

LYSOV, A.G.

New cutting-off tool and its holder. Mashinostroitel'
no.9:25 S '64.

(MIRA 17:10)

LYSOV, A.G.

Boring attachment. Mashinostroitel' no.4:12 Ap '65. (MIRA 18:5)

LYSOV, A.I.

Diagnosis and treatment of severe injuries of the urethra and abdominal cavity during bouginage and introduction of the cystoscope. Urologia 25 no.2:24-28 Mr-Apr '60. (MIRA 13:12)
(~~URETHRA~~—WOUNDS AND INJURIES) (~~BLADDER~~—EXPLORATION)
(~~ABDOMEN~~—WOUNDS AND INJURIES)

LYSOV, A.I.

Use of the Horner method in solving algebraic congruences of higher order. Uch. zap. Orsk. gos. ped. inst. no.5:71-73 '63.

(MIRA 18:3)

ACC NR: AP7002177 SOURCE CODE: UR/OI46/66/009/006/0059/0063

AUTHOR: Roytman, M. S.; Tsimbalist, E. I.; Lysov, A. I.

ORG: Tomsk Polytechnic Institute (Tomskiy politekhnicheskiy institut)

TITLE: Photoelectric converter as a control element for electrical circuits

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 6, 1966, 59-63

TOPIC TAGS: photoelectric method, electric device, control circuit

ABSTRACT: The characteristics of a photoelectric converter designed for use in control and measuring circuits are described. The four-terminal converter consists of an SF2-2 photoresistor (output terminal pair) enclosed in a capsule together with an NSM-type low-voltage incandescent lamp which operates at either 6v, 20 mamp, or 9v, 60 mamp (input terminal pair). The converter is characterized by a slight temperature dependence, absence of galvanic coupling between the controlling and the controlled loop, a relatively low time constant, and a high linearity. Some characteristics of the converter are: input impedance, 200-400 and 80 - 170 ohm for 6.3-v, 20-mamp and 9-v, 60-mamp NSM lamps; maximum transfer factor, about 10; temperature instability at an ambient temperature of 1000K is $\leq 0.15\%$, average photo-emf, 2 μv (for photoresistors illuminated with 9-v, 60-mamp lamps); maximum input power, 20-40 mw. Orig. art. has: 2 figures and 2 formulas. SUB CODE: 09/ SUBM DATE: 10Mar66/ ORIG REF: 005 UDC: 681.2.083.8 ATD PRESS: 5111

Card - 1/1

LYSOV, A. M.

Lysov, A. M. "For nichurinist methods in the scientific research of karakul raising", Karakulevodstvo i zverovodstvo, 1949, No, 1, p. 10-12.

SO: U-3042, 11 March 53, (Letopis'nykh Statey, No. 10, 1949).

LYSOV, A. M.

24187 LYSOV, A. M. Rabota plenkhoza "Ravnina" po uluchsheniyu stada ovets
(Turk. SSR) Karakulevodstvo i zverovodstvo, 1949, No. 4, S. 61-65.

SO: Letopis, No. 32, 1949.

USSR/Human and Animal Physiology. The Nervous System

T-12

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65759

Author : Lysov A.M., Antreyev M.N., Panin B.V.

Inst : ~~Lab. Physiol.~~ *Lab. Physiol. all-Union Sci. Res. Inst. Sheep Breeding*

Title : A Study of Conditioned Motor-Food Reflexes in Sheep

Orig Pub : Fiziol. zh. SSSR, 1956, 42, No 11, 997-1001

Abstract : By using a photoelectric recorder, a description and plan of which are included in the paper, reflex latent period, number of turns to the feeder and the time the animal spent at the feeder are all read from a kymograph strip. The arrangement of the sound-proof chamber and control panel are also described.--I.A. Slavutskaya

Card : 1/1

LYSOV, A.M., kand.biologicheskikh nauk

Institute controls breeding stations. Zhivotnovodstvo
23 no.7:58-62 JI '61. (MIRA 16:2)

1. Direktor Nauchno-issledovatel'skogo instituta
karakulevodstva.

(Uzbekistan---Karakul sheep)

BURGVITS, A.G.; ZAV'YALOV, G.A.; LYSOV, A.N. (Chelyabinsk)

"On the development of the hydrodynamical theory of the high-speed oil-film bearings"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964

LYSOV, A. P.

EPM-1 electric rock-loading machine Moskva, Ugletekhizdat, 1952. 215 p. (54-17779)

TN345.I9

1. Mining machinery.

LYSOV, A.F.

524. EM-1 ELECTRIC PAGE LOADING MACHINE. LYSOV, A.F., Stalin, V.M. and Likhutin, K.A. (Moscow: Uglatskhizdat, 1954). 4 pages, illustr. in Sovetsk. Nov. Knigi (Soviet New Books), July 1954, 11). Details of performance and construction, working diagrams and instructions for operation and maintenance.

LYSOV, A. P.

LATYSH, A.I.; LYSOV, A.P.

Lined guide supports for mine hoists. Ugol' 32 no.10:47 0 '57.

(MIRA 10:11)

1. Toretskiy mashinostroitel'nyy zavod.
(Mine hoisting)

LYSOV, A.S., inzhener; SHEYDIN, S.A., inzhener

Electric lighting of metalwork shops. Svetotekhnika 1 no.1:23
F '55. (MLRA 8:9)

1. Magnitogorskiy metallurgicheskiy kombinat
(Metallurgical plants) (Electric lighting)

LYSOV, A.S., inzh.; MURINETS, S.V., inzh.; YERSHOV, A.G., inzh.

Comparing various automatic control systems of conveyer charging of the sinter into blast furnaces. Stal' 23 no.12:1073-1077 D '63.
(MIRA 17:2)

1. Magnitogorskiy metallurgicheskiy kombinat.

LC710

S/120/62/000/004/006/047
E039/E420

246730

AUTHORS: Malyshev, I.F., Popkovich, A.V., Roshal', G.Ya.,
Zheleznikov, F.G., Lysov, A.V., Tsepakin, S.G.,
Solnyshkov, A.I., Boytsov, A.S., Astakhov, Ye.Ya.,
Mironov, B.V., Lapitskiy, Yu.Ya., Batalin, V.A.,
Khoroshkov, V.S.

TITLE: The electrostatic accelerator - Injector of the proton
synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 37-45

TEXT: An electrostatic accelerator used as an injector in the
7.0 Gev proton synchrotron developed in 1956 by NIEFA is
described. The pressure chamber is 2200 mm in diameter and
7400 mm high and is intended for working pressures of up to
16 atm. Insulating gas is N₂:CO₂ mixture with a ratio of partial
pressure of 3:1. The main column is of conventional segmented
construction using polymethylmetacrylate. Values of the
dependence of the voltage produced on the gas pressure shows that
4 MV is obtained at 6.5 atm and 5.7 MV at 16 atm and a relative
humidity of < 1%. The charge transporter belt is a six layer
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The electrostatic accelerator ...

S/120/62/000/004/006/047
E039/E420

fabric driven by a 3000 rpm 10 KW motor at 20 m/sec. The accelerating tube and its electrode system is described in detail: it is 300 mm inner diameter with 44 segments and the residual pressure is 2 to 5 x 10⁻⁶ mm Hg. A Penning type discharge is used in the ion source which provides 0.3 mA total ion current on continuous operation or 20 mA pulsed; the proton component being 10 to 12% and 65% respectively. The energy of the injected particles is stabilized to about 0.1%. Results of operation in 1960-61 show that beam currents of 4 to 5 mA are obtained at 4 MV. There are 10 figures and 1 table.

