various diagrams expressing the effect of the initial height of the catalyst layer and of the apparatus diameter on the heat transfer process, the effect of

$Re = \frac{w \cdot d}{\nu}$ on the heat exchange process, and the effect

Fr on the heat exchange process. The last diagram also gave numerical values of Fr which made possible the determination of the optima velocities of the air for the investigated catalyst in laminar and turbulent flow; the respective equations are (5) and (6):

$$w_{opt.} = \sqrt{\frac{g \cdot d}{0.0415}} = 15.35 \cdot \sqrt{d}, \qquad (5)$$

$$w_{opt.} = \sqrt{\frac{g \cdot d}{0.00374}} = 51.2 \cdot \sqrt{d}. \qquad (6)$$

Heat Transfer From Fluidized Catalyst Layer to the Heat Exchange Surface. Communication 2

75666
SOV/80-32-10-15/51

There are 7 figures; and 10 references, 4 U.S., 6 Soviet. The U.S. references are: Dow, W. M., Jacob, M., Ch. Eng. Progr., 47, 12 (1951); Heerden, C., Nobel, A. P., Krevelen, D. W., Ind. Eng. Ch., 45, 6 (1953); Ju-Chin Chu, Fluidization, New York, 1956; Leva, M., et al., Ch. Eng. Progr., 45, 9 (1949); 48, 6 (1952).

ASSOCIATION: Leningrad Institute of Technology imeni Lensoveta (Leningradskiy Tekhnologicheskiy institut imeni Lensoveta)

SUBMITTED: April 24, 1958

Card 5/5

ANOKHIN, V.N.; TRABER, D.G.; MUKHLENOV, I.P.

Conversion of carbon monoxide in the fluidized bed of a catalyst.
Zhur. prikl. khim. 33 no.8:1740-1745 Ag '60. (MIRA 13:9)
(Carbon monoxide)

TRABER, D.G.; SARKTS, V.B.; MUKHENOV, I.P.

Heat transfer from the fluidized bed of granular materials to the surface of heat exchange. Zhur.prikl.khim. 33 no.10:2197-2205 O '60. (MIRA 14:5)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Heat--Transmission) (Granular materials)

MUKHLENOV, I.P.; TRABER, D.G.; SARKITS, V.B.

Heat transfer from the fluidized bed of gramular materials to the surface of heat exchange. Zhur.prikl.khim. 33 no.10:2206-2212 O '60. (MIRA 14:5)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Heat—Transmission) (Gramular materials)

MUKHLENOV, I.P.; TRABER, D.G.; MIKHALEV, M.F.; SHMEKKER, Ya.M.

Oxidation of sulfur dioxide in an apparatus with a fluidized catalyst bed. Khim.prom. no.1:42-46 Ja '61. (MIRA 14:1)

1. Leningradskiy technologicheskiy institut imeni Lensoveta i zavod "Krasnyy Khimik."

(Sulfur dioxide) (Fluidization)
(Oxidation)

MUKHLENOV, I.P.; TRABER, D.G.; SARKITS, V.B.; RUMYANTSEVA, Ye.S.; MIKHALEV, M.F.; SHMEKKER, Ya.M.; CHERNYAK, M.A.

Testing an apparatus for the oxidation of concentrated sulfur sioxide in a fluidized catalyst bed. Khim.prom. no.11:770-775 N '61. (MIRA 15:1)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta, i Leningradskiy zavod "Krasnyy khimik".
(Chemical apparatus) (Sulfur dioxide)
(Catalysis)

24000
S/080/61/034/006/001/020
D247/D305

AUTHORS: Mukhlenov, I.P., Traber, D.G., Romyanteseva, Ye.S., and Pomerantsev, V.M.

TITLE: Hydrodynamics of a fluidized catalyst bed under high pressure

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 6, 1961, 1181 - 1185

TEXT: With a continuous expansion of the chemical industry and increased demands for natural and synthetic gases, it has been found necessary to study more closely conversions and syntheses, based on carbon oxide, carried out in a fluidized bed, and to confirm the existing hydrodynamic equations for processes conducted under pressures exceeding 30 atm. in order to obtain data for more efficient construction of plants. The investigations were carried out with a gas mixture normally used in methanol synthesis under pressures of 1 - 30 atm. Temperature 15-20°C using spherical [illegible]

Card 1/

Hydrodynamics [illegible]

nules of catalyst of variable particle size, 0.75 - 4.5 mm. The experiments considered of measuring, under different conditions, the hydraulic resistance of the fluidized bed, Δp, determining critical velocity of gas corresponding to the transition of the solid from stationary to fluidized state, apparent gas velocity W_f, being calculated instead of real W_f, and determining the specific height of the fluidized bed H_{sp} in terms of a ratio of heights of bed in fluidized, H, and stationary, H_o, states. Under high pressures Δp has been found to exceed, in all cases, the ratio of the weight of the contact mass to the cross sectional area of the apparatus by 20 - 30 % and the final equation for Δp has been established as follows:

$$\Delta p = H_o(\gamma_T - \gamma_f)(1 - \varepsilon_o)$$

($\gamma_T = \gamma_S$ and $\gamma_f = \gamma_G$) where γ_S and γ_G - density of solid and gaseous phases; ε and ε_o - porosity of fluidized and stationary beds;

Card 2/4

24000
S/080/6[illegible]
D247/D305

Hydrodynamics of a ...

and [illegible] the coefficient of resistance of the fluidized bed. For pressures of [illegible] atm the coefficient showed a slight increase corresponding to 1.2 [illegible] depending upon the particle size of the [illegible]. The critical velocity of gas has been found to decrease with the increasing pressure, the effect being more pronounced for larger particles (d [illegible] 5.5 mm). The experimental results were worked out according to A.I. Ryzhkov, and N.A. Shakhova (Ref. [illegible]: I.F.Zh. [illegible] and who used equations (Ref. [illegible]: O.M. Todes, and A.K. Bondareva, Khim. nauka i prom. [illegible]) (Abstracter's note: Equations not given) and [illegible] pressures showed good agreement with the latter. For higher pressures 50 - 230 ata, Pomerantsev submitted the following equation

$$Re_{c} = 1.3\ Ar_{c}^{[illegible]},$$

where Re_{c} - Reynolds number and [illegible]

Card 5/[illegible]

24000
S/080/61/034/003/021

Hydrodynamics of a ... D2..

[illegible]

Ar - Archimedes number and d_e - equivalent ... (m) determined by Ryzha... method. ν - kinematic viscosity coefficient (m^2/sec), g - acceleration due to gravity. This equation is represented graphically. The experiments also established that intensive working of the ... mass is achieved for gas velocities corresponding to H_{g} ... under such conditions the solid mass is sat...ted ... while still maintaining a sufficiently high concentration of catalyst in the working space. There are 5 ..., ... and ... Soviet-bloc references.

SUBMITTED: November 29, 19..

Card 4/4

S/080/62/035/001/003/013
D245/D304

AUTHORS: Anokhin, V. N., Mukhlenov, I. P., Traber, D. G., Chekmov, O. S., Shekun, B. N., and Khiterer, R. Z.

TITLE: Study of the ammonia synthesis in a suspended catalyst layer

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 1, 1962, 37-42

TEXT: The authors studied NH_3 synthesis using a suspended layer of activated Fe catalyst (type ГК-1 (GK-1)) with an average particle diameter of 0.18 mm. The temperature dependence of the reaction rate was found to conform to the Arrhenius equation and the activation energy of the catalyst was calculated to be 41,000 kcal/kg-mole., which is in agreement with results obtained by other workers. At pressures of 100, 200 and 300 atm., and over the temperature range studied (400 - 560°C) the reaction rate depended considerably on the grain size of the catalyst. The linear rate of gas flow also affected the degree of uniformity of mixing the gaseous and fluidized catalyst phases and, accordingly, the reaction rates.

Card 1/2

S/080/62/035/001/003/013
D245/D304

Study of the ammonia ...

There are 7 figures and 21 Soviet-bloc references.

SUBMITTED: April 14, 1961

Card 2/2

MUKHLENOV, I.P.; TRABER, D.G.; ANOKHIN, V.N.; SAVILOV, D.M.; SHEKUN, B.N.

