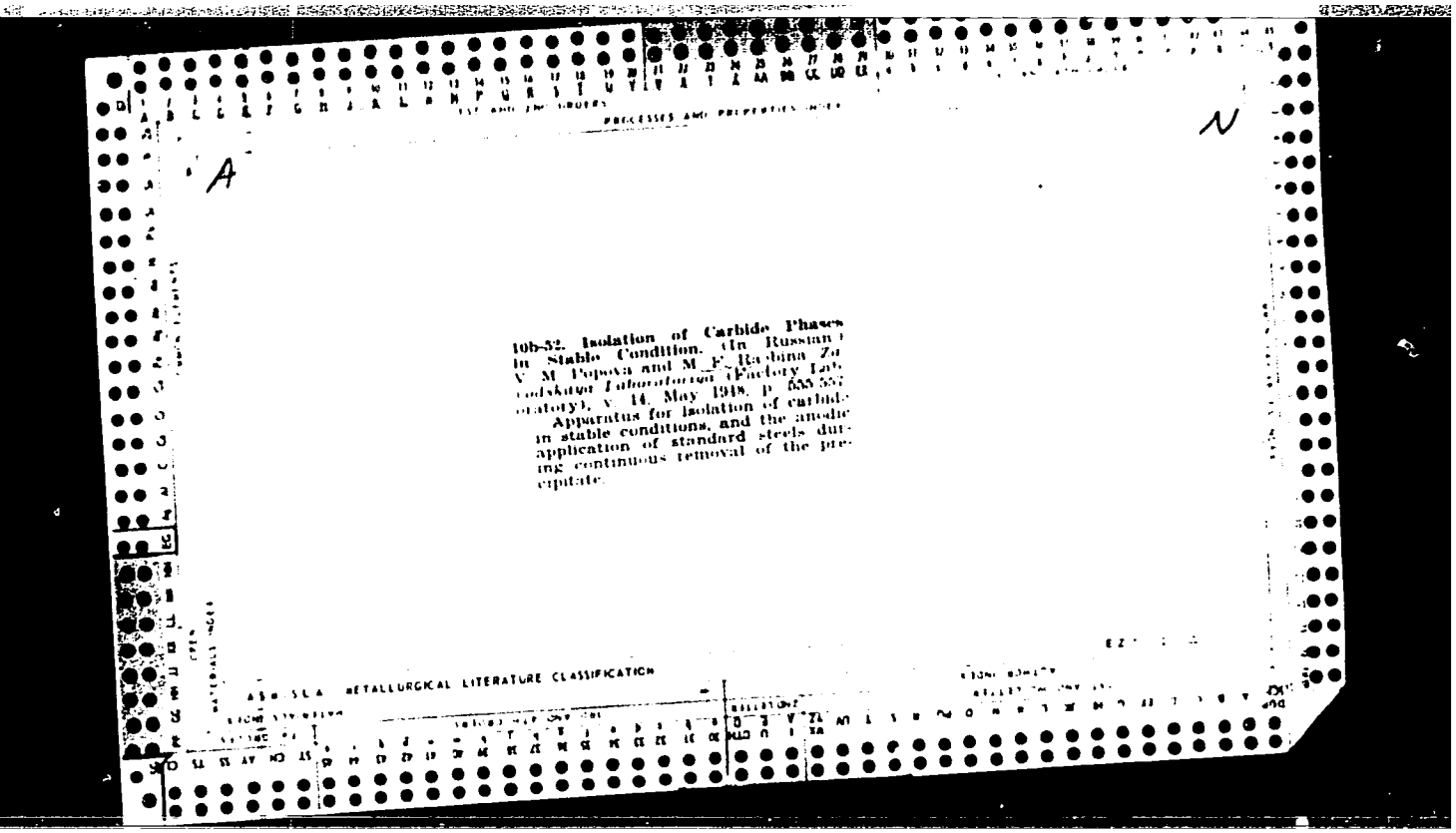
PROCESSES AND PROPERTIES INDEX

Effect of inhibitors on autoxidation of linseed oil. Marijan Rac (Hrvat. Univ., Zagreb). *Kem. Vestnik* (Zagreb) 15/16, 67-7[illegible] (in German), 7[illegible] (1941-42). To 100 cc. of technical linseed oil, heated to 200°, was added 0.1 g. of PbO_2. After soln. was complete, the oil was cooled and inhibitor, previously warmed to 110°, was added. Reducible aniline dyes act as inhibitors, and their effect is a linear function of the oxidation-reduction potential, as well as of the concn. of the dye. Concns. varied from 0.002 to 0.0[illegible] moles per l. Methylene blue had only a slight effect, while thionine, toluidine blue, neutral red, phenosafranine, and Nile blue (the last both as the base and as the sulfate salt) were much more active. Nile blue inhibited the reaction almost completely even at very low concns. Ascorbic and barbituric acids had only a mild effect. Thiosinamine and diethylthiosinamine practically stopped the reaction. A petroleum ether ext. of barley flour (Dieman and Fox, C. A. 33, 5015) in concns. of 1-10 g./l. had but slight inhibiting properties. 8 references. C. S. Shapiro

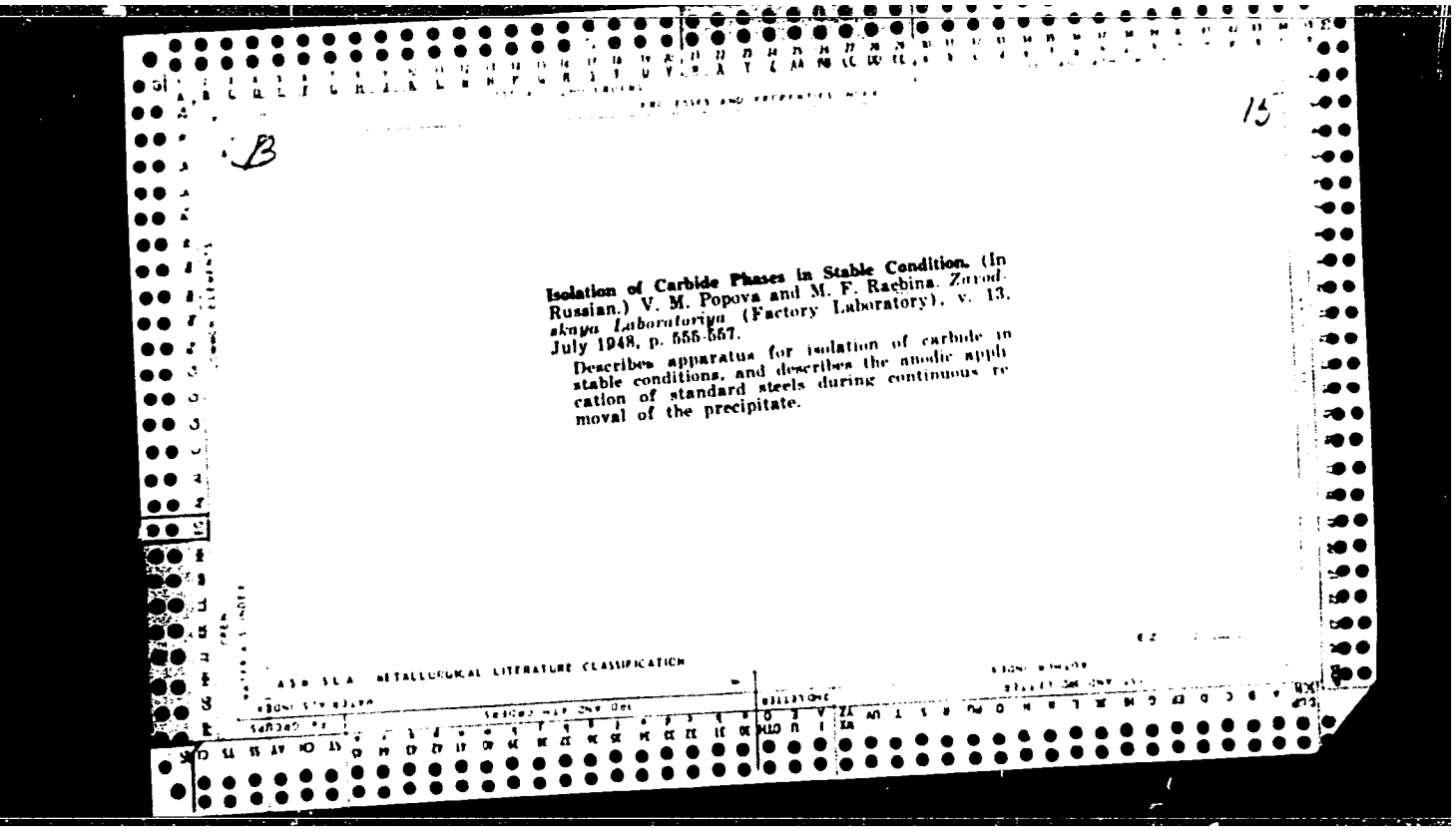
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



10b-32. Isolation of Carbide Phases in Stable Condition. (In Russian) V. M. Popova and M. F. Rachina Zavodskaya Laboratoriya (Factory Laboratory), v. 14, May 1948. p. 555-557.

Apparatus for isolation of carbides in stable conditions, and the anodic application of standard steels during continuous removal of the precipitate.

METALLURGICAL LITERATURE CLASSIFICATION



Isolation of Carbide Phases in Stable Condition. (In Russian.) V. M. Popova and M. F. Rachina. *Zavodskaya Laboratoriya* (Factory Laboratory), v. 13, July 1948, p. 555-557.

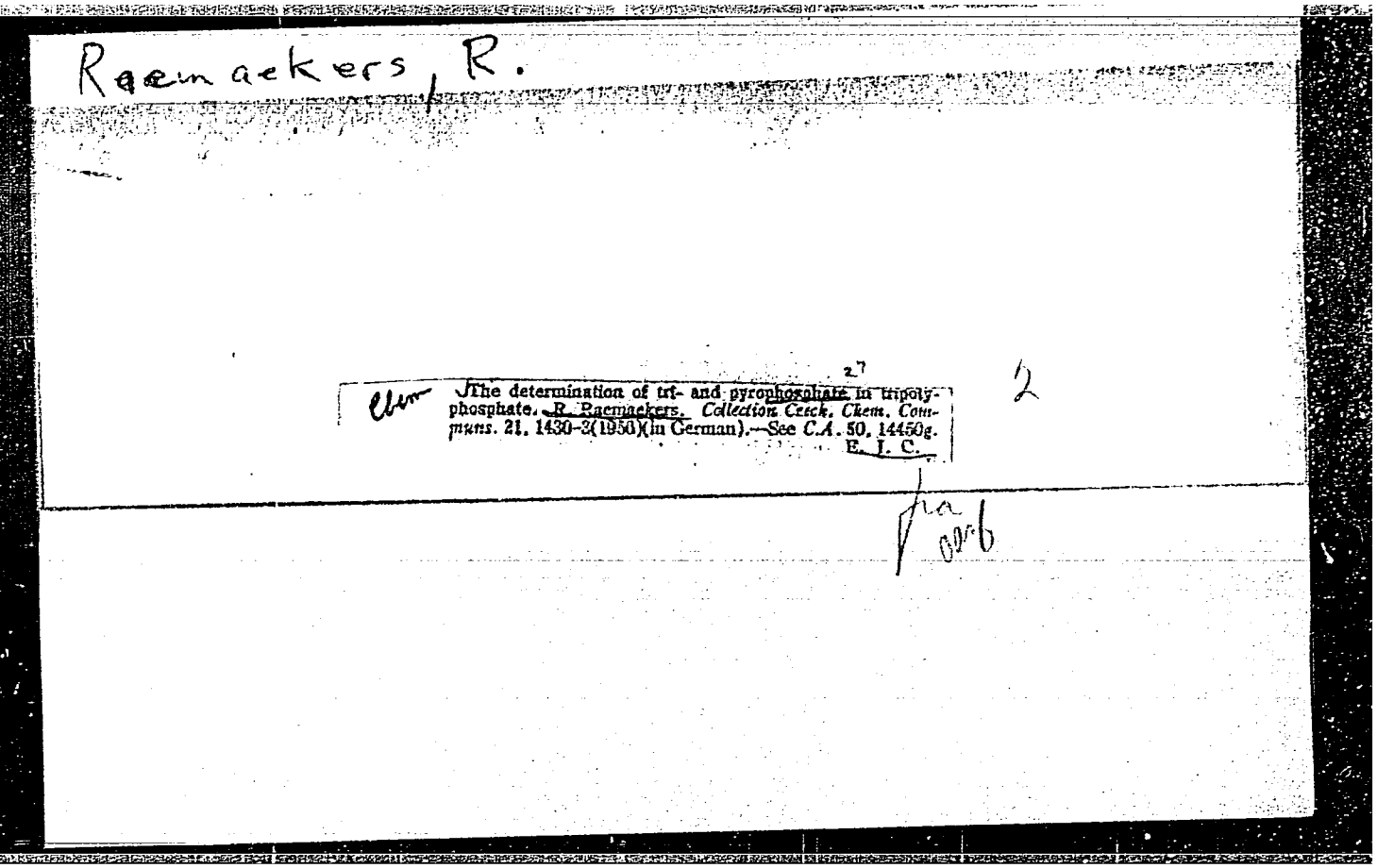
Describes apparatus for isolation of carbide in stable conditions, and describes the anodic application of standard steels during continuous removal of the precipitate.

SHEMYAKIN, M.M.; RAMDEL', G.A.; CHAMAN, Ye.S.; SHVETSOV, Yu.B.; VINOGRADOVA, Ye.I.

Synthesis of racemic sarkomycin. Izv. AN SSSR. Otd. khim. nauk no.8:1007 Ag '57. (MIRA 11:2)

1. Institut biologicheskoy i meditsinskoy khimii Akademii meditsinskikh nauk SSSR.

(Sarkomycin)



Raemaekers, R.

Chem The determination of tri- and pyrophosphate in tripolyphosphate. R. Raemaekers. *Collection Czech. Chem. Communs.* 21, 1430-3(1950)(in German).—See *C.A.* 50, 14450g. E. J. C.

2

Phos

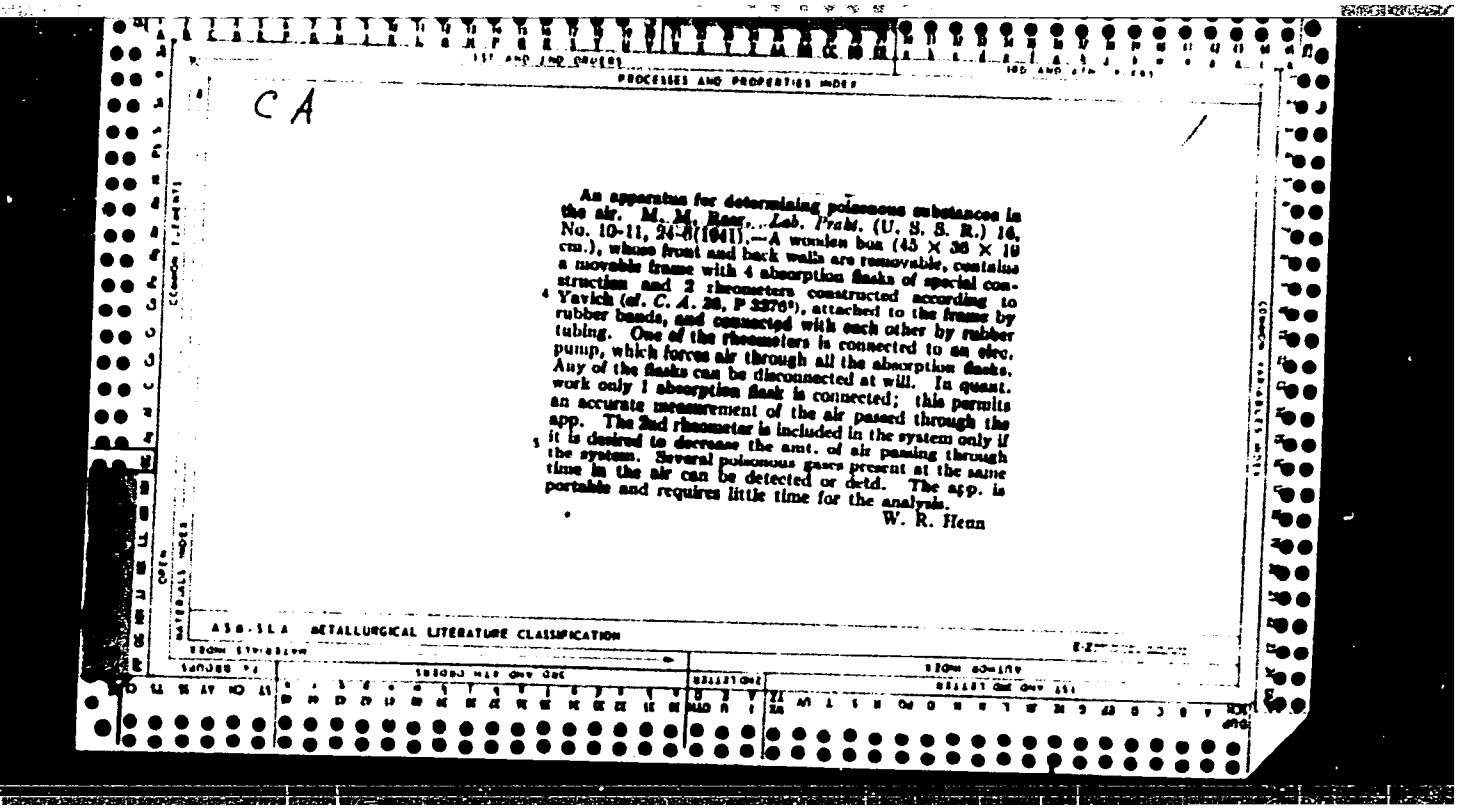
COUNTRY : Rumania
CATEGORY :
79826
ABS. JOUR. : RZKhim., No. 22 1959, No.

AUTHOR : Radulescu, G. A.
INST. : Not given
TITLE : The Refining of Mineral Oils

ORIG. PUB. : Tecn Noua, 6, No 283, 1, 8 (1958)

ABSTRACT : A process for the adsorption-refining of oils is described and a flow sheet and examples are given.
G. Lavrech

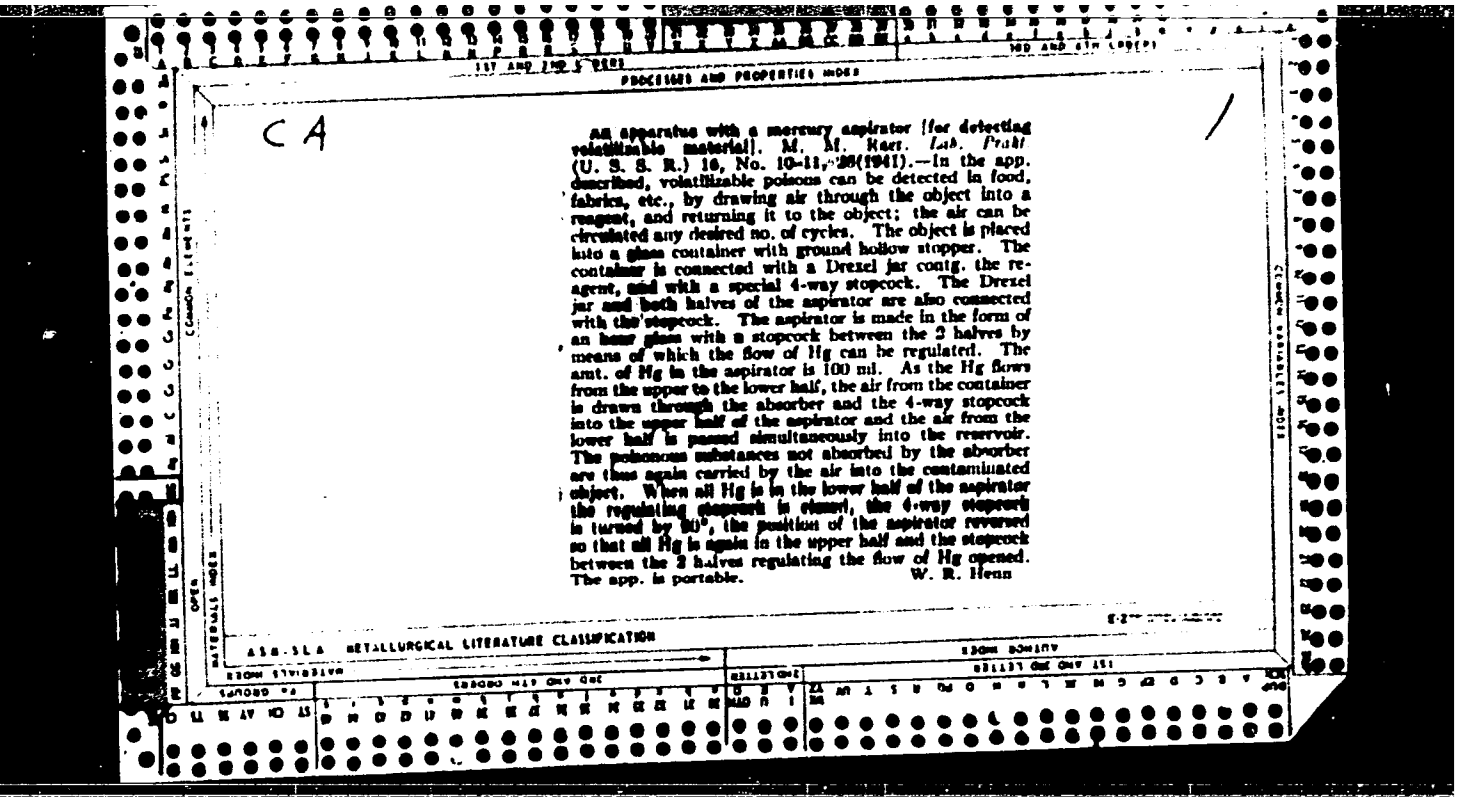
CARD: 1/1



CA

An apparatus for determining poisonous substances in the air. M. M. Rose. *Lab. Prakt.* (U. S. S. R.) 16, No. 10-11, 24-9 (1941).—A wooden box (45 × 36 × 19 cm.), whose front and back walls are removable, contains a movable frame with 4 absorption flasks of special construction and 2 rheometers constructed according to Yavich (*cf. C. A.* 28, P 3276[6]), attached to the frame by rubber bands, and connected with each other by rubber tubing. One of the rheometers is connected to an elec. pump, which forces air through all the absorption flasks. Any of the flasks can be disconnected at will. In quant. work only 1 absorption flask is connected; this permits an accurate measurement of the air passed through the app. The 2nd rheometer is included in the system only if it is desired to decrease the amt. of air passing through the system. Several poisonous gases present at the same time in the air can be detected or detd. The app. is portable and requires little time for the analysis.

W. R. Henn

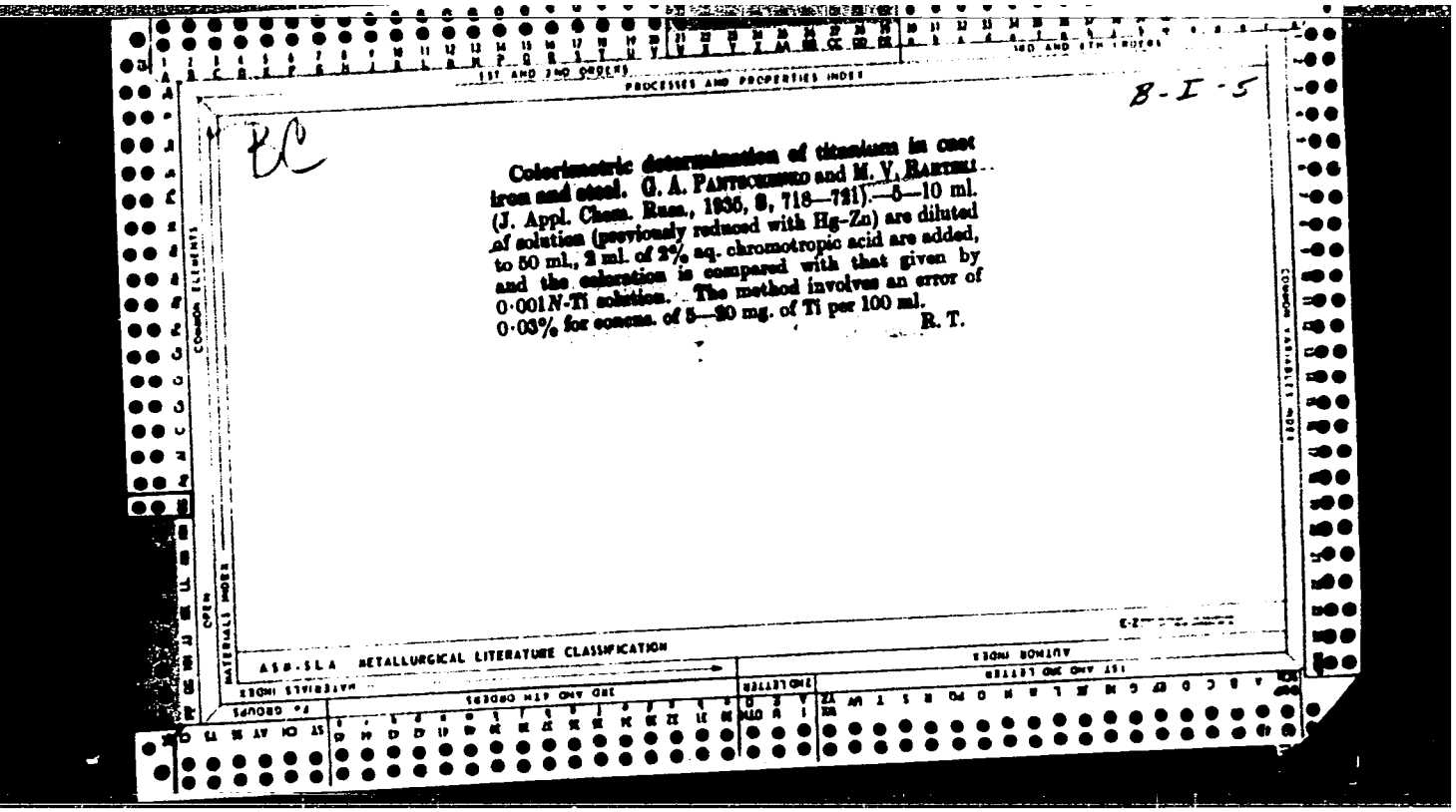


CA

1

An apparatus with a mercury aspirator [for detecting volatilizable material]. M. M. Kost. *Lab. Prakt* (U. S. S. R.) 16, No. 10-11, 38(1941).—In the app. described, volatilizable poisons can be detected in food, fabrics, etc., by drawing air through the object into a reagent, and returning it to the object; the air can be circulated any desired no. of cycles. The object is placed into a glass container with ground hollow stopper. The container is connected with a Drexel jar contg. the reagent, and with a special 4-way stopcock. The Drexel jar and both halves of the aspirator are also connected with the stopcock. The aspirator is made in the form of an hour glass with a stopcock between the 2 halves by means of which the flow of Hg can be regulated. The amt. of Hg in the aspirator is 100 ml. As the Hg flows from the upper to the lower half, the air from the container is drawn through the absorber and the 4-way stopcock into the upper half of the aspirator and the air from the lower half is passed simultaneously into the reservoir. The poisonous substances not absorbed by the absorber are thus again carried by the air into the contaminated object. When all Hg is in the lower half of the aspirator the regulating stopcock is closed, the 4-way stopcock is turned by 90°, the position of the aspirator reversed so that all Hg is again in the upper half and the stopcock between the 2 halves regulating the flow of Hg opened. The app. is portable.

W. R. Henn



8-I-5

Colorimetric determination of titanium in cast iron and steel. G. A. PANTSCHENKO and M. V. RABTSEL (J. Appl. Chem. Russ., 1936, 9, 718—721).—5—10 ml. of solution (previously reduced with Hg–Zn) are diluted to 50 ml., 2 ml. of 2% aq. chromotropic acid are added, and the coloration is compared with that given by 0·001*N*-Ti solution. The method involves an error of 0·03% for concns. of 5—30 mg. of Ti per 100 ml.

R. T.

PROCESSES AND PROPERTIES INDEX

Colorimetric determination of titanium in cast iron and steel. G. A. Panchenko and M. A. Rastakil. *J. Applied Chem.* (U. S. S. R.) 8, 718-21(1935). To 10 ml. of soln. (previously reduced with Hg Zn) to 50 ml., add 2 ml. of 2% aq. chromotropic acid and compare the color with that given by 0.001 N Ti soln. The method involves an error of 0.02% for concns. of 5-20 mg. of Ti per 100 ml.
B. C. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

HUNGARY

RAETTIG, Hansjurgen; Robert Koch Institute (Robert Koch Institut) (chief: HENNENBERG, Georg, professor), Berlin.

"Vaccination-Caused 'Negative Phase' and 'Provocation', and Their Prevention."

Budapest, Orvosi Hetilap, Vol 104, No 32, 11 Aug 1963, pages 1500-1505.

Abstract: The concepts of 'negative phase' and 'provocation' are defined by the author. A historical survey is made and experiments of Brieger, and Ehrlich, v. Dungern, de Gaspery, Raetting and Wolk, Gillert, and Seifert are discussed. Experiments on mice infected by Breslau and poliomyelitis strains, respectively, were conducted by the author. Active immunization has been carried out after the infection has taken place. The results are presented on several graphs. Data on observations of the polio epidemic in Chicago, 1956 and the typhoid epidemic in Mecklenburg, 1945/46, are also presented. The author attempts to show that the 'negative phase' is an immune-biological phenomenon. It is concluded that initial vaccination should be done before an epidemic outbreak. If this is not feasible, the use of decreased amounts of vaccine may be considered. Booster shots present no danger, probably because of their very rapid action. No references.

RAFIKTV A.S.

29596

GALLIONELLA ELIASTHERSIS (sp.N.) Kak Komponent Baktyerial'Nogo Planktona. Mikrobiologiya, 1949, vyp.5 S.442-46 - Bibliogr: 6 Nazv

Zh BOTANIKA

SO: Letopis' No. 40

RAEUSKOVSKIY

28934

V.V. pryeobraeovaniye prirody molyekul. (K prisuzhdyeniyu stalinskoy pryemii ea 1948 g.b.a. kaeanskomu ea nauch trudy po organ. Khimii). Priroda, 1949, No. 9, c. 3-7, c. portr.--Bibliogr: 12 Naev.

So: Letopis' No. 34

J-

BULGARIA/Acoustics - Noise.

Abs Jour : Ref Zhur Fizika, No 3, 1960, 6717

Author : Raev, A., Popova, L.

Inst : Institute of Physics, Sofia University, Bulgaria

Title : On the Voltage-Tunable Operation of Magnetrons with Resistive External Circuit.

Orig Pub : Dokl. Bolg. AW, 1958, 11, No 6, 441-444

Abstract : An investigation was made of the dependence of the active component of the alternating voltage between segments of a slotted magnetron V_a on the resistance and capacitance of the external circuit. A simple calculation shows that the quantity V_a depends on $R' = R/(1+\omega^2 C^2 D^2)$, where R is the resistance of the external circuit, C the capacitance between the segments, and ω the circular frequency of oscillations. The experiments were carried out on

Card 1/2

4
1-4E1d

5135. STATIONARY ELECTRONIC OSCILLATIONS IN TWO-SEGMENT MAGNETRONS WITHOUT TUNED CIRCUITS. Chet.
A.Rasev and I.Uzunov. 25
~~C.R. Acad.~~ Bulg. Sci., Vol. 8, No. 2, 1-4 (April-June, 1955). In German.

Voltage-tunable oscillations are obtained from a two-segment magnetron when the external circuit is purely resistive and of suitable value. An explanation is suggested, and the limiting values of resistance are found.

A.Reddish

87
MT

RAEV, A.

4
1-4E14

5136. STATIONARY OSCILLATIONS INDEPENDENT OF AN EXTERNAL TUNED CIRCUIT IN MAGNETRONS. Elect.

A.Raev and A.Angelov. 25

Izv. Bulg. Akad. Nauk., Vol. 5, 121-34 (1955). In Bulgarian, with summaries (2 pp.) in Russian and (2 pp.) in German.

The effect of heater current on the conditions for oscillation has been found for two- and four-segment magnetrons with purely resistive external circuits (see C.R. Acad. Bulg. Sci., Vol. 1, No. 1, 39, 1948 and preceding abstract). A.Reddish

87
MT

RAEV, A.

Bulgaria/Radiophysics - Superhigh Frequencies, I-11

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35396

Author: Raev, A., Usunov, I.

Institution: Physics Institute, Sofia University, Bulgaria

Title: Stationary Electron Oscillations of a Two-Segment Magnetron in the Absence of an Oscillating Circuit

Original Periodical: Dokl. Bolg. AN, 1955, 8, No 2, 1-4; German; Russian resumé

Abstract: Brief description of the fundamental properties of nonresonant oscillations of a 2-segment magnetron, due to connecting between its segments an active resistance of a definite value. The mechanism of this oscillation was analyzed previously by Raev (Raev, A., Annals of the Sofia University, 1945-1946, 42, No 1, 311).

Emphasis is placed on the role of the space charge condensations occurring in the magnetron and inducing in the external circuit a current that produces in turn the high frequency voltage between

Card 1/2

Bulgaria/Radiophysics - Superhigh Frequencies, I-11

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35396

Abstract: the segments, which maintain under certain conditions the occurring condensation. The frequency of the oscillations is entirely dependent on the values of the anode voltage and of the magnetic field, satisfying the posthumus relation with another value of the constant.

Experiments performed in the meter band confirm the qualitative ideas concerning the character of the variation of the oscillation voltage, and also the relationship between the optimum values of the active resistance and those values of the resistance, which corresponds to the occurrence and to the interruption of the oscillations.

Card 2/2

RADEV, Al. (Sofia)

Lasers. Pt. 2. Mat i fiz Bulg 7 no. 2: 1-9 '64.

Chelate lasers. Fiz mat spisanie BAN 6 no. 4:29 '63.

[illegible], A.

[illegible]A[illegible], A. Stationar[illegible] oscillations in magnetr[illegible]ns independent of exterior oscillation limits. [illegible]. 121. Vol. 5, Jan./Dec. 1955.
IZVESTIIA SE[illegible]IA FIZICHESK[illegible]A. Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol. 6 No. 4 April 1957

RAEV, A.

Stationary electron oscillations in two segmental magnetrons without oscillatory circuits. In German with Russian summary, p. 1.
Vol. 8, no. 2, Apr./June 1955, DOKLADY, sofiya, Bulgaria.

Source: Monthly List of East European Accessions, (EEAL), Library of Congress. Vol. 5, No. 10, Oct. 1956.

CA

3

Microwave radiophysics at the service of spectroscopy
Aleksandur Racv. *Annuaire univ. Sofia, Faculté sci.*, Livré 1. 45, 303-20(1948-49).—The use of microwaves in the detn. of structures of mols. and atoms is discussed.
G. Meguerian

RAEV, E.

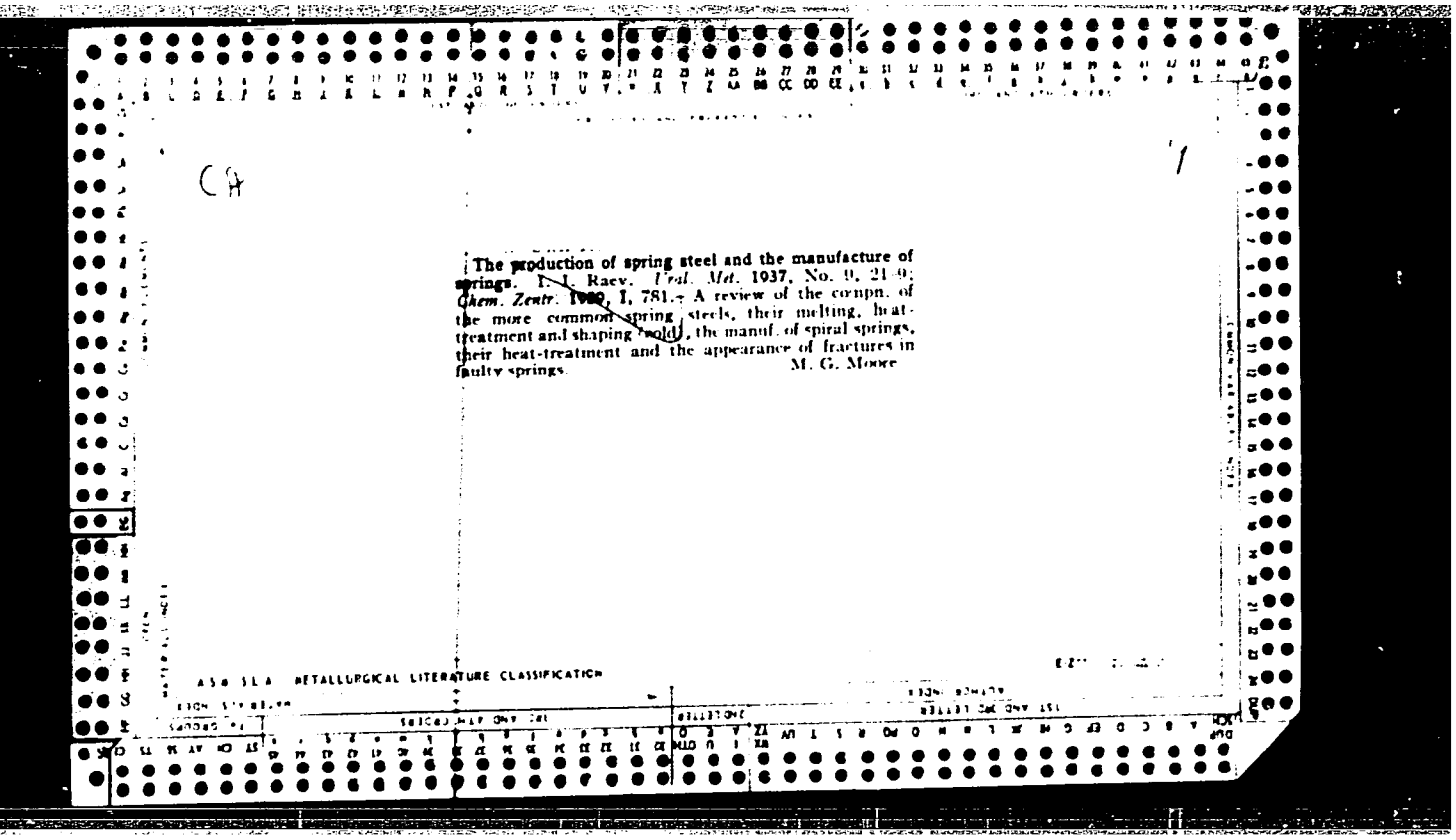
" Pure and Mixed Rows in Types of Forest Cultures," p. 108.
(Gorsko Stopanstvo, Vol.8, No.3, Mar. 1952, Sofiya.)

SO: Monthly List of East European Accessions, Vol.2, No.9 Library of Congress, September 1953, Uncl.

RAEV, E.

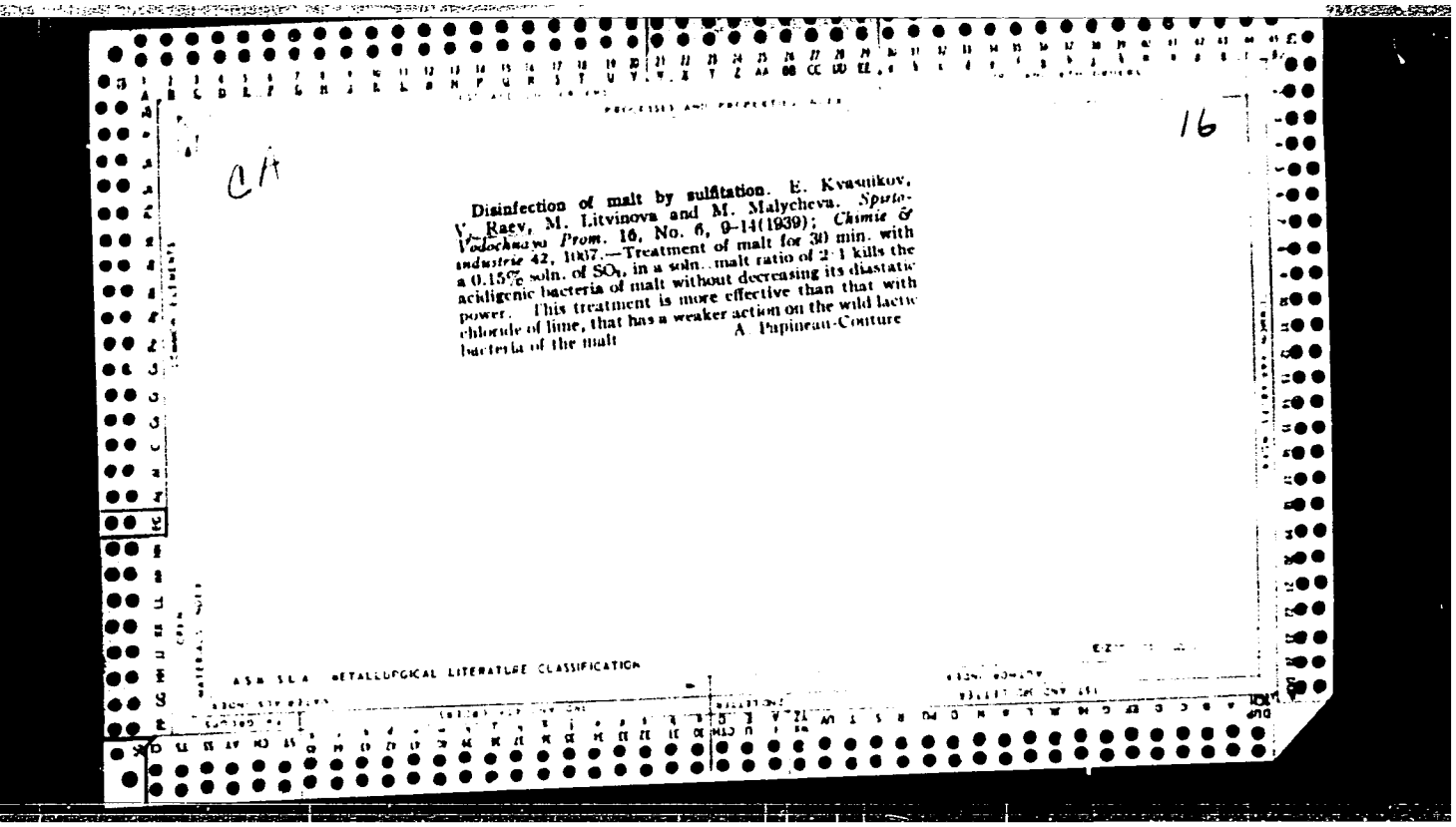
"How to Prepare the Soil for Afforestation." p.213
(GORSKO STOPANSTVO VOL. 9, no. 5, May 1953, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, Library of Congress, Vol. 2, No. 9, Oct. 1953, Uncl.



The production of spring steel and the manufacture of springs. I. L. Raev. *Tsvet. Met.* 1937, No. 9, 21-9; *Chem. Zentr.* 1938, I, 781.—A review of the compn. of the more common spring steels, their melting, heat-treatment and shaping (cold), the manuf. of spiral springs, their heat-treatment and the appearance of fractures in faulty springs.

