

The Theory of the Excitation of an Explosion
by a Shock

1958-12-13

due to the shock is no less important than the conditions of flowing of the substance. There are 2 figures, 2 tables, and 4 references, 2 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
(Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: December 13, 1958, by N. N. Semenov, Academician

SUBMITTED: December 13, 1958

Card 3/3

5(4),2(1)

AUTHOR:

Bolkhovitinov, L. G.

SOV/20-126-2-26/64

TITLE:

A Possible Mechanism for the Initiation of Liquid Explosives
(Vozmozhnyy mekhanizm initsirovaniya zhidkikh vzryvchatykh
veshchestv)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 2, pp 322-324
(USSR)

ABSTRACT:

F. P. Bouden and his collaborators (Ref 1) proved experimentally that the decomposition of a certain quantity of explosives subjected to an impact begins to develop from a small source, which was heated up to a temperature of from 400 to 450°. The heating of very small gas-inclusions ($1 \sim 10^{-3}$ to 10^{-5} cm), which are adiabatically compressed during the impact, are considered to be the most probable cause of the occurrence of hot sources in the liquid during the impact. However, according to the author's opinion, such inclusions with dimensions of 10^{-3} to 10^{-5} cm are isothermally compressed. The author further is of the opinion that the rapid increase of pressure in the liquid may be due to a mechanism that is in no connection with the existence of air inclusions, but

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nevertheless leads to the occurrence of small hot sources. The idea of such a mechanism may be based upon the following: The liquid state of the substance is not constant at any values of temperature and pressure. If, at a given temperature, the pressure exceeds a certain value, the liquid state becomes metastable and the liquid crystallizes. If the specific volume of the liquid is greater than that of the solid phase, crystallization is accompanied by the liberation of heat, so that temperature must rise. The connection between the pressure at which transition from one phase to another occurs and the temperature of the transition satisfies the well-known equation of Clapeyron-Clausius. The rapid increase of pressure in the liquid during the impact may increase its temperature considerably if only part of the liquid crystallizes at high pressure. The more slowly the liquid crystallizes at high pressure, the more intensely may it become "undercooled" in the case of a rapid increase of pressure, and the higher will its temperature become in transition to the solid state. The order of magnitude of the pressure necessary in order that the liquids

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(the melting temperatures of which do not differ much from room temperature at normal pressure) crystallize at 400° be evaluated by means of two methods: Firstly, it is found according to the Clapeyron-Clausius equation that in the case of nitroglycerin the necessary pressure is $\sim 3 \cdot 10^4$ kg/cm². Secondly: According to experiments carried out by Bridgman (Ref 4), Dow (Ref 5), and other authors, the melting point of high-molecular organic compounds rises by $\sim 0.02^{\circ}$ if pressure increases by 1 atmosphere. If this value is considered to hold also in the case of explosive liquids, the pressure necessary for crystallization at 400° C amounts to $\sim 2 \cdot 10^4$ kg/cm². The initiation mechanism suggested here is possible only if the following 2 conditions are satisfied: 1) The range within which the process may be looked upon as an equivalent one must be much larger than the critical dimension of the "germ". 2) The velocity of crystallization must be such that, within the duration of the impact, a crystal of from 10^{-3} to 10^{-5} cm can be formed. The hypothetical mechanism suggested in the present paper is not in

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contradiction to facts known from practice, and in some cases it supplies a simple physical explanation of the phenomena observed. There are 7 references, 4 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute for Chemical Physics of the Academy of Sciences, USSR)

PRESENTED: February 6, 1959, by V. N. Kondrat'yev, Academician

SUBMITTED: January 21, 1959

Card 4/4

2,1000

81599

S/062/60/000/04/05/006
B004/B066

AUTHORS: Bobolev, V. K., Bolkhovitinov, L. G.

TITLE: On the Temperature of the Initial Heating Centers When the Explosion Is Initiated by a Stroke

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 4, pp. 754 - 755

TEXT: The authors proceed from the assumption that the crystals of an explosive are plastically deformed and melt in an explosion initiated by a stroke. At this stage, equations (1) and (2) hold for pressure and velocity of flow. These equations contain the falling speed of the weight, the viscosity coefficient of the partially molten explosive, the thickness of the explosive layer, and the axes of a cylindrical coordinate system. Equation (3) is written down for heating the volume l^3 of the explosive, considering the evolution of heat by viscous forces. Therefrom an equation is derived for T and for the critical temperature T_* which is attained at a falling speed u_* and a pressure p_* . This

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On the Temperature of the Initial Heating
Centers When the Explosion Is Initiated by
a Stroke

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corresponds to a melting-point depression to T_* within the time τ_* (Equation 4). The unknown viscosity coefficient is eliminated from this equation, and equation (6) results. This includes the constant a which is about $0.02^\circ\text{C}/\text{atm}$ for all explosives. Experiments were carried out with Ten, Hexogen, and Octogen. The time between stroke and explosion was measured on an OK-17M (OK-17M) oscilloscope. Data are given in Table 1. The values calculated for T_* agree with the experimental and theoretical data obtained by other scientists (Refs. 5, 6). There are 1 table and 7 references: 6 Soviet and 1 British.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

SUBMITTED: July 31, 1959

Card 2/2

5.1300(A)

AUTHOR: Bolkhovitinov, L.G.

68859

S/076/60/034/02/038/044
B010/B007

TITLE: The Relation Between Shock Sensitivity and the Ignition Temperature of Explosive Substances

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 2, p 476 (USSR)

ABSTRACT: A relation is found between shock sensitivity and the ignition temperature of explosives. The critical temperatures of the ignition spark, (forming during a shock), are assumed to equal the ignition temperature (obtained under the same conditions). If the explosives are tested under the same conditions on a drop hammer, the pressure produced by the shock is proportional to the square root of the initial load energy, i.e. $P \sim \sqrt{E}$. In an earlier paper (Ref 1), the author showed that the maximum shock temperature is determined by means of the melting temperature of the substance. The melting temperature depends on pressure, so that for the purpose of producing a spark of the temperature T a pressure of $p \sim T - T_{melt}$ must be applied, if $T > T_{melt}$. Thus, $(T_{ign.} - T_{melt}) / \sqrt{E}$ must be \approx const for all explosives if the ignition temperature is determined at equal conditions, where E - shock energy, for which the explosion probability is the same for all explosives. To be sure, the absolute value of the constant depends on the conditions for the determination

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The Relation Between Shock Sensitivity and the
Ignition Temperature of Explosive Substances

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B010/B007

of T_{ign.} and E. For the purpose of examining the dependence mentioned, data obtained from the paper by Ya.I. Leytman (Ref 2) is used and the regular correlation between the ignition temperature of explosive substances and shock sensitivity (Fig) is confirmed. Thus, also the assumption concerning the part played by pressure in an explosion caused by shock, which is mentioned in reference 1, is confirmed. There are 1 figure and 2 Soviet references.

ASSOCIATION: Akademiya nauk SSSR Institut khimicheskoy fiziki (Academy of Sciences of the USSR, Institute of Chemical Physics)

SUBMITTED: June 30, 1959

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Card 2/2

5(4), 2(5)

AUTHOR: Bolkhovitinov, L.G.

