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S/149/60/000/005/012/015
A006/A001

5.1310 1018, 1160, 1236, 1530

AUTHORS: Fedotova, N.Ya., Titov, F.S.

TITLE: Cathode Polarization During Deposition of Copper-Nickel Alloys From Pyrophosphatic Electrolytes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, 1960, No. 5, pp. 126-131

TEXT: The authors present results of investigations into the mechanism and kinetics of electrodeposition of Cu-Ni alloys from pyrophosphate electrolytes. A set of graphs (Figure 1) shows the dependence of the copper and nickel ion discharge rate on the cathode potential during their joint and separate deposition. The polarization curves were plotted for the two solutions: 1) 0.938 $NK_4[Ni(P_2O_7)]_2$, 0.062 $NK_6[Cu(P_2O_7)_2]$ and 0.8 $NK_4P_2O_7 \cdot 3H_2O$; 2) 0.666 $NK_6[Ni(P_2O_7)_2]$, 0.334 $NK_6[Cu(P_2O_7)_2]$ and 0.8 $NK_4P_2O_7 \cdot 3H_2O$. The curves show that the discharge of nickel ions is facilitated during the deposition of the alloy from both of the solutions. Partial curves during joint deposition with copper are shifted toward more positive values of the potential than curves obtained during deposition of nickel alone. The separation of copper jointly with

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Cathode Polarization During Deposition of Copper-Nickel Alloys From Pyrophosphate Electrolytes

nickel is more difficult as compared to the separate deposition. The partial curves of copper separation are shifted to the negative potential range. These data are compared with those presented by N.V. Korovin, A.T. Vagramyan and I.K. Rusnak and it is stated that the causes entailing a retarded discharge rate of one of the solid solution components, are mainly determined by changed conditions of electrolysis during which individual processes occurring at the cathode, are modified. The magnitude of the partial curve shift depends on the composition of the deposit and the solution. The nature of polarization is determined to provide precise data on the mechanism of electrolytic deposition of Cu-Ni alloys. The author used Gorbachev's method by investigating the effect of temperature on electrolysis at a constant polarization in the electrolyte, and the method of accelerated plotting of polarization curves developed by A.T. Vagramyan (Ref. 17). The potentials were measured in solution No. 1, at 60°C, the current density varying from 0 to 2 amp/dm². A platinum spiral was used as a cathode and H-1 (N-1) grade nickel as an anode. Prior to the measurement the cathode was preliminarily covered with a copper and a Cu-Ni alloy layer of approx.

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Cathode Polarization During Deposition of Copper-Nickel Alloys From Pyrophosphatic Electrolytes

10-micron thickness. A calomel semi-element was used as a comparison electrode. Measurements were made at a rate of 60 sec (2 rev/min); 2.4 sec (50 rev/min); 1.2 sec (100 rev/min) and 0.48 sec (250 rev/min). The data obtained show that the deposition of Cu-Ni alloys containing up to 50-70% Ni, is mainly accompanied by chemical polarization, limiting the electrode process. Therefore, the degree of electrode polarization is not only determined by the partial activities of metals contained in the alloy but also by the ratio of the electrode process rates.

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Cathode Polarization During Deposition of Copper-Nickel Alloys From Pyrophosphatic Electrolytes

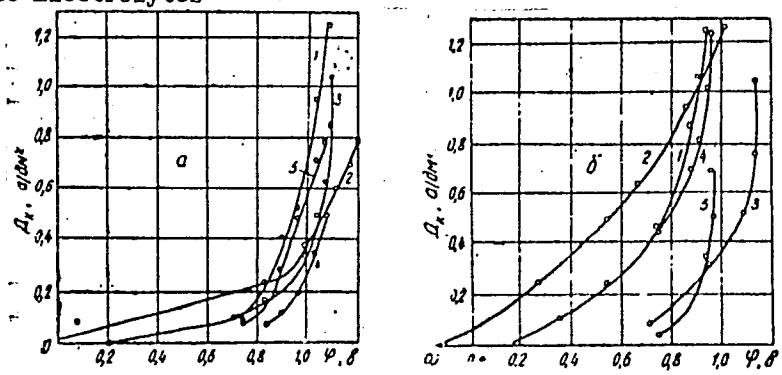

Figure 1. Cathode polarization during electrodeposition of copper, nickel and Cu-Ni alloy from pyrophosphatic electrolytes No. 1 (a) and No. 2 (b) 1 - Cu-Ni alloy; 2 - Cu; 3- Ni; 4 - partial curve for copper during deposition of the alloy; 5 - partial curve for nickel during deposition of the alloy. All the curves are corrected for hydrogen separatión.

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S/149/60/000/005/012/015
A006/A001

Cathode Polarization During Deposition of Copper-Nickel Alloys From Pyrophosphatic Electrolytes

There are 3 figures and 17 references: 16 Soviet and 1 German.

ASSOCIATIONS: Krasnoyarskiy institut tsvetnykh metallov (Krasnoyarsk Institute of Non-Ferrous Metals) Kafedra elektrokhimii i korrozii (Department of Electrochemistry and Corrosion)

SUBMITTED: February 16, 1960

Card 5/5

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

OSETROVA, N.V.; TITOV, P.S.

Adhesion to iron of copper deposited from complex ethylenediamine electrolytes. Izv.vys.ucheb.zav.; khim.i khim tekh. 3 no.1: 154-157 '60. (MIRA 13:6)

1. Kafedra elektrokhimii i korrozii Moskovskogo instituta tsvetnykh metallov i zolota imeni M.I.Kalinina.

(Copper plating)
(Adhesion)
(Ethylenediamine)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TURCHUK, A.A.; MEDVEDEV, N.V.; ORLOV, L.N.; TITOV, P.S.; BUBNOV, Ye.S., red.; FEDOROVA, L.N., red.izd-va; BYKOVA, V.V., tekhn.red.

[ZIF-650 A boring machine unit] Burovoi agregat ZIF-650 A. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geologii i okhrane nedr, 1959. 133 p. (MIRA 13:4)
(Boring machinery)

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77735
SOV/149-60-1-24/27

AUTHORS: Osetrova, N. V., Titov, P. S.

TITLE: Concerning Mechanics of Copper Electrodeposition from Aqueous Solutions of Complex Copper-Ethylenediamine Salts

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Tsvetnaya metallurgiya, 1960, Nr 1, pp 154-162 (USSR)

ABSTRACT: The use of the above compounds has the following advantages: stable complexes shift equilibrium potential towards the negative; eliminate contact displacement of copper by iron; and allow direct copper plating of iron. Compared to other noncyanide electrolytes, they are less volatile and more stable than the ammoniate compounds and more productive than the less soluble pyrophosphates. The following topics are investigated: Structure and stability of complex copper salts with ethylenediamine (En). In both the solid state and in

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the solution, $[CuEn_3]^{2+}$ is present but it disintegrates into the quite stable $[CuEn_2]^{2+}$. Unlike ammoniate, pyridine and other complexes which are reduced stepwise on a mercury cathode, $[CuEn_2]^{2+}$ is reduced directly, which is a proof of its stability and lack of tendency to be reduced to compounds of monovalent copper. A special study was made of the effect of a higher H^+ concentration on the $[CuEn_2]^2$ structure. Spectrophotometric investigation disclosed that in $[CuEn_2]Cl_2$ solutions with a gradually decreasing pH (from 10 to 2) the complex ions disintegrate according to the following reaction

$$[Cu\,En_2]\,Cl_2 + HCl \rightleftarrows Cu\,Cl_2 + En_2\,HCl$$

During this study, a noticeable influence of the anion (X) of the salt $[CuEn_2]X_n$ on electrolytic processes was revealed. A polarographic study placed the

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investigated anions in the following sequence according to their wave heights: $Cl^- > NO_3^- > BF_4^- > SO_4^{2-}$. Cathode processes in copper-ethylenediamine electrolytes: Most of electrolytes studied consisted of 0.5M CuX_n + 1.5M En, i.e., 0.5M free En. Here X is Cl^-, SO_4^{2-}, and BF_4^-; at pH about 12. Curves of potential versus current density showed a considerable difference of polarization for the above salts.

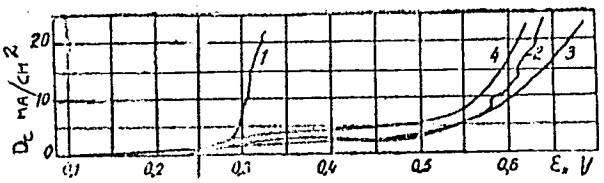

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Fig. 1. (Caption on Card 4)

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Concerning Mechanics of Copper Electro-deposition from Aqueous Solutions of Complex Copper-Ethylenediamine Salts

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SOV/149-60-1-24/27

Fig. 1. Cathode polarization in electrolytes: 0.5M $CuCl_2$ + 1.5M En (1); 0.5M $CuSO_4$ + 1.5M En (2); 0.35M $CuSO_4$ + 2.5M En (3); 0.5M $Cu(BF_4)_2$ + 2.0M En (4).

