USSR/Boilers Jul 1947
Surfaces - Heating

"Reducing Ash Wear of Boiler Heating Surfaces,"
V. A. Lokshin, 6 pp

"Izv VTI" No 7

Discusses the nature and method of computing general wear, local wear, reductior of general wear, and prevention of local damage.

14T53

LOKHIN, V.A.

28319

Borