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L 10252-66
ACC NR: AP5028056

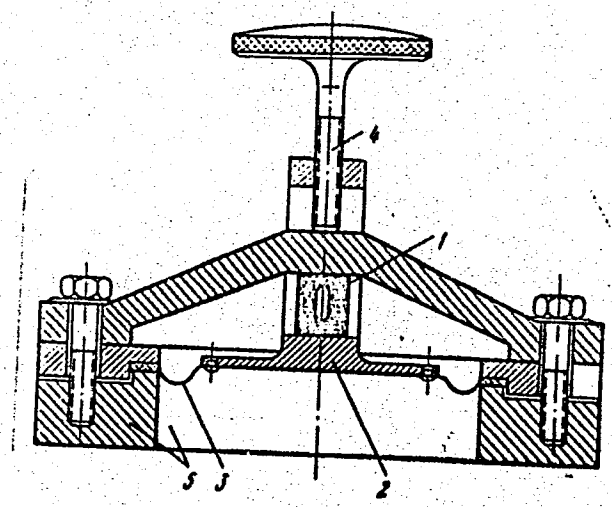

Fig. 1. Experimental device

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L 10252-66
ACC NR: AP5028056

output signal. The device exhibited a sensitivity of 1—2 μv/dyne·cm^2 in the amplitude detection circuit and 100 μv/dyne·cm^2 in the frequency-detection circuit. Orig. art. has: 2 figures. [03]

SUB CODE: 20,09/ SUBM DATE: 20May65/ ORIG REF: 004/ OTH REF: 002/
ATD PRESS: 4161

Card 3/3

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

SEMIKHATOVA, S.V., prof., glav. red.; FILIPPOVA, M.F., red.; MAKAROVA, T.V., red.; IVANOVA, Z.P., red.; CHULKOVA, V.V., red.; BEKMAN, Yu.K., ved. red.; POLOSINA, A.S., tekhn. red.

[Resolutions of the Conference on the Study of Accurate Unification of Stratigraphic Scales of the Upper Proterozoic and Paleozoic in the Volga-Ural Oil and Gas Region held in Moscow at the All-Union Scientific Research Institute of Petroleum Geology and Prospecting, February 12-20, 1960] Resheniia soveshchaniia po utochneniiu unifitsirovannykh stratigraficheskikh skhem verkhnego proterozoia i paleozoia Volgo-Ural'skoi neftegazonosnoi provintsii, sostoiavshegosia v Moskeve pri VNIGNI s 12 po 20 fevralia 1960 g. Moskva, Gostoptekhizdat, 1962. 47 p. (MIRA 16:5)

1. Soveshchaniye po utochneniyu unifitsirovannykh stratigraficheskikh skhem verkhnego proterozoya i paleozoya Volgo-Ural'skoy neftegazonsonoy provintsii, Moscow, 1960.
(Volga-Ural--Geology, Stratigraphic)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULKOVA, Ye. I.

Cabbage

New varieties of cabbage. Sad i og., No. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, _____1953. Unclassified.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHUIKOVA, YE. I.

7784. CHUIKOVA, YE. I.---Luk i chesnok. Minsk, Gosizdat BSSR, Red. S.-kh. Lit., 1954. 88 5. s ill. 14 sm. 20.000 EKZ. 65K.—Bibliogr: s. 87--Na obl. avt. Ne Ukazan.--Na Belorus. Yaz.---(55-3840)
635,25&635.26& (016.3)

SO: Knizhnaya Letopis', Vol. 7, 1955

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULKOVA Ye. I.

MALININ, S.N.; LUPINOVICH, I.S.; MOLOCHKO, I.S.; ABRAMCHUK, A.P.; ALEKSEYEV, Ye.K.; AL'SMIK, P.I.; AMBROSOV, A.L.; ANDREYEVA, N.M.; ANOKHIN, A.N.; AFONIN, M.I.; BABOSOV, M.M.; BALOBIN, V.N.; BARANOVSKIY, A.K.; BEZDENKO, T.T.; BEL'SKIY, B.B.; BOBKOVA, A.F.; BOL'SHAKOVA, V.P.; BULGAKOV, N.P.; VAGIN, A.T.; BIL'DFLUSH, R.T.; VIL'CHINSKIY, A.D.; VLASOVA, K.S.; VOYTKO, D.I.; VOLUZNEV, A.G.; GABYSHEV, M.F. [deceased]; GAYKO, A.A.; GALASHEV, M.A.; GOREGLYAD, Kh.S.; GARKUSHA, I.F.; GOSTILOVSKAYA, M.N.; GORBUNOVA, N.N.; GORSKIY, N.A.; GORFINKEL', Z.Sh.; GRUBILKO, N.P.; GUSAKOV, V.A.; GUDAYKIN, A.I.; DANILOVICH, A.F.; DEMENT'YEV, V.A.; DENISOV, Z.N.; DOROZHKIN, N.A.; DUBOV, A.B.; DUBOVSKIY, Ya.K.; YEVTIKHIYEV, B.Ye.; ZHARIKOV, I.S.; ZHILIN, A.P.; ZHOLNEROVICH, A.M.; ZHURAVEL', B.N.; ZABELLO, D.A.; ZAKHARENKO, G.D.; ZUBETS, V.M.; IVITSKIY, A.I.; KACHURO, I.M.; KEDROV-ZIKHMAN, O.K.; KIDALINSKIY, V.A.; KIPENVARLITS, A.F.; KOVALEVSKIY, G.T.; KOVAL'CHUK, P.P.; KOZHANOV, K.Ya.; KOZLOVSKIY, I.Ye.; KOCHETOVA, Z.N.; KRIVODUBSKIY, I.P.; KUDRYAVTSEV, S.F.; KUSTOVA, A.I.; LAPPO, A.I.; LARIONENKO, V.B.; LASHKEVICH, G.I.; MAL'CHEVSKIY, V.I.; MAN'KO, N.F.; MARKOVETS, A.F.; MATSEPURO, M.Ye.; MEDVEDEV, A.G.; MEL'TSER, Ya.D.; MOISEYEV, I.G.; MUSORIN, V.V.; MUKHIN, N.D.; NAGORSKAYA, Ye.D.; NALIBOTSKIY, S.B.; NIKOLAYEVA, Yu.N.; NEDOLUGOV, I.T.; ORLOVSKIY, I.A.; ORLOVSKIY, K.P.; PANKEVICH, A.A.; PESKIN, A.L.; PROKOPOV, P.Ye.; PUSHKAREV, I.I.; RAZMYSLOVICH, I.R.; RAZUMENKO, A.V.; REMNEVA, Z.I.; RINKIS, V.A.; ROVDO, A.I.; ROGOVOY, P.P.; ROZENBLYUM, B.M.; RYZHMANOV, A.G.; RUSINOV, A.A.; SAVCHENKO, A.I.; SAPUNOV, V.A.; SAFRONOV, I.P.; SVIRSKIY, Ya.N.; SEVERNEV, V.P.; SERGEYEV, I.V.; SEMENOV, A.L.; SIDORENKO, G.M.;

(Continued on next card)

Chulkova

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MALININ, S.N.---(continued) Card 2.

SKOROPANOV, S.G.; SKRIPNICHENKO, L.A.; SMIRNOV, T.Ye.; STAROVOYTOV, K.T. [deceased]; STRELKOV, I.G.; SUSLOV, V.P.; SUKHORUKOV, G.Ye.; SYUBAROV, A.Ye.; TIMOSHININ, V.D.; TISHKEVICH, I.I.; TROPASHKO, I.N.; TRIZNO, S.I.; TRIMA, N.K.; TUZOVA, R.V.; TURETSKIY, R.L.; UMANSKIY, M.M.; UR'YEV, I.M.; KHOT'KO, A.I.; KHROBOSTOV, S.N.; TSEKHANOVICH, P.V.; CHERNYAVSKIY, I.G.; CHULKOVA, Ye.I.; CHUNOSOV, M.N.; SHEMPEL', V.I.; SHIKHALEYEV, N.F.; SHKLYAR, A.Ye.; SHCHERBOV, N.A.; YURGENS, B.A.; YUSKOVETS, M.K.; YAKOVLEV, B.I.; YAKERSON, S.A.; YAROSHEVICH, A.A.; LUTSENKO, M.N., red.; LARIN, V., red.; KALECHITS, G., tekhn.red.

