

TERENT'YEV, Boris Petrovich, prepod.; MITAYEV, Valentin Yevgen'yevich, prepod.; TORBOVITSKIY, Roman Markovich, prepod.; KRAUS, Lyus'yen Adol'fovich, prepod.; IUTILOVA, Iya Nikolayevna, prepod.; Prinimala uchastiye LYATKOVSKAYA, A.D., inzh.; LYUBSKIY, G.S., otv. red.; VOLODARSKAYA, V.Ye., red.

[Power systems of communication enterprises] Energetika predpriyatii aviatsii. Moskva, Sviaz', 1965. 614 p. (MIRA 18:9)

1. Moskovskiy elektrotekhnicheskii institut svyazi (for all except Lyubskiy, Volodarskaya).

L 6512-66

ACC NR: AP5025648

SOURCE CODE: UR/0106/65/000/010/0064/0070

AUTHOR: Kitayev, V. Ye.; Bokunyshev, A. A.

ORD: none

TITLE: On-off d-c voltage stabilizer with a parallel-connected regulating transistor

SOURCE: Elektrosvyas', no. 10, 1965, 64-70

TOPIC TAOS: voltage stabilizer, transistor voltage stabilizer

ABSTRACT: A transistorized d-c voltage stabilizer operating under sustained oscillation conditions is considered. Essentially, a regulating transistor (P-4, P-209, or P210), an emitter-coupled trigger, and a comparison circuit (total of 6 transistors) constitute the stabilizer which can handle a relatively heavy load current with a voltage ripple of about 1%. Formulas for the principal parameters of the stabilizer are developed. An experimental verification on a laboratory hookup developing 5 amp at 15 v (50% load drop, 1% supply-voltage variation) is reported. Orig. art. has: 4 figures, 34 formulas and 1 table.

SUB CODE: EC/ SUM: DATE: 08Feb65/ ORIG REF: 003/ OTH REF: 001

nw

Card 1/1

UDC: 521.5.072.2

KITAYEV, Ye., glavnyy inzhener

For a steady increase in labor productivity. Stroi.mat., izdel.
1 konstr. 1 no.3:5-9 Mr'55. (MLRA 8:10)

1. Glavnoye upravleniye shifernoy krovli
(Roofing, Slate) (Pipe, Clay)

~~KITAYEV, Yel.~~
KITAYEV, Yel.

Fuel Abstracts
Vol. XV, No.2
Feb. 1964
Electricity and
Electric Power.

1999. MEETING ON UTILIZATION OF WIND POWER. Kitayev, E.I.
(Elektrichestvo (Electricity), May 1955, 24, 55).

KITAYEV, Ye., insh.

Adsorption of calcium hydroxide by asbestos and its significance
for the technology of asbestos cement production. Stroi. mat. 4
no.12:31-34 D '58. (MIRA 11:12)
(Asbestos cement) (Adsorption)

KITAYEV, Ye.N., inzh.; ERLIKH, I.A., red.

[Best conditions for manufacturing asbestos-cement materials from sand cement using pressure autoclaving] Optimal'nye uslovia proizvodstva asbesto-tsementnykh materialov iz peschani-stogo tsementa s primeneniem avtoklavnoi obrabotki pod davleniem. Moskva, Otdel nauchno-tekhn.informatsii, 1959. 47 p.

(MIRA 15:1)

(Asbestos cement)

(Auto claves)

KITAYEV, Ye.N., inzh.; ZARETSKIY, B.I., otv. red.

[The best cements for the manufacture of asbestos-cement materials] Optimal'nye tsementy dlia proizvodstva asbestotsementnykh materialov. Moskva, Otdel nauchno-tekhn.informatsii, 1959. 71 p. (MIRA 15:1)
(Cement) (Asbestos cement)

KITAINV, Ye.N., inzh.

**Peptization of asbestos fibers and its effect on properties of
asbestos-cement products. Stroi. mat. 5 no.6:32-34 Jo '59.**

(MIRA 12:8)

(Asbestos cement)

KITAYEV, Ye.N., inzh.; GOMCHARSKAYA, Kh.M., tekhnik

Resistance of autoclave-hardened asbestos cement to chemical actions and possibilities for making pipes using sand cements. Stroimaterialy no.11:17-19 N '59. (MIRA 13:3)
(Pipe, Asbestos-cement--Corrosion)

KITAYEV, Ye.N., inzh.; GONCHARSKAYA, R.E.; ZARETSKIY, B.I., otv. red.;
ERLIKH, I.A., red.

[Asbestos cement materials obtained from sand cements by autoclave treatment, and their chemical resistance to corrosive solutions] Khimicheskaya stoikost' v agressivnykh rastvorakh asbestotsementnykh materialov, poluchaemykh iz peschanistykh tsementov s primeneniem avtoklavnoi obrabotki. Moskva, Otdel nauchno-tekhn. informatsii, 1960. 24 p.

(MIRA 15:1)

(Asbestos cement)

KITAYEV, Ye. N., Cand Tech Sci -- (diss) "Research into the production of asbestos-cement material of high quality." Moscow, 1960. 37 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Chemical Technology Inst im D. I. Mendeleyev, Gosplan RSFSR, Scientific Research Inst for Asbestos, Mica, Asbestos-cement Articles, and the Planning of Construction of Enterprises in the Mica Industry, "NIIAsbesttsement"); 100 copies; price not given; (KL, 17-60, 155)

BLOKH, G.S., kand. tekhn. nauk; CHERNYAK, Ya.N., kand. tekhn. nauk;
BALKEVICH, V.L., kand. tekhn. nauk; GAK, B.N., kand. tekhn.
nauk; KORDONSKAYA, R.K., kand. tekhn. nauk; REMPEL', A.M.,
kand. tekhn. nauk; ZHUKOV, D.V., nauchnyy red.; YUSHKEVICH,
M.O., red. toma; SKRATAYEV, B.G., glav. red.; BALAT'YEV,
P.K., red.; KITAYEV, Ya.N., red.; KITAYGORODSKIY, I.I., red.;
KRZHEMINSKIY, B.A., red.; ROKHVARGER, Ye.L., red.; KHOLIN, I.I.,
red.; GURVICH, E.A., red. izd-va; SHERSTNEVA, N.V., tekhn. red.

