

GULYANOV, G.V. --

"Certain Methods for the Biological Improvement of Seeds of Spring Wheat in the Initial Stages of Seed Planting (for conditions of the Wooden Steppes of the Southeastern USSR)." Cand Agr Sci, Saratov Agricultural Inst, Saratov, 1953, (RZhBiol, No 3, Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

GUYAZEV, G.V.; POLAK, L.S.

Kinetics of the thermal decomposition of methane. Kin. i kat. 6  
no.3:399-405 My-Je '65. (MIPA 18:10)

1. Institut neftekhimicheskogo sinteza imeni Topchiyeva AN SSSR.

SOV/70-4-4-9/34

AUTHORS: Sanadze, V.V. and Gulyayev, G.V.

TITLE: The Decay of Solid Solutions in the System Nickel-gold. I.

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 4, pp 526 - 533  
+ 1 plate (USSR)

ABSTRACT: The nickel-gold alloys, containing 0.7, 1.12 and 1.72 at.% Au, have been studied by the method of successive annealing. It was shown, by X-ray diffraction, micro-hardness and electrical conductivity measurements, that in these alloys a two-phase decay of solid solutions rich in Au takes place at comparatively low temperatures, but that above 500-600 °C, two-phase decay proceeds in solutions based on Ni. Alloys of the three compositions were made by fusing Ni and Au in a corundum crucible in a vacuum furnace. .5 mm dia cylinders were turned from the specimens and etched with 50% HNO<sub>3</sub>, 50% CH<sub>3</sub>COOH for X-ray examination. Parameters were found from the 420 CuK<sub>α</sub> doublet at 78°30'. Specimens, both rods and plates, were annealed at various temperatures between 250 and 925 °C. Those quenched from temperatures higher than 925 °C had the single-phase β-solid solution structure.

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SOV/70-4-4-9/34

The Decay of Solid Solutions in the System Nickel-gold. I.

The equilibrium diagram of the Ni-Au system shows that the limit of the solubility of Au in Ni below 300 °C has not been exactly established, although extrapolation gave some basis for the assumption that at room temperature Au was soluble in Ni to the extent of at least 1-1.5 at.%. This was why the particular concentrations used here were chosen. For the two lower concentrations, metallographic examination failed to show two phases and only the increased background or weak lines in the diffraction pictures showed that at room temperature the alloys were not single-phase. For studying the transformation proceeding in the Au-rich  $\alpha$ -phase, the measurements of X-ray background and electrical resistance were particularly valuable as these characteristics were especially sensitive to changes in the finely-dispersed components of alloys. As a result of the increasing solubility of Au in the Ni lattice with increasing temperature, non-uniformities begin to be produced in  $\alpha$ -solid solutions which decay into  $\alpha$  and  $\alpha'$  phases poorer and richer in Au. There are two

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SOV/70-4-4-9/34

The Decay of Solid Solutions in the System Nickel-gold. I.

solid solutions co-existing in one and the same base but of different concentrations and this indicates the occurrence of two-phase decay of the solid solution. The impoverishment of the  $\alpha$ -solid solutions with respect to Au leads to the formation of ordered structures, first  $Au_3Ni$ , then AuNi

and, finally,  $Ni_3Au$ . At higher temperatures (above 500-600 °C) the  $\beta$ -solid solutions begin to decay. These modes are very complicated and are summarised in a diagram. Exfoliation of the  $\beta$ -solid solutions proceeds with the separation of gold-rich phases ( $\beta$ ,  $\beta^*$  and  $\beta'$ ). This process in turn leads to the formation of ordered structures of the  $Ni_3Au$  type based on the  $\beta$ -solid solutions. It

is clear that all the phases mentioned are not stable and only express separate stages of the process, its kinetics. The process consists of the meeting of two diffusion currents leading at high temperatures to the formation of a homogeneous solid solution.

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SOV/70-4-4-9/34  
The Decay of Solid Solutions in the System Nickel-gold. I.

There are 9 figures, 1 table and 6 references, of which  
4 are German, 1 English and 1 international.

ASSOCIATION: Gruzinskiy politekhnicheskiy institut im. S.M. Kirova  
(Georgian Polytechnical Institute imeni S.M. Kirov)

SUBMITTED: April 8, 1959

Card4/4

201/10 4-4-11/20

AUTHORS: Sanadze, V. V., Gulyayev, G. V.

TITLE: Decomposition of Solid Solutions in Nickel-Gold Alloys

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 5, pp 678-694 (USSR)

ABSTRACT: Continuing the subject of their previous studies (Abstract 74873, Kristallografiya, 4,4, 1959), The authors examined the course of phase transitions in the nickel-gold alloys with higher Au contents than in previous experiments. The contents of 10.07% Au, 14.4% Au, 19.5% Au (3.2, 4.8, 6.7 atomic %, respectively) secured two-phase systems at indoor temperatures. The phase transitions and the compounds resulting from them at the annealing temperatures varying from 250 to 925° C are shown in Fig. 10. It can be seen that the redistribution of atoms in the  $\alpha$ -phase, rich in gold, first leads to the segregation of  $Au_3Ni$  with

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Decomposition of Solid Solutions in Nickel-Gold Alloys

75.00  
307/70-4-9-01/36

an ordered crystal structure and  $\alpha'$ -phase with a lower Au content. The still further temperature increase leads to the solution of more gold in the  $\beta$ -phase on the expense of  $\text{Au}_3\text{Ni}$ ,  $\alpha'$ -phase and  $\text{AuNi}$  which consequently disappear completely at certain temperatures. The increased Au content in the  $\beta$ -phase gives rise to the segregation of  $\beta'$ -phase, of which, in turn, segregates the  $\beta''$ -phase, taking the excessive Au. Finally, above  $900^\circ\text{C}$ , all the transitional phases dissolve one in another forming a single  $\beta$ -phase of uniform composition. The unit cell dimensions of each phase were determined according to the X-ray photographs taken at various temperatures. The identity periods,  $a$ , of their cubic cells are given in Fig. 10 in parentheses. The alloys of the three different compositions, annealed at various temperatures, have been tested for the hardness,  $H_{\mu}$  in  $\text{kg}/\text{mm}^2$  units, and electric resistivity,  $\rho$  in  $10^6 \Omega$  per cm units. The results for the alloy with 4.8% Au (atomic)

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Decomposition of Solid Solutions in Nickel-Gold Alloys

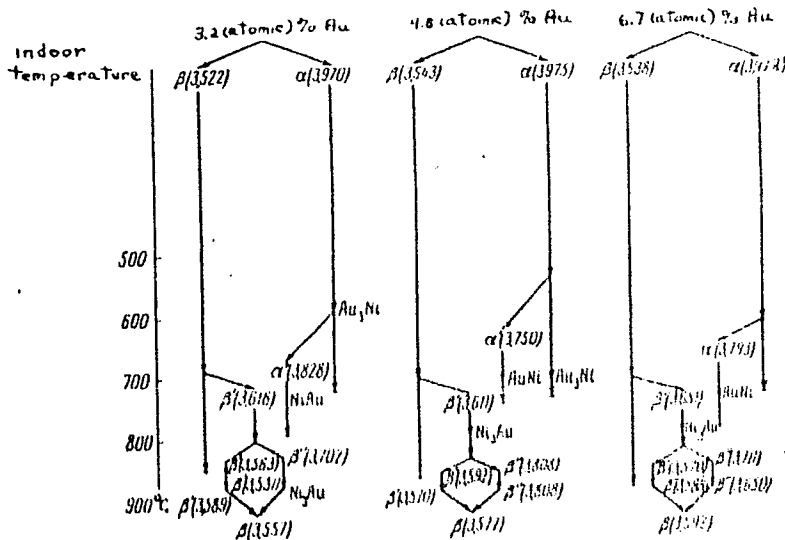


Fig. 10

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Decomposition of Solid Solutions in Nickel-Gold Alloys

15/83  
307/76-4-5-11/36

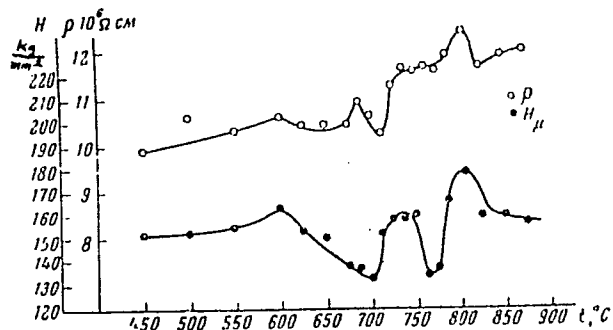


Fig. 6

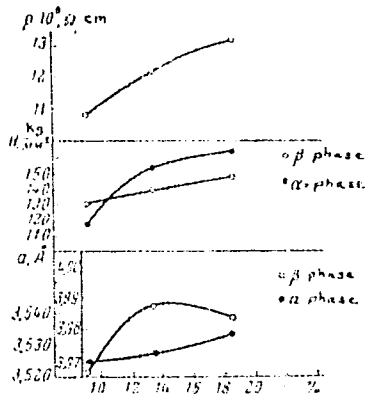


Fig. 1

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Decomposition of Gold Solutions in Nickel  
(Gold Alloys)

1959/04/08

are shown in Fig. 6. The changes in the identity periods, electric resistivities, and hardnesses with the change in the Au content are illustrated in Fig. 1. There are 10 figures; 5 tables; and 2 references, 1 Soviet, 1 British. The British reference is: M. Hanson, "Constitution of Binary Alloys," London, 1958.