Synthesis of ammonia in a fluidized catalyst bed. Zhur. prikl. khim. 37 no.2:233-239 F '64. (MIRA 17:9)

1. Leningradskiy tekhnologicheskiy institut imeni Lenosoveta i Novomoskovskiy khimicheskiy kombinat.

YESELEV, I.M.; MUKHLENOV, I.P.; TRABER, D.G.

Use of iron catalysts in the contact-tower process. Zhur. prikl.khim. 37 no. 5:972-979 My '64. (MIRA 17:7)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

MUKHLENOV, I.P.; DOBKINA, Ye.I.; TRABER, D.G.; DERYUZHKINA, V.I.; FILIPPOVA, Z.G.

Effect of the concentrations of impregnating solutions on the chemical composition and structure of a mechanically strong contact vanadium mass. Khim. prom. 41 no.10:751-754 O '65. (MIRA 18:11)

YEGOROV, I.A.; [illegible]

Certain problems [illegible] contact-tower process. [illegible]

(MIRA 14:3)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

MUKHLENOV, I.P.; [illegible], D.G.; [illegible], Yu.I.

Mechanically resistant iron catalyst for the oxidation of sulfur dioxide. Khim. prom. no. 4:241-243 Ap '64. (MIRA 17:7)

YESELEV, I.M.; MUKHLENOV, I.P.; TRABER, D.G.

Use of an iron catalyst in the contact-tower process. Zhur. prikl. khim. 37 no. 4:722-727 Ap '64. (MIRA 17:5)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

POMERANTSEV, V.M.; MUKHLENOV, I.P.; TRABER, D.G.

Synthesis of methanol in a fluidized bed of catalyst. Zhur. prikl. khim. 36 no.4:754-764 Ap '63. (MIRA 16:7)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Methanol) (Fluidization)

TRABER, D.G.; POMERANTSEV, V.M.; MUKHLENOV, I.P.; SARKITS, V.B.

Heat transfer from a fluid-bed catalyst to the surface of heat exchange. Zhur.prikl.khim. 35 no.11:2386-2393 N '62. (MIRA 15:12)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Heat exchangers) (Fluidization) (Heat—Transmission)

PLOTNIKOVA, K.N.; Prinimali uchastiye: GORNAYA, K.A.; SHILINA, L.S.; KUZNETSOVA, V.K.; BOGDANOVA, E.I.; BASHILOV, S.P.; TRABER, I.G.; KAREVA, M.V.; KUZ'MINA, A.I.

Experience in the production of lavsan-cotton blend yarn in the "Trekhgornaya Manufaktura" and Kalinin Cotton Mills. Nauch.-iss. trudy TSNIKHBI za 1962 g.:166-175 '64. (MIRA 18:8)

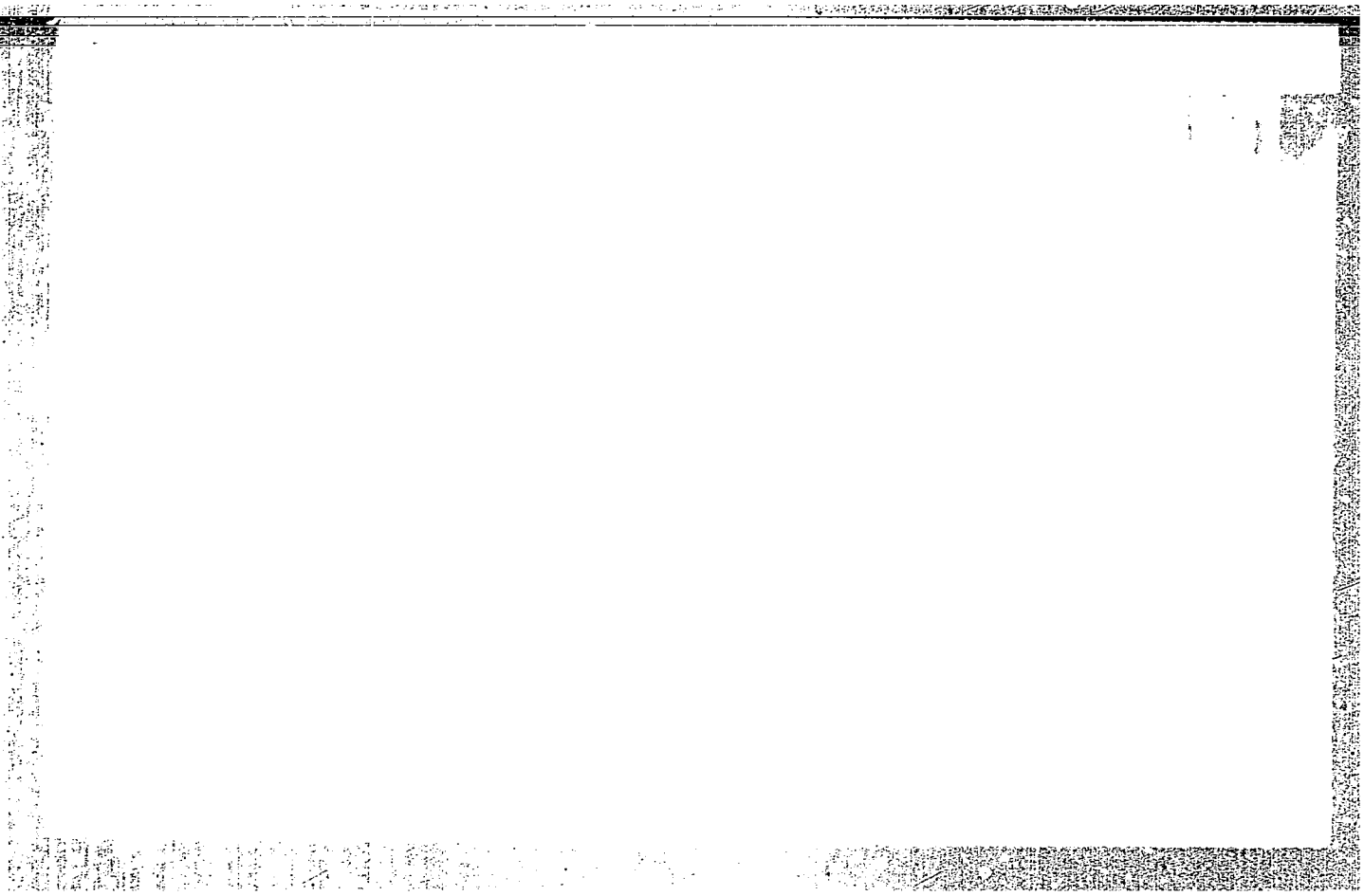
1. TSentral'noy nauchno-issledovatel'skiy institut khlopchatobumazhnoy promyshlennosti, Moskva (for Gornaya, Shilina). 2. Kalininskiy nauchno-issledovatel'skiy institut tekstil'noy promshlennosti (for Kuznetsova, Bogdanova). 3. Kalininskiy khlopchatobumazhnyy kombinat (for Bashilov), Traber). 4. Kombinat "Trekhgornaya manufaktura" (for Kareva, Kuzmina).

AMS - AMS

Bibliography on dew

JD 44 551.576.41

*Trabert, Wilhelm. Meteorologie. [Meteorology] Leipzig, 1896. 149 p. 49 figs., 7 tables, numerous refs. DLC On p. 110-111 the author discusses the problem of dew and hoar frost formation. Wells' theory of dew formation is correct in the author's opinion. Wollny's and Ryssel's investigations, however, showed that more vapor is derived from the earth than from the air. The quantity of water vapor given off by plants also causes dew formation. Hoffmann determined that the annual amount of dew is 7 mm, i.e., nearly 1% of the annual amount of total precipitation. *Subject Headings*: 1. Dew formation 2. Dew intensity 3. Wells' dew theory.



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756420013-2"

TRABININ, S.M.

"On Calculations of the Defraction Component of Turbulent Forces in Vessel Pitching on an Oblique Course."

report presented at the 11th Annual Scientific Technical Conference on Ship Theory, organized by the Central Administration of the Scientific-Technical Society of the Shipbuilding Industry, 13-15-December 1960.

S/182/60/000/011/015/016
A161/A029

AUTHOR: Trabinovich, D. L.