[Handbook on the manufacture of structural ceramics] Spra-
vochnik po proizvodstvu stroitel'noi keramiki. Moskva, Gos.
izd-vo lit-ry po stroit., arkhitekt. i stroit. materialam.
Vol.1. [General information and production control] Obshchie
svedeniia i kontrol' proizvodstva. Pod red. M.O. Iushkevicha.
1961. 464 p. (MIRA 15:2)
(Ceramics) (Building materials)

KITAYEV, Ye.N., kand.tekhn.nauk

Problems in developing the production of asbestos cement pipes.
Stroi.mat. 7 no.8:19-23 Ag '61. (MIRA 14:8)
(Pipe, Asbestos-cement)

KITAYEV, Ye.N., kand.tekhn.nauk

Effect of the conditions of manufacture on the quality of
asbestos-cement sheet elements. Trudy NIAsbesttsmenta no.12;
18-54 '61. (MIRA 16:8)
(Asbestos cement)

KITAYEV, Ye.N., kand.tekhn.nauk

Significance of the composition of portland cements in the
intensification of production of asbestos cement products.
Stroi.mat. 8 no.1:35-38 Ja '62. (MIRA 15:5)
(Portland cement) (Asbestos cement)

BUDNIKOV, P.P.; ALEKPEROV, M.S.; BAKLANOV, G.M.; BOLDYREV, A.S.;
BOS'KO, K.D.; VOLZHEINSKIY, A.V.; GROKHOTOV, N.V.; ZHUKOV, A.V.;
ZABAR, L.B.; KITAYEV, Ya.N.; KOSHKIN, V.G.; KRUPIN, A.A.;
MUROMSKIY, P.G.; POPOV, A.N.; SUKHOTSKIY, S.F.; USPENSKIY, V.V.;
KILINT, I.A.; SHVAGIREV, M.P.; YUSHKEVICH, M.O.

Conference on increasing the durability of corrugated roofing
sheets. Stroimaterialy. 8 no.1:p.3 of cover Ja '62. (MIRA 15:5)
(Roofing)

KITAYEV, Ye. N., kand. tekhn. nauk

Technological factors in increasing the rate of production of
sheets of asbestos cement. Stroi. mat. 8 no.9:8-12 S '62.
(MIRA 15:10)

(Asbestos cement)

8/081/63/000/002/048/088
P156/P144

AUTHOR: Kitayev, Yu. N.
TITLE: Selection of cements for producing high-grade asbestos
cement components
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1963, 394, abstract
2M221 (Tr. N -1. in-t asbesta, slyudy, asbestotsementn.
izdelyi i proyektir. str-va predpriyatiy slyud. prom-sti,
no.14, 1962, 89-102)

TEXT: According to a number of research workers, asbestos cement
components made using a mixture with a Portland cement base, with
increased C_3S and C_2S contents and a reduced C_3A content, have the highest
strengths after storage for long periods in moist air conditions. The
increased C_3S content improves all the properties of components made of
asbestos cement. Grinding the cement more finely also has a good
effect. Industrial tests have confirmed that the relationships arrived
at in the laboratory are correct. With cement containing constant amounts

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Selection of cements for producing ...

S/001/53/000/002/040/088
B156/B144

of C_3A and C_4AF , increase in the amount of C_3S and a corresponding reduction in the amount of C_2S improve the strength and density of components and reduce their water-absorption properties. The output of plate-molding machines is also increased. Increase in the content of C_3A causes deterioration in the filtration properties of articles made of asbestos cement, and weakens the bond between the asbestos cement fibre and the solid cement. The following ideal cement composition is recommended for the production of high-grade asbestos cement articles: $C_3S \geq 55\%$ (by clinker), $C_2S \leq 20\%$, C_3A 3-7%, C_4AF up to 16%, free $CaO \leq 1\%$, SO_3 2.5-3.5%. The specific surface area of the cement must be $\geq 3200 \text{ cm}^2/\text{g}$.

[Abstracter's note: Complete translation.]

Card 2/2

KITAYEV, Ye.N.

Principles of intensifying the process of manufacturing asbestos-
cement products. Trudy NIIAsbesttsementa no.15:82-138 '62.

(MIRA 16:7)

(Asbestos cement)

ANASTASIADI, A.P.; BOROVSKIY, V.R.; VYBORNOV, G.V.; KOPELYANSKIY,
G.D.; MAK, I.L.; PECHURO, S.S.; PIYEVSKIY, I.M.;
RACHEVSKAYA, K.D.; REYZNER, Yu.B.; RYBAK, L.L.; TSEPELIOVICH,
M.R.; SHUMAKHER, L.I.; YUSHKEVICH, M.O. [deceased]; AGEYENKO,
Yu.G., nauchnyy red.; BELUGIN, A.T., nauchnyy red.; KOGAN,
G.S., nauchnyy red.; KRZHEMINSKIY, S.A., nauchnyy red.;
MITSKEVICH, M.I., nauchnyy red.; SILENOK, S.G., nauchnyy red.;
TRILESIK, Z.Ye., nauchnyy red.; ZUBAREV, K.A., glav. red.;
TROFIMOV, I.P., red.; SKRAMTAYEV, B.G., glav. red.; BALAT'YEV,
P.K., red.; KITAYEV, Ye.N., red.; KITAYGORODSKIY, I.I., red.;
ROKHVARGER, Ye.L., red.; KHOLIN, I.I., red.; CHERKINSKAYA,
R.L., red.; RODIONOVA, V.H., tekhn. red.

[Manual on the production of gypsum and gypsum products] Spravochnik po proizvodstvu gipsa i gipsovykh izdelii. [By] A.P. Anastasiadi i dr. Pod red. K.A. Zubareva. Moskva, Gosstroizdat, 1963. 464 p. (MIRA 16:7)
(Gypsum) (Gypsum products)

KITAYEV, Ye.M., kand.tekhn.nauk

Effect of the quantity and grade of asbestos on the productivity
of sheet-molding machines and the quality of slate. Stroil. mat.

9 no.4:2-4 Ap '63.

(MIRA 16:5)

(Asbestos cement)

KITAYEV, Ye.N., kand.tekhn.nauk

Production of sheet asbestos cement products from low-grade asbestos.
Stroi.mat. 9 no.12:36-37 D '63. (MIRA 17:3)

KITAYEV, Ye.N.

Autoclaved asbestos-cement products made with sandy and slag cements.
Truly NIAsbesttsementa no.16:116-121 '63. (MIRA 16:8)
(Asbestos cement)

KITAYEV, Ye.N., kand. tekhn. nauk

Manufacturing sheet asbestos cement products from various
makes of portland cement. Stroi. mat. 10 no.213-14 P '64.
(MIRA 17:6)

KITAYEV, YEVGENIY VASIL'YEVICH

DECEASED

1961/I

SEE ILC

ELECTRICAL ENGINEERING

KITAYEV, Yu.M.

Effect of narcotic and stimulants of the central nervous system
on the time of appearance of rigor mortis. Farm. i toks. 21 no.5:
13-16 8-0 '58 (MIRA 11:11)

1. Kafedra farmakologii (sav. - prof. K.A. Meshcherskaya)
Chelyabinskogo meditsinskogo instituta.

(DEATH,

eff. of analeptics & narcotics on rigor mortis (Rus))

(NARCOTICS, effects,

on rigor mortis (Rus))

(ANALEPTICS, effects,

same (Rus))

KITAYEV, Yu.M.

Focal skin edema in the area of the strangulation furrow.
Sud.-med.ekspert. 7 no. 2:47-48 Ap-Je '64. (MIRA 17:7)

1. Kafedra sudebnoy meditsiny (zav. - dotsent D.B.Laykin)
Karagandinskogo meditsinskogo instituta.

KITAYEV, Yu.M.

Nonfatal trauma caused by a high-tension current. Sud.med.
ekspert. 6 no.3:53-55 1963. (MIRA 16:10)

1. Kafedra sudebnoy meditsiny (zav. - dotsent D.B. Leykin)
Karagandinskogo meditsinskogo instituta.
(ELECTRICITY, INJURIES FROM)

KITAYEV, Yu. M.

