FILIMONOV, V.A.

Beta-decay of -hyperons and the spins of light hyper-nuclei. Izv.vys.ucheb.zav.; fiz. no.3:89-97 '63. (MIRA 16:12)

1. Nauchno-issledovatel'skiy institut pri Tomskom politekhnicheskom institute imeni S.M.Kirova.

FILIMONOV, V.A.

Decay of the Σ^+p hypernucleus. Zhur. eksp. i teor. fiz. 45 no.6:1954-1959 D '63. (MIRA 17:2)

1. Institut yadernoy fiziki, elektroniki i avtomatiki Tomskogo politekhnicheskogo instituta.

MASLYUKOV, A.P.; FILINKOV, V.A.

Laboratory apparatus for studying the high-speed pyrolysis of sour mazut in the gas suspension of a solid heat carrier. Izv. vys. ucheb. zav.; neft' i gaz no. 5:107-112 '64
(MIRA 19:2)

ACC NR: AT7006846 SOURCE CODE: UR/0000/66/000/000/0101/0110

AUTHOR: Pechuro, N. S. (Professor, Doctor of technical sciences); Pesin, O. Yu.; Filimonov, V. A.

ORG: none

TITLE: Effect of electrode diameter and stock circulation on the decomposition of liquid hydrocarbons in electric discharges

SOURCE: Moscow. Eksperimental'nyy nauchno-issledovatel'skiy institut metallorezhushchikh stankov. Khimicheskiye reaktsii organicheskikh produktov v elektricheskikh razryadakh (Chemical reactions of organic products in electric discharges). Moscow, Izd-vo Nauka, 1966, 101-110

TOPIC TAGS: electrocracking, arc discharge, petroleum product, hydrocarbon

ABSTRACT: The effect of outer and inner electrode diameter and stock circulation on the electrocracking of a petroleum product was studied under both stationary and dynamic conditions in a low-voltage alternating-current arc. The quantity of stock was varied from 0 to 17.0 liters/min, and the power of the arc discharge from ~0.4 to 4.0 kW. It was found that an increase in the amount of circulating stock and inner electrode diameter and a decrease in the outer diameter permit an increase in the yield of gas per unit time and the acetylene content of the gas. It is shown that the influence of D, d and Q manifests itself in a change of the volume velocity

Card 1/2

ACC NR: AT7006846

of the stock in the interelectrode gap; this velocity determines the power of the arc and the yield and composition of the gas. An increase in the volume velocity decreases the specific consumption of electric energy per nm^3 of C_2H_2; under optimum conditions, this value amounts to ~7.6 kW hr at an acetylene concentration of ~36-37%. Orig. art. has: 4 figures, 7 tables and 1 formula.

SUB CODE: 11, 07 SUBM DATE: none/ ORIG REF: 003

Card 2/2

FILIMONOV, V.G. (MOSKVA)

Conditioned reflex chamber for the study of higher nervous activity in rats by defense methods. Pat.fiziol. i eksp.terap. 3 no.6:64-65 N-D '59. (MIRA 13:3)

1. Iz kafedry patologicheskoy fiziologii (zaveduyushchiy S.M. Pavlenko) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(CENTRAL NERVOUS SYSTEM physiol.)
(REFLEX CONDITIONED)

FILIMONOV, V.G.

Method of electrode implanation in the nerve for reading biopotentials in a chronic experiment. Fiziol. zhur. SSSR 46 no. 9:1165-1167 S '60. (MIRA 13:10)

1. From the Chair of Pathological Physiology, Sechenov First Medical Institute, Moscow.
(ELECTROPHYSIOLOGY)

FILIMONOV, V.G. (Moskva)

Technology of fising "AKR-7" plastic in making an electrode holder for recording cerebral currents. Pat.fiziol.i eksp. 5 no.1:70-72 Ja-F '61. (MIRA 14:6)

1. Iz kafedry patologicheskoy fiziologii (zav. - prof. S.M.Pavlenko). I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(ELECTROENCEPHALOGRAPHY) (ACRYLIC RESINS)

SUCHKOV, V.V.; FILIMONOV, V.G.

Multichannel photoelectronic rheograph. Fiziol. zhur. 47 no.11: 1434-1439 N '61. (MIRA 14:11)

1. From the Laboratory for Physiology of Abnormal Bodily Reactivity, I.M.Setchenov Medical Institute, Moscow.
(BLOOD--CIRCULATION) (LABORATORIES--APPARATUS AND SUPPLIES)

FILIMONOV, V.G. (Moskva)

Device for recording respiration. Pat. fiziol. i eksp. terap. 6 no.3:74-75 My-Je '62 (MIRA 17:2)

1. Iz laboratorii po izucheniyu reaktivnosti pri kafedre patofiziologii (zav. - prof. S.M. Pavlenko) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

FILIMONOV, V.G. (Moskva)

Modified electrophysiological indices of the cerebral cortex, hypothalamus and vagus nerve under the influence of sensitization of the body. Pat. fiziol. i eksp. terap. 6 no.6:45-51 N-D'62 (MIRA 17:3)

1. Iz laboratorii po izucheniyu reaktivnosti organizma pri kafedre patofiziologii (zav. - zasluzhennyy deyatel' nauki RSFSR prof. S.M. Pavlenko) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

FILIMONOV, V.G. [Filimonov, V.H.]

Photostimulator for electroencephalographic studies. Fiziol. zhur. [Ukr.] 10 no.3:411-413 My-Je '64. (MIRA 18:9)

1. Kafedra patologicheskoy fiziologii 1-go Moskovskogo meditsinskogo instituta im. Sechenova.

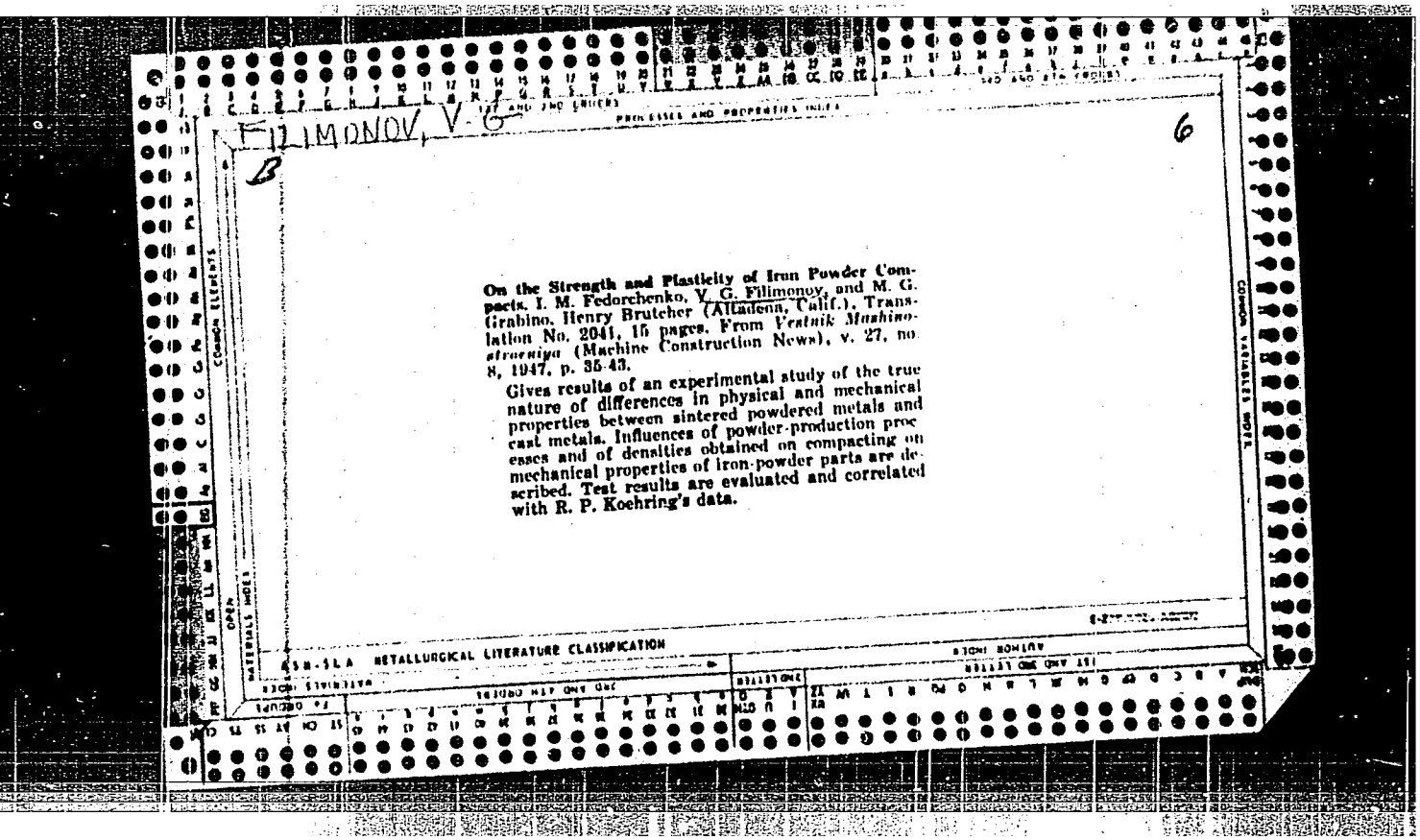
ABINDER, A.A.; FILIMONOV, V.G.

Effect of the changed state of the nervous system on the development of protein sensitization of the organism. Pat. fiziol. i eksp. terap. 9 no.3:76-77 My-Je '65. (MIRA 18:9)

1. Kafedra patofiziologii (zav.- prof. S.M. Pavlenko) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

GRABINO, M.G., inzhener; FILIMONOV, V.G., inzhener.

Iron powder production for metal-ceramic parts. Vest.mash.27 no.11: 54-60 N '47. (Powder metallurgy) (MLRA 9:4)



FILIMONOV, V. G. TA 2/4-T45

USSR/Engineering Jul 48
Machinery - Construction
Metallurgy, Powder

"Mechanization of the Process of Pressing Parts From Iron Powder," V. G. Filimonov, Engr, 4 pp

"Vest Mashinostroy" No 7

Discusses basic construction of mechanical and hydraulic presses. Mechanical presses are easier to operate and are performing satisfactorily in production of small-size parts. Describes basic principles and operations of the mechanical press. 2/49T45

USSR/Engineering (Contd) Jul 48

Includes sketches of press parts.

2/49T45

Filimonov, V. G.

414. Filimonov, V. G., Construction of curves of true stress from tests of porous metal-ceramic specimens (in Russian), Zavod. Lab. 21, 1, 82-84, 1955; Ref. Zh. Mekh. 1956, Rev. 5002

In order to determine the true stresses during compression in a metal-ceramic porous material on the basis of the author's experiments, the following formula is recommended

In which P is the compressing force, F is the original area [illegible] cross section, and ε is the axial deformation.

Courtesy Referativnyi Zhurnal

Translation, courtesy [illegible] supply, England

FILIMONOV, V.G.

"Using metal ceramics in machinery industry" by V.S.Rakovskii, V.V. Saklinskii. Reviewed by V.G. Filimonov. Vest.mash. 37 no.6:89-91 Je '57. (MLRA 10:7)

(Powder metallurgy) (Cermets)
(Rakovskii, V.S.) (Saklinskii, V.V.)

