AUTHOR BELKIN M.K., Regular Member of the Societ... 108-6-7/11

TITLE On the Coefficient of Noise in the Supergenerator. (O koeffitsiyente shuma sverkhregeneratora-Russian)

PERIODICAL Radiotekhnika, 1957, Vol 12, Nr 6, pp 60 - 63 (U.S.S.R.)

ABSTRACT With reference to the paper by Georg and Urkovich (PIRE Nr 4, 1953) it is said that an error was committed there which renders the results obtained useless. The error consists in the fact that, when introducing the notion of a specific spectral density of noise in the case of a load with a resistance of 1 ohm, the authors disregarded the fact that the component caused by the Schottky effect of the tube depends on the conductivity of the circuit, whereas the component of thermal noise is independent of it.- In the present work the question of the noise coefficient for superregenerative receivers is investigated for linear operation, and the following conclusions are drawn: 1) The noise coefficient F is independent of the equivalent frequency domain. Therefore it is no use determining it unless one is interested in the absolute values of the noise at the output of the superregenerator. 2) The dependence of the coefficient F on frequency is determined only by the character of the input resistance R_{in}. With an increase of frequency, R_{in} decreases and F rises. From the table shown here it may be seen that F of the superregenerator exceeds the coefficient F of the superheterodyne only very little. In order to reduce F, it is useful to increase the average steepness. 3) The

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On the Coefficient of Noise in the Supergenerator. [redacted]
106-6-11/22

conclusions given here apply also in the case in which the superregenerator is used as an intermediate frequency amplifier in a superheterodyne receiving set.
(1 illustration, 1 table, and 2 Slavic references)

ASSOCIATION Not Given.
PRESENTED BY
SUBMITTED 4.7.1955
AVAILABLE Library of Congress.
Card 2/2

Belkin, M.K.

109-10-17/19

AUTHOR: Belkin, M.K.

TITLE: Investigation of the Superregenerative Regime in a Split-anode Magnetron (Issledovaniye sverkhregenerativnogo rezhima v magnetrone s razreznym anodom)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol.II, No.10, pp. 1307 - 1310 (USSR)

ABSTRACT: It is assumed that a system consisting of a magnetron, a tuned circuit having parameters L, C, r and an external electromotive force E having a frequency ω_1 can be described by Eq.(1) where u is the voltage at the resonance circuit, i_1 and i_2 are currents of the first and the second anode, and $\omega_o = 1/\sqrt{LC}$ is the resonance frequency of the circuit (Refs.1 and 2). A feasible solution of the equation is in the form of Eq.(2) in which d_1 is the negative damping coefficient, d_2 is the positive damping, d_o is the damping coefficient of the resonance circuit, δ_1 is the overall damping.

Investigation of Eq.(2) for actual magnetron systems shows that Card1/2 it is possible to obtain power gains of the order of several

Investigation of the Superregenerative Regime in a Split-anode Magnetron.

hundred which is lower than that of a triode operating as a superregenerator. Experimentally, the superregenerative regime was investigated on the circuit shown in Fig.1. The system had a magnetic field of 1 300 and operated at a frequency of 300 kc/s. A similar investigation was carried out on a double-magnetron system (Fig.4) operating at 3 000 Mc/s. It was found that the system of Fig.1 gave gains ranging from 10 - 100, while that of Fig.4 had considerably lower gains. There are 4 figures and 3 Slavic references.

SUBMITTED: January 8, 1957.

AVAILABLE: Library of Congress.

BELKIN, M.K.

Noise level associated with regeneration. Izv. vys. ucheb. zav.; radiotekh. no.2:166-172 Mr-Ap '58. (MIRA 11:5)

1. Rekomendovana kafedroy radiopriyemnykh ustroystv Kiyevskogo ordena Lenina politekhnicheskogo instituta.
(Noise)

BELKIN, M.K.

Superregenerative receivers equipped with reflex klystrons. Nauch.dokl. vys.shkoly; radiotekh. i elektron. no.2:180-186 '58.
(MIRA 12:1)

1. Kafedra radiopriyemnykh ustroystv Kiyevskogo politekhnicheskogo instituta.
(Radio, Shortwave--Receivers and reception)
(Klystrons)

AUTHORS: Belkin, M. K., Member of the Society, Gatkin, N. G., Member of the Society SOV/108-13-10-4/13

TITLE: On the Problem of Receiving Pulsed Signals by Storage Methods (K voprosu o priyëme impul'snykh signalov metodom nakopleniya)

PERIODICAL: Radiotekhnika, 1958, Vol 13, Nr 10, pp 14 - 17 (USSR)

ABSTRACT: In this article the possibilities of receiving pulsed signals by storage methods in one single- and double-tuned receivers are discussed. This is in particular an approach to the noise stability conditions at limited mean pulse time. It is shown that atgreat mean pulse times the method of double-tuned storage, as compared to single-tuned reception provides a certain gain in noise stability. A model was constructed for experimental investigations, the block-scheme of which is given. The results of the comprehensive information collected are to the point that a double-tuned reception offers a certain degree of improvement as compared to ordinary single-tuned reception with respect to noise stability,

Card 1/2

this gain, however, being insignificant. There are 5 figures and 5 references, 3 of which are Soviet.

SUBMITTED: June 6, 1957 (initially) and December 2, 1957 (after revision)

ASSOCIATION: Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A. S. Popova (All-Union Scientific and Technical Society of Radio and Communications Engineering im. A. S. Popov)

9(9) SOV/142-2-1-3/22

AUTHOR: Belkin, M.K.

TITLE: Signal and Noise at the Output of a Superregenerative Receiver (Signal i shum na vykhode sverkhregenerativnogo priyemnika)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - radiotekhnika, 1959, Vol 2, Nr 1, pp 24-30 (USSR)

ABSTRACT: The author investigates the simultaneous influence of a sinusoidal pulse signal and fluctuation noise on a superregenerator. He presents formulae for the signal-to-noise ratio at the output of a linear and a square-law amplifier with different averaging intervals. The author explains the differences between his method and the Whitehead method [Ref 2], saying that is is necessary to consider the inertia of linear circuits before and after the dectector, when using Whitehead's results on pulse reception problems.

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Signal and Noise at the Output of a Superregenerative Receiver

There are 4 graphs and 7 references, 3 of which are English and 4 Soviet.

ASSOCIATION: Kafedra radiopriyemnykh ustroystv Kiyevskogo ordena Lenina politekhnicheskogo instituta (Chair of Radio Receiving Devices of the Kiyev Lenin Order Polytechnical Institute)

SUBMITTED: April 10, 1958

BELKIN, Mark Konstantinovich [BIELKIN, M.K.]; POLYANSKAYA, L. [Polians'ka, L.], red.; GORKAVENKO, L. [Horkavenko, L.], tekhn.red.

[Masers and parametric amplifiers] Molekuliarni ta parametrychni pidsyliuvachi. Kyiv, Derzh.vyd-vo tekhn.lit-ry URSR, 1960. 39 p. (MIRA 14:4)

(Masers) (Amplifiers (Electronics))

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S/142/60/003/002/012/022
E192/E382

AUTHORS: Belkin, M.K. and Gatkin, N.G.

TITLE: On the Problem of the Reception of Weak Signals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1960, Vol. 3, No. 2, pp 266-269

TEXT: Two radio-receivers are considered (Fig. 1). The first system is in the form of a single-channel device, consisting of a selective filter $\Delta\omega$, a square-law detector and an integrating circuit. It is shown that the noise-to-signal ratio at the output of this system is given by:

$$\left(\frac{\Pi}{C}\right)_{\text{Bbl}X} = \sqrt{2}\sqrt{2\left(\frac{\Pi}{C}\right)^2_{\text{Bbl}X} + \left(\frac{\Pi}{C}\right)^4_{\text{BX}}} \qquad (1)$$

where $(\Pi/C)^2_{\text{BX}}$ is the noise-to-signal ratio at the input. When the noise-to-signal ratio at the input is small, Eq. (1) can be written as Eq. (2). The second device of Fig. 1 is a two-channel system which receives input signals U_1 and U_2

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On the Problem of the Reception of Weak Signals

and correlated noises x_1 and x_2. It is shown that for the case when there is no correlation between x_1 and x_2, the noise-to-signal ratio at the output of this system is given by:

$$\left(\frac{\Pi}{C}\right)_{\text{Bbix}} = \frac{\sigma^2}{U_{3\phi}^2} = \left(\frac{-}{C}\right)^2_{\text{BX}} \qquad (5).$$

It is seen that the gain with respect to the first type of the receiver is $\sqrt{2}$, When x_1 and x_2 are correlated, the noise-to-signal ratio at the output is given by Eq. (6), where R_{12} is the correlation factor for x_1 and x_2. There are 1 figure and 4 Soviet references.