[Measures for increasing agricultural production per 100 hectares of land on collective and state farms of White Russia] Meropriiatiia po uvelicheniiu proizvodstva sel'skokhoziaistvennoi produktsii na 100 gektarov zemel'nykh ugodii v kolkhozakh i sovkhozakh BSSR. Red.kollegiia; I.S.Lupinovich i dr. Minsk, Gos.izd-vo BSSR. Red.sel'khoz. lit-ry, 1959. 601 p. (MIRA 13:4)

1. White Russia. Ministerstvo sel'skogo khozyaystva.
(White Russia--Agriculture)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

GORINSHTEYN, M.L., doktor med.nauk; CHULKOVA, Z.N. (Moskva)

Treatment of myocardial infarct with neodicoumarin. Vrach.delo no.12:1241-1243 D '56. (MIRA 12:10)

1. Terapevticheskoye otdeleniye (nauchnyy rukovoditel' - doktor med.nauk M.L.Gorinshteyn) Klinicheskoy bol'nitsy TSentral'nogo instituta usovershenstvovaniya vrachey.
(HEART--INFARCTION) (ACETIC ACID)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

GORINSHTEYN, M.L.; SRIBNER, TS.M.; CHULKOVA, Z.N.

Use of the new ganglion blocking preparation, dioquine, in hypertension. Khim. i med. no.15:94-97 '60. (MIRA 15:1)

1. Iz terapevticheskogo otdeleniya (nauchnyy rukovoditel' - doktor meditsinskikh nauk M.L.Gorinshteyn) bazovoy bol'nitsy TSentral'nogo instituta usovershenstvovaniya vrachey (glavnyy vrach - kand.med. nauk, zasluzhenyy vrach RSFSR P.P.Obnorskiy).
(HYPERTENSION) (DIOQUINE--THERAPEUTIC USE)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULKOVA, Z.S.

CHULKOVA, Z.S.

Microdetermination of prothrombin. Lab.delo no.4:16-17 Jy-Ag '55. (MLRA 8:8)

1. Iz biokhimicheskoy laboratorii (zav. prof. L.G. Smirnova) Nauchno-issledovatel'skogo instituta, akusherstva i ginekologii Ministerstva zdravookhraneniya SSSR (dir. L.G. Stepanov)

(PROTHROMBIN TIME, determination micromethod)

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CHULKOVA, Z. S.

62
3

Adaptive changes in respiratory function of erythrocytes in asphyxia of newly born. V. V. Koval'skii, Yu. I. Raetskaya, V. I. Tolcheeva, and Z. S. Chulkova (Sci. Research Inst. Obstet. and Gynecol., Ministry of Health U.S.S.R., Moscow). *Fiziol. Zhur. S.S.S.R.* 41, 401-9(1955).—It was shown that K ions, in raising the hydration activity of carbonic anhydrase, lowers the O-binding ability of hemoglobin, while Mg ions have a reverse ability. These results are confirmed by expts. on the action of metallic salts on dialyzed specimens of hemoglobin. At low pressure of O Mg raises the O-fixing ability of hemoglobin by 12-18%. Under conditions of asphyxia of newly born the high activity of Mg may be regarded as an adaptive function tending to improve gas metabolism. G. M. Kosolapoff

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULKOVA, Z.S.
CA

Permeability of erythrocytes to cations. V. V. Koval'skii and Z. S. Chulkova. *Doklady Akad. Nauk S.S.S.R.* 79, 895-8(1951).—To follow the periodic variations in concns. of cations within erythrocytes as a proof of their cationic permeability, the concns. of K, Ca, and Mg were detd. several times per day in humans. While very considerable individual variations were found in 98% of total cases, there were av. differences in concn. between the day and night. In each case groups of subjects were found that had substantially reciprocal results in comparison with each other (i.e., in some the high values were at night, in others in the day). The max. or min. for K occurs at about midnight and at 3-4 P.M.; Ca at noon-3 P.M. and at about midnight; and Mg showed a general decline (or rise in opposite group) during evening hrs. with a min. (or max.) at about midnight-1 A.M. and a smaller max. or min. 3-4 hrs. later. G. M. Kosolapoff

Inst. Experimental Biol., AMS SSSR

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

Paper chromatography and its application in the deter-

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULKOVA, Z.S., GUMINA, I.I.

Chromatographic determination of the different amino acids in blood serum. Lab.delo 4 no.3:22-24 My-Je '58 (MIRA 11:5)

1. Iz laboratorii biokhimii (zav. - prof. L.G. Smirnova) Instituta akusherstva i ginekologii Ministerstva zdravookhraneniya RSFSR, Moskva.
(AMINO ACIDS)
(BLOOD--ANALYSIS AND CHEMISTRY)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

SMIRNOVA, L.G.; KVATER, Ye.I.; CHULKOVA, Z.S.

Pregnancy toxemias and problems of nutrition. Akush.i gin. 36 no.1:3-7 Ja-F '60. (MIRA 13:10)
(PREGNANCY, COMPLICATIONS OF) (BLOOD PROTEINS)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOCHNIKOV, V.I.

Dividing the Mongolian Altai into tectonic zones. Geol. sbor. [Lvov] no.5/6:367-373 '58. (MIRA 12:10)

1. Ukrainskoye geologicheskoye upravleniye, Kiyev.
(Altai Mountains--Geology, Structural)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

MATKOVSKIY, O.I.; YASINSKAYA, A.A.; CHULOCHNIKOV, V.I.; PAVLISHIN, V.I.

Sulfide and complex metal deposits in the Chivchin Mountains. Min. sbor. no.16:273-284 '62. (MIRA 16:10)

1. Gosudarstvennyy universitet imeni Ivana Franko, L'vov i L'vovskaya geologicheskaya ekspeditsiya.
(Carpathian Mountains—Ore deposits)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOK, P.D.

CHULOK, P.D. (Odessa)

Sanitation of natural waters. Gig. i san. 22 no.12:64 D '57
(WATER--POLLUTION) (SEWAGE--PURIFICATION) (MIRA 11:3)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOV, M.I.; FEDORTSOV-LUTIKOV, G.P.

Apparatus for determining the creep of materials at elevated temperatures. Patent U.S.S.R. 77,716, Dec. 31, 1949.
(CA 47 no.19:9680 '53)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOV, M.I.

Universal'naia ispytatel'naia mashina na 30 t. (Vestn. Mash., 1951, no. 7, p. 17-18)

A new hydraulic testing machine designed by the Central Scientific Research Institute of Technology and Mechanical Engineering.

Universal testing machine for 30 t.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOV, M.I.; MODEL', B.I., tekhn. red.

[IM-12A testing machine] Ispytatel'naia mashina IM-12A. Izd.2., dop. i ispr. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1954. 23 p. (MIRA 14:9)

(Testing machines)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

BR

ACCESSION NR: AP4040696 S/0135/64/000/006/0011/0015

AUTHOR: Chuloshnikov, P. L. (Engineer); Nesterov, Yu. V. (Engineer)

TITLE: The spot welding of aluminum alloys on the condenser machine

SOURCE: Svarochnoye proizvodstvo, no. 6 (630), 1964, 11-15

TOPIC TAGS: welding, spot welding, aluminum alloy welding, alloy spot welding, stored energy welding, stored energy welder, MTK-75 welder

ABSTRACT: The spot welding of aluminum alloys on the MTK-75 stored energy welder was investigated. The investigation showed that the welding current pulses of MTK-75 welder have adequate technological characteristics which permit welding aluminum alloys 0.3—2.5 mm thick with good reproducibility of weld strength over a wide range of working conditions. High quality joints between dissimilar alloys and dissimilar thicknesses were noted. No special preparation of surfaces and no specially close fits between the surfaces to be welded are required, as compared to existing requirements for other types

Card 1/2

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ACCESSION NR: AP4040696

of welders. Welds of satisfactory quality can be obtained over a rather wide range of magnitudes and durations of forging pressures. However, the time of application of pressure is rather critical as too early or too late application of forging pressure leads to formation of macrodefects in the weld nugget. The weight of the moving parts of the upper electrode drive (350 kg) does not significantly change the electrode pressure and can be taken into account when the initial pressure is selected. Orig. art. has: 7 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ATD PRESS: 3049 ENCL: 00

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

Card 2/2

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOV, P.L.

BALKOVETS, D.S., kandidat tekhnicheskikh nauk; ORLOV, B.D., inzhener; CHULOSHNIKOV, P.L., inzhener.

Spot welding 30KhGSA steel by a two-impulse process. Vest.mash.34 no.4:68-71 Ap '54. (MLRA 7:5)
(Steel--Welding)

Evaluation B-81524

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOV, P.L.

ORLOV, B.D., kandidat tekhnicheskikh nauk; CHULOSHNIKOV, P.L., inzhener

Current regulation in voltage oscillation of spot and roll welding machine circuits. Svar. proizv. no.4:13-17 Ap '55. (MLRA 8:9)
(Electric welding)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOV, P.L., inzhener; OBIDIN, V.A., inzhener

Instrument for recording electric pressure of a spot welding machine.
Svar. proizv. no.7:17-19 Jl '55. (MIRA 8:9)
(Electric welding--Testing)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

Chuloshnikov, P.L.

BALKOVETS, D.S., kandidat tekhnicheskikh nauk; CHULOSHNIKOV, P.L., inzhener

Stabilizing the electrode squeeze effort in spot welding. Svar. proizv. no.9:7-8 S'55. (MIRA 8:11)

(Electric welding)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

Chuloshnikov, P.L.