Fatal aspiration in a case of ascariasis. Med. paraz. i paraz. bol. 27
no.4:496 J1-Ag '58. (MIRA 12:2)

1. Iz knedry sudebnoy meditsiny Karagandinskogo gosudarstvennogo med-
itsinskogo instituta (sav. Kafedroy D.B. Leykin).
(ASCARIASIS, case reports,
fatal aspiration of Ascaris (Rus))

KETAYEV, Yu.P.; TROYEPOLO'SKAYA, T.V.; ARBUZOV, A. Ye.

Syntheses of heterocyclic compounds based on E. Fisher's
reaction. Part 3: Catalysts of an "abnormal" course of reaction.
Zhur. ob. Khim. 34 no.6:1835-1843 Je '64. (MIRA 17:7)

CA 17

New method of iodometric determination of nrotropine
in medicinal mixtures. Yu. P. Kharov (V. I. Ul'yanov-Lenin
State Univ., Kazan, U.S.S.R.). *Zhur. Anal. Khim.* 6,
127-30 (1961).—This method is based on the reaction
 $\text{C}_{10}\text{H}_{16}\text{N}_4 + 4 \text{I} = \text{C}_{10}\text{H}_{12}\text{N}_4$. Nrotropine is pptd. by an
excess of KI, the ppt. is filtered off, and the excess I is
titrated back with thiosulfate. This method is accurate in
neutral media free of substances reacting with I.
M. Hensch

1957

KITAYEV, Yu. P.

USSR/Chemistry - Organophosphorus Compounds Mar 52

"The Addition of Dialkylphosphorus Acids to Unsaturated Compounds. IV. Addition of Dialkylphosphonic Acids to Unsaturated Aldehydes; New Method of Synthesizing Unsaturated α -Hydroxyphosphonic Esters," A. M. Pudovik, Yu. P. Kitayev, Lab of Org Chem of Kazan Affiliate, Acad Sci USSR, and Kazan State U

"Zhur Obshch Khim" Vol XXII, No 3, pp 467-473

Dialkylphosphorus acids in presence of alcoholates of alkali metals will add to α , β -unsatd aldehydes at the carbonyl group, forming esters of unsatd

209742

USSR/Chemistry - Organophosphorus Compounds (Contd) Mar 52

α -hydroxyphosphonic acids. The products of addn of dialkylphosphorus acids to acrolein, cinnamic aldehyde, crotonic aldehyde, fural acrolein, and benzidine-2,4-di-1 were sepd and described.

209742

KITAYEV, Yu. P., Cand Chem Sci -- (diss) "On the Mechanism of
B. Fisher's Reaction and Cases of Its Abnormal Course." Mos,
1957. 18 pp (Acad Sci USSR, Inst of Organic Chemistry im N. D.
Zelinskiy), 100 copies (KL, 48-57, 105)

- 9 -

"APPROVED FOR RELEASE: 09/17/2001

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2/2

ARBUZOV, A.Ye.; KITAYEV, Yu.P.

Synthesis of heterocyclic compounds on the basis of E. Fischer's reaction. Part 2: Abnormal course of E. Fischer's reaction. Zhur. ob. khim. 27 no.9:2341-2354 8 '57. (MIRA 11:3)

1. Kasanskiy khimiko-tekhnologicheskii institut.
(Chemical reaction--Mechanism)

Received, via

AUTHOR ARBUZOV A. Ye., Member of the Academy, KITAIEV Iu. M. PA - 3146

TITLE A polarographic study of the tautomerism and geometrical isomerism of some Arylhydrazones.
(Isucheniye tautomerii i geometricheskoy izomerii nekotorykh arilgidrazonov poliarograficheskim metodom. Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 3, pp 577-580 (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT As it is known that tautomeric forms and stereoisomers regenerate at different potentials on a mercury-drop electrode, the polarographic method was chosen in the present case, by means of which the modifications taking place on the occasion of the dissolution of arylhydrazones in alcohol were controlled. Polarograms were recorded during storage in the dark of the methanol solutions of phenyl hydrazones of acetone, of methyl ethyl ketone, of methyl isopropylketone, of cyclohexanon, of acetophenon, of n-chlorine acetophenon, of vinegar- and benzene aldehydes. A borate buffer with $pH = 7,2$ was used. The concentration of the solutions investigated was $10^{-6} - 1,2 \cdot 10^{-3}$ mol. There follows the description of the deciphering of the polarograms. By means of polarography it was found that the forms of the phenylhydrazone of acetaldehyde are not stereoisomers but tautomers. The substance with the melting point at 57° which is obtained by the interaction of the component in ether in the cold or from the second form by treatment with a SO_2 alcohol solution is an antiisomer-phenylhydrazone, whilst the substance with the melting point at $98 - 101^{\circ}$ was found to be a 2-phenylhydrazone ethylene. Besides, two isomers of phenylhydrazone neobenzaldehyde

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KITAYEV, YU. P.

AUTHOR: ARBUZOV, A.YE. Member of the Academy of Science, PA - 2742
KITAYEV, YU. P.

TITLE: On the Mechanism and Abnormal Course of E.FISCHER'S Reaction.
 (O mekhanizme reaktsii E.Fishera i anormal'nom protokanii yaye, Russian)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 4, pp 807-810 (U.S.S.R.)
 Received: 6 / 1957 Reviewed: 7 / 1957

ABSTRACT: The authors showed previously that the arylhydrazones may exist in the three tautomeric forms. The polarographic activity of all three forms proves the existence of conjunctions of bindings in their molecules. This paper is intended to show the nature of the intermediary effect of bindings in the enhydrazine form. The molecules of these compounds contain two double bindings which are separated by nitrogen atoms, i.e. there exist two groups with πp -conjugations in each of them. In so far as arylhydrazone compounds are of a basic nature, their state is considerably influenced by the acid medium. Thus, hydrazine of the one group may bring about a 1,4 connection of an acid according to a $\pi \sigma$ -conjugated system. By this a more basic hydrazine is produced, which becomes an anion. In this connection the effect produced by catalyzers in FISCHER'S reaction becomes understandable. They shift the tautomeric equilibrium in the direction of enhydrazine and activate the bindings. The most characteristic feature of 1,4-conjugated systems is their ability of entering into reactions of the Diels

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PA - 2742

On the Mechanism and Abnormal Course of E.FISCHER'S Reaction.

synthesis. The authors believe that some 1,6-conjugated systems are, under certain circumstances, able to bring about a new distribution of electron densities accompanied by an intermolecular transformation of the type of the Diels-Alder synthesis, above all the enhydrazine systems. In this paper it was shown by the examples of: phenyl hydrazines of acetone, isopropyl ketone, pinacolone, pyruvic acid, acetophenone, etc., that what has been said about the anomaly of ketone-arylhydrazones decomposition (which gave no methylene group besides carbonyl) by Cu_2O is true. Anomalous products were obtained from acetone-phenylhydrazines and from methylisopropyl ketone, the structural forms of which are given. The theories worked out by the authors concerning the course of reaction are illustrated by means of graphs and are discussed in detail. (8 Citations from Slav Publications, 1 Table, 8 groups of Chemical Formulae).