ASSOCIATION: Kafedra radiopriyemnykh ustroystv Kiyevskogo ordena Lenina politekhnicheskogo instituta (Chair of Radio-Receiving Equipment of the Order of Lenin Kiyev Polytechnical Institute)

SUBMITTED: February 26, 1959

Card 2/2

S/108/61/016/001/004/007
B010/B077

9.2572

AUTHOR: Belkin, M. K., Member of the Society

TITLE: General Theory of Regenerative Circuits With Variable Parameters

PERIODICAL: Radiotekhnika, 1961, Vol. 16, No. 1, pp. 33 - 40

TEXT: The calculation of a parametric superregenerative amplifier can be done by a very general analysis of the resonant circuit with sinusoidal variable parameters. Special cases of a parametric amplifier and a superregenerative one are obtained by specializing the general theory. If the time functions for the parameters of the resonant circuit shown in Fig.1 are of the type $R(t) = R_0(1+n\cos\Omega t)$, $C(t) = C_0(1+m\cos\omega_n t)$, $e(t) = E\cos(\omega_c t+\varphi)$ with $q = m/2 \ll 1$ and $L = \text{const}$, then, after introducing the expressions $x = \omega t$, $\lambda = \frac{\Omega}{\omega}$, $y = \int i dt$, $\alpha_0 = \frac{R_0}{2\omega L} = \frac{d_0}{2}(1+\xi_0)$, $d_0 = 1/Q$, $\xi_c = \frac{\omega_c}{\omega} - 1$, $\xi_0 = \frac{\omega_0}{\omega} - 1$, $a = \frac{E}{\omega^2 L}$, the oscillation equation

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General Theory of Regenerative Circuits With Variable Parameters

S/108/61/016/001/004/007
B010/B077

$L\frac{di}{dt} + R(t)i + \frac{1}{C(t)}\int idt = e(t)$ takes the form: $y''+2\alpha(x)y'+q(x)y=f(x)$ (4), where $\alpha = \alpha_0(1+n\cos\lambda x)$, $q(x) = (1+\xi_0)^2(1-2q\cdot\cos 2x)$, $f(x) = a\cos[(1+\xi_c)x + \varphi]$. (4) can be integrated after transformation into a Mathieu equation:

$$y(x) = \frac{1}{2z_1(0)z_1'(0)}\cdot\left[\psi_1(x)\int_{-\infty}^{x}\psi_2(\tau)f(\tau)\exp\left\{\int_x^{\tau}[\alpha(\tau)-\mu]d\tau\right\}d\tau\right.$$

$$\left. - \psi_2(x)\int_{-\infty}^{x}\psi_1(\tau)f(\tau)\exp\left\{\int_x^{\tau}[\alpha(\tau)+\mu]d\tau\right\}\right] \quad (11);$$

$z(x) = \exp(\mu x)\psi_1(x)$, $z_2(x) = \exp(-\mu x)\psi_2(x)$, $\mu \approx \sqrt{(\frac{m}{4})^2 - \xi_0^2}$, $\psi_1(x) \approx \sin(x-\sigma)$, $\psi_2(x) \approx \sin(x+\sigma)$, $\sigma = -\frac{1}{2}\arccos(-\frac{\xi_0}{m/4})$. (11) can be specialized for three cases:

A) superregenerative amplifier; only R is variable, i.e., $m = 2q = 0$ and $\mu = 0$. After setting $u = \lambda x = \Omega t$, $\bar{\alpha} = \alpha n \approx \frac{n}{2Q}$, $\cos u_0 = 1/n$, (11) yields the basic equation for the amplification factor:

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General Theory of Regenerative Circuits With Variable Parameters

$k = \sqrt{\frac{2\pi}{\alpha\lambda \sin u_o}} \exp\left\{-\frac{\xi_o^2}{2\alpha\lambda \sin u_o}\right\}\frac{f_c}{f_o} \exp\left\{\frac{2\alpha}{\lambda}(\sin u_o - u_o \cos u_o)\right\}$ (15) which can be used to determine the bandwidth and similar operating parameters (cf. studies of L. S. Gutkin); B) parametric amplifier; only C is variable, i.e., n=0. Using expression (11) the amplification factor is determined to be $k \approx (1+\xi_o+\xi_c)/2\sqrt{\left[d_o - \sqrt{(\frac{m}{2})^2-(2\xi_o)^2}\right]^2 + (2\xi_c)^2}$ which can be easily specialized for the various operating conditions of the parametric amplifier ($\xi_o = 0$, $\xi_c = 0$, etc.); C) parametric superregenerative amplifier; C and R are variable, and $\Omega < \omega_n$. (11) also yields (15) for the amplification factor if substituting u_o by $U_o = \arccos(\frac{1}{n} - \frac{\mu}{\alpha})$ (28). The bandwidth with respect to a 0.5-decrease amounts to $\frac{\Delta F}{f} = 1.2 d_o \sqrt{\lambda Q \sqrt{n^2-\gamma^2}}$ (29) with $\gamma = 1 - 2\mu Q$. The product P of bandwidth and resonance amplification is obtained from (15), (28), and (29) to be

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General Theory of Regenerative Circuits With Variable Parameters

$k_o \frac{\Delta F}{f} \approx 2 \exp \frac{d_o n}{\lambda} (\sin U_o - U_o \cos U_o)$, yielding values of up to 10. Here, the magnitude of P is much higher than found for a parametric amplifier having semiconductor diodes; thus, the parametric superregenerative amplifier seems to be suitable for use in extremely sensitive receivers. Paper: by L. I. Mandel'shtam and N. D. Papaleksi from 1935 are mentioned. There are 5 figures and 11 references: 7 Soviet and 4 US.

SUBMITTED: May 21, 1960

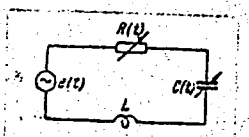

Рис. 1 (Figure 1)

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S/142/62/005/001/010/012
E192/E382

9,2572

AUTHOR: Belkin, M.K.

TITLE: Parametric amplifiers based on semiconductor diodes without idle networks

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 5, no. 1, 1962, 117 - 125

TEXT: The article reviews parametric amplifiers without idle networks, i.e. amplifiers consisting of only one tuned circuit or one line. The amplifiers are based on a nonlinear capacitance provided by a p-n semiconductor junction. The simplest parametric amplifier is a single-tuned amplifier, represented in Fig. 2. In general, the actual amplifier contains an additional circuit for providing the pump signal but this can be adequately represented by the circuit in Fig. 2. When the variables in the circuit are C and R , the differential equation of the system is in the form:

$$L\frac{di}{dt} + R(t)\cdot i + \frac{1}{C(t)}\int idt = E \sin(\omega_c t + \varphi) \qquad (2) .$$

Card (1/4)

Parametric amplifiers ....

The equation can be solved by the method of varying the arbitrary Lagrange multipliers (Ref.14 .. Smirnov, V.I. - Kurs vysshey matematiki (Course on Higher Mathematics), Gostekhizdat, 1957, 2; Ref. 15 .. MacLachlan, N.V. - Theory and Application of Mathieu Functions - transl. from the English, 1953). For the case when $R(t) = R$, the solution of Eq. (2) is comparatively simple. In practice, the construction of amplifiers of the type shown in Fig. 2 presents considerable difficulties in that they amplify the signal reflected from the load and tend to be unstable. This deficiency is eliminated by introducing ferrite circulators which have strong directional properties. Such amplifiers give gains of the order of 20 db and bandwidths of several tens of Mc/s at centimetre waves and the noise factor is about 3 db. A parametric amplifier operating under super-regenerative conditions can be realized by introducing a super-regeneration signal which changes the pump power or its frequency or the biasing of the diode. Such an amplifier can be represented by the equivalent circuit shown in Fig. 5 and its differential equation is in the form:

Parametric amplifiers ....

$$y'' + 2\delta(1 + n\cos \lambda x)y' + (1 + \varepsilon_o)^2(1 - m \cos 2x)\, y = a \cos\left[(1 + \varepsilon_o)x + \varphi\right] \qquad (4)$$

where n is the depth of the damping modulation. The super-regenerative parametric amplifiers have a gain bandwidth ratio at least an order higher than that of simple parametric amplifiers, so that their maximum gain is about 80 db. One of the main disadvantages of the resonance-type parametric amplifiers is their comparatively narrow operating bandwidth (about 1% of the centre frequency). This deficiency is eliminated in travelling-wave parametric amplifiers which give a relative bandwidth of 10 - 25%. As regards the noise, it is found that the minimum noise figure is achieved in single-tuned amplifiers operating in conjunction with a circulator. Under these conditions the noise can be as low as 1 db. These values of noise are higher than those in masers but much lower than in travelling-wave tubes. There are 13 figures.

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S/142/62/005/001/010/012
Parametric amplifiers E192/E382

ASSOCIATION: Kafedra radiopriyemnykh ustroystv Kiyevskogo ordena Lenina politekhnicheskogo instituta (Department of Radio-receiving Devices of Kiyev Order of Lenin Polytechnical Institute)

SUBMITTED: February 15, 1960 (initially)
June 27, 1961 (after revision)

Fig. 2:

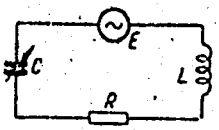
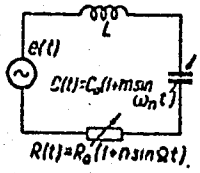


Fig. 5:



Card 4/4

HELKIN, M.K.

Author's reply. Izv. vys. ucheb. zav.; radiotekh.
5 no.3:414 My-Je '62. (MIRA 15:9)

1. Kiyevskiy ordena Lenina politekhnicheskiy institut.
(Amplifiers (Electronics))
(Microwaves)
(Oscillators, Electron-tube)

BELKIN, M.K., dotsent, kand. tekhn. nauk

Transactions of communication institutes. Izv. vys. ucheb. zav.; radiotekh. 6 no.5:582-583 S-O '63. (MIRA 17:1)

BELKIN, M.K., kand.tekhn.nauk; LAYKHTMAN, I.B., kand.tekhn.nauk

Review of G.IA.Mirskii's book "Radioelectronic measurements. Izv.vys.ucheb.zav.; radiotekh. 7 no.6:770 N-D '64.