ASSOCIATION: Georgian Polytechnic Institute imeni S. M. Kirov  
(Gruzinskiy politekhnicheskiy institut imeni S. M. Kirova)

SUBMITTED: April 8, 1959

Card 5/5

37710

S/139/62/000/002/002/028  
E111/E135

12 1250  
AUTHORS: Sanadze, V.V., and Gulyayev, G.V.

TITLE: Kinetics of recrystallization in nickel-gold alloys

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,  
Fizika, no.2, 1962, 15-20

TEXT: Previously the authors studied phase transformations occurring through mutual solution of phases in nickel-gold alloys. The study of their recrystallization properties is the subject of the present article. The four alloys studied contained 3.66, 5.5, 10.07 and 14.4% Au by weight. All were vacuum-melted, annealed and slowly cooled, and were found to be two-phase. Cold-rolled (deformation up to 96-98%) specimens 0.06 mm thick were annealed for various times and temperatures and were studied by X-ray diffraction and micro-hardness measurements in order to find the temperature of the start and end of recrystallization. Except for the longest holding time (60 min), the curves of the temperature of the start and end of recrystallization as functions of gold content had two maxima; at about 4 and at 10-12% Au.

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Kinetics of recrystallization ... S/139/62/000/002/002/028  
E111/E135

The effect of diffusion, which reduces stresses in the deformed alloys, leads to an increase in the recrystallization temperature. A further important factor is the appearance of intermediate states which can affect the temperatures of the start or end of recrystallization for the shorter holding times. The activation energy of the start of recrystallization rises from about 37 kcal/g atom at about 4% Au to about 79 at 10, and about 80 at 15; the curve is similar to that of the temperature of the start of recrystallization for a holding time of 60 min. Evidently gold atoms, reducing the surface tension, increase lattice bonding forces when they penetrate its grains, thus raising both start and end temperatures of recrystallization. Professor V.I. Iveronova gave valuable advice on this work. There are 8 figures and 1 table.

ASSOCIATION: Gruzinskiy politekhnicheskiy institut imeni V.I. Lenina (Georgian Polytechnical Institute imeni V.I. Lenin)  
SUBMITTED: December 20, 1960

Card 2/2

SAMADZE, V.V.; GULYAYEV, G.V.

Phase dissolution in the system nickel-gold. Dokl. AN SSSR  
158 no.1:89-91 S-0 '64 (MIRA 17:8)

1. Gruzinskiy politekhnicheskiy institut imeni V.I. Lenina.  
Predstavleno akademikom N.V. Belovym.

L 59531-65 EWT(m)/EPF(c)/ENG(m)/EPR/EMP(j)/I PC-4/Pz-4/PA-4 DS/AM/RM

ACCESSION NR: AP5016810

UR/0195/05/006/003/0399/0405  
547.211 : 542.921 : 541.124

AUTHOR: Gulyayev, G. V.; Polak, L. S.

TITLE: Kinetics of thermal decomposition of methane

SOURCE: Kinetika i kataliz, v. 6, no. 3, 1965, 399-405

TOPIC TAGS: kinetics, thermal decomposition, methane, acetylene

ABSTRACT: A mathematical treatment of the kinetics of thermal decomposition of methane was given assuming the conditions of: unlimited space, absence of concentration and temperature gradients, and instantaneous heat-up of gas to reaction temperature (time = zero). For such an idealized system a formula was derived for calculating maximum residence time of methane at reaction temperature to achieve a maximum conversion to acetylene

$$t_{max} = \frac{\ln \frac{K_2}{K_3}}{K_2 - K_3}$$

where:  $K_2$  is the rate constant of thermal decomposition of methane,  $K_3$  is the rate

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L 59531-65

ACCESSION NR: AP5016810

constant of thermal decomposition of ethylene, and  $K_4$  is the rate constant of thermal decomposition of acetylene. The values of  $K_2$ ,  $K_3$ , and  $K_4$  were taken from G. I. Kozlov and V. G. Knorre *Combustion and Flame*, 6, 253, 1962. At 2500°K  $t_{\max} = 3.65 \cdot 10^{-5}$  sec and the conversion of methane to acetylene is 82% (0.41 moles of  $C_2H_2$  from 1 mol of  $CH_4$ ). At 3000°K  $t_{\max}$  is  $4.6 \cdot 10^{-6}$  sec and the corresponding conversion to acetylene is 85%. Orig. art. has: 1 table, 2 figures, 7 formulas.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyava AN SSSR  
(Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 24Dec63

ENCL: 00

SUB CODE: GC

NO REF SOV: 005

OTHER: 012

  
Card 2/2



53244

S/844/62/000/000/105/129  
D204/D307

AUTHORS: Gulyayev, G. V., Davydov, B. E., Krentsel', B. A., Pata-  
lakh, I. I. and Polak L. S.

TITLE: The effect of radiation on semiconducting polymeric ma-  
terials

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khi-  
mii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962,  
621-624

TEXT: The effects of  $\beta^-$  and electron irradiation on polymers based  
on polyacrylonitrile (PAN) were studied, to determine the nature of  
such materials. The (powdered) specimens were prepared by catalytic  
or radiational polymerization; a polyacrylonitrile fabric was also  
tested. The specific electron conductance ( $\sigma$ ,  $10^{-10}$  ohms $^{-1}$ .cm $^{-1}$ ) of  
hot-pressed (15,000 atm, 350°C) radiation polymerized PAN was lower  
than that of catalytically polymerized PAN ( $\sim 2.6 - 3.6$ ) and de-  
creased, by a factor of 10 - 15, with increasing power of the dose  
used to induce polymerization ( $10^6$  r, the rates were varied from 28

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The effect of radiation ...

S/844/62/000/000/105/129  
D204/D:07

to 140 r/sec.cm<sup>2</sup>, at 25°C). The  $\sigma$  of catalytic PAN polymerized at 28 r/sec.cm<sup>2</sup>, increased on irradiation with increasing doses, up to  $\sim 10$  and  $\sim 5$  respectively at 5 Mr; further increase was only slight. The  $\sigma$  of PAN polymerized at 75 and at 140 r/sec.cm<sup>2</sup> was unaffected by irradiation. The energy of activation (= 0.4 ev) remained constant in all cases. The specific conductance of PAN fabric increased on irradiation, from  $\sim 10^{-5}$  at 0 to  $\sim 10^{-3}$  ohm<sup>-1</sup>cm<sup>-1</sup> at 140 Mr, whilst the energy of activation fell from 0.33 to 0.2 ev. Similar effects were observed by subjecting the fabric to 0.7 Mev electrons. The various changes observed in these semiconducting polymers on irradiation are ascribed to differences in the macrostructure of the polymer. There are 4 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AS USSR)

Card 2/2

43533

S/204/62/002/005/007/007  
E202/E192

11-134-0

AUTHORS: Gulyayev, G.V., Kozlov, G.I., Polak, L.S.,  
Khitrin, L.N., and Khudyakov, G.N.

TITLE: Conversion of methane into acetylene in a plasma jet

PERIODICAL: Neftekhimiya, v.2, no.5, 1962, 793-794

TEXT: Acetylene synthesis was studied quantitatively in a constricted arc plasma torch. The working parameters of the latter were as follows: W-cathode, Cu - water cooled nozzle-anode, input 15 kW, power to plasma 9.5-10.0 kW, current 280 A, working gas - argon, at 60.3-58.0 litre/min. Methane was introduced above the W-electrode at rates 6.7-49.7 litre/min. The temperature of pure Ar plasma was calculated approximately at 10 000 °K, and the time of residence of methane in plasma approximately 10<sup>-5</sup> sec. The product gases were sampled along the plasma jet axis at various distances and analysed chromatographically. In contrast to the results of H.W. Leutner and C.S. Stokes (Ind. Engng Chem., v.53, 1961, 341) the authors found that almost 100% of methane had reacted and the conversion into acetylene was approximately 80%.

X

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Conversion of methane into ...

S/204/62/002/005/007/007  
E202/E192

The authors claim that their present rate of energy consumption of 15 kW.hr. per one m<sup>3</sup> of acetylene could be considerably improved by replacing the argon with methane or hydrogen and increasing the power of the plasma torch.  
There are 1 figure and 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR  
(Institute of Petrochemical Synthesis AS USSR)

Energeticheskiy institut im. G.M. Krzhizhanovskogo  
(Power Engineering Institute imeni G.M. Krzhizhanovskiy)

SUBMITTED: July 14, 1962

Card 2/2

L5177

S/020/63/148/003/035/037  
B117/B186

51600

AUTHORS: ~~Gulyayev, G. V.~~, Kozlov, G. I., Polak, L. S. Khitrin,  
L. N., Corresponding Member AS USSR, Khudyakov, G. N.