S/020/60/130/05/025/061

B004/B014

TITLE: Low-speed Detonation of Liquid Explosives "

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 5, pp 1044-1046
(USSR)

ABSTRACT: The author attempts to explain the fact that in the case of some liquid explosives such as nitro-glycerin⁷ and methyl nitrate, besides the normal course of detonation whose velocity is 7-8 km/sec, also a detonation with a velocity of only 1.7-2.2 km/sec may occur. This phenomenon is attributed to phase variations such as crystallization which occur on the passage of the shock wave through the substance. The author studies the conditions for the development of such a crystallization zone behind the shock wave. Furthermore, he derives sets of equations on the basis of the law of conservation of energy, and obtains an equation for the detonation speed D, in which the latent melting heat and the specific volumes of the liquid in the undisturbed state on the passage of the shock wave and in the case of phase variation are contained. Figure 1 shows possible relations between the phase-equilibrium curves

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Low-speed Detonation of Liquid Explosives

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and the state of the substance behind the shock wave. The p - v diagram for low-speed and high-speed detonations may be seen from figure 2. The author further investigates the satisfying of Yu.B. Khariton's condition according to which the duration of the chemical reaction is shorter than the time in which the reaction products are spread. The slow detonation of nitro-glycerin is computed as an example. L.D. Landau and K.P. Stanyukovich are mentioned in this paper. There are 2 figures and 10 references, 7 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

PRESENTED: October 9, 1959, by V.N. Kondrat'yev, Academician

SUBMITTED: October 5, 1959



Card 2/2

89734

S/020/61/136/003/020/027
B004/B056

11.8300

AUTHORS: Afanas'yev, G. T., Bobolev, V. K., and Bolkhovitinov, L. G.

TITLE: The Theory of an Explosion Released by Impact

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol.136, No. 3, pp. 642-643

TEXT: The problem as to the conditions under which the explosion of an explosive is released by impact is studied in theory. The authors proceed from the assumption that the course of the impact explosion is a plastic deformation of the substance accompanied by the formation of centers with critical temperature. According to experiments made by V. R. Regel' and G. V. Berezhkova as well as by L. M. Kachanov, the stress at which plastic deformation occurs, depends on the factor α , and the ratio between the height and the diameter of the specimen. According to Refs. 4 and 5, $P = \sigma_s / \sqrt[3]{3} \alpha$ (1) is therefore written down as the first condition. P is the pressure necessary to release the explosion, σ_s - the flow limit of the substance. On the other hand, also the criterion by D. A. Frank-Kamenetskiy must be satis-

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The Theory of an Explosion
Released by Impact

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$$\text{fied: } [d^2 Q E z \exp(-E/RT)] / 4\kappa R T^2 = \delta$$

$$(T_m + \chi P)^2 = f(2)$$

$\delta = 3.32$ in the case of a spherical center of explosion; d = diameter. If the temperature D is higher than the melting temperature T_m of the substance, it is necessary, according to Ref. 7, that the heating be accompanied by universal compression: $P = (T - T_m) \chi / \chi_0$. χ_0 is the increase of the melting point per atmosphere. On the assumption that the extent of the heating center equals the height of the specimen to be compressed, the following second condition is written down: $\{(aD)^2 Q E z \exp[-E/R(T_m + \chi P)]\} / 4\kappa R$. D is the diameter of the specimen. The conditions for the impact explosion are discussed for $T_{\text{expl}} < T_m$ and $T_{\text{expl}} > T_m$. In the former case, the condition (1) suffices to release an explosion. Since the factor a changes during deformation, a graphical solution is given for an ideal plastic body at $T_{\text{expl}} > T_m$. Curve I in Fig. 1 represents the condition (1) as $P = f(a)$, curve II shows condition (2). The latter is satisfied only

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The Theory of an Explosion
Released by Impact

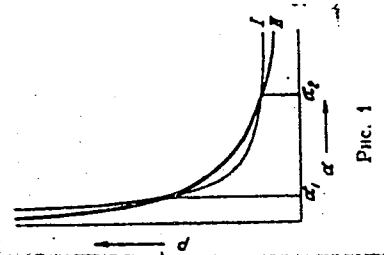
S/020/61/136/003/020/027
B004/B056

with $\alpha \leq \alpha_1$ and $\alpha \geq \alpha_2$. Only within this region hot centers leading to explosion can be formed. There are 1 figure and 7 references: 6 Soviet and 1 British.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: July 30, 1960 by V. N. Kondrat'yev, Academician

SUBMITTED: July 28, 1960



Card 3/3

20645

S/020/61/136/006/022/024
B103/B203

11. 8300

AUTHORS: Afanas'yev, G. T., Bobolev, V. K., and Bolkhovitinov, L. G.

TITLE: Estimation of the sensitivity of explosives

PERIODICAL: Doklady Akademii nauk SSSR, v. 136, no. 6, 1961, 1396-1398

TEXT: The authors worked out a comprehensive criterion for the sensitivity of explosives considering the chemical, mechanical, and thermodynamic properties of these substances. It also reflects the conditions of mechanical action. Such a criterion has not yet been established in publications (Ref. 1; N. A. Kholevo, Ref. 2). The authors proceed from the theory of heat explosion (tepovoy vzryv) and from the theorem of the role of pressure in the initiation of explosion by impact. To attain, in the zone of plastic deformation, the temperature T which exceeds the melting temperature of the substance (T_{fus}), a pressure P must be applied: X

$P = (T - T_{fus})/\alpha$ (1), where α is the increase of the melting point by 1 atm (mostly, α is assumed to be 0.02 deg/atm). The extent of the zone of the

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Estimation of the sensitivity of...

temperature T, in which no steady chemical reaction can take place, is determined on the basis of the theory of heat explosion. To subject a zone of the extent l to thermal self-ignition, l must be larger than l_{cr}, l_{cr} being calculated from A. A. Frank-Kamenetskiy's formula.

$l_{cr}^2 \frac{QEz}{4\chi RT^2} \exp(-E/RT) = \delta$ (2), where Q - the heat effect of the reaction per unit volume, E - activation energy, z - a factor, χ - coefficient of heat conductivity, and $\delta = 3.32$ for a spherical center at the boundary of which the temperature T is maintained. The value l_{cr} determined from (1) and (2) shows that at a pressure P the effective center can only be larger, by no means smaller than l_{cr}. Consequently, l_{cr} is the critical dimension of the initiation at a pressure P. When an explosive specimen is equalized to an ideal plastic body deformed so as to have no scale effect, the heating temperature is, due to plastic deformation, limited by a pressure proportional to the yield point σ_s of the explosive.

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Estimation of the sensitivity of...

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This temperature is approximately equal to $T = T_{fus} + \frac{1}{3} \alpha \sigma_S (3)$. Thus, the dimension of the zone of plastic deformation, in which a steady reaction at the temperature T is impossible, only depends on the properties of the explosive. Therefore, this dimension may serve as a quantitative characteristic of the sensitivity of an explosive in the same way as the critical diameter of detonation may serve to estimate the detonating capacity of an explosive. The authors think it possible to establish a uniform order of sensitivity of explosives from this dimension which is calculated by substituting (3) in (2). They call this dimension the critical dimension of a substance. On the other hand, the pressure resulting in an explosive charge under mechanical action generally depends on the geometry of the charge. Thus, the scale effect strongly influences small specimens. Therefore, the authors suggest a further definition of l_{cr} : critical dimension of the initiation of charge. It depends both on the mechanical properties of the explosive and on the conditions of the action. This dimension reflects the relative sensitivity of explosives to mechanical action. The authors determined this l_{cr} for Ten, hexogen, tetryl, and trotyl on a ram

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Estimation of the sensitivity of...