28(1) PHASE I BOOK EXPLOITATION SOV/2156

Soveshchaniye po kompleksnoy mekhanizatsii i avtomatizatsii tekhnologicheskikh protsessov. 2nd, 1956.

Avtomatizatsiya mashinostroitel'nykh protsessov; /trudy soveshchaniya/, tom. 1: Goryachaya obrabotka metallov (Automation of Machine-Building Processes; Proceedings of the Conference on Over-All Mechanization and Automation of Technological Process, Vol 1: Hot Metal-Forming) Moscow, 1959. 394 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.

Resp. Ed.: V.I. Dikushin, Academician: Compiler: V.M. Raskatov: Ed. of Publishing House; V.A. Kotov; Tech. Ed.: I.F. Kuz'min.

PURPOSE: The book is intended for mechanical engineers and metallurgists.

COVERAGE: The transactions of the Second Conference on the Over-All Mechanization and Automation of Industrial Processes, September 25-29, 1956, have been published in three volumes. This book, Vol. I, contains articles under the general title, Hot Working of Metals. The investigations described in the book were conducted by the Sections for Automation and Hot Working of Metals, under the direction of the following scientists: casting - F.N. Aksenov, D.P. Ivanov and G.M. Orlov; forming - A.I. Tselikov, A.D. Tomlenov and V.T. Meshcherin; welding - G.A. Nikolayev, B.I. Prolov and G.A. Maslov. There are 183 references: 142 Soviet, 34 English, 6 German, and 1 French.

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AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

Chuloshnikov, P.L.

AID P - 5603

Subject : USSR/Engineering

Card 1/1 Pub. 107-a - 3/12

Authors : Balkovets, D. S., Kand. of Tech. Sci., B. D. Orlov, Kand. of Tech. Sci. and P. L. Chuloshnikov, Eng.

Title : Electronic modulator for spot welding of aluminum alloys

Periodical : Svar. proizv., 12, 10-13, D 1956

Abstract : The process of the formation of spot weld in bonded specimens of D16T duralumin up to 1.5mm thick is briefly outlined. The authors describe their device to control spot welding impulses. They call it the electronic modulator and claim it eliminates spattering and cracks in the weld, which are commom defects in spot welding of duralumin. Five micro-pictures, 5 drawings, 1 photo and 1 table; 2 Russian references (1951-55).

Institution : Scientific Research Institute of Aviation Technology (NIAT).

Submitted : No date

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOV, PAVEL LEONIDOVICH.

Call Nr: TS 227.B29

AUTHORS: Balkovets, D. S., Orlov, B. D., Chuloshnikov, P. L.

TITLE: Spot and Seam Welding of Special Steels and Alloys (Tochechnaya i rolikovaya svarka spetsial'nykh staley i splavov)

PUB. DATA: Gosudarstvennoye izdatel'stvo oboronnoy promyshlennosti, Moscow, 1957, 430 pp.,5500 copies.

ORIG. AGENCY: None given

EDITORS: Editor: Veys, A. L., Candidate of Technical Sciences; Editor-in-Chief: Sokolov, A. I., Eng.; Ed. of Publishing House: Bogomolova, M. F.; Tech. Ed.: Rozhin, V. P.; Reviewers: Prof. Gel'man, A. S., Dr. of Technical Sciences, and Poplavko, M. V., Candidate of Technical Sciences

PURPOSE: The book is intended for scientific research institutes of technology, as well as for a wide circle of practicing engineers, designers, technologists and personnel engaged in the field of quality control, and for persons interested in spot and seam welding techniques.

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Spot and Seam Welding of Special Steels and Alloys (Cont.) Call Nr: TS 227 .B29

COVERAGE: The book presents extensive information on the technology of spot and seam resistance welding. Welding machinery, equipment and measuring instruments are described and illustrated. Suggestions for adequate design of spot or seam welded frames and tight, thin sheet-metal structures from structural steels, heat resistant and non-ferrous alloys are given, and basic methods employed in quality control of welds are presented. Failures in weld joints, causes of defective welds and methods of their detection are discussed and illustrated. Special measuring and testing instruments employed for the set-up and adjustment of welding machines are described, and methods of eliminating operating trouble are suggested. There are 83 bibliographic references, 76 of which are Slavic, 6 English, 1 French. Personalities mentioned include: Akhun, A.I., Kochanovskiy, N.Ya., Gel'man, A.S., Grigor'yev, V.A., Maslov, G.A., Skakun, G.F., Poplavko, M.V.

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Call Nr: TS 227.B29

Spot and Seam Welding of Special Steels and Alloys (Cont.)

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Call Nr: TS 227.B29

Spot and Seam Welding of Special Steels and Alloys (Cont.)

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Spot and Seam Welding of Special Steels and Alloys (Cont.)

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Spot and Seam Welding of Special Steels and Alloys (Cont.)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

Chuloshnikov, P.L.

135-5-7/14

SUBJECT: USSR/Welding.

AUTHORS: Orlov, B.D., Candidate of Technical Sciences, Chuloshnikov, P.L., Engineer, and El'yasheva, M.A., Candidate of Technical Sciences.

TITLE: Strength of Spot-Welded and Roller-Welded Joints in Titanium "BT1Д". (Prochnost' soyedineniy titana "BT1Д", vypolnennykh tochechnoy i rolikovoy svarkoy).

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 5, pp 19-22 (USSR)

ABSTRACT: The investigation described had the purpose of comparing the properties of titanium "BT1Д" with the properties of steel "1X18H9-H" for which titanium may be a replacement giving an economy in weight. Both metals were tested under static load, under cyclic fatigue load, and under pressure load. The technology of specimen preparation and of testing is given in detail.

The following conclusions have been made:

1. The static strength of spot-welded and roller welded joints of titanium "BT1Д" is not below the static strength of those made of steel "1X18H9-H", despite the strength of the basic metal "BT1Д" being 25% below the strength of the basic metal

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

135-5-7/14

TITLE: Strength of Spot-Welded and Roller-Welded Joints in Titanium "BT1Д". (Prochnost' soyedineniy titana "BT1Д", vypolnennykh tochechnoy i rolikovoy svarkoy).

steel "1X18H9-H".

2. In tear-off tests, titanium "BT1Д" shows weaker spot welds than steel "1X18H9-H".

3. Fatigue resistance of lap-spot joints and in lap-roller welded joints is practically equal in both compared metals. In type III spot welds (shown in illustration) the resistance of titanium is only half the resistance of steel "1X18H9-H", which can be explained by low formability of titanium and hence its poor ability to readjust stresses in multi-spot joints.

4. Spot welds in combination with a sheet and a profile section made of titanium "BT1Д" show good performance under pressure loads, but have brittleness breakdowns.

The article contains 4 tables, 1 sketch, 1 diagram, 5 photographs.

ASSOCIATION: "НИАТ" (NIAT)
PRESENTED BY:
SUBMITTED:
AVAILABLE: At the Library of Congress.
Card 2/2

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

AUTHOR: Chuloshnikov, P.L., Engineer SOV-135-58-10-15/19

TITLE: ~~Device for Current~~ Control in Roller Welding (Pribor dlya kontrolya toka pri rolikovoy svarke)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 10, pp 39 - 40 (USSR)

ABSTRACT: An automatic device for the control of current in roller welding was developed by NIAT, together with the machine-building plant and the participation of V.A. Obidin and A.G. Glashkon. In the case of deviation from the given welding current value, the device produces a light and sound signal and switches off the current. It permits a control of the current and improves the quality of weld joints. Information includes detailed illustrated description of the controlling measuring and the signal systems of the device. There are 2 circuit diagrams and 1 photo.

ASSOCIATION: NIAT

1. Spot welding--Control systems

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

SOV-135-58-11-9/21

AUTHORS: Orlov, B.D., Candidate of Technical Sciences, and Chuloshnikov, P.L., Engineer

TITLE: The Selection of Parameters for the Spot Welding of High-Strength Aluminum Alloys (O vybore rezhima tochechnoy svarki vysokoprochnykh alyuminiyevykh splavov)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 11, pp 23-26 (USSR)

ABSTRACT: The author discusses the use of soft and rigid parameter machines for the spot welding of high-strength aluminum alloys over 1 mm thickness. The advantages of machines with soft parameters are: the relative facility of controlling the shape and continuity of the welding pulse, a reduced probability of non-fusion and the possibility to reveal non-fusion areas by X-ray flaw detectors. The effect of the parameters on the strength of weld joints under different load was examined by metallographic investigations. Mechanical tests were carried out on specimens of plated high-strength alloys welded on the following types of machines: 1) with power accumulation in "A-400" type capacitors; 2) single-phase a.c. machines (MTP-200) with a welding current modulator (EM-1-NIAT); 3) d.c. pulse machines (MTIP-600-2 and MTIP-450-2). The following

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SOV-135-58-11-9/21

The Selection of Parameters for the Spot Welding of High-Strength Aluminum Alloys

conclusions are made: Spot welding with both soft and rigid parameter machines entails a sharp reduction of metal mechanical properties in the cast spot weld, which is less noticeable in zones adjacent to the weld spot. Comparative tests on hardness, static shear and tear, fatigue limits and repeated static load showed similar mechanical properties of joints welded with soft or rigid parameters. The use of machines with soft parameters (type MTIP) for spot welding of high-strength and other aluminum alloys over 1 mm thickness is found more expedient because of technological advantages. Engineer V.A. Petrov participated in the work. There are 5 tables, 3 diagrams, 5 photos and 6 references, 4 of which are Soviet, 1 French, and 1 English.