TITLE: Die for Manufacturing Perforated Strip

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No.11, pp.46-47

TEXT: Special perforating equipment used by some plants is cumbersome and slow in operation. The "Kuztekstil'mash" Plant has produced and is using a highly productive die for perforating steel strip in a continuous process from coils. Ready perforated strip is cut to lengths after the perforating. The die (Fig. 1) is designed for cam and crank presses and accommodates strip 393 mm wide. Perforations of 4 mm in diameter are punched in strip in staggered rows in a pattern (Fig. 3) with 4.5 mm space between the centers in horizontal direction and 2.75 mm in vertical direction, but in the bed die and the top die halves the respective center distances (between holes in the bed die and punches in the top) are 9 mm and 13.75 mm. It would be too difficult to manufacture a bed die with holes placed as closely as in ready strip and it would be broken promptly, so the close hole pattern is achieved by the punching sequence indicated

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Die for Manufacturing Perforated Strip

9/182/60/000/011/015/016
A161/A029

(Fig. 3). The top die half holds 79 punches (11), 40 in one row and 39 in the other. Besides, there are two trimming knives (13) 5.5 mm wide and 13 mm long, pressed into the punch holder. The bed die (2) is fixed with screws (10) and tapered pins (15) in a groove in the die body (1). Two more grooves are cut in the body for fixing the guide angle bars (17). The cut in the bottom side of the die body is designed for periodical pushing through of the cuttings in spots where the hole in the bed die does not coincide with the opening in the press table for the removal of the cuttings. Two guide linings (3) forming an extension of the guide bars (17) are provided with limit protrusions for moving the strip to the stop. The angle bars (6) are attached to the stripper plate (4) for rigidity. The two posts (14) make it easy to assemble the die halves and prevent the punches from breaking when the die is being installed in the press. The punch holder (18) is attached to the top pad (8) by screws (10). The lining (7) prevents pressing out of the punches in operation. The top pad is attached to the press slider by the shank (9). Perforation of 1.5 mm thick strip would normally require a pressure of 5,000 kg/cm^2 and a press effort of 77 tons, but the difference in the length of the punches (Fig. 2)

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Die for Manufacturing Perforated Strip

S/182/60/000/011/015/016
A161/A029

reduces the required effort by three times. Strip 393 mm wide is fed into the guides (17) (see Fig. 1) to the limit edges on the linings (3) spaced 11 mm from the center line of the first row of punches and in line with the rear side of the knives (Fig. 3). The first press stroke punches two hole rows A and A_1 (13.75 mm apart), and the knives trim the strip producing 5.5 mm wide protruding edges on both sides. When the punches rise, the strip moves on again to the limit edges (i.e., 5.5 mm) and thrusts against them. The second stroke punches the hole rows Б and $Б_1$, the third makes the rows B and B_1, then ГГ$_1$, ДД$_1$, ЕЕ$_1$ and so on. The die is produced by the following procedure. A preliminary machined bed die blank is hardened and tempered to a hardness of RC 60-62, then annealed, then finish-planed, preliminarily ground, drilled, reamed and machined to final dimensions with an allowance left for final grinding. Then follows the final heat treatment and final plane grinding. The finished bed die must be used as jig for drilling and reaming the punch holder and the stripper, for this is the only way to make the holes and punches match accurately. The high productivity of these dies and high accuracy of work pay off the production costs in a short time. They are recommended for mass-production. There are 3 figures.

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Die for Manufacturing Perforated Strip

S/182/60/000/011/015/016
A161/A029

Fig. 1

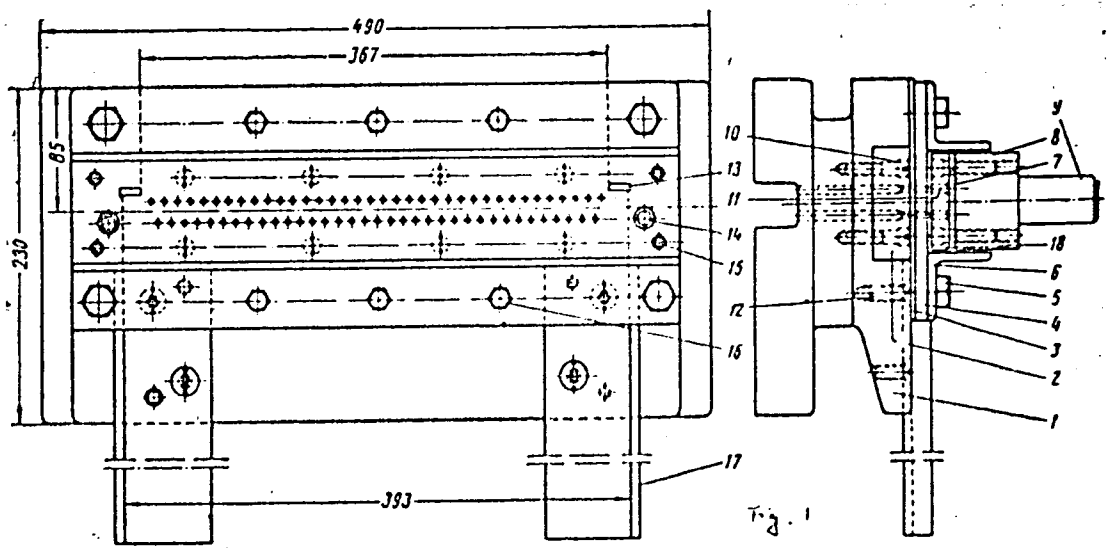

Fig. 1

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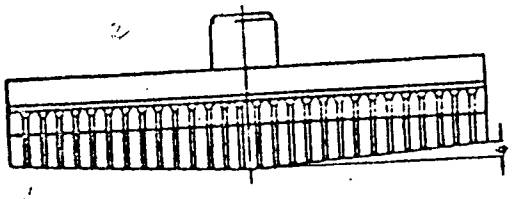
Die for Manufacturing Perforated Strip

S/182/60/000/011/015/015
A161/A029

Fig. 2



Card 5/6

Die for Manufacturing Perforated Strip

S/182/60/000/011/015/016
A161/A029

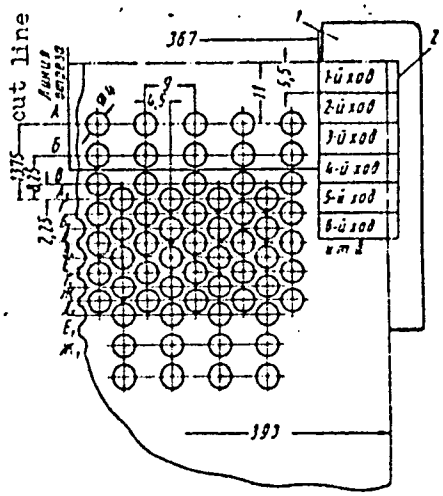


Fig. 3 - Punching pattern:
1 - the stopping lining edge;
2 - trimming knife

Card 6/6

TRABILOVICH, D.L.

Die for the manufacture of perforated strip. Kuz.-shtam. proizv. 2 no.11:46-47 N '60. (MIRA 13:10)
(Dies (Metalworking)) (Sheet-metal work)

TRABKA, Jan

Consciousness disturbances and electroencephalographic changes in a case of benign thalamic glioma. Neurol neurochir psych 12 no.6:847-854 N-D '62.

1. Klinika Neurochirurgii, Akademia Medyczna, Krakow. Kierownik: prof. dr A.Kunicki.

TRABKA, Jan

Consciousness disorders and EEG changes in the case of benign left thalamic glioma. Neurol. neurochir. psychiat. pol. 12 no.6:847-854 '62.

1. Klinika Neurochirurgii AM w Krakowie Kierownik: prof. dr A. Kunicki.

(GLIOMA) (BRAIN NEOPLASMS) (COMA) (THALAMUS) (ELECTROENCEPHALOGRAPHY)

TRABKA, Jan

Tumors of the central section of the brain in the electroencephalographic picture. Neurologia etc., polska 12 no.3:325-333 '62.

