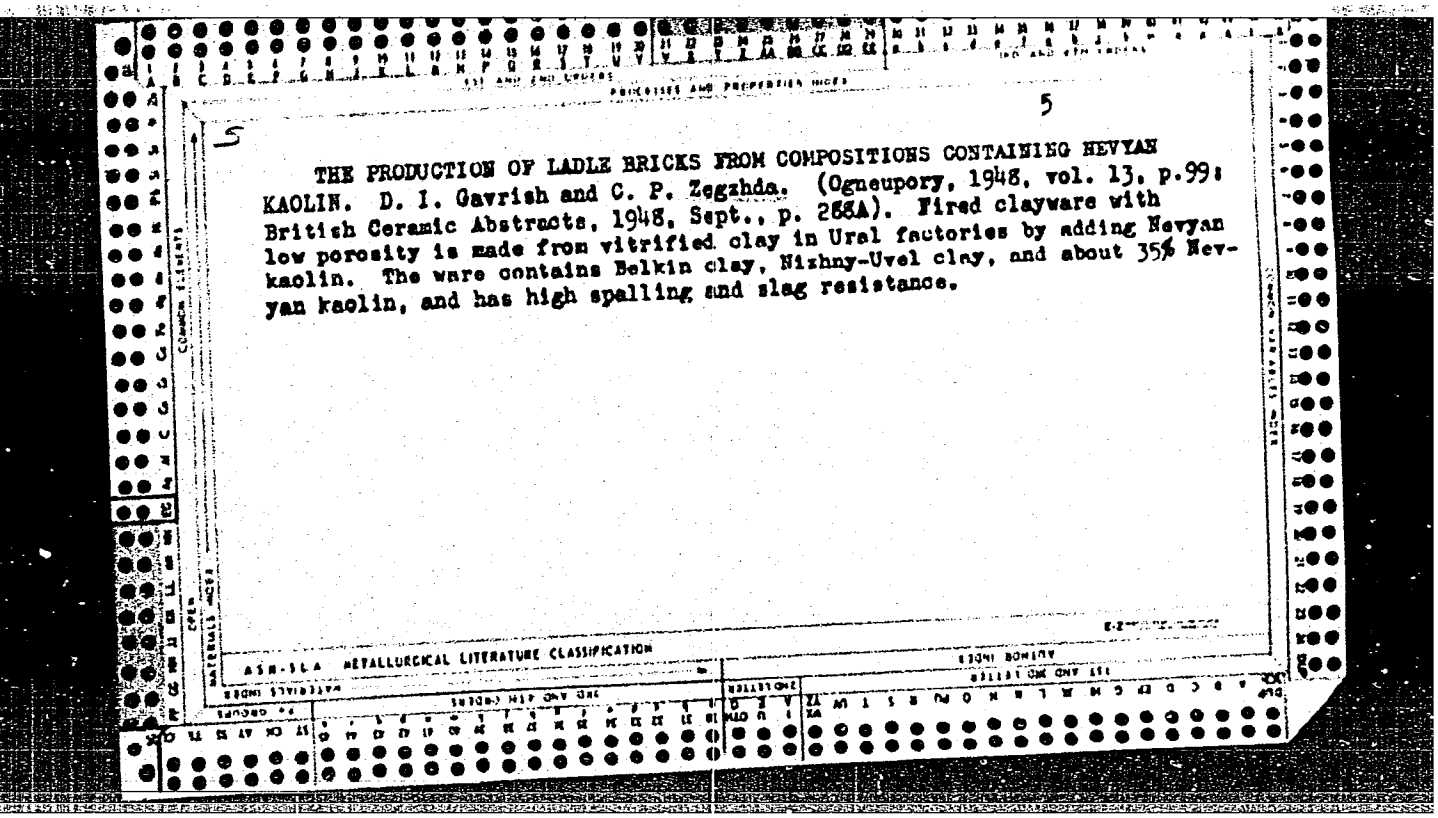
ZEGZHDA, A. S.

DECEASED 1955

Hydraulic Engineering

see ILC



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THE PRODUCTION OF LADLE BRICKS FROM COMPOSITIONS CONTAINING NEVYAN KAOLIN. D. I. Gavrish and C. P. Zegzhda. (Ogneupory, 1948, vol. 13, p.99; British Ceramic Abstracts, 1948, Sept., p. 265A). Fired clayware with low porosity is made from vitrified clay in Ural factories by adding Nevyan kaolin. The ware contains Belkin clay, Nizhny-Uvel clay, and about 35% Nevyan kaolin, and has high spalling and slag resistance.

MARTON, G., candidat in stiinte; ZEGHERU, N., ing.

Automatization of the process of stereophotogrammetric use of the coordimeter. Rev geodezie 7 no.1:15-25 '63.

ZEGHERU, N.

12

256

Bucharest, Revista de Geodezie si Organizarea Teritoriului, Vol VI, No 2, 1962

1. "Report on the Completion of Collectivization and the Reorganization of Agriculture Submitted to the Extraordinary Session of the Grand National Assembly at the Session of 27 April 1962," Gh. GHEORGHIU-DEJ; pp 3-32.

2. "The Old Geodetic Triangulation Network in the Western Part of the Country Carried out in Various Planning Systems and the Possibility of Its Integration in the State Geodetic Network," Engr A. POPA, Engr I. ZAHARIA and Engr T. LIPAN of the Center for the Organization of Territory (Centrul de Organizarea Teritoriului), Timisoara; pp 33-44.

3. "The New M.R.B. 21/1818 Photoaereal Camera in Production," G. MARTON, Candidate in Science (Candidat in Stiinte) and Engr N. ZEGHERU; pp 45-52.

4. "The Necessity of Adapting the Plans for the Organization of Territory," Engr M. ANASTASIU and Engr I. CHIRIAC; pp 53-59.

5. "Diagrams for the Expeditious Organization of the Territory in Support of the Socialist Agricultural Units," Engr A. DOBREA; pp 60-64.

6. "The 'Avram' Ioometer," Engr S. AVRAM, Center for the Organization of Territory, Bucharest; pp 65-66.

1024
CSO: 2000-N

— 1/1 —

ZEGERO

SURNAME, Given Names ZEGHERU, NICOLAE

5

Country: Rumania

Academic Degrees: [not given]

Affiliation: General Directorate of Geotopography and of the Territory's Organization of the Ministry of Agriculture (Directia Generala Geotopografica si a Organizarii Teritoriului din Ministerul Agriculturii).

Source: Bucharest, Revista de Geodezie si Organizarea Teritoriului, No 3, 1961, pp 41-46.

Data: "Concerning the Preparation of a Fundamental Topographic Plan of the Country."

Co-author:
NICOARA, Nicolae,
General Directorate of Geotopography and of the Territory's Organization of the Ministry of Agriculture.

GPO 981643

CYGAN, Z.; KUSMIERSKI, S.; DROZDZ, M.; ZEGLEN, S.; ZAK, T.

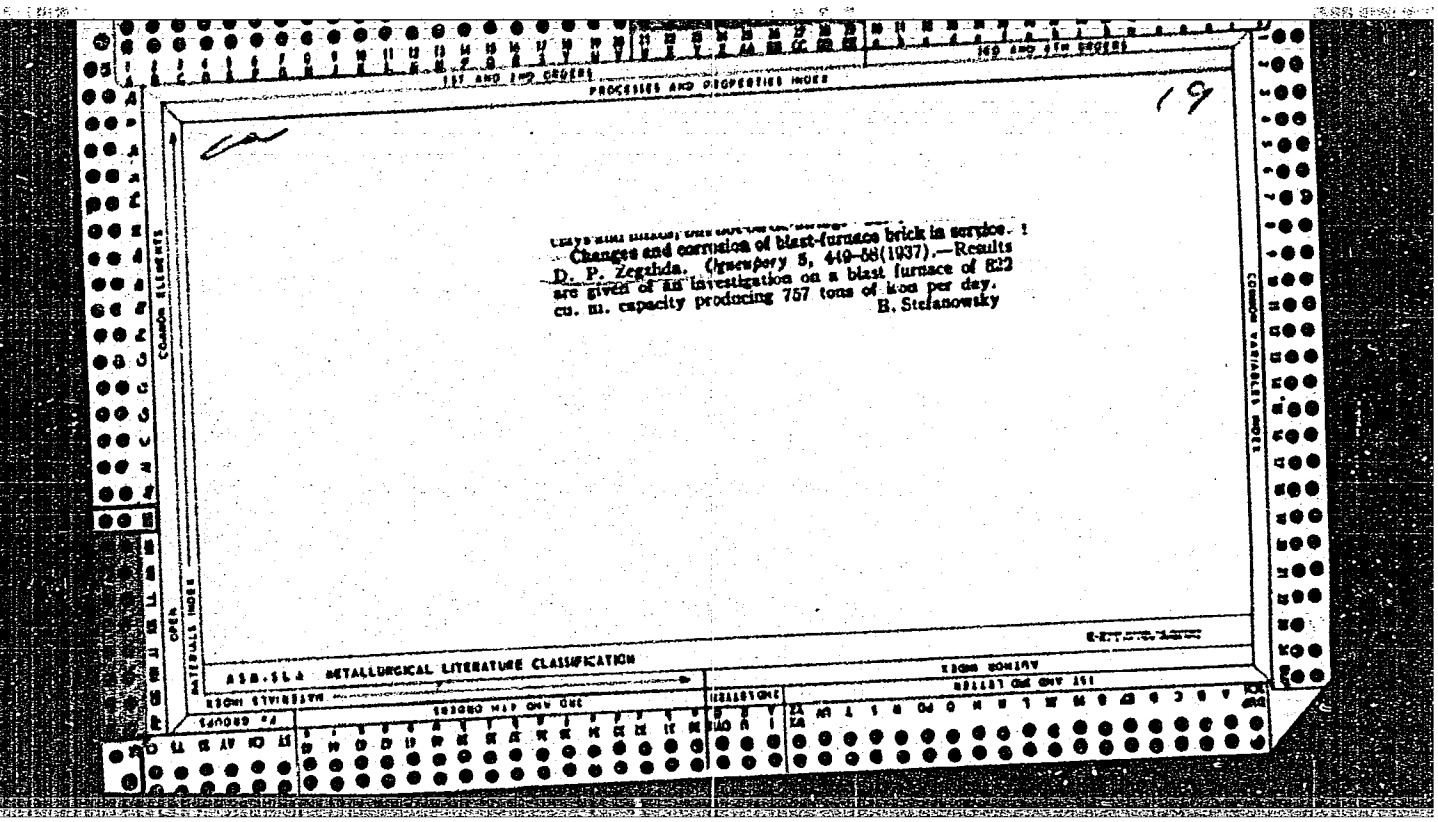
Assesment of the clinical usefulness of the determination of serum mucoproteins in surgical diseases. Wiad. lek. 18 no.20: 1603-1608 15 O '65.

1. Z Zakladu Chemii Fizjologicznej (Kierownik: prof. dr. S. Jozkiewicz) i z II Kliniki Chir. Slaskiej AM w Zabrzu (Kierownik: prof. dr. J. Gasinski).

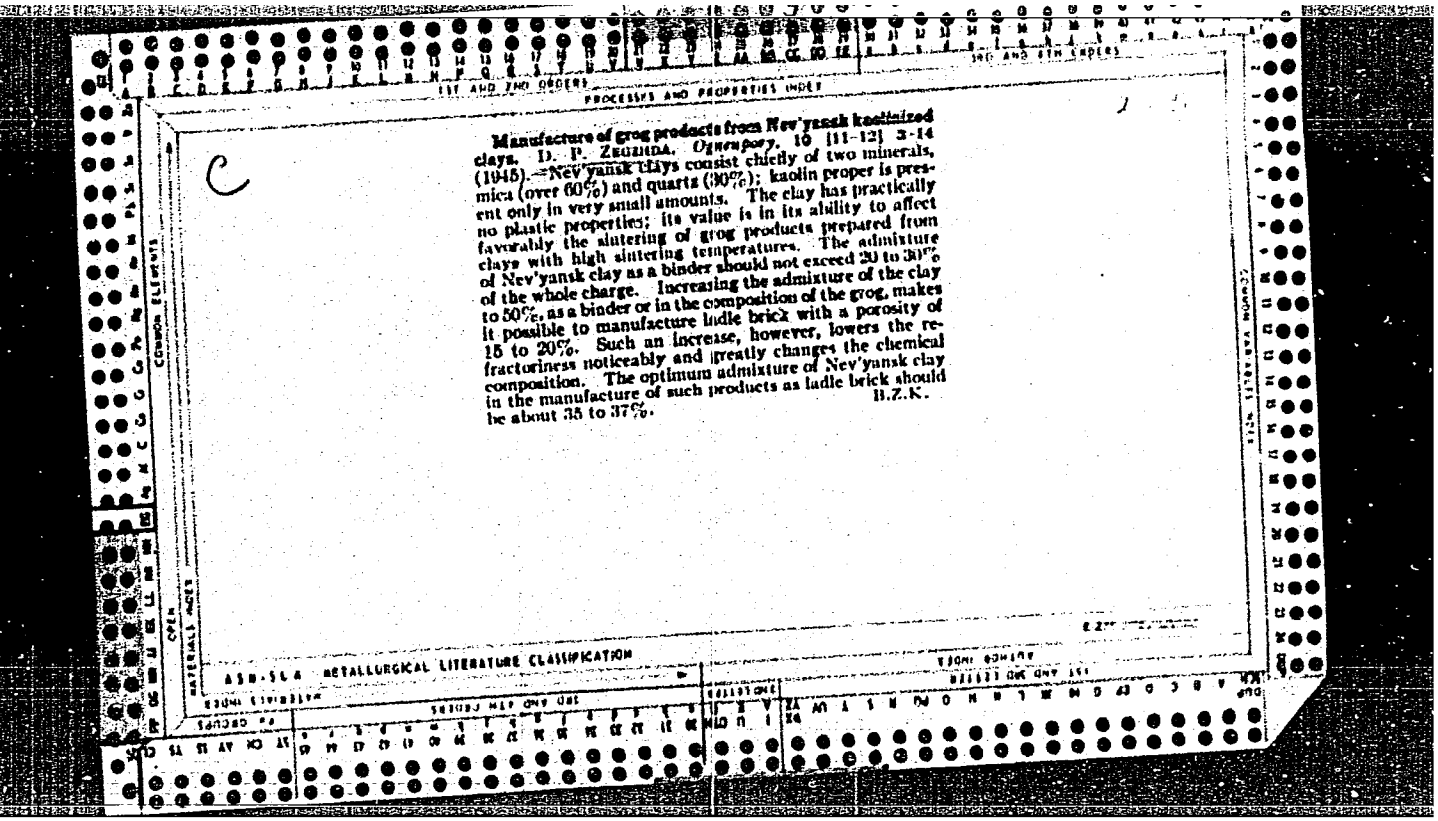
ZEGORENKOV, I. P.

"Ways to Increase Labor Productivity during the Cleaning and Chopping of Castings."

report presented at the Leningrad Regional Conference on Progressive Foundry Practice, Leningrad, 8-12 Dec 1959.



Changes and corrosion of blast-furnace brick in service. I.
D. P. Zegzhda. Ogneupory 5, 449–68(1937).—Results are given of an investigation on a blast furnace of 822 cu. m. capacity producing 757 tons of iron per day.
B. Stefanowsky



Manufacture of grog products from Nev'yansk kaolinized clays. D. P. Zhukhina. *Ogneupory*, 10 [11–12] 3–14 (1945).—Nev'yansk clays consist chiefly of two minerals, mica (over 60%) and quartz (30%); kaolin proper is present only in very small amounts. The clay has practically no plastic properties; its value is in its ability to affect favorably the sintering of grog products prepared from clays with high sintering temperatures. The admixture of Nev'yansk clay as a binder should not exceed 30 to 35% of the whole charge. Increasing the admixture of the clay to 50%, as a binder or in the composition of the grog, makes it possible to manufacture ladle brick with a porosity of 15 to 20%. Such an increase, however, lowers the refractoriness noticeably and greatly changes the chemical composition. The optimum admixture of Nev'yansk clay in the manufacture of such products as ladle brick should be about 35 to 37%.

B.Z.K.

PA 18/49T93

ZEGZHDA, D. P.

Nov 48

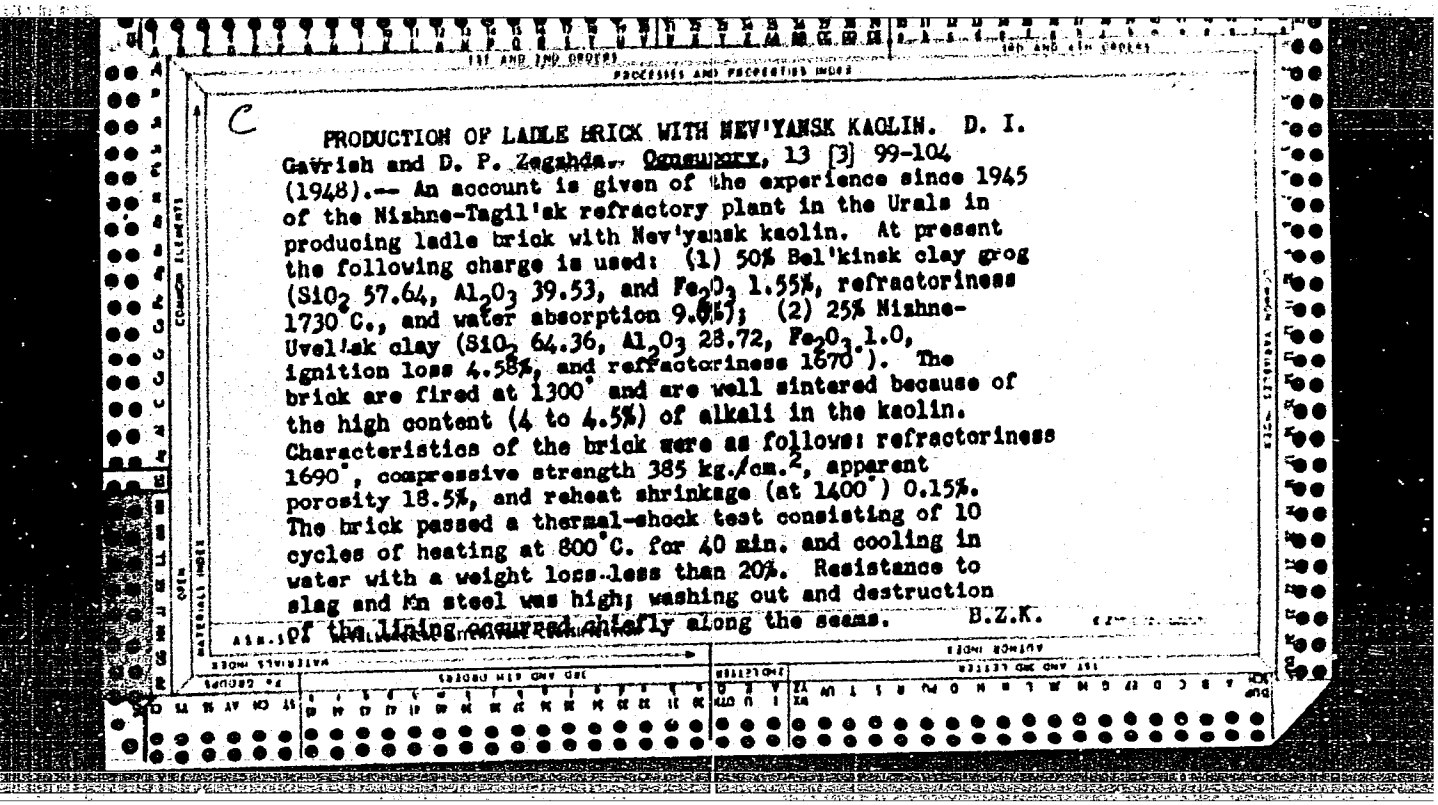
USSR/Minerals
Clays, Aluminum-Containing
Ceramics

"The Use of Southern Ural Clay for the Manufacture of High-Alumina-Content Parts," V. A. Bron, Cand Tech Sci, D. P. Zegzhda, 9 pp

"Ogneupory" No 11

Reports experiments. Discusses effect of mixture composition on agglomeration of parts, effect of paste treatment, effect of mineralizers, pastes containing aluminum by-products, and agglomeration of pastes, made from elutriated Yeleninsk kaolin. Includes 12 tables.

18/49T93



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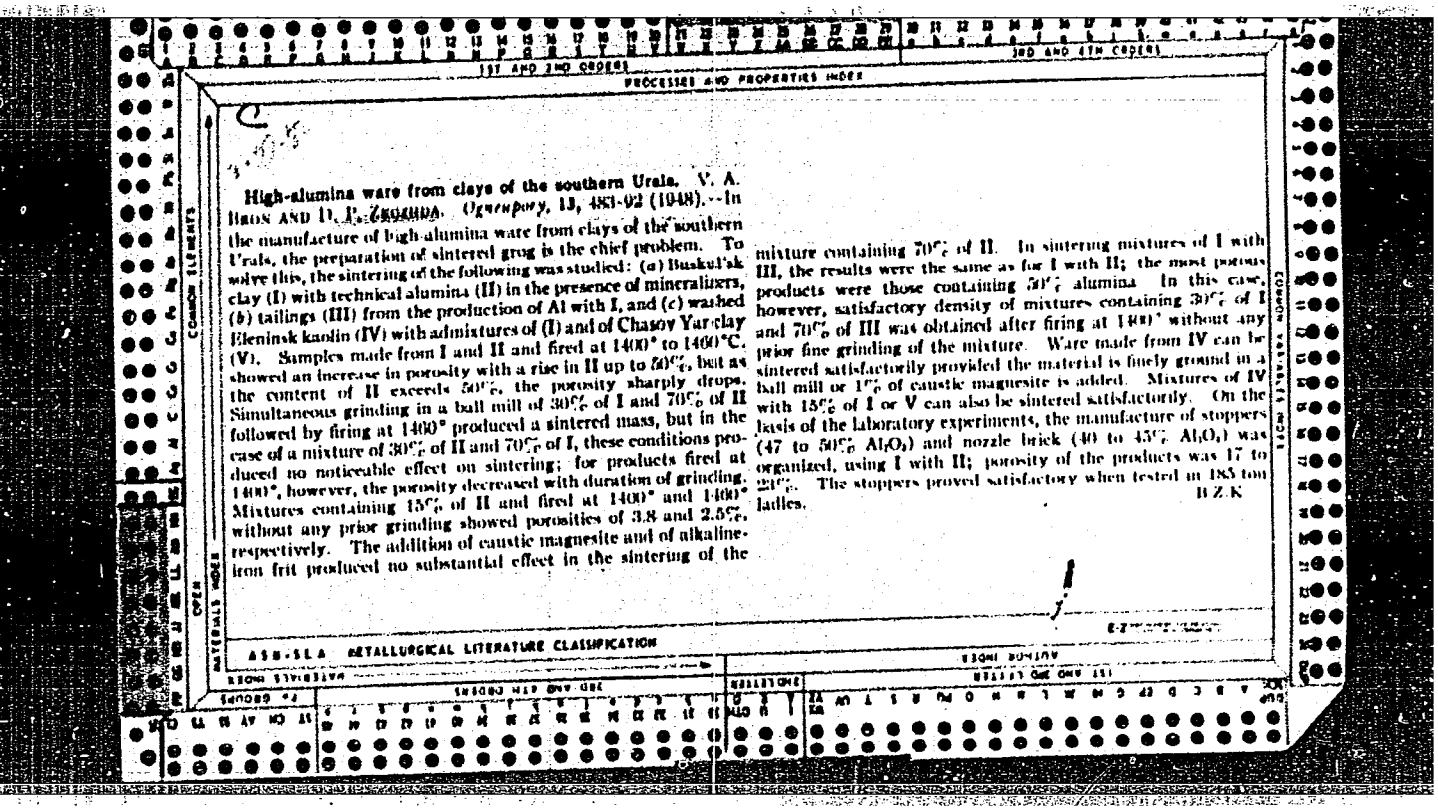
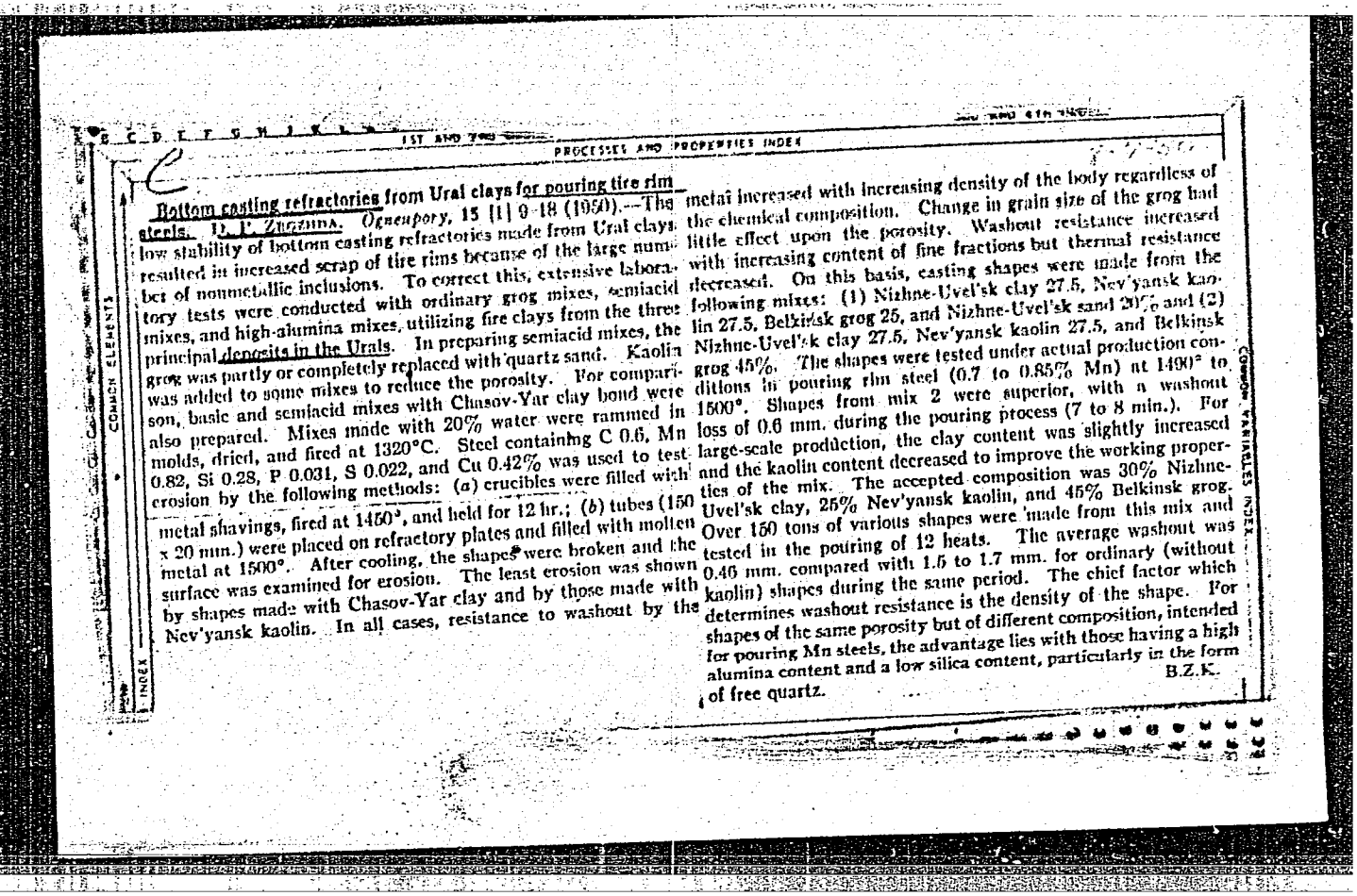
PRODUCTION OF LADLE BRICK WITH NEV'YANSK KAOLIN. D. I. Gavrish and D. P. Zegzhda. Ogneupory, 13 [3] 99-104 (1948).— An account is given of the experience since 1945 of the Nizhne-Tagil'sk refractory plant in the Urals in producing ladle brick with Nev'yansk kaolin. At present the following charge is used: (1) 50% Bel'kinsk clay grog (SiO_2 57.64, Al_2O_3 39.53, and Fe_2O_3 1.55%, refractoriness 1730° C., and water absorption 9.0%); (2) 25% Nizhne-Uvel'sk clay (SiO_2 64.36, Al_2O_3 28.72, Fe_2O_3 1.0, ignition loss 4.58%, and refractoriness 1670°). The brick are fired at 1300° and are well sintered because of the high content (4 to 4.5%) of alkali in the kaolin. Characteristics of the brick were as follows: refractoriness 1690°, compressive strength 385 kg./cm.^{2}, apparent porosity 18.5%, and reheat shrinkage (at 1400°) 0.15%. The brick passed a thermal-shock test consisting of 10 cycles of heating at 800° C. for 40 min. and cooling in water with a weight loss less than 20%. Resistance to slag and Mn steel was high; washing out and destruction of the lining occurred chiefly along the seams. B.Z.K.