TITLE: Transformation of methane into acetylene in the argon  
plasma beam

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 3, 1963, 641-643

TEXT: In order to reduce the specific energy consumption during production of acetylene and to achieve a high degree of transformation of methane into acetylene, experiments were made with argon plasma beam. The latter was produced in a 15 kw plasmotron by a stabilized argon discharge ignited between a tungsten cathode and a water-cooled copper anode. Plasma was discharged through a 3 mm jet into the anode. Methane was introduced into the plasma beam through special openings in the jet wall at an angle of 90° to the direction of plasma discharge. Reaction products were tested chromatographically for content of H<sub>2</sub>, CH<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, C<sub>2</sub>H<sub>4</sub> and C<sub>2</sub>H<sub>2</sub>. The dependence of the degree of cracking of methane on its consumption was investigated at 280 a, a power of 9.5 kw and an argon consumption of  
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Transformation of methane into ...

S/020/63/148/003/035/037  
B117/B186

60 l/min. The analysis of gas specimens showed that the specific energy consumption is lower in the center (along the axis) of the plasma beam than in the cross section of the total beam. A sufficiently high degree of cracking could be obtained at the equivalent of 5000°C along the beam axis and a methane consumption of 30 l/min. In this case the specific energy consumption was 15 kwh/m<sup>3</sup> C<sub>2</sub>H<sub>2</sub> per 1 Nm<sup>3</sup> of the acetylene produced. 80% cracking in the complete plasma beam could be achieved only at a high specific consumption (~40 kwh/m<sup>3</sup> C<sub>2</sub>H<sub>2</sub>). This may be traced back to relatively high energy losses in the jet walls. Though the specific energy consumption could not be reduced by increasing the amperage (up to 435 a) a certain reduction of the same (down to 24 kwh/m<sup>3</sup> C<sub>2</sub>H<sub>2</sub>) could be achieved by using jets of larger diameters (4.5, 7 mm) and simultaneously increasing the plasmotron power (to ~12.5 kw), as well as by shortening the electrode distance. Experiments with 4.5 and 7 mm jets showed that the specific energy consumption would be about 13 kwh/m<sup>3</sup> C<sub>2</sub>H<sub>2</sub> in a standard plasmotron of ~70% efficiency and an argon plasma beam. Further possibilities of using plasma beams for endothermal chemical reactions are

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Transformation of methane into ...

S/020/63/148/003/035/037  
B117/B186

here investigated: transformation of methane into acetylene in a 200-kw  
plasmotron with argon, hydrogen and other carrier gases; transformation  
of propane, butane and the propane-butane fraction in the plasma beam;  
production of bound nitrogen in the plasma beam. There are 1 figure and  
2 tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR  
(Institute of Petrochemical Synthesis of the Academy of  
Sciences USSR); Energeticheskiy institut im. G. M.  
Krzhizhanovskogo (Power Engineering Institute imeni  
G. M. Krzhizhanovskiy)

SUBMITTED: October 13, 1962

Card 3/3

BUROV, N.Ye.; DAMIR, Ye.A.; GULYAYEV, G.V.; SADYKOV, N.M.

Hyperventilation tetany during light anesthesia. Eksp.  
khir. i anest. 8 no.5:84-87 S-D '63. (MIRA 17:6)

1. Kafedra anesteziologii (zav.- dotsent Ye.A. Damir)  
Tsentral'nogo instituta usovershenstvovaniya vrachey, Moskva.



GULYAYEV, G.V.

Appendicitis in a case of total visceral inversion. Khirurgia no.5:  
76-77 My '56. (MIRA 9:9)

(APPENDICITIS)

(VISCERA---ABNORMALITIES AND DEFORMITIES)

GULYAYEV, G.V.

Disturbances in external respiration in thoracic surgery. Report  
No.1: Changes in respiration in relation to the position of the  
patient on the operating table. Eksper. khir. 4 no.6:30-37 N-D '59.  
(MIRA 14:6)

1. Iz kliniki torakal'noy khirurgii i anesteziologii (zav. - prof.  
Ye.N.Meshalkin) Tsentral'nogo instituta usovershenstvovaniya vrachey  
(dir. M.D.Kovrigina).  
(CHEST--SURGERY) (RESPIRATION)

GULYAYEV, G.V.

Disorders of external respiration in thoracic surgery. Part 2.  
Respiratory changes during surgical pneumothorax. Eksp. khir.  
5 no.1:14-21 Ja-F '60. (MIRA 13:12)  
(PNEUMOTHORAX) (RESPIRATION)

GULYAYEV, G. V., Cand Med Sci -- <sup>Version</sup> "Modification of the function  
of ~~each lung's~~ <sup>the respiration of each lung</sup> external ~~breathing~~ in intrathoracic opera-  
tions." Mos, 1961. (Min of Health USSR. First Mos Order  
of Lenin Med Inst im I. M. Sechenov) (KL, 8-61, 260)

- 454 -

DAMIR, Ye.A.; SADYKOV, N.M.; GULYAYEV, G.V.; PLATONOVA, Z.V.

Characteristics of anesthesia in emergency surgical interventions.  
Trudy Inst. im. N.V. Sklif. 9:175-180 '63. (MIRA 18:6)

1. Iz kafedry anesteziologii Tsentral'nogo instituta usovershenstvovaniya vrachey (zav. kafedroy - dotsent Ye.A. Damir).

SUKHININ, P.L., prof.; RUSANOV, S.A., prof.; GULYAYEV, G.V., doktor;  
BOLDINSKIY, I.I., doktor; VILYAVIN, G.D., prof.; ZHURAV, I.S.,  
prof.; LIPSKIY, doktor; GOL'DBERG, F.I., doktor; ZHONOV, I.S., prof.;  
VOZCHOK, Ye.V., doktor; MARTYNOV, A.T., doktor; GROZDOV, D.M., prof.;  
KOTOV, I.A., doktor; SKATIN, L.I., doktor; PIKOVSKIY D.L., doktor,  
dotsent; SMIRNOVA, Ye.S., doktor; SMOL'YANNIKOV, A.V., prof.;  
UKHANOVA, N.V., doktor; PETROV, B.A., prof.

Discussions at the session. Trudy Inst. im. N.V. Sklif. 9:  
278-303 '63. (MIRA 18:6)

1. I gorodskaya bol'nitsa imeni Lenina, Saratov (for Skatin).
2. Kafedra gospital'noy khirurgii lechebnogo fakul'teta  
Gor'kovskogo meditsinskogo instituta (for Pikovskiy).
3. Gosudarstvennyy onkologicheskiy institut imeni Gertsena,  
Moskva (for Smirnova).

<sup>Y</sup>  
GULYAEV, Ivan Aleksandrovich; GERMAN, V.Ye., redaktor; MANINA, M.P.,  
tekhnicheskiy redaktor

[Hunting fur-bearing animals] Okhota na pushnykh sveri. Moskva,  
Gos. izd-vo "Fizkul'tura i sport," 1956. 79 p. (MLRA 9:12)  
(Hunting)

YEROKHIN, N.M.; GULYAYEV, I.A., agronom; RUSINOVA, R.D., nauchnyy  
sotrudnik

Frunze Collective Farm in the Altai Territory is striving for  
higher standards of agriculture. Zemledelia 7 no.12:30-33  
D '59. (MIRA 13:3)

1. Predsedatel' kolkhoza imeni Frunze, Yegor'yevskogo rayona,  
Altayskogo kraya (for Yerokhin). 2. Kolkhoz im.Frunze,  
Yegor'yevskogo rayona, Altayskogo kraya (for Gulyayev). 3. Altayskiy  
zonal'nyy nauchno-issledovatel'skiy institut sel'skogo khozyaystva  
(for Rusinova).  
(Altai Territory--Collective farms)



DIMKELIS, S.S., detset; TADZHIKOV, M.M.; GULYAYEV, I.A.

Some problems of industrial hygiene in the mining of nonradio-  
active complex metal deposits. Bor'ba s sil. 6:303-307 '64  
(MIRA 18:2)

1. Tadzhikskiy gosudarstvennyy meditsinskiy institut.

GULYAYEV, I.B., insh.

~~Estimates~~ should be practical. Avt. dor. 21 no. 4:22-23 Ap '58.  
(Bridge construction--Costs) (MIRA 11:4)

GULYAYEV, I.B., inzh.

Some sources for lowering the net cost in bridge construction.  
Avt.dor. 21 no.6:21-22 Ja '58. (MIRA 12:10)  
(Bridges--Costs)

S/137/61/000/006/042/092  
A006/A101

AUTHORS: Gulyayev, G.I., Finkel'shteyn, Ya.S., Gulyayev, I.N., Kolpovskiy, N.M., Osinskiy, V.A., Chudnyy, I.G., Bogomazov, M.M., Shkabatur, K.I.

TITLE: Investigating the operation of a three-roll reduction mill

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 35, abstract 6D285 ("Byul. nauchno-tekhn. inform. Ukr. n.-1. vrata. in-t", 1959, no. 6 - 7, 48 - 57)

TEXT: The authors studied the operation of an 18-stand three-roll reduction mill for the purpose of establishing the rolling technology for both seamless and welded water-gas pipes under conditions of the Plant imeni Lenin. It was established that the combination of the former grooving of the rolls with kinematics of a three-roll reduction mill, makes it possible to obtain the necessary elongation only when reducing welded pipes of 2 and 1 $\frac{1}{2}$ " diameter to 1" diameter. In the other cases the wall of the central pipe section is, after rolling, thicker than required by GOST 3262-55. The authors calculated and investigated new calibration of the rolls, for reducing pipes from 48 x 3.5 mm to

Card 1/2

Investigating the operation ...