V.G. FILIMONOV

4000

Influence of impregnation on compression strength of sintered iron. V. G. Filimonov. (Vestnik Mashinostroe-niya 35, No. 1, [illegible] Cylindrical specimens made of Fe powder (sp. gr. 2.15) compressed and sintered [illegible] were impregnated for 1 hr. and 30 min. at 12[illegible] and cylinder oil and with paraffin [illegible] was tested at room temp., both in the original [illegible] nated state. A diagram plotted for Fe with 25[illegible] shows that impregnation lowers the compression strength of the metal inversely proportional to the fluidity of the impregnant at room temp. The reduction in strength for these impregnants was, resp., 8, 40, and 52%.

J. D. Gat

LTR

25281 S/122/60/000/002/014/018
A161/A130

11600

AUTHOR: Filimonov, V. G.

TITLE: Producing porous bimetal and other two-layer cermet articles

PERIODICAL: Vestnik mashinostroyeniya, no. 2, 1960, 68 - 71

TEXT: The existing technology of making of bimetal parts (e.g., bearing bushings) is slow because of several pressing operations and hand-operated press molds, and the bond between layers is weak, for the layers are pressed separately. A new method consists in the use of a special mold filling device (Fig. 1) which is composed of a case casing (1), an internal cone (2), a centring crosspiece (3) and a dividing cylinder (4). The crosspiece is fixed by brazing or welding in cuts of the cone (2), then together with the cone (2) in the case casing. The dividing cylinder (4) has four slots on the bottom side for setting on the crosspiece. The whole filling device is installed on the tray of a stationary press mold, in guides (6). Two different powders are filled into spaces inside and outside the dividing cylinder. A set of dividing cylinders enables different combinations of metal layer thicknesses to be attained. The different powders are filled into the die and pressed simultaneously, and the bond between the layers is as strong as in

Card 1/6

Producing porous bimetal and other...

single metal. The dividing cylinder diameter is found by known as well as the inner and outer diameters of the die, the thickness of one layer, and the running capacity of the two metal powders. When their running capacity is not the same, the dividing cylinder diameter formula is

$$\Pi_a l_a = \Pi_b (A + l_a), \qquad (1)$$

from which it follows that

$$l_a = \frac{A}{1 + \frac{\Pi_a}{\Pi_b}} \qquad (2)$$

where Π_a is the running capacity of powder a in g/sec; Π_b - the same of the powder b; l - the space between the inner die diameter and the inner diameter of the dividing cylinder, in cm; A - the wall thickness of the pressing (or the die cavity width), in cm. For convenience l can be expressed in diameters. Then the mean diameter of the dividing cylinder for obtaining an inner layer with thickness h_a from the powder a must satisfy the relation

Card 2/6

Producing porous bimetal and other...

$$D_{4a} = d_{BH} + \frac{2A}{1+\frac{n_a}{n_b}} \qquad (3)$$

where D_{4a} is the mean diameter of the dividing cylinder in cm; d_{BH} - the inner diameter of the die cavity in cm. If $h_a \neq n_b$, when the internal powder a layer must be n times thinner than the outer b layer:

$$D_{4a} = d_{BH} + \frac{2A}{1+\frac{nn_a}{n_b}},$$

and if the powder n layer has to be n times thinner than the a powder layers

$$D_{4a} = d_{BH} + \frac{2A}{1+\frac{n_a}{nn_b}} \qquad (5)$$

A practical calculation example is included. The calculated diameter needs corrections (because of the shaking of the die on the working press, heterogeneity of

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25211 B/129/60/000/002/014/018
A161/A130

Producting porous bimetal and other...

the powder, different surface finish of the die, etc.). Bimetal bushings have been manufactured using this method, part of them with the inner layer of copper and the outer from iron, baked in 1,000°C in generator gas. The layers could not be separated in tests. As it is difficult to obtain a firm iron layer with an inner bronze layer (because of two different melting points), the following process is recommended for this case: 1) To press the bimetal bushings so as to reach a porosity 5 - 7% higher than final wanted; 2) sinter at bronze sintering point (800 - 900°C) for 2 h; 3) compress the bushings to final dimensions and porosity; 4) sinter again for 2 h at the same temperature. The resulting bond is not weaker than in bushings produced using the conventional technology and 1,200°C for sintering. The first pressing is to be performed in the described charging device, and the concentrical second pressing (after first sintering) in a special die, in the following way. The presintered bushing is to be placed between cams; a top crossarm lowered to make a shell exert pressure on the cams that will press on a bushing; the bushing will be compressed and densened. When the crossarm descends further, the cams stay immobile, and a top punch will reach the bushing and push it down together with the center core into a die cavity until it thrusts at a bottom punch. The ready bushing is ejected by the bottom punch from pressure exerted by a piston.

Card 4/6

When the crossarm retracts, the cams are released and returned into initial position by leaf springs. The installing of bushings into the die and the ejection can be automated. There are 4 figures and 2 Soviet-bloc references.

Card 5/6

Producing porous bimetal and other...

Fig. 1.

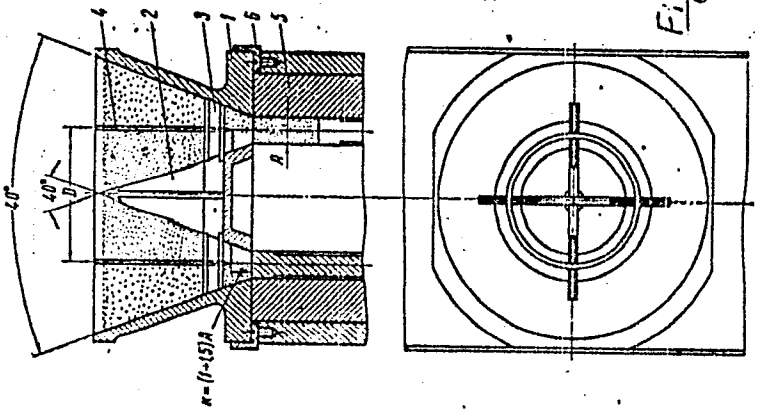

Fig. 1

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RAKOVSKIY, V.S.; SAKLINSKIY, V.V.; FILIMONOV, V.G., inzh., retsenzent; MARTENS, S.L., inzh., red.; GORDEYEVA, L.P., tekhn. red.

[Powder metallurgy in the machinery industry] Poroshkovaia metallurgiia v mashinostroenii; spravochnik. 2 izd., ispr. i dop. Moskva, Mashgiz, 1963. 101 p. (MIRA 16:8)
(Powder metallurgy--Handbooks, manuals, etc.)

ACCESSION NR: AP4042898 S/0119/64/000/007/0010/0012

AUTHOR: Kalatozishvili, N. I. (Candidate of technical sciences); Filimonov, V. N. (Engineer)

TITLE: Remote discrete liquid-level gauge

SOURCE: Priborostroyeniye, no. 7, 1964, 10-12

TOPIC TAGS: level gauge, liquid level gauge, remote level gauge, discrete level gauge

ABSTRACT: A remote measuring device consists of a photoconverter sensor and a decoder receiver with digit indication. The continuous variation in the liquid level is converted into a binary-decimal code which is transmitted over a 2-wire circuit. A self-explanatory sketch of the sending end is given in Enclosure 1. A laboratory model of the device "was built and tested." Orig. art. has: 2 figures.

ASSOCIATION: Institut elektroniki, avtomatiki i telemekhaniki AN GruzSSR (Institute of Electronics, Automation and Telemechanics, AN GruzSSR)

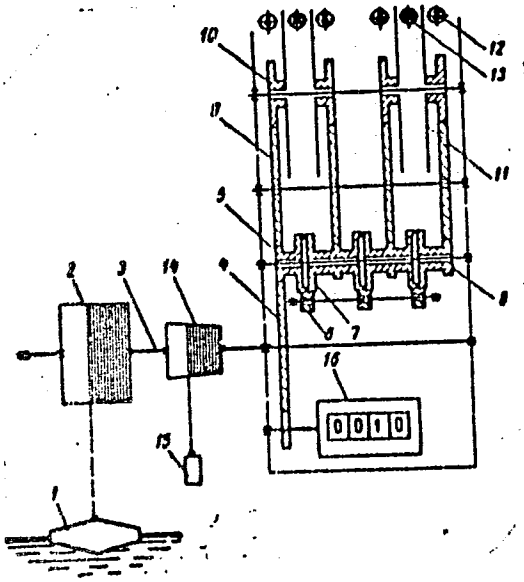
SUBMITTED: 00 ENCL: 01

SUB CODE: IE NO REF SOV: 001 OTHER: 000

Card 1/2

ACCESSION NR: AP4042898

ENCLOSURE: 01



A sensor for digital remote level indication

1 - float
2 - drum
3 - shaft
4 - 5 - 9 - 10 gear (pinions)
11 - perforated disk
12 - photodiodes
13 - lamp
14 - counterweight conical drum
15 - counterweight

Card 2/2

TITLE: Corrosion of aircraft parts and its prevention

SOURCE: Vestnik protivovozdushnoy oborony, no. 5, 1964, 55-58

[illegible] of metal corrosion [illegible]
[illegible] of atmosphere, chemical reactions, heated [illegible]

[illegible] NR: AP5008122

are cleaned of the disintegration products and covered with proper primer, varnish, enamel, or lubricant. Magnesium alloys require special treatment: the oxidation [illegible] the metal surface is restored before painting to prevent a direct contact [illegible] paint and to achieve a [illegible]