ASSOCIATIONS: MATI and NIAT

1. Aluminum alloys--Spot welding 2. Spot welds--Test results 3. Welded joints--Properties 4. Spot welding--Equipment

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

18(4), 25(1,5) SOV/135-59-7-5/15

AUTHOR: Orlov, B.D., Candidate of Technical Sciences (Mati)
Chuloshnikov, P.L., Engineer (NIAT)

TITLE: Present State and Future Development of Spot and Seam Welding of Light Alloy Designs

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 7, pp 16-19(USSR)

ABSTRACT: In connection with a constantly increasing application of aluminum and magnesium alloys in the Soviet machine-building industry, resistance welding will be utilized for producing parts of the aforementioned alloys. The authors review various resistance welding methods applicable for light metals and their alloys. They discuss welding equipment, anticorrosion protection of welds, problems of strength, detection of defects and the mechanization of auxiliary operations. There are 1 photograph, 3 diagrams, 3 tables and 10 references, 9 of which are Soviet and 1 French.

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ASSOCIATION: MATI, NIAT

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHIN, P.I.

PHASE I BOOK EXPLOITATION SOV/3791

Soveshchaniye po obrabotke zharoprochnykh splavov, Moscow, 1957.

Obrabotka zharoprochnykh splavov; [sbornik dokladov...] (Treatment of Heat-Resistant Alloys; Collection of Papers Read at the Conference), Moscow, Izd-vo AN SSSR, 1960. 231 p. 3,500 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya; Akademiya nauk SSSR. Institut metallurgii im. A.A. Baykova. Nauchnyy sovet po problemam zharoprochnykh splavov.

Resp. Ed.: V.I. Dikushin, Academician; Ed. of Publishing House: V.A. Kotov; Tech. Ed.: V.V. Bruzgul'.

PURPOSE: This book is intended for metallurgists.

COVERAGE: The book consists of thirty papers read at the Conference on the Treatment of Heat-Resistant Alloys held in Moscow by the Committee on Machine-Building Technology, Institute of the Science of Machines, Academy of Sciences USSR, in 1957. The papers deal with four principal areas of alloy metallurgy: casting, forming, machining, and welding. The alloys (together with refractory carbides, borides, nitrides, and oxides) are discussed especially in connection with their application in the manufacture of turbine blades, heat engines, boilers, reactors, containers for high-temperature media, dies, casting molds, and metal-cutting tools. No personalities are mentioned. Some of the articles are accompanied by references, mainly Soviet.

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VLADIMIRSKIY, T.A., doktor tekhn.nauk; VROBLEVSKIY, R.V., inzh.; GLEBOV, L.V., inzh.; GODIN, V.M., kand.tekhn.nauk; GUZOV, S.G., inzh.; GULYAYEV, A.I., inzh.; YERSHOV, L.K., inzh.; KOCHANOVSKIY, N.Ya., kand.tekhn.nauk; LYUBAVSKIY, K.V., prof., doktor tekhn.nauk; PATON, B.Ye., akademik, prof., doktor tekhn. nauk; RABINOVICH, I.Ya., kand.tekhn.nauk; RADASHKOVICH, I.M., inzh.; RYKALIN, N.N., prof., doktor tekhn.nauk; SPEKTOR, O.Sh., inzh.; KHRENOV, K.K., akademik, prof., doktor tekhn.nauk; CHERNYAK, V.S., inzh.; CHULOSHNIKOV, P.L., inzh.; SHORSHOROV, M.Kh., kand.tekhn.nauk; BRATKOVA, O.N., prof., doktor tekhn.nauk, nauchnyy red.; BRINBERG, I.L., kand.tekhn.nauk, nauchnyy red.; GEL'MAN, A.S., prof., doktor tekhn.nauk, nauchnyy red.; KONDRATOVICH, V.M., inzh., nauchnyy red.; KRASOVSKIY, A.I., kand.tekhn.nauk, nauchnyy red.; SKAKUN, G.F., kand.tekhn.nauk; nauchnyy red.; SOKOLOV, Ye.V., inzh., red.; IVANOVA, K.N., inzh., red.izd-va; SOKOLOVA, T.F., tekhn.red.

[Welding handbook] Spravochnik po svarke. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. Vol.1. 1960. 556 p. (MIRA 14:1)

1. AN USSR (for Paton, Khrenov). 2. Chleny-korrespondenty AN SSSR (for Rykalin, Khrenov).

(Welding--Handbooks, manuals, etc.)

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S/135/60/000/004/001/008
A115/A029

AUTHORS: Orlov, B.D., Candidate of Technical Sciences, Chuloshnikov, P.L., Engineer

TITLE: Investigation of Contact-Roller Weldings of Steels of Unequal Thickness

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 4, pp. 3 - 7

TEXT: Contact-roller welding of steel parts with a thickness ratio of 1:3 yields joints with or without mutual fusion. In the latter case, the joint is being formed at the expense of fusion and mutual crystallization of separate micro-contacts by so-called "sticking". Such joints are not firm. A solid weld can be obtained by fusion of both parts only. The quality of the weld depends on the thickness of the thinner plate. The thickness of the thicker plate, if the ratio is less than 1:3, does not influence the conditions of building a joint. The object of this study is welding of 0.15+ 2 and 0.5+ 2 mm thick stainless steel 1X18H9T(H), (1Kh18N9T(N)). The following cross sections of fused joints have been taken into consideration: for 0.15 plates 0.8 - 1.2 mm; for 0.5 plates 2 - - 3 mm. MШП -100 (MShP-100) welding machine (Fig. 1) with ПИШ-1 (PISh-1) contact breaker and a battery of capacitors was used. The oscillograph proved that

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A115/A029

Investigation of Contact-Roller Weldings of Steels of Unequal Thickness

when feeding through capacitors, the minimum length of the impulse was 0.003 sec and when working with contact breaker on one ignitron - 0.005 sec. The temperature fields were observed on a МТП -75-9 (MTP-75-9) machine with a ПИТ-50-2 (PIT--50-2) breaker. Table 1 gives the characteristics of the electrodes used. Figure 2 shows investigation of electric fields in cross section of a roller seam. The measurements were carried out by a magnetoelectric millivoltmeter. Figures 3 and 4 show the corresponding isotherms, Figure 5 shows the installation of the thermoelectric couples: with (a) and without (b) thermal screens. Figure 6 shows cross sections of 0.15+ 2.0 mm joints (a), longitudinal section 0.15+ 2.0 mm and (b) cross section joint 0.15+ 0.8 mm (v). Figure 7 shows cross sections of the welding zone 0.5+ 2.0 mm done with molybdenum electrode a) with step shift and b) with continuous movement. Figure 8 gives the cross section of 0.5+ 2.0 mm welded with a 0.15 mm screen of the stainless steel. This investigation was performed in collaboration with M.P. Zaytsev, Ye.A. Bulgachev, L.A. Kudryavtseva and D.G. Solav'yanov. There are 8 figures, 3 tables and 3 Soviet references.

ASSOCIATION: MATI Orlov, B.D., NIAT Chuloshnikov, P.L.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

S/135/60/000/006/006/007
A104/A029

AUTHOR: Chuloshnikov, P.L., Graduate Engineer

TITLE: Measuring and Control Devices for Contact Welding Current

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 6, pp. 35 - 37

TEXT: The author describes measuring and control devices for a-c single-phase spot and roller welders designed by the Nauchno-issledovatel'skiy institut tekhnologii i organizatsii proizvodstva (Scientific Research Institute of Technology and Organization of Production). The ACT-2 (AST-2) measuring device is assembled in a 270 x 270 x 180 mm metal box with a separate compartment for the toroid and weighs 8 kg. Currents of 4,000 - 35,000 amp can be measured. Results of tests carried out at various welding currents prove that at 0.04 - 0.18 sec impulses and 0.04 - 0.30 sec intervals the readings do not deviate from a mean value by more than ± 2%. The AST-2 pickup consists of a converter with a non-magnetic core placed on the conductor line of the welding circuit. The influence of the toroid position on the recordings was examined. The most accurate recording is obtained by placing the toroid on the permanent section current conductor

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A104/A029

Measuring and Control Devices for Contact Welding Current

at a length no less than the diameter of the toroid (200 mm). The introduction of ferromagnetic substances into the welding circuit causes a decrease of the recorded data proportional to the circuit decrease. The МЭ-2 (ME-2) control device regulates the current as spot welding is most expediently executed at a gradually increasing and decreasing current pulse. In 1958 the "Elektrik" plant started production of ПИТ-2 (PIT-2) circuit breakers equipped with a stabilizer, for which a ME-2 electronic modulator was developed. The modulator is fed with stabilized alternating voltage by a PIT-2 ferroresonator. The desired current modulation pulse is obtained by 3 switches on the front panel of the device. Tests showed that the modulation coefficient depends on the switching angle of ignitrons, i.e., the setting of the "hot" switch. The joint performance of ME-2 and PIT-2 was tested at varying voltages and showed that variations of 330 - 400 v have no effect on the modulation pulse. AST-2 and ME-2 devices are produced in the Rzhevskiy zavod svarochnogo oborudovaniya (Rzhevsk Welding Equipment Plant). There are 2 tables, 6 figures and 1 Soviet reference.

