REEL #26

AVERBUKH, S.S.
to

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AVERBUKH, S.S., doktor meditsinskikh nauk (Leningrad).

Instrument for the extraction of dental roots. Stomatologiia
no.5:48 '53.   (MLRA 7:1)
                                        (Dental instruments and apparatus)

AVERBUKH, S.S, doktor meditsinskikh nauk [deceased] (Leningrad).

New approaches to the root apex and their anatomical principles.
Stomatologiia no.4:35-38 Jl-Ag '55.   (MLRA 8:10)
        (TEETH, surgery,
            approach to apex of root)

AVERBUKH, S. Ya.

USSR/ Agriculture - Fungicide

Card   1/1   Pub. 124 - 9/45

Authors   : Litvinov, M. A., Cand. of Biol. Sc., and Averbukh, S. Ya. Engineer-Chemist

Title   : New fungicide mixture for combatting mold

Periodical   : Vest. AN SSSR 2, 51-52, Feb 1955

Abstract   : The development of a new fungicide mixture (salicylic acid 15%, turpentine
               35% and 50% paraffin) which was found highly effective in combatting
               various fungi is announced by the V. L. Komorov Botanical Institute of
               the Academy of Sciences USSR.

Institution : ....

Submitted   : ....

LITVINOV, M.A.; AVERBUKH, S.Ya.; BARKOVSKAYA, N.N.

Experimental research on effective fungicidal mixtures of chemicals suitable for the impregnation of industrial cork packings. Trudy Bot.inst.Ser.2 no.10:175-178 '56.   (MLRA 10:2)
(Fungicides)   (Packing (Mechanical engineering))

AVERBUKH, T.D.

Obtaining elementary sulfur from the furnace gases in pyritic smelting. T. D. Averbukh. *Sotsialist. Rekonstruktsiya i Nauka* 1933, No. 4, 198.—Furnace gases produced in pyritic smelting contain up to 40% of S plus SO₂. The S could be recovered by changing the existing side charging of the furnace to top charging so as to obtain perfect tightness of the furnace and uniformity of operation.
                                              B. V. Shvartsburg

AVERBUKH, E.D.

Hydrofluoric acid. I. D. Averbukh and N. I. Kheidu-
kov. Russ. 48,396, Jan. 31, 1936. Fluorspar is treated
with H_2SO_4 in a rotating kiln heated by flue gases.

A-3-1LA   METALLURGICAL LITERATURE CLASSIFICATION

AVERBUKH, G.D.

CH

The comparison of chemistry and light metallurgy. T. D. Averbukh. J. Chem. Ind. (U.S.S.R.) 17, No. 4-5, 29-6(1940).—Processes for utilizing the SO₂ from various smelting operations are described.   H. M. Leicester

METALLURGICAL LITERATURE CLASSIFICATION

AVERBUKH, T. D.

C-1

and removal of sulfur dioxide from waste gases. The equilibrium partial pressure over the system Na_2HPO_4-NaH_2PO_4-SO_2-H_2O. T. D. Avrrbukh and I. V. Streshinov. *J. Chem. Ind.* (U. S. S. R.) 17, No. 0, 13-20(1940). --The partial pressures of SO_2 and H_2O are detd. above this system at 30-90°, ratios of Na^+:PO_4^{---} of 1-2 and PO_4^{---} concns. of 1-13.8 moles per 100 moles H_2O. The temp. coeff. for SO_2 partial pressure is 2130. The amt. of SO_2 absorbed increases with increased Na^+:PO_4^{---} ratio and increased PO_4^{---} concn., but in very concd. solns. it is difficult to distil off the SO_2 even by boiling the soln. at 107°. The behavior of SO_2 follows classical electrolytic theory only at very low concns. At a Na^+:PO_4^{---} ratio of 1.04 and a concn. of 9.03 moles

PO_4^{---} per 100 moles H_2O the soln. removes 04 g. SO_2 per l. from a gas contg. 0.3% SO_2. In practice removal of about 40 g. per l. is desirable, since at higher concns. the cost of steam for the desorption process is too high.

H. M. Leicester

ASM-ILLA METALLURGICAL LITERATURE CLASSIFICATION

AVERUUKH, T.D.

9

Composition of chemistry and light metallurgy. Possible use for sulfur dioxide from the Kirovgrad copper smelter. T. D. Averbukh. J. Chem. Ind. (U.S.S.R.) 17, No. 8, 17-20(1940); M.C.A. 34. 6345. H. M. L.

METALLURGICAL LITERATURE CLASSIFICATION

AVERBUKH, G. D.

Transformation of chromates into dichromates. G. D. Averbukh, Alum. Prom. 1940, No. 11, 13-16. The acidification of acid solns. of chromate were studied to det. the best conditions for the chromate → dichromate transformation through the action of an acid on the chromate. The following assumptions are made: (1) the salts in solved diswoc. completely (strong electrolytes); (2) there are no chromates nor dichromates in the solid phase; and (3) there are no HCrO₄ ions in the soln. If all the components remain in soln., the extent of the chromate → dichromate transformation is independent of concn. and is detd. by the molar ratio of acid and chromate. When an insol. salt is formed, if the acid is sol. (HF) the degree of transformation is calcd. to be 0.86%; if the acid is only slightly sol. (CO₂), increase in pressure promotes transformation, rise in temp. causes a rapid drop, and an increase in the concn. of chromate favors transformation. The reaction is 6CrO₃ + 4HCl + 3H₂O → 6HCrO₄ + 3Cl + ClO₃ is rather slow. A phase diagram is presented for the sepn. of Na₂CrO₄ and NaClO₄. From the process point of view, the treatment of Na₂CrO₄ with HF is considered the most economical. The CO₂ method is advisable if waste CO₂ is available. The Cl and the electrolytic method are suitable only if cheap electric power is available.

M. Hosch

AVERBUKH, T.D.; KATS, S.D.; SEREBRYANNIKOVA, M.T.; BAKINA, N.P.; TROFIMOVA, V.S.

Absorbent for the extraction of sulfur dioxide from industrial gases.
Patent U.S.S.R. 77,110, Dec. 31, 1949.
(CA 47 no.19:10202 '53)

Cr_2O_3 oxidation kinetics in the batches during the chromite production are investigated in relation to the composition of the chrome-spinellide (Al_2O_3, Fe_2O_3, Al, Fe_2O_3 (I)) and the roasting temps. 900-1000°. It is established that the velocity of oxidation decreases with the increased content of Al_2O_3 and Fe_2O_3 in I. With the temp. increase, the difference in the oxidation of Cr_2O_3 in I decreases. Batch and comp.

batch thickness and depending temp. result of the calcining velocity, it is established that at 900° the process takes place in a kinetics region where the batch thickness does not affect the velocity of oxidation. In the range 900-1000° the velocity of this process is basically deci. by chem. kinetics, but it is considerably affected by the diffusion of O_2 through the layer of the grains of I and amount, and particle of I.

N. Yesmen

Dukeburn, T.D

Investigation of the chromic oxide method of concentration of sulfur dioxide. II The rate of absorption of sulfur dioxide in chromic oxide in different scrubbers. D. Avrjbukh, M. I. Strichmankov, N. L. Babkin, and P. [illegible]. [Eng. translation] See C.A. 30, 6754. B. M. R.

AVERBUKH, T. D

USSR.

Investigation of the chromic oxide method of concentration of sulfur dioxide. II. The rate of absorption of sulfur dioxide in chromic oxide in different scrubbers. C. D. Averbukh, M. T. Serebrennikova, N. P. Bakina, and S. Trokhova. Zhur. Priklad. Khim. 27, 1942-59(1954); cf. C.A. 47, 10602b. The over-all coeff. K_r of the absorption of SO_2 in basic chromic sulfate was detd. at room temp. in the following types of scrubbers: (a) a vertical tower, 10 cm. in diam., packed with 17-mm. Raschig rings with a total area of 2.58 sq. m.; (b) towers filled with wooden grids, total area 2.98 sq. m.; (c) revolving disks, parallel to the direction of flow (20 r.p.m., 0.5 sq. m. wetted area) and perpendicular to the direction of flow (17 r.p.m., 0.3 sq. m.) (cf. Agaev, C.A. 40, 3850a). The liquid and gas films enter into the absorption process which is assumed to be a slowly reversible reaction through the entire depth of the diffusion layer of the type $K < D$, $< D$, (cf. ... C.A. ... 42, ...). K_r is a linear function of the liquor and the gas rates in all absorbers. It is but little affected by the temp. (up to 40°) and decreases as the concn. of the absorbent and SO_2 in the gas (1-10%) increase. The latter is ascribed to a deviation from Henry's law. K_r is about the same in a and c but it is 2 times as large in b.

I. Rabinowitz.

AVERBUKH, T.D.;SEREBRENNYKOVA, M.A.;MASLOVA, N.D.

Affect of admixtures (waste rock) in chromite ore on the oxidation roasting of charges in the bichromate. Zhur. prikl. khim. 29 no.4:498-505 Ap '56.   (MLRA 9:11)
     (Chromite) (Dolomite)

AVERBURK, T. D.

Effect of impurities (ore gang) of chromate ore in the process of oxidizing ...

SOV/81-59-16-57616

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 281 (USSR)

AUTHORS: Averbukh, T.D., Serebrennikova, M.A., Maslova, N.D.