1. Z Kliniki Neurochirurgicznej AM w Krakowie Kierownik: prof. dr A. Kunicki.
(BRAIN NEOPLASMS) (ELECTROENCEPHALOGRAPHY)

TRABKA, Jan

Cerebral tumors of the central region in the electroencephalographic picture. Neurol neurochir psych 12 no.3:325-333 My-Je '62.

1. Klinika Neurochirurgiczna, Akademia Medyczna, Krakow. (Kierownik: prof. dr A. Kunicki). Krakow, ul. Botaniczna 3.

*

TRABKA, Jan

The EEG picture of subdural hematomas. Neurol. neurochir. psychiat. pol. 13 no.1:49-56 '63.

1. Klinika Neurochirurgiczna AM Krakow Kierownik: prof. dr A. Kunicki.
(HEMATOMA, SUBDURAL) (ELECTROENCEPHALOGRAPHY)

SEKULA, Jan; TRABKA, Jan; HALAMA , Andrzej

Nystagmographic evaluation of caloric nystagmus. Otolaryng. Pol. 18 no.4:467-471 '64

1. Z Kliniki Neurochirurgicznej Akademii Medycznej w Krakowie (Kierownik: prof. dr. A. Kunicki) i z Kliniki Otolaryngologicznej Akademii Medycznej w Krakowie (Kierownik: prof. dr. J. Miodonski).

TRABKA, Jan

Electroencephalographic evaluation of the amytal test. Neurol., neurochir., psychiat. Pol. 15 no.1:77-84 Ja-F'65.

1. Z Kliniki Neurochirurgicznej Akademii Medycznej w Krakowie (Kierownik: prof. dr. A. Kunicki).

ACC NR: AP6020024 SOURCE CODE: CZ/0079/65/007/003/0309/0309

AUTHOR: Gryglewski, R.; Marczynski, T.; Trabka, J.

ORG: Institute of Pharmacology, PAN; Academy of Medicine, Krakow

TITLE: Central nervous action of alpha-aminobutyrylcholine [This paper was presented at the 7th Annual Psychopharmacological Meeting, Jesenik, 20-23 January 1965.]

SOURCE: Activitas nervosa superior, v. 7, no. 3, 1965, 309

TOPIC TAGS: nervous system drug, neuron, serotonin, pharmacology

ABSTRACT: Alpha-aminobutyrylcholine (ABC) exerts a central action differing according to the site of application; it combines competitively with cholinergic receptors of neurons. In trophotropic structures where the cholinergic neurons are usually excited by serotonin, ABC blocks the cholinergic receptors and thus produces an anticholinergic and antiserotonin action. In ergotropic structures, its action resembles that of acetylcholine in high concentrations. [Orig. art. in Eng.] [JPRS]

SUB CODE: 06 / SUBM DATE: none

Card 1/1 JS

TRABSKAYA, YE. YE. (ENGINEER)

USSR (600)

Automobiles-Springs

Free swinging of spring-supported automobile bodies equipped with passive gyroscopic stabilizer. Eng Ye. Ye Trabskaya. (Trudy) NAMI No. 48 1947.

9. Monthly List of Russian Accessions, Library of Congress, September 1951, Uncl.

TRABSKAYA, Ye.Ye.; MINAYEV-TSIKANOVSKIY, V.A.

Dynamics of the acceleration of the inner cylinder of a combined washing machine. Sbor. nauch. rab. AKKH no.7:50-64 '61.
(MIRA 18:5)

TRABSKAYA, Ye.Ye.

Effect of gyroscopic moments on the dynamic strength of centrifuges. Nauch. trudy AKKH no.32:154-169 '64.
(MIRA 19:1)

TRABUN, M.A.; PRUPIS, M.A.

Special finishes of wool blends. Tekst. prom. 21 no. 4:38-40 Ap '61.
(MIRA 14:7)

1. Glavnyy inzhener Rostokinskoy kamvol'noy otdelochnoy fabriki (for Trabun). 2. Nachal'nik khimicheskoy laboratorii Rostokinskoy kamvol'noy otdelochnoy fabriki (for Prupis).
(Wool and woolen manufacture) (Textile finishing)

TRABUNOV, N.

With the help of the public at large. Mor. flot 23 no.11:7-8 N '63. (MIRA 16:12)

1. Predsedatel' komiteta partiyno-gosudarstvennogo kontrolya pri Estonskom parokhodstve.

TRAC, Bretslav, inz.

Saving of wood in packing techniques. Tech praca 14 no.4:292-2[illegible]

1. Vyvoj nabytkarskeho prumyslu, Brno.

HAVLICEK, Viktor, inz.; TRAC, Bratislav, inz.

Use of particle boards and flax drive boards in furniture production. Drevo 20 no.2:71-74 F '65.

1. Vyvoj nabytkarskeho prumyslu, Brno.

TRACEWSKI, C.

Opening of the new, Poland's only, center of rehabilitation for neurological and psychiatric diseases. Neurologia & polska 2 no. 5: 650-652 Sept-Oct 1952. (CLML 24:1)

1. Stron Slaski, District Bystrzyca, Wroclaw Region. 2. Director of the Center--Cz. Tracewski, M.D. 3. 800-1000 bed capacity, supposed to be doubled by 1953.

Ca

18

Utilization of waste products from the Rubezhnaya chemical works. M. S. Vasserman and E. L. Tsch... *Anilinokrasochnaya Prom.* 3, 97-9(1933).—The sludge, consisting of a mixt. of Fe_2O_3 and Fe_3O_4, obtained in the manuf. of NH_2Ph can be utilized for the production of abrasive powder. H_2S, present in condensation H_2O from evapg. vats, yields S with SO_2, also a waste product, which can alternatively be converted into $NaHSO_3$. Rejected and broken fireclay bricks can, after powdering, be used, together with 50% of the usual material, for the manuf. of the same type of brick. B. C. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

TRACH, V.

In a struggle for a high title. Sov.shakht. 10 no.3:5-6 Mr '61.
(MIRA 14:7)

1. Predsedatel' uchastkovogo komiteta profsoyuza shakhty imeni Rumyantseva.
(Coal mines and mining)

TRACH, V.

Technical improvement of communal enterprises. Zhil.-kom. khoz. 6 no.6:10-12 '56. (MLRA 9:12)

1. Glavnyy inshener Chkalovskogo oblastnogo otdela kommunal'nogo khozyaystva.
(Chkalov Province--Municipal services)

TRACH, V. K.

Trach, V. K. - "Harmonic [illegible]", Uchen. zapiski Kaz'k. [illegible] im. Gor'kogo, Vol. XXVII, Trudy Fiz. otd-niya Fiz.-mat. fak., Vol. I, [illegible], p. 121-29.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 8, 1949).

TRACH, V. N.

TRACH, V. N. - "The Fauna, Biology, and Methods of Liquidating Strongyli of Sheep in the Kiev Poles'ye." Acad Sci Ukrainian SSR. Inst of Zoology. Kiev, 1954. (Dissertation for theDegree of Candidate in Biological Sciences)

So; Knizhnaya Letopis' No 3, 1956

USSR/Zooparasitology - Helminths. G.

Abs Jour : Ref Zhur - Biol., No 15, 1958, 67532

Author : Trach, V.N.

Inst : Academy of Sciences UkSSR, Institute of Zoology.

Title : Material on the Helminthofauna of the Sheep of Kiev Poles'ye

Orig Pub : Sr. In-tu zool. AN URSR, 1957, 14, 32-42.

Abstract : In the years, 1952-1955, 70 sheep carcases were opened, and investigation of the fecalia disclosed that 100% of the sheep were infected with nematodes, 50% with trematodes, and 30% with cestodes. Of the nematodes the most common were: Ostertagia circumcincta, Chabertia ovina, Haemonchus contortus, Os. trifurcata, Trichostrongylus axei, T. columbiformis, Oesophagostomun venulosum, Nematodirus spathiger, Dictyocaulus filaria; of the cestodes: the representatives of the Moniezia genus; of the trematodes:

Card 1/2

USSR/Zooparasitology - Helminths. G.