[illegible]: none

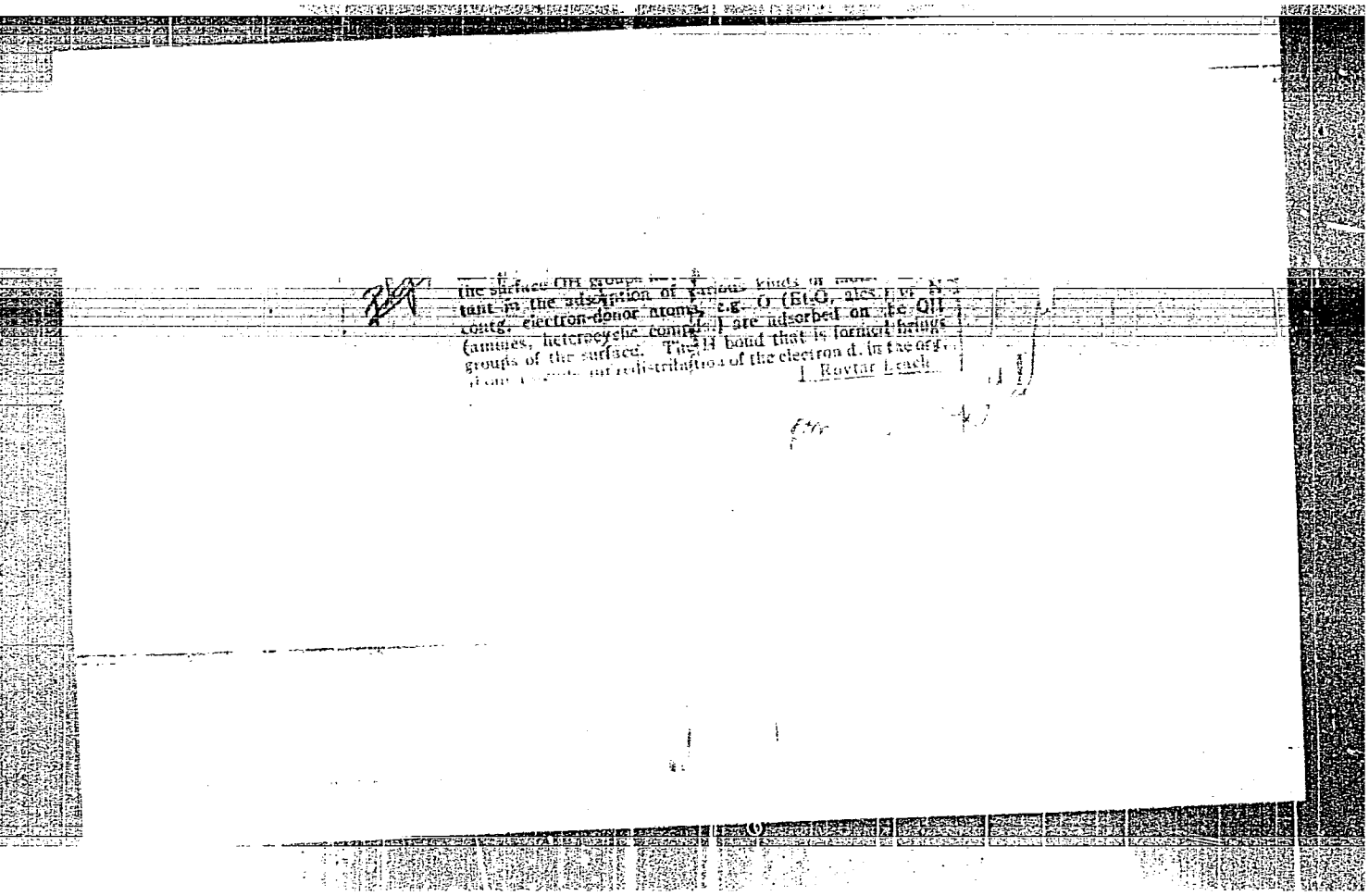
[illegible] 00 [illegible]

[illegible]THER: [illegible]

FILIMONOV, V. N. --

FILIMONOV, V. N. -- "Investigation of the Interaction of Molecules with Electron-Acceptor Catalytic Agents Using the Method of Infra-Red absorption Spectra." Leningrad Order of Lenin State U imeni A. A. Zhdanov. Leningrad, 1955. (Dissertation for the Degree of Candidate in Physicomathematical Sciences)

SO: Knizhnaya Letopis', No 1, 1956, pp 102-122, 124



Filimonov, VN

USSR/Optics - Spectroscopy K-6

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 13043

Author : Filimonov, V.N., Terenin, A.N.

Inst : Leningrad State University, USSR.

Title : Infrared Spectra of Absorption of Complexes of Several Organic Compounds with Aluminum Bromide and Tin Tetrachloride.

Orig Pub : Dokl. AN SSSR, 1956, 109, No 4, 799-801

Abstract : An investigation was made of the variation of the infrared spectra of absorption of certain organic compounds, occurring when $AlBr_3$ and $SnCl_4$ are dissolved in them. The frequency of the valent vibration of C = O acetone is reduced by 165 cm^{-1}. The structure of the overtone band C -- H of diethyl-ether experiences changes analogous to the changes in it upon interaction of the ether

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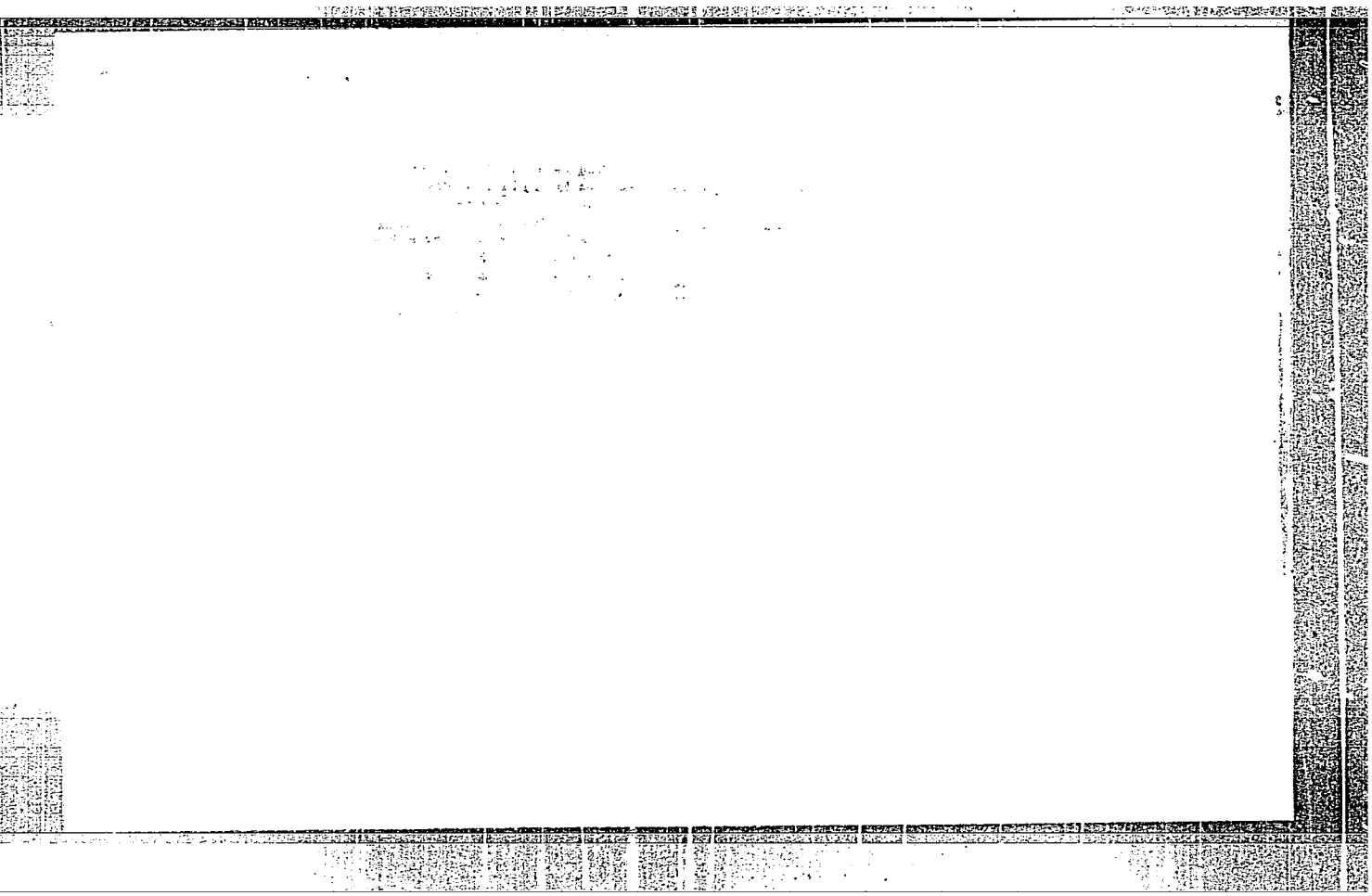
Card 2/2



APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413030009-1"

Fillimonov, V. N.

51-5-6/11

AUTHORS: Fillimonov, V.N., Bystrov, D.S. and Terenin, A.N.

TITLE: Infra-red Spectra of Molecular Compounds with Metal Halides (Infrakrasnye spektry molekulyarnykh soyedineniy s galogenidami metallov)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr 5, pp.480-493 (USSR).

ABSTRACT: Infra-red absorption spectra of molecular compounds, NO, acetonitryl, pyridine, cyclohexane, acetone and methanol with $AlBr_3$, $AlCl_3$ and $SnCl_4$ were investigated in the region 8000 to 700 cm^{-1}. The work was carried out on an infra-red spectrometer of type ИКС-11 with prisms of LiF and NaCl and an autocollimating spectral instrument of high dispersion using glass prisms. Pronounced changes in the spectra of molecules to which metallic halogens ($AlBr_3$, $AlCl_3$ and $SnCl_4$) become attached, show that a donor-acceptor bond is established between them. The frequency changes are quite pronounced and form a direct evidence supporting the above hypothesis. Detailed absorption curves of the substances and frequency

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51-5-6/11

Infra-red Spectra of Molecular Compounds with Metal Halides.

tables are given. There are 10 figures, 8 tables and 29 references, many of which are Slavic.

ASSOCIATION: Scientific and Research Institute of Physics of the Leningrad State University (Nauchno-issledovatel'skiy fizicheskiy institut, Leningradskogo gosudarstvennogo universiteta)

SUBMITTED: May 17, 1957.

AVAILABLE: Library of Congress.

Card 2/2

FILIMONOV, V. N., and TERENIN, A. [N.], Leningrad.

"Hydrogen Bond Between Adsorbed Molecules and Structural Oh-Groups At The Surface of Solids," report submitted at IUPAP Symposium on Nature of Hydrogen Bonding, Ljubljana, Yugoslavakis, 30 July - 3 Aug 57.

also in Vestnik AN SSSR, 1957, No. 11, pp.137-139, "An Intl. Dymposium on the Hydrogen Bond in Ljubljana," by Vol'kenshteyn, M.V.

Trans. Encl. B-8,096,177, 20 Jan 58.

Filimonov, V.N.

51-4-3-7/30

AUTHORS: Royev, L.M., Filimonov, V.N. and Terenin, A.N.

TITLE: Changes in the Infrared Spectrum of Molecules on Interaction with Adsorption Centres of an Aluminium Silicate Catalyzer. (Izmeneniya infrakrasnogo spektra molekul pri ikh vzaimodeystvii s tsentrami adsorbtsii alyumosilikatnogo katalizatora.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol.IV, Nr.3, pp.328-334 (USSR)

ABSTRACT: The present paper forms part of a cycle of investigations on application of the infrared spectra to the study of adsorption and catalysis which was started in 1940 (Ref.1). The present paper reports measurements of the infrared absorption spectra of ammonia and acetonitrile adsorbed on an aluminium silicate catalyser and on silica gel. The aluminium silicate catalyser contained about 10% of Al_2O_3 and had a specific surface area of 400 m^2/g. The specific surface area for silica gel was about 500 m^2/g. Both adsorbents were in the form of powders placed between two plates of LiF or NaCl. Thickness of an adsorbent layer was about 10 mg/cm^2. In some tests

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Changes in the Infrared Spectrum of Molecules on Interaction with Adsorption Centres of an Aluminium Silicate Catalyzer.

porous glass plates, 0.5 mm thick, were used. These glass plates had a specific surface area of 100 m^2/g. Before measurements the adsorbents were heated for 2 hours in air at 600°C and for 1 1/2 hours in 10^{-4} mm Hg vacuum at 450°C. Adsorption of ammonia and acetonitrile vapours and recording of spectra were carried out using a vacuum cell described in Ref.9. Infrared spectrometers IKS-2 and IKS-11 with LiF and NaCl prisms were used. Fig.1 gives the absorption band of OH groups on the surfaces of the aluminium silicate catalyzer (curve 1) and silica gel (2) after vacuum treatment and before adsorption of the vapours studied (both adsorbents were immersed in CCl_4). Fig.2 gives the absorption spectra of the aluminium silicate catalyzer (curve 1) and silica gel (2) with ammonia adsorbed on them and after immersion in CCl_4. Fig.3 gives the change in the absorption spectra of the aluminium silicate catalyzer on adsorption of acetonitrile; curve 1 represents the vacuum-dried adsorbent, curve 2 shows the adsorbent with acetonitrile, curve 3 shows the same adsorbent as in

Changes in the Infrared Spectrum of Molecules on Interaction with Adsorption Centres of an Aluminium Silicate Catalyzer.

curve 2 after evacuation of acetonitrile. Fig.4 gives the change in the absorption spectra of porous glass on adsorption of acetonitrile; curve 1 represents the adsorbent by itself, curve 2 represents the adsorbent with acetonitrile, curve 3 represents the adsorbent of curve 2 after evacuation of acetonitrile. The results obtained show a lowering of the frequencies of the valence vibrations of N—H of ammonia and an increase of the frequency of C≡N of acetonitrile on adsorption. These changes in frequencies are greater in the case of adsorption on the aluminium silicate catalyzer than on adsorption on silica gel. Change of the frequencies of ammonia and acetonitrile on adsorption on the aluminium silicate catalyzer are similar in their sign to the changes of frequencies of the same molecules when the latter are attached to a non-protonic catalyzer (such as $AlCl_3$). Adsorption of molecules on carefully vacuum-treated samples of the aluminium silicate catalyzer is not accompanied by attachment of the catalyzer protons to the adsorbed molecules. The

Card 3/4

authors thank A.N. Sidorov for help in this work.