(MIRA 18:4)

ACC NR: AP6029460 SOURCE CODE: UR/0108/66/021/008/0022/0028

AUTHOR: Belkin, M. K. (Active member); Daletskiy, Yu. L. (Active member)

ORG: Scientific-Technical Society of Radio and Communications Engineering im A.S. Popov (Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi)

TITLE: Parametric amplification theory

SOURCE: Radiotekhnika, v. 21, no. 8, 1966, 22-28

TOPIC TAGS: parametric amplifier, parametric resonance, mathematic analysis, mathematics

ABSTRACT: The processes in a parametrically regenerated circuit, the capacitance and attenuation of which change simultaneously in accordance with a complex law, are reviewed because, despite much writing on the subject of parametric resonance and parametric amplifiers with nonlinear reactance, that published in recent years and known to the authors deals only with the circuit with one variable reactance. This work, therefore, considers the superregenerative state in the parametric amplifier, during which the reactance and the attenuation change simultaneously in accordance with a complex law, such as a modulated pumping law. The solutions to the homogeneous equation, as well as to the inhomogeneous equation, and to individual special, cases, are shown. The methodology used for solving the problems can be used as well for modulated pumping and for the more complex laws which changes in the system obey. Orig. art. has: 23 formulas and 2 figures.

SUB CODE: 09/SUBM DATE: 13Feb64/ORIG REF: 008/OTH REF: 003

Card 1/1 UDC: 621.375.93

KHODYKIN, A.V.; BELKIN, M.L.

School for therapeutic and effective cooking. Vop. pit. 19 no.2: 95 Mr-Ap '60. (MIRA 14:7)

(DIET)

BELKIN, M.N.

CHIZHOV, D.G.; KOGTEV, G.I.; LAVRENENKO, K.D.; SPIRIN, S.A.; NEKRASOV, A.M.; IVANOV, M.I.; UFAYEV, M.Ya.; GRISHIN, I.K.; KOSTIN, M.F.; POPOV, V.A.; ZAGORODNIKOV, P.I.; FEDOTOV, P.N.; KAZ'MIN, A.V.; FOMICHEV, G.I.; YERSHOV, P.I.; MESHCHERYAKOV, V.I.; YEFREMOV, S.G.; LEVIN, I.S.; LETUCHEV, L.I.; BELKIN, M.N.; OBOLONKOV, M.I.; BATENIN, B.A.; BUR'YANOV, B.P.; KANATOV, P.I.; KOKOREV, S.V.

Nikolai Alekseevich Andreev. Elek. sta. 27 no.10:62 O '56.
(Andreev, Nikolai Alekseevich, 1897-1956) (MLRA 9:12)

ZARFMBA, Ye.M.; CHVAMANIYA, A.Ye.; KUVARDINA, N.M.; BELKIN, M.L.; MALYKHINA, A.F.; NEPLOTNIK, I.F.; CHUCHENKO, R.I.; MATUSYAK, Ye.I.

Comparative evaluation of various methods of gastric lavage with "Yessentuki" No.4 mineral water in chronic gastritis. Sbor. nauch. rab. vrach. san.-kur. uchr. profsoiuzov no.1:79-83 '54. (MIRA 18:10)

1. Yessentukskiy sanatoriy imeni I.P.Pavlova (glavnyy vrach A.Ye. Chvamaniya, nauchnyy rukovoditel' kand.med.nauk I.I.Konovalov).

BELKIN, M.N., inzh.; PLATONOVA, V.P., inzh.

Construction of hydraulic tunnels in soft ground. Trudy Nauch.-issl. sekt.Mosk.fil.Inst."Orgenergostroi" no.3:19-53 '59. (MIRA 14:7)
(Tunneling)

MAMCHENKO, V.P., inzh.; BELKIN, M.N., inzh. [deceased]; ZAV'YALOV, G.N., inzh.; DZHAVOKHIN, T.V., inzh.; CHEPYZHOV, B.P., inzh.; MOLYARCHUK, V.S., kand. tekhn. nauk; KRUCHININ, M.S., inzh.; AVDUKOV, M.I., inzh.; MEL'NIKOV, V.Ye., red.; MEDVEDEVA, M.A., tekhn. red.

[Manual for the locomotive engineer] Rukovodstvo parovoznomu mashinistu. Izd.2., ispr. i dop. Pod obshchei red. V.S. Moliarchuka. Moskva, Transzheldorizdat, 1963. 389 p. (MIRA 16:12)

1. Russia (1923- U.S.S.R.) Ministerstvo putey soobshcheniya. (Locomotives--Handbooks, manuals, etc.)

DMITRIYEV, I.M., inzh.; BELKIN, M.N., inzh.

Underground housing of a hydroelectric power station with suspended crane beams. Energ. stroi. no.33:59-62 '63.
(MIRA 17:8)

1. Nauchno-issledovatel'skaya stantsiya Moskovskogo filiala Vsesoyuznogo instituta po proyektirovaniyu organizatsiy energeticheskogo stroitel'stva.

BELKIN, M.S.

Pirogov Medical Society; from original unpublished proceedings of the society and other materials. Vest.khir. 89 no.7:117-120 Jl '62. (MIRA 15:8)

(MEDICAL SOCIETIES)

BELKIN, M. S.

21979 BELKIN, M. S. Russkiye Zhenshchiny-vrachi--pionery vysshego zhenskogo meditsinskogo obrazovaniya. (N. P. Suslova, V. A. Kashevarova i M. A. Bokova) Sov. uracheb. sbornik, vyp. 14, 1949, s. 29-36.

30: Letopis'Zhurnal'nykh Statey, No. 29, Moskva, 1949.

BELKIN, M.S., kand.med.nauk (Leningrad)

Pirogov's thoughts about the war; according to unpublished addresses of N.I. Pirogov to the Pirogov Medical Club and other material. Sov. zdrav. 19 no.12:37-42 '60. (MIRA 14:3)
(PIROGOV, NIKOLAI IVANOVICH, 1810-1881) (WAR)

BELKIN, Moisey Savel'yevich; FRAYMAN, Tevel' Rubinovich; DUBAKH, M.Ia., red.

[Mechanization of labor-consuming processes in the maintenance of motorbuses; practice of motorbus parks in Moscow] Mekhanizatsiia trudoemkikh protsessov pri tekhnicheskom obsluzhivanii avtobusov; iz opyta avtobusnykh parkov Moskvy. Moskva, Transport, 1964. 45 p.
(MIRA 17:9)

BERNSHTEYN, M.L., doktor tekhn. nauk, prof.; BELKIN, M.Ya., kand. tekhn. nauk; VENZHEGA, A.S., kand. tekhn. nauk; KALYAGINA, G.P., inzh.; RYABOVA, L.A., inzh.

High-temperature thermomechanical surface hardening. Vest. mashinostr. 45 no.6:63-65 Je '65. (MIRA 18:6)

28(5) SOV/32-25-4-34/71

AUTHOR: Belkin, M. Ya.

TITLE: Simplifying the Shape of Samples for Testing Metals for Fatigue (Ob uproshchenii formy obraztsov dlya ispytaniy metallov na ustalost')

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 4, pp 466-469 (USSR)

ABSTRACT:

II

The present paper describes the simplification of the shape of fatigue samples of highly resistant alloyed steel. The experiments were carried out under the direction of I. V. Kudryavtsev, Professor, Doctor of Technical Sciences. A poorly alloyed, highly resistant steel 40 KhN (0.41% C, 0.57% Mn, 0.03% S, 0.025% P, 0.07% Si, 0.63% Cr, 1.25% Ni) was thermally processed for different degrees of hardness and examined. A sketch of the sample form (Fig 1), as well as the mechanical characteristics of the sample groups (Table 1) are given. The surface hardening is made by means of a three-roller device designed by the TsNIITMASh (Ref 5). The fatigue tests were carried out by bending with rotation of the sample on the basis of 5 million cycles. As the conditions of the first surface hardenings did

Card 1/2

Simplifying the Shape of Samples for Testing Metals for Fatigue

not bring the desired success, the hardening was done under different conditions. The profile radius of the rollers was reduced to 1.8 mm at a diameter of 40 mm, and the roller pressure was 125, 150 and 175 kg, so that by the rolling an increase in the surface hardening was attained, and the depth of the hardened layer was 1.5-1.7 mm. The results of the fatigue tests are given (Table 2, Fig 2), and it is pointed out that none of the samples broke at the supports or at the end of the hardening zone. Thus, it is stated that, with sufficiently deep and intense hardening of the support zones, no samples with a supporting head are needed. The samples not destroyed were tested by staining with 50% hydrochloric acid at 70° (for 30 minutes), and no cracks were ascertained. There are 2 figures, 2 tables, and 5 Soviet references.

ASSOCIATION: Staro-Kramatorskiy mashinostroitel'nyy zavod im. S. Ordzhonikidze (Staro-Kramatorskiy Machine-building Works imeni S. Ordzhonikidze)

BELKIN, M. Ya.