Yield based on current was high for all three types of electrolytes (85 to 100%). The lowest yields corresponded to high pH. Preparation of depositions bonded to iron: While deposits were brilliant and semi-brilliant, their bonding to iron was poor, which could be due to contact displacement or to formation of a phase or adsorption film on the metal. A special electrolyte was prepared which produced dull and well bonded copper deposits, 20-40 micron thick, at a current density of 2-4 amp/dm^2 and room temperature. It consisted of $CuSO_4 \cdot 5H_2O$, 0.3-0.5M; En, 2-2.5M; H_2SO_4 up to a pH of 7.3 to 7.8. Fluoroborate electrolyte

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Concerning Mechanics of Copper Electrodeposition from Aqueous Solutions of Complex Copper-Ethylenediamine Salts

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being acidic, good bonding is achieved at pH = 7.5-8.5. However, at this pH value BF_4^- is unstable. Electrolytes with chlorides always gave imperfect bonding. Passivation of iron and copper electrodes in ethylenediamine electrolytes: Figure 2 shows polarization peaks in electrolytes producing poorly bonded deposits and a smooth change of potential in sulfate electrolyte with pH = 8. The authors conclude that the described phenomena can be explained by the relation of the surface charge of the electrode to the charge of particles being adsorbed, and to the position of the zero point, as well as the adsorption mechanics of passivation. The zero charge potential for copper is $\varepsilon^{Cu}_{q=0} = -0.04$ v. At pH = 12 copper charge in relation to solution is -0.25 + 0.04 = -021. If surface-active $[CuEn_2]^{2+}$ are present in the solution, they can recharge the double layer permitting an adsorption of uncharged En molecules. The surface charge of iron is -20 + 0.37 = 0.17.

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Concerning Mechanics of Copper Electro-deposition from Aqueous Solutions of Complex Copper-Ethylenediamine Salts

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A shift of zero charge point toward the positive also promotes the adsorption of organic cations of the inhibitor. There are 4 figures; and 28 references, 17 Soviet, 1 German, 1 Swedish, 1 French, 1 U.K., 7 U.S. The U.S. references are: H. Jonassen, R. Reeves, J. Amer. Chem. Soc., Mau, 2748 (1955); H. Latineu, E. Onstott, ibid., Vol 71, 1550 (1949); R. Pflaum, ibid., 76, 6215 (1955), E. Lyone, J. of the El. Soc., Vol 101, Nr 7, 363 (1956); U.S. Pat. Nr 2355070, August 8, 1944.

ASSOCIATION: Krasnoyarsk Institute of Nonferrous Metals. Chair of Electrochemistry and Corrosion (Krasnoyarskiy institut tsvetnykh metallov Kafedra elektrokhimii i korroziyi)

SUBMITTED: April 23, 1959

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APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

Concerning Mechanics of Copper Electrodeposition from Aqueous Solutions of Complex Copper-Ethylenediamine Salts

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SOV/149-60-1-24/27

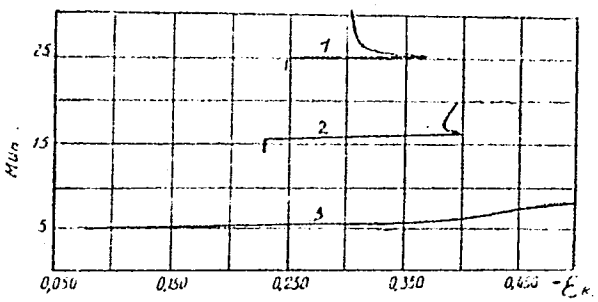

Fig. 2. Curves of potential versus time at initial instant of copper plating on iron cathode at D_c = = 2.6 ma/cm^2 from electrolytes

0,5 M $CuCl_2$ + 1,5 M *En*, pH = 12 (*1*); 0,5 M $CuSO_4$ + 1,5 M *En*, pH = 12 (*2*); 0,35 M $CuSO_4$ + 2,5 M *En*, pH = 8 (*3*)

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TITOV-P S

~~LOSHKAREV, M. A.~~

5(4) PHASE I BOOK EXPLOITATION SOV/2216

Soveshchaniye po elektrokhimii. 4th, Moscow, 1956.

Trudy...; [sbornik] (Transactions of the Fourth Conference on Electrochemistry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed.
Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

Editorial Board: A.N. Frumkin (Resp. Ed.) Academician, O.A. Yesin, Professor; S.I. Zhdanov (Resp. Secretary), B.N. Kabanov, Professor, S.I. Zhdanov (Resp. Secretary); B.N. Kabanov, Professor; Ya. M. Kolotyrkin, Doctor of Chemical Sciences; V.V. Losev, P.D. Lukovtsev, Professor; Z.A. Solov'yeva; V.V. Stender, Professor; and G.M. Florianovich; Ed. of Publishing House: N.G. Yegorov; Tech. Ed.: T.A. Prusakova.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE: The book contains 127 of the 138 reports presented at the Fourth Conference on Electrochemistry sponsored by the Department of Chemical Sciences and the Institute of Physical Chemistry, Academy of Sciences, USSR. The collection pertains to different branches of electrochemical kinetics, double layer theories and galvanic processes in metal electrodepositon and industrial electrolysis. Abridged discussions are given at the end of each division. The majority of reports not included here have been published in periodical literature. No personalities are mentioned. References are given at the end of most of the articles.

Agladze, R.I. Hydrometallurgical Production of Manganese and Chromium 493

Titov, P.S., and Z.A. Tubyshkina (Institut tsvetnykh metallov i zolota imeni M.I. Kalinina-Institute of Nonferrous Metals and Gold imeni M.I. Kalinin). Cathodic Process During the Deposition of Tin From Halogen Electrolytes 498

Polukarov, M.N. (Permskiy Gosudarstvennyy universitet-Perm' State University). Hydrogen Absorption by Steel Cathodes in the Metal Electrodeposition Process 502

Zhogina, V.M., and B. Ya. Kaznachey. Electrodeposition of Hard Magnetic Alloys 506

Kadaner, L.I., and A. Kh. Masik (Pedagogicheskiy institut Institut sovetskoy torgovli, Khar'kov-Pedagogical Institute of Soviet Trade). Mechanism of Electrolytic Deposition of Metals Onto a Passivated Surface 512

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APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

OSETROVA, N.V.; TITOV, P.S.

Effect of hydrogen-ion concentration on ethylenediamine electrolytes for copper and zinc plating. Nauch.dokl.vys. shkoly; khim.i khim.tekh. no.1:193-196 '59. (MIRA 12:5)

1. Predstavlena kafedroy elektrokhimii i korrozii Moskovskogo instituta tsvetnykh metallov i zolota im. M.I. Kalinina.
(Electroplating)
(Hydrogen-ion concentration)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

OSETROVA, N.V.; TITOV, P.S.

Electrodeposition of copper, zinc, cadmium, nickel and cobalt from complex salts containing ethylenediamine. Nauch.dokl.vys.shkoly; khim. i khim.tekh. no.4:782-784 '58. (MIRA 12:2)

1. Predstavlena kafedroy elektrokhimii i korrozii Instituta tsvetnykh metallov i zolota imeni M.I. Kalinina.
(Complex compounds) (Electroplating)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

5(4) SOV/156-59-1-30/54

AUTHORS: Osetrova, N. V., Titov, P. S.

TITLE: The Influence of the Hydrogen Exponent on the Ethylene-diamine Electrolyte of Coppering and Galvanizing (Vliyaniye vodorodnogo pokazatelya na etilendiaminovyye elektrolity medneniya i tsinkovaniya)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 1, pp 193 - 196 (USSR)

ABSTRACT: In an earlier paper (Ref 1) an investigation had been made into the electrolysis in solutions of complex ethylene-diamine electrolytes at different pH-values. With a low hydrogen-ion concentration the curve potential-current density shifted into the positive field (Diagram). In copper electrolytes the violet color typical of the complex ion $[CuEn_2]^{2+}$ (En = ethylene diamine) changed into a dark green one, with the formation of a yellow precipitation. In the paper under consideration these changes were spectroscopically investigated. The copper complex salt showed, over the basic pH-range, a pH-independent absorption curve with its maximum at 500 mμ, which corresponds

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to the compound $[CuEn_2]Cl_2$. With falling pH-values the maximum gradually flattens out, and eventually disappears on the formation of the hydrated Cu^{2+} ion. The data of the absorption- and polarization curves (Tables) suggest the formation of a compound En_2HCl. Probably the following reaction takes place: $[CuEn_2]Cl_2 + HCl \rightleftarrows CuCl_2 + En_2HCl$. The precipitation separated out in the hydrochloric acid solution at pH $<$ 2 is probably a complex salt with the formula $[Cu(EnHCl)_4]Cl_2$. Its solution is dark green, as is that of copper chloride. With falling pH-values the zinc electrolytes showed the same shifting of the polarization curves, from which the reaction $[ZnEn_3]Cl_2 + HCl \rightleftarrows ZnCl_2 + En_3HCl$ can be inferred. A spectroscopic checking was not possible as the zinc complex compounds do not have an absorption maximum in the range of the visible light. There are 3 figures, 2 tables, and 3 references, 2 of which are Soviet.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