M. G. Moore

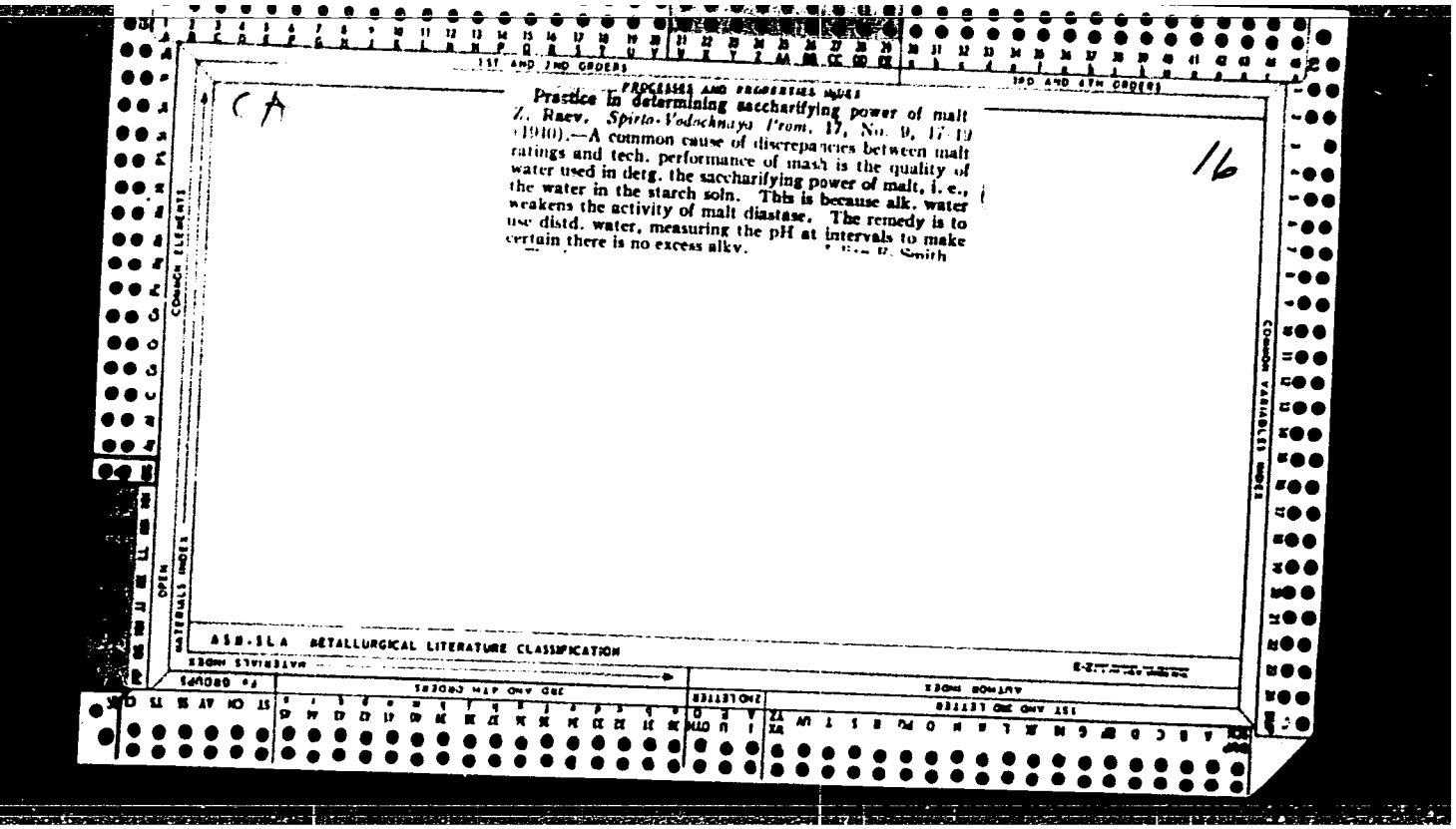


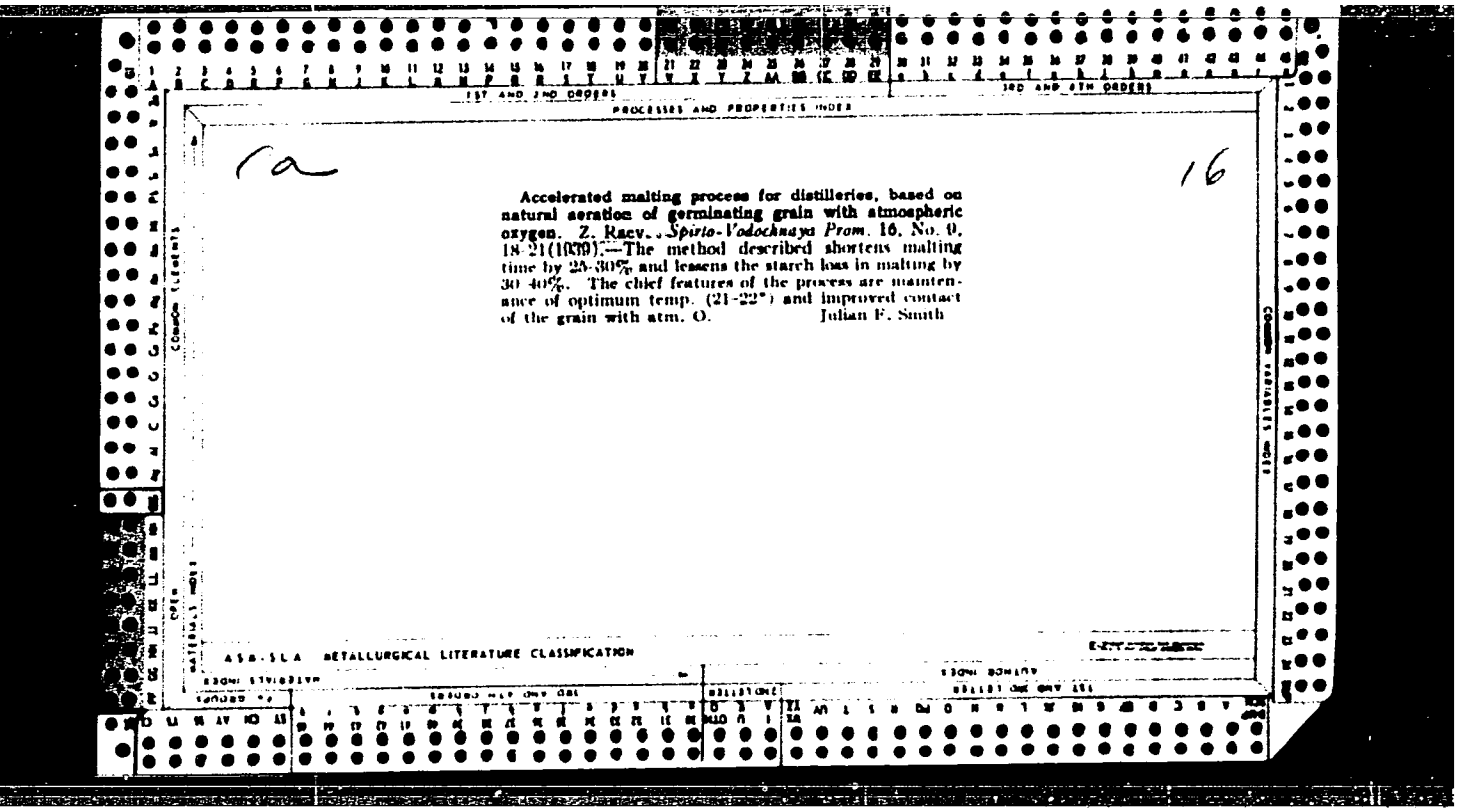
16

C/A

Disinfection of malt by sulfitation. E. Kvasnikov, V. Raev, M. Litvinova and M. Malycheva. *Spirto-Vodochnaya Prom.* 16, No. 6, 9–14(1939); *Chimie & Industrie* 42, 1007.—Treatment of malt for 30 min. with a 0.15% soln. of SO_2, in a soln.-malt ratio of 2:1 kills the acidigenic bacteria of malt without decreasing its diastatic power. This treatment is more effective than that with chloride of lime, that has a weaker action on the wild lactic bacteria of the malt A. Papineau-Couture

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION





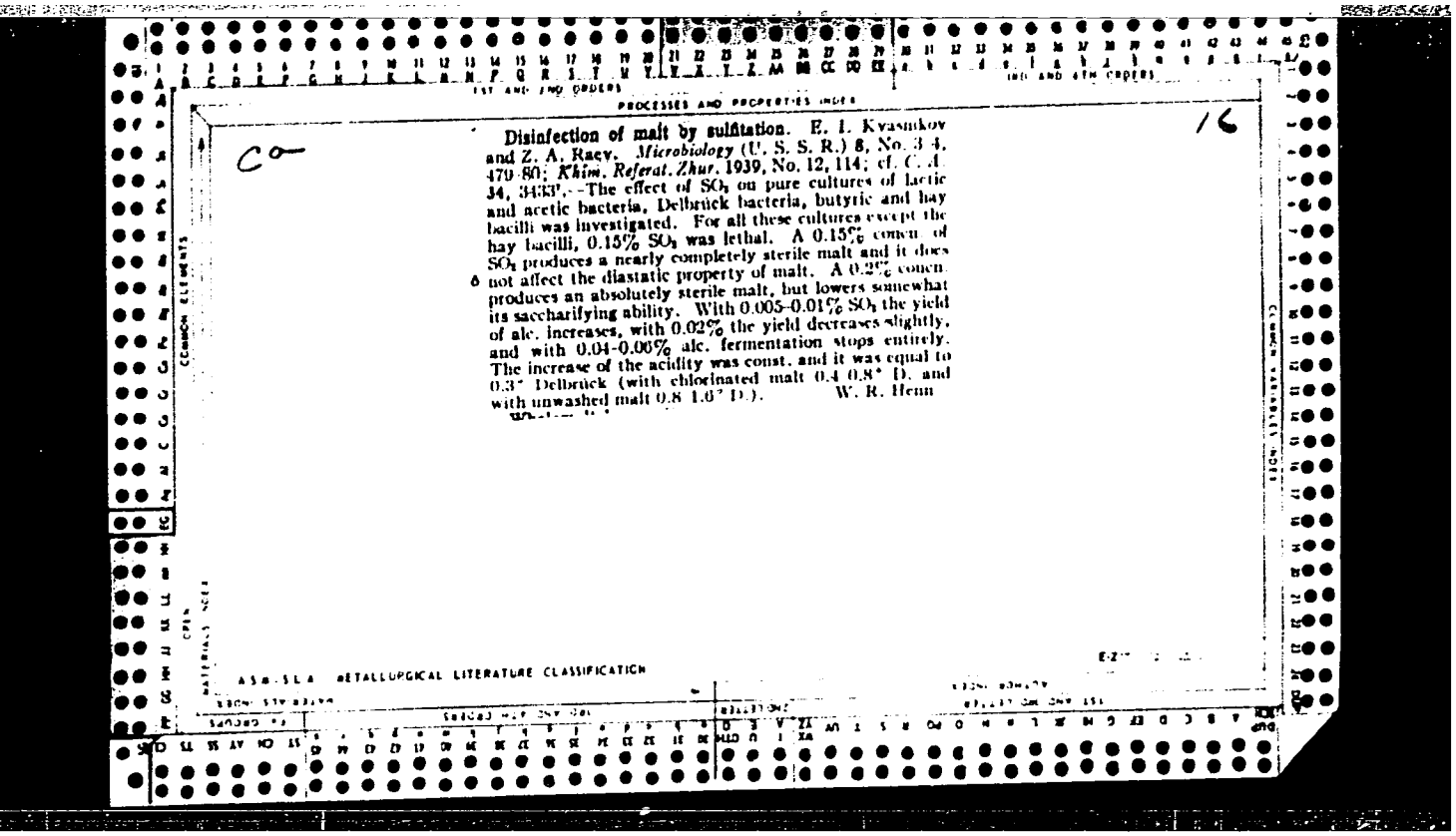
PROCESSES AND PROPERTIES INDEX

ra

16

Accelerated malting process for distilleries, based on natural aeration of germinating grain with atmospheric oxygen. Z. Racv., *Spirto-Vodochnaya Prom.* 16, No. 9, 18-21(1939).—The method described shortens malting time by 25-30% and lessens the starch loss in malting by 30-40%. The chief features of the process are maintenance of optimum temp. (21-22°) and improved contact of the grain with atm. O. Julian F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

16

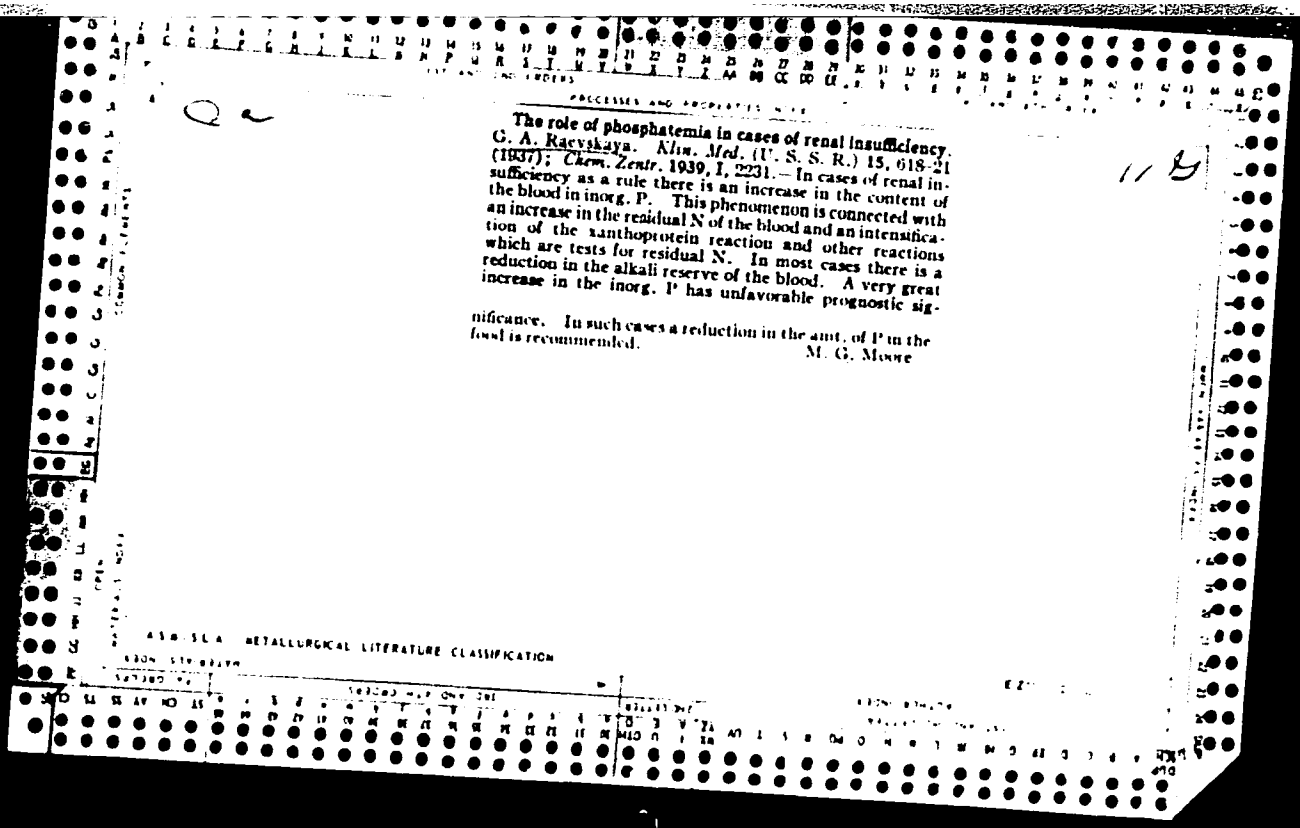
Disinfection of malt by sulfitation. E. I. Kvasnikov and Z. A. Raev. *Microbiology* (U. S. S. R.) 8, No. 3-4, 479-80; *Khim. Referat. Zhur.* 1939, No. 12, 114; cf. C. A. 34, 3433.—The effect of SO_2 on pure cultures of lactic and acetic bacteria, Delbrück bacteria, butyric and hay bacilli was investigated. For all these cultures except the hay bacilli, 0.15% SO_2 was lethal. A 0.15% concn. of SO_2 produces a nearly completely sterile malt and it does not affect the diastatic property of malt. A 0.2% concn. produces an absolutely sterile malt, but lowers somewhat its saccharifying ability. With 0.005–0.01% SO_2 the yield of alc. increases, with 0.02% the yield decreases slightly, and with 0.04–0.06% alc. fermentation stops entirely. The increase of the acidity was const. and it was equal to 0.3° Delbrück (with chlorinated malt 0.4 0.8° D. and with unwashed malt 0.8 1.0° D.). W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

RAEVSKAIA, G.

"Pronostic et la capacite de travail au cours de l'ictere catarrheux." Raevskaia, G. (p. 612)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1940, Volume 18, no. 1.



The role of phosphatemia in cases of renal insufficiency. G. A. Racvskaya. *Klin. Med.* (U. S. S. R.) 15, 618-21 (1937); *Chem. Zentr.* 1939, I, 2231.—In cases of renal insufficiency as a rule there is an increase in the content of the blood in inorg. P. This phenomenon is connected with an increase in the residual N of the blood and an intensification of the xanthoprotein reaction and other reactions which are tests for residual N. In most cases there is a reduction in the alkali reserve of the blood. A very great increase in the inorg. P has unfavorable prognostic significance. In such cases a reduction in the amt. of P in the food is recommended.

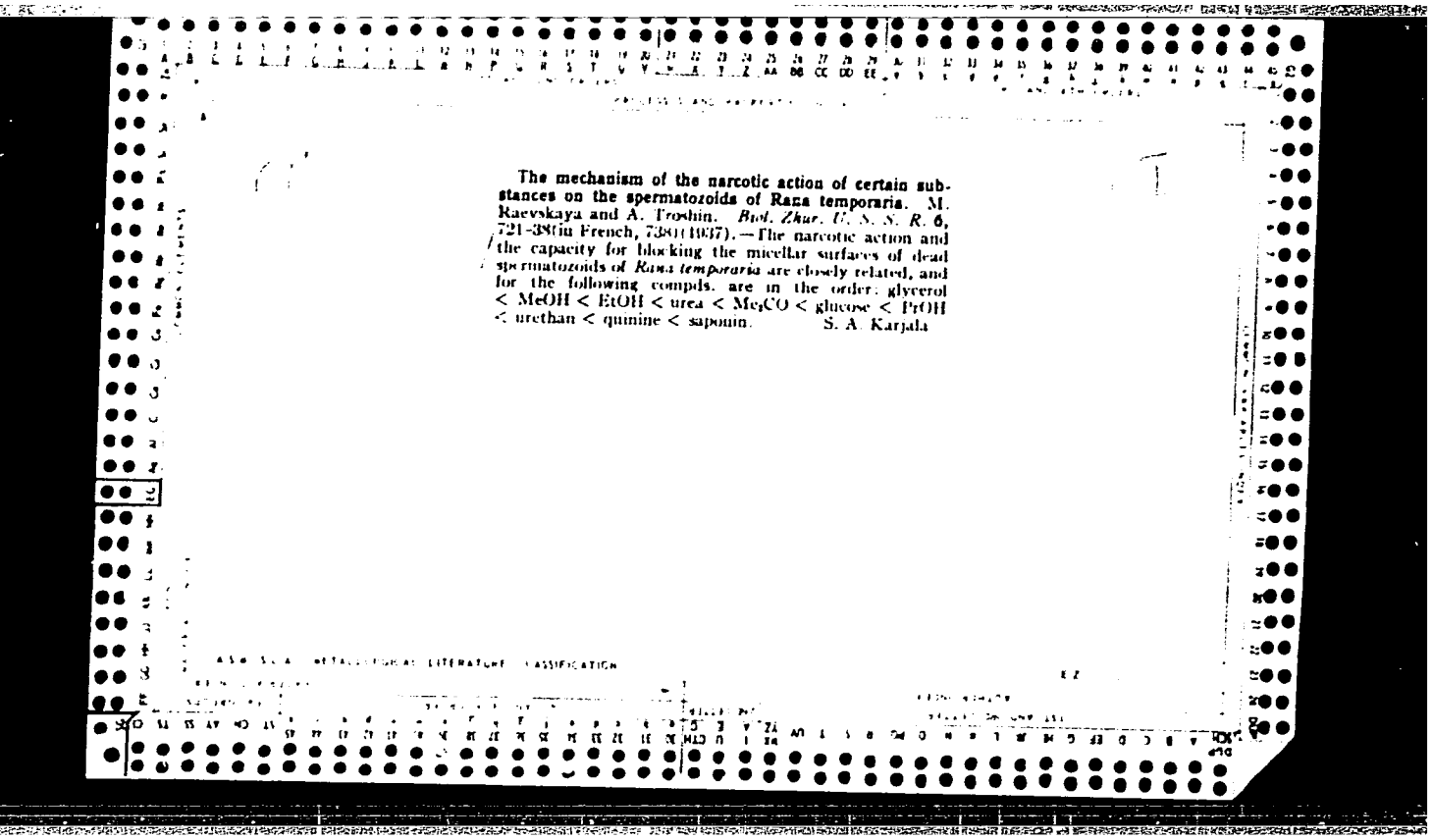
M. G. Moore

RAEVSKAYA, L.N.,
T.V. ASS, Colloid J. 6, 639-43 (1940)

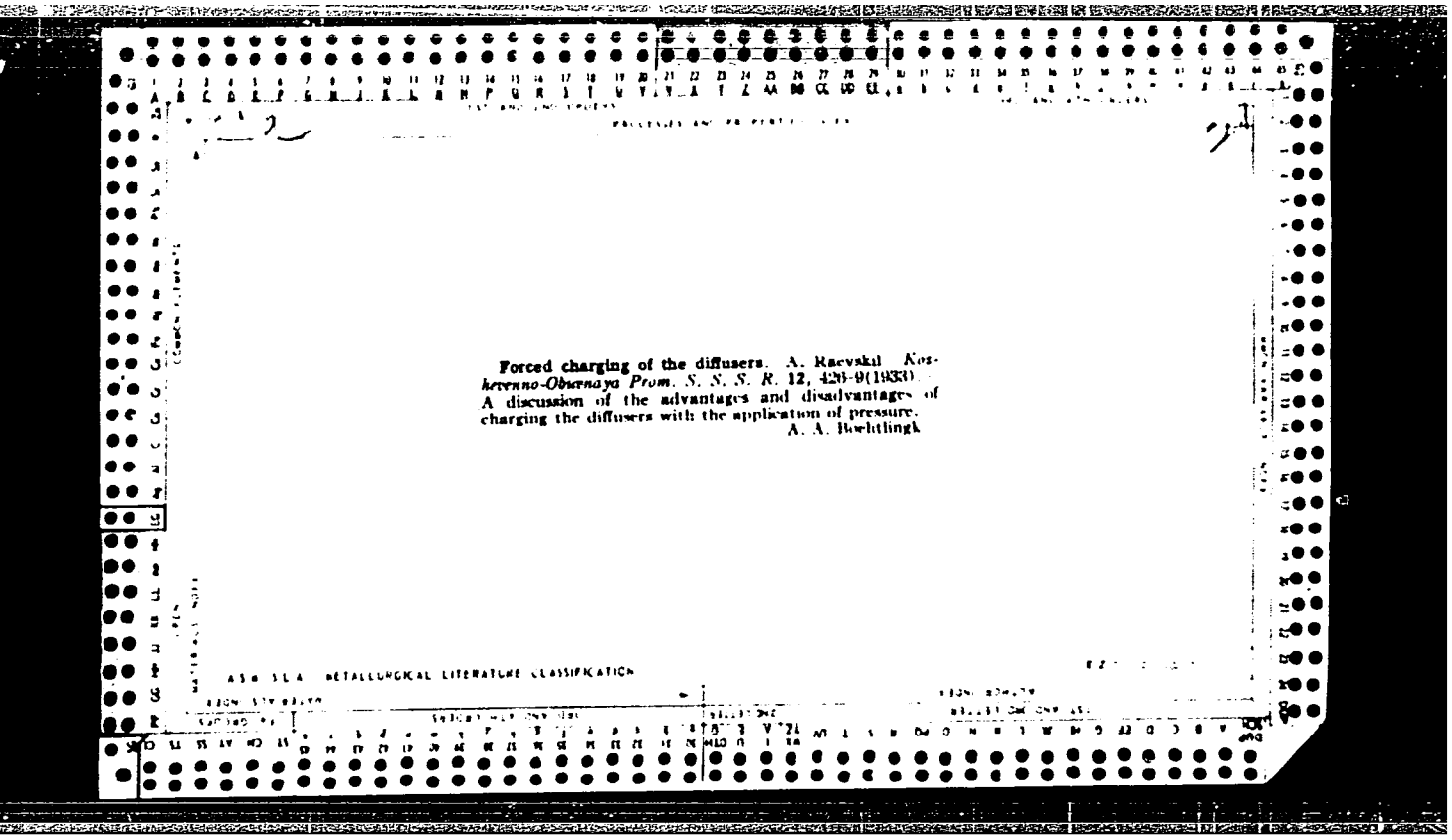
RAEVSKAYA, Mr.

"On the mechanism of the narcotic action of certain substances on the spermatozoaz of Rana Temporaria." (p. 721) Laboratory of the Physiology of Cells (Chief: Prof. D. N. Nasonov), Institute of Physiology, Leningrad University. by Raevskaya, Mr. and Troshin, A.

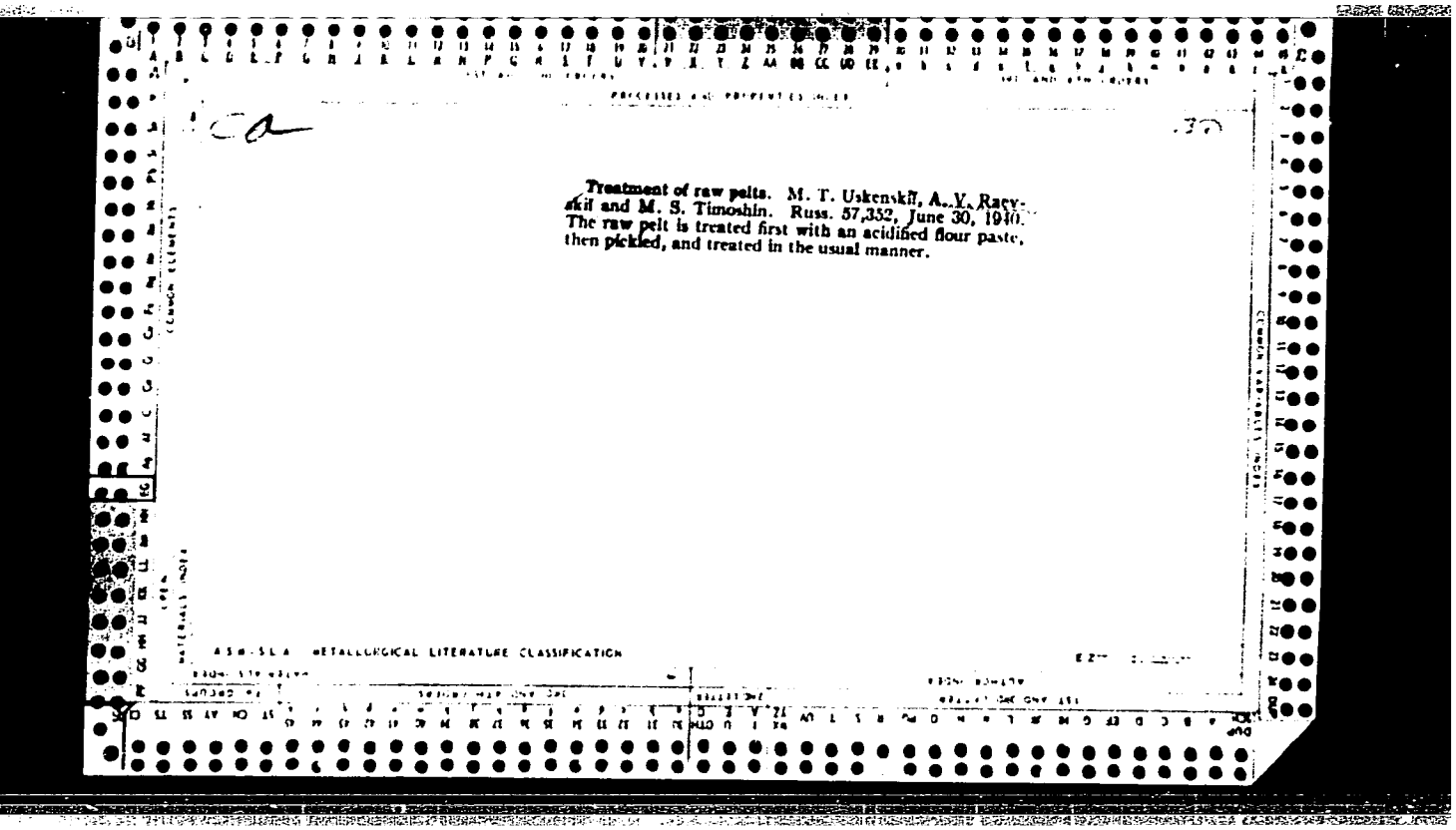
SO: Biological Journal (Biologicheskii Zhurnal) Vol. VI, 1937, No. 4



The mechanism of the narcotic action of certain substances on the spermatozoids of Rana temporaria. M. Raevskaya and A. Troshin. *Biol. Zhur. U. S. S. R.* 6, 721-38(in French, 738(1937).—The narcotic action and the capacity for blocking the micellar surfaces of dead spermatozoids of *Rana temporaria* are closely related, and for the following compds. are in the order: glycerol < MeOH < EtOH < urea < Me_2CO < glucose < PrOH < urethan < quinine < saponin. S. A. Karjala



Forced charging of the diffusers. A. Raevskii *Koksevenno-Obornaya Prom. S. S. S. R.* **12**, 428-9(1933). A discussion of the advantages and disadvantages of charging the diffusers with the application of pressure.
A. A. Bochtlingk

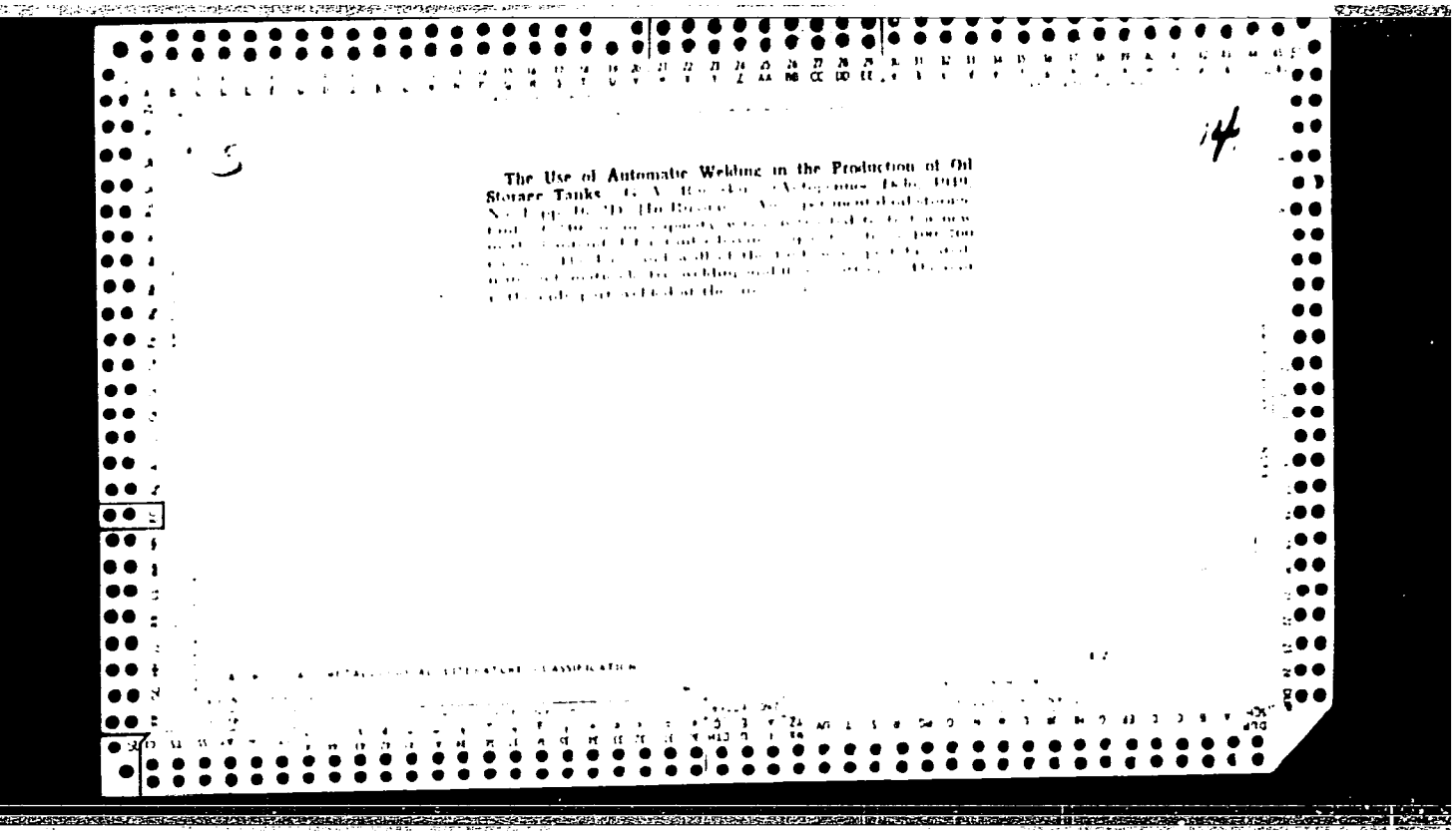


Treatment of raw pelts. M. T. Uskenskiĭ, A. V. Raevskiĭ and M. S. Timoshin. Russ. 57,352, June 30, 1940. The raw pelt is treated first with an acidified flour paste, then pickled, and treated in the usual manner.

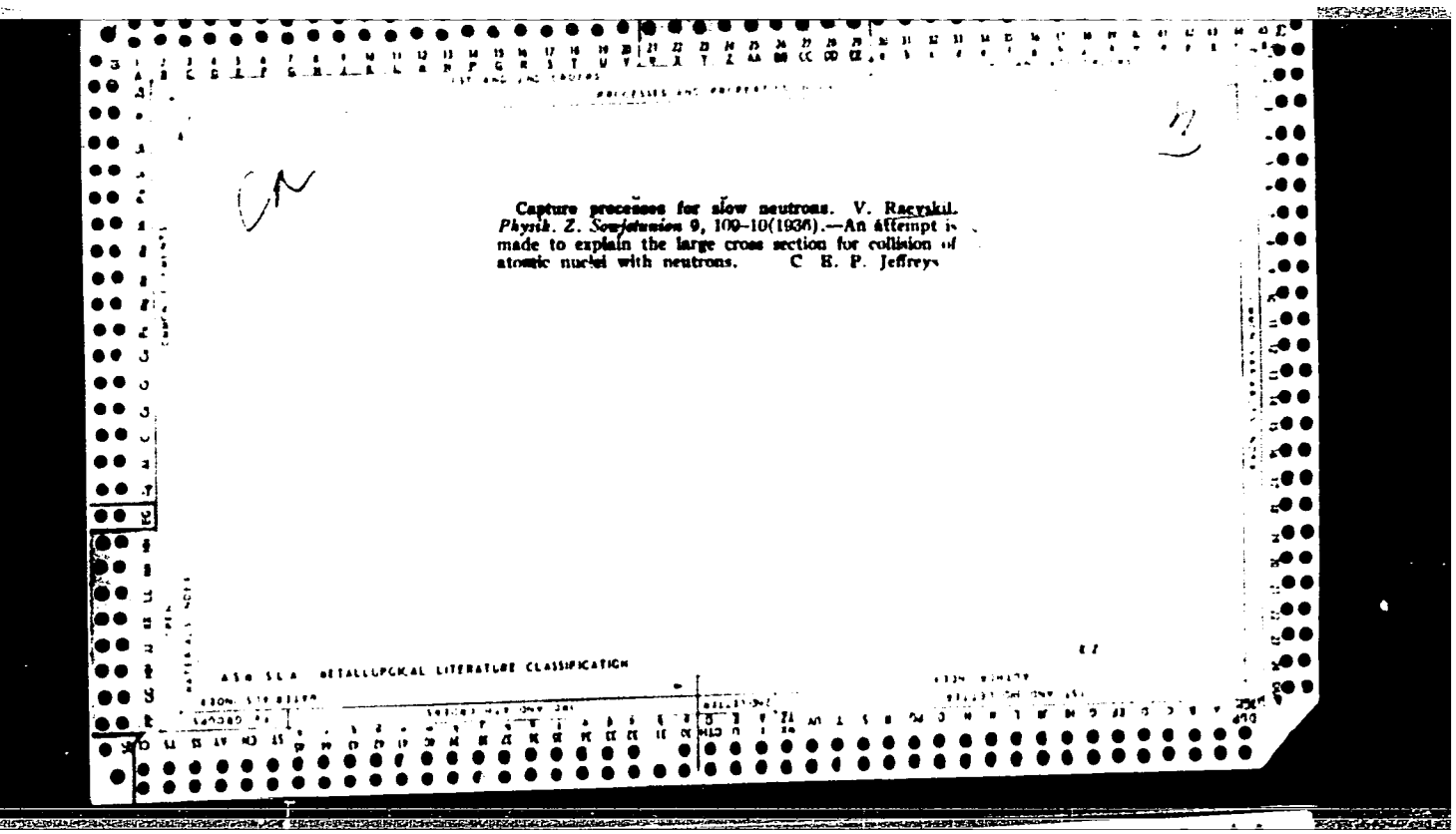
[illegible], [illegible].

[illegible] USSR conference on new welding methods, [illegible] Abridged from: Konferentsiia po [illegible]
novym sposobam svarki.
[illegible], [illegible](12): 20-2[illegible], 1952.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010008-0"



The Use of Automatic Welding in the Production of Oil Storage Tanks



Capture processes for slow neutrons. V. Rasvskil. *Physik. Z. Sowjetunion* 9, 109–10(1936).—An attempt is made to explain the large cross section for collision of atomic nuclei with neutrons. C. B. P. Jeffreys

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

The position of the lowest energy term of the deuteron. Victor Rojanskii. *Physik. Z. Sowjetunion* 8, 511-15 (1935).—The energies of the 1S and the 1S terms are calcd. The yield of γ radiation to be expected from proton-neutron collisions is detd. Harold Gershinowitz

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

RAEVSKIY, G.V. [Raievs'kyi, H.V.], laureat Leninskoy premii

Welded constructions of the future. Znan. ta pratsia no. 3:14-15 Mr '61. (MIRA 14:5)

1. Zaveduyushchiy laboratoriyey Instituta elektrosvarki imeni E.O. Patona AN USSR.
(Electric welding) (Sheet metal work)

RAEYEVIC, D.V.

29665

Eashchita vrashchayushchikhsya mashin,

Rabo'ayushchikh iva voedushnyye sveti,

ot atmosfrernykh preryenapryazhyeniy:

Elvektrichvestvo, 1949, No. 9 s. 45-50

SO: LETOPIS' NO. 40

RAF S. YA.

Effect of soda-potash mixture on the crystallization and fusion of window pane glass. M. V. Oklotin, I. D. Tykachinskii, R. S. Levina, G. S. Bogdanova, and S. Ya. Raf. *Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Stekla* 1954, No. 34, 3-9; *Referat. Zhur., Khim.* 1955, No. 841. The suitability of the soda-potash mixt. obtained as a by-product in Al_2O_3 plants operating on nepheline in glass melting was investigated. The mixt. contained K_2CO_3 33.8 and Na_2CO_3 53.8%. Exptl. glass was melted in crucibles and kept for 4 hrs. at 1420°. The glass was then poured from the crucibles, annealed, and its physicochem. properties were examd. visually. It was concluded that the soda-potash mixt. could be used in batches of sheet glass to replace soda partly or entirely; in the latter case the working temp. of the glass was raised by 40-50°. A glass contg. in its alk. component 7.5% K_2O was in its crystn. properties identical with a glass contg. only Na_2O.

M. Hr...ch

(4)

RAF, S. YA.

"Preparation of Soda-sulfate Melt and Its Use in Glass Melting," I. M. Boguslavskiy, V. V. Pollyak, G. M. Nisnevich, and S. Ya. Raf, Stekol'naya i Keram From 1945, No 4/5 pp 20 (SEE: Inst. Insect/Fung, in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949

SOV/72-58-9-7/20

AUTHOR: Raf, S. Ya.

TITLE: Influence of Packing and Storing Conditions of Sheet Glass Upon the Leaching of Its Surface (Vliyaniye usloviy upakovki i khraneniya listovogo stekla na rasshchelachivaniye yego poverkhnosti)

PERIODICAL: Steklo i keramika, 1958, Nr 9, pp 17 - 19 (USSR)

ABSTRACT: A special investigation of the influence of the packing and storing conditions upon the quality of the glass surface was carried out in the Glass Works Lisichansk and "Proletariy". In table 1 the chemical composition of the glass produced by these works is presented. If the sheet glass is packed in boxes which were stored in the open for as long as 1 1/2 year a leaching was found to have occurred of about 30% of the glass sheets. This was found in the Lisichansk Works. In the Plant "Proletariy" the boxes were stored on board platforms. Only 15-18% of the glass sheets were found as having been leached, the majority of them being from boxes which were fully exposed to the sun. Further experiments were conducted by either packing the sheet glass as it comes hot directly

Card 1/2

from the machine or by packing it after cooling. The shavings used in packing were used partly with a humidity of 55-60%, and partly dried with a humidity of 0,5-3,0% The packed boxes were either stored in the open or sheltered under a roof. The temperature and the humidity of the air in the glass storages were measured daily (Table 2). The results obtained by checks after a fortnight of storage are given in table 3 and those obtained after a storage of two months in table 4. The information gained indicates that chippings with a humidity of 1-3% are best suited for packing. Hot glass should not be packed immediately, but only after cooling. Packed glass should not be stored in the open. There are 4 tables

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut stekla (State Scientific Research Institute of Glass)

RAF, S. Ya.
25(2)

Primeneniye astrakhanita V steklovarenii. Steklo I Keramika, 1948, No. 6, s. 7-9

SO: LETOPIS NO. 30, 1948

25632 [illegible], [illegible]. Yu.

Primeneniye [illegible] v stekloverenii.
Steklo i keramika, 1948, No. 6, s. 7-9.

SO: Letopis' Zhurnal'nykh Statey, No. 30, Moskva, 1948

1. RAF., S. YA.

2. USSR (600)

4. Glass manufacture

7. Modern methods of handling raw materials., Stek. i. ker, 9, no. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

RAF, S. YA.

Use of astrakhanite in glassmelting. S. Ya. Raf. *Steklo i Keram.*, 5 [8] 7-9 (1948). Large deposits of astrakhanite ($MgSO_4 \cdot Na_2SO_4 \cdot 4H_2O$) are located on the right bank of the Volga, near the city of Astrakhan; other deposits are scattered in eastern Russia, western Siberia, and central Asia. The chemical composition of astrakhanite varies as follows: Na_2SO_4 22 to 36, $MgSO_4$ 20 to 31, $CaSO_4$ 6 to 8, NaCl 1.5 to 1.5, and H_2O 10 to 23%. A total of 550 tons of dry astrakhanite was used over a 17-day period in a tank furnace producing glass of the following composition: SiO_2 + R_2O_3 72.1, CaO 7.8, MgO 3.0, Na_2O 16.0, and SO_3 0.6%. The charge consisted of 80% astrakhanite and 20% cullet. Due to the high content of MgO in astrakhanite, the MgO in the glass rose to 3.75%, but the total RO remained unchanged by reduction of CaO. The composition of the glass changed gradually. There were no sharp changes in the glassmelting process. Rate of withdrawal of the glass remained the same (86 to 104 m /hr.). No difficulties were observed in the cutting and breaking of the glass. B.Z.K.

R&F, S. YA.

5-5)41

Methods of introducing Al_2O_3 into the composition of sheet glass made in Fourcault machines. S. Ya. Rar. *Steklo i Keram. Prom.*, 1946, No. 11-12, pp. [illegible]

The manufacture of Fourcault window glass containing up to 3.5% MgO and up to 2% Al_2O_3 was discontinued in Russia during the last war because of lack of raw materials, but it is now being resumed. In the absence of better materials, refractory clay is used as a means of introducing alumina. The clay is dried, sorted, ground to pass a sieve of 121 openings per $cm.^2$, mixed with dolomite, and then mixed with the other components. The use of the clay produced no difficulties in the melting and working of the glass; additional formation of such defects as cords and stones was not noticed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of alumina. White slime is a by-product of the aluminum industry and consist of sodium aluminosilicate; it analyzed SiO_2 20 to 25, Al_2O_3 30 to 32, Fe_2O_3 1.5 to 1.8, and alkali 20 to 25%. When using feldspar, it should be thoroughly dried, sorted, and ground to pass a sieve of 81 openings per $cm.^2$.

B.Z.K.

RAF, S. YA.

Method of adding the reducing agent to the sulfate charge. S. Ya. Raf. *Stekol'naya i Keram. Prom.*, 1946, No. 6, pp. 7–10.—In all cases, regardless of the type of mixer employed, the method of adding the sulfate and the reducing agent is of decisive importance in obtaining a charge in which the reducing agent will be uniformly distributed around the sulfate and in contact therewith. The best results are obtained by dividing the process into two stages: (1) preliminary mixing of the sulfate with the reducing agent only, and (2) addition to this mixture of the remaining components of the charge, followed by mixing to obtain uniformity. Both the sulfate and the reducing agent (anthracite, coke, etc.) are ground prior to mixing to pass a sieve having 64 openings per cm.^{2}. When using wood sawdust as the reducing agent, the size should be not over 5 to 6 mm. The sulfate and reducing agent should not be of different grain size, and the components of the charge should not be mixed all together. R.Z.K.

RAF, S. YA.

Effect of sodium silicate coloration on the color of light-green glass. S. Ya. Raf. *Steklo i Keram. Prom.*, 1945, No. 4-5, pp. 10-12.—Sodium silicate batches varying in color from green to black were prepared from clay, sulfate, and carbon (8, 9, 10, 12, and 15% C on the basis of total sulfates). The silicates of all colors (except green) were used to melt glass of 74 SiO_2, 10 CaO, and 16% Na_2O. The Na_2O was added in two forms: (1) 50% Na_2O as silicate and 50% as sulfate and (2) 75% Na_2O as silicate and 25% as sulfate. The addition of brown silicate to give 50% of the Na_2O in the glass does not produce any noticeable impairment of the color of the glass. The addition of colored silicate to give 75% of the Na_2O in the glass produces a definite coloration of the glass; some quantity of the reducing agent was left. To obtain uncolored glass when 75% of the Na_2O in the glass is to come from the silicate, it is necessary to leave in the charge some carbon-free sulfate, in which case it is necessary to reduce the amount of the carbon to be added by 40 to 50%. B.Z.K.

RAF, S. YA.

PROCESSES AND PROPERTIES INDEX

Briquetting of sulfate charge. S. YA. RAF, V. V. POLLYAK, AND G. M. NISNEVICH. *Stekol'naya i Keram. Prom.*, 1949, No 6, pp. 1-3.—Sulfate charge based to give a glass melt of SiO_2 72.5, R_2O 0.5, CaO 8, MgO 3, and R_2 16% was used to prepare briquettes with 2, 3, 4, 6, 8, 10, and 12% water under pressures of 20, 50, 100, 200, 400, 500, 750, and 1000 kg./cm.^{2}. Briquettes of good mechanical strength were obtained with pressures of 500 to 750 kg./cm.^{2}. Optimum water content is 6 to 8%. The use of special binders had no noticeable effect on strength. Grain size had no effect on mechanical strength. Cullet should not be used to prepare the briquettes. The briquettes should be allowed to harden for 2 to 3 days before use. B.Z.K.

RAF, S. YA.

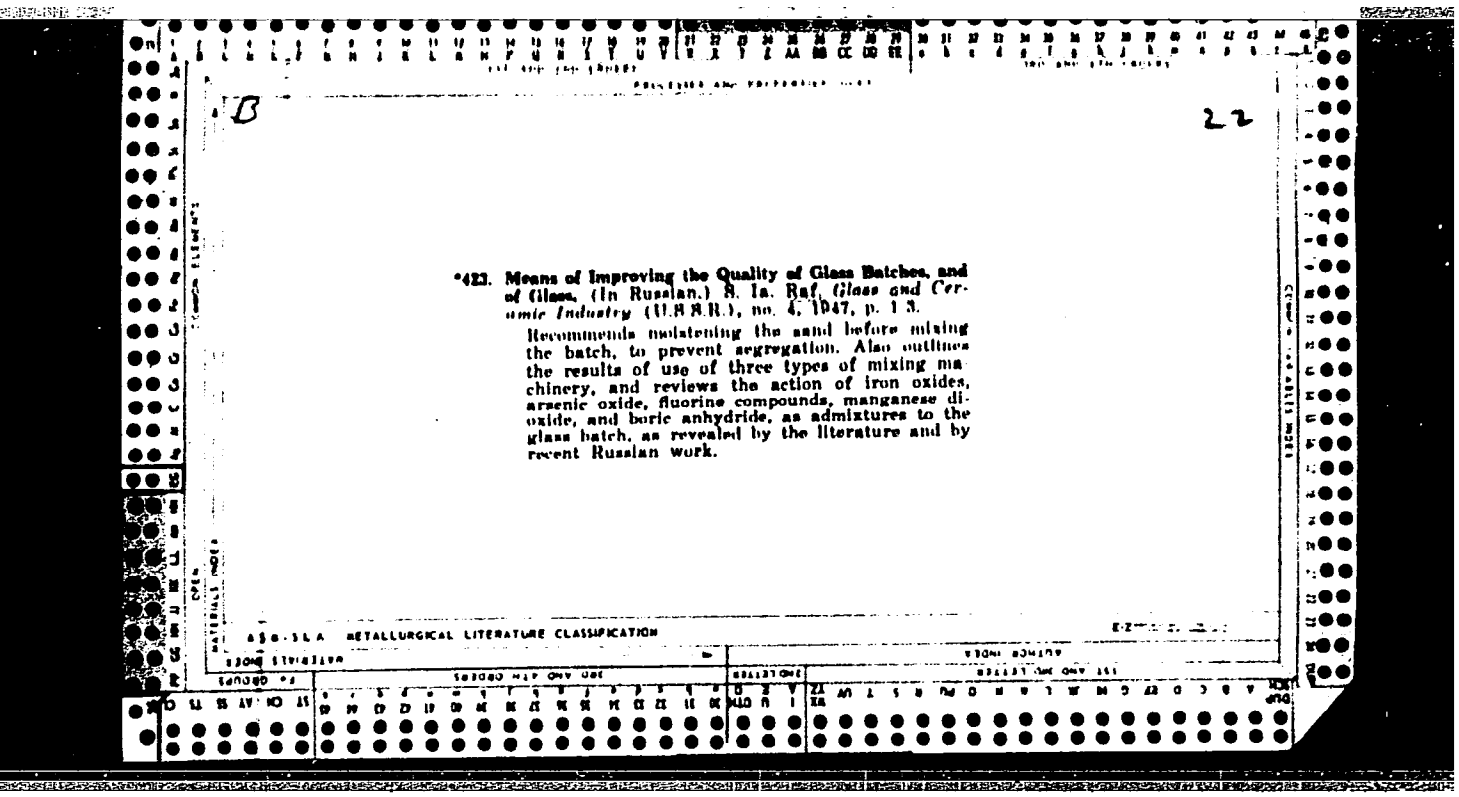
Preparation of soda-sulfate melt and its use in glassmelting. I. M. BOGUSLAVSKII, V. V. POLIYAK, G. M. NISNEVICH, and S. YA. RAF. Abstracted in Steklo i Keram. Prom., 1953, No. 4-5, p. 20,-- it was proposed to use in glassmelting a modified Leblanc melt consisting a mixture of soda and sulfate which was obtained by the incomplete reduction of the sulfate to the sulfide and the carbonization of the latter by the decomposition of the added $CaCO_3$. In contrast to the Leblanc melt, the modified melt was to have Na_2O and CaO in the proportions in which they are used in normal Fourcault charges, and the ratio of soda to sulfate was to be 1:1. The melt was selected on the basis of a glass composition of SiO_2 73, CaO 13, and Na_2O 15% in which $Na_2O/CaO = 1.25$. The glass melt obtained did not differ in coloration from that obtained from a sulfate charge. The absolute content of the sulfides that will produce a colorless glass melts can vary within large limits and does not by itself cause the coloration. The glass becomes colored only when the relation between the sulfides and the free undecomposed sulfates is shifted to give an excess of sulfides not oxidized by the sulfate. The coefficient of reduction of the sulfate should not exceed about 50 to 52%. A homogeneous and uncolored glass is formed from charges containing this melt at 1300° which is a lower temperature than that for soda-sulfate and soda charges. The transmissivity is lowered by increasing the content of Fe oxides, but with the correct ratio of sulfides and sulfates in the melt this will not be the cause of the sulfide coloration. B.I.K.

[illegible], S. Ya.

Glass Manufacture

Problem concerning the technological process involved in the production of glass with soda substitutes, Stek. i ker., 9. No. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952 Unclassified.



B

22

*423. **Means of Improving the Quality of Glass Batches, and of Glass.** (In Russian.) S. Ia. Raf, *Glass and Ceramic Industry* (U.S.S.R.), no. 4, 1947, p. 13.

Recommends moistening the sand before mixing the batch, to prevent segregation. Also outlines the results of use of three types of mixing machinery, and reviews the action of iron oxides, arsenic oxide, fluorine compounds, manganese dioxide, and boric anhydride, as admixtures to the glass batch, as revealed by the literature and by recent Russian work.

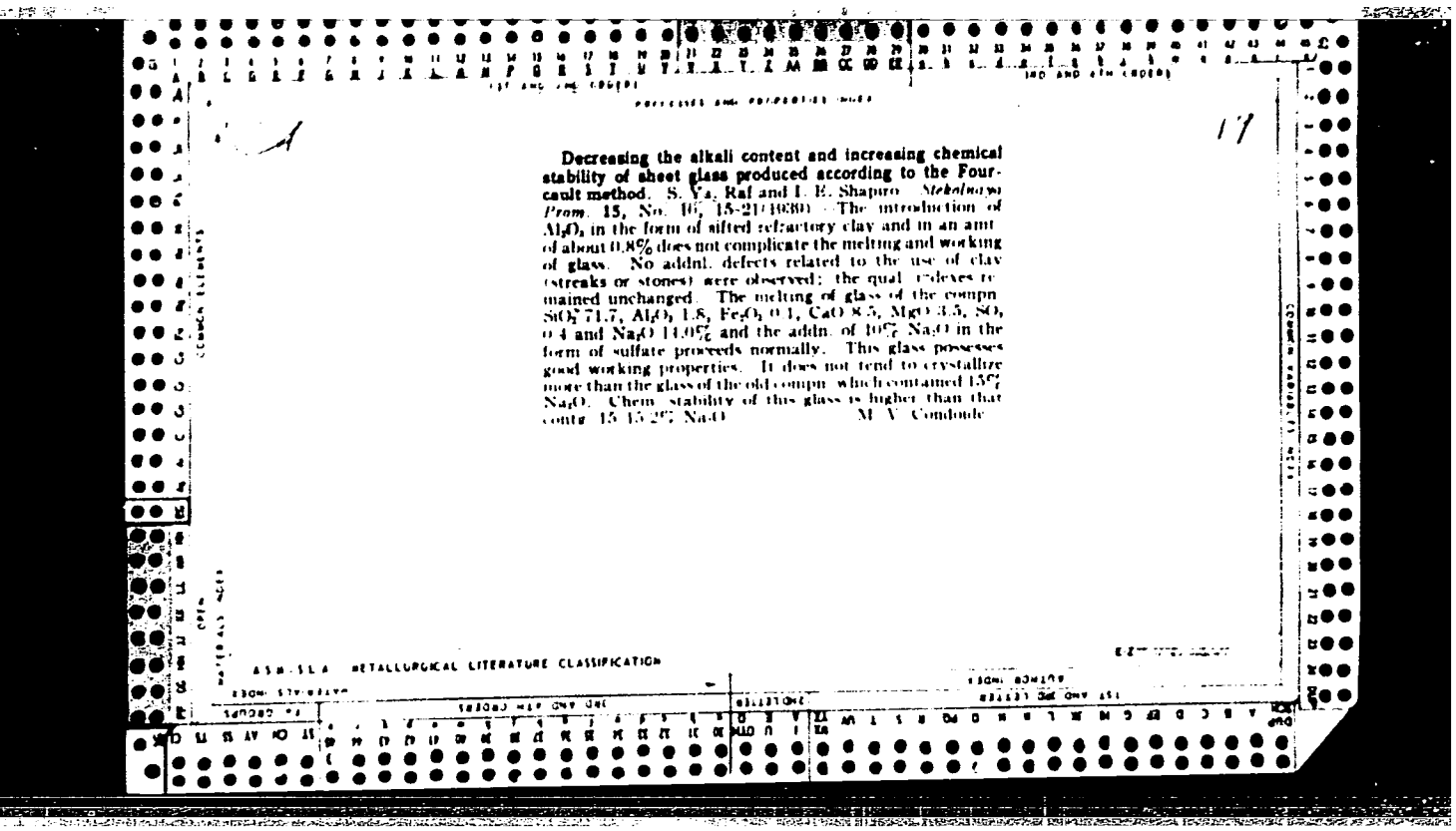
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

Gl. Ch.