Increasing the durability of hammer rods by means of cold rolling. Kuz.-shtam. proizv. 2 no.7:36-38 Jl '60. (MIRA 13:8)
(Forging machinery) (Metals--Cold working)

28161

S/122/61/000/009/008/009
D298/D305

1.1730

AUTHOR: Belkin, M.Ya., Engineer

TITLE: Strengthening large size components by working them with a vibrating roller

PERIODICAL: Vestnik mashinostroyeniya, no.9, 1961, 67-68

TEXT: Mechanical methods for strengthening large size components involve many difficulties as they require application of considerable pressures. In these cases, the single-roller method proved to be unsatisfactory, and the application of three-roller hydraulic or spring-lever devices is inconvenient for exploitation owing to their bulkiness. The present article describes a new method of strengthening by using vibration roller (Author's certificate 128034 by I.V. Kudryavtsev and N.A. Lopatinskiy). In Fig. 1 a general layout of such a rolling device is given. The rollers are made of steel 9XC (9KhS) and

Card 1/3

Strengthening large size ...

are heat treated up to hardness RC 60-62. The following optimum parameters were selected: Roller diameter - 90 mm; roller profile radius - 7 mm; static force - 750 kg; striking energy - 3.4 kgm; feed - 1.53 mm/turn. The depth of plastic deformation amounted to 20 mm. Experiments were carried out on the shifting mechanism shafts for grab trucks of a gantry crane having a span of 76.2 m; diameter of shafts - 260 mm. The shafts were made of steel 40 XH (40 KhN) having very high technical qualities as regards the composition of metal, forging, thermal treatment and mechanical properties. During the experiment, it was determined that the endurance limit of the test pieces treated by cold hardening was increased for steel 40X (40Kh) from 11.5 to 28.5 kg/mm^2. Analogous results were obtained for steel 40XH (40KhN). In order to eliminate intensive scaling of small metal particles during the process of strengthening, the quality of surface finish of the treated components was established not to be under class 5 of ГОСТ (GOST) 2789-59.

Card 2/3

ANDREYEV, V.S.; BELKIN, M.Ya.; TSEGEL'NITSKAYA, A.Yu.

Exchange of experience. Zav.lab. 27 no.8:1039-1040 '61.
(MIRA 14:7)

1. Kuybyshevskiy industrial'nyy institut imeni V.V.Kuybysheva (for Andreyev). 2. Staro-Kramatorskiy mashinostroitel'nyy zavod imeni Ordzhonikidze (for Belkin). 3. Sudoremontnyy zavod No.2 Chernomorskogo parokhodstva (for TSegel'nitskaya).
(Testing machines)

S/122/62/000/004/001/006
D221/D302

AUTHORS: Kudryavtsev, I.V., Doctor of Technical Sciences, Professor, and Belkin, M.Ya., Engineer

TITLE: Increasing the load-carrying capacity of large steel shafts

PERIODICAL: Vestnik mashinostroyeniya, no. 4, 1962, 3 - 7

TEXT: Special devices were designed by TsNIITMASh and other institutions for experimental determination of fatigue characteristics of large specimens. The tests revealed the effectiveness of surface hardening by the strain method when applied to critical zones of stress concentration. The work of Vsesoyuznyy nauchno-issledovatel'skiy teplovoznyy institut (Kolomna) (All-Union Scientific Research Institute of Locomotives) demonstrated that the fatigue limit of stepped shafts due to hardening by roller burnishing is independent of the scale of the modelling. The fatigue tests on specimens with diameters ranging from 20 to 160 mm in 40ХН (40 KhN) and 40Х (40 Kh) steels were carried out in order to ascertain the possibility of replacing the former. Dimensions of the test-pieces and the

Card 1/3

Increasing the load-carrying ...

steel compositions are quoted. The specimens with stress raisers were examined both in treated and untreated conditions. The different dimensions provided the answer to the scale factor. The sleeves for force fit were made in steel Ст. 3 (St. 3) and to ОСТ (OST) 1042 specifications. The operation of roller-burnishing is described in detail. The fatigue tests were carried out in a У-200 (U-200) resonance type machine designed by TsNIITMASh, which ensured a symmetrical cycle of torsional bending. Some failures occurred outside of the concentration of stresses. Comparison of results indicated that the press-fit of sleeves and fillets reduces the fatigue strength of large shafts. 40KhN steel appeared more sensitive to stress raisers than 40 Kh. The effect of the scale factor follows in this order: Plain, stepped and press-fit specimens for the untreated items. The strain-hardened specimens exhibited a similar behavior. Consequently, the chrome-nickel steel, 40KhN, has little advantage over the chrome steel, 40Kh. The fatigue strength of stepped shafts has increased by 1.5 - 2 times, whereas that of sleeved components improved by 2 - 2.3 times due to work-hardening. Fatigue resistance decreased with increasing size of the shafts. Candidate of Technical Sciences N.A. Balabanov, Engineer, V.N.

Card 2/3

Increasing the load-carrying ...

Chizhik and M.I. Nagornaya participated in the experimental part of the work. There are 5 figures, 1 table and 10 references: 9 Soviet-bloc and 1 non-Soviet-bloc.

Card 3/3

VENZHEGA, A.S., inzh.; BELKIN, M.Ya., inzh.

Strength of rolls for cold finish rolling. Mashinostroenie no.1:9-10 Ja-F '63. (MIRA 16:7)

1. Staro-Kramatorskiy mashinostroitel'nyy zavod.
(Rolls(Iron mills))

S/129/63/000/001/004/017
E073/E335

AUTHORS: Belkin, M.Ya. and Venzhega, A.S., Engineers

TITLE: Hardening of large components by surface-working as a substitute for heat treatment

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 1, 1963, 15 - 16

TEXT: The technology of strengthening the top drum of flying shears weighing 28.4 t (cutting force 150 t, bending and torsion stresses in the dangerous cross-section 500 kg/cm^2), made from steel 34ХНМ (34KhNM), is described. Bearings and gears are shrink-fitted onto the 480 and 530 mm dia. drum neck. Step-shaped specimens (r:d = 0.13) were investigated. The fatigue limit of 160-mm dia. specimens increased as a result of work-hardening from 14.5 - 20.5 kg/mm^2 in the case of normalized specimens and from 19.0 - 24.5 kg/mm^2 in the case of heat-treated specimens. Work-hardened, normalized steel has a higher fatigue index than otherwise heat-treated steels. Therefore, the laborious hardening of high-temperature tempering can be substituted by cold deformation. The flying-shears drum was first normalization-annealed and then

Card 1/2

Hardening of large components ....

machined (with an addition of 2.5 mm). To prevent layering, the surface quality prior to work-hardening must not be lower than class 6. The area where the bearings and gears are fitted is work-hardened with a vibrating roller of 90 mm dia. with a profile radius of 7 mm, using a static force of 750 kg, impact energy of 3.4 kgm, feed rate of 1 mm/rev and a speed of drum rotation of 3 r.p.m. The attachment and tool rest are set to an angle of 45° relative to the drum axis. The drums are finish-machined to the required accuracy after work-hardening. There is 1 table.

ASSOCIATION: Staro-Kramatorskiy mashinostroitel'nyy zavod
(Staro-Kramatorsk Machine-building Works)

DRAYGOR, D.A., doktor tekhn. nauk; SOLOGUB, V.A., inzh.; BELKIN, M.Ya., inzh.; DUNAYEVSKIY, V.I., inzh.

Strength of ball-burnished circular. Mashinostroenie no.5: 45-46 S-O '63. (MIRA 16:12)

VENZHEGA, A.S., inzh.; BELKIN, M.Ya., inzh.

Effect of grinding conditions on the surface layer quality of rolls for cold rolling. Vest. mashinostr. 43 no.10:68-70 O '63. (MIRA 16:11)

DRAYGOR, D.A.; VENZHEGA, A.S.; BELKIN, N.Ya.; VAL'CHUK, G.I.; ARUTYUNOV, I.G., kand. tekhn. nauk, retsenzent; SAVEL'YEV, Ye.Ya., red.

[Roll durability in cold rolling finishing] Stoikost' valkov chistovogo kholodnogo prokata. Moskva, Izd-vo "Mashinostroenie," 1964. 126 p. (MIRA 17:7)

VENZHEGA, A.S., inzh.; BELKIN, M.Ya., inzh.

Increasing the wear resistance of heavy-machinery parts. Mashinostroenie no.3:10-13 My-Je '64.

(MIRA 17:11)

VENZHEGA, A.S., kand. tekhn. nauk; BELKIN, M. Ya., kand. tekhn. nauk

Selecting grinding conditions for hardened 9Kh steel. Mashinostroenie no.5:51 S-O '64 (MIRA 18:2)

L 58789-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4 MJW/JD/HW

ACCESSION NR: AP5016106 UR/0122/65/000/006/0063/0065
621.78:621.787

AUTHORS: Bernshteyn, M. L. (Doctor of technical sciences, Professor); Belkin, M. Ya. (Candidate of technical sciences); Venzhega, A. S. (Candidate of technical sciences); Kalyagina, G. P. (Engineer); Ryabova, L. A. (Engineer)

TITLE: High temperature thermomechanical surface treatment

SOURCE: Vestnik mashinostroyeniya, no. 6, 1965, 63-65

TOPIC TAGS: surface treatment, thermomechanical surface treatment, cold rolling/9Kh steel

ABSTRACT: To determine the optimum thermomechanical surface treatment parameters for treating rolls of multi-roll cold rolling equipment, specimens (10 mm wide, 38 mm outside diameter, 15.8 mm inside diameter) of 9Kh steel were surface rolled under forces of 25, 35, 45, 55, 65, 75 kg at 850, 900, and 950C at 720 rpm, and at a rate of deformation of 180 mm/min. After surface treatment, the specimens were tempered at 160-180C before being tested for surface endurance (cycles to first appearance of pitting) at 250 kg/mm^2 (2.5 times the load encountered during actual operation). It was found that the optimum surface treatment parameters

Card 1/2

L 58789-65

ACCESSION NR: AP5016106

were 65 kg contact force at a deformation rate of 180 mm/min and 720 rpm, 900-950C temperature during treatment with immediate quenching in water from a temperature above Ac_3, and final tempering at 160-180C. Since the surface endurance was not too sensitive to small parameter changes, this surface treatment can be applied in mass production of axles, rolls, etc. Orig. art. has: 4 figures.