ASSOCIATIONS: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury GKAE (Scientific Research Institute for Electrophysical Apparatus GKAE)
Institut teoreticheskoy i eksperimental'noy fiziki GKAE (Institute of Theoretical and Experimental Physics GKAE)

SUBMITTED: April 6, 1962

Card 2/2

MALYSHEV, I.F.; POPKOVICH, A.V.; ROSHAL', G.Ya.; ZHELEZNIKOV, F.G.;
LYSOV, A.V.; TSEPAKIN, S.G.; SOLNYSHKOV, A.I.; BOYTSOV, A.S.;
ASTAKHOV, Ye.Ya.; MIRONOV, B.V.; LAPITSKIY, Yu.Ya.;
GATALIN, V.A.; KHOROSHKOV, V.S.

Electrostatic accelerator-injector in a proton synchrotron.
Prib. i tekhn. eksp. 7 no.4:37-45 J1-Ag '62. (MIRA 16:4)

1. Nauchno-issledovatel'skiy institut elektrofizicheskoy
apparatury Gosudarstvennogo komiteta po ispol'zovaniyu
atomnoy energii SSSR i Institut teoreticheskoy i eksperimental'-
noy fiziki Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy
energii SSSR.

(Particle accelerators) (Synchrotron)

LYSOV, B.; ZHIMSKIY, V.

How we organize audits. Fin. SSSR 22 no.9:71-74 S '61.

(MIRA 14:9)

1. Glavnyy kontroler-revizor Kontrol'no-revizionnogo upravleniya Ministerstva finansov RSFSR po Saratovskoy oblasti (for Lysov).
2. Starshiy kontroler-revizor Kontrol'no-revizionnogo upravleniya Ministerstva finansov RSFSR po Saratovskoy oblasti (for Zhimskiy).
(Saratov Province--Auditing)

LYSOV, B.

Seven annual quotas before the end of the seven-year plan. Avt.transp.
4 no.8:4-5 Ag '62. (MIRA 16:4)
(Transportation, Automotive—Production standards)

AUTHORS: Sokolov, A. A., Lysov, B. A.

SOV/56-34-5-59/61

TITLE: Compton Scattering of Longitudinally Polarized Photons on Electrons with Oriented Spin (Komptonovskoye rasseyaniye prodol'no polarizovannykh fotonov na elektronakh s oriyentirovannym spinom)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 34, Nr 5, pp 1351-1354 (USSR)

ABSTRACT: In connection with the discovery of the non-conservation of parity the further development of quantum-electrodynamics of electrons and photons with a longitudinal polarization is becoming a problem of topical interest. To consider the longitudinal polarization of the electrons in the computation of the matrix elements, not the formula by Casimir (Kazimir) but the formula (21,12) from the book by A.A. Sokolov and D.D. Ivanenko (Ref 3) has to be used, s denoting the eigenvalue of the operator $(\sigma \cdot \hat{n})/1 - 2$. This operator describes the double projection of the electron spin upon its direction of motion. This formula can be used in cases where the electron initially is at rest. For this case the formula is written down explicitly. Then an expression for the corresponding matrix element is given. From these expressions a generalization of the formula by Klein-Nishina

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Compton Scattering of Longitudinally Polarized Photons on Electrons
with Oriented Spin

(Kleyn-Nishina) can be derived. Starting with these expressions the formula by Klein-Nishina can be generalized to that case where the initial spin of the electron has the given orientation s and where the final spin states are summed up. In the scattering of a non-polarized radiation the orientation of the spin has no influence upon the integral law of scattering. A formula for the computation of the rate of the circular polarization of the scattered radiation is given. In the non-relativistic case there is obtained $P_{\text{nonrelativistic}} = 2 \cos \theta / (1 + \cos^2 \theta)$. In the ultrarelativistic case the scattered radiation will, in the case of wide scattering angles, partly be circularly polarized. As inverse problem to the problem investigated above the two-photon annihilation of longitudinally polarized positrons on electrons at rest with a given spin direction is discussed. An expression for the corresponding cross-section is given. In the examined case a polarization and an azimuthal asymmetry exist. This makes possible to apply the two-photon annihilation of the positrons at oriented electrons for the experimental determination of the degree

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Compton Scattering of Longitudinally Polarized Photons on Electrons
with Oriented Spin

of longitudinal polarization of positrons. There are 6 references, 4
of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State
University)

SUBMITTED: February 27, 1958

1. Photons--Scattering
2. Electrons--Properties
3. Nuclear spins
4. Mathematics--Applications

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24(5)

AUTHOR:

Lysov, B. A.

SOV/56-36-1-49/62

TITLE:

The Energy Losses of a Particle Which Are Connected With the Excitation of Longitudinal Waves (Energeticheskiye poteri chastitsy, svyazannyye s vozbuzhdeniyem prodol'nykh voln)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 321-322 (USSR)

ABSTRACT:

It is necessary to develop a theory of the Cherenkov effect which can be applied to the emission of longitudinal electromagnetic waves by an electron. In this case, the usual Lagrangian $L = (\epsilon \vec{E}^2 - \vec{H}^2) / 8\pi$ cannot be applied since the energy density of the field $(\epsilon \vec{E}^2 + \vec{H}^2) / 8\pi$ would be equal to zero for a longitudinal field. In order to avoid these difficulties, the author uses the Lagrangian of W. Fok and B. Podol'skiy, generalizing it for the case of an isotropic medium: $L = \left\{ (n \vec{E})^2 - \vec{H}^2 - (\text{div } \vec{A} + \frac{n^2}{c} \frac{\partial \varphi}{\partial t})^2 \right\}$. \vec{A} denotes the vector potential, φ - the scalar potential, n - the refraction index (n in the present paper is an operator). If there are no free charges ($\psi = 0$), the equations

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$$\left\{ A - (n^2 \partial^2 / c^2 \partial t^2) \right\} \vec{A} = 0$$
 and

$$T_{44} = \left\{ (\text{div } \vec{A})^2 + (\partial n \vec{A} / c \partial t)^2 \right\} / 8\pi$$
 can be deduced from the above-mentioned Lagrangian. The solution of these 2 equations is written down explicitly, and for the energy of the longitudinal field the expression

$$H = \sum_K (c \hbar \kappa / n) (\vec{a}^+ \vec{a})$$
 is found. $\hbar \kappa$ and $c \hbar \kappa / n$ denote the momentum and the energy of the longitudinal photon. The author puts $\vec{a} = g \vec{\kappa}_0$, $\vec{a}^+ = g^+ \vec{\kappa}_0$, $\kappa_0 = \hbar / \lambda$ in order explicitly to satisfy the longitudinal condition. The operators g and g^+ satisfy the Bose (Boze) commutation relations. The phenomenologic quantum electrodynamics developed in this paper is formally equal to the theory of A. Sokolov and D. Ivanenko, the difference being only constituted by the meanings of the operators \vec{a} and \vec{a}^+ . In the case of a longitudinal field there is no specific quantum correction that is proportional to \hbar^2 and which can be connected with the electron spin in the case of a transverse field. There is a

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The Energy Losses of a Particle Which Are Connected With the Excitation of Longitudinal Waves SOV/56-36-1-49/62

very essential difference between transverse and longitudinal fields. In classical approximation, there is no threshold irradiation in the case of Cherenkov irradiation of transverse waves. For longitudinal waves, however, radiation remains finite at the threshold and in classical approximation. The author thanks A. A. Sokolov for his great interest in this paper and for his stimulating advice, and Yu. M. Loskutov for a useful discussion. There are 9 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: September 3, 1958

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21(7)

SOV/56-37-2-45/56

AUTHOR:

Lysov, B. A.