TITLE: The Investigation of the Process of Oxidation Calcination of Dolomite-Free Charges in Bichromate Production

PERIODICAL: Tr. Ural'skogo n.-i. khim. in-ta, 1958, Nr 7, pp 23-31

ABSTRACT: In several chromite samples the calcination of charges without filler (in boats and in revolving furnace models) has been investigated under stationary conditions at various temperatures and duration, at various degrees of grinding of the components and thickness of the charge layer. In the oxidation calcination of chromite charges without filler in which the quantity of the soda is calculated for forming Na_2CrO_4, $Na_2Fe_2O_4$, $Na_2Al_2O_4$ and Na_2SiO_3, the oxidation rate of Cr_2O_3 is many times lower than in the calcination of the usual charges. The determining effect in the kinetics of the oxidation process shows the oxygen diffusion in the layer or the granules. Due to the high Na_2CO_3 content in the charge there is a danger of melting out the liquid phase (which can be avoided only by very long preliminary calcination at low temperature) and obtaining a dense cake with

Card 1/2

SOV/81-59-16-57616

The Investigation of the Process of Oxidation Calcination of Dolomite-Free Charges in Bichromate Production

a low oxidation degree which is difficultly permeable by oxygen. The calcination of dolomite-free charges, in which a part of the soda, consumed in the binding of Al_2O_3, Fe_2O_3 and SiO_2, is substituted by lime, shows encouraging results under stationary conditions. Due to the high fusibility of such charges their calcination in revolving kilns has no future.

V. Borisova.

Card 2/2

TELEPNEVA, A.Ye.; AVERBUKH, T.D.; BLINOVA, N.P.; MATUSEVICH, V.S.;
SHCHELKUNOVA, N.V.; BASHKIROVA, Ye.M.

Processing of waste thiosulfate liquors produced in the removal
of hydrogen sulfide from gases. Koks i khim. no.12:40-44 '60.
(MIRA 13:12)
1. Ural'skiy nauchno-issledovatel'skiy khimichoskiy institut (for
Bashkirova).
(Sewage—Purification)   (Sodium thiosulfate)

AVERBUKH, T.D.; APAKHOV, I.A.; MAYDUROVA, O.V.; BAKINA, N.P.; BLINOVA,
N.P.; BURBA, A.A.; AVDEYEVA, I.V.

Removal of sulfur from waste gases of copper and sulfur plants
by the method of afterburning. Khim.prom. no.4:281-288 Ap '62.
(MIRA 15:5)

1. Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut i
Mednogorskiy medno-sernyy kombinat.
(Gases—Purification) (Sulfur oxides)

ACC NR: AP6023874   SOURCE CODE: UR/0109/66/011/007/1285/1294

AUTHOR: Averbukh, T. G.; Buzanova, L. K.; Vasil'yev, A. M.; Gliberman, A. Ya.

ORG: none

TITLE: Electric modulation of lateral photoemf

SOURCE: Radiotekhnika i elektronika, v. 11, no. 7, 1966, 1285-1294

TOPIC TAGS: photo emf, photoelectric effect, lateral photoelectric effect, photoeffect cell

ABSTRACT: So far the lateral-photoeffect cells have been investigated under the conditions of a constant signal; G. Wallmark (Proc. IRE, 1957, 45, 4, 474) mentioned a possibility of obtaining an alternating lateral photovoltage. The present article describes a theoretical and experimental investigation of a lateral-photoeffect cell modulated electrically by superposing an external alternating voltage on the p-n-junction voltage; weak illumination is assumed ($AkT/q \approx 30-50$ mv). It is found that: (1) The experiments have shown that the parameter $\lambda = I_N(\rho / W) / (AkT / q)$ should not exceed 2.5 3 (for the photocells having R = 20 kohms and A = 1.7) in order to warrant the validity of the reported formulas; (2) The plot of light-spot coordinate vs. lateral modulated emf is linear, within 6%, when the spot moves away from the photocell center by a distance under 0.5 d; at 0.8 d, the nonlinearity is 12%; (3) The photocell sensitivity is proportional to the square of the photocell-

Card 1/2   UDC: 621.383.44:546.28

L 28896-66

ACC NR: AP6023874

layer resistance; a formula for the sensitivity in terms of no-load voltage is
suggested. Orig. art. has: 5 figures and 53 formulas.   [03]

SUB CODE: 20, 09 / SUBM DATE: 06Feb65 / ORIG REF: 003 / OTH REF: 003/   ATD PRESS:
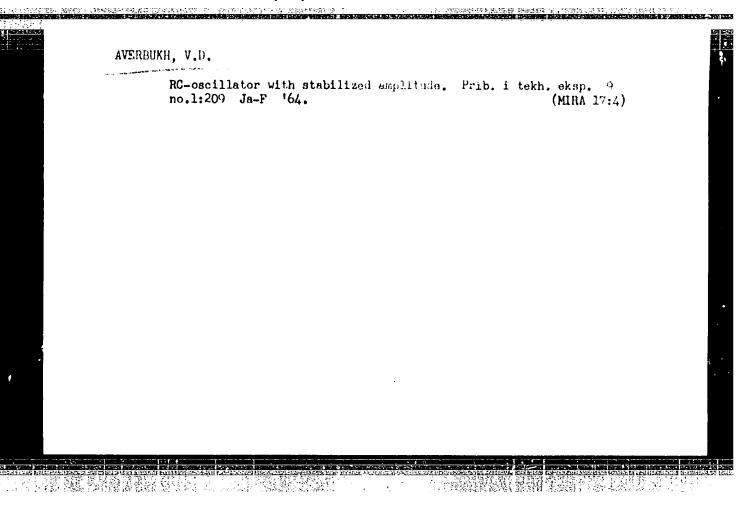5050

Card 2/2

MAR'YENKO, A.F.; AVERBUKH, V.D.

Automation of the heating of reactors in the production of alkyd resins. Lakokras. mat. i ikh prim. no. 6:61-63 '60.

(MIRA 13:12)

(Resins, Synthetic)   (Automatic control)

AVERBUKH, V.D.

RC-oscillator with stabilized amplitude. Prib. i tekh. eksp. 9
no.1:209 Ja-F '64.   (MIRA 17:4)

L 36851-66   EWT(1)/T   IJF(c)   AT

ACC NR: AP6019723   SOURCE CODE: UR/0108/66/021/006/0025/0031
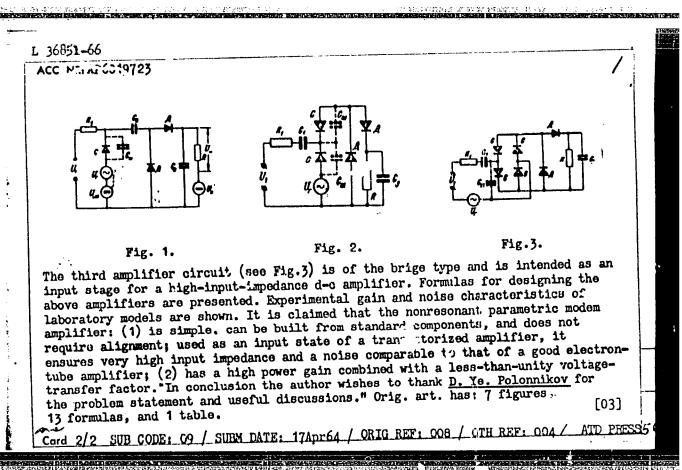
AUTHOR: Averbukh, V. D. (Active member)

ORG: Scientific and Technical Society of Radio Engineering and Electrocommunication im. A. S. Popov (Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi)

TITLE: Nonresonance parametric low-frequency amplification by means of alloy p-n junction capacitance

SOURCE: Radiotekhnika, v. 21, no. 6, 1966, 25-31

TOPIC TAGS: parametric amplifier, transistorized amplifier, lf amplifier, solid state amplifier, AMPLIFIER DESIGN, PN JUNCTION

ABSTRACT: Three improved circuits of l-f parametric nonresonant modem-type amplifiers are suggested. Each circuit comprises: (a) a varactor, at which the pumping voltage or current is modulated by the input signal, (b) a linear with-respect-to-the-envelope circuit, and (c) a demodulator. The first amplifier circuit (see Fig.1) uses one varactor and a diode detector of the asymmetrical doubler type; the input and pumping circuits are decoupled by R_1; the load circuit is connected to the varactor via C_2; the capacitor C_3 is used for filtering the output voltage. The second amplifier circuit (see Fig.2) uses two varactors connected in parallel at the input side and in series at the output side; this circuit has a higher voltage-transfer factor than the first circuit (theoretically, double).

Card 1/2   UDC: 621.375.931

L 36851-66

ACC N: AP6049723

Fig. 1.   Fig. 2.   Fig.3.

The third amplifier circuit (see Fig.3) is of the brige type and is intended as an input stage for a high-input-impedance d-c amplifier. Formulas for designing the above amplifiers are presented. Experimental gain and noise characteristics of laboratory models are shown. It is claimed that the nonresonant parametric modem amplifier: (1) is simple, can be built from standard components, and does not require alignment; used as an input state of a tran-storized amplifier, it ensures very high input impedance and a noise comparable to that of a good electron-tube amplifier; (2) has a high power gain combined with a less-than-unity voltage-transfer factor."In conclusion the author wishes to thank D. Ye. Polonnikov for the problem statement and useful discussions." Orig. art. has: 7 figures, 13 formulas, and 1 table.