ASSOCIATION:
PRESENTED BY:
SUBMITTED:
AVAILABLE:

Kazan Chemical-Technological Institute.

12.11.1956
Library of Congress

Card 2/2

5(3),5(4)

AUTHORS:

SOV/20-127-4-25/60
Kitayev, Yu. P., Budnikov, G. K., Arbusov, A. Ye., Academician

TITLE:

Polarographic Investigation of the Tautomerism of Some Semi- and Thiosemicarbazones in Solutions

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 4, pp 818-821 (USSR)

ABSTRACT:

As the problem of the structure and tautomerism of semi- and thiosemicarbazones has not yet been fully solved, the authors started with this article a systematic investigation of the structure and behavior of the representatives of this type of compounds. At first, the polarographic method was used. The semi- and thiosemicarbazones of acetone, methyl-ethyl ketone, acetaldehyde, propionaldehyde, cyclopentane, benzaldehyde, and acetophenone as well as the thiosemicarbazone of para- and isopropylbenzaldehyde were investigated by means of an LP-55 polarograph (Heyrovskiy system) with photographic recording of polarograms. The polarograms were recorded for buffer solutions of the above compounds with the pH-values 5.7, 7.3, 9.3 at 20°, and a molar concentration of the semi- and thiosemicarbazones of $5 \cdot 10^{-4}$ - $5 \cdot 10^{-3}$. A family of curves was obtained for every

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Polarographic Investigation of the Tautomerism of
Some Semi- and Thiosemicarbazones in Solutions

SOV/2C-127-4-25/60

solution with a certain pH-value. The polarograms show the high similarity in the behavior and, consequently, in the structures of the individual compounds. Certain rules for the polarograms of the aliphatic aldehydes and ketones as well as of the alicyclic ketones of semi- and thiosemicarbazones were found in the change of polarograms (Fig 1); the waves with an $E_{1/2} \sim -1.4$ to -1.55 v first become smaller with the time, grow again, and finally disappear completely. The aliphatic and alicyclic α -compounds had - as they occur in two tautomeric forms - two waves at $E_{1/2} \sim -1.5$ v and $E_{1/2} \sim -1.1$ v.

Comparative polarograms of the aqueous alcohol solutions of S-methylthiosemicarbazone were recorded which also show the two waves corresponding to the two tautomeric forms ($E_{1/2} \sim -0.8$ and ~ -1.15 v). An analysis of the polarograms led to the following results: All compounds investigated had an enseri- and enthiosemicarbazone structure in aqueous and aqueous-alcoholic solutions. There is no transition of the double bond from the azomethin group into the carbonyl group.

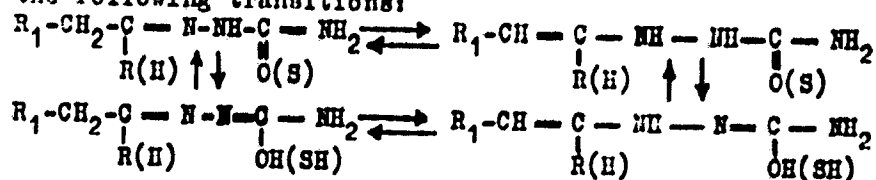
Card 2/3

Polarographic Investigation of the Tautomerism of
Some Semi- and Thiosemicarbazones in Solutions

SOV/20-127-4-25/60

The polarograms of the benzalsemi- and acetophenonethiosemi-
carbazones again showed only one wave ($E_{1/2} \sim -1.15$) (Fig 3).

In the general case, the polarograms pointed to 4 possible
tautomers of the semi- and thiosemicarbazones. They permit
the following transitions:



There are 3 figures and 6 references, 4 of which are Soviet.

ASSOCIATION: Khimicheskiy institut im. A. Ye. Arbuzova Kazanskogo filiala
Akademii nauk SSSR (Chemical Institute of the Kazan' Branch
of the Academy of Sciences, USSR)

SUBMITTED: May 21, 1959

Card 3/3

5(3)

AUTHOR:

Kitayev, Yu. P. (Kazan')

SOV/74-28-3-6/6

TITLE:

Syntheses of Heterocyclic Compounds on the Basis of E. Fischer's Reaction (Sintezy geterotsiklicheskich soyedineniy na osnove reaktsii E. Fishera)

PERIODICAL:

Uspekhi khimii, 1959, Vol 28, Nr 3, pp 336-368 (USSR)

ABSTRACT:

The present summary is dedicated to the fact that the reaction detected by the German scientist E. Fischer and named after him was found 75 years ago. A further motive for this paper was the proof of the catalytic character of the reaction detected by the Russian chemist A. Ye. Arbuzov 45 years ago. The reaction found by Fischer became the basis of the laboratory syntheses in the field of nitrogen-containing heterocyclic compounds. In this reaction about 80 different aryl hydrazines were used (Table 1). It may be expected that numerous further compounds of this class will be successfully used in this reaction. In the selection of aryl hydrazines, however, some limitations were found (Refs 27,28). From the carbonyl compounds different aldehydes, ketones, aldehyde- and keto acids as well as their esters, phenols, coumaranones and ketolactones were used (Table 2). It can be seen from the

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Syntheses of Heterocyclic Compounds on the
Basis of E. Fischer's Reaction

SOV/74-28-3-6/6

data available that by means of the Fischer reaction substituted indoles, indolenines, oxindoles, tetrahydro- and octahydro-carbazoles, pyrroles, tri- and tetracyclic asazalines (Ref 187) and 2-aminobenzthiazoles can be synthesized. In the course of time the method by Fischer was completed in many ways and some modifications were made. At present more than 30 different catalysts are recommended (Table 4). It is not possible to mention all examples described in publications for the performance of Fischer's reaction in this paper. The tables published in it cover rather completely the principal classes of the carbonyl compounds and hydrazine derivatives. Besides they illustrate in detail both the application fields of the reaction and the variety of the experimental methods used. Although the transformation of arylhydrazones into indole derivatives was detected already 70 years ago, the mechanism of this reaction has not yet been perfectly clarified. Further a summary of publications is given dealing with the investigation of the reaction mechanism and establishing various hypotheses and assumptions. These papers have historical importance only. At present the scheme by G. and R. Robinson,

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Syntheses of Heterocyclic Compounds on the
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completed by Allen and Wilson is widely accepted. The individual stages of this scheme which explains the cyclization process of aryl hydrazones, aryl hydrazides of the carboxylic acids and ketone-azines, could be confirmed. The author of this paper had investigated in the last few years the tautomerism of aryl hydrazones and their rearrangement in Fischer's reaction under the supervision of A. Ye. Arbuzov. It was possible to demonstrate the applicability of the polarographic method to the investigation of isomeric and stereoisomeric transformations of aryl-hydrazones in solutions (Refs 65,66, 219,229). On the basis of the studies performed the scheme suggested 40 years ago by G. and R. Robinson could be confirmed, defined and completed once more. It was further possible to prove from the point of view of the generalized conjugation theory (Refs 66,222) that hitherto by far not all possible transformations, similar to Fischer's reaction, have been investigated. There are 5 tables and 228 references, 38 of which are Soviet.