High-alumina ware from clays of the southern Urals. V. A. Bron and D. P. Zegzhda. Ogneupory, 13, 183-92 (1948). In the manufacture of high-alumina ware from clays of the southern Urals, the preparation of sintered grog is the chief problem. To solve this, the sintering of the following was studied: (a) Buskul'sk clay (I) with technical alumina (II) in the presence of mineralizers, (b) tailings (III) from the production of Al with I, and (c) washed Eleninsk kaolin (IV) with admixtures of (I) and of Chasov Yar clay (V). Samples made from I and II and fired at 1400° to 1460° C. showed an increase in porosity with a rise in II up to 50%, but as the content of II exceeds 50%, the porosity sharply drops. Simultaneous grinding in a ball mill of 30% of I and 70% of II followed by firing at 1460° produced a sintered mass, but in the case of a mixture of 30% of II and 70% of I, these conditions produced no noticeable effect on sintering; for products fired at 1400°, however, the porosity decreased with duration of grinding. Mixtures containing 15% of II and fired at 1400° and 1460° without any prior grinding showed porosities of 3.8 and 2.5%, respectively. The addition of caustic magnesite and of alkaline-iron frit produced no substantial effect in the sintering of the mixture containing 70% of II. In sintering mixtures of I with III, the results were the same as for I with II; the most porous products were those containing 50% alumina. In this case, however, satisfactory density of mixtures containing 30% of I and 70% of III was obtained after firing at 1400° without any prior fine grinding of the mixture. Ware made from IV can be sintered satisfactorily provided the material is finely



High-alumina ware from clays of the southern Urals. V. A. Ilkos and D. P. Zhukova. *Ogneupory*, 13, 483-92 (1948).--In the manufacture of high-alumina ware from clays of the southern Urals, the preparation of sintered grog is the chief problem. To solve this, the sintering of the following was studied: (*a*) Buskul'sk clay (I) with technical alumina (II) in the presence of mineralizers, (*b*) tailings (III) from the production of Al with I, and (*c*) washed Bleninsk kaolin (IV) with admixtures of (I) and of Chasov Yar clay (V). Samples made from I and II and fired at 1400° to 1400°C. showed an increase in porosity with a rise in II up to 50%, but as the content of II exceeds 50%, the porosity sharply drops. Simultaneous grinding in a ball mill of 30% of I and 70% of II followed by firing at 1400° produced a sintered mass, but in the case of a mixture of 30% of II and 70% of I, these conditions produced no noticeable effect on sintering; for products fired at 1400°, however, the porosity decreased with duration of grinding. Mixtures containing 15% of II and fired at 1400° and 1400° without any prior grinding showed porosities of 3.8 and 2.5%, respectively. The addition of caustic magnesite and of alkaline-iron frit produced no substantial effect in the sintering of the mixture containing 70% of II. In sintering mixtures of I with III, the results were the same as for I with II; the most porous products were those containing 50% alumina. In this case, however, satisfactory density of mixtures containing 30% of I and 70% of III was obtained after firing at 1400° without any prior fine grinding of the mixture. Ware made from IV can be sintered satisfactorily provided the material is finely ground in a ball mill or 1% of caustic magnesite is added. Mixtures of IV with 15% of I or V can also be sintered satisfactorily. On the basis of the laboratory experiments, the manufacture of stoppers (47 to 50% Al_2O_3) and nozzle brick (40 to 45% Al_2O_3) was organized, using I with II; porosity of the products was 17 to 21%. The stoppers proved satisfactory when tested in 185 ton ladles.

B Z K



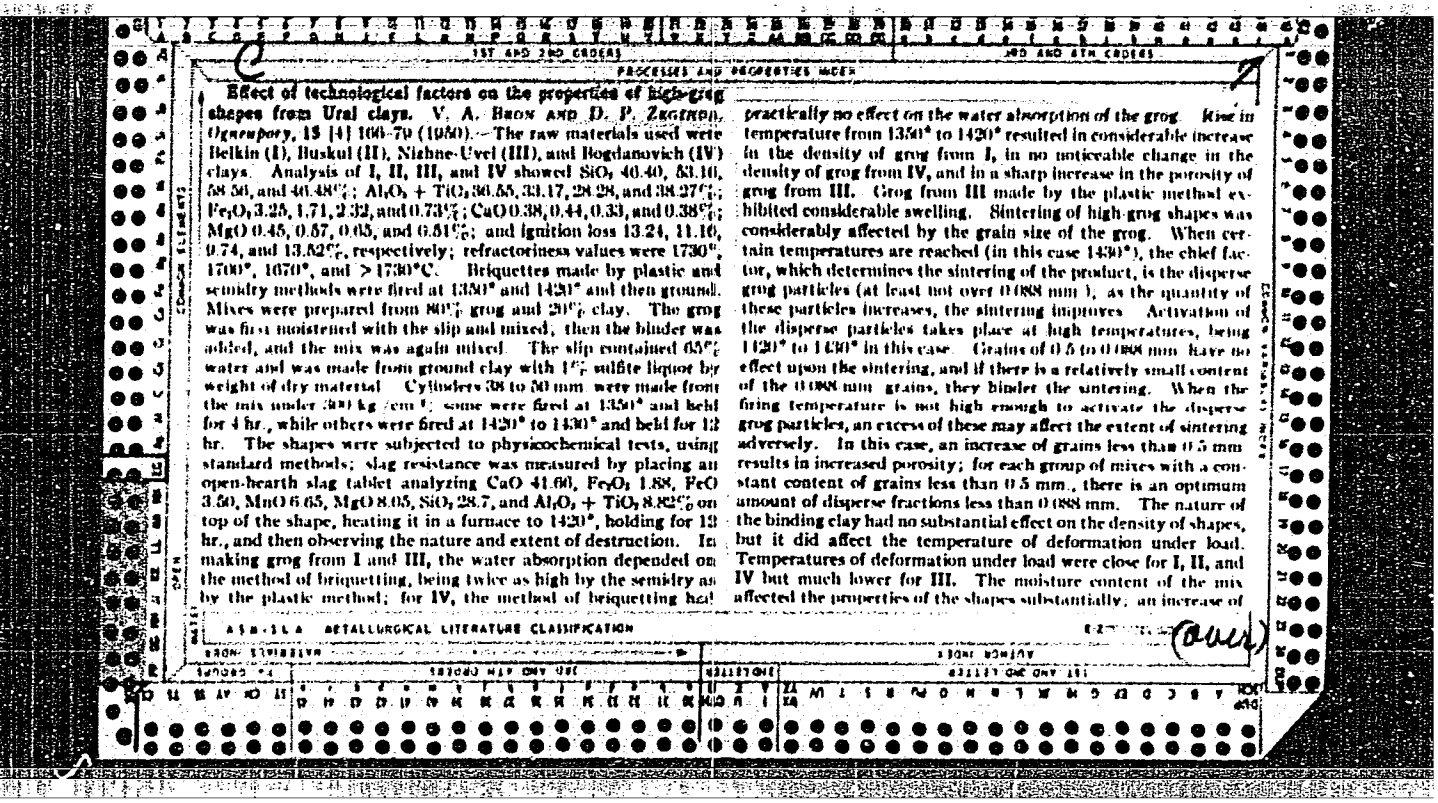
C D E F S M J K L N 1ST AND 2ND ... PROCESSES AND PROPERTIES INDEX ... 3RD AND 4TH INDEX

COMMON ELEMENTS INDEX

COMMON VARIABLES INDEX

Bottom casting refractories from Ural clays for pouring tire rim steels. U. P. Zhezhina. *Ogneupory*, 15 [1] 9-18 (1950).—The low stability of bottom casting refractories made from Ural clays resulted in increased scrap of tire rims because of the large number of nonmetallic inclusions. To correct this, extensive laboratory tests were conducted with ordinary grog mixes, semiacid mixes, and high-alumina mixes, utilizing fire clays from the three principal deposits in the Urals. In preparing semiacid mixes, the grog was partly or completely replaced with quartz sand. Kaolin was added to some mixes to reduce the porosity. For comparison, basic and semiacid mixes with Chasov-Yar clay bond were also prepared. Mixes made with 20% water were rammed in molds, dried, and fired at 1320°C. Steel containing C 0.6, Mn 0.82, Si 0.28, P 0.031, S 0.022, and Cu 0.42% was used to test erosion by the following methods: (*a*) crucibles were filled with metal shavings, fired at 1450°, and held for 12 hr.; (*b*) tubes (150 x 20 mm.) were placed on refractory plates and filled with molten metal at 1500°. After cooling, the shapes were broken and the surface was examined for erosion. The least erosion was shown by shapes made with Chasov-Yar clay and by those made with Nev'yansk kaolin. In all cases, resistance to washout by the metal increased with increasing density of the body regardless of the chemical composition. Change in grain size of the grog had little effect upon the porosity. Washout resistance increased with increasing content of fine fractions but thermal resistance decreased. On this basis, casting shapes were made from the following mixes: (1) Nizhne-Uvel'sk clay 27.5, Nev'yansk kaolin 27.5, Belkinsk grog 25, and Nizhne-Uvel'sk sand 20% and (2) Nizhne-Uvel'sk clay 27.5, Nev'yansk kaolin 27.5, and Belkinsk grog 45%. The shapes were tested under actual production conditions in pouring rim steel (0.7 to 0.85% Mn) at 1490° to 1500°. Shapes from mix 2 were superior, with a washout loss of 0.6 mm. during the pouring process (7 to 8 min.). For large-scale production, the clay content was slightly increased and the kaolin content decreased to improve the working properties of the mix. The accepted composition was 30% Nizhne-Uvel'sk clay, 25% Nev'yansk kaolin, and 45% Belkinsk grog. Over 150 tons of various shapes were made from this mix and tested in the pouring of 12 heats. The average washout was 0.46 mm. compared with 1.5 to 1.7 mm. for ordinary (without kaolin) shapes during the same period. The chief factor which determines washout resistance is the density of the shape. For shapes of the same porosity but of different composition, intended for pouring Mn steels, the advantage lies with those having a high alumina content and a low silica content, particularly in the form of free quartz.

B.Z.K.



1ST AND 2ND ORDERS — PROCESSES AND PROPERTIES INDEX — 3RD AND 4TH ORDERS

Effect of technological factors on the properties of high-grog shapes from Ural clays. V. A. Bron and D. P. Zagibin. *Ogneupory*, 15 [4] 166–70 (1950).—The raw materials used were Belkin (I), Buskul (II), Nizhne-Uvel (III), and Bogdanovich (IV) clays. Analysis of I, II, III, and IV showed SiO_2 40.40, 53.10, 58.50, and 40.48%; $Al_2O_3 + TiO_2$ 36.55, 33.17, 28.28, and 38.27%; Fe_2O_3 3.25, 1.71, 2.32, and 0.73%; CaO 0.38, 0.44, 0.33, and 0.38%; MgO 0.45, 0.57, 0.65, and 0.51%; and ignition loss 13.24, 11.10, 9.74, and 13.82%, respectively; refractoriness values were 1730°, 1700°, 1670°, and >1730°C. Briquettes made by plastic and semidry methods were fired at 1350° and 1420° and then ground. Mixes were prepared from 80% grog and 20% clay. The grog was first moistened with the slip and mixed, then the binder was added, and the mix was again mixed. The slip contained 65% water and was made from ground clay with 1% sulfite liquor by weight of dry material. Cylinders 38 to 50 mm. were made from the mix under 300 kg./cm.²; some were fired at 1350° and held for 4 hr., while others were fired at 1420° to 1430° and held for 12 hr. The shapes were subjected to physicochemical tests, using standard methods; slag resistance was measured by placing an open-hearth slag tablet analyzing CaO 41.60, Fe_2O_3 1.88, FeO 3.50, MnO 6.65, MgO 8.05, SiO_2 28.7, and $Al_2O_3 + TiO_2$ 8.82% on top of the shape, heating it in a furnace to 1420°, holding for 12 hr., and then observing the nature and extent of destruction. In making grog from I and III, the water absorption depended on the method of briquetting, being twice as high by the semidry as by the plastic method; for IV, the method of briquetting had practically no effect on the water absorption of the grog. Rise in temperature from 1350° to 1420° resulted in considerable increase in the density of grog from I, in no noticeable change in the density of grog from IV, and in a sharp increase in the porosity of grog from III. Grog from III made by the plastic method exhibited considerable swelling. Sintering of high-grog shapes was considerably affected by the grain size of the grog. When certain temperatures are reached (in this case 1430°), the chief factor, which determines the sintering of the product, is the disperse grog particles (at least not over 0.088 mm.), as the quantity of these particles increases, the sintering improves. Activation of the disperse particles takes place at high temperatures, being 1420° to 1430° in this case. Grains of 0.5 to 0.088 mm. have no effect upon the sintering, and if there is a relatively small content of the 0.088 mm. grains, they hinder the sintering. When the firing temperature is not high enough to activate the disperse grog particles, an excess of these may affect the extent of sintering adversely. In this case, an increase of grains less than 0.5 mm. results in increased porosity; for each group of mixes with a constant content of grains less than 0.5 mm., there is an optimum amount of disperse fractions less than 0.088 mm. The nature of the binding clay had no substantial effect on the density of shapes, but it did affect the temperature of deformation under load. Temperatures of deformation under load were close for I, II, and IV but much lower for III. The moisture content of the mix affected the properties of the shapes substantially; an increase of

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

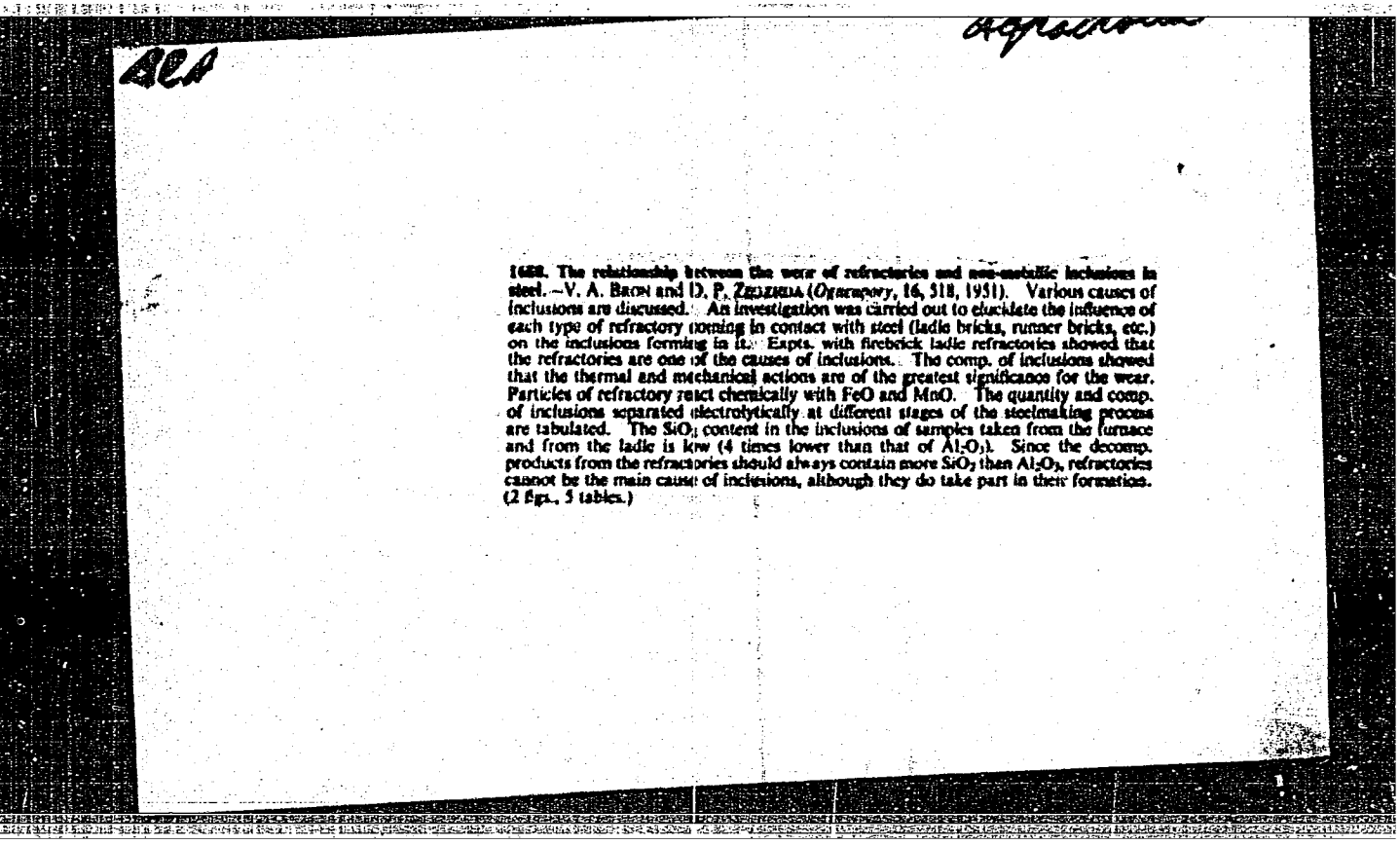
moisture to 8 to 10% increased the bulk weight of the green product after drying and the density after firing. The effect of wetting was more pronounced with rising pressure of forming, particularly for fine grain size. The method of working the mix was an important factor in determining the properties of the shapes. Simultaneous treatment of grog and clay in a ball mill produced the highest density and slag resistance. Satisfactory shapes were also obtained by treating the mix in runner mills. With increasing pressure of forming, the porosity and slag attack decreased. For pressures over 500 kg./cm.², increase in density was less pronounced; pressures of 500 to 900 kg./cm.² are considered most desirable. The firing temperature should be not less than 1420° to 1430°.

B.Z.K.

BCS

Refractories

1377. The life of bottom-pouring refractories in relation to their properties.—D. P. ZEGZHDA (*Ogneupory*, 16, 453, 1951). In a previous article it was asserted that the refractory does not contaminate the steel to any considerable extent. The author supports this view on the basis of extensive expts. Four types of refractories were used including high-quality fireclay products and graphite-fireclay bricks (containing 25% flake graphite, 45% grog, and 30% clay). Results showed that density and thermal stability have a noticeable effect on the behaviour of products in service. However, no relationship could be found between the amount of non-metallic inclusions in the steel and the wear of the refractories. The graphite grog refractories showed an extremely high stability; it is assumed that between these and the metal there is no chem. reaction whatever, the slight wear that there is being due solely to erosion. The general use of clay-graphite products is considered impracticable, however. (4 figs., 5 tables.)



1488. The relationship between the wear of refractories and non-metallic inclusions in steel.—V. A. Brun and D. P. Zelzerma (*Ogneupory*, 16, 518, 1951). Various causes of inclusions are discussed. An investigation was carried out to elucidate the influence of each type of refractory coming in contact with steel (ladle bricks, runner bricks, etc.) on the inclusions forming in it. Expts. with firebrick ladle refractories showed that the refractories are one of the causes of inclusions. The comp. of inclusions showed that the thermal and mechanical actions are of the greatest significance for the wear. Particles of refractory react chemically with FeO and MnO. The quantity and comp. of inclusions separated electrolytically at different stages of the steelmaking process are tabulated. The SiO_2 content in the inclusions of samples taken from the furnace and from the ladle is low (4 times lower than that of Al_2O_3). Since the decomp. products from the refractories should always contain more SiO_2 than Al_2O_3, refractories cannot be the main cause of inclusions, although they do take part in their formation. (2 figs., 5 tables.)

Zegzhda, D.P.

Kaolins of the Novo-Selitsk deposit. D. P. Zegzhda (Met. Inst. Dnepropetrovsk). Ogneupory 20, 108-12 [illegible]. The deposit is in the [illegible] region of the Ukraine. Kaolins have a high-Al_2O_3 content (up to 72.8%, over 45% [illegible]). Loss on ignition is 14-16%. Fe_2O_3 is up to [illegible] ref[illegible] is above [illegible] [illegible] [illegible] pyrite.

B. Z. Kamich

ZEGZHDA, D.P.; ARZUMANOV, M.A.; LEVITAS, Ye.G.; FROLOVA, A.I.; DUDAVSKIY, I.Ye.

Properties of grog obtained by burning certain clays in rotary kilns. Ogneupory 31 no.1:5-10 '66. (MIRA 19:1)

1. Dnepropetrovskiy metallurgicheskiy institut (for Zegzhda, Arzumanov, Levitas, Frolova). 2. Zaporozhskiy ogneupornyy zavod (for Dudavskiy).

32777
S/137/61/000/012/002/149
A006/A101

15.2630

AUTHORS: Zegzhda, D.P., Radchenko, I.I.

TITLE: Investigation of heat conductivity and thermal expansion of alumosilicate masses

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 12, 1961, 4, abstract 12B18 ("Tr. Nauchn. tr. Dnepropetrovsk. metallurg. in-t", 1958, no. 36, 95 - 104)

TEXT: The method of non-stationary heat process was employed to determine heat conductivity of roasted specimens, 40 mm in diameter, of four compositions: Al_2O_3, Al_2O_3 $2SiO_2$, Al_2O_3 SiO_2 and Al_2O_3 $4SiO_2$, in pure state and with admixtures of 2% MgO or TiO_2. The nature of changes in the heat conductivity with changing volumetric weight was determined not from the ratio of the main oxide components but from the presence and nature of mineralizers, which accelerate the formation of mullite and thus change the structure of the body and its properties. In pure masses, heat conductivity increases gradually with higher temperatures; in masses with admixtures it increases rapidly up to 500 - 600°C, passing through a maximum, and then decreases. This is explained by the high

Card 1/2

Investigation of heat conductivity ...

degree of the crystalline phase development. The highest thermal expansion determined by VNIIO differential dilatometer, was observed in pure masses; mineralizers MgO, TiO_2 and K_2O reduce thermal expansion.

N. Molchanov

[Abstracter's note: Complete translation]

Card 2/2

32778
S/137/61/000/012/003/149
A006/A101

15.2610

AUTHORS: Zegzhda, D.P., Klimkovich, N.S.

TITLE: The dependence of elastic properties of alumo-silicate masses on the nature of the depleting agent and bond

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 4, abstract 12B20 ("Sb. nauchn. tr. Dnepropetr. metallurg. in-t", 1959, no. 38, 101 - 111)

TEXT: It was established that changes in the chemical and mineralogical composition of the depleting agent and the bond caused changes in the nature of the dependence between the modulus of elasticity and the grain composition because 1) in the case of masses with quartzite, changes in the modulus of elasticity do practically not depend on temperature (such a phenomenon was not observed when investigating refractory masses); 2) at all roasting temperatures, the modulus of elasticity increased to maximum values at a content of fractions of < 0.088 mm equal to 20% (for refractory masses the maximum value of the modulus of elasticity was shifted to 30 - 40% content of fine fraction depending on the roasting temperature); 3) the degree of variation in the values of the modulus

Card 1/2

The dependence of elastic properties ...

of elasticity with a changing content of fine fractions is considerably higher for masses with quartzite than for refractory masses, when changes in the modulus of elasticity proceed smoothly. The investigation has shown that the presence or absence of various admixtures and differences in the structure of the initial raw material may exert a decisive effect on the formation of elastic properties of alumo-silicate articles at equal technological parameters of manufacture.

V. Oparysheva

[Abstracter's note: Complete translation]

ZEGZHDA, D.P.

Destruction process of aluminosilicate products under the effect of thermal shocks. Izv.vys.uchab.zav.; chern.met. no.4:169-170 '60. (MIRA 13:4)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Aluminum silicates--Thermal properties)

VOLSHTEYN, L.M.; ZEGZHDA, G.D.