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impact machine (koprovoye ispytaniye) (Table 1). Apparatus no. 2 of N. A. Kholevo (Ref. 2) was used for this purpose. Pressure was determined tensometrically. The values z and E were found by A. I. Serbinov. The authors state that the knowledge of l_{cr} permits, in many cases, a rapid and correct estimation of the probability of an explosion on the basis of test conditions. According to Ya. I. Leytman, the degree of fine distribution of an explosive has no effect on its sensitivity to impact. The authors, however, state that Leytman's conclusion only holds if the explosive particles are smaller than l_{cr} . Up to this point, the conditions of release of an explosion are not affected by the increase in size of particles. In conclusion, the authors state that the use of l_{cr} permits a simple and natural explanation of test results on ram impact machines. l_{cr} expresses the possibility of formation of an effective center, which corresponds to the idea of the sensitivity being a "readiness for decomposition". There are 2 figures, 1 table, and 8 references: 6 Soviet-bloc and 1 non-Soviet-bloc.

Card 4/4 *Inst. Chem. Physics AS USSR*

PROCESSES AND PROPERTIES INDEX

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CA

New process of quenching steel. N. E. BOLKHOMITSOV. *Vestnik Metallopram* 10, 88-90(1930). *Chimie & industrie* 25, 352-3(1931). -- It is carried out with Lewis' process, which consists in heating the steel above the crit. temp. and then quenching in a bath of molten salt or of oil heated to 230°. When treated in this way, the steel is at first soft; it consists of austenite, and becomes hard only about 5 min. after having reached ordinary temp. It then expands, becomes magnetic and is transformed into martensite. Owing to this slow change in structure, all the transformations produced by the variations in vol. have time to take place, which completely eliminates the usual defects of the ordinary quenching process, giving great hardness and homogeneity. But from a practical standpoint, the greatest advantage of the method lies in the fact that pieces quenched in this way can undergo all the requisite deformations and flexions in 1-2 min. after quenching.

A. PARINICAL COULURE

AS - 51.4 METALLURGICAL LITERATURE CLASSIFICATION

A standard classification of graphite in gray cast iron.
 N. F. Bolkhovitinov, *Zavodskaya Lab.* 6, 1482-4 (1937).
 The adaptation of the Mahin and Hamilton system
 (C. A. 31, 7376⁴) is recommended. Chas. Blanc

A13B-31A METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS
 OPEN
 NATIONAL INDEX
 SERIALS INDEX

9

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UQ UR US UT UU UV UW UX UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VQ VR VS VT VU VW VX VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WU WV WW WX WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YQ YR YS YT YU YV YW YX YY YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ

1ST AND 2ND LETTERS PROCESSES AND PROPERTIES INDEX 1ST AND 2ND LETTERS

Ca

9

Methods for determination of the grain size in steels
S. I. Bulkoventinov. *Zashchita* Vol. 7, 10 1968.
Determination of natural grain in steel by the method of successive and partial hardening. S. M. Danogov. *Ibid.* 50 2. Determination of the grain number in construction medium-carbon steel. S. K. Dunaev and V. N. Makhov. *Ibid.* 53 6. The authors give crit. discussions of the conventional methods with suggestions for practical improvements in the procedures. C. B.

COMMON ELEMENTS

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST LETTER

2ND LETTER

3RD LETTER

4TH LETTER

5TH LETTER

6TH LETTER

7TH LETTER

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10TH LETTER

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The choice of the grain size of steels for modern machine construction. N. F. Bolkhovitinov. *Kachestvennyi Naib* 6, No. 2, 47-0, 1939, 1, 1438, et. C. A. 32, 2483, 4120. -- A summary reporting the most satisfactory grain size for rolling, forging and hot-pressing of steels as well as for the production of steels for special purposes, as ball bearings and spring steels, etc. M. G. Moore

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED INDEXED SERIALIZED FILED

APR 1961

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

PROCESSES AND PROPERTIES INDEX

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BOLKHOVITSEV, N. F. "Metallurgy and Heat Treatment of Steel." Moscow, 1946: State Publishers of Technical-Scientific Books on Metallurgy. (In Russian).

One of the interesting features in this work is a useful list of recent Russian books on metallurgical subjects, including three of the author's own: (a) Metallurgy and Heat-Treatment (1933); (b) Organizing a Works' Laboratory in Tractor Manufacture (1935); (c) Grain Size and Properties of Steel (1943). In view of the present difficulty in getting up-to-date Russian text-books, it is at least something to know that they exist. Another valuable feature is the large number of tabulated data and specifications of Russian steels used for specific purposes, including tractor manufacture, in which the author is particularly interested. More generally, the book may be said to be a model of conciseness, for within the comparatively short compass of just over 300 pages Prof. Bolkhovitinov has succeeded in compressing a really wonderful amount of information, including a very large number of tables, curves, isothermal transformation diagrams, and photomicrographs.

The thirteen sections into which the book is divided

evaluation B-8884

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

GROUP	CLASS	SECTION	NUMBER
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13

TEST AND END ORDERS

PROCESSING AND PROPERTIES INDEX

Ca

9

A study of steel hardenability by the end-quench method. N. P. Bolkhovitinov and D. V. Vasil'ev. *Vestnik Mashinostroyeniya* 26, No. 5 0, 117-22(1966). The advantages of the jominy test for hardenability of steel are pointed out. A simple lab. app. for making this test is described. Twelve steels were tested, 6 of which carry also S.A.E. designations, and the results are tabulated. M. Hoch.

ASB.SLA METALLURGICAL LITERATURE CLASSIFICATION

ALPHABETICALLY	BY SUBJECT	BY AUTHOR	BY TITLE	BY YEAR
1	2	3	4	5

BOLKHOVITINOV, N. F.

Metallovedenie i termicheskaja obrabotka stali; posobie dlia proizvodstvennikov.
Moskva, Metallurgizdat, 1946. 319 p. illus.

Bibliography: p. (311). 313.

(Metallography and heat treatment of steel.)

DLC: TN693. 17D6

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

BOLKHOVITINOV, N.F.

[Metals and their heat treatment] Metallovedenie i termicheskaya obrabotka. Moskva, Mashgiz, 1947. 338 p. (MIRA 13:9)
(Physical metallurgy) (Metals--Heat treatment)

BOLKHOVITINOV, N.F., doktor tekhnicheskikh nauk, professor.

Steel shot peening. Vest.mash.27 no.3:66-68 '47. (MLRA 9:4)
(Shot peening)

PHASE I

BOOK

Call No.: TN690.B73 1952

Author: Bolkhovitinov, N.F.

Full Title: METALLOGRAPHY AND THERMIC TREATMENT

Transliterated Title: Metallovedenie i termicheskaja obrabotka

Publishing Data

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No. of copies: 15,000

Editorial Staff

Editor: Aristov, N.P.

Ed.-in-Chief: None.

Tech. Ed.: Beizel'man, R.D.

Appraiser: None.

Text Data

Coverage: A revised and supplemented edition of the 1947 textbook on metallography and heat treatment. The first part describes the theoretical bases of metallography: crystal structure of metals, theory of alloys, iron carbide alloys, steel and cast iron, study of plastic deformation and strength, and principles of heat and chemical-heat treatment. The second part describes construction and tool steels, steels and alloys with special physical and chemical properties, nonferrous alloys, alloys for ball bearings, and powder alloys. 278 Drawings. 53 Tables.

Purpose: A textbook for students of machine building institutes.

Facilities:

No. of Russian or Slavic References: Reading materials listed at end of each chapter.

Available: Library of Congress.