Card 3/3
USCOMM-DC-60759

5(4)

AUTHORS:

Kitayev, Yu. P., Budnikov, G. K., Arbusov, A. Ye., Academician SOV/20-127-3-30/58

TITLE:

The Polarographic Investigation of the Stereoisomeric Transformation of Some Semi- and Thiosemicarbasones in Solutions

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 5, pp 1041-1045 (USSR)

ABSTRACT:

The authors point out that the stereoisomerism of semi- and thiosemicarbasones has not yet been sufficiently well investigated, and that there are many discrepancies in published data (Refs 2-4). Investigations were carried out of the semi- and thiosemicarbasones of methyl ketone, diethyl ketone, cyclopentanone, cyclohexanone, benzaldehyde, acetophenone, and thiosemicarbasone of p-isopropylbenzaldehyde in a 20% solution of methanol in water with pH = 5.7 under irradiation with ultraviolet light. The measurements were carried out by means of the photorecording polarograph LR-55. In the case of alicyclic aldehydes and ketones the stereoisomeric transformation of the corresponding semi- and thiosemicarbasones occurs easily. Under irradiation by ultraviolet light the polarogram shows a new wave with positive $E_{1/2}$. An exception is formed by the thiosemi-

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The Polarographic Investigation of the Stereoisomeric Transformation of Some
Semi- and Thiosemicarbazones in Solutions

carbazone of cyclopentanone, which decays by irradiation. The production of the second wave, the height of which increases with the duration of the irradiation, is explained by the production of a labile form. In the case of cyclic derivatives isomerism is based on the cis- and trans-form with respect to the ring. In aromatic derivatives stereoisomerism may be explained by the group $R_1 \setminus \begin{matrix} C-N- \\ R(H) \end{matrix}$.

Table 1 gives the measured potentials of the semiwaves of the stereoisomers and the transformation energies. Even though the polarographical data alone do not suffice for the purpose of explaining the structure of stereoisomers, they may, in conjunction with chemical and physical methods, nevertheless make a valuable contribution. The labile forms found will as a rule be the cis- (or syn-) forms, though there are exceptions. Therefore a further investigation of the structure of these stereoisomers is necessary. There are 2 figures, 1 table and 9 references, 7 of which are Soviet.

Card 2/3

SOV/20-127-5-30/58

The Polarographic Investigation of the Stereoisomeric Transformation of Some
Semi- and Thiosemicarbazones in Solutions

ASSOCIATION: Khimicheskiy institut im. A. Ye. Arbusova Kazanskogo filiala
Akademii nauk SSSR (Chemical Institute imeni A. Ye. Arbusov
of the Kazan' Branch of the Academy of Sciences, USSR)

SUBMITTED: May 22, 1959

Card 3/3

KITAYEV, Yu.P.; BUDNIKOV, G.K.; ARBUZOV, A.Ye.

Study of tautomerism and geometric isomerism of nitrogen- containing derivatives of carbonyl compounds. Report No.3: Polarographic study of some semi- and thiosemicarbazones in water-alcohol solutions. Izv. AN SSSR.Otd.khim.nauk no.5:824-831 My '61. (MIRA 14:5)

1. Khimicheskiy institut im. A.Ye.Arbusova Kazanskogo filiala Akademii nauk SSSR,

(Semicarbazones)

(Polarography)

KITAYEV, Yu.P.; DULNIKOV, G.K.; ARBUZOV, A.Ye.

Tautomerism and geometrical isomerism of nitrogen-containing carbonyl compounds. Report No.4: Polarographic study of transformations of some semi- and thiosemicarbazones in water - alcohol solutions. Izv. AN SSSR. Otd.khim.nauk no.7: 1222-1227 J1 '61. (MIRA 14:7)

1. Khimicheskiy institut im. A.Ye. Arbuzova Kazanskogo filiala Akademii nauk SSSR.

(Semicarbazones)

TOROPOVA, V.F.; KITAYEV, Yu.P.; BUDNIKOV, G.K.

Complex compounds of mercury and silver with acetone thiosemicarbazone. Zhur. neorg. khim. 6 no.3:647-652 Mr '61.

(MIRA 14:3)

1. Kazanskiy gosudarstvennyy universitet imeni V. I. Ul'yanova-Lenina Kazanskiy filial AN SSSR.

(Mercury compounds)

(Silver compounds)

(Acetone)

KITAYEV, Yu.P.; BUDNIKOV, G.K.; TROYEOL'SKAYA, T.V.; ARBUZOV, A. Ye.,
akademik

Quantitative evaluation of the effect of substituents on the
polarographic reduction of certain azomethine compounds. Dokl.
AN SSSR 137 no.4:862-865 Ap '61. (MIRA 14:3)

1. Khimicheskiy institut im.A. Ye. Arbuzova Kazanskogo filiala
AN SSSR.

(Schiff bases)

(Hammett equation)

KITAYEV, Yu.P.; HUDNIKOV, G.K.; ARBUZOV, A.Ye.

Study of tautomerism and geometrical isomerism of nitrogen-containing derivatives of carbonyl compounds. Report No.5: Polarographic study of semi- and thiosemicarbazones of aromatic aldehydes. Izv.AN SSSR.Otd.khim.nauk no.10:1772-1780 0 '61.
(MIRA 14:10)

1. Khimicheskiy institut im. A.Ye.Arbusova Kazanskogo filiala
AN SSSR.

(Semicarbazones) (Polarography)

KITAYEV, Yu.P.; BUDNIKOV, G.K.; SKREBKOVA, I.M.

Tautomerism and geometrical isomerism of nitrogen-containing derivatives of carbonyl compounds. Report No.6: Polarographic study of semicarbazones and thiosemicarbazones of some aliphatic and alicyclic ketones. Izv. AN SSSR Otd.khim.nauk no.2:244-252 P '62.
(MIRA 15:2)

1. Khimicheskiy institut im. A.Ye.Arbuzova AN SSSR, Kazan'.
(Semicarbazones)
(Polarography)

KITAYEV, Yu.P.; BUDNIKOV, G.K.

Use of polarography in organic chemistry. Usp.khim. 31 no.6:
670-709 Je '62. (MIRA 15:5)

1. Khimicheskiy institut imeni A.Ye. Arbuzova Kazanskogo
filiala AN SSSR.
(Polarography) (Chemistry, Organic)

KITAYEV, Yu.P.; ARBUZOV, A.Ye.

Study of tautomerism and geometric isomerism of nitrogen-containing derivatives of carbonyl compounds. Report No.2: Polarographic study of transformations of phenylhydrazones of some aldehydes and fatty aromatic ketones in methanol. Izv.AN SSSR Otd.khim.nauk no.8:1405-1411 Ag '60. (MIRA 15:5)

1. Khimicheskiy institut im. A.Ye.Arbusova, Kazanskiy filial AN SSSR.
(Hydrazones) (Polarography) (Isomerism)

KITAYEV, Yu.P.; BUDNIKOV, G.K.