S/137/61/000/006/042/092  
A006/A101

21.25 x 2.75 mm. It was established that the efficiency can be raised if pipes of 2,  $1\frac{1}{2}$  and 1" diameter are manufactured only by welding on mill no. 2, and pipes of  $1\frac{1}{4}$ ,  $\frac{3}{4}$  and  $\frac{1}{2}$ " diameter on mill no. 1 with the use of reduction. Preliminary calculations have shown that the reduction of 7.5 m long pipes from a 2" diameter to  $1\frac{1}{4}$ ", from 2" to  $\frac{3}{4}$ " and from  $1\frac{1}{2}$ " to  $\frac{1}{2}$ " will raise the efficiency of the pipe-welding shop at the Plant imeni Lenin by 12.81%; the coefficient of metal consumption will increase by 14%. To maintain the coefficient of metal consumption on the level of planned figures, and to obtain a further increase in the efficiency of the reduction mill, it is necessary to increase the length of the welded pipes prior to rolling up to 9.6 - 15.5 m.

Yu. Manegin

[Abstracter's note: Complete translation]

Card 2/2

GULYAYEV, I. N

133-1-16/24

AUTHORS: Alferova, N.S., Pishchikov, G.P., and Konovalov, V.P.  
TITLE: Production of Hot Rolled Tubes from Steel  $\Sigma A 595$  and Their Properties (Proizvodstvo goryachekatanykh trub iz stali EI 595 i ikh svoystva)  
PERIODICAL: Stal', 1958, No.1, pp. 60 - 66 (USSR)

ABSTRACT: An investigation of the suitability of heat-resistant steel  $\Sigma A 595$  for hot rolling of tubes is described. Specimens of metal cut out from tube semis (Fig.3) were tested under laboratory conditions, for deformability and piercing ability in a wide range of temperatures at various degrees of reduction. The results obtained were compared with those for other heat-resistant steels: X25T, X25R5, carbon steel 10 and stainless steel 1X18H9T (Figs. 1, 2 and 4). As steel  $\Sigma A 595$  is brittle in the cold state, the influence of heat treatment on this property was investigated. The results of tests for impact strength of specimens hardened and slow-cooled from 950 °C are shown in Fig.5, together with the values for impact strength after hardening from 750, 850, 900 and 1 000 °C. It was found that to prevent temper brittleness, it is necessary to apply rapid cooling of tubes in water from 950 - 1 000 °C. Experimental hot rolling of tubes was done on a laboratory mill from specimens of 35 mm diameter and 120 mm long, cut out from

Card1/3

133-1-16/24

Production of Hot Rolled Tubes from Steel ~~AM~~595 and Their Properties

works' semis of 90 mm diameter. Piercing was done at 1 200 °C and hot rolling under two practices: 1) piercing with subsequent rolling from single heating, and 2) reheating after piercing to 1 200 °C. The micro-structure of experimental tubes rolled by the above two methods before and after hardening from various temperatures is shown in Figs. 6 and 7, respectively, and mechanical properties in Table 1. Cold rolling of tubes made according to Method 1 after thermal treatment according to the method described in Ref.4 was also tested with good results. Experimental rolling of tubes on an industrial scale was done on the works imeni Lenin. The temperature of semis before piercing was 1 160 - 1 180 °C, after piercing 1 120 - 1 130 °C. Rolling of tubes 57 x 5 mm was done on a continuous mill in rolls with round passes on a long mandrel 48 mm diameter. At the end of rolling, the temperature was 930 - 970 °C. Rolling was normal, the coefficient of consumption of metal for finished hot-rolled tubes before and after heat treatment (hardening from 950 after 1 hour soaking) are given in Table 2 and Figs. 8 and 9. The following personnel of the Plant 'imeni Lenin participated in the work: I.N. Gulyayev, N.M. Kolpovskiy, A.M. Ludenskiy, N.M. Bukhman, K.F. Beskorvnyy and P.P. Bezrukavyy. There are 2 tables,

Card2/3

I. G4796-65 EMT(m)/EPA(w)-2/EPA(m)-2 IJT(c)

ACCESSION NR: AR5004574

S/0275/64/000/011/A053/A053  
621.364.6

SOURCE: Ref. zh. Elektronika i yeye primeneniye. Svedroy tom, Abs. 11, 557

22  
B

AUTHOR: Stepanchuk, V. P.; Gulyayev, K. A.

TITLE: Electronic circuit for protecting the betatron injector and LM-2 hot-wire gauge from the atmosphere

CITED SOURCE: Sb. Elektron. uskoriteli. M., Vyssh. shkola, 1964, 368-370

TOPIC TAGS: betatron, betatron injector, hot wire manometer

TRANSLATION: The construction and principal circuit are described of an attachment to the VIT-1 vacuumeter which ensures quick turn-off of the heating circuit of the betatron injector and LM-2 hot-wire gauge upon a vacuum deterioration in the chamber. The circuit monitors the voltage drop across an input resistor of the vacuumeter amplifier by means of applying a part of this drop to the attachment amplifier; the attachment turns on and off a relay which controls the heating circuit of the injector and LM-2 gauge. A one-year operation of the attachment has corroborated its usefulness.

Card 1/1

SUB CODE: NP, EC

ENCL: 00



GULYAYEV, K.I., assistant

Methods for mating bevel gear wheels having a cycloidal longitudinal tooth profile. Izv. vys. ucheb. zav.; mashinostr. no.12:15-20 '64. (MIRA 18:3)

1. Leningradskiy politekhnicheskoy institut.

GULYAYEV, K.I., assistant

Selecting parameters of cutter heads for cutting bevel gears with  
cycloidal longitudinal tooth profile. Izv. vyz. ucheb. zav.; mashinostr.  
no.1:101-107 '65. (MIRA 18:5)

GULYAYEV, K.N.; LAPTEV, A.D.; MALAMID, M.M.; MELKISHEVA, M.G.; NADEZHDIR,  
Ye.D.; GLAZKOV, A.P., otv.red.

[Industry of Vologda Province; on the fortieth anniversary of  
the Great October Socialist Revolution] Promyshlennost' Volo-  
godskoi oblasti; k 40-letiiu Velikoi Oktiabr'skoi sotsialisticheskoi  
revoliustii. Vologda, Obl.knizhnaia red., 1957. 92 p.  
(MIRA 13:3)

(Vologda Province--Economic conditions)

GULYAYEV, K.N.

The lumbering industry is conducted in a new way. Volog. krai  
no.2:3-40 '60. (MIRA 14:11)  
(Vologda Province--Lumbering)

GULYAYEV, K.N., red.

[We are building communism]My stroim kommunizm. Red.kol.: K.N.  
Guliaev i dr. Vologda, Vologodskoe knizhnoe izd-vo, 1962.  
348 p. (MIRA 16:1)  
(Vologda Province—Economic conditions)

YASINSKIY, Aleksandr Dmitriyevich, Inzh.; GULYAYEV, K.K., Inzh.

[How to increase the output of merchantable lumber] Kak  
povysit' vykhod delovoi drevesiny. Vologda, Vologodskoe  
knizhnoe izd-vo, 1963. 108 p. (MIRA 18:5)

15(6)

SOV/72-59-1-13/16

AUTHORS: Tsaritsyn, M. A., Zakharenko, N. I., Gulyayev, K. V.

TITLE: Improved Drawing Method of Stained Glaze (Usovershenstvo-  
vannyi sposob vytyagivaniya tsvetnogo nakladnogo stekla)

PERIODICAL: Steklo i keramika, 1959, Nr 1, pp 40-43 (USSR)

ABSTRACT: In the Chernyatinskiy stekol'nyy zavod (Chernyatichi Glass Works) a plant was used for this purpose, as shown in figure 1. It was, however, not possible to produce perfect stained signal glass up to the GOST standards. The stained glass applied to the belt showed considerable deficiencies. Figures 2, 3 and 4 show the construction of a plant that obtained good results. The stained glass metal is spread on the colorless glass belt in the form of a thin layer, the thickness of the layer depending on the level of the stained glass metal in the melting tank. The glass production is carried out on a vertical drawing device, the width of the belt being 1200 mm. The performance of this plant is described in detail. As experience has shown, it is advisable to prefer highly aluminiferous beams to fire clay beams for the melting tank of the stained glass because the

Card 1/2

Improved Drawing Method of Stained Glaze

004/72-59-1-13/16

latter may be corroded by the glass metal. When this plant was first introduced the drawing speed amounted to 21 - 23 m/h, after a month it had risen up to 34 m/h. The shuttles were in operation for 21 to 24 hours, the apparatus was running for 500 to 580 hours without any interruption. The usable output amounted from 600 to 620 m<sup>2</sup> daily. By this method it has been possible to produce inexpensive stained glass for building purposes and light filters for signaling. There are 4 figures.