Abs Jour : Ref Zhur - Biol., No 15, 1958, 67532

Fasciola hepatica. Maximal infectation of sheep with sexually mature strongylates was noted in spring and autumn, with fascioles -- in autumn and early spring, with Moniezia sp. -- in the June-September period. A description is given of new female forms from the Ostertagia and Haemonchus genera which cannot be regarded as independent species. It is impossible to determine the species of these genera until the corresponding males are discovered, and their morphological characteristics determined, since the females possess their own morphological modifications. The southern nematode species are not found in Kiev Poles'ye, obviously because of the natural-economic conditions of the zone. -- V.G. Gubina.

Card 2/2

USSR/Zooparasitology - Helminths. G-2

Abs Jour : Ref Zhur - Biol., No 10, 1958, 43390

Author : Trach, V.N.
Inst :
Title : Ascaridia (Ascaridia Galli) in Hen's Egg.

Orig Pub : Tr. In-tu zool. AN URSR, 1957, 14, 43.

Abstract : A case of discovery of a sexually ripe female A. galli in a hen's egg; a discription of the parasite is given.

Card 1/1

USSR/Zooparasitology - Helminths. G-2

Abs Jour : Ref Zhur - Biol., No 10, 1958, 43386

Author : Trach, V.N.
Inst :
Title : Classification of Round Worms, Genus Ostertagia Ranson, 1907.

Orig Pub : Ab. prats Zool. muzeyu. AN URSR, 1957, No 28, 108-115.

Abstract : Analysis of intraspecies changes in females of genus Ostertagia showed that only the morphological features of the male can serve to determine the species of the given genus.

Card 1/1

- 4 -

TRACH, V.N.

A new form of female worms of the genus Haemonchus Cobb. Zbir. prats' Zool. muz. AN URSR no.28:116-117 '57. (MIRA 11:5)
(Kiev Province--Nematoda)

AUTHOR: Trach, V.N. SOV-21-58-8-26/27

TITLE: Helminths of Sheep in the Crimean Highlands (Gel'minty ovets v gornykh rayonakh Kryma)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 8, pp 900-902 (USSR)

ABSTRACT: Thirty-eight helminthological examinations were carried out on sheep carcasses in the highlands of the Crimea. All animals proved to be infected by helminths. The lambs were more intensely infected by helminths than the adult sheep. On comparing the data obtained from helminth fauna in sheep of the Crimea and the Ukrainian SSR Poles'ye, the conclusion was drawn that sheep in the Crimea are more intensely infected by Trichostrongylus vitrinus, Trichocephalus ovis and Dicrocoelium lanceatum, and less intensely by species of the genera Haemonchus Ostertagia. In addition, Marshallagia marshalli and Nematodirus oiratianus are found in the Crimea. These are "southern" forms which are not encountered in the Poles'ye of the Ukrainian SSR. A particular menace for sheep raised in the Crimean highlands is presented by Dicrocela, Nematodirus and pulmonary forms of Strongilata. There is 1 table.

Card 1/2

Inst. Zoology AS Ukr SSR

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756420013-2"

TRACH, V. N.

"Certain Seasonal Characteristics of Young Strongyles in the Ukrainian Forest-Steppe."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Institute of Zoology of the Ukrainian Academy of Sciences

30(1) SOV/21-59-9-22/25

AUTHOR: Trach, V.N.

TITLE: Strongylates of Cattle in the Forest-Steppe Area of the Ukrainskaya SSR

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, Nr 9, 1959, pp 1024-1027 (USSR)

ABSTRACT: The article covers the result of investigations conducted in order to illustrate the species and the peculiarities of fauna formation of the cattle strongylates in the forest-steppe area of the Ukrainskaya SSR. For this purpose, 143 helminthologic incisions on cattle and calves were made, and 70 complexes of gastro-intestinal tracts were investigated. In consequence of this investigation, a 100%-infection of the cattle with helminths was stated. A particularly-strong distribution and a large number of such cattle strongylates as Ostertagia ostertagi, Trichostrongylus axei, Cooperia oncophora, Cooperia punctata, Nematodirus helvetianus and Haemonchus contortus was noted.

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Strongylates of Cattle in the Forest-Steppe Area of the Ukrainskaya SSR

Their number mostly did not exceed 200, with the exception of one species, the invasion intensity of which reached in one instance 500 specimen. Other species of strongylates were seldom encountered. The extensity of invasion, and the number of population, were to a considerable extent dependent on the natural conditions of the region, and particularly on the conditions of cattle feeding. It has also been stated that strongylates settle in certain parts of the organs. The seasonal changes in the population number of various strongylate species were not the same. According to this, they may be divided into three separate groups. The strongylate species and the intensity of infection by them change depending on the season, the peculiarities of the biology of individual strongylates, the physiological state of the animal organism, as well as

Strongylates of Cattle in the Forest-Steppe Area of the Ukrainskaya

on the environmental conditions of the hosts. There is 1 table and 1 Soviet reference.

ASSOCIATION: Instytut zoolohiyi AN URSR (Institute of Zoology of the AS UkrSSR)

PRESENTED: By O.P. Markevych, Member, AS UkrSSR

SUBMITTED: March 7, 1959

TRACH, V.N.

Material on a study of helminth parasites of cattle in the Ukrainian Poles'ye. Pratsi Inst.zool.AN URSR 15:43-45 '59. (MIRA 13:7)

(Poles'ye--Worms, Intestinal and parasitic)
(Parasites--Cattle)

TRACH, V.N.

Development and period of viability of invading larvae of some strongylids of sheep in the Poles'ye near Kiev. Pratsi Inst.zool.AN URSR 15:46-53 '59. (MIRA 13:7)
(Poles'ye--Strongyloidiasis)
(Sheep--Diseases and pests)

TRACH, V.N.

Resistance to freezing and dessication of invading larvae of certain strongylids of sheep. Pratsi Inst.zool.AN URSR 15:58 '59. (MIRA 13:7)
(Strongyloidiasis)

TRACH, V.N.

Helminths of sheep in the steppe districts of the Ukraine. Trudy Ukr. resp. nauch. obva paraz. no. 3:189-202 '64 (MIRA 19:1)

Marshallagia marshalli (Ransom, 1907) Orloff, 1933 of sheep in the steppe of the Ukraine. Ibid.:203-205

1. Institut zoologii AN UkrSSR.

TRACH, V.N.

Characteristics of the distribution of strongyles of sheep, goats and cattle in the forest-steppe of the Ukraine. Pratsi Inst. zool. AN URSR 30:40-51 '61. (MIRA 16:8)

TRACH, Yadviga[Tracz, Jadwiga] (Pabianitse, Pol'skaya Narodnaya Respublika); GRABETSKIY, A.[translator]

Precipitation of a catalyst on soluble glass. Khim. v shkole 17 no.4:78 Jl-Ag '62. (MIRA 15:10)

(Catalysts)

ТРАЧЕНКО А.А.

AUTHOR: Onopriyenko, V.P., Starshinov, B.N., Candidates of Technical Sciences and Trachenko, A.A., Sinitskiy, V.D., Freydin, L.M., Portnyy, L.Ya., Engineers. 133-9-2/23

TITLE: Operation of a Blast Furnace with 1.1 atm. Top Pressure. (Rabota domennoy pechi s davleniem do 1.1 ati)

PERIODICAL: Stal', 1957, No. 9, pp. 772 - 778 (USSR).

