S/046/62/008/001/010/018
B125/B102

AUTHORS: Merkulov, L. G., Yakovlev, L. A.

TITLE: Peculiarities in the spreading and reflection of ultrasonic
              beams in crystals

PERIODICAL: Akusticheskiy zhurnal, v. 8, no. 1, 1962, 99 - 106

TEXT: Equations for calculating ultrasonic waves in piezoelectric
crystals are derived by determining the group velocity. The reflection
on a free boundary is studied. From the initial equations (that connect
elastical and electrical quantities)

$$\rho \cdot \ddot{U}_i = \frac{\partial \sigma_{ik}}{\partial x_k} = c_{iklm}^E \cdot \frac{\partial u_{lm}}{\partial x_k} - e_{j,ik} \cdot \frac{\partial E_j}{\partial x_k} \, , \left.\right\}$$

$$D_p = e_{pq}^u \cdot E_q + 4\pi \cdot e_{p,rs} \cdot u_{rs}. \qquad (3)$$

one obtains for the solution of the system of equations

$$\left\{\rho \cdot \omega^2 \cdot \delta_{im} - c_{iklm}^E \cdot q_l \cdot q_k - \frac{4\pi \, (e_{j,ki} \cdot q_j \cdot q_k)(e_{p,rm} \cdot q_p \cdot q_r)}{e_{pq}^r \cdot q_p \cdot q_q}\right\} U_m = 0. \qquad (4)$$

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Peculiarities in the spreading...

for the components of the displacement vector. It is assumed that $\operatorname{div} \vec{D} = 0$ and also $\vec{E} = 0$; the wave is considered to be monochromatic. U_i denotes the components of the displacement vector in the elastic wave, u_{lm} the components of the deformation tensor, D_p the components of the electric induction vector, E_q the components of the electric fieldstrength, c^E_{iklm} the modulus of elasticity at a constant electric field strength, $e_{j,ik}$ the piezoelectric constants, ε^u_{pq} the components of the dielectric constant at constant deformation, ϱ the crystal density, l_j the direction cosine of the wave vector. $q_l = q \cdot l$, is valid. With

$$\Gamma_{lm} = c^E_{iklm} \cdot q_l q_k + \frac{4\pi (e_{j,kl} \cdot q_j \cdot q_k) \cdot (e_{p,rm} \cdot q_p \cdot q_r)}{e^r_{pq} \cdot q_q \cdot q_p}. \tag{5}$$

system (4) only has solutions different from zero when $\left| \varrho \cdot f^2 \delta_{im} - \Gamma_{im} \right| = 0$ (6). The totality of q forms three surfaces of wave vectors. The velocity of sound in a crystal is changed by the piezoelectric correction. The direction of sound waves in crystals is given by

Card 2/5

Peculiarities in the spreading...

$$L_i = \sum_{k=1}^{3} p_k^2 \cdot \left[\frac{1}{\alpha_k} \cdot \frac{\partial \alpha_k}{\partial l_i} \cdot (\rho \cdot v_{(n)}^2) - Q_{kk} + \frac{\partial Q_{kk}}{\partial l_i} \right] = C_{ik} l_m P_k \cdot (P_i l_m + P_m \cdot l_i). \, (10) \qquad (10)$$

and the velocity of sound in one beam is given by

$$v_n = (v_{n_1}^2 + v_{n_2}^2 + v_{n_3}^2)^{\frac{1}{2}} = \frac{1}{2\rho \cdot v_{(n)}} \left(\sum_{i=1}^{3} L_i^2 \right)^{\frac{1}{2}} \qquad (11).$$

The reflection of a spreading sound wave in a crystal is described by $\sin \alpha^0 / v_{(n)}^0 = \sin \alpha^j / v_{(n)}^j$ at the boundary surface. The indices o and j refer to the incident and reflected wave. The interrelation of the amplitudes is given by

$$c_{iklm} \cdot n_i \cdot \left[(q_m^0 \cdot U_l^0 + q_l^0 \cdot U_m^0) \cdot e^{iq^0 \cdot r} + \sum_j (q_m^j \cdot U_l^j + q_l^j \cdot U_m^j) \cdot e^{iq^j \cdot r} \right] = 0 \, (15).$$

The sound field can be made visible in optically permeable crystals

Card 3/5

Peculiarities in the spreading...

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3125/3102

(quartz) with the help of the shadow method. The index of refraction
changes periodically due to the rotation of the Fresnel ellipsoid and
the change of the ellipsoid axes in length. Longitudinal, quasi-
longitudinal and quasitransversal waves always change the velocity of
light, but purely transversal waves only in the case of certain
symmetrical properties of the crystal and a specific direction of
propagation of the sound beam. These special properties of ultrasonic
waves are also noticeable when using a pulse method. There are 7
figures, 1 table, and 8 references: 4 Soviet and 4 non-Soviet. The four
references to English-language publications read as follows: F. E.
Borgnis. Specific direction of longitudinal wave propagation in
anisotropic media. Phys. Rev., 1955, $\underline{98}$, 1000 - 1005; M. J. P. Musgrave.
On the propagation of elastic waves in aeolotropic media. I. General
principles. Proc. Roy. Soc., 1954, $\underline{A226}$, 339 - 355; H. Mueller. The
intensity and polarization of the light diffracted by supersonic waves
in solids. Phys. Rev., 1937, $\underline{52}$, 233; R. Bechmann. Elastic and piezo-
electric constants of alpha-quartz. Phys. Rev., 1958, $\underline{110}$, 1060 - 1061.

Card 4/5

Peculiarities in the spreading...

S/046/62/008/001/010/018
B125/B102

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. Ul'yanova
(Lenina) (Leningrad Electrotechnical Institute imeni
Ul'yanov (Lenin))

SUBMITTED: April 3, 1961

Card 5/5

S/046/62/008/002/007/016
B104/B138

AUTHORS: Merkulov, L. G., Yakovlev, L. A.

TITLE: Ultrasonic delay lines of crystals with ray deflection from the normal

PERIODICAL: Akusticheskiy zhurnal, v. 8, no. 2, 1962, 199 - 203

TEXT: An ultrasonic quartz delay line (Fig. 1) is studied which was out out perpendicular to the crystallographic axes. The ultrasonic ray (transverse waves) shown in Fig. 1 is calculated with the aid of equations (L. D. Landau, Ye. M. Lifshits, Mekhanika sploshnykh sred - Continuum Mechanics, M., GITTL, 1953) which describe the propagation of sound waves in crystals:

$$\rho \cdot v^2_{(n)} \cdot U_i = Q_{im} \cdot U_m, \qquad (1)$$

$$| Q_{im} - \rho \cdot v^2_{(n)} \cdot \delta_{im} | = 0, \qquad (2)$$

$v_{(n)}$ is the velocity of the wave front, δ_{ik} is the Kronecker symbol. From the results (Table 1), the delay times were calculated for two different ray paths: theory: 37.4 and 105.4 μsec; experiment: 37.3 and 105 μsec. There are 3 figures and 2 tables.

Card 1/2

Ultrasonic delay lines of...