51-4-3-7/30

Changes in the Infrared Spectrum of Molecules on Interaction with Adsorption Centres of an Aluminium Silicate Catalyzer.

There are 4 figures, 1 table and 18 references, of which 9 are Soviet, 5 American, 1 German, 1 French, 1 English and one translation of a Western work into Russian.

ASSOCIATION: Physic Research Institute, Leningrad State University. (Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gosudarstvennogo universiteta.)

SUBMITTED: May 17, 1957.

1. Infrared spectra--Applications 2. Ammonia--Absorption --Spectrographic analysis 3. Acetonitrile--Absorption--Spectrographic analysis 4. Aluminum silicate catalyst--Adsorptive properties 5. Silica gel--Adsorptive properties

Card 4/4

SOV/51-5-6-16/19

AUTHOR: Filimonov, V.N.

TITLE: Electronic Absorption Bands of ZnO and TiO_2 in the Infrared Region (Elektronnyye polosy pogloshcheniya ZnO i TiO_2 v infrakrasnoy oblasti spektra)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 6, pp 709-711 (USSR)

ABSTRACT: Many semiconductors absorb in the infrared region. This absorption is due to electron transitions between energy levels in the conduction band and due to transitions from local levels into the conduction band or from a filled band to local levels. Such absorption is not observed in ZnO under normal conditions. The author shows that infrared absorption may be observed in ZnO when adsorbed oxygen is removed from the sample surface. Experiments were made on ZnO produced by decomposition of Zn oxalate (Ref 2). ZnO powder was compressed between 2 NaCl plates; the sample thickness was 5-10 mg/cm^2. Samples were placed in a cell which could be evacuated down to 10^{-3} mm Hg. An IKS-14 infrared spectrometer with LiF and NaCl prisms was used. It was found that evacuation of air at room temperature did not affect transmission by ZnO in the infrared region. Irradiation with ultraviolet light from a mercury lamp SVDSh-250-3 was found to produce infrared

Card 1/3

Electronic Absorption Bands of ZnO and TiO_2 in the Infrared Region

absorption in ZnO (Fig 1, where the ordinate represent the ratio of transmissions before and after ultraviolet irradiation). This absorption remains when ultraviolet irradiation ceases. When air or oxygen is let into the cell the sample recovers its former transmission. The observed effects are ascribed to the presence of adsorbed O_2 on ZnO under the usual conditions and removal of O_2 by ultraviolet radiation. Similar effects are observed on adsorption of NO and nitromethane (CH_3NO_2) on ZnO, but water vapour does not affect the infrared absorption of ZnO. This is shown in Fig 2, where the effects of air, nitromethane and D_2O vapour are represented by curves a, b and v respectively. The infrared absorption band in ZnO is due to increase in the number of conduction electrons on removal of O_2 and other substances and due to transitions in the conduction band. Infrared absorption, which disappears in the presence of air, was also observed on heating or illumination in the region of intrinsic absorption of fine-grained samples of TiO_2 in vacuo. The absorption

Electronic Absorption Bands of ZnO and TiO_2 in the Infrared Region

band in this case has the form shown by the lower curve in Fig 1 and it may be due to superposition of absorption due to transition of electrons from local levels. The author thanks A.N. Terenin for his interest. There are 2 figures and 6 references, 4 of which are Soviet and 2 translations.

SUBMITTED: June 21, 1958

Card 3/3

AUTHORS: Terenin, A. N., Filimonov, V. N., Bystrov, D. S. SOV/48-22-9-23/40

TITLE: Infrared Absorption Spectra of Molecular Compounds of Metal Halides (Infrakrasnyye spektry pogloshcheniya molekulyarnykh soyedineniy s galogenidami metallov)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22 , Nr 9, pp 1100 - 1102 (USSR)

ABSTRACT: This is an investigation of the infrared absorption spectra of the molecular compounds of NO, acetonitrile, pyridine, acetaldehyde, acetone, chloro acetyl ethyl acetate, diethyl ether, methanol and cyclohexane with $AlBr_3$, $AlCl_3$, $SnCl_4$ and some other metal halides. The majority of these molecular compounds was investigated in solid state. They were produced by the sorption of the vapors of organic compounds and of the gaseous NO which was sublimated through the halide layer. A description of the experimental method and part of the results were published already in reference 1. A somewhat more pronounced

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shift of the frequency indicates that these metal halides possess better electron acceptor properties than protonic acids. The modifications in the infrared spectrum clearly indicate that the addition of metal halides to organic molecules can lead to the same modifications in these molecules as can the addition of a proton. This means that the halides of Al,Sn, Ti and Fe behave as strong acids even in the absence of the respective hydrogen halides. There are 7 references,1 of which is Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos.universiteta im.A.A.Zhdanova (Scientific Research Institute of Physics of the Leningrad State University imeni A.A.Zhdanov)

Filimonov, V.N.

PHASE I BOOK EXPLOITATION SOV/3921

Akademiya nauk SSSR. Institut fizicheskoy khimii

Problemy kinetiki i kataliza. [t] 10: Fizika i fiziko-khimiya kataliza (Problems of Kinetics and Catalysis. [vol.] 10: Physics and Physico-Chemistry of Catalysis) Moscow, Izd-vo AN SSSR, 1960. 461 p. Errata slip inserted. 2,600 copies printed.

Eds.: S.Z. Roginskiy, Corresponding Member of the Academy of Sciences USSR, and O.V. Krylov, Candidate of Chemistry; Ed. of Publishing House: A.L. Bankvitser; Tech. Ed.: G.A. Astaf'yeva.

PURPOSE: This collection of articles is addressed to physicists and chemists and to the community of scientists in general interested in recent research on the physics and physical chemistry of catalysis.

COVERAGE: The articles in this collection were read at the conference on the Physics and Physical Chemistry of Catalysis organized by the Otdel khimicheskikh nauk AN SSSR (Section of Chemical Sciences, Academy of Sciences USSR) and by the Academic Council on the problem of "the scientific bases for the selection of catalysts." The Conference was held at the Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR) in Moscow, March 20-23, 1958. Of the great volume of material presented at the conference, only papers not published elsewhere were included in this collection.

III. SOME GENERAL PROBLEMS OF CATALYSIS

IV. ACID - BASE CATALYSIS

2/5

FILIMONOV, V.N.

Theoretical invesitgation of the performance of double-action pneumatic hammers. Nauch.zap.Od.politekh.inst. 14:27-41 '59. (MIRA 14:3)

(Hammers--Testing)

FILIMONOV, V.N.; BYSTROV, D.S.

Spectral manifestations of the action of some aprotic catalysts. Probl. kin. i kat. 10:291 '60. (MIRA 14:5)

1. Fizicheskiy fakul'tet Leningradskogo gosudarstvennogo universiteta.
(Catalysts—Spectra) (Halides)

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S/051/60/008/02/027/036
E201/E391

24.7700
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AUTHOR: Filimonov, V.N.

TITLE: Changes in the Infrared Absorption of Certain Semiconducting Adsorbates on Illumination with Ultraviolet Light

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2, pp 270 - 272 (USSR)

ABSTRACT: In a preceding note (Ref 1) the author reported that illumination of ZnO and TiO_2 with ultraviolet light produces absorption in the infrared region and this absorption decays slowly in vacuo when the ultraviolet illumination ceases; the decay occurs much faster in air or oxygen. This infrared absorption is due to an increase in the concentration of free electrons on photo-desorption of oxygen and is related to transitions of electrons from donor levels to the conduction band or transitions within that band. The present note describes studies of infrared absorption produced by ultraviolet illumination of WO_3 and SnO_2, whose electrical conductivity like the electrical conductivity of ZnO and TiO_2, rose

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Changes in the Infrared Absorption of Certain Semiconducting Adsorbates on Illumination with Ultraviolet Light

sharply on illumination with ultraviolet light in vacuo (Ref 6). WO_3 was prepared by decomposition of H_2WO_4 at 500 °C; WO_3 powder was deposited from alcohol suspension onto an NaCl plate. Samples of SnO_2 were prepared by heating to 500 °C a mixture of $SnCl_4$ with ethanol deposited on an NaCl plate. Sample thickness was 2-3 mg/cm^2. An infrared spectrometer IKS-14 with NaCl, LiF and F-1 prisms was employed. Figure 1 shows the change in transmission of WO_3 (at 5 000 cm^{-1}) and SnO_2 (1 300 cm^{-1}) samples on illumination with light from a mercury lamp SVD-250 passed through glass and water filters. Figure 1 shows that ultraviolet irradiation of samples in vacuo produces infrared absorption which decays slowly when this irradiation ceases. If air or oxygen is let into the vacuum chamber the transmission of WO_3 quickly recovers its former value.

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Changes in the Infrared Absorption of Certain Semiconducting Adsorbates on Illumination with Ultraviolet Light

In the case of SnO_2 the action of air or oxygen produces only a partial recovery of the original transmission. The infrared absorption spectra produced by ultraviolet illumination of WO_3, SnO_2 and TiO_2 (Ref 1) in vacuo are shown in Figure 2 (the ordinate axis represents the ratio of the transmissions after and before illumination). The absorption of WO_3 has a wide band in the region 0.3 - 0.9 eV. The absorption maximum of SnO_2 lies approximately at 0.16 eV. In the case of TiO_2 both uniform absorption, extending from 3 000 cm^{-1} to higher frequencies and a gradual rise of absorption at low frequencies were observed. Infrared absorption in WO_3 and SnO_2 is due to transitions of electrons from donor levels to the conduction band. The author points out that powder samples scattered light strongly and, therefore, only the change in infrared absorption produced by ultraviolet illumination was measured,

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Changes in the Infrared Absorption of Certain Semiconducting Adsorbates on Illumination with Ultraviolet Light

i.e. the results obtained do not exclude the possibility of infrared absorption by ZnO, TiO_2, WO_3 and SnO_2 before illumination with ultraviolet light. Acknowledgment is made to A.N. Terenin for his advice.
There are 2 figures and 8 references, 4 of which are Soviet, 2 Soviet and others, 1 English and 1 German.