POGODIN-ALEKSEYEV, G.I., doktor tekhnicheskikh nauk, professor; BOL-
KHOVITINOV, N.F., doktor tekhnicheskikh nauk, professor, retsenzent;
BLANTER, M.Ye., doktor tekhnicheskikh nauk, professor, retsenzent;
POPOVA, S.M., tekhnicheskiy redaktor.

[Structure and strength of metals and alloys; collection of scientific essays] Struktura i prochnost' metallov i splavov. Sbornik nauchnykh rabot. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, Vol. 5. 1953. 182 p. (MIRA 7:9)

(Metalwork) (Metals--Testing) (Metallography)

PALESTIN, S.M., kandidat tekhnicheskikh nauk, doctent [reviewer];
BOLKHOVITINOV, N.F., professor [author].

"Metallography and heat treatment." Bolkhovitinov, N.F. Reviewed
by S.M.Palestin, and others. Vest. mash. 33 no.12:97-99 D '53.

(MLBA 6:12)

(Metallography) (Metals--Heat treatment) (Bolkhovi-
tinov, N.F.)

BOLOKHOVITINOV, N.F. [author]; PROSVIRIN, V.I. [reviewer].

"Metallography and heat treatment." N.F. Bolkhovitinov. Reviewed by V.I.
Prosvirin. Sov.kniga no.8:49-50 Ag '53. (MLA 6:8)
(Metallography) (Bolkhovitinov, N.F.)

BOLKHOVITINOV, N.F., d-r tekhnicheskikh nauk, professor; LAKHMIN, Yu.M.,
~~d-r tekhnicheskikh nauk, professor, redaktor; MODEL', B.I. tekhnicheskiiy redaktor~~

[Metals and heat treatment] Metallovedenie i termicheskaya obrabotka. Izd. 3-e, perer. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel. lit-ry, 1954. 446 p. (MLRA 8:6)
(Metals--Heat treatment)

OMEL'YANOV, A.Ye.; RABINOVICH, I.P.; BOLKHOVITINOV, N.F., doktor
tehnicheskikh nauk, retsenzent; KUMYAVSKIY, M.N., kandidat tehnikhi-
cheskikh nauk, redaktor.

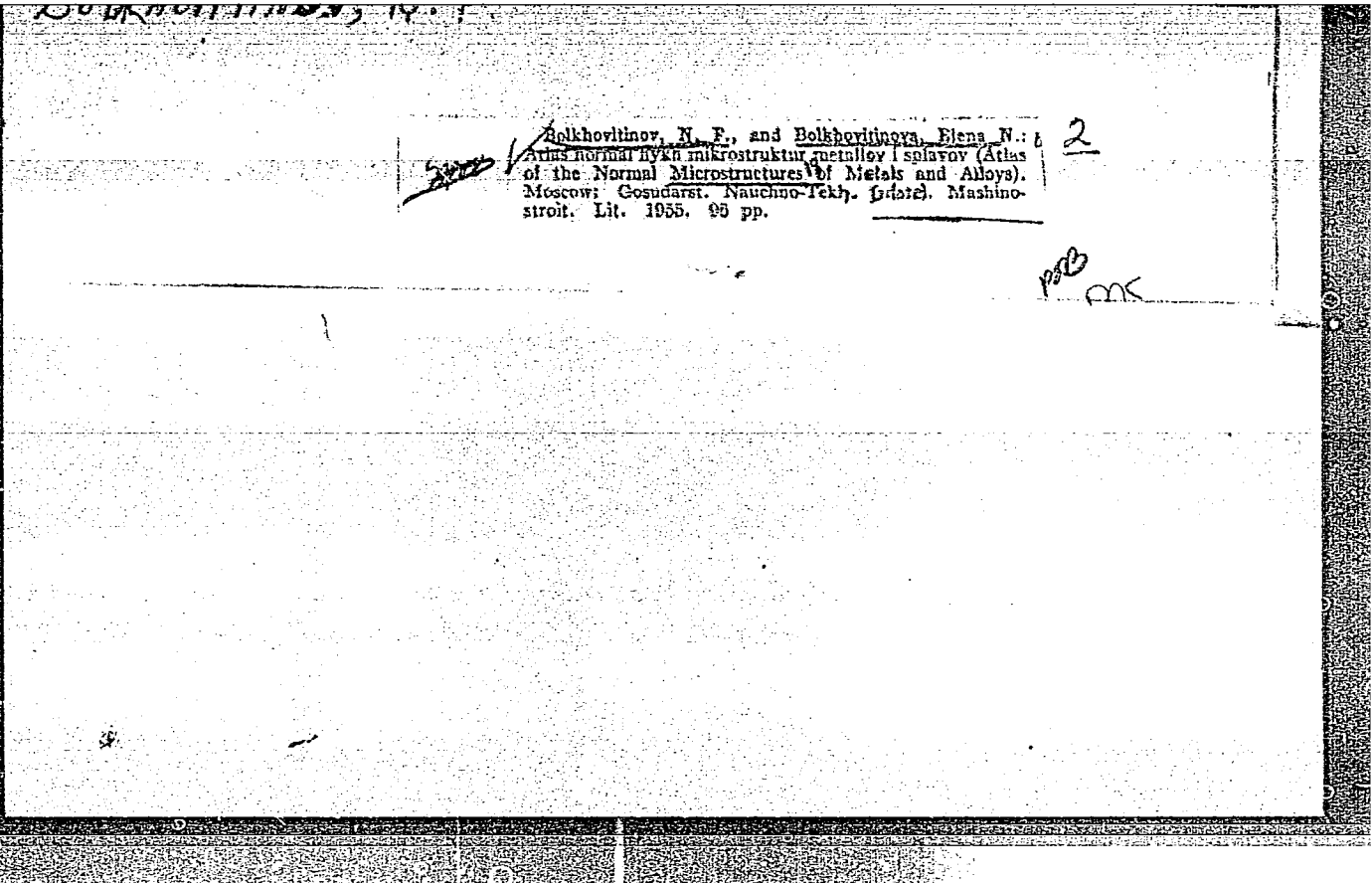
[Reference manual on materials in farm machinery parts] Spravochnik
po materialam detalei sel'skokhoziaistvennykh mashin. Izd. 2-e ispr.
i dop. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel'noi i su-
dostroitel'noi lit-ry, 1954. 527 p. (MLRA 7:8)
(Agricultural machinery industry)

BOLKHOVITINOV, Nikolay Feodoseyevich, professor, doktor tekhnicheskikh nauk; BOLKHOVITINOVA, Yelena Nikolayevna, dotsent, kandidat tekhnicheskikh nauk; KOLLI, A.Ya., inzhener, redaktor; VLADISLAVLEV, V.S., professor, retsenzent; POGODIN-ALEKSEYEV, G.I., professor, doktor tekhnicheskikh nauk, retsenzent; POPOVA, S.M., tekhnicheskii redaktor

[Atlas of normal microstructures of metals and alloys] Atlas normal'nykh mikrostruktur metallov i splavov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1955. 94 p. (MIRA 9:2)
(Metallography)

KASHCHENKO, Georgiy Antonovich, professor; BOLKHOVITINOV, N.F., professor,
doktor tekhnicheskikh nauk, retsenzent; GLIKMAN, L.A., professor,
doktor tekhnicheskikh nauk, redaktor; LEYKINA, T.L., redaktor
izdatel'stva; SOKOLOVA, L.V., tekhnicheskiy redaktor

[Principles of physical metallurgy] Osnovy metallovedeniia. Izd. 2-oe,
dop. i perer. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-
ry, 1956. 395 p. (MIRA 10:1)
(Physical metallurgy)



~~1955~~ ✓ Bolkhovitinov, N. F., and Bolkhovitina, Elena N.:
Atlas normal'nykh mikrostruktur metallov i splavov (Atlas
of the Normal Microstructures of Metals and Alloys).
Moscow: Gosudarst. Nauchno-Tekhn. Izdat. Mashino-
stroit. Lit. 1955. 98 pp.

