SOV/70-4-3-5/32

Superposition Methods of Solving Crystal Structures

$(NaAsO_3)_x$ (50 atoms/cell; $P\bar{1}$)

$LiAlPO_4(F, OH)$ (Amblygonite, 24 parameters; $P\bar{1}$)

$Na_4MnTi(Zr_{1.5}Ti_{0.5})[Si_2O_7]_2O_2(F, OH)_2$ (Seidozerite, 43 parameters; $P2/c$) .

It is concluded that the superposition methods available at present are interesting from the point of view of structure analysis theory and are powerful means of solving crystal structures. The possibilities of superposition methods have not been fully exploited, particularly as they can readily be tried on the Patterson projections which are almost always made at the start of an analysis. The mechanical computation of sharpened three-dimensional Patterson syntheses will greatly facilitate the use of superposition methods, particularly if superposition and minimalisation can be done automatically.

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Superposition Methods of Solving Crystal Structures SOV/70-4-3-5/32

There are 63 references, 16 of which are Soviet, 1 German, 1 French, 10 English and 35 international.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc., USSR)

SUBMITTED: March 10, 1959

Card 3/3

SOV/70-4-4-7/34

.AUTHORS: Simonov, V.I. and Vaynshteyn, B.K.

TITLE: The Use of Functions Isolating a Structure From Among
the Interatomic Vectors for Finding the Phases of the
Structure Amplitudes

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 4, pp 505-509 (USSR)

ABSTRACT: On the basis of the superposition method, formulae are
proposed for determining the phases of the structure
amplitudes. The efficacity of one of the formulae is
verified on the $h0l$ zone of the known structure of
seidozerite.
If there is no overlapping and no parasitic peaks the

functions $\zeta(\bar{r})$, $\cap(\bar{r})$ and $M(\bar{r})$ give maxima which

approximate to $\rho(\bar{r})$, the electron-density distribution.
In as much as these functions are equal, their Fourier
coefficients are like each other. So knowing the phases
of one of these isolating functions, they could be
attached to observed values of $|F_{hkl}|$ for a Fourier

synthesis. If there is no centre the process would
Card1/4   require more care.

SOV/70-4-4-7/34

The Use of Functions Isolating a Structure From Among the Interatomic Vectors for Finding the Phases of the Structure Amplitudes

For a centrosymmetric structure, $2\bar{r}_o$, the vector between centre-related atoms can be found by Mamedov's method (Ref 19). The origin is chosen to be at a centre of symmetry and the Patterson function can be written as:

$$P(\bar{r}) = 1/V \sum_{H} F_H^2 \exp\left[-2\pi i\, \bar{H}(\bar{r} \pm \bar{r}_o)\right] .$$

The $\angle$-function is:

$$\angle(\bar{r}) = 2/V \sum_{H} (F_H^2 \cdot \cos 2\pi \bar{H}\bar{r}_o) \exp\left[-2\pi i \bar{H}\bar{r}\right] ,$$

which, when compared with:

$$\angle(\bar{r}) = 1/V \sum_{H} F_H \exp\left[-2\pi i \bar{H}\bar{r}\right]$$

gives the Fourier coefficients. $\Lambda(\bar{r})$ and $M(\bar{r})$ are treated similarly. The formula actually used is from

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The Use of Functions Isolating a Structure From Among the Interatomic Vectors for Finding the Phases of the Structure Amplitudes

SOV/70-4-4-7/34

$\rho(\bar{r})$ and relates the signs by:

$$S(F_{\bar{H}}) = S\sum_{\bar{H}'} \{(F^2_{\bar{H}'} \cos 2\pi \bar{H}'\bar{r}_0)[F^2_{\bar{H}-\bar{H}'}\cos 2\pi(\bar{H} - \bar{H}')\bar{r}_0] +$$

$$+ (F^2_{\bar{H}} \sin 2 \bar{H}'\bar{r}_0)[F^2_{\bar{H}-\bar{H}'}\sin 2\pi (\bar{H} - \bar{H}')\bar{r}_0]\} .$$

This was applied to the hOℓ zone of seidozerite which has the symmetry p2 . Out of 378 non-zero reflexions the heavy atoms, (Zr + Na$_I$) , determined 68 incorrectly.

Calculation with the above formula is most laborious and pairs were selected from the 102 strongest reflexions. A table of |F| on transparent material which could be superimposed on another table was used. The signs of all 378 reflexions were calculated from the formula given and all but 36 (9.5%) were correct. Using the heavy atom calculation, 19% were wrong. This method uses the

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SOV/70-4-4-7/34

The Use of Functions Isolating a Structure From Among the Interatomic Vectors for Finding the Phases of the Structure Amplitudes

minimum information about the structure, only the position $\bar{r}_o$ of one atom and a wide selection of F^2_{exp}. Putting the intensities on an absolute scale to include F^2_{000} introduces some error. Various other deficiencies are discussed but the method is considered promising. The function $M(\bar{r})$ would be better but more difficult to handle mathematically. Acknowledgments are made to Academician N.V. Belov and to V.D. Andreyev. There are 1 figure and 22 references, of which 15 are Soviet, 1 English, 1 German and 5 international.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc. USSR)

SUBMITTED: May 4, 1959

Card 4/4

3(5), 5(2)

AUTHORS: Belov, N. V., Academician, Simonov, V. I.   SOV/20-125-4-56/74

TITLE: Isomorphous Interactions Between Zirconium and Titanium (Ob izomorfnykh sootnosheniyakh mezhdu tsirkoniyem i titanom)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 4, pp 888 - 889 (USSR)

ABSTRACT: The present paper gives the correction by the authors who were not careful (Ref 1) in the case of several sentences: "Ti was lacking in the Fersman-isomorphism "star" for Zr, can, however, constantly be found in all papers concerning the Lovozero massif. So the latter is in Lovenite with a content of more than 20% ZrO_2 substituted up to 50% by TiO_2". There are, however, important reasons for the absence of Ti in the Zr-star. The present material from the Lovozero-massif shows that this isomorphism of Zr and Ti occurs in fact only in the case of three minerals: Seydoserite (Seydozerit), Lovenite (Ti-Lovenites), and Astrophyllite-Kupletskite. These minerals have a high manganese content (10% and more % MnO). The role of Mn in Seydoserite is quite clear (Refs 1,2) though this is not the case in the two last mentioned minerals (their structure is unknown).

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Isomorphous Interactions Between Zirconium and   SOV/20-125-4-56/74
Titanium

The structure analysis confirmed on the whole the formula of this mineral (according to M. Ya. Kazakova and Ye. I. Semenov, Ref 2): $Na_8Zr_3Ti_3Mn_2[SiO_4]_8F_4$. The most essential change carried out by the authors was the affiliation of a third of Ti to Zr and the removal of each 8th O-atom from the silicon-oxygen radical (which is less visible for the analyst). The two interpretations by Ye. I. Semenov (Ref 2) are from the first dangerous in view of the numbers obtained by a detailed analysis (M. Ye. Kazakova). Ye. I. Semenov is, however, right in the case of Seydoserite in its cation distribution as was confirmed by the X-ray structure analysis of the authors. Only two maxima were determined on the corresponding projection. One of them may be ascribed to the Mn-cation, the other one to the Ti. After the identification of the higher maximum with Mn the authors immediately discovered a mistake in the case of the distances between these two cations and the surrounding O-atoms. This mistake could be corrected only by the exchange of Ti and Mn. It could, however, not be concluded from the height of the Ti-maxima that Zr is contained in them. On the

Card 2/4

Isomorphous Interactions Between Zirconium and   SOV/20-125-4-56/74
Titanium

contrary, the chemical and radiographic analysis pointed out clearly that a fourth of Zr is replaced by Ti. Thus the assumed isomorphism would be in any case unilateral. After the detection that $1/4$ of the Zr-atoms is replaced by Ti in Seydoserite, and correspondingly the half of the Mg-atoms by Mn, not only one, but 2 paradoxes are solved. The Mn which inclines towards high oxidation degrees is transformed from the bivalent state into a trivalent (or ? even tetravalent) one. Correspondingly the tetravalent Ti becomes trivalent (like in the case of pyroxene, Ref 4). The reaction $Ti^{4+} + Mn^{2+} \rightleftharpoons Ti^{3+} + Mn^{3+}$ (Mn^{4+} ?) renders the radius of the Ti^{3+} ($R_i = 0.83$ Å) immediately commensurable to that of Zr^{4+} (0.87 Å) and to that of Mn^{3+} (0.71 Å) with that of Mg^{2+} (0.78 Å). It is not necessary that the reaction is finished, a corresponding tendency is sufficient. These statements are illustrated by other minerals. There are 4

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Isomorphous Interactions Between Zirconium and   SOV/20-125-4-56/74
Titanium

            Soviet references.