BI-9, Glass, ceramics abrasives

Effects of different methods of preparing the batch and of grading on the speed of fusion of glass. S. V. Raf and N. A. Milyaeva (*Stek. Keram.*, 1948, **5**, No. 2, 4; *Brit. ceram. Abstr.*, 1948, A351).—The process of fusion and fining of glass is accelerated when the batch is pressed into briquettes and when the grain size of the latter is small

R. H. CLARKE.

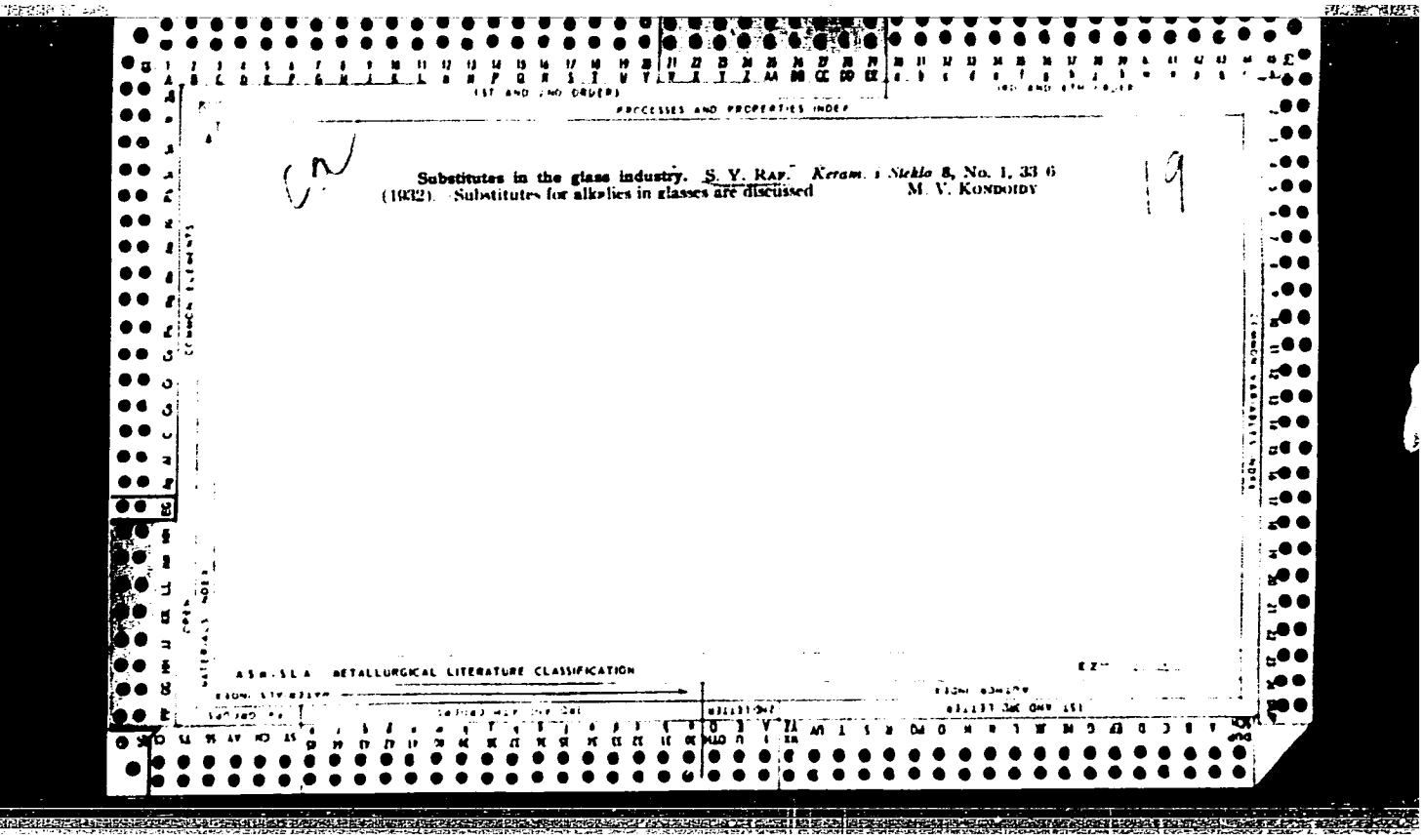


Decreasing the alkali content and increasing chemical stability of sheet glass produced according to the Fourcault method. S. Ya. Raf and I. E. Shapiro. *Steklo i Keram.* 15, No. 10, 15-21 (1958). The introduction of Al_2O_3 in the form of sifted refractory clay and in an amt of about 0.8% does not complicate the melting and working of glass. No addnl. defects related to the use of clay (streaks or stones) were observed; the qual. indexes remained unchanged. The melting of glass of the compn SiO_2 71.7, Al_2O_3 1.8, Fe_2O_3 0.1, CaO 8.5, MgO 3.5, SO_3 0.4 and Na_2O 14.0% and the addn. of 10% Na_2O in the form of sulfate proceeds normally. This glass possesses good working properties. It does not tend to crystallize more than the glass of the old compn which contained 13% Na_2O. Chem. stability of this glass is higher than that contg 13-15.2% Na_2O. M. V. Condoide

glass

BCS

1232. **Moistening the glass batch.**—S. Ya. Rat (*Strek. Keram.*, 8, No. 10, 7, 1951). Various methods of moistening the glass batch to avoid its segregation are discussed. The total moisture content in a soda batch ready for use should be 2–3%, in a soda-sulphate batch 3–5%, and in a pure sulphate batch 6–7%. Sand alone should be wetted before it is mixed with other components regardless of the wetting method used. It is emphasized that wetting of all raw materials during their mixing is by no means permissible. Some authors suggest that the batch should be wetted by steam at the tank (as it leaves the bunker in the dry state). The suggestion is severely criticized. On the contrary, to avoid clotting it is suggested that the dry sand, which may be hot, should be cooled to 35°–40° C. before wetting.



PROCESSES AND PROPERTIES INDEX

Substitutes in the glass industry. S. V. Rav. *Keram. i Steklo* **8**, No. 1, 33 6 (1932). Substitutes for alkalies in glasses are discussed M. V. Kondoidy

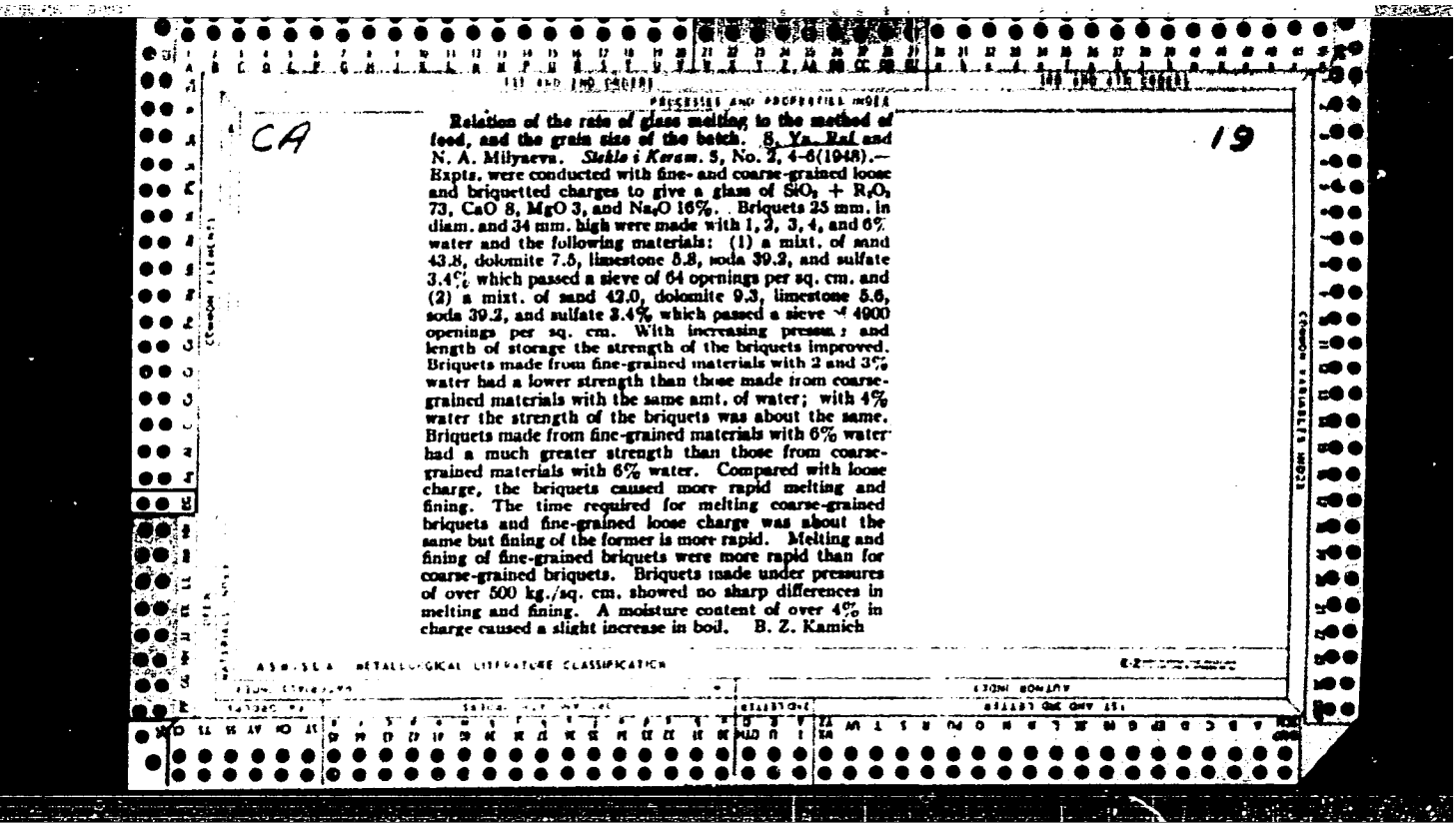
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

19

Use of astrakhanite in glass melting. S. Ya. Rai *Steklo i Keram.* 5, No. 6, 7-9(1948).—Chem. compn. of astrakhanite ($MgSO_4.Na_2SO_4.4H_2O$) varies as follows: Na_2SO_4 22–36, $MgSO_4$ 20–34, $CaSO_4$ 6–8, NaCl 1.5–4.5, H_2O 10–23%. A large tank furnace producing glass of SiO_2-R_2O_3 72.1, CaO 7.8, MgO 3.0, Na_2O 16.0, and SO_3 0.6% was fed for 17 days with a charge of 80% dry astrakhanite and 20% cullet; total consumption of dry astrakhanite was 550 tons. Because of high content of MgO in the astrakhanite, the MgO in the glass was gradually increased to 3.75% by corresponding decrease of CaO; the total sum of RO remained unchanged. The glass compn. changed gradually. No marked changes in the process were observed. Pick-up of glass remained the same at about 98–100 m./hr. It was not difficult to cut or break the glass.

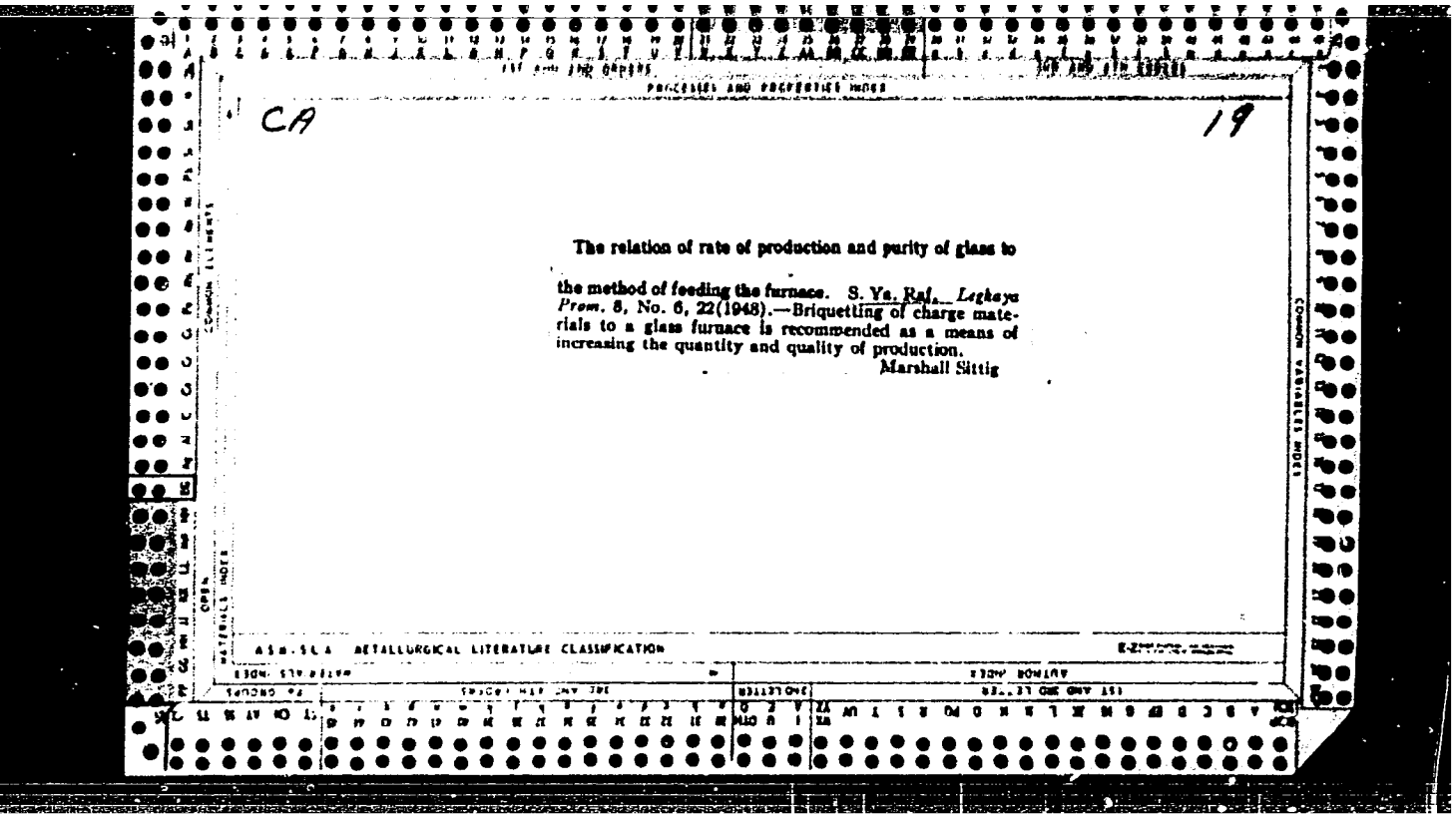
B. Z. Kamich



CA

19

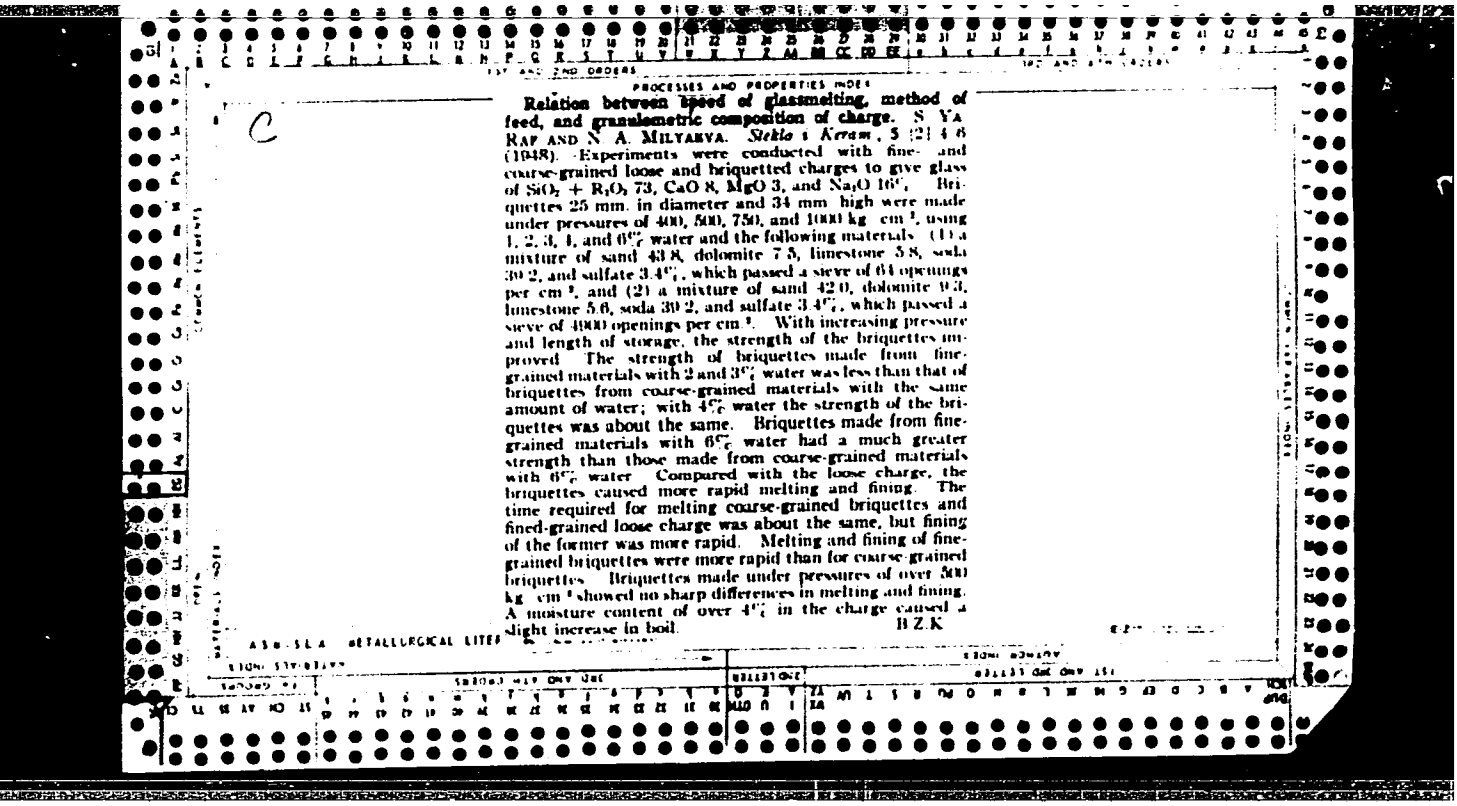
Relation of the rate of glass melting to the method of feed, and the grain size of the batch. S. Ya. Rai and N. A. Milyaeva. *Steklo i Keram.* 5, No. 2, 4–6(1948).— Expts. were conducted with fine- and coarse-grained loose and briquetted charges to give a glass of SiO_2 + R_2O_3 73, CaO 8, MgO 3, and Na_2O 16%. Briquets 25 mm. in diam. and 34 mm. high were made with 1, 2, 3, 4, and 6% water and the following materials: (1) a mixt. of sand 43.8, dolomite 7.5, limestone 5.8, soda 39.2, and sulfate 3.4% which passed a sieve of 64 openings per sq. cm. and (2) a mixt. of sand 42.0, dolomite 9.3, limestone 5.6, soda 39.2, and sulfate 3.4% which passed a sieve of 4900 openings per sq. cm. With increasing pressure and length of storage the strength of the briquets improved. Briquets made from fine-grained materials with 2 and 3% water had a lower strength than those made from coarse-grained materials with the same amt. of water; with 4% water the strength of the briquets was about the same. Briquets made from fine-grained materials with 6% water had a much greater strength than those from coarse-grained materials with 6% water. Compared with loose charge, the briquets caused more rapid melting and fining. The time required for melting coarse-grained briquets and fine-grained loose charge was about the same but fining of the former is more rapid. Melting and fining of fine-grained briquets were more rapid than for coarse-grained briquets. Briquets made under pressures of over 500 kg./sq. cm. showed no sharp differences in melting and fining. A moisture content of over 4% in charge caused a slight increase in boil. B. Z. Kamich



CA 19

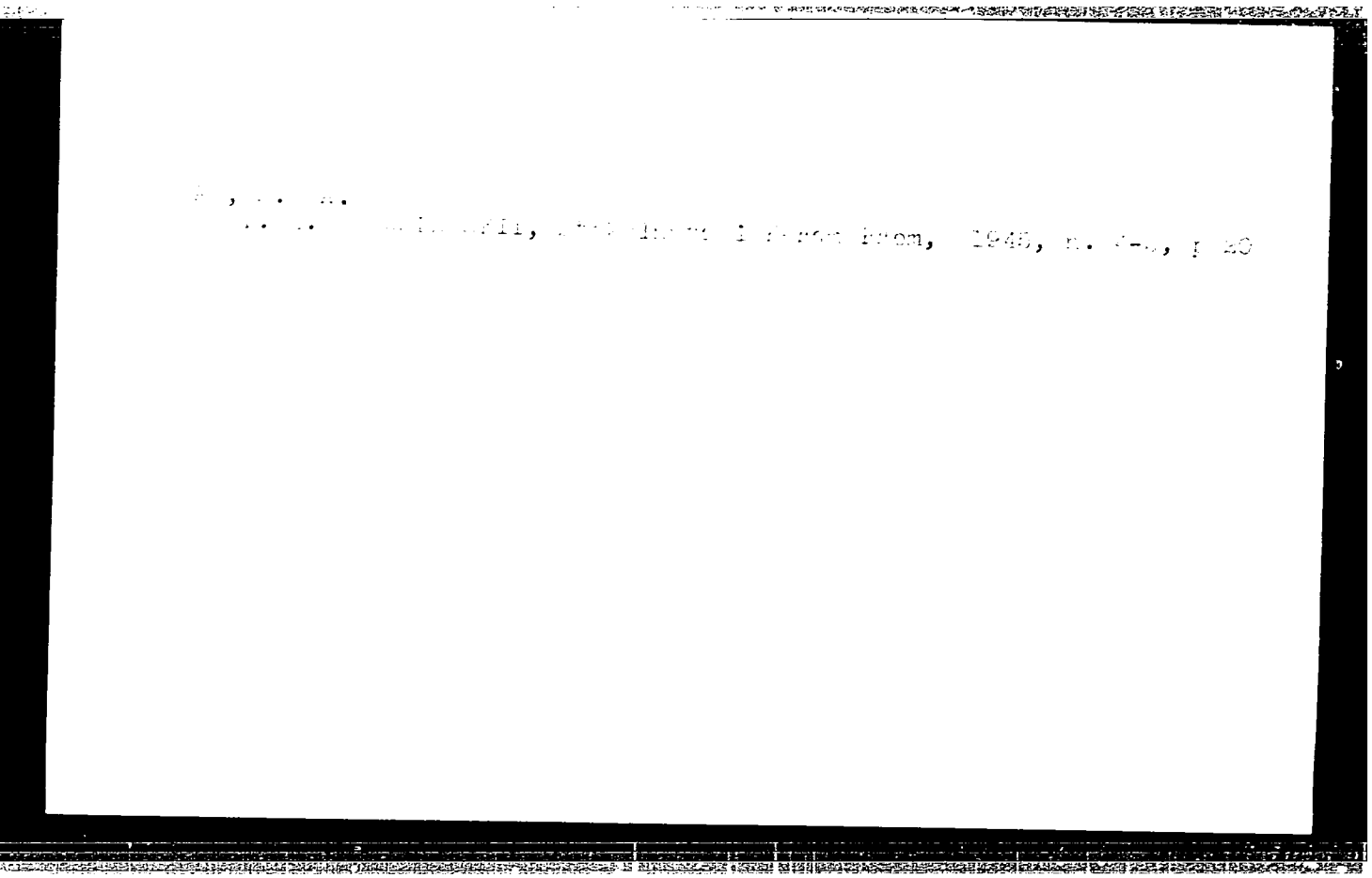
The relation of rate of production and purity of glass to the method of feeding the furnace. S. Ya. Raf. *Legkaya Prom.* 8, No. 6, 22(1948).—Briquetting of charge materials to a glass furnace is recommended as a means of increasing the quantity and quality of production.

Marshall Sittig



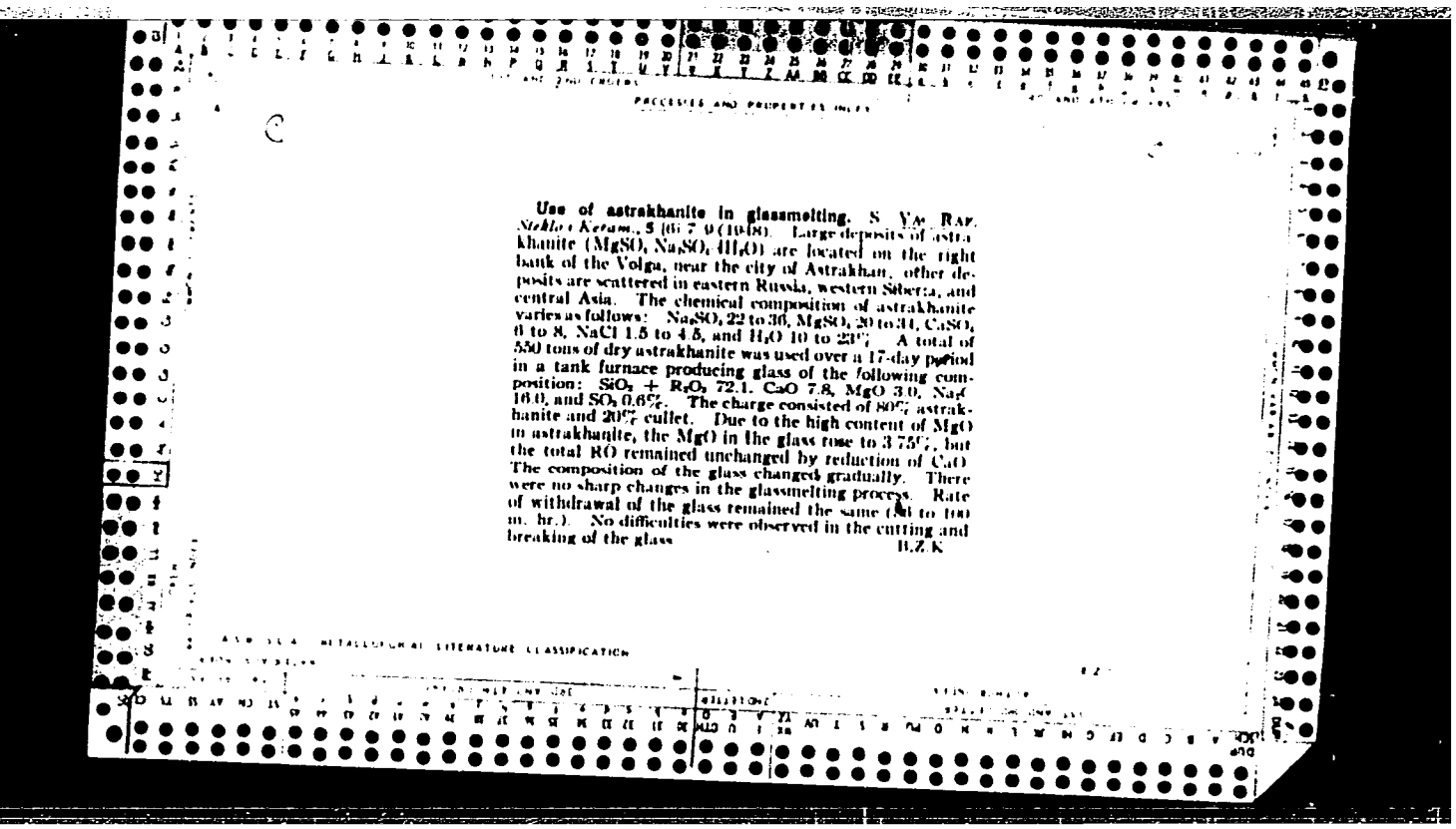
PROCESSES AND PROPERTIES INDEX

Relation between speed of glassmelting, method of feed, and granulometric composition of charge. S YA RAP AND N A MILYAEVA. *Steklo i Keram.*, 5 [2] 4-6 (1948). Experiments were conducted with fine- and coarse-grained loose and briquetted charges to give glass of $SiO_2 + R_2O_3$ 73, CaO 8, MgO 3, and Na_2O 16%. Briquettes 25 mm. in diameter and 34 mm. high were made under pressures of 400, 500, 750, and 1000 kg. cm.$^{-2}$, using 1, 2, 3, 4, and 6% water and the following materials: (1) a mixture of sand 43.8, dolomite 7.5, limestone 5.8, soda 39.2, and sulfate 3.4%, which passed a sieve of 64 openings per cm.^{2}, and (2) a mixture of sand 42.0, dolomite 9.3, limestone 5.6, soda 39.2, and sulfate 3.4%, which passed a sieve of 4900 openings per cm.^{2}. With increasing pressure and length of storage, the strength of the briquettes improved. The strength of briquettes made from fine-grained materials with 2 and 3% water was less than that of briquettes from coarse-grained materials with the same amount of water; with 4% water the strength of the briquettes was about the same. Briquettes made from fine-grained materials with 6% water had a much greater strength than those made from coarse-grained materials with 6% water. Compared with the loose charge, the briquettes caused more rapid melting and fining. The time required for melting coarse-grained briquettes and fined-grained loose charge was about the same, but fining of the former was more rapid. Melting and fining of fine-grained briquettes were more rapid than for coarse-grained briquettes. Briquettes made under pressures of over 500 kg. cm.$^{-2}$ showed no sharp differences in melting and fining. A moisture content of over 4% in the charge caused a slight increase in boil. B Z K



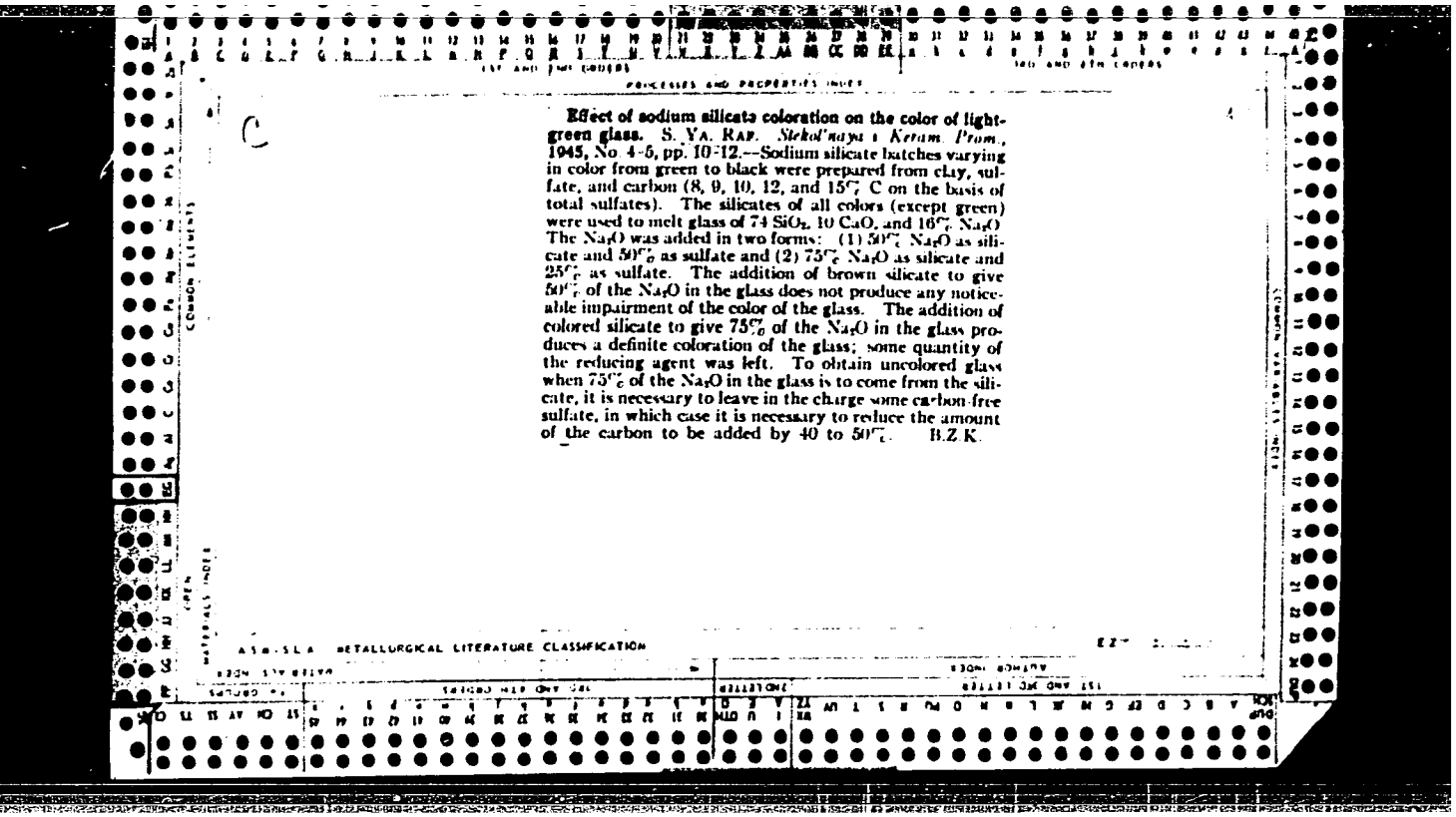
RAFAILOVA, Kh.Kh.

Effect of the Arctic on the features of meridional circulation over Europe and Western Siberia. Trudy TSIP no.49:181-230 '57. (Arctic regions) (Europe--Atmosphere) (MLRA 10:8) (Siberia, Western--Atmosphere)

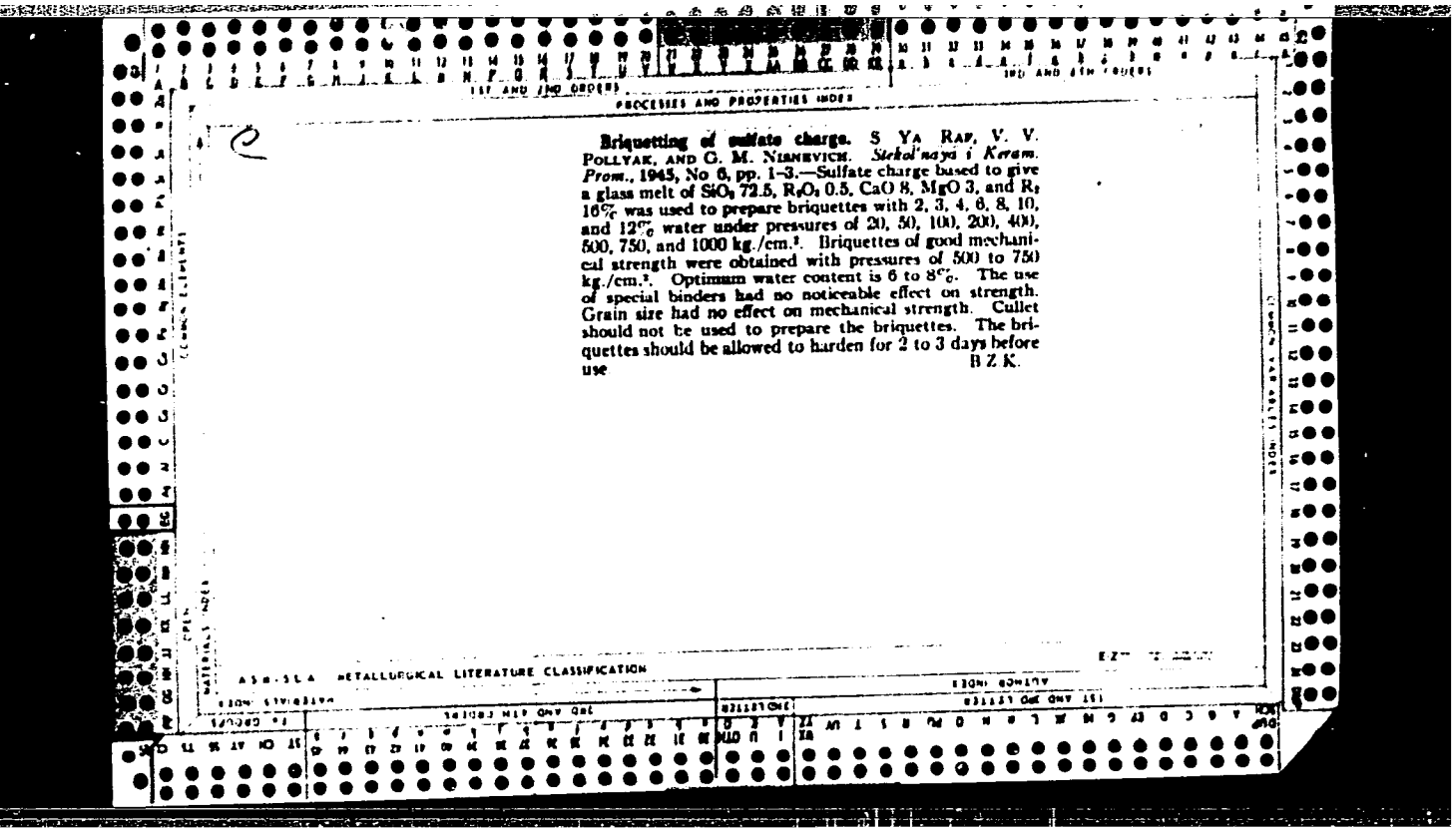


Use of astrakhanite in glassmelting. S. Ya. Raz. *Steklo i Keram.*, 5 (6) 7–9 (1948). Large deposits of astrakhanite ($MgSO_4 \cdot Na_2SO_4 \cdot 4H_2O$) are located on the right bank of the Volga, near the city of Astrakhan; other deposits are scattered in eastern Russia, western Siberia, and central Asia. The chemical composition of astrakhanite varies as follows: Na_2SO_4 22 to 36, $MgSO_4$ 20 to 34, $CaSO_4$ 0 to 8, NaCl 1.5 to 4.5, and H_2O 10 to 23%. A total of 550 tons of dry astrakhanite was used over a 17-day period in a tank furnace producing glass of the following composition: SiO_2 + R_2O_3 72.1, CaO 7.8, MgO 3.0, Na_2O 16.0, and SO_3 0.6%. The charge consisted of 80% astrakhanite and 20% cullet. Due to the high content of MgO in astrakhanite, the MgO in the glass rose to 3.75%, but the total RO remained unchanged by reduction of CaO. The composition of the glass changed gradually. There were no sharp changes in the glassmelting process. Rate of withdrawal of the glass remained the same (8 to 10 m. hr.). No difficulties were observed in the cutting and breaking of the glass.

B.Z.K



Effect of sodium silicate coloration on the color of light-green glass. S. YA. RAP. *Steklo'naya i Keram. Prom.*, 1945, No. 4-5, pp. 10-12.--Sodium silicate batches varying in color from green to black were prepared from clay, sulfate, and carbon (8, 9, 10, 12, and 15% C on the basis of total sulfates). The silicates of all colors (except green) were used to melt glass of 74 SiO_2, 10 CaO, and 16% Na_2O. The Na_2O was added in two forms: (1) 50% Na_2O as silicate and 50% as sulfate and (2) 75% Na_2O as silicate and 25% as sulfate. The addition of brown silicate to give 50% of the Na_2O in the glass does not produce any noticeable impairment of the color of the glass. The addition of colored silicate to give 75% of the Na_2O in the glass produces a definite coloration of the glass; some quantity of the reducing agent was left. To obtain uncolored glass when 75% of the Na_2O in the glass is to come from the silicate, it is necessary to leave in the charge some carbon-free sulfate, in which case it is necessary to reduce the amount of the carbon to be added by 40 to 50%. B.Z.K.

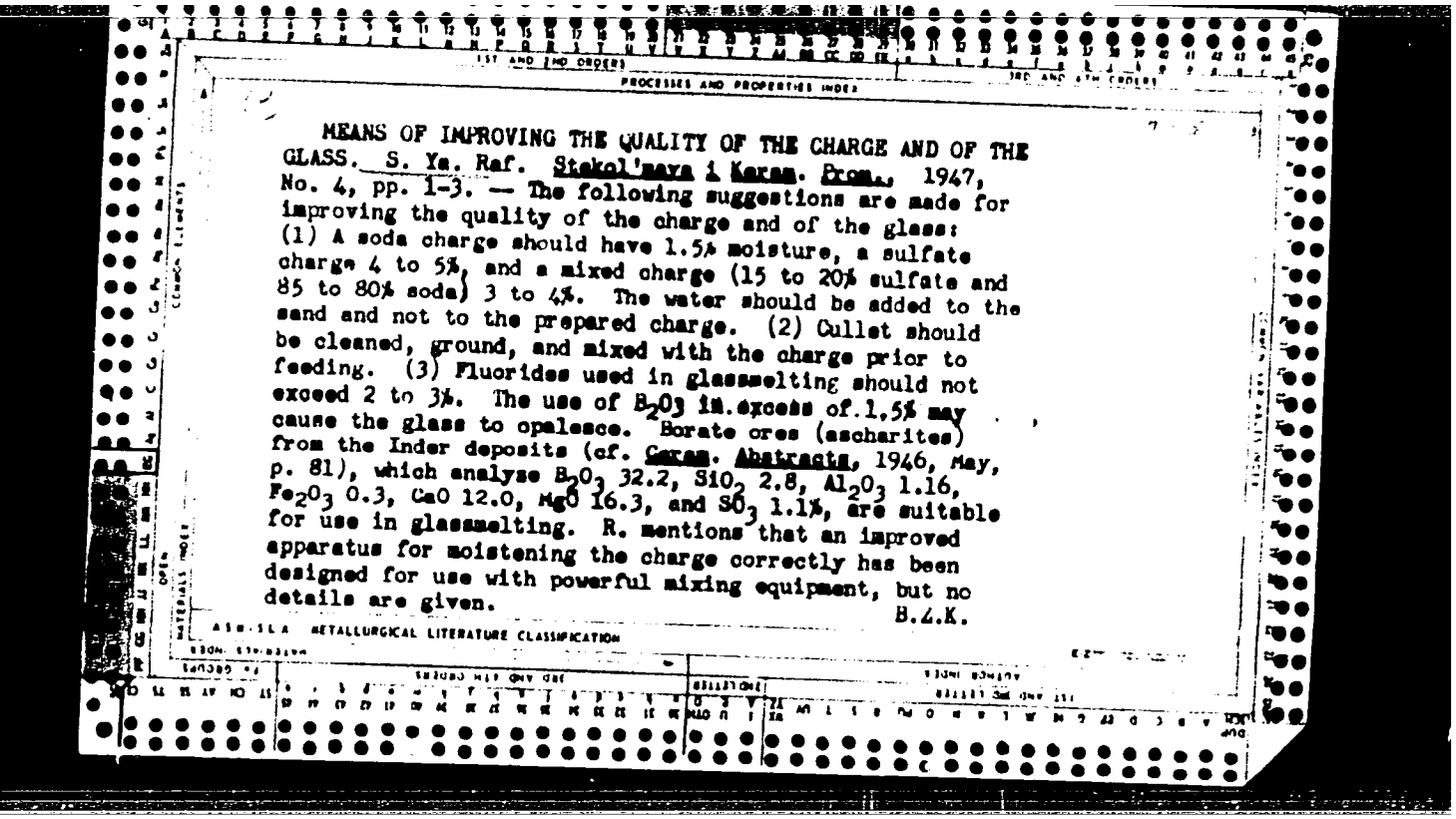


PROCESSES AND PROPERTIES INDEX

Briquetting of sulfate charge. S YA RAP, V. V. POLLYAK, AND G. M. NIANEVICH. *Steklo'naya i Keram. Prom.*, 1945, No 6, pp. 1–3.—Sulfate charge based to give a glass melt of SiO_2 72.5, R_2O_3 0.5, CaO 8, MgO 3, and R_2 16% was used to prepare briquettes with 2, 3, 4, 6, 8, 10, and 12% water under pressures of 20, 50, 100, 200, 400, 500, 750, and 1000 kg./cm.². Briquettes of good mechanical strength were obtained with pressures of 500 to 750 kg./cm.². Optimum water content is 6 to 8%. The use of special binders had no noticeable effect on strength. Grain size had no effect on mechanical strength. Cullet should not be used to prepare the briquettes. The briquettes should be allowed to harden for 2 to 3 days before use

B Z K.

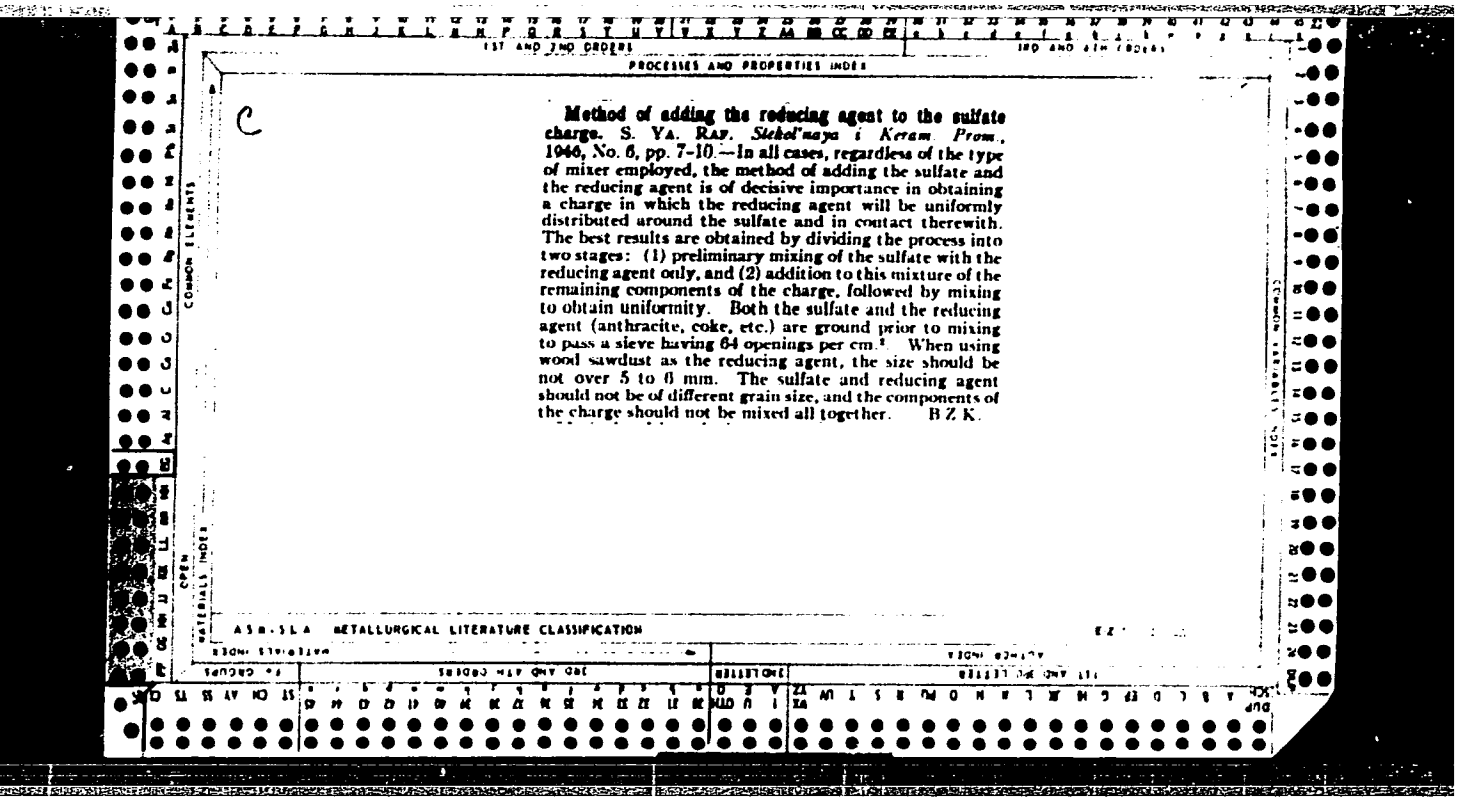
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

MEANS OF IMPROVING THE QUALITY OF THE CHARGE AND OF THE GLASS. S. Ya. Raf. Stekol'naya i Keram. Prom., 1947, No. 4, pp. 1-3. — The following suggestions are made for improving the quality of the charge and of the glass: (1) A soda charge should have 1.5% moisture, a sulfate charge 4 to 5%, and a mixed charge (15 to 20% sulfate and 85 to 80% soda) 3 to 4%. The water should be added to the sand and not to the prepared charge. (2) Cullet should be cleaned, ground, and mixed with the charge prior to feeding. (3) Fluorides used in glassmelting should not exceed 2 to 3%. The use of B_2O_3 in excess of 1.5% may cause the glass to opalesce. Borate ores (ascharites) from the Inder deposits (cf. Keram. Abstracts, 1946, May, p. 81), which analyse B_2O_3 32.2, SiO_2 2.8, Al_2O_3 1.16, Fe_2O_3 0.3, CaO 12.0, MgO 16.3, and SO_3 1.1%, are suitable for use in glassmelting. R. mentions that an improved apparatus for moistening the charge correctly has been designed for use with powerful mixing equipment, but no details are given. B.A.K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

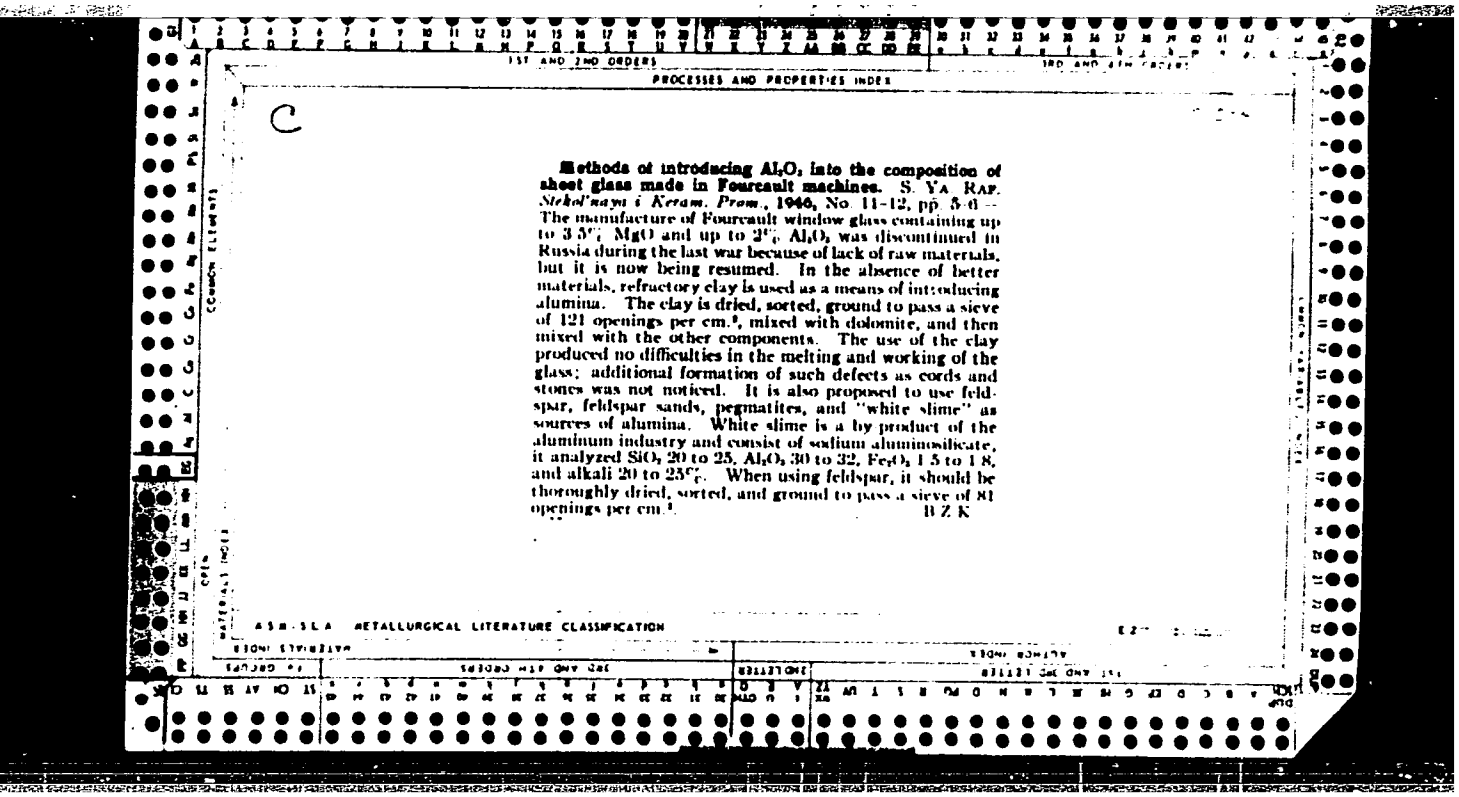


PROCESSES AND PROPERTIES INDEX

C

Method of adding the reducing agent to the sulfate charge. S. Ya. Rap. *Stekol'naya i Keram. Prom.*, 1946, No. 6, pp. 7-10.—In all cases, regardless of the type of mixer employed, the method of adding the sulfate and the reducing agent is of decisive importance in obtaining a charge in which the reducing agent will be uniformly distributed around the sulfate and in contact therewith. The best results are obtained by dividing the process into two stages: (1) preliminary mixing of the sulfate with the reducing agent only, and (2) addition to this mixture of the remaining components of the charge, followed by mixing to obtain uniformity. Both the sulfate and the reducing agent (anthracite, coke, etc.) are ground prior to mixing to pass a sieve having 64 openings per cm.^{2} When using wood sawdust as the reducing agent, the size should be not over 5 to 6 mm. The sulfate and reducing agent should not be of different grain size, and the components of the charge should not be mixed all together. B Z K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



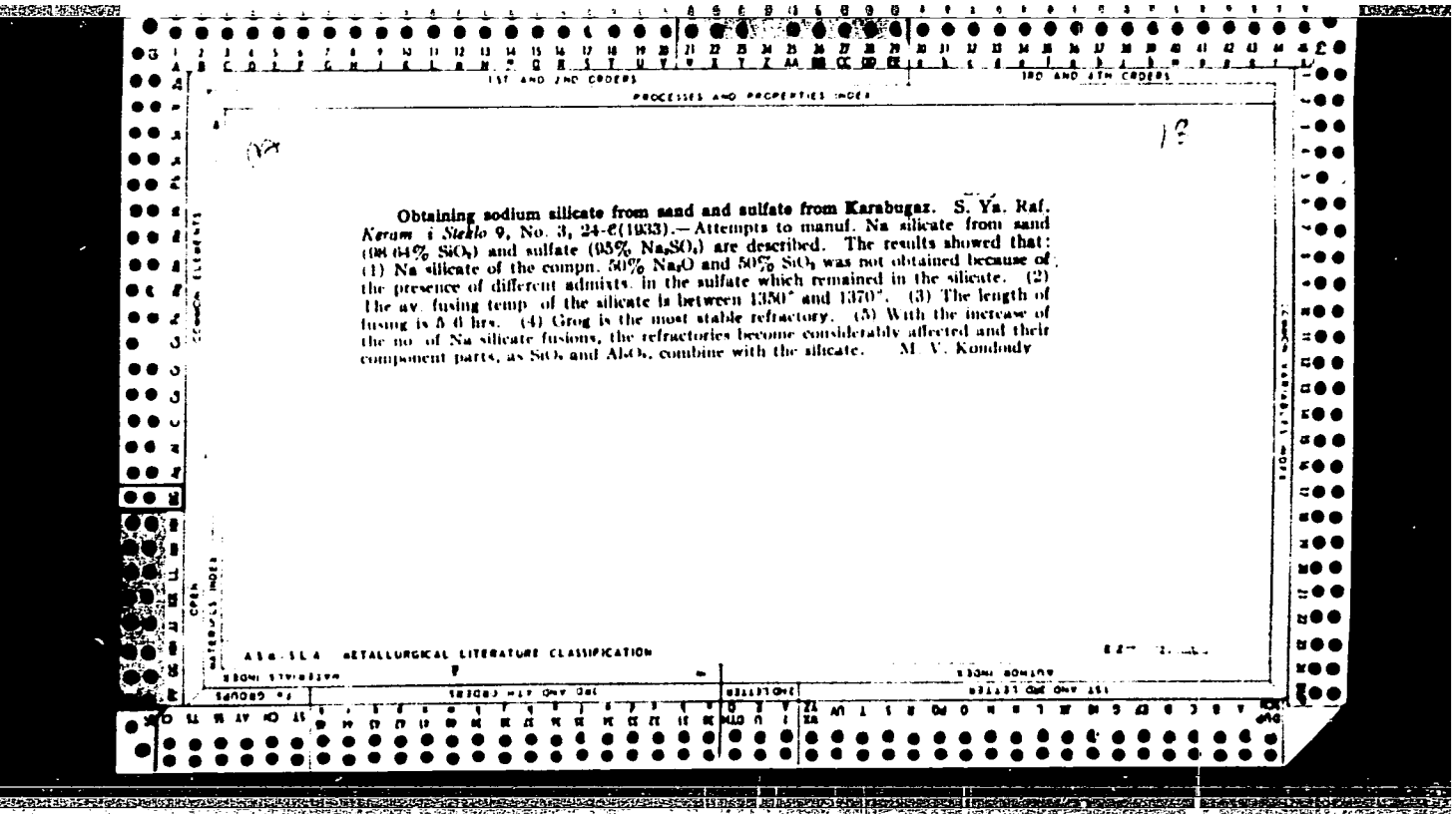
PROCESSES AND PROPERTIES INDEX

C

Methods of introducing Al_2O_3 into the composition of sheet glass made in Fourcault machines. S. Ya. Rap. *Steklo'nayi i Keram. Prom.*, 1946, No. 11-12, pp. 5-6 — The manufacture of Fourcault window glass containing up to 3.5% MgO and up to 2% Al_2O_3 was discontinued in Russia during the last war because of lack of raw materials, but it is now being resumed. In the absence of better materials, refractory clay is used as a means of introducing alumina. The clay is dried, sorted, ground to pass a sieve of 121 openings per $cm.^2$, mixed with dolomite, and then mixed with the other components. The use of the clay produced no difficulties in the melting and working of the glass; additional formation of such defects as cords and stones was not noticed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of alumina. White slime is a by product of the aluminum industry and consist of sodium aluminosilicate, it analyzed SiO_2 20 to 25, Al_2O_3 30 to 32, Fe_2O_3 1.5 to 1.8, and alkali 20 to 25%. When using feldspar, it should be thoroughly dried, sorted, and ground to pass a sieve of 81 openings per $cm.^2$.

H Z K

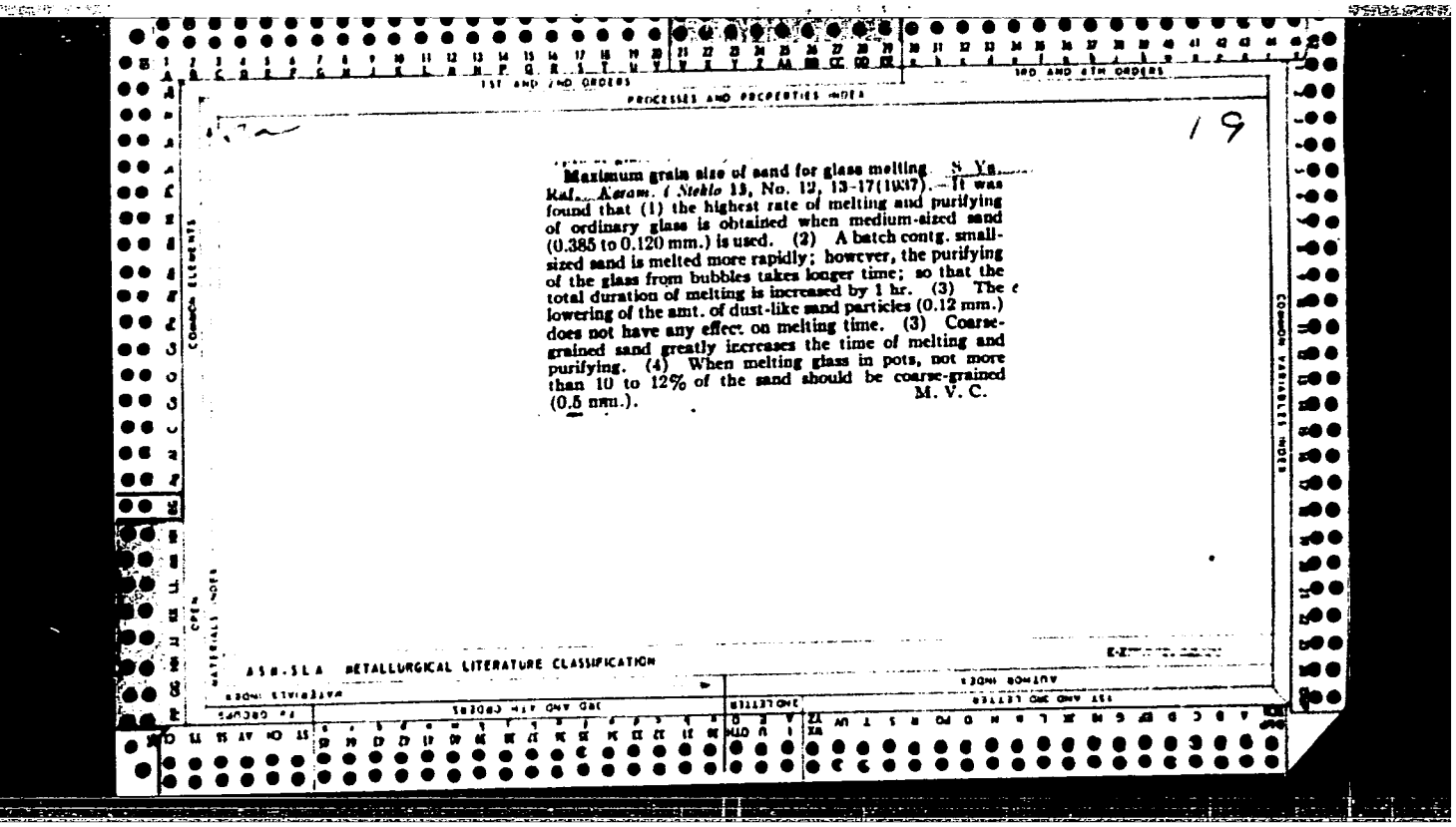
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Obtaining sodium silicate from sand and sulfate from Karabugaz. S. Ya. Raf. *Keram i Steklo* 9, No. 3, 24-6(1933).—Attempts to manuf. Na silicate from sand (98.64% SiO_2) and sulfate (95% Na_2SO_4) are described. The results showed that: (1) Na silicate of the compn. 50% Na_2O and 50% SiO_2 was not obtained because of the presence of different admixts. in the sulfate which remained in the silicate. (2) The av. fusing temp. of the silicate is between 1350° and 1370°. (3) The length of fusing is 5-6 hrs. (4) Grog is the most stable refractory. (5) With the increase of the no. of Na silicate fusions, the refractories become considerably affected and their component parts, as SiO_2 and Al_2O_3, combine with the silicate. M. V. Kondudy

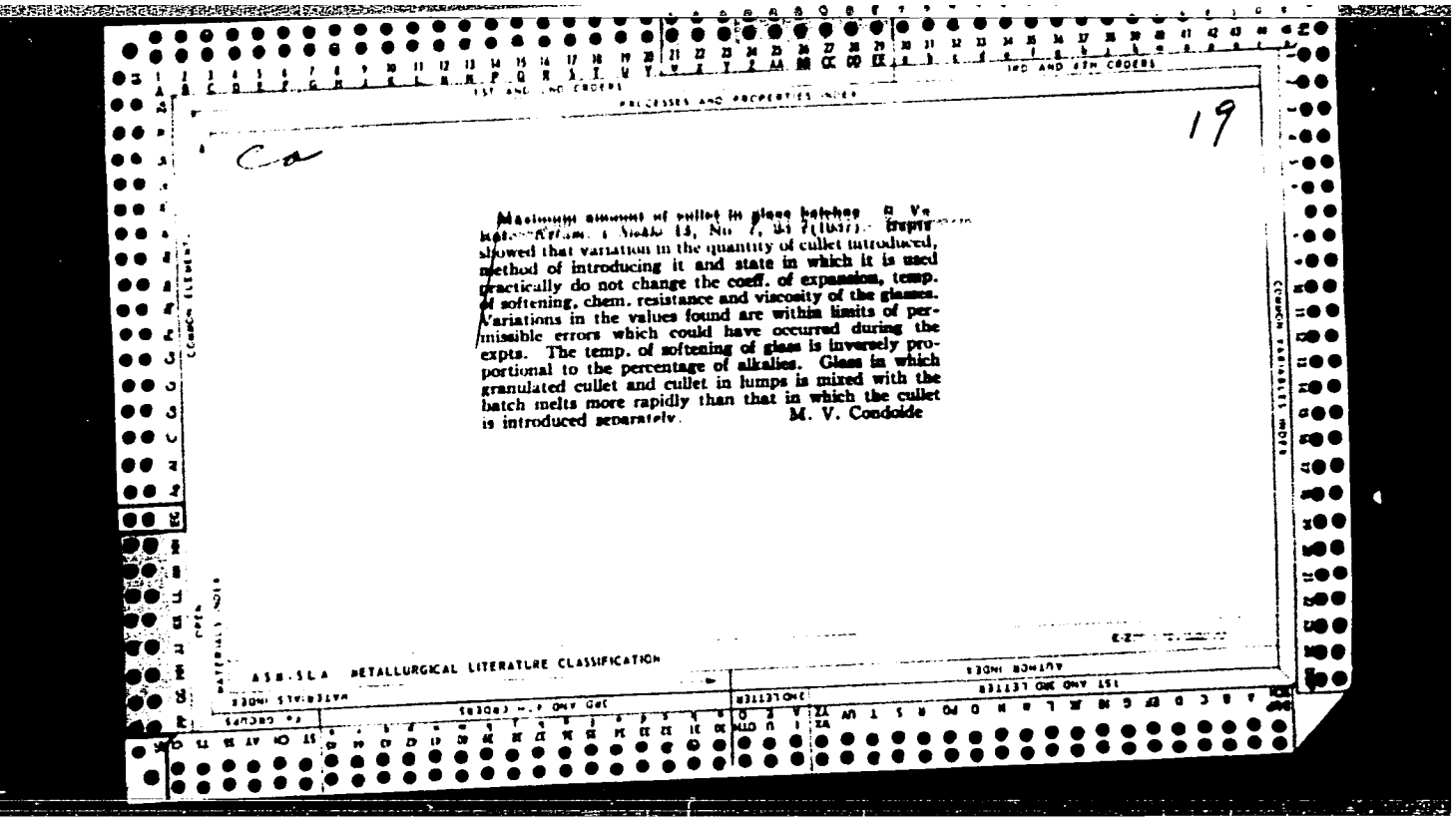
METALLURGICAL LITERATURE CLASSIFICATION



19

Maximum grain size of sand for glass melting. S. Ya. Rat... *Keram. i Steklo* 15, No. 12, 13–17(1937).—It was found that (1) the highest rate of melting and purifying of ordinary glass is obtained when medium-sized sand (0.385 to 0.120 mm.) is used. (2) A batch contg. small-sized sand is melted more rapidly; however, the purifying of the glass from bubbles takes longer time; so that the total duration of melting is increased by 1 hr. (3) The lowering of the amt. of dust-like sand particles (0.12 mm.) does not have any effect on melting time. (3) Coarse-grained sand greatly increases the time of melting and purifying. (4) When melting glass in pots, not more than 10 to 12% of the sand should be coarse-grained (0.5 mm.). M. V. C.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



19

Ca

Maximum amount of cullet in glass batches [illegible] showed that variation in the quantity of cullet introduced, method of introducing it and state in which it is used practically do not change the coeff. of expansion, temp. of softening, chem. resistance and viscosity of the glasses. Variations in the values found are within limits of permissible errors which could have occurred during the expts. The temp. of softening of glass is inversely proportional to the percentage of alkalies. Glass in which granulated cullet and cullet in lumps is mixed with the batch melts more rapidly than that in which the cullet is introduced separately.

M. V. Condoide

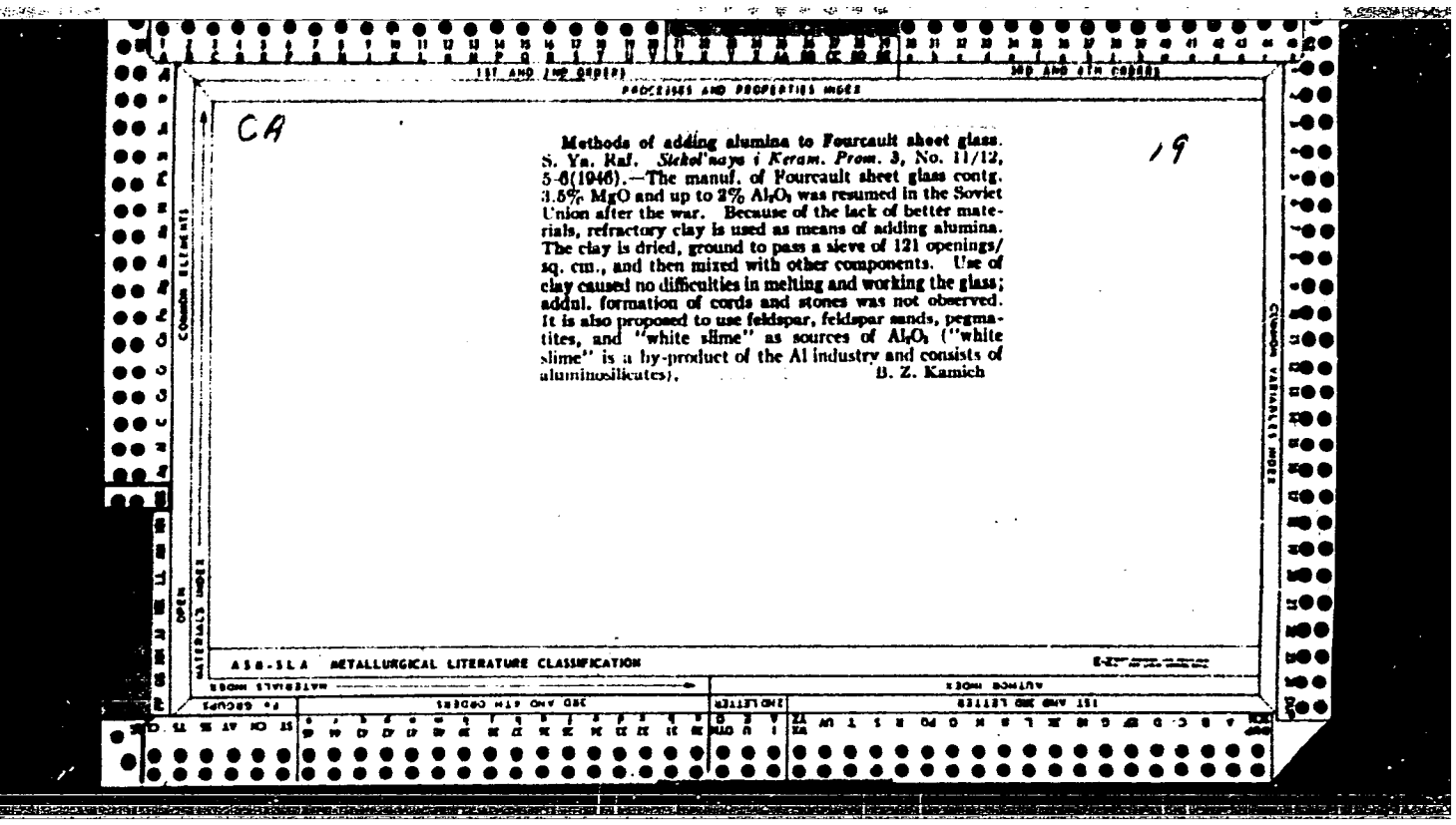
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

19

Methods of introducing alumina into the composition of sheet glass made in Fourcault machines. S. Ya. Rafi. *Stekol'naya i Keram. Prom.* **1948**, No. 11/12, 5-6; *Ceram. Abstracts* **1948**, 98(in *J. Am. Ceram. Soc.* **31**, No. 5).—Refractory clay is used as a means of introducing alumina. The clay is dried, sorted, ground to pass a sieve of 121 openings per sq. cm., mixed with dolomite, and then mixed with the other components. The use of the clay produced no difficulties in the melting and working of the glass; addnl. formation of such defects as cords and stones was not noticed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of alumina. White slime is a by-product of the Al industry and consists of Na aluminosilicate; it analyzed SiO_2 20 to 25, Al_2O_3 30 to 32, Fe_2O_3 1.5 to 1.8, and alkali 20 to 25%. When using feldspar, it should be thoroughly dried, sorted, and ground to pass a sieve of 81 openings per sq. cm.

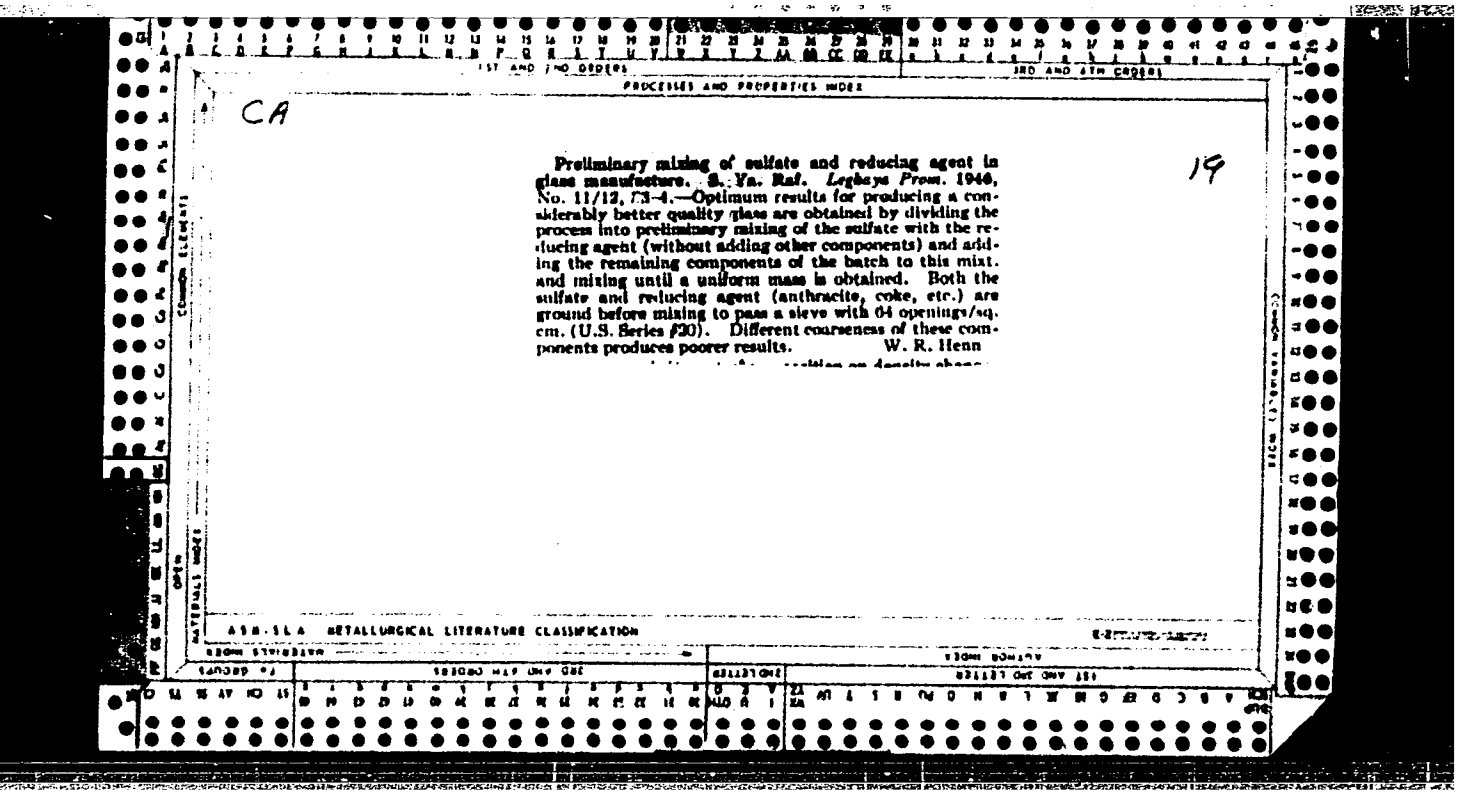
R. D. H.



CA

19

Methods of adding alumina to Fourcault sheet glass. S. Ya. Raf. *Steklo'naya i Keram. Prom.* 3, No. 11/12, 5-6(1946).—The manuf. of Fourcault sheet glass contg. 3.5% MgO and up to 2% Al_2O_3 was resumed in the Soviet Union after the war. Because of the lack of better materials, refractory clay is used as means of adding alumina. The clay is dried, ground to pass a sieve of 121 openings/sq. cm., and then mixed with other components. Use of clay caused no difficulties in melting and working the glass; addnl. formation of cords and stones was not observed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of Al_2O_3 ("white slime" is a by-product of the Al industry and consists of aluminosilicates). B. Z. Kamich



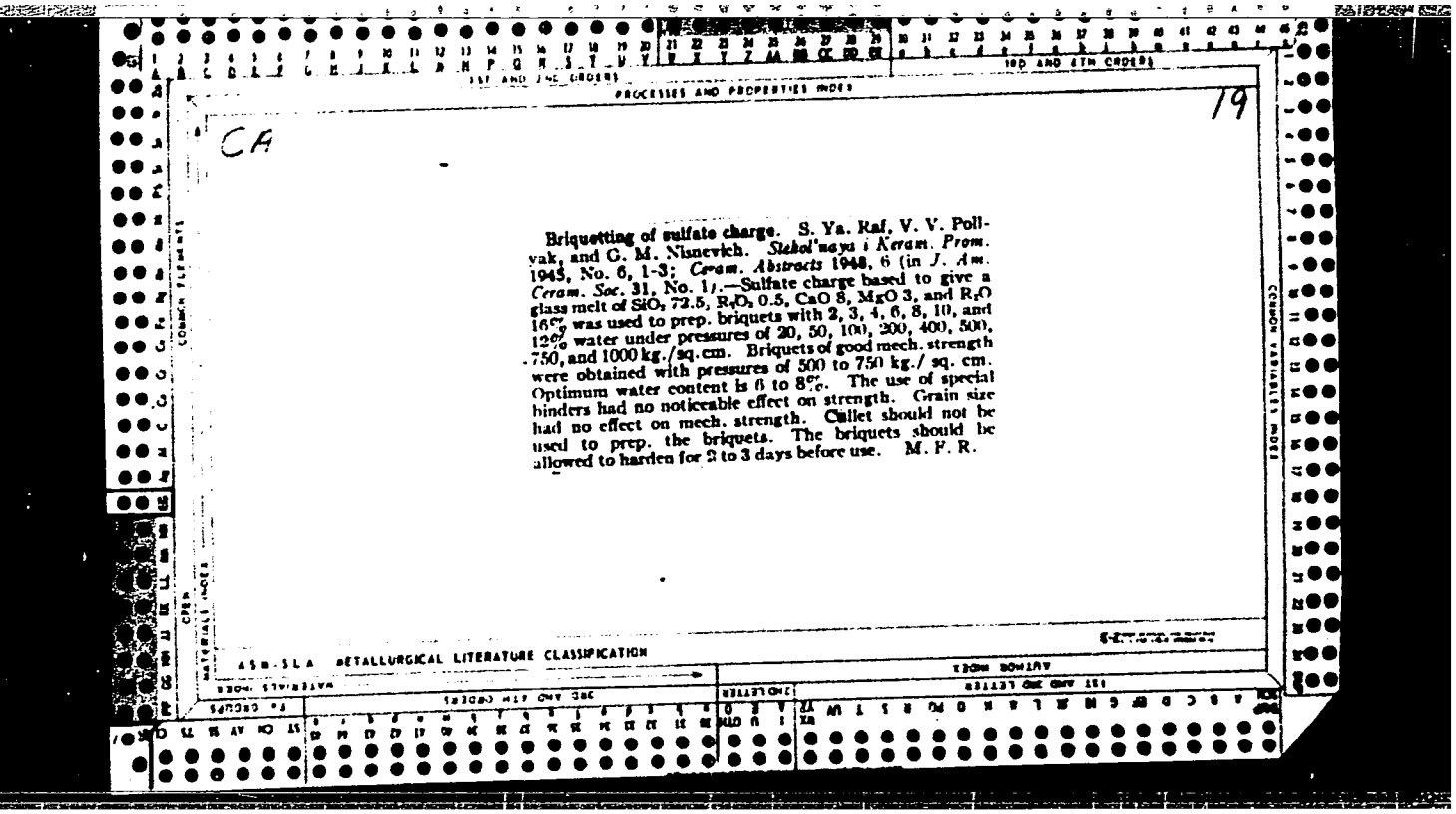
PROCESSES AND PROPERTIES INDEX

CA

19

Preliminary mixing of sulfate and reducing agent in glass manufacture. S. Ya. Raf. *Legkaya Prom.* 1946, No. 11/12, 73–4.—Optimum results for producing a considerably better quality glass are obtained by dividing the process into preliminary mixing of the sulfate with the reducing agent (without adding other components) and adding the remaining components of the batch to this mixt. and mixing until a uniform mass is obtained. Both the sulfate and reducing agent (anthracite, coke, etc.) are ground before mixing to pass a sieve with 64 openings/sq. cm. (U.S. Series #20). Different coarseness of these components produces poorer results. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



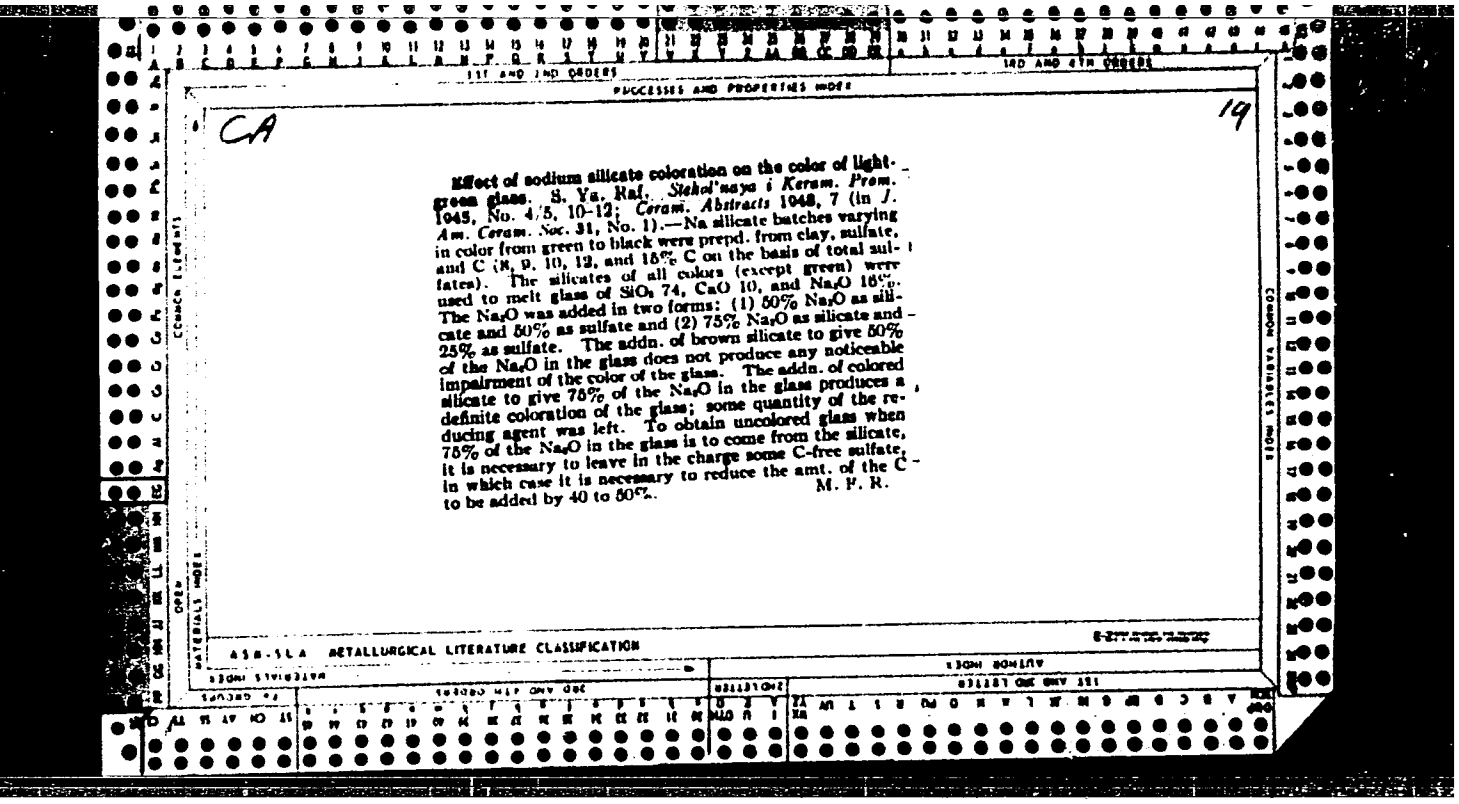
PROCESSES AND PROPERTIES INDEX

19

CA

Briquetting of sulfate charge. S. Ya. Raf, V. V. Pollyak, and G. M. Nisnevich. *Stekol'naya i Keram. Prom.* 1948, No. 6, 1-3; *Ceram. Abstracts* 1948, 6 (in *J. Am. Ceram. Soc.* 31, No. 1).—Sulfate charge based to give a glass melt of SiO_2 72.5, R_2O_3 0.5, CaO 8, MgO 3, and R_2O 16% was used to prep. briquets with 2, 3, 4, 6, 8, 10, and 12% water under pressures of 20, 50, 100, 200, 400, 500, 750, and 1000 kg./sq.cm. Briquets of good mech. strength were obtained with pressures of 500 to 750 kg./sq. cm. Optimum water content is 6 to 8%. The use of special binders had no noticeable effect on strength. Grain size had no effect on mech. strength. Cullet should not be used to prep. the briquets. The briquets should be allowed to harden for 2 to 3 days before use. M. F. R.

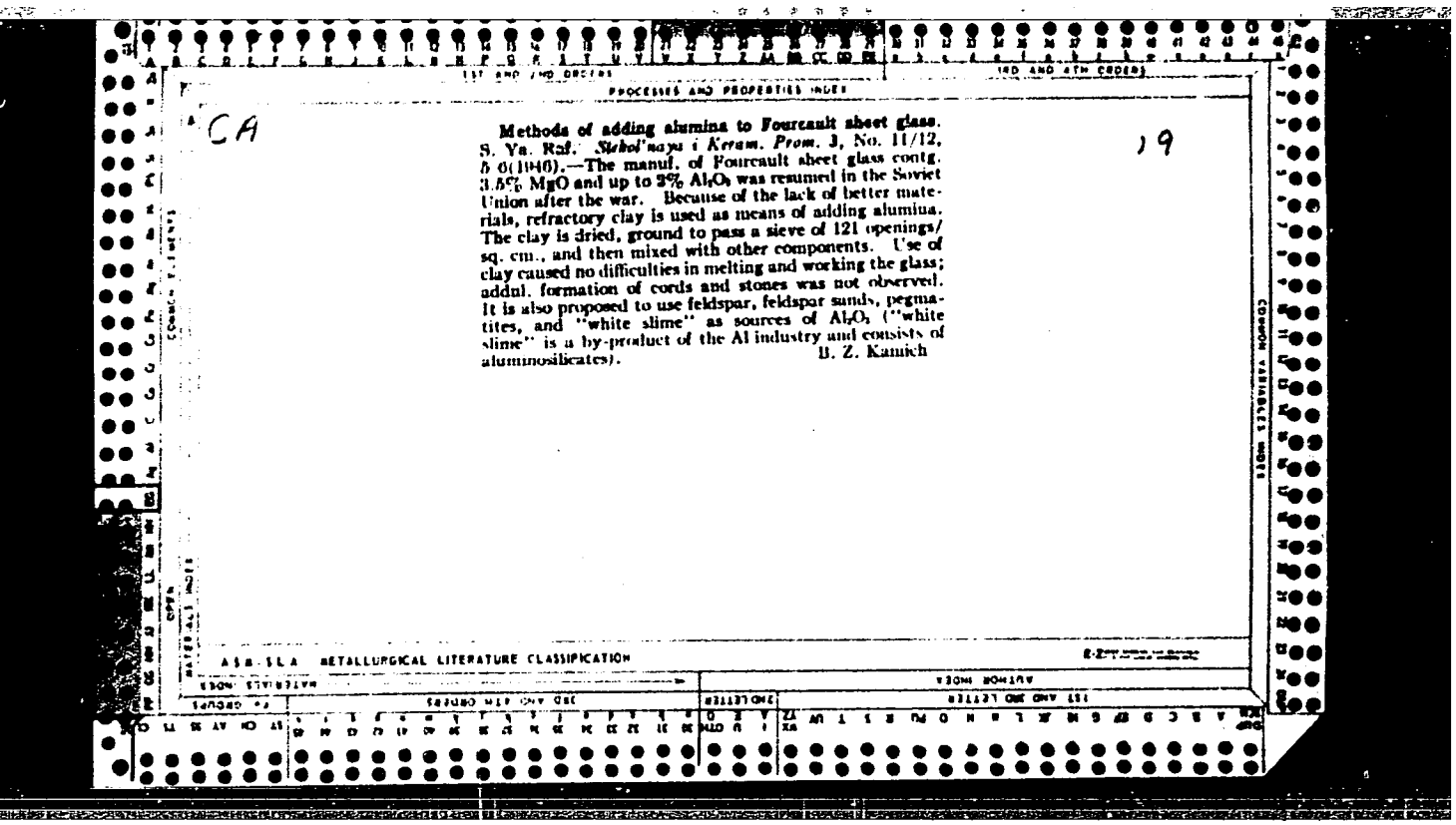
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



CA 19

Effect of sodium silicate coloration on the color of light-green glass. S. Ya. Raĭ. *Stekol'naya i Keram. Prom.* 1945, No. 4/5, 10–12; *Ceram. Abstracts* 1948, 7 (in *J. Am. Ceram. Soc.* 31, No. 1).—Na silicate batches varying in color from green to black were prepd. from clay, sulfate, and C (8, 9, 10, 12, and 15% C on the basis of total sulfates). The silicates of all colors (except green) were used to melt glass of SiO_2 74, CaO 10, and Na_2O 16%. The Na_2O was added in two forms: (1) 50% Na_2O as silicate and 50% as sulfate and (2) 75% Na_2O as silicate and 25% as sulfate. The addn. of brown silicate to give 50% of the Na_2O in the glass does not produce any noticeable impairment of the color of the glass. The addn. of colored silicate to give 75% of the Na_2O in the glass produces a definite coloration of the glass; some quantity of the reducing agent was left. To obtain uncolored glass when 75% of the Na_2O in the glass is to come from the silicate, it is necessary to leave in the charge some C-free sulfate, in which case it is necessary to reduce the amt. of the C to be added by 40 to 50%.

M. P. R.



CA

19

Methods of adding alumina to Fourcault sheet glass. S. Ya. Raf. *Steklo'naya i Keram. Prom.* 3, No. 11/12, 5-6(1946).—The manuf. of Fourcault sheet glass contg. 3.5% MgO and up to 5% Al_2O_3 was resumed in the Soviet Union after the war. Because of the lack of better materials, refractory clay is used as means of adding alumina. The clay is dried, ground to pass a sieve of 121 openings/sq. cm., and then mixed with other components. Use of clay caused no difficulties in melting and working the glass; addnl. formation of cords and stones was not observed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of Al_2O_3 ("white slime" is a by-product of the Al industry and consists of aluminosilicates).

B. Z. Kanich

RAFA, P.

Effective cooperation. Pozh.delo 9 no.1:22 Ja '63. (MIRA 16:1)

(Fire extinction)

RAFA, P.

What causes cooling tower fires? Pozh. delo 8 no.10:14 O '62.
(MIRA 15:10)

(Cooling towers—Fires and fire prevention)

RAFA, P.

Skillful evacuation. Pozh.delo 6 no.9:19 S '60.
(MIRA 13:9)
(Hospitals—Fires and fire prevention)

RAFACZ-KRZYZANOWSKA, Maria

Omissions of labor establishments in cancelling labor contracts.
Praca zabezp spol 4 no.1:34-39 '62.

RAFACZ-KRZYZANOWSKA, Maria

Labor performance. Praca zabezp spol 5 no.1:7-12 Ja '63.

RAFACZ- KRZYZANOWSKA, Maria

Problems of principles of proper community relationship in labor legislation. Praca zabezp spol 5 no.12 43-47 D'63.

RAFACZ-KRZYZANOWSKA, Maria

Workers' claims for compensatory damages for illegal dissolution of a labor contract. Praca zabezp spol 3 no.10:52-54 '61.

RAFAEL, E.

"Dimensional Determination Of Relay Windings" p. 25. (Telekomunikacije, Vol. 2, no. 3, July 1953, Beograd.)

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

GADZHIYEV, B.; SHIRINOV, I.; RAGIMOV, G.; RAFAEL', I.

Pre-October pledge of the petroleum workers of the Neftyanyye Kamni field. Neftianik 7 no.11:9 N '62. (MIRA 16:6)

1. Nachal'nik neftepromyslovogo upravleniya im. XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza, Neftyanyye Kamni (for Gadzhiyev). 2. Zamestitel' sekretarya komiteta Leninskogo Kommunisticheskogo soyuza molodezhi neftepromyslovogo upravleniya imeni XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza, Neftyanyye Kamni (for Rafael'). 3. Neftepromyslovoye upravleniye imeni XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza, Neftyanyye Kamni (for Shirinov, Ragimov).
(Neftyanyye Kamni region--Oil well drilling, Submarine)

RAFAELI, P.

Thoracic surgery at a district hospital. Med. arh., Sarajevo 11 no.2:29-43 Mar-Apr 57.

1. Hirursko odjeljenje Opste bolnice u Sibeniku Sef: dr. P. Rafaeli.
(THORAX, surg.
in smaller hosp., organiz. problems (Ser))

RAFAELI, P.

Perforation of echinococcosis cyst of the liver into biliary tract. Acta chir. Iugosl. 9 no.2:154-158 '62.

1. Kirurski odjel Medicinskog centra u Sibeniku (Sef dr P. Rafaeli).
(ECHINOCOCCOSIS compl) (LIVER DISEASES compl)
(BILIARY TRACT dis)

RAFAELI, Petar, dr.; ZANINOVIC, Mirko, dr.

Echinococcosis of the heart. Lijecn. vjesn. 84 no.7:661-672 '62.

1. Iz Kirurskog i Internog odjela Medicinskog centra u Sibeniku.
(HEART DISEASES) (ECHINOCOCCOSIS)

RAFAELI, P.

Present-day therapy of pulmonary echinococcosis. Acta chir. iugosl. 2 no.4:341-353 1955.

1. Kirurski odjel Opce bolnice Sibenik (Sef dr. Petar Rafaeli)

(ECHINOCOCCOSIS,
lungs, diag. & surg. (Ser))
(LUNGS, dis.
echinococcosis, diag. & surg. (Ser))

RAFAELI, P.

Case of massive hydropyonephrosis. Acta chir. iugosl. 3 no.2: 170-174 1956.

1. Kirurski odjel Opce bolnice u Sibeniku (sef. dr. Petar Rafaeli).
(HYDRONEPHROSIS, case reports
hydropyonephrosis, (Ser))

RAFAELI, Petar

Personal experiences in the treatment of acute hematogenous osteomyelitis. Acta chir. iugosl. 4 no.2:160-167 1957.

1. Kirurski odjel Opce bolnice u Sibeniku (sef: Dr. Petar Rafaeli).
(OSTEOMYELITIS, ther.
management of acute hematogenous osteomyelitis (Ser))

RAFAELI,Petar,d-r

Urolithiasis in the surgical ward of Sibernik general hospital during recent 5 years. Med. arh.,Sarajevo 13 no.6:35-50 N-D '59.

1. Kirurski odjel Opce bolnice Sibenik, sef: d-r Petar Rafaeli.
(URINARY CALCULI statist.)

RAFAELI, Petar, dr.

Duplications of the alimentary tract. Med. arh., Sarajevo 8 no.2: 49-53 Mar-Apr 54.

1. Iz Kirurske klinike Medicinskog fakulteta u Sarajevu, sef. prof. dr. B.Kovacevic.

(COLON, abnorm.
duplication of sigmoid)
(ABNORMALITIES
colon duplication)

LONGHINO, Andrija, dr.; RAFAELI, Petar, dr.

Intestinal obstruction caused by a fruit. Lijecn. vjesn. 84 no.5: 455-460 '62.

1. Iz Kirurske klinike Medicinskog fakulteta u Zagrebu i Kirurskog odjela Opce bolnice u Sibeniku.

(INTESTINAL OBSTRUCTION etiol)

S

RAFAELIAN, S.; KARAMANCHEV, S.

"Using titanium in industry."

p.33 (Tekhnika, Vol. 6, no. 6, 1957, Sofiia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 8, August 1958

RAFAILIAN, S.; DINOV, K.

"Plastic textile fibers", P. 12, (TEKHKA PROMISHLENOST, Vol. 3, No. 9, 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, June 1955, Uncl.

RAFAELOV, A.P.