ABSTRACT: The influence of top pressure variation from 0.6 to 1.1 atm. on the operation of a large (1 386 m^3) blast furnace was investigated. The profile of the furnace is shown in Fig.1. Characteristics of burden materials and coke during the individual test periods are given in Tables 1 and 2. Operating factors are given in Table 3. Changes in the distribution of CO_2 along the throat radios in Fig.2, the composition and temperatures of the peripheral and top gas in Fig.3, the pressure drop with the height of the furnace in Fig.4, changes in the gas pressure along the furnace throat radius in Fig.5. Changes in the length of tap hole and furnace-operating indices during various testing periods are given in Tables 4 and 5, respectively. On the basis of experience gained, the following conclusions are drawn: an increase of top pressure from 0.6 to 1.1 atm., contributes to the development of the peripheral flow of gases. In such case, a decrease on the coke charge or an increase in the proportion

Card 1/3

Operation of a Blast Furnace with 1.1 atm. Top Pressure.

of direct (ore first) charges (with simultaneous dropping of the whole charge) leads to an increase in amount of ore charged to the periphery with a subsequent decrease in the peripheral flow. Static pressure along the furnace height changes lineary. On increasing pressure of gas in the throat from 0.11 atm. to 0.46 atm. and blast volume from 1 400 to 3 400 m^3/min, the blast pressure increased more than that of top gas, while the uniform drop of pressure along the height of the furnace was preserved. On increasing mean gas pressure in the furnace by an appropriate increase in driving rate, the blast pressure increases to the same extent as the pressure of gas in the throat. With a constant blast volume, the pressure of gas in the stack increases to a lesser degree than that in the throat. On transfer to a higher top pressure (1.1 atm.) the blast temperature can be increased by 20 - 50 °C and the driving rate increased by 2-6% (in comparison with operating conditions of a top pressure 0.6 - 0.8 atm). The operation of the furnace becomes smooth, but on decreasing top pressure back to 0.6 - 0.8 atm., the smoothness of the operation deteriorates. On increasing top pressure from 0.8 to 1.1 atm., the output of the furnace increased by 8.3% and the coke rate decreased by 2.9%. On decreasing pressure from 1.1 atm. to

 0.6 - 0.8 atm., the output of the furnace decreased by 5.0 - 9.3%

133-9-2/23

Operation of a Blast Furnace with 1.1 atm. Top Pressure.

and coke rate increased by 3.8 - 3.7% (recalculated on equal iron content in the burden). There are 5 tables and 5 figures.

ASSOCIATION: The Ukrainian Institute of Metals (Ukrainskiy Institut Metallov) Works im. Voroshilov (Zavod im. Voroshilova)

AVAILABLE: Library of Congress.

Card 3/3

TRACHENKO, M.I., starshiy nauchnyy sotrudnik; TURALEVSKIY, I.M., kand. biolog. nauk

Mechanizing the thermal disinfection of seeds. Zashch. rast. ot vred. i bol. 9 no.2:30-31 '64. (MIRA 17:6)

NECHAYEVA, Z.P.; TRACHENKO, S.S., kand.med.nauk; SINADSKIY, N.Ye., dotsent; OSNA, A.I., dotsent; KURILO, A.A.; PRIKHOD'KO, A.K.; MEZHENINA, Ye.P., kand.med.nauk

Reports on session of societies of traumatologists and orthopedists. Ortop.travm.i protez. 20 no.8:81-90 Ag '59. (MIRA 12:11)
(ORTHOPEDIC SOCIETIES)

TRACHIK, Vladislav (Moskva)

Functional state of higher segments of the central nervous system and the adrenopituitary activity [with summary in English, p.126]. Probl. endok. i gorm. 3 no.3:25-34 My-Je '57. (MIRA 10:10)

1. Iz kafedry normal'noy fiziologii (zav. - prof. M.A.Usiyevich) Moskovskogo ordena Lenina meditsinskogo instituta.

(ADRENAL CORTEX, physiology,
adrenopituitary funct., role of cerebral cortex, review (Rus))
(PITUITARYGLAND, ANTERIOR, physiology,
same)
(CEREBRAL CORTEX, physiology,
in adrenopituitary funct., review (Rus))

TRACHIK, VLADISLAV

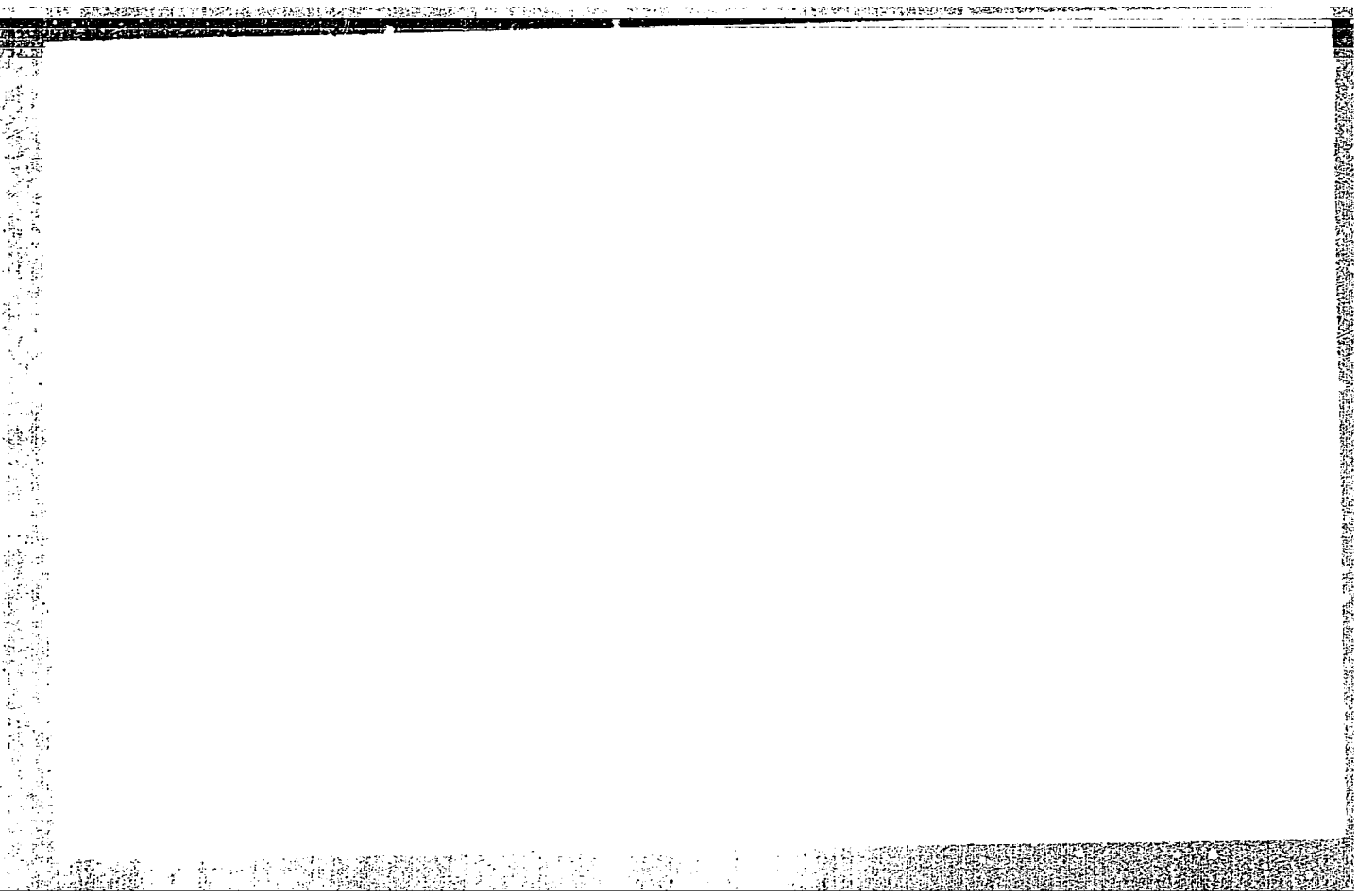
TRACHIK, VLADISLAV: "The functional state of the higher portions of the central nervous system and hypophysal-suprarenal activity" (Experimental investigation). Moscow, 1955. First Moscow Order of Lenin Medical Inst. (Dissertations for the degree of Candidate of Medical Sciences.)

SO: Knizhnava Letopis' No. 50. 10 December 1955. Moscow.

SOROKOVSKIY, S.P., inzh., ad"yunkt; TRACHIK, V.V., inzh., starshiy assistent

Automatic and remote control on Polish railroads. Avtom. telem.i sviaz' 4 no.8:45-47 Ag '60. (MIRA 13:8)

1. Varshavskiy politekhnicheskiy institut.
(Poland--Railroads--Signaling)



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756420013-2"

L 27427-66 EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HM/JG

ACC NR: AP6017780 SOURCE CODE: UR/0133/65/000/009/0855/0855

41
B

AUTHOR: Trakhimovich, V. I.; Gnuchev, S. M.