ASSOCIATION: Staro-Kramatorskiy mashinostroitel'nyy zavod (Staro-Kramatorsk Machinery Construction Factory)

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

NO REF SOV: 003 OTHER: 000

Card 2/2 dm

BELKIN, M.Ye.; VENZHEGA, A.S.; DUNAYEVSKIY, V.I.; VOYAKIN, V.N.

Determining the depth of the hardened layer in alloyed steels. Zav.lab. 31 no.4:485-488 '65. (MIRA 18:12)

1. Staro-Kramatorskiy mashinostroitel'nyy zavod im. Ordzhonikidze.

L 14420-66 EWT(m)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b) IJP(c) MJW/JD/HW/JG

ACC NR: AP6002120 SOURCE CODE: UR/0369/65/001/006/0701/0706

AUTHOR: Bernshteyn, M. L.; Kalyagina, G. P.; Venzhega, A. S.; Belkin, M. Ya.; Ryabova, L. A.

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

TITLE: High-temperature thermomechanical surface treatment (with 9 Kh steel as example)

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 6, 1965, 701-706

TOPIC TAGS: steel, surface hardening, metal heat treatment, mechanical heat treatment

ABSTRACT: The paper gives the results of a study and adoption in industry of a new method of hardening the surface layers of cold rolls, the high-temperature thermomechanical surface treatment (HTMST). In experiments with rolls of 9Kh steel, the greatest increase in the contact strength of 9Kh steel rolls as compared to ordinary hardening treatment with high-frequency currents and low tempering is provided by HTMST involving an austenizing temperature of 900-950C, a draft pressure of 64 dkN, a longitudinal feed of 180 mm/min, and a rotation velocity of 720 rpm. After this treatment, the contact strength in the zone of

Card 1/2

L 14420-66

ACC NR: AP6002120

2

limited life increased from 4.1—5.4 to 13.0—14.8 million cycles (in some samples, up to 50—55 million cycles). The life of the working rolls of a twelve-roll mill increased by a factor of over 2. Metallographic studies and microhardness measurements following the HTMST showed the presence of a markedly hardened surface layer characterized by a high etchability. HTMST results in a refinement of carbide particles, an increased alloying with chromium, and causes a certain orientation to appear in the separation of these particles. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 11 / SUBM DATE: 11Mar65 / ORIG REF: 001

FW

Card 2/2

BELKIN, N.

AUTHOR: Belkin, N. 2-3-13/14

TITLE: International Conference on the Problem of Application of Electronic Computers for Processing of Statistical Data (Mezhdunarodnoye soveshchaniye po voprosu primeneniya elektronnykh vychislitel'nykh mashin dlya obrabotki statisticheskikh dannykh)

PERIODICAL: Vestnik Statistiki, 1957, No 3, May-June, pp 86-89 (USSR)

ABSTRACT: This article presents information on the international conference which convened from 21 to 24 Jan 57 in Geneva. The Soviet representatives were Yu. Ya. Bazilevskiy (Ministry of Instrument Building and Automation), N.V. Belkin (Soyuzmashuchet TsSU SSSR), and Academician B.V. Gnedenko (Institute of Mathematics of the Academy of Sciences of Ukrainian SSR). Two full columns in the article are devoted to the U.S. electronic computer "Univac" and to the U.S. experience in the practical use of this machine. The Soviet experimental work on programs for computers БЭСМ and "Strela" (for experimental computation of the movement of materials between workshops of an automobile plant and for the processing of census data) is mentioned.

AVAILABLE: Library of Congress

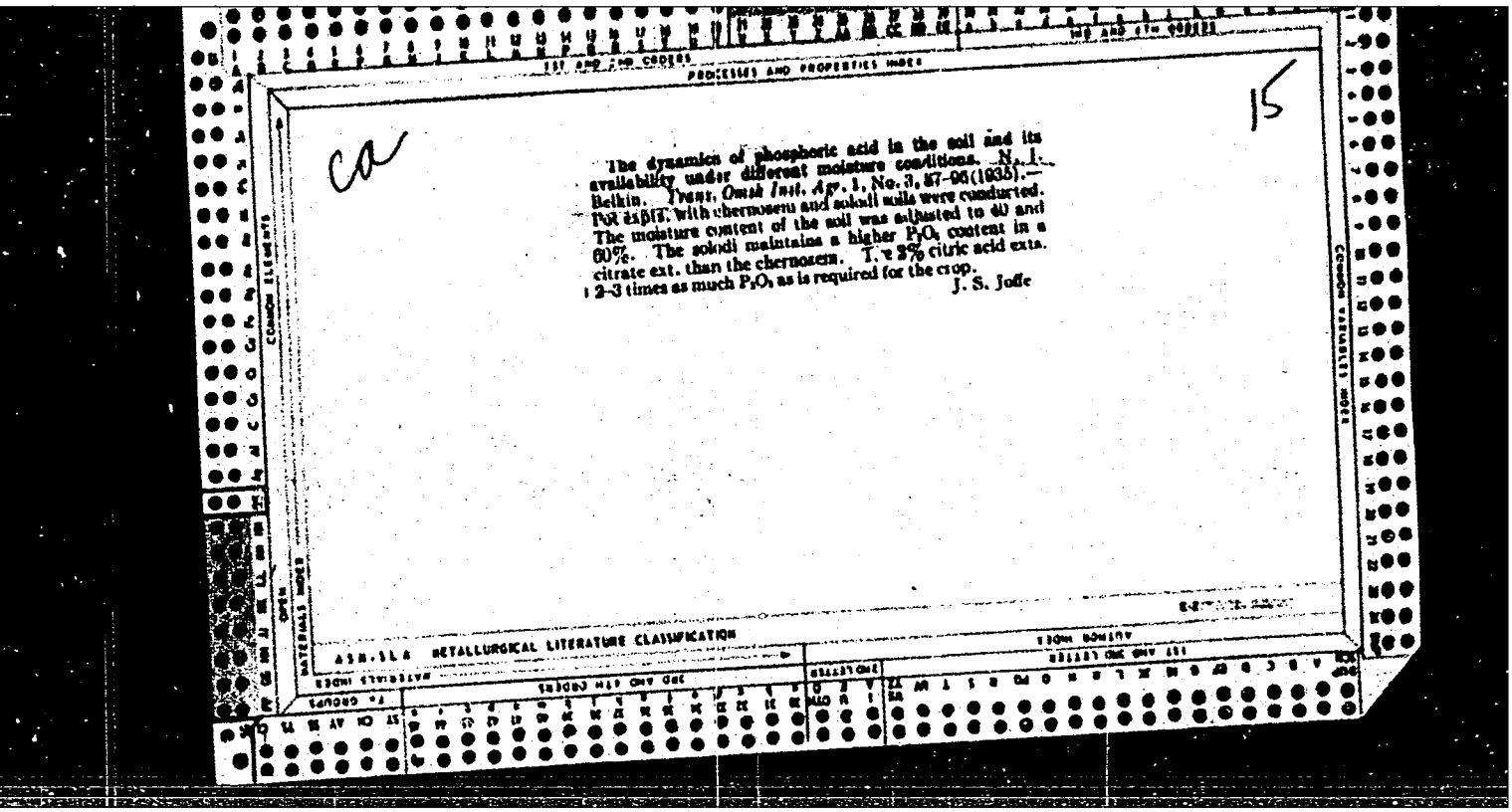
Card 1/1

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000204320019-0"

BELKIN, N.I., inzh.

Dimensions of the deformation modulus of high-grade concrete and bent reinforced concrete elements subjected to loads of short duration. Trudy NIIZHT no.14:108-117 '58.
(MIRA 12:1)