The Influence of the Hydrogen Exponent on the Ethylenediamine Electrolyte of Coppering and Galvanizing SOV/156-59-1-50/54

ASSOCIATION: Kafedra elektrokhimii i korrozii Moskovskogo instituta tsvetnykh metallov i zolota im. M. I. Kalinina (Chair of Electrochemistry and Corrosion of the Moscow Institute of Non-ferrous Metals and Gold imeni M. I. Kalinin)

SUBMITTED: September 25, 1958

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APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

AUTHORS: Persiantseva, V. P., Titov, P. S. SOV/156-59-3-47/52

TITLE: The Electrolytic Production of Brass From Pyrophosphate Electrolytes (Elektroliticheskoye latunirovaniye iz pirofosfatnykh elektrolitov)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Khimiya i khimicheskaya tekhnologiya, 1959, Nr 3, pp. 584 - 587 (USSR)

ABSTRACT: The conditions for the production of brass by electrolysis from solutions containing copper pyrophosphate and zinc pyrophosphate were investigated. It was found that in the dissolution of copper pyrophosphate and zinc pyrophosphate in solutions of sodium pyrophosphate complex ions are formed which have the following composition: $[MeP_2O_7]^{2-}$ and $[Me(P_2O_7)_2]^{6-}$.

The dependence of the quality of the electrolytic brass surface on such factors as the concentration of copper and zinc solutions, on the current density, the temperature, the mixture of the electrolytes during electrolysis, as well as on the acidity of the solution was investigated. It was found that the following conditions are necessary for the production of a good brass surface: the concentration of zinc and copper in the electrolyte

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The Electrolytic Production of Brass From Pyrophosphate Electrolytes

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must not be lower than 0,5 - 0,45 mole/l; the concentration of the free phosphate solution should be 0,15 - 0,35 N; the pH value of the electrolysis solution should be 8 - 9,4; the temperature of the solution should be 35 - 40° C, and the current density should be 0,7 - 1 V(?). The chemical analysis, and the microscopic and radiographic investigations of a brass surface so produced showed that this surface had mono-phase structure. There are 2 figures, 3 tables, and 3 references, which are Soviet.

ASSOCIATION: Kafedra elektrokhimii i korrozii Moskovskogo instituta tsvetnykh metallov i zolota im.M.I.Kalinina (Chair of Electrochemistry and Corrosion at the Moscow Institute for Nonferrous Metals and Gold imeni M.I.Kalinin)

SUBMITTED: January 17, 1958

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APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

SOV/196-58-4-44/49

AUTHORS: Osetrova, N. V., Titov, P. S.

TITLE: On the Electrodeposition of Copper, Zinc, Cadmium, Nickel, and Cobalt From Ethylene Diamine Complex Salts (Ob elektroosazhdenii medi, tsinka, kadmiya, nikelya i kobal'ta iz kompleksnykh soley, soderzheshchikh etilendiamin)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 4, pp 782-784 (USSR)

ABSTRACT: The electrodeposition of copper, zinc, cadmium, nickel, and cobalt was carried out by means of solutions of ethylene diamine complex salts. The dependence of the separation potential on the current density of 30°C was determined in simple metal chloride solutions and solutions of ethylene diamine complex salts. The separation potential is considerably shifted in the direction of negative values if compared with the potential of simple chloride salts. Due to an increase of ethylene diamine concentration the potential is further shifted towards negative values. The current yield was investigated in dependence of the current density to the effect that the yield of zinc and cadmium is a 100% one and dependent on the current density. In the case of copper, the current yield increases from 75 to 95% with a rise of the current density,

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

SOV/156-58-4-44/49

On the Electrodeposition of Copper, Zinc, Cadmium, Nickel, and Cobalt From Ethylene Diamine Complex Salts

in the case of cobalt from 0 to 50%. The current yield drops, however, with an increase of the current density from 65 to 35% in the case of nickel.
There are 4 figures, 1 table, and 3 references, 2 of which are Soviet.

ASSOCIATION: Kafedra elektrokhimii i korrozii Instituta tsvetnykh metallov i zolota im. M. I. Kalinina (Chair of Electrochemistry and Corrosion at the Institute for Nonferrous Metals and Gold imeni M. I. Kalinin)

SUBMITTED: April 25, 1958

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, P.S.

AKIMOVA, K.I.; BAZHENOV, M.F.; BAKHVALOV, G.T.; BEZKLUBENKO, N.P.; BERMAN, S.I.; BOGDANOV, Ye.S.; BODYAKO, M.N.; BOYKO, B.B.; VINOGRADOV, S.V.; GAGEN-TORN, K.V.; GLEK, T.P.; GOREV, K.V.; GRADUSOV, P.I.; GUSHCHINA, T.N.; YEMEL'YANOV, A.K.; YESIKOV, M.P.; ZDZYARSKIY, A.V.; ZAKHAROV, M.V.; ZAKHAROVA, M.I.: KARCHEVSKIY, V.A.; KOMAROV, A.M.; KORZHENKO, O.T.; LAYNER, V.I.; MAL'TSEV, M.V.; MILLER, L.Ye.; MILOVANOV, A.I.; MIRONOV, S.S.; NIKONOROVA, N.A.; OL'KHOV, N.P.: OSIPOVA, T.V.; OSOKIN, N.Ye.; PERLIN, I.L.; PLAKSIN, I.N.: PROKOF'YEV, A.D.; RUMYANTSEV, M.V.; SEVERDENKO, V.P.; SEREDIN, P.I.; SMIRYAGIN, A.P.; SPASSKIY, A.G.; TITOV, P.S.; TURKOVSKAYA, A.V.; SHAKHNAZAROV, A.K.; SHPICHINETSKIY, Ye.S.; YURKSHTOVICH, N.A.; YUSHKOV, A.V.; YANUSHEVICH, L.V.

Sergei Ivanovich Gubkin. TSvet.met. 28 no.6:60-61 N-D '55. (MIRA 10:11)
(Gubkin, Sergei Ivanovich, 1898-1955)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, P. S., F. M. LOSKUTOV, V. S. LOVCHIKOV, A. N. VOL'SKIY, R. A. ARACHEVA, AND A. M. YEGOROV,

"On Hydrometallurgical Treatment"

Mintsvetmetzoloto

report submitted at a conference on new methods of lead production from concentrates, Gintsvetmet (State Inst. Non-Ferrous Metallurgy), Moscow 22-25 June 1956.

(for entire conf. see card for LIDOV, V. P.)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

PERSIANTSEVA, V.P.; TITOV, P.S.

Electrolytic brass plating from pyrophosphate electrolytes. Nauch. dokl. vys. shkoly; khim. i khim. tekh. no.3:584-587 '58. (MIRA 11:10)

1. Predstavlena kafedroy elektrokhimii i korrozii Moskovskogo instituta tsvetnykh metallov i zolota imeni M.I. Kalinina.
(Brass) (Electroplating)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

SOV/137-58-8-17465

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 180 (USSR)

AUTHORS: Korovin, N.V., ~~Titov, P.S.~~

TITLE: Electrolytic Deposition of an Iron-nickel Alloy (Elektroosazhdeniye splava zhelezo-nikel')

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, 1957, Nr 27, pp 300-313

ABSTRACT: The process of electrolytic deposition of Fe-Ni alloys from chlorous solutions in the presence of Na citrate and H_3BO_3 was investigated. Relationships were established between the composition of an Fe-Ni alloy and its current efficiency and as against the current density, concentration of Na citrate, total concentration of metals, pH of the solution, and stirring. The study of the cathode potentials during the deposition of the alloy and, taking into account the current efficiency of the portion of the current expended on the deposition of the metal (or alloy), showed that in the separate deposition the curve for the Ni discharge is always more positive by 100-150 mv than the curve of the Fe discharge; however, in the case of the combined discharge, the curve of the relationship of the rate of the reaction

Card 1/2

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SOV/137-58-8-17465

Electrolytic Deposition of an Iron-nickel Alloy

to the cathode potential for Ni, by contrast, lies in a more negative region than the curve for Fe. The curve of the relationship of the rate of the reaction of deposition of the alloy to the potential lies between the Fe and Ni curves. In the combined deposition the rate of the discharge of Fe ions increases and that of Ni ions decreases, which phenomenon is explained by the depolarizing effect of Ni during the formation of the solid solution and by the fact that the reaction of reduction of Fe, proceeding with a lower overvoltage, depresses the reaction of the reduction of Ni, which proceeds with a greater overvoltage. The analysis of processes of electrolytic deposition of a series of other alloys in which ions with a great difference in overvoltage are discharged confirms the opinion expressed on the predominance of that process having the lower energy of activation. Therefore, all the factors contributing to a decrease of the overvoltage of the deposition of the alloy should increase the rate of discharge of Ni which actually takes place up to a certain current density (1 amp/dm^2) when the action of the concentrational factors begins to appear. On the basis of the study of the cathode process the opinion is expressed that the complex ion of Ni and citrate is more stable than the analagous ion of Fe.