[03]

Card 2/2   SUB CODE: C9 / SUBM DATE: 17Apr64 / ORIG REF: 008 / OTH REF: 004 / ATD PRESS5

L 30605-65   (d)   IJP(c)

ACCESSION NR: AP5007226   S/0055/65/000/001/0030/0036

SOURCE: Moscow. Universitet. Vestnik. Seriya 1. Matematika, mekhanika, no. 1, 1965, 30-36

TOPIC TAGS: elliptic equation, complex variable, Cauchy problem

$$\frac{\partial^m u(t, x)}{\partial t^m} \ \sum_{i=1}^{m-1} a_i t^{m-i} \ \frac{\partial^m u(t, x)}{\partial x^m} = 0$$

was obtained in a form suitable for practical applications in the case of elliptic

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L 35605-65
ACCESSION NR: AP5007266

equations with doubly symmetric roots. These roots appear as quadruples (see Fig. ... the enclosure) with the corresponding elliptic equation of doubly symmetric roots

$$\prod_{k=1}^{?} \left[\frac{\partial^4}{\partial t^4} + 2(a_k^2 - b_k^2) \frac{\partial^4}{\partial t^2 \partial x^2} + (a_k^2 + b_k^2)^2 \frac{\partial^4}{\partial x^4} \right] u(t, x) = 0$$

The desired solution of this equation is given by

$$2\pi G(t, x) = \frac{r^{-3}}{(r-2)!} \sum_{k=1}^{?} \{ \text{Re}\, C_k (a_1\beta_1 + a_2\beta_2 + a_3\beta_3 + a_4\beta_4)_k -$$

$$- \ln C_k (a_1\beta_2 - a_2\beta_1 + a_3\beta_4 - a_4\beta_3)_k \}$$

where the index k means that the values of the functions α_i and β_i are to be taken at the points a_k, $-b_k$ ... the roots α_i are distributed on a single straight axis parallel to the imaginary axis $a_k = a$. Then, the coefficients C_k become

$$C_k = \frac{i}{2ib_k \prod_{l=1}^{?}{}' (ib_k - ib_l)(ib_k + ib_l)} = \frac{i}{2b_k \prod_{l=1}^{?}{}' (b_k^2 - b_l^2)}$$
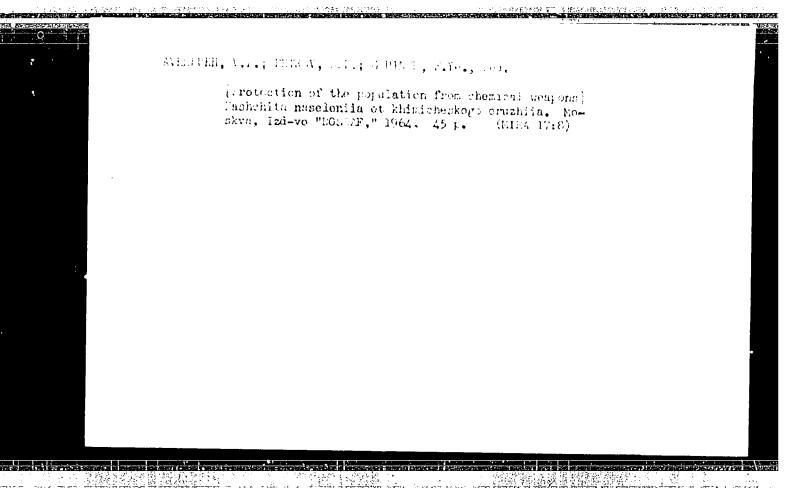
Card 2/4

L 35605-65
ACCESSION NR: AP5007226

with the simplified solution

$$G(t, x) = \frac{1}{\pi \sqrt{2}} \operatorname{arctg} \frac{t^2}{x^2}.$$

In a final note it is shown that of the functions α_i ($i = 1,2,3,4$) only α_1 depends on time explicitly, for the rest, time appears through the variable $\zeta = x/t$. Orig. art. has: 35 equations.

ASSOCIATION: Kafedra teorii funktsiy i funktsional'nogo analiza, Moskovskiy gosudarstvennyy universitet (Department of Function Theory and Functional Analysis, Moscow State University)

SUBMITTED: 01Aug63   ENCL: 01   SUB CODE: MA

NO REF SOV: 001   OTHER: 001

Card 3/4

ALEKSEEV, V.A.; PERTSEV, L.L.; LOBKO, A.Ye., red.

[Protection of the population from chemical weapons]
Zashchita naseleniia ot khimicheskogo oruzhiia. Mo-
skva, Izd-vo "DOSAAF," 1964. 45 p.   (MIRA 17:8)

AVERBUKH, Vladimir Leonidovich; BERLIN, Isay Zakharovich; VOLKOV,
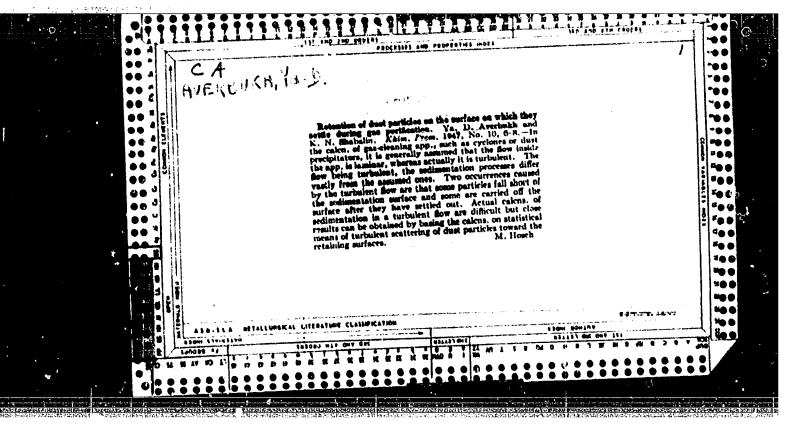P..., red.; SOVEL'YEVA, Z.A., tekhn. red.

[How to protect cereal products against radioactive,
chemical substances, and bacterial agents] Kak zashchitit'
khlebcprodukty ot radioaktivnykh, khimicheskikh veshchestv
i bakterial'nykh sredstv. Moskva, TsINTI, 1963. 44 p.
                                        (MIRA 16:12)
                    (Cereal products)
            (Radioactivity--Safety measures)

C A
AVERUUKR, Ya.D.

Retention of dust particles on the surface on which they settle during gas purification. Ya. D. Averbakh and K. N. Shabalin. *Khim. Prom.*, 1947, No. 10, 6-8. —In the calcn. of gas-cleaning app., such as cyclones or dust precipitators, it is generally assumed that the flow inside the app. is laminar, whereas actually it is turbulent. The flow being turbulent, the sedimentation processes differ vastly from the assumed ones. Two occurrences caused by the turbulent flow are that some particles fall short of the sedimentation surface and some are carried off the surface after they have settled out. Actual calcns. of sedimentation in a turbulent flow are difficult but close results can be obtained by basing the calcns. on statistical means of turbulent scattering of dust particles toward the retaining surfaces.
                                              M. Hoseh

AVERBUKH,Ya.D., kandidat tekhnicheskikh mauk; SHABALIN,X.N., professor
tekhnicheskikh nauk

Dust retention on the deposition surface in gas purification. Khim.
prom.no.10:290-292 O'47.   (MLRA 8:12)

1. Ural'skiy industrial'nyy institut
          (Scrubber (Chemical technology))

Calculation of the optimum thickness of absorbent in
studying x-ray absorption spectra

$\mu'A'/M + \mu'A'/M + \cdots$ are defined by the ... size of the ... μ', etc. are the mass absorption coeffs. and A', etc. and A' the individual elements in the compd., and M is its mol wt ...

18.8300, 18.8400, 18.3100

65693
SOV/136-59-10-10/18

AUTHORS: Averbukh, Ya.D., Potaskuyev, K.G. and Sharnin, A.A.

TITLE: Causes and Means of Reducing the Wear of the Boiler Tubes in the Steam Digester Batteries During Iroduction of Alumina

PERIODICAL: Tsvetnyye metally, 1959, Nr 10, pp 58-64 (USSR)

ABSTRACT: The object of the investigation described in the present paper, carried out jointly by the Department of Chemical Engineering at the Urals Iolytechnical Institute, the Bogoslovsky Aluminium Plant (BAP) and the Urals Aluminium Plant (UAP), was to determine the causes and find means of preventing excessive wear of the tubes through which the alkaline aluminate solution is passing through the steam-heated digesters. The importance of the problem is illustrated by the fact that the life of the tubes in the first (on the steam entry side) digester at BAP was only three months, the life of the tubes in the first digesters of the duplex batteries at UAP being approximately eight months. It had been observed that wear of the tubes at BAP was most pronounced at a distance of 1.5 to 1.6 m from the top baseplate; at this point the thickness of the tube wall in contact with the

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Causes and Means of Reducing the Wear of the Boiler Tubes in the
Steam Digester Batteries During Production of Alumina

solution decreased rapidly; the effect was less
pronounced above this point and even less noticeable
below it. A similar effect had been observed at UAP,
except that the point of maximum wear was situated at
a distance of 3 m from the top baseplate. It could be
assumed that this variation of the degree of wear across
the length of the vertical tubes was due to the changing
conditions of the flow of the aluminate solution. The
tubes used at BAP are 7 m long; the aluminate solution,
containing 290 to 300 g/l $Na_2O_{caustic}$, circulated through
these tubes is at the boiling point (135 to $140^\circ C$)
according to the pressure in the separator. Since the
solution entering a tube is under a positive pressure
exerted by the column of liquid present in the tube,
boiling of the solution (formation of the vapour bubbles)
takes place in the upper part of the tube where the
temperature is higher and the pressure lower and where
the bubbles are formed at the liquid-tube wall interface;
it can be assumed, also, that what happens above the

Card 2/11   boiling zone is not so much formation of new bubbles near

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SOV/136-59-10-10/18

Causes and Means of Reducing the Wear of the Boiler Tubes in the
Steam Digester Batteries During Production of Alumina

the tube wall, as growth of those formed earlier, which
are now distributed uniformly throughout the volume of
the liquid (Ref 1). It follows that the intensity of the
movement of the liquid layer adjacent to the tube wall
should be at its maximum in the boiling zone, since it
is there that the vapour bubbles are formed; consequently,
wear of the tube is localized in this zone. The tubes used
at UAP are also 7 m long; the temperature of the solution
(containing 250 to 260 g/l $Na_2O_{caustic}$) entering the tube
of the first digester is 105 to 115 C, ie below its
boiling point; it is for this reason that boiling of the
solution takes place in the middle part of the tube where,
also, most intensive wear occurs. The hypothesis
formulated above was checked experimentally by studying
wear of tube samples subjected to the action of concentrated,
industrial, alkaline aluminate solutions under conditions
of: (a) absence of boiling, (b) boiling at the solution-
tube wall interface and (c) boiling in the volume of the
solution. The apparatus shown in Fig 1 was used for this

Card 3/11   purpose. The solution was contained in an open tank

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S(V/136-59-10-10/18

Causes and Means of Reducing the Wear of the Boiler Tubes in the
Steam Digester Batteries During Production of Alumina

(detail 1) in which three tube specimens were suspended
forming a vertical "chain". The middle specimen (detail 2),
both ends of which were closed with flanges, could be
heated by a nichrome heating element placed in its
interior. In this way the middle specimen was subjected
to the action of solution boiling at the tube-liquid
interface; the bottom specimen was in contact with the
solution at a temperature below its melting point, while
the top specimen was surrounded by a solution with
uniformly distributed vapour bubbles. To prevent the
formation of a galvanic cell between the tank and the
tube specimens (which would result in anodic passivation
of the latter), the tubes were suspended on a cantilever
(detail 3) insulated from the tank. To maintain the
strengths of the solution constant, distilled water was
added to it periodically. To match the conditions
obtaining under industrial conditions, the intensity of
the bubble formation was varied from experiment to
experiment by varying the current thr. h the heating
Card 4/11   element of the middle specimen. The duration of each

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Causes and Means of Reducing the Wear of the Boiler Tubes in the
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experiment was six hours. All specimens were subjected
to the same preliminary treatment: polishing, washing in
alcohol, drying in a desiccator and weighing; after the
test, the loose products of erosion wore brushed off, the
specimens were washed in water and then in alcohol
and, after drying, were weighed again. The rate of wear,
$K(g/m^2/hr)$, was calculated from the formula given on p 59
where: Δg - loss of weight; S - specimen surface area, m^2;
τ - duration of the test, min. The depth of penetration,
Π (mm/year), was calculated from the second formula on
p 59 where: γ - specific gravity of the metal. The results
are reproduced in Fig 2 where Π(mm/year) is plotted against
the rate of the heat flow, $N(kcal/m^2/hr$, bottom scale), for
the top (curve 3), middle (curve 1) and bottom (curve 2)
specimens. It will be seen that the depth of
penetration was less in the bottom specimen and that in
this case, it was practically unaffected by the variation
of N. Thus the results of these experiments confirmed
the view that localized wear of the tubes is associated
Card 5/11   with boiling of the solution near the heating surface.

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SOV/136-59-10-10/18

Causes and Means of Reducing the Wear of the Boiler Tubes in the
Steam Digester Batteries During Production of Alumina

However, the question whether this wear is caused by
cavitation disintegration, erosion by the solid particles
suspended in the solution or corrosion remained still
unanswered. The results of experiments in which solutions
free from suspended solid particles had been used, proved
that erosion plays no part in causing wear of the tubes.
The fact that the investigated effect had been observed
only in tubes carrying the strong solution (ie in those
which pass through the first of the digesters constituting
a battery) indicated that cavitation phenomena cannot be
regarded as the cause of wear of the tubes either. To
prove this point, the previously described experiments
were repeated under identical conditions, except that
the solution was mechanically agitated but not boiled
(ie there was no formation of the vapour bubbles); the
solution was agitated by rotating the specimens at a speed
varying between zero and the maximum rate of flow of the
solution through the pipes under industrial conditions.
The results of these experiments are reproduced in Fig 2
(curve 4) where Π_1 (mm/year) is plotted as a function of

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Causes and Means of Reducing the Wear of the Boiler Tubes in the Steam Digester Batteries During Production of Alumina

the peripheral velocity, v, (m/sec, top scale) of the specimens. It will be seen that Π_1 increased with increasing v; at high values of v, Π_1 attained values similar to those obtained as a result of boiling at the heating surface. This proves that localized wear of the tubes is not caused by cavitation. Consequently, it has to be concluded that the investigated phenomenon is caused by a diffusion material transfer, ie by electro-chemical or chemical dissolution of iron in the alkaline aluminate solution. Since the results of experiments, reproduced in Fig 2 in the form of a Π_2 versus v curve (curve Nr 5), in which pure NaOH solution had been used, were similar to those in which an industrial $Na_2O_{caustic}$-bearing solution had been employed, it was concluded that in this case NaOH is the corroding agent. It is known that corrosion of the iron-carbon alloys in alkaline solutions consists in anodic dissolution of iron; the corrosion products form a protective layer on the metal

Card 7/11   surface which, however, is soluble in hot, concentrated

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alkaline solution, the rate of corrosion being
determined by the rate of dissolution to this protective
layer (Ref 2 and 3), which in turn is affected by the
temperature and concentration of the solution and by the
degree of agitation. The effect of these factors was
investigated in the next series of experiments in which
the peripheral velocity of the rotating specimens was
constant and maintained at v equal 0.8 m/sec; the results
are reproduced in Fig 3 where Π(mm/year) is plotted as a
function of the $Na_2O_{caustic}$ content (g/l) of the solution
at temperatures ranging from 70 to 140°C; it can be seen
that at temperatures up to 110°C the variation of the
concentration of Na_2O in the solution had very small effect
on Π, which however, increased rapidly with the increasing
$Na_2O_{caustic}$ content in the solution at higher temperatures.
The same solutions were used in the next series of
experiments, each of which was carried at the temperature
corresponding to the boiling point of the respective
solution (at the atmospheric pressure); the peripheral
velocity of the specimens was varied within wide limits;

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Causes and Means of Reducing the Wear of the Boiler Tubes in the
Steam Digester Batteries During Production of Alumina

in addition, the effect of agitation (the peripheral
velocity of the specimens) was studied also in solutions
containing approximately 290 g/l $Na_2O_{caustic}$ at temperatures
between 80 and 115°C. The results of all these tests
showed that the lower the concentration and temperature of
the solution, the less is the effect of the intensity of
agitation on the rate of corrosion. Thus, for instance,
the rate of corrosion in a solution containing 200 g/l
$Na_2O_{caustic}$, tested at temperatures up to its boiling
point (at atmospheric pressure). is practically independent
from the intensity of agitation; the effect of agitation,
however, becomes apparent at higher temperatures and in
more concentrated solutions. The results of all the
experiments described above provided a complete
explanation of the causes and the mechanism of localized
wear of the boiler tubes under consideration. The next
problem to be solved was the selection of a tube material
which would be more corrosion-resistant and which, in
addition, would possess the following characteristics:
Card 9/11   resistance to inter-granular corrosion (caustic brittleness);

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Causes and Means of Reducing the Wear of the Boiler Tubes in the
Steam Digester Batteries During Production of Alumina

availability and low cost; thermal coefficient of
expansion and electrode potential as near as possible to
those of steel St 20 from which other components of the
digesters are made; high thermal conductivity; workability.
The code marks and the chemical composition of steels
selected for the corrosion tests are tabulated on p 62.
Industrial alkaline aluminate solution, containing
290 g/l $Na_2O_{caustic}$, was used in the experiments carried
out at the boiling point (140°C) of the solution which was
agitated by rotating the specimens; each test was
continued until a constant rate of corrosion of the
tested steel was attained; the solution was changed
every 24 hr to keep low its iron content which, as had
been established, affects the rate of corrosion (the
inside of the tube specimens was nickel-plated for the
same reason). The results of the corrosion tests are
reproduced in Fig 4 where $K(g/m^2/hr)$ of various steels
(including the plain carbon steel St 10) is plotted
against time, τ (hr). In the last series of experiments,
Card 10/11 the effect of temperature on the rate of corrosion of

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Causes and Means of Reducin- the Wear of the Boiler Tubes in the
Steam Digester Batteries During Production of Alumina

various steels was investigated; in all these tests
v equal 0.5 m/sec was employed. The results are
reproduced in Fig 5 where $K(g/m^2/hr)$ is plotted against
temperature (°C), the duration (hr) of each test being
indicated by figures in brackets. All alloy steels were
found to be more corrosion-resistant than steel St 10
and while the rate of corrosion of the latter increased
with rising temperature, the rate of corrosion of the
alloy steels either remained constant or decreased. It
was concluded that on economical grounds, steels 10KhSND
or 15KhSND are most suitable for replacing steel St 10
as a material for the construction of the boiler tubes
under consideration. Acknowledgments are made to
T.A.Tkachenko, G.Z.Nasyrov, A.K.Styazhkin, T.Z.Mikhaleyeva,
N.V.Yeremeyeva and R.G.Rozenblyum who participated in
this work. There are 5 figures, 1 table and 7 Soviet
references.

Card 11/11

5(1)

AUTHORS:

Govorkov, V.M., Averbukh, Ya. D.

TITLE:

On the Methods of Calculating Mass Transfer in Apparatuses With Continuous Change of the Driving Force and in Apparatuses of the Step Type (O metodakh rascheta massoperedachi v apparatakh s nepreryvnym izmeneniyem dvizhushshey sily i v apparatakh stupenchatogo tipa)

PERIODICAL:

ABSTRACT:

The authors stress a principal difference in the run of absorption processes between the apparatuses of packed or spray type on one hand and the apparatuses of bubble plate or sectional type on the other. An essential characteristic of the former is the continuous and monotonous change in the driving force of absorption, i.e., the difference of concentrations of an absorbed substance in a gas and in a liquid. Due to this condition, apparatus dimensions are calculated by integrating the fundamental equation for the rate of mass transfer:

Card 1/3

$$-Gdy = Ldx = K_F DF (y - y^*)$$

On the Methods of Calculating Mass Transfer in Apparatuses With Continuous
Change of the Driving Force and in Apparatuses of the Step Type

SOV/80-32-4-16/47

from the limit y_{in} to y_{fin}.
Where Gdy is the quantity of substance absorbed by the liquid
from the gas in a unit of time over the surface dF; K_F is
absorption rate coefficient referred to a unit of surface;
(y - y*) is the driving force of the process in which y is
the working concentration of the absorbed substance in the
gas, and y* = f(x) is the concentration of this substance
over the surface of the liquid, equiponderant with the
concentration of the matter. The surface area of a packing
is determined either by analytical integration of the above
equation or by graphical integration when the relationship
between y* and x is non-linear. This method is not applicable
to apparatuses of the step type, because concentration of a
substance in them proceeds not continuously throughout the
whole height of the apparatus. Therefore the authors criti-
cize the viewpoints of Planovskiy and Kasatkin /Ref. 1_7 and
the recent method of the so-called "units of transfer", and
adhere to the opinion of Statnikov /Ref. 2_7 who questioned