TITLE:

Polarization Effects During the Direct Transition of $\mu^+\mu^-$
Into an Electron-Positron Pair

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 37, Nr 2(8), pp 571-572 (USSR)

ABSTRACT:

Ya. B. Zel'dovich has recently directed attention to the possibility of converting a $\mu^+\mu^-$ -pair into an electron-positron pair through a virtual quantum. This problem proves to be of interest also without a limitation to the non-relativistic approximation, as Ya. B. Zel'dovich has done. The matrix element describing this process can be determined directly from the matrix element of the exchange portion of the Bhabha interaction, if the initial electron and positron functions are replaced by the wave functions of the mesons. It is easy then to find an expression for the probability of the transformation from $\mu^+\mu^-$ into e^+e^- . In the center-of-mass system $dw = (e^4_d \Omega / 8c^3 \hbar^2 L^3 k_\mu^2) S^+ S^-$ is obtained if the rest mass of the electron and positron is ignored as compared to their energy,

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Polarization Effects During the Direct Transition of $\mu^+\mu^-$ Into an Electron-Positron Pair SOV/56-37-2-45/56

the spin portion of the matrix element being given by
 $S = b_{\mu}^{'+} \alpha_{\nu} b_{\mu} b_e^{'+} \alpha_{\nu} b_e$. α_{ν} denotes the four-vector composed of the Dirac matrices and b the spinor amplitudes of the respective particles. In order to find the probability of the transformation from $\mu^+\mu^-$ into e^+e^- the corresponding symmetrical combination of the spinor amplitudes is directly substituted into the above formula $dw = (e^4 d\Omega / 4c \hbar^2 L^3 K_{\mu}^2) S^+ S$ in the third ortho-state, when the projection of the total spin of the mesons upon their direction of motion is zero. If the direction of motion coincides with the z-axis, $b(s) = \int_3 \sigma_1 b(-s)$ holds. For the probability of the transition of the third ortho-state

$dw_0^s = (e^4 d\Omega / 4c \hbar^2 L^3 K_{\mu}^2) (1 - k_{\mu}^2 / K_{\mu} + k_{0\mu}^2 / K_{\mu}^2) (1 - \cos^2 \theta)$ is found. The probability of the transformation from $\mu^+\mu^-$ into an e^+e^- -pair in the ortho-state is markedly dependent upon

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Polarization Effects During the Direct Transition of $\mu^+\mu^-$ Into an Electron-Positron Pair

the projection of the total spin of the mesons upon their direction of motion. If this projection is ± 1 , the electrons will mostly be emitted in the direction of motion of the meson. If, however, the total projection of the meson spin upon their direction of motion is zero, the electrons will mostly be emitted in a direction perpendicular to the direction of motion of the electrons. In the non-relativistic approximation ($k_\mu \rightarrow 0$, $\cos^2 \theta \rightarrow 1/3$) the probability of a $\mu^+\mu^- - e^+e^-$ transition is equal for all three ortho-states, amounting to $w^s = 4\pi e^4/3c \hbar^2 L^3 k_{0\mu}$, which is in agreement with the value found by Ya. B. Zel'dovich. The transition probability for $\mu^+\mu^- - e^+e^-$ in the para-state is zero not only in non-relativistic approximation, but also in the general case. The author expresses his gratitude to Professor A. A. Sokolov for valuable help and suggestions. There are 2 Soviet references.

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Polarization Effects During the Direct Transition of $\mu^+\mu^-$ Into an Electron-Positron Pair SOV/56-37-2-45/56

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: May 13, 1959

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9.4160
26.2361

S/139/61/000/001/006/018
E032/E514

AUTHOR: Lysov, B. A.

TITLE: Polarization Phenomena in the Photoelectric Effect

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika,
1961, No.1, pp.71-76

TEXT: The discovery of the non-conservation of parity in weak interactions has led to very intensive study of various kinds of polarization phenomena. In particular, a number of papers have recently appeared on the polarization properties of photoelectrons and their dependence on the polarization of the initial photons. In their classical papers Sauter (Ref.1) and Sommerfeld (Ref.2) discussed the case of linear polarization of the original photons, and the polarization of the emitted photoelectrons was not investigated. The first attempt to take into account the circular polarization of the incident photons is due to McVoy (Ref.3). However, this author used a rather rough approximation and completely neglected the Coulomb distortion of the electron wave function in the final state. This approximation is said to be untenable when the energy of the incident photons is in the relativistic region. This is the reason why the results obtained by McVoy are in
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EO32/E514

contradiction with the results obtained by Sauter and Sommerfeld... An agreement can only be obtained in the non-relativistic case. McVoy's results reported in Ref.3 have recently been modified by Fano et al. (Ref.4). However, the present author states that the final formula for the degree of longitudinal polarization of the photoelectrons which was obtained in Ref.4 contains an error. In the present paper the author investigates the longitudinal polarization of photoelectrons ejected from the K-shell by circularly polarized quanta. The Born method is employed in the second approximation. Polarization effects are taken into account using the theory of Dirac particles with oriented spins, as developed by Sokolov (Refs.5 and 6). It is shown that the degree of longitudinal polarization of the photoelectrons is given by

$$P_l(\theta) = \frac{1}{\sqrt{\gamma(\gamma+2)}} \frac{1 + \frac{1}{2}(\gamma+1)(\gamma^2-2)(1-\beta \cos \theta)}{1 + \frac{1}{2}\gamma(\gamma^2-1)(1-\beta \cos \theta)} \quad (20)$$

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where $\ell = \pm 1$, depending on whether the incident photon has a right-handed or a left-handed circular polarization, γ is the ratio of the energy of the photon to the rest energy of the electron and $\beta = v/c$. The differential cross-section for the photoelectric effect, including terms describing polarization of both the incident γ -rays and of the ejected photoelectrons, is given by

$$\frac{d\sigma}{d\Omega} = \frac{a^0 Z^3}{k_0^2} \frac{\beta^3 \sin^2 \theta}{\gamma^5 (\gamma+1) (1-\beta \cos \theta)^4} \times \left[1 + \frac{1}{2} \gamma (\gamma^2 - 1) (1 - \beta \cos \theta) + \right. \\ \left. + s \ell \frac{\tilde{\gamma}}{\sqrt{\tilde{\gamma} \cdot \tilde{\gamma} + 2}} \left[1 + \frac{1}{2} (\tilde{\gamma} + 1) (\tilde{\gamma}^2 - 2) (1 - \beta \cos \theta) \right] \right] \quad (19)$$

where

$$\tilde{\gamma} = \frac{x}{k_0} \quad \text{H} \quad \beta = \frac{v}{c}$$

In the non-relativistic case when $\gamma \ll 1$

$$P(\theta) = \frac{1}{2} \ell \beta^2 \cos \theta \quad (21)$$

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In the ultra-relativistic case when $\gamma \gg 1$

$$P_{\ell}(\theta) = \ell. \quad (22)$$

The results obtained are in agreement with those obtained by Banerjee (Ref.9), who used the Sommerfeld approximation and a somewhat different method of taking into account the spin properties of the photons and electrons. Acknowledgments are expressed to Professor A. A. Sokolov who directed this work. There are 9 references: 3 Soviet and 6 non-Soviet.

ASSOCIATION: Moskovskiy gosuniversitet imeni M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 4, 1960

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LYSOV, B.A.; BELOVA, L.P.; KRCOVINA, L.I.

Polarization of recombination radiation. Zhur. eksp. i teor. fiz.
40 no.4:1160-1165 Ap '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet.
(Radiation) (Electrons--Capture)

L 33182-66 EWT(1) IJP(c) AT

ACC NR: ARG016162

SOURCE CODE: UR/0058/65/000/011/BO08/BO08

AUTHORS: Sokolov, A. A.; Lysov, B. A.; Kolesnikova, M. H.

40
B

TITLE: Boundary condition in the presence of radiation friction forces

SOURCE: Ref. zh. Fizika, Abs. 11B75

REF SOURCE: Tr. po teorii polya, vyp. 1, 1964, 3-11

TOPIC TAGS: electron radiation, Cauchy problem, electron motion, boundary value problem, initial value problem

ABSTRACT: The authors investigate the classical equation of motion of an electron, with allowance for the radiation-friction force. It is shown that a solution for specified initial conditions (the Cauchy problem) can be obtained if there is no radiation-friction force. If the latter is taken into account, on the other hand, then one should obtain a boundary-value problem in which the final conditions must be specified besides the initial ones. [Translation of abstract]

SUB CODE: 20, 12

Card 1/1

TERNOV, I.M.; LYSOV, B.A.; KOROVINA, L.I.