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im.
              V. I. Ul'yanova (Lenina) (Leningrad Electrotechnical
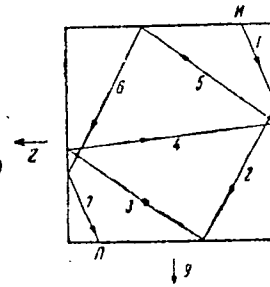   Institute imeni V. I. Ul'yanov (Lenin))

SUBMITTED: April 24, 1961

Table 1. Calculated ray parameters.

Fig. 1

Legend: (1) ray number; (2) direction cosines
of the wave normals; (3) direction cosines of
the rays; (4) propagation rate; 10^{-5} cm/sec;
(4a) in direction of the normal; (4b) in
direction of the ray.

(1)	(2)	(3)	(4a)	(4b)
1	$l_2= 1,\quad l_3= 0$	$\lambda_2= 0,92,\ \lambda_3=-0,39$	3,92	4,26
2	$l_2= 0,86,\ l_3= 0,51$	$\lambda_2= 0,87,\ \lambda_3= 0,5$	3,36	3,36
3	$l_2=-0,03,\ l_3= 0,78$	$\lambda_2=-0,87,\ \lambda_3= 0,82$	5,06	5,07
4	$l_2=-0,48,\ l_3=-0,88$	$\lambda_2=-0,111,\lambda_3=-0,994$	3,85	4,18
5	$l_2=-0,63,\ l_3= 0,78$	$\lambda_2=-0,57,\ \lambda_3= 0,82$	5,06	5,07
6	$l_2= 0,86,\ l_3= 0,51$	$\lambda_2= 0,87,\ \lambda_3= 0,5$	3,36	3,36
7	$l_2= 1,\quad l_3= 0$	$\lambda_2= 0,92,\ \lambda_3=-0,39$	3,92	4,26

Card 2/2

24.7500

AUTHOR: Merkulov, L. G.

TITLE: Ultrasonic observation of dislocations in NaCl crystals

PERIODICAL: Akusticheskiy zhurnal, v. 5, no. 3, 1962, 34C - 343

TEXT: The development of dislocations in NaCl crystals under stress was
studied by an ultrasonic technique (Akust. zh., 1960, 6, 2, 244 - 251).
This technique is based on recording the change in the absorption
coefficient of ultrasound which occurs when the stress in the crystal
changes. The absorption coefficient of the crystals would increase on
compression but would regain its original value when the stress was re-
moved. In the case of small elastic loads the increase in absorption was
found proportional to the square of the load. With higher load the square
law would gradually approach linearity. Relaxation of absorption was con-
siderably slower. When load was further increased the specimens retained
a residual deformation and absorption did not drop to its original value.
The dislocations in annealed specimens are scarcely mobile and do not con-
tribute much to the absorption of sound. The movable dislocations arising

Card 1/2

Ultrasonic observation of...   S/046/62/008/003/004/007
                                             B108/B104

on plastic deformation rapidly increase in number when load is applied,
leading to a considerable increase in absorption. These results are in
good agreement with theory and with results obtained by an optical method.
There are 5 figures.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im.
             V. I. Ul'yanova (Lenina) (Leningrad Electrotechnical
             Institute imeni V. I. Ul'yanov (Lenin))

SUBMITTED: April 8, 1961

Card 2/2

S/032/62/028/002/017/037
B104/B108

AUTHORS: Golubev, A. S., Merkulov, L. G., and Shchukin, V. A.

TITLE: Attainment of maximum sensitivity in ultrasonic echo
                defectoscopy

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 2, 1962, 196 - 199

TEXT: The maximum attainable sensitivity of the echo method depends on the
defect-reflected signal-to-reverberation noise ratio.   A study of the
structure reverberation in solids can in first approximation be made
similarly to the study of volume reverberation in the sea.   The frequency
dependence of the reverberation noise is mainly determined by $\sqrt{\alpha_p}\exp(-(\alpha+\alpha')r)$

where $\alpha = \alpha_p + \alpha_\pi$ is the total absorption coefficient in a polycrystalline

body. α_π is the absorption and α_p the scattering coefficient. α' takes
account of the attenuation of the scattered waves.   With increasing frequen-
cy the reverberation noise initially increases due to the increased
scattering power of the medium.   At a certain frequency where
$\sqrt{\alpha_p} \approx \exp(-(\alpha+\alpha')r)$, a maximum is reached.   If the frequency increases

Card 1/3

Attainment of maximum sensitivity ...

S/032/62/028/002/017/037
B104/B108

further the noise decreases owing to increasing attenuation. If the
scattering power of the medium increases the maximum is shifted to lower
frequencies. If the ultrasonic wavelength λ is considerably larger than
the mean grain size of the medium, reverberation noise will be weak. If λ
is approximately equal to the mean grain size, an interference-type noise
is observed. The authors calculated the frequency dependences of the
reverberation noise (Fig. 2), of the useful signal, and of the useful signal-
to-noise ratio (Fig. 5). The signal-to-noise ratio can be improved by
increasing the transducer area. There are 5 figures and 6 Soviet references.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im.
                V. I. Ul'yanova-Lenina (Leningrad Electrotechnical Institute
                imeni V. I. Ul'yanov-Lenin)

Fig. 2. Calculated (a) and experimental (b) dependence of the relative
reverberation noise on frequency for 1X18H9T (1Kh18N9T) steel.
Legend: (1) mean grain size 1.2 mm; (2) mean grain size 0.3 mm.

Fig. 5. Useful signal to reverberation noise ratio as a function of
frequency for a cylindrical defect (diameter 1 mm).
Card 2/3

MERKULOV, Lev Grigor'yevich, kand. tekhn. nauk; MIKHAYLOV, I.G.,
     red.; FREGER, D.P., red.izd-va; GVIRTS, V.L., tekhn. red.

[New achievements in ultrasonic flow detection] Novye do-
stizheniia ul'trazvukovoi defektoskopii. Leningrad, 1963.
20 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy.
Seriia: Elektricheskie metody obrabotki materialov, no.3)

                                        (MIRA 16:6)
          (Ultrasonic testing)

IVANOV, V. Ye.; MERKULOV, L. G.; YAKOVLEV, L. A.

Damped piezoelectric detector of an ultrasonic defectoscope.
Zav. lab. 28 no.12:1459-1464 '62.   (MIRA 16:1)

1. Leningradskiy elektrotekhnicheskiy institut im. V. ⊥.
Ul'yanova-Lenina.

(Ultrasonic testing)

ACCESSION NR: AR4032186   S/0058/64/000/002/H056/H057

SOURCE: Ref. zh. Fiz., Abs. 2Zh349

AUTHOR: Merkulov, L. G.