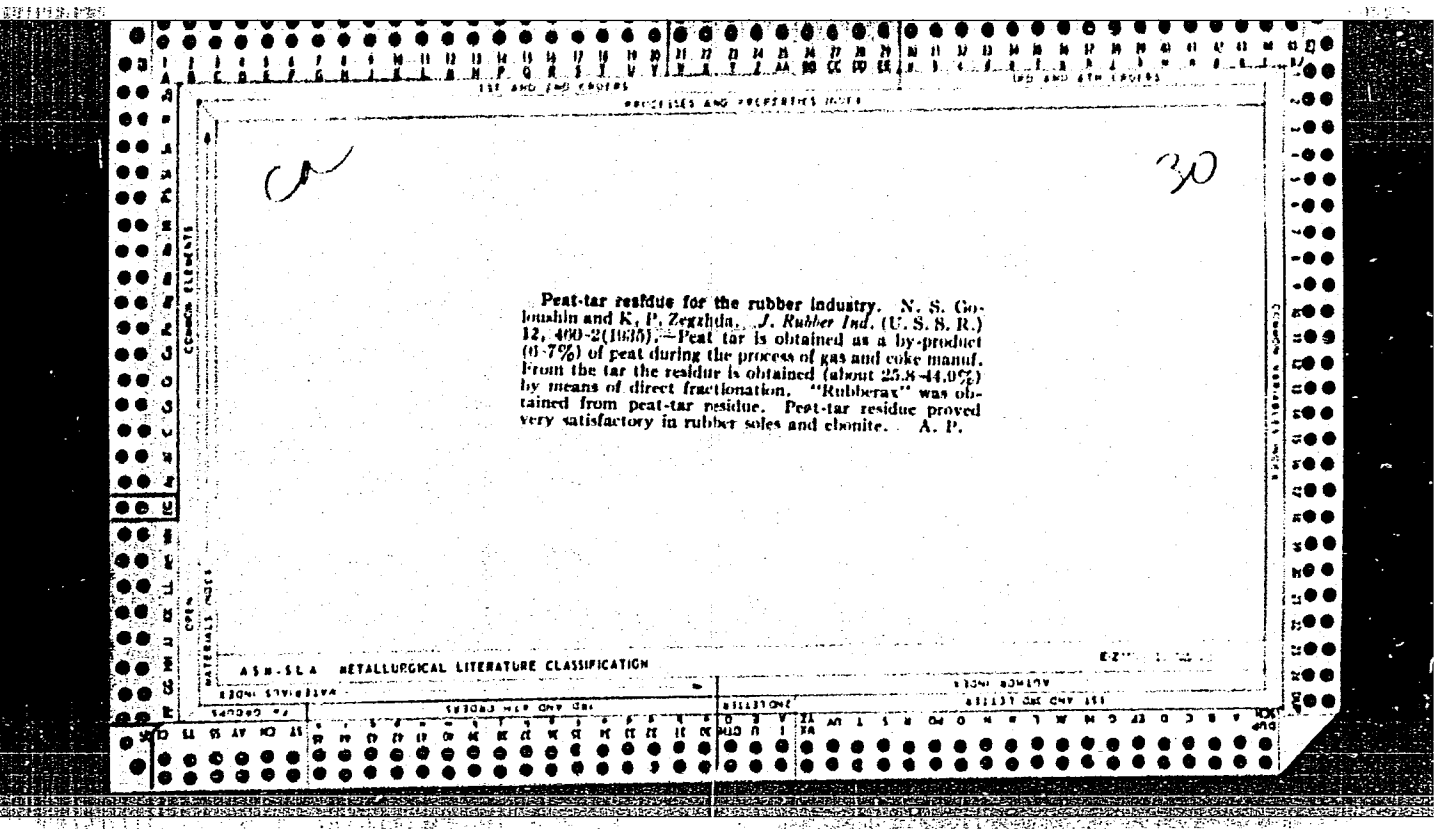
Complex compounds of bivalent platinum with valine. Zhur.neorg.khim. 7 no.7:1525-1529 Jl '62. (MIRA 16:3)

1. Dnepropetrovskiy khimiko-tekhnicheskiy institut imeni F.E.Dzerzhinskogo.
(Platinum compounds) (Valine)

VOLSHTEYN, L.M.; ZEGZHDA, G.D.

Mutual transformation of isomers of platimum divaline.
Zhur.neorg.khim. 7 no.10:2315-2319 O '62. (MIRA 15:10)

1. Dnepropertovskiy khimiko-tekhnologicheskiy institut imeni F.E.Dzerzhinskogo.
(Platinum compounds) (Valine) (Isomerization)



Peat-tar residue for the rubber industry. N. S. Golushin and K. P. Zegzhda. *J. Rubber Ind.* (U. S. S. R.) 12, 400-2(1935).—Peat tar is obtained as a by-product (0.7%) of peat during the process of gas and coke manuf. From the tar the residue is obtained (about 25.8-44.0%) by means of direct fractionation. "Rubberax" was obtained from peat-tar residue. Peat-tar residue proved very satisfactory in rubber soles and ebonite. A. P.

ZEGZHDA, S.A.

Longitudinal impact with allowance for local deformation under conditions of linearity. Vest. LGU 20 no.13:94-106 '65. (MIRA 18:7)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220003-4"

ZEGZHDA, S.A.

Longitudinal impact of a body against a rod allowing for local deformation. Vest. LGU 20 no.7:106-117 '65. (MIRA 18:5)

L 1969-66 EWT(d)/EWT(m)/EWP(w) EM

ACCESSION NR: AP5019931 UR/0043/65/000/003/0094/0106

AUTHOR: Zegzhda, S. A.

TITLE: On longitudinal impact with local contortion in a linear formulation

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 3, 1965, 94-106

TOPIC TAGS: stress analysis, differential equation, approximation method

ABSTRACT: Central longitudinal impact of a body on a rod is studied with simultaneous attention paid to local deformation and the propagation of deformation waves through the rod. The case of a semi-infinite rod is considered in greatest detail. It is shown that in this case and under certain assumptions the solution of the problem in dimensionless variables depends only on a single parameter, which --if less than unity--becomes Saint-Venant's solution and--if greater than unity--Hertz's solution. The relation of the impact parameters with the above parameter for the case of local deformation is given in tabular form. A linear relation is substituted for the nonlinear relation between the force of contact and the local contortion, and the error thus arising from this linearization is shown graphi-

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ACCESSION NR: AP5019931

cally. The solution of the given problem for a finite rod is also offered. In addition, an approximate formulation is given for the problem involving the collision of a body with a rigidly fixed rod, which reduces to the same problem for a spring loaded at one end. "In conclusion, the author expresses his gratitude to G. N. Bukharinov for his valuable suggestions and attention to this paper." Orig. art. has: 49 formulas, 5 figures, 2 tables.

ASSOCIATION: none

SUBMITTED: 10Dec63 ENCL: 00 SUB CODE: MA, ME

NO REF SOV: 004 OTHER: 001

Card 2/2 DP

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220003-4"

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001964220003-4"

S/043/63/000/001/010/011
D218/D308

AUTHOR: Zegzhda, S. A.

TITLE: Oscillations of an asymmetric body suspended from elastic supports

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 1, 1963, 145-148

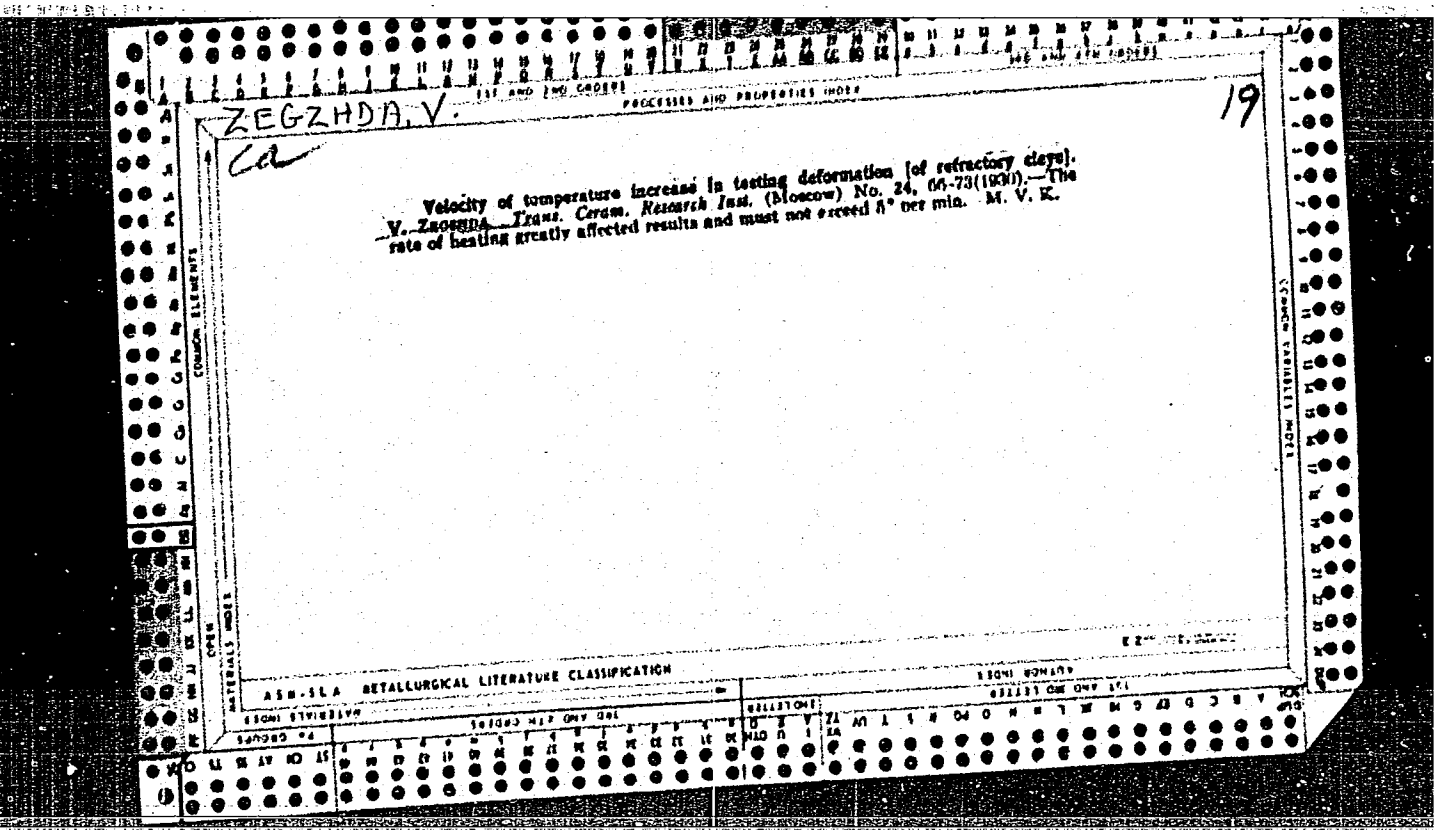
TEXT: The author discusses the oscillations of an elastically suspended body with one plane of symmetry for a circular motion of the base. It is assumed that the center of gravity lies on the line connecting the points of attachment of the suspensions to the body, and that the tension in the supports is large compared with the weight of the body. Assuming that the oscillations are small, a general solution of the Lagrange equation is derived, and formulas are obtained for the frequencies of the natural oscillations. These frequencies were checked experimen-

Card 1/2

tally and the agreement between the experimental and theoretical values was 8% on the average.

SUBMITTED: April 24, 1962

Card 2/2



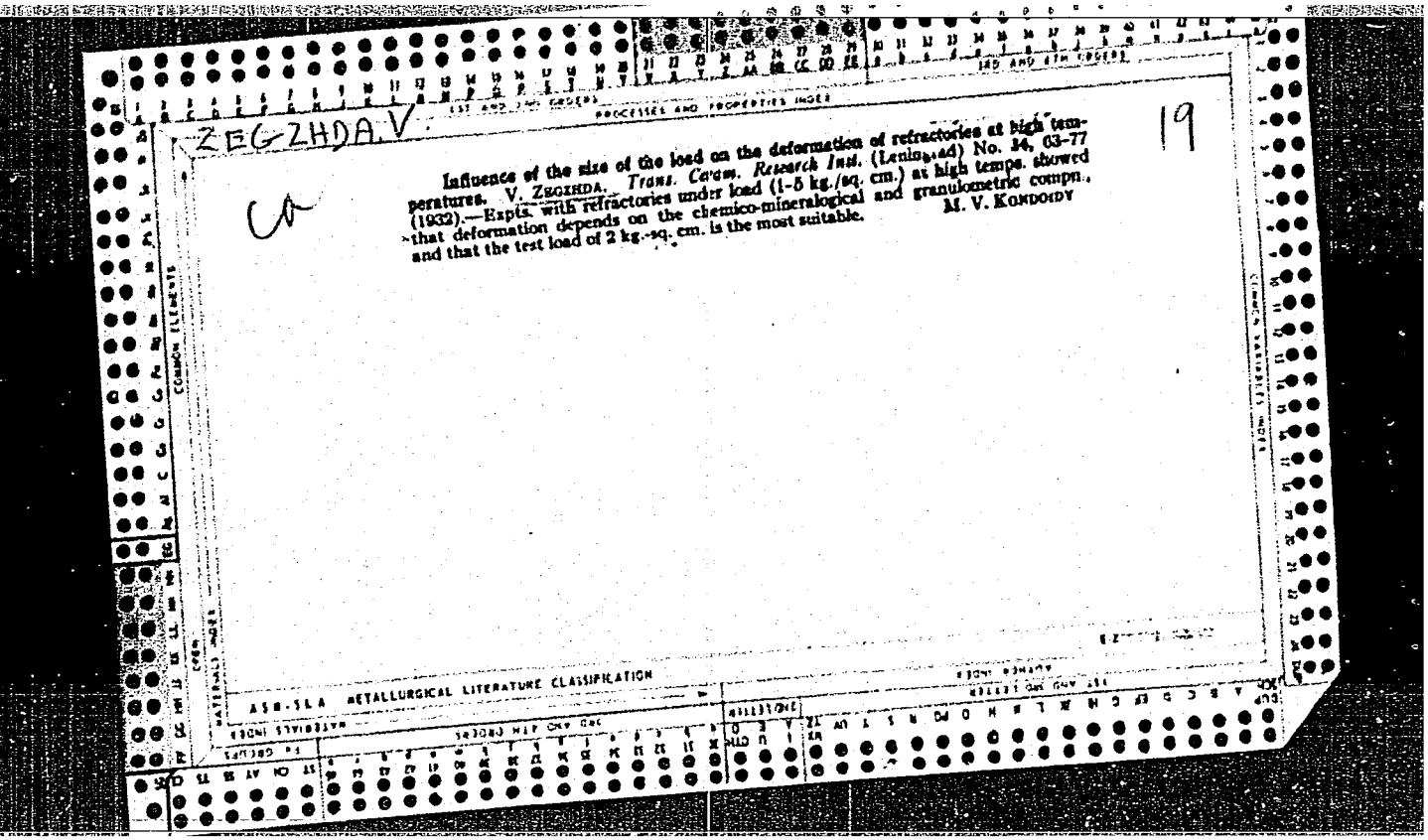
ZEGZHDA, V.

19

Ca

Velocity of temperature increase in testing deformation [of refractory clays]. V. Zegzhda. *Trans. Ceram. Research Inst.* (Moscow) No. 24, 66-73(1939).—The rate of heating greatly affected results and must not exceed 8° per min. M. V. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



ZEGZHDA, V.

19

Influence of the size of the load on the deformation of refractories at high temperatures. V. ZEGZHDA. *Trans. Ceram. Research Inst.* (Leningrad) No. 34, 63–77 (1932).—Expts. with refractories under load (1–5 kg./sq. cm.) at high temps. showed that deformation depends on the chemico-mineralogical and granulometric compn., and that the test load of 2 kg.-sq. cm. is the most suitable. M. V. KONDOIDY

ZEGZHDA, V. P., Cand Tech Sci -- (diss) "Graphite-content refractories, their properties, and application." Leningrad, 1960. 19 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Leningrad Order of Labor Red Banner Technology Inst im Lensovet, Chair of Technology of Refractory Materials); 200 copies; price not given; (KL, 26-60, 135)

15 (2)
AUTHORS: Zegzhda, V. P., Kablukovskiy, A. F., Laktionov, V. S., Skorokhod, S. D. SOV/131-59-9-7/12

TITLE: The Use of Graphite Chamotte Bricks in Steel Casting Ladles and Gutters for Steel Melting Furnaces

PERIODICAL: Ogneupory, 1959, Nr 9, pp 419-423 (USSR)

ABSTRACT: The Vsesoyuznyy institut ogneuporov (All-Union Institute for Refractories) has carried out experiments with graphite-chamotte bricks, containing 15% and 25% of graphite, in 80 t ladles of the Izhora Works. In the "Elektrostal'" works experiments were made with 20 t casting ladles with graphite-chamotte bricks of the Borovichi Kombinat for refractories. The properties of the bricks are shown in table 1. The wear of the test bricks, burnt at high temperatures, is indicated in table 2. In casting steels of the types 10-45, ESHKh15, 20G, 37KhN3A, 15KhFA, 20Kh, EU8, and U10A at the "Elektrostal'" works the graphite chamotte lining of the ladle has not exercised any influence on the carbon content of the metal. The composition of the mortar used may be seen from the table 3. Figures 1 and 2 (photos) show the condition of the joints, made from mortar Nr 1 and Nr 2 after

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The Use of Graphite Chamotte Bricks in Steel Casting Ladles and Gutters for Steel Melting Furnaces

10 melts. Data concerning the stability of the test ladles are given by table 4, and table 5 contains data concerning the wear of the lining of the ladle. The installation of a thermo-couple for measuring the metal temperature in the ladle is represented in figure 3, and the respective measuring results are compiled in table 6. Figure 4 shows the manner in which the side walls of the casting gutters are subject to wear.
Conclusions: When casting dead, bubble-free, steel with a carbon content of more than 0.5% the graphite-chamotte lining of the ladle does virtually not exercise any influence upon the carbon content of the metal. It must still be found out whether this lining can be used when casting steel with a lower carbon content. In order to prevent the destruction of the joints, the use of a special mortar is recommended. Owing to their higher heat-conductivity it is not advantageous to employ graphite-chamotte bricks for lining the bottom of the ladles. A further paper in this field will deal with the changes in the shape and the dimensions of these products, as well as the reduction of their heat conductivity. The necessity is stressed of of an industrial production of the graphite-chamotte bricks.

Card 2/3

SOV/131-59-9-7/12

The Use of Graphite Chamotte Bricks in Steel Casting Ladles and Gutters for Steel Melting Furnaces

There are 4 figures, 6 tables, and 7 references, 5 of which are Soviet.

(V. P. Zegzhda)

ASSOCIATION: Vsesoyuznyy institut ogneuporov/(All-Union Institute for Refractories). Zavod "Elektrostal'" ("Elektrostal'" Works)

Card 3/3

15 (2)

SOV/131-59-7-8/14

AUTHOR: Zegzhda, V. P.

TITLE: Production Experiments and Operation Tests of Graphite Fire-bricks (Opyty izgotovleniya i ispytaniye v sluzhbe grafito-shamotnogo kirpicha)

PERIODICAL: Ogneupory, 1959, Nr 7, pp 325-329 (USSR)

ABSTRACT: The Vsesoyuznyy institut ogneuporov (All-Union Institute of Refractories) tested the influence of small admixtures of flaky graphite on the properties of fire-clay masses. Masses with an admixture of from 5 to 30 % of crucible graphite of the ZT brand were investigated. Latnenskiy clay of the first type was used as a binder, and fire clay of this type was used for leaning. The results of the laboratory tests are indicated in table 1, and the corrosion by slag is shown in figure 1. To clarify the possibility of using refractory graphite fire-clay products in steel ladles, 3 sample lots of bricks were made and tested. The first lot was made in the "Krasnyy tigel'" Works from layers with 15-25 % graphite (Table 2), and tested in the ladles of the Izhorskiy Works. At a content of 25 % graphite, the ladle bricks endured 15 melts, which exceeded the stability of firebricks 2 to 3 times. At the Borovichi Kombinat of

Card 1/3

Production Experiments and Operation Tests of Graphite Firebricks

Refractories, the second lot of graphite-fire-clay ladle bricks of the brands KP-7, KP-8 and KP-9 was manufactured. Chasov-Yar half-acid clay of the Ch2PK brand with low shrinkage was used as a binder. This lot was made with 15 % foundry graphite of the KLZ-1 brand. In experiments, the metal in the ladle started intensely boiling which caused an intense destruction of the seams of the lining (Fig 2). Among other things, it was assumed that the ladle was insufficiently dried, which was, however, doubted by the editors of the periodical (Footnote 1), and it was recommended to check this assertion. At the Borovichi Kombinat, the third experimental lot of bricks with a content of from 20 to 25 % graphite of the ZT and KLZ-1 brands was prepared. A mixture of clay types of the L1PS and Ch1 brands was used as a binder. The mass composition, the properties of the products, and the experimental results of the sample lots of bricks are indicated in table 2. A mortar of sand, clay, graphite, and ferro-silicon was ascertained by experiments. The state of the seams of the ladle lining with this mortar after 10 melts is shown in figure 3. The wear of the lining and of the mortar proved to be low. The experiments

in this field must, however, be continued. It was found that the channels of the Martin and electric melting furnaces made of these bricks last 4-8 times longer than the usual ones. There are 3 figures, 2 tables, and 8 references, 4 of which are Soviet.

ASSOCIATION: Vsesoyuznyy institut ogneuporov (All-Union Institute of Refractories)

GORDEYEV, N.P.; ZEGZHDA, V.P.; KONAREV, M.U.; SHALKOV, K.A.; KONOVALOV, Ya.A.

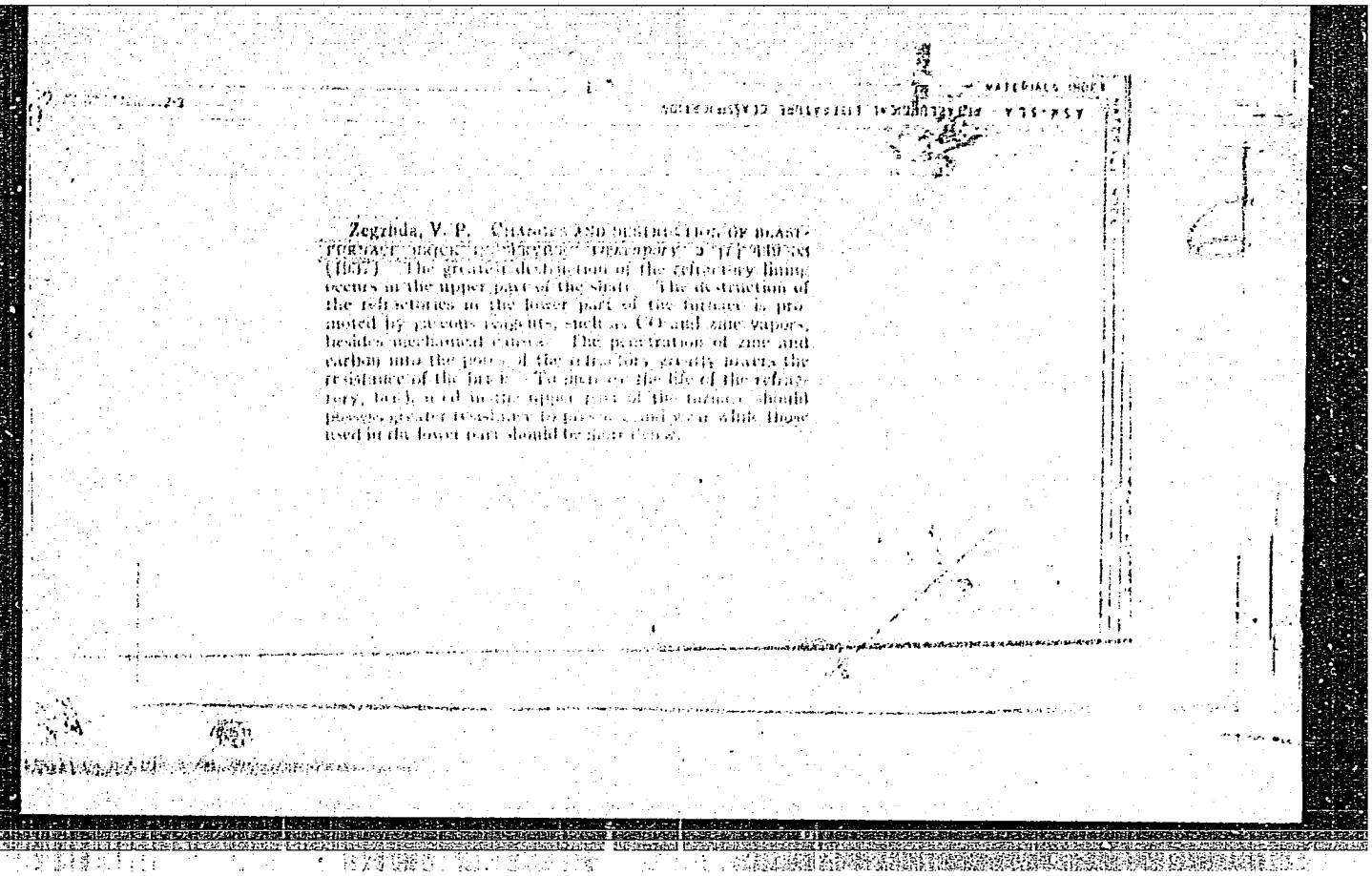
Using refractory materials containing graphite for transferring liquid metals by an electromagnetic method. Ogneupory 26 no.6:292 '61. (MIRA 14:7)

1. Vsesoyuznyy institut ogneuporov (for Gordeyev, Zegzhda).
2. Borovichskiy kombinat ogneuporov (for Konarev, Shalkov, Konovalov).