Card 2/3

SOV/80-32-4-16/47

On the Methods of Calculating Mass Transfer in Apparatuses With Continuous
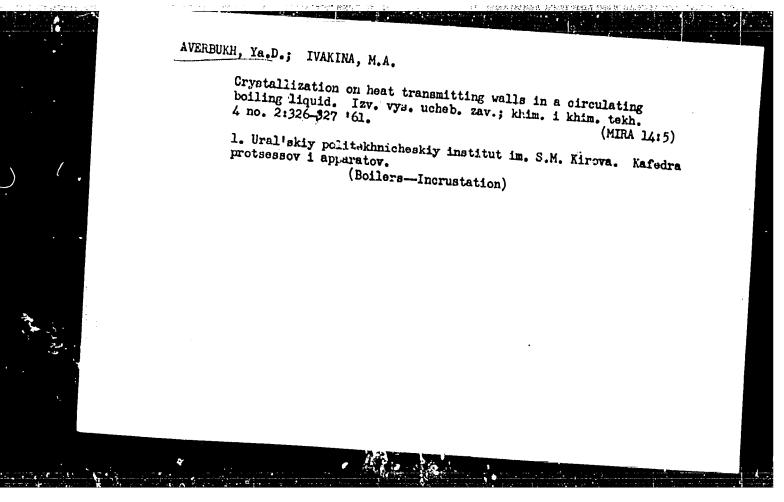Change of the Driving Force and in Apparatuses of the Step Type

the concepts of "theoretical plate" and "efficiency factor
of the plate", etc. The authors conclude that apparatuses
of the step type should be designed by means of graphical
methods, making use of the concept of the local efficiency
factor of the contact, which was introduced by Merfri
(Russian spelling) in 1925.
There are 1 diagram, 2 graphs and 5 references, 4 of which
are Soviet and 1 English.

SUBMITTED: November 10, 1957.

Card 3/3

AVERBUKH, Ya.D.;   IVAKINA, M.A.

Crystallization on heat transmitting walls in a circulating
boiling liquid. Izv. vys. ucheb. zav.; khim. i khim. tekh.
4 no. 2:326-327 '61.

(MIRA 14:5)

1. Ural'skiy politekhnicheskiy institut im. S.M. Kirova. Kafedra
protsessov i apparatov.

(Boilers—Incrustation)

AVERBUKH, Ya.D.; SHARNIN, A.A.; POTASKUYEV, A.G.

Anodic protection of steel in alkali media and the effect of dis-
solved iron on it. Izv.vys.ucheb.zav.;khim.i khim.tekl. 4 no.4:
594-598 '61.
(MIRA 15:1)

1. Ural'skiy politekhnicheskiy institut imeni Kirova, kafedra
protsessov i apparatov.
(Steel) (Electrolytic corrosion)

INTUSHKIN, N.V.; AVERBUKH, Ya.D.

Effect of conditions of gas flow on dust collection in an electric field. TSvet. met. 35 no.7:37-41 Jl '62.
(MIRA 15:11)
(Gas flow)
(Electrostatic separators)

INYUSHKIN, N.V.; AVERBUKH, Ya.D.

Problem of calculating dust deposition in electrostatic precipitators from turbulent gas flow. Izv.vys.ucheb.zav.; khim. i khim. tekh. 6 no.6:1031-1036 '63.

(MIRA 17:4)

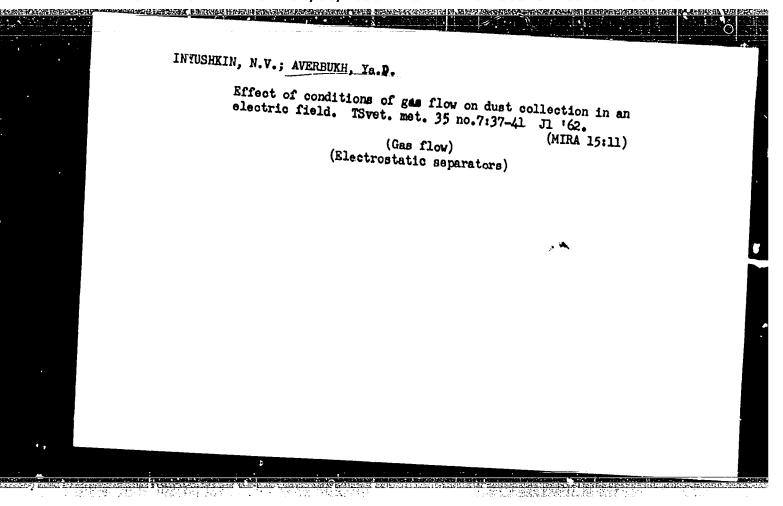1. Ural'skiy politekhnicheskiy institut imeni Kirova, kafedra protsessov i apparatov khimicheskoy tekhnologii.
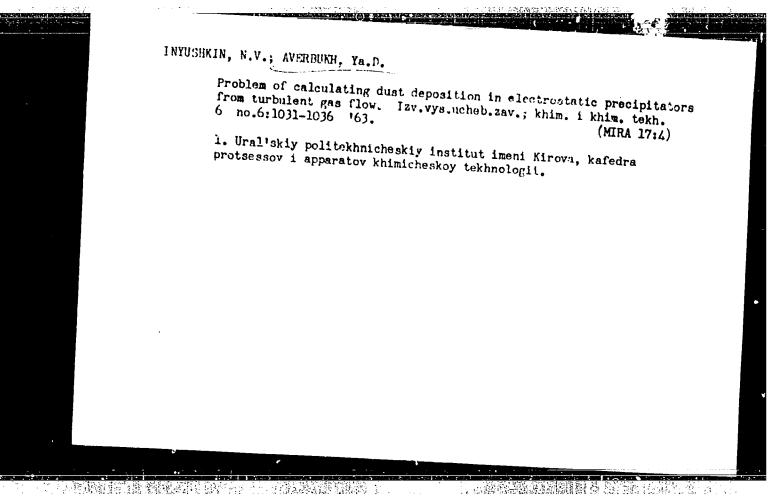
S/132/60/000/008/004/010
A161/A029

AUTHORS: Sogrishin, Yu.P.; Averbukh, Ya.I.

TITLE: Mechanization of Extrusion-Turning

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 8, pp. 32 - 34

TEXT: Information is given on tests of a ЗР.53 (ZR-53) extrusion lathe
(tokarno-davil'nyy stanok) designed for producing conical or cup-shaped parts
from aluminum alloys up to 2.5 mm thick. The method is quite common in machine
building and in some instances cheaper than stamping. It is used not only in the
Soviet Union. The Zr-53 machine tool was tested at Kiyevskiy mekhanicheskiy za-
vod (Kiyev Mechanical Works). It has a hydraulic drive for the longitudinal and
transverse tool posts and for the tailstock clamp; the transverse tool post
moves on a guide block in a semi-automatic operation cycle; the height of the
center is 225 mm, the spindle has seven speeds (from 350 to 2,780 rpm); both
longitudinal and transverse maximum feed is 3,000 mm/min. Work is shaped on
hardened steel mandrels by a hardened roller applied with pressure. Conical
parts were shaped in 30 - 50 sec. Extrusion without thinning out the work wall
proved impossible (the pressing roller of the machine is moved toward the head-
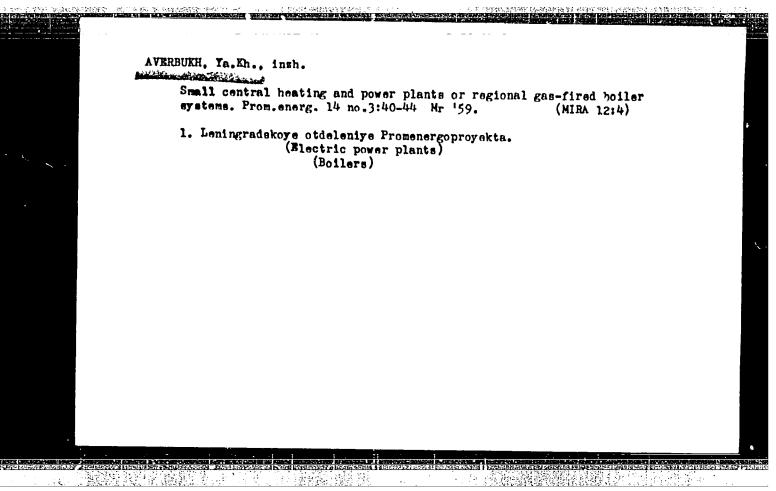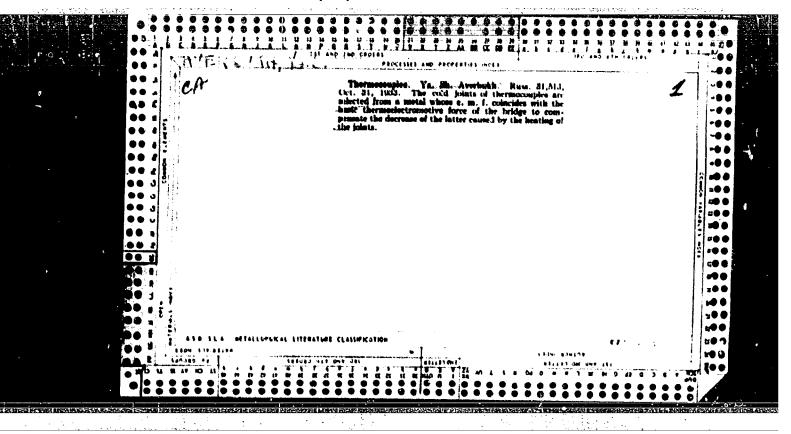
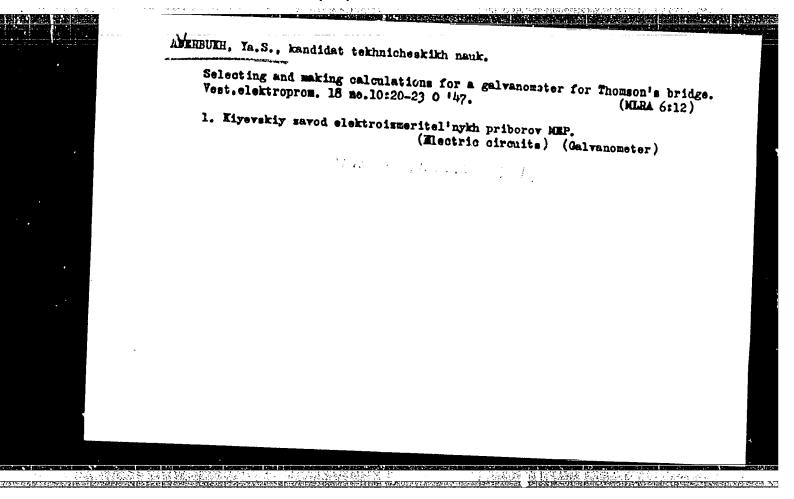Card 1/2