SUBMITTED: July 8, 1959

Card 4/4

S/051/60/009/004/007/034
E201/E191

AUTHORS: Bystrov, D.S., Sumarokova, T.N., and Filimonov, V.N.

TITLE: Infrared Absorption Spectra of Urea and Thiourea Complexes with Tin Chloride and Bromide

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 4, pp 460-466

TEXT: The authors studied the infrared absorption spectra of urea $(NH_2)_2CO$, its three complexes, $2(NH_2)_2CO.SnCl_4$, $(NH_2)_2CO.TiCl_4$ and $2(NH_2)_2CO.SnBr_4$, of thiourea $(NH_2)_2CS$, and its two complexes, $2(NH_2)_2CS.SnCl_4$ and $2(NH_2)_2CS.SnBr_4$. The purpose of the investigation was to find where metal halides were attached to urea and thiourea molecules and to find the effect of such attachment on the attached molecules. The infrared spectra were recorded using a technique described earlier (Ref 5). Thin layers of complexes were prepared by sublimation in vacuum (Refs 1, 2) or by interaction of sublimated layers of urea or thiourea with appropriate vapours (the latter method was used only for $SnCl_4$).

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Infrared Absorption Spectra of Urea and Thiourea Complexes with Tin Chloride and Bromide

The spectra were found to be independent of the method of preparation; they were recorded with an infrared spectrometer ИКС-14 (IKS-14). The results for urea and its complexes are given in Tables 1 and 2 and Figs 1 and 2. The results for thiourea and its complexes are listed in Table 3 and shown in Fig 3. It was found that in urea complexes $SnCl_4$ and $TiCl_4$ were attached to oxygen, while $SnBr_4$ was attached to nitrogen. In thiourea complexes $SnCl_4$ and $SnBr_4$ were attached to sulphur.

Acknowledgements are made to A.N. Terenin who directed this work.
There are 3 figures, 3 tables and 17 references: 4 Soviet, 5 English, 1 French, 1 Swiss, 2 translations into Russian and 4 from international journals.

SUBMITTED: January 12, 1960

Card 2/2

FILIMONOV, V.N.

Changes in the infrared absorption of some semiconducting adsorbents subjected to illumination with ultraviolet light. Opt. i spektr. 8 no.2:270-272 F '60. (MIRA 13:10)
(Semiconductors--Spectra) (Adsorbents--Spectra)
(Ultraviolet rays)

RYSTROV, D.S.; SUMAROKOVA, T.N.; FILIMONOV, V.N.

Infrared absorption spectra of complexes of urea and thiourea with stannic chloride and bromide. Opt.i spektr. 9 no.4:46--466 O '60. (MIRA 13:11)

(Tin compounds--Spectra)

IMEDADZE, V.V.; SAAKYAN, E.A.; CHAKHIROV, N.S.; FILIMONOV, V.N.

Correlation recorder using transistor and ferrite cells. Trudy Inst. elek., avtom. i telem. AN Gruz. SSR 3:35-46 '62. (MIRA 16:5)
(Information theory)

4454 3
S/020/62/147/006/028/034
B144/B186

15.2100

AUTHORS: Alekseyev, A. V., Filimonov, V. N., Terenin, A. N., Academician

TITLE: Infra-red spectra of nitrous oxide adsorbed on synthetic zeolites

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 6, 1962, 1392 - 1395

TEXT: The adsorption of NO on synthetic A and X type zeolites, in Na and Ca forms with pore diameters of 4 and 5 Å and on natural zeolites such as natrolite and desmine, was studied by IR spectroscopy. The presence of adsorption centers and the formation of intermediate products needs clearing up. The spectra were recorded in the 2400 - 1200 cm^{-1} range on powdered zeolites placed between fluorite plates with intermediate aluminum foils, and subjected to a vacuum pretreatment of 4 - 8 hrs at 400°C. The final gas pressure of 40 mm Hg excluded the recording of gaseous NO which has a band at 1876 cm^{-1}. A comparison between the spectra of the pure zeolites and those resulting after NO adsorption showed bands shifted by more than 300 cm^{-1} to the right and

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Infra-red spectra of nitrous oxide ...

to the left of the NO band, revealing the formation of other nitrogen oxides. This was verified by recording the IR spectra of N_2O and NO_2 adsorbed on a CaA zeolite. The bands at 2250, 1300 and all low-frequency bands belong undoubtedly to N_2O forming by the reaction: $2NO_{ads} \rightarrow N_2O_{ads} + O_{ads}$. Unlike the 1616 and 1322 cm^{-1} bands of gaseous NO_2, the IR spectrum of the adsorbed NO_2 shows bands at 1350 - 1490 cm^{-1} due to the formation of the NO_3^- group, and bands at 1940 and 2110 cm^{-1} resulting from a decomposition of the NO_2 molecule with formation of chemisorbed NO. This agrees with published data on the ionic form NO^+(2100 - 2400 cm^{-1}) and the coordination bond of NO with electrophilic centers (1940 cm^{-1}). Thus the presence of electrophilic and electron-acceptor centers can be assumed on the surface of these zeolites. There are 3 figures.

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S/020/62/147/006/028/034
Infra-red spectra of nitrous oxide ... B144/B186

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A. A. Zhdanova (Scientific Research Physics Institute of the Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: July 30, 1962

Card 3/3

FILIMONOV, V.N.

Reaction of oxygen with NiO, Fe_2O_3 and Cr_2O_3 studied from their absorption spectra in the infrared. Kin. i kat. 4 no.3:367-372 My-Je '63. (MIRA 16:7)

1. Nauchno-issledovatel'skiy fizicheskiy institut, Leningradskiy universitet.
(Metallic oxides—Absorption spectra)
(Oxygen)

FILIMONOV, V.N.

Photocatalytic oxidation of gaseous isopropanol on ZnO and TiO_2. Dokl. AN SSSR 154 no.4:922-925 F '64.
(MIRA 17:3)

1. Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A.A. Zhdanova. Predstavleno akademikom A.N. Tereninym.

BORESKOV, G.K.; SHCHEKOCHIKHIN, Yu.M.; MAKAROV, A.D.; FILIMONOV, V.N.

Use of infrared absorption spectra in studying the structure of surface compounds formed during adsorption of ethanol on γ-oxide of aluminum. Dokl. AN SSSR 156 no. 4:901-904 Je '64. (MIRA 17:6)

1. Institut kataliza Sibirskogo otdeleniya AN SSSR i Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova. 2. Chlen-korrespondent AN SSSR (for Boreskov).

[redacted], V.N.

Photocatalytic oxidation of organic compounds on ZnO, TiO_2, Al_2O_3, and SiO_2 as determined from the absorption spectra of adsorbed molecules in the infrared. Dokl. AN SSSR 158 no.6:1408-1411 O '64. (MIRA 17:12)

1. Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A.A. Zhdanova. Predstavleno akademikom A.N. Terenin[redacted].

KAIAIOZISHVILI, N.I.; FILIMONOV, V.N.

Device for discrete telemetering of liquid level. Priborostroenie no.7:10-12 Jl '64. (MIRA 17:11)

EWT(m)/EWT(d)/T DJ

ACC NR: AP5026559 SOURCE CODE: UR/0286/65/000/019/0114/0114

INVENTOR: Gafanovich, A. A.; Zanin, A. V.; Vidishev, B. G.; Filimonov, V. N.

ORG: none

TITLE: Cardan shaft with protective housing. Class 47, No. 175358

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 114

TOPIC TAGS: Cardan shaft, universal joint

ABSTRACT: An Author Certificate has been issued for a Cardan shaft consisting of a protective housing in the form of a telescoping tube with hemispheres, a shaft, and joints with grooved yokes. To better protect the Cardan shaft and prevent the housing's rotation, the housing is equipped with outer hemispheres connected to inner hemispheres by rings located in the universal joint's plane of vibration (See Fig. 1) and mounted on sealed ball bearings installed on the hubs of the grooved

Card 1/2 UDC: 621—76—233.1.825.6

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ACC NR: AP5026359

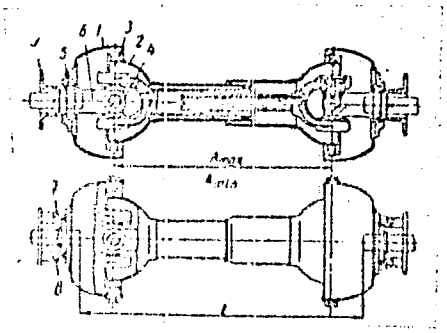

Fig. 1. Cardan shaft with protective housing

1 - Outer hemisphere; 2 - inner hemisphere; 3 - ring; 4 - joint; 5 - sealed bearing; 6 - grooved yoke; 7 - ears; 8 - lugs; 9 - connecting flange.

yokes. To prevent the Cardan shaft from operating without the protective housing, the outer hemispheres are fitted with ears for connection with the appropriate lug of the connecting flange. Orig. art. has: 1 figure. [KT]

SUB CODE: IE/ SUBM DATE: 13Nov63/ ATD PRESS: 4137

Card 2/2

VERSHININ, Ye.A.; FILIMONOV, V.N.; KISLYAKOV, L.D.; CHVANOV, P.A.; BELYAYEV, M.A.; KOROBKOV, V.P.

Efficient flotation flow chart for collective concentrates at the Sibay plant. TSvet. met. 38 no.4:14-17 Ap '65. (MIRA 18:5)

FILIMONOV, V.N.; BYSTROV, D.S.

Change in the vibrational frequencies of nitrogen-containing compounds associated with a change in the orbital hybridization of nitrogen in donor-acceptor interaction. Opt. i spektr. 12 no.1:66-72 Ja '62. (MIRA 15:2)

(Quantum theory)
(Nitrogen)

KHOKHLOV, Yu.I.; FILIMONOV, V.P.

Combination hot chrome-tanning of leather for shoe uppers.
Leg.prom. 17 no.8:48-49 Ag '57. (MIRA 10:10)
(Tanning)

PETRUSENKO, V.G.; SHOSTYA, I.V.; OKUNEVA, Z.S.; PRIBITKOVA, Yu.V.; FILIMONOV, V.P.; POLIYEKTOVA, A.M.; CHERNISHOVA, N.P.; ISAYCHENKO, M.M., red.; LINKOV, G., tekhn.red.