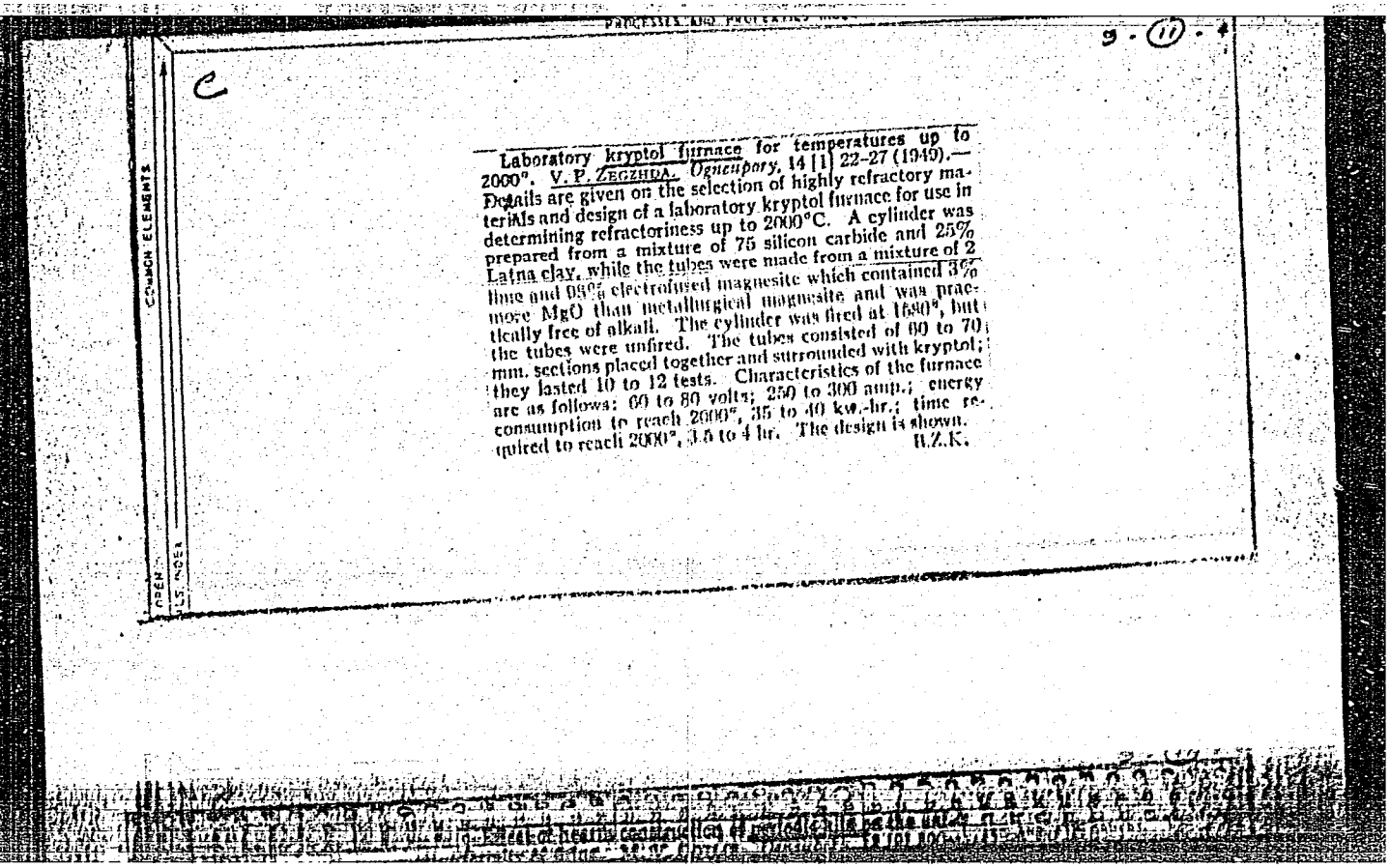
(Refractory materials)
(Smelting)

ZEGZHDA, V.P., inzh.

Graphite molds for bimetallic rods. Biul. TSNIICHM no.6:38-43 '58.
(Molding (Founding)) (MIRA 11:5)



Zegzhda, V. P. CHANGES AND DESTRUCTION OF BLAST-FURNACE [illegible] (1957) The greatest destruction of the refractory lining occurs in the upper part of the shaft. The destruction of the refractories in the lower part of the furnace is promoted by gaseous reagents, such as CO and zinc vapors, besides mechanical causes. The penetration of zinc and carbon into the pores of the refractory greatly impairs the resistance of the brick. To increase the life of the refractory, brick used in the upper part of the furnace should possess greater resistance to gaseous and wear while those used in the lower part should be more dense.



9 · (11) · 4

C

Laboratory kryptol furnace for temperatures up to 2000°. V. P. Zegzhda. *Ogneupory*, 14 [1] 22-27 (1949).—Details are given on the selection of highly refractory materials and design of a laboratory kryptol furnace for use in determining refractoriness up to 2000°C. A cylinder was prepared from a mixture of 75 silicon carbide and 25% Latna clay, while the tubes were made from a mixture of 2 lime and 98% electrofused magnesite which contained 3% more MgO than metallurgical magnesite and was practically free of alkali. The cylinder was fired at 1580°, but the tubes were unfired. The tubes consisted of 60 to 70 mm. sections placed together and surrounded with kryptol; they lasted 10 to 12 tests. Characteristics of the furnace are as follows: 60 to 80 volts; 250 to 300 amp.; energy consumption to reach 2000°, 35 to 40 kw.-hr.; time required to reach 2000°, 3.5 to 4 hr. The design is shown.

B.Z.K.

COMMON ELEMENTS
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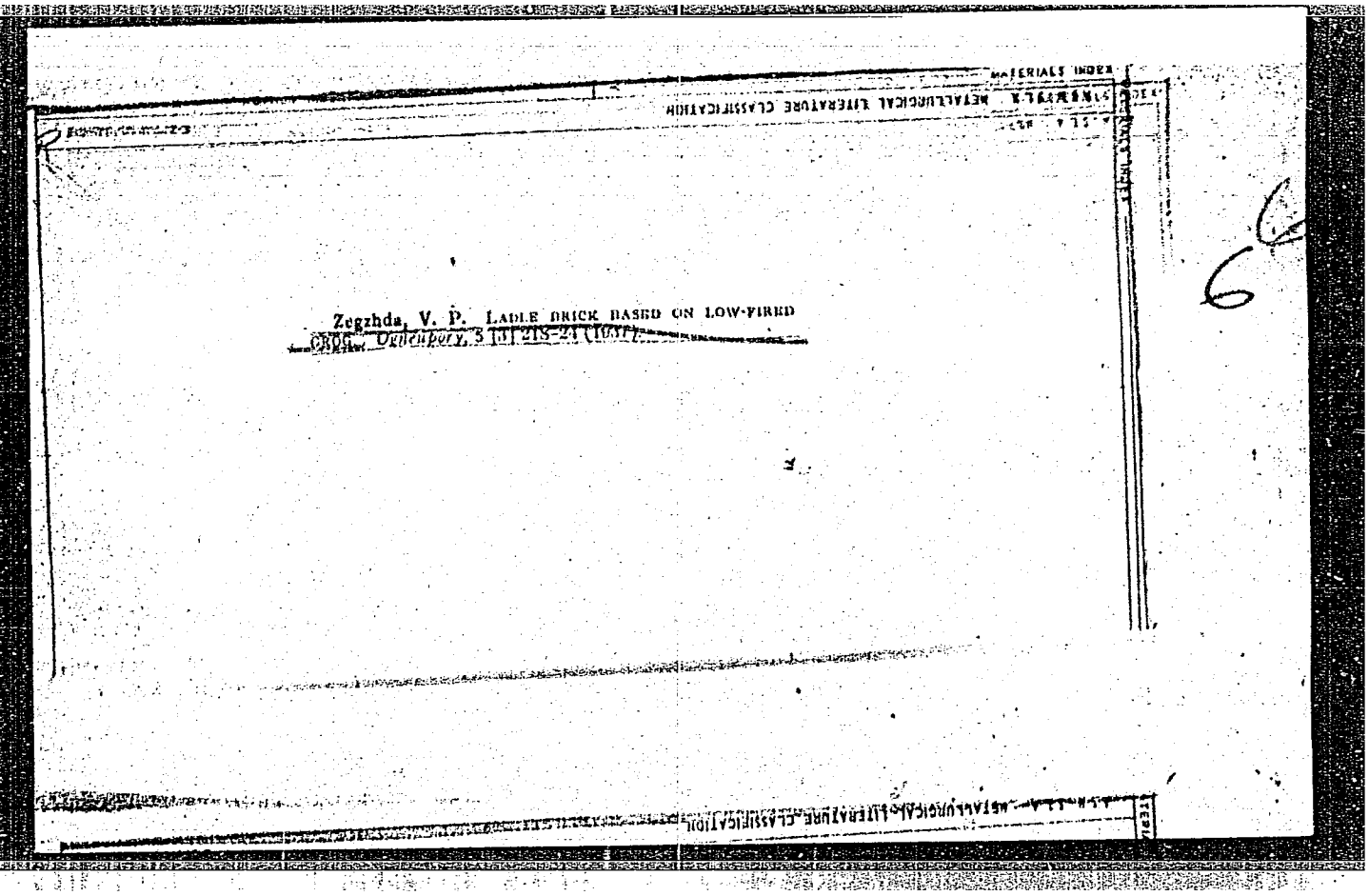
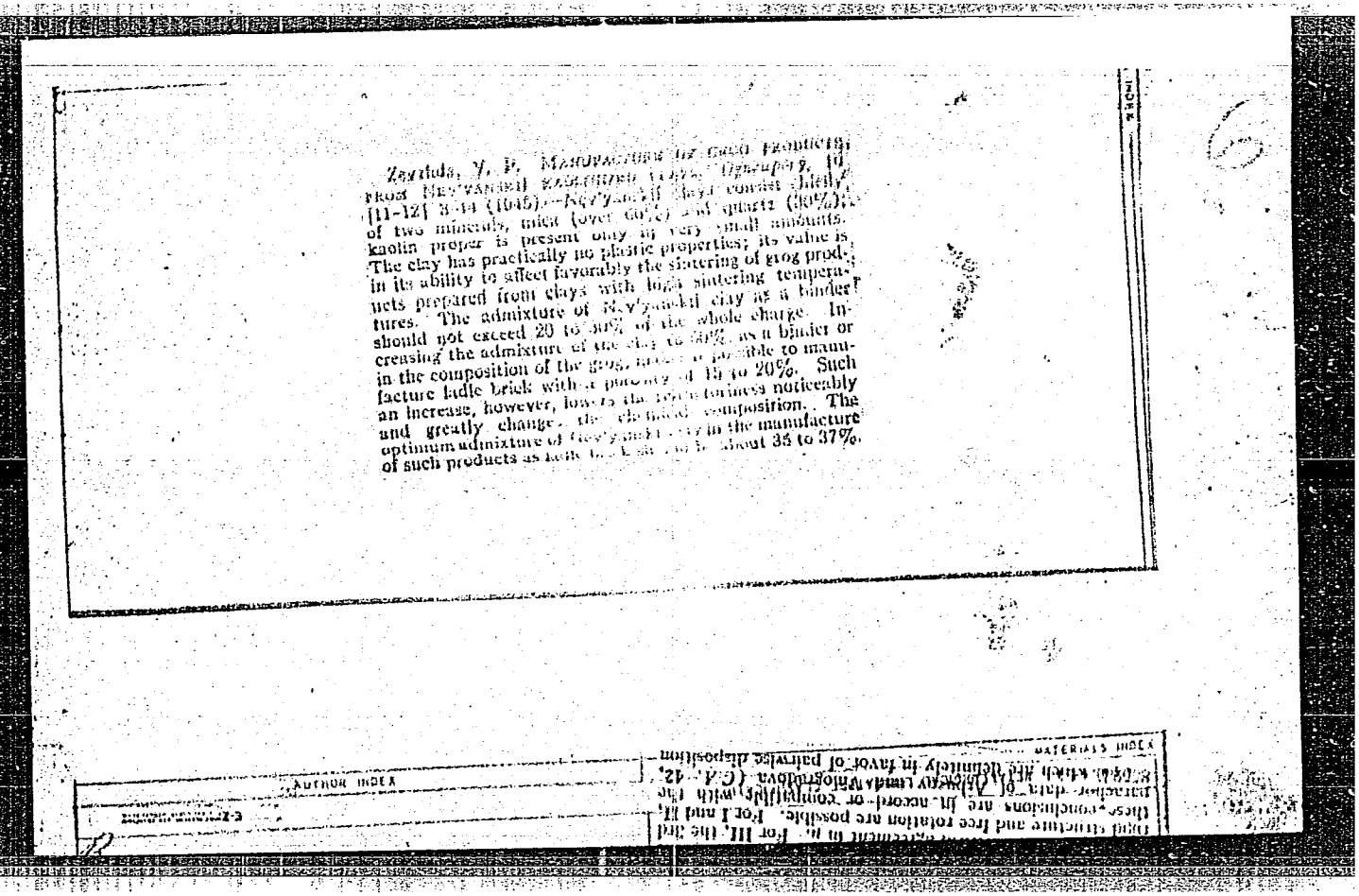
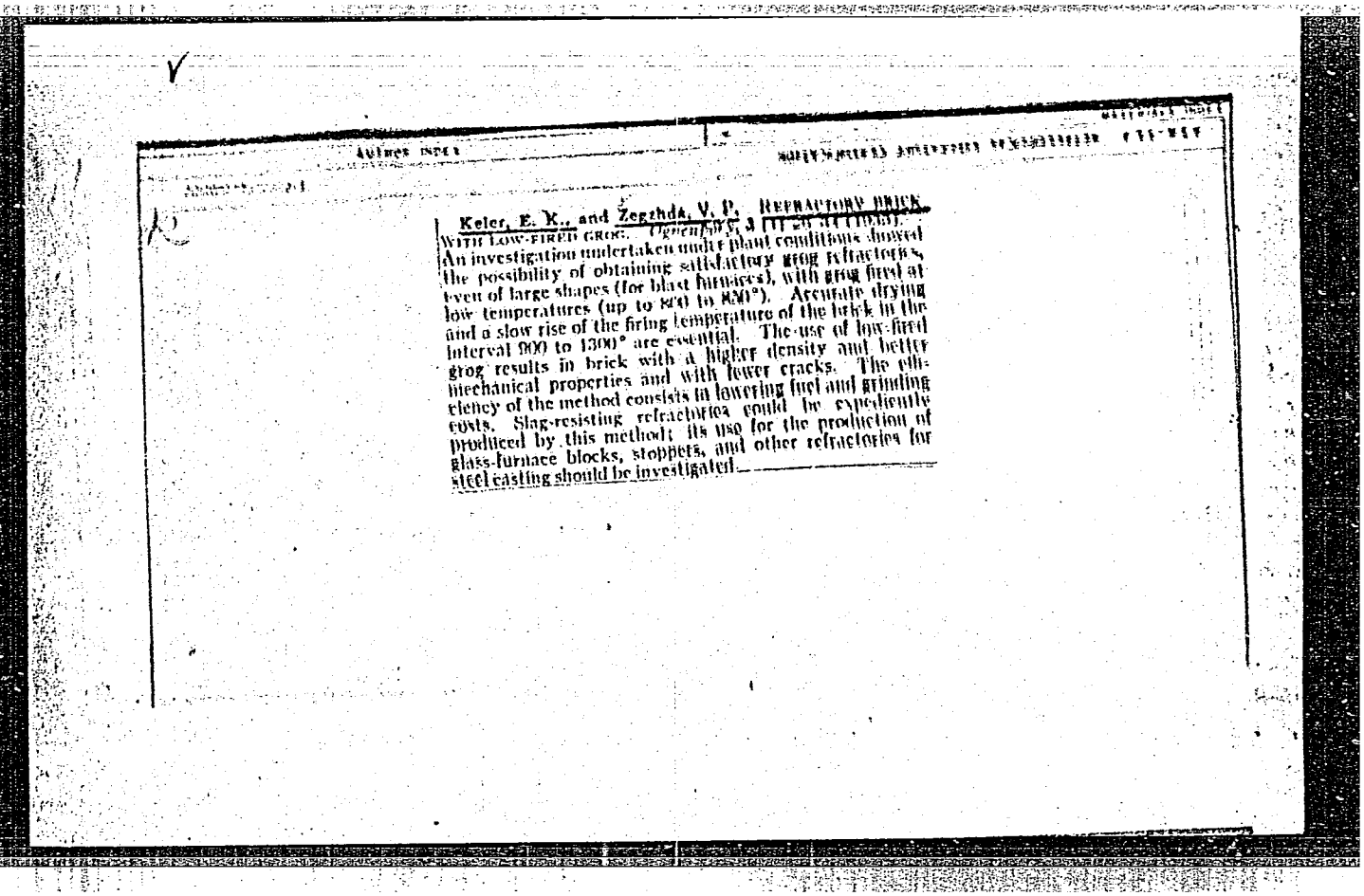


Zegzhda, V. P. LADLE BRICK BASED ON LOW-FIRED

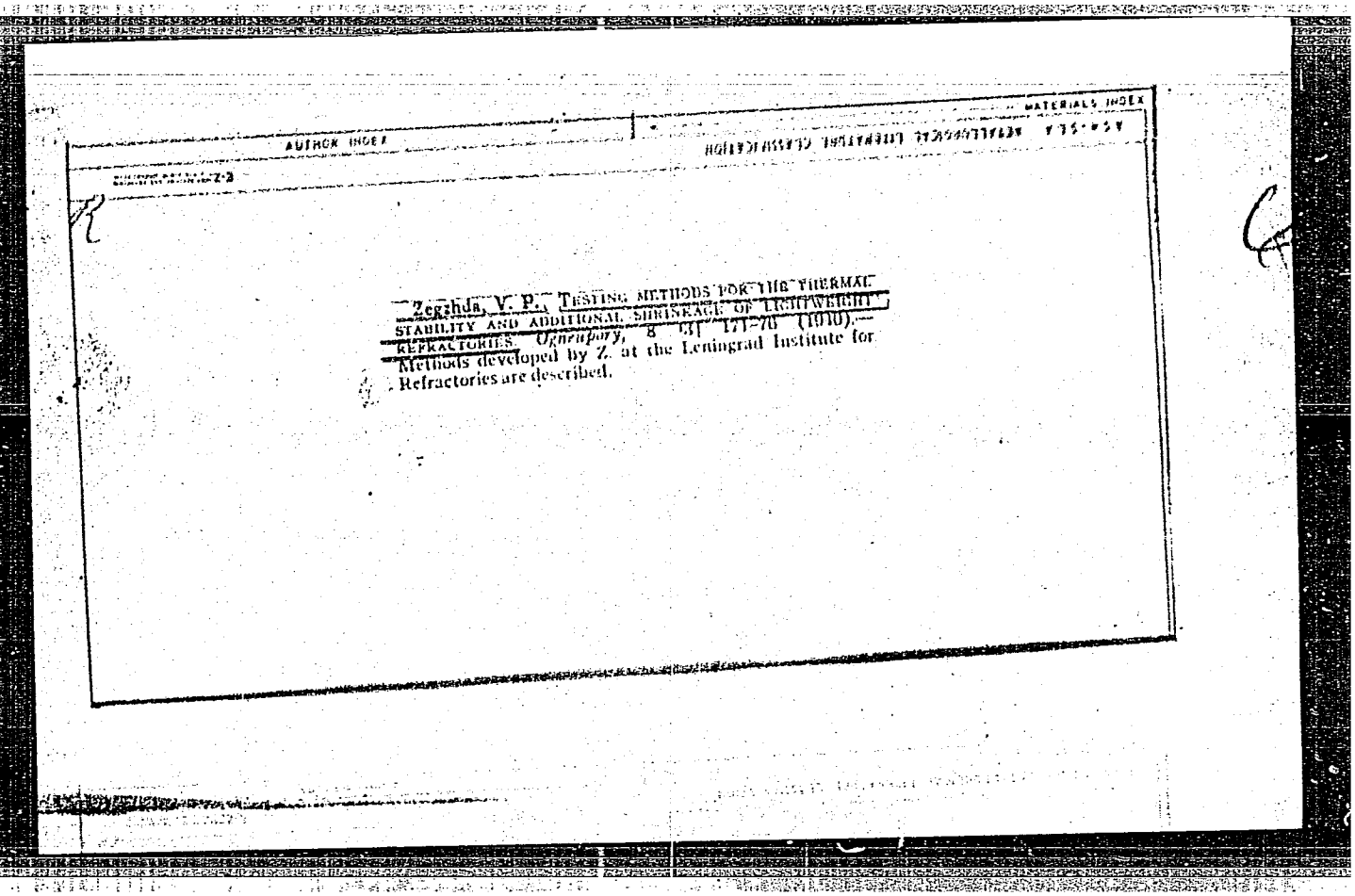


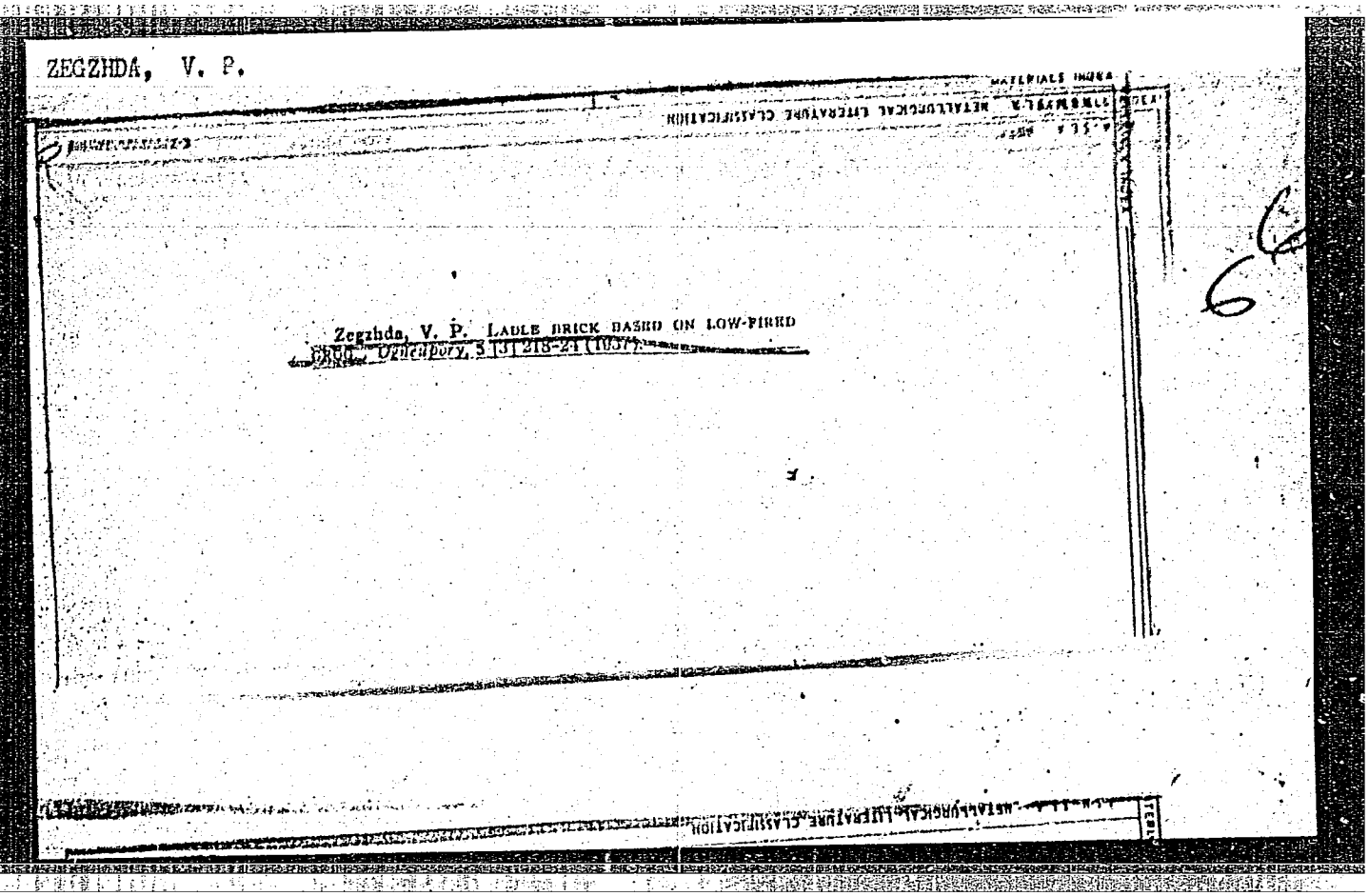
Zavitaia, Y. P. MANUFACTURE OF GROG PRODUCTS FROM NEVYANSKII KAOLINOUS CLAY. Ogneupory, 10 [11-12] 543-44 (1945).—Nevyanskii clays consist chiefly of two minerals, mica (over 60%) and quartz (30%). Kaolin proper is present only in very small amounts. The clay has practically no plastic properties; its value is in its ability to affect favorably the sintering of grog products prepared from clays with high sintering temperatures. The admixture of Nevyanskii clay as a binder should not exceed 20 to 30% of the whole charge. Increasing the admixture of the clay to 50% as a binder or in the composition of the grog makes it impossible to manufacture ladle brick with a porosity of 15 to 20%. Such an increase, however, lowers the refractoriness noticeably and greatly changes the chemical composition. The optimum admixture of Nevyanskii clay in the manufacture of such products as ladle brick is about 35 to 37%.

Keller, E. I., and Zegzhda, V. P. MANUFACTURE OF REFRACTORIES FROM LOW-FIRED GROG. Trudy Vsesoyuz. Inst. Ogneuporov, No. 19, 41-98 (1940).--As a result of many experiments, the production of refractories from low-fired grog was developed. The advantages of this type of refractory are (1) low cost of manufacture, (2) greater production yield of the grinding equipment, (3) the use of coarser granulometric grog composition, and (4) easier drying. Disadvantages are (1) higher moisture content in the worked mix and (2) greater shrinkage of the product. The finished products show denser bodies and a high mechanical resistance. Moreover, they are more slag resistant and have a low gas permeability.



Keler, E. K., and Zegzhda, V. P. REFRACTORY BRICK WITH LOW-FIRED GROG. (Ogneupory, 3 [11-20 (1938)]). An investigation undertaken under plant conditions showed the possibility of obtaining satisfactory grog refractories, even of large shapes (for blast furnaces), with grog fired at low temperatures (up to 800 to 850°). Accurate drying and a slow rise of the firing temperature of the brick in the interval 900 to 1300° are essential. The use of low-fired grog results in brick with a higher density and better mechanical properties and with fewer cracks. The efficiency of the method consists in lowering fuel and grinding costs. Slag-resisting refractories could be expediently produced by this method; its use for the production of glass-furnace blocks, stoppers, and other refractories for steel casting should be investigated.





ZEGZHDA, V. P.

Zegzhda, V. P. LADLE BRICK BASED ON LOW-FIRED
Ogneupory, 5 [1] 218-21 (1937)

ZEGZHDA, V.P.