ASSOCIATION: NIAT

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

AM4021133 BOOK EXPLOITATION S/

Zaychik, L. V.; Orlov, B. D.; Chuloshnikov, P. L.

Electric resistance welding of light alloys (Kontaktnaya elektrosvarka legkikh splavov), Moscow, Mashgiz, 1963, 217 p., illus., biblio., errata slip inserted. 7,500 copies printed.

TOPIC TAGS: Aluminum alloy, magnesium alloy, beryllium sheet, EI712, OT4, V95AT, AMg6, D16AT, 1Kh18N9T, MA8, spot welding , roller welding, butt welding, glue welding, welding equipment

PURPOSE AND COVERAGE: This book gives basic information on the technology of electric resistance welding, spot welding, and roller welding of articles from aluminum and magnesium alloys. The welding equipment and the control equipment are described. The basic methods and techniques of quality control of weldments are presented. The material in the book can be used to design welded structures and to develop new welding equipment. The book is intended for engineers and technicians who work in welding technology.

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ACCESSION NR: AP3000139 S/0125/63/000/005/0011/0015

68
67

AUTHOR: Chuloshnikov, P. L.; Verdenskiy, V. B.; (NIAT). (Also took part in the project: Petrov, A. G.; Petrov, V. A.; Obidin, V. A.; Nesterov, Yu. V.; Stolpner, Ye. A.; Sigal, I. M.)

TITLE: Some development in spot and seam welding control [Report at the Conference on Automatic Welding Control, Kiev, 25 December 1962]

SOURCE: Avtomaticheskaya svarka, no. 5, 1963, 11-15

TOPIC TAGS: SPUL-I-A140 welding program timer, SPUL-III-A50 welding program timer, BPU-1 welding program unit

ABSTRACT: Some problems of resistance-welding programing are considered. An SPUL-I-A140 station was developed for time and electrode-force programing for MTP single-phase spot-welding machines. The station includes an ignitron timer and a current stabilizer; it permits a 3-stage current programing with modified leading and trailing pulse edges. An SPUL-III-A50 station is designed for time and squeezing-force programing for three-phase spot- and seam-welding machines (MTPT, MShShI, and MShShT types). The station permits a 4-stage uni- and bidirectional current programing with various pulse edges and timings. A BPU-1 programing unit was developed for use in combination with MTPT machines; it ensures an automatic

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program change after a predetermined number of welds are done. Relations between the interelectrode voltage drop and the weld nugget were studied experimentally on 1Kh18N9T 0.25 plus 0.25-mm sheet steel. Interelectrode-voltage controllers were developed, as well as an ASD-1 half-cycle ammeter (for 2,000-40,000 amp, single-phase machines). Orig. art. has: 6 figures.

ASSOCIATION: NIAT

SUBMITTED: 05Feb63 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: ML, SD NO REF SOV: 000 OTHER: 000

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOV, P.L., inzh; NESTEROV, Yu.V., inzh.

Spot welding of aluminum alloys with the use of a condenser.
Svar. proizv. no.6:11-15 Je '64 (MIRA 18:2)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

L 32474-65 EWT(m)/EWP(v)/EWA(d)/EWP(t)/T/EWP(k)/EWP(b) Pf-4 IJP(c) KJW/

[illegible] AP4049516 [illegible]

[illegible] Chuloshnikov, P. L. (Engineer); Dmitriyeva, [illegible] M. (Engineer)

TITLE: Investigation of the process of double-spot series welding

SOURCE: Avtomaticheskaya svarka, no. 11, 1964, 37-43

TOPIC TAGS: electrical conductivity, series welding, weld formation, backing, double spot welding, double spot series welding

ABSTRACT: The authors discuss the formation of the fusion zone in series welding of low-conductivity 18N9T and 30KGSA steel and 0.74 titanium specimens. The current distribution in the [illegible] and in the backing strip was investigated. The shunt current was found to affect the formation of the weld substantially. The general electrode feeding current I_1 and current [illegible] were determined [illegible] I_1. The effect of the pitch on I_1 is appreciable. In order to provide the proper current, the voltage of the welding transformer idle motion is calculated from the value of resistance $R_{elect-electr.}$ of the electrode-electrode section at different

[illegible] KA [illegible]

[illegible] 30KGSA [illegible]

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

L 32471-65
ACCESSION NR: AP4049516

combinations of thickness. The need for the application of comparatively high resistances was established, in particular, for the current-conducting backing [illegible] figures and 1 table.

[illegible]ON: NIAT

[illegible]D: 22Jan64 ENCL: 00 SUB CODE: [illegible]

NR REF SOV: 001 OTHER: 000

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

L 40000-65 EWT(d)/EPA(s)-2/EWT(m)/EWA(d)/EWP(v)/[illegible]/EWP(z)/[illegible]/EWA(c) Pf-4 [illegible]/JD/[illegible]

ACCESSION NR: AP5002887 S/0135/65/000/001/0019/0022

AUTHOR: Chuloshnikov, P.L. (Engineer); Sigal, I.M. (Engineer); Verdenskiy, V.B. (Engineer)

TITLE: Automatic regulation of roller welding of extended seams

SOURCE: Svarochnoye proizvodstvo, no. 1, 1965, 19-22

TOPIC TAGS: welding, continuous welding, roller welding, welding control, controlled welding voltage, automatic welding, seam stability, steel welding/steel Kh18N9T

ABSTRACT: During roller welding of thin sheets of Kh18N9T steel, one can often achieve 200-250 m long continuous air-tight seams. The welding utilizes a continuous flow of [illegible] current at a 4 m/min sample speed. The pauses between pulses are generated by thyratrons. Defective parts of such a seam cannot be repaired and, consequently, high stability of the process is of paramount importance. The authors established that the basic [illegible] tightness is the change in [illegible] They also found that [illegible] roller interval results in a melted zone of very constant dimensions. Consequently, they developed automatic roller welding controls (electromechanical and electronic) which, by maintaining a constant voltage drop, compensate for the wear of the

Card 1/2

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L 40289-65

ACCESSION NR: AP5002887

rollers. The article describes the circuits and their operation and shows the macrostructure of test welds. Orig. art. has: 7 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 003 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

L 61844-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(z)/
[illegible] /Pf-[illegible] [illegible] /JD/HM
[illegible] NR: AP5016019 UR [illegible] 0057/0061
621.[illegible]

[illegible] Shuloshnikov, P. L. (Engineer, Moscow); Yakimov, V. A. (Engineer, Moscow)

TITLE: Spot welding on the MTR-1 capacitor machine

SOURCE: Avtomaticheskaya svarka, no. 6, 1965, 57-61

TOPIC TAGS: resistance welding, electric circuit, weld microstructure, weld shear strength, aluminum alloy, alloy steel, titanium alloy, spot welding

ABSTRACT: Spot welding was done on the MTR-1 capacitor machine using type K50I-1 electrolytic capacitors. The technical characteristics of this machine are given [illegible], kinematic and electrical schematics are [illegible]. Important variables [illegible], such as capacitance, voltage, and transformer ratio are analyzed; the [illegible] current is plotted as a function of the pulse duration for these para- [illegible] maximum decrease in the contact force [illegible] maximum weld- [illegible] Aluminum alloys D16AT and AMtsAM, [illegible] steel [illegible] titanium were [illegible] thicknesses ranging from 0.3 to 1.5 mm. [illegible] were made [illegible] having a hardness of 110-120 HV, with [illegible], and

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

L 61844-65

ACCESSION NR: AP5016019

100 mm. Macrostructures of the alloys are presented, as well as tabulated data con- [illegible] the particular welding conditions for each of the alloys. Chattering was [illegible] in cases where the contact resistance [illegible] and the electrodes, better results were [illegible] was [illegible] samples welded on three different [illegible] strength was noted, for a scatter in results [illegible] has: 6 figures, 2 tables.