ASSOCIATION: Institut kristallografii Akademii nauk SSSR (Institute of
               Crystallography of the Academy of Sciences, USSR)

SUBMITTED: January 21, 1959

Card 4/4

3 (8)
AUTHORS: Mamedov, Kh. S., Simonov, V. I.,   SOV/20-126-2-42/64
                Belov, N. V., Academician

TITLE: On Wöhlerite-Lovenite and Rinkite Mosandrite Groups
                (O gruppakh velerita-lovenita i rinkita-mozandrita)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 2,
                pp 379-381 (USSR)

ABSTRACT: The 2 groups named in the title followed each other in
                modern text-books (Refs 1, 2) and in mineralogical tables
                (Ref 3). Despite a somewhat closely-connected type-formula,
                they differ greatly with respect to their shape and the
                parameters of the elementary cells. The recently published
                results of an exhaustive investigation of the Zr,Ti-silicate
                of Lovozero - the Seydhozerite (Refs 4, 5) change the
                mineralogical picture considerably. This mineral was placed
                by its discoverer (Ref 6) into the Wöhlerite-Lovenite group
                (ZrO_2-content = 23 %). According to röntgenometrical data
                it doubtlessly belongs to the Rinkite group. Moreover, this
                mineral should because of its ideal structure be placed on
Card 1/3   top of the Seydhozerite-Rinkite-group. The same test of the

On Wöhlerite-Lovenite and Rinkite Mosandrite Groups   SOV/20-126-2-42/64

structure (Figs 4, 5) proved that cuspidine should be placed
on top of the Wöhlerite-Lovenite-group. In the essential work
on the cuspidine and other purely mineralogical publications
much space was devoted to its close structural connection with
another Ca-silicate, the tillite. By means of geometrical
analysis of this simplest Ca-silicate there was determined
an infinite mineralogical radical - the tillite band which
all minerals have in common (Fig 1). With the aid of this
band such an important compound as tricalciumsilicate-hydrate
(Ref 8) is for cement-chemistry, could simply be "put
together" and a structural solution could be found. A second
interesting result obtained in consequence of the tillite
band determination is the aforementioned geometrical
(structural) difference between both mineral groups, mentioned
in the title. Hence further (rational) combination of both
these groups, which are already connected by a common type-
formula is necessary. From figures 2-4, one may see that the
minerals of the Cuspidine-Wöhlerite-Lovenite group are (at
least from the geometrical standpoint) only a polymorphous
modification of the mineral group Seydhozerite-Rinkite.
Perhaps in this case the term polytypical modification would

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On Wöhlerite-Lovenite and Rinkite Mosandrite Groups   SOV/20-126-2-42/64

be more convenient. This modification is characteristically
expressed by the projection-surface of the cell which is
nearly the same if slight differences in the length of the
axis are not taken into account. In real minerals (Table 1)
above all the composition changes. There are 4 figures,
1 table, and 8   references, 7 of which are Soviet and
1 German.

ASSOCIATION: Institut khimii Akademii nauk AzerbSSR (Institute for
Chemistry of the Academy of Sciences of the Azerbaydzhan SSR)
Institut kristallografii Akademii nauk SSSR (Institute for
Crystallography of the Academy of Sciences, USSR)

SUBMITTED: February 26, 1959

Card 3/3

SIMONOV, V. I.   (Moscow)

Die Struktur des neuen Zr-Ti-Silikates Lovenit

report submitted for the Symposium on Silicates with 1 & 2 cations,
Berlin, DDR, 7-9 Apr 60

SIMONOV, V.I.

Baotite, a mineral with metasilicate rings [Si_4O Krsitallografiia
5 no.4:544-546 Jl-Ag '60.   (MIRA 13:9)

1. Institut kristallografii AN SSSR.
                                (Baotite)

BELOV, N.V.; PRIKHOD'KO, N. Ye.; SIMONOV, V.I.; FLORINSKAYA, V.A.;
MCHEDLOV-PETROSYAN, O.P.

Symposium on the study of silicates of monovalent and diva-
lent cations. Zhur. prikl. khim. 33 no.11:2598-2600 N '60.
(MIRA 14:4)

(Silicates--Congresses)

SIMONOV, V.I.; SHCHEDRIN, B.M.

Fourier integral from the minimum phase function, and the signs of structural amplitudes. Kristallografiia 6 no.3:363-374 My-Je '61.

(MIRA 14 8)

1. Institut kristallografii AN SSSR i Vychislitel'nyy tsentr Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova.
(Fourier's series) (Lattice theory)

SIMONOV, V.I.

Determination of the phases of structural amplitudes from a modified minimalization function. Dokl. AN SSSR 136 no.4:813-816 F '61.
(MIRA 14:1)

1. Institut kristallografii Akademii nauk SSSR. Predstavleno akademikom N.V. Belovym.
(Crystallography, Mathematical)

SIMONOV, V.I., kand.fiz.-matem.nauk

Investigations on the diffraction of X rays.   Vest. AN SSSR 32
no.9:132-133 S '62.
(X rays—Diffraction)

Vest. AN SSSR 32
(MIRA 15:9)

S/030/62/000/009/002/002
I046/I242

AUTHOR: Simonov, V.I., Candidate of Physico-Mathematical Sciences

TITLE: Research on X-ray diffraction

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 9, 1962, 132-133

TEXT: The 900 Soviet scientists participating in the annual Fedorov
Conference and the special symposium on X-ray apparatus held between May 21 and
26, 1962, presented 260 papers on the following subjects. General: crystal
chemical classification of sulfides, arsenides, sulfoarsenides and ther analogs,
dynamic scattering theory, nature of structural impurities in crystals, applica-
bility of X-ray structural analysis. Theory: X-ray scattering from crystals
with defects and lattice deformations, from solid solutions and from polymers;
Fourier analysis of one or several lines in powder patterns; explicit phase
relationships for symmetry-linked structural amplitudes of the tetragonal,
hexagonal, and cubic systems; representation of lattice symmetry in reciprocal
space. Experimental: new results on silicate structures (existence of
$Si_{2+2}O_{12} \infty$ chains in $Na_2BaTi_2Si_4O_{14}$); a new method for analyzing the structure of
$(Ca,Na)_3(Zr,Ti) \left[Si_2O_7\right] (O,F)_2$ by preliminary treatment of "substructures"

Card 1/2

Research on X-ray...

specified by reflections with even k only; a modification of the isomorphous-substitution method applied to the analysis of $NiEn_2Cl_2$ and $NiEn_2Br_2$; X-ray studies of phase transformations; binary and ternary systems; X-ray and electric changes in dielectric and piezoelectric ternary solid solutions; electron-diffraction methods; neutron-diffraction analysis of atomic and magnetic structures. General crystallography, mineralogy and petrography: synthetic quartz; diffractometric and thermographic analysis of loams; crystal growth; structural deformations of metals and alloys; real-crystal structure; dislocational structure of crystals (theory and experiment); two- and multi-component alloys; solid-solution deterioration in Cu-Be, Ni-Be, Cu-Sn, Cu-Ni-Co; problems of texture, ordering, brittleness, plastic deformation, interphase boundaries; X-ray approach to electrolytic coating. X-ray apparatus: theoretical determination of optimal conditions for diffraction-pattern recording; new instruments in X-ray spectroscopy. Some of the participants mentioned in text were: G.B. Bokiy, Z.G. Pinsker, V.A. Frank-Kamenetskiy, A.I. Kitaygorodskiy, I.V. Yavorskiy, B.K. Vaynshteyn, B.B. Zvyagin, A.S. Antsyshkina, M.A. Poray-Koshitsa.

Card 2/2

SIMONOV, V.I.

Third All-Union Conference on the use of computers in the struc-
tural analysis of crystals. Zhur.strukt.khim. 4 no.5:798-800 S-O
'63.
(MIRA 16:11)

NIKITIN, A.V.; SIMONOV, V.I.