PROCESSES AND PROPERTIES INDEX

C

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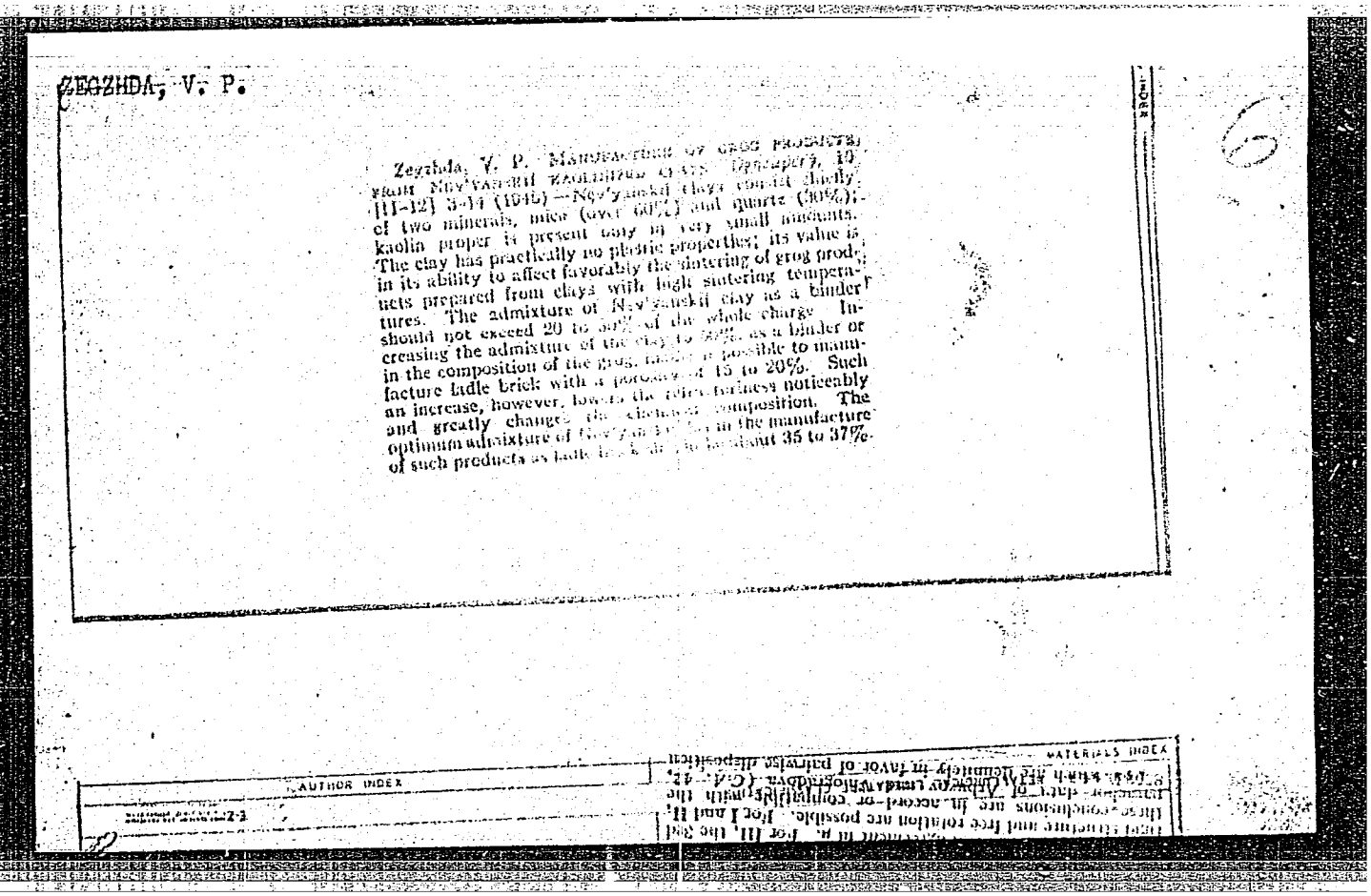
COMMON ELEMENTS

OPEN U.S. INDEX

Laboratory kryptol furnace for temperatures up to 2000°. V. P. ZEGZHDA. *Ogneupory*, 14 [1] 22-27 (1949).—Details are given on the selection of highly refractory materials and design of a laboratory kryptol furnace for use in determining refractoriness up to 2000°C. A cylinder was prepared from a mixture of 75 silicon carbide and 25% Latna clay, while the tubes were made from a mixture of 2 lime and 98% electrofused magnesite which contained 3% more MgO than metallurgical magnesite and was practically free of alkali. The cylinder was fired at 1580°, but the tubes were unfired. The tubes consisted of 60 to 70 mm. sections placed together and surrounded with kryptol; they lasted 10 to 12 tests. Characteristics of the furnace are as follows: 60 to 80 volts; 250 to 300 amp.; energy consumption to reach 2000°, 35 to 40 kw.-hr.; time required to reach 2000°, 3.5 to 4 hr. The design is shown.
R.Z.K.

ZEGZHDA, V. P.

Methods of testing thermal stability and reheat shrinkage of lightweight refractories. S. V. GLEBOV AND V. P. ZEGZHDA. *Vsesoyuz. Gosudarst. Inst. Nauch.-Issledovatel. i Proekt. Rabot Ogneupor. Prom., Inst. Ogneupor., Legkov. Ogneupory*, 1943, pp. 31–39.—In the absence of a panel installation, the thermal-shock cycle consisted of heating in an electric furnace followed by cooling in air. Products of low thermal stability should be heated to 850°C. and those of high thermal stability, to 1300°. In testing reheat shrinkage, the authors suggest a test temperature of 1400°, rise of temperature to occur in not less than 20 hr., holding at 1400° for 24 hr., use of an oil-fired heating furnace with oxidizing atmosphere, and the use of whole brick. B.Z.K.



ZEGZHDA, V. P.

Zegzhda, V. P. Manufacture of grog products from Nov'yanskii kaolinized clays. Ogneupory, 10 [11-12] 3-14 (1945).—Nov'yanskii clays consist chiefly of two minerals, mica (over 60%) and quartz (30%); kaolin proper is present only in very small amounts. The clay has practically no plastic properties; its value is in its ability to affect favorably the sintering of grog products prepared from clays with high sintering temperatures. The admixture of Nov'yanskii clay as a binder should not exceed 20 to 30% of the whole charge. Increasing the admixture of the clay to 40% as a binder or in the composition of the grog mixture makes it possible to manufacture ladle brick with a porosity of 15 to 20%. Such an increase, however, lowers the refractoriness noticeably and greatly changes the structural composition. The optimum admixture of [illegible] in the manufacture of such products as ladle [illegible] is about 35 to 37%.

AUTHOR INDEX

MATERIALS INDEX

ZEGZHDA, V. P.

PA 52/49T36

USSR/Engineering
Refractory Materials
Furnaces

Jan 49

"Selection of High-Temperature Refractory Materials and the Development of Designs for a Kryptol Laboratory Kiln for Temperatures up to 2,000 Degrees," V. P. Zegzhda, 6 pp

"Ogneupory" No 1

Conducted experiments to determine best-type refractory material for kryptol furnaces operating at temperatures of 2,000°. Made test batches with metallurgical magnesite and magnesite alloys melted in electric furnaces. Furnace built as a

52/49T36

FDD

USSR/ Engineering (Contd)

Jan 49

result of the tests had these characteristics: Pipes, 60 mm in diameter, were manufactured from magnesite melted in an electric furnace. Heating cylinder was manufactured from carborundum.

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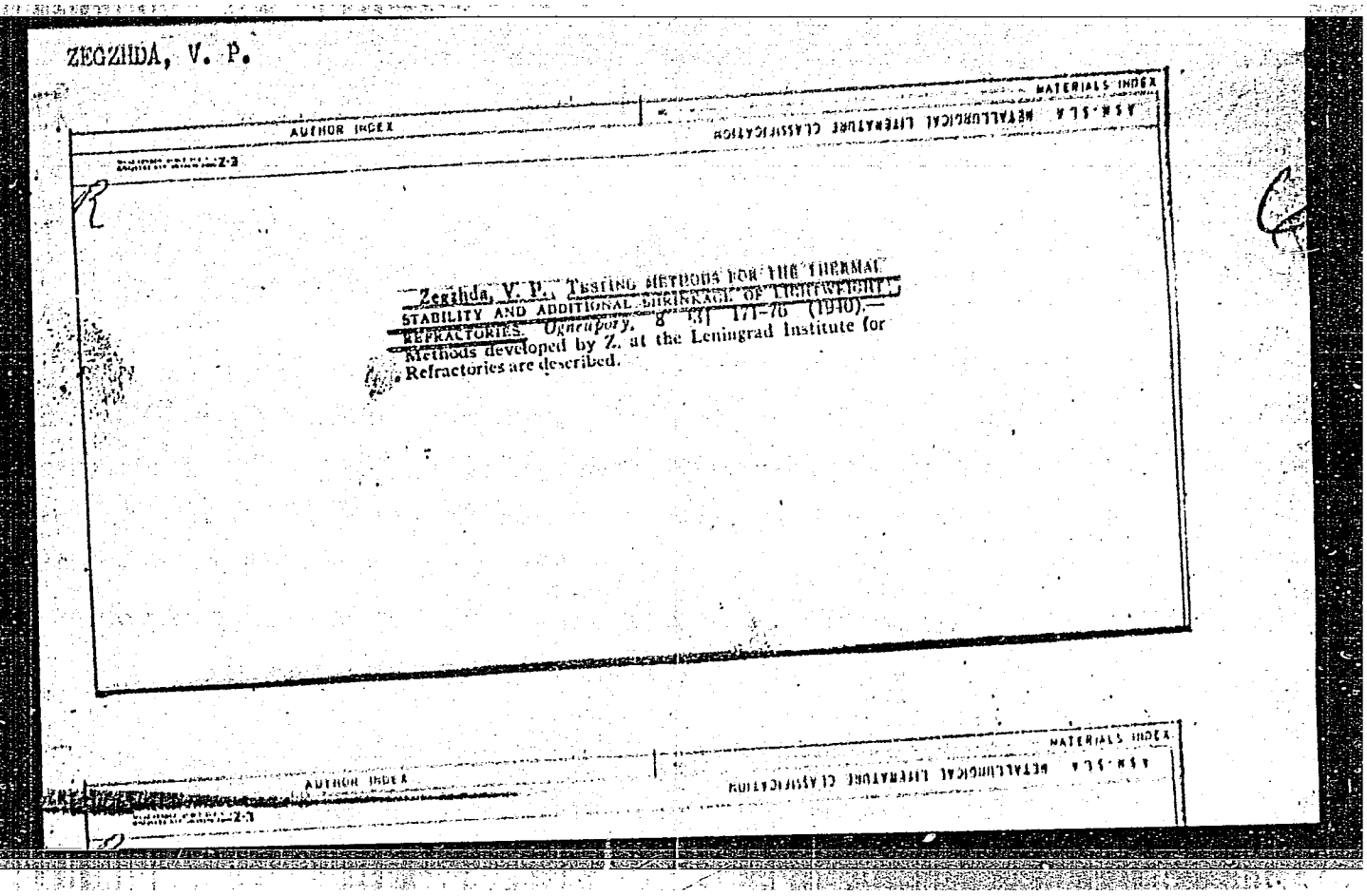
FDD



ZEGZHDA, V. P.

AUTHOR INDEX

Z-2

Zegzhda, V. P.: Testing methods for the thermal stability and additional shrinkage of lightweight refractories. *Ogneupory*, 8 131 171-76 (1940).—Methods developed by Z. at the Leningrad Institute for Refractories are described.

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR INDEX

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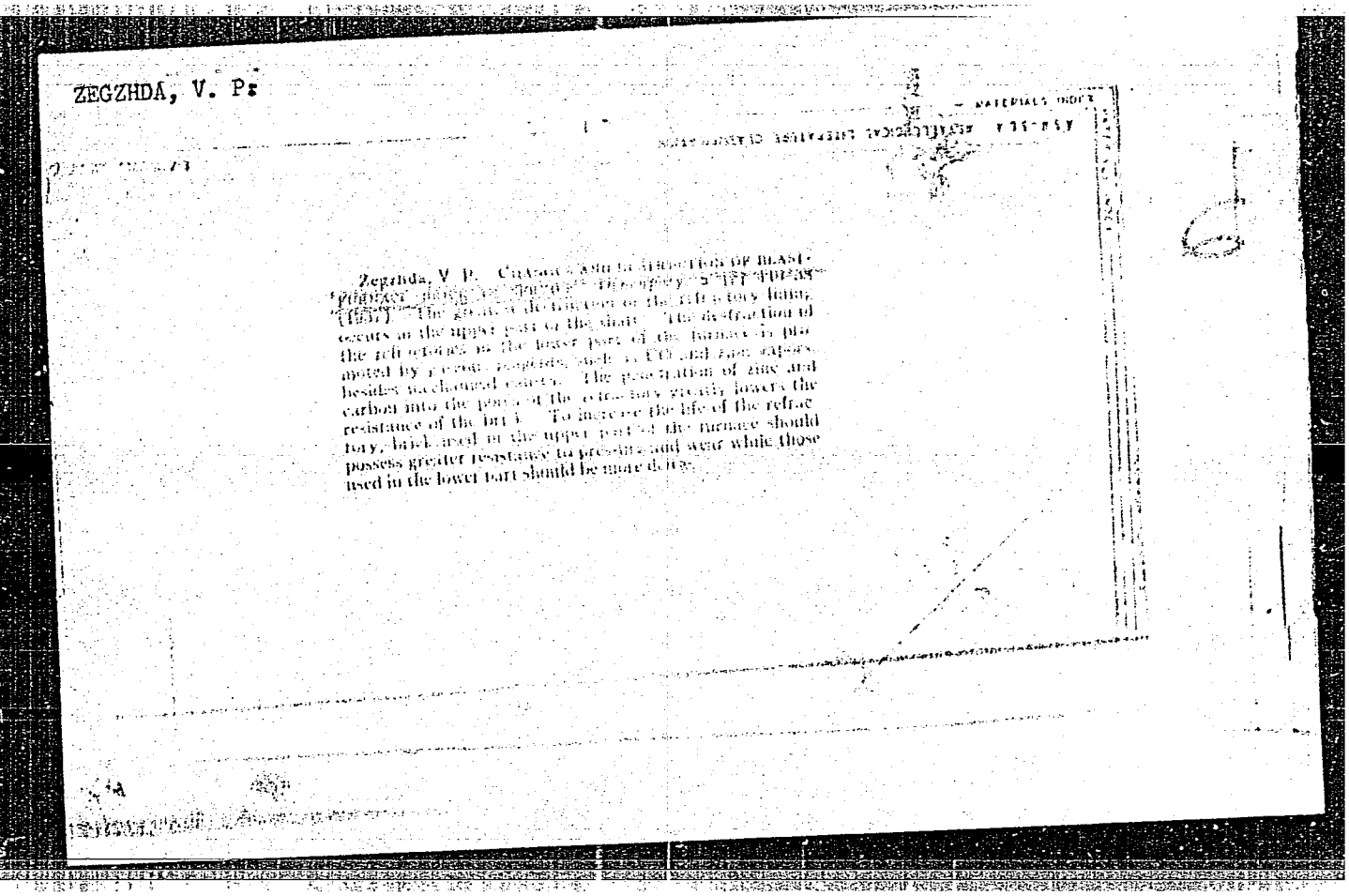
MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



ZEGZHDA, V. P.

Zegzhda, V. P. Causes and prevention of blast-furnace [illegible] (1957). The greatest destruction of the refractory lining occurs in the upper part of the shaft. The destruction of the refractories in the lower part of the furnace is also noted by [illegible] slag, iron vapors, besides mechanical causes. The penetration of zinc and carbon into the pores of the refractory greatly lowers the resistance of the brick. To increase the life of the refractory, brick used in the upper part of the furnace should possess greater resistance to pressure and wear while those used in the lower part should be more dense.

A C S.

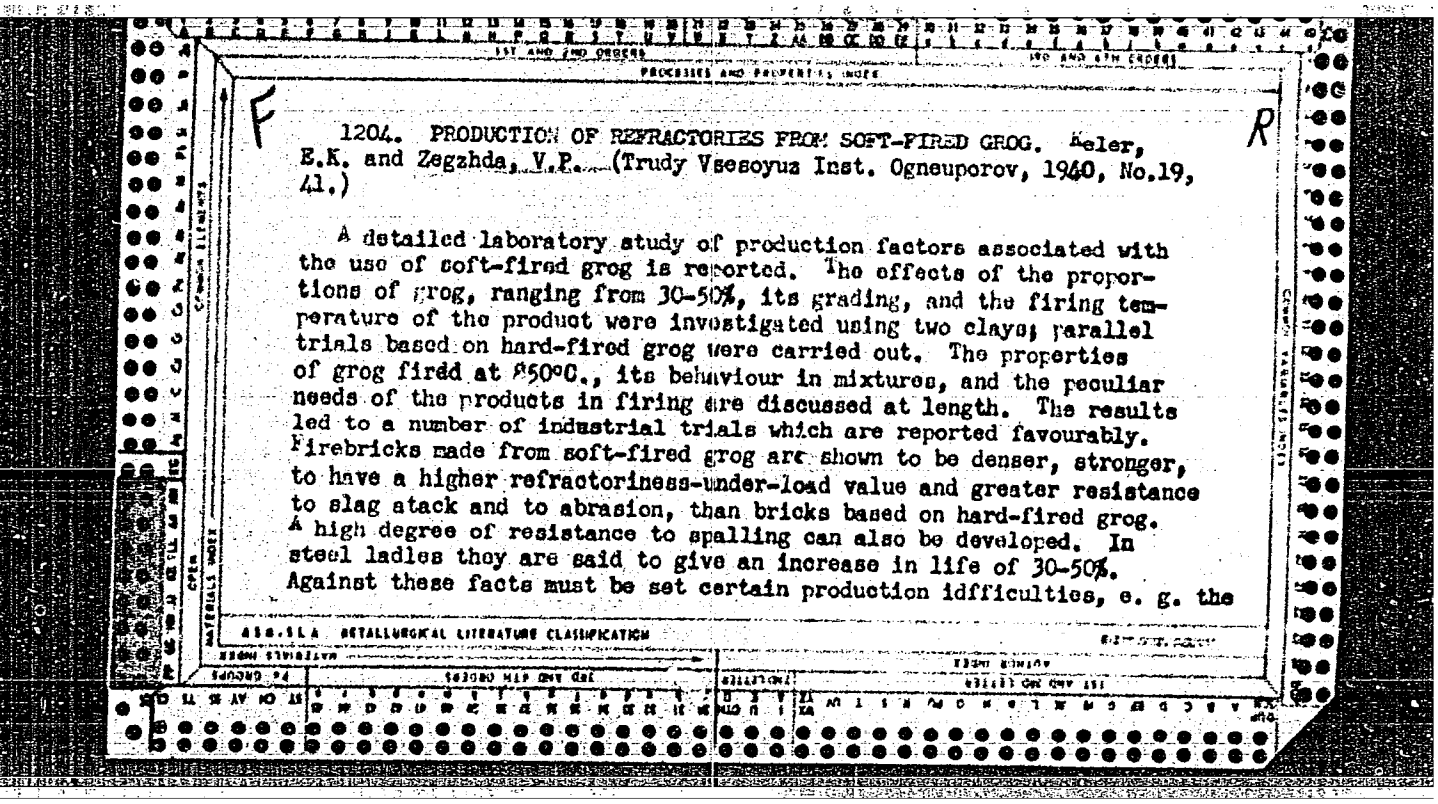
Edited

Pot mixes for melting plate glass. V. P. Zhuzhda. *Trudy Vsesoyuz. Inst. Ogneuporov*, No. 20, pp. 3-34 (1941). The composition of different pot mixes is analyzed, and directions for their manufacture are given. M.V.C.

A.C.S.

Refractories

Testing methods for the thermal stability and additional shrinkage of lightweight refractories. V. P. ZELIDA. *Ogneupory*, 1940, No. 8, pp. 171–78.—Methods developed by Z. at the Leningrad Institute for Refractories are described. M.V.C.



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1204. PRODUCTION OF REFRACTORIES FROM SOFT-FIRED GROG. Keler, E.K. and Zegzhda, V.P. (Trudy Vsesoyuz Inst. Ogneuporov, 1940, No.19, 41.)

R

A detailed laboratory study of production factors associated with the use of soft-fired grog is reported. The effects of the proportions of grog, ranging from 30-50%, its grading, and the firing temperature of the product were investigated using two clays; parallel trials based on hard-fired grog were carried out. The properties of grog fired at 850°C., its behaviour in mixtures, and the peculiar needs of the products in firing are discussed at length. The results led to a number of industrial trials which are reported favourably. Firebricks made from soft-fired grog are shown to be denser, stronger, to have a higher refractoriness-under-load value and greater resistance to slag atack and to abrasion, than bricks based on hard-fired grog. A high degree of resistance to spalling can also be developed. In steel ladles they are said to give an increase in life of 30-50%. Against these facts must be set certain production idfficulties, e. g. the