1. Novosibirskiy institut inzhenerov zheleznodorozhnogo transporta.
(Reinforced concrete)

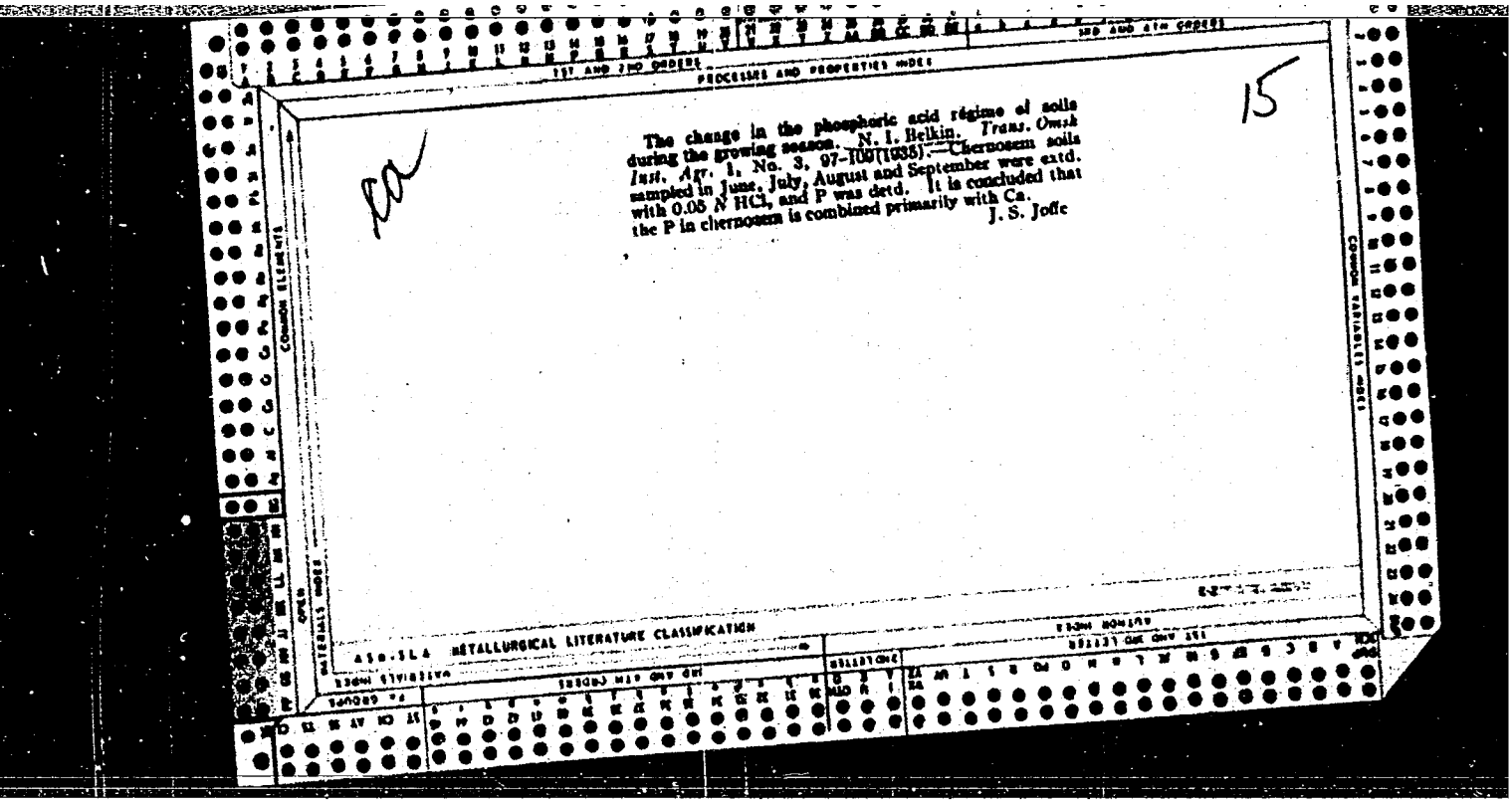


ca

15

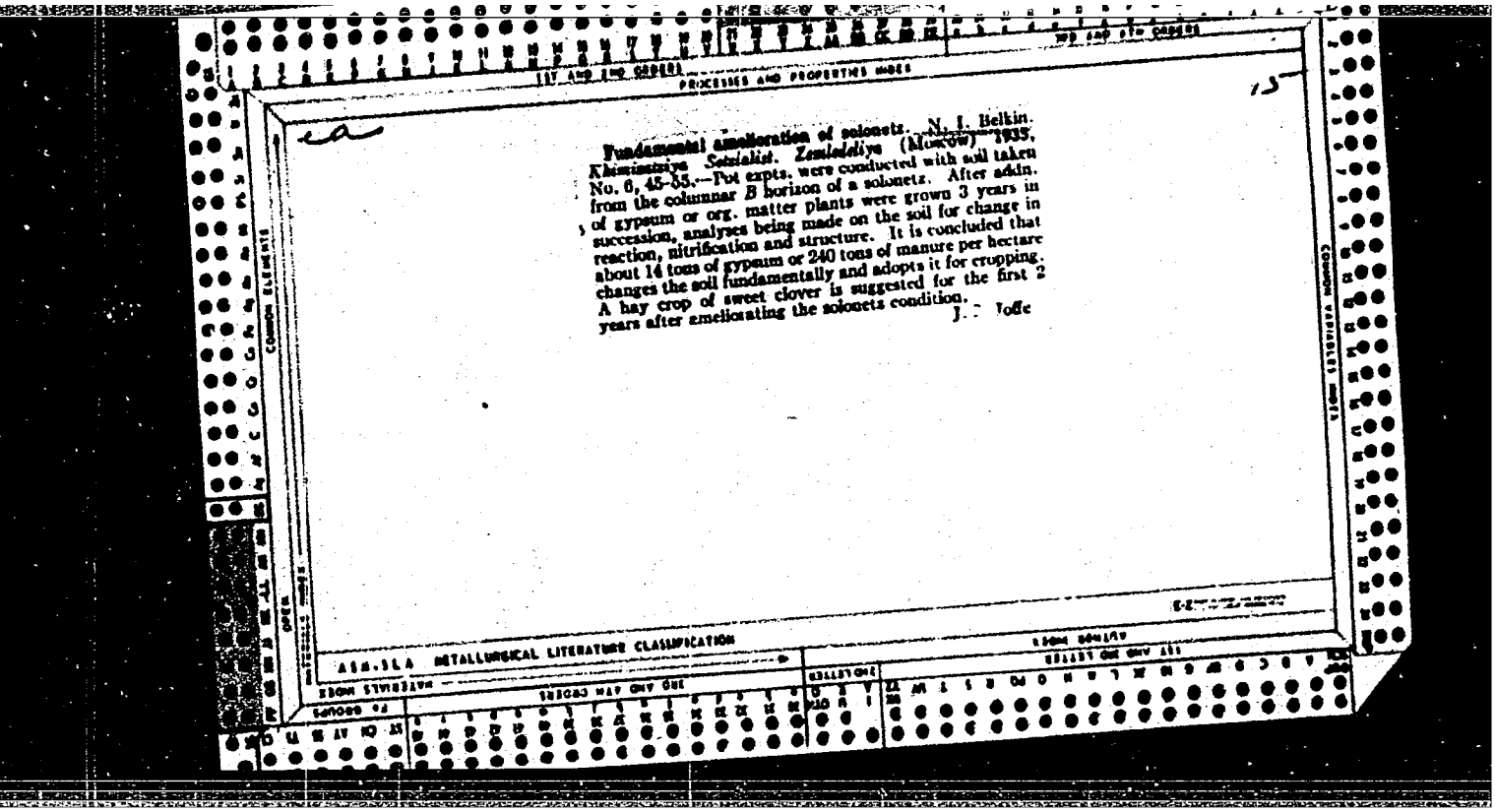
The dynamics of phosphoric acid in the soil and its availability under different moisture conditions. N. I. Belkin. *Trans. Omsk Inst. Agr.* 1, No. 3, 87–96 (1935).—Pot expts. with chernozem and solonetz soils were conducted. The moisture content of the soil was adjusted to 40 and 60%. The solonetz maintains a higher P_2O_5 content in a citrate ext. than the chernozem. To 2% citric acid extn. 2–3 times as much P_2O_5 as is required for the crop.

J. S. Joffe



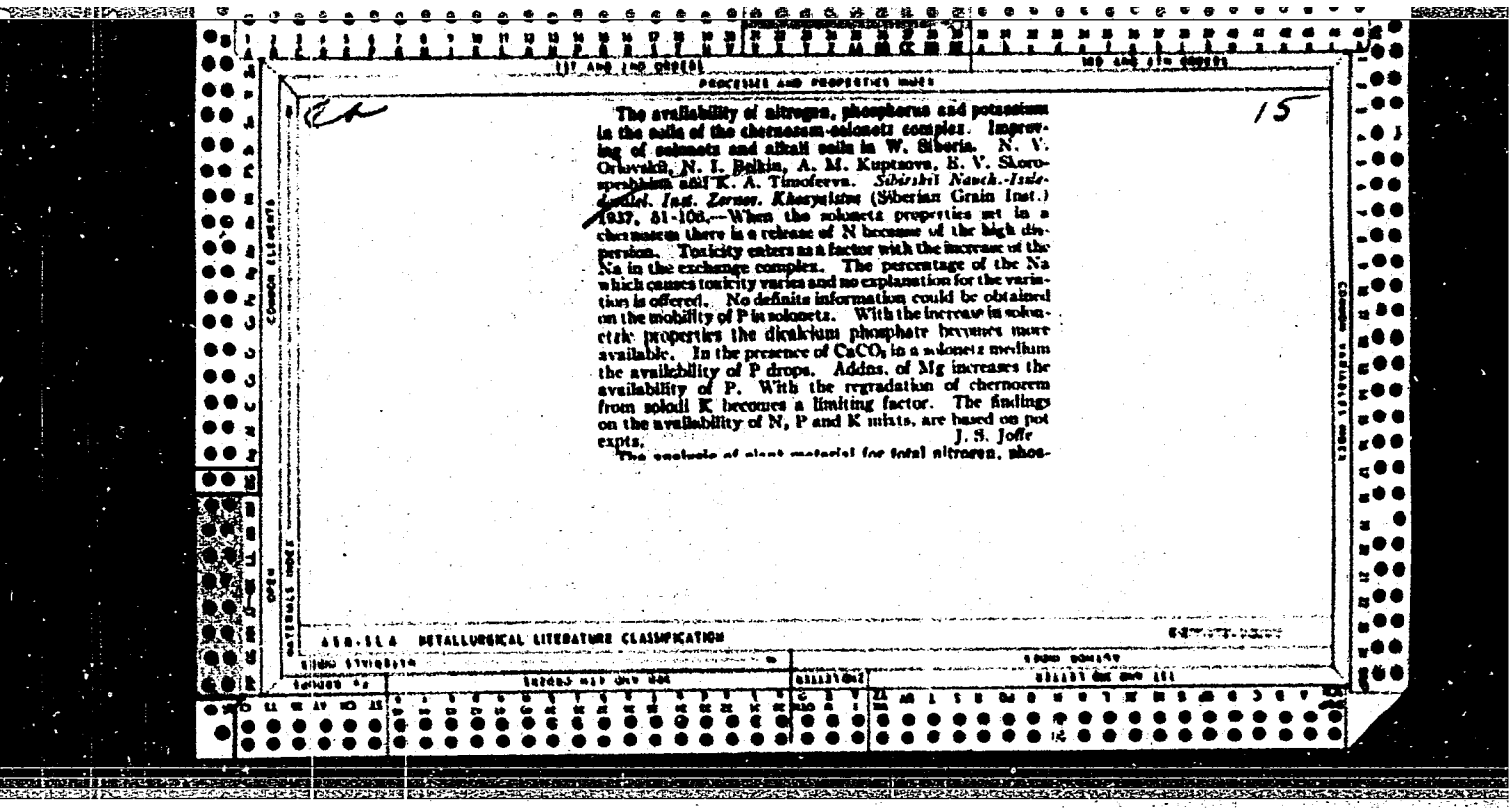
15

The change in the phosphoric acid régime of soils during the growing season. N. I. Belkin. *Trans. Omsk Inst. Agr.* 1, No. 3, 97–100(1938).—Chernozem soils sampled in June, July, August and September were extd. with 0.05 *N* HCl, and P was detd. It is concluded that the P in chernozem is combined primarily with Ca.
J. S. Joffe