ASSOCIATION: Chernyatinskiy stekol'nyy zavod  
(Chernyatichi Glass Works)

Card 2/2



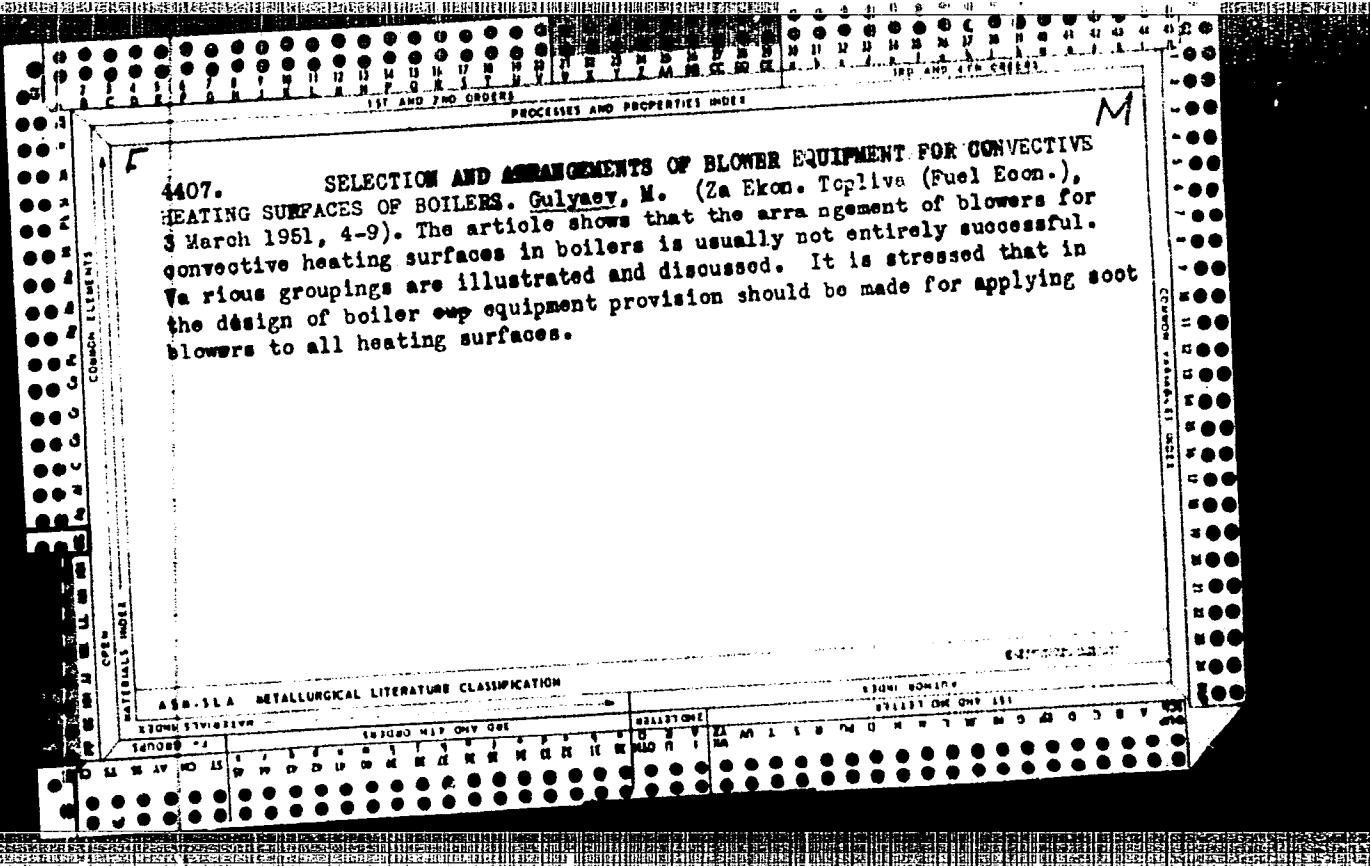
GULYAYEV, Grigoriy Vladimirovich; BANNIKOV, P., red.; VORONKOVA, Ye.,  
tekh. red.

[Seed production of grain crops; basic problems in variety  
changing and strain renovation and growing high-yield seeds]  
Semenovodstvo zernovykh kul'tur; osnovnye voprosy sortosmeny,  
sortoobnovleniia i vyrashchivaniia vysokourozhainykh semian.  
Penza, Penzenskoe knizhnoe izd-vo, 1962. 457 p. (MIRA 16:3)  
(Grain--Varieties) (Seed production)

ANDRYUSHCHENKO, I.G.; GULYAYEV, L.S.

Practical application of soil research results obtained on the  
"Oneshts" State Farm in connection with the use of fertilizers.  
Pochvovedenie no.10:73-78 '60. (MIRA 13:10)

1. Gosudarstvennyy proyektnyy institut, Kishinev.  
(Fertilizers and manures) (Soil research)



GULYAEV, M. A.

Lobanchenko, N. G.

Steamblast cleaning of heating surfaces of boiler units. Moskva, Gos. energ. izd-vo, 1952. 155 p. (54-35070)

TJ390.L58

U. S. S. R.

V. A. Golovinskiy, G. A. Dolin, and V. G. Ivanov, Blowing Out Boiler Surfaces  
(Blowing Out Boiler Units), Handbook.

The booklet describes the causes, and the formation of boiler scale, the design, methods of installation, and operating schedule of various blowing-out apparatus. The necessary instructions are included for personnel charged with blowing-out boiler heating surfaces, and basic labor safety requirements are stated.

The booklet is intended for personnel charged with blowing-out boiler units, but also may serve as a practical aid for other duties of boiler operating personnel.

SO: Soyuzdizne Intiz (Soviet Books), No. 183, 1953, Moscow, (U-8872)

SOV/96-58-5-23/27

AUTHOR: Gulyayev, M.A., Candidate of Technical Sciences

TITLE: The Design of Gas/Fuel-oil Burners of Azenergo  
(Konstruktsii gazomazutnykh gorelok Azenergo)

PERIODICAL: Teploenergetika, 1958, Nr 5, pp 85 - 88 (USSR)

ABSTRACT: In Azenergo, natural gas and fuel-oil have been burned under large boilers for more than twenty years. The burner designs aim at the best mixing of gas and fuel oil with air and the simultaneous heating of the mixture in the embrasure before inlet to the furnace. Some other requirements also arise. In Azenergo, there are four types of burners that have justified themselves by long service. The bladed burner of the BPK is illustrated in Figure 1. Burners of this design have been in operation since 1939 but are rather complicated and allow some gas to get into the air box. The tendency for the flame to retract makes it necessary to work with high excess air ratios at light loads. The tangential burner of the BPK is illustrated in Figure 2. The air is swirled by a simple tangential inlet; gas is introduced at the centre and mixes with the air before leaving the embrasure. This type of burner is simple in design and better than those with peripheral gas delivery; it has been used since 1940 and gives satisfactory combustion with a long flame

Card1/4

SOV/96-58-5-23/27

The Design of Gas/Fuel-oil Burners of Azenergo

and no smoke.

The spiral burner of Azenergoprojekt, illustrated in Figure 3 and first installed in 1945-46, differs from the others in having a spiral register with a damper to regulate the air-flow. With hot air at high speeds, good combustion is obtained when burning fuel oil alone. The non-uniformity of air velocity in the embrasure is much less with this design than with the previous one.

The bladed burner of BPK-Azenergoprojekt with central gas delivery is illustrated in Figure 4. In order to regulate the swirl and the quantity of air delivered, Azenergoprojekt in 1947 designed rotating in place of fixed blades. The increased swirling of the air made the flame somewhat shorter and improved the air distribution in the burner and embrasure. In 1956-57, when a number of power stations were converted to gas burning, Azenergoprojekt designed some new gas/fuel-oil burners. Three of these designs, intended for different types of boilers, are illustrated in figures 5, 6 and 7 and are described in the article. An improved gas burner is illustrated in figure 8.

Re-design of the burners on one Babcock and Wilcox boiler

Card2/4

The Design of Gas/Fuel-oil Burners of Azenergo

SOV/96-58-5-23/27

gave greatly improved combustion with a short transparent flame. This marked change in the nature of the flame had no appreciable influence on the degree of superheat. For purposes of comparison, the embrasures on another boiler were arranged in the same way but the old gas burners were left in place. Although the combustion was much improved, the flame remained long and luminous.

Comparison between spiral and bladed gas/fuel-oil burners with central gas-delivery shows that both types of burner can ensure satisfactory combustion of gas and fuel-oil given a correct choice of dimensions and gas- and air-velocity. With spiral burners, uniform air delivery round the circumference is readily secured. However, rotating-blade burners give the best control of the degree of swirl and, therefore, of flame shape. If they are well designed, there is little to choose between spiral and bladed burners in respect of size and resistance. The spiral design is simpler than the bladed if the burners are arranged in a single row. Preliminary tests on the influence of different design features on combustion confirm the advantages of swirling the gas in the

Card3/4



SCV/96-58-5-23/27

The Design of Gas/Fuel-oil Burners of Azenergo

direction of rotation of the air in the embrasure and of delivering it with increased speed from the centre to the periphery. When burning gas and fuel-oil, the gas must be thoroughly mixed with air in the embrasure, if a short, transparent flame is to be obtained.

There are 8 figures and 1 table.

- Card 4/4
1. Oil burners--Effectiveness
  2. Gas burners--Effectiveness
  3. Boilers--Equipment

GULYAYEV, M.A.

Errors in the calibration of air-spaced capacitors used in  
measuring at stepped up frequencies. Truly VNIIM no.38:  
21-29 '59. (MIRA 13:4)  
(Electric capacitors) (Electric measurements)

S/123/61/000/024/009/016  
A004/A101

AUTHORS: Gulyayev, M. A., Ryzhov, V. A.