1. Iron-nickel alloys--Electrodeposition N.O.

Card 2/2

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

SOV/137-58-10-21367

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 131 (USSR)

AUTHORS: Korovin, N. V., Titov, P. S.

TITLE: Properties of Iron-nickel Alloy Coatings (Svoystva pokrytiy iz splava zhelezo-nikel')

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Tsvetn. metallurgiya. 1958, Nr 1, pp 164-170

ABSTRACT: The results of a study of the structure and properties (microhardness, internal stresses, and magnetic characteristics) of electrolytic Fe-Ni coatings deposited from sulfate and chloride electrolytes of various compositions onto polished Cu sections (Minimum thickness of the coatings is 15 μ). The phase composition was determined by X-ray diffraction. The hardness of the Fe-Ni coatings proved to be greater than the hardness of Fe and Ni deposits (especially from sulfate solutions) and approaches the hardness of electrolytically deposited Cr; it varies with the temperature of the electrolyte and the cd. Electrolytically deposited Fe-Ni alloy exhibits high internal stresses owing to the distortion of the lattice parameters, possesses a very fine crystalline structure and luster, and constitutes a solid Fe-Ni

Card 1/2

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SOV/137-58-10-21367

Properties of Iron-nickel Alloy Coatings

solution. Electrolytically deposited alloys exhibit a higher coercive force and a lower residual induction than rolled and heat-treated alloys. The great hardness, the beautiful appearance, and a sufficiently high corrosion resistance of coatings containing up to 30% Fe provide a basis for the assumption that they might replace nickel and sometimes even chromium coatings. Bibliography: 14 references.

B. L.

1. Iron nickel alloy coatings--Properties

Card 2/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TURCHUK, A.A.; TITOV, P.S.; ORLOV, L.N.; BORAVLEV, V.A., red.; MUKHIN, S.S., red.izd-va; PEN'KOVA, S.A., tekhn.red.

[ZIF-1200A drilling unit] Burovoi agregat ZIF-1200A. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr, 1958. 103 p. (MIRA 11:5)
(Boring machinery)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

KOROVIN, N.V.; TITOV, P.S.

Properties of iron-nickel alloy platings. Izv. vys. ucheb. zav.; tsvet. met. no.1:164-170 '58. (MIRA 11:6)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra elektrokhimii i korrozii.
(Iron-nickel alloys) (Electroplating)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TORGONSKIY, Mikhail Nikolayevich, kandidat tekhnicheskikh nauk; TITOV, P.V., inzhener, ofitsial'nyy retsenzent; LESKOV, T.N., inzhener, ofitsial'nyy retsenzent; SAMUYLLO, V.I., redaktor; PITERMAN, Ye.L., redaktor izdatel'stva; KARASIK, N.P., tekhnicheskiy redaktor

[Structures for forest roads] Iskusstvennye sooruzheniia lesovoznykh dorog. Moskva, Goslesbumizdat, 1956. 151 p. (MLRA 9:9)
(Forest roads)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, P.V.; KHANDROS, L.G.

Hysterisis during martensite transformations in copper-aluminum and copper-aluminum-nickel alloys. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.13:158-166 '61. (MIRA 14:12)
(Copper aluminum alloys—Metallography)
(Phase rule and equilibrium)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

35184

S/601/61/000/013/016/017
D207/D302

18.1770

AUTHORS: Titov, P. V. and Khandros, L. G.

TITLE: Hysteresis in the martensitic transformation in copper-aluminum and copper-aluminum-nickel alloys

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalofyzyky. Sbornik nauchnykh rabot, no. 13, 1961. Voprosy fiziki metallov i metallovedeniya, 158-166

TEXT: The authors investigated the martensitic transformation in the following alloys: (I) Cu + 14.1% Al, (II) Cu + 14.9% Al + 1.6% Ni, (III) Cu + 14.9% Al + 1.8% Ni, (IV) Cu + 15.1% Al + 5.6% Ni. The alloys were prepared from materials of 99.99% purity, in graphite crucibles under a flux. After a six-hour homogenizing annealing at 900°C, they were quenched. Crystal structure was examined by x-ray diffraction using Fe radiation. At room temperature the alloys consisted of the β_1-phase (Cu-Al also contained the γ-phase). Measurements of the electrical resistance, with a ПЛТН-1

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Card 2/2

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as above): +5
loy (II); -60 and -10°C
(IV). Acknowledgements is
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APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, P.V.

Increased capacity garage for thawing out ore. Met. i gornorud. prom. no.2:78-79 Mr-Ap '65. (MIRA 18:5)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, P.V.; KHANDROS, L.G.

Effect of nickel and manganese additions on the martensite transformation in Cu-Al alloys. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.14:105-110 '62. (MIRA 15:6)
(Copper-aluminum alloys--Metallography)
(Phase rule and equilibrium)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

S/601/62/000/016/013/029
E193/E383

AUTHORS: Titov, P.V. and Khandros, L.G.

TITLE: The effect of uniaxial tension on the martensitic transformation in Cu-Al-Ni alloys

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalofyzyky. Sbornik nauchnykh rabot. no. 16. Kiyev, 1962. Voprosy fiziki metallov i metallovedeniya. 103 - 110

TEXT: Electrical resistance and dilatometric measurements were used to study the effect of externally applied elastic tensile stresses (0.7 - 7.5 kg/mm^2) on the martensitic transformation in 80.8%Cu/14.4% Al/4.8% Ni and 83.5% Cu/14.9% Al/1.6% Ni alloys. The experiments were carried out on a specially designed equipment, incorporating a thermostat for accurate control of the temperature of the test pieces, and progress of the transformation during both cooling and heating was followed. The final results for the 80.8% Cu/14.4% Al/4.8% Ni alloy are reproduced in Fig. 5, where the increase in the proportion of the martensitic phase ($\delta M/\delta t$, wt.%/$^\circ$C) is plotted against the temperature ($^\circ$C), the

Card 1/3

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

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E193/E383

graphs a and b relating, respectively, to unstressed specimens and specimens under a load of 7.5 kg/mm^2, the cooling and heating cycles being denoted by circles and crosses, respectively. Conclusions 1) Application of elastic stress brings about an increase in the reversible deformation accompanying the martensitic transformation in Cu-Al-Ni alloys and shifts this transformation towards higher temperatures. The beginning and end of the reverse transformation (i.e. that taking place on heating) are also shifted towards higher temperatures. 2) If a specimen of a Cu-Al-Ni alloy is cooled and heated through the transformation range with the external elastic stress applied during the heating cycle only, the temperature of the reverse transformation is not shifted and under these conditions the hysteresis of the transformation decreases. 3) The martensitic transformation in the alloys studied extends over a wider temperature interval when they are under externally applied stresses. There are 6 figures.

SUBMITTED: January 15, 1962

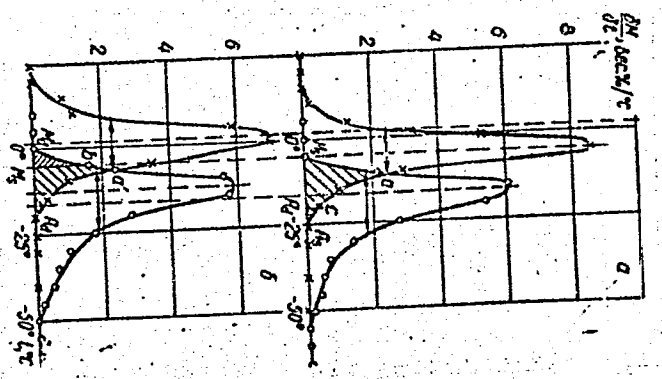
APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

S/601/62/000/016/013/029
E193/E383

The effect of ....

Fig. 5:



Card 3/3

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

S/185/63/008/001/017/024
D234/D308

AUTHORS: Titov, P. V. and Khandros, L. G.

TITLE: Thermoelastic and residual crystals of martensitic β"-phase in a Cu-Sn alloy

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 8, no. 1, 1963, 109-115

TEXT: The authors investigated the effect of the rate of heating on the length of a Cu-Sn alloy containing 24.8% Sn (by weight). It is established that reverse martensite transformation occurs at about 0°C in the case of rapid heating from -196°C to room temperature, and begins at about 70°C in the case of slow heating. This is attributed to stress relaxation during slow heating, which decreases the elastic energy. After relaxation, the reverse transition can occur only below T_0. In the case of rapid heating there is no relaxation. Thermoelastic and residual crystals of martensite phase have been observed here in the same material. There are 4 figures.

Card 1/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

Thermoelastic and residual ... S/185/63/008/001/017/024
D234/D308

ASSOCIATION: Instytut metalofizyky AN URSR, Kiev (Institute of Metal Physics of the AS UkrSSR, Kiev)

SUBMITTED: June 29, 1962

Card 2/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, P.V.; KHANDROS, L.G. [Khandros, L.H.]