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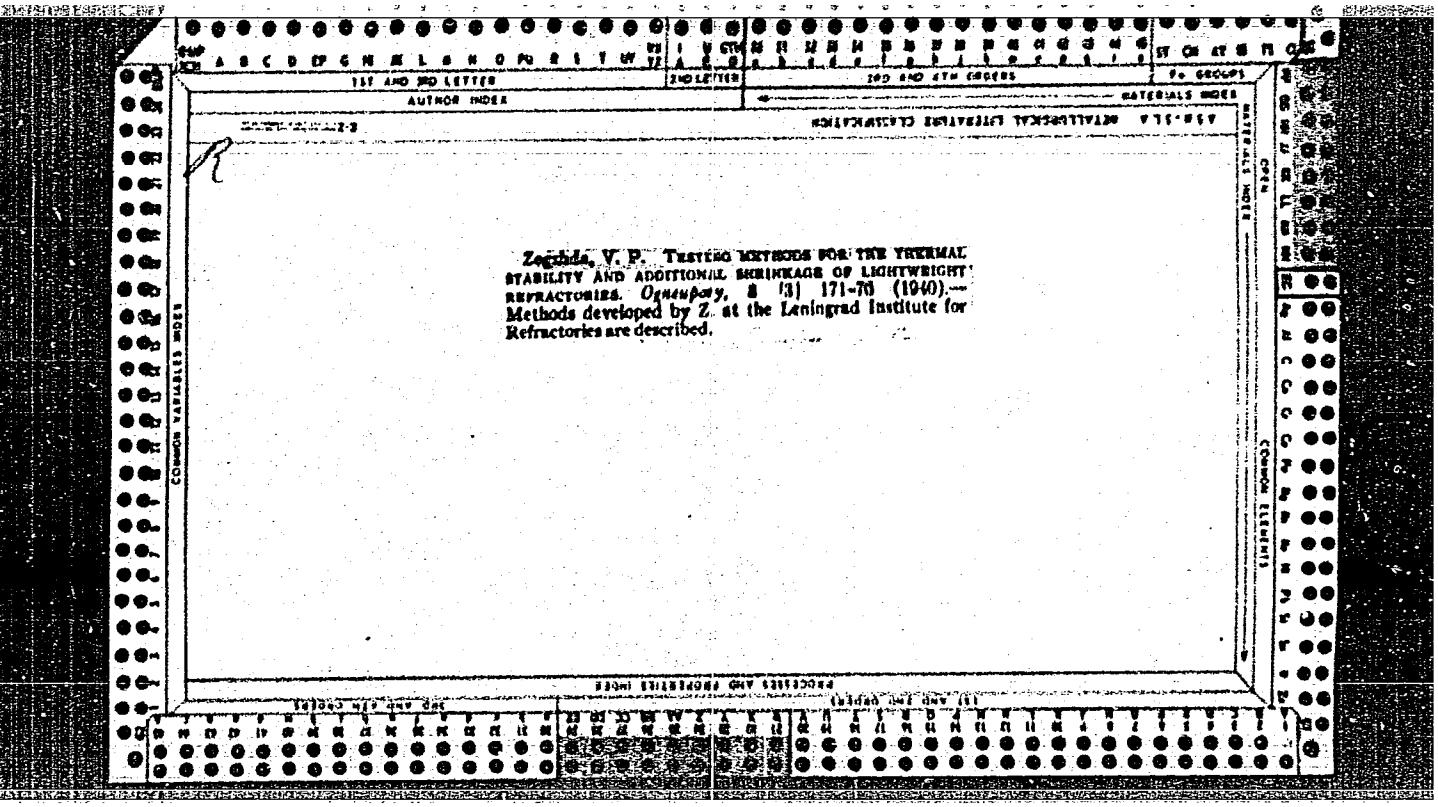
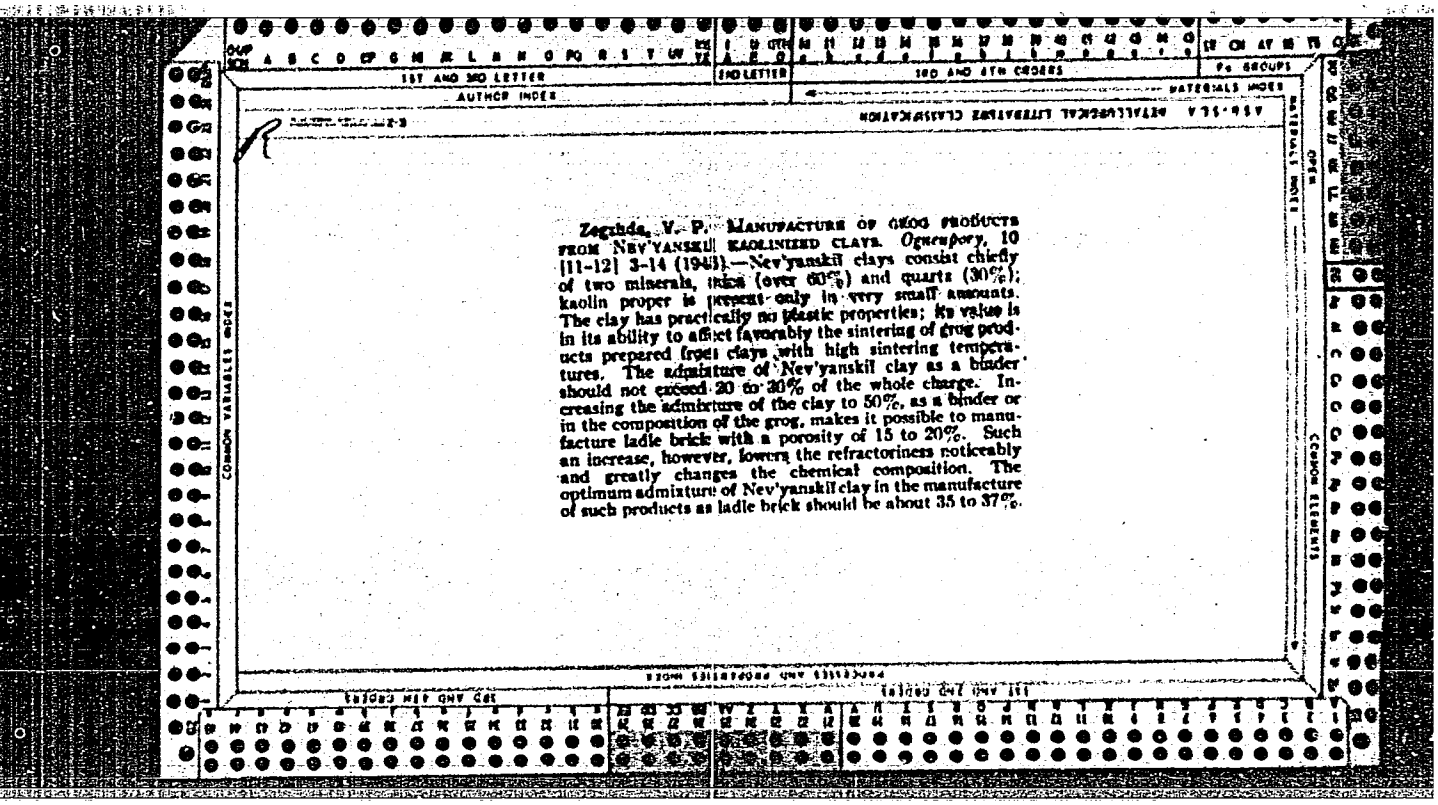
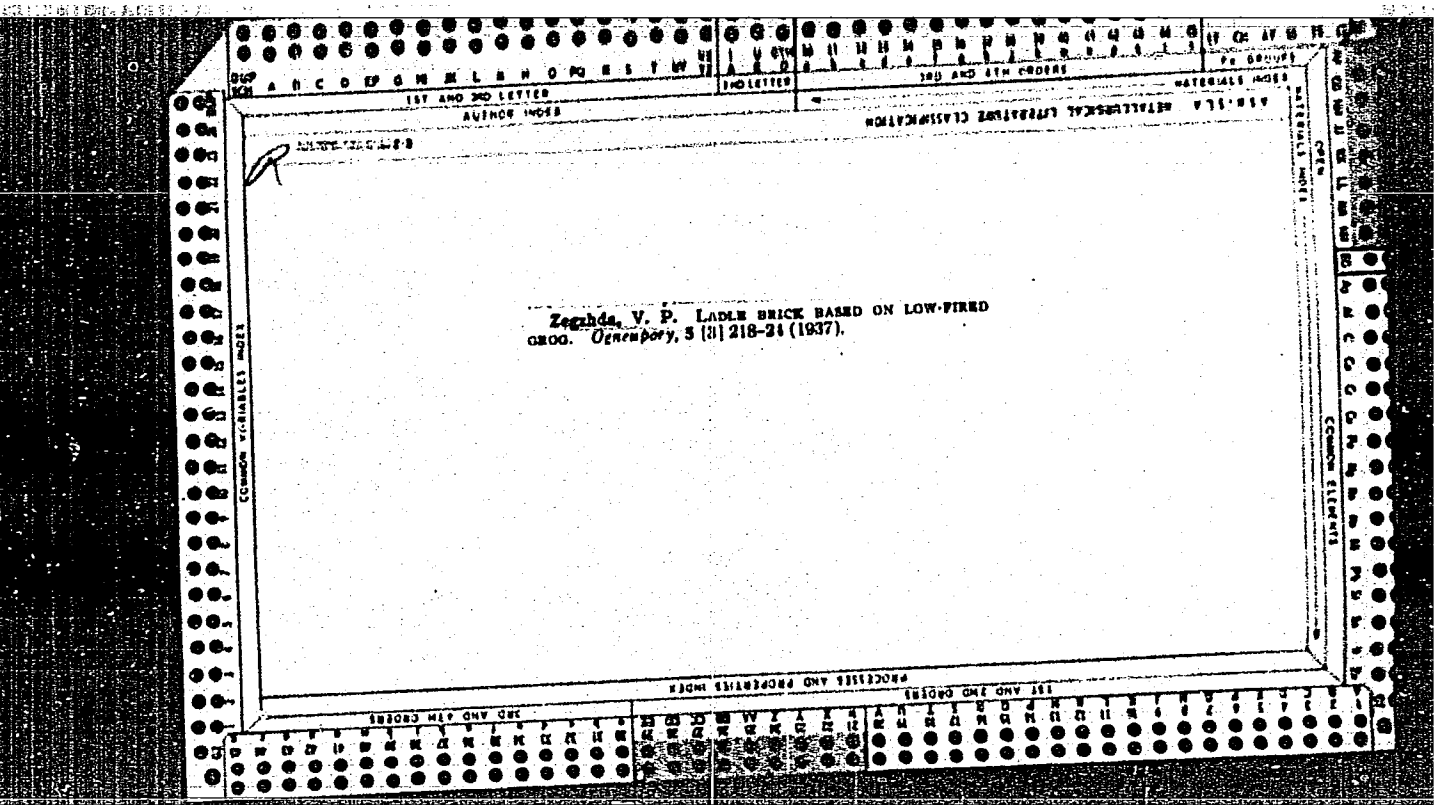
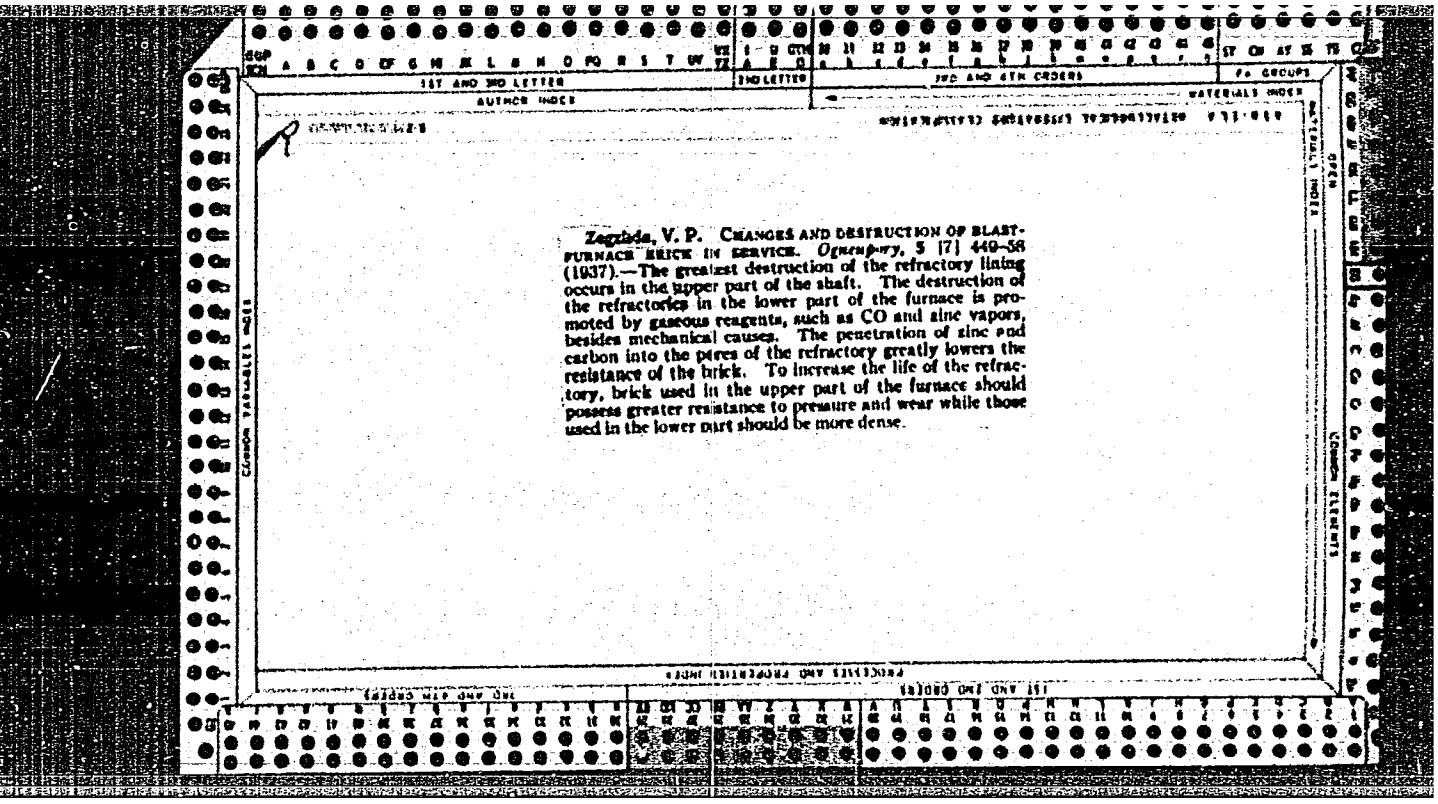


Zagrida, V. P. Testing methods for the thermal stability and additional shrinkage of lightweight refractories. *Ogneupory*, 8 [3] 171-76 (1940).— Methods developed by Z. at the Leningrad Institute for Refractories are described.

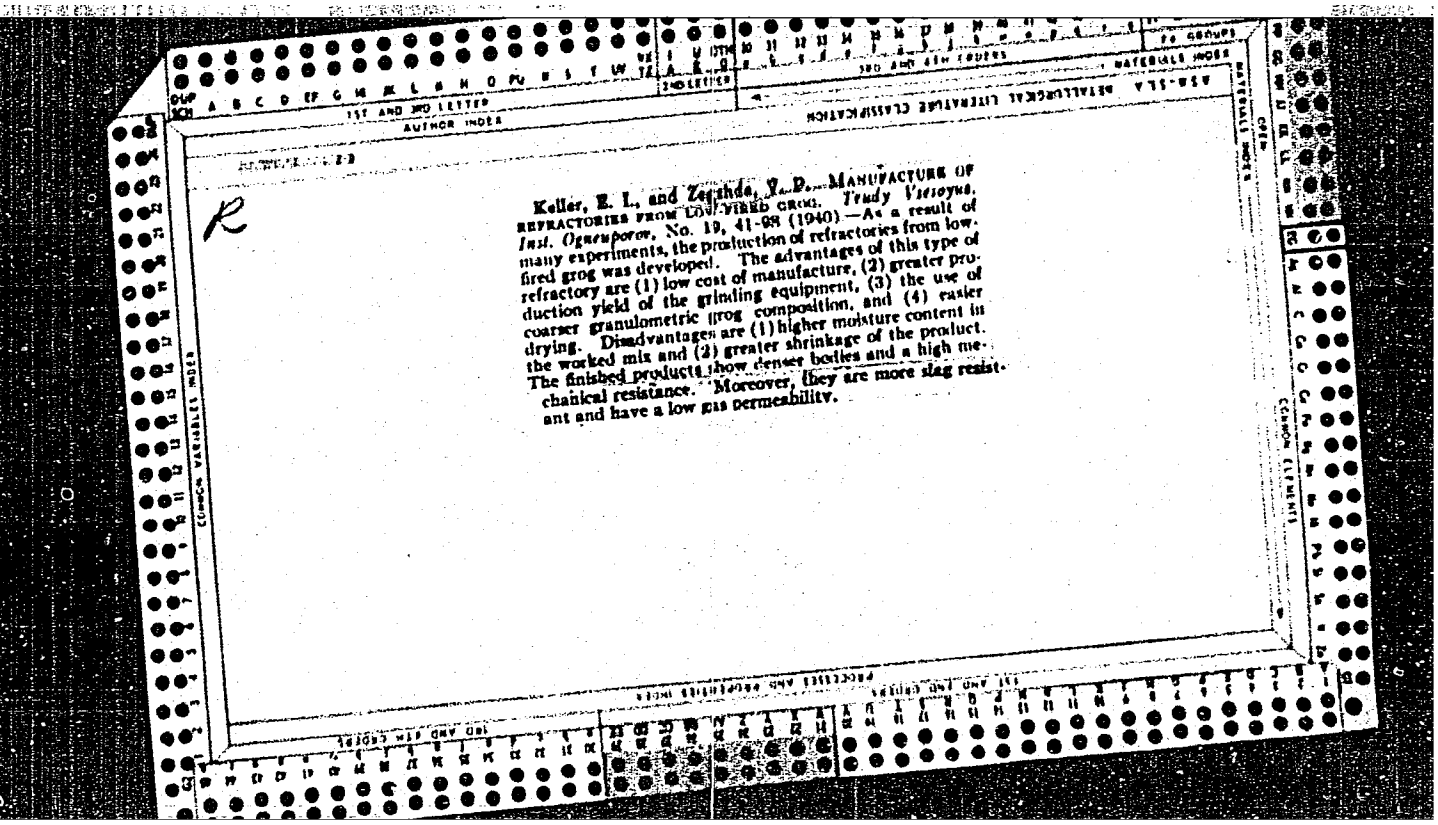


Zegzhda, V. P. MANUFACTURE OF GROG PRODUCTS FROM NEV'YANSKII KAOLINIZED CLAYS. *Ogneupory*, 10 [11-12] 3-14 (1945).—Nev'yanskii clays consist chiefly of two minerals, illite (over 60%) and quartz (30%); kaolin proper is present only in very small amounts. The clay has practically no plastic properties; its value is in its ability to affect favorably the sintering of grog products prepared from clays with high sintering temperatures. The admixture of Nev'yanskii clay as a binder should not exceed 20 to 30% of the whole charge. Increasing the admixture of the clay to 50%, as a binder or in the composition of the grog, makes it possible to manufacture ladle brick with a porosity of 15 to 20%. Such an increase, however, lowers the refractoriness noticeably and greatly changes the chemical composition. The optimum admixture of Nev'yanskii clay in the manufacture of such products as ladle brick should be about 35 to 37%.

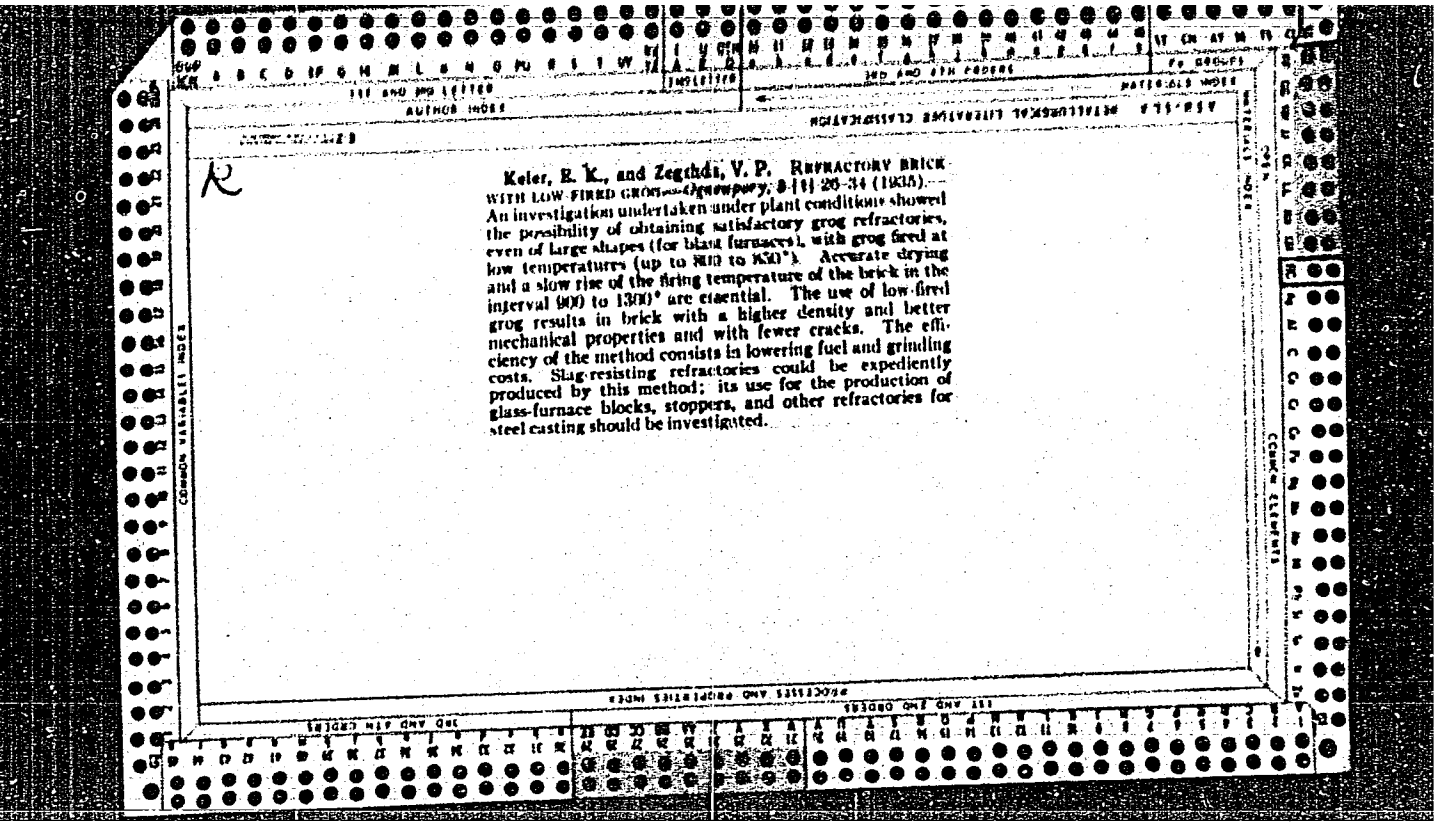




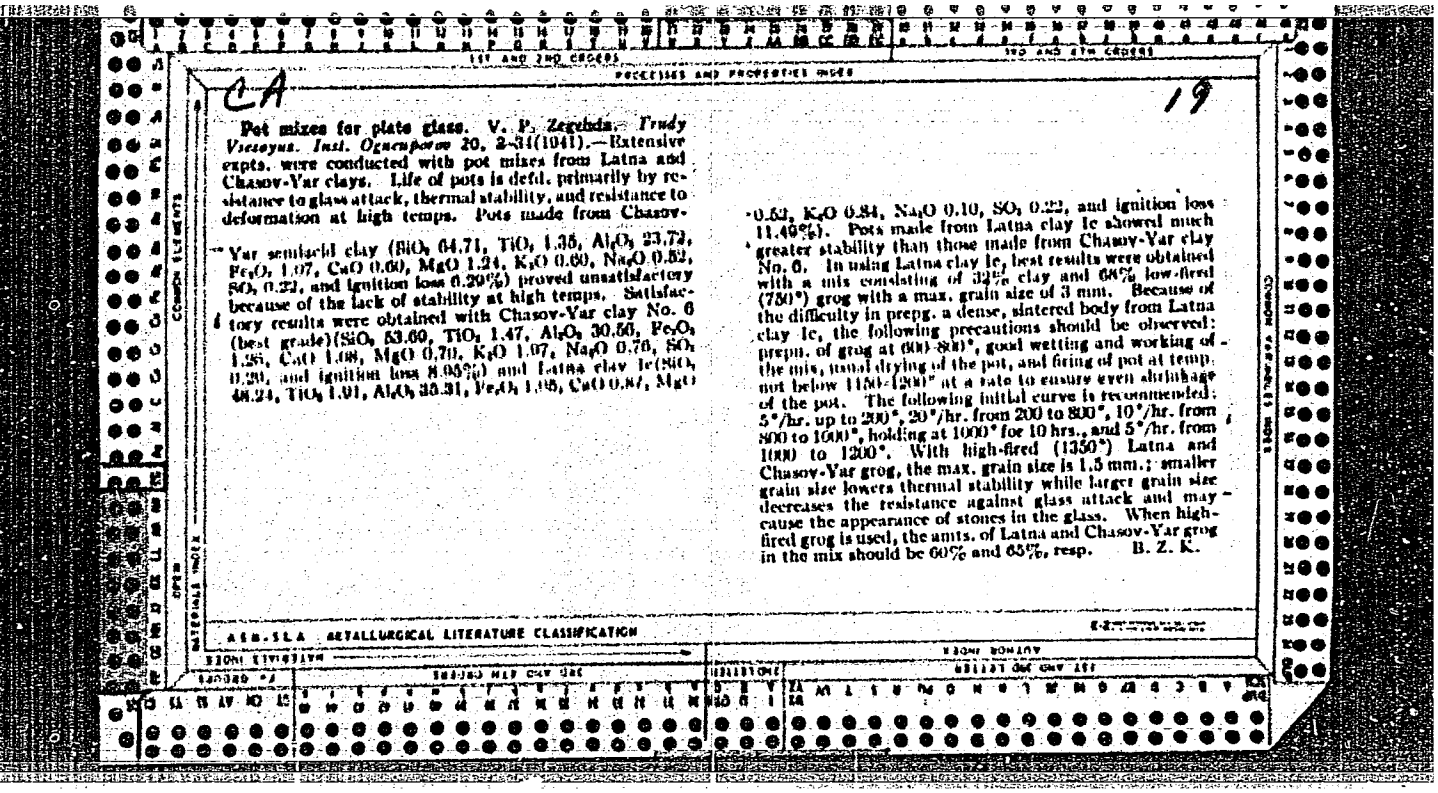
Zegzida, V. P. CHANGES AND DESTRUCTION OF BLAST-FURNACE BRICK IN SERVICE. *Ogneupory*, 5 [7] 449–58 (1937).—The greatest destruction of the refractory lining occurs in the upper part of the shaft. The destruction of the refractories in the lower part of the furnace is promoted by gaseous reagents, such as CO and zinc vapors, besides mechanical causes. The penetration of zinc and carbon into the pores of the refractory greatly lowers the resistance of the brick. To increase the life of the refractory, brick used in the upper part of the furnace should possess greater resistance to pressure and wear while those used in the lower part should be more dense.



Keller, E. L., and Zelinda, V. P. MANUFACTURE OF REFRACTORIES FROM LOW-YIELD GROG. *Trudy Vsesoyuz. Inst. Ogneuporov*, No. 19, 41-98 (1940).—As a result of many experiments, the production of refractories from low-fired grog was developed. The advantages of this type of refractory are (1) low cost of manufacture, (2) greater production yield of the grinding equipment, (3) the use of coarser granulometric grog composition, and (4) easier drying. Disadvantages are (1) higher moisture content in the worked mix and (2) greater shrinkage of the product. The finished products show denser bodies and a high mechanical resistance. Moreover, they are more slag resistant and have a low gas permeability.



Keler, E. K., and Zegzhda, V. P. REFRACTORY BRICK WITH LOW-FIRED GROG—*Ogneupory*, 3 [1] 26–34 (1935).—An investigation undertaken under plant conditions showed the possibility of obtaining satisfactory grog refractories, even of large shapes (for blast furnaces), with grog fired at low temperatures (up to 800 to 850°). Accurate drying and a slow rise of the firing temperature of the brick in the interval 900 to 1300° are essential. The use of low-fired grog results in brick with a higher density and better mechanical properties and with fewer cracks. The efficiency of the method consists in lowering fuel and grinding costs. Slag-resisting refractories could be expediently produced by this method; its use for the production of glass-furnace blocks, stoppers, and other refractories for steel casting should be investigated.