TITLE: The machining of capillaries for exemplary compression pressure gages

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 24, 1961, 9, abstract 24E47 ("Tr. in-tov Kom-ta standartov, mer i izmerit. priborov pri Sov. Min. SSSR", 1961, no. 50 (110), 58-61)

TEXT: The authors describe the machining technology of capillary tubes 1-5 mm in diameter for compression pressure gages. When selecting the blanks the authors consider tubes suitable whose difference of inner diameter of ends over a length of 350 - 400 mm, measured by a plug gage, does not exceed 0.1 mm. The channel is machined by a set of laps (3 pieces). To determine the diameter of the ground capillary the tube is immersed in a glass tub with plane-parallel bottom filled with toluol. Toluol has a refractive index which comes rather near the refractive index of molybdenum glass, so that during the observation in the transient light the capillary walls nearly "dissappear" while the channel boundaries are clearly and distinctly visible. The diameter is measured on the

Card 1/2

The machining of capillaries ...

S/123/61/000/024/009/016  
A004/A101

multipurpose УИМ-21 (UIM-21) microscope. The measuring results were processed by the dispersion analysis method. The developed technology makes it possible to obtain high-quality capillaries with a RMS diameter deviation over sections of up to 400 mm length not exceeding  $2\mu$ . There are 3 figures.

S. Kivillis

[Abstracter's note: Complete translation]



Card 2/2

GULYAYEV, M.A., kand.tekhn.nauk; FALKOVSKIY, M.A., inzh.

Enlargement and redesign of a fuel oil and gas operated medium-  
pressure electric power plant. Elek. sta. 32 no.11:20-23 N

'61.

(MIRA 14:11)

(Electric power plants)

GULYAYEV, M.A.; RYZHOV, V.A.

Processing capillaries for standard compression manometers.  
Trudy inst. Kom. stand., ser' 1 izm. prib. no.50:58-61 '61.  
(MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii  
im. Mendeleeva.

(Manometer) (Capillaries)

GULYAYEV, M.A.; YERYUKHIN, A.V.; RYZHOV, V.A.

Sets of standard compression manometers of the All-Union  
Institute of Metrology. Trudy inst. Kom. stand., mer i izm.  
prib. no.50:62-69 '61. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii  
im. Mendeleeva.

(Manometer)

GULYAYEV, M.A.

Measuring inductances and effective capacitances of measuring  
air capacitors. Izv. tekh. no.9:32-35 S '63.

(MIRA 17:1)



GULYAYEV, M.A.; MAMEDOV, M.M.; ABDULLAYEV, K.M.

Testing reconditioned separating devices of the EG-35 boilers  
using softened water from the Dzheyran-Batan Lake. Za tekh.progr.  
3 no.3:14-16 Mr '63. (MIRA 16:10)

1. Upravleniye energetiki Soveta narodnogo khozyaystva Azerbaydzhanskoj  
SSR.

GULYAYEV, M.A.; YERYUKHIN, A.V.

Precision measurement of the vacuum in scientific investigations. Izv.  
tekh. no.6:17-20 Je '64. (MIRA 17:12)

L 52151-65 EPR/EWT(1)/EPA(π)-2/EPA(bb)-2 Ps-4/Pab-10 00/00  
ACCESSION NR: AFS017054 UR/0115/64/000/011/0017/0019

AUTHOR: Gulyayev, M. A.; Yeryukhin, A. V.

35  
B

TITLE: Metrology problems in measuring vacuum

SOURCE: Izmeritel'naya tekhnika, no. 11, 1964, 17-19

TOPIC TAGS: metrology, <sup>21</sup>vacuum measurement, pressure measuring instrument, power meter <sub>9M</sub>

ABSTRACT: The vast extension of investigations requiring extremely high vacuum in turn requires the development of manometers capable of measuring  $10^{-10}$  to  $10^{-12}$  mm Hg. An electronic ionization manometer has been developed to the All-Union Scientific Research Institute of Metrology. The linearity of its characteristic, which governs the lower extrapolation limit, is determined indirectly. Since the indications of the ionization manometer cannot be used to calibrate instruments operating with gases of unknown composition, it is necessary to broaden the range of the equipment which can reproduce units of pressure independently at the highest possible vacuum.

Card 1/2

L 52151-65

ACCESSION NR: AP5017054

Problems involved in vacuum measurement technology are reviewed, and solutions are called for in the next 3 to 5 years in order not to hamper the success of scientific and industrial undertakings.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: M3 , IE

NO REF SOV: 004

OTHER: 007

JPRS

ci

Card

I 35348-66 EWT(d)/EWT(l)/EWF(v)/EWP(k)/EWP(h)/EWP(l) WN/GG

ACC NR: AR6017786

SOURCE CODE: UR/0058/66/000/001/A014/A014

AUTHOR: Gulyayev, M. A.

52  
B

TITLE: Measurement of vacuum

SOURCE: Ref. zh. Fizika, Abs. 1A143

REF SOURCE: Tr. in-tov Gos. kom-ta standartov, mer i izmerit. priborov SSSR, vyp.76 (136), 1965, 218-228

TOPIC TAGS: vacuum measurement, vacuum research, research facility, manometer, ultrahigh vacuum/ VM-1 vacuum gauge, VMB-2 vacuum gauge, VMB-3 vacuum gauge

ABSTRACT: Review of work carried out at the VNI metrologii im. D. I. Mendeleeva during the period from 1950 to date in the field of vacuum measurements. Model installations have been developed, covering the range of absolute pressures of  $15 - 10^{-10}$  mm Hg, and in particular a new universal stand to check ionization, thermocouple, and also magnetic vacuum meters types VM-1, VMB-2, and VMB-3. A model thermomolecular manometer of grade 1, a set of model compression manometer, and a model ionization manometer of grade 2 are described. P. A. [Translation of abstract]

SUB CODE: 20

Card 1/1 *hh*

GULYAYEV, N.A.

Socialist competition is a basis of success. Vest.sviazi 21  
no.10:16 0 '61. (MIRA 14:10)

1. Nachal'nik Minskoy direktsii radiotranslyatsionnoy seti.  
(Wire broadcasting--Competitions)

GULYAEV, M. P.

✓Gulyaev, M. P. On a new particular solution of the equations of motion of a heavy rigid body having a fixed point. Vestnik Moskov. Univ. 9, no. 3, 15-21 (1955). (Russian) 62 1-F/W  
The author is not satisfied with Grioli's [Ann. Mat. Pura Appl. (4) 26, 271-281 (1947); MR 10, 335] demonstration of the existence of a regular precession around (a generally nonvertical) axis  $OP$  normal to the mass-center line  $OG$ , provided that  $OG$  is normal to a circular cross-section of the momental ellipsoid. The angular-velocity magnitude is then uniquely determined by the mass distribution. This case seems to have escaped the Schiff-Stäckel list of regular precessions [Hamel, Theoretische Mechanik, Springer, Berlin, 1949, pp. 426-442; MR 11, 548]. Using the common devices, the paper shows that if  $OG$  has the stated direction, and the angular velocity about  $OG$  is constant, Grioli's precession results, and the usual variables are expressible in terms of  $\sin t$  and  $\cos t$ . He also states that a precession of "this type" ( $OP$  normal to  $OG$ ?) is possible only under his assumptions. The reviewer could not find the proof in the paper. Moreover, the author's integration does not hold for the marginal case when  $A=B$  and  $C=0$  because for a physical pendulum the rotation is not uniform and elliptic functions are necessary. The notation of the paper is redundant, and the expression for the angle of  $OP$  with the vertical is not given in terms of independent parameters (it depends on the shape only of the momental ellipsoid).  
A. W. Wundheiler (Chicago, Ill.)

USSR/Physics - Mechanics of motion

FD-302

Card 1/1      Pub. 125-1/20

Author       : Gulyayev, M. P.

Title         : A new partial solution of the equations of motion of a heavy solid body which possesses one fixed point

Periodical   : Vest. Mosk. un., Ser. fizikom. i yest. nauk, 10, No 2, 15-21, Mar 1955

Abstract     : One of the results of the author's dissertation work ("Circular sections of ellipsoids of inertia and one solution, connected with them, to the problem of the motion of a heavy solid body around a fixed point, "Thesis, Moscow State University, 1953; scientific adviser, Prof. V. V. Dobronravov). The author notes that the regular precessions of a heavy body having one fixed point in the case where the angle between the axis of proper motion and axis of precession of  $90^\circ$  possess exceptional properties. In the present work the author gives a new solution to the problem of the regular precessions of a heavy asymmetrical solid body, first solved somewhat earlier by the Italian investigator G. Grioli (Annali Matem, pura di applicata, ser. IV, vol. XXVI, 1947).

Institution: Chair of Theoretical Mechanics

Submitted    : July 31, 1953



GULYAYEV, M.P.

Stable forms of arches in stopes. Izv. AN Kazakh. SSSR. Ser. nat. 1  
mekh. no. 6:33-45 '57. (MIRA 11:4)

(Arches) (Mining engineering)

GULYAYEV, M. P.

"On Circular Cross Sections of Reciprocal Ellipsoids in Inertia"

"On the Dynamically Possible Regular Precessions of a Solid Body with One Fixed Point"

Trudy, t. 1. Transactions of the Mathematics and Mechanics Section, Kazakh SSR, Acad. Sci., Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1958, 207pp.