Effect of temperature correction on the divergence factor in
the structural analysis of crystals. Kristallografiia 8 no.3:
446-449 My-Je '63.   (MIRA 16:11)

1. Institut kristallografii AN SSSR.

SHIBAYEVA, R.P.; SIMONOV, V.I.; BELOV, N.V.

Crystalline structure of the Ca, Na, Zr, Ti-silicate resenbuschite
$Ca_{3.5}Na_{2.5}Zr(Ti,Mn,Nb)[Si_2O_7]_2F_2O(F,O)$. Kristallografiia 8 no.4:506-
516 Jl-Ag '63.   (MIRA 16:9)

1. Institut kristallografii AN SSSR.
                         (Rosenbuschite crystals)

Aspects of structural analysis at the "Data Interactions"
Seminar. Crystallography and structure, & fig. &
plates, diagrams.

SIMONOV, V.I.

Use of a symmetry hypercenter in analyzing crystalline structures.
Kristallografiia 10 no.1:10-14 Ja-F '65.

(MIRA 18:3)

1. Institut kristallograf i AN SSSR.

SIMONOV, V.I.

Possibility for automating the superprsition method of solving crystalline structures. Kristallografiia 10 no.2:155-161 Mr-Ap '65.

(MIRA 18:7)

1. Institut kristallografii AN SSSR.

LI DE-YUY [Li Te-yu]; SIMONOV, V.I.; BELOV, N.V., akademik

Crystalline structure of rinkite $Na(Na, Ca)_2(Ca, Ce)_4 (Ti, Nb)$ $[Si_2O_7]_2 (O, F)_2F_2$. Dokl. AN SSSR 162 no.6:1288-1291 Je '65.

(MIRA 18:7)

1. Institut kristallografii AN SSSR.

L 27073-66

ACC NR: AP6017471   SOURCE CODE: UR/0020/65/162/006/1288/1291

AUTHOR: Li, D.-I.; Simonov, V. I.; Belov, N.V.(Academician)

ORG: Institute of Crystallography, AN SSSR(Institut kristallografii AN SSSR)

TITLE: Crystal structure of rinkite Na(Na, Ca) sub 2 (Ca, Ce) sub 4 (Ti, Nb)
/Si sub 2 O sub 7/ sub 2 (O, F)sub 2 F sub 2

SOURCE: AN SSSR. Doklady, v. 162, no. 6, 1965, 1288-1291

TOPIC TAGS: crystallography, crystal structure, mineral

ABSTRACT: Different structures have been proposed for rinkite
which may be due to the use of slightly different samples of the
mineral. The crystallographic measurements reported were carried
out on amber-colored Greenland rinkite. The true symmetry of rin-
kite was found to be monoclinic, but with a unique psuedorhombic
nature. The coordinates of the basic atoms of rinkite are tabu-
lated, and its polyhedral structure is projected in the xy plane.
Features of the crystallographic structure are discussed in de-
tail and compared with those of other minerals. The authors thank
M.D. Dorfman for providing the rinkite samples, and for his interest in the
work on the rinkite structure. Further thanks is rendered to Ye. I. Semenov
for providing the new chemical analysis of Greenland rinkite. Orig. art.
has: 1 table, 2 figures.
Card 1/1 SUB CODE: 08, 20 / SUBM DATE: 05Mar65 / ORIG REF 010 / OTH REF   002

L 31197-66   ЕЖТ(d) I   I r(c)

ACC NR: A.0022579

SOURCE CODE: UR/0070/66/011/002/0155/0158

AUTHOR: Shchedrin, B. M.; Tovbis, A. B.; Simonov, V. I.

ORG: Computer Center, MGU (Vychislitel'nyy tsentr MGU); Institute of Crystallography, AN SSSR (Institut kristallografii AN SSSR)

TITLE: Program for computing structural amplitude phases from the three-dimensional minimization function

SOURCE: Kristallografiya, v. 11, no. 2, 1966, 155-158

TOPIC TAGS: minimization, digital computer, phase shift analysis, electron density, electron distribution, Fourier analysis, approximation, computer program, data storage

ABSTRACT: An experimental digital computer program is described which, with it and given phase-shift vectors, makes it possible to calculate structural amplitude phases from Fourier integrals of the minimization functions and to construct the first approximation of the electron density distribution. The program was tested on the structure of $C_8N_2O_3H_{16}Br$. The large core storage required for this problem was circumvented by increasing the computing time.

SUB CODE: 09, 07 / SUBM DATE: 01Jul65 / ORIG REF: 008

UDC: 548.734

Card 1/1

SOV/137-58-12-24045

1958, Nr 12, p 18 (USSR)

Translation from   Referativnyy zhurnal. Metallurgiya

AUTHORS: Filippov, S. I., Klyuyev, M. M., Simonov, V. I.

TITLE: Regularities of Steel-refining Processes in a Current of Gaseous Oxidizer. I. The Kinetics of the Oxidation of Carbon (Zakonomerno-sti protsessov rafinirovaniya stali v potoke gazoobraznogo okislitelya. I. Kinetika okisleniya ugleroda)

PERIODICAL: Sb. Mosk. in-t stali, 1958, Vol 38, pp 64-78

ABSTRACT: The regularities governing oxidation of C in Fe-C melts under the in fluence of a gaseous oxidizer are studied by a dynamic method which eliminates the development of secondary reactions in the gas phase. The essence of the method lies in the forced delivery of CO_2 to the surface of the metal (Me), which is melted by induction heating in an alundum crucible mounted on a fixture in a quartz tube, and in meas- uring the gas flow rates at the system inlet and outlet by capillary rheometers. The actual amount of gas emitted (v_f) is calculated, with consideration of the viscosity of the gas-phase components, in accordance with the equation $v_f = 100\, v_r / (x + yK_{CO} + zK_{Ar})$, where v_r

Card 1/2

Regularities of Steel-refining Processes in a Current of Gaseous Oxidizer

SOV/137-58-12-24045

is the quantity of gas measured by the rheometer; x, y, and z are the contents of CO_2, CO and Ar, respectively, in %; and K_{CO} and K_{Ar} are coefficients which account for the viscosities of CO and Ar. The rate of carbon removal from the Me, v_s, during various stages of the process is calculated from the equation $v_s = 0.000523$ v_f J/m, where m is the Me weight. As the result of the experiment it is established that v_s in the heat is determined by the oxidizing properties of the furnace atmosphere and is a constant at a given temperature and constant rate of delivery of oxidizer to the metal bath. When the bath is constantly supplied with oxidizer, v_s is not dependent upon [C] and increases with an increase in rate of oxidizer supply to the bath. However, as the intensity of delivery of oxidizer increases, the coefficient of utilization thereof diminishes. It is shown that the results obtained are explained by the previously suggested theory of the inhibiting oxygen link. According to that theory the case of development of the process in the region of diffusion reaction, which is of practical importance, is inhibited by the stage of delivery of the oxygen to the reaction zone. The existence of a critical point (~1500°C) in Fe-C melts, which corresponds to the temperature threshold of a sharp change in v_s due to a change in the chemical activity of the reacting C, is confirmed.

Card 2/2

V. M.

S/130/60/000/009/003/004
A006/A002

AUTHORS: Kablukovskiy, A.F., Simonov, V.I., Zuyev, T.I., Vorob'yev, Yu.K.