Theory of the β -decay of a neutron in an external magnetic field. Vest. Mosk. un. Ser. 3: Fiz., astron. 20 no.5:58-63 S-0 '65. (MIRA 18:11)

1. Kafedra teoreticheskoy fiziki Moskovskogo universiteta. Submitted May 26, 1964.

ACC NR: AP6021947

(A)

SOURCE CODE: UR/0188/66/000/002/0077/0082

AUTHOR: Lysov, B. A.; Safronov, A. N.

ORG: Department of Theoretical Physics (Kafedera teoreticheskoy fiziki)

TITLE: Interaction between a quantized electromagnetic field and a three-dimensional oscillator

SOURCE: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 2, 1966, 77-82

TOPIC TAGS: quantum oscillator, quantum field theory, relativistic electron, Hilbert space, photon, operator equation

ABSTRACT: The interaction between a classical system and a quantized magnetic field is treated in the article in analogy with the motion of a relativistic electron in a magnetic field. The equation of motion of a three-dimensional harmonic oscillator in a photon field is written out in operator form, and the physical quantities characterizing this system are set in correspondence with operators acting on the state vector in Hilbert space. A set of commuting operators is defined such that combinations of these operators can express the operators of the physical quantities of interest. The operators corresponding to observable quantities are expressed in the form of a sum of two terms, one independent of the time and consisting of a bilinear combination of

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UDC: 538.56:530.145

ACC NR: AP6021947

annihilation and creation operators, and a fluctuating part, whose terms are characterized by the presence of a time-oscillating factor. The latter is made to vanish by averaging over the time. The results show that the interaction with the field leads to quantization of all the dynamic variables characterizing the motion of the oscillator, in analogy with the case of the one-dimensional oscillator. The authors thank Professor A. A. Sokolov for interest in the work. Orig. art. has: 25 formulas.

SUB CODE: 20/ SUBM DATE: 11Nov64/ ORIG REF: 006/ OTH REF: 002

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L 50996-65 ENG(j)/EWP(e)/EWT(m)/EPP(c)/EPT(n)-2/EPR/EWP(t)/EWP(k)/EWP(z)/EWP(b)
PF-l/Pr-l/Ps-l/Pu-l IJP(c) JD/JW/JG

ACCESSION NR: AP5013327

UR/0148/65/000/005/0145/0147
669.293'715

55
53
B

AUTHOR: Yelyutin, V. P.; Lysov, B. S.; Mitin, B. S.

TITLE: Interaction between niobium and aluminum oxide ^{v1}

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1965, 145-147 ²⁷

TOPIC TAGS: niobium, sintered niobium alloy, aluminum oxide containing alloy,
aluminum oxide solubility ⁶

ABSTRACT: The dependence of the interaction of niobium with Al₂O₃ on the temperature, holding time, and Al₂O₃ content has been investigated. Compositions containing 99.8%-pure niobium and 2, 4, 7, 10, or 15 vol% Al₂O₃ were degassed in vacuum at 975K for 30 min, furnace cooled, and sintered in argon at 1675, 1875, 2075, and 2275K for 2 and 3 hr. The content of metallic aluminum in compositions sintered for 2 hr varied randomly within wide limits regardless of the sintering temperature. A sharp variation in the aluminum content (from 0.08 to 2.10%) was observed in compositions sintered for 3 hr at 1875K. In compositions sintered for 3 hr at 2075 and 2275K, the aluminum content varied from 0.18 to 0.27% regardless of the Al₂O₃ content. This comparatively small scattering in the values of aluminum content in-

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L 50996-65

ACCESSION NR: AP5013327

2

indicated that under these conditions the reaction approached an equilibrium. In compositions sintered at 1675 and 1875K a correspondingly longer holding time (10 and 5 hr, respectively) was required to achieve equilibrium. The mean equilibrium concentration of aluminum was 0.31, 0.27, 0.22, and 0.18% in alloys sintered at 1675, 1875, 2075, and 2275K. Thus, even such a thermodynamically stable oxide as Al_2O_3 cannot be regarded as an insoluble additive in Nb- Al_2O_3 compositions. It can be assumed that a similarly noticeable chemical interaction exists between niobium and other thermodynamically stable oxides (ZrO_2 , TiO_2 , etc.). Orig. art. has: 1 table. [MS]

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute for Steel and Alloys)

SUBMITTED: 20Jun64

ENCL: 00

SUB CODE: MM

NO REF SOV: 002

OTHER: 009

ATD PRESS: 4014

Card 2/2

YELUTIN, V.P.; PAVLOV, Yu.A.; LYSOV, B.S.

Free energy of formation of vanadium-oxygen solutions. Izv. vys.
ucheb. zav.; Chern. met. no.1:5-11 '60. (MIRA 13:1)

1. Moskovskiy institut stali.

(Vanadium--Oxygen content)

(Force and energy)

YELYUTIN, V.P.; LYSOV, B.S.; MITIN, B.S.

Interaction of niobium with aluminum oxide. Izv. vys. ucheb.
zav.; chern. met. 8 no.5:145-147 '65. (MIRA 18:5)

1. Moskovskiy institut stali i splavov.

LYSOV, B.S., kand.tekhn.nauk [translator]; MOZZHUKHIN, Ye.I., kand.
tekhn.nauk [translator]; SHULEPOV, V.I., kand.tekhn.nauk
[translator]; IVANOV, A.F. [translator]; SIROTINA, Ye.P.
[translator]; NATANSON, A.K., kand.tekhn.nauk, red.;
ALEKSEYEV, V.A., red.; DZHATIYEVA, F.Kh., tekhn.red.

[Molybdenum] Molibden; sbornik statei. Moskva, Izd-vo
inostr.lit-ry, 1962. 393 p. Translated from the English.
(MIRA 15:5)

1. Kafedra metallurgii redkikh metallov Moskovskogo instituta
stali (for Lysov, Mozzhukhin, Shulepov).
(Molybdenum)

35224

S/148/62/000/001/009/015

E073/E535

18.11.85

AUTHORS: Voleyrik, V.V., Yelyutin, V.P., Lysov, B.S. and Maurakh, M.A.

TITLE: Electric conductivity of solid and liquid titanium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.1, 1962, 137-140

TEXT: Although data on the electric conductivity of titanium up to temperatures of 1300°C have been published, similar data relating to near-fusion temperature and to the liquid state have not been published. An electrodeless method was applied for measuring the resistivity of titanium. This is based on measuring the stationary torsion angle of a specimen suspended on an elastic thread in a rotating magnetic field. The stator coil winding of the measuring instrument was provided with a high temperature insulation and the coils were placed inside a water-cooled steel housing. Graphite heater elements were used which permitted obtaining temperatures up to 2500°C. The method of measurement of the resistivity is similar to that applied by other authors for measuring the resistivity of molten metals. The temperature
Card 1/3

X

Electric conductivity of solid ... S/148/62/000/001/009/015
E073/E535

dependence of the resistivity of titanium ρ , mohm·cm is plotted in a graph. Curve 1 represents the values obtained by the author of this paper, curves 2 and 3 are published values. For the liquid metal two values were obtained: A - for melts produced in ThO_2 or BeO crucibles, B - for melts produced in graphite crucibles. The author points out that the data for liquid titanium at 1800°C (points A and B) are not entirely reliable and should be verified with a crucible material less active towards liquid titanium than the graphite, thorium dioxide, and beryllium oxide used in these experiments. From the test results the temperature coefficients of α - and β -titanium were determined. The specific resistance of α -titanium in the temperature range 20 to 450°C can be expressed by

$$\rho_\alpha = 61.5 [1 + 2.48 \cdot 10^{-3} (t - 20)]$$

and for β -titanium, in the temperature range 880 to 1700°C , can be expressed by

$$\rho_\beta = 143 [1 + 2.13 \cdot 10^{-4} (t - 880)]$$

There are 1 figure and 11 references: 5 Soviet-bloc and 6 non-Soviet-bloc. The four latest English-language references read as follows: Ref.2: McQuillan A.D. J. Inst. Met., 78,249, 1950-51; Card 2/3 X