TITLE: Ultrasound waves in crystals'

CITED SOURCE: Sb. Primeneniye ul'traakust. k issled. veshchestva. M., vy*p. 17, 1963, 15-33

TOPIC TAGS: Ultrasound, ultrasound in crystals, sound velocity in crystal, sonic crystal optics, ultrasound in piezocrystal, nonresonant surface wave excitation, ultrasound absorption

TRANSLATION: The fundamental equations of sonic crystal optics are obtained. In view of the fact that the acoustic properties of crystals are determined by a fourth rank elastic constant tensor, the laws of propagation of sound in crystals are mathematically more complicated than the laws for light propagation, since the optical properties of crystals are determined by a second rank tensor. Relations are obtained for the directions of the ultrasound rays in crystals. The reflection of sound waves from the free surface is investigated. It is noted

Card 1/2

ACCESSION NR: AR4032186

that the reflected ray must not lie necessarily in the plane of incidence,
except when the latter coincides with the crystal symmetry plane. All the ob-
tained results are valid also for piezocrystals. The propagation of sound waves
was also investigated experimentally in crystals in which these waves were ex-
cited by the method of nonresonant excitation of the peizocrystal surface
(RZhFiz, 1960, No. 8, 21264). With the aid of this method it was possible to in-
vestigate the absorption of sound at high frequencies and at room temperatures in
different crystals, particularly in quartz crystals, up to hypersonic frequencies
~ 2000 Mcs. In transparent crystals, the sound waves were observed optically by
the shadow method of visualization of sound (the Toepler method). It is shown
that the longitudinal, quasilongitudinal, and quasitransverse waves always cause
a change in the velocity of light and therefore can be observed by the shadow
method. Purely transverse waves may in some cases not lead to a change in the
velocity of light. Bibliography, 17 titles. A. Polyakova.

DATE ACQ: 31Mar64   SUB CODE: PH   ENCL: 00

Card   2/2

MERKULOV, L.G.; YABLONIK, L.M.

Performance of a piezoelectric transducer in the presence of
several intermediate layers. Akust. zhur. 9 no.4:449-459 '63.
(MIRA 17:3)

1. Leningradskiy elektrotekhnicheskiy institut imeni Ul'yanova
(Lenina) i Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'-
skogo instituta elektromekhaniki.

GUSEVA, Ye.K. DYMSHITS, Ye.R. MERKULOV, L.G.

Dislocation relaxation in NaCl crystals. Akust. zhur. 9 no.4:8.-
486 '63.   (MIRA 17:3)

1. Leningradskiy elektrotekhnicheskiy institut imeni Ul'yanova
(Lenina).

ZHARKOV, K.V.; MERKULOV, L.G.; HIGUL.SKIY, Ye.D.

Attenuation of normal waves in a plate with free boundaries.
Akust. zhur. 10 no.2:163-166 '64.   (MIRA 17:6)

1. Leningradskiy elektrotekhnicheskiy institut imeni V.I.
Ul'yanova (Lenina).

ACCESSION NR: AP4039282

AUTHOR: Merkulov, L. G.

TITLE: Decay of normal waves in plates immersed in liquids

SOURCE: Akusticheskiy zhurnal, v. 10, no. 2, 1964, 206-212

TOPIC TAGS: normal wave, dispersion equation, symmetric mode, asymmetric mode, damping coefficient, isotropic plate, wave propagation, ideal liquid

ABSTRACT: The decay of normal waves (caused by radiation loss) from plates immersed in a liquid has been studied analytically for arbitrary values of $k_1 h$ (k_1 - wave number, h - plate thickness). The dispersion equations of normal wave propagation in an unbounded isotropic plate in an ideal fluid are given and solved to a first order approximation, where ρ_0/ρ is assumed much smaller than unity, and $k_1 = k + \Delta$, $|\Delta| < k$. The solution leads to expressions for damping coefficient in the asymmetric mode $\overline{\alpha_0}\left\{\frac{h}{2}\left[\frac{1}{\beta}\left(\text{th}\frac{\beta h}{2} - \text{cth}\frac{\beta h}{2}\right) - \frac{1}{\gamma}\left(\text{th}\frac{\gamma h}{2} - \text{cth}\frac{\gamma h}{2}\right)\right] + \right.$

$\left. + \left[\frac{1}{\gamma^2} + \frac{1}{\beta^2} - \frac{2}{k^2}\left(\frac{3k^2 - \beta^2}{k^2 + \beta^2}\right)\right]\right\} = \frac{\rho_0 k_t^4 \,\text{th}(\beta h/2)}{4\rho k^4 \beta \sqrt{k_0^2/k^2 - 1}}$

Card 1/2

ACCESSION NR: AP4039282

and the symmetric mode $\alpha_a\left\{\frac{h}{2}\left[\frac{1}{\gamma}\left(\th\frac{\gamma h}{2}-\cth\frac{\gamma h}{2}\right)-\frac{1}{\beta}\left(\th\frac{\beta h}{2}-\cth\frac{\beta h}{2}\right)\right]+\right.$

$$\left.+\left[\frac{1}{\gamma^2}+\frac{1}{\beta^2}-\frac{2}{k^2}\left(\frac{3k^2-\beta^2}{k^2+\beta^2}\right)\right]\right\}=\frac{\rho_0 k_t^4}{4\rho k^4\beta\sqrt{k_0^2/k^2-1}\,\th(\beta h/2)}.$$

The equations show that for a given fh value (f - frequency) the damping coefficient is inversely proportional to plate thickness. The limiting cases of small and large fh are considered. For large fh the damping coefficient increases linearly with f.

A numerical calculation is given for $\rho = 7.8$ gm/cm^3, $\rho_0 - 1$ g/cm^3 and $v_0 = 1.5$ x 10^5 cm/sec corresponding to the case of a steel plate in water. Orig. art. has: 17 formulas and 2 figures.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova, Lenina (Leningrad Institute of Electrical Engineering)

SUBMITTED: 24Jun63   DATE ACQ: 12Jun64   ENCL: 00

SUB CODE: ME   NO REF SOV: 002   OTHER: 001

Card 2/2

L 37142-66   EWT(d)/EWT(1)/EWP(e)/EWP(v)/T/EWP(k)/ EWP(1)   IJP(c)
(N)

ACC NR: AP6014419   SOURCE CODE: UR/0381/65/000/005/0013/0021

AUTHORS: Merkulov, L. G.; Verevkin, V. M.

ORG: Leningrad Electrotechnical Institute im. V. I. Ul'yanov (Lenin)
Leningradskiy elektrotekhnicheskiy institut)

TITLE: Transmission and reflection of an ultrasonic impulse for a plane-parallel
plate in a liquid

SOURCE: Defektoskopiya, no. 5, 1965, 13-21

TOPIC TAGS: sound wave, sonic pulse, sound propagation, ultrasonics

ABSTRACT: A theoretical analysis of the transmission and reflection of ultrasonic
impulses by a plane-parallel plate immersed in a liquid was carried out. The anal-
ysis was developed by means of the Fourier integral method. Two particular cases
were treated: 1) the signal shape had a bell-shaped form given by

$$p_1(t) = e^{j\omega_0 t - \delta_0^2 t^2}$$

and 2) the signal had a rectangular shape given by

$$p_1(t) = \sigma(t) e^{j\left(\omega_0 t - \frac{\pi}{2}\right)}$$

Card 1/2   UDC: 620.179.16

L 37141-66

ACC NR: AP6014419

The shapes of the derived transmitted and reflected signals for the two initial
shape signals are shown graphically. Distortion of the shapes of the transmitted
and reflected signals depends on the ratio of the sonic resistances of the plate
and liquid medium. To decrease signal distortion, it is recommended that the plate
thickness correspond to one quarter of the sonic wavelength. Orig. art. has: 4
graphs and 31 equations.

SUB CODE: 20 / SUBM DATE: 22Sep65/ ORIG REF: 003

Nondestructive testing

Card 2/2 af

ACC NR: AP6029526   (N)   SOURCE CODE: UR/0046/66/012/003/0289/0295

AUTHOR: Verevkina, L. V.; Merkulov, L. G.; Tursunov, D. A.