Antibiotics in emphysematous carbuncle. Veterinariia 34 no.7:71 Jl '57. (MLRA 10:8)

1. Veterinarnyy vrach Abisskogo veterinarnogo uchastka, Kvareli-skogo rayona, Gruzinskoy SSR.
(Penicillin) (Carbuncle)
(Cattle--Diseases and pests)

USSR / Soil Science Tilling. Melioration. Erosion. J

Abs Jour : Ref Zhur - Biologiya, No 11, 1958, No. 48693

Author : Rafaelyan, A. S.
Inst : Not given
Title : Subsurface Mole-Drainage Irrigation Under the Conditions of Priaraksin Lowland

Orig Pub : Izv. ArmSSR. Byul. i. s.-kh. n., 1956, 9, No 12, 59-75

Abstract : This article reports the results of the experiments with the subsurface mole-drainage irrigation of clayey soil with the content of 0.25 mm water-resistant aggregates to 85% and mole-drainage irrigation of slightly clayey soils with the content of these aggregates at about 5.21%. The experiments were conducted on wheat sowings. It was shown that subsurface

Card 1/2

USSR / Soil Science Tilling. Melioration. Erosion. J

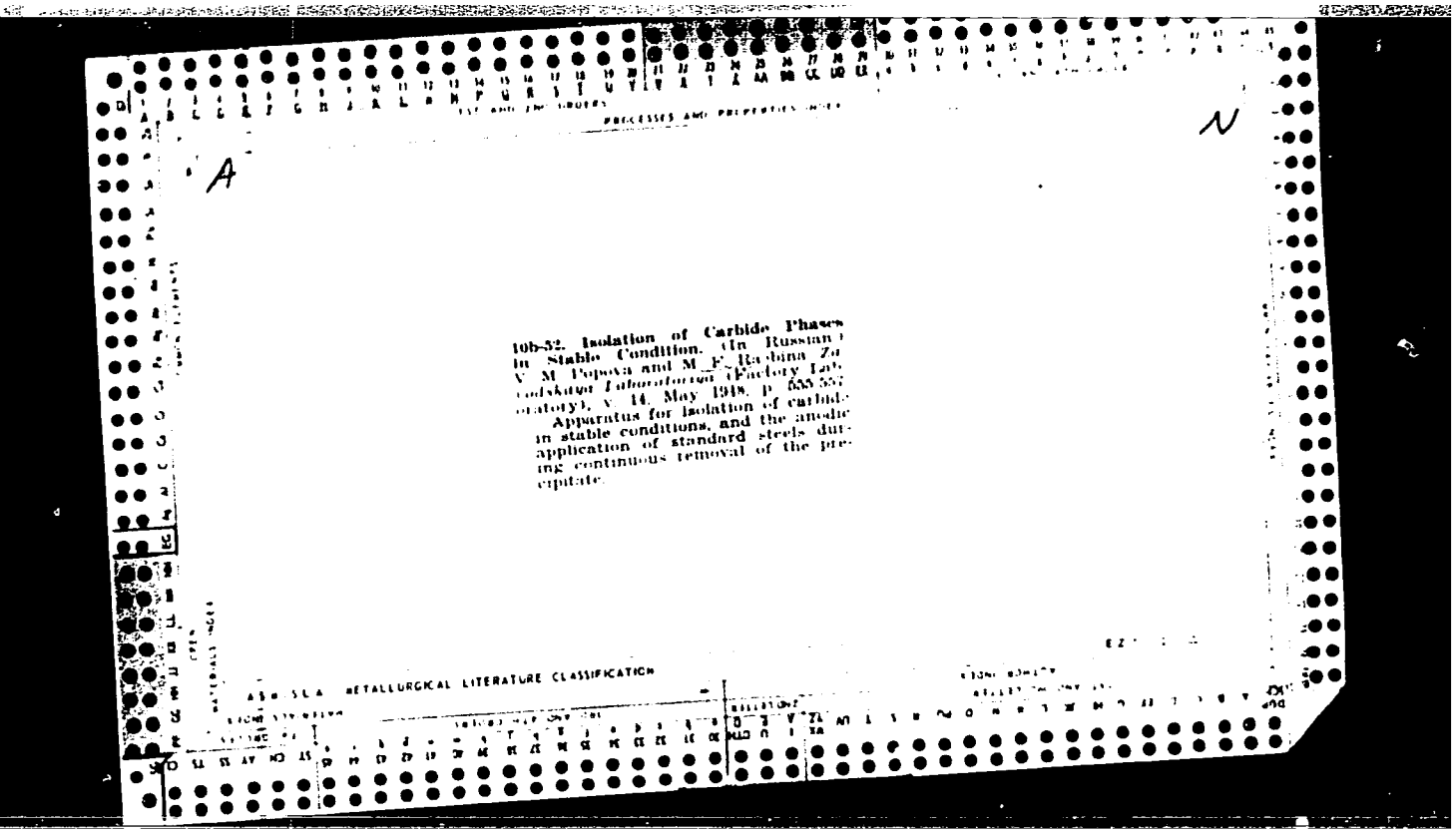
Abs Jour : Ref Zhur - Biologiya, No 11, 1958, No. 48693

mole-drainage irrigation promotes a decrease in the irrigation rates and has a series of other advantages over furrow watering. In furrow watering 104 m^3 of water were expended for 1 centner of the crop and with the sub-surface mole-drainage irrigation the expenditure of water was only 36.5 m^3. -- S. A. Nikitin

Card 2/2

Effect of inhibitors on autoxidation of linseed oil. Marijan Rac (Hrvat. Univ., Zagreb). *Kem. Vestnik* (Zagreb) **15/16**, 62-7 (in German, 75-6) (1941-42).—To 100 cc. of technical linseed oil, heated to 240°, was added 0.1 g. of PbO. After soln. was complete, the oil was cooled and inhibitor, previously warmed to 110°, was added. Reducible aniline dyes act as inhibitors, and their effect is a linear function of the oxidation-reduction potential, as well as of the concn. of the dye. Concns. varied from 0.002 to 0.02 moles per l. Methylene blue had only a slight effect, while thionine, toluidine blue, neutral red, phenosafranine, and Nile blue (the last both as the base and as the sulfate salt) were much more active. Nile blue inhibited the reaction almost completely even at very low concns. Ascorbic and barbituric acids had only a mild effect. Thiosinamine and diethylthiosinamine practically stopped the reaction. A petroleum ether ext. of barley flour (Dieman and Fox, C. A. **33**, 5015) in concns. of 1-10 g./l. had but slight inhibiting properties. 8 references. C. S. Shapiro

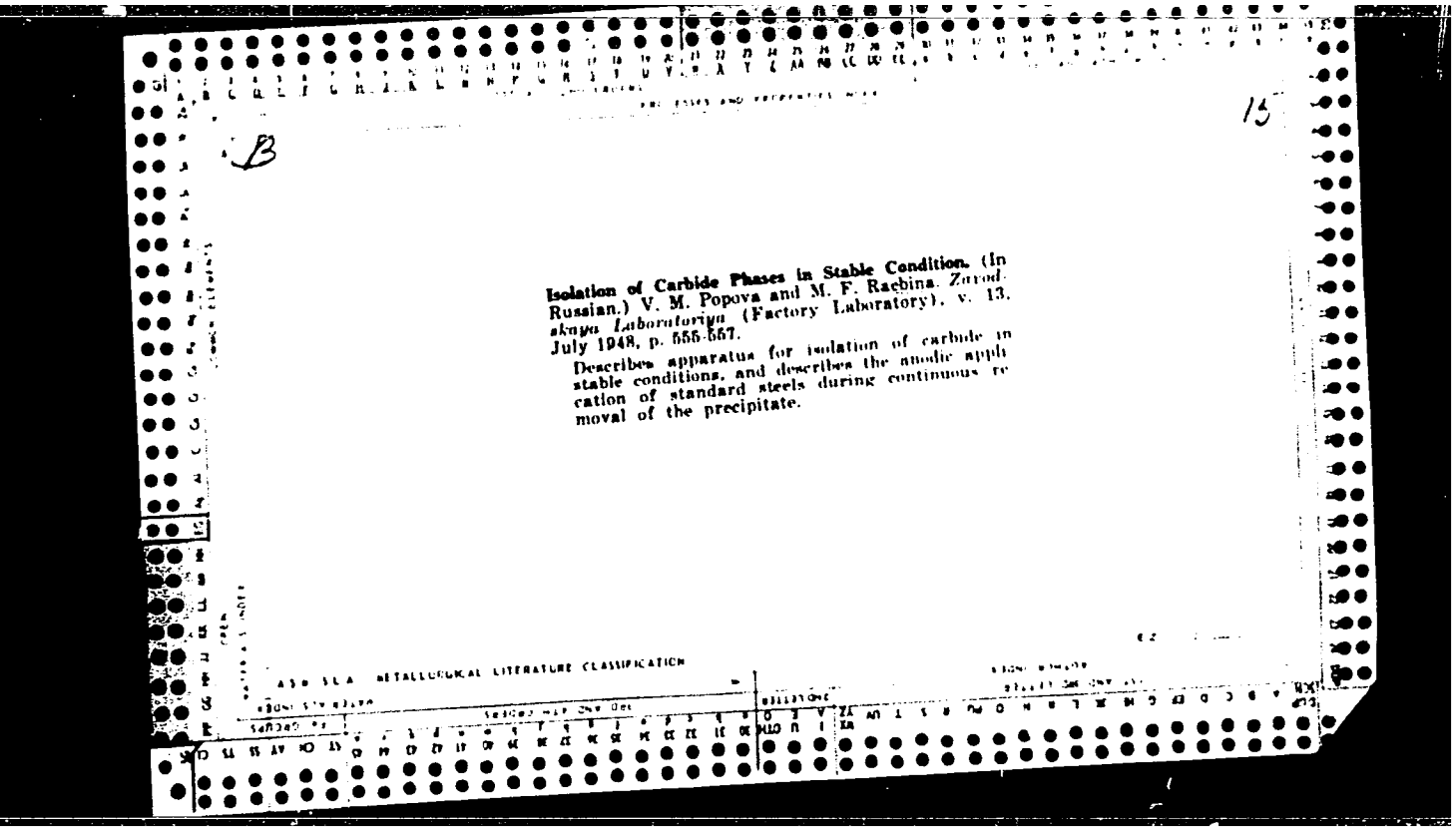
METALLURGICAL LITERATURE CLASSIFICATION



10b-32. Isolation of Carbide Phases in Stable Condition. (In Russian) V. M. Popova and M. F. Rachina Zavodskaya Laboratoriya (Factory Laboratory), v. 14, May 1948. p. 555-557.

Apparatus for isolation of carbides in stable conditions, and the anodic application of standard steels during continuous removal of the precipitate.

METALLURGICAL LITERATURE CLASSIFICATION



Isolation of Carbide Phases in Stable Condition. (In Russian.) V. M. Popova and M. F. Rachina. *Zavodskaya Laboratoriya* (Factory Laboratory), v. 13, July 1948, p. 555-557.

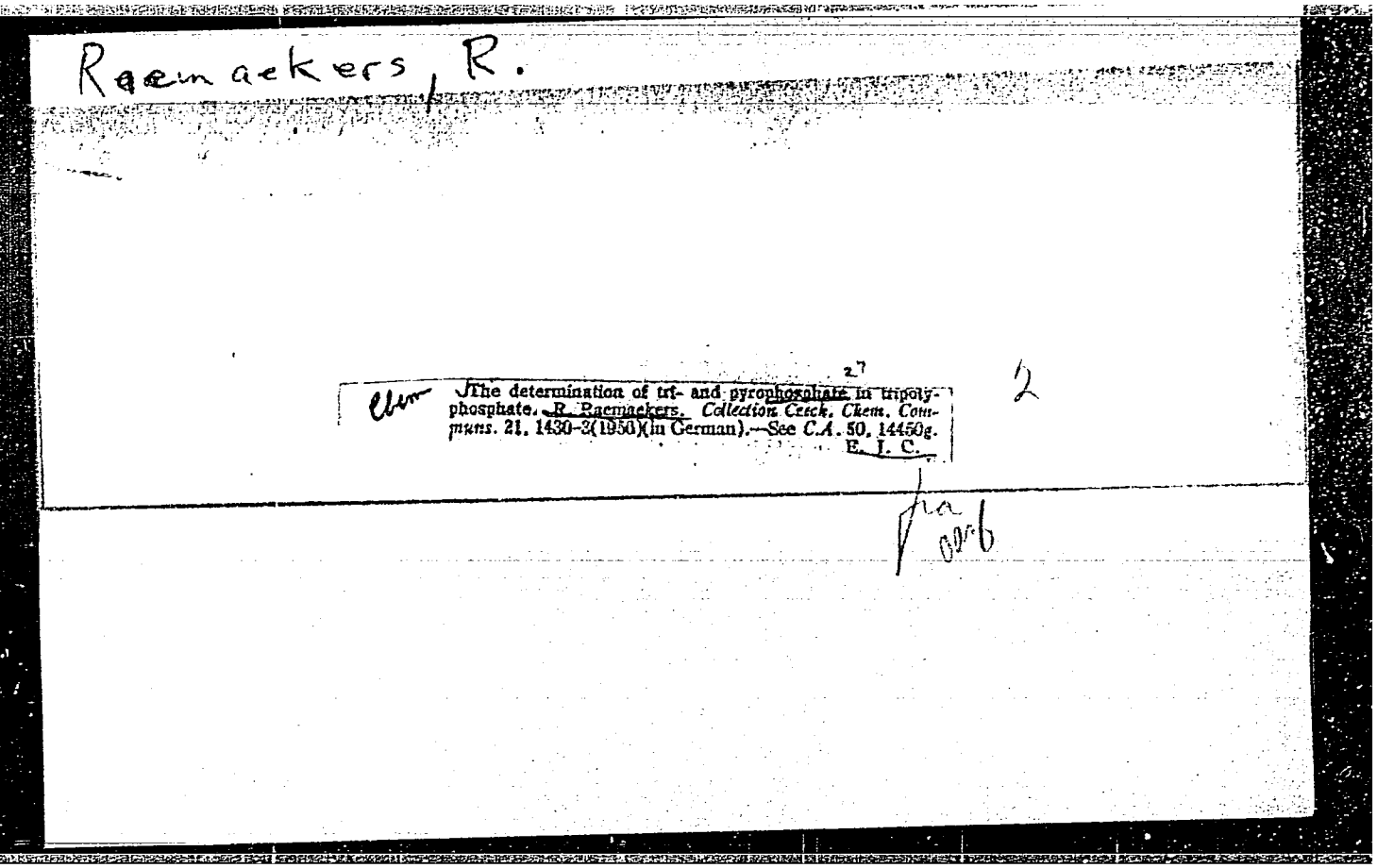
Describes apparatus for isolation of carbide in stable conditions, and describes the anodic application of standard steels during continuous removal of the precipitate.

SHEMYAKIN, M.M.; RAMDEL', G.A.; CHAMAN, Ye.S.; SHVETSOV, Yu.B.; VINOGRADOVA, Ye.I.

Synthesis of racemic sarkomycin. Izv. AN SSSR. Otd. khim. nauk no.8:1007 Ag '57. (MIRA 11:2)

1. Institut biologicheskoy i meditsinskoy khimii Akademii meditsinskikh nauk SSSR.

(Sarkomycin)



Raemaekers, R.

Chem The determination of tri- and pyrophosphate in tripolyphosphate. R. Raemaekers. *Collection Czech. Chem. Communs.* 21, 1430-3(1950)(in German).—See *C.A.* 50, 14450g. E. J. C.

2

Phos

COUNTRY : Rumania
CATEGORY :

79826

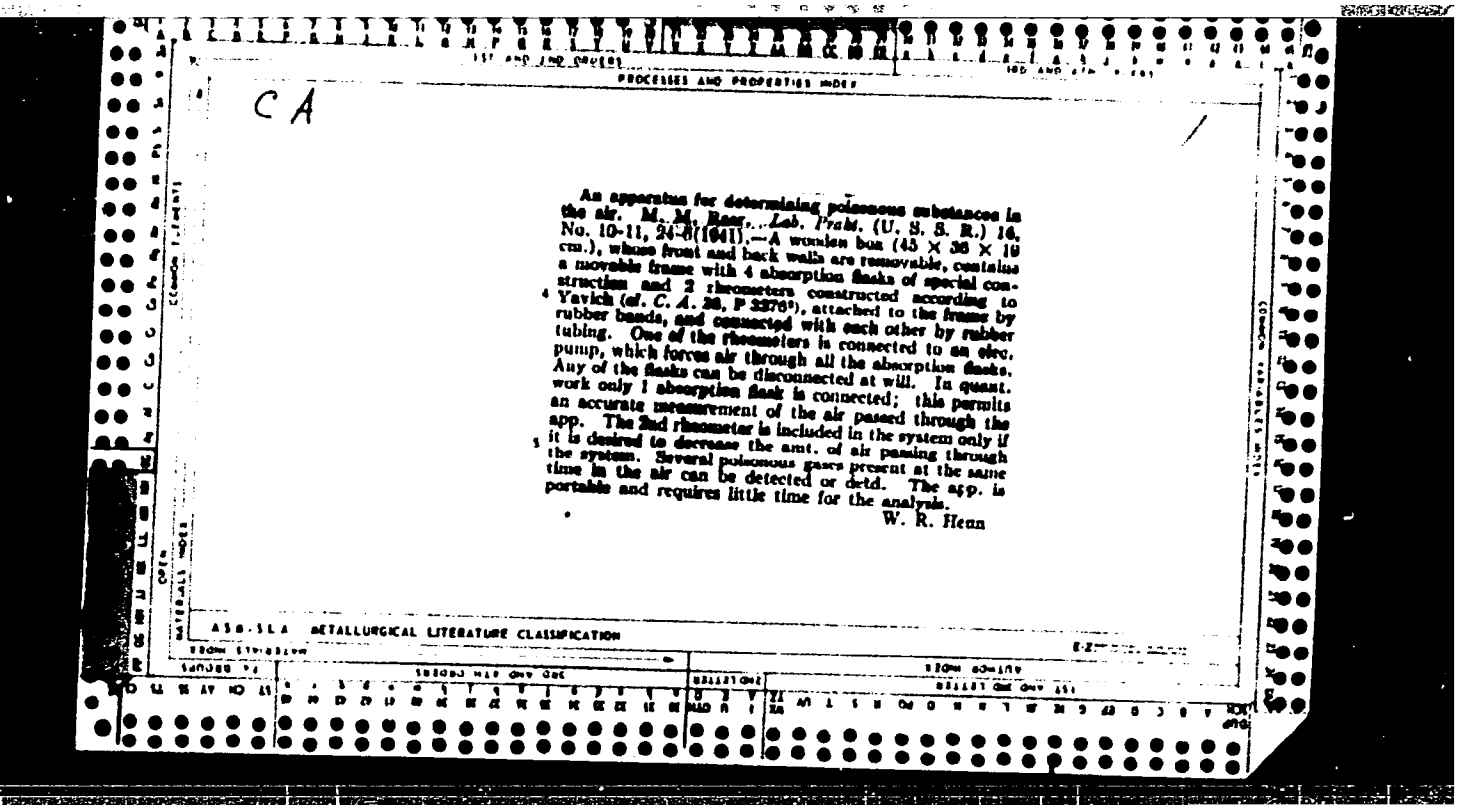
ABS. JOUR. : RZKhim., No. 22 1959, No.

AUTHOR : Radulescu, G. A.
INST. : Not given
TITLE : The Refining of Mineral Oils

ORIG. PUB. : Tecna Noua, [illegible] No [illegible]3, 1, 8 (1958)

ABSTRACT : A process for the adsorption-refining of oils is described and a flow sheet and examples are given.
G. Zaveh

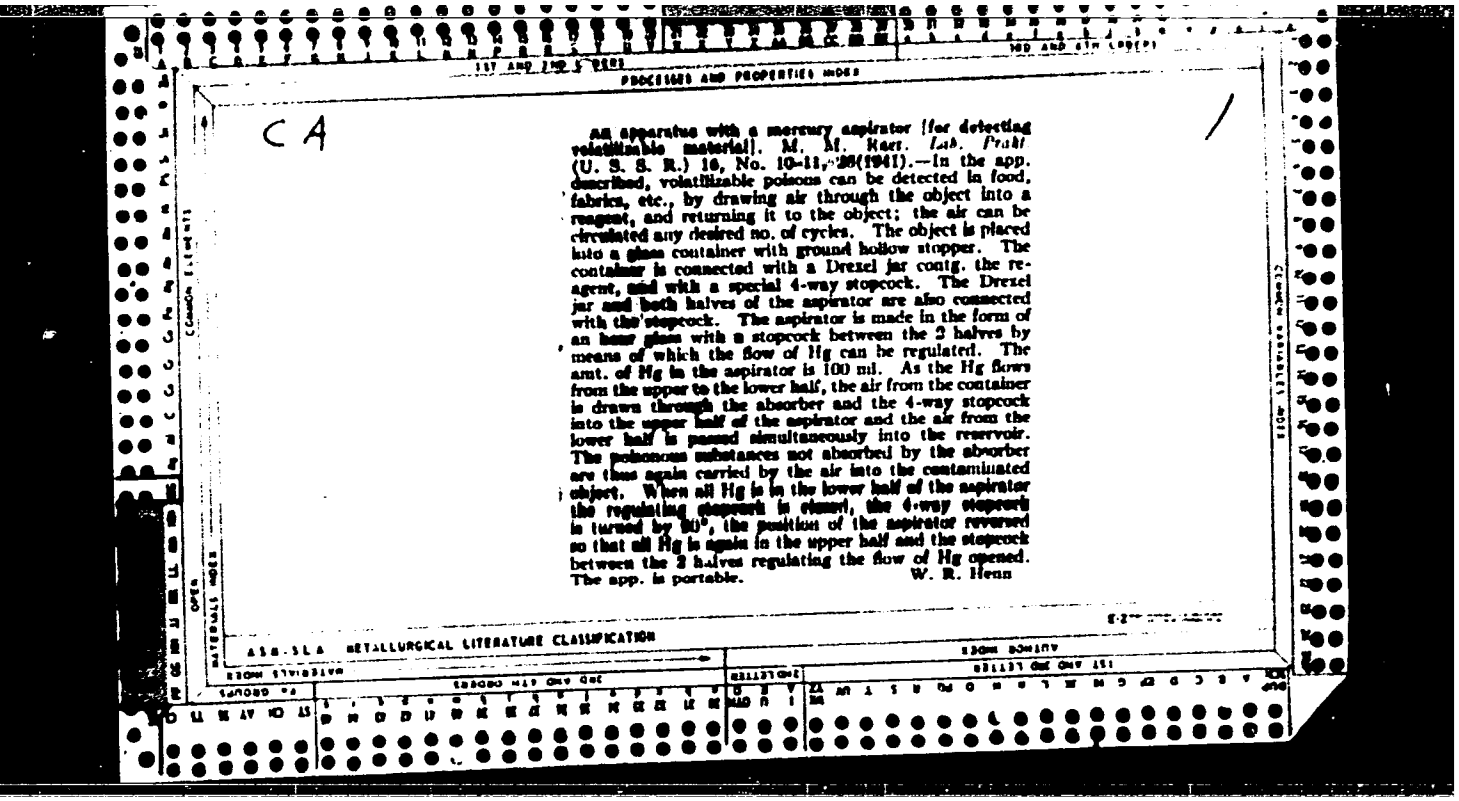
CARD: 1/1



CA

An apparatus for determining poisonous substances in the air. M. M. Rose. *Lab. Prakt.* (U. S. S. R.) 16, No. 10-11, 24-9 (1941).—A wooden box (45 × 36 × 19 cm.), whose front and back walls are removable, contains a movable frame with 4 absorption flasks of special construction and 2 rheometers constructed according to Yavich (*cf. C. A.* 28, P 3276[6]), attached to the frame by rubber bands, and connected with each other by rubber tubing. One of the rheometers is connected to an elec. pump, which forces air through all the absorption flasks. Any of the flasks can be disconnected at will. In quant. work only 1 absorption flask is connected; this permits an accurate measurement of the air passed through the app. The 2nd rheometer is included in the system only if it is desired to decrease the amt. of air passing through the system. Several poisonous gases present at the same time in the air can be detected or detd. The app. is portable and requires little time for the analysis.

W. R. Henn

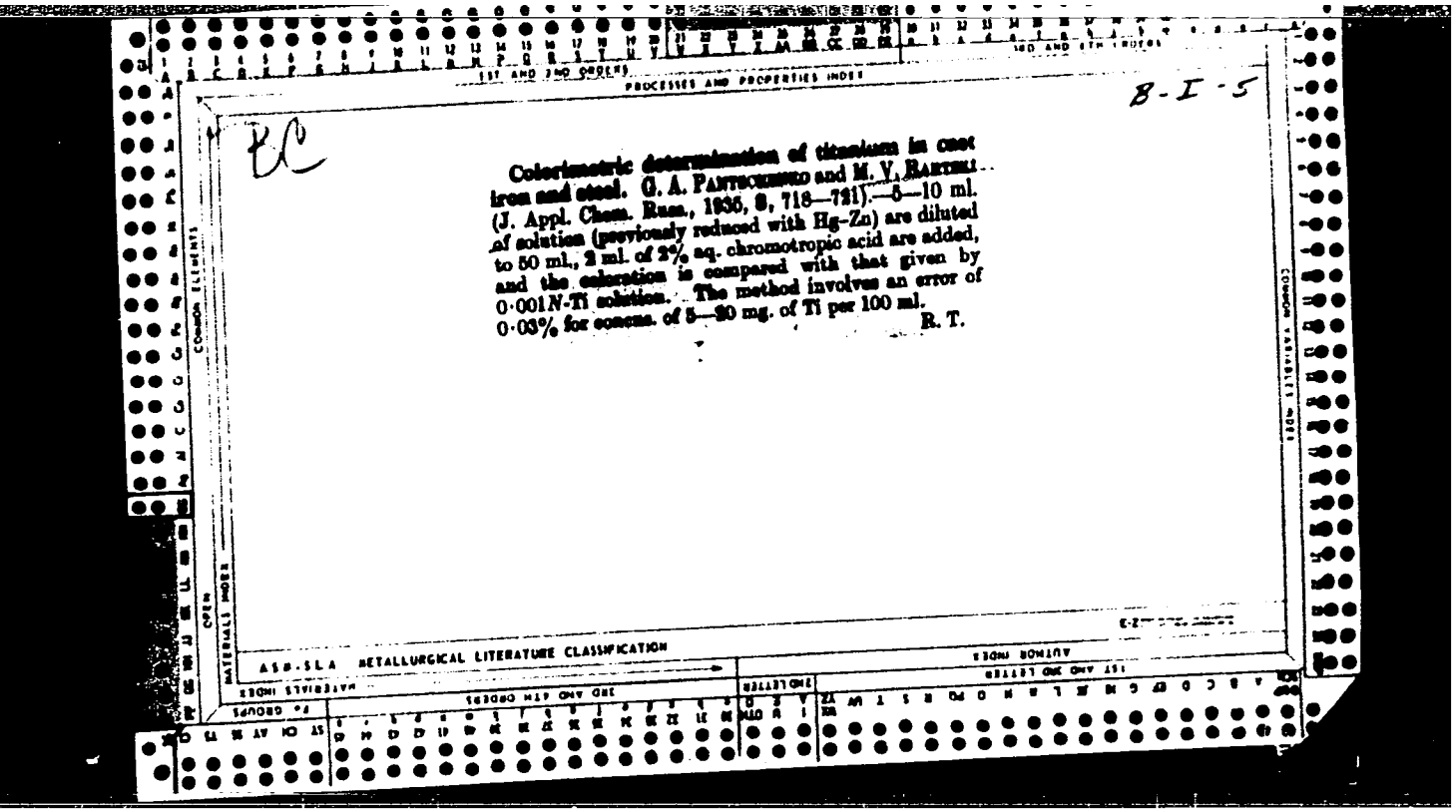


CA

An apparatus with a mercury aspirator [for detecting volatilizable material]. M. M. Kost. *Lab. Prakt* (U. S. S. R.) 10, No. 10-11, 38(1941).—In the app. described, volatilizable poisons can be detected in food, fabrics, etc., by drawing air through the object into a reagent, and returning it to the object; the air can be circulated any desired no. of cycles. The object is placed into a glass container with ground hollow stopper. The container is connected with a Drexel jar contg. the reagent, and with a special 4-way stopcock. The Drexel jar and both halves of the aspirator are also connected with the stopcock. The aspirator is made in the form of an hour glass with a stopcock between the 2 halves by means of which the flow of Hg can be regulated. The amt. of Hg in the aspirator is 100 ml. As the Hg flows from the upper to the lower half, the air from the container is drawn through the absorber and the 4-way stopcock into the upper half of the aspirator and the air from the lower half is passed simultaneously into the reservoir. The poisonous substances not absorbed by the absorber are thus again carried by the air into the contaminated object. When all Hg is in the lower half of the aspirator the regulating stopcock is closed, the 4-way stopcock is turned by 90°, the position of the aspirator reversed so that all Hg is again in the upper half and the stopcock between the 2 halves regulating the flow of Hg opened. The app. is portable.

W. R. Henn

1



8-I-5

Colorimetric determination of titanium in cast iron and steel. G. A. PANTCHENKO and M. V. RABTCHEL... (J. Appl. Chem. Russ., 1936, 9, 718—721).—5—10 ml. of solution (previously reduced with Hg–Zn) are diluted to 50 ml., 2 ml. of 2% aq. chromotropic acid are added, and the coloration is compared with that given by 0·001*N*-Ti solution. The method involves an error of 0·03% for concns. of 5—30 mg. of Ti per 100 ml.

R. T.

PROCESSES AND PROPERTIES INDEX

Colorimetric determination of titanium in cast iron and steel. G. A. Panchenko and M. A. Rastakil. *J. Applied Chem.* (U. S. S. R.) 8, 718-21 (1935). To 10 ml. of soln. (previously reduced with Hg-Zn) to 50 ml., add 2 ml. of 2% aq. chromotropic acid and compare the color with that given by 0.001 N Ti soln. The method involves an error of 0.03% for concns. of 5-20 mg. of Ti per 100 ml.

B. C. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

HUNGARY

RAETTIG, Hansjurgen; Robert Koch Institute (Robert Koch Institut) (chief: HENNENBERG, Georg, professor), Berlin.

"Vaccination-Caused 'Negative Phase' and 'Provocation', and Their Prevention."

Budapest, Orvosi Hetilap, Vol 104, No 32, 11 Aug 1963, pages 1500-1505.

Abstract: The concepts of 'negative phase' and 'provocation' are defined by the author. A historical survey is made and experiments of Brieger, and Ehrlich, v. Dungern, de Gaspery, Raetting and Wolk, Gillert, and Seifert are discussed. Experiments on mice infected by Breslau and poliomyelitis strains, respectively, were conducted by the author. Active immunization has been carried out after the infection has taken place. The results are presented on several graphs. Data on observations of the polio epidemic in Chicago, 1956 and the typhoid epidemic in Mecklenburg, 1945/46, are also presented. The author attempts to show that the 'negative phase' is an immune-biological phenomenon. It is concluded that initial vaccination should be done before an epidemic outbreak. If this is not feasible, the use of decreased amounts of vaccine may be considered. Booster shots present no danger, probably because of their very rapid action. No references.

RAFIKTV A.S.

29596

GALLIONELLA ELIASTHERSIS (sp.N.) Kak Komponent Baktyerial'Nogo Planktona. Mikrobiologiya, 1949, vyp.5 S.442-46 - Bibliogr: 6 Nazv

Zh BOTANIKA

SO: Letopis' No. 40

RAEUSKOVSKIY

28934

V.V. pryeobraeovaniye prirody molyekul. (K prisuzhdyeniyu stalinskoy pryemii ea 1948 g.b.a. kaeanskomu ea nauch trudy po organ. Khimii). Priroda, 1949, No. 9, c. 3-7, c. portr.--Bibliogr: 12 Naev.

So: Letopis' No. 34

J-

BULGARIA/Acoustics - Noise.

Abs Jour : Ref Zhur Fizika, No 3, 1960, 6717

Author : Raev, A., Popova, L.

Inst : Institute of Physics, Sofia University, Bulgaria

Title : On the Voltage-Tunable Operation of Magnetrons with Resistive External Circuit.

Orig Pub : Dokl. Bolg. AW, 1958, 11, No 6, 441-444

Abstract : An investigation was made of the dependence of the active component of the alternating voltage between segments of a slotted magnetron V_a on the resistance and capacitance of the external circuit. A simple calculation shows that the quantity V_a depends on $R' = R/(1+\omega^2 C^2 D^2)$, where R is the resistance of the external circuit, C the capacitance between the segments, and ω the circular frequency of oscillations. The experiments were carried out on

Card 1/2

4
1-4E1d

5135. STATIONARY ELECTRONIC OSCILLATIONS IN TWO-SEGMENT MAGNETRONS WITHOUT TUNED CIRCUITS. Chet.
A.Rasev and I.Uzunov. 25 25
~~C.R. Acad.~~ Bulg. Sci., Vol. 8, No. 2, 1-4 (April-June, 1955). In German.

Voltage-tunable oscillations are obtained from a two-segment magnetron when the external circuit is purely resistive and of suitable value. An explanation is suggested, and the limiting values of resistance are found.

A.Reddish

87
MT

RAEV, A.

4
1-4E14

5136. STATIONARY OSCILLATIONS INDEPENDENT OF AN EXTERNAL TUNED CIRCUIT IN MAGNETRONS. Elect.

A.Raev and A.Angelov. 25

Izv. Bulg. Akad. Nauk., Vol. 5, 121-34 (1955). In Bulgarian, with summaries (2 pp.) in Russian and (2 pp.) in German.

The effect of heater current on the conditions for oscillation has been found for two- and four-segment magnetrons with purely resistive external circuits (see C.R. Acad. Bulg. Sci., Vol. 1, No. 1, 39, 1948 and preceding abstract). A.Reddish

87
MT

RAEV, A.

Bulgaria/Radiophysics - Superhigh Frequencies, I-11

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35396

Author: Raev, A., Usunov, I.

Institution: Physics Institute, Sofia University, Bulgaria

Title: Stationary Electron Oscillations of a Two-Segment Magnetron in the Absence of an Oscillating Circuit

Original Periodical: Dokl. Bolg. AN, 1955, 8, No 2, 1-4; German; Russian resumé

Abstract: Brief description of the fundamental properties of nonresonant oscillations of a 2-segment magnetron, due to connecting between its segments an active resistance of a definite value. The mechanism of this oscillation was analyzed previously by Raev (Raev, A., Annals of the Sofia University, 1945-1946, 42, No 1, 311).

Emphasis is placed on the role of the space charge condensations occurring in the magnetron and inducing in the external circuit a current that produces in turn the high frequency voltage between

Card 1/2

Bulgaria/Radiophysics - Superhigh Frequencies, I-11

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35396

Abstract: the segments, which maintain under certain conditions the occurring condensation. The frequency of the oscillations is entirely dependent on the values of the anode voltage and of the magnetic field, satisfying the posthumus relation with another value of the constant.

Experiments performed in the meter band confirm the qualitative ideas concerning the character of the variation of the oscillation voltage, and also the relationship between the optimum values of the active resistance and those values of the resistance, which corresponds to the occurrence and to the interruption of the oscillations.

Card 2/2

RADEV, Al. (Sofia)

Lasers. Pt. 2. Mat i fiz Bulg 7 no. 2: 1-9 '64.

Chelate lasers. Fiz mat spisanie BAN 6 no. 4:29 '63.

[illegible], A.

[illegible]A[illegible], A. Stationar[illegible] oscillations in magnetr[illegible]ns independent of exterior oscillation limits. [illegible]. 121. Vol. 5, Jan./Dec. 1955.
IZVESTIIA SE[illegible]IA FIZICHES[illegible]A. Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol. 6 No. 4 April 1957

RAEV, A.

Stationary electron oscillations in two segmental magnetrons without oscillatory circuits. In German with Russian summary, p. 1.
Vol. 8, no. 2, Apr./June 1955, DOKLADY, sofiya, Bulgaria.

Source: Monthly List of East European Accessions, (EEAL), Library of Congress. Vol. 5, No. 10, Oct. 1956.

CA

3

Microwave radiophysics at the service of spectroscopy
Aleksandur Racv. *Annuaire univ. Sofia, Faculté sci.*, Livré 1. 45, 303-20(1948-49).—The use of microwaves in the detn. of structures of mols. and atoms is discussed.
G. Meguerian

RAEV, E.

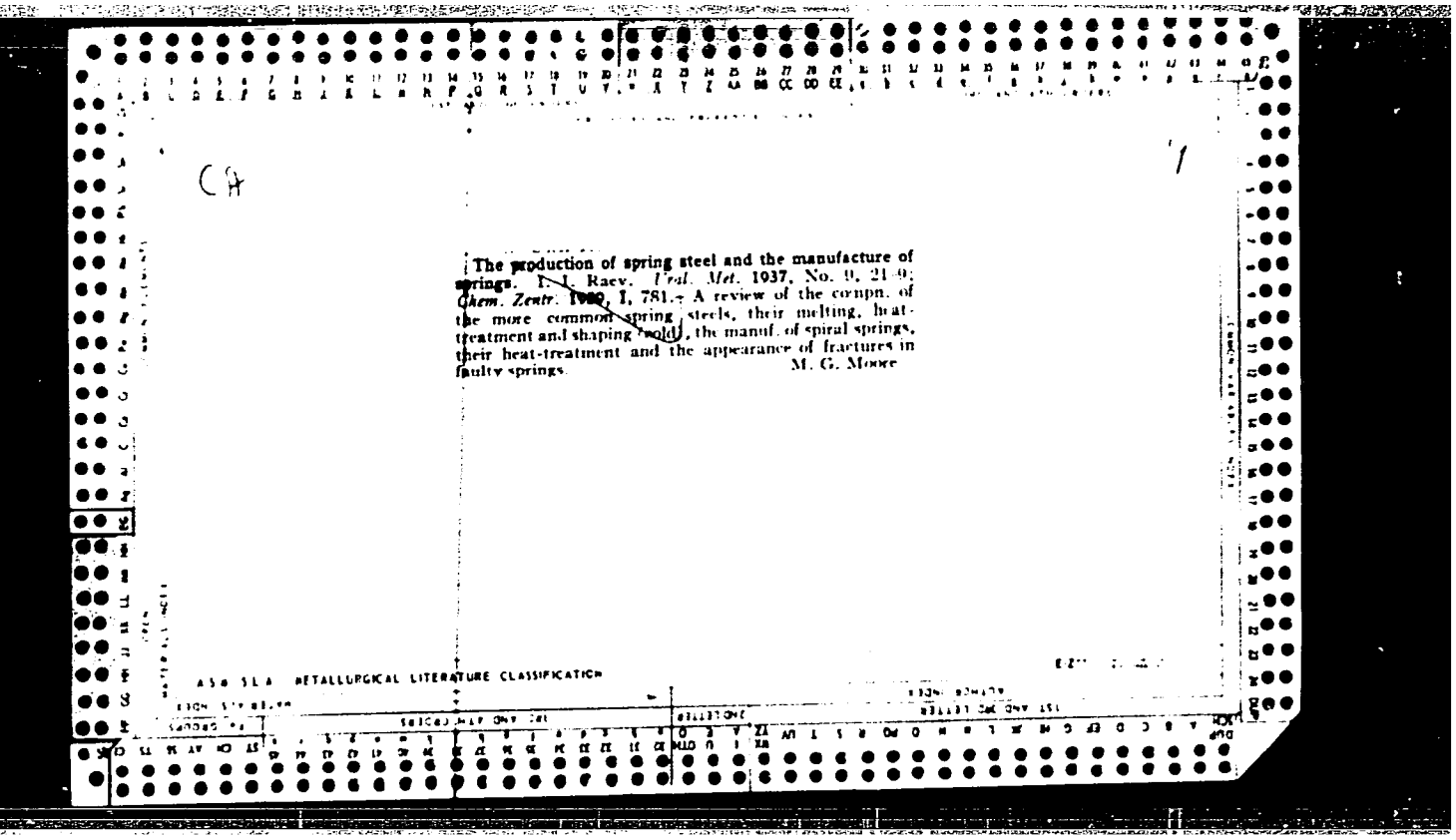
" Pure and Mixed Rows in Types of Forest Cultures," p. 108.
(Gorsko Stopanstvo, Vol.8, No.3, Mar. 1952, Sofiya.)

SO: Monthly List of East European ~~Russian~~ Accessions, Vol.2, No.9 Library of Congress, September 1953, Uncl.

RAEV, E.

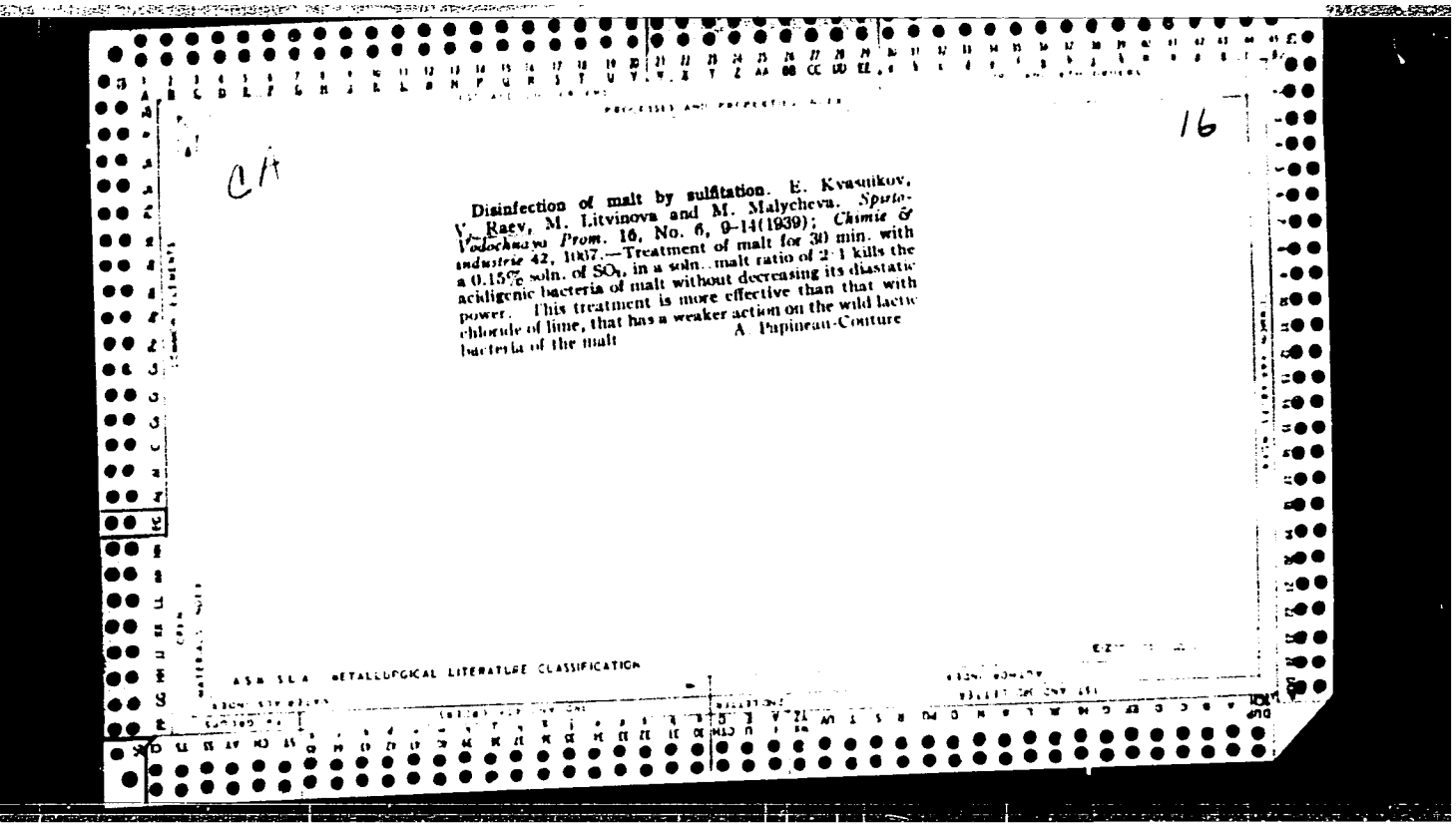
"How to Prepare the Soil for Afforestation." p.213
(GORSKO STOPANSTVO VOL. 9, no. 5, May 1953, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, Library of Congress, Vol. 2, No. 9, Oct. 1953, Uncl.



The production of spring steel and the manufacture of springs. I. L. Raev. *Tsvet. Met.* 1937, No. 9, 21-9; *Chem. Zentr.* 1938, I, 781.—A review of the compn. of the more common spring steels, their melting, heat-treatment and shaping (cold), the manuf. of spiral springs, their heat-treatment and the appearance of fractures in faulty springs.

M. G. Moore

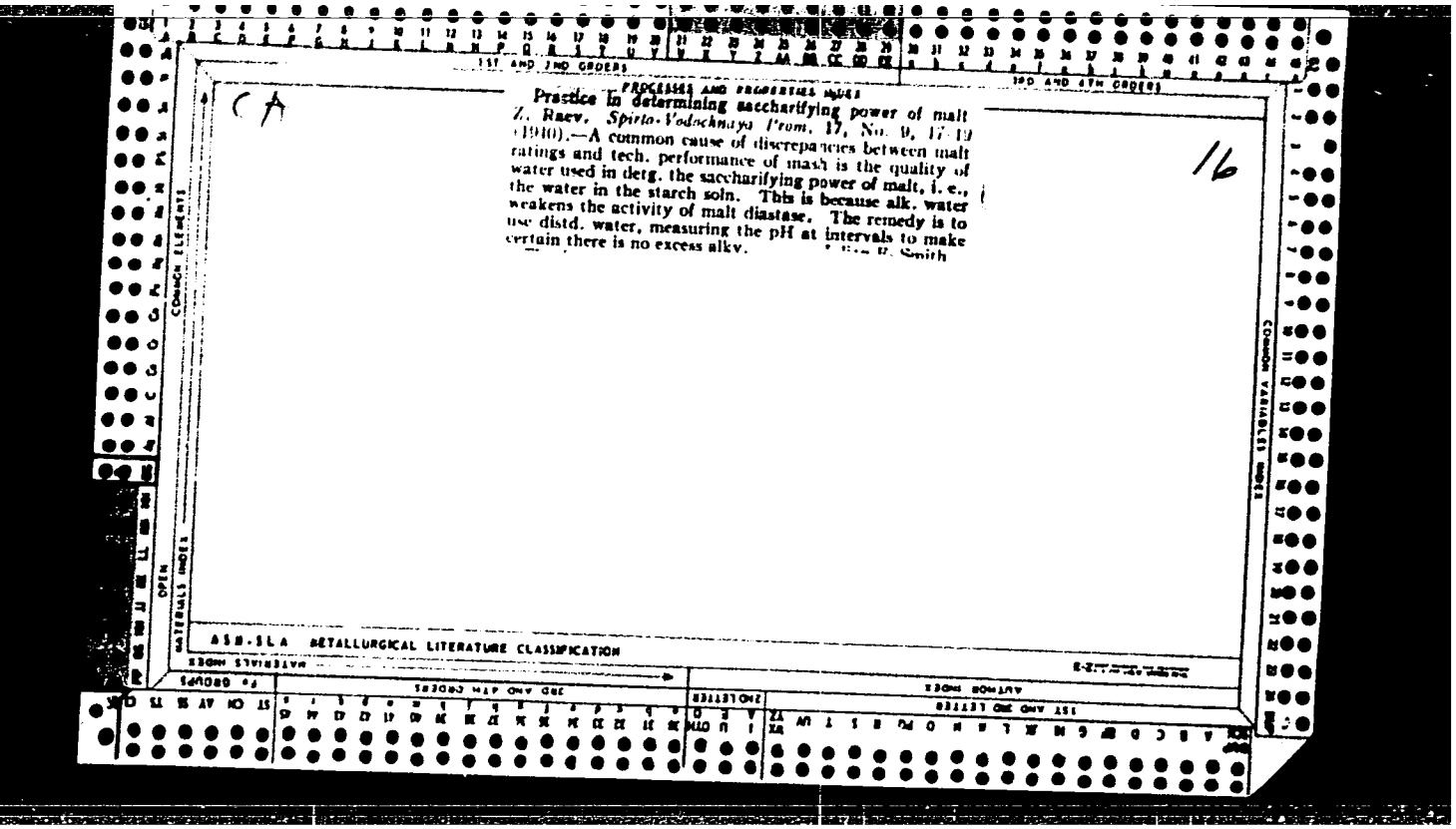


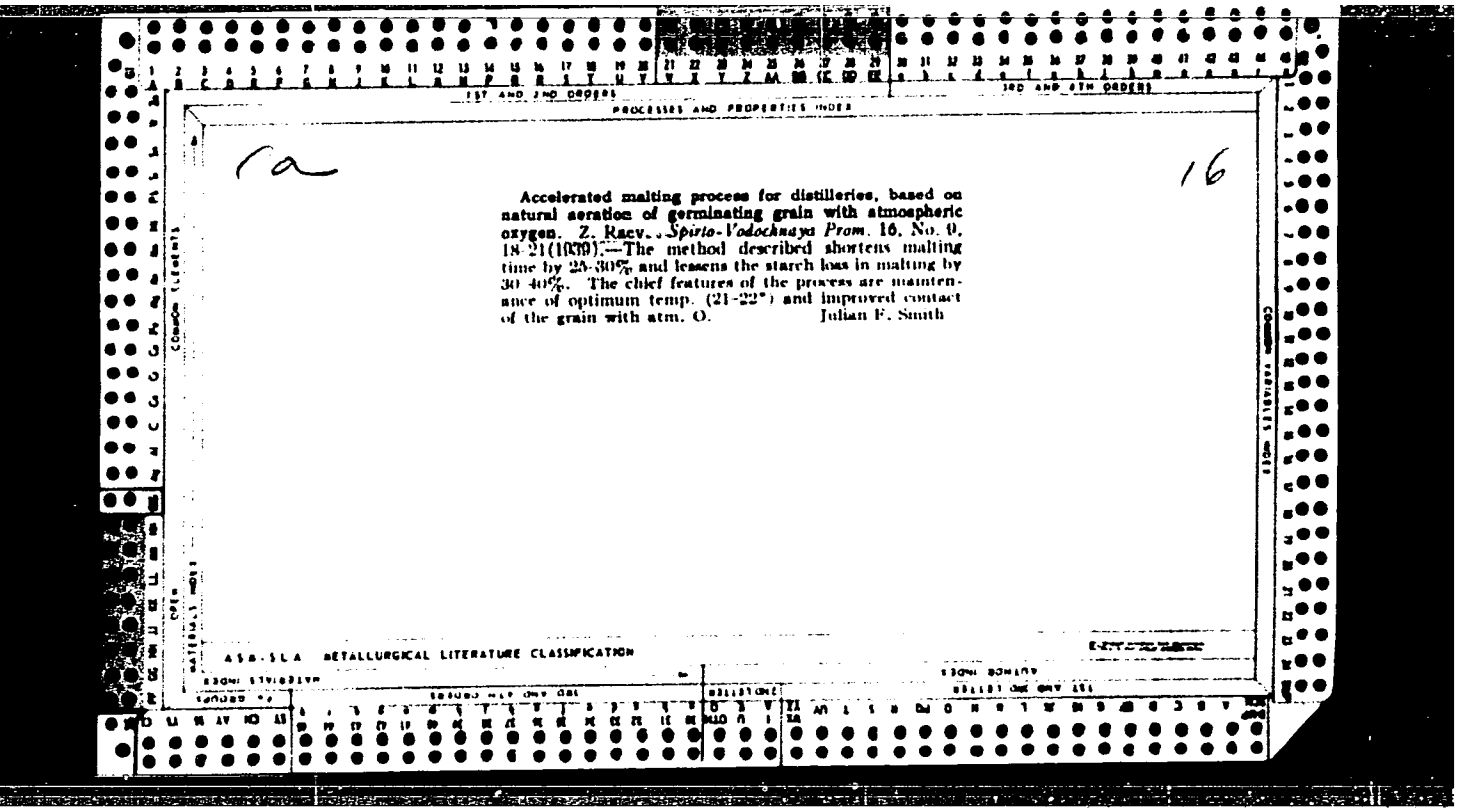
16

CA

Disinfection of malt by sulfitation. E. Kvasnikov, V. Raev, M. Litvinova and M. Malycheva. *Spirto-Vodochnaya Prom.* 16, No. 6, 9–14(1939); *Chimie & Industrie* 42, 1007.—Treatment of malt for 30 min. with a 0.15% soln. of SO_2, in a soln.-malt ratio of 2:1 kills the acidigenic bacteria of malt without decreasing its diastatic power. This treatment is more effective than that with chloride of lime, that has a weaker action on the wild lactic bacteria of the malt A. Papineau-Couture

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION





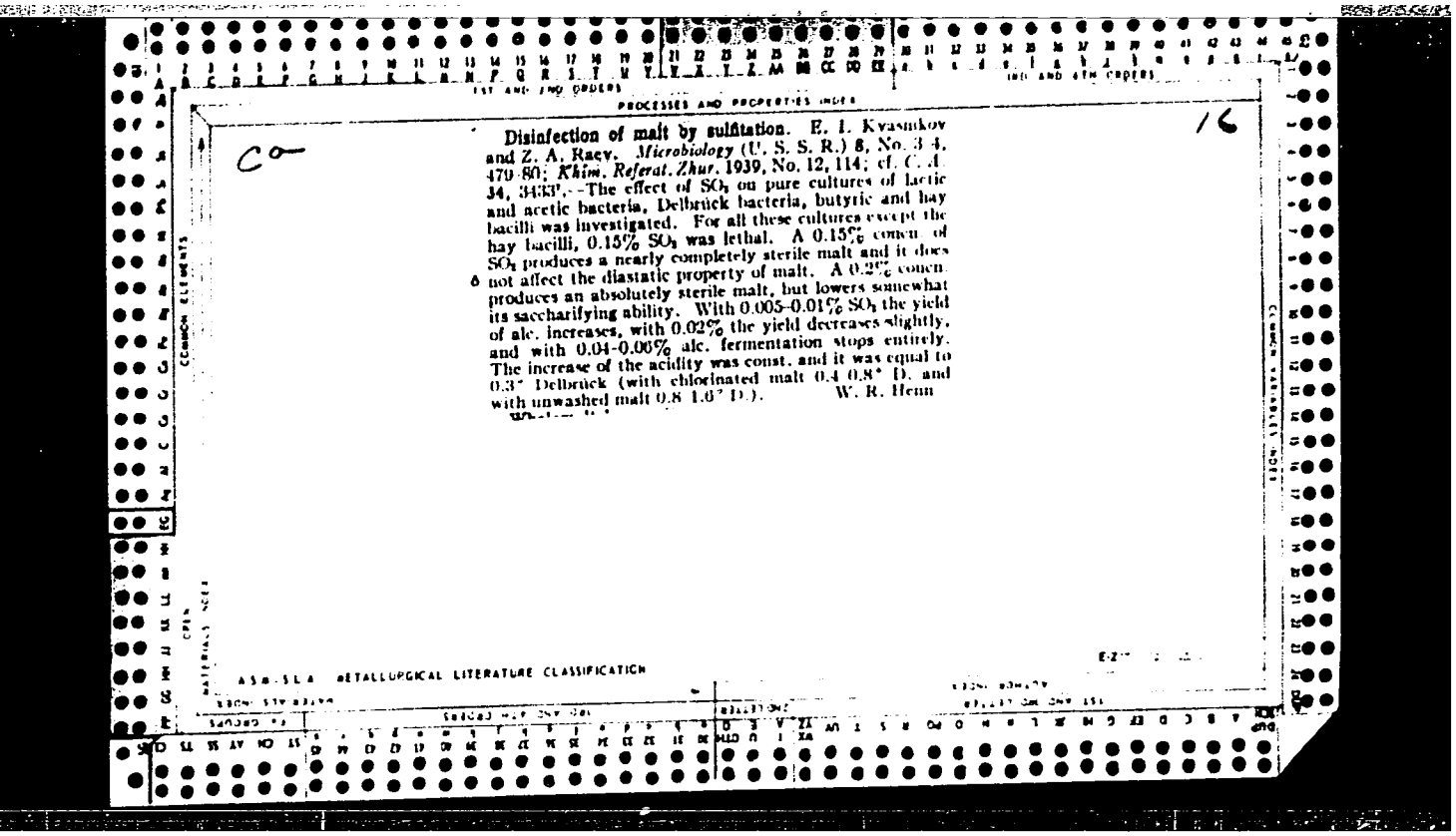
PROCESSES AND PROPERTIES INDEX

ra

16

Accelerated malting process for distilleries, based on natural aeration of germinating grain with atmospheric oxygen. Z. Racv., *Spirto-Vodochnaya Prom.* 16, No. 9, 18-21(1939).—The method described shortens malting time by 25-30% and lessens the starch loss in malting by 30-40%. The chief features of the process are maintenance of optimum temp. (21-22°) and improved contact of the grain with atm. O. Julian F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

16

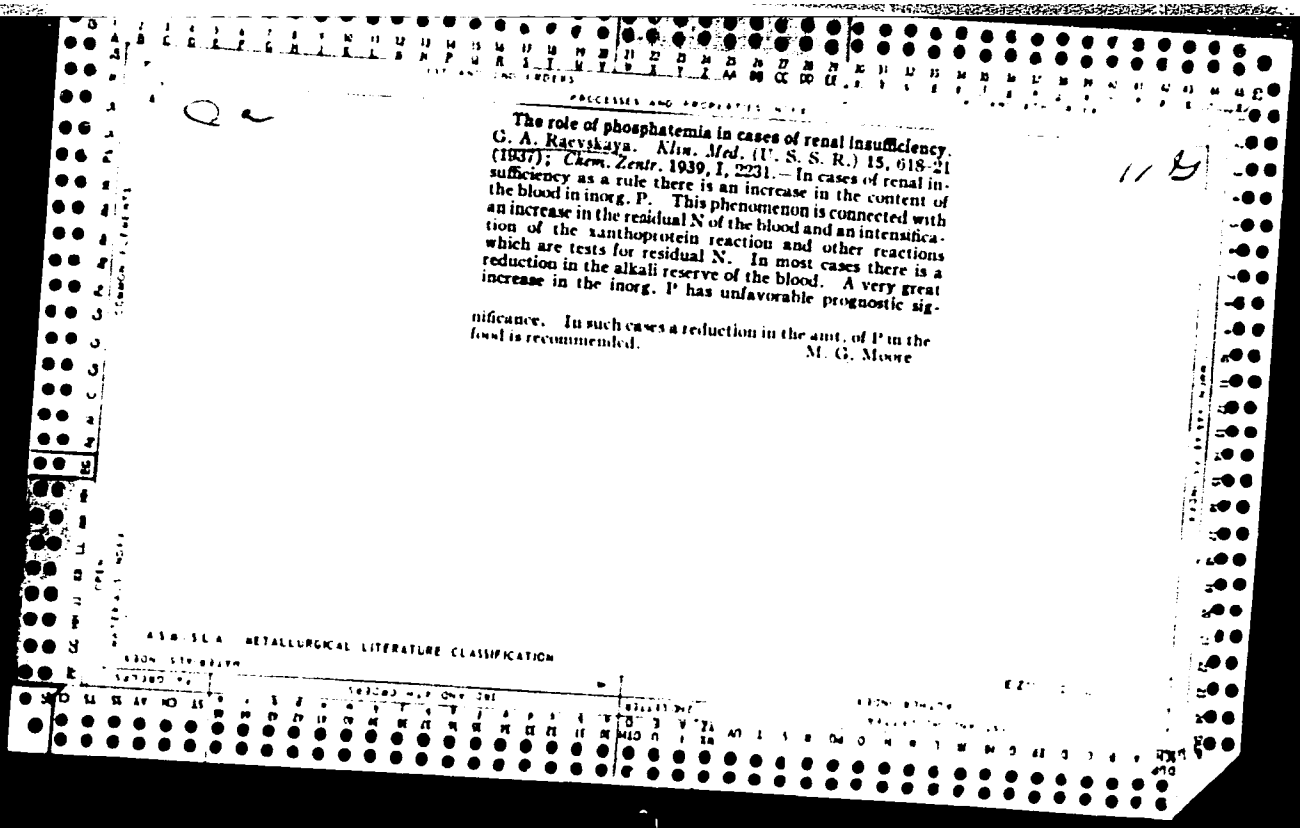
Disinfection of malt by sulfitation. E. I. Kvasnikov and Z. A. Raev. *Microbiology* (U. S. S. R.) 8, No. 3-4, 479-80; *Khim. Referat. Zhur.* 1939, No. 12, 114; cf. C. A. 34, 3433.—The effect of SO_2 on pure cultures of lactic and acetic bacteria, Delbrück bacteria, butyric and hay bacilli was investigated. For all these cultures except the hay bacilli, 0.15% SO_2 was lethal. A 0.15% concn. of SO_2 produces a nearly completely sterile malt and it does not affect the diastatic property of malt. A 0.2% concn. produces an absolutely sterile malt, but lowers somewhat its saccharifying ability. With 0.005–0.01% SO_2 the yield of alc. increases, with 0.02% the yield decreases slightly, and with 0.04–0.06% alc. fermentation stops entirely. The increase of the acidity was const. and it was equal to 0.3° Delbrück (with chlorinated malt 0.4 0.8° D. and with unwashed malt 0.8 1.0° D.). W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

RAEVSKAIA, G.