TITLE: Intensified Melting in Arc Furnaces

PERIODICAL: Metallurg, 1960, No. 9, pp. 19 - 20

TEXT: When melting ШХ15 (ShKh15) ball bearing steel in electric arc fur-
naces at the "Elektrostal'" Plant, diffusion deoxidation during the reduction
period and holding of the metal under carbide slag takes not less than one hour.
Ferrochromium is added to the deoxidized metal 40 minutes after the onset of
refining. The carbide slag is converted into white slag 10-15 minutes prior to
teeming, and ferrosilicide lumps are supplied to the furnace. Prior to teeming
the metal into the ladle, it is deoxidized with aluminum lumps (0.4 kg/ton). The
total refining time is 1 hour 40 min - 2 hours 10 min. A new method was developed
to raise the efficiency of 20-ton arc furnaces when melting ShKh15 steel without
impairing the quality of the metal. This technology differs from the conventional
method as follows: a) partial dephosphorization and melting of the charge are com-
bined by adding lime and ore to the pool at the end of the melting period; b) suf-
ficient degassing of the metal is ensured by a reduced carbon content at the be-

Card 1/2

Intensified Melting in Arc Furnaces

S/130/60/000/009/003/004
A006/A002

ginning of the oxidizing period and by removing not less than 0.30% carbon during bubbling; c) the metal is preliminary deoxidized at the end of the oxidizing period with refined cast iron containing 4.0 - 4.5% C, 8.0-10.0% Mn and not over 0.030% P in an amount of 7.5-12.5 kg/t; d) additional deoxidizing of the metal prior to the formation of reducing slag with silico-chromium lumps (5.0-6.0 kg/ ton) and aluminum (0.4 kg/ton); e) addition of the main portion of ferrochromium to the bare metal without preliminary diffusion deoxidation; f) deoxidation of the slag with coke powder and 75% ferrosilicide and final deoxidation of the metal with aluminum lumps (0.5 kg/ton) prior to teeming; g) the total reducing time is 60-70 min. The contamination of the metal in both cases was almost equal. The melting time with a fresh charge was reduced by 48 min; in remelting of waste it was reduced by 33 min i.e. by 15-19%. The average economy in electric power was 47 kwh/ton in remelting and 75 kwh/ton on a fresh charge. Presently the method is used for melting 12XH3A (12KhN3A), 18XHBA (18KhNVA), 40X (40Kh), 9X BГ (EKhVG), 60C2A (60S2A) and other structural and instrument steels at the Elektro-stal' Plant. A table is given containing technical and economical data of ex-perimental and conventional melts.
ASSOCIATION: "Elektrostal'" zavod (Elektrostal' Plant)

Card 2/2

S/130/62/000/006/001/003
A006/A101

AUTHORS: Vinogradov, V. M., Yefroymovich, Yu. Ye.,Kablukovskiy, A. F.,
               Simonov. V. I.

TITLE: Automated control and regulation of heat conditions of a steel-
               melting arc furnace

PERIODICAL: Metallurg, no. 6. 1962. 16-18

TEXT: To eliminate deficiencies in the use of immersion thermocouples,
the Central Laboratory of Automation and the Elektrostal' Plant have designed
a mechanized unit for multiple periodic measurement of the metal temperature in
the pool of a steelmelting arc furnace and have developed an automatic method of
regulating the heat conditions of the furnace. The temperature-measuring unit
consists of a pneumatic force-mechanism, a trolley for moving the thermocouple,
guides. a mechanism controlling the position of the thermocouple and a control
board. The unit is fixed to the furnace portal and the tungsten-rhenium thermo-
couple is introduced into the furnace through a special hole. Between the
measurements, this aperture is closed by a pneumatic-driven slide which operates
the electro-pneumatic relay circuit of the thermocouple. An electronic potentio-

Card 1/2

Automated control and regulation ...   S/130/62/000/006/001/003
                                                        A006/A101

meter with a signal unit and automatic control of the completed measurement
serves as a secondary registering device. The use of this device reduces errors
in measuring the mean pool temperature; the temperature control can also be
performed during smoke formation without switching-off the furnace. The metal
temperature pulse can be used to produce a closed circuit for the automatic
control of the furnace heat conditions. The metal temperature indicator is
connected to the heat-condition control unit which operates the transformer-
voltage step-switch and an automatic device regulating the power supply with the
aid of a computer. Experiments made with the new and conventional units show
that the temperature straggling of the metal in the pool and in the ladle can
be reduced by a factor of 2.5 - 3.5. The efficiency of the furnace is raised
by 7 - 9%; electric-power consumption decreases by 3.5 - 4.0%. There are
2 figures.

ASSOCIATIONS: TsLA (Central Laboratory of Automation); Zavod"Elektrostal'"
                (Elektrostal' Plant)

Card 2/2

S/133/62/000/006/002/015
A054/A127

AUTHORS: Kablukovskiy, A. F., Candidate of Technical Sciences, Simonov, V. I., Vinogradov, V. M., Engineers

TITLE: Temperature checks of the bath and control of arc furnace heat conditions

PERIODICAL: Stal', no. 6, 1962, 521 - 523

TEXT: The conventional method of ensuring the required heat conditions of smelting, based on immersion thermo-couples and manual control, sometimes causes variations in temperature of 60 - 70°C during the oxidizing and reducing periods. To improve the existing temperature control methods, tests were carried out at the "Elektrostal'" Plant in smelting ШХ15 (ShKh15) grade steel in a 20-ton arc furnace. In these tests the optimum operating conditions of the electrical system were established for obtaining the required metal temperatures and preventing overheating of the furnace lining. It was found that the main factors affecting the control of the furnace operation are the accuracy of the metal temperature recording in the bath and the accuracy with which instructions as to the

Card 1/2

Temperature checks of...   S/133/62/000/006/002/015
                                                A054/A127

duration of smelting phases, the amounts of slag forming, alloying elements, oxygen and ore are being followed. The conventional manual method of bath temperature recording with immersion thermocouples in arc furnaces not provided with electromagnetic stirring equipment is not accurate enough (the places of measurement vary) and necessitates switching off the current, thus causing unwarranted standstills (5 - 7 minutes for 20 measurements). Hence a mechanism has been developed to allow mechanical temperature recording of the metal by means of BP -5/20 (VR-5/20) immersion thermocouples. This mechanism gives more accurate average indications, because the places of recording in the depth of the bath and on the metal surface are stabilized. It was also possible to increase the number of measurements to 15 - 20 and to reduce the current switch-off time during smelting. When applying the new heat control method (manually), the variations in temperature were reduced to ±10°C and overheating of the lining was completely eliminated. Comparison of the temperature conditions with the conventional and the experimental method shows that inaccuracies of the conventional control system are apt to lengthen the smelting process (for the reducing period alone) by an average of 15 - 20 minutes and to increase power consumption by 30 - 40 kW-hour/ton. There are 3 figures.
ASSOCIATION: Zavod "Elektrostal" ("Elektrostal'" Plant) and Tsentral'naya laboratoriya avtomatiki (Central Laboratory of Automation)
Card 2/2

KABLUKOVSKIY, A.F.; SIMONOV, V.I.; PENTYAK, V.I.; LAKTIONOV, V.S.

Simultaneous oxidation of carbon and chromium during metal blowing
with oxygen. Izv. vys. ucheb. zav.; chern. met. 6 no.5:70-75 '63.
(MIRA 16:7)

1. Zavod "Elektrostal'".
                 (Chromium steel--Electrometallurgy)
                 (Oxygen--Industrial applications)

DROZDOV, N.N.; SIMONOV, V.I.; GONCHAROV, I.A.; FILIPPOV, S.I.

Kinetic principles of the control and automation of the steel
decarburization process during the period of the oxygen blowing
of the metal. Izv. vys. ucheb. zav.; chern. met. 7 no.3:16-22
'64.   (MIRA 17:4)

1. Moskovskiy institut stali i splavov.

DROZDOV, N.N.; SIMONOV, V.I.; FILIPPOV, S.I.

Kinetic principles of the control and automation of the
chromium oxidation process during the oxygen blowing of
metal. Izv. vys. ucheb. zav.; chern. met. 7 no.9:16-23 '64.
(MIRA 17:6)

1. Moskovskiy institut stali i splavov. 2. Otvetstvennyy
redaktor zhurnala "Izvestiya vysshikh uchebnykh zavedeniy;
chernaya metallurgiya."

SIMONOV, U.K.

ROSTOVTSEV, S.T.; SIMONOV, V.K.

Nekotorye osobennosti kinetiki i mekanizm vosstanovleniya
okislov zheleza uglerodom.

report submitted for the 5th Physical Chemical Conference on
Steel Production.

Moscow _ 20 Jun 1960

18 (5), 18 (3)
AUTHORS: Rostovtsev, S. T., Rudenko, L. N.,   SOV/163-59-2-1/48
Simonov, V. K.