ASSOCIATION: none

SUBMITTED: 11Jul64 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 003 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

L 28869-66 EWP(k)/EWT(m)/T/EWP(v)/EWP(t)/ETI IJP(c) JD/HW

ACC NR: AP6011540 SOURCE CODE: UR/0135/66/000/004/0040/0041

AUTHOR: Zaychik, L. V. (Candidate of technical sciences); Komarchev, A. I. (Engineer); Chuloshnikov, P. L. (Engineer)

ORG: none

43
B

TITLE: Percussion welding machines for the spot welding of light alloys

SOURCE: Svarochnoye proizvodstvo, no. 4, 1966, 40-41

TOPIC TAGS: welding equipment, welder, spot welding, aluminum alloy, magnesium alloy, brass, titanium steel / MTK-4 welder, MTK-10 welder, MTK-15 welder, MTK-40 welder, MTK-75 welder, MTK-100 welder

ABSTRACT: Following is a brief description of the newly developed, improved MTK-4, MTK-10, MTK-15, MTK-40, MTK-75, MTK-100, and MTR-1 Soviet welding machines adapted for the quality welding of light (Al and Mg) alloys, brass and titanium, as well as of stainless, high temperature, and low-carbon steels. These machines are designed with capacitors of a low charging voltage (up to 400 v) and they assure a high heating rate and a wide range of the amplitudes and durations of the current pulse. Their power requirement is 10-20 times as low as that of the conventional single-phase machines. For example, to weld Al alloys measuring 1.5 + 1.5 mm in

Card 1/2 UDC: 621.791.037

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L 28869-66

ACC NR: AP6011540

thickness, a single-phase machine consumes ~300 kva whereas a percussive machine needs only 15 kva. The use of these machines dispenses with the restrictions on the employment of resistance welding due to the inadequate power of the shop electric systems. The MTK-40 and MTR-1 are already regularly produced; as for the production of the other models, its organization should be expedited, since it is so much more economically expedient than the modernization of the old single-phase machines. Orig. art. has: 4 figures, 2 tables.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 004

Card 2/2

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

ACC NR: AP7004756 (N) SOURCE CODE: UR/0413/67/000/001/0052/0052

INVENTOR: Yakimov, V. A.; Chuloshnikov, P. L.; Timofeyev, N. V.

ORG: None

TITLE: A method of seam welding. Class 21, No. 189959

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1967, 52

TOPIC TAGS: seam welding, welding technology

ABSTRACT: This Author's Certificate introduces a method of seam welding with correction for the direction of the rollers along the seam. The axes of the rollers are periodically or continuously rotated in a plane parallel to the sheets being welded to increase productivity and improve welding quality.

SUB CODE: 13/ SUBM DATE: 20Oct65

Card 1/1

UDC: 621.791.76

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

SHULOSHNIKOV, P.L., inzh.; RAKCHEYEV, V.N., inzh.

Reversive drives for rollers in contact welding. Elektrotekhnika 35 no.3:53-55 Mr '64. (MIRA 17:5)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

MOZEL', A.I.; CHULOSHNIKOVA, L.M.; PIROGOVA, Ye.P.

Lesion of the liver in Rendu-Osler disease. Sov. med. 27 no.11: 130-134 N '63 (MIRA 18:1)

1. Iz Moskovskoy gorodskoy bol'nitsy No. 66 (glavnyy vrach L.I. Sazanova; nauchnyy rukovoditel' prof. S.A. Gilyarevskiy) i patologoanatomicheskogo otdeleniya 1-y klinicheskoy infektsionnoy bol'nitsy Moskvy (glavnyy vrach N.G. Zaliskver).

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOVA, V.N., starshaya meditsinskaya sestra (Moskva)

Role of the nurse in taking care of a sick child during his first days in the hospital. Med.sestra 15 no.3:24-25 Mr '56. (MIRA 9:6)
(PEDIATRIC NURSING)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

Chuloshnikova, Ye. P.

ROSHCHIN, N.K.; CHULOSHNIKOVA, Ye.P., inzh., red.; FREGER, D.P., tekhn.red.

[Pneumatic drive for the operation of friction screw presses] Pnevmaticheskii privod upravleniia vintovymi friktsionnymi pressami. Leningrad, 1955. 3 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii listok, no.28(716)) (MIRA 10:12)

(Punching machinery--Pneumatic driving)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

Chuloshnikova, Ye. P.

ZAGORSKIY, F.N., kand.tekhn.nauk; RAUKHVARGER, Z.O., inzh.; CHULOSHNIKOVA, Ye.P., inzh., red.; FREGER, D.P., tekhn.red.

[Safety devices for operation of punching machinery] Prisposobleniia bezopasnosti pri rabote na pressakh. Leningrad, 1955. 7 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii listok, no.43(731)) (MIRA 10:12)
(Punching machinery)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOVA, YE.P.

BYLINKIN, V.S.; CHULOSHNIKOVA, Ye.P., inzh., red.; FREGER, D.P., tekhn.red.

[Improved technique of producing forged flanges by free forging; practices of the Leningrad interfactory mixed brigade] Progressivnaia tekhnologiia izgotovleniia pokovok tipa flantsev na molotakh svobodnoi kovki; iz opyta rabory Leningradskoi mezhzavodskoi kompleksnoi brigady. Leningrad, 1955. 9 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii listok, no.76(764)) (MIRA 10:12)

(Forging) (Flanges)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOVA, Ye. P.

SHILOV, V.S.; CHULOSHNIKOVA, Ye.P., inzh., red.; FREGER, D.P., tekhn.red.

[Efficient design of dies for forging; practices of the "Krasnaia Zaria" Plant in Leningrad] Ratsional'nye konstruktsii shtampov kholodnoi shtampovki; opyt Leningradskogo zavoda "Krasnaia zaria." Leningrad, 1955. 14 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii listok, no.88(776)) (MIRA 10:12)

(Dies (Metalworking))

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOVA, Ye.P.

MILYAYEV, B.V., inzh.; CHULOSHNIKOVA, Ye.P., inzh., red.; FREGER, D.P., tekhn.red.

[Efficient methods of cold stamping of consumers' goods; practices of the "Krasnyi vyborzhets" Plant] Ratsional'nye metody kholodnoi shtampovki pri izgotovlenii izdelii narodnogo potrebleniia; opyt zavoda "Krasnyi vyborzhets." Leningrad, 1955. 26 p. (Leningradskiy dom nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii listok, no.78(766)) (MIRA 11:1)
(Sheet-metal work) (Kitchen utensils)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOSHNIKOVA, YE.P.

NEYMAN, Moisey Isaakovich; CHULOSHNIKOVA, Ye.P., inzh., red.; FREGER, D.P., tekhn.red.

[Experience in constructing pressmolds for parts made of inorganic materials] Opyt konstruirovaniia pressform dlia detalei iz neorganicheskikh materialov. Leningrad, 1956. 13 p. (Leningradskii dom nauchno-tekhnicheskii listok, no.28. Kholodnaia shtampovka) (MIRA 10:12)

(Founding)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

KOROVKIN, Valentin Semenovich; KONDITEROV, Vasiliy Mikhaylovich; CHULOSHNIKOVA, Ye.P., inzh., red.; FREGER, D.P., tekhn.red.

[Introducing automatic control in the straightening and cutting of rods having from 1.5 to 8 mm. in cross section] Avtomatizatsiia rikhtovki i rubki prutkovogo materiala diametrom ot 1,5 do 8 mm. Leningrad, Leningr.dom nauchno-tekhn. propagandy, 1958. 8 p. (Listok novatora, no.10. Kovka i shtampovka) (MIRA 12:10)

(Metalworking machinery) (Automatic control)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

VLADYKIN, Mikhail Ivanovich, inzh.; CHULOSHNIKOVA, Ye.P., inzh., red.; GVIRTS, V.L., tekhn.red.

[Introducing automatic control of stamping small parts] Avtomatizatsiia shtampovki melkikh detalei. Leningrad, Leningr. Dom nauchno-tekhn.propagandy, 1958. 10 p. (Listok novatora, no.4. Kholodnaia shtampovka) (MIRA 12:10)
(Sheet-metal work) (Automatic control)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

VAYNTRAUB, David Abramovich, inzh.; CHULOSHNIKOVA, Ye.P., inzh., red.; KLOPOVA, T.B., tekhn.red.

[New method for manufacturing working pieces of punching and compound dies] Novyi metod izgotovleniia rabochikh chastei probivnykh i sovmeshchennykh shtampov. Leningrad, Leningr.dom nauchno-tekhn.propagandy, 1958. 3 p. (Informatsionno-tekhnicheskii listok, no.33. Kholodnaia shtampovka) (MIRA 12:4)
(Dies (Metalworking))

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOVICH, A.B., inzhener.