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LIBOLKHOVITIMOV, N. F.

✓ Stahl, Eisen, NE-Metalle und ihre Wärmebehandlung. By N. F. Bolkhovitinov. 2. Ausgabe. (Translated from the Russian.) 24 x 17 cm. Pp. 435, with 278 illustrations. Berlin: Verlag Technik. (DM 42.60.)

Met

When a book starts with the statement that "It was Russian servants who were the founders of the sciences of metals", one is prepared for anything! In this particular case, it must be for the apparent attempt to prove that everything which is worth doing has been done by someone with a Russian-sounding name. The attempt would be a complete failure with one who knows anything at all of the history of our science, but it is dangerous in that to the uninitiated it may appear to be the truth. It is evident that the author is not unaware of the part that workers in other countries have played, since he includes their results, in most cases without acknowledgement. In a somewhat similar manner, when he makes statements which are, to say the least of it, difficult to substantiate, such as one, for instance, on page 175, that "the X-ray investigation of the atomic structure of martensite was first carried out by N. T. Gudzow, G. W. Kurdjumov and N. Ja. Seljakow", there is not, so far as one unfamiliar with the Cyrillic alphabet can see, any reference which enables one to justify this attribution in the face of the general belief that the tetragonal form of martensite was first described by Honda and Nishiyama in 1932.

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BOLKHOVITINOV, N. F.

✓ Stahl, Eisen, NE-Metalle und ihre Wärmebehandlungs. By N. F. Bolkhovitinov. 2. Ausgabe. (Translated from the Russian.) 24 X 17 cm. Pp. 435, with 278 illustrations. 1953. Berlin: Verlag Technik. (DM 42.00.)

net

When a book starts with the statement that "It was Russian savants who were the founders of the science of metals", one is prepared for anything! In this particular case, it must be for the apparent attempt to prove that everything which is worth doing has been done by someone with a Russian-sounding name. The attempt would be a complete failure with one who knows anything at all of the history of our science, but it is dangerous in that to the uninitiated it may appear to be the truth. It is evident that the author is not unaware of the part that workers in other countries have played, since he includes their results, in most cases without acknowledgement. In a somewhat similar manner, when he makes statements which are, to say the least of it, difficult to substantiate, such as one, for instance, on page 175, that "the X-ray investigation of the atomic structure of martensite was first carried out by N. T. Gudzow, G. W. Kurdjumow and N. Ja. Seljakow", there is not, so far as one unfamiliar with the Cyrillic alphabet can see, any reference which enables one to justify this attribution in the face of the general belief that the tetragonal form of martensite was first described by Honda and Nishiyama in 1922.

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Bolkhovitinov, N. F.

Turning, however, to the contents of the book, these are, on the whole, of a fairly conventional character, but there are here and there sections which will not be familiar to western readers, and the book is of value in that it provides an account of what Russian workers are doing and the general lines of thought behind such researches. If one can eliminate the propagandist element of the approach, there is a residue of interesting work which is perhaps not as well known as it deserves to be. It is doubtful, however, whether there are many to whom this publication can be recommended in comparison with corresponding available works.

F. C. THOMPSON.

2/2

MIKHAYLOV-MIKHBYEV, Prokopy Borisovich, doktor tekhn.nauk; BOLKHOVITINOV,
N.F. prof., doktor tekhn.nauk, retsenzent; VYAZNIKOV, kand.tekhn.
nauk, red.; VASIL'YEVA, V.P., red. izd-va; SPERANSKAYA, O.V., tekhn.
red.

[Metals for gas turbines] Metall gazovykh turbin. Moskva, Gos.
nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 350 p. (MIRA 11:12)
(Gas turbines) (Heat-resistant alloys)

PHASE I BOOK EXPLOITATION

682

Bolkhovitinov, Nikolay Fedoseyevich, Doctor of Technical Sciences, Professor

Metallovedeniye i termicheskaya obrabotka (Physical Metallurgy and Heat Treatment)
4th ed., rev. and enl. Moscow, Mashgiz, 1958. 431 p. 25,000 copies printed.

Reviewer: Kuyavskiy, M. N., Candidate of Technical Sciences (deceased);
Ed.: Aristov, N. P., Candidate of Technical Sciences, Docent; Ed. of Publishing
House: Morozova, M. N.; Tech. Ed.: Korotkova, G. M.; Managing Ed. for
literature on metalworking and tool making (Mashgiz): Beyzel'man, R. D., Engineer.

PURPOSE: This book is a manual in physical metallurgy for students in technical colleges and tekhnikums.

COVERAGE: In this book the author deals with the theoretical fundamentals of physical metallurgy including crystallography, theory of alloys, the behavior of metal, and various methods of treating metals and alloys. There is a brief discussion about metals used in the production of atomic energy and the effect of radiation on metals. Some data pertaining to special alloys and high-speed steels are also given. This book contains extensive bibliographical material

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Physical Metallurgy and Heat Treatment

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relating to metallurgy on a world-wide scale, and includes a list of periodicals published in the Soviet Union and abroad. The author acknowledges the help and assistance of I. A. Odintsov, Corresponding Member of the Academy of Science, USSR; V. S. Ivanova, Candidate of Technical Sciences; N. F. Pravdyuk, Candidate of Technical Sciences; and N. P. Aristov, Science Editor, Docent, Candidate of Technical Sciences. The author also expresses his gratitude to the following who lent him various micro - and macrophotographs: A. D. Assonov; Ye. A. Bondarenko; Ye. N. Bolkhovitonova; N. N. Nossakovskaya; Ye. T. Kotikova; P. A. Lankin; O. B. Lotareva; Yu. A. Skakov; V. V. Skotnikov; A. V. Smirnova; P. I. Stepin; K. Z. Shepelyakovskiy; Ye. I. Shilova; L. N. Chaporova; and A. N. Chervyakov. Historical personalities who laid the foundations of modern metallurgy in the USSR and abroad are mentioned. The number of references is given after each chapter in the Table of Contents. The author dedicated this book to Dmitriy Konstantinovich Chernov, the founder of the Russian school of metallurgy.

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PHASE 1 BOOK EXPLOITATION SOV/3534

Bolkhovitinov, Nikolay Feodosiyevich, Doctor of Technical Sciences, Professor,
and Yelena Nikolayevna Bolkhovitina, Candidate of Technical Sciences, Docent

Atlas makro- i mikrostruktur metallov i splyavov (Atlas of Macro- and Micro-
structures of Metals and Alloys) 2d ed., rev. and enl. Moscow, Mashgiz, 1959.
86 p. 13,000 copies printed.

Ed.: N. P. Aristov, Candidate of Technical Sciences, Docent; Ed. of Publishing
House: V. V. Rzhavinskiy, Engineer; Tech. Ed.; Z. I. Chernova; Managing
Ed. for Literature on Metal Working and Instrument Making (Mashgiz): R. D.
Beyzel'man, Engineer.

PURPOSE: This atlas is intended for students of schools of higher technical
education taking the course in metallography and heat treatment of metals.