CA

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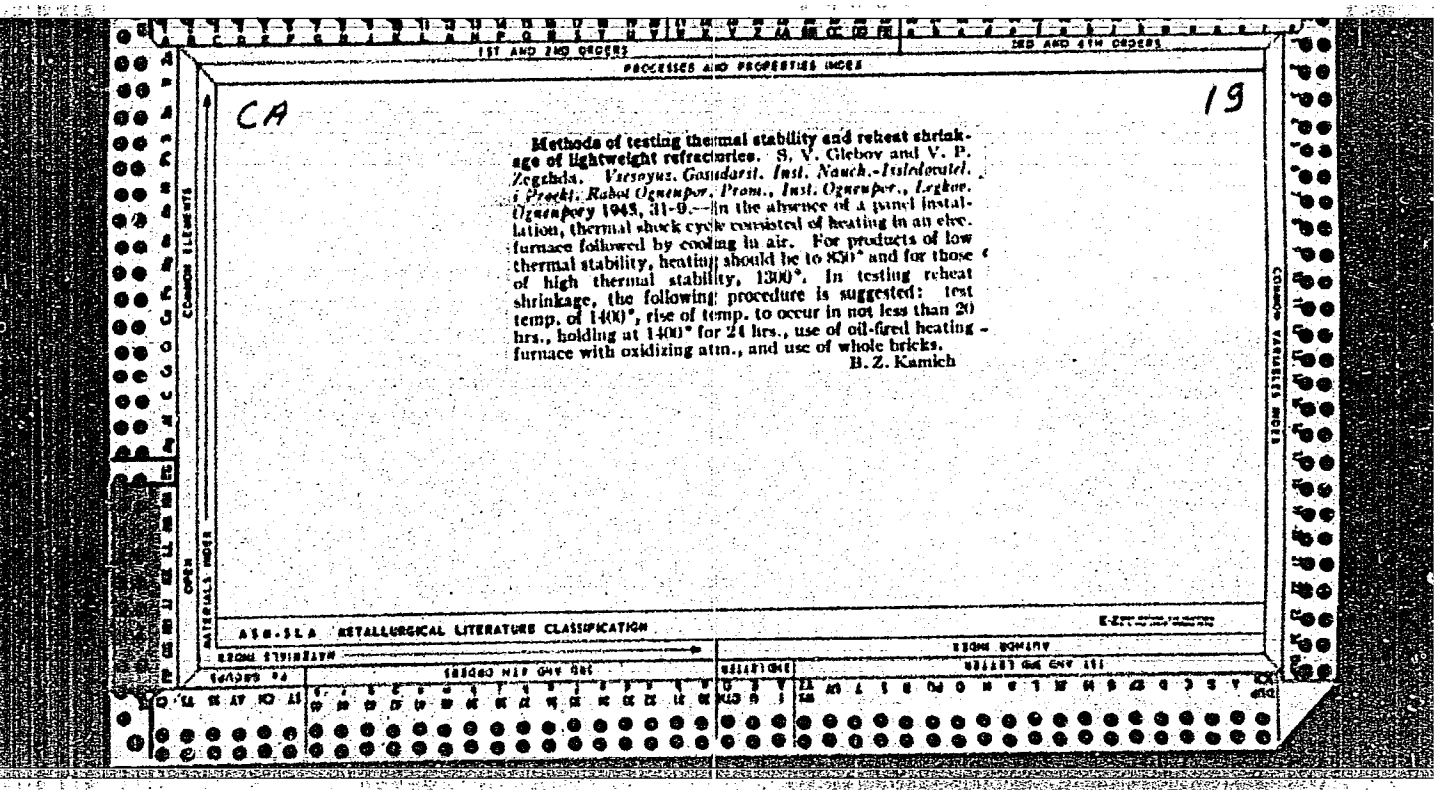
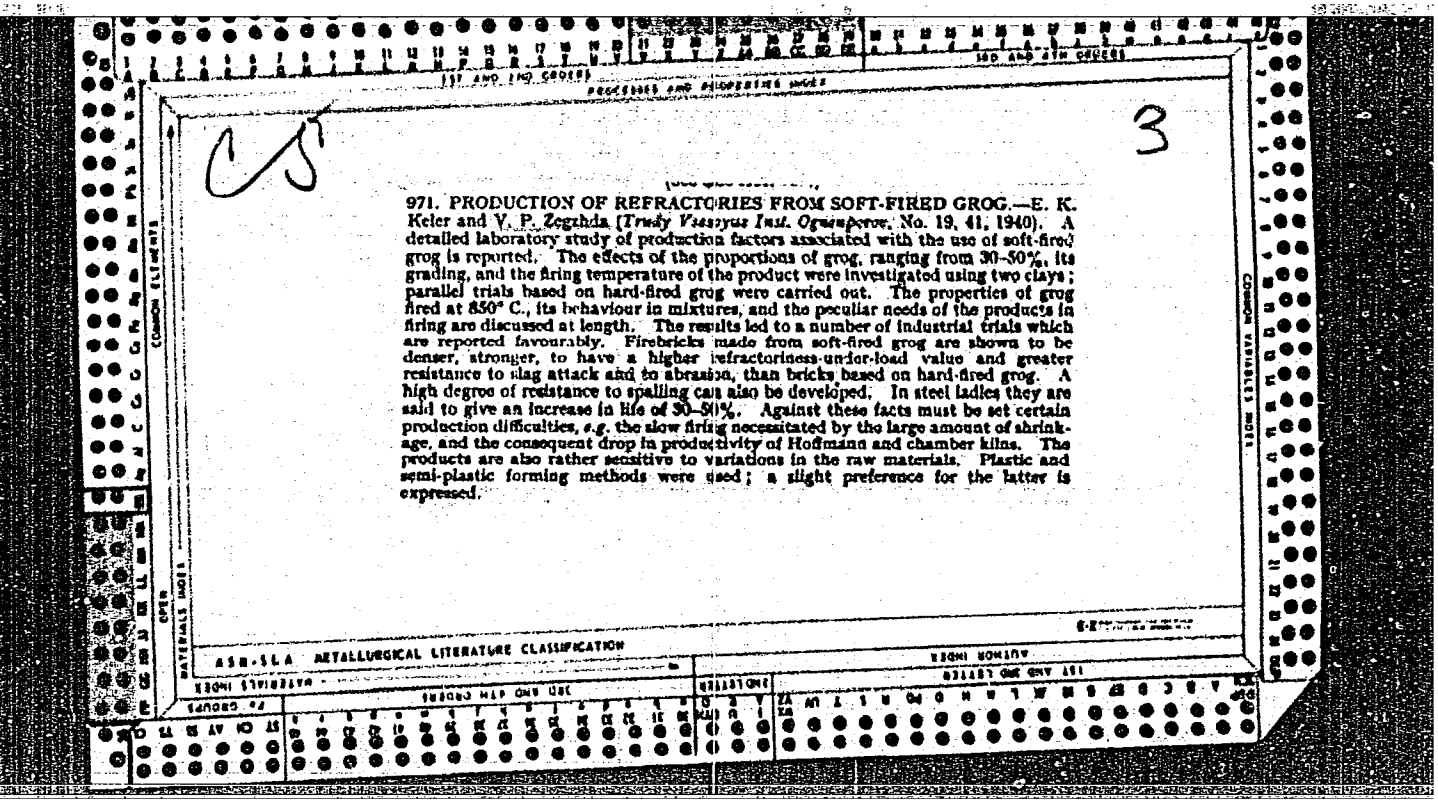
Pot mixes for plate glass. V. P. Zegelda. *Trudy Vsesoyuz. Inst. Ogneuporov* 20, 2-31(1941).—Extensive expts. were conducted with pot mixes from Latna and Chasov-Yar clays. Life of pots is detd. primarily by resistance to glass attack, thermal stability, and resistance to deformation at high temps. Pots made from Chasov-Yar semiacid clay (SiO_2 64.71, TiO_2 1.35, Al_2O_3 23.72, Fe_2O_3 1.07, CaO 0.60, MgO 1.24, K_2O 0.60, Na_2O 0.52, SO_3 0.22, and ignition loss 6.20%) proved unsatisfactory because of the lack of stability at high temps. Satisfactory results were obtained with Chasov-Yar clay No. 6 (best grade)(SiO_2 53.60, TiO_2 1.47, Al_2O_3 30.50, Fe_2O_3 1.26, CaO 1.08, MgO 0.70, K_2O 1.07, Na_2O 0.76, SO_3 0.20, and ignition loss 8.95%) and Latna clay Ic(SiO_2 48.24, TiO_2 1.01, Al_2O_3 33.31, Fe_2O_3 1.05, CaO 0.87, MgO 0.53, K_2O 0.84, Na_2O 0.10, SO_3 0.22, and ignition loss 11.49%). Pots made from Latna clay Ic showed much greater stability than those made from Chasov-Yar clay No. 6. In using Latna clay Ic, best results were obtained with a mix consisting of 32% clay and 68% low-fired (750°) grog with a max. grain size of 3 mm. Because of the difficulty in prepg. a dense, sintered body from Latna clay Ic, the following precautions should be observed: prepn. of grog at 600-800°; good wetting and working of the mix, uniform drying of the pot, and firing of pot at temp. not below 1150-1200° at a rate to ensure even shrinkage of the pot. The following initial curve is recommended: 5°/hr. up to 200°, 20°/hr. from 200 to 800°, 10°/hr. from 800 to 1000°, holding at 1000° for 10 hrs., and 5°/hr. from 1000 to 1200°. With high-fired (1350°) Latna and Chasov-Yar grog, the max. grain size is 1.5 mm.; smaller grain size lowers thermal stability while larger grain size decreases the resistance against glass attack and may cause the appearance of stones in the glass. When high-fired grog is used, the amts. of Latna and Chasov-Yar grog in the mix should be 60% and 65%, resp. B. Z. K.



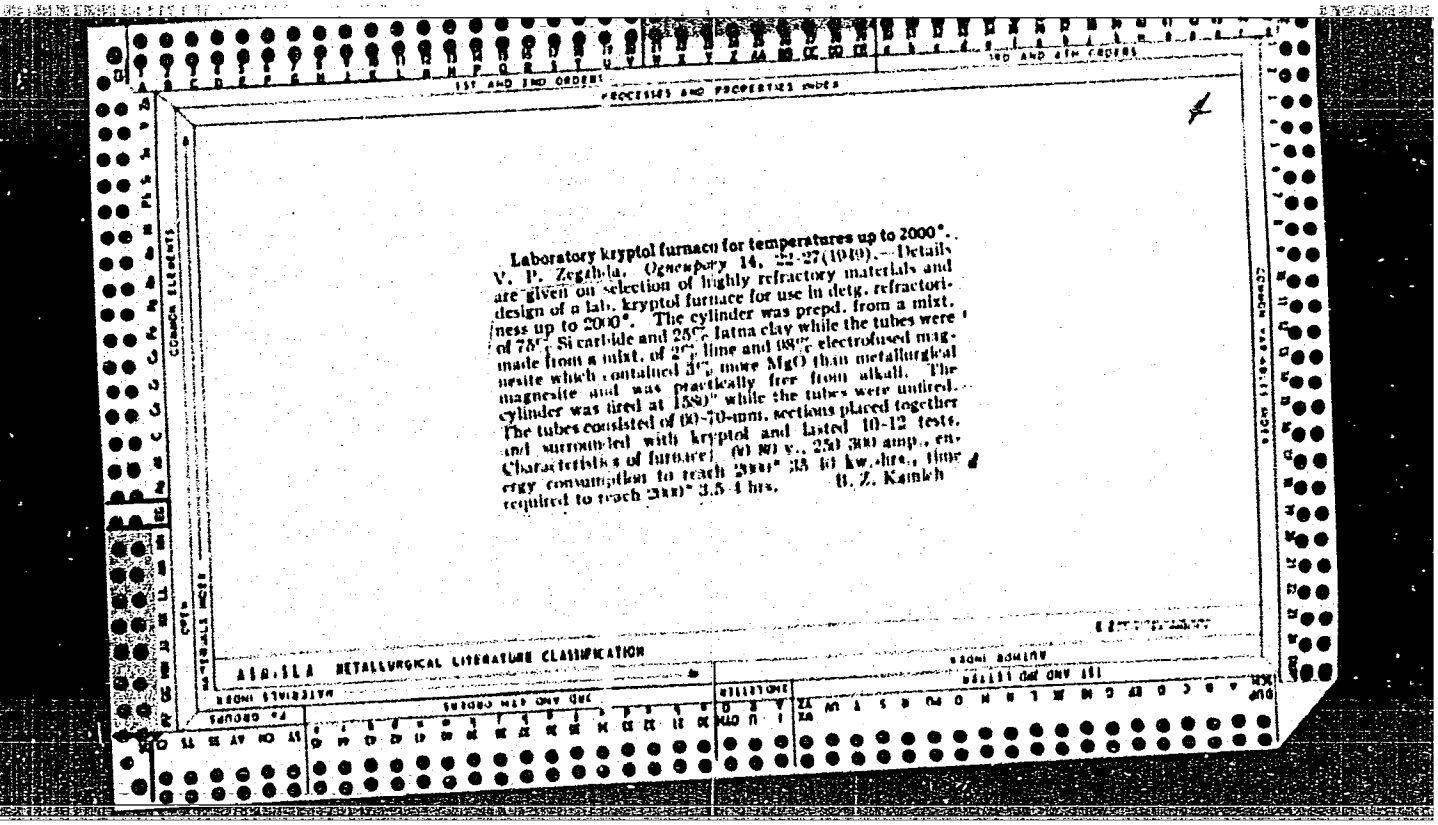
CA 19

Methods of testing thermal stability and reheat shrinkage of lightweight refractories. S. V. Glebov and V. P. Zegzhda. *Vsesoyuz. Gosudarst. Inst. Nauch.-Issledovatel. i Proekt. Rabot Ogneupor. Prom., Inst. Ogneupor., Leghne. Ogneupory* 1943, 31-9.—In the absence of a panel installation, thermal shock cycle consisted of heating in an elec. furnace followed by cooling in air. For products of low thermal stability, heating should be to 850° and for those of high thermal stability, 1300°. In testing reheat shrinkage, the following procedure is suggested: test temp. of 1400°, rise of temp. to occur in not less than 20 hrs., holding at 1400° for 24 hrs., use of oil-fired heating furnace with oxidizing atm., and use of whole bricks.

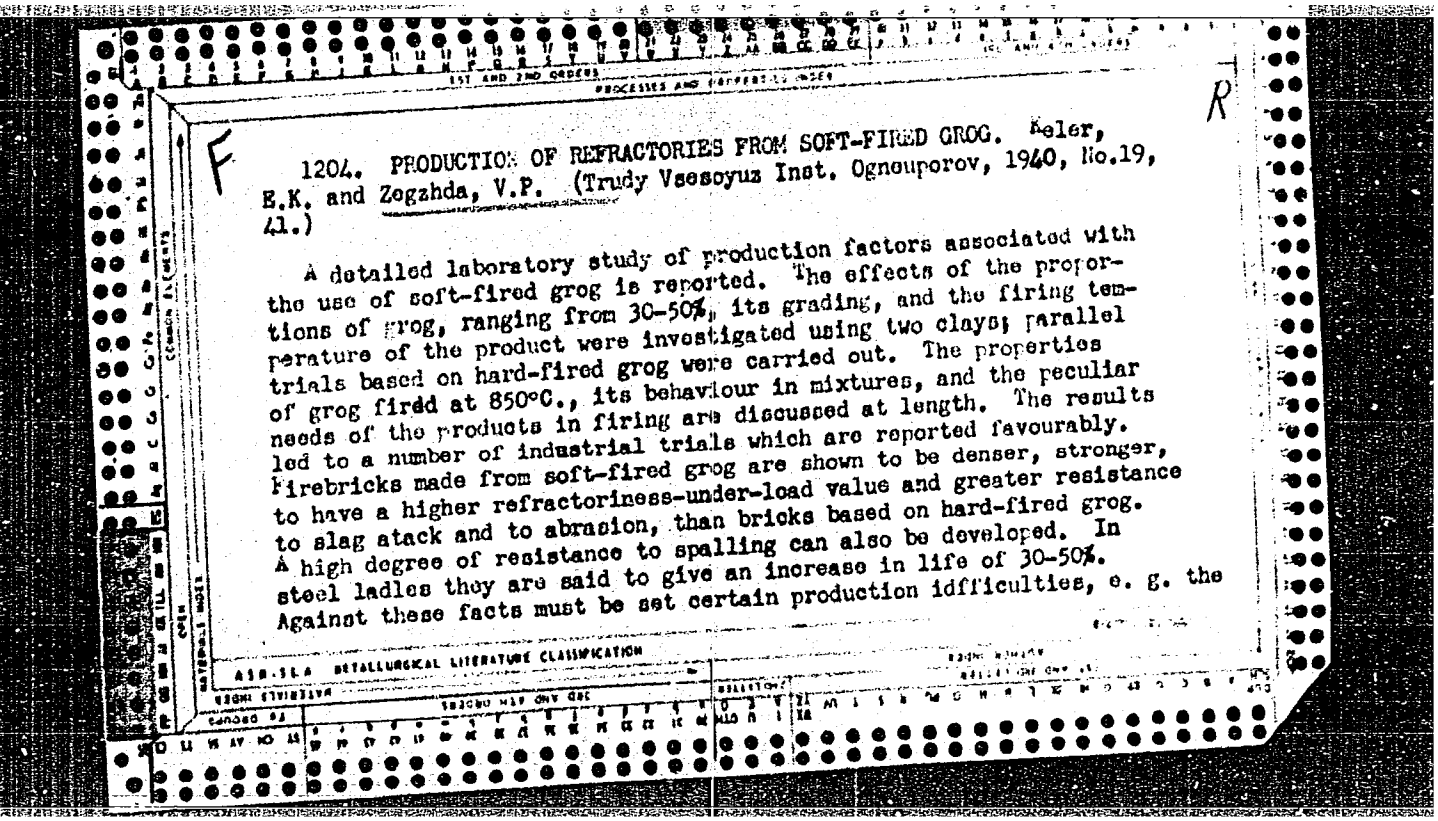
B. Z. Kamich



971. PRODUCTION OF REFRACTORIES FROM SOFT-FIRED GROG.—E. K. Keler and V. P. Zegzhda (*Trudy Vsesoyuz Inst. Ogneuporov*, No. 19, 41, 1940). A detailed laboratory study of production factors associated with the use of soft-fired grog is reported. The effects of the proportions of grog, ranging from 30–50%, its grading, and the firing temperature of the product were investigated using two clays; parallel trials based on hard-fired grog were carried out. The properties of grog fired at 850° C., its behaviour in mixtures, and the peculiar needs of the products in firing are discussed at length. The results led to a number of industrial trials which are reported favourably. Firebricks made from soft-fired grog are shown to be denser, stronger, to have a higher refractoriness-under-load value and greater resistance to slag attack and to abrasion, than bricks based on hard-fired grog. A high degree of resistance to spalling can also be developed. In steel ladles they are said to give an increase in life of 30–50%. Against these facts must be set certain production difficulties, *e.g.* the slow firing necessitated by the large amount of shrinkage, and the consequent drop in productivity of Hoffmann and chamber kilns. The products are also rather sensitive to variations in the raw materials. Plastic and semi-plastic forming methods were used; a slight preference for the latter is expressed.



Laboratory kryptol furnace for temperatures up to 2000°. V. P. Zegzhda. *Ogneupory* 14, 22-27(1949).—Details are given on selection of highly refractory materials and design of a lab. kryptol furnace for use in detg. refractoriness up to 2000°. The cylinder was prepd. from a mixt. of 75% Si carbide and 25% latna clay while the tubes were made from a mixt. of 2% lime and 98% electrofused magnesite which contained 3% more MgO than metallurgical magnesite and was practically free from alkali. The cylinder was fired at 1580° while the tubes were unfired. The tubes consisted of 60-70-mm. sections placed together and surrounded with kryptol and lasted 10-12 tests. Characteristics of furnace: (a) 80 v., 250 300 amp., energy consumption to reach 2000° 35 40 kw.-hrs., time required to reach 2000° 3.5-4 hrs. B. Z. Kamish



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R

1204. PRODUCTION OF REFRACTORIES FROM SOFT-FIRED GROG. Keler, E.K. and Zegzhda, V.P. (Trudy Vsesoyuz Inst. Ogneuporov, 1940, No.19, 41.)

A detailed laboratory study of production factors associated with the use of soft-fired grog is reported. The effects of the proportions of grog, ranging from 30-50%, its grading, and the firing temperature of the product were investigated using two clays; parallel trials based on hard-fired grog were carried out. The properties of grog fired at 850°C., its behaviour in mixtures, and the peculiar needs of the products in firing are discussed at length. The results led to a number of industrial trials which are reported favourably. Firebricks made from soft-fired grog are shown to be denser, stronger, to have a higher refractoriness-under-load value and greater resistance to slag atack and to abrasion, than bricks based on hard-fired grog. A high degree of resistance to spalling can also be developed. In steel ladles they are said to give an increase in life of 30-50%. Against these facts must be set certain production idfficulties, e. g. the

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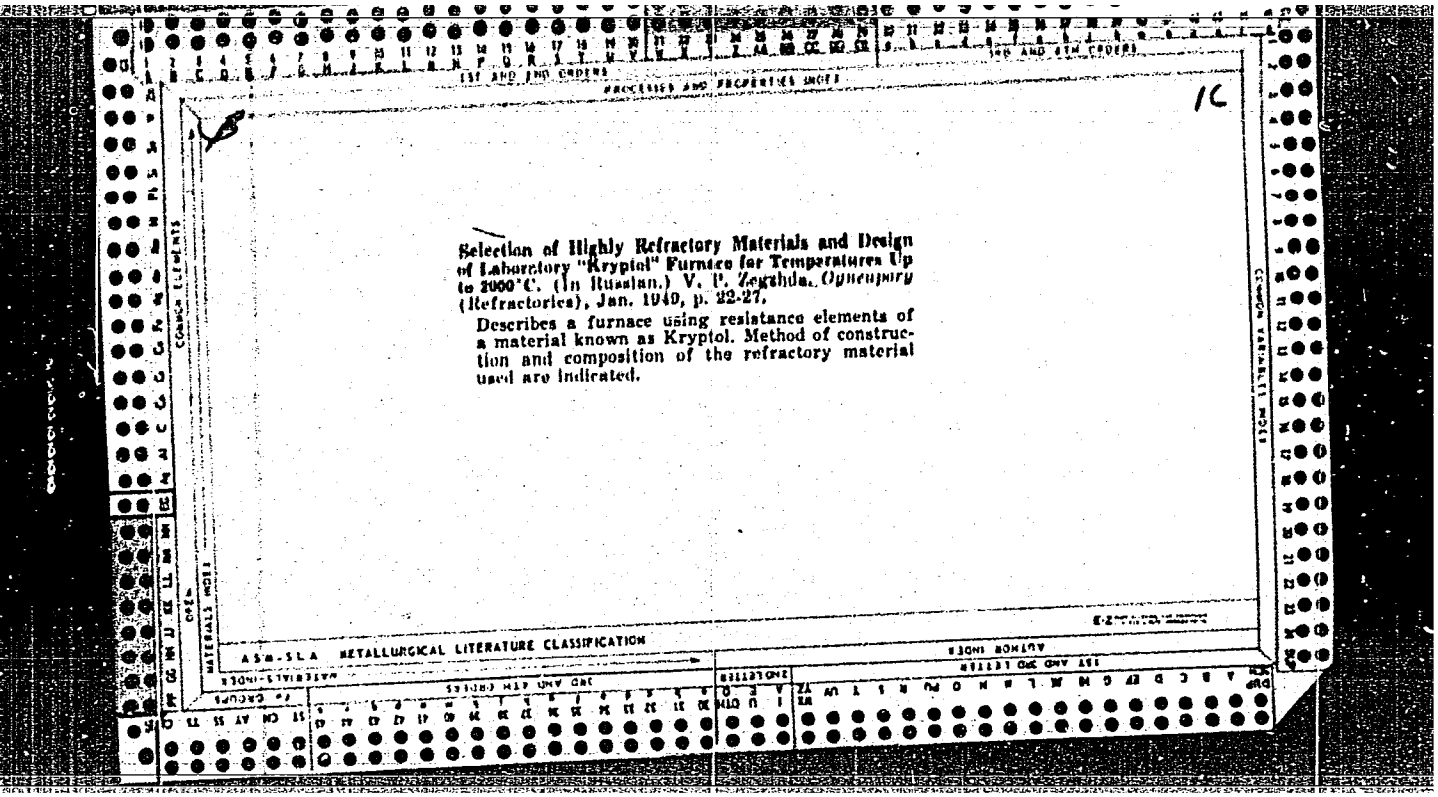
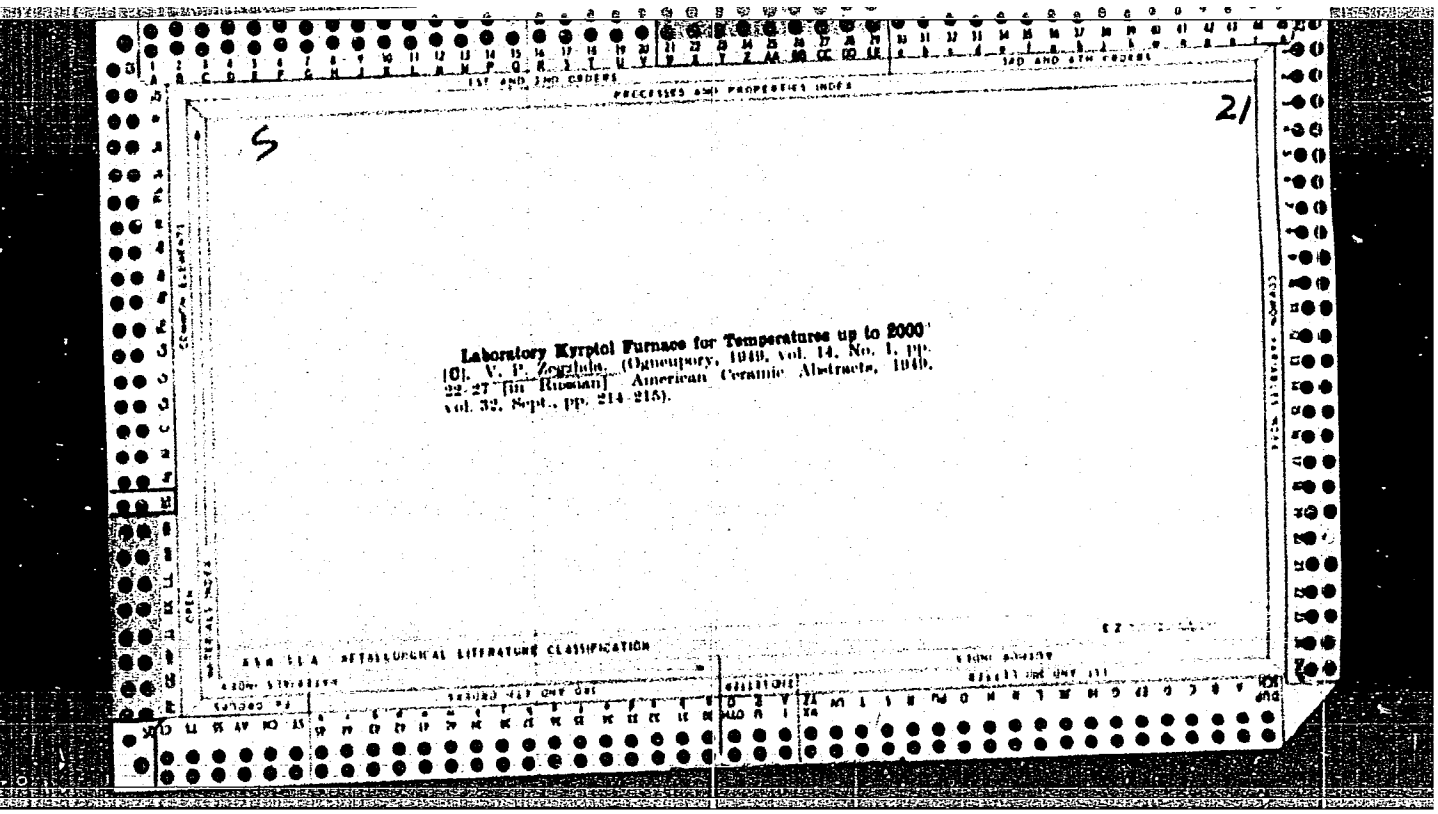
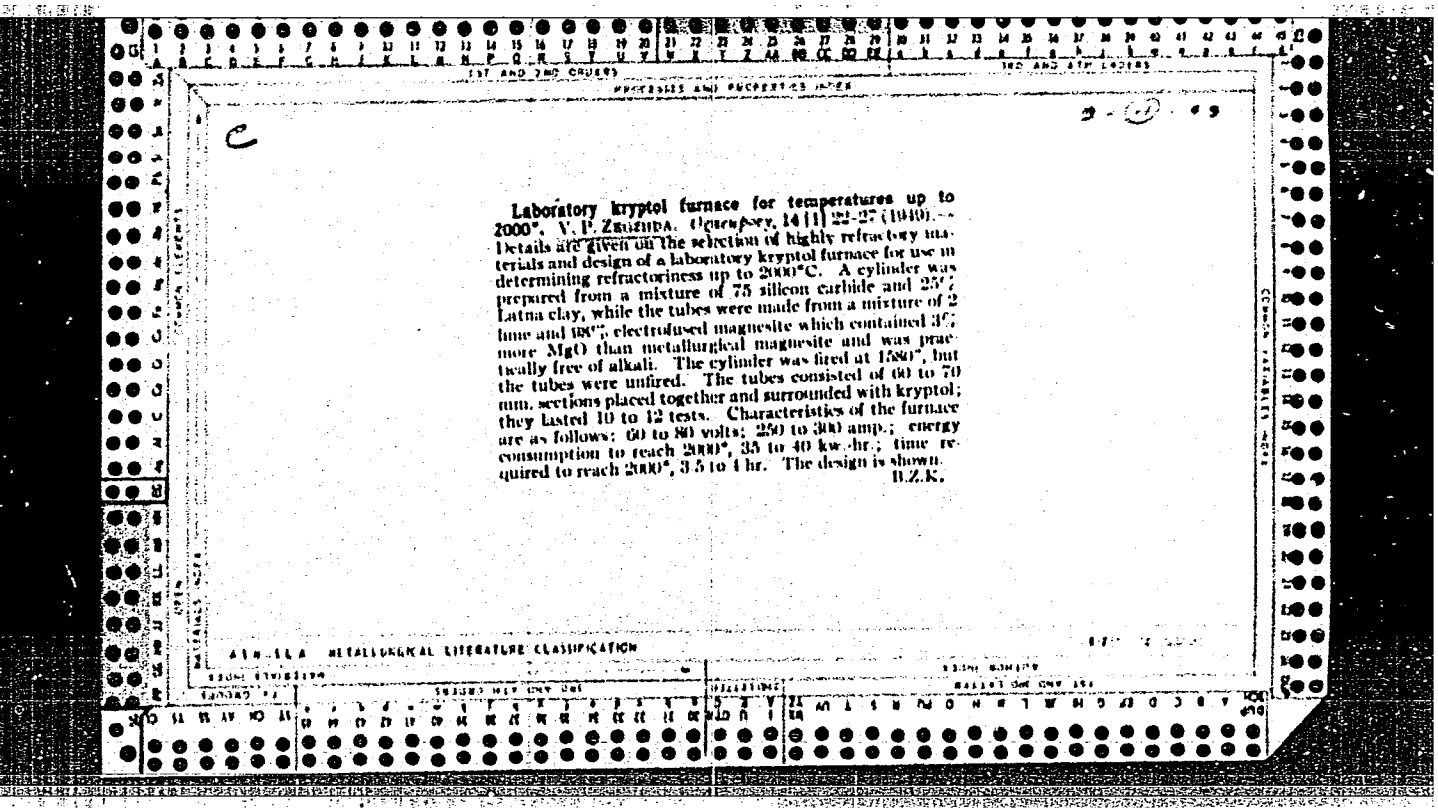


Selection of Highly Refractory Materials and Design of Laboratory "Kryptol" Furnace for Temperatures Up to 2000°C. (In Russian.) V. P. Zegzhda. *Ogneupory* (Refractories), Jan. 1949, p. 22-27.