ORG: Central Scientific Research Institute of Ferrous Metallurgy im. I. P. Bardin (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)

TITLE: Hot ductility and crack resistance in welding 1Kh13M2BFR steel containing additions of cerium, lanthanum and yttrium

SOURCE: Stal', no 9, 1965, 855

TOPIC TAGS: ductility, induction furnace, rare earth metal, steel, boron/1Kh13M2BF steel

ABSTRACT: The steel was melted in a 40-kg induction furnace. Rare earth metals (REM) (98% pure) were introduced in a 0.01-0.15% quantity 3 minutes before tapping. Their residual contents, independent of the calculated addition, amounted to 0.003-0.010%. The combined or individual introduction of boron and REM into 1Kh13M2BF [sic] steel increases its ductility and crack resistance. Up to 0.004% boron increases these characteristics, but if it is more than 0.004% it decreases them. The addition of REM permits the preservation of these high indicators of ductility in steel containing up to 0.010% B. The introduction of REM into steel without boron offers the same effect as the best addition of boron. The high indicators of ductility and crack resistance in this case are obtained in the entire range of calculated and residual concentrations of REM investigated. The individual effect of cerium, lanthanum, or yttrium on ductility was not observed. [JPRS]

SUB CODE: 11, 13, 20 / SUBM DATE: none

Card 1/1 UDC: 669.18-412:621.746.753.001.5

Z/031/61/009/002/002/008
A205/A126

AUTHORS: Trachta, K and Sixta, J.

TITLE: Machining of rectangular holes with a broach

PERIODICAL: Strojírenská výroba, v. 9, no. 2, 1961, 69 - 70

TEXT: A simplified method for simultaneous machining of all holes for carbon brushes into brush holders by broaching on a hydraulic press is applied since 1959 at the "ČKD - Praha", National Enterprise, Branch Plant "Stalingrad" Formerly, each hole was slotted and sized separately, which was rather uneconomical and inaccurate. An obsolete hydraulic standard press for fireclay tiles was adjusted for precise sizing (Fig. 1). The table (1) is lifted (maximum 160 mm) through lever (2), controlling the distribution valve (3), and is moved back by 4 drawsprings (5). The broaching tool is hydraulically clamped between the fixed jaw (12) and the moving jaw (11). Jaw motion is controlled by the hand-operated valve (14), the cylinder (7) and the piston (8). The hydraulic unit consists of the tank (15), the lid (16), the electromotor (17) and a "ZHZD 40x4"-high-pressure pump system, comprising the main pump (40 liters/min) for table lift, and the auxiliary pump (4 liters/min) for the clamping device. The main pump has a

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Z/031/61/009/002/002/008
A105/A126

Machining of rectangular holes with a broach

50 atm relieve valve, the auxiliary pump a 10 atm relieve valve. The jig (21) is shown in Fig. 2. It consists of the base plate (1), 2 tubes (2), a pair of rails (3) and the stop (4) which secures proper position of brush holders. Sliding between the rails is the broach guide (5) which is held in upper position by the springs (6). Broaches are made of "20X2" steel, hardened to H_{RC} 62 - 64 on cutting edges, and come in sets of 3 or 5 (according to the number of holes). The first two sets have 13 cutting teeth, the third set has 16 cutting teeth and 3 sizing teeth. Cutting teeth are graded 0.03 mm, sizing teeth are 0.05 mm wider than required hole dimensions. The broaching process is described as follows: (1) the jig is placed on the press table; (2) the proper jaw is screwed to the liner of the clamping device; (3) the hydraulic unit is engaged, (4) broaches are inserted into guides of the jig, the table is lifted and the broaches are clamped; (5) the jig is secured with screws and the table is lowered; (6) the brush holder is placed on the jig, (7) the table is lifted, holes are pierced and clamping jaws are released; (8) the table is lowered and the broached holder is stripped from broaches which rest in the guides. The table is lifted again, the broaches are clamped, chips are removed by an air blast, the table is lowered again and a new brush holder is placed on the jig. The described broaching method improves

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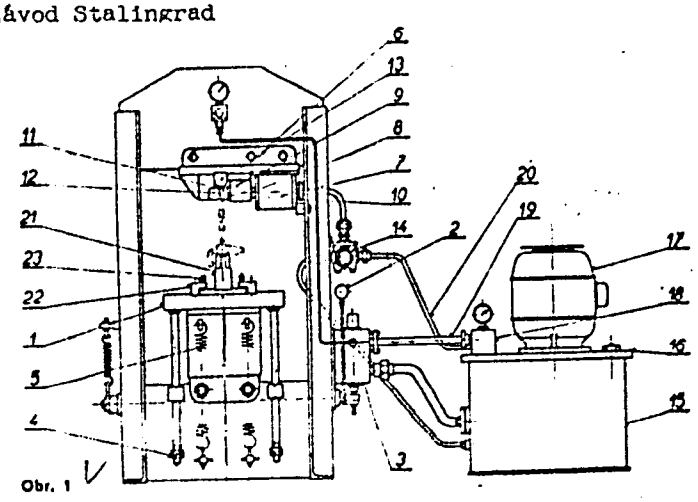
Z/031/61/009/002/002/008
A205/A126

Machining of rectangular holes with a broach

the quality and increases productivity 300 - 400%. There are 3 figures and 3 photos.

ASSOCIATION: ČKD Praha, n.p. závod Stalingrad

Fig. 1: Schematic diagram of hydraulic press



Obr. 1

Card 3/4

L 27063-66 EWT(d)/T/EWP(1) IJP(c) BB/GG

ACC NR: AP6017437 SOURCE CODE: UR/0096/66/000/003/0029/0034

AUTHOR: Gil'man, G. I. (Engineer); Trakhtenberg, M. D. (Engineer); Shal'man, M. P. (Engineer)

ORG: none

TITLE: Usage of information computers in control systems of thermal power units

SOURCE: Teploenergetika, no. 3, 1966, 29-34

TOPIC TAGS: thermoelectric power plant, computer, automatic control system

ABSTRACT: This is a description of a control system for a 300 Mw unit using an informati computer which performs the functions of digital registration of parameters, signalization of deviations, computation of technico-economic indices and checking of parameters upon operator demand. The computer, with 500 points of control, performs interrogation of transducers to seek deviations of parameters no less often than each 10 seconds. Each instrument on the control panel can carry the indications of up to 40 transducers, greatly reducing the amount and difficulty of reading the control panel. When a signal light lights up to indicate deviation of a constantly monitored parameter, the light flashes and a sound signal is heard to attract the attention of the operator. A block diagram of the computer is presented. The computer uses a single-address instruction system with 30 instructions in its repertoire. Input rate for information is 200 numbers per second; printout rate is 10 digits per second. Orig. art. has: 2 figures and 2 tables. [JPRS]

SUB CODE: 10, 09 / SUBM DATE: none

Card 1/1 UDC: (621.18+621.165)681.142.37.001.3

TRACHTULEC, Jan, promovany geolog

Drainage of quarries in Luzice lignite basin. Uhli 3 no.11:382-384 N '61.

1. Sdruzeni Severoceskych hnedouhelnych dolu, Most.

HURNIK, Stanislav, p.g.; TRACHTULEC, Jan, p.g.

The drainage of quick sand strata in North Bohemian Lignite District. Uhli 4 no.2:58-60 F '62.

1. Vyzkumny ustav pro hnede uhli v Moste (for Hurnik). 2. Sdruzeni severoceskych hnedouhelnych dolu, Most (for Trachtulec).

DVORAK, Jaroslav; MUSIL, Rudolf; SEKANINA, Josef; ZUREK, Vladimir; TRACHTULEC, Jan; VODA, Oldrich; CHLUPAC, Ivo; HOMOLA, Vladimir; PESEK, Jiri; ZAK, Lubor; GASPARIK, Jan

Activities of the branches of the Czechoslovak Society for Mineralogy and Geology in Brno, Most, Olomouc, Ostrava, Praha and Zilina. Cas min geol 7 no.3:385-392 '62.

TRACHTULEC, Jan, promovany geolog

"Hydrogeologist's handbook" by M.E. Altovskij [Al'tovskiy, M.E.]. Reviewed by Jan Trachtulec. Uhli 5 no.4:151 Ap '63.

1. Sdruzeni Severoceskych hnedouhelnych dolu, Most.

TRACHTULEC, Jan, Ing.