TITLE: On the Mechanism of the Reduction Process of Ferric Oxide
(K voprosu o mekhanizme reaktsiy vosstanovleniya okislov
zheleza)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959,
Nr 2, pp 5-8 (USSR)

ABSTRACT: The reduction of ferric oxide with gaseous CO and H_2 is a
complicated heterogeneous process in which various phase
transformations occur on the surface of the ferric oxide.
Iron in atomic state is produced on the surface during the
reduction process. The atomic iron produced on the surface of
the crystalline lattice of the oxide phase plays an important
rôle in the heterogeneous catalysis. The atomic ions of the
iron metal are the active centres on which the gas molecules
are adsorbed. The activating adsorption of the gases which
have a reducing effect on the surface of the oxides is the
beginning of a chemical interaction in the reduction process.
Card 1/2   Iron- and oxygen ions form a complex on the surface of the

On the Mechanism of the Reduction Process of   SOV/163-59-2-1/48
Ferric Oxide

ferric oxide. The absorption complex $\{mCO^{2+} - mO^{2-}\}$
passes over into CO_2 molecules. The reduction of Fe_2O_3
proceeds gradually, i. e. $Fe_2O_3 \longrightarrow \gamma$-phase and γ-phase $\longrightarrow$
$\longrightarrow Fe_3O_4$. The first stage proceeds with, the second stage
without phase transformation. There are 5 Soviet references.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
                (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: May 19, 1958

Card 2/2

SIMONOV, V.K.; ROSTOVTSEV, S.T.

Some problems of the kinetics and the mechanism of iron oxide reduction by carbon. Izv.vys.ucheb.zav.; chern.met.   no.4: 5-18 '60.   (MIRA 13:4)

1. Dnepropetrovskiy metallurgicheskiy institut.
                 (Iron--Metallurgy)

S/1?/6?/000/003/???/???
A006/A101

AUTHORS: Rostovtsev, S. T., Simonov, V. K.

TITLE: Some peculiarities of kinetics and mechanism of iron oxide reduction with carbon

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 14, abstract 3A76
(V sb. "Fiz.-khim. osnovy proiz-va stali", Moscow, AN SSSR, 1961,
143-156)

TEXT: The direct reduction of Fe oxides is a complex process where the gaseous phase plays an important part. However, the participation of the gaseous phase does not exhaust all the peculiarities of the process and cannot be considered by the mechanical combination of two links, namely indirect reduction and gasification of C. These two processes are closely interacting, both in the physico-chemical and the temperature-thermal relation. The three stages of direct reduction of Fe2O3 proceed under strongly different conditions, producing specific peculiarities of their kinetics. In the initial stage the main part is acted by the gaseous phase (CO-CO2), and kinetics of the third stage is strongly affected by the appearance of Fe metal. The important part of Fe metal was

Card 1/2

Card 2/2

CLIMENKO, I.K.; RUDENKO, T.N.; ROSTOVTSEV, S.T.; LISOVSKIY, A.F.

Reduction of fluxed sinter by soot carbon in a flow of nitrogen, carbon monoxide and their mixtures. Izv.vys.ucheb.zav.; chern.met. 8 no.6:16-21 '65. (MIRA 18:8)

1. Dnepropetrovskiy metallurgicheskiy institut.

ZUYEV, M.I.; KULTYGIN, V.S.; KABLUKOVSKIY, A.F.; SIMONOV, V.I.; ZUYEV, T.I.;
VOROB'YEV, Yu.K.; MARTYNUSHKIN, A.M.; TSUKANOV, V.F.; LAKTIONOV, V.S.

Improved technology of the smelting of ShKh-15 steel for ball
bearings. From.energ. 17 no.2:12 F '62.   (MIRA 15:3)
            (Steel--Metallurgy) (Ball bearings)

124-57-1-528

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 66 (USSR)

AUTHORS: Simonov, V. M. , Kushnareva, I. P.

TITLE: The Effect of the Obliqueness of an Overpass Crossing a Body
of Running Water on the Distribution of the Discharge Between
Two Bridge Spans (Vliyaniye kosiny peresecheniya vodotoka
perekhodom na raspredeleniye raskhoda mezhdu dvumya mosto-
vymi otverstiyami)

PERIODICAL: Sb. stud. nauch. rabot   Saratovsk. avtomob.-dor. in-t
1956, Nr 2, pp 15-27

ABSTRACT: Bibliographic entry

1 Water--Distribution   2. Bridges--Design--Effectiveness--Appli-
cations

Card 1/1

MESHCHERSKIY, Nikita Alekseyevich; SIMONOV, V.M.,red.; VAGIN, A...., red.
izd-va; ATTOPOVICH, M.K., tekhn.red.

[Operation of water purification equipment in metallurgy]
Ekspluatatsiia vodopodgotovok v metallurgii. Moskva, Gos.
nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii,
1958. 515 p.   (MIRA 11:12)
                    (Water--Purification)

ACC NR: AP6025081   SOURCE CODE: UR/0115/66/000/006/0093/0094

AUTHOR: Dyuzhin, A. T.; Simonov, V. M.

ORG: none

TITLE: Semiconductor voltage stabilizer with a built-in thermostat

SOURCE: Izmeritel'naya tekhnika, no. 6, 1966, 93-94

TOPIC TAGS: voltage stabilizer, semiconductor device

ABSTRACT: A voltage stabilizer (see figure) is briefly described in which the reference voltage source and first three feedback-amplifier stages are thermostated (T_1, T_2, T_3, CT_1, CT_2, T_6, T_7, T_8). Transistor T_8 supplies the heat. In the 30--50C range, the thermostat working temperature keeps within ± 0.5C. Ambient temperature, 0--35C. The thermostat temperature is
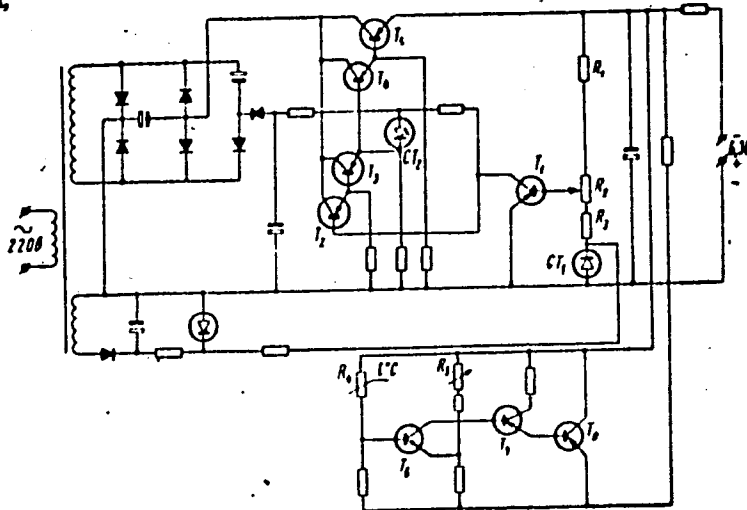
Card 1/2

UDC: 621.3.032:621.316.722.1.08

L 06274-67

ACC NR: AP6025081

set at 5--15C higher than the ambient. The stabilizer characteristics are: output voltage, 6.3 v; maximum load current, 3 amp; ripple, 1 mv; output voltage instability, ± 0.001% when the supply voltage varies within ± 10%; output voltage drift, 0.005% in 10 minutes. Orig. art. has: 2 figures and 1 formula.

SUB CODE: 09 /SUBM DATE: none / ORIG REF: 002

Card 2/2

T6(1) 16.3000 16.3800 68002

AUTHOR: Simonov, V.P.   SOV/155-58-6-3/36

TITLE: On the Question Concerning the Uniqueness of the Solution
            of the Inverse Potential Problem

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki,
                                    1958, Nr 6, pp 14-18 (USSR)

ABSTRACT: Let $w = f(z)$ be holomorphic and schlicht in $|z| < R$,
            $f(0) = 0$. Then on $(0,R]$ there exists a maximum number ρ_0,
            such that $|z\, f'(z)|$ for $0 < r < \rho_0$ is an increasing func-
            tion of $|z| = r$. G_1 and G_2 are assumed to be the con-
            formal mappings, settled by $w = f(z)$, of two radial domains
            with respect to $z = 0$ of the z - plane situated within $|z| < \rho_0$.
            Theorem 1 : If G_1 and G_2 are filled up with an attractive mass
            of constant density, and if they have equal external potentials,
            then it is $G_1 = G_2$.
            Theorem 2 : Let $\mu(r, \varphi) > 0$ be defined in the whole plane,
            $\mu(r, \varphi)r^2$ be an increasing function of r. Two domains G_1 and

Card 1/2

SOV/155-58-6-3/36

On the Question Concerning the Uniqueness of the Solution of the Inverse Potential Problem

G_2 radial with respect to the origin are supposed to be filled up with an attractive mass of density μ. If G_1 and G_2 have equal external potentials, then it is $G_1 \equiv G_2$.

P.S. Novikov is mentioned in the paper.
There are 2 Soviet references.