GULYAYEV, M. P. and M. OSHIBAYEV

"On the Stability of the Rotation of a Heavy Solid Body with One Fixed Point in the Case of D. N. Loryachev and S. A. CHAPLYGIN"

Trudy, t. 1. Transactions of the Mathematics and Mechanics Section, Kazakh SSR, Acad. Sci., Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1958, 207pp.

SOV/124-59-4-3489

Translation from: Referativnyy zhurnal. Mekhanika, 1959. Nr 4, p 12 (USSR)

AUTHOR: Gulyayev, M.P. and Oshibayev, M.

TITLE: On the Stability of Rotation of a Heavy Solid Body<sup>21</sup> With One Fixed Point for the Case of D.N. Goryachev and S.A. Chaplygin.

PERIODICAL: Tr. sektora matem. i mekhan. AS KazSSR, 1958, Vol 1, pp 144-146.

ABSTRACT: The authors investigate the stability of the permanent rotation of a solid body on a vertical axis with a distribution of mass that is the characteristic of the Goryachev-Chaplygin case. The note duplicates V.V. Rumyantsev's article (Prikl. matem. i mekhan., 1954, Vol 18, Nr 4, 457-458 - RZhMekh, 1955, Nr 2, 614) down to the symbols, although no reference to the article is made. The authors make a mistake in designating the Goryachev-Chaplygin case as the subject of their work, because in this case the vector of the kinetic moment is horizontal, and therefore the possibility of vertical permanent rotations is excluded; other inaccuracies are also tolerated. The problem of the stability of permanent rotations, in particular under the conditions in question, has been treated by ✓

Card 1/2

SOV/124-59-4-3489

On the Stability of Rotation of a Heavy Solid Body With One Fixed Point for the Case of D.N. Goryachev and S.A. Chaplygin.

V.V. Rumyantsev (Prikl. matem. i mekhan., 1956, Vol 20, Nr 1, pp 51-66 - RZhMekh, 1956, Nr 12, 8040).

L.M. Markhashov ✓

Card 2/2

GULYAYEV, M.P.

Circular sections of mutual inertia ellipsoids. Trudy Sekt.  
mat.i mekh.AN Kazakh.SSR 1:175-193 '58. (MIRA 11:12)  
(Ellipsoid)

GULYAYEV, M.P.

Dynamically possible regular precessions of a solid body having  
one fixed point. Trudy Sekt.mat.i mekh.AN Kazakh.SSR 1:202-208  
'58.

(MIRA 11:12)

(Motion)

GULYAYEV, M.P.

831

01/31/61/000/104/001/000  
0237/0304

AUTHORS: Tikhmenev, S.G., Trohina, V.P., Chikin, V.A., Knyazev, G.  
N., Gulyayev, M.P., Zakharov, Yu.Ye., Chikina, I.M., Igna-  
min, V.I., Bogharov, V.K., Shigina, Ye.K., and Krotov, V.P.

TITLE: Scientific, pedagogical and general activities of Profes-  
sor V.V. Dobrenravov

SOURCE: Moscow, Vyssheye tekhnicheskoye uchilishche [Trudy], no.  
104, 1961. Kekhmatka, 7 - 18

TEXT: On the occasion of his 60th birthday and the 30th anniversa-  
ry of the scientific and pedagogical activity of Professor, Doctor  
of Physical and Mathematical Sciences, Vladimir Vasilyevich Dobren-  
ravov who is at present Professor of General Mechanics at MVTU  
im. N.E. Baumana (MVTU im. N.E. Bauman), one of his students  
present this appreciation. V.V. Dobrenravov was born on March 17th,  
1901. In 1924 he obtained his degree in mathematics at the Saratov-  
skiy Gosudarstvennyy universitet im. N.G. Chernyshevskiy (Saratov  
State University im. N.G. Chernyshevskiy). In 1927 he accepted the

Card 1/3



Scientific, pedagogical and ...

S/549/51/007/104/01/018  
D/37/D304

post of Assistant to the Professor of Physics at the Leningrad State Medical Institute, where in subsequent years he published a paper in neuro-biophysics. During 1929-31, he was Professor of Mathematics at the Saratov Agricultural Institute and lectured at Saratov University. From 1931 he worked in a number of higher educational establishments in Moscow and was associated with Moscow University from 1931 to 1952. In 1946 he was awarded a doctorate at Moscow State University and in 1951 he was elected to the Department of Theoretical Mechanics at MVTU im. N.S. Bauman, where in subsequent years, under his guidance, courses in specialized branches such as stability of motion, gyroscopy, oscillation, variational method etc. were developed. During his career the main contributions made were in the field of mechanics of non-holonomic systems. After 1950 he published papers on kinetics of motion of rigid body (Izudy MIKhM, no. 2, (10), 1950), stability of linear systems of diff. equations with constant coefficients in (Avtomatika i Telemekhanika, v. 17, no. 3, 1956) etc. In the 1950's he also became interested in astronautics. He has been a member of the Moscow Mathematical Society since 1944, and is an active member of the Methodological Commis-

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Scientific, pedagogical and ...

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tion on the Theoretical Mechanics of the Ministry of the Secondary and Higher Education of USSR. At present he is engaged in preparing a monograph on non-holonomic systems.

ASSOCIATION: Moskovskoye ordena Lenina i ordena trudovogo krasnogo znameni vycsheye tekhnicheskoye uchilishche im. Bauman (Moscow Order of Lenin and Order of the Red Banner of Labor Higher Technical School im. Bauman)

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25711  
 S/020/61/139/003/010/025  
 B104/B201

AUTHOR: Gulyayev, M. P.

TITLE: Regular precession of a solid body with a liquid-filled cavern

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 3, 1961, 574 - 575

TEXT: Ye. I. Kharlamova (DAN, 125, no. 5, (1959)) showed that Euler's equations

$$\begin{aligned}
 A \frac{dp}{dt} - (B - C) qr_1 &= Mg (z_0 \gamma' - y_0 \gamma''), & \frac{d\gamma}{dt} &= r\gamma' - q\gamma'', \\
 B \frac{dq}{dt} - (C - A) pr &= Mg (x_0 \gamma'' - z_0 \gamma), & \frac{d\gamma'}{dt} &= p\gamma'' - r\gamma, & (1) \\
 C \frac{dr}{dt} - (A - B) pq &= Mg (y_0 \gamma - x_0 \gamma'), & \frac{d\gamma''}{dt} &= q\gamma - p\gamma',
 \end{aligned}$$

+

have, for  $C > 2A > 2B$ ,  $y_0 = 0$  and  $x_0 \sin \alpha = z_0 \cos \alpha$  (2), the partial solution

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Regular precession of...

$$p = \frac{v}{A} (\cos \rho + \chi \sin \rho \cos \sigma), \quad r = \frac{v}{C} (\sin \rho - \chi \cos \rho \cos \sigma), \quad q = v \chi \sin \sigma.$$

$$\gamma = \frac{B(A+C) \cos \rho + 3AC\chi \sin \rho \cos \sigma + 3A(C-B) \cos \rho \sin^2 \sigma}{3AC - B(A+C)}, \quad (3)$$

$$\gamma' = \frac{3ABC\chi \sin \sigma - 3\frac{\chi}{\chi} (C-A) \sin \rho \cos \rho \sin \sigma \cos \sigma}{3AC - B(A+C)}$$

$$\gamma'' = \frac{B(A+C) \sin \rho - 3AC\chi \cos \rho \cos \sigma + 3A(A-B) \sin \rho \sin^2 \sigma}{3AC - B(A+C)}$$

where  $\sigma$  can be determined from equation  $d\sigma/dt = \frac{\chi}{N}(k + k' \cos \sigma)$ . For the various constants in (2) and (3), relations

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Regular precession of...

$$\begin{aligned} \cos \alpha &= \frac{1}{H} \sqrt{C(A-B)(C-2A)^3}, \quad \sin \alpha = \frac{1}{H} \sqrt{A(C-B)(2C-A)^3}, \\ \cos \rho &= \sqrt{\frac{C(A-B)(C-2A)}{(C-A)[3AC-B(A+C)]}}, \quad \sin \rho = \sqrt{\frac{A(C-B)(2C-A)}{(C-A)[3AC-B(A+C)]}}, \\ \chi &= \sqrt{\frac{3AC-2B(A+C)}{3AC}}, \quad \kappa = \sqrt{\frac{(C-2A)(2C-A)}{3AC[3AC-B(A+C)]}}, \\ v &= -3AC \sqrt{\frac{Mgl}{H}} \sqrt{\frac{C-A}{3AC-B(A+C)}}, \quad l = \sqrt{x_0^2 + z_0^2}, \\ H &= \sqrt{A(C-B)(2C-A)^3 + C(A-B)(C-2A)^3}, \\ k &= \sqrt{(C-2A)(2C-A)[3AC-B(A+C)]}, \\ k' &= (A+C) \sqrt{3(A-B)(C-B)}, \quad N = 3AC \sqrt{3AC-B(A+C)}. \end{aligned} \quad (A)$$

are valid. Conditions (2) and solution (3) are valid for a body with a water-filled cavern. When studying (3), these formulas are found to be similar to those found by G. Grioli (Ann. Matem. pura ed appl., ser. IV, 26, (1947)) for the description of the regular precession of a kinetically asymmetric heavy solid body. However, motion (3) is no regular precession,