Electric conductivity of solid ... S/148/62/000/001/009/015
E073/E535

Ref.3: I.L.Wyrtt. Trans. Amer. Inst. min. (metal) Engrs. 197, 903, 1953;

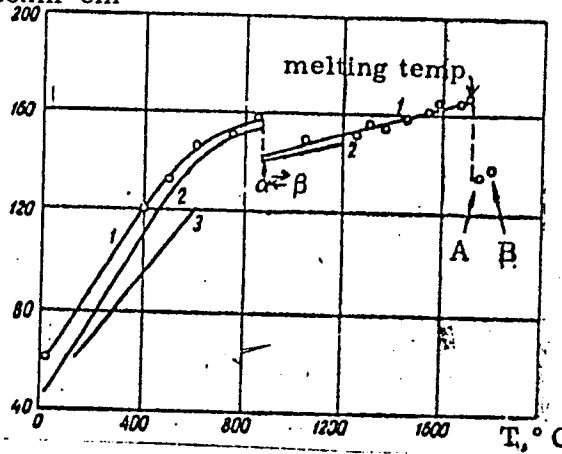
Ref.4: W.C. Michels, S. Wilford. Phys. Rev. 76, 174, 1949; Ref.10:

B. Weber, M. Thompson. J. Amer. Ceram. Soc. 40(11), 363, 1957.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: April 6, 1961 ρ , mohm·cm

Figure



Card 3/3

YELYUTIN, V.P.; PEPEKIN, G.I.; LYSOV, B.S.

Thermodynamic calculations of certain reactions occurring during the precipitation of titanium carbide from the gaseous phase. *Izv. vys. ucheb. zav.; Chern. met.* 6 no.11:5-10 '63. (MIRA 17:3)

1. Moskovskiy institut stali i splavov.

YELYUTIN, V.P.; PEPEKIN, G.I.; LYSOV, B.S.

Dissociation of niobium pentachloride on niobium and carbide surfaces. *Izv. vys. ucheb. zav.; tsvet. met.* 8 no.4:90-96 '65.
(MIRA 18:9)

1. Kafedra vysokotemperaturnykh materialov Moskovskogo instituta stali i splavov.

ACCESSION NR: AP4022897

S/0148/64/000/003/0124/0130

AUTHORS: Yelyutin, V.P.; Pepekin, G.I.; Ly*sov, B.S.

TITLE: Investigation of the titanium carbide formation process precipitated from the gaseous phase

SOURCE: IVUZ. Chernaya metallurgiya, no.3, 1964, 124-130

TOPIC TAGS: titanium carbide, titanium tetrachloride, methane dissociation, vapor pressure, hydrogen, titanium tetrachloride

ABSTRACT: Although the method of precipitating titanium carbide is well known, the mechanism of the formation of high-melting carbides remains to be studied. For that purpose, the authors observed the process of titanium carbide precipitation from a mixture of titanium tetrachloride, methane and hydrogen. The process took place in the gas flow (hydrogen, helium) at atmospheric pressure. The possibility of forming metallic titanium under conditions of a substantial excess of hydrogen was investigated by holding an incandescent titanium filament in a gas flow consisting of titanium tetrachloride and hydrogen vapors. In all tests the titanium filament was dissolved which co-

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ACCESSION NR: AP4022897

incides with available thermodynamic data. The authors attribute the precipitation of titanium carbide to the reaction of elementary decomposition of methane that occurs on the hot surface. This reaction has been studied in great detail by many authors and the thermodynamic as well as the kinetic constant are well known. Methane was found to be thermally unstable dissociating at temperatures above 1000C. Therefore, the processes of the formation of a carbide film on the carbon surface differ only in that the carbon is provided by the diffusion of the carbon base or as a result of the decomposition of methane by the gaseous phase. In the latter case, the rate of titanium carbide formation is affected by the partial pressure of methane in the initial mixture. The increase in the partial pressure was accompanied by an increase in the rate of titanium carbide formation. However, above $1.4 \cdot 10^{-2}$ atm, partial pressure either accelerates the formation very little or not at all. Titanium tetrachloride was not affected by the partial pressure of methane. The authors account for the precipitation of metal by the reducing effect of hydrogen on titanium tetrachloride. Orig. art. has 5 figures and 3 tables.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and Alloys)

Card 2/3

ACCESSION NR: AP4022897

SUBMITTED: 21Jun63

DATE ACQ: 10Apr64

ENCL: 00

SUB CODE: ML, CH

NR REF SOV: 003

OTHER: 004

Card 3/3

ACCESSION NR: AT4013987

S/3070/63/000/000/0178/0181

AUTHOR: Voleyrik, V. V.; Yelyutin, V. P.; Ly*sov, B. S.; Maurakh, M. A.

TITLE: Instrument for measuring electric resistance of solid and melted metals at temperatures up to 2000C

SOURCE: Novy*ye mashiny* i pribory* dlya ispy*taniya metallov. Sbornik statey. Moscow, Metallurgizdat, 1963, 178-181

TOPIC TAGS: conductance measurement, solid metal conductance, liquid metal conductance, high temperature conductance, non-electrode conductance measurement, conductance measuring equipment

ABSTRACT: Using a new instrument, which is described in detail in the text, conductance in solid or liquid metals can be measured over the range 20-2000C, hence even for Ti, V or Zr. The design is based on a non-electrode method of measuring conductance in terms of the moment of forces acting on a specimen in a rotating magnetic field. The instrument has stator coils 180 cm high and located inside the housing, hence the entire assembly can be made of common structural steel. The usual operation is in an atmosphere of inert gas (argon), although tests can be carried out in a 10^{-3} mm Hg vacuum. Dependence of the angle of twist on specimen height for a specimen diameter of 14 mm was plotted in a diagram (see

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ACCESSION NR: AT4013987

Fig. 1 in the Enclosure) which can be used to reduce all angles of twist to a uniform specimen height and to determine the conductance of a given material with the aid of a simple formula:

$$\sigma = K \frac{\Delta \varphi L}{i_{\text{MEAN}}}$$

where K is the instrument constant determined from the angle of twist of a uniform height standard, i_{mean} is the average current intensity in stator components in amps., $\Delta \varphi$, is the angle of twist reduced to uniform specimen height, in radians. Temperature was shown to have little effect on the value of K. Orig. art. has: 1 table, 2 formulas, 2 graphs.

ASSOCIATION: MOSKOVSKIY INSTITUT STALI I SPLAVOV (Moscow Steel and Alloy Institute)

SUBMITTED: 00

DATE ACQ: 20Feb64

ENCL: 01

SUB CODE: ML, SD

NO REF SOV: 003

OTHER: 001

Card

2/32

L 13533-66 EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(h)/EWA(c) IJP(c) JD/JW/JG
ACC NR: AP5028978 SOURCE CODE: UR/0149/65/000/004/0090/0096

AUTHOR: Yelyutin, V. P.; Pepekin, G. I.; Lysov, B. S.