Mine waters in the opencast mines of the north Bohemian coalfield and methods of their draining. Uhli 6 no.1 9-13 Ja'64.

1. Sdruzeni Severoceskych uhelnych dolu, Most.

TRACHTULEC, Jan

On the origin of thermal springs in the Retenice spring zone in Teplice. Cas min geol 9 no.2:154-159 '64.

1. Sdruzeni severoceskych hnedouhelnych dolu, Most.

TRACHTULEC, Jan, promovany geolog

"Experience in draining mineral deposits under complicated hydrogeological conditions." Reviewed by Jan Trachtulec. Rudy 12 no. 3: 101 Mr '64.

1. Sdruzeni Severoceskych hnedouhelnych dolu, Most.

CZECHOSLOVAKIA

THAUTHIL, J.

Association of Northern Bohemian Li ht Brown Coalmines (Sdruzeni severoceskych hnedouhelnych dolu), Most

Prague, Casopis pro mineralogii a geologii, No 2, 1963, pp 155-158

"The Origin of Thermal Waters on the Retenice Spring Line at Teplice."

TRACHUK, M.

First fire-prevention exhibitions in Russia. Pozh.delo 4 no.8:22 Ag '58. (MIRA 11:9)

1. Starshiy prepodavatel' pozharno-tekhnicheskogo uchilishcha, L'vov.

(Fire prevention--Exhibitions)

TRACHUK, M. (L'vov)

Excellent city fire department. Pozh.delo 5 no.12:19-20 D '59. (MIRA 13:4)
(Nesterov(L'vov Province)--Fire departments)

TRACHUK, N. A.

In the Ukrainian Scientific Pharmaceutical Society. Apt.delo 4 no.1: 52 Ja-F '55 (MLRA 8:4)

1. Otvetstvennyy sekretar' Ukrainskogo otdeleniya Vsesoyuznogo nauchnogo farmatsevticheskogo obshchestva.
(PHARMACOLOGY - PERIODICALS)

TRACHUK, S. V.

77-1-31/32

AUTHORS: Trachuk, S. V. , Voronin, N. N. (Deceased)

TITLE: The Electroreduction of Oxygen on a Porous Chromium Cathode (Elektrovosstanovleniye kisloroda na poristom khromovom katode)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 1, pp. 201-203 (USSR)

ABSTRACT: The oxygen-reduction-process on a porous chromium electrode at a simultaneous transmission of oxygen and air through the electrode pores in a 1 N NaOH solution was investigated here. It was stated that the velocity of oxygen-ionization depends on the mode of oxygen supply to the working surface of the electrode, on the temperature of the electrolysis, the concentration of the base, the partial pressure of the oxygen above the electrolyte, i.e. on the size of grain of the metallic powder, on the ram pressure and the kind of sintering. Good results were obtained with: electrodes of fine fraction of the chromium powder with a dispersion of 20 - 30 μ, which was compressed under 1200 kg/cm^2 at 800°C (for 4 hours in a hydrogen atmosphere). The porosity of the electrode amounted to 55 - 62 %. It was shown that the increase of velocity of the air passing through the electrode causes an essential decrease of the cathode potential, especially, if the air is replaced by oxygen. A quantitative evaluation is given for the dependence of the cathode

Card 1/2

The Electroreduction of Oxygen on a Porous Chromium Cathode

potential on the oxygen partial pressures in the presence of constant current density and equal oxygen consumption.
It is stated that the porous electrodes show a sufficient strength and corrosion stability. After a continuous operation of 150 hours their corrosion properties do not deteriorate. Consequently, these electrodes are interesting for industrial electrolysis. There are 3 figures, and 9 references, 7 of which are Slavic.

ASSOCIATION: Polytechnical Institute, Kiyev
(Kiyevskiy politekhnicheskiy institut)

SUBMITTED: November 20, 1956

AVAILABLE: Library of Congress

Card 2/2

88708

S/076/61/035/001/006/022
B004/B060

9,4100 (1003, 1105, 1140)
26.2521

AUTHOR: Trachuk, S. V.

TITLE: Study of oxygen depolarization of porous cathodes made from metals of the chromium group

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 1, 1961, 102-111

TEXT: The development of powder metallurgy made it possible to manufacture sintered porous electrodes with a surface much larger than that of smooth electrodes. Following a series of articles by N. N. Voronin (Refs. 13-16), the author studied the behavior of sintered Cr, Mo, and W electrodes for the purpose of a) accelerating the reduction of O_2 at high current densities; b) studying the cathodic process of O_2 depolarization; c) studying the possibility of obtaining H_2O_2. The experiments were made with the apparatus shown in Fig. 1. The electrode to be tested (2) was placed in electrolyzer (1). Inlet tube (3) served for connecting reference electrode (12) which was composed of HgO + 1 N NaOH for tests with alkaline

Card 1/5

Study of oxygen depolarization ...

solutions, and of Hg_2SO_4 + 1 N H_2SO_4 for tests with acid solutions. Inlet tube (4) contained a thermometer. (5) is a tap for emptying the electrolyzer; (6) is a platinum electrode 30 mm in diameter; (7) is a pressure gauge; (8) is an outlet for air or O_2; (9) is a regulating tap; (10) is an inlet for air or O_2; and (11) is a pressure gauge. The cathode space was cooled with running water. Experiments were carried out in 1 N NaOH or H_2SO_4 at 17°C. The electrodes were made from metal powder (grain size 5-60μ) and pressed onto a substrate of iron powder. 10-15% of a 5% gasoline solution of rubber was added as a binder. Porosity was increased by adding $(NH_4)_2CO_3$. Optimum conditions were: pressure of 1200 kg/cm^2, sintering temperature of 800°C, and a duration of 4 hr (for Cr electrode); 2000 kg/cm^2, 1000°C, 4 hr (Mo electrode); and 3000 kg/cm^2, 1300°C, 7 hr (W electrode). The diffusion coefficient D*, the coefficient m_o of permeability to gas, and the porosity V_o were determined according to V. A. Royter and G. P. Korneychuk. From this, the mean pore diameter d, the number N of pores, and their length l were calculated. Table 1 gives

Study of oxygen depolarization ...

these data for Mo before and after electrolysis:

Electrode	D^*, cm^2/sec	m_o, $cm^3/cm^2 \cdot sec \cdot atm$	V_o, cm^2/cm^3	d, cm
before experiment	$1.23 \cdot 10^{-2}$	7.14	0.534	$1 \cdot 10^{-3}$
after experiment	$2.93 \cdot 10^{-2}$	8.55	0.637	$0.71 \cdot 10^{-3}$

N	l, cm
$0.46 \cdot 10^6$	1.47
$1.53 \cdot 10^6$	1.04

During the electrolysis, the electrode was oxidized and covered with hydrates, which resulted in a decrease of the pore diameter. The number of "blind passages" increased due to corrosion. In the case of Cr, the reduction rate of O_2 was 250-280 ma/cm^2. In the case of Mo, there was no liberation of hydrogen even at 400 ma/cm^2. At commercial current densities (70-80 ma/cm^2), the cathode potential was lowered by 0.885 v (Cr), 1.04 v (Mo), and 0.87 v (W). Small amounts of H_2O_2 were formed on Cr and W:

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Study of oxygen depolarization ...

0.03 g/l on the Cr electrode when blowing air through the electrolyte (current output, 2%), and 0.44 g/l in alkaline solution. Blowing O_2 through alkaline solution increased the H_2O_2 concentration to 1 g/l (current output, 12%). No H_2O_2 was formed on Mo. Commercial production of H_2O_2 is thus impossible. However, drinking water can be purified with these small amounts of H_2O_2. Fig. 6 shows the reduction rate of O_2 as a function of the NaOH concentration, and Fig. 7 shows dto. as a function of temperature. Table 2 illustrates the influence of the partial pressure of O_2. Depolarization is improved by increasing the temperature, partial pressure, and flow of the depolarizer. The differences in the course of O_2 reduction on the three electrodes studied is explained. On Cr and W, molecular O_2 is ionized at low current density. Electron addition to O_2 leads to the formation of H_2O_2. On Mo, this reaction is immediately followed by the splitting of O_2 into an O^- ion and an O atom. At high current density,