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Regular precession of...

as the condition  $p^2 + q^2 + r^2 = \omega^2 = \text{const}$  is not satisfied. There is, however, the partial integral  $A \cos \varphi + C \sin \varphi = v$ , which can be either considered as a scalar product of the vector  $(Ap, Bq, Cr)$  and the vector  $(\cos \varphi, 0, \sin \varphi)$  or as a scalar product of the vector  $(p, q, r)$  and the vector  $(A \cos \varphi, 0, C \sin \varphi)$ . As the body is in motion, this product remains constant. This circumstance is then and only then regarded as a kinematic characteristic of a regular precession if the direction of the vector  $(A \cos \varphi, 0, C \sin \varphi)$  is in perpendicular to one of the circular cross sections of the inertia ellipsoid, and fits the vector  $(l \cos \alpha, 0, l \sin \alpha)$  as to the direction. The last mentioned vector determines the center of mass of the body. If these conditions are satisfied, the solutions

$$p = \frac{v}{A} \chi \cos \sigma, \quad q = v \chi \sin \sigma, \quad r = \frac{v}{C},$$

$$x_1 = \frac{s}{\chi} \cos \sigma, \quad x_2 = \frac{s}{A \chi} \sin \sigma, \quad x_3 = \text{const},$$

where

$$s = \frac{C - 2A}{2C - A}, \quad \text{const} = \frac{A + C}{2C - A}. \quad (B)$$

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Regular precession of...

describe the regular precession of the body. Function  $\sigma = \sum_{i=1}^3 \kappa_i t + \sigma_0$  is a linear function of time. The direction cosines  $\kappa_1, \kappa_2, \kappa_3$  which determine the orientation of the precession axes of the body, agree with  $\gamma, \gamma', \gamma''$ . Thus, the precession described here takes place about the vertical axis and differs from the one indicated by Lagrange, where  $A = B$  and  $2A > C$ . The case under consideration here represents a precession that is evidently possible from the dynamic viewpoint. There are 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet im. S. M. Kirova  
(Kazakh State University imeni S. M. Kirov)

PRESENTED: March 29, 1961, by L. I. Sedov, Academician

SUBMITTED: November 21, 1959

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GULYAYEV, M. P.

Some New Conditions of the Limit Equilibrium of Rocks. p. 113

B. Some Results of Investigation Into Regular Precessions of a Solid Body Around a Stationary Point. p. 114

TRANSACTIONS OF THE 2ND REPUBLICAN CONFERENCE ON MATHEMATICS AND MECHANICS  
(TRUDY VIOROY RESPUBLIKANSKOY KONFERENTSIY PO MATEMATIKE I MEKANIKE), 184  
pages, published by the Publishing House of the AN KAZAKH SSR, ALMA-ATA, USSR, 1962



GULYAYEV, N. (Perm')

Competition in combat readiness. Pozh.delo 6 no.10:18-19 0 '60.  
(MIRA 13:10)

(Perm--Firemen)

GULYAYEV, N.F., redaktor; RACHEVSKAYA, M.I., redaktor; GUROVA, O.A.,  
tekhnikheskiy redaktor.

[Sanitary engineering; collection of articles] Sanitarnaia tekhnika;  
sbornik statei. Moskva, Izd-vo Ministerstva kommunal'nogo khoziaist-  
va RSFSR, 1954. 289 p. (MLBA 7:11)

1. Akademiya kommunal'nogo khoziaistva, Moscow.  
(Sanitary engineering)

GULYAYEV, N.

Change the order of issuing planning tasks. Zhil.-kom. khoz.  
5 no.8:30 '55. (MIRA 8:6)  
(Water supply engineering)

GULYAYEV, N.F., kandidat tekhnicheskikh nauk.

Against propaganda of technical backwardness in city sanitary engineering ("Sanitary engineering for populated places." D.B. Piguta. Reviewed by N.F. Guliaev). Gor. khoz. Mosk. 30 no.7:36-37 J1 '56. (MLRA 9:10)

1. Rukovoditel' sektora ochistki Akademii kommunal'nogo khozyaystva.  
(Sanitary engineering) (Piguta, D.B.)

GULYAYEV, N.F., kandidat tekhnicheskikh nauk; LAVROV, A.A., sanitarnyy vrach; NAGIVINA, T.Ye., sanitarnyy vrach; NIKOLAYEVA, T.A., kandidat meditsinskikh nauk; FOKIN, D.T., sanitarnyy vrach

Imaginary errors in the sanitary protection of natural waters.  
Gig. i san. 22 no.3:68-73 Mr '57. (MIRA 10:6)  
(WATER SUPPLY  
sanitary protection of water reservoirs in Russia)  
(SANITATION  
same)

~~Гулыайсв, Н.Е.~~  
GULYAYEV, N.E.

On the problem of agricultural sewage irrigation. Gig. 1 san.  
22 no.12:64-65 D '57 (MIRA 11:3)

1. Iz Akademii kommunal'nogo khozyaystva imeni K.D. Pamfilova.  
(SEWAGE IRRIGATION)

SDV-3-58-10-7/23

AUTHOR: Gulyayev, N.F., (Settlement Zyryanka, Yakutsk ASSR)

TITLE: **Opening Up** a Distant Region (Osvaivaya dal'kiy kray...)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 10, pp 40 - 42 (USSR)

ABSTRACT: The story tells of the professional and public works done in the distant Kolyma Kray by graduates of the Ivanovskiy meditsinskiy institut (Ivanovo Institute of Medicine), the Moskovskaya sel'skokhozyayastevnnaya akademiya (Moscow Academy of Agriculture), the Permskiy pedagogicheskiy institut (Perm Pedagogical Institute) and of the Leningradskiy pedagogicheskiy institut (Leningrad Pedagogical Institute).

Card 1/1

SOSYANTS, V.G., dotsent, obshchiy red.; IVANOV, I.T., kand.tekhn.nauk, red.;  
KLOPATOV, K.K., inzh., red.; ZHUKOV, A.I., prof., doktor tekhn.nauk,  
red.; GULYAYEV, N.F., kand.tekhn.nauk, red.; DJBOV, Yu.B., inzh.,  
red.; ANTONOV, I.K., kand.tekhn.nauk, red.; YEFREMOV, I.S., prof.,  
doktor tekhn.nauk, red.; DYUSKIN, V.K., doktor tekhn.nauk, red.;  
VINOGRADOV, K.A., kand.sel'skokhoz.nauk, red.; BOFOVA, Yu.P., red.  
izd-va; SALAZKOV, N.P., tekhn.red.

[Materials of the Scientific and Technical Conference on Problems in  
Introducing Achievements of Science and Technology in Municipal  
Economy] Materialy Nauchno-tekhnicheskogo soveshchaniya po voprosam  
vnedreniya dostizhenii nauki i tekhniki v gorodskoe khoziaistvo.  
Moskva, Izd-vo kommun.khoz.RSFSR, No.6. [Roads and municipal electric  
transportation] Gorodskoi transport i dorogi. Pod obshchei red. V.G.  
Sosiyantsa. 1959. 197 p. (MIRA 13:2)

1. Nauchno-tekhnicheskoye soveshchaniye po voprosam vnedreniya  
dostizheniy nauki i tekhniki v gorodskoye khozyaystvo. 2. Rukovo-  
ditel' sektora gorodskogo transporta Akademii kommunal'nogo khozyaystva  
(for Sosyants).

(Local transit)

(Road construction)



GULYAEV, N. F., RYANOV, V. Y., VASIL'KOVA, Z. G., NIKOLAYEVA, T. K.,  
MATVEYEV, P. V., PERTLOVSKAYA, M. I., KHAZANOV, M. I.

"Basic hygienic premises in the field of legislature on  
the sanitary protection of the soil of populated places."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists  
and Infectionists, 1959.

GULYAYEV, N., kand.tekhn.nauk; VAYNBERG, M., kand.tekhn.nauk

Constructing refuse-sorting plants. Zhil.-kom.khoz. 9  
no.11:13-14 '59. (MIRA 13:2)  
(Refuse and refuse disposal)

SHISHKIN, Zakhar Nesterovich; KARELIN, Yakov Aleksandrovich, dotsent;  
KOLOBANOV, Sergey Konstantinovich, dotsent, kand.tekhn.nauk;  
YAKOVLEV, Sergey Vasil'yevich, doktor tekhn.nauk; ZHUKOV,  
A.I., prof.; GULYAYEV, N.F., kand.tekhn.nauk; SUKHIY, P.A.,  
inzh., retsenzent; POPOVA, N.M., kand.tekhn.nauk, retsenzent;  
SMIRNOVA, A.P., red.izd-va; GILENSON, P.G., tekhn.red.;  
TEMKINA, Ye.L., tekhn.red.

[Sewerage] Kanalizatsiia. Izd.2., ispr. Pod red. A.I.Zhukova.  
Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materislam,  
1960. 592 p. (MIRA 14:4)

(Sewerage)

GULYAYEV, N.F., kand.tekhn.nauk

Urgent objectives in improving sanitary conditions in the city  
of Moscow. Gor.khoz.Mosk. 34 no.2:3-5 F '60.  
(MIRA 13:6)

1. Bukovoditel' sektora ochistki gorodov Akademii kommunal'nogo  
khozaystva.

(Moscow--Refuse and refuse disposal)