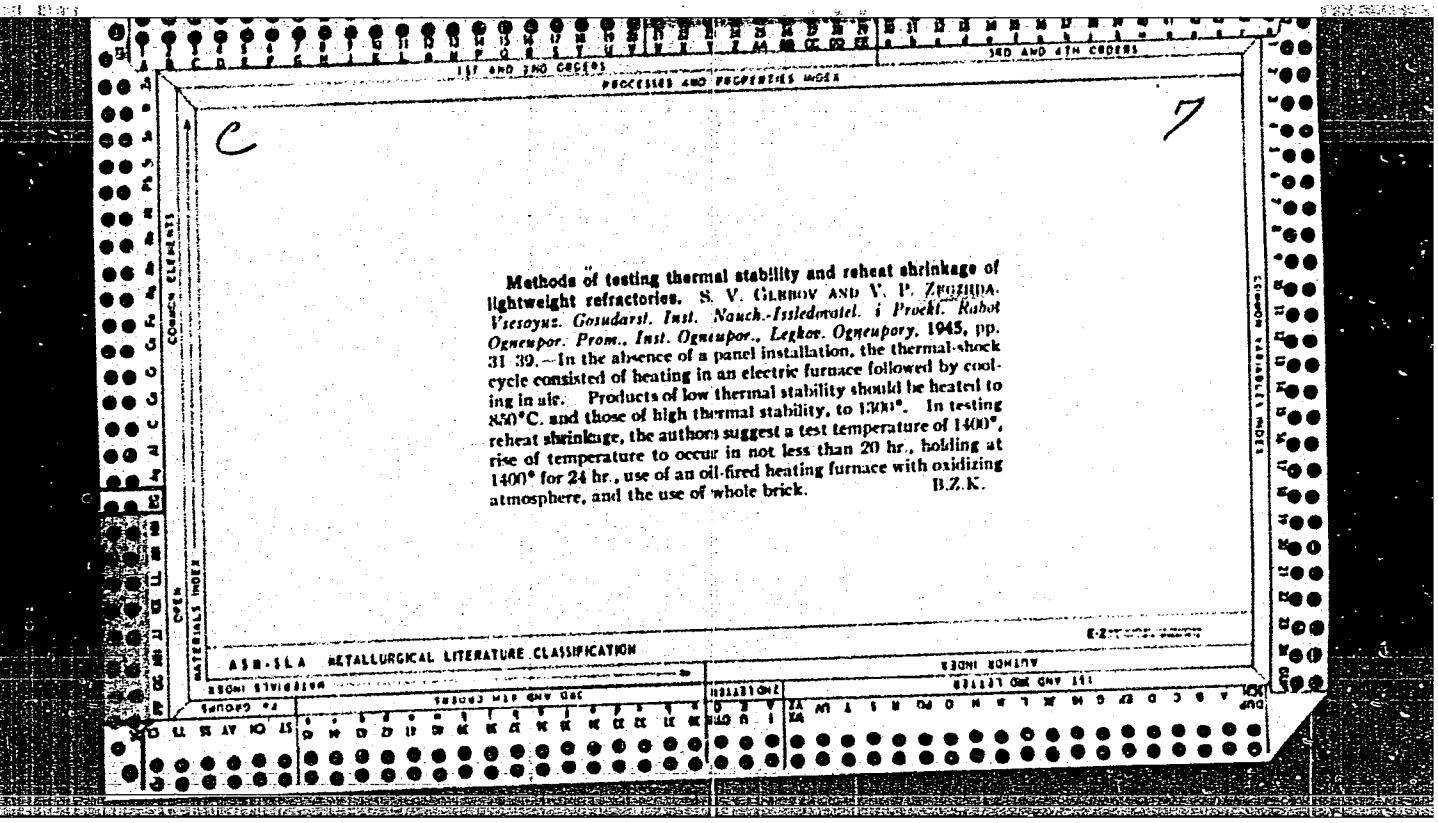
Describes a furnace using resistance elements of a material known as Kryptol. Method of construction and composition of the refractory material used are indicated.



Laboratory Kyrptol Furnace for Temperatures up to 2000°
[O. V. P. Zegzhda. (Ogneupory, 1948, vol. 14, No. 1, pp. 22-27 [in Russian] American Ceramic Abstracts, 1949, vol. 32, Sept., pp. 214-215).



Laboratory kryptol furnace for temperatures up to 2000°. V. P. ZHUZHUBA. Ogneupory, 14 [1] 22-27 (1949).—Details are given on the selection of highly refractory materials and design of a laboratory kryptol furnace for use in determining refractoriness up to 2000°C. A cylinder was prepared from a mixture of 75 silicon carbide and 25% Latna clay, while the tubes were made from a mixture of 2 lime and 98% electrofused magnesite which contained 3% more MgO than metallurgical magnesite and was practically free of alkali. The cylinder was fired at 1580°, but the tubes were unfired. The tubes consisted of 60 to 70 mm. sections placed together and surrounded with kryptol; they lasted 10 to 12 tests. Characteristics of the furnace are as follows: 60 to 80 volts; 250 to 300 amp.; energy consumption to reach 2000°, 35 to 40 kw.-hr.; time required to reach 2000°, 3.5 to 4 hr. The design is shown.
B.Z.K.

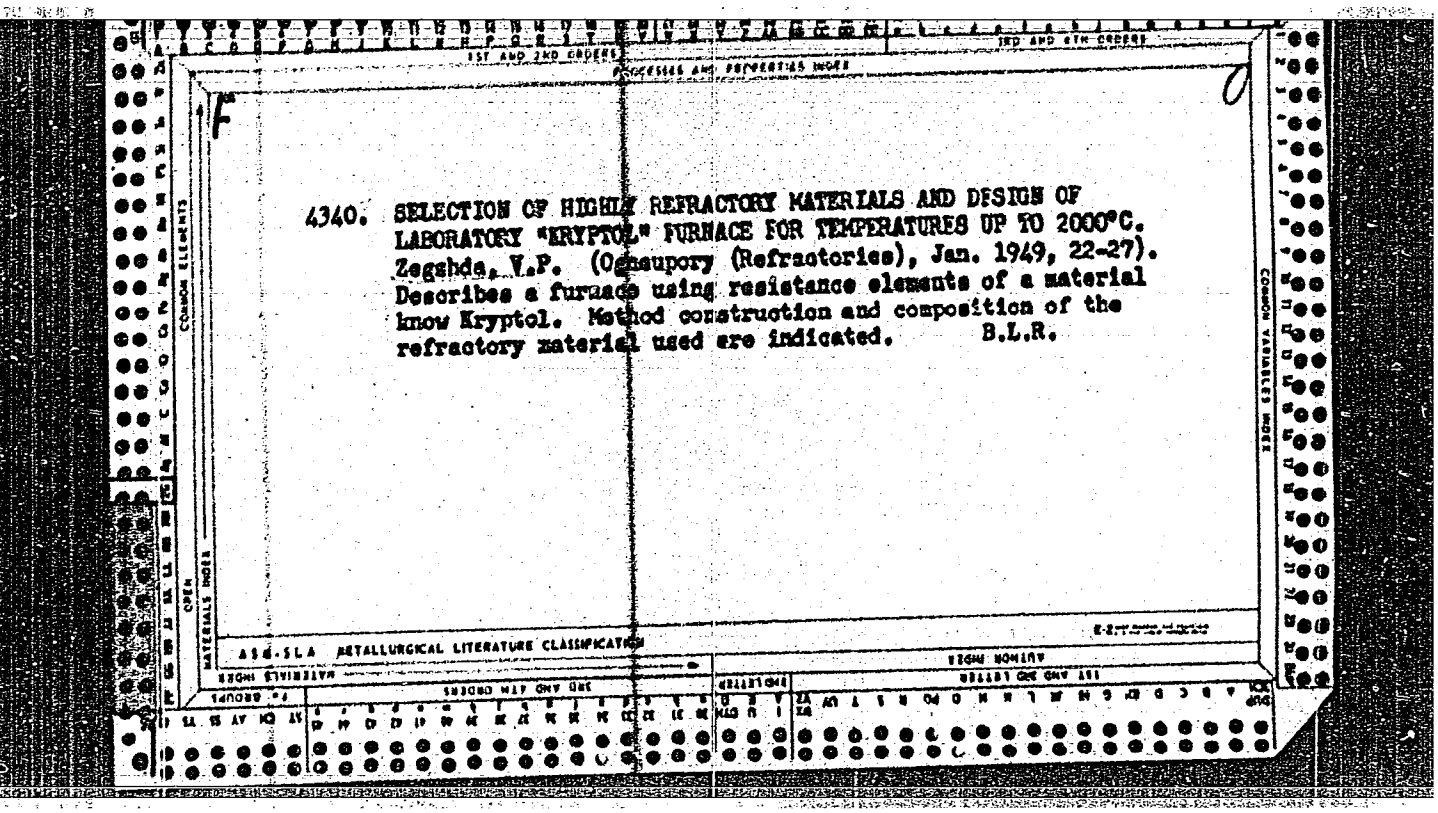


Methods of testing thermal stability and reheat shrinkage of lightweight refractories. S. V. GLEBOV AND V. P. ZHUZHIDA. *Vsesoyuz. Gosudarst. Inst. Nauch.-Issledovatel. i Proekt. Rabot Ogneupor. Prom., Inst. Ogneupor., Legkor. Ogneupory*, 1945, pp. 31–39.—In the absence of a panel installation, the thermal-shock cycle consisted of heating in an electric furnace followed by cooling in air. Products of low thermal stability should be heated to 850°C. and those of high thermal stability, to 1300°. In testing reheat shrinkage, the authors suggest a test temperature of 1400°, rise of temperature to occur in not less than 20 hr., holding at 1400° for 24 hr., use of an oil-fired heating furnace with oxidizing atmosphere, and the use of whole brick. B.Z.K.

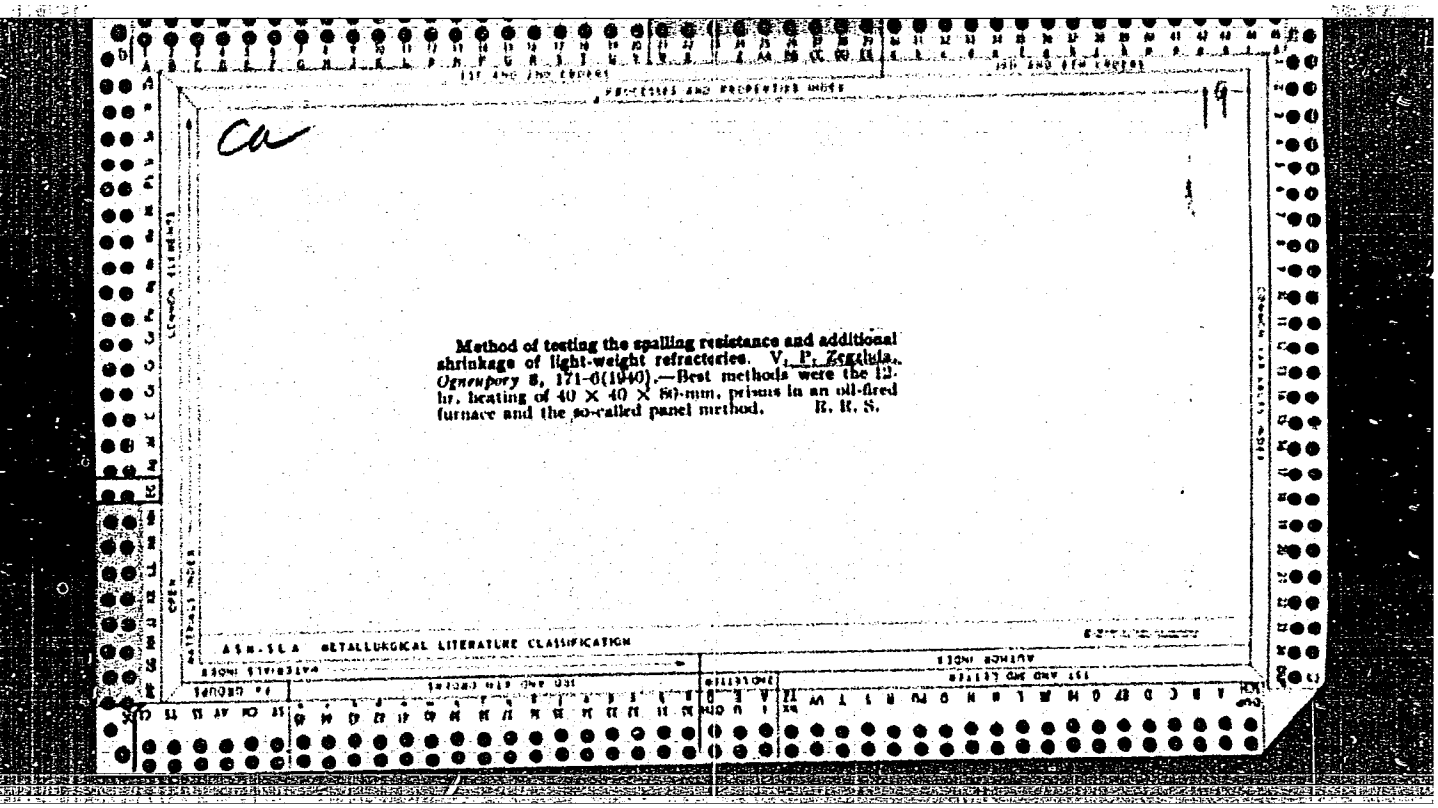
Br. Abs. BT-4, Glass, ceramics

Production of refractories from soft-fired grog. E. K. Keler and V. P. Zegzhda (*Trudy Vsesoyuz. Inst. Ogneuporov*, 1940, No. 19, 41; *Brit. Ceram. Abs.*, 1946, 173a).—The effects of the proportions of grog (30—50%), its grading, and the firing temp. of the product were studied using two clays; parallel trials based on hard-fired grog were made. The properties of grog fired at 850°, its behaviour in mixtures, and the peculiar needs of the products in firing are discussed. Firebricks made from soft-fired grog are denser, stronger, and have a higher refractoriness-under-load val. and greater resistance to slag attack and to abrasion than those made from hard-fired grog. A high degree of resistance to spalling can be developed. In steel ladles they give an increased life of 30—50%. These advantages are offset by production difficulties, *e.g.*, slow firing necessitated by the large amount of shrinkage and the consequent drop in productivity of Hoffmann and chamber kilns. The products are also sensitive to variations in the raw materials. Plastic and semi-plastic forming methods were used; the latter is slightly preferable.

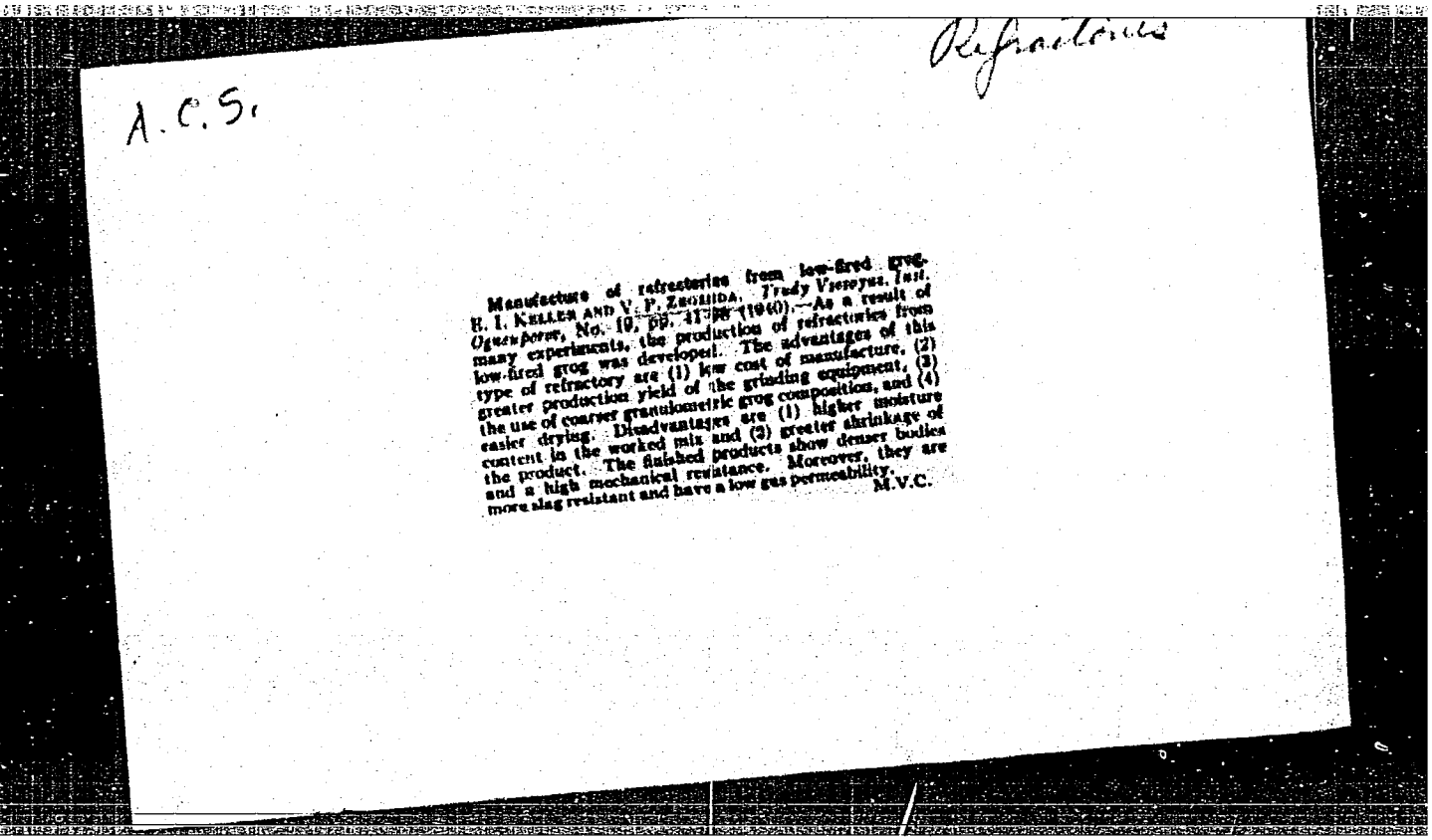
R. B. CLARKE.



4340. SELECTION OF HIGHLY REFRACTORY MATERIALS AND DESIGN OF LABORATORY "KRYPTOL" FURNACE FOR TEMPERATURES UP TO 2000°C. Zegzhda, V.P. (Ogneupory (Refractories), Jan. 1949, 22-27). Describes a furnace using resistance elements of a material know Kryptol. Method construction and composition of the refractory material used are indicated. B.L.R.



Method of testing the spalling resistance and additional shrinkage of light-weight refractories. V. P. Zgrzhula. *Ogneupory* 8, 171-6(1940).—Best methods were the 12-hr. heating of 40 × 40 × 80-mm. prisms in an oil-fired furnace and the so-called panel method. R. R. S.



A.C.S.

Refractories

Manufacture of refractories from low-fired grog. R. I. KELLER AND V. P. ZHOLUDA. *Trudy Vsesoyuz. Inst. Ogneuporov*, No. 10, pp. 41-58 (1940).—As a result of many experiments, the production of refractories from low-fired grog was developed. The advantages of this type of refractory are (1) low cost of manufacture, (2) greater production yield of the grinding equipment, (3) the use of coarser granulometric grog composition, and (4) easier drying. Disadvantages are (1) higher moisture content in the worked mix and (2) greater shrinkage of the product. The finished products show denser bodies and a high mechanical resistance. Moreover, they are more slag resistant and have a low gas permeability. M.V.C.

MARANTS, A.G.; ZEGZHDA, V.P.; TIKHONOVA, L.A.; SOKOLOV, V.I.; RYBNIKOV, V.A. [deceased]; DEREVYANCHENKO, L.D.; KARKLIT, A.K.; AKSEL'RAD, E.A.; SARMIN, A.P.; FEL'DGANDLER, G.G., red.; MAKSIMOV, Ye.I., red. izd-va KARASEV, A.E., tekhn. red.

[Handbook of refractory materials, products, and raw materials; compiled accoridng to state standards and technical specifications] Spravochnik na ogneupornye izdeliia, materialy i syr'e. Sostavlen po gosudarstvennym standartam i tekhnicheskim usloviiam. Izd.2., ispr. i dop. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 338 p. (MIRA 14:9)

1. Sotrudniki Vsesoyuznogo instituta ogneuporov (for all except Fel'dgandler, Maksimov, Karasev).
(Refractory materials--Standards)

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AUTHORS: Gordeyev, N. P., Zegzhda, V. P., Konarev, M. U., Shalkov, K. A., Konovalov, Ya. A.

TITLE: Experience in the use of graphite containing refractory materials for pumping over liquid metals by the electromagnetic method

PERIODICAL: Ogneupory, no. 6, 1961, 292

TEXT: This article deals with the problem of the transportation of liquid metals by means of electromagnetic pumps, for the solution of which high-quality refractory materials are necessary. The high thermal and slag stability, non-wettability by metals and other properties of graphite containing refractory materials led to the assumption that they are suitable for this purpose. The testing of graphite containing refractory materials in steel discharge shutes, made according to the method of the VIO, Vsesoyuznyy institut ogneuporov (All-Union Institute of Refractory Materials) jointly with the Borovichskiy kombinat ogneuporov (Borovichi Combine of Refractory Materials) showed positive results: the

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Experience in the use of graphite ...

graphite containing chamotte products were highly resistant against washing out by the stream of liquid metal, and warranted an increase of the stability of the discharge-shute lining by four to ten times. The All-Union Institute of Refractory Materials, jointly with the avtozavod im. Likhacheva (Automobile Plant imeni Likhachev) experimentally produced a graphite containing chamotte lining for an electromagnetic shute for pumping over liquid crude iron, as well as an electromagnetic measuring hopper in an iron foundry. After three tests of pumping over liquid crude iron, the 6 m long shute lining did not show any signs of washing out or destruction. The development of the induction method for pumping over liquid crude iron will necessitate the establishment of a special department for the manufacture of graphite containing refractory materials. There is 1 figure.

ASSOCIATION: Vsesoyuznyy institut ogneuporov (All-Union Institute of Refractory Materials) N. P. Gordeyev, V. P. Zegzhda; Borovichskiy kombinat ogneuporov (Borovichi Combine of Refractory Materials) M. U. Konarev, K. A. Shalkov, Ya. A. Konovalov

PHASE I BOOK EXPLOITATION SOV/5865

Zegzhda, V. P., L. A. Tikhonova, V. I. Sokolov, A. G. Marants, V. A. Rybnikov [deceased], L. D. Derevyanchenko, A. K. Karklit, E. A. Aksel'rad, and A. P. Sarmin

Spravochnik na ogneupornyye izdeliya, materialy i syr'ye. Sostavlen po gosudarstvennym standartam i tekhnicheskim usloviyam (Handbook of Refractory Products, Materials and Raw Materials. Compiled According to State Standards and Technical Specifications) 2d ed. rev. and enl. Moscow, Metallurgizdat, 1961. 338 p. Errata slip inserted. 12,500 copies printed.

Supervisor: A. G. Marants; Ed.: G. G. Fel'dgandler; Ed. of Publishing House: Ye. I. Maksimov; Tech. Ed.: A. I. Karasev.

PURPOSE: This manual is intended for technical personnel working in ferrous and nonferrous industries and in other branches of industry and construction, for planners, designers, and personnel of technical supply administrations,

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and for specialists in refractory manufacture and application.

COVERAGE: The manual deals with State standards and technical specifications for refractory wares, materials, and stock used in the construction and repair of furnaces used for smelting, heating, calcination, and distillation, and of fire chambers for boilers and dryers. The specifications also cover other thermal units used for processing under high thermal conditions, but do not include all refractory materials since approximately 10% of them have never been standardized. This edition has been enlarged by the inclusion of data on cast refractories and carbonaceous wares, as well as additional data on refractory stock, magnesite wares, forsterite wares, and metallurgical filler powders. The lists included in the manual contain State standards and specifications approved as late as Mar 1960. No personalities are mentioned. There are no references.

UZA, G., dr.; BUTNARU, M., dr.; MANASIA, M., dr.; ZEHAN, M., chim.

Considerations on the use of the artificial kidney (based on 100 cases of hemodialysis). Med. intern. 14 no.9:1131-1140 S '62.

1. Lucrare efectuata in Clinica I medicala, Cluj (director: acad. A.Moga).
(KIDNEY, ARTIFICIAL) (ACUTE RENAL FAILURE) (NEPHRITIS)
(TUBERCULOSIS, RENAL) (BARBITURATE TOXICOLOGY) (PREGNANCY COMPLICATIONS)