19
69
12

ORG: Moscow Institute of Steel and Alloys, High-Temperature Materials Dept (Moskovskiy institut stali i plavov, Kafedra vysokotemperaturnykh materialov)

TITLE: Dissociation on niobium pentachloride on niobium and carbide surfaces

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 4, 1965, 90-96

TOPIC TAGS: niobium compound, chlorine compound, metal deposition, thermodynamic property, activation energy

ABSTRACT: Nb and NbC were experimentally deposited on Nb thread and graphite thread, respectively, from NbCl₅ in a helium current. The rate of formation of the solid products was determined by weighing the thread before and after the process of deposition, at periodic intervals of time, and the composition of the coating was radio-graphically analyzed. On this basis, the following empirical equation was derived for the rate of Nb deposition as a function of the partial pressure of NbCl₅ in the vapor-gas phase

$$W = 1.6 \cdot 10^{-3} p^{0.7}$$

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UDC: 669.293

L 13533-66

ACC NR: AP5028978

and for the rate of deposition

$$W = 1.88 \cdot 10^{-3} P^{0.8}$$

where W is the rate of Nb deposition, g-atom/cm²-0.5 hr and P is the partial pressure of NbCl₅, atm. In the latter formula the slightly higher order of magnitude with respect to the concentration of NbCl₅ at which the activation energy of the process markedly decreases with decomposition of NbCl₅ on NbC surface, as compared with Nb surface, may be attributed to the virtually total absence of inhibition of the reaction by Cl in the case of deposition of NbC. It appears that the reason for this lies in the different catalytic properties of Nb and NbC. A comparison of the findings on specific weight gain within 0.5 hr indicates that in the presence of partial pressures of NbCl₅ amounting to $0.78 \cdot 10^{-2} - 6 \cdot 10^{-2}$ atm the deposition rate of NbC is time-independent. This, as well as the sufficiently high activation energy of the total process (33 kcal/mole) shows that in the 1500-1800°K temperature range the rate of the total process is limited by the surface chemical reactions. Thus, a comparison of the kinetic laws of the processes of deposition of Nb and NbC is of interest only in conditions when the rates of these processes are determined by the rates of the surface chemical reactions. For deposition of NbC on a graphite substrate, such conditions are observed only in the presence of small concentrations of NbCl₅ in the vapor-gas phase (less than $6 \cdot 10^{-2}$) and comparatively low temperatures (1500-1800°K) close to the initial temperature of the formation of Nb₂C. The unfavorable thermody-

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L 13533-66

ACC NR: AP5028978

namic conditions for the reduction of $NbCl_5$ with carbon (graphite wire), on the one hand, and the similarity between the kinetic equations of the dependence of the decomposition rate of $NbCl_5$ on the concentration of $NbCl_5$ in the vapor-gas phase for decomposition into both Nb and NbC, on the other, indicate that the mechanism of segregation of the metal from $NbCl_5$ is the same in both cases. In other words, when $NbCl_5$ is decomposed in the presence of carbon, even under conditions thermodynamically unfavorable to the deposition of Nb, the function of carbon consists solely in carburizing the metal released in the process of the thermal dissociation of $NbCl_5$. Orig. art. has: 4 tables, 3 figures, 5 formulas.

SUB CODE: 07, 11/ SUBM DATE: 10Jul64/ ORIG REF: 003/ OTH REF: 003

Card 3/3

LYSOV, G., Col.

Author of article, "On Foresight in Operational Art," which developed from the following definition: Foresight in operational art means determining a perspective of the development of combat actions in the operation as a whole, as well as in its separate stages; also, on the basis of a continuous study of the situation, uncovering the various forms of obstacles which, from the enemy's point of view as well as from natural conditions, might prevent the planned development of the operation. *Voyennaya Mysl'*, Moscow, No 11, Nov 53

SO: SUM 291, 2 Dec 1954

S/035/62/000/010/121/128
A001/A101

AUTHOR: Lysov, G. F.

TITLE: Adjustment of a geodetic quadrangle at measurements of equal accuracy

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 1962, 41, abstract 10G216 ("Sb. statey po geod.", 1962, no. 12, 3 - 7)

TEXT: The author derives calculation formulae for adjustment of a geodetic quadrangle by the method of condition measurements, which do not require solution of normal equations. An example is presented.

[Abstracter's note: Complete translation]

Card 1/1

LYSCV, G.F.

Formulas for determining average errors due to the incorrect centering of theodolites and signals in the measurement of horizontal angles. Izv. TPI 118:70-73 '63.

Tables of increase of coordinates for mine surveyors. Ibid.:74-75

Problems of selecting the size of the bob and the diameter of the wire in the orientation of a mine. Ibid.:123-128

Laboratory and theoretical studies on the accuracy of adjoining to the alignment of plumb lines depending on the cross section of the wire. Ibid.:129-137

Empirical formulas expressing pressure of the air currents on the plumb bob wire by the velocity of the air flow and the diameter of the wire. Ibid.:138-144 (MIRA 18:9)

LYSOV, G.F.

Adjustment of a geodetic quadrangle in measurements of equal accuracy.
Sbor. stat. po geod. no. 12:3-1 '62. (MIRA 15:7)
(Geodesy) (Least squares)

LYSOV, I.

Combined railroad and air transportation. Grazhd.av. 13 no.9:3
S '56. (MLRA 9:11)

1. Nachal'nik gorodskogo agentstva Tomskogo aeroporta.
(Transportation)

BLAZHNOV, A.G., inzh.; LYSOV, I.V., inzh.; PRAGER, V.Ye., inzh.

Automatic feed of bearing races to machine tools. Mekh.
i avtom. proizvod. 18 no.7:1-2 J1 '64. (MIRA 17:9)

LYSOV, Ivan Vasil'yevich; RYASKOV, Vladimir Leonidovich; KORKINA, V.,
red.; LUKASHEVICH, V., tekhn. red.

[Manual for mechanics]Spravochnik slesaria. Saratov, Saratovskoe
knizhnoe izd-vo, 1962. 303 p. (MIRA 15:12)
(Machine-shop practice)

BLAZHNOV, A.G., inzh.; VORONTSOV, A.V., inzh.; IZYUMOV, A.A., inzh.;
LYSOV, I.V., inzh.; PRAGER, V.Kh., inzh.; RYASKOV, V.L.,
inzh.; DEROV, V.A., tekhnik; KOSTINA, V.P., red.;
LUKASHEVICH, V.K., tekhn. red.

[Over-all automation at a bearing plant] Kompleksnaia avtoma-
tizatsiia na podshipnikovom zavode. Saratov, Saratovskoe
knizhnoe izd-vo, 1962. 53 p. (MIRA 16:4)

1. Saratovskiy podshipnikovyy zavod (for all except Kostina,
Lukashevich).

(Saratov--Bearing industry) (Automation)

LYSOV, K.I.; GRIGOR'YEV, K.T.; KHAVTISOV, G.Ya., red.

[Pumps and pumping machinery] Nasosy i nasosnye ustanovki.
Moskva, Kolos, 1965. 254 p. (MIRA 18:8)

LYSOV, K.I.; KORENEV, I.Ye.

Results of laboratory studies of several types of water pipes
with vertical axial pumps. Trudy NPI 138:49-66 '63.
(MIRA 16:10)

LYSOV, K.I.; KORENEV, I.Ye.

Laboratory testing of the chamber type water supply to axial
pumps. Trudy NPI 157:63-73 '64. (MIRA 19:1)

LYSOV, M.

Preventing wear in the steering trapezium of the "Moskvich" car.
Za rul. 18 no.8:20-21 Ag '60. (MIRA 13:9)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni
nauchno-issledovatel'skiy avtomobil'nyy i avtomotorny institut.
(Automobiles--Steering gear)

L 11294-67 EWT(d)/EWT(m)/EWP(k)/EWP(w)/EWP(v)/EWP(t)/ETI IJP(c) EM/WW/JD/IW

ACC NR: AF6030259

SOURCE CODE: UR/0147/66/000/003/0111/0119

32

AUTHOR: Lysov, M. I.; Zakirov, I. M.

ORG: none

TITLE: Determination of the permissible deformation in hot forming formed rings and flanged shells from titanium alloys

26

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 3, 1966, 111-119

TOPIC TAGS: titanium alloy, hot rolling, metal rolling

ABSTRACT: The article presents mathematical expressions for determining suitable rolling conditions for titanium alloys to avoid loss of flange stability. (See Fig. 1). The expressions derived were compared with experimental results on titanium alloy OT-4 in the temperature interval 20-700°C and were found in substantial agreement. These expressions make it possible to determine the permissible degree of deformation in the area of deformation, the critical angles of bending in a single pair of rollers (one pass), and the necessary number of passes for forming profiles of a given cross section. Orig. art. has: 23 equation, 4 figures and 1 table.