Color reaction of thiosemicarbazones with sodium nitroprusside.

Zav.lab. 28 no.7:806-807 '62.

(MIRA 15:6)

1. Khimicheskiy institut Kazanskogo filiala AN SSSR.
(Semicarbazones) (Sodium nitroprusside)

BUDNIKOV, G.K.; KITAYEV, Yu.P.

Oscillographic polarography of some semicarbazones and
thiosemicarbazones. Zhur.ob.khim. 32 no.2:358-364, 1962.
(MIRA 15:2)

1. Khimicheskiy institut imeni A.Ye. Arbuzova Kazanskogo
filiala AN SSSR.

(Semicarbazones)
(Polarography)

KITAYEV, Yu.P.; BUDNIKOV, G.K.; CHERNOVA, A.V.

Tautomerism and geometric isomerism of nitrogen-containing derivatives of carbonyl compounds. Report No.7: Ultraviolet spectra of some semi- and thiosemicarbazones. Izv. AN SSSR. Otd. khim. nauk no.7:1208-1213 JI '62. (MIRA 15:7)

1. Khimicheskiy institut im. A.Ye. Arbuzova AN SSSR.
(Semicarbazones--Spectra)

SHAGIDULLIN, R.R.; SATTAROVA, F.K.; BUDNIKOV, G.K.; KITAYEV, Ku.P.

Characteristic analytical features in infrared absorption spectra and in the structure of semi- and thiosemicarbazones, as well as of their methylation products. Izv. AN SSSR, Ser. fis. 26 no.10:1301-1303 0 '62. (MIRA 15:10)

1. Khimicheskiy institut im. A.Ye.Arbusova AN SSSR.
(Semicarbazones—Spectra)

SHAGIDULLIN, R.R.; SATTAROVA, F.K.; TROYEPOL'SKAYA, T.V.; KITAYEV, Yu.P.

On the coexistence of different tautomeric forms of
phenyl hydrazones. Izv. AN SSSR. Otd. khim. nauk no. 2: 385-385,
F '63. (MIRA 16:4)

1. Khimicheskiy institut im. A.Ye. Arbuzova AN SSSR.
(Hydrazones) (Tautomerism)

KITAYEV, Yu.P.; TROYEPOLO'SKAYA, T.V.

Tautomerism and geometrical isomerism of nitrogen-containing derivatives of carbonyl compounds. Report No.8: Polarographic study of phenyl hydrazone tautomerism. Izv.AN SSSR,Otd.khim. nauk no.3:454-465 Mr '63. (MIRA 16:4)

1. Khimicheskiy institut im. A.Ye.Arbusova AN SSSR.
(Hydrazones) (Tautomerism) (Polarography)

KITAYEV, Yu.P., TROYEOL'SKAYA, T.V.

Tautomerism and geometrical isomerism of nitrogen-containing derivatives of carbonyl compounds. Report No.9: Polarographic behavior of phenyl hydrazones. Izv.AN SSSR.Otd.khim.nauk no.3:465-473 Mr '63. (MIRA 16:4)

1. Khimicheskiy institut im. A.Ye.Arbusova AN SSSR.
(Hydrazones) (Tautomerism) (Polarography)

SHAGIDULLIN, R.R.; SATTAROVA, F.K.; TROYEPOLO'SKAYA, T.V.; KITAYEV, Yu.P.

Tautomerism and geometrical isomerism of nitrogen-containing derivatives of carbonyl compounds. Report No.10: Infrared spectra of the phenyl hydrazones of some aldehydes. Izv.AN SSSR.Otd.khim.nauk no.3:473-478 Mr '63. (MIRA 16:4)

1. Khimicheskiy institut im. A.Ye.Arbutova AN SSSR.
(Hydrazones--Absorption spectra) (Tautomerism)

SHAGIDULLIN, R.R.; SATTAROVA, F.K.; SEMENOVA, N.V.; TROYEPOL'SKAYA, T.V.;
KITAYEV, Yu.P.

Tautomerism and geometrical isomerism of nitrogen-containing
derivatives of carbonyl compounds. Report No. 2: Infrared
spectra of phenylhydrazones of some ketones. Izv. AN SSSR.
Otd. khim. nauk no.4:633-637 Ap '63. (MIRA 16:3)

1. Khimicheskiy institut im. A. Ye. Arbusova AN SSSR, Kazan'.
(Hydrazones—Absorption spectra) (Isomerism)

KITAYEV, Yu.P.; BUDNIKOV, G.K.

Polarographic reduction of semicarbazones and thiosemicarbazones. Zhur. ob. khim. 33 no.5:1396-1403 My '63.

(MIRA 16:6)

1. Khimicheskiy institut imeni A.Ye. Arbuzova AN SSSR.
(Semicarbazones) (Polarography)

KITAYEV, Yu.P.; SKREBKOVA, I.M.

Behavior of some polynitroalkanes on a mercury dropping electrode.
Dokl. AN SSSR 149 no.5:1080-1083 Ap '63. (MIRA 16:5)

1. Khimicheskiy institut im. A.Ye.Arbusova AN SSSR. Predstavleno
akademikom A.Ye.Arbusovym.
(Nitroparaffins) (Electrodes, Dropping mercury)

KITAYEV, Yu.P.; BUDNIKOV, O.K.

Polarographic study of some benzohydrazides. Dokl. AN SSSR 154 no.6:1379-1381 P '64. (MIRA 17:2)

1. Khimicheskiy institut im. A.Ye.Arbusova AN SSSR. Predstavleno akademikom A.Ye.Arbusovym.

KITAYEV, Yu.P.; BUDNIKOV, G.K.

Tautomerism and geometrical isomerism of nitrogen-containing derivatives of carbonyl compounds. Report No.12: Polarographic study of semi and thiosemicarbazones of aliphatic aldehydes. Izv. AN SSSR. Ser. khim. no.6:978-984 Je '64. (MIRA 17:11)

1. Khimichenskiy institut im. A.Ye. Arbuzova AN SSSR.

CHERNOVA, A.V.; SHAGIDULLIN, R.R.; KITAYEV, Yu.P.

Transformations of phenylhydrazones in solutions. Izv.
AN SSSR. Ser. khim. no.8:1555 Ag '64. (MIRA 17:9)

1. Khimicheskiy institut im. A.Ye. Arbuzova AN SSSR, Kazan'.

RAYEVSKIY, O.A.; SHAGIDULLIN, R.R.; KITAYEV, Yu.P.

Vibrational spectra and structure of thiosemicarbazones of
some keto acid esters. Dokl. AN SSSR 159 no.4:900-903 D '64.
(MIRA 18:1)

1. Khimicheskiy institut imeni A. Ye. Arbuzova AN SSSR.
Predstavleno akademikom B.A. Arbuzovym.

1. G. V. Kiselev, V. V. Kiselev, V. V. Kiselev, V. V. Kiselev.

Electron paramagnetic resonance in nitrochlorobenzene
Zhur. strukt. khim. 6 no.1:153-155 Ja-7 '65.
(MIRA 18:12)

1. Institut organicheskoy khimii AN SSSR, Kazan'. Submitted
July 14, 1964.

ARBUTOV, B.A.; SAMITOV, Yu.Yu.; KITAYEV, Yu.P.