Fundamental amelioration of solonets. N. I. Belkin. *Khimizatsiya Sotsialist. Zemledeliya* (Moscow) 1935, No. 6, 45-55.—Pot expts. were conducted with soil taken from the columnar *B* horizon of a solonetz. After addn. of gypsum or org. matter plants were grown 3 years in succession, analyses being made on the soil for change in reaction, nitrification and structure. It is concluded that about 14 tons of gypsum or 240 tons of manure per hectare changes the soil fundamentally and adopts it for cropping. A hay crop of sweet clover is suggested for the first 2 years after ameliorating the solonets condition.

J. - Ioffe



The availability of nitrogen, phosphorus and potassium in the soils of the chernozem-solonetz complex. Improving of solonets and alkali soils in W. Siberia. N. V. Orlovskii, N. I. Belkin, A. M. Kuptsova, E. V. Skoro-spekhina and K. A. Timofeeva. *Sibirskii Nauch.-Issled. Inst. Zernov. Khozyaistva* (Siberian Grain Inst.) 1937, 81-108.—When the solonetz properties set in a chernozem there is a release of N because of the high dispersion. Toxicity enters as a factor with the increase of the Na in the exchange complex. The percentage of the Na which causes toxicity varies and no explanation for the variation is offered. No definite information could be obtained on the mobility of P in solonetz. With the increase in solonetzic properties the dicalcium phosphate becomes more available. In the presence of $CaCO_3$ in a solonetz medium the availability of P drops. Addns. of Mg increases the availability of P. With the regradation of chernozem from solodi K becomes a limiting factor. The findings on the availability of N, P and K units, are based on pot expts.

J. S. Joffe

The contents of plant material for total nitrogen, phos-

BELKIN, N.I.

Belkin, N.I. "Fermentation indexes of the resistance to cold in winter wheat in relation to its hardening", TRudy Dnepropetr. s.-kh. in-ta, Vol. II-III, 1948, p. 185-90, - Bibliog: 10 items

SO: U-3261, 10 April 53, (Letopis 'zhurnal 'nykh Statey No. 12, 1949)

BELKIN, N. I.

Belkin, N. I. - "Experience in observing the effect of fertilizer on larvae of the beet weevil", Trudy Dnepropetr. s.-kh. in-ta, Vol. 11-111, 1948, p. 293-96.

SO: U-3261, 10 April 53, (Letopis 'Zhurnal 'nykh Statey, No. 12, 1949).

BELKIN, N. I.

USSR/Biology (Agriculture) - Cold Resistance of Wheat - Sep/Oct 51

"Enzymatic Indexes of Cold Resistance of Winter Wheat in Connection With Climatic Hardening and Fertilization," N. I. Belkin, Chair of Agr Chem and Plant Physiol, Yaroslav Agr Inst

"Biokhim" Vol XVI, No 5, pp 429-433

Resistance to winter cold is characterized by the capacity of plants to suppress the hydrolytic action of enzymes of carbohydrate metabolism at low temps. Nitrogen activates hydrolytic reactions,

202T18

USSR/Biology (Agriculture) - Cold Resistance of Wheat (Contd) - Sep/Oct 51

thus lowering resistance. Phosphorus and potassium stimulate synthetic processes, increasing cold resistance. Winter wheats require reinforced P-K nutrition in the fall and N fertilization in the spring.

202T18

USSR / Cultivated Plants. Grains. M-2

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24994

Author : Trusov, M. S., Belkin, N. I., Demina, M. N.
Inst : Yaroslav Agricultural Inst.
Title : A Study of the Agrotechnical Methods for Corn in Yaroslavskaya Oblast'

Orig Pub: Tr. Yaroslavsk. s.-kh. in-ta, 1956, 3, 25-32

Abstract: At the experimental training farm of Yaroslav Agricultural Institute a study was made in 1954-1955 of the sowing periods, bed areas in square-pocket planting and the application of manure and organic mineral mixtures for corn. The highest cob yields were obtained with square-pocket planting (60 x 60 cm.) in 25-30 May with 2 plants per bunch, the seeds bedded 5 cm. deep, with the simultaneous application of manure under the plow and

Card 1/2

USSR / Cultivated Plants. Grains. M-2

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24994

Abstract: an organic mineral mixture being placed in the holes when sowing. -- Ye. T. Zhukovskaya

Card 2/2

BELKIN N. I.

USSR/Physiology of Plants. Heat Regimen I-4

Abs Jour : Ref Zhur-Biologiya, No 2, 1958, 5682

Author : N. I. Belkin
Inst : Yaroslavskiy Agricultural Institute
Title : Biochemical Method of the Determination of Resistance of Winter Wheat

Orig Pub : Tr. Yaroslavsk. s-kh. in-ta, 1956, 3, 80-84

Abstract : 600 to 1000 seeds of the variety under investigation were soaked for a period of 6-12 hours and then cultivated on sterile substrata for a period of 16-18 days, while being irrigated with distilled water at room temperature. The hardening process was carried out in two phases; phase 1- cultuation under light at 0-+5° for a period of 10-12 days, and phase 2-3 day subjection to 0 to -5° To analyze the leaves by means of vacuum-infiltration water introduced were (to determine the

Card 1/2

USSR/Physiology of Plants. Heat Regimen I-4

Abs Jour : Ref Zhur-Biologiya, No 2, 1958, 5682

Abstract : content of sugars in the plant), glucose (to determine the synthetic capacity of the leaves), or saccharose (to determine the ability to hydrolize). Mono-and disaccharides contents were determined in each sample (by the Bertran method or the Lisitsyn micromethod). Winter resistance was judged on the basis of the trend of invertase action. By this method it was found that winter resistant varieties after hardening differ from the winter nonresistant varieties by a small predominance of sythesis over hydrolysis.

Card 2/2

BELKIN, N.I.; DIKUSAR, I.G., prof., doktor sel'khoz.nauk,red.; DRYAKHLOVA,V.I., red.; POLONSKIY, S.A., tekhn. red.

[Winter hardiness of plants] Zimostoikost' rastenii; faktory zimostoikosti. Kishinev, Izd-vo "Shtiintsa" Moldavskogo filiala Akad. nauk SSSR, 1961. 279 p. (MIRA 14:10)
(Plants—Frost resistance)

BELKIN, N.I.

"Morphological and physiological periodicity and frost resistance of woody plants" by L.I.Sergeev, K.A.Sergeeva, V.K.Mal'nikov. Reviewed by N.I.Belkin. Bot.zhur. 48 no.2:287-289 F '63. (MIRA 16:4)
(Bashkiria--Woody plants) (Bashkiria--Plants--Frost resistance)
(Sergeev, L.I.) (Sergeeva, K.A.) (Mel'nikov, V.K.)

HELKIN, N.V.

State and tasks of the mechanization of accounting in the national economy of the U.S.S.R. [Izd.] LONITOMASH 44:7-16 '58. (MIRA 11:9)

(Machine accounting)

85124

9.7000

S/123/60/000/017/015/016
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1960, No. 17, p. 264, # 93667

AUTHOR: Belkin, N.V.

TITLE: Aspects of Development of Computer-Engineering in the USSR

PERIODICAL: Byul. tekhn. inform.(Sovnarkhoz Kurskogo ekon. adm. r-na), 1958, No. 7-8, pp. 66-68

TEXT: The author gives a synopsis on the computer-engineering development in the Soviet Union from 1947 to 1957. In this period, the stock of computers with motor driving increased 7 times, and models of the highspeed electronic computers "BESM" (BESM), "Strela", "Ural", "M3" (M2) and others were developed. In the next years, it is planned to intensify the production of computers of all types, and to start the serial output of electronic computers for statistical and economical analysis with operation speeds up to 150 - 200 thousands of operations per second. The output of perforation-type computers will be increased up to 1,000 - 1,200 sets per year. The output of multiple-key computing automats is

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A005/A001

Aspects of Development of Computer-Engineering in the USSR

planned to be increased during 7 years up to 15 - 20 thousand pieces, and that of 10-key computing semiautomats up to 10 - 12 thousands. The further development of the computer engineering will further the growth of the productive forces of the country.

I.Yu.I.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

BELKIN, N.V., mashinist

Excitation of the main generator by a storage battery. Elek.i tepl.tiaga 7 no.1:36-37 Ja '63. (MIRA 16:2)

1. Depo Volgograd Privolzhskoy dorogi.
(Diesel locomotives)

BELKIN, N.V., inzh.

Centralized system of remote transmission, reception and processing of information. Mekh.i avtom.proizv. 17 no.9:4-9 S '63. (MIRA 16:10)

BELKIN, N.V.; ZASYPKIN, V.I.