Mechanization of Extrusion-Turning
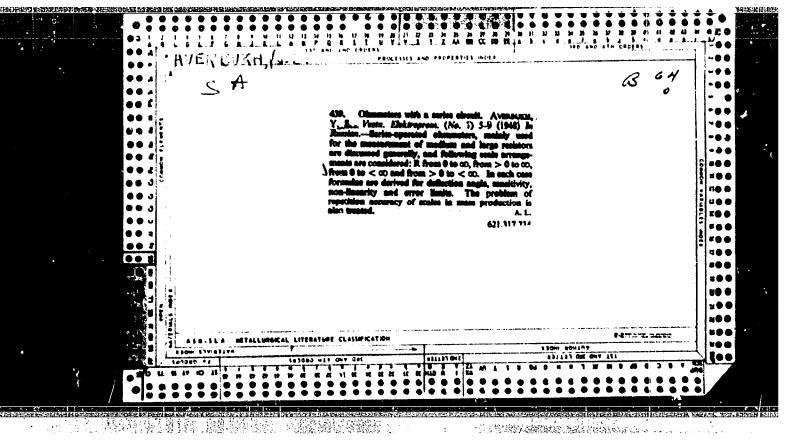
S/182/60/000/008/004/010
A161/A029

stock). Various design faults were noted. The absence of a cooling system is one of the faults; the major fault is insufficient effort of the roller, retraction of the roller (and uneven wall thickness) under higher load applied. After debugging the machine is expected to become a convenient means for producing cones and cylinders from aluminum alloys of up to 2.5 · 3.0 mm thickness. Practical experience with manual extrusion of such work must be considered in an improved design. A kinematic system is suggested for pressure roller control that would make possible extrusion with even wall thickness. The machine design is not illustrated. There are 3 figures.

Card 2/2

AVERBUKH, Ya.Kh., insh.

Small central heating and power plants or regional gas-fired boiler
systems. Prom.energ. 14 no.3:40-44 Mr '59.   (MIRA 12:4)

1. Leningradskoye otdeleniye Promenergoproyekta.
             (Electric power plants)
                  (Boilers)

Thermocouples. Ya. Sh. Averbukh. Russ. 31,51,1, Oct. 31, 1945. The cold joints of thermocouples are selected from a metal whose e. m. f. coincides with the thermoelectromotive force of the bridge to compensate the decrease of the latter caused by the heating of the joints.

AVERBUKH, Ya.S., kandidat tekhnicheskikh nauk.

Selecting and making calculations for a galvanometer for Thomson's bridge.
Vest.elektroprom. 18 no.10:20-23 O '47.
(MLRA 6:12)

1. Kiyevskiy zavod elektroizmeritel'nykh priborov MEP.
(Electric circuits) (Galvanometer)

AVERBUKH,

S A

B 64

PROPERTIES AND PROPERTIES INDEX

430. **Ohmmeters with a series circuit.** AVERBUKH, Y. S. Vestn. Elektroprom. (No. 1) 5-9 (1948) In Russian.—Series-operated ohmmeters, mainly used for the measurement of medium and large resistors are discussed generally, and following scale arrangements are considered: R from 0 to ∞, from > 0 to ∞, from 0 to < ∞ and from > 0 to < ∞. In each case formulae are derived for deflection angle, sensitivity, non-linearity and error limits. The problem of repetition accuracy of scales in mass production is also treated.
A. L.

621.317.714

METALLURGICAL LITERATURE CLASSIFICATION

AVERBUKH, YA. S.

PA 14/49 T11

USSR/Electricity
Instruments, Measuring
Voltmeters

Aug 48

"New Designs for Electric Measuring In-" "u
Produced by the 'TochElektroPribor' Factor..
Ya. S. Averbukh, Cand Tech Sci, Kiev 'Toch:. Pro-
Pribor' Factory,Min Elec Ind, 6 pp

"Test Elektro-Prom" No 8

Plant has designed several AC measuring instruments
for industrial work. Describes multiscale volt-
meter, two-scale milliammeter, three-scale volt-
meter, two-scale ammeter, single phase portable

USSR/Electricity (Contd)

14/49T11

Aug 48

phasemeter, two-scale microfaradmeter, vibration
galvanometer, bridge for measuring dielectric
losses, induction coils, induction box, and
capacitors.

14/49T11

AVERFUKH, YA. S.

PA 64/49T28

Electricity
Electrical Equipment
Galvanometers

Oct 48

"Vibration Galvanometer With A Suspended Magnet," Ya. S. Averbukh, Cand Tech Sci, Moscow X-Ray Factory, Min of Elec Ind, 3½ pp

"Test Elektro-Svaz" No 10

Gives design and construction details for vibration galvanometer used primarily in computing and bridge circuits at power frequency. Superior to telephone as null indicator due to greater sensitivity, objective reading, and insensitive to harmonics.

64/49T28

USSR/Electricity   (Contd)   Oct 48

Also eliminates need for special audio signal generator since the regular power network is satisfactory. Galvanometer sensitivity is 11 mm. on scale per microamp and 0.07 mm per microvolt, 1-1.5% resonance band, 0.8 - 1.3 sec damping time.

64/49T28

AVERBUKH, YA S.

AVERBUKH, YA. S.

"Automatic Relays Manufactured by the Kiev Plants 'Tochelektropribor'
and 'Rele i Avtomatiki'," pp 174-180, ill

Abst: The article gives a short description and photographs of various
types of relays (RVT 1200, Ye 52, Ye 512, Ye 513, and others).

SOURCE: Raboty M&R SSSR po Mekhan. i Avtomatizatsii Narodn. Khoz. (Work of
the Ministry of the Electrical Engineering Industry USSR on Mechanization
and Automation in the National Economy), Part 3, Moscow, TsBTI, 1956

Sum 1854

AVERBUKH, Ya.S., kandidat tekhnicheskikh nauk.

Planning international standards for electricmeasuring instru-
ments. Standartizatsiia no.4:30-33 Jl-Ag '56. - (MLRA 9:11)

1. Glavnyy konstruktor zavoda "Tochelektropribor," Kiyev.
(Electric instruments--Standards)

AUTHOR: Averbukh, Ya.S., Candidate of Technical Sciences ("Tochelektro- 414
            pribor" Works).

TITLE: Universal high-sensitivity instruments of the "Tochelektro-
            pribor" Works. (Universal'nye pribory vysokoy chuvstvitel'
            nosti zavoda "Tochelektropribor")

PERIODICAL: "Vestnik Elektropromyshlennosti" (Journal of the Electrical
            Industry), 1957, Vol. 28, No. 5, pp. 17 - 19 (U.S.S.R.)

ABSTRACT: This article describes universal instruments that have
            been developed especially for use in radio and electronics.
            The movement is of small dimensions, a magnet is mounted inside
            the coil frame and pivot suspension is used. The magnetic
            induction in the working gap was made uniform by using a
            magnet of special shape with pole pieces. The instrument used
            miniature resistors of several megohms made from very thin
            manganin wire with glass insulation. Two types have been made
            each with the same movement. Type TS-51 has 34 ranges
            including d.c. from 75 micro-amps to 15 amps, a.c. from 3 to
            15 amps; voltage d.c. and a.c. 3-600 volts and resistance
            d.c. from 3 kilo-ohms to 30 megohms using a dry battery. The
            instrument is of class 1 on direct current and class 1.5 for
            most of the a.c. ranges except 3 and 600 volts which are
            classes 2.5. Germanium rectifiers are used the circuit is
            given. Instrument Ts-52 is similar to Ts-51 but smaller and
            of lower accuracy. It is of class 1.5 on d.c. and 2.5 on a.c.

414

Universal high-sensitivity instruments of the "Tochelektro-
pribor" Works. (Cont.)

It has 32 ranges. Other characteristics are given. Current
transformers and shunts can be provided to extend the range
of measurements.

6 figures, no literature references.

PHASE I BOOK EXPLOITATION   SOV/4407

Akademiya nauk Ukrainskoy SSR.   Institut elektrotekhniki

Voprosy obshchego elektropriborostroyeniya (Overall Problems of the Electric
     Instrument Industry) Kiyev, 1960.   262 p.   3,000 copies printed.

Additional Sponsoring Agency: Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy
     promyshlennosti. Ukrainskoye respublikanskoye pravleniye.

Editorial Board: A. D. Nesterenko, Corresponding Member, Academy of Sciences
     Ukrainskaya SSR (Resp. Ed.), M. I. Levin, Doctor of Technical Sciences,
     P. P. Ornatskiy, Candidate of Technical Sciences, V. F. Petrochenko, Candi-
     date of Technical Sciences, A. F. Gorodovskiy, Engineer, S. Sh. Zaslavskiy,
     Engineer, and B. A. Saliber; Ed. of Publishing House: B. A. Kazantsev; Tech.
     Ed.: M. I. Yefimova.

PURPOSE: This book is intended for technical personnel working in the field of
     electric measurement techniques, in electrical instrument plants, in labora-
     tories of electric power systems and in electric measurement laboratories of
     plants.