Thermoelastic and residual crystals of the martensitic "-phase in the Cu-Sn alloys. Ukr. fiz. zhur. 8 no.1:109-115 Ja '63. (MIRA 16:5)

1. Institut metallofiziki AN UkrSSR, Kiyev.
(Copper-tin alloys) (Metallurgy)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

S/601/62/000/014/009/012
I003/I203

AUTHORS: Titov, P. V. and Khandros, L. G.

TITLE: The influence of additions of nickel and of manganese on the martensitic transformations in Cu-Al alloys

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalofyzyky. Sbornik nauchnykh rabot. no. 14. Kiev, 1962. Voprosy fiziki metallov i metallovedeniya, 105–110

TEXT: The present work is an attempt to investigate the influence of the factors responsible for the temperature lag in the $\beta \leftrightarrows \alpha$ martensitic transformation in Cu-Al alloys. The alloy to be investigated was homogenized at 900°C, and rolled into sheets from which the samples were cut out. The addition of some percent of manganese to Cu-Al alloys does not change the structure of either the β or of the martensitic phase, while the addition of nickel does not change the structure of the high-temperature phase but leads to a change in the structure of the martensitic phase. The combined addition of both mangenese and nickel decreases the $A_c - A_r$ lag. Addition of manganese decreases the temperature of the martensitic transformation. The transformation of the β-phase into martensite in Cu-Al-Si alloys results in a 0.5% change in volume, while in the Cu-Al-Mn alloys this change lies wihtin the limit of experimental error and does not exceed 0.1%. There are 6 figures.

Card 1/1

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TITOV, R.A.

Spectral distribution of the photoconductivity of semiconductors in the case of additive absorption. Fiz. tver. tela 5 no.12:3480-3484 D '63. (MIRA 17:2)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe AN SSSR, Leningrad.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

AKOPYAN, Y. Kh.; GROSS, Ye. F.; DREYNGOLD, F. I.; NOVIKOV, B. V.; TITOV, R. A.; SHERKHMAMETYEV, R. I.

"The investigation by the photoconductivity and luminescence method of the exciton states near the edge and in the depth of the fundamental absorption in crystals."

paper submitted for Intl Conf on Physics of Semiconductors, Paris, 19-24 Jul 64.

Leningrad State Univ.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

PASTRNYAK, I.; TITOV, R.A.

Spectral distribution of the photoelectric sensitivity of Cu_2O crystals at low temperatures. Fiz. tver. tela 3 no. 3:861-868 Mr '61. (MIRA 14:5)

1. Fiziko-tekhnicheskiy institut AN SSSR, Leningrad.
(Copper oxide—Electric properties) (Photoelectricity)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TSAREV, B.P., inzh.; STASENKO, I.K., inzh.; SHALANIN, P.D., inzh.; SOKOLOV, P.P., inzh.; TITOV, R.P., inzh.; YAKOBSON, P.V., kand.tekhn.nauk; TITOV, S.N., kand.tekhn.nauk

Determining consolidated material consumption norms for locomotive and car repairs. Vest. TSNII MPS 20 no.6:62-64 '61. (MIRA 14:10)

(Railroads--Repair shops)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

Titov, S.

AZOS, S.; AREF'YEV, A.; ARTAMONOV, I.; BABINA, I.; BEREGOVSKIY, V.; BLOZHKO, V.; BRAVERMAN, A.; BYKHOVSKIY, Yu.; VINOGRADOVA, M.; GALANKINA, Ye.; GIL'DENGERSH, F.; GLOBA, T.; GREYVER, N.; GORDON, G.; GUL'DIN, I.; GULYAYEVA, Ye.; GUSHCHINA, I.; DAVYDOVSKAYA, Ye.; DAMSKAYA, G.; DERKACHEV, D.; YEVDOKIMOVA, A.; YEGUNOV, V.; ZABELYSHINSKIY, I.; ZAYDENBERG, B.; AZMOSHNIKOV, I.; ITKINA, S.; KARCHEVSKIY, V.; KLUSHIN, D.; KUVINOV, Ye.; KUZNETSOVA, G.; KURSHAKOV, I.; LAKERNIK, M.; LEYZEROVICH, G.; LISOVSKIY, D.; LOSKUTOV, F.; MALEVSKIY, Yu.; MASLYANITSKIY, I.; MAYANTS, A.; MILLER, L.; MITROFANOV, S.; MIKHAYLOV, A.; MYAKINENKOV, I.; NIKITINA, I.; NOVIN, R.; OGNEV, D.; OL'KHOV, N.; OSIPOVA, T.; OSTRONOV, M.; PAKHOMOVA, G.; PETKER, S.; PLAKSIN, I.; PLETENEVA, N.; POPOV, V.; PRESS, Yu.; PROKOF'YEVA, Ye.; PUCHKOV, S.; REZKOVA, F.; RUMYANTSEV, M.; SAKHAROV, I.; SOBOL', S.; SPIVAKOV, Ya.; STRIGIN, I.; SPIRIDONOVA, V.; TIMKO, Ya.; TITOV, S.; TROITSKIY, A.; TOLOKONNIKOV, K.; TROFIMOVA, A.; FEDOROV, V.; CHIZHIKOV, D.; SHEYN, Ya.; YUKHTANOV, D.

Roman Lazarevich Veller; an obituary. TSvet. met. 31 no.5:78-79 My '58. (MIRA 11:6)

(Veller, Roman Lazarevich, 1897-1958)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

GRODSKIY, Ye.; GRODEK, A., nauchnyy sotrudnik; TITOV, S., nauchnyy sotrudnik

Studies of mesh-reinforced concrete. Sbor. nauch. soob. NIIsel'stroia no.2:14-30 '60. (MIRA 15:5)

1. Nauchno-issledovatel'skiy institut sel'skogo stroitel'stva.
2. Rukovoditel' laboratorii armotsementa Nauchno-issledovatel'skogo instituta sel'skogo stroitel'stva (for Grodskiy).
(Reinforced concrete construction)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, S.

Excellent reputation. Vnesh. torg. 43 no.7:38-39 '63.
(MIRA 16:8)
(Licorice)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, S.

Guarantee fulfillment of the retail trade plan. Sov. torg. no.8:1-6 Ag '56. (MLRA 9:10)

1. Chlen Kollegii Ministerstva torgovli RSFSR. (Retail trade)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV S. A.

13

Electrolytic Zinc Plant "Electrozinc" at Ordjonikidze (formerly Vladikavkaz). S. A. Titov (*Zvetnye Metally* (*Non-Ferrous Metals*), 1935, (1), 79–91).—A description.—S. G.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, S. A.

25th Anniversary of the Yakutsk Eye Hospital (1925-1950).
Vest. oft., Moskva 30 no.3:44-46 May-June 1951. (CIML 21:1)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

PUCHKOV, V.V.; TITOV, S.I.

Use of date on outgoing radiation for restoring the temperature and humidity fields. Izv. AN SSSR. Fiz. atm. i okeana 2 no.1: 28-38 Ja '66. (MIRA 19:1)

1. Submitted June 8, 1965.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, S.N., inzh.

Potentialities for an efficient utilization of the capacity of electric locomotives. Trudy MIIT no.122:6-16 '59. (MIRA 13:5)

(Electric locomotives--Performance)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, S.N., inzh.

Using the Hall effect in semiconductors for an oscillographic evaluation of induction distribution in the air gap of d.c. motors. Trudy MIIT no.122:17-23 '59.
(MIRA 13:5)

(Hall effect)
(Electric motors--Direct current)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TSAREV, B.P., inzh.; STASENKO, I.K., inzh.; SHALANIN, P.D., inzh.; SOKOLOV, P.P., inzh.; TITOV, R.P., inzh.; YAKOBSON, R.V., kand.tekhn.nauk; TITOV, S.N., kand.tekhn.nauk

Determining consolidated material consumption norms for locomotive and car repairs. Vest. TSNII MPS 20 no.6:62-64 '61. (MIRA 14:10)

(Railroads--Repair shops)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, S. A

An integrating and indicating röntgenometer. B. M. Isaev, A. N. Krongauz, and S. A. Titov (Inst. Biophys., Acad. Med. Sci. U.S.S.R., Moscow). *Zhur. Tekh. Fiz.* 20, 1372-81(1950).—A röntgenometer scheme is described for measuring x-ray and γ-ray dosages of very high and low intensities. The röntgenometer can measure the strength of 62 (2)

placed in a container contg. the brass aperture piece and acetone. After soln. of the lacquer, the acetone was drained and the metal foil settled on the aperture. It could be shown that foils made by 2 were never quite free of submicroscopic pinholes. Foils with backing, deposited on an aperture of 4-5 mm. withstood 3 microamp./sq. cm. proton current for 6 hrs. Nonbacked foils withstood 1 microamp./sq. cm. current for 1-2 hrs. The particles leaving the foil were analyzed with a magnetic analyzer. The ratio I_{H^-}/I_{H^+} for Al and Cu foils is of the order of 20% at 15 e.kv. and drops to 8% at 30 e.kv.; for Be I_{H^-}/I_{H^+} is 60% at 8, 30% at 15, and 10% at 30 e.kv. Deuterons of 28 e.kv. show the same ratios as protons of 14 e.kv. A mol. beam of H_2^+ of 32 e.kv. was completely dissoed. into protons and ions and the ratio corresponded to the ratio at 16 e.kv. P.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

KIROV, S.A., kand.tekhn.nauk; LISTOV, A.M., kand.tekhn.nauk; KOPYSHTA, I.L., inzh.; DROZDOV, V.A., kand.tekhn.nauk; TITORENKO, N.Ye., kand.tekhn.nauk; BUTOR, A.I., inz.; Prinimali uchastiye: ALEKSEYEV, A.P., kand.tekhn.nauk; MALYSHEV, Ye.G., kand.tekhn. nauk; GAGARIN, Yu.A., inzh.; TITOV, S.A., inzh.; TUMARINSON, N.S. inzh.; KRUTIKOV, V.I., inzh., red.; MEDVEDEVA, M.A., tekhn.red.