[Economy of Cherkassy Province; statistical collection] Narodne hospodarstvo Cherkas'koi oblasti; statystychnyi zbirnyk. Cherkasy, 1957. 126 p. (MIRA 12:11)

1. Cherkassy (Province) Statisticheskoye upravleniye. 2. Nachal'nik Statisticheskogo Upravleniya Cherkasskoy oblasti (for Isaychenko). (Cherkassy Province--Statistics)

AUTHORS: Filimonov, V. P., Nikol'skiy, K. N. 50-58-4-14/26

TITLE: On the Scale of Fire Susceptibility and the Forecast of Fire Danger in Forests (O shkale gorimosti i prognozakh pozharoopasnosti v lesu)

PERIODICAL: Meteorologiya i Gidrologiya, 1958, Nr 4, pp 38-39 (USSR)

ABSTRACT: For the determination of the probability of the rising of forest fires is used, as is known, such a scale. It is based upon a complex index of the susceptibility for fire, which was worked out by professor Nesterov. This index is a product of the air temperature at 1300 hours multiplied by the saturation deficit. The sum of such indices for a number of days, at which no rain has brought more than 3 mm precipitation, characterize the degree of fire susceptibility, which according to the value of this sum belongs to one of the fire susceptibility classes. The computation of this coefficient together with the specialized fire susceptibility forecast is a big step forward in the forest fire prevention, though this method also has some deficiencies. Above all there is no good correlation between the repetition frequency of the forest fires and the corresponding fire susceptibility

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classes, which are determined by means of the mentioned method. Season particularities of the rising of fires are not considered, especially not in spring, when they arise at a low value of the fire susceptibility index. The wind velocity, which plays a role in the fire expansion, is not considered. The fixed criterion of the removal of the fire danger - the precipitation quantity of 3 mm, is not brought into connection with a precedent period of aridity. Besides precipitation quantities above 3 mm are not considered. B. L. Dandre (ref. 1) suggests a fire susceptibility scale and fire danger classes of a somewhat different types. Instead of the product here the sum of the air temperature and the saturation deficit is used. The class-scale here is based upon the season principle. Separated for spring and summer. Thereby the forest fire danger is to increase with a considerably lower fire susceptibility index. A special coefficient is introduced, by which the fallen precipitations (in mm) are multiplied. Also a so called negative fire susceptibility was introduced, which characterizes the moisture degree of the litter of leaves. A scale of the extinguishing of the negative fire susceptibility is worked

On the Scale of Fire Susceptibility and the Forecast of Fire Danger in Forests

50-58-4-14/26

out. It indicates the day on which, after the rising of the negative susceptibility, a fire can rise. Corrections for the wind velocity are introduced. Therefore the scale by Dandre comes much closer to the conditions, which really prevail in forests. By several examples of application in the woods of the Tuvinskiy autonomous district the author could convince himself of the advantages of the method by Dandre. There are 1 table and 1 reference, which is Soviet.

AVAILABLE: Library of Congress

1. Forest fires - Statistical analysis

Card 3/3

LYUTTSAU, Aleksey Grigor'yevich; MER, N.I.; MERRO, Ye.M.; RYBIN, N.G.; ROZENVASSER, M.A.; SOLOV'YEV, S.N.; FILIMONOV, V.P.; SHAROYKO, V.V.; MEREZHKO, V.G., retsenzent; USENKO, L.A., tekhn. red.

[On the road of great initiative] Po puti velikogo pochina. Moskva, Transzheldorizdat, 1961. 75 p. (MIRA 15:2)

1. Zamestitel' nachal'nika Glavnogo upravleniya lokomotivnogo khozyaystva Ministerstva putey soobshcheniya (for Merezhko).
(Railroads—Employees—Labor productivity)

FILIMONOV, V.P., inzh.; ROZENVASSER, M.A.

A "popular university" in the repair shop of Moskva-Sortirovochnaia. Elek. i tepl. tiaga 6 no.11:5-6 N '62. (MIRA 16:1)

1. Chlen soveta Narodnogo universiteta v depo Moskva-Sortirovochnaya (for Filimonov). 2. Otvetstvennyy sekretar' gazety "Pervyy subbotnik" (for Rozenvasser).
(Railroads—Employees) (Railroads--Repair shops)

GITEL'ZON, I.I.; BAKLANOV, O.G.; FILIMONOV, V.S.; ARTEMKIN, A.S.; SHATOKHIN, V.F.

Bioluminescence as a hydrooptic and biological factor in a sea. Trudy MOIP. Otd. biol. 21:147-155 '65. (MIRA 18:6)

LIKHORADOV, A.P.; ZHIGULIN, V.I.; ZHEMBUS, M.D.; RUDAKOV, V.F.; KOTOV, K.I.; ZHAK, A.M.; TSYMBALYUK, V.Yu.; FILIMONOV, V.V.

Service of the lining and cooling equipment of a blast furnace in the smelting of ferromanganese. Metallurg 10 no.10:12-14 O '65. (MIRA 18:10)

1. Zavod im. Petrovskogo.

VAL'SHTEYN, G.I.; KLEYMENOV, V.P.; FILIMONOV, Ya.G.

Investigating efficient parameters of the rod bolting of stopes in the Dzhezkazgan Mine. Nauch. trudy KNIUI no.14:291-298 '64. (MIRA 18:4)

NIITMASH, Yu.o.

Continuous line for the manufacture of core blocks. Sbor. st. NIITIAZHMASHa Uralmashzavoda no.9:65-78 '65.

Mechanized permanent molding pit for assembling molds from standardized core blocks. Ibid.:79-87

(MIRA 18:8)

FILIMONOV, Yu.F., inzh.

Impact extrusion of bars and hollow parts. [Nauch. trudy] ENIKMASHa 3:38-53 '60. (MIRA 14:1)
(Extrusion (Metals))

S/182/60/000/012/001/010
A161/A030

AUTHOR: Filimonov, Yu.F.

TITLE: Experience With Cold Extrusion of Steel Parts

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No.12, pp.1-5

TEXT: Cold extrusion of automobile and tractor parts has been studied in laboratory experiments, and the process is coming into use at the Minskiy traktornyy zavod (Minsk Tractor Plant) and at Kuybyshevskiy zavod avtotraktornogo elektrooborudovaniya (Kuybyshev Automobile and Tractor Electric Equipment Plant). Six cold-extruded steel parts are illustrated (Fig.1) and dies used for them shown in detailed drawings (Fig. 2). The adapter, nipple, spring disc and pinion (Fig.1, a, b, c, and d) are produced in one single operation, the regulator disc and the pusher (e and f) in two operations. The bottom die design with outer casings has proven successful - dies did not need to be replaced after extrusion of 5,000 adapters and 7,500 spring discs from "20" steel. Allowances used for single-casing bottom dies (Fig.2, a, b, c) were 0.3 - 0.4 mm (at 60 - 70 mm joint diam-

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Experience With Cold Extrusion of Steel Parts

eter and 120 - 150 mm outer diameter), and for multicasing dies 0.2 - 0.3, 0.5 - 0.7, and 0.8 - 1.0 mm from the outer casing to the inner. The work portions of the dies were made of X12Φ1 (Kh12F1) steel and hardened to HRC 58-60. The single-casing die casings of 40X (40Kh) or "45" steel were hardened to HRC 40-42 and heated to 300°C for setting on the work parts; the casings for multicasing dies were of different steel and quenched to hardness decreasing from the outer to the inner casing, provided with 1.5° taper and pressed on cold. The work part of the pinion die (Fig.2,) was made by slotting and calibrated with a master punch. The spring disc and the pusher could not be extruded from all steel grades tried, as the punch broke on some. The effect of the gauging belt height (h) (3, 8, 15 and 25 mm) on the work pressure was significant at a low-speed in the test machine (increasing "h" height raised 20-30% the extrusion effort), but in the "K682" crank press making 90 strokes a minute it was practically negligible, but it affected the accuracy of pin type parts (e.g., the adapter). In this case the "h" must equal the bed die diameter; the accuracy of tubular parts (nipple) also rose with increased "h" belt height. In reverse extrusion of cups on a П457 (P457) press with 3 mm/sec speed it had no effect and could be in the range from 0.1 to 0.3 of D_n.

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Experience With Cold Extrusion of Steel Parts

It is recommended to calculate the press effort using the formulae (not included in the article) of works (Ref.1, 4 and 5) (1 -V.Ye.Favorskiy; 4 - S.I.Gubkin; 5 - G.P.Bol'shakov). S.I.Gubkin's method (Ref.7) has been used for calculating the mean metal hardening in the deformation focus; the friction factor was assumed to be 0.1 for all cases. It has been revealed that phosphate-coating reduced friction better than electrolytic copper or zinc coating. In all experiments the blanks were dipped for 10-12 min into a bath containing 65-100 cm^3/liter phosphating concentrate and 1-2 g/liter sodium nitrate and heated to 60-70°C. The phosphating concentrate consisted of 200 g/liter zinc oxide, 250 cm^3/liter nitric acid (of 1.34-1.36 density) and 180 cm^3/liter orthophosphoric acid (1.7 - 1.8 density). Phosphate coated blanks were immersed for 10 min into soap emulsion with water, with 58-60 g/liter fatty acids in emulsion heated to 70°C. The Minsk Tractor Plant has started the series output of cold-extruded parts. The dies for adapters and spring discs outlast 10-15 thousand operations; the punches lasted for 3,000 operations in the first lot of pushers from "20" steel. There are 5 figures and 8 references: 7 Soviet and 1 Czech.

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S/182/60/000/012/001/010
A161/030

Experience With Cold Extrusion of Steel Parts

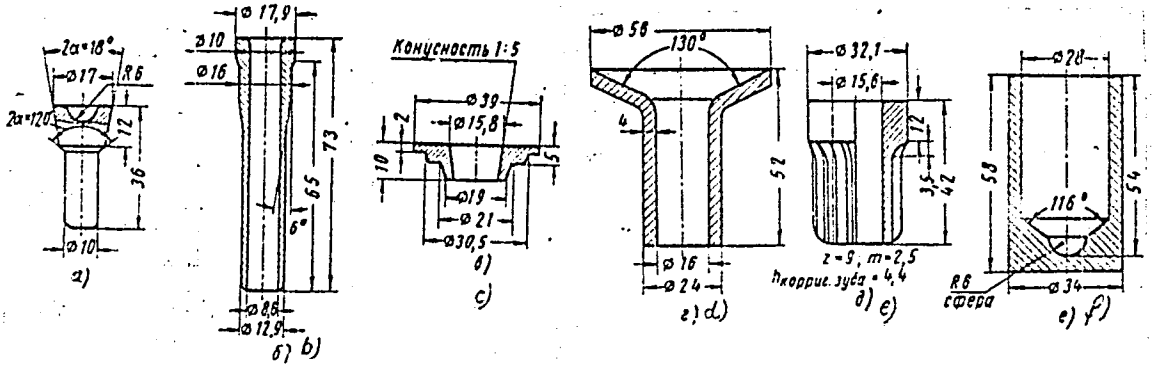

Fig.1: a - adapter; b - nipple; c - spring disc; d - regulator disc; e - pinion; f - pusher.

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Experience With Cold Extrusion of Steel Parts

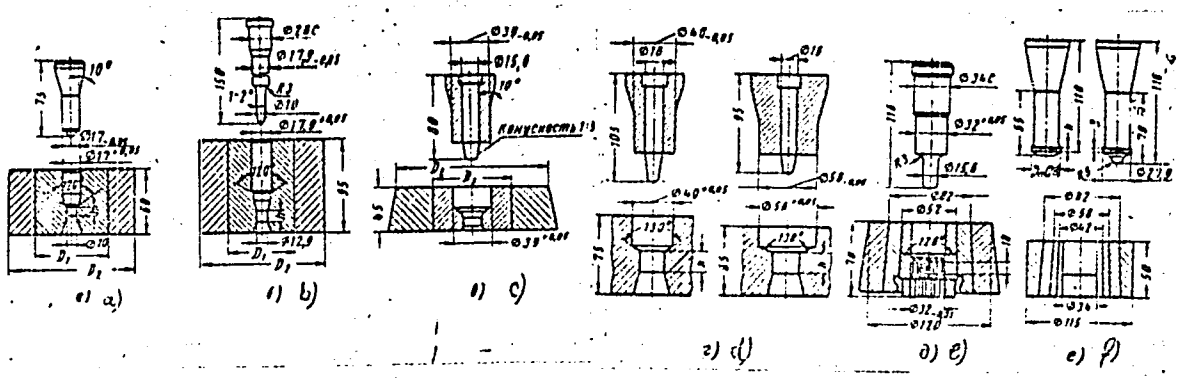

Fig.2 - Replaceable dies for the parts in Fig.1.