ASSOCIATION: Birskiy gosu rstvennyy pedagogicheskiy institut (Birsk State Pedago cal Institute)

SUBMITTED: April 12, 1957 (Uspekhi matematicheskikh nauk)
October 24, 1958 (Nauchnyye doklady vysshey shkoly, Fiziko-
matematicheskiye nauki)

Card 2/2

ACCESSION NR: AT4028750   S/2531/63/000/144/0111/0113

AUTHOR: Simonov, V. V.

TITLE: Comparison of a real wind with a geostrophic wind according to data from an expedition

SOURCE: Leningrad. Gl. geofiz. observ. i Ukr. n.-i. gidrometeorol. inst. Trudy*, no. 144/40, 1963. Fizika pogranichnogo sloya atmosfery* (physics of the atmospheric boundary layer); Dneprovskaya expeditsiya GGO i UkrNIGMI, 111-113

TOPIC TAGS: Dnieper expedition, geostrophic wind, real wind, wind magnitude

ABSTRACT: The concept of the geostrophic wind is used in many theoretical works. It is also a well known fact that a real wind deviates from a geostrophic wind. This circumstance calls for theoretical research as well as appropriate comparisons based on empirical material. The author has processed the data obtained during the Dnieper expedition which was organized by the Principle Geophysical Observatory (GGO) in 1961. A comparison of the velocities and direction of the actual and geostrophic winds was conducted on a surface level of 850 and 700 mb. Observation data at a surface altitude of 500 mb was not processed due to the small number of observations. The results of the observations are presented in tables. The tables

Card 1/2

ACCESSION NR: AT4028750

show wind variations during different hours of day and night. The average deviation angle is quite small, although the average angles of deviation from the positive or negative, as well as the mean angle of absolute deviations, reach 30° and more, while in specific cases the maximum deviations exceed 100°. The recurrence of these and other deviations is approximately identical and apparently in the case of a sufficiently large number of observations the mean angle of deviation will approach 0°. Orig. art. has: 2 tables.

ASSOCIATION: Leningradskaya glavna geofizicheskaya observatoriya (Principle Geophysical Observatory of Leningrad)

SUBMITTED: 00   DATE ACQ: 16Apr64   ENCL: 00

SUB CODE: AS   NO REF SOV: 003   OTHER: 000

Card 2/2

L 14188-66   EWT(1)/FCC   GW

ACC NR: AT6004151   SOURCE CODE: UR/2531/65/000/167/0059/0066

AUTHOR: Nadezhina, Ye. D.; Simonov, V. V.

ORG: Main Geophysical Observatory, Leningrad (Glavnaya geofizicheskaya observatori-
ya)

TITLE: Formation and transformation of advective fog

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 1, 1965.
Fizika pogranichnogo sloya atmosfery (Physics of the boundary layer of the atmos-
phere), 59-66

TOPIC TAGS: phase transition, heat conductivity, meteorology, fog, water vapor

ABSTRACT: The paper is an attempt to generalize the theory of advective fogs. Ex-
tension of the theory from specific to general cases has the following features: 1.
equations for heat influx and moisture transfer take account of turbulent mixing
during phase transitions in moisture; 2. radial heat flux is accounted for; 3. a
heat balance equation is used as the boundary condition on the underlying surface;
4. the transfer of water content is taken into consideration to account for trans-
formation of the fog when there is a nonhomogeneous underlying surface; 5. the

Card 1/2

L 14188-66

ACC NR: AT6004151 $\mathcal{O}$

equation of heat conductivity for the soil is considered to account for non-station-
ary conditions; 6. the theory may be used for predicting the formation and transfor-
mation of advective fogs independently of their nature. Formulas are derived for
calculating the profiles of meteorologic elements both inside and outside the fog.
A method of successive approximation is proposed as the computational scheme. Exam-
ples are given showing the application of the method. Curves are plotted showing
the boundaries of the fog and the water content profile assuming a drop in tempera-
ture with altitude. Cases of increasing and decreasing humidity with altitude are
considered, assuming water vapor saturation in the first case and unsaturated water
vapor in the second case. Orig. art. has: 2 figures, 1 table, 35 formulas.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 007/ OTH REF: 000

Card 2/2

LAYKHTMAN, D.L.; NADEZHINA, Ye.D.; SIMONOV, V.V.

Effect of a change in external conditions on the t: . .'': :: '': : ''
of low clouds. Trudy GGO no.167:67-72 '65.

(MiR: ? ·· :)

ACC NR: AT6021511

SOURCE CODE: UR/2531/66/000/187/0122/0130

AUTHOR: Simonov, V. V.

ORG: none

TITLE: Transformation of the drop-size distribution in clouds and fog under the effect of external conditions

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 187, 1966.
Fizika pogranichnogo sloya atmosfery (Physics of the atmospheric boundary layer), 122-130

TOPIC TAGS: atmospheric cloud, fog, cloud physics, ATMOSPHERIC HUMIDITY, ATMOSPHERIC TEMPERATURE,

ABSTRACT: In this work an attempt is made to find the change of the drop-size distribution from the change of water content obtained from solving the large-scale problem, i.e., to relate the redistribution of drops by sizes with such "external" parameters as the coefficient of turbulence, wind velocity, temperature and humidity of the air mass, thermophysical characteristics, and the radiation balance of the underlying surface. The solution of the problem was derived under the following assumptions: the effect of the radius of curvature on the saturation vapor pressure over the drop was not taken into account; the drop was spherical; the rate of fall of the drops was zero; the effect of the change in concentration of the substances

Card 1/2

Card 2/2

SIMONOV, V. V.: Master Tech Sci (diss) -- "Investigation of the flow of a liquid
(water, clay mortar) through the wash nozzles of cutting chisels". Moscow, 1958.
15 pp (Min Higher Educ USSR, Moscow Order of Labor Red Banner Inst of the Oil-
Chemistry and Gas Industry im Acad I. M. Gubkin, Chair of "Drilling Oil and Gas
Wells"), 160 copies (KL, No 1, 1959, 120)

SIMONOV, V.V.

Determining pressure gradient in discharge nozzles. Izv.vys.ucheb. zav.; neft' i gaz 1 no.11:111-118 '58.   (MIRA 12:5)
(Nozzles) (Oil well drilling fluids)

SIMONOV, V.V.

Experimental study of fluid discharge coefficients during flow through flushing ports. Izv. vys. ucheb. zav.; neft i gaz no.8:31-36 '58.
(MIRA 11:10)

1.Moskovskiy neftyanoy institut im. akad. I.M. Gubkina.
(Boring machinery) (Hydraulics)

SIMONOV, V.V.

Studying fluid flow through roller bit washing canals. Trudy MNI
no.22:270-282 '58.
(Oil well drilling fluids)
(MIRA 12:4)

POTAPOV, Yu.F.; SIMONOV, V.V.

Effect of power input on the efficiency of rock breaking.
Izv. vys. ucheb. zav.; neft' i gaz 3 no.7:35-41 '60. (MIRA 15:5)

1. Tatarskiy neftyanoy nauchno-issledovatel'skiy institut i
Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti
imeni akademika I.M. Gubkina.
(Oil well drilling)

SIMONOV, V.V.; POTAPOV, F.Yu.

Relationship between power parameters of the rock disinte-
gration process. Neft. khoz. 38 no.9:36-39 S '60.
                                            (MIRA 13:9)
          (Turbodrills)   (Boring)

POTAPOV, Yuriy Fedorovich; SIMONOV, Vladimir Vladimirovich; KAYESHKOVA,
S.M., vedushchiy red.; TROFIMOV, A.V., tekhn. red.

[Breaking rock with small diameter, three-cone bits] Razrushenie
gornykh porod trekhsharoshechnymi dolotami malogo diametra. Mo-
skva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry,
1961. 85 p.
(MIRA 14:6)
(Rock drills)

MALEVANSKIY, V.D.; UDYANSKIY, S.H.; GOL'DSHTEYN, I.Ye.; SIMONOV, V.V.

Problems of the airtightness of the casing space manifold of gas wells. Gaz. prom. 6 no.9;1-6 '61.   (MIRA 14:12)
(Gas wells)

SIMONOV, V.V.; POTAPOV, Yu.F.

Wear of three roller slim bits. Trudy MINKHiGP no.35:31-41
'61.   (MIRA 14:11)

(Boring machinery)

SIMONOV, V.V.