Attachement for machining the surface of valve bodies on a lathe. Gidroliz. i lesokhim. prom. 8 no.7:26 '55. (MLRA 9:4)

1.Ferganskiy gidroliznyy zavod.
(Turning) (Valves)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOVSKIY, I. K., TROP, I. E.

"Salmonellosis of synanthropic and wild rodents and birds in the Omsk oblast." p. 284

Desyatoye Soveshchaniye po parazitologicheskim problemam i prirodnoochagovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

Omsk Inst. of Epidemiology, Microbiology and Hygiene

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

TROP, I.Ye., CHULOVSKIY, I.K.

Culture media supressing the rampant growth of Proteus vulgaris. Lab.delo 6 [i.e. 4] no.4:46-48 Jl-Ag '58 (MIRA 11:9)

1. Iz mikrobiologicheskoy laboratorii (zav. - kand.med.nauk I.Ye. Trop) Omskogo instituta epidemiologii, microbiologii i gigiyeny.
(PROTEUS VULGARIS)
(BACTERILOGY--CULTURES AND CULTURE MEDIA)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

POPOVA, V.M.; ROZENTAL', M.D.; SADYRIN, M.M.; TROP, I.Ye.; CHULOVSKIY, I.K.

Group poisoning with spring honey and a method for determining toxicity by the biological testing and pollen analysis. Gig. i san. 25 no. 6:92-94 Je '60. (MIRA 14:2)

1. Iz Omskogo nauchno-issledovatel'skogo instituta epidemiologii, mikrobiologii i gigiyeny, Omskogo veterinarnogo instituta i Omskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(HONEY—TOXICOLOGY)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

TROP, I.Ye.; CHULOVSKIY, I.K.

Susceptibility to enteric pathogens among Norway rats caught in food plants and on hog farms; author's abstract. Zhur.mikrobiol.epid. i immun. 31 no.9:143 S '60. (MIRA 13:11)

1. Iz Omskogo instituta epidemiologii, mikrobiologii i gigiyeny.
(INTESTINES—MICROBIOLOGY)
(RATS AS CARRIERS OF DISEASE)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOVSKIY, I.K.

Data on the study of leptospirosis foci in the northern forest-steppe of Omsk Province. Zhur. mikrobiol.; epid. i immun. 41 no.6:38-42 Je '64. (MIRA 18:1)

1. Omskiy institut prirodnoochagovykh infektsiy Ministerstva zdravookhraneniya RSFSR.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

ACC NR: AP6030798 (A,N) SOURCE CODE: UR/0346/66/000/009/0038/0040

AUTHOR: Gudoshnik, A. N.; Yegorova, L. S.; Voshchakina, N. V.; Chulovskiy, I. K.

ORG: Omsk Scientific Research Institute for Naturally Focal Infections (Omskiy nauchno-issledovatel'skiy institut prirodnoochagovykh infektsiy)

TITLE: Dogs as possible carriers of zoonotic infections

SOURCE: Veterinariya, no. 9, 1966, 38-40

TOPIC TAGS: animal disease, veterinary medicine, dog, cattle, sheep, brucellosis, Q fever, leptospirosis

ABSTRACT: Because of its close contact with human domestic and forming activity, the dog is included in the infective cycle of several diseases which may be spread from animals to humans. Among such diseases which dogs naturally harbor are brucellosis, leptospirosis, and Q fever. The blood of 256 dogs on five forms in the Omsk oblast was examined using the following tests: agglutination reaction and Huddleson's reaction for brucellosis, complement-fixation (with antigen from *R. Burneti*) for Q fever, and the microagglutination-lysis reaction for leptospirosis, using nine *Leptospira* strains. Based on their results, the authors

Card 1/2 UDC: 619:616.98.031.2:636.7

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

ACC NR: AP6030798

failed to establish a real correlation in the percentage of infected dogs and the intensity and course of brucellosis among livestock. It was noticed that on farms where livestock suffered acute brucellosis, Wright's reaction was positive at higher titers (1:320) while the titer was not above 1:50 on farms where clinical signs of brucellosis were not observed. The results of serological studies for Q fever and leptospirosis were also fairly inconclusive statistically. It was found that *Leptospira icterohaemorrhagia* was most widespread among all animals studied. Dogs alone showed antibodies for *L. grippotyphosa*, *L. pomona*, and *L. hebdomadis* most frequently, and cattle and sheep for *L. tarassovi* and *L. batavial*. However, in many cases, antibodies for two or three leptospiral serotypes were found simultaneously. The authors conclude that dogs may maintain these diseases among livestock, and that preventive measures should be undertaken on affected forms. [WA-50; CBE No. 12]

SUB CODE: 06/ SUBM DATE: none/

Card 2/2

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOVSKIY, L. K., GUSACHENKO, I. V. and ZAGRYADSKIY, V. P.

"Comparative Characterization of the Effect of Phenamene and Phenatene", Voyenn-medits. zhur., No. 1, pp 41-45, 1955.

verbatim translation D 312227, 18 Aug 1955

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

CHULOVSKOY, G.K.

Surgical treatment of congenital hydronephrosis. Urologiia, 23 no.1:64-65 Ja-F '58. (MIRA 11:3)

1. Iz khirurgicheskogo otdeleniya (nauchnyy rukovoditel'-prof. A.I. Manuylov) Omskoy oblastnoy klinicheskoy bol'nitsy.
(HYDRONEPHROSIS, surg.
in congen.)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5

PUGACHEV, V.S.; KAZAKOV, I.Ye.; YEVLANOV, L.G.; MAL'CHIKOV, S.V.; MISHAKOV, A.F.; SEDOV, V.D.; SOKOLOV, V.I.; CHUL'SKIY, L.A., red.; BRUDNO, K.F., tekhn. red.

[Principles of automatic control] Osnovy avtomaticheskogo upravleniia. Moskva, Fizmatgiz, 1963. 646 p. (MIRA 16:11)

(Automatic control)

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110019-5"

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CHUL'SKIY, N.; REYNGOL'D, P.; MALININ, D.

Stand for wheel interchanging. Avt. transp. 43 no.1:15-17 Ja '65. (MIRA 18:3)

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CHUL'SKIY, Leonid Aleksandrovich; SHUSTOVA, I.B., red.

[Stability in nature] Ustoichivost' v prirode. Moskva, Izd-vo "Znanie," 1965. 93 p. (Narodnyi universitet kul'tury: Estestvenno-nauchnyi fakul'tet, no.7)
(MIRA 18:6)

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S/056/62/042/002/055/055
B108/B138

AUTHORS: Ignatenko, A. Ye., Petrashku, M. G., Chultem, D.

TITLE: Electron activation of mesic atoms

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 2, 1962, 646-647

TEXT: It is known that the formation and occupation of "holes" on the inner electron shells of atoms leads to multiple ionization, stripping of chemical bonds, and ejection of an atom in the form of a free ion. The study of the atomic charge distribution in radioactive transformations has shown that the atoms lose on the average about 7 electrons when one "hole" is filled up. De Borde (Proc. Phys. Soc., A67, 57, 1954) has shown that cascade transitions of muons in mesic atoms in general lead to an ionization of the inner atomic shells. For instance, the bromine mesic atom may emit about 5 electrons when muons from the shell with principal quantum number n = 14 go over to the ground level. Consequently, the mean charge of ions in the case of mesic atoms can be considerable. The so called electron activation of mesic atoms may lead, for instance, to the transi-

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three or four electrons. In red phosphorus (dielectric) where $t_0 \gg \tau$, R is already smaller than $1/\tau$ when one "hole" is formed. It was shown experimentally by L. B. Yegorov et al. (ZhETF, 40, 391, 1961) that the shell has no effect on the polarization of muons in diamagnetic substances. Therefore, it has also no effect in black phosphorus. Experiments with red phosphorus showed a maximum asymmetry of the electrons from $\mu - e -$ decay at the frequency of the mesic nucleus spin precession, which is half as high as the precession frequency of the spin of the free muon. This indicates that in red phosphorus also the electron shell has no effect on the polarization of the muons. [Abstracter's note: Complete translation.] There are 7 references: 3 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: Beta- and Gamma-Ray Spectroscopy, Ed. by K. Siegbahn, North-Holland Publishing Company, Amsterdam, 1955, pp. 591-594; R. Winston, V. L. Telegdi. Phys. Rev. Lett., 7, 104, 1961; H. L. Donley. Phys. Rev., 50, 1012, 1936; De Borde. Proc. Phys. Soc., A67, 57, 1954.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: November 14, 1961

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24(5)

AUTHORS: Ignatenko, A. Ye., Yegorov, L. B., Khalupa, B., Chultem, D.