"Pronostic et la capacite de travail au cours de l'ictere catarrheux." Raevskaia, G. (p. 612)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1940, Volume 18, no. 1.



The role of phosphatemia in cases of renal insufficiency. G. A. Racvskaya. *Klin. Med.* (U. S. S. R.) 15, 618-21 (1937); *Chem. Zentr.* 1939, I, 2231.—In cases of renal insufficiency as a rule there is an increase in the content of the blood in inorg. P. This phenomenon is connected with an increase in the residual N of the blood and an intensification of the xanthoprotein reaction and other reactions which are tests for residual N. In most cases there is a reduction in the alkali reserve of the blood. A very great increase in the inorg. P has unfavorable prognostic significance. In such cases a reduction in the amt. of P in the food is recommended.

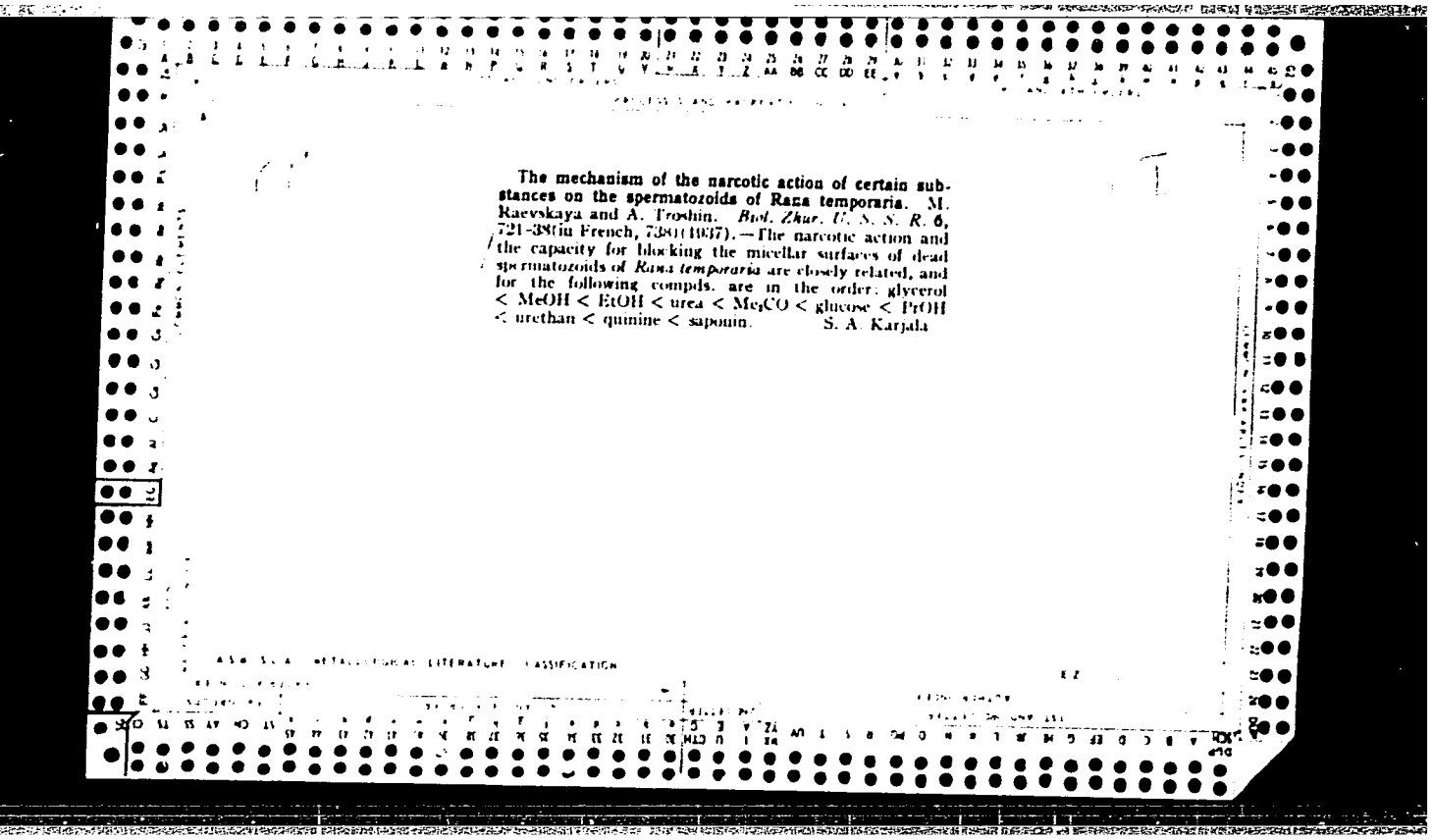
M. G. Moore

RAEVSKAYA, L.N.,
T.V. ASS, Colloid J. 6, 639-43 (1940)

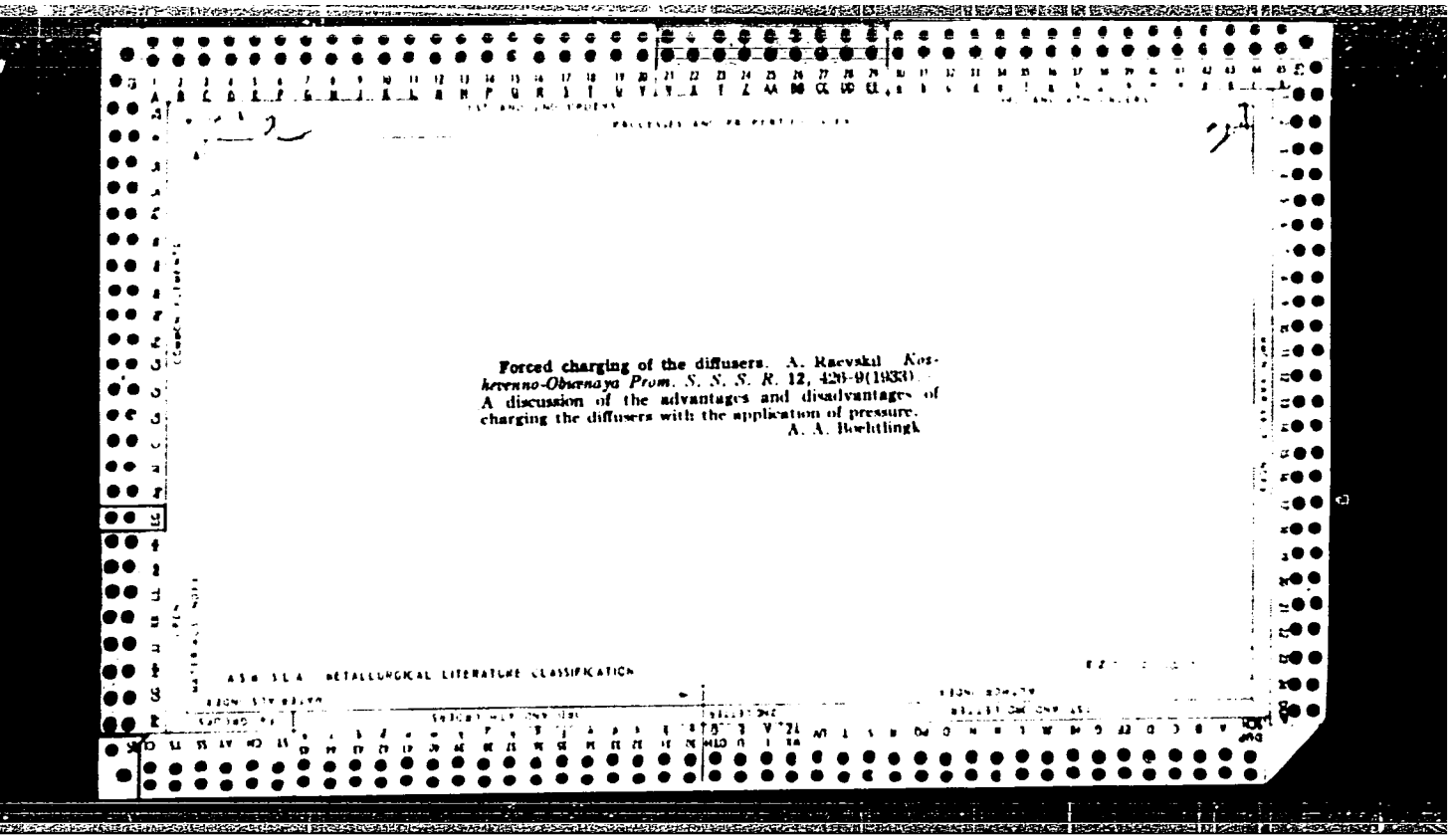
RAEVSKAYA, Mr.

"On the mechanism of the narcotic action of certain substances on the spermatozoaz of Rana Temporaria." (p. 721) Laboratory of the Physiology of Cells (Chief: Prof. D. N. Nasonov), Institute of Physiology, Leningrad University. by Raevskaya, Mr. and Troshin, A.

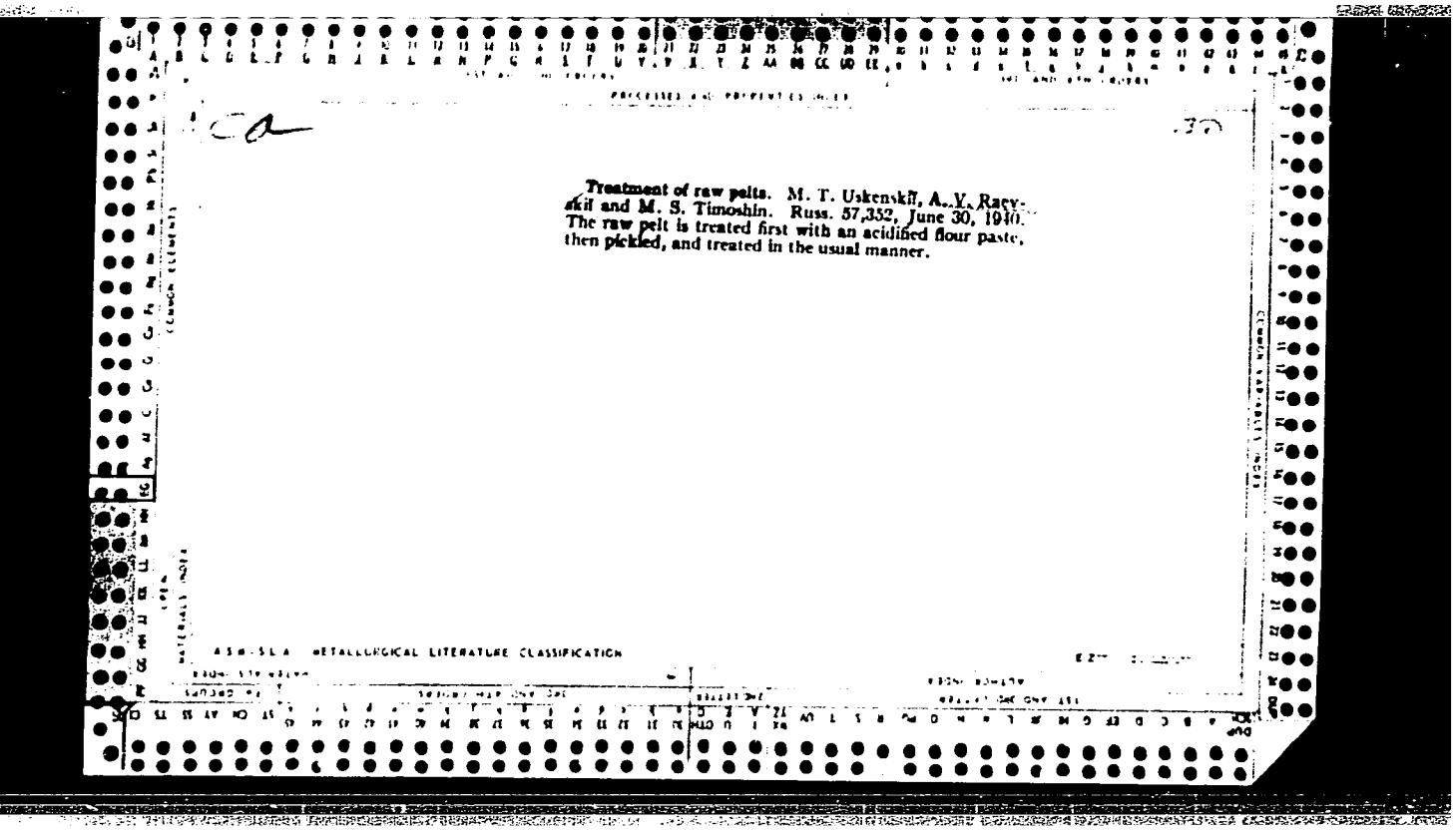
SO: Biological Journal (Biologicheskii Zhurnal) Vol. VI, 1937, No. 4



The mechanism of the narcotic action of certain substances on the spermatozoids of Rana temporaria. M. Raevskaya and A. Troshin. *Biol. Zhur. U. S. S. R.* 6, 721-38(in French, 738)(1937).—The narcotic action and the capacity for blocking the micellar surfaces of dead spermatozoids of *Rana temporaria* are closely related, and for the following compds. are in the order: glycerol < MeOH < EtOH < urea < Me_2CO < glucose < PrOH < urethan < quinine < saponin. S. A. Karjala



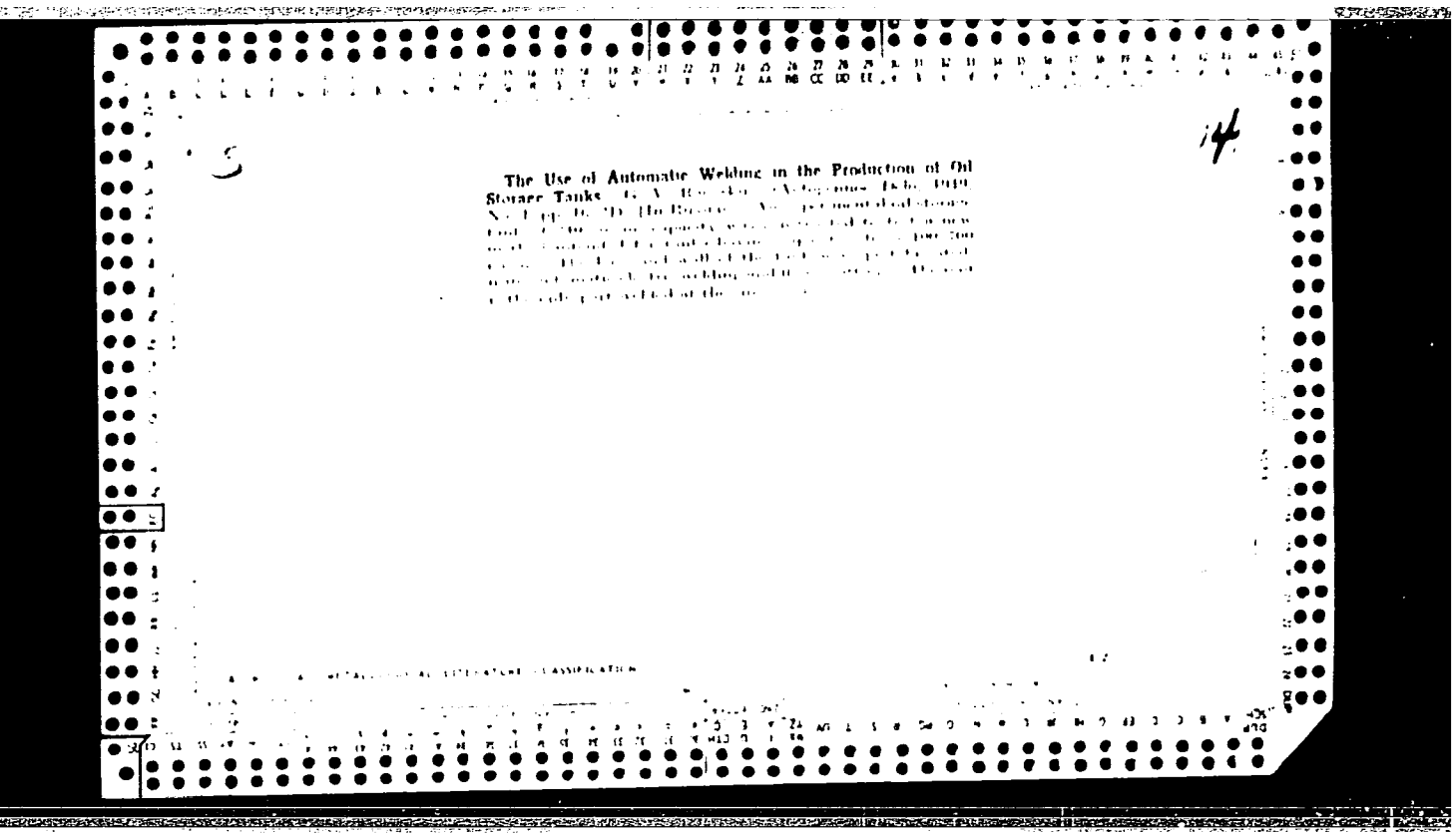
Forced charging of the diffusers. A. Raevskii *Koksevenno-Obornaya Prom. S. S. S. R.* **12**, 428-9(1933). A discussion of the advantages and disadvantages of charging the diffusers with the application of pressure.
A. A. Bochtlingk



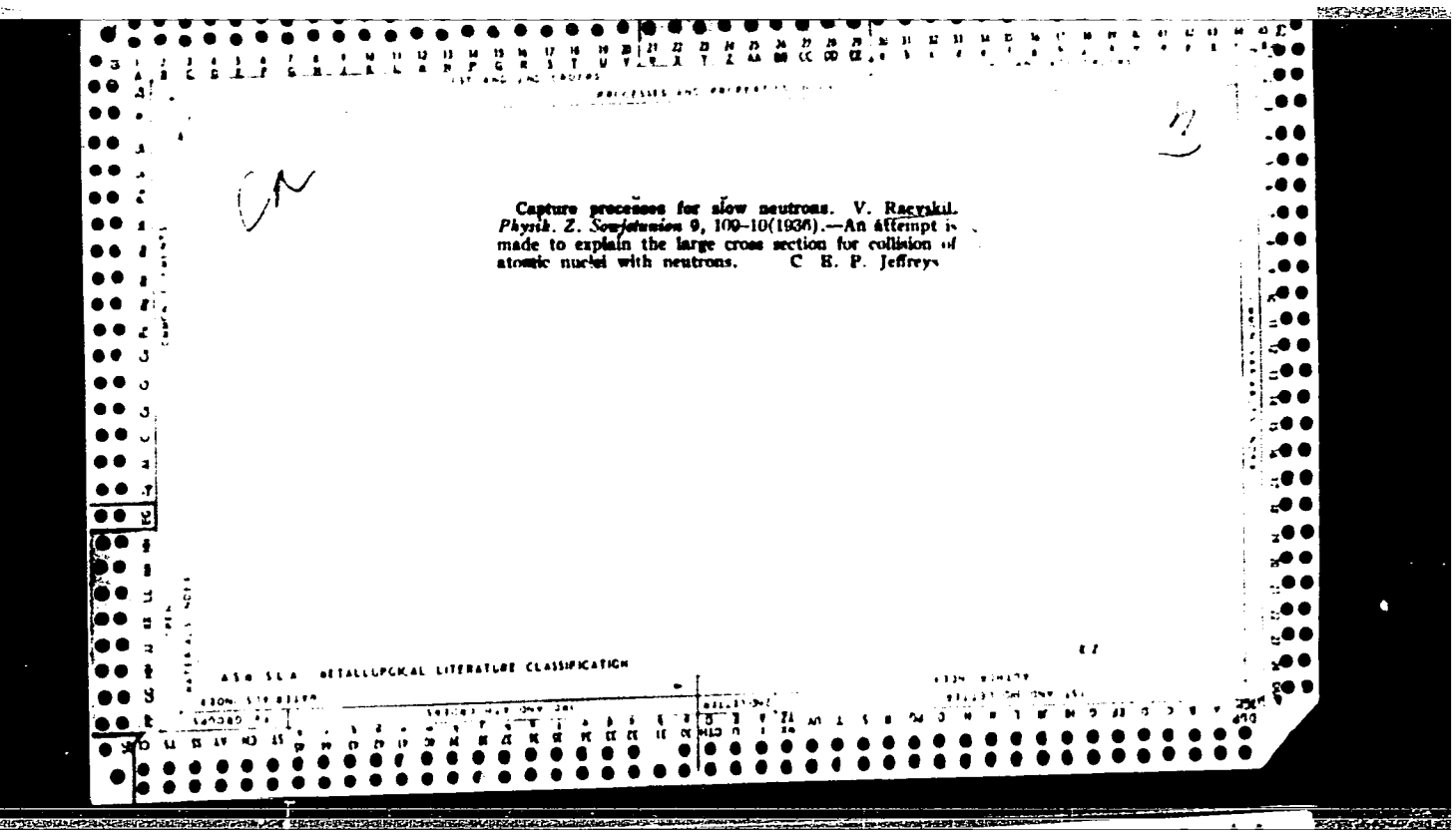
Treatment of raw pelts. M. T. Uskenskiĭ, A. V. Raevskiĭ and M. S. Timoshin. Russ. 57,352, June 30, 1940. The raw pelt is treated first with an acidified flour paste, then pickled, and treated in the usual manner.

[illegible], [illegible].

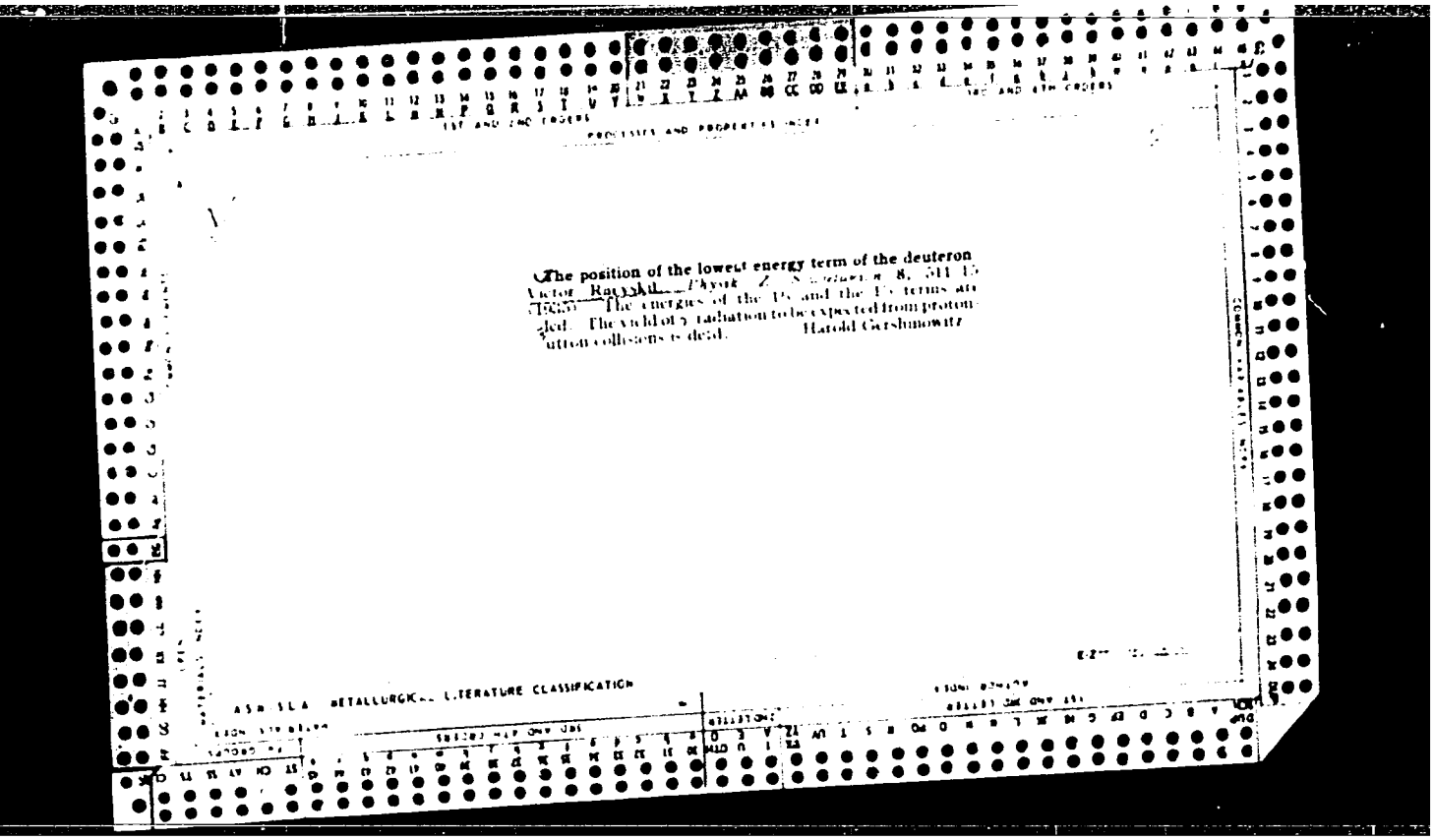
[illegible] USSR conference on new [illegible]lding methods, [illegible] [illegible] from: [illegible]ferentsiia [illegible] novym sposo[illegible] svarki.
[illegible], [illegible](12): 20-2[illegible], 1952.



The Use of Automatic Welding in the Production of Oil Storage Tanks



Capture processes for slow neutrons. V. Rasvskil. *Physik. Z. Sowjetunion* 9, 109–10(1936).—An attempt is made to explain the large cross section for collision of atomic nuclei with neutrons. C. B. P. Jeffreys



The position of the lowest energy term of the deuteron.
Victor Rau[illegible] Physik Z. S[illegible] 8, 511 [illegible]
[illegible] The energies of the [illegible] and the [illegible] terms are
[illegible]. The yield of γ radiation to be expected from proton-
[illegible] collisions is deid. Harold Gershinowitz

ASM SLA METALLURGI[illegible] LITERATURE CLASSIFICATION

RAEVSKIY, G.V. [Raievs'kyi, H.V.], laureat Leninskoy premii

Welded constructions of the future. Znan. ta pratsia no. 3:14-15 Mr '61. (MIRA 14:5)

1. Zaveduyushchiy laboratoriyey Instituta elektrosvarki imeni E.O. Patona AN USSR.
(Electric welding) (Sheet metal work)

RAEYEVIC, D.V.

29665

Eashchita vrashchayushchikhsya mashin,

Rabo'ayushchikh iva voedushnyye sveti,

ot atmosfrernykh preryenapryazhyeniy:

Elvektrichvestvo, 1949, No. 9 s. 45-50

SO: LETOPIS' NO. 40

RAF S. YA.

Effect of soda-potash mixture on the crystallization and fusion of window pane glass. M. V. Oklotin, I. D. Tykachinskii, R. S. Levina, G. S. Bogdanova, and S. Ya. Raf. *Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Stekla* 1954, No. 34, 3-9; *Referat. Zhur., Khim.* 1955, No. 841. The suitability of the soda-potash mixt. obtained as a by-product in Al_2O_3 plants operating on nepheline in glass melting was investigated. The mixt. contained K_2CO_3 33.8 and Na_2CO_3 53.8%. Expt. glass was melted in crucibles and kept for 4 hrs. at 1420°. The glass was then poured from the crucibles, annealed, and its physicochem. properties were examd. visually. It was concluded that the soda-potash mixt. could be used in batches of sheet glass to replace soda partly or entirely; in the latter case the working temp. of the glass was raised by 40-50°. A glass contg. in its alk. component 7.5% K_2O was in its crystn. properties identical with a glass contg. only Na_2O.

M. Hr...ch

(4)

RAF, S. YA.

"Preparation of Soda-sulfate Melt and Its Use in Glass Melting," I. M. Boguslavskiy, V. V. Pollyak, G. M. Nisnevich, and S. Ya. Raf, Stekol'naya i Keram From 1945, No 4/5 pp 20 (SEE: Inst. Insect/Fung, in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949

SOV/72-58-9-7/20

AUTHOR: Raf, S. Ya.

TITLE: Influence of Packing and Storing Conditions of Sheet Glass Upon the Leaching of Its Surface (Vliyaniye usloviy upakovki i khraneniya listovogo stekla na rasshchelachivaniye yego poverkhnosti)

PERIODICAL: Steklo i keramika, 1958, Nr 9, pp 17 - 19 (USSR)

ABSTRACT: A special investigation of the influence of the packing and storing conditions upon the quality of the glass surface was carried out in the Glass Works Lisichansk and "Proletariy". In table 1 the chemical composition of the glass produced by these works is presented. If the sheet glass is packed in boxes which were stored in the open for as long as 1 1/2 year a leaching was found to have occurred of about 30% of the glass sheets. This was found in the Lisichansk Works. In the Plant "Proletariy" the boxes were stored on board platforms. Only 15-18% of the glass sheets were found as having been leached, the majority of them being from boxes which were fully exposed to the sun. Further experiments were conducted by either packing the sheet glass as it comes hot directly

Card 1/2

from the machine or by packing it after cooling. The shavings used in packing were used partly with a humidity of 55-60%, and partly dried with a humidity of 0,5-3,0% The packed boxes were either stored in the open or sheltered under a roof. The temperature and the humidity of the air in the glass storages were measured daily (Table 2). The results obtained by checks after a fortnight of storage are given in table 3 and those obtained after a storage of two months in table 4. The information gained indicates that chippings with a humidity of 1-3% are best suited for packing. Hot glass should not be packed immediately, but only after cooling. Packed glass should not be stored in the open. There are 4 tables

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut stekla (State Scientific Research Institute of Glass)

RAF, S. Ya.
25[illegible]

Primeneniye astrakhanita V steklovarenii. Steklo I Keramika, 1948, No. 6, s. 7-9

SO: LETOPIS NO. 30, 1948

25632 [illegible]F, [illegible]. Yu.

Primeneniye [illegible] v stekloyarenii.
Steklo i keramika, 1948, No. 6, s. 7-9.

SO: Letopis' Zhurnal'nykh Statey, No. 30, Moskva, 1948

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010008-0"

1. RAF., S. YA.

2. USSR (600)

4. Glass manufacture

7. Modern methods of handling raw materials., Stek. i. ker, 9, no. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

RAF, S. YA.

Use of astrakhanite in glassmelting. S. Ya. Raf. *Steklo i Keram.*, 5 [8] 7-9 (1948). Large deposits of astrakhanite ($MgSO_4 \cdot Na_2SO_4 \cdot 4H_2O$) are located on the right bank of the Volga, near the city of Astrakhan; other deposits are scattered in eastern Russia, western Siberia, and central Asia. The chemical composition of astrakhanite varies as follows: Na_2SO_4 22 to 36, $MgSO_4$ 20 to 31, $CaSO_4$ 6 to 8, NaCl 1.5 to 1.5, and H_2O 10 to 23%. A total of 550 tons of dry astrakhanite was used over a 17-day period in a tank furnace producing glass of the following composition: SiO_2 + R_2O_3 72.1, CaO 7.8, MgO 3.0, Na_2O 16.0, and SO_3 0.6%. The charge consisted of 80% astrakhanite and 20% cullet. Due to the high content of MgO in astrakhanite, the MgO in the glass rose to 3.75%, but the total RO remained unchanged by reduction of CaO. The composition of the glass changed gradually. There were no sharp changes in the glassmelting process. Rate of withdrawal of the glass remained the same (86 to 104 m /hr.). No difficulties were observed in the cutting and breaking of the glass. B.Z.K.

R&F, S. YA.

5-5)41

Methods of introducing Al_2O_3 into the composition of sheet glass made in Fourcault machines. S. Ya. Rar. *Steklo i Keram. Prom.*, 1946, No. 11-12, pp. [illegible]

The manufacture of Fourcault window glass containing up to 3.5% MgO and up to 2% Al_2O_3 was discontinued in Russia during the last war because of lack of raw materials, but it is now being resumed. In the absence of better materials, refractory clay is used as a means of introducing alumina. The clay is dried, sorted, ground to pass a sieve of 121 openings per $cm.^2$, mixed with dolomite, and then mixed with the other components. The use of the clay produced no difficulties in the melting and working of the glass; additional formation of such defects as cords and stones was not noticed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of alumina. White slime is a by-product of the aluminum industry and consist of sodium aluminosilicate; it analyzed SiO_2 20 to 25, Al_2O_3 30 to 32, Fe_2O_3 1.5 to 1.8, and alkali 20 to 25%. When using feldspar, it should be thoroughly dried, sorted, and ground to pass a sieve of 81 openings per $cm.^2$.

B.Z.K.

RAF, S. YA.

Method of adding the reducing agent to the sulfate charge. S. Ya. Raf. *Stekol'naya i Keram. Prom.*, 1946, No. 6, pp. 7–10.—In all cases, regardless of the type of mixer employed, the method of adding the sulfate and the reducing agent is of decisive importance in obtaining a charge in which the reducing agent will be uniformly distributed around the sulfate and in contact therewith. The best results are obtained by dividing the process into two stages: (1) preliminary mixing of the sulfate with the reducing agent only, and (2) addition to this mixture of the remaining components of the charge, followed by mixing to obtain uniformity. Both the sulfate and the reducing agent (anthracite, coke, etc.) are ground prior to mixing to pass a sieve having 64 openings per cm.^{2}. When using wood sawdust as the reducing agent, the size should be not over 5 to 6 mm. The sulfate and reducing agent should not be of different grain size, and the components of the charge should not be mixed all together. R.Z.K.

RAF, S. YA.

Effect of sodium silicate coloration on the color of light-green glass. S. Ya. Raf. *Steklo i Keram. Prom.*, 1945, No. 4-5, pp. 10-12.—Sodium silicate batches varying in color from green to black were prepared from clay, sulfate, and carbon (8, 9, 10, 12, and 15% C on the basis of total sulfates). The silicates of all colors (except green) were used to melt glass of 74 SiO_2, 10 CaO, and 16% Na_2O. The Na_2O was added in two forms: (1) 50% Na_2O as silicate and 50% as sulfate and (2) 75% Na_2O as silicate and 25% as sulfate. The addition of brown silicate to give 50% of the Na_2O in the glass does not produce any noticeable impairment of the color of the glass. The addition of colored silicate to give 75% of the Na_2O in the glass produces a definite coloration of the glass; some quantity of the reducing agent was left. To obtain uncolored glass when 75% of the Na_2O in the glass is to come from the silicate, it is necessary to leave in the charge some carbon-free sulfate, in which case it is necessary to reduce the amount of the carbon to be added by 40 to 50%. B.Z.K.

RAF, S. YA.

PROCESSES AND PROPERTIES INDEX

Briquetting of sulfate charge. S. YA. RAF, V. V. POLLYAK, AND G. M. NISNEVICH. *Stekol'naya i Keram. Prom.*, 1949, No 6, pp. 1-3.—Sulfate charge based to give a glass melt of SiO_2 72.5, R_2O 0.5, CaO 8, MgO 3, and R_2 16% was used to prepare briquettes with 2, 3, 4, 6, 8, 10, and 12% water under pressures of 20, 50, 100, 200, 400, 500, 750, and 1000 kg./cm.^{2}. Briquettes of good mechanical strength were obtained with pressures of 500 to 750 kg./cm.^{2}. Optimum water content is 6 to 8%. The use of special binders had no noticeable effect on strength. Grain size had no effect on mechanical strength. Cullet should not be used to prepare the briquettes. The briquettes should be allowed to harden for 2 to 3 days before use. B.Z.K.

RAF, S. YA.

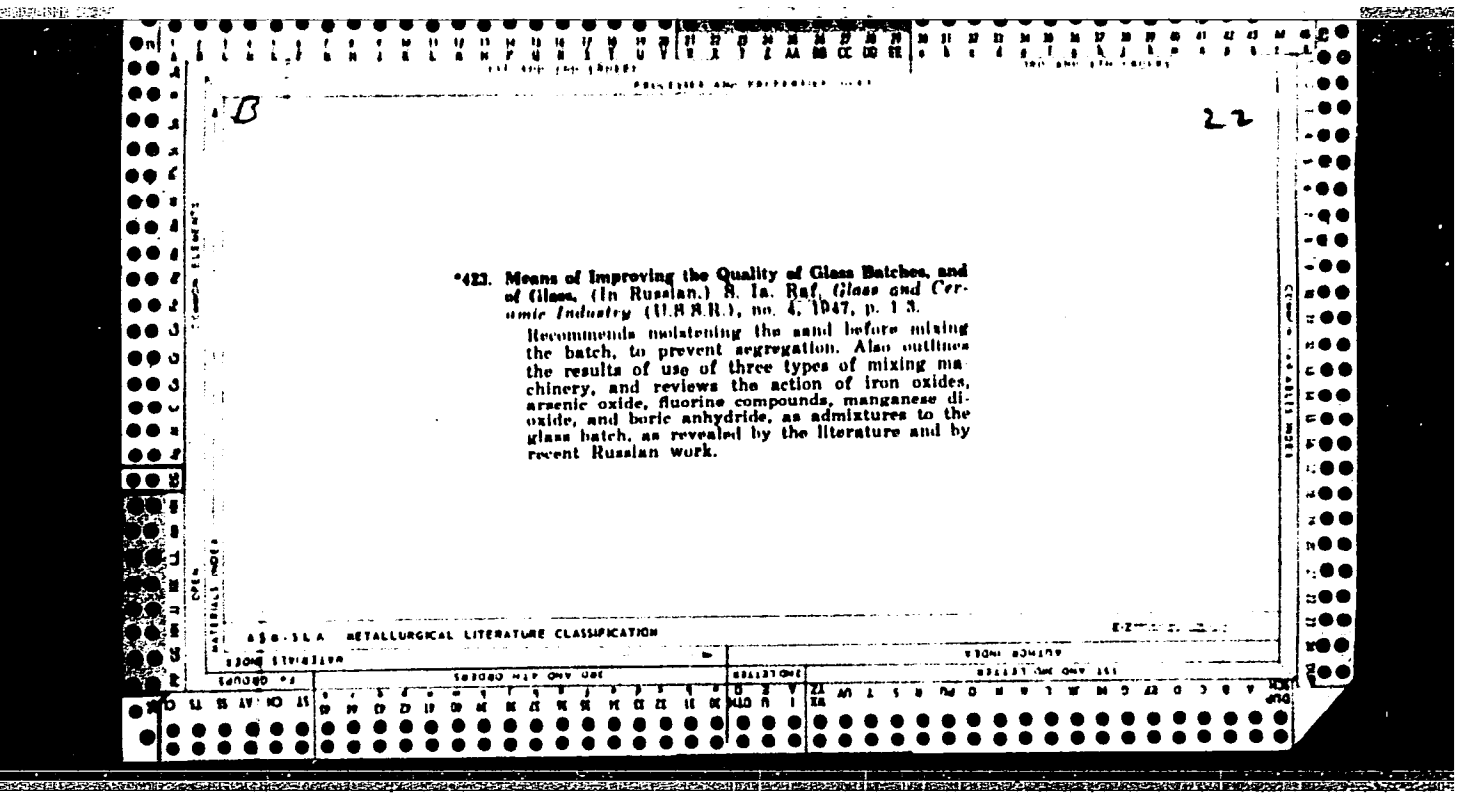
Preparation of soda-sulfate melt and its use in glassmelting. I. M. BOGUSLAVSKII, V. V. POLIYAK, G. M. NISNEVICH, and S. YA. RAF. Abstracted in Steklo i Keram. Prom., 1953, No. 4-5, p. 20,-- it was proposed to use in glassmelting a modified Leblanc melt consisting a mixture of soda and sulfate which was obtained by the incomplete reduction of the sulfate to the sulfide and the carbonization of the latter by the decomposition of the added $CaCO_3$. In contrast to the Leblanc melt, the modified melt was to have Na_2O and CaO in the proportions in which they are used in normal Fourcault charges, and the ratio of soda to sulfate was to be 1:1. The melt was selected on the basis of a glass composition of SiO_2 73, CaO 13, and Na_2O 15% in which $Na_2O/CaO = 1.25$. The glass melt obtained did not differ in coloration from that obtained from a sulfate charge. The absolute content of the sulfides that will produce a colorless glass melts can vary within large limits and does not by itself cause the coloration. The glass becomes colored only when the relation between the sulfides and the free undecomposed sulfates is shifted to give an excess of sulfides not oxidized by the sulfate. The coefficient of reduction of the sulfate should not exceed about 50 to 52%. A homogeneous and uncolored glass is formed from charges containing this melt at 1300° which is a lower temperature than that for soda-sulfate and soda charges. The transmissivity is lowered by increasing the content of Fe oxides, but with the correct ratio of sulfides and sulfates in the melt this will not be the cause of the sulfide coloration. B.I.K.

[illegible], S. Ya.

Glass Manufacture

Problem concerning the technological process involved in the production of glass with soda substitutes, Stek. i ker., 9. No. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952 Unclassified.



B

22

*423. **Means of Improving the Quality of Glass Batches, and of Glass.** (In Russian.) S. Ia. Raf, *Glass and Ceramic Industry* (U.S.S.R.), no. 4, 1947, p. 13.

Recommends moistening the sand before mixing the batch, to prevent segregation. Also outlines the results of use of three types of mixing machinery, and reviews the action of iron oxides, arsenic oxide, fluorine compounds, manganese dioxide, and boric anhydride, as admixtures to the glass batch, as revealed by the literature and by recent Russian work.