Nuclear magnetic resonance spectra of proteins and the structure of azines and phenylhydrazones. Izv. AN SSSR. Ser. Khim. no.1:65-66. (MIRA 19:1)

1. Khimicheskiy institut im. A.Ye.Arbusova AN SSSR i Kazanskiy gosudarstvennyy universitet im. V.I.Ul'yanova-Lenina.

KHILAYEV, Yu.F.; BUDNIKOV, G.K.; TRAVNIKOVA, T.V.

Maxima on the polarographic curves of some nitrogen-containing derivatives of carbonyl compounds. Izv. AN SSSR. Ser. Khim. (1965) no.1:186-188.

1. Khimicheskii Institut im. A.Ye. Arbusova AN SSSR. Submitted April 27, 1965.

VYASELEV, M.R.; BUDNIKOV, G.K.; KITAYEV, Yu.P.

Possibility of determining microquantities of organic compounds during their adsorption by using an oscillographic method with stepped polarization voltage. Dokl. AN SSSR 162 no.2:331-334 My '65.

(MIRA 18:5)

1. Kazanskiy aviatsionnyy institut. Submitted October 8, 1964.

L 27890-66
 ACC NR: AP5026538
 SOURCE CODE: UR/0286/65/000/019/0081/0081
 AUTHORS: Kitayev, Yu. V.; Sinagin, A. V.; Malyshev, V. A.
 ORG: none
 TITLE: A device for testing a diving respiratory apparatus. Class 42, No. 175262
 SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 81
 TOPIC TAGS: respirator, pressure regulator, automatic pressure control
 ABSTRACT: This Author Certificate presents a device for testing a diving respiratory apparatus. The device contains a sensitive element in the form of a membrane dividing the casing into two compartments and directing the flow of a gas stream through a nozzle regulated by a measuring element (see Fig. 1). To broaden the limits of testing pressure without destroying the sensitive element, the nozzle-containing chamber of the device is provided with a valve and an auxiliary membrane which is equal to the effective size of the membrane and which directs the valve. The valve and the auxiliary membrane regulate the pressure delivered by a source of compressed air in response to the tested pressure.
 Cord 1/2
 UDC: 626.025.001.4

L 27890-66

ACC NR: AP5026538

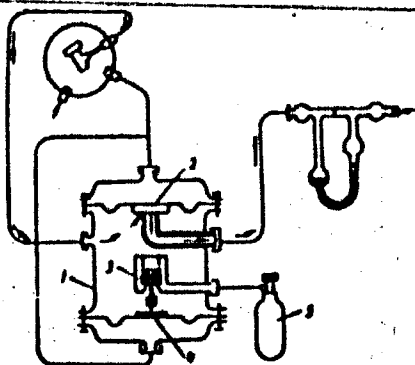


Fig. 1. 1- chamber;
2- nozzle; 3- valve;
4- membrane;
5- source of compressed
air

Orig. art. has: 1 figure.

SUB CODE: IE/

SUBM DATE: 01Jul63

Card 2/2 *lp*

ACC NR: AP7002618

(A,N)

SOURCE CODE: UR/0413/66/000/023/0134/0134

INVENTOR: Inozemtsev, N. I.; Kitayev, Yu. V.; Bykhovskiy, Kh, V.; Pechatin, A. A.

ORG: none

TITLE: .Piston reducer for an automatic aqualung. Class 65, No. 189323

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 134

TOPIC TAGS: piston reducer, aqualung, diving technology, life support equipment, respirator, underwater clothing, survival kit

ABSTRACT: An Author Certificate has been issued for a piston reducer assembly for an automatic aqualung. Fig. 1 shows the assembly. To maintain secondary pressure in the

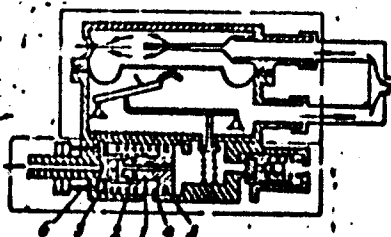


Fig. 1. Piston reducer assembly

- 1 - Differential piston;
- 2 and 3 - rubber gaskets;
- 4 - spring; 5 - seal;
- 5 - connecting pipe seat.

Card 1/2

UDC: 626.025.5

ACC NR: AP7002618

"APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R000722910020-8

reducer chamber more accurately, a seal made of plastic is attached to the butt of the small differential piston. This seal covers the opening of the connecting pipe seat where air is introduced at high pressure. A spring prevents damage to the piston during vibration. [WA-M-67-02]

SUB CODE: 06/ SUBM DATE: 23Apr64/

Card 2/2

L 10 10-67 PAT(1) SCFB DD

ACC NR AP0035943 (✓) SOURCE CODE: UR/0413/66/000/020/0204/6204

INVENTOR: Tyurin, V. I.; Klepatskiy, A. G.; Kolyadina, L. A.; Kitayev, Yu. V.;
Sapogov, S. V.

ORG: none

TITLE: Breathing device for divers working at constant depths. Class 65,
No. 187553

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966,
204

TOPIC TAGS: water, air, respirator, diving mask, naval physiology

ABSTRACT: An Author Certificate has been issued for a breathing device for divers working at constant depths. It consists of a housing with a mask and inhaling and exhaling valves; it is connected to the breathing bag of the device regulating the required gas volume. The breathing bag has a bleeder valve joined to a regenerative cartridge containing a chemical substance, and to a cartridge containing a chemical absorbent. To insure that the diver can remain under water at constant depths for a long period, the component regulating the required gas

Card 1/2

UDC: 629.128.2/7 614.894

L 10676-67
ACC NR: AP6035943

volume in the breathing bag is in the form of a housing with channels. The housing is joined to the exhalation tube by a regenerative cartridge and a cartridge containing a chemical absorbent. The housing contains a valve rest contacting an elasticized membrane mounted inside the housing and attached to the elastic walls of the breathing bag by flexible trip rods. The housing automatically distributes the flow of exhaled gas to the regenerative and absorbent cartridges. Orig. art. has: 1 figure. [Translation] [N-67-2]

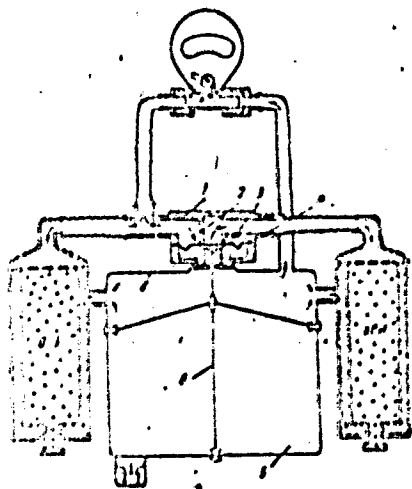


Fig. 1. Breathing device for divers.
1—Housing of device regulating required gas volume; 2—valve rest; 3—membrane; 4—spring; 5—breathing bag; 6—elastic trip rods

SUB CODE: 06/SUBM DATE: 13Jan65/

Card 2/2

ACCESSION NR: AT4042687

8/0000/63/000/000/0246/0247

AUTHOR: Kitayev-Smyk, L. A.