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Overall Problems of the Electric (Cont.)   SOV/4407

COVERAGE: This is a collection of reports presented at a conference on the over-all development of the Soviet electrical instrument industry held in Kiyev on October 23-27, 1956. The conference was convened by the Institut elektro-tekhniki AN USSR (Institute of Electrical Engineering, Academy of Sciences UkrSSR) and the Ukrainskoye respublikanskoye pravleniye NTO priborostroitel'-noy promyshlennosti (Ukrainian Republic Administration of NTO of the Instru-ment-making Industry) Problems relating to electrical instrument-making as a whole (reports by A. D. Nesterenko, P. P. Ornatskiy, Ya. S. Averbukh, Ye. G. Shramkov) were discussed, as well as problems relating to the development of reference instruments (Ya. S. Averbukh, I. K. Khodeyev), the automation of electric-measuring circuits (A. Ya. Shramkov, L. Ya. Mizyuk) and to the theory and practice of magnetic measurements (N. N. Shol'ts, G. L. Gornshteyn). Attending the conference were workers of scientific research institutes and schools of higher education, along with representatives of the main electric instrument plants ("Vibrator" in Leningrad, "Tochelektropribor" in Kiyev, "Omelektrotochpribor" in Omsk, ZIP in Krasnodar and others) and of various electric power systems. No personalities are mentioned. References ac-company ten of the reports.

Card 2/12

Overall Problems of the Electric (Cont.)   30V/4407

TABLE OF CONTENTS:

Foreword
                                                                        3

Nesterenko, A. D. Present State of the Electric Instrument Industry,
and Principal Problems Facing Industrial and Scientific Workers in
Their Task of Developing and Introducing Novel Electric-Measuring Instru-
ments Into Practice
                                                                        5
     The author enumerates the following trends in the development
     of the Soviet electrical instrument industry: improvement of instru-
     ment characteristics; increase of measurement limits and of the
     number of values measured with a single meter; new instrument specifi-
     cations, especially for instruments operating in automatic control
     circuits; automation of measuring processes and transition to auto-
     matic instruments. He recommends various means for improving exist-
     ing conditions, in particular the standardization of terminology.

Card 3/18

Overall Problems of the Electric (Cont.)   SOV/4407

Ornatskiy, P. P. New Designs of Indicating Electric-Measuring
Instruments
    The author reviews new designs of portable precision, back con-   16
nected, permanent-magnet moving-coil, electrodynamic, ferro-
dynamic, induction, electrostatic, electrothermic and universal
rectifier instruments. Improvements in the construction of
instrument units are discussed.

Averbukh, Ya. S. Project of an International Standard For Electric-
Measuring Instruments
    This is a review of the activity of Committee no. 13 of the Inter-   38
national Electrotechnical Commission [IEC, Soviet abbreviation MEK]
for the period 1952-1956, on the matter of establishing an inter-
national standard for electric-measuring instruments.

Shramkov, Ye. G. On the New All-Union State Standard "Electric and
Magnetic Units"
    This article discusses the GOST8033-56 (All-Union State Standard   44
8033-56) "Electric and Magnetic Units" approved in July, 1956
by Komitet standartov, mer i izmeritel'nykh priborov pri Sovete
Ministrov SSSR (Committee of Standards, Measures and Measuring
Instruments at the Council of Ministers, USSR) to become effective Jan-
uary 1, 1957.

Card 1/12

Overall Problems of the Electric (Cont.)   SOV/4407

Averbukh, Ya. S. High Precision A-C Devices for a Broad Range of
Rated Frequencies
    The author suggests a series of electrodynamic devices of   175
somewhat complex construction which would permit the use of an
expanded range of frequencies at a considerable reduction in
power. There are 6 references: 5 Soviet and 1 English.

Khodeyev, I. K. Type D57 Electrodynamic Reference Instruments of
the Precision Class 0.1
    The author describes instruments which are to be constructed in   190
accordance with the specifications of GOST 1845-52 (All-Union
State Standard 1845-52).

Khodeyev, I. K. Type M502 Permanent-Magnet Moving-Coil Reference
Instruments of the 0.1 Class
    The author describes M502-type instruments having the fol-   201
lowing measurement boundaries: 0.15 , 0.3, 0.75, 1.5, 3,
and 7.5 amperes; 45 and 75 millivolts; and 1.5 and 3 volts.

Card 10/12

S/194/61/000/008/004/092
D201/D304

AUTHOR: Averbukh, Ya.S.

TITLE: A series of high class accuracy a.c. instruments
for a wide range of nominal frequencies

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 8, 1961, 8, abstract 8 A47 (V sb. Vopr. obshch.
elektropriborostr., Kiyev, AN USSR, 1960, 175-189)

TEXT: Theoretical assumptions are given as applied to the
design of the series of moving coil 0.5 class of instruments by
factory "Tochelektropribor". The instruments, voltmeters type
Д525 (D525), ammeters type Э526 (D526) and wattmeters Д527
(D527) have a nominal frequency range up to 1500 c/s. The frequency
errors are analyzed as due to the inductance and mutual inductance
of windings, eddy currents, and distributed winding capacities.
Ideas, as to the possible methods of either eliminating or decreas-
ing the above errors, are given. Formulae are given for evaluating
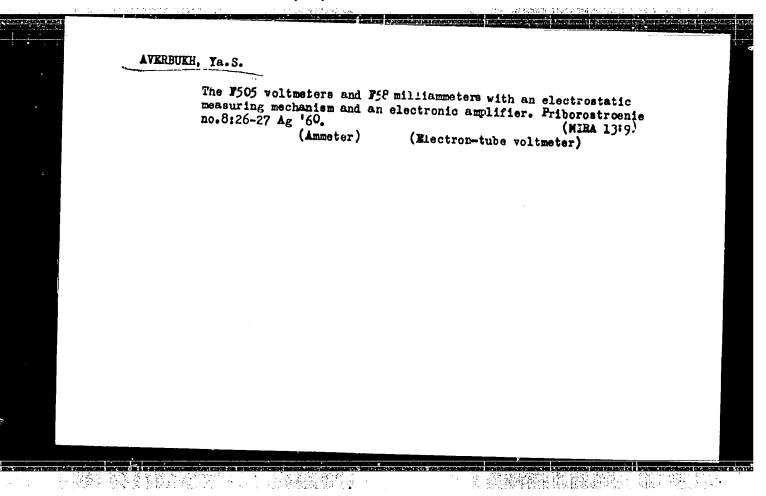
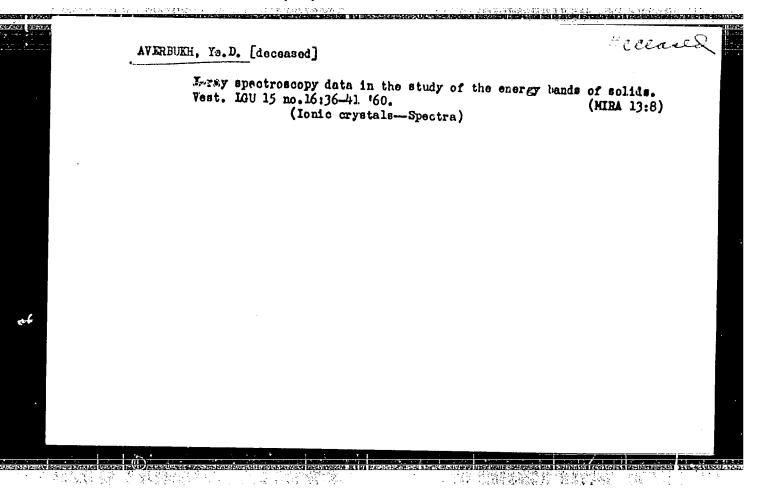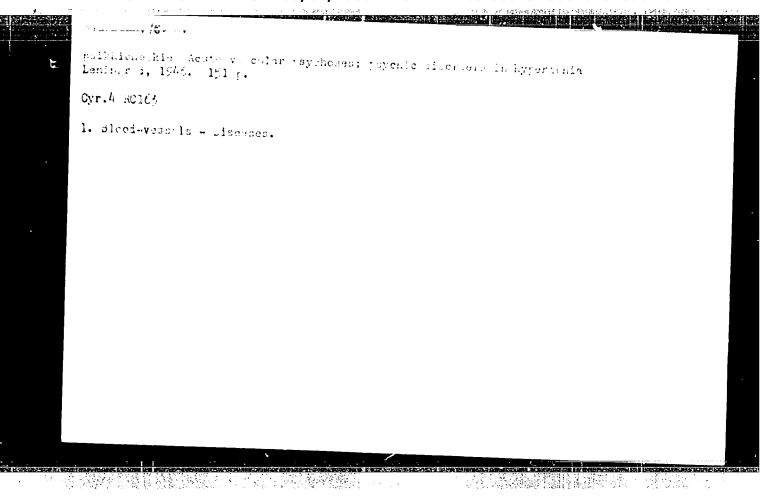Card 1/3

A series of high class accuracy...

el. parameters of the instruments which affect the frequency errors and several conclusions are made on the choice of their optimum values. Measurement ranges of the series are given together with some construction details and properties. The length of the scale of instruments is 150 mm, overall dimensions 215 x 280 x 160 mm. Ammeters and milliammeters are manufactured with upper limits from 25 mA to 10 A, voltmeters - 50 to 450 V. Both categories are single-range instruments for better frequency error compensation. Because of specific difficulties in frequency error compensation in volt-meters due to the combined inductance of the frame and the fixed coil, the FSD currents have been made larger than those in 50 c/s instruments. Because of this, the power consumption is up to 12 W. In ammeters it varies between 0.3 and 19 W, depending on the upper range limit. The wattmeters have two nominal voltages (150 and 300 V) and two nominal currents from the range 0.15/0.3, 0.5/1, 2.5/5 and 5/10 A, with current in the parallel branch of 30 mA. The series circuit consumes nominally from 0.1 to 0.36 W. The above instruments exhibit many better technical properties than the

Card 2/3

A series of high class accuracy...   S/194/61/000/003/004/092
D201/D304

previous range of the same class of accuracy, providing at the same time facilities of measurements within a much wider frequency range. 6 references. /Abstracter's note: Complete translation/