[Completely precast buildings with few stories] Polnosbornye maloetazhnye zdaniia. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1962. 87 p. (Vsesoiuznyi nauchno-issledov. institut transportnogo stroitel'stva. Trudy no.44). (MIRA 15:8)

(Railroads--Buildings and structures)
(Precast concrete construction)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

SYTSKO, P.A.; TITOV, S.A.; KOSTITSKIY, I.V.; KUCHERENKO, V.S.; MATVIYENKO, B.N.

Beginning made by the Orsha track workers. Put' i put. khoz. no.9: 5-8 S '58. (MIRA 11:9)

1. Nachal'nik otdeleniya dorogi st. Orsha (for Sytsko). 2. Nachal'nik distantsii puti st. Orsha (for Titov). 3. Nachal'nik vagonnogo uchastka st. Orsha (for Kostitskiy). 4. Nachal'nik parovoznogo depo st. Orsha (for Kucherenko). 5. Nachal'nik energeticheskogo otdela st. Orsha (for Matviyenko).

(Orsha--Railroads--Track)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

SHAVKUNOV, A.V., inzh.; AKSENOV, N.A., inzh.: MUGORMAN, Yu. N., inzh.; KOLCHINSKIY, V.I., inzh.; Prinimali uchastiye: KORNEYEVA, M.P., inzh; CHERNOV, V.I., inzh.; MARKAROV, S.Ye., inzh.; SAYMUKOVA, Ye.P., inzh; LUKASH, B.K., starshiy master; TITOV, S.A., svarshchik; BEREZOVSKIY, V.A.

Welding titanium alloys in chambers with a controlled atmosphere. Svar. proizv. no.4:24-25 Ap'61. (MIRA 14:3)
(Titanium alloys- Welding) (Proctective atmospheres)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

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S/050/61/000/004/002/004
B117/B212

3,5140

AUTHOR: Titov, S. I.

TITLE: Dynamic conditions at atmospheric fronts

PERIODICAL: Meteorologiya i gidrologiya, no. 4, 1961, 12-16

TEXT: The author has investigated the dynamic conditions at atmospheric fronts. Using the explicit form of the formula for dynamic conditions:

$$\tan\alpha = \frac{\partial p_2}{\partial y} - \frac{\partial p_1}{\partial y} / g(\rho_2 - \rho_2) \qquad (2)$$

it is shown that in order to fulfill all dynamic conditions at atmospheric fronts for the case where the cold air is wedge-shaped below the warm air, a baric trough has to be present at the frontal line and the frontal surface. From Eq. (2) it follows that the angle of inclination of the frontal surface to the horizon (α) depends on 1) the difference of the horizontal and perpendicular components of the pressure gradient on both sides of the front and 2) the difference of air masses in density (temperature). The most favorable conditions for an increase of the angle of inclination of the

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frontal surface with an increase of the altitude z are obtained if the distance between the isobars on the starting level decreases and that between the isotherms increases from the front toward the cold air mass. With an increase in density of the isotherms along the y-axis, an opposite phenomenon should be observed, i. e., a decrease of the angle α and an increase of z. From a transformation of Eq. (2):

$$\tan\alpha = \left[RT_1T_2 \frac{\partial^2 p_o}{\partial y^2} / gp_o(T_1-T_2)\right]\Delta y + \left[zT_1T_2 \frac{\partial^2 T_m}{\partial y^2} / T_{m2}(T_1-T_2)\right]\Delta y \qquad (3)$$

(where $\frac{\partial^2 p_o}{\partial y^2}$ and $\frac{\partial^2 T_m}{\partial y^2}$ are the second derivatives of pressure and average temperature; Δy denotes the step) it follows that the angle of inclination of the frontal furface, under otherwise equal conditions, will be the larger, the smaller the temperature difference. A consideration of this statement that seems paradoxical at first, resulted in the following formula:

$$T_{m1} - T_{m2} = \frac{\partial^2 T_m}{\partial y^2} S\Delta S \qquad (6).$$

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

T_{m1} and T_{m2} represent the temperatures at the boundary of the frontal zone in the warm and the cold air mass; ΔS denotes half the width of the frontal zone. From this expression it can be seen that $\frac{\partial^2 T_{m2}}{\partial y^2}$ will also increase if the temperature difference increases. Eq. (3) shows that this circumstance will lead to an increase of the angle of inclination with respect to the horizon. Starting from Eq. (2), the ratio of forces acting on the front has been investigated. It has been established that the inclination of the frontal surface to the horizon is determined by three factors: 1) the difference between the Coriolis forces perpendicular to the front or between the tangential components of the wind velocity; 2) the difference between the accelerations of air masses perpendicular to the front; 3) and the density or the jump of temperature on the front. A comparison of the right sides of Eqs. (2) and

$$\tan \alpha_k = l(\rho_1 u_1 - \rho_2 u_2) / g (\rho_2 - \rho_2) \qquad (11)$$

seems to make it possible to find in each concrete case one of the three ratios: $\tan\alpha > \tan\alpha_k$; $\tan\alpha < \tan\alpha_k$; $\tan\alpha = \tan\alpha_k$. In the first case, the dif-

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ference of the pressure gradients perpendicular to the front is larger than that of the Cariolis forces. In the second case, the opposite is found. Only at $\alpha=\alpha_k$ the accelerations of air masses perpendicular to the front will be zero. Therefore, α and also α_k can be found in principle in each concrete case. From Eq. (11) it follows that α_k represents a wind or kinematic characteristic of the inclination of the frontal surface to the horizon. It is suggested to call α a dynamic characteristic. For $\alpha > \alpha_k$ it follows from Eqs. (2) and (11) that $\frac{\partial p_2}{\partial y} - \frac{\partial p_1}{\partial y} > 1\ (\rho_1 u_1 - \rho_2 u_2)$. This inequality means that the difference of the pressure gradients perpendicular to the front is larger than the Coriolis forces. Therefore, the circulatory acceleration caused by thermodynamic solenoids on the front and by the earth's rotation is positive. It is known that this will take place at a front if the warm air rises and the cold air drops. At $\alpha < \alpha_k$ the air mass is more influenced by the Coriolis forces than by the force of the baric gradient. In this case, the air circulation on the front is weaker. This is possible if the warm air drops and the cold air rises. There is 1 figure.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

BORISENKOV, Yevgeniy Panteleymonovich; TITOV, S.I., dotsent, otv.red.; USHAKOVA, T.V., red.; VOLKOV, N.V., tekhn.red.

[Energetics of atmospheric processes] Voprosy energetiki atmosfernykh protsessov. Leningrad, Gidrometeor.izd-vo, 1960. 167 p. (MIRA 14:1)

(Atmosphere) (Force and energy)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

YUDIN, Mikhail Isaakovich; TITOV, S.I., otv. red.; VLASOVA, Yu.V., red.; BRAYNINA, M.I., tekhn. red.

[New methods and problems in short-range weather forecasting] Novye metody i problemy kratkosrochnogo prognoza pogody. Leningrad, Gidrometeoizdat, 1963. 403 p. (MIRA 16:5)
(Numerical weather forecasting)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, S.I.

The dynamic condition at atmospheric fronts. Meteor. i gidrol. no.4:12016 Ap '61. (MIRA 14:3)

(Meteorology)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

L 22085-66 EWT(1) GW

ACC NR: AP6012928 SOURCE CODE: UR/0362/66/002/001/0028/0038

AUTHOR: Puchkov, V. V.--Pouchkov, V. V.; Titov, S. I.