Postal service and computer technology aid industrial management. Vest. sviazi 23 no.3:7-8 Mr '63. (MIRA 16:3)

1. Nachal'nik vychislitel'nogo tsentra TSentral'nogo proyektno-konstruktorskogo i tekhnologicheskogo byuro Moskovskogo oblastnogo soveta narodnogo khozyaystva (for Belkin). 2. Glavnyy inzh. Moskovskogo oblastnogo upravleniya svyazi (for Zasypkin).
(Postal service) (Industrial management) (Electronic computers)

BEFKIN, P.

Plant Director, Leningrad Auto Repair Works, -c1948-.

"Fifteen years work of the Leningrad Auto-Repair Works," Avtomobil', no. 3, 1948

BELKIN, P.B.; LIPIN, A.I., kand.khim.nauk

Basic trends of the mechanization and automation of electroplating processes. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch. i tekh.inform. 17 no. 5:77-79 My '64. (MIRA17:6)

BELKIN, P. I. (PROF.)

"On Darwinism" (p. 228) by Mechnikov, I. I., edited by Komarova, V. L. (Acad.) and Belkin, P. I. (Prof.). (1943, 244 pages) Reviewed by Shtraikh, S.

SO: Advances in Contemporary Biology (Uspekhi Sovremennoi Biologii) Vol. 17, 1944, No. 2

BELKIN, P.I.

I.P. Pavlov and his teachings.

Moskva, Goskul'tprosvetizdat, 1951

BELKIN, P. [I.]

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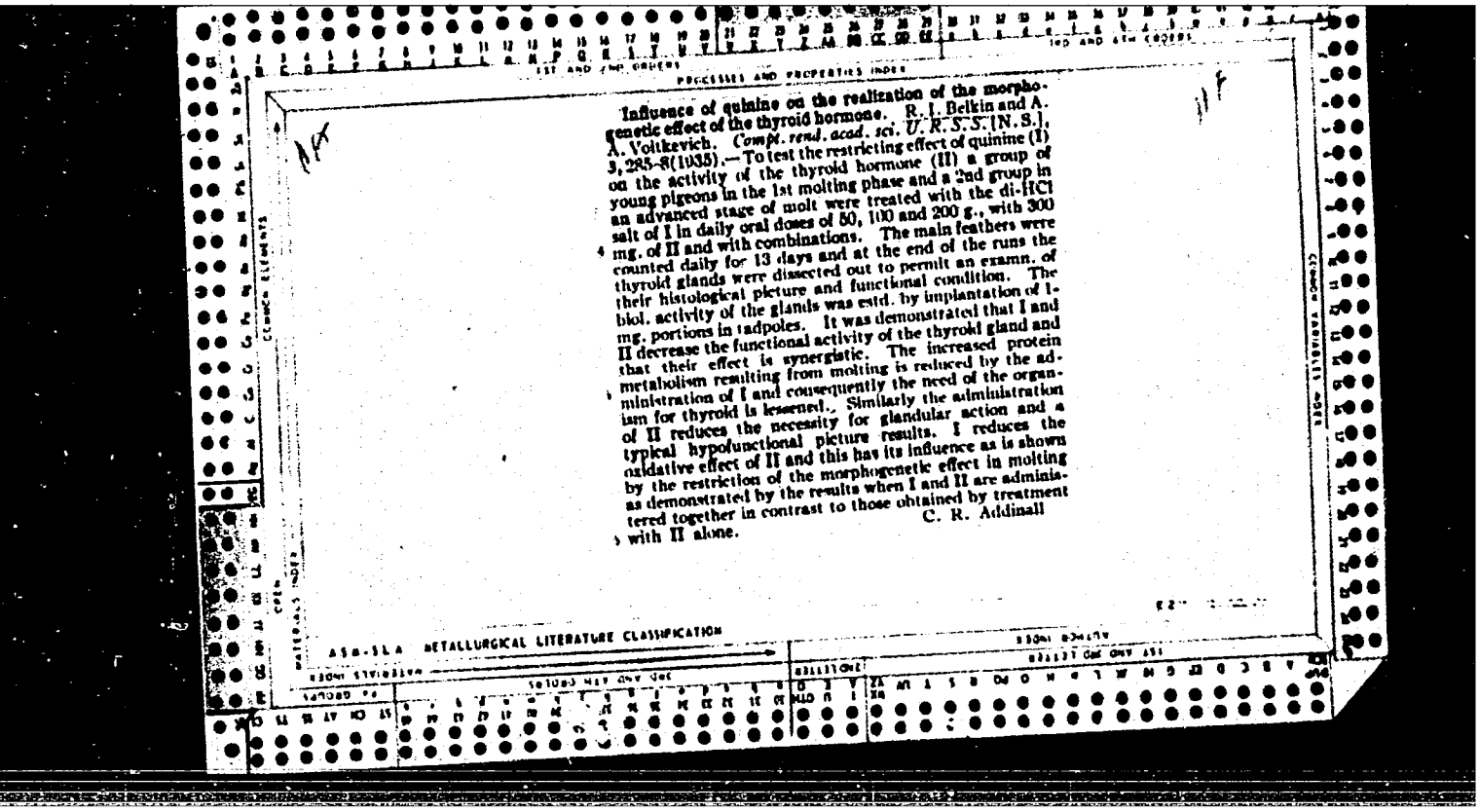

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C. R. Addinall

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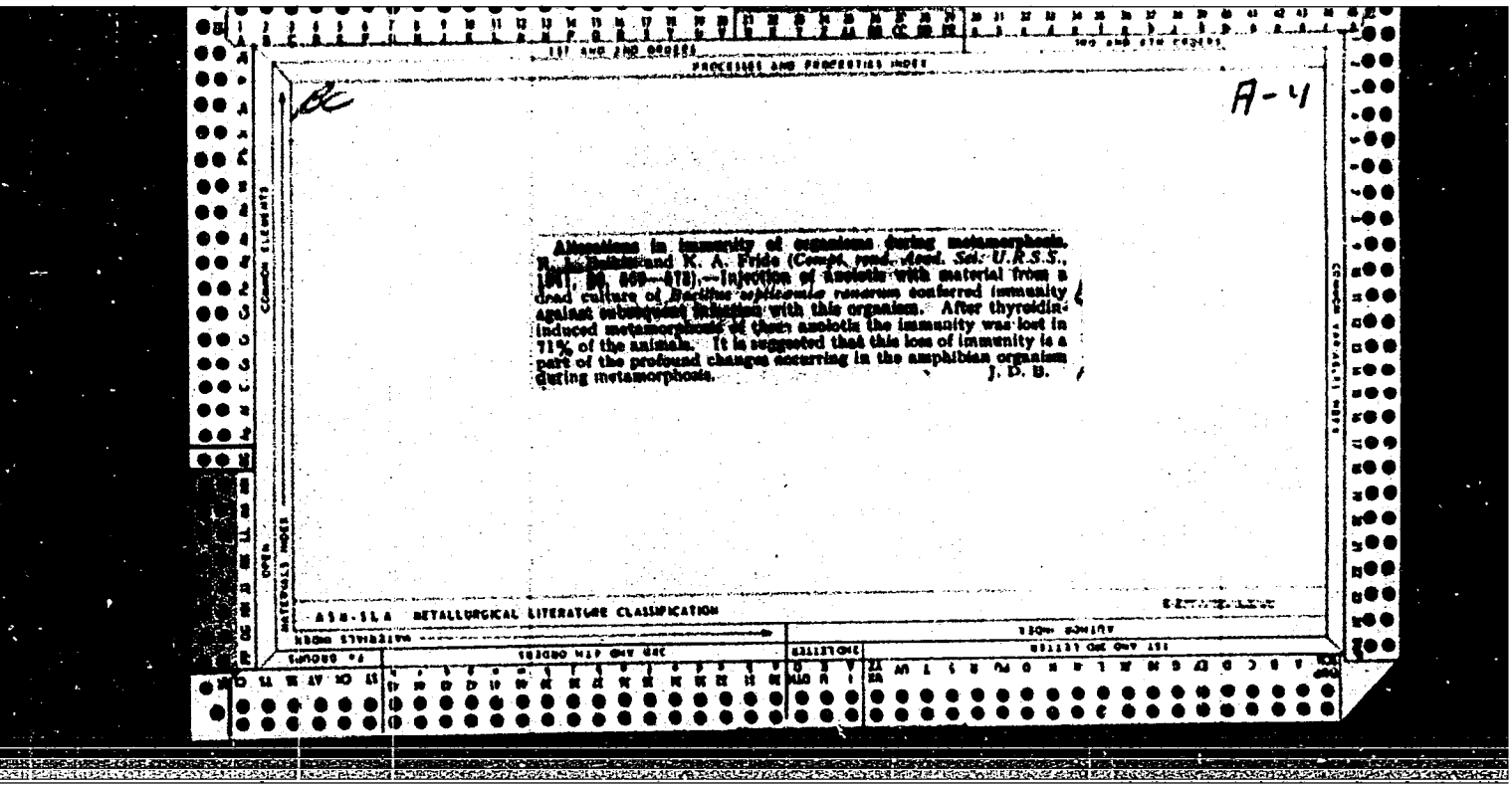

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A5a-51a METALLURGICAL LITERATURE CLASSIFICATION

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Chief editors: Academicians V. L. Komarov and L. A. Orbeli
Editorial Board: Professors R. I. Belkin, A. G. Ginetsinsky and A. A. Davilov (deceased), Academicians S. A. Zernov, Corresponding members B. L. Isachenko and Kh. S. Koshtoiants, Professor V. P. Savich and Academicians I. I. Schmalhansen.

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