Methods of calculating pressure gradient in discharge nozzles of three roller bits. Trudy MINKHiGP no.35:66-80 '61.   (MIRA 14:11)

(Oil well drilling--Equipment and supplies)

POTAPOV, Yu.F.; SIMONOV, V.V.

    Studying the process of breaking rock with roller bits. Izv. vys.
    ucheb. zav.; neft' i gaz 3 no.5:35-41 '60.   (MIRA 15:6)

    1. Tatarskiy nauchno-issledovatel'skiy institut i Moskovskiy
    institut neftekhimicheskoy i gazovoy promyshlennosti imeni
    akademika I.M. Gubkina.
                             (Boring)

SIMONOV, V.V.; BREVDO, G.D.; VUGIN, R.B.; YEGOROV, A.Ye.

Rotational speed of cones of three roller bits. Trudy MINKHiGP no.40:
32-41 '63.   (MIRA 1c:4)
            (Oil well drilling--Equipment and supplies)

BEREZHNOY, A.I.; KULAGIN, P.G.; POTYUKAYEV, M.A.; SIMONOV, V.V.

Possibilities of making clayless drilling fluids from polymeric
coagulants and brines. Izv. vysh. ucheb. zav.; neft' i gaz 6
no.3:29-34 '63.
(MIRA 16:7)

1. Khar'kovskiy gosudarstvennyy universitet imeni A.M. Gor'kogo,
Ukrainskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta gaza i iskusstvennogo zhidkogo topliva, i Khar'kovskiy
sovet narodnogo khozyaystva.
(Oil well drilling fluids)

SHAPOSHNIKOV, I.P.; MURAVYEV, V.M.

Effect of the parameters of drilling practices on the rotation speed of a bit roller. Izv.vys.ucheb.zav.; neft' i gaz 7 no.4:23-27 '64. (MIRA 17:9)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni akademika Gubkina.

L 55237-65   EEO-2/FSS-2/EWT(1)/EWA(d)/EWA/EED-2/FCS(k)
UR/0286/65/000/008/0110/0110
ACCESSION NR: AP5015558

AUTHORS: Simonov, S. G.; Simonov, V. V.; Simonova, L. S.

TITLE: An impact-triggering mechanism of an automatic weapon.   Class 72, No. 170340

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 110

TOPIC TAGS: automatic weapon, firing mechanism, weapon component

ABSTRACT: This Author Certificate presents an impact-triggering mechanism of an automatic weapon, consisting of a firing pin, firing pin spring, two sears, a trigger hook with a slot and a spring, and a trigger lever with a projection (see Fig. 1 on the Enclosure). To eliminate the inertial blows of the firing pin against the primer cap of a cartridge during the passage of the breechblock to its extreme forward position after firing or during the loading of the following cartridge into the breech chamber, the fire control lever is made in the shape of a bent plate held by a pin to the trigger hook. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 26Dec63   ENCL: 01   SUB CODE: WA

NO REF SOV: 000   OTHER: 000

Card 1/2

L-55237-65
ACCESSION NR: AP5015558
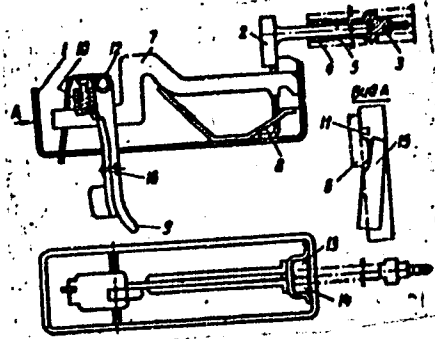
Fig. 1. 1- receiver; 2- firing pin; 3- hammer; 4- firing pin cover;
5- firing pin spring; 6- trigger lever; 7- trigger lever protrusion;
8- strip spring; 9- trigger hook; 10- spiral spring; 11- trigger hook
slot; 12- trigger hook pin; 13- sear; 14- automatic sear; 15- fire
control lever; 16- fire control lever pin
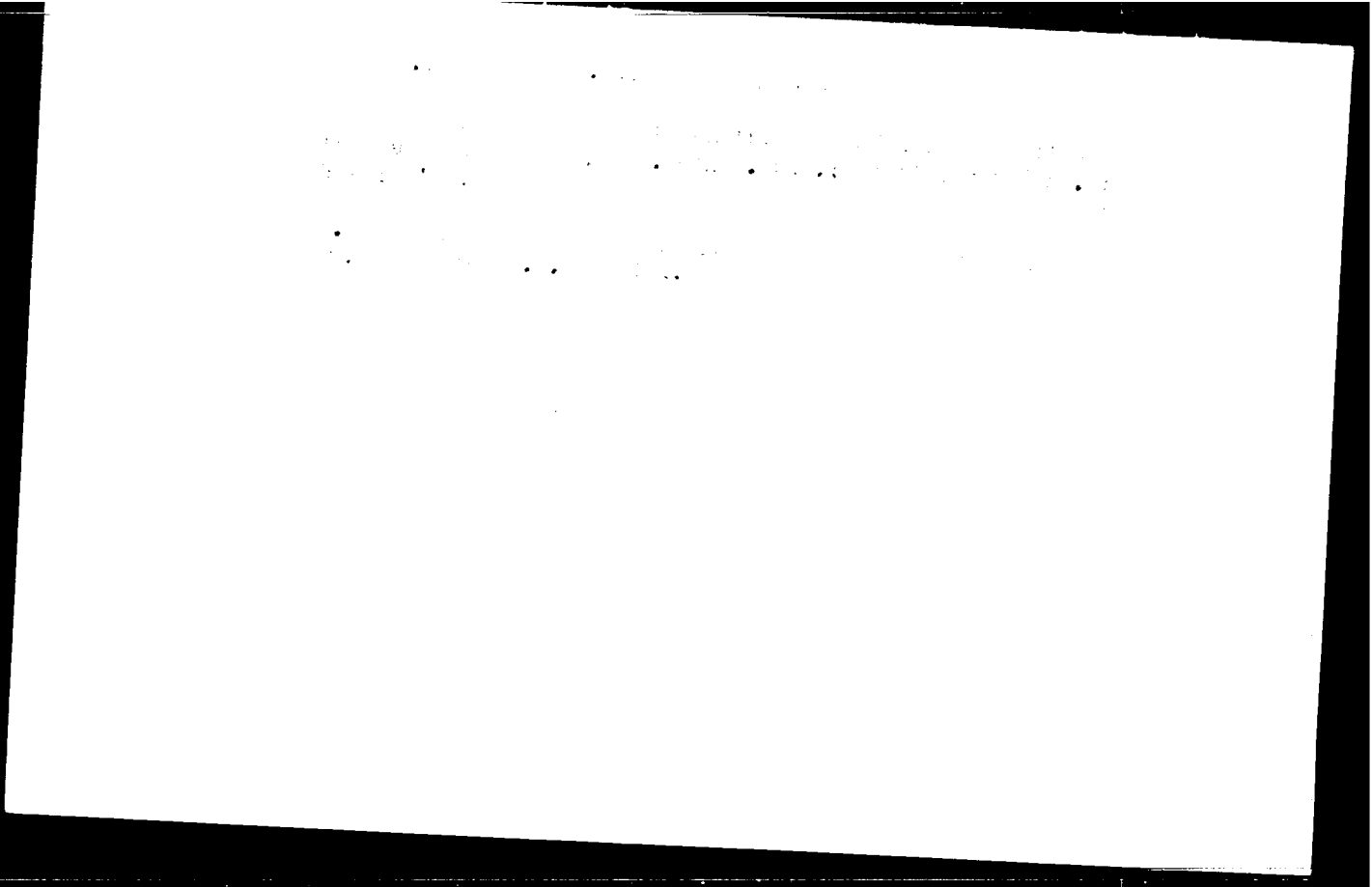
Card 2/2

SIMONOV, V.V.; BREVDO, G.D.

Dependence of bit torques on axial load. Neft. khoz. 43 no.6:
16-18 Je '65.   (MIRA 18:7)

SIMONOV, V.V. (Leningrad, Agafonovskaya ul., d.2, kv.1)

Early diagnosis of endarteritis obliterans [with summary in English, p.138]. Vest.khir. 79 no.12:67-69 D '57.   (MIRA 11:1)

1. Iz kafedry obshchey khirurgii No.2 (nach. - prof. M.S.Lisitsyn) Voyenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova.
         (THROMBOANGIITIS OBLITERANS, diag.)