ORG: none

TITLE: Use of data on outgoing radiation for determining the temperature and humidity fields

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 1, 1966, 28-38

TOPIC TAGS: radiosonde, electronic computer, cloud cover, atmospheric temperature, atmospheric humidity, earth radiation

ABSTRACT: The initial data for computation of the statistical characteristics of outgoing radiation in the spectral region 8-12 μ were the fluxes of outgoing radiation in the mentioned spectral range, computed on an electronic computer using radiosonde data for the winter season 1957-1958 at 0000 GMT at an extensive network of stations. Thirty maps of the flux of outgoing radiation were computed. The following assumptions were made: cloud cover at a particular station was absent or at at height of 2-4 km there was a continuous cloud cover which is visualized as an ideally black surface and the temperature of the upper cloud boundary is equal to the temperature of the surrounding air and the temperature of the underlying surface is equal to air temperature at the level of the psychrometric enclosure. It is shown that the structural function of the radiation field of the underlying surface,

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L 22085-66

ACC NR: AP6012928

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radiation from the upper boundary of a continuous cloud cover in the mentioned spectral interval and effective moisture content increases almost linearly to 1,500 m and attains saturation at a distance of 3,000 km. A relationship has been established between the radiation of the earth's surface, total radiation of the atmosphere, temperature of the radiating surface and effective moisture content. Orig. art. has: 5 figures, 14 formulas and 9 tables. [JPRS]

SUB CODE: 04, 09 / SUBM DATE: 08Jun65 / ORIG REF: 012 / OTH REF: 003

Card 2/2 BLG

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

EWT(d)/EWT(m)/EWP(k)/EWP(h)/EWP(1)/EWP(v) DD/GD

ACC NR: AT6021730 (A) SOURCE CODE: UR/0000/66/000/000/0081/0088

AUTHOR: Dvoretskiy, V. M.; Molchanov, G. G.; Temnyy, V. P.; Titov, S. M.

ORG: none

TITLE: System of elements for automatic hydraulic control

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki. Pnevmoavtomatika (Pneumatic automation). Moscow, Izd-vo Nauka, 1966, 81-88

TOPIC TAGS: automatic control system, hydraulic device, hydraulic engineering, hydraulic equipment, hydraulic logic device, hydraulic pressure amplifier, hydraulic resistance, hydraulics

ABSTRACT: Modules comprising a hydraulic control system are described. The operational amplifier consists of a resistance-membrane summation amplifier and a power amplifier. The operational amplifier, shown in figure 1, operates as follows: The elastic membranes *2* and *3* in the body of the summation amplifier *1* are connected by rod *4*. Supply pressure P_B enters through choke (resistance) *8* into first amplification stage I, and simultaneously through channel *16* into pressure nozzle *12* of second amplification stage II. The input pressure is fed through chokes *5* into amplifier I, causing an average pressure of the inputs to be generated in the membrane chamber. The pressure difference forces the membrane to move flap *6* with respect to nozzle *7*. The size

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L 07885-67
ACC NR: AT6021730

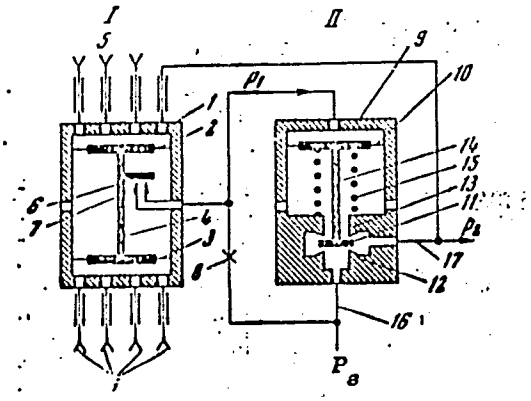

Fig. 1.

of the valve opening establishes a certain value of pressure within the middle chamber of amplifier I. This pressure serves as input P_1 to second stage II. The displacement of the membrane *10* is transfered to valve gate *11* through rod *14*. The membrane is preloaded by spring *15*. Valve chamber *12* and *13* is connected to output channel *17* and valve *13* leads to the pressure sink. The output pressure is determined by the position of valve gate *11*. The hydraulic differentiator is constructed using two operational amplifiers, an inertial element, and chokes (resistances). The first operational amplifier with the inertial element works as a repeater of the lagging signal and is connected to one of the chambers of the second amplifier which operates as a summation unit. The in-

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ACC NR: AT6021730

put pressure is fed into the choke of the inertial element; the pressure difference across this choke serves as the input to the second amplifier. The transfer function of the differentiator is

$$W(p) = \frac{kT_p}{T_p + 1}.$$

The hydraulic integrator is very similar to the differentiator except that the inertial element and the corresponding choke are contained in the feedback loop. The hydraulic capacitor is a single outlet chamber which can have either a flexible membrane or a spring-loaded bellows such that the internal volume changes with respect to the input pressure. The hydraulic chokes can either be of the laminar or turbulent flow type. The former is usually in the form of a tube with a small bore. An electro-hydraulic converter was designed for the performance analysis of the hydraulic modules. It is based on displacement measurement of a membrane by means of a linear differential transformer. The bandwidth of this instrument is 0.1 to 100 cps. Each of the described modules is shown by a block diagram and fairly extensive performance data are included. Orig. art. has: 10 figures.

SUB CODE: 13,14/ SUBM DATE: 03Feb66/ ORIG REF: 005

Card 3/3

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

ALEKSEYEV, Vladimir Ivanovich; ZARETSKIY, [illegible]; TYUKOVIN, I.N.; [illegible] I.P., retsenzent; BELOV, M.I., retsenzent; IVANOV, K.A., retsenzent; MEYYEROVICH, M.G., retsenzent; ORFANOV, I.K., retsenzent; PITOV, S.M., retsenzent; TONYAYEV, V.I., retsenzent

[Moscow-Gorkiy-Moscow; guidebook on the Moscow Canal, and the Volga, Oka, and Moscow Rivers] Moskva - Gor'kii - Moskva; putevoditel' po kanalu imeni Moskvy, Volge, Oke i Moskve-reke. Moskva, Izd-vo "Transport," 1964. 101 p. (MIRA 17:6)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

ACC NR: AP7004782 SOURCE CODE: UR/0413/67/000/001/0095/0095

INVENTOR: Dvoretskiy, V.M.; Titov, S.M.

ORG: none

TITLE: Hydraulic relay. Class 42, No. 190088

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1967, 95

TOPIC TAGS: hydraulic device, hydraulic logical device

ABSTRACT: An Author Certificate has been issued for a hydraulic relay for logical and relay control circuits (see Fig. 1). To increase reliability and

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

ACC NR: AP7004782

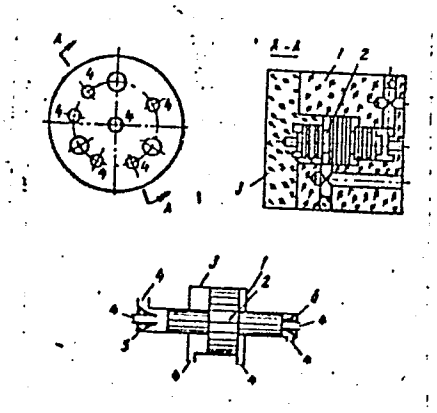

Fig. 1. Hydraulic relay

1 - Valve body; 2 - piston valve; 3 - cap; 4 - channels; 5 - inlet nozzle; 6 - exhaust nozzle.

simplify construction, a differential-type piston valve is used, and inlet and exhaust nozzles are directed toward the small-end faces of the piston valve. Orig. art. has: 1 figure. [WP]

SUB CODE: 13/ SUBM DATE: 14Sep65/ ATD PRESS: 5115

Card 2/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, S. N., Cand of Tech Sci -- (diss) "Investigation of the Work Capacity Properties of Electrical Engines Equipped with a Traction Motor Having Various Stages of Magnetic Saturation," Moscow, 1959, 8 pp (Moscow Institute of Engineers of Railroad Transport im Stalin) (KL, 2-60, 115)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, Stepan Pavlovich; STRONGIN, V.L., red.; MAMONTOVA, N.N., tekhn.red.

[Public supervision is a great force; an aid for the public inspector] Obshchestvennyi kontrol' - bol'shaia sila; v pomoshch' obshchestvennomu kontroleru. Moskva, Gos.izd-vo torg. lit-ry, 1959. 55 p. (MIRA 13:3)
(Retail trade)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

FEDOROV, L.T., kand.tekhn.nauk; LEONT'YEVSKIY, B.B.; GIL'DENBLAT, Ya.D., kand.tekhn.nauk; KORENISTOV, D.V.; ROSSINSKIY, K.I., kand.tekhn. nauk; KUZ'MIN, I.A., kand.tekhn.nauk; KONDRATSKAYA, A.A., inzh.; NISAR-MUKHAMEDOVA, G.N., inzh.; PANOVA, G.M., inzh.; ROZHDESTVENSKIY, G.L., inzh.; SEMIKOLENOV, A.S., inzh.; TSAREVSKIY, S.V., inzh.; ZHUKOVA, M.F., inzh.; GRISHIN, M.M., retsenzent; KRITSKIY, S.N., doktor tekhn.nauk, red.; MENKEL', M.F., doktor tekhn.nauk, red.; GALAKTIONOV, V.D., kand.geol.-min.nauk, red.; ZAVALISHIN, I.S., inzh., red.; MALYSHEV, N.A., inzh., red.; MIKHAYLOV, A.V., doktor tekhn. nauk, red.; PETROV, G.D., inzh., red.; RAPOPORT, Ya.D., red.; RUSSO, G.A., kand.tekhn.nauk, glavnyy red.; SEVAST'YANOV, V.I., inzh., red.; TITOV, S.V., inzh., red.; TISTROVA, O.N., red.; LARIONOV, G.Ye., tekhn.red.