ORG: Leningrad Electrotechnical Institute im. V. I. Ul'yanov (Lenin) (Leningradskiy elektrotekhnicheskiy institut)

TITLE: Surface waves in a quartz crystal

SOURCE: Akusticheskiy zhurnal, v. 12, no. 3, 1966, 289-295

TOPIC TAGS: quartz crystal, crystal surface, surface wave, crystal symmetry

ABSTRACT: In view of the number of obscure points still remaining in the general theory of waves propagating along a free boundary of an anisotropic elastic body, the authors investigate the propagation of elastic waves in the free surface of X-cut quartz. All the expressions are presented in invariant form for a coordinate system with one axis coinciding with the direction of propagation. Solution of the equilibrium equation by means of an electronic computer shows a number of features specific in the propagation of a surface wave in a crystal. One of them is the fact that the angle between the plane of the displacement ellipse and the wave vector does not remain constant but varies with depth. In addition to calculations, experimental measurements of the velocities of the surface waves were made for different directions of the YZ plane of the quartz crystal. An optical method was used, based on the lateral displacement of a reflected ultrasound beam when the surface wave is excited. The experimental data obtained for different crystal samples coincided almost completely.

Card 1/2   UDC: 534.232.1: 553.621

ACC NR: AP6029526

At most angles the experimental results agreed with the theoretical values, some dis-
crepancies being connected with a change in the type of the surface wave. The re-
sults also confirm that for all the directions of the symmetry plane only one surface
wave propagates. It is concluded also that the experimental data can be used for
theoretical calculations, since they make it possible to establish immediately those
values of the velocity at which the roots of the boundary-condition determinant can
be determined. Orig. art. has: 4 figures and 17 formulas.

SUB CODE: 20/   SUBM DATE: 20Jul64/   ORIG REF: 001/   OTH REF: 008

Card 2/2

L 41939-66   EWT(l)   IJF(c)   AH, GW

ACC NR: AR6017815   SOURCE CODE: UR/0058/66/000/001/H063/H063

AUTHOR: Merkulov, L. G.; Timoshenko, V. I.

TITLE: Calculation of the coefficient of acoustic coagulation

SOURCE: Ref. zh. Fizika, Abs. 1Zh421

REF SOURCE: Sb. Primeneniye ul'traakust. k issled. veshchestva. Vyp. 20. M., 1964, 187-191

TOPIC TAGS: coagulation, particle distribution, conductor, acoustic field

ABSTRACT: The paper deals with the calculation of the coefficient for determining the coagulation rate (changes in the concentration of particles per unit of time). It is assumed that forces arise around the particle in the acoustic field at a certain distance from the particle (from the coagulation surface) which lead to instantaneous coagulation. The coagulation process is considered stationary. The determination of the coagulation probability under these assumptions becomes an electrostatic problem: the determination of field near the surface of a charged conductor. L. Zarembo. [Translation of abstract] [NT]

SUB CODE: 09/

Card 1/1   11b

MERKULOV, L.I.; CHOPKNOV, ..M. (Moskva)

Comparative evaluation of anesthesis methods in neur surgery.
Vop. neirokhir. 27 n.3:9-13 My-Je '63.   (MIRA 17:1)

1. Neyrokhirurgicheskoye otdeleniye Glavnogo voyennogo gospitalya
imeni N.N Burdenko.

MERKULOV, L.I.; BOGOMOLOV, S.A.

Prophylaxis and treatment of the residual effect of depolarizing re-
laxants. Vest. khir. 93 no.9:86-93 S '64.   (MIRA 18:4)

1. Iz anesteziolgicheskogo otdeleniya (nachal'nik - S.A.Bogomolov)
Glavnogo voyennogo gospitalya imeni akademika Burdenko.

MERKULOV, M.

Zadacha po bukhgalterskomu uchetu v promyshlennosti dlia bukhgalterov (2-e perer. izd.) /Problem for bookkeepers on industrial accounting/. Gosstatizdat, 1953.
223 p.

SO: Monthly List of Russian Accessions, Vol. 7 No. 1 April 1954.

MERKULOV, M. A.

N/5
611.91
.S41

Bukhgalterskiy uchet v promyshlennosti; uchebnoye posobiye dlya pod-
gotovki bukh-alterov v kursovoy seti UPK TSU SSSR (Bookkeeping accounting in
Industry, by) S. I. Seleznev, P. Kh. Shneyvas i M. A. Merkulov. Moskva,
Gosstatizdat, 1955.
350 p. diagrs., tables.

SOROKIN, S.S.; SELEZNEV, S.I.; MERKULOV, M.A.; GALUZINSKIY, P.A.; KRIVOPALOV, V.I.; MAYATSKIY, I.G.; PARASHUTIN, N.V.; SUDARIKOV, V.R.; MERKULOV, M.A.; TARBEYEV, A.A.; IL'YUSHENKOVA, T.P., tekhn. red.

[Accounting in industrial enterprises] Bukhgalterskii uchet v promyshlennykh predpriiatiiakh. Pod red. S.S.Sorokina. 2., perer. izd. Moskva, Gosstatizdat, 1962. 333 p. (MIRA 16:3)

1. Russia (1923- U.S.S.R.)TSentral'noye statisticheskoye up-ravleniye. Upravleniye podgotovki kadrov schetnykh rabotnikov.
2. Upravleniye podgotovki kadrov schetnykh rabotnikov TSentral'-nogo statisticheskogo upravleniya SSSR (for all except Il'yushenkova).

(Accounting)

MERKULOV, M. D. Eng.

Dirll (Agricultural Implement)

Combined grain and grass seed drill SZTK-47.   Sel'khozmashina No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952 UNCLASSIFIED

KLYUCHNIKOV, A. I.; MERKULOV, M. D.

Peanuts

Machines for harvesting peanuts, Sel'khozmashina, No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, __October__ 195**2**, Uncl.

KLYUCHNIKOV, A. I.; MELNIKOV, N. D.

Peanuts

Machines for harvesting peanuts, Sel'khozmashina, No. , 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

1. MERKULOV, M. D., Eng.; ZHUKOVA, A. V., Eng.

2. USSR (600)

4. Peanuts

7. New machines for preparing seeds and sowing peanuts. Sel' khozmashina
   No. 5, 1953.

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

ONUCHAK,A.I., kandidat sel'skokhozyaystvennykh nauk; MERKULOV,M.D., inzhener

New machines for growing peanuts, sesame and filbert. Trudy VKNII no.10:72-74 '54.   (MLRA 8:9)
                         (Agricultural machinery)

MERKULOV, M. F.

Dissertation: "The Effect of Synestrol and Testosteronepropione on the Dynamics
of Absorption of Radioactive Iodine by the Thyroid Gland and on the Reactivity of
the Central Nervous System of Rabbits." Cand Med Sci, Second Moscow State Medical
Inst imeni I. V. Stalin, 23 Jun 54. (Vechernyaya Moskva, Moscow, 14 Jun 54)

SO: SUM 318, 23 Dec. 1954

MERKULOV, M.F. (Moscow)

"Pharmacology of Synthetic Sex Hormones" Paper given at Pharmacological
Conference in Ryazan, 17-19 June 1954.