ACCESSION NR AM4021941 BOOK EXPLOITATION S/

Filimonov, YU. F. (Engineer); Poznyak, L. A. (Candidate of Technical Sciences)

Stamping by extrusion (Shtampovka pressovaniyem), Moscow, izd-vo "Mashinostroyeniye", 1964, 187 p. illus., biblio. 5,000 copies printed.

TOPIC TAGS: metallurgy, metal working, extrusion, steel, metalworking equipment

PURPOSE AND COVERAGE: The book describes the features of the process of cold extrusion of steel parts. It cites experience in mastering technology of cold pressing of parts at a number of plants and also analyzes literature data on this question. Various types of designs of dies and rams and the characteristics of the equipment are discussed. The book is intended for engineers and researchers in the field of metal working by pressure; the book can also be used by students in technical higher educational institutions.

TABLE OF CONTENTS [abridged]:

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ACCESSION NR AM4021941

SUB CODE: MM SUBMITTED: 11Feb64 NR REF SOV: 057

OTHER: 032 DATE ACQ: 04Jun64

Card 2/2

FILIMONOV, Yu.F., inzh.; POZNYAK, L.A., kand. tekhn. nauk; MISOZHNIKOV, V.M., kand. tekhn. nauk, retsenzent; BABENKO, V.A., inzh., red.

[Forging by extrusion] Shtampovka pressovaniem. Moskva, Mashinostroenie, 1964. 187 p. (MIRA 17:5)

L 35512-65 EWT(d)/FSS-2/EEC(k)-2/EEC-4/EEC(t) Pn-4/Po-4/Pp-4/Pq-4/Pac-4/Pg-4/Pk-4/Pl-4

ACCESSION NR: AP5008156 S/0286/65/000/005/0036/0036

AUTHORS: Kordobovskiy, A. I.; Filimonov, Yu. F.

5 2
B

TITLE: A device for measuring maximal marginal distortion of telegraph signals. Class 21, No. 168749

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 36

TOPIC TAGS: telegraph signal, signal distortion

ABSTRACT: This Author Certificate presents a device for measuring the maximal marginal distortion of telegraph signals with start-stop and synchronous distribution, nodal coincidence, and an indicator assemblage made up of discrete elements. For determining the maximal measured value of distortion at any given time interval, up to the moment of break, a recording assemblage, made up of ferrite-transistor trigger elements, is placed between the coincidence node and the indicator unit. In order to compute the maximal distortion for each individual cycle, the circuit for returning to the initial state (break) of the recording-unit triggers is closed periodically, in time with the distributor. In order to determine the values of all distortions appearing during time of measurement, the power supply, in addition to the breaking circuit, is fed directly from the

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L 35542-65

ACCESSION NR: AP5008156

negative side of the battery. This is effected by means of the switch of the recording unit.

ASSOCIATION: none

SUBMITTED: 03May64 ENCL: 00 SUB CODE: EC

NO REF SOV: 000 OTHER: 000

Card 2/2

[illegible]-67 EWT(m)/EWP(k)/EWP(t)/ETI IJP(c) FGD/JD/HM/JH

ACC NR: AR6013846 (A, N) SOURCE CODE: UR/0276/65/000/011/V009/V009

30

AUTHORS: Deordiyev, N. T.; Filimonov, Yu. F.

TITLE: Multi-pass reduction with limit deformation

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya, Abs. 11V65

REF SOURCE: Materialy Eksperim. n.-i. in-ta kuznechno-pres. mashinostr., vyp. 12, 1965, 44-50

TOPIC TAGS: metal forming, metal rolling

ABSTRACT: Experimental investigation of the multi-pass reduction process has confirmed the tendency towards increased limit deformations with increased number of cycles. A nomogram is constructed for finding the diameter increments of the blank for multi-pass reduction, considering limit deformations of the order of 15%. The equation for finding the power required for multi-pass reduction is derived. Graphs of the average axial stresses in the blank are constructed as a function of degree of deformation and number of passes. 3 illustrations. Bibliography of 5 titles. I. Gendlina [Translation of abstract]