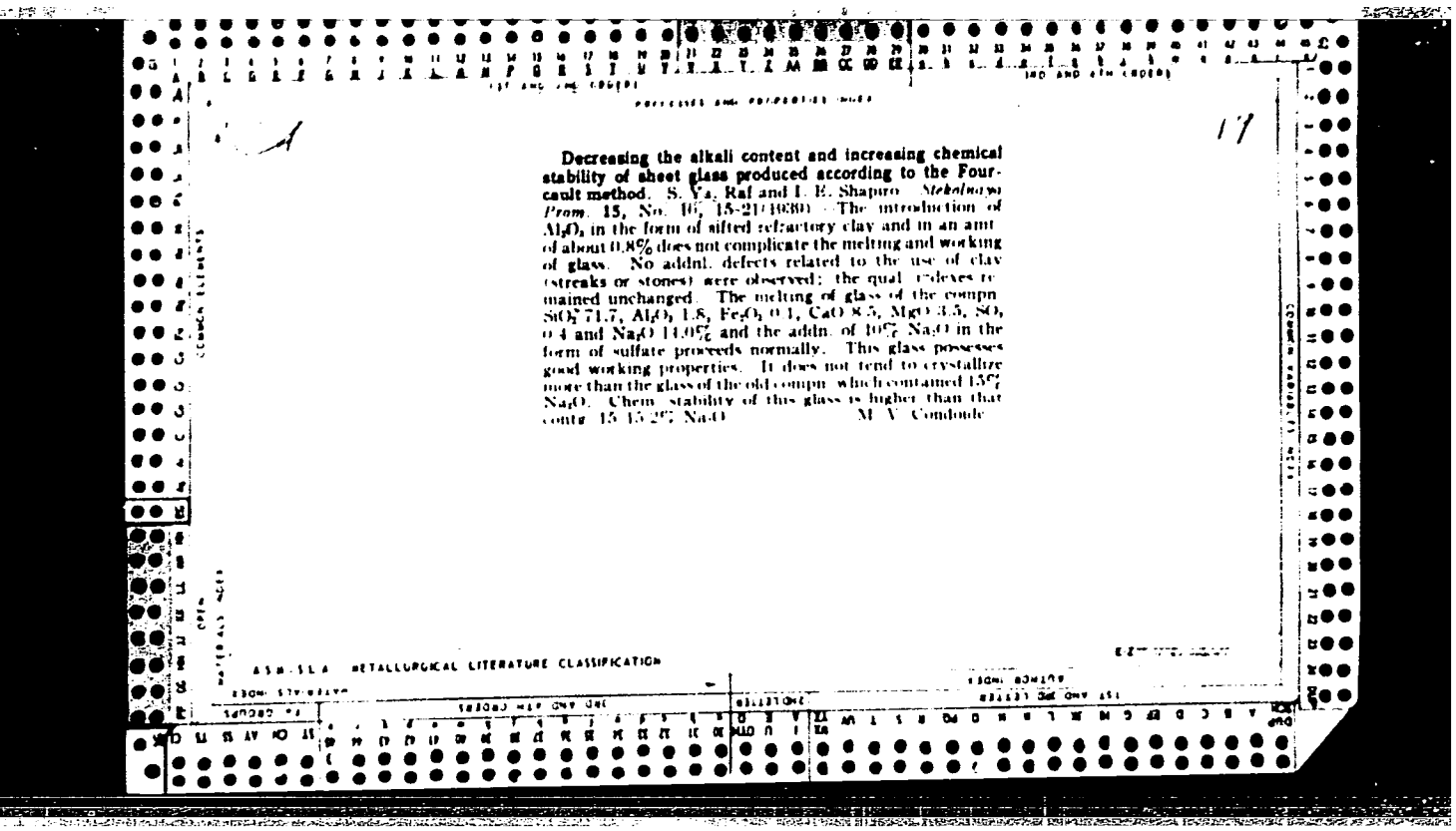
A 5 8 - 5 L A METALLURGICAL LITERATURE CLASSIFICATION

Gl. Ch.

BI-9, Glass, ceramics abrasives

Effects of different methods of preparing the batch and of grading on the speed of fusion of glass. S. V. Raf and N. A. Milyaeva (*Stek. Keram.*, 1948, **5**, No. 2, 4; *Brit. ceram. Abstr.*, 1948, A351).—The process of fusion and fining of glass is accelerated when the batch is pressed into briquettes and when the grain size of the latter is small

R. H. CLARKE.

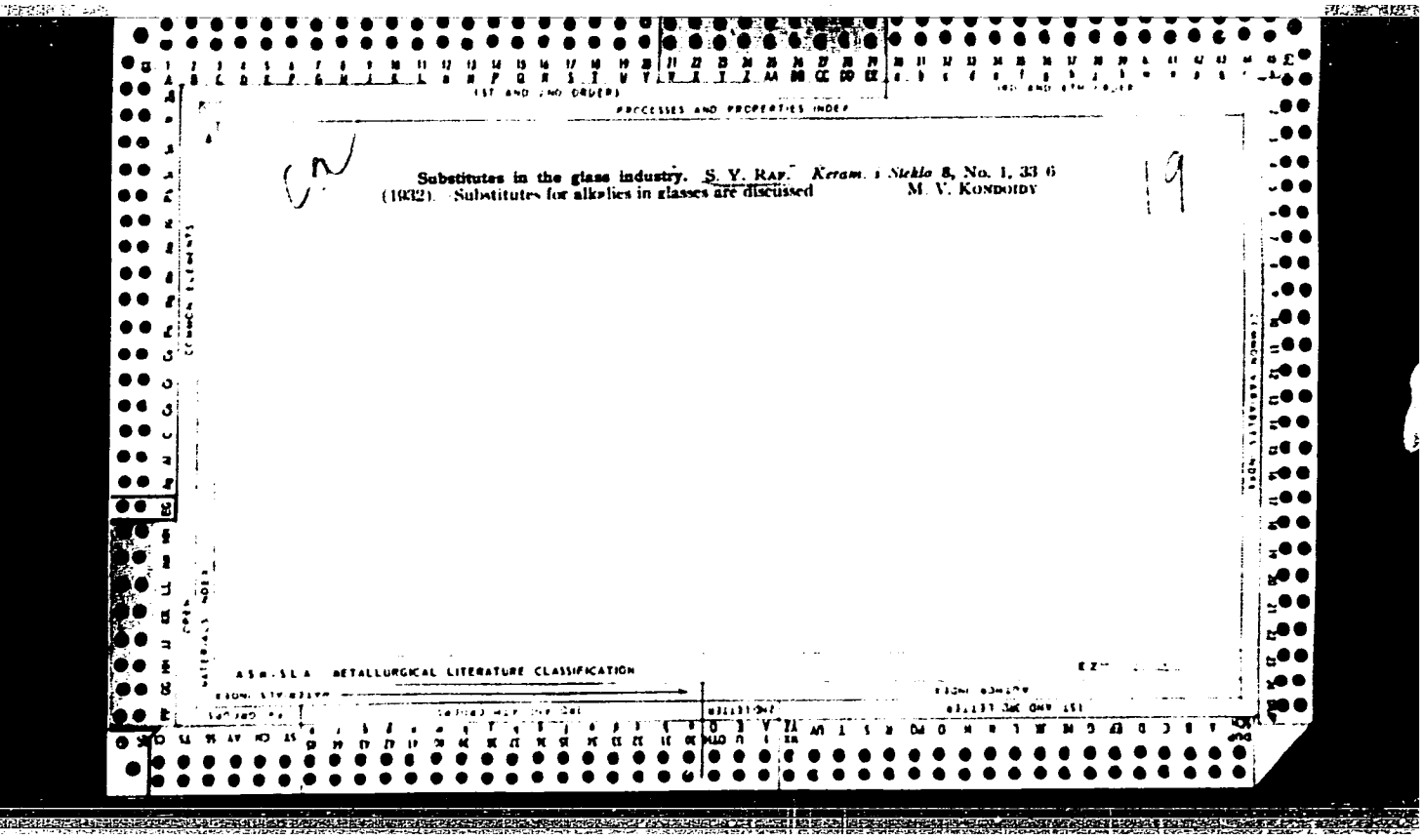


Decreasing the alkali content and increasing chemical stability of sheet glass produced according to the Fourcault method. S. Ya. Raf and I. E. Shapiro. *Steklo i Keram.* 15, No. 10, 15-21 (1958). The introduction of Al_2O_3 in the form of sifted refractory clay and in an amt. of about 0.8% does not complicate the melting and working of glass. No addnl. defects related to the use of clay (streaks or stones) were observed; the qual. indexes remained unchanged. The melting of glass of the compn. SiO_2 71.7, Al_2O_3 1.8, Fe_2O_3 0.1, CaO 8.5, MgO 3.5, SO_3 0.4 and Na_2O 14.0% and the addn. of 10% Na_2O in the form of sulfate proceeds normally. This glass possesses good working properties. It does not tend to crystallize more than the glass of the old compn. which contained 13% Na_2O. Chem. stability of this glass is higher than that contg. 13-15.2% Na_2O. M. V. Condoide

glass

BCS

1232. **Moistening the glass batch.**—S. Ya. Rat (*Strek. Keram.*, 8, No. 10, 7, 1951). Various methods of moistening the glass batch to avoid its segregation are discussed. The total moisture content in a soda batch ready for use should be 2–3%, in a soda-sulphate batch 3–5%, and in a pure sulphate batch 6–7%. Sand alone should be wetted before it is mixed with other components regardless of the wetting method used. It is emphasized that wetting of all raw materials during their mixing is by no means permissible. Some authors suggest that the batch should be wetted by steam at the tank (as it leaves the bunker in the dry state). The suggestion is severely criticized. On the contrary, to avoid clotting it is suggested that the dry sand, which may be hot, should be cooled to 35°–40° C. before wetting.



PROCESSES AND PROPERTIES INDEX

Substitutes in the glass industry. S. V. Rao. *Keram. i Steklo* **8**, No. 1, 33–6 (1932). Substitutes for alkalies in glasses are discussed M. V. Kondoidy

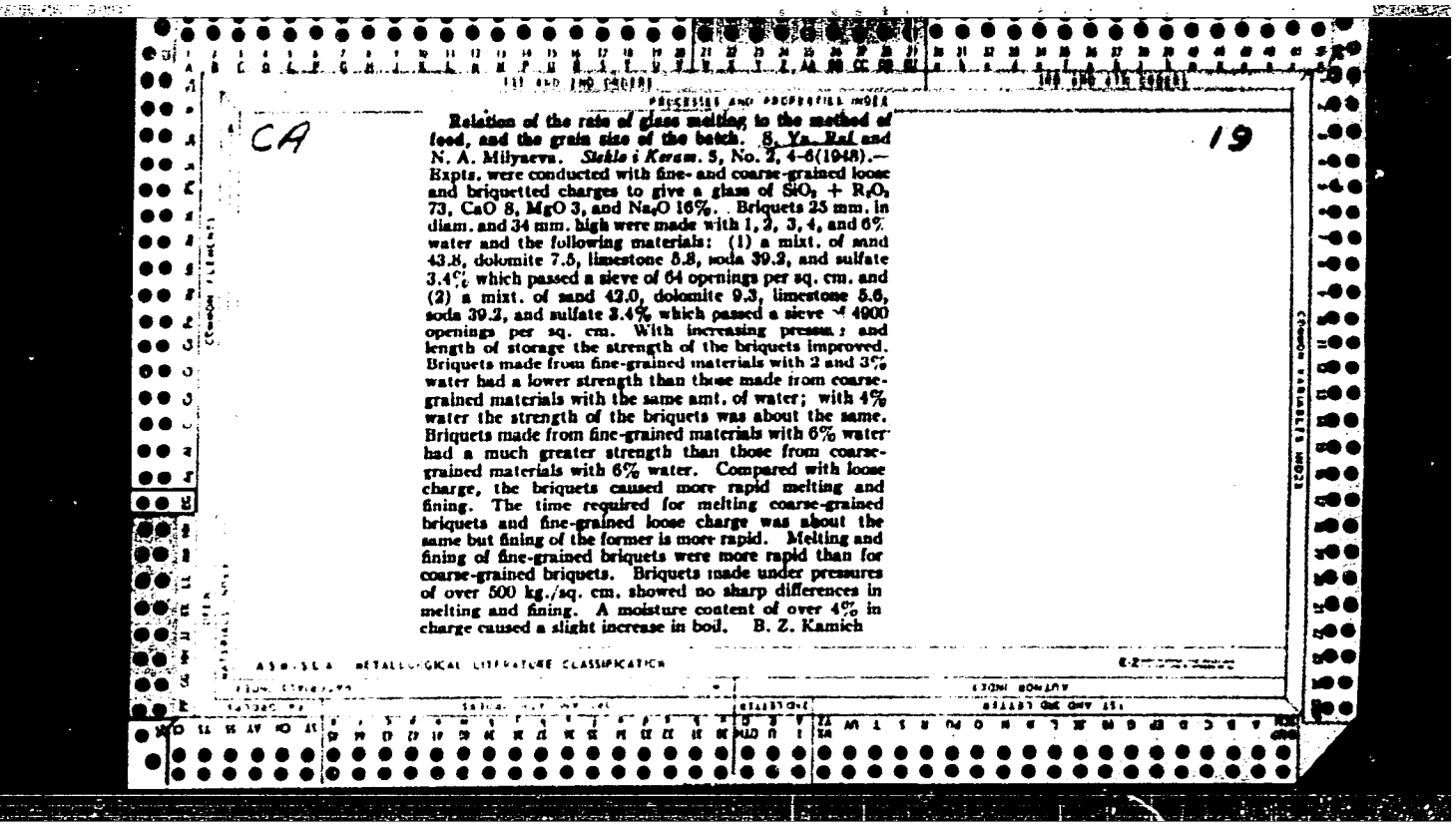
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

19

Use of astrakhanite in glass melting. S. Ya. Rai *Stekla i Keram.* 5, No. 6, 7-9(1948).—Chem. compn. of astrakhanite ($MgSO_4.Na_2SO_4.4H_2O$) varies as follows: Na_2SO_4 22–36, $MgSO_4$ 20–34, $CaSO_4$ 6–8, NaCl 1.5–4.5, H_2O 10–23%. A large tank furnace producing glass of SiO_2-R_2O_3 72.1, CaO 7.8, MgO 3.0, Na_2O 16.0, and SO_3 0.6% was fed for 17 days with a charge of 80% dry astrakhanite and 20% cullet; total consumption of dry astrakhanite was 550 tons. Because of high content of MgO in the astrakhanite, the MgO in the glass was gradually increased to 3.75% by corresponding decrease of CaO; the total sum of RO remained unchanged. The glass compn. changed gradually. No marked changes in the process were observed. Pick-up of glass remained the same at about 98–100 m./hr. It was not difficult to cut or break the glass.

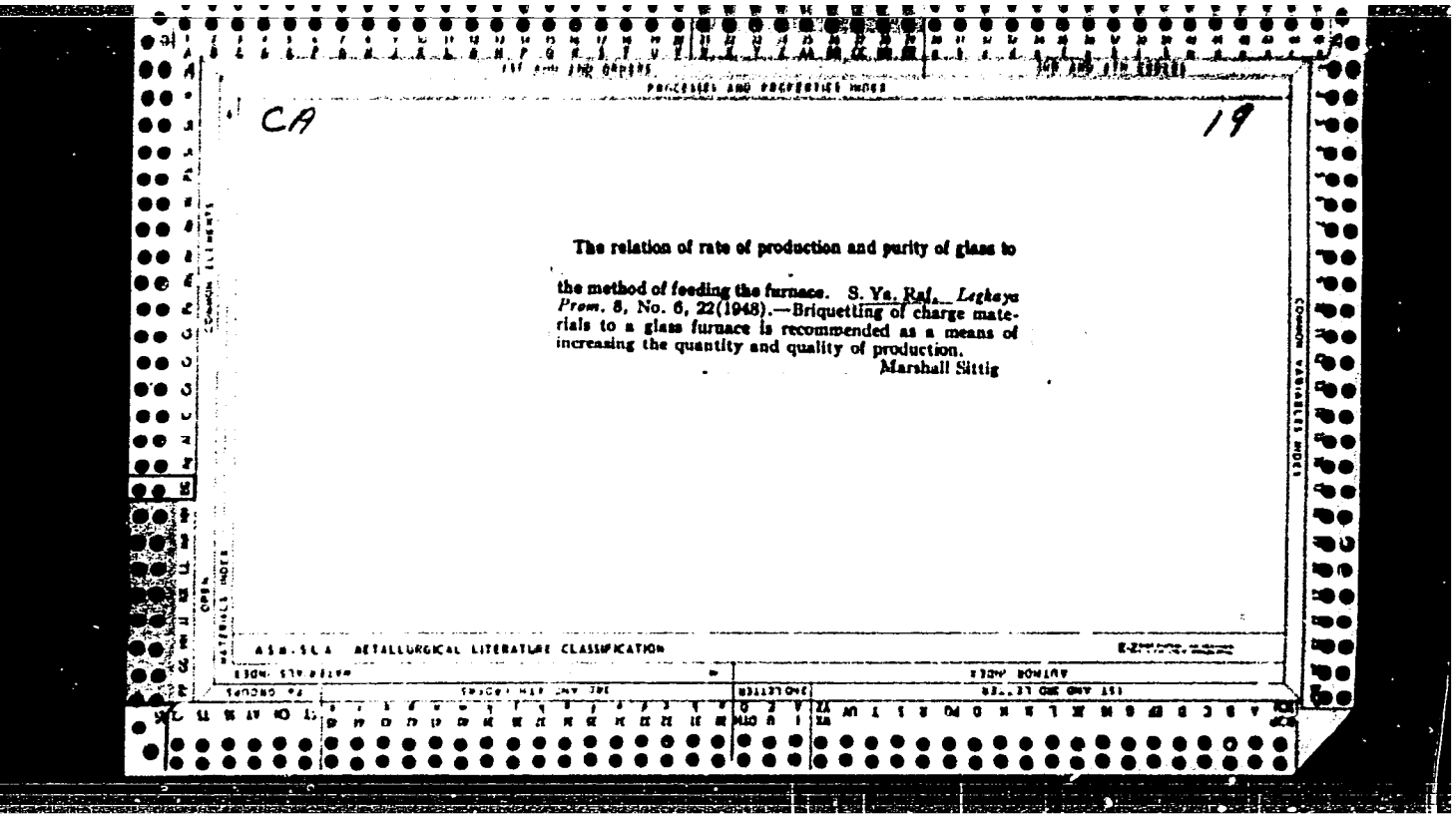
B. Z. Kamich



CA

19

Relation of the rate of glass melting to the method of feed, and the grain size of the batch. S. Ya. Rai and N. A. Milyaeva. *Steklo i Keram.* 5, No. 2, 4–6(1948).— Expts. were conducted with fine- and coarse-grained loose and briquetted charges to give a glass of SiO_2 + R_2O_3 73, CaO 8, MgO 3, and Na_2O 16%. Briquets 25 mm. in diam. and 34 mm. high were made with 1, 2, 3, 4, and 6% water and the following materials: (1) a mixt. of sand 43.8, dolomite 7.5, limestone 5.8, soda 39.2, and sulfate 3.4% which passed a sieve of 64 openings per sq. cm. and (2) a mixt. of sand 42.0, dolomite 9.3, limestone 5.6, soda 39.2, and sulfate 3.4% which passed a sieve of 4900 openings per sq. cm. With increasing pressure and length of storage the strength of the briquets improved. Briquets made from fine-grained materials with 2 and 3% water had a lower strength than those made from coarse-grained materials with the same amt. of water; with 4% water the strength of the briquets was about the same. Briquets made from fine-grained materials with 6% water had a much greater strength than those from coarse-grained materials with 6% water. Compared with loose charge, the briquets caused more rapid melting and fining. The time required for melting coarse-grained briquets and fine-grained loose charge was about the same but fining of the former is more rapid. Melting and fining of fine-grained briquets were more rapid than for coarse-grained briquets. Briquets made under pressures of over 500 kg./sq. cm. showed no sharp differences in melting and fining. A moisture content of over 4% in charge caused a slight increase in boil. B. Z. Kamich

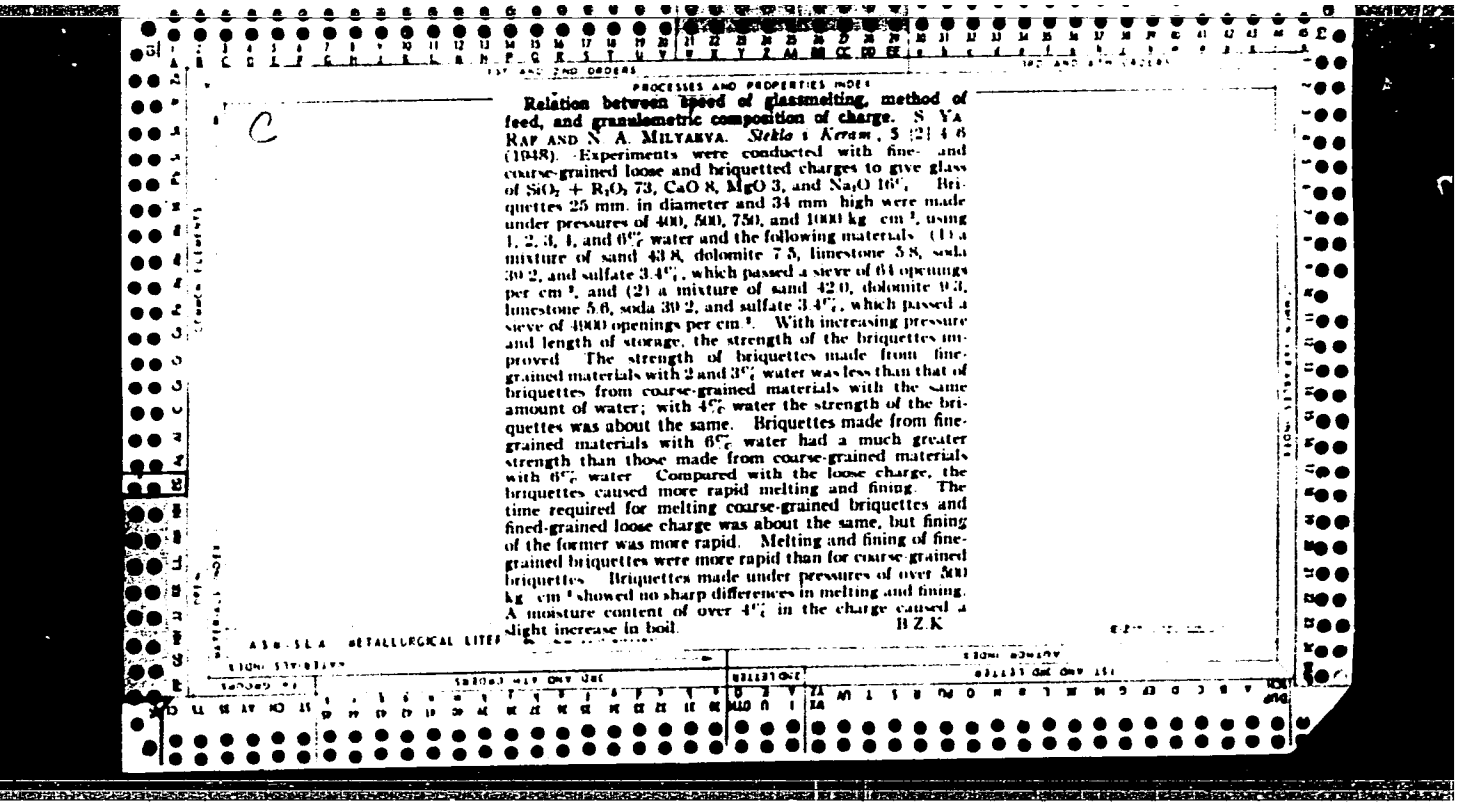


CA

19

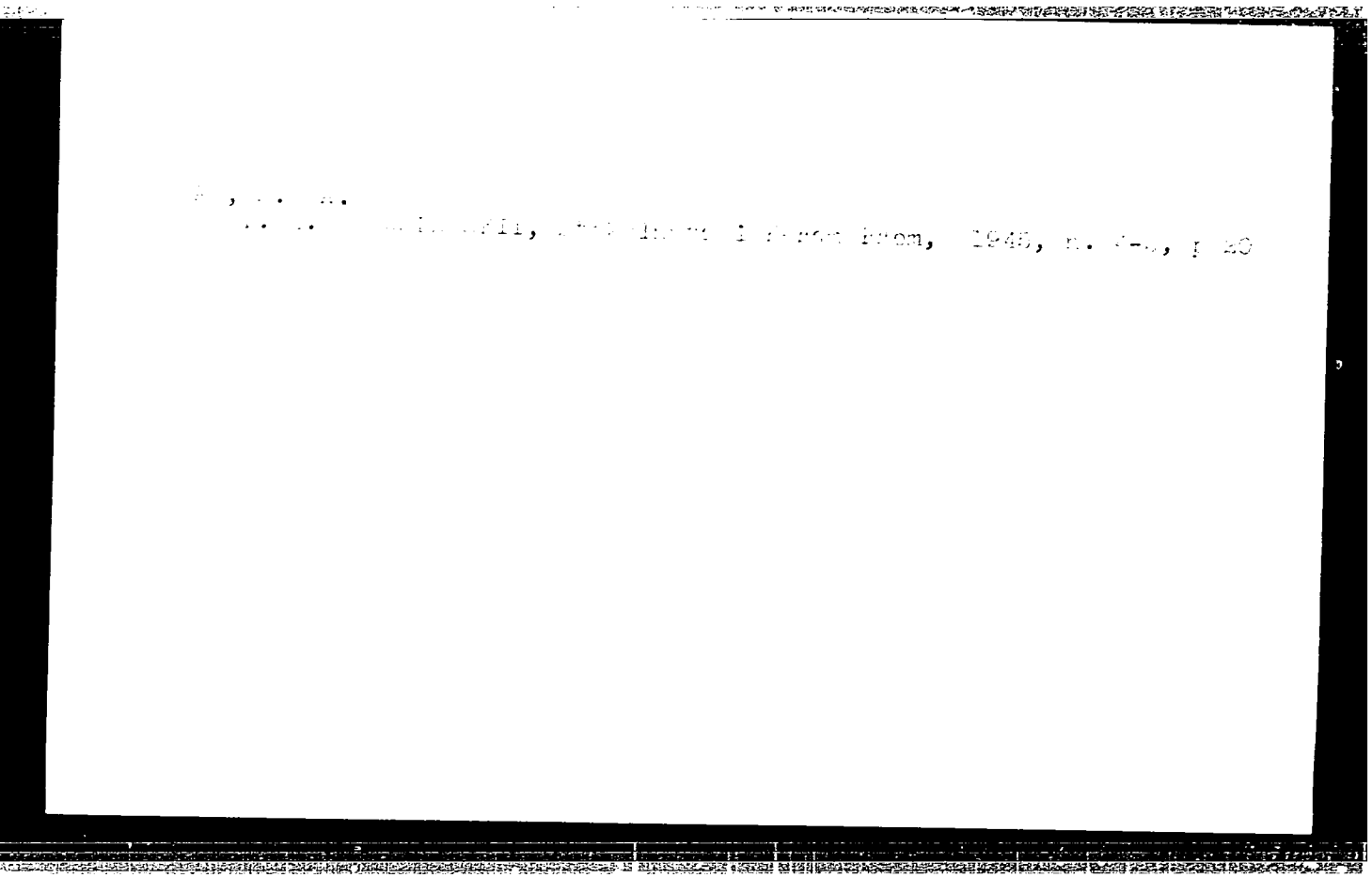
The relation of rate of production and purity of glass to the method of feeding the furnace. S. Ya. Raf. *Legkaya Prom.* 8, No. 6, 22(1948).—Briquetting of charge materials to a glass furnace is recommended as a means of increasing the quantity and quality of production.

Marshall Sittig



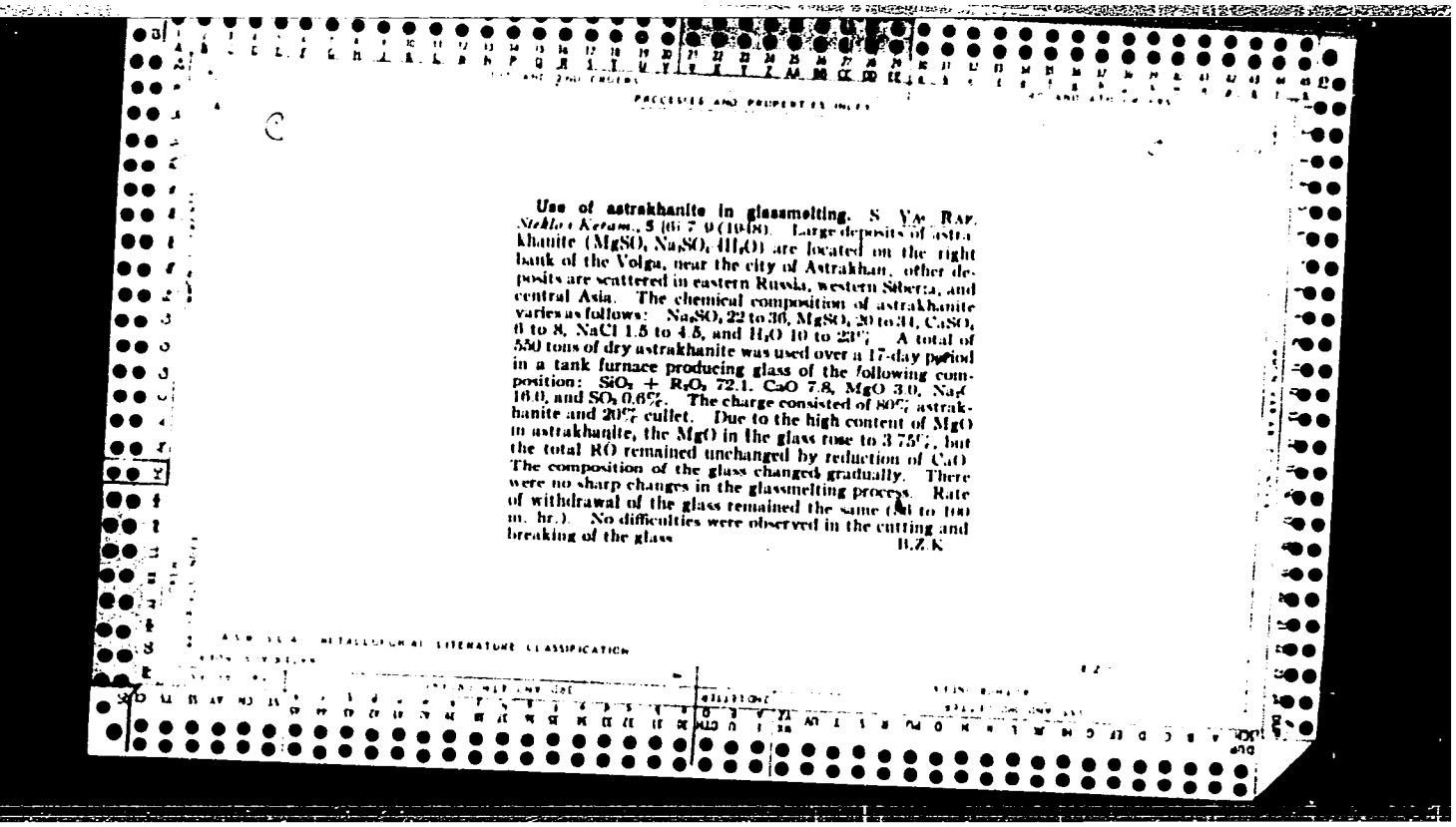
PROCESSES AND PROPERTIES INDEX

Relation between speed of glassmelting, method of feed, and granulometric composition of charge. S YA RAP AND N A MILYAEVA. *Steklo i Keram.*, 5 [2] 4-6 (1948). Experiments were conducted with fine- and coarse-grained loose and briquetted charges to give glass of $SiO_2 + R_2O_3$ 73, CaO 8, MgO 3, and Na_2O 16%. Briquettes 25 mm. in diameter and 34 mm. high were made under pressures of 400, 500, 750, and 1000 kg. cm.$^{-2}$, using 1, 2, 3, 4, and 6% water and the following materials: (1) a mixture of sand 43.8, dolomite 7.5, limestone 5.8, soda 39.2, and sulfate 3.4%, which passed a sieve of 64 openings per cm.^{2}, and (2) a mixture of sand 42.0, dolomite 9.3, limestone 5.6, soda 39.2, and sulfate 3.4%, which passed a sieve of 4900 openings per cm.^{2}. With increasing pressure and length of storage, the strength of the briquettes improved. The strength of briquettes made from fine-grained materials with 2 and 3% water was less than that of briquettes from coarse-grained materials with the same amount of water; with 4% water the strength of the briquettes was about the same. Briquettes made from fine-grained materials with 6% water had a much greater strength than those made from coarse-grained materials with 6% water. Compared with the loose charge, the briquettes caused more rapid melting and fining. The time required for melting coarse-grained briquettes and fined-grained loose charge was about the same, but fining of the former was more rapid. Melting and fining of fine-grained briquettes were more rapid than for coarse-grained briquettes. Briquettes made under pressures of over 500 kg. cm.$^{-2}$ showed no sharp differences in melting and fining. A moisture content of over 4% in the charge caused a slight increase in boil. B Z K



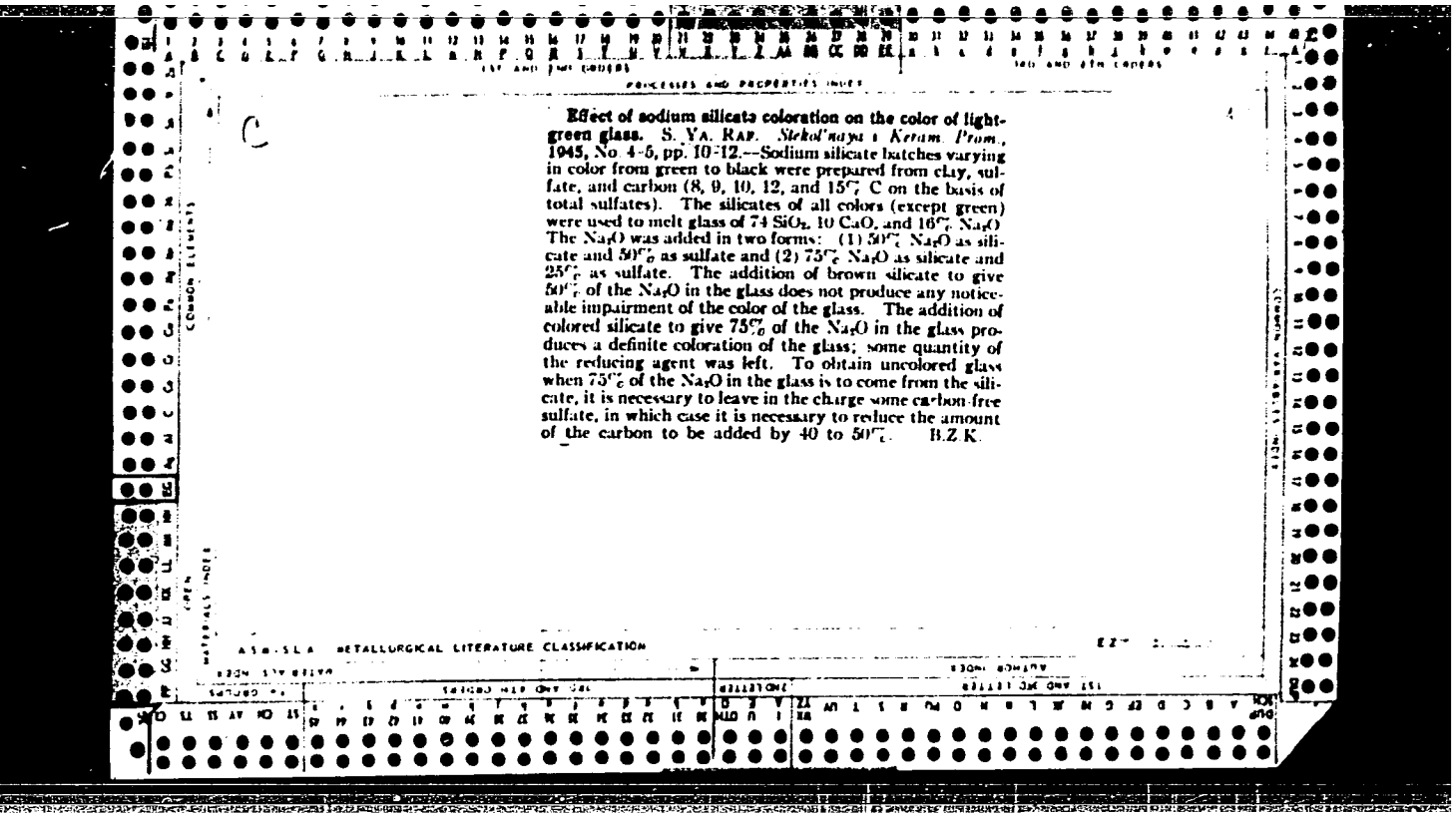
RAFAILOVA, Kh.Kh.

Effect of the Arctic on the features of meridional circulation over Europe and Western Siberia. Trudy TSIP no.49:181-230 '57. (Arctic regions) (Europe--Atmosphere) (MLRA 10:8) (Siberia, Western--Atmosphere)

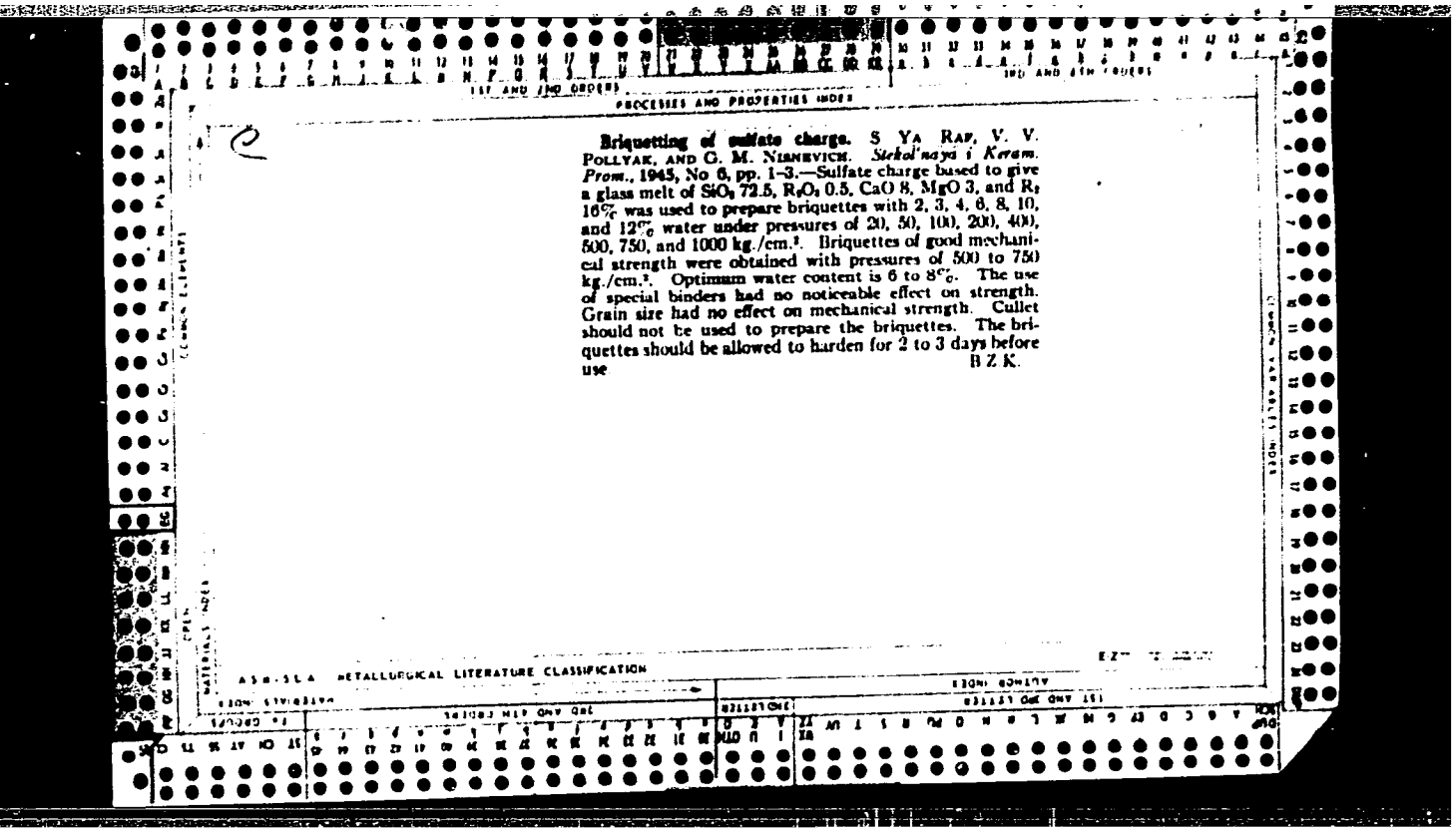


Use of astrakhanite in glassmelting. S. Ya. Raz. *Steklo i Keram.*, 5 (6) 7–9 (1948). Large deposits of astrakhanite ($MgSO_4 \cdot Na_2SO_4 \cdot 4H_2O$) are located on the right bank of the Volga, near the city of Astrakhan; other deposits are scattered in eastern Russia, western Siberia, and central Asia. The chemical composition of astrakhanite varies as follows: Na_2SO_4 22 to 36, $MgSO_4$ 20 to 34, $CaSO_4$ 0 to 8, NaCl 1.5 to 4.5, and H_2O 10 to 23%. A total of 550 tons of dry astrakhanite was used over a 17-day period in a tank furnace producing glass of the following composition: SiO_2 + R_2O_3 72.1, CaO 7.8, MgO 3.0, Na_2O 16.0, and SO_3 0.6%. The charge consisted of 80% astrakhanite and 20% cullet. Due to the high content of MgO in astrakhanite, the MgO in the glass rose to 3.75%, but the total RO remained unchanged by reduction of CaO. The composition of the glass changed gradually. There were no sharp changes in the glassmelting process. Rate of withdrawal of the glass remained the same (61 to 100 m. hr.). No difficulties were observed in the cutting and breaking of the glass.

B.Z.K



Effect of sodium silicate coloration on the color of light-green glass. S. YA. RAP. *Steklo'naya i Keram. Prom.*, 1945, No. 4-5, pp. 10-12.--Sodium silicate batches varying in color from green to black were prepared from clay, sulfate, and carbon (8, 9, 10, 12, and 15% C on the basis of total sulfates). The silicates of all colors (except green) were used to melt glass of 74 SiO_2, 10 CaO, and 16% Na_2O. The Na_2O was added in two forms: (1) 50% Na_2O as silicate and 50% as sulfate and (2) 75% Na_2O as silicate and 25% as sulfate. The addition of brown silicate to give 50% of the Na_2O in the glass does not produce any noticeable impairment of the color of the glass. The addition of colored silicate to give 75% of the Na_2O in the glass produces a definite coloration of the glass; some quantity of the reducing agent was left. To obtain uncolored glass when 75% of the Na_2O in the glass is to come from the silicate, it is necessary to leave in the charge some carbon-free sulfate, in which case it is necessary to reduce the amount of the carbon to be added by 40 to 50%. B.Z.K.

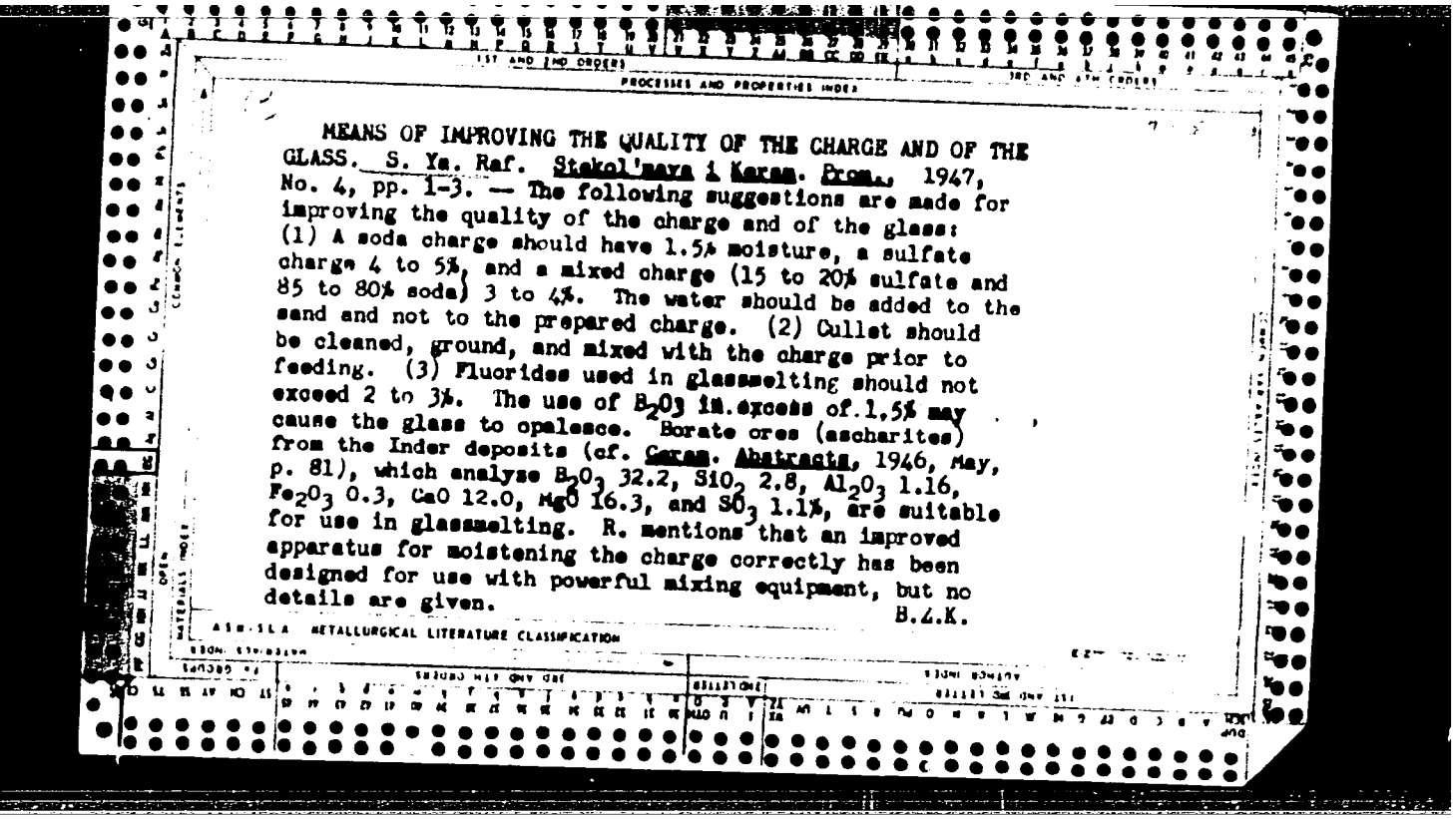


PROCESSES AND PROPERTIES INDEX

Briquetting of sulfate charge. S YA RAP, V. V. POLLYAK, AND G. M. NIANEVICH. *Steklo'naya i Keram. Prom.*, 1945, No 6, pp. 1–3.—Sulfate charge based to give a glass melt of SiO_2 72.5, R_2O_3 0.5, CaO 8, MgO 3, and R_2 16% was used to prepare briquettes with 2, 3, 4, 6, 8, 10, and 12% water under pressures of 20, 50, 100, 200, 400, 500, 750, and 1000 kg./cm.². Briquettes of good mechanical strength were obtained with pressures of 500 to 750 kg./cm.². Optimum water content is 6 to 8%. The use of special binders had no noticeable effect on strength. Grain size had no effect on mechanical strength. Cullet should not be used to prepare the briquettes. The briquettes should be allowed to harden for 2 to 3 days before use

B Z K.