Author found that character of absorption of radioactive iodine by thyroid gland of
a rabbit is subject to considerable individual variations. Using various methods of
introduction of an iodine isotope (intravenous, subcutaneous, peroral) the highest
level in the thyroid gland was observed 24 hours after administration of the iso-
tope. He showed that in the female rabbit "synestrol" reduces the ability of the
thyroid gland to absorb the radioactive iodine, and in the male rabbit the same
effect is caused by testosterone propionate. This observation suggested testing
sex hormones in treatment of hyperthyroidosis.

MERKULOV, M.F.

Relation of thyroid absorption of radioiodine and the mode of
administration. Farm.i toks. 19 supplement:21-22 '56. (MLRA 10:7)

1. Kafedra farmakologii (zav. - zasluzhennyy deyatel' nauki,
deystvitel'nyy chlen AMN SSSR prof. V.I.Skvortsov) II Moskovskogo
gosudarstvennogo meditsinskogo instituta imeni I.V.Stalina.
          (IODINE, radioactive,
              thyroid uptake, eff. of mode of admin. (Rus))
          (THYROID GLAND, metabolism,
              radioiodine uptake, eff. of mode of admin. (Rus))

MERKULOV, N.F. (Moskva)

Localization of labeled thyroglobulin in thyroid structures at various periods following the administration of radioiodine [with summary in English]. Probl. endok. i gorm. 3 no.6:26-31 N-D '57. (MIRA 11:3)

1. Iz kafedry farmakologii (zav.-deystvitel'nyy chlen AMN SSSR prof. V.I.Skvortsov) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova (dir.-dotsent S.I.Milovidov).
      (IODINE, radioactive,
          determ. of intrathyroid labeled thyroglobulin in various
          periods after admin. of radioiodine (Rus)
      (THYROID GLAND,
          same)

USSR / Pharmacology and Toxicology.   Tranquilizers.   V-2

Abs Jour   : Ref Zhur - Biol., No 16, 1958, No 75709

Author   : Merkulov, M. F.; Fedorov, N. A.; Poberiy, I. A.
Inst   : Second Moscow Medical Institute
Title   : Autoradiographic Study of the Spread of S^{35}-Aminazine in
              the Tissues of Rats.

Orig Pub   : Uch. zap. 2-go Mosk. med. in-ta, 1957, 6, 190-196.

Abstract   : 50 mg/kg of aminazine-S^{35} (I) was introduced in rats inter-
              nally and slowly; in 20 minutes the animals were sacrificed
              and the content of I was determined in the tissues. With
              the methods used in treatment of the tissues, a significant
              part of the radioactivity was washed out; therefore, the
              autographs obtained showed the spread only of those frac-
              tions of I that were solidly connected with the structural
              parts of the cells. In the lungs, a selective accumulation

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MERKULOV, M.F.

Influence of synestrol and testosterone propionate on the
dynamics of absorption of radioactive iodine by the thyroid
gland in rabbits. Trudy Vses. ob-va fiziol., biokhim. i
farm. 4:157-159 '58.   (MIRA 14:2)

1. Kafedra farmakologii 2-go Moskovskogo meditsinskogo instituta
(zav. kafedroy prof. V.I. Skvortsov).
          (PHENOL) (TESTOSTERONE) (IODINE—ISOTOPES)
                         (THYROID GLAND)

MERKULOV, M.F.

Effect of synthetic substitutes for sex hormones on functional conditions of the thyroid gland [with summary in English]. Farm. i toks. 21 no.3 34-38 My-Je '58   (MIRA 11:6)

1. Kafedra farmakologii (zav. - zaslyzhennyy deyatel' nauki deystvitel'-nyy chlen AMN SSSR prof. V.I. Skvortsov) II Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I. Pirogova.
         (THYROID GLAND, effect of drugs on,
             sex hormones, synthetic prep. (Rus))
         (SEX HORMONES, effect.
             on thyroid gland, synthetic hormones (Rus))

MERKULOV, M.F.

Historadiography [with summary in English]. Vest.rent. i rad. 33 no.3:
40-48 My-Je '58   (MIRA 11:8)

1. Iz kafedry f armakologii (zav. - deystvitel'nyy chlen AMN SSSR
zaslyzhenyy deyatel'nauki prof. V.I. Skvortsov) II Moskovskogo
meditsinskogo instituta imeni N.I. Pirogova.
            (HISTOLOGY,
                photographic impression of tissue containing radioisotopes
                (Rus))
            (PHOTOGRAPHY,
                same (Rus))
            (ISOTOPES,
                same (Rus))

MERKULOV, M.F.

Role of colloid in the hormone-synthesizing function of the
thyroid gland. Biul.eksp.biol.i med.   48 no.11:61-65 N '59.
(MIRA 13:5)

1. Iz kafedry farmakologii (zav. - deystvitel'nyy chlen AMN SSSR
V.I. Skvortsov [deceased] II Moskovskogo meditsinskogo instituta
imeni N.I. Pirogova. Predstavlena deystvitel'nym chlenom AMN SSSR
V.I. Skvortsovym [deceased].
(THYROID GLAND hormones)

MERKULOV, M.F.

Distribution of radiosulfur compounds in the thyroid gland after
the administration of S-35 thiourea. Probl. endkok. i gorm. 6
no. 1:40-45 Ja-F '60.   (MIRA 14:1)
          (THYROID GLAND) (UREA) (SULFUR—ISOTOPES)

MERKULOV, M.F.; MEDESTOV, V.K.; MASLOV, N.P.; POBERIY, I.A.

Distribution of radioactive iodine in thyroid gland tumors. Vop.
onk. 6 no. 9:31-37 S '60.   (MIRA 14:1)
        (THYROID GLAND—TUMORS)   (IODINE—ISOTOPES)

MERKULOV, M.F.; KHOVANSKAYA, M.G.

Tissue respiration and iodine metabolism in the thyroid gland of rats after a single administration of antithyroid preparations. Farm. toks. 24 no.3:347-354 My-Je '61.   (MIRA 15:1)

1. Kafedra farmakologii (zav. - prof. V.V.Vasil'yeva) i TSentral'naya nauchno-issledovatel'skaya laboratoriya (zav. - dotsent E.M.Kogan) 2-go Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I.Pirogova.

(THYROID GLAND)   (IODINE IN THE BODY)
(IMIDAZOLE)

MIKHEYEV, I.I.; MERKULOV, M.I.

Ways of increasing the operating efficiency of sanders. Der.
prom. 10 no.12-4-6 D '61.   (MIRA 14:12)

1. L'vovskiy lesotekhnicheskiy institut (for Mikheyev).
2. Moskovskaya mebel'naya fabrika No.5 (for Merkulov).
                    (Sanding machines)

MERKULOV, M.I.; GORBUNOVA, R.I.

Chair finishing with colored varnish. Der.prom. 10 no.12:19-
20 D '61.   (MIRA 14:12)

1. Moskovskaya mebel'naya fabrika No.5.
                (Chairs)
                (Varnish and varnishing)

productivity

MERKULOV, M. P.   Cand Agr Sci -- (diss) "Meat ~~yield~~ of young animals of the

Bestuzhev stock ~~resulting from~~ *after fattening and* accelerated fattening."   Kuybyshev, 1957.

21 pp 20 cm. (Min of Agr USSR. Saratov Zootechnological-Vet Inst), 115 copies

(KL, 14-57. 87)

~~25-A~~)6

MERKULOV, M. P.

MERKULOV, M.P., zootekhnik.

Accelerated fattening of young cattle. Nauka i pered.op.v sel'khoz.
7 no.9:17-19 S '57.   (MIRA 10:10)
                    (Cattle--Feeding and feeding stuffs)

KARNAUKHOV, Ivan Prokof'yevich, dots.; IVANKIN, Vasiliy Kirillovich,
prof.; VELESOV, Konstantin Nikolayevich, dots.; BONDARENKO,
Nikolay Vasil'yevich, dots.; NIKISHIN, Konstantin
Georgiyevich, dots.; LANGE, K.F., kand. sel'khoz. nauk, dots.
retsenzent; MERKULOV, M.P., kand. sel'khoz. nauk, dots.,
retsenzent; NOVIKOV, A.A., kand. sel'khoz. nauk, dots.,
retsenzent; NOSUL'KO, I.I., st. prepod., retsenzent; SAFRONOVA,
O.G., st. prepod., retsenzent; YEFIMOV, A.L., red.

[Fundamentals of agriculture] Osnovy sel'skogo khoziaistva.
3. perer. izd. Moskva, Prosveshchenie, 1965. 646 ;.
(MIRA 18:3)
1. Kuybyshevskiy pedagogicheskiy institut (for Lange, Merkulov).
2. Orlovskiy pedagogicheskiy institut (for Novikov, Nosul'ko,
Safronova).

MERKULOV, N.

Thus a collective decision is born. Sov. profsoiuzy 18 no.13:25-27 Jl '62. (MIRA 1 :6)

1. Zamestitel' predsedatelya komiteta profsoyuza Penzenskogo velosipednogo zavoda.
          (Penza Province—Trade unions)

KALYUZHNYY, M.D.; TURCHENKO, V.I.; MERKULOV, N.A.; KIRILLOV, N.P.;
          BORISOVICH, V.G.

     Exchange of practices by the enterprises of economic councils.
     Torf.prom. 40 no.5:32-34 '63.   (MIRA 16:8)

     1. Pirotchinskoye torfopredpriyatiye Sumskoy oblasti (for
     Kalyuzhnyy). 2. Zavod Ivtorfmash Verkhne-Volzhskogo soveta narodnogo
     khozyaystva (for Turchenko). 3. Torfopredpriyatiye "Vasil'yevskiy
     mokh" Kalininskoy oblasti (for Merkulov). 4. Lar'yanovskoye
     torfopredpriyatiye (for Kirillov). 5. Leningradskiy gosudarstvennyy
     trest torfyanoy promyshlennosti (for Borisovich).
                                      (Peat industry)

MERKULOV, Nikolay Ivanovich; PAVLIKOV, Arkadiy Alekseyevich; FEDOROV,
    Aleksey Sergeyevich; LEBEDEV, S.A., akademik, red.; SOLOV'YEVA,
    L.A., red.; MURASHOVA, N.Ya., tekhn. red.

[BESM electronic digital computer]Elektronnaia tsifrovaia vy-
chislitel'naia mashina BESM. Pod obshchei red. S.A.Lebedeva.
Moskva, Fizmatgiz. Vol.3.[Memory systems of the BESM-2 computer]
Zapominaiushchie ustroistva BESM-2. [By] N.I.Merkulov i dr. 1962.
286 p.   (MIRA 16:3)
        (Electronic digital computers--Memory systems)

MERKULOV, N.

New equipment for Moscow Basin mines. Mast.ugl. 8 no.2:8
F '59.   (MIRA 13:4)

1. Nachal'nik otdela ispytaniya i vnedreniya novykh mashin
Giprouglemasha.
                    (Moscow Basin--Coal mining machinery)

MERKULOV, N.; BARONENKOV, Ye.

Seven high prizes out of ten. Mast.ugl. 8 no.3:25-26
Mr '59.   (MIRA 13:4)
   (Bruxelles--Exhibitions) (Coal mining machinery)

MERKULOV, N.I., gornyy inzh.

"AK-3" coal mining machinery unit. Nauka i zhizn' 28 no. 2:17
F '61. (MIRA 14:2)
(Coal mining machinery)

CHERNYAK, I.L.,inzhener; MERKULOV, N.S., inzhener; NOVIKOVA, M.M.,
vedushchiy redaktor; MUKHINA, E.A.,tekhnicheskiy redaktor

[Safety instructions for handling ethylated gasoline
when receiving, storing, removing and delivering it at
enterprises of the Chief Administration of the Supply of
Petroleum and By-products] Instruktsiia po meram bezopasnosti
pri obrashchenii s etilirovannym benzinom pri ego priemke,
khranenii, otpuske i perekachke na predpriiatiiakh Glavneftesbyta.
Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry,
1956. 102 p.   (MLRA 10:5)
          (Gasoline--Safety measures)

MERKULOV, Nikolay Sergeyevich,; GOR'KOVA, A.A., ved. red.; FEDOTOVA, I. G., tekhn. red.

[Tank farm mechanic] Mekhanik neftebazy. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1958. 266 p.
(MIRA 11:12)

(Tanks)

14(5)   SOV/92-58-12-18/24

AUTHORS: Merkulov, N.S., Frenkel', B.A., Tsimbler, Yu.A., Members of the Moscow
          Transportation Administration Rosglavneftesnabsbyt

TITLE: Automatic Heating of Viscous Petroleum Products Kept in Storage Tanks
          (Avtomatizatsiya podogreva vyazkikh nefteproduktov v rezervuarakh)

PERIODICAL: Neftyanik, 1958, Nr 12, pp 22-24 (USSR)

ABSTRACT: Referring to K.A. Taran's article, published in Neftyanik, 1958, Nr 5
    under the title "Automatic Devices Regulate the Temperature in Storage Tanks",
    the author states that though the system developed by K. A. Taran for the re-
    mote measurement and regulation of the stored petroleum product temperature
    works satisfactorily, it does not show, however, the true average temperature
    of the whole mass of liquid kept in the storage tank. In addition the system
    has some further defects which prohibit its use in storage tanks installed at a
    distance exceeding 40-50 m from the controlling office. Furthermore, the auto-
    matic operation of this system requires purified compressed air, the pressure
    of which exceeds 2 kg/cm. In bulk plants such compressed air is not readily
    available. For this reason the PKB MTTU developed another system regulating
    and controlling temperature of the viscous petroleum products kept in storage

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Automatic Heating of Viscous (Cont.)   SOV/92-58-12-18/24

tanks automatically. This system, which is shown in (Fig. 1), consists of a
PRT temperature regulator, an electrical manometric thermometer of the EKT-1
type, and a thermostatic condensate outlet arrangement. The author explains
how the PRT temperature regulator, which consists of a number of parts such as
a regulating valve, sensitive thermal system, separating arrangement, works.
He also shows its design in (Fig.2) Temperature control and remote signaliz-
ation to indicate the disruption of operating conditions is effected by an
electrical thermometer installed at the storage tank and built of resistant
material. Any deflection of the temperature or drop in the liquid level below
the line of the thermal cylinder is communicated to the controlling office
either by sound or light signals. The thermostatic condensate arrangement
of the 45kch6br type serves to drain the condensate, the temperature of which
dropped below 80-85°C. All the above-mentioned apparatus have been tested
in the winter, and it has been found that they operate satisfactorily.
There are 2 figures.

ASSOCIATION: Moskovskoye tovaro-transportnoye upravleniye Rosglavneftesnabsbyt
   (The Moscow Transportation Administration Rosglavneftesnabsbyt)

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14(5)   SOV/93-58-12- 13/16

AUTHOR: Merkulov, N.S., Frenkel', B.A., and Tsimbler, Yu. A.

TITLE: Automatic Regulation and Control of Viscous Oil Heating in Storage Tanks
             (Avtomaticheskoye regulirovaniye i kontrol' podogreva vyazkikh
             nefteproduktov v rezervuarakh)

PERIODICAL: Neftyanoye khozyaystvo, 1958, Nr 12, pp 62-67 (USSR)

ABSTRACT: The 04-TG pneumatic regulators in conjunction with control valves assure
             stable temperature control. But these regulators require a continuous supply of
             pure, dry, and compressed air at a minimum pressure of 2 kg/sq cm. This is
             difficult to produce at tank farms, and furthermore, since the capillary tubes are
             limited in length to 60 m, they can serve only those tanks which are within a
             40-50 m radius from the control post. Therefore, the MTTU Planning and Design
             Bureau of the Rosglavneftesnabsbyt developed a new control system (Fig 1), con-
             sisting of a PRT direct action regulator (Fig 2), an EKT-1-VZG manometric ther-
             mometer with electric contact (Fig 3), and 45kch6br thermostatic condensate
             eductors (Fig 4). This control system was tested at air temperatures   to -23°
             and 1-1.5 atm of steam pressure at the Pervomayskiy tank farm in 1957-58. The
             apparatus satisfied the requirements for open air operation and assured regulation
             of high accuracy. Table 1 gives data on the efficiency of the condensate eductors
             at various atmospheres of steam pressure. There are 4 figures and 1 Table.

Card 1/1

MERKULOV, Nikolay Sergeyevich; GOR'KOVA, A.A., vedushchiy red.;
GANINA, L.V., tekhn.red.

[Tank-farm mechanic] Mashinist neftebazy. Moskva, Gos.nauchno-
tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1959. 326 p.
(MIRA 12:11)

(Petroleum--Storage)

MERKULOV, N. Ya.

"The New 'Karlik' Type Battery Electric Locomotive" (Novyy tip akkumulyatornogo elektrovosa "Karlik"). Izd Byuro tekhnicheskoy informatsii 'Ministerstva stroitel' stva toplivnykj predpriyatiy SSSR (Publishing House of the Bureau of Technical Information, Ministry of Construction of Fuel Enterprises USSR), 7 pp., 1947

MERKUROV, M.Ya. OTROV, A.I.

"Introduction of Yom-2M Coal Corbines" Mekh Trud i Tyazh rabot No 9, Sep 1951 pp 35-38

MERKULOV, N. Ya., Laureate of Stalin Prize

USSR/Mining - Coal, Equipment   Oct 51

"Coal Combine UKT-1," N. Ya. Merkulov, Laureate
of Stalin Prize

"Nauka i Zhizn'" Vol XVIII, No 10, pp 37,38

Describes coal cutter for thin seams, designed at
Giprouglemash (State Planning-Designing and Exptl
Inst of Coal Mach Bldg). Machine consists of
operational member, elec motor, feeding mechanism
and detachable guiding ski. It may travel along
face of longwall in both directions. In 1951, en-
gineers A. D. Gridin, Ye. I. Kudryashev, A. A.
Pichugim and I. Ya. Burtsev were awarded Stalin
prize of 1st class for developing UKT-1.
213T107

MERKULCU N [Ya]

MERKULOV, N.

Cutting mine passages with the PK-2 M combine. p. 61 (Mechanisace. Prace. Vol. 7,
no. 2/3. Feb./Mar. 1959)
SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6
June 1955, Uncl.

MERKULOV, N. Ya.

IVANOV, K.I.; MERKULOV, N.Ya.; SOSNOV, V.D., redaktor; ABRAMOV, V.I., redaktor; IL'INSKAYA, O.M., tekhnicheskiy redaktor.

[Work practice in operating UKT-1 cutter-loaders in mines of the Voroshilovgradcoal Combine] Opyt ekspluatatsii kombainov UKT-1 na shakhtakh kombinata Voroshilovgradugol'. Moskva, Ugletekhizdat, 1954. 75 p.   (MLRA 8:1)
        (Coal-mining machinery)

MERKULOV, N.Ya.; IVANOV, K.I.; FATOVSKIY, P.A., nauchnyy redaktor; KONTSEVAYA, Ye.M., redaktor; KRYNOCHKINA, K.V., tekhnicheskiy redaktor.

[Use of machinery in mining] Mekhanizirovannaia prokhodka gornykh vyrabotok. Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1954. 86 p.   (MIRA 7:9)
        (Mining engineering) (Mining machinery)

Merkulov, Nikolay Yakovlevich

VEDERNIKOV, Viktor Ivanovich; MERKULOV, Nikolay Yakovlevich; KOMAROV,
Nikolay Ivanovich; KHORIN,V.N., redaktor; ANDREYEV,G.G.,
tekhnicheskiy redaktor; KOROVENKOVA,Z.A., tekhnicheskiy redaktor

[Experience in operating coal combines for mining sloping thin
seams] Opyt ekspluatatsii ugol'nykh kombainov dlia vyemki polo-
gopadaiushchikh tonkikh plastov. Moskva, Ugletekhizdat, 1955.
242 p.   (MLRA 9:3)
                    (Coal mines and mining)

MERKULOV, N. YA.

3802. MDK-1 MECHANIZED ORGAN PIPE SUPPORTS. Ivanov, K. I., Merkulov, N.
Ya. and Musalskii, V. A. (Mekhan. Trud. Tyazhel. Rabot (Mech. arduous Wk,
Moscow), Feb. 1955, 28-32; abstr. in Ugol (Coal, Moscow), June 1955, 47).
An illustrated account is given of the successful use of these supports in
conjunction with hinged steel top members.

MERKULOV, N.Ya., gornyy inzhener.

Eliminate obstacles to the creation of new machinery. Mekh.trud.rab
9no.10:11 O '55.   (MIRA 9:1)
                        (Coal mining machinery)

MERKULOV, N.Ya.

    The K-57 coal mining combine. Biul. tekh.-ekon.inform. no.7:3-4
    '58.   (MIRA 11:9)
          (Coal mining machinery)

MERKULOV, N.Ya.

The A-2 coal cutting and extracting unit. Biul.tekh.-ekon.inform.
no.7:4-6 '58.   (MIRA 11:9)
        (Coal mining machinery)

MERKULOV, N.Ya.

The K-52m narrow-grabbing combine. Biul. tekhn.-ekon. inform.
no.9:3-4 '58.   (MIRA 11:10)
            (Coal mining machinery)

MERKULOV, N.Ya.; BRUK, Ya.S.

The PKS-3 coal-mining combine. Biul.tekh.-ekon.inform.
no.7:3-4 '60.   (MIRA 13:7)
            (Coal mining machinery)

MERKULOV, N.Ya.; BRUK, Ya.S.

     The ShK-1 combine. Biul.tekh.-ekon.inform. no.8:6-8 '60.
                                         (MIRA 13:9)
      (Coal mining machinery)

MERKULOV, N. Ya.

Over-all mechanization of operations in stopes. Biul.tekh.-
ekon. inform. no.2:7-9 '61.   (MIRA 14:3)
    (Coal mining machinery—Technological innovations)

ANIKLOV, N.Ya.; KRUK, Ya.S.

The A-3 coal-mining unit. Biul. tekh.-ekon. inform. no. 16-11 '61.   (MIRA 14:5)

(Coal mining machinery)

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S/193/61/000/005/002/006
A004/A104

12.9100

AUTHOR: Merkulov, N. Ya.

TITLE: The ПK-6 (PK-6) drifting combine with balanced operating organ

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, no. 5, 1961, 16-19

TEXT: The Giprouglemash Institute has developed and fabricated a pilot
model of the new improved PK-6 combine intended for drifting operations in coal
and rock of medium hardness. The PK-6 combine has been designed on the basis of
the ПKГ-3 (PKG-3) combine of which the following units have been replaced:
operating organ with reducer and cardan shaft, bench cutters, bracing bogie. The
combine is caterpillar-mounted and has an operating organ equipped with teeth
which cut the face of the stope while special mechanisms remove the cut-off masses
from the face space, loading them onto the conveyer installations of the mine.
The operating organ consists of two disks revolving in different directions.
Teeth are fixed to the disks in special holders. The disks are made in two
versions, one for coal the other for rock. The operating organ cuts concentric
slots of 40-45 mm into the rock or coal face while the blocks of 95-150 mm formed
between the slots are broken off by special shearing mechanisms. The inner disk

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The ПК-6 (PK-6) drifting combine ...

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consists of two bows revolving clockwise while the outer disk has four bows revolving anti-clockwise, which ensures a balanced operation of the combine. For harder rock it is possible to fit additional cutting teeth. All cutters are equipped withВК 8В (VK8V) sintered carbide bits. In 1960 the combine was subjected to tests at the Myachkovo stone pit near Moscow. Drifting was carried out in a limestone seam of horizontal occurance some 4 m thick. The hardness of the limestone varied from 0.6 to 4.2 points according to the scale by professor Protod'yakonov. Three drifts of 48 running meters at a speed of up to 6 running meters/hour were cut. Then the PK-6 combine, after having undergone an inspection, was subjected to service tests at the Bereznikovskiy kombinat kaliynikh soley (Bereznikov Potash Salt Combine). During the first month of service a drifting rate of up to 4 m/h was attained, while the productivity of the (ShEM) combine amounted to only 8-9 running meters per day. The shift capacity of the PK-6 combine during the testing period came up to 20 running meters. From December 6 to December 15, 1960, the combine cut 200 running meters during two-shift work. The author presents the following technical data: productivity: for coal faces - 14.4 m/h; for rock faces - 8.14 m/h; dimensions of the cuts being drifted: diameter - 2.3 m, rough cross section area - 4.32 m^2; mean special pressure on the ground - up to 1-1.35 kg/cm^2; electromotors: a) operating organ

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S/193/61/000/005/002/006
A004/A104

The ПК-6 (PK-6) drifting combine ...

drive: power - 75 kw, rotation speed - 1,485 rpm; b) caterpiller drive: power - 8 kw; rotation speed - 980 rpm; overall dimensions of the combine (in operating position) height and width (at the face shield) - 2,300 mm; length (without reloading device) - 6,552 mm; weight (without reloading device) - 17,700 kg. The illustration shows the new PK-6 drifting combine. There is 1 figure.

Card 3/3
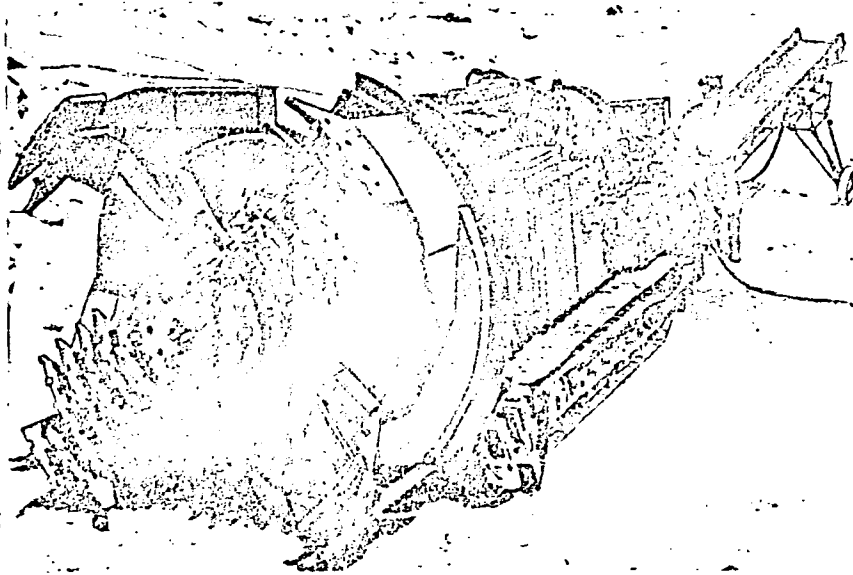
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"Study of Stratum XII of the Tashkalinsk Petroleum Bed to Determine the Effect of Inter-
ference," G. M. Sukharev, N. Ye. Merkulov, Groznyy, 54 pp

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General evaluation of the performance of Stratum XII. Described briefly three separate
studies conducted at the Tashkalinsk Petroleum beds. Subject stratum is similar to Stratum
XVI of the Oktyabr'skiy deposits. Authors urge further study to determine reasons for
interference in Startum XII.

PA 64T81

MERKULOV, P. I.

USSR/Engineering - Machine methods

Card 1/1

Author	:	Merkulov, P. I.
Title	:	Device for sharpening metal-cutting circular saws
Periodical	:	Stan. i instr. 24/4, 34, April 1953
Abstract	:	The author claims to have developed a method by which saw teeth may be sharpened on the Model 3A64 universal grinder from the Il'ich Factory or on machines of other models by observing the proper technology. The method is explained with drawings.
Institution	:	....
Submitted	:	....

MERKULOV. P.I.

USSR/Engineering - Machine tools

Card 1/1   Pub. 103 - 12/29

Authors   : Merkulov, P. I.

Title   : A device used on universal grinding-machines for milling flat stripper-
                plates

Periodical   : Stan. i instr. 10, page 26, Oct 1954

Abstract   : A short description is presented of the operation and structure of a device
                used on universal grinding-machines for milling splined stripper-plates.
                Drawings.

Institution   : ...

Submitted   : ...

USSR/Miscellaneous - Industrial processes

Card 1/1   Pub. 103 - 12/24

Authors   : Merkulov, P. I.

Title   : Grinding and finishing of spiral drill-bits

Periodical : Stan. i instr. 11, 30-31, Nov 1954

Abstract   : The basic technical conditions for grinding and finishing spiral drill-bits,
                used in the machining of cast iron and steel objects, are listed. The
                three basic steps, recommended for the grinding of dull spiral drill-bits,
                are explained. Tables; drawings.

Institution :   ...

Submitted   :   ...

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40 Ap '57.   (MLRA 10:6)
                              (Inventors)

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