Card 3/3

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        (ENDOCRINE GLANDS--DISEASES)

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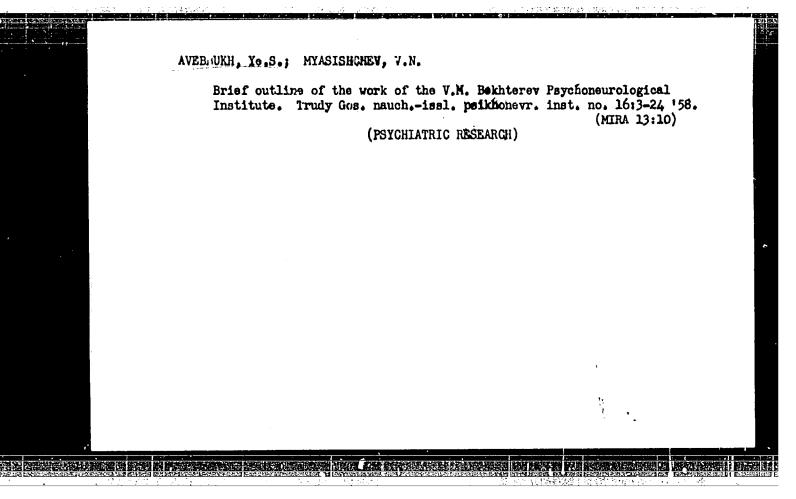   (MASSERMAN, JULES HUMEN, 1905-)

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skogo instituta imeni V.M.Bakhtereva (dir. - prof. V.N.Myasishchev)
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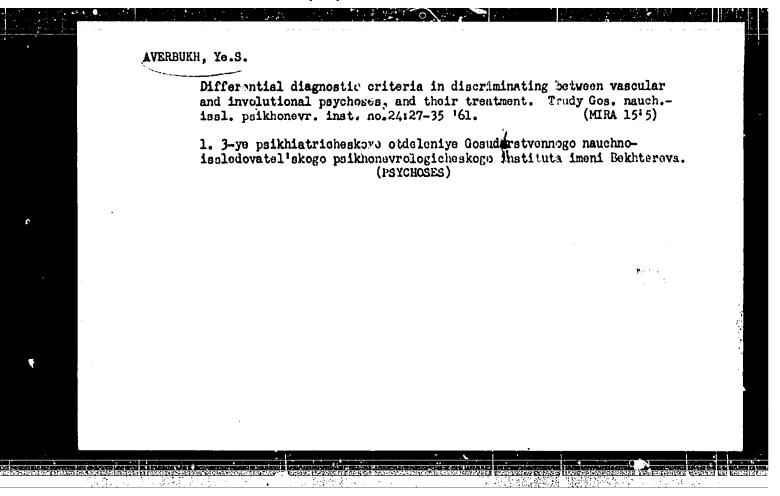YEFAMENKO, V.L.; LEBEDEV, B.A.

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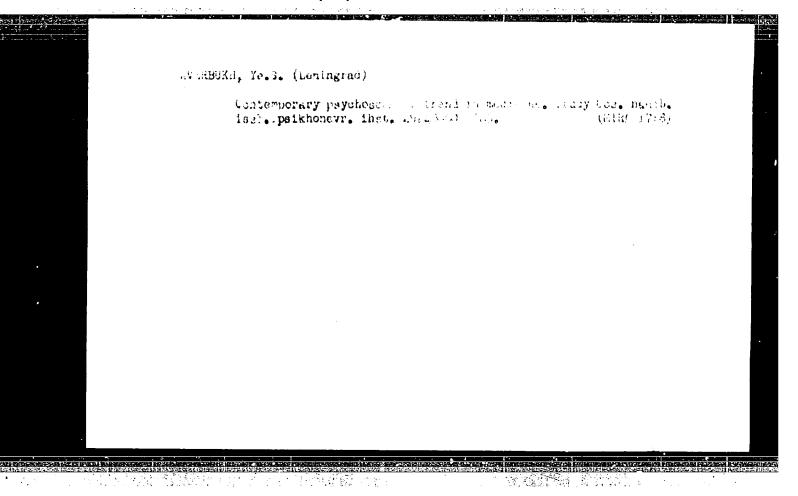   (PSYCHOSES)

AVERBUKH, Ye. S.

Psychic disturbances in acute disorders of cerebral blood circu-
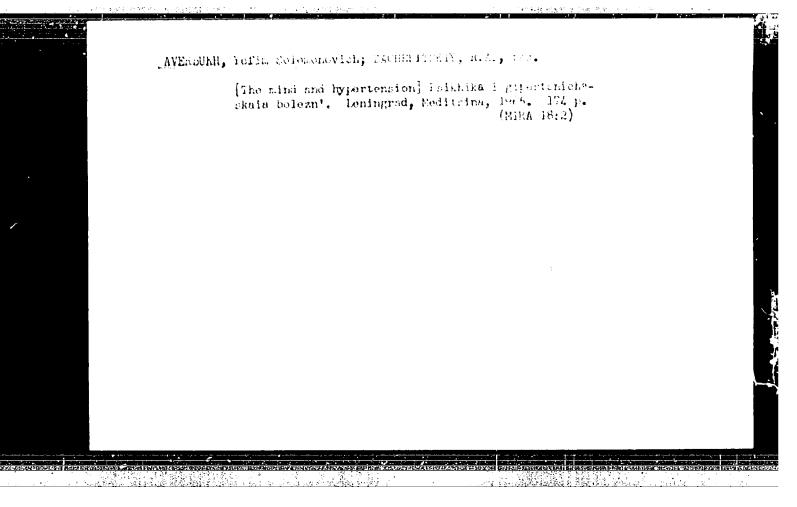lation. Nauch. trudy Inst. nevr. AMN SSSR no.1:205-209 '60.
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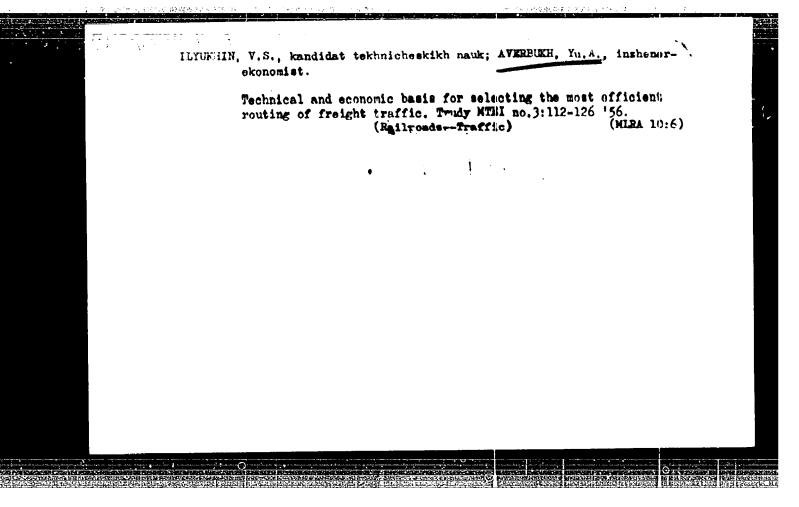Bekhtereva.

(CEREBROVASCULAR DISEASE)   (MENTAL ILLNESS)

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Contemporary psychose... ...trend in ....dry ....
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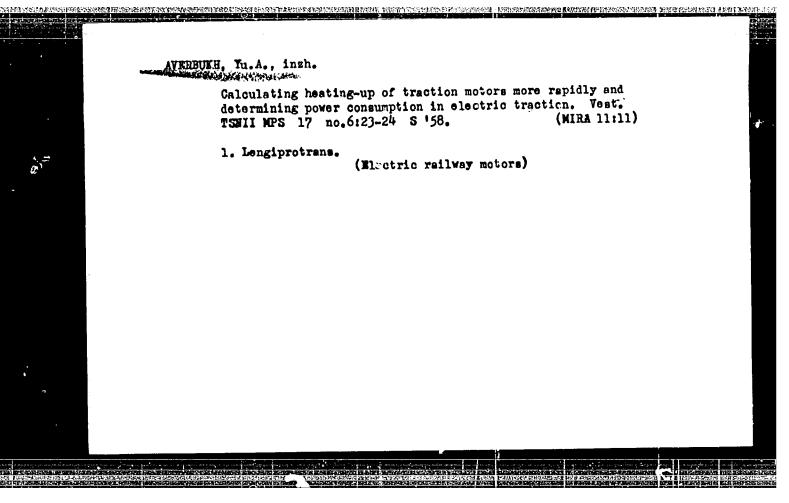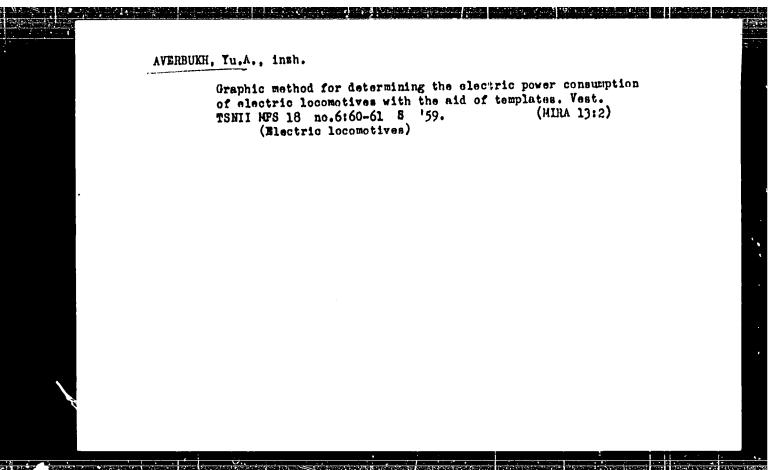
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red.; BONDAREV, N.I., red.; BORZUNOVA, A.S., red.;
ZENEVICH, G.V., red.; MNUKHIN, S.S., red.; MYASISHCHEV,
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