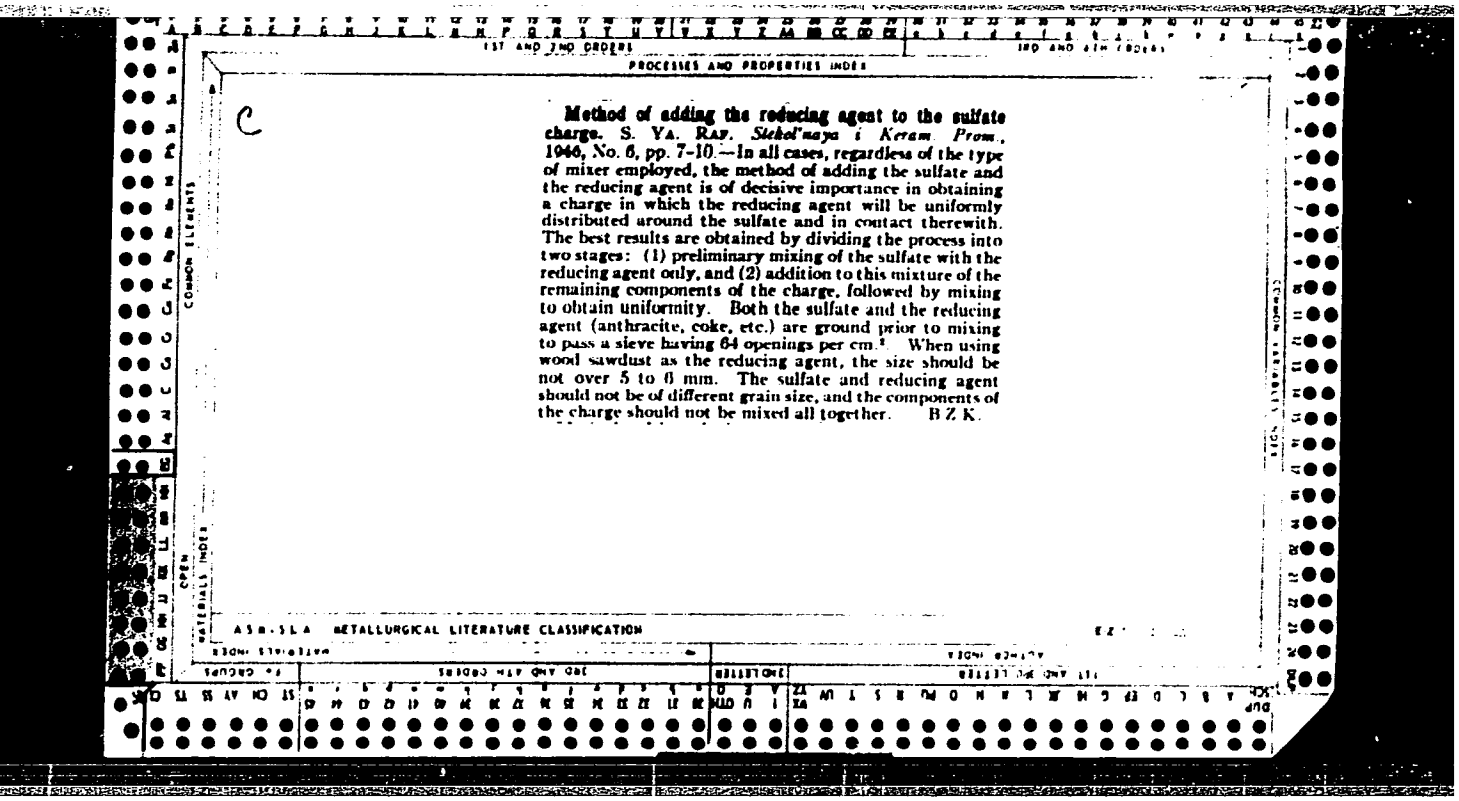
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

MEANS OF IMPROVING THE QUALITY OF THE CHARGE AND OF THE GLASS. S. Ya. Raf. Stekol'naya i Keram. Prom., 1947, No. 4, pp. 1-3. — The following suggestions are made for improving the quality of the charge and of the glass: (1) A soda charge should have 1.5% moisture, a sulfate charge 4 to 5%, and a mixed charge (15 to 20% sulfate and 85 to 80% soda) 3 to 4%. The water should be added to the sand and not to the prepared charge. (2) Cullet should be cleaned, ground, and mixed with the charge prior to feeding. (3) Fluorides used in glassmelting should not exceed 2 to 3%. The use of B_2O_3 in excess of 1.5% may cause the glass to opalesce. Borate ores (ascharites) from the Inder deposits (cf. Keram. Abstracts, 1946, May, p. 81), which analyse B_2O_3 32.2, SiO_2 2.8, Al_2O_3 1.16, Fe_2O_3 0.3, CaO 12.0, MgO 16.3, and SO_3 1.1%, are suitable for use in glassmelting. R. mentions that an improved apparatus for moistening the charge correctly has been designed for use with powerful mixing equipment, but no details are given. B.A.K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

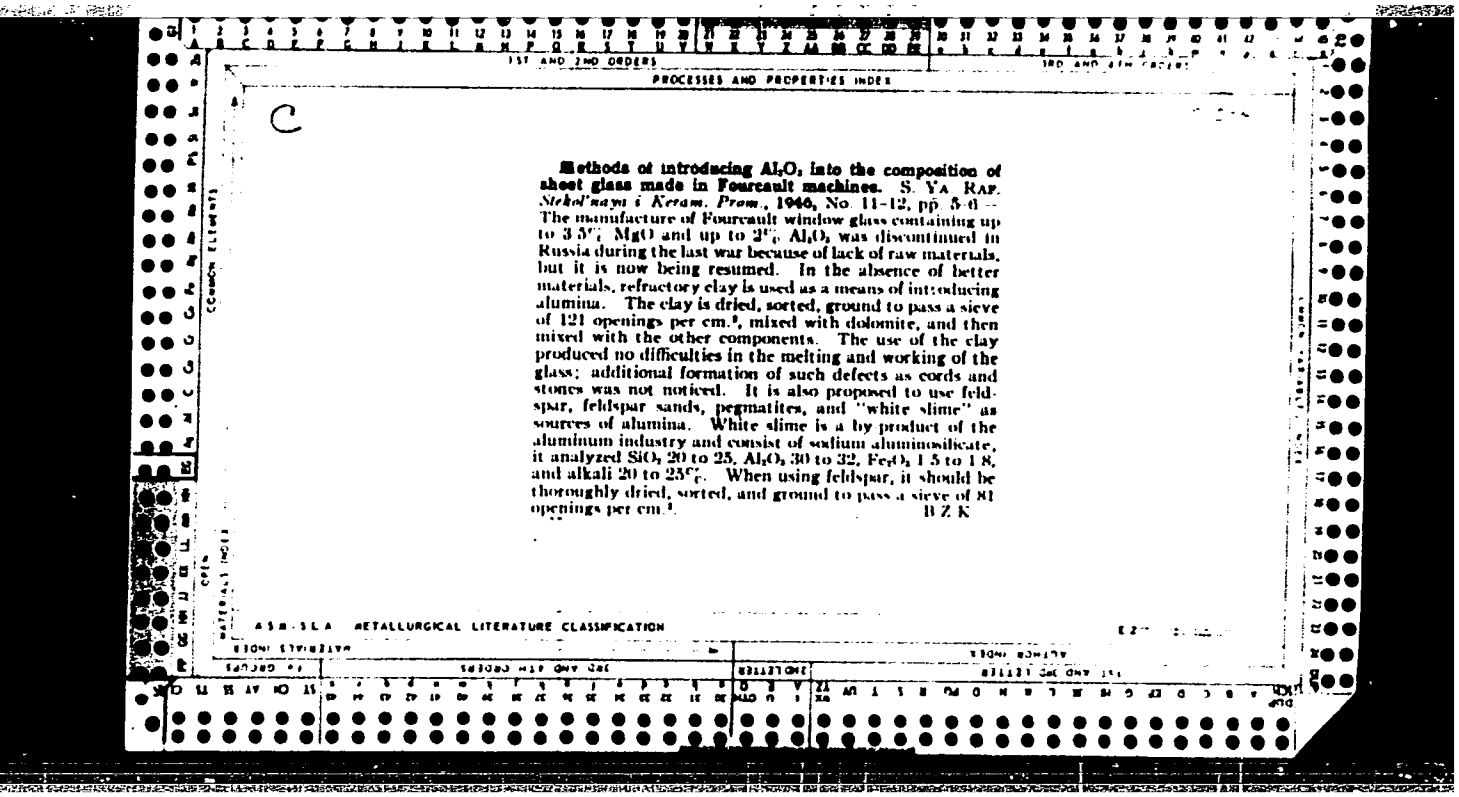


PROCESSES AND PROPERTIES INDEX

C

Method of adding the reducing agent to the sulfate charge. S. Ya. Rap. *Stekol'naya i Keram. Prom.*, 1946, No. 6, pp. 7-10.—In all cases, regardless of the type of mixer employed, the method of adding the sulfate and the reducing agent is of decisive importance in obtaining a charge in which the reducing agent will be uniformly distributed around the sulfate and in contact therewith. The best results are obtained by dividing the process into two stages: (1) preliminary mixing of the sulfate with the reducing agent only, and (2) addition to this mixture of the remaining components of the charge, followed by mixing to obtain uniformity. Both the sulfate and the reducing agent (anthracite, coke, etc.) are ground prior to mixing to pass a sieve having 64 openings per cm.² When using wood sawdust as the reducing agent, the size should be not over 5 to 6 mm. The sulfate and reducing agent should not be of different grain size, and the components of the charge should not be mixed all together. B Z K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



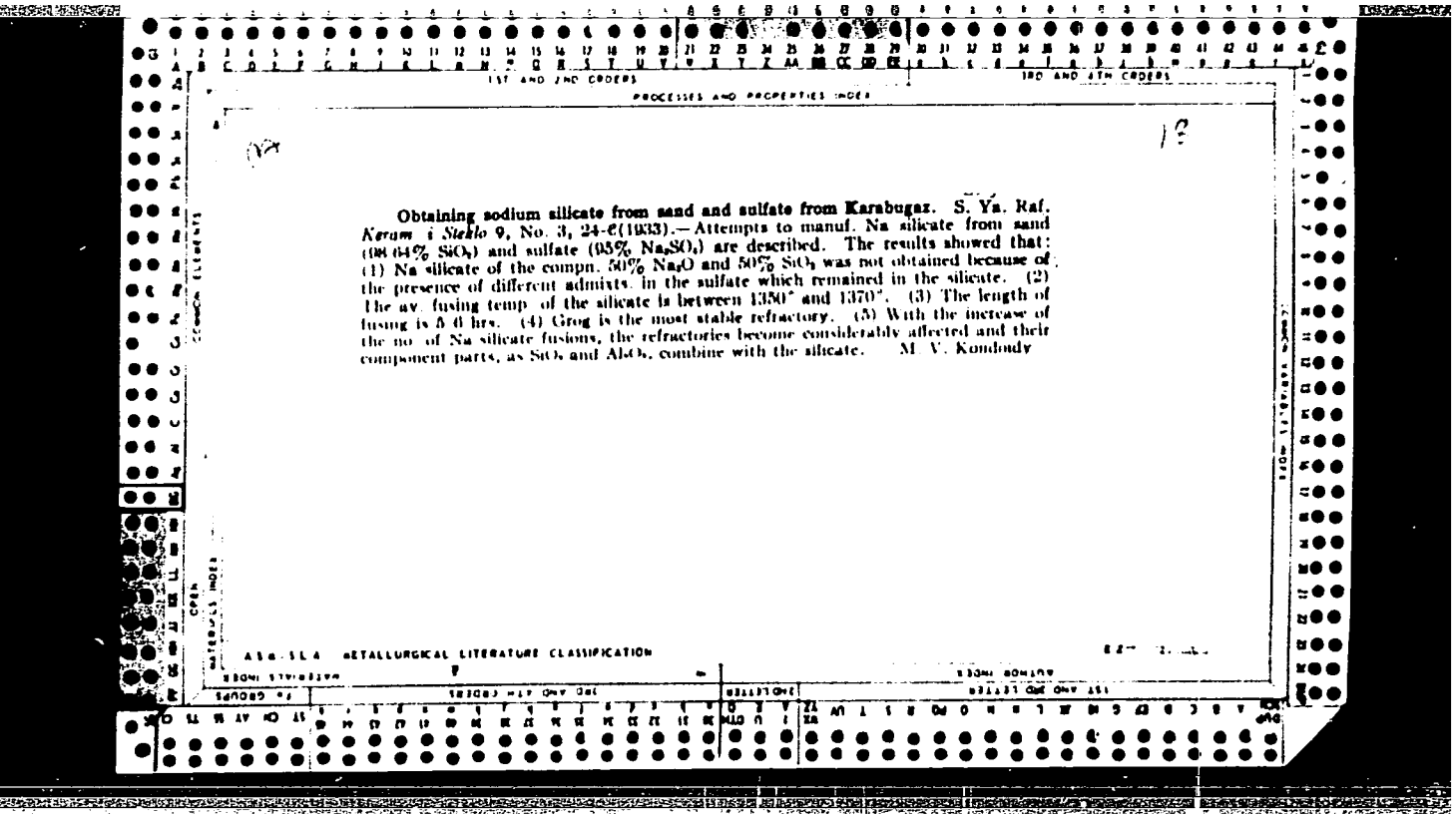
PROCESSES AND PROPERTIES INDEX

C

Methods of introducing Al_2O_3 into the composition of sheet glass made in Fourcault machines. S. Ya. Rap. *Steklo'nayi i Keram. Prom.*, 1946, No. 11-12, pp. 5-6 — The manufacture of Fourcault window glass containing up to 3.5% MgO and up to 2% Al_2O_3 was discontinued in Russia during the last war because of lack of raw materials, but it is now being resumed. In the absence of better materials, refractory clay is used as a means of introducing alumina. The clay is dried, sorted, ground to pass a sieve of 121 openings per $cm.^2$, mixed with dolomite, and then mixed with the other components. The use of the clay produced no difficulties in the melting and working of the glass; additional formation of such defects as cords and stones was not noticed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of alumina. White slime is a by product of the aluminum industry and consist of sodium aluminosilicate, it analyzed SiO_2 20 to 25, Al_2O_3 30 to 32, Fe_2O_3 1.5 to 1.8, and alkali 20 to 25%. When using feldspar, it should be thoroughly dried, sorted, and ground to pass a sieve of 81 openings per $cm.^2$.

H Z K

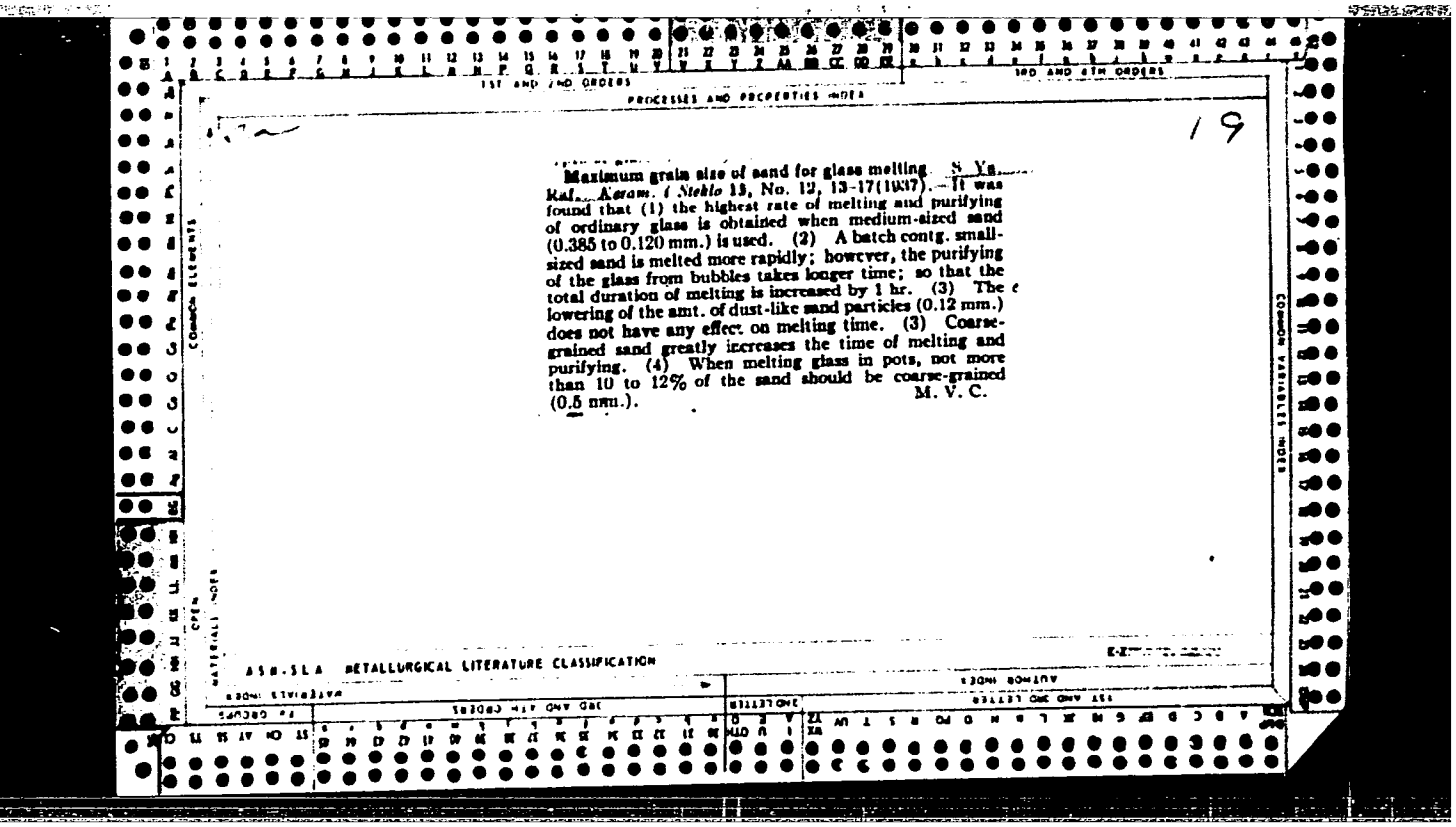
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Obtaining sodium silicate from sand and sulfate from Karabugaz. S. Ya. Raf. *Keram i Steklo* 9, No. 3, 24-6(1933).—Attempts to manuf. Na silicate from sand (98.64% SiO_2) and sulfate (95% Na_2SO_4) are described. The results showed that: (1) Na silicate of the compn. 50% Na_2O and 50% SiO_2 was not obtained because of the presence of different admixts. in the sulfate which remained in the silicate. (2) The av. fusing temp. of the silicate is between 1350° and 1370°. (3) The length of fusing is 5-6 hrs. (4) Grog is the most stable refractory. (5) With the increase of the no. of Na silicate fusions, the refractories become considerably affected and their component parts, as SiO_2 and Al_2O_3, combine with the silicate. M. V. Kondudy

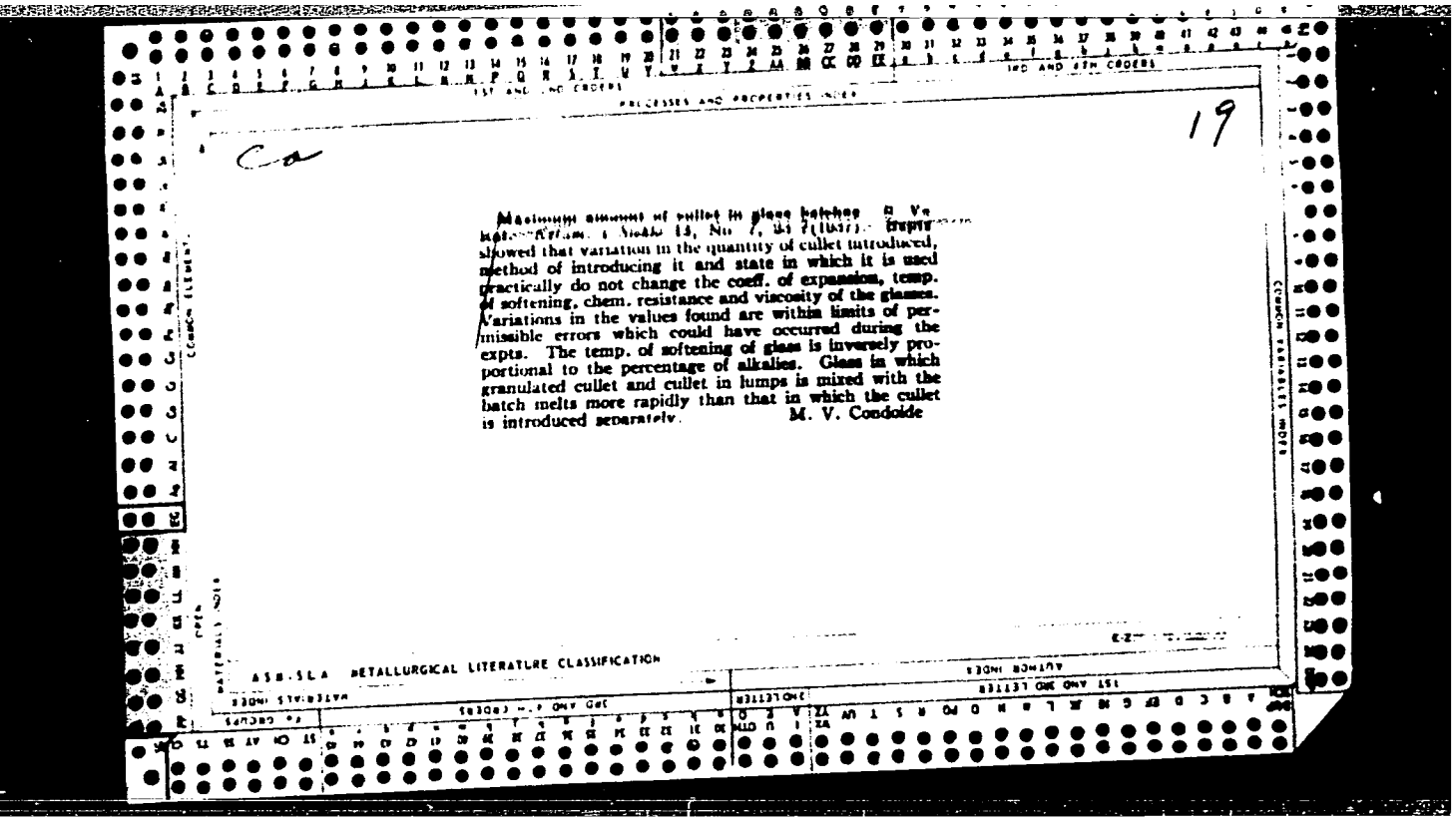
METALLURGICAL LITERATURE CLASSIFICATION



19

Maximum grain size of sand for glass melting. S. Ya. Rat... *Keram. i Steklo* 15, No. 12, 13–17(1938).—It was found that (1) the highest rate of melting and purifying of ordinary glass is obtained when medium-sized sand (0.385 to 0.120 mm.) is used. (2) A batch contg. small-sized sand is melted more rapidly; however, the purifying of the glass from bubbles takes longer time; so that the total duration of melting is increased by 1 hr. (3) The lowering of the amt. of dust-like sand particles (0.12 mm.) does not have any effect on melting time. (3) Coarse-grained sand greatly increases the time of melting and purifying. (4) When melting glass in pots, not more than 10 to 12% of the sand should be coarse-grained (0.5 mm.). M. V. C.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



19

Ca

Maximum amount of cullet in glass batches [illegible] showed that variation in the quantity of cullet introduced, method of introducing it and state in which it is used practically do not change the coeff. of expansion, temp. of softening, chem. resistance and viscosity of the glasses. Variations in the values found are within limits of permissible errors which could have occurred during the expts. The temp. of softening of glass is inversely proportional to the percentage of alkalies. Glass in which granulated cullet and cullet in lumps is mixed with the batch melts more rapidly than that in which the cullet is introduced separately.

M. V. Condoide

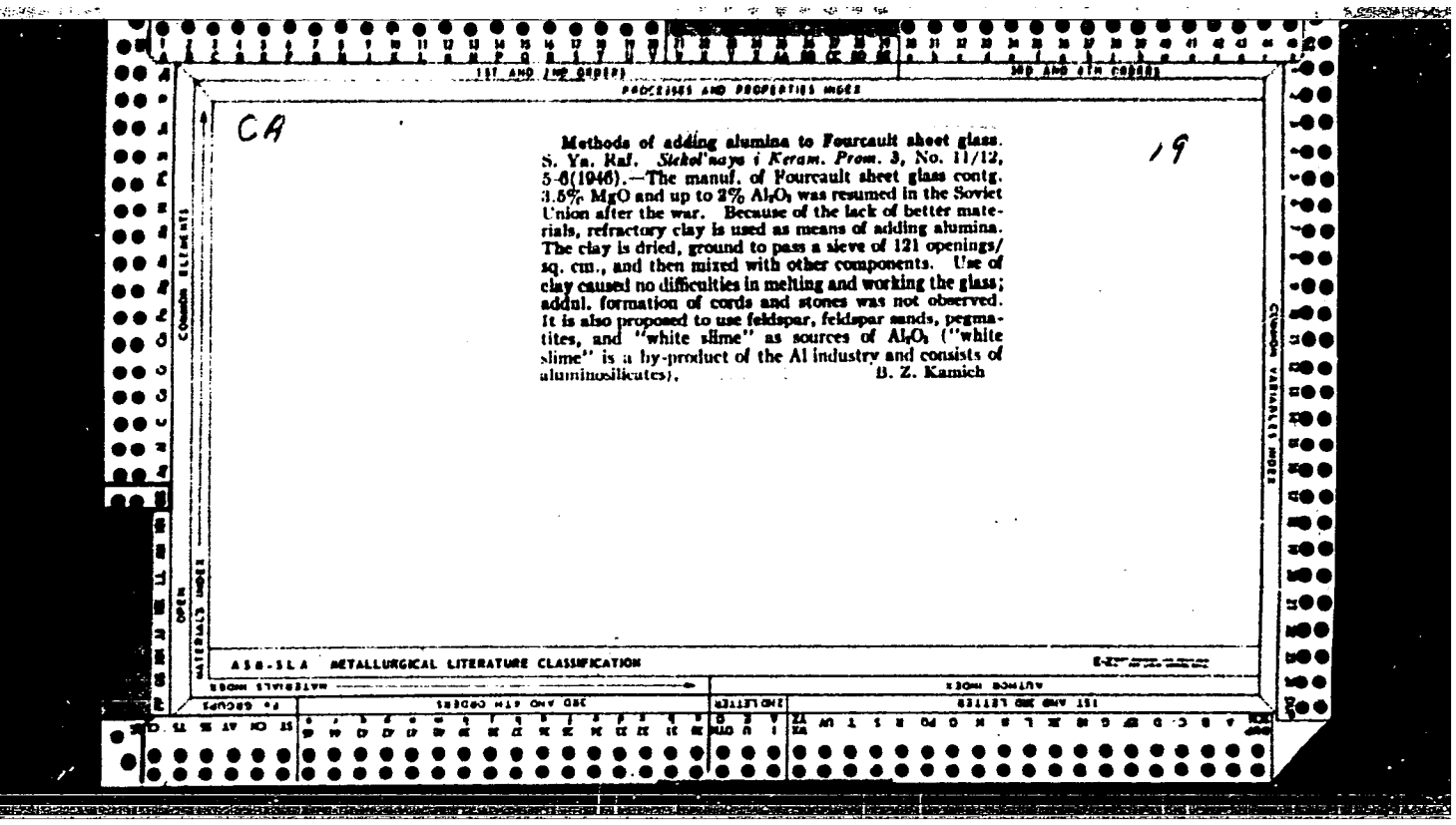
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

19

Methods of introducing alumina into the composition of sheet glass made in Fourcault machines. S. Ya. Rafi. *Steklo i Keram. Prom.* 1946, No. 11/12, 5-6; *Ceram. Abstracts* 1948, 98(in *J. Am. Ceram. Soc.* 31, No. 5).—Refractory clay is used as a means of introducing alumina. The clay is dried, sorted, ground to pass a sieve of 121 openings per sq. cm., mixed with dolomite, and then mixed with the other components. The use of the clay produced no difficulties in the melting and working of the glass; addnl. formation of such defects as cords and stones was not noticed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of alumina. White slime is a by-product of the Al industry and consists of Na aluminosilicate; it analyzed SiO_2 20 to 25, Al_2O_3 30 to 32, Fe_2O_3 1.5 to 1.8, and alkali 20 to 25%. When using feldspar, it should be thoroughly dried, sorted, and ground to pass a sieve of 81 openings per sq. cm.

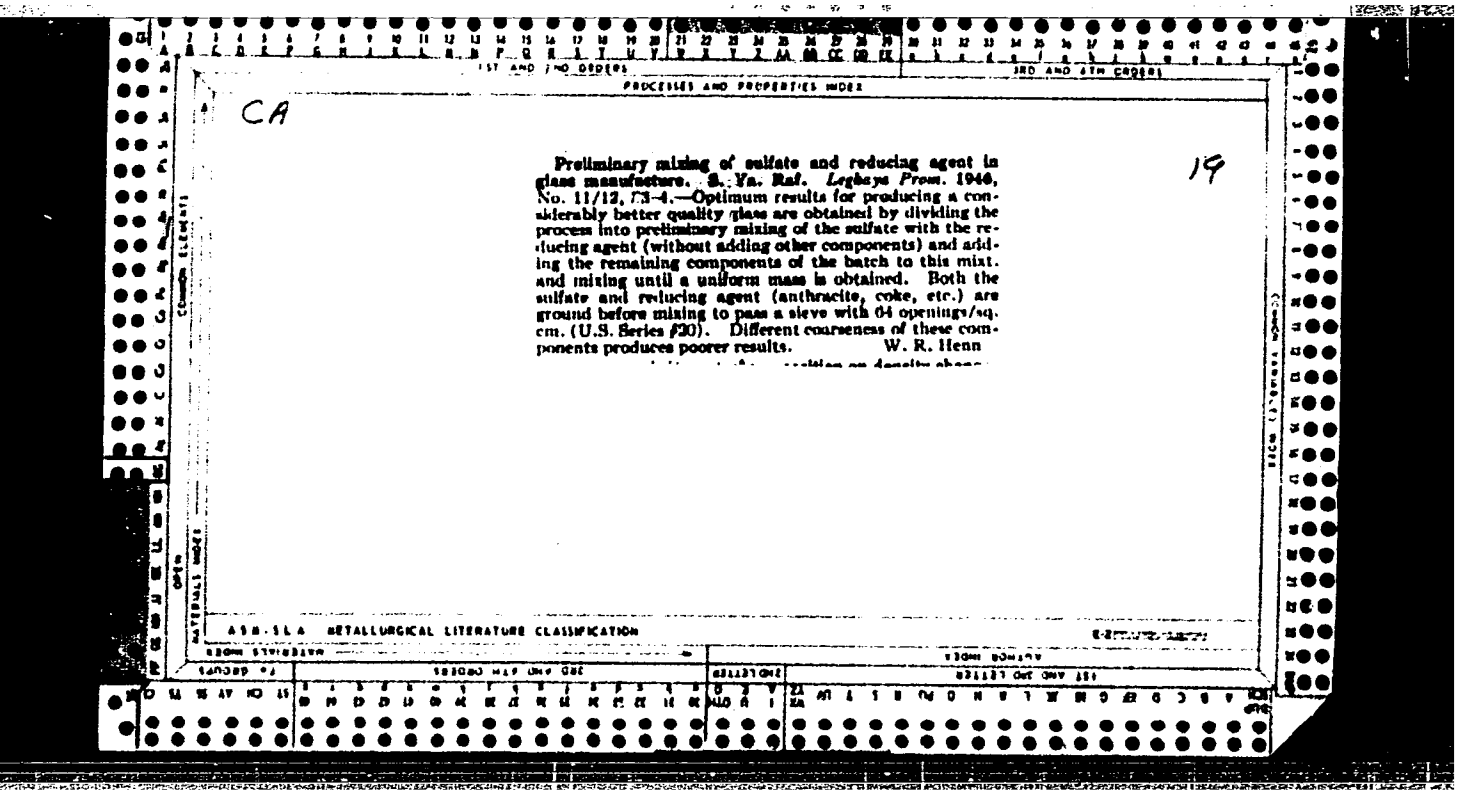
R. D. H.



CA

19

Methods of adding alumina to Fourcault sheet glass. S. Ya. Raf. *Steklo'naya i Keram. Prom.* 3, No. 11/12, 5-6(1946).—The manuf. of Fourcault sheet glass contg. 3.5% MgO and up to 2% Al_2O_3 was resumed in the Soviet Union after the war. Because of the lack of better materials, refractory clay is used as means of adding alumina. The clay is dried, ground to pass a sieve of 121 openings/sq. cm., and then mixed with other components. Use of clay caused no difficulties in melting and working the glass; addnl. formation of cords and stones was not observed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of Al_2O_3 ("white slime" is a by-product of the Al industry and consists of aluminosilicates). B. Z. Kamich



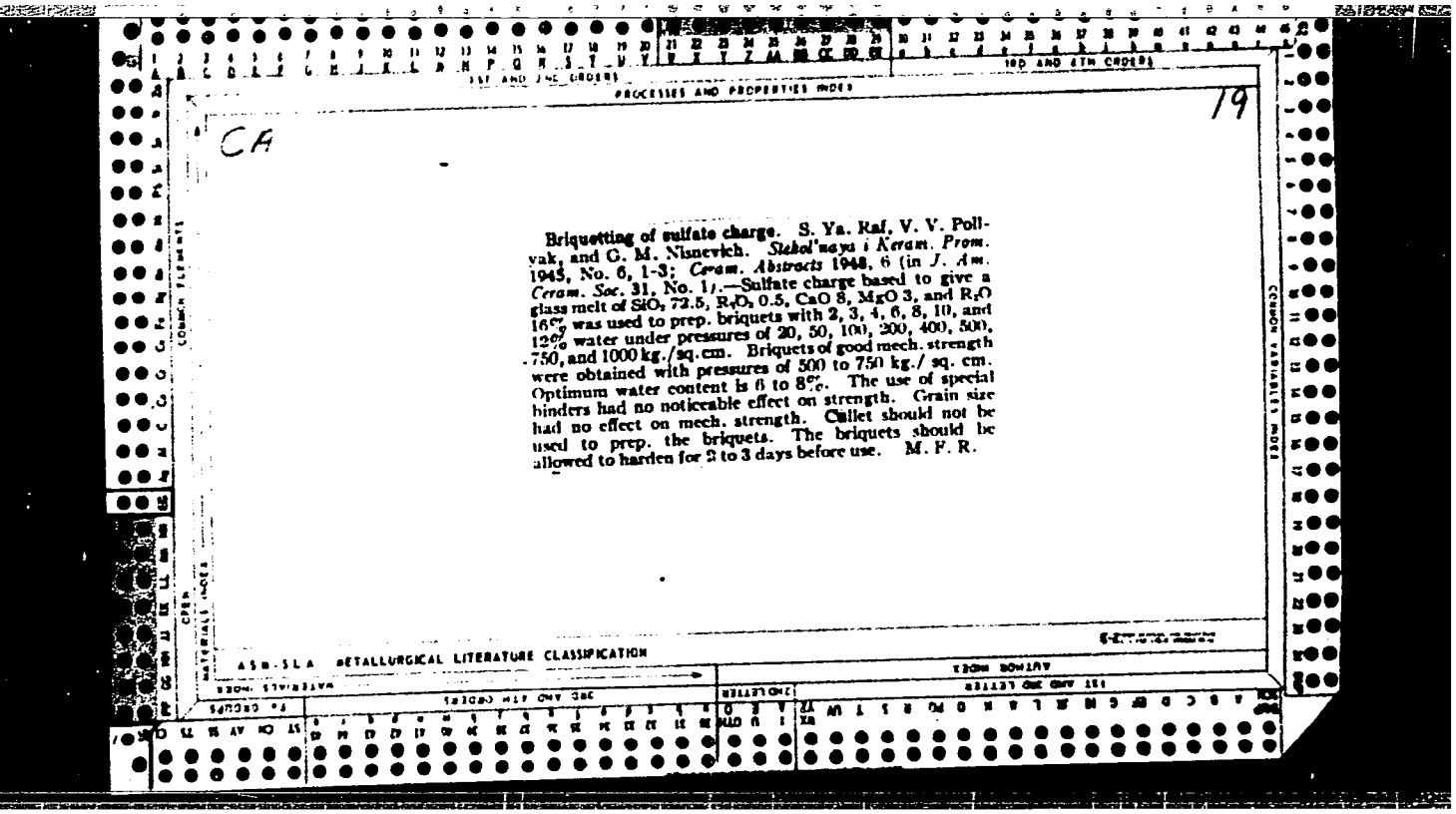
PROCESSES AND PROPERTIES INDEX

CA

19

Preliminary mixing of sulfate and reducing agent in glass manufacture. S. Ya. Raf. *Legkaya Prom.* 1946, No. 11/12, 73–4.—Optimum results for producing a considerably better quality glass are obtained by dividing the process into preliminary mixing of the sulfate with the reducing agent (without adding other components) and adding the remaining components of the batch to this mixt. and mixing until a uniform mass is obtained. Both the sulfate and reducing agent (anthracite, coke, etc.) are ground before mixing to pass a sieve with 64 openings/sq. cm. (U.S. Series #20). Different coarseness of these components produces poorer results. W. R. Henn

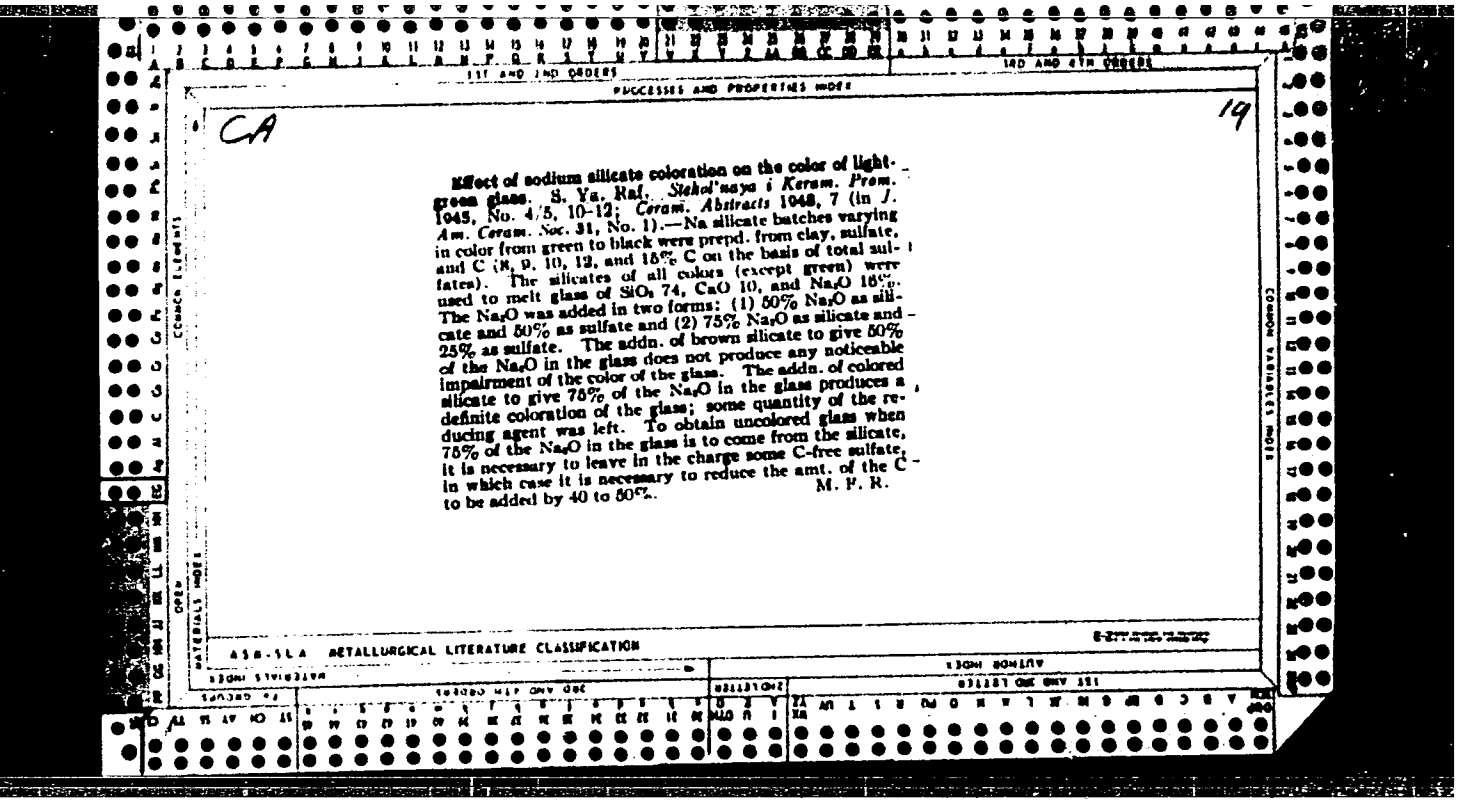
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

19

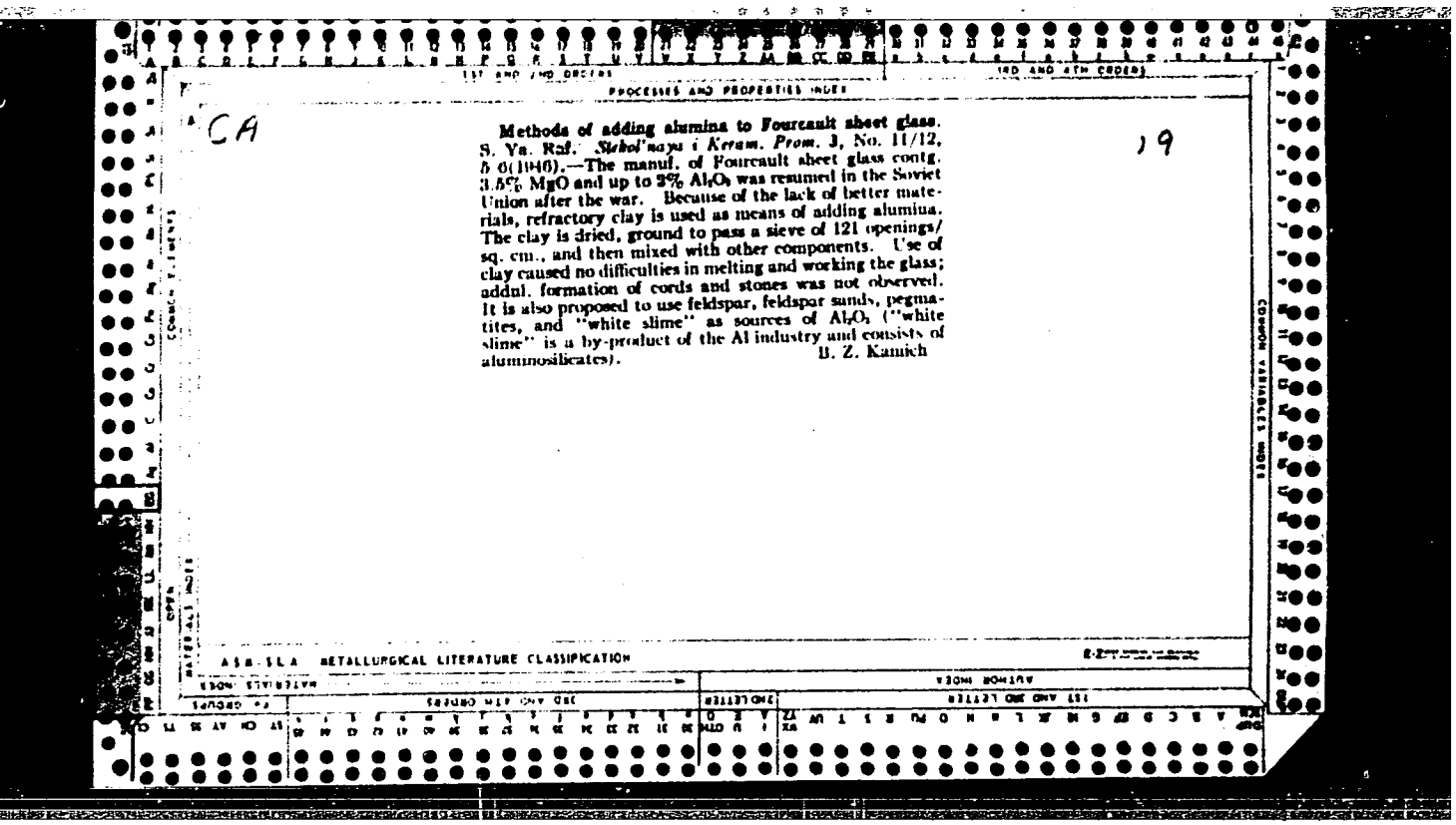
Briquetting of sulfate charge. S. Ya. Raf, V. V. Pollyak, and G. M. Nisnevich. *Stekol'naya i Keram. Prom.* 1948, No. 6, 1-3; *Ceram. Abstracts* 1948, 6 (in *J. Am. Ceram. Soc.* 31, No. 1).—Sulfate charge based to give a glass melt of SiO_2 72.5, R_2O_3 0.5, CaO 8, MgO 3, and R_2O 16% was used to prep. briquets with 2, 3, 4, 6, 8, 10, and 12% water under pressures of 20, 50, 100, 200, 400, 500, 750, and 1000 kg./sq.cm. Briquets of good mech. strength were obtained with pressures of 500 to 750 kg./sq. cm. Optimum water content is 6 to 8%. The use of special binders had no noticeable effect on strength. Grain size had no effect on mech. strength. Cullet should not be used to prep. the briquets. The briquets should be allowed to harden for 2 to 3 days before use. M. F. R.



CA 19

Effect of sodium silicate coloration on the color of light-green glass. S. Ya. Raĭ. *Stekol'naya i Keram. Prom.* 1945, No. 4/5, 10–12; *Ceram. Abstracts* 1948, 7 (in *J. Am. Ceram. Soc.* 31, No. 1).—Na silicate batches varying in color from green to black were prepd. from clay, sulfate, and C (8, 9, 10, 12, and 15% C on the basis of total sulfates). The silicates of all colors (except green) were used to melt glass of SiO_2 74, CaO 10, and Na_2O 16%. The Na_2O was added in two forms: (1) 50% Na_2O as silicate and 50% as sulfate and (2) 75% Na_2O as silicate and 25% as sulfate. The addn. of brown silicate to give 50% of the Na_2O in the glass does not produce any noticeable impairment of the color of the glass. The addn. of colored silicate to give 75% of the Na_2O in the glass produces a definite coloration of the glass; some quantity of the reducing agent was left. To obtain uncolored glass when 75% of the Na_2O in the glass is to come from the silicate, it is necessary to leave in the charge some C-free sulfate, in which case it is necessary to reduce the amt. of the C to be added by 40 to 50%.

M. F. R.



CA

19

Methods of adding alumina to Fourcault sheet glass. S. Ya. Raf. *Steklo'naya i Keram. Prom.* 3, No. 11/12, 5-6(1946).—The manuf. of Fourcault sheet glass contg. 3.5% MgO and up to 5% Al_2O_3 was resumed in the Soviet Union after the war. Because of the lack of better materials, refractory clay is used as means of adding alumina. The clay is dried, ground to pass a sieve of 121 openings/sq. cm., and then mixed with other components. Use of clay caused no difficulties in melting and working the glass; addnl. formation of cords and stones was not observed. It is also proposed to use feldspar, feldspar sands, pegmatites, and "white slime" as sources of Al_2O_3 ("white slime" is a by-product of the Al industry and consists of aluminosilicates).

B. Z. Kanich

RAFA, P.

Effective cooperation. Pozh.delo 9 no.1:22 Ja '63. (MIRA 16:1)

(Fire extinction)

RAFA, P.

What causes cooling tower fires? Pozh. delo 8 no.10:14 O '62.
(MIRA 15:10)

(Cooling towers—Fires and fire prevention)

RAFA, P.

Skillful evacuation. Pozh.delo 6 no.9:19 S '60.
(MIRA 13:9)
(Hospitals—Fires and fire prevention)

RAFACZ-KRZYZANOWSKA, Maria

Omissions of labor establishments in cancelling labor contracts.
Praca zabezp spol 4 no.1:34-39 '62.

RAFACZ-KRZYZANOWSKA, Maria

Labor performance. Praca zabezp spol 5 no.1:7-12 Ja '63.

RAFACZ- KRZYZANOWSKA, Maria

Problems of principles of proper community relationship in labor legislation. Praca zabezp spol 5 no.12 43-47 D'63.

RAFACZ-KRZYZANOWSKA, Maria

Workers' claims for compensatory damages for illegal dissolution of a labor contract. Praca zabezp społ 3 no.10:52-54 '61.

RAFAEL, E.

"Dimensional Determination Of Relay Windings" p. 25. (Telekomunikacije, Vol. 2, no. 3, July 1953, Beograd.)

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

GADZHIYEV, B.; SHIRINOV, I.; RAGIMOV, G.; RAFAEL', I.

Pre-October pledge of the petroleum workers of the Neftyanyye Kamni field. Neftianik 7 no.11:9 N '62. (MIRA 16:6)

1. Nachal'nik neftepromyslovogo upravleniya im. XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza, Neftyanyye Kamni (for Gadzhiyev). 2. Zamestitel' sekretarya komiteta Leninskogo Kommunisticheskogo soyuza molodezhi neftepromyslovogo upravleniya imeni XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza, Neftyanyye Kamni (for Rafael'). 3. Neftepromyslovoye upravleniye imeni XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza, Neftyanyye Kamni (for Shirinov, Ragimov).
(Neftyanyye Kamni region--Oil well drilling, Submarine)

RAFAELI, P.

Thoracic surgery at a district hospital. Med. arh., Sarajevo 11 no.2:29-43 Mar-Apr 57.

1. Hirursko odjeljenje Opste bolnice u Sibeniku Sef: dr. P. Rafaeli.
(THORAX, surg.
in smaller hosp., organiz. problems (Ser))

RAFAELI, P.

Perforation of echinococcosis cyst of the liver into biliary tract. Acta chir. Iugosl. 9 no.2:154-158 '62.

1. Kirurski odjel Medicinskog centra u Sibeniku (Sef dr P. Rafaeli).
(ECHINOCOCCOSIS compl) (LIVER DISEASES compl)
(BILIARY TRACT dis)

RAFAELI, Petar, dr.; ZANINOVIC, Mirko, dr.

Echinococcosis of the heart. Lijecn. vjesn. 84 no.7:661-672 '62.

1. Iz Kirurskog i Internog odjela Medicinskog centra u Sibeniku.
(HEART DISEASES) (ECHINOCOCCOSIS)

RAFAELI, P.

Present-day therapy of pulmonary echinococcosis. Acta chir. iugosl. 2 no.4:341-353 1955.

1. Kirurski odjel Opce bolnice Sibenik (Sef dr. Petar Rafaeli)

(ECHINOCOCCOSIS,
lungs, diag. & surg. (Ser))
(LUNGS, dis.
echinococcosis, diag. & surg. (Ser))

RAFAELI, P.

Case of massive hydropyonephrosis. Acta chir. iugosl. 3 no.2: 170-174 1956.

1. Kirurski odjel Opce bolnice u Sibeniku (sef. dr. Petar Rafaeli).
(HYDRONEPHROSIS, case reports
hydropyonephrosis, (Ser))

RAFAELI, Petar

Personal experiences in the treatment of acute hematogenous osteomyelitis. Acta chir. iugosl. 4 no.2:160-167 1957.

1. Kirurski odjel Opce bolnice u Sibeniku (sef: Dr. Petar Rafaeli).
(OSTEOMYELITIS, ther.
management of acute hematogenous osteomyelitis (Ser))

RAFAELI,Petar,d-r

Urolithiasis in the surgical ward of Sibernik general hospital during recent 5 years. Med. arh.,Sarajevo 13 no.6:35-50 N-D '59.

1. Kirurski odjel Opce bolnice Sibenik, sef: d-r Petar Rafaeli.
(URINARY CALCULI statist.)

RAFAELI, Petar, dr.

Duplications of the alimentary tract. Med. arh., Sarajevo 8 no.2: 49-53 Mar-Apr 54.

1. Iz Kirurske klinike Medicinskog fakulteta u Sarajevu, sef. prof. dr. B.Kovacevic.

(COLON, abnorm.
duplication of sigmoid)
(ABNORMALITIES
colon duplication)

LONGHINO, Andrija, dr.; RAFAELI, Petar, dr.

Intestinal obstruction caused by a fruit. Lijecn. vjesn. 84 no.5: 455-460 '62.

1. Iz Kirurske klinike Medicinskog fakulteta u Zagrebu i Kirurskog odjela Opce bolnice u Sibeniku.

(INTESTINAL OBSTRUCTION etiol)

S

RAFAELIAN, S.; KARAMANCHEV, S.

"Using titanium in industry."

p.33 (Tekhnika, Vol. 6, no. 6, 1957, Sofiia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 8, August 1958

RAFAILIAN, S.; DINOV, K.

"Plastic textile fibers", P. 12, (TEKHKA PROMISHLENOST, Vol. 3, No. 9, 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, June 1955, Uncl.

RAFAELOV, A.P.

Antibiotics in emphysematous carbuncle. Veterinariia 34 no.7:71 Jl '57. (MLRA 10:8)

1. Veterinarnyy vrach Abisskogo veterinarnogo uchastka, Kvareli-skogo rayona, Gruzinskoy SSR.
(Penicillin) (Carbuncle)
(Cattle--Diseases and pests)

USSR / Soil Science Tilling. Melioration. Erosion. J

Abs Jour : Ref Zhur - Biologiya, No 11, 1958, No. 48693

Author : Rafaelyan, A. S.
Inst : Not given
Title : Subsurface Mole-Drainage Irrigation Under the Conditions of Priaraksin Lowland

Orig Pub : Izv. ArmSSR. Byul. i. s.-kh. n., 1956, 9, No 12, 59-75

Abstract : This article reports the results of the experiments with the subsurface mole-drainage irrigation of clayey soil with the content of 0.25 mm water-resistant aggregates to 85% and mole-drainage irrigation of slightly clayey soils with the content of these aggregates at about 5.21%. The experiments were conducted on wheat sowings. It was shown that subsurface

Card 1/2

USSR / Soil Science Tilling. Melioration. Erosion. J

Abs Jour : Ref Zhur - Biologiya, No 11, 1958, No. 48693

mole-drainage irrigation promotes a decrease in the irrigation rates and has a series of other advantages over furrow watering. In furrow watering 104 m^3 of water were expended for 1 centner of the crop and with the sub-surface mole-drainage irrigation the expenditure of water was only 36.5 m^3. -- S. A. Nikitin

Card 2/2