Card 1/2

UDC: 621.983.1

L 11284-67

ACC NR: AF6030259

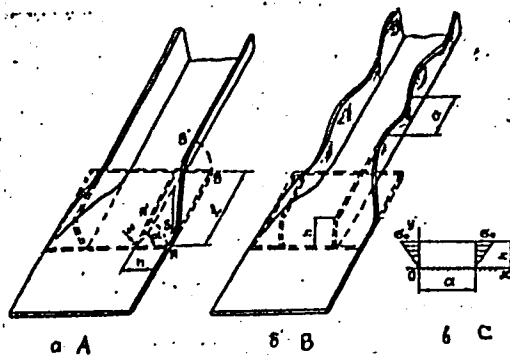


Fig. 1. Area of deformation during forming.
a) No loss of flange stability; b) loss of flange stability; c) load diagram.

SUB CODE: 13/ SUBM DATE: 04Dec65/ ORIG REF: 008

Card: 2/8, jh

LYSOV, M. I.

Kardanye mekhanizmy; konstruksii, teoriia, raschet i ispytaniia.
Moskva, Mashgiz, 1945. 156 [4] p. illus.

Bibliography: p. [158].

Universal joints; design, theory, calculation and testing.

DLC: TJI059.L9

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

LISOV, M.I.

Automobiles--Steering gear

Stand for measuring the amount of play in steering gear mechanism. Avt. trakt. prom.
No. 3, 1952

9. Monthly List of Russian Accessions, Library of Congress, June 1953^{1/2}. Unclassified.

LYSOV, M.I.

Automobiles--Steering Gear

"Mechanisms of automobile steering." Reviewed by L.A. Yegorov Avt. trakt. prom. No. 4
April, 1952

9. Monthly List of Russian Accessions, Library of Congress, August 1952 Unclassified.

LYSOV, M. I.; KOROLEV, A. I.

[The steering gear of an automobile] Rulevye upravleniia avtomobilei.
Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1953.

[Microfilm]

(MLRA 9:2)

(Automobile driving)

LYSOV, M.I.

LYSOV, M.I.; KOROLEV, A.I.; YEGOROV, L.A., inzhener, retsenzent; DYBOR, O.V.,
kandidat tekhnicheskikh nauk, redaktor; MATVEYEVA, Ye.N., tekhnicheskiy
redaktor; MODEL', B.I., tekhnicheskiy redaktor

[Methods of testing automobiles and their mechanisms] Metody ispytaniya avtomobilia i ego mekhanizmov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry. No.4. [Steering gear] Rulevye upravleniia avtomobilei. 1953. 81 p. [Microfilm] (MLRA 8:2)

1. Russia (1923- U.S.S.R.) Ministerstvo avtomobil'noy i traktornoy promyshlennosti.
(Automobiles--Testing) (Automobiles--Steering gear)

LYSOV, M.I., kandidat tekhnicheskikh nauk.

Testing universal joints of automobiles. Avt.trakt.prom. no.9:15-17 S '53.
(MLRA 6:9)

1. Nauchnyy avtomotorny institut.
(Universal joints (Mechanics)) (Automobiles)

LYSOV, M.I., kandidat tekhnicheskikh nauk;

Power steering in automobiles. Avt. trakt. prom. no.6:4-9
Je '55. (MLRA 8:9)

1. Nauchno-issledovatel'skiy avtomotornyy institut
(Automobiles--Steering gear)

LYSOV, M.I., kandidat tekhnicheskikh nauk.

Hydraulic servo steering in foreign automobiles. Avt. i trakt. prom.
no.2:39-40 № '56. (MLRA 9:6)
(Automobiles--Steering gear)

LYSOV, M.I., Kandidat tekhnicheskikh nauk.

Automobile power steering having progressive action on the steering wheel. Avt.i trakt.prom. no.6:6-9 de '57. (ILRA 10:8)

1.Nauchno-issledovatel'skiy avtomotorny institut.
(Automobiles--Steering gear)

SOV-113-58-8-3/21

AUTHOR: Lysov, M.I., Candidate of Technical Sciences

TITLE: Test Methods Applied to the Steering Gear with Booster
(Metodika ispytaniy rulevogo upravleniya s usilitelem)

PERIODICAL: Avtomobil'naya promyshlennost, 1958, Nr 8, pp 4-9 (USSR)

ABSTRACT: The author of this article describes in detail tests carried out on steering gears provided with boosters of the "NAMI" or "YaAZ" types. He has worked out a special device for determining the appraisable parameters of the steering gear, i.e. a dynamometer steering wheel with an automatic oscillographic recorder (figure 1). The recording of the stress is based on the principle of deformation of the elastic element built in the steering wheel, and the recording of the steering angle is based on the displacement of the roller along the steering column or on a plane perpendicular to its axle.

Card 1/2

SOV-113-58-8-3/21

Test Methods Applied to the Steering Gear with Booster

"YaAZ-210", "MAZ-502", "MAZ-200", "Brokvey", "Ural-ZIS", "Granit", "GAZ-51", "ZIL-585", "LAZ-695", "Shosson ASH 592" and "YaAZ-214". There is 1 photo, 3 graphs, 6 schematic diagrams and 4 tables.

ASSOCIATION: "NAMI"

1. Automobiles--Control systems
2. Automobiles--Test methods
3. Mathematics--Applications

Card 2/2

SOV/113-58-12-3/17

AUTHOR: Lysov, M.I., Candidate of Technical Sciences

TITLE: Principles of Calculation and Selection of Booster Types for Steering Gears (Osnovy rascheta i vybora tipa usiliteley rulevogo upravleniya)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 12, pp 5-12 (USSR)

ABSTRACT: A booster for steering gears consists of three principal elements: the power cylinder (1), the distribution device (2), and the centering device (3) (Figure 1). The forces acting on the lever system of a booster with a centering device of the spring type are shown in Figure 2. There are various designs of the distribution device (Figure 3) and their different properties must be studied to permit a correct selection. An indicator for the efficiency of a steering gear is the reaction value determined by the stress increase caused by the resistance to turning of the wheel. If the area "f₂" of the reactive valve or its diameter "d" is increased (Figure 5), the efficiency of the booster decreases and the stress on the steering wheel increases. In Figure 6 the dependence of these values on the size of the

Card 1/2

SOV/113-58-12-3/17

Principles of Calculation and Selection of Booster Types for Steering Gears

reactive area "f" of the plungers is shown. Boosters must be designed in such a way that the mechanisms are easily handled in direct lines, but ensure a difficult adverse movement. The effective action of the booster depends on the size of the power cylinder. The reactive action on the steering wheel depends on the design of the distribution device. There are two groups of boosters: in one group the distribution device and the centering device are built into the steering column (Figure 8); in the other group these two devices are built in between the steering wheel and the steering gear (Figure 9). There are 3 photos, 6 sets of diagrams, 4 graphs, and 3 Soviet references.

ASSOCIATION: NAMI

Card 2/2

LYE OV, M., kand, tekhn, nauk.