COVERAGE: The atlas describes macro and microstructures of metals and alloys and gives
photographs of observations. Techniques of microscopic analysis, cutting
of specimens, imbedding them in plastics, grinding, polishing and etching are
described along with macrostructure and microstructure of carbon steel, tool

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Atlas of Macro- and Microstructures (Cont.)

SOV/3534

steel, hard alloys, nonferrous alloys, bearing alloys and cast iron. Structural failures of metals and various alloys are illustrated and a number of microsections presented as specimens for testing students on microstructures of metals and alloys. There are 39 references: 22 Soviet, 12 English, 4 German, and 1 French.

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Card 3/3

TM/fal
5-27-60

KASHCHENKO, Georgiy Antonovich, prof.. Priginal uchastiye: DELLE, V.A.
~~BOLKHOVITINOV, N.F.~~, prof., doktor tekhn.nauk, retsenzent;
GLIKMAN, L.A., prof., doktor tekhn.nauk, red.; LEYKINA, T.L.,
red.izd-va; DLUGOKANSKAYA, Ye.A., tekhn.red.

[Principles of metal properties and metal structure] Osnovy
metallovedeniia. Izd.3., dop. i perer. Moskva, Gos.nauchno-
tekhn.izd-vo mashinostroit.lit-ry, 1959. 395 p. (MIRA 12:10)
(Physical metallurgy)

BOIKHOVITINOV, Nikolay Fedoseyevich, doktor tekhn. nauk, prof.;
KOZLOVSKIY, I.S., kand. tekhn. nauk, retsenzent; RZHAVIN-
SKIY, V.V., red. izd-va; CHERNOVA, Z.I., tekhn. red.;
EL'KIND, V.D., tekhn. red.

[Metals and their heat-treatment] Metallovedenie i ter-
micheskaya obrabotka. Izd.5-e, dop. i perer. Moskva,
Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961.
463 p. (MIRA 14:5)
(Metallography) (Metals--Heat treatment)

BOLKHOVITINOV, Nikolay Feodosiyevich, doktor tekhn. nauk, prof.;
GLIKIN, N.M., inzh., retsenzent; STEPANCHENKO, N.S., red.
izd-va; DENKINA, N.F., tekhn. red.

[Properties and use of sheet steel for die stamping] Svoistva i
primeneniye listovoi stali dlia kholodnoi shtampovki. Moskva,
Mashgiz, 1962. 82 p. (MIRA 15:12)
(Sheet-metal work) (Sheet steel)

BOLKHOVITINOV, N.F., doktor tekhn. nauk, prof.; BOLKHOVITINOVA,
Ye.N., kand. tekhn. nauk, dots.; IONOV, P.M., inzh.,
red.

[Atlas of macro- and microstructures of metals and alloys]
Atlas makro- i mikrostruktur metallov i splavov. Izd.3.
perer. i dop. Moskva, Mashinostroenie, 1964. 101 p.
(MIRA 17:8)

BOLKHOVITINOV, Nikolay Feodosiyevich (1894-1964); SIDORIN, I.I.,
doktor tekhn. nauk, prof., retsenzent

[Study of metals and their heat treatment] Metallovedenie
i termicheskaya obrabotka. Izd.6., dop. i perer. Moskva,
Mashinostroenie, 1965. 503 p. (MIRA 18:8)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche im.
N.Ye.Baumana (for Sidorin).

YELYENYEVSKIY, S.S., KOROL'KOV, V.I., i BOLKHOVITINOV, N.Z.

29777

Opyt kormlyeniya loshadyey b yez grubogo korma. Trudy Voroivye-shsk. Zooyetin-ta, T. XI, 1948, S. 27-30.

SO: LETOPSIS' No, 40

BOLKHOVITINOV, N.Z., kand.sel'skokhoz.nauk

Food value of mixed silage, Zhivotnovodstvo 21 no.10:79-80
0 '59. (MIRA 13:2)
(Swine--Feeding and feeds) (Ensilage)

BOLKHOVITINOV, S. I.: Master Tech Sci (diss) -- "Investigation to improve the quality of concrete used to reinforce the vertical shafts of mines". Moscow, 1959. 14 pp (Min Higher Educ USSR, Moscow Mining Inst Im I. V. Stalin), 150 copies (KL, No 15, 1959, 116)

BOLKHOVITIKOV, V.

"Scientists Who Conducted Research in the Field of Radio Location," Tekh.
Molod., Nos. 5-6, May-June, 1946

BOLKHOVITINOV, V.

23031 Tvortsy geologicheskoy nauki. (O rus. uchennykh-geologakh). Ill. A. Pobedinskiy. Tekhnika-molodezhi, 1949, No. 7, C. 27-32. -- Prodolzheniye. Sleduet.

SO: LETOPIS' NO. 31, 1949

BOLKHOVITINOV, V. I.

27636. BOLKHOVITINOV, V. I. Ostroumov, g. tvortsy geologicheskoy nauki. (orus. uchenykh - geologakh). ill. s. pivovarov. tekhnika -- molodezhi, 1949, No 8, s. 27-31 [prodolz. nachalo: No 7.

SO: Knizhaya Letopis, Vol. 1, 1955

BOLENOVITINOV, V. i OTRONOV, G.

29574

Tvortsy Gyeologichyeskoy Nauki. 10 kus. Uchyenykh-geologakh. Ill. K.
Artsyeulov i A. Pobyedinskiy. Tyekhnika-Molodyezhi, 1949, No. 9, s.27-37.-
Okonchaniye. Nachalo: No.7

SO: LETOPIS' NO. 40

BOLKHOVITINOV, V.; POMERANTSEVA, G., redaktor; MAKAROVA, E., tekhnicheskii redaktor.

[Aleksandr Grigor'evich Stoletov, 1839-1896] [Leningrad] Izd-vo TsK VLKSM "Molodaia gvardiia," 1953. 509 p. (MLRA 7:8)
(Stoletov, Aleksandr Grigor'evich, 1839-1896)

BAYKOV, V.T.; BOLKHOVITINOV, V.F., prof., retsenzent; TRAPEZIN, I.I., dots., retsenzent; ROMASHEVSKIY, A.Yu., otv. red.; YERMAKOV, M.M., tekhn. red.

[Structural mechanics for airplanes] Stroitel'naya mekhanika samoleta. Moskva, MAI. Pt.1. [Statically determinate rod systems] Sticheski opredelime sterzhnevye sistemy. 1950. 228 p.
(MIRA 15:1)

(Structures, Theory of)
(Airplanes--Design and construction)

PHASE I BOOK EXPLOITATION

SOV/6140

Bolkhovitinov, Viktor Fedorovich

Puti razvitiya letatel'nykh apparatov (History of Aircraft Development) Moscow, Oborongiz, 1962. 129 p. Errata slip inserted. 4800 copies printed.

Reviewer: S. V. Il'yushin, Doctor of Technical Sciences, Professor; Ed. A. I. Sokolov, Engineer; Ed. of Publishing House: S. I. Vinogradskaya; Tech. Ed.: N. A. Pukhlikova; Managing Ed.: S. D. Krasil'nikov.

PURPOSE: This book is intended for engineers and technicians engaged in the design, manufacture, and use of aircraft.

COVERAGE: The history of the development of aircraft is presented briefly and the reasons determining the appearance and discontinuation of individual designs are analyzed, along with advances and setbacks in the development of a particular type of

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SOV/6140

History of Aircraft Development

technique. It is demonstrated how aircraft were used and how technology applied the achievements of science to aircraft. It is also shown how technological and scientific requirements were introduced through actual application of aircraft and how, in combination with the foregoing, the last mentioned brought about the development of aircraft. No personalities are mentioned. There are 28 references: 19 Soviet, 8 English, and 1 French.