SOV/56-35-4-9/52

TITLE: Investigation of the Depolarization of Negative μ-Mesons in Liquid Hydrogen (Issledovaniye depolyarizatsii otritsatel'nykh μ-mezonov v zhidkom vodorode)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 4, pp 894-898 (USSR)

ABSTRACT: The investigation of the capture of polarized negative myons in hydrogen furnishes data concerning the form of weak myon-nucleon interaction (Refs 1-3). The myon absorption process on protons develops according to $\mu^- + p \rightarrow n + \gamma$. Thus, investigation of the angular neutron distribution of this reaction according to the formula $\omega(\theta) = 1 + a\beta \cos\theta$ (β-asymmetry coefficient of neutron angular distribution, θ-angle between the direction of neutron emission and myon spin, a - the degree of polarization of myons in mesic hydrogen) should supply information concerning the form of interaction. The present paper, which deals with the experimental investigation of myon polarization in liquid hydrogen, was carried out on the synchrocyclotron Ob"yedinennyy

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Investigation of the Depolarization of Negative μ-Mesons in Liquid Hydrogen SOV/56-35-4-9/52

institut yadernykh issledovaniy (United Institute for Nuclear Research). After a short theoretical explanation of possible (μ^-H)-processes, the experimental arrangement is described and results are discussed. The angular distribution of the electrons (μ- e -decay) was measured by means of scintillation counters; within the error limits isotropy was determined. The degree of polarization of myons in mesic hydrogen, which was calculated according to the results obtained by measurements of angular distribution, is less than 2.5%. The complete μ^--meson depolarization is explained according to Ya. B. Zel'dovich and S. S. Gershteyn (Refs 7-9) by the fact that the myon should jump from one proton to another, simultaneously with transition to the hyperfine structure ground state. According to this mechanism also the mutual transformation of ortho- and para-hydrogen is possible. As, however, the μ^--mesons are subjected to total depolarization, it is impossible to draw conclusions on the basis of measurement of neutron angular distribution of the process $\mu^- + p \rightarrow n + \nu$, as to the form of interaction between a negative myon and nucleon. In conclusion the authors

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thank Ya. B. Zel'dovich, Academician, and S. S. Gershteyn for their help and discussions, and they expressed their gratitude to V. B. Belyayev and B. N. Zakhar'yev for their discussions and their constant interest in this work.

There are 1 figure and 15 references, 7 of which are Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (United Institute for Nuclear Research)

SUBMITTED: May 5, 1958 (initially) and July 14, 1958 (after revision)

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24(5)

SOV/56-35-5-10/56

AUTHORS: Ignatenko, A. Ye., Yegorov, L. B., Khalupa, B., Chultem, D.

TITLE: The Measurement of the Polarization of Negative μ-Mesons in Mesic Atoms of Carbon, Oxygen, Magnesium, Sulfur, Zinc, Cadmium, and Lead (Izmereniye polyarizatsii otritsatel'nykh μ-mezonov v mezoatomakh ugleroda, kisloroda, magniya, sery, tsinka, kadmiya i svintsa)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 5, pp 1131-1134 (USSR)

ABSTRACT: An investigation of the angular distributions of neutrons originating from the process $\mu^- + p \rightarrow n + \nu$ (capture of polarized muons in liquid hydrogen) would offer a possibility of obtaining information concerning the form of weak muon-nucleon interaction (Refs 1, 2). As was, however, shown by experiments (Ref 3), this is not possible because of the total depolarization of muons. A theoretical investigation (Ref 2) of the capture of polarized muons by light nuclei shows, however, that by measuring the angular distribution of neutrons with energies in the upper part of the spectrum it is possible to determine the nature of interaction. The formula for angular distribution is $W(\Theta) = 1 + a\beta\gamma \cos \Theta$. Herefrom it follows that

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investigation of neutron angular distribution should be preceded by measurement of muon polarization in the mesic atoms as well as by an investigation of neutron depolarization in nuclear matter (in the formula β denotes the asymmetry coefficient of angular distribution, the amount and sign of which depends on the form of interaction, θ - the angle between the direction of neutron emission and the spin of the muon, a and γ - coefficients connected with polarization and depolarization respectively). Within the framework of this investigation program, the present paper describes muon polarization measurements carried out in various substances. Determination of polarization was carried out by measuring the anisotropy of the angular distribution of decay electrons by using the apparatus described by reference 3. Aluminum filters were used for the purpose of slowing-down pions and muons. The target had a size of 15.15 cm^2 and its thickness corresponded to 2-6 g/cm^2; the target was inclined towards the axis of the meson beam at an angle of 45°. The polyethylene filter between the counters corresponded to 4-8 g/cm^2. For C, O, Mg,

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The Measurement of the Polarization of Negative μ-Mesons in Mesic Atoms of Carbon, Oxygen, Magnesium, Sulfur, Zinc, Cadmium, and Lead

and S the asymmetry coefficient a was determined in the electron angular distribution $I(\theta) = 1 + a \cos \theta$ by investigating the dependence of the number of electrons on the voltage of the H-field in which the target was located. For Zn, Cd and Pb a was determined by determining the number of electrons at H_{max} and H_{min}, corresponding to the maximum and minimum of electron intensity on the precision curve

$$I(H) = \int_{t_1}^{t_2} e^{-t/\tau} \cdot \left[1 + a \cos(2\pi f t) + 0_0)\right] dt.$$ Results of polarization determination:

C: 14 ± 4
O: 15 ± 4
Mg: 20 ± 5
S: 15 ± 4
Zn, Cd, Pb: 19 ± 7

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The Measurement of the Polarization of Negative μ-Mesons in Mesic Atoms of Carbon, Oxygen, Magnesium, Sulfur, Zinc, Cadmium, and Lead

These values give muon polarization in %. In substances in which nuclear spin is equal to zero, muon depolarization can be explained mainly by spin-orbit interaction during the formation of mesic atoms; partly it may also be explained by the effect produced by the magnetic field of the electron shell of the atom on the muon during its life on the K-orbit. There are 1 figure, 1 table, and 11 references, 4 of which are Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

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16.8100,16.8300,24.6100,
24.6200,24.2100

76963
SOV/56-37-6-3/55

AUTHORS: Egorov, L. B., Ignatenko, A. E., Chultem, D.

TITLE: Effect of the Hyperfine Structure on the Polarization of μ^--Mesons in Mesic Atoms

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 6, pp 1517-1523 (USSR)

ABSTRACT: A study was made with the aid of scintillation counters of the angular distributions of the μ^--meson decay electrons from aluminum, phosphorus, and carbon mesic atoms. It was shown that because of the interaction of the hyperfine structure there was a decrease of the μ^--meson polarization. These results accord with the theoretical calculations provided that the depolarization exclusively on the K orbit of the mesic atom is taken into account. A comparison of the results of the measurements for phosphorus with the results previously obtained for liquid hydrogen (cf. A. E. Ignatenko, L. B. Egorov, B. Khalupa, D. Chultem, Zhur. eksp. i teoret.

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Effect of the Hyperfine Structure on the Polarization of μ^--Mesons in Mesic Atoms

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fiz., 35, 894, 1958) showed that the complete depolarization of μ^--mesons observed in hydrogen cannot be explained only by the interaction between the fine and hyperfine structures. The explanation would require the assumption of an additional mechanism (such as the "jumping" of a μ^--meson from one proton to another with concurrent transition of the hyperfine structure to the ground state). All experimental data on the depolarization of μ^--mesons in various substances can be explained theoretically, if it is assumed that in the mesic atoms of metals the electron shell does not affect the depolarization of μ^--mesons. The presence of a fine and hyperfine structure in mesic atoms was confirmed and this again indicated that the electromagnetic properties of mesons and electrons are similar. In experiments with phosphorus the observed reduction of precision frequency in the mesic nucleus spin by a factor of 2 as compared with the precision frequency of the free μ-meson spin indicates directly that the spin

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Effect of the Hyperfine Structure on the Polarization of μ^--Mesons in Mesic Atoms

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SOV/56-37-6-3/55

of a negative μ-meson is equal to 1/2. There is 1 graph; 1 table; and 11 references: 6 Soviet, 5 U.S. The 5 most recent U.S. references are: M. E. Rose, Depolarization precesses for negative mu-mesons, preprint Oak Ridge Nat. Lab., 1958; H. Uberall. Hyperfine splitting effects in the capture of polarized μ^--mesons, preprint Carnegie Inst. of Technol., 1959; J. Bernstein, T. D. Lee, C. N. Yang, H. Primakoff. Phys. Rev., 111, 313, 1958; R. Garwin, L. Lederman, M. Weinrich. Phys. Rev., 105, 1415, 1957; V. Telegdi. Proc. of 1958 Ann. Intern. conf. on high energy physics at CERN, p. 250.

ASSOCIATION: Joint Inst. Nuclear Research, USSR (Ob'edinenyy institut yadernykh issledovaniy, SSSR)

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YEGOROV, L.B.; ZHURAVLEV, G.V.; IGNATENKO, A.Ye.; LI SYUAN-MIN; PETRASHKU, M.G.; CHULTEM, D.

Investigating the paramagnetism of μ-mesonic atoms. Zhur. eksp. i teor. fiz. 40 no.2:391-399 F '61. (MIRA 14:7)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Mesons)

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