TITLE: Sensory disruptions due to weightlessness

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963.
Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 246-247

TOPIC TAGS: weightlessness, sensory disruption, sensory illusion, coordination test

ABSTRACT: A series of tests was performed during short-term weightlessness for the purpose of determining various sensory, vegetative, and motor reactions of people. Many persons who had little previous flying experience suffered from a sensation of falling, accompanied by a sense of fear. Other persons underwent a sense of disorientation so that they felt that they were hanging head-down or back-down or in some other nonvertical position. Persons who experienced a sensation of falling and fear often also experienced other illusory sensations, such as sensations of expanding or increasing in size, distortion of objects in their field of vision, and sometimes the appearance of violet aura around lighted

Card 1/2

ACCESSION NR: AT4042687

objects. An examination of color perception found that certain colors, particularly yellow, were more vividly perceived in a weightless state. In most cases this visual acuity diminishes as the state of weightlessness is prolonged, and in some persons it disappears entirely after a while. Coordination in a weightless state was tested by means of a "horizontal letter." The object of this test is to draw a series of crosses in a horizontal line. In a weightless state, the line of crosses tended to go up, and during excess g it tended to down. This was true with eyes opened or closed, although in the latter case the reaction was less well marked. In tests with open eyes, when the subject's hand was shielded from his view, the line of crosses tended to go down during weightlessness, whereas the line tended to go up during excess g. Among experienced flying personnel, these effects were not observed. Shots fired at a target during weightlessness tended to be displaced upward and to the right, while during excess g they tended to be displaced downward. In a weightless state, the shots tended to be less well grouped. Evaluation of passage of time by persons in weightlessness gave somewhat indefinite results.

ASSOCIATION: none

SUBMITTED: 27Sep63
NO REF SOV: 000

ENCL: 00
OTHER: 000

SUB CODE: LS

Card 2/2

KITAYEV-SMYK, L.

Cat floats in the air. Nauka i zhizn' 30 no.4:35-39 Ap '63.
(MIRA 16:7)

(Weightlessness)

ACCESSION NR: AT4042682

8/0000/63/000/000/0197/0198

AUTHOR: Zverev, A. T.; Kitayev-Say^{sk}, L. A.

TITLE: Effects of short-term weightlessness on the nervous system

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963.
Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 197-198

TOPIC TAGS: weightlessness, nervous system, performance test, angular acceleration, Coriolis acceleration

ABSTRACT: Experiments were performed in order to determine the ability of men to perform certain types of tasks under conditions of weightlessness. The tasks included responding to lights, numbers, and needle indicators. If a light lit up, the subject had to connect contacts. If a 3-digit figure appeared, he had to dial the number on a telephone-like dial. In the case of the needle indicator, the subject had to maintain it on center while the needle deviated according to a programmed tape. In work with contacts, when the aircraft was gathering speed, execution time was reduced; during initial excess g execution time became still

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ACCESSION NR: AT4042682

less; during weightlessness it became greater, often greater than the initial level; during the second excess g it diminished once more; and during the second level flight it increased. Execution times for work with 3-digit numbers followed the same pattern. The magnitude of error in work with keeping the needle indicator on center was 1.5--2 times as great during initial and post-weightless overloads as it was during level flight. During weightlessness, the magnitude of error over level flight increased by a factor of 3--4. When subjected to angular accelerations, the magnitude of error increased by 10--15%. During coriolis accelerations, the margin of error also increased in all stages of flight, but was particularly marked during weightlessness when it increased 8- to 10-fold. These objective data contrasted with subjective evaluations of the subjects who felt that it was more difficult to work during excess g than during weightlessness.

ASSOCIATION: none

SUBMITTED: 27Sep63

ENCL: 00

SUB CODE: 1A

NO REF SOV: 000

OTHER: 000

Card 2/2

Author: Litayev-Smyk, A. (Research associate)

TITLE: Man in a state of weightlessness

SOURCE: Nauka i zhizn', no. 9, 1964, 16-21

TOPIC TAGS: weightlessness, manned spaceflight, parabolic flight, performance test, zero G effect, psychophysiology

ABSTRACT: The author gives a general account of various parameters of weightlessness as they are now understood, including methods of experimentation, sensory organs affected by weightlessness, psychological response of people to weightlessness, seasickness, visual response to weightlessness, movements during weightlessness, and working ability under weightless conditions. It seems likely, as a result of experiments involving the repeated exposure of subjects to parabolic flight, that the human organism is able to adapt to the state of short-term weightlessness. The initial sensory effects of weightlessness, such as fear, tumbling sensations, and uncomfortable feelings of

Card 1/3

APPROVED FOR RELEASE: 09/17/2001

ENCL: 1

R 15, PH

NO REF SOV: 000

OTHER: 000

ATT PRESS: 3133

Card 3/3

ACCESSION NR: AT4037685

8/2865/64/003/000/0159/0166

AUTHOR: Kitayev-Smyk, L. A.

TITLE: Reactions of humans to weightlessness

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 3, 1964, 159-166

TOPIC TAGS: parabolic flight, weightlessness, manned space flight

ABSTRACT: Parabolic trajectories in aircraft were used to study the reactions of more than 200 persons to brief (26 to 30 sec) periods of weightlessness. The drawback of the method is that the periods of weightlessness are preceded and followed by periods of increased (2g) gravity lasting up to 18 sec. Some subjects underwent several hundred trials. Data were collected by observation, interrogation, and motion pictures. At the onset of weightlessness, 75% of the subjects not accustomed to flight experienced spatial illusions (hanging head downward; lying on stomach, back, or side; sensation of being thrown upward, of falling, and of falling and turning in the air). These spatial illusions were accompanied to a greater or lesser degree by psychological reactions (fear,

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disorientation, and even loss of contact with reality) and sympathetic reactions (nausea, vomiting) in various combinations. Correlations were noted between the type of spatial illusion experienced and the psychological and sympathetic reactions which followed, permitting the latter to be predicted. These psychological and sympathetic disturbances (fear, disorientation, nausea, vomiting) are the factors limiting human tolerance to weightlessness. Subjects were divided into two groups: those with considerable flight experience (over 100 hrs flying time or over 20 parachute jumps) and persons unaccustomed to flight. The experienced group showed a much higher (82%) proportion of persons with good tolerance to weightlessness than the inexperienced group (17%). A pregnant woman unintentionally included in the experimental group experienced nausea and vomited, but recovered after the flight and carried a normal baby to term. The data obtained indicate the possibility of adaptation to weightlessness.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 002

OTHER: 002

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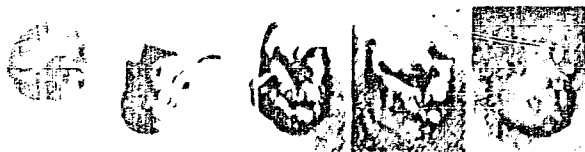
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