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ACC NR: AP6035702

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SOURCE CODE: UR/0413/007/007

INVENTORS: Azovtsev, A. A.; Bolkhovitinov, V. K.; Ivanova, V. A.; Kolpakova, G. A.; Kyun, Ye. V.; Savel'yev, Yu. F.; Drozdov, A. I.; Byunau, A. E.

ORG: none

TITLE: A device for automatically controlling the movement of ship models on deeply immersed underwater vanes. Class 21, No. 186547 (announced by Central Scientific Research Institute imeni Academician A. N. Krylov (Tsentral'nyy nauchno-issledovatel'skiy institut))

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 48

TOPIC TAGS: shipbuilding engineering, model test, simulation test facility, automatic control system

ABSTRACT: This Author Certificate presents a device for automatically controlling the movement of ship models on deeply immersed underwater vanes, with the use of a tow device and of a measuring arm. The design makes it possible to accomplish the programmed changes of the model, conforming to angles of trim difference, of heeling, and of yaw. It also makes it possible to measure the instantaneous values of all these angles and the magnitudes of the vertical displacement of the model. The lower end of the measuring arm is mounted on a Cardan ball joint. The upper end of the arm is set in a control housing which is the inner frame of a second Cardan joint.

UDC: 621.501.72:629.12.014.5

Card 1/2

ACC NR: AF0035702

The outer frame of this second Cardan joint is rigidly fastened to the frame of the tow device.

SUB CODE: 13, 14/ SUBM DATE: 06Aug64

Card 2/2

BOLEKHOVITINOV, VIKTOR FERDINANDOVICH

N/5
601.7
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589 P. ILLUS., DIAGRS., MAPS, PORTS.

BOLKHOVITINOV, Viktor Nikolayevich; REZNIK, S., red.

Stoletov. Moskva, Molodaia gvardiia, 1965. 509 p.
(Zhizn' zamechatel'nykh liudei. Seria biografii,
no.17(411)) (MIRA 18:10)

BOLKHOVITINOVA, L. M.

"Changes in the Lungs of Newborn Children in Cases of Early Death." Cand
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Survey of Scientific and Technical Dissertations Defended at USSR Higher
Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

BOLSHOVITTEVA, L. M.

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Voprosy toksoplazmoza. report theses of a conference on toxoplasmosis,
Moscow, 3-5 April 1961, publ. by Inst Epidemiology and Microbiology
im. N. P. Gamaleya, Acad. Med. Sci USSR, Moscow, 1961, 69pp.

VASIL'YEVA, N. N.; BOLKHOVITINOVA, L. M. (Moskva)

Morphogenesis and clinical aspects of embryonal adenosarcoma
of the kidneys in adults. Arkh. pat. no.6:51-56 '61.
(MIRA 14:12)

1. Iz kafedry patologicheskoy anatomii (zav. - chlen-korrespondent
AMN SSSR prof. A. I. Strukov) I Moskovskogo ordena Lenina meditsin-
skogo instituta imeni I. M. Sechenova.

(KIDNEYS-TUMORS)

BOLKHOVITINOVA, L.M., assistant

Changes in the organs of infants born to mothers with diabetes
mellitus. Trudy 1-go MMI 22:200-209 '63 (MIRA 18:2)

BOLKHOVITINOVA, L. M., kand. med. nauk

Congenital defects of development in newborn infants. *Pediatria*
no.11:17-21 '61. (MIRA 14:12)

1. Iz kafedry patologicheskoy anatomii (zav. - chlen-korrespondent
AMN SSSR prof. A. I. Strukov) I Moskovskogo meditsinskogo instituta
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(INFANTS(NEWBORN) (DEFORMITIES)
(PREGNANCY, COMPLICATIONS OF)

ASLAMAZOV, E.G.; BOLKHOVITINOVA, L.M. (Moskva)

Morphology of urinary schistosomiasis; from endobiopsy data. Arkh.
pat. 24 no.8:39-44 '62. (MIRA 15:8)

1. Iz urologicheskoy kliniki (zav. - prof. I.M. Epshteyn) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova i klinicheskogo otdeleniya Instituta meditsinskoy parazitologii i tropicheskoy meditsiny imeni Ye.I. Martainovskogo (zav. - prof. N.N. Flotnikov), iz kafedry patologicheskoy anatomii (zav. - chlen-korrespondent AMN SSSR prof. A.I. Strukov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

(SCHISTOSOMIASIS) (GENITOURINARY ORGANS--DISEASES)

BOLEKOVITRINA, L.M. (patent)

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ZHOROV, I.S.; BOLKHOVITINOVA, L.N. (Moskva)

Modern anesthesia. Med.vestn 18 no.12:6-10 '59.
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BOLKHOVITINOVA, L.N., kand.med.nauk

~~Changes in kidney function in certain types of anesthesia.~~
Khirurgia 35 no.6:79-83 Je '59. (MIRA 12:8)

1. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. I.S. Zhorov)
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Lenina meditsinskogo instituta im. I.M. Sechenova.

(ANESTHESIA

renal funct. changes in various types of
anesth. (Rus))

(KIDNEYS, physiol.

funct. changes in various types of anesth.
(Rus))

BOLKHOVITINOVA, L.N., kand.med.nauk

Selection of anesthesia in hypertension. Trudy 1-go MMI 3:27-34
'57. (ANESTHESIA) (HYPERTENSION) (MIRA 14:5)

BOLKHOVITINOVA, L.N., kand.med.nauk

Nitrous oxide anesthesia. Trudy 1-go MMI 3:66-74 '57.

(MIRA 14:5)

(NITROUS OXIDE)

VINOGRADOVA, N.I.; TRUBNIKOVA, A.S.; BOLKHOVITINOVA, M.H.

Effects of local conditions on the quality of artesian water.
Gig. i san. 24 no.6:46-48 Je '59. (MIRA 12:8)

1. Iz Tsentral'noy nauchno-issledovatel'skoy laboratorii
gigiyeny i epidemiologii Ministerstva putey soobshcheniya,
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cheskoy stantsii, Tekhnologicheskoy laboratorii Lyublinskogo
kombinata tresta "Mosochistvod".

(WATER SUPPLY

artesian wells, eff. of local cond. on
quality of water (Rus))

BOLEKHOVITRINA, Ye. N.

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Application of shot method for increasing the strength of gears hardened by high-frequency currents.

DLC: Tkh.vh

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"Investigation of the Possibility for Using a Shot Peening Process in the Manufacture and Repair of Agricultural Machine Parts." Sub 18 May 51, Moscow Inst for the Mechanization and Electrification of Agriculture imeni V. M. Molotov

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SO: Sum. No. 480, 9 May 55

BOLKHOVITINOVA, Ye. N.

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October 1952. UNCLASSIFIED.

BOLKHOVITINOVA, E. N.

Vliianie drobestriunogo naklepa na svoistva stal'nykh detalei [Effect of shot blasting on the properties of steel parts]. Moskva, Mashgiz, 1953. 92 p.