SUB CODE: 13, 11 UDC: 621.986

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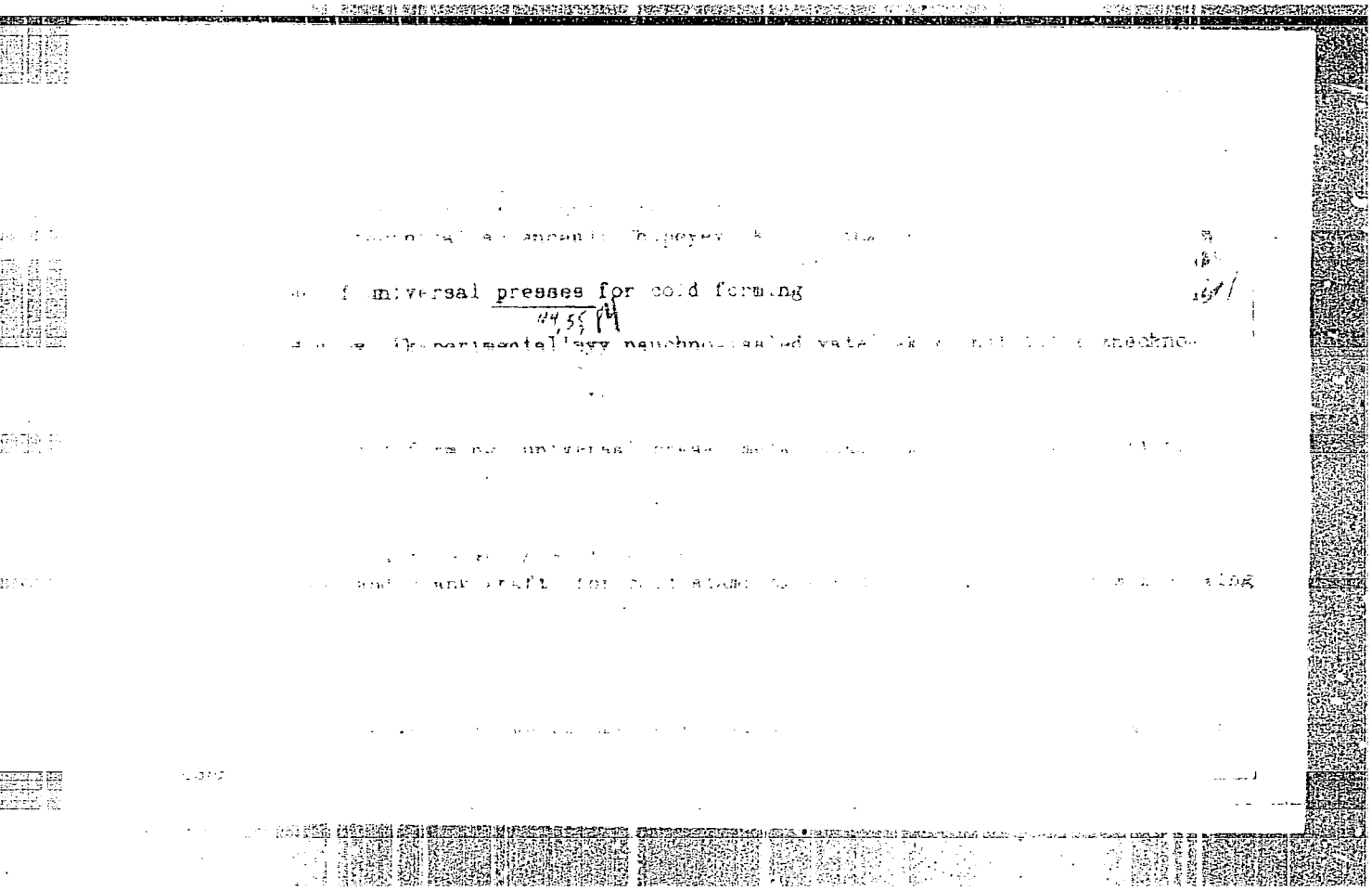
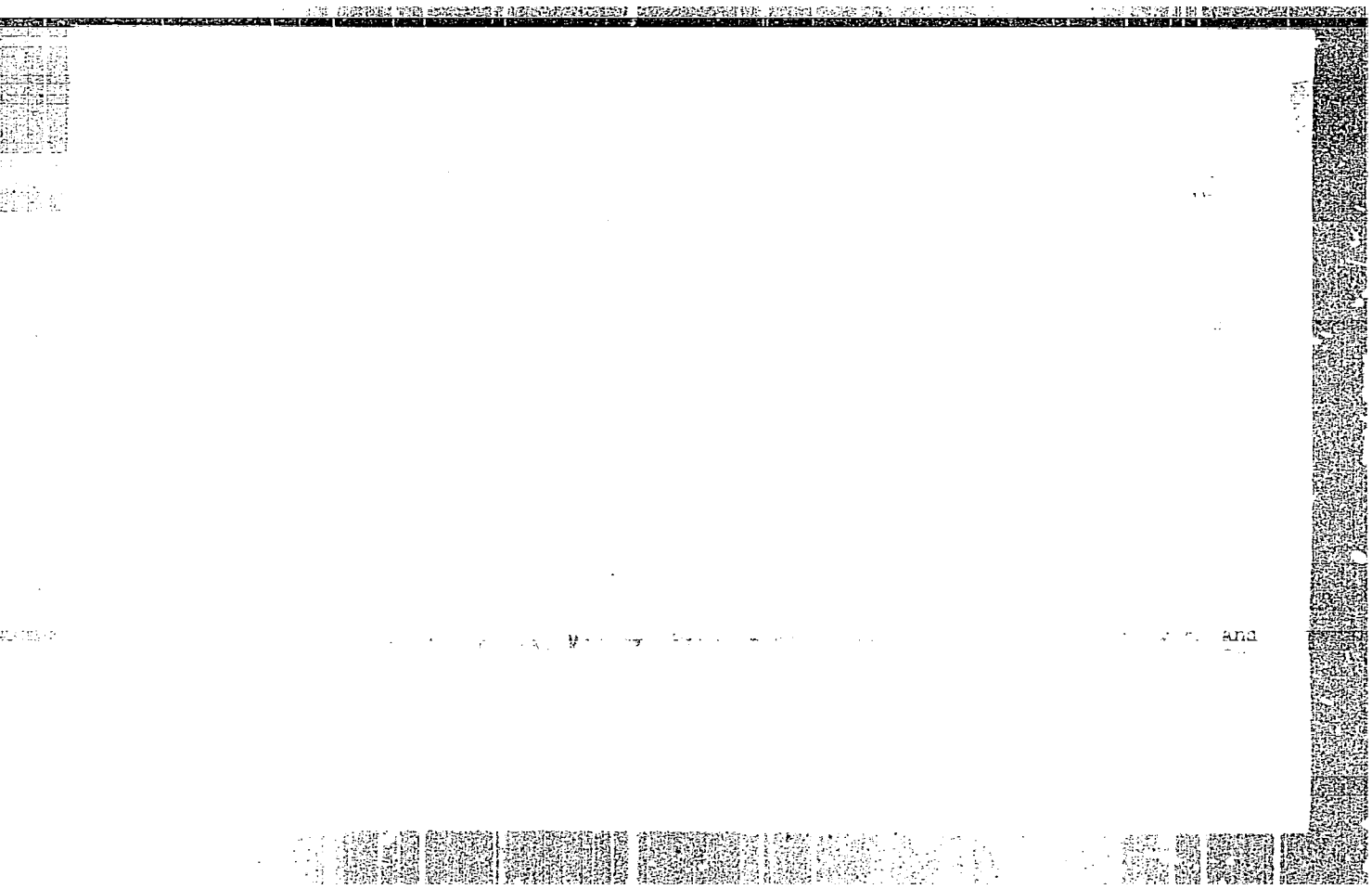
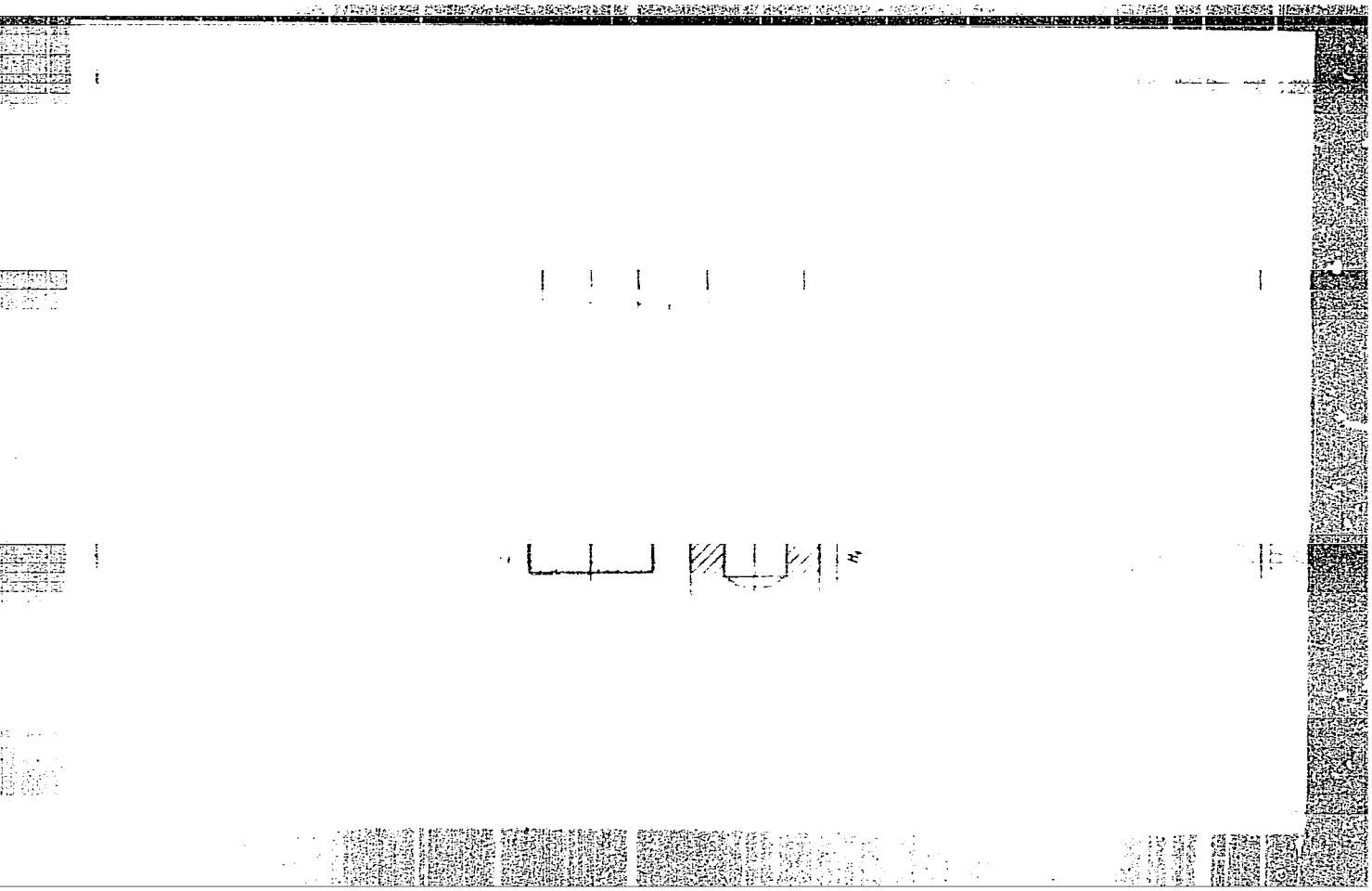
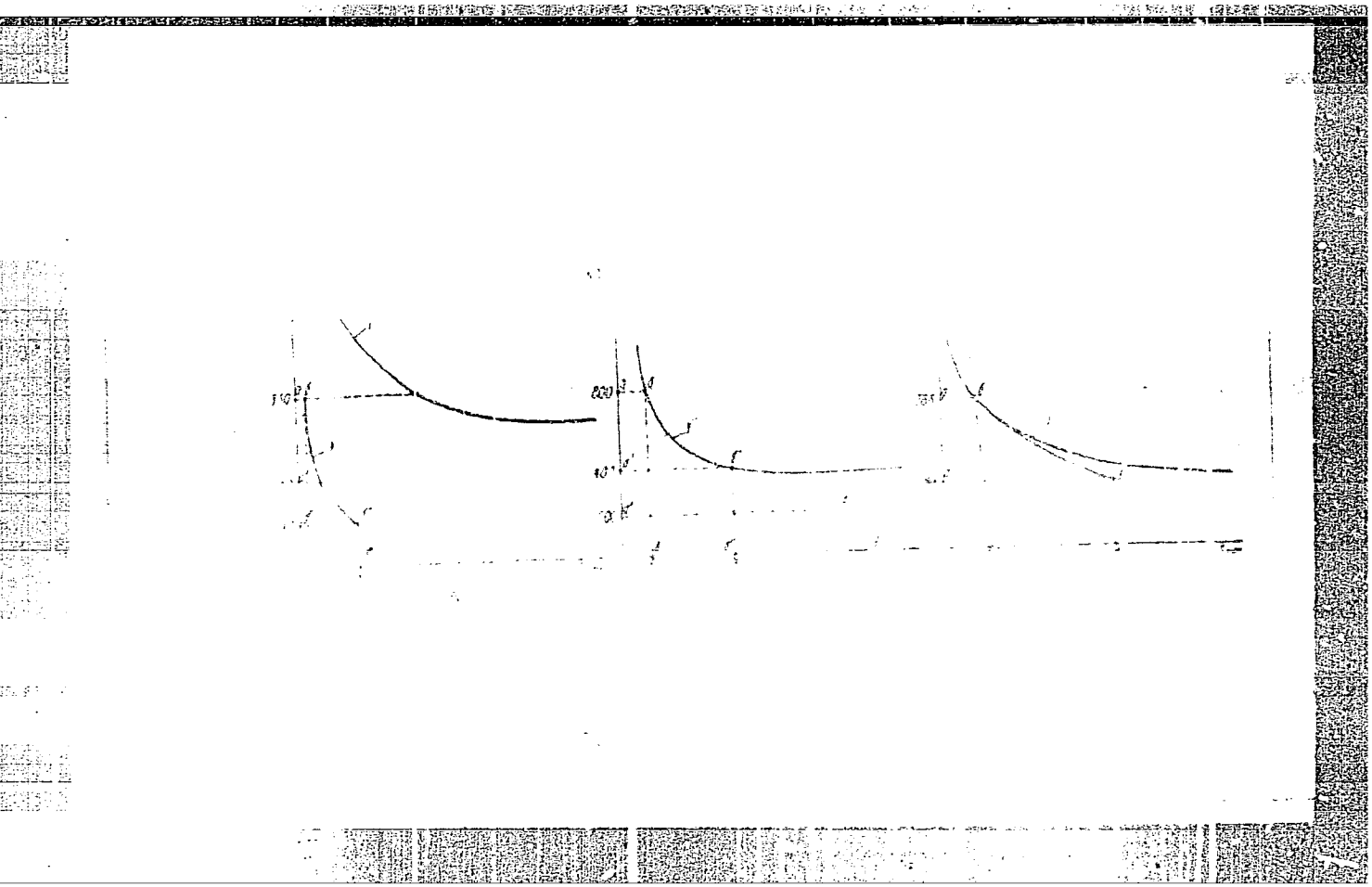


m: versal presses for cold forming







From Card 4

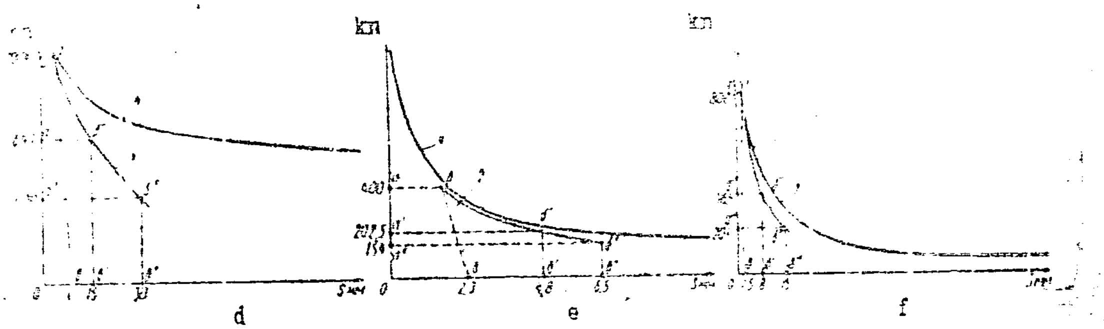


Fig. 2. Characteristic load-stroke capabilities of mechanical presses: ... f - presses KA262, K22?, K862, K86?, ... respectively; ... strength; ... drive energy capacity ... limitations; d - crankshaft strength

Card 5/5

APOSTOLOV, B.G.; FILIMONOV, Yu.A.

Data on the phagocytic reaction of the blood in colienteritis in infants. Vop. okh. mat. i det. 6 no.3:38-42 Mr '61. (MIRA 14:10)

1. Kafedra detskikh bolezney (zaveduyushchiy - kand.med.nauk B.G. Apostolov) Stavropol'skogo meditsinskogo instituta (direktor - prof. V.G.Budylin).

(INTESTINES--DISEASES) (PHAGOCYTOSIS)

FILIMONOV, Yu.A.

Phagocytic index of the blood in relation to the pathogenic strains of Escherichia coli and some other antigens in healthy children. Uch. zap. Stavr. gos. med. inst. 12: 375-376 '63.

Clinical picture, course, pathomorphological changes and dynamics of the phagocytic index in experimental colienteritis. Ibid.:377-378

Specificity of the phagocytic reaction of the blood in colienteritis in young children. Ibid.:379-380

Diagnostic importance of the phagocytic reaction of the blood in colienteritis in children. Ibid.:381-382

Dynamics of the phagocytic index of the blood in relation to pathogenic serotypes of Escherichia coli in children with gastrointestinal diseases in case of negative results of bacteriological examinations. Ibid.:383 (MIRA 17:9)

1. Kafedra detskikh bolezney (zav. dotsent B.G. Apostolov) Stavropol'skogo gosudarstvennogo meditsinskogo instituta.