Pneumatic power steering. Avt. transp. 36 no,3:24-25 M₁ '58.
(Motortrucks--Steering gear) (MIRA 11:3)

12(2)

SOV/113-59-7-9/19

AUTHOR: Lysov, M.I., Candidate of Technical Sciences

TITLE: Methods and Results of Steering Gear Wear Tests

PERIODICAL: Avtomobil'naya promyshlennost', 1959, Nr 7, pp 27 -30 (USSR)

ABSTRACT: The author describes briefly existing types of steering gear wear test stands. A diagram of a test stand with a reversible hydraulic drive and its valve system is shown in Figure 2. A test stand with a reversible electric motor is shown in Figure 3. The steering arms of the steering gears to be tested are connected to hydraulic or friction brakes. The operating conditions of these test stands are admissible for steering gear wear tests, since they provide an even motion and reproduce wear effects which are similar to those of actual operation. The author mentions a crankshaft-connecting-rod test stand (a shaping machine may be

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Methods and Results of Steering Gear Wear Tests

converted for this purpose) and a crankshaft-link mechanism, the latter is shown in Figure 4, which are less suitable for steering gear wear tests, since the load on the steering arm changes more suddenly. The author discusses test results of steering gears of the ZIL-110, "Volga", ZIL-150 and of four American trucks (GMC, Reo, Mack, Brockway). Data for the friction forces in these steering gears are presented in a table. When developing steering gears with rollers mounted in ball bearings, the force to be applied at the steering wheel (10.5 kg) should be equal or somewhat higher for test stand operation, than it will be during normal operation (6-8 kg). In any case, the force should be considerably lower than the maximum forces found during difficult operating conditions (18-20 kg). The author found that the roller is the weakest member of the steering gears investigated.

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Methods and Results of Steering Gear Wear Tests

When testing the steering gear of the ZIL-110, it was established that a load of 18 kg was excessive. Destructions of the roller were observed after 3000-5000 test cycles. A 15 kg load caused damage after 19,000 cycles. For small turns, a force of 3-5 kg is required, while 6-8 kg are needed for sharp turns. There are 1 photograph, 3 diagrams, 3 graphs and 2 Soviet references.

ASSOCIATION: NAMI

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LYSOV, M.I., kand.tekhn.nauk

Facilitating the operation of steering gears. Avt.prom. no.8:
12-15 Ag '60. (MIRA 13:8)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni
nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Motortrucks--Steering gear)

LYSOV, M. I., kand.tekhn.nauk

Determining the maneuverability of motor vehicles at turns.
Avt.prom. 27 no.8:31-33 Ag '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Motor vehicles--Dynamics)

LYSOV, M.I.; GONIKBERG, Ye.M., inzh., retsenzent; OSEPCHUGOV, V.V.,
doktor tekhn. nauk, red.

[Steering gear on automobiles] Rulevye upravleniia avto-
mobilei. Moskva, Izd-vo "Mashinostroenie," 1964. 245 p.
(MIRA 17:6)

L 14542-66 EWT(l)/EWT(m)/EWI(t)/EWP(k)/EJP(b) JD/HW

ACC NR: AT6003159

SOURCE CODE: UR/2529/64/000/084/0143/0148

AUTHORS: Anisimov, A. A.; Lysov, M. I. (Professor)

ORG: Kazan Aviation Institute (Kazanskiy aviatsionnyy institut)

TITLE: Shaping curvilinear parts from tubes by the bending-rolling method

SOURCE: Kazan, Aviatsionnyy institut. Trudy, no. 84, 1964. Aviatsionnaya tekhnologiya i organizatsiya proizvodstva (Aviation technology and production management), 143-148

TOPIC TAGS: metal bending, bending machine, metal tube, pipe, metalworking

ABSTRACT: This paper deals with the possibility of shaping parts from tubes by the bending-rolling method. The following problems are involved: the development of apparatus and an experimental check; determination of the adjustment parameters that ensure the formation of a part of a given shape; distortions of the cross section of tubes in plastic bending as functions of the grade of the material, of the tube cross section, of the bending radius, and of the filler used; and springing in plastic bending of parts from tubes as a function of the grade of the material, of the tube cross section, and of the bending radius. The proposed scheme uses three rollers. An analytic relationship between the curvature and the adjustment parameters is derived

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L 14542-66

ACC NR: AT6003159

$$1/p = \frac{2(d_p + d_{mp} - y \cos \beta)}{y^2 - y(d_p + d_{mp}) \cos \beta}$$

The method makes it possible to mechanize and automate the process of shaping parts from tubes and to increase the efficiency of the process and the accuracy of the parts. Orig. art. has: 1 formula, 2 diagrams, and 2 graphs.

SUB CODE: 13/ SUBM DATE: 10Oct63/ ORIG REF: 002

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L 11202-01 ENI(A)/ENI(L)/ENI(R)/ENI(V)/ENI(X)/ENI(Y)
ACC NR: AP6032049 SOURCE CODE: UR/0145/06/000/005/0157/0162

AUTHOR: Lysov, M. I. (Doctor of technical sciences, Professor); Shekhtin, G. M.
(Graduate student)

ORG: None

TITLE: Optimum production capacity of rotary machines

SOURCE: IVUZ. Mashinostroyeniye, no 5, 1966, 157-162

TOPIC TAGS: production engineering, industrial production

ABSTRACT: The authors study variation in the technical and economic characteristics of rotary equipment as production capacity is increased. Optimum production capacity and optimum differentiation are considered for a given program using rotary machines... Functional and analytic relationships are established which determine the optimum layout for individual machines and for combinations. An empirical example is given to illustrate these relationships. The article was presented for publication by Professor I. F. Parkhomenko of the Kazan' Aviation Institute. Orig. art. has: 3 figures, 16 formulas.

SUB CODE: 13, 14/ SUBM DATE: 17Sep64

Card 1/1 jb

KATAYEV, Yu.P.; LYSOV, M.I.

Theoretical investigation of the bending process taking into consideration the formation of area of secondary plastic deformations during the unloading. Izv.vys.ucheb.zav.;av.tekh. 7 no. 1:153-160 '64. (MIRA 17:5)

LYSOV, M.I.; KATAYEV, Yu.P.

Effect of the consecutive reduction of metal thickness on the
curvature of shaped metal. Izv.vys.ucheb.zav.;av.tekh. 7 no.2:
109-125 '64. (MIRA 17:9)

LYSOV, M . I.

"On the Theory of the Processes of Free Bending of Details"
Tr. Kazansk, Aviats. In-ta, Vol 28, 1953, 193-199

The author investigates the relation between force and geometric parameters in the free bending of thin strip bars. The dependence between the stresses and the deformations in the region of plastic deformations, and also the connection between the bending moment and the curvature, are expressed in power functions. The solution of the differential equation of equilibrium is expressed as an elliptic integral. For the practical utilization of this solution it is necessary to solve a system of transcendental equations. (RZhMekh, No 7, 1955)

SO: Sum-No 787 , 12 Jan 56

SOV/137-57-6-9975

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 91 (USSR)

AUTHOR: Lysov, M.I.

TITLE: An Investigation of the Process of Bending Parts of Sheet Metal
(Issledovaniye protsessa gibki detaley iz listovogo metalla)

PERIODICAL: Tr. Kazansk. aviats. in-ta, 1956, Vol 31, pp 143-155

ABSTRACT: Experimental data are employed to establish analytical equations for change in part sizes in bending due to spring-back. An analysis of residual stresses relative to bending curvature and the thickness of the starting material is presented.

V.S.

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SOV/124-58-7-7995

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 7, p 100 (USSR)

AUTHOR: Lysov, M.I.

TITLE: On Determining the Resilience and Residual-stress Parameters in a Case of Plastic Bending (K voprosu opredeleniya parametrov pruzhineniya i ostatochnykh napryazheniy pri plasticheskom izgibe)

PERIODICAL: Tr. Kazansk. aviats. in-ta, 1957, Vol 37, pp 35-40

ABSTRACT: In order to determine the resilience and residual stresses in a case of plastic bending, a series of complicated formulae is proposed. The stress-removal theorem and an exponential stress-strain relationship in the plastic region involved serve as the basis for the evolution of these formulae. Formulae are evolved also for determining in cases of plastic bending the position of the neutral layer in sections having only one axis of symmetry and where the neutral layer does not pass through the center of gravity of the cross-sectional area.

1. Materials--Plasticity 2. Materials M.P. Markovets
--Stress 3. Materials--Deformation

Card 1/1

Лысов, М.И.
LYSOV, M.I., kand. tekhn. nauk.

Theoretical foundations for shape forming processes caused by
loose bending of parts, Trudy MAI no.91:3-51 '57. (MIRA 10:12)
(Deformations (Mechanics))