[Hydrology and water economy of the Volga-Don] Gidrologiia i vodnoe knoziaistvo Volgo-Dona. Pod red. S.N.Kritskogo i M.F.Menkelia. Moskva, Gos.energ.izd-vo, 1960. 146 p. (MIRA 13:11)

1. Moscow. Vsesoyuznyy proyektno-izyskatel'skiy i nauchno-issledovatel'skiy institut "Gidroproyekt" imeni S.Ya.Zhuk. 2. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Grishin).
(Don River--Water resources development)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, S. V.

PA 15/49T58

USSR/Engineering Jul 48
Ice Protection
Mathematics, Applied

"The Problem of Computing the Amount of Pressure Which Ice Fenders Will be Able to Absorb," S. V. Titov, Engr, 3/4 p

"Gidrotekh Stroi" No 7

Criticizes certain points in A. M. Latyshenkov's article on this subject. ("Gidrotekh Stroi" No 4, 1946.)

FDB 15/49T58

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

PA 68T56

TITOV, S. V.

Apr 1948

USSR/Engineering
Dams
Flow, Fluid

"Selection of the Specific Discharge of a Spillway on the Basis of the Type of Dam and Locks," S. V. Titov, Engr, 5½ pp

"Gidrotekh Stroi" No 4

Presents controversial methods for selection. Arguments may arise from fact that Titov does not take into account all possible types of currents in lower water.

68T56

FDB

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

1. TITOV, T.

2. USSR (600)

4. Horses

7. Budenny State Horse Breeding Center, Konevodstvo 23 No. 2, 1953

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TIMOV, T. A.

Method for studying directed currents in a gaseous discharge. E. M. Reikhrudel and T. A. Titov (Sci. Research Inst. Phys., Lomonsov State Univ., Moscow). *Zhur. Tekh. Fiz.* 17, 1127-30(1947).—Current distribution in a discharge tube was studied with the aid of 2 radially movable probes and an anode disk divided into several concentric, mutually insulated rings. At c.ds. of 1-5 amp./sq. cm., the radial distribution of c.d. and the electron concn. in the pos. column followed a zero-order Bessel function. At lower c.ds., the radial distribution of electrons in the pos. column of a glow discharge in A departed considerably from a Bessel function. At low currents, the potential gradient in the pos. column increased with current. Cyrus Feldman

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TITOV, T.A.; SHVETSOV, S.G.; SHCHERBAKOV, A.V.

Concerning A.B.Frenkel's article, "Automation in power engineering enterprises." Prom. energ. 17 no.8:50-51 Ag '62. (MIRA 16:4)

1. Glavnyy energetik Moskovskogo avtomobil'nogo zavoda imeni Likhacheva (for Titov). 2. Rukovoditel' gruppy telemekhaniki Proyektnogo upravleniya Moskovskogo avtomobil'nogo zavoda imeni Likhacheva (for Shvetsov). 3. Zamestitel' nachal'nika otdela glavnogo energetika Moskovskogo avtomobil'nogo zavoda imeni Likhacheva (for Shcherbakov).
(Power engineering) (Automation)

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TITOV, T. F.,Cand Agric Sci (diss)-- "The agrotechnology of perennial lupine for fertilization, under the conditions of northwestern RSFSR". Leningrad-Pushkin, 1960. 20 pp (Min Agric RSFSR, Leningrad Agric Inst), 150 copies (KL, No 11, 1960, 136)

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ZHIGLINSKAYA, Yevgeniya Aleksandrovna; RYUMIN, Nikolay Nikolayevich; TITOV, Timofey Fadeyevich; PEN'KOVA, G.A., red.

[Green manure crops] Sideratsionnye kormovye kul'tury. Leningrad, Kolos, 1965. 263 p. (MIRA 18:4)

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BOGOSLOVSKIY, V., kand. tekhn. nauk; TITOV, V., kand. tekhn. nauk

Conference on temperature conditions of residential and public buildings built from large elements. Zhil. stroi. no.9:31 '65. (MIRA 18:11)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

SUPRUNENKO, Afanasiy Lukich; PAVLOV, N., red.; TITOV, V., red.; VORONKOVA, N., tekhn.red.

[China builds socialism] Kitai stroit sotsializm. Smolensk, Smolenskoe knizhnoe izd-vo, 1959. 331 p. (MIRA 13:6)
(China--Economic conditions)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, V.

Simplify the procedure for financing the construction of housing and buildings serving cultural and public needs. Fin. SSSR 38 no.1:54-58 Ja '64. (MIRA 17:2)

1. Nachal'nik otdela finansirovaniya stroitel'stva i proyektnykh organizatsiy Moskovskogo gorodskogo finansovogo upravleniya.

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ZAKHARCHUK, M., instruktor; TITOV, V., instruktor

Methods for training submarine swimmers. Voen.znan. 37 no.7:31 Jl '61. (MIRA 14:6)

1. Morskoy klub podvodnogo sporta Vsesoyuznogo dobrovol'nogo obshchestva armii, aviatsii i flotu, g. Alushta, Krymskoy oblasti.
(Diving, Submarine)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, V., inzh.; GEORGADZE, N., inzh.; POLTORAK, Yu., inzh.; EFENDIYEV, F., inzh.; FREYDLIN, M., inzh.

Development of the operational and technical base for automotive transportation. Avt.transp. 42 no. 4:22-24 Ap '64. (MIRA 17:5)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, V.

Improve the training of builders. Prof.-tekh. obr. 14 no.5:31 My '57. (MIRA 10:6)

1. Direktor stroitel'noy shkoly No.1 (g. Velikiye Luki).
(Building trades--Study and teaching)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

PANOV, V., zootekhnik kolkhoza; TITOV, V., tekhnik-osemenitel'

Artificial insemination station on the collective farm. Nauka i pered. op. v sel'khoz 8 no.12:46 D '58. (MIRA 12:1)

1.Kolkhoz "Krasnaya poyma" Lukhovitskogo rayona Moskovskoy oblasti. (Artificial insemination)

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SOV/107-59-5-32/51

25(1)

AUTHORS: Titov, V., Makarov, Ye. (Nikolayev)

TITLE: Welding Conductors Made of Different Metals

PERIODICAL: Radio, 1959, Nr 5, p 41 (USSR)

ABSTRACT: In case soldering does not provide a reliable connection of two conductors, the authors recommend welding using borax or boric acid as a flux. They describe the welding operation in detail. One end of the conductors to be welded is connected to one plug pin of some electrical device (soldering iron, electric stove, etc.). The other plug pin is connected to one pole of the electric power mains. The other pole of the power mains is connected by a wire to a make-shift electrode with which the welding is performed. Graphite rods taken from a pencil may be used as electrodes.

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TITOV, V.

Reestablish the spartakiadas of the primary organizations of the All Union Voluntee: Society for Cooperation with the Army, Air Force, and Navy. Voen. znan. 35 no.9:16 S '59. (MIRA 12:12)

1.Predsedatel' soveta samodeyatel'nogo strelkovogo Kluba pervichnoy organizatsii Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu avtozavoda imeni Likhacheva, Moskva.
(Rifle practice)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

PETROV, V.P., starshiy inzh.; LANKIN, G.N., inzh.; TITOV, V., inzh.; SUSLOV, L., zhurnalist; PROSKURIN, A.M., zhurnalist; ITUNINA, R.G., red.; SKRADZSKAYA, P.G., tekhn.red.

[Nikolai Manukovskii's new initiative] Novyi pochin Nikolaia Manukovskogo. Voronezh, Voronezhskoe knizhnoe izd-vo, 1960. 201 p. (MIRA 14:1)

(Farm mechanization)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

KOMAROV, V.N.; TITOV, V., red.; MUKHIN, Yu., tekhn.red.

[Marvelous phenomena in the sky] Chudesnye iavleniia na nebe. Moskva, Gos.izd-vo polit.lit-ry, 1960. 94 p. (MIRA 13:7)
(Astronomy)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755910002-1

TITOV, V.

27-5-18/25

AUTHOR: Titov, V., Director of Construction School # 1 (Velikiye Luki)

TITLE: Improve the Training of Construction Workers (Uluchshit' podgotovku stroiteley)

PERIODICAL: Professional'no - Tekhnicheskoye Obrazovaniye, May 1957, #5(144), p 31 (USSR)

ABSTRACT: The article refers to issue # 9 of 1956 of this periodical containing an article from K. Yevseyev on "Undecided Questions in Construction Schools (Nereshennyye voprosy v stroitel'nykh shkolakh) and to issue # 1 of 1957 with an article from A. Petrovichev "Questions of Training Builders" (Voprosy podgotovki stroitelei) and points out that although the training programs issued by the Main Administration of the Labor Reserves are compulsory for all the schools of the organization, the specific features of building in some of the districts, require that the program be supplemented in some respect.

He points to the insufficient equipment of the schools and pleads that the supply be centralized, the more so since the trade and technical schools manufacture complete machine tools

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