USSR / Human and Animal Physiology (Normal and Patholo-   T
         gical). Physiology of the Skeleton

Abs Jour: Ref Zhur-Biologiya, No 21, 1958, 97810

Author : Simonov, V. V.

Inst   : Not given

Title   : Metallic Osteosynthesis of Fractures in Radiation
          Sickness and Possibilities of Accelerating Their
          Healing (Experimental Investigation)

Orig Pub: Voyen. med. zh., 1957, No 12, 33-39

Abstract: Six- to eight-month-old rabbits were subjected to
          general roentgen irradiation at disages of 450 and
          650 r. The next day, under local infiltrating
          anaesthesia, using a 0.25 percent solution of novo-
          cain (60 ml), a transverse fracture of the right

Card 1/3

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SIMONOV, V.V., kand. med. nauk (Leningrad)

Unusual form of liver cirrhosis: Cruveilhier-Baumgarten syndrome.
Klin. med. 41 no.2:134-138   F'63   (MIRA 17:3)

1. Iz kliniki fakul'tetskoy khirurgii (nachal'nik - prof.
V.M. Sitenko) imeni S.P. Fedorova Voyenno-meditsinskoy ordena
Lenina akademii S.M. Kirova.

PROKOPEV, A...; PLDENKO, N.M.; SOBOLEV, V...

Chemiluminescence and antioxidizing properties of aromatic amines. Biofizika 9 no.4:423-427 '64.

1. Institut biofiziki AN Leningradskogo otdeleniya AN SSSR, Moskva.

SIMONOV, V.V.

Anomalous disposition of the abdominal organs. Vest. khir. 93
no.9:109-110 S '64.   (MIRA 18:4)

1. Iz 2-go khirurgicheskogo otdeleniya (zav. - K.N.TSatsanidi)
Moskovskoy gorodskoy bot'nitsy No.68 (glavnyy vrach V.M.Knyazev).

THERAULV, A.I.; FILATOV, Yu.N.; SIMONOV, V.V.

Chemiluminescence and antioxidative properties of human lipids.
Trudy MOIP. Otd. biol. 21:75-89 '65.   (MIRA 18:6)

ZHUR, V. L.,   : FILIPPOV, Yu.N.; SIMONOV, V.V.

Mechanism of chemiluminescence of lipids in man. Biofizika 10 no.2:
246-251 '65.   (MIRA 18:7)

SIMONOV,V.

Meetings of glider pilots in Crimea. Kryl.rod. 2 no.6:
12b-12d Je '51.   (MLRA 8:8)

1. Inspektor planernogo otdela TSentral'nogo komiteta
Dobrovol'nogo obshchestva sodeystviya aviatsii.
                (Gliders (Aeronautics))

P'YETSUKH, Aleksey; BOLOTNIKOV, V.F., doktor tekhnicheskikh nauk, redaktor;
SIMONOV, V.Ya., redaktor; ZUDAKIN, I.M., tekhnicheskiy redaktor.

[Wings of youth; gliding technique] Kryl'ia molodezhi; praktika
planerizma. Pod obshch.red. V.F.Bolotnikova. Moskva, Gos.izd-vo
oboronnoi promyshl., 1954. 290 p. [Microfilm]   (MLRA 8:5)
          (Gliders (Aeronautics))

SIMONOV, V.

AID - P-118

Subject   : USSR/Aeronautics

Card   : 1/1

Author   : Simonov, V.

Title   : A Quick Way to Understand Air Currents

Periodical   : Kryl. Rod., 3,   14 - 16,   Mr 1954

Abstract   : The author describes air currents and special cloud
                 formations, of interest to glider pilots, gives photos
                 and diagrams.

Institution   : None

Submitted   : No date

SIMONOV, V.

"Currents of Waves. Tr. from the Russian." P. 28. (AVIATIA SPORTIVA, Vol. 5, No. 5, May 1954, Bucuresti, Rumania.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955, Uncl.

SIMONOV, V.

"An Accident." P. 31. (AVIATIA SPORTIVA, Vol. 5, No. 5, May 1954, Bucuresti, Rumania.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955, Uncl.

Simonov, V.

AID P - 1076

Subject   : USSR/Aeronautics

Card 1/1   Pub. 58 - 6/19

Author   : Simonov, V.

Title   : Soaring flights in undulating currents

Periodical : Kryl. rod., 12, 9-10, D 1954

Abstract   : The author describes glider altitude flights in undulating
               air currents. He gives some data on these currents.
               Diagram.

Institution : None

Submitted   : No date

SIMONOV, V.

PHASE X   TREASURE ISLAND BIBLIOGRAPHICAL REPORT   AID 726 - X

BOOK   Call No.: AF666890
  Authors: MAKAROV, V., and SIMONOV, V., compliers
  Full Title: GLIDING SPORT. COLLECTED ESSAYS
  Transliterated Title: Planernyy sport. Sbornik Statey
PUBLISHING DATA
  Originating Agency: None
  Publishing House: DOSAAF (All-Union Voluntary Society for the promotion
                     of the Army, Aviation and the Navy)
  Date: 1955   No. of pp.: 92   No. of copies: 18,000
  Editorial Staff: None
PURPOSE AND EVALUATION: The purpose of this booklet is not stated. It appears to
  be an attempt to give the reader a selection of interesting articles. These
  articles do not have any special value. However, they are of interest as a
  popular technical contribution to anybody interested in gliding.
TEXT DATA
  Coverage: This booklet consists of a compilation of 12 articles reprinted from
     the newspaper "Patriot rodiny" and the periodical "Kryl'ya rodiny".
     Unspecified changes were made in some of the articles.
  Table of Contents   Pages
     1. Anokhin, S., Hero of the Soviet Union, "Soviet Gliding Sport" 3-11

NOTE: See card for MAKAROV, V. for pages 2-5 of the abstract.

SIMONOV, V., master sporta;   SHEREMETEV, B., konstruktor.

What kind of gliders does the All-Union Volunteer Society for
Assistance to the Army, Air Force and Navy need?   Kryl.rod.6
no.1:11-13 Ja '55.   (MIRA 8:3)
          (Gliders (Aeronautics))

MAKAROV, Vyacheslav Nikolayevich; SIMONOV, Vitaliy Yakovlevich; VASIL'YEV,A.,
    redaktor; ANDRIANOV, B., tekhnicheskiy redaktor

[Mechanically powered take-off for gliders] Mekhanizirovannyi vzlet
planera. Moskva, Izd-vo DOSAAF, 1956. 140 p.   (MLRA 9:9)
    (Gliding (Aeronautics))

AID P - 4678

Subject   : USSR/Aeronautics - Training (DOSAAF)

Card 1/1   Pub. 58 - 4/14

Author   : Simonov, V., Master of Sports

Title   : The rays of the April sun.

Periodical : Kryl. rod., 4, 6-7, Ap 1956

Abstract   : The author discusses the methods of training applied in the DOSAAF organizations for teaching the students the soaring flights on gliders. The importance of requiring the trainees to keep up their physical fitness and to develop their sense of discipline is emphasized, and careful planning of the exercises is advocated. Practical advices are given as to the substance of these exercises.

Institution : None

Submitted : No date

GONCHARENKO, Viktor Vladimirovich, master sporta SSSR; SIMONOV, V.Ya.,
    red.; GRIGOR'YEVA, A.I., red.; KOBZAR', V.N., tekhn.red.

[Glider soaring] Pariashchie polety na planere. Moskva, Izd-vo
DOSAAF, 1959. 55 p.   (MIRA 12:10)
                  (Gliding and soaring)

SIMONOV, Ya.

In a land of friends. Pozh.delo 8 no.11:30-31 N '62.
(MIRA 15:11)

1. Nachal'nik Upravleniya pozharnoy okhrany
Saratovskoy oblasti.
(Vietnam, North--Fires and fire prevention)

_) I M C N C V , Y A , T̅

Subject   : USSR/Meteorology   AID P - 2611

Card 1/1   Pub. 71-a - 14/26

Authors   : Simonov, Ya. P. and V. P. Shumeyko

Title   : A universal model of a heliograph

Periodical   : Met i gidr, 4, 49, Jl/Ag 1955

Abstract   : The design of the universal heliograph used at hydro-
                meteorological stations is criticized for its complex
                operation and frequent failures. However, it is
                mentioned that this type is the only one which operates
                efficiently in polar regions.

Institution : None

Submitted   : No date