SO: Monthly List of Russian Accessions, Vol. 6 No. 8 November 1953

BOLKHOVIT INOV, Nikolay Feodosyevich, professor, doktor tekhnicheskikh nauk; BOLKHOVIT INOVA, Yelena Nikolayevna, dotsent, kandidat tekhnicheskikh nauk; KOLLI, A.Ya., inzhener, redaktor; VLADISLAVLEV, V.S., professor, retsenzent; POGODIN-ALEKSEYEV, G.I., professor, doktor tekhnicheskikh nauk, retsenzent; POPOVA, S.M., tekhnicheskiy redaktor

[Atlas of normal microstructures of metals and alloys] Atlas normal'nykh mikrostruktur metallov i splavov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1955. 94 p. (MIRA 9:2)
(Metallography)

BOLKHOVITINOVA, YE.N.

Call Nr AF 1119832

BOOK

AUTHOR: Yelizavetin, Mikhail A.

TITLE: Surface Hardening of Machine Parts (Uprochneniye poverkhnosti detaley mashin)

PUB. DATA: Vsesoyuznoye uchebno-pedagogicheskoye izdatel'stvo trudrezervizdat, Moscow, 1956, 82 pp., 10,000 copies

ORIG. AGENCY: None given

EDITORS: Editor: Kontsevaya, E.M.; Technical Editor: Kuz'min, D.G.; Science Editor: Bolkhovitinoва, Ye.N., Candidate of Technical Sciences

PURPOSE: This pamphlet is intended for coaches of industrial training courses, for teachers and graduates of vocational and technical schools and for skilled workers in machine shops.

Card 1/1

Call Nr AF1119832

Surface Hardening of Machine Parts (Cont.)

COVERAGE: This pamphlet contains discussions on the modern technological processes of surface hardening of machine parts, which have found wide application in machine shops as an effective means of increasing the performance characteristics of products. This booklet offers Russian contributions. No personalities are mentioned. There are 22 bibliographic references, all of which are Slavic.

Card 2/4

Call Nr AF 1119832

Surface Hardening of Machine Parts (Cont.)

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Ball peening by M.I. Kuzmin's method	23
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Call Nr AF1119832

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Card 4/4	

BOLKHOVITINOVA, YE. N.

"Investigation of Certain Materials for Mechanical Suture,"
by Ye. N. BolkhovitinoVA and A. M. Volkov, Scientific
Research Institute of Experimental Surgical Apparatus and
Instruments, Meditinskaya Promyshlennost' USSR, No 2, Feb 57,
pp 41-45

Tantalum wire is used in the manufacture of staples for mechanical sutures because it does not react with human tissues. "However, no one up to now has thoroughly studied the mechanical properties of tantalum wire with respect to the specific working conditions of the staples." Because of the high cost of tantalum, the authors have attempted to find a substitute.

Both tantalum and chrome-nickel stainless steel were subjected to mechanical tests and compared. Chrome-nickel stainless steel was also subjected to a biological corrosion test.

The investigators succeeded in making staples from heat-treated stainless steel which had the same mechanical properties as tantalum.

In animals subjected to vascular suture with the stainless-steel staples the tissue reaction for periods up to 25 days was identical to the tissue reaction to tantalum. (U)

SUM. 1360

БОЛКHOVИTИHOBA, Ye.N.

AL'TGAUZEN, O.N., kandidat fiziko-matematicheskikh nauk; BERNSHTEYN, M.L., kandidat tekhnicheskikh nauk; BLANTER, M.Ye., doktor tekhnicheskikh nauk; BOKSETYN, S.Z., doktor tekhnicheskikh nauk; BOLKHOVITINOVA, Ye.N., kandidat tekhnicheskikh nauk; BORZDYKA, A.M., doktor tekhnicheskikh nauk; BUNIN, K.P., doktor tekhnicheskikh nauk; VINOGRAD, M.I., kandidat tekhnicheskikh nauk; VOLOVIK, B.Ye., doktor tekhnicheskikh nauk [deceased]; GAMOV, M.I., inzhener; GELLER, Yu.A., doktor tekhnicheskikh nauk; GORELIK, S.S., kandidat tekhnicheskikh nauk; GOL'DENBERG, A.A., kandidat tekhnicheskikh nauk; GOTLIB, L.I., kandidat tekhnicheskikh nauk; GRIGOROVICH, V.K., kandidat tekhnicheskikh nauk; GULYAYEV, B.B., doktor tekhnicheskikh nauk; DOVGALYEVSKIY, Ya.M., kandidat tekhnicheskikh nauk; DUDOVTSSEV, P.A., kandidat tekhnicheskikh nauk; KIDIN, I.N., doktor tekhnicheskikh nauk; KIPNIS, S.Kh., inzhener; KORITSKIY, V.G., kandidat tekhnicheskikh nauk; LANDA, A.F., doktor tekhnicheskikh nauk; LEYKIN, I.M., kandidat tekhnicheskikh nauk; LIVSHITS, L.S., kandidat tekhnicheskikh nauk; L'VOV, M.A., kandidat tekhnicheskikh nauk; MALYSHEV, K.A., kandidat tekhnicheskikh nauk; MEYERSON, G.A., doktor tekhnicheskikh nauk; MINKEVICH, A.N., kandidat tekhnicheskikh nauk; MOROZ, L.S., doktor tekhnicheskikh nauk; NATANSON, A.K., kandidat tekhnicheskikh nauk; NAKHIMOV, A.M., inzhener; NAKHIMOV, D.M., kandidat tekhnicheskikh nauk; POGODIN-ALEKSEYEV, G.I., doktor tekhnicheskikh nauk; POPOVA, N.M., kandidat tekhnicheskikh nauk; POPOV, A.A., kandidat tekhnicheskikh nauk; RAKHSHTADT, A.G., kandidat tekhnicheskikh nauk; ROGEL'BERG, I.L., kandidat tekhnicheskikh nauk;

(Continued on next card)

AL'TGAUZEN, O.N.---- (continued) Card 2.

SADOVSKIY, V.D., doktor tekhnicheskikh nauk; SALT'YKOV, S.A., inzhener; SOBOLEV, N.D., kandidat tekhnicheskikh nauk; SOLODIKHIN, A.G., kandidat tekhnicheskikh nauk; UMANSKIY, Ya.S., kandidat tekhnicheskikh nauk; UTEVSKIY, L.M., kandidat tekhnicheskikh nauk; FRIDMAN, Ya.B., doktor tekhnicheskikh nauk; KHIMYSHIN, F.F., kandidat tekhnicheskikh nauk; KHRUSHCHEV, M.M., doktor tekhnicheskikh nauk; SHAPIRO, M.M., inzhener; SHKOL'NIK, L.M., kandidat tekhnicheskikh nauk; SHRAYBMR, D.S., kandidat tekhnicheskikh nauk; SECHAPOV, N.P., doktor tekhnicheskikh nauk; GUDTSOV, N.T., akademik, redaktor; GORODIN, A.M., redaktor izdatel'stva; VAYNSHTYIN, Ye.B., tekhnicheskii redaktor

[Physical metallurgy and the heat treatment of steel and iron; a reference book] Metallovedenie i termicheskaya obrabotka stali i chuguna; spravochnik. Pod red. N.T.Dudtsova, M.L.Bernshteina, A.G. Rakhshtadta. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po cherno i tsvetnoi metallurgii, 1956. 1204 p. (MLRA 9:9)

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(Steel--Heat treatment) (Iron--Heat treatment)
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Med.prom. 11 no.7:32-37 J1 '57. (MLRA 10:8)

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(SURGICAL INSTRUMENTS AND APPARATUS)
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Bolkhovitina, E. N., Volkov, A. M., and Petrova, N. P.

"The use of K1ONK1M alloy in surgery." Novye khirurgicheskie
apparaty i instrumenty i opyt ikh primeneniya, No. 2, ~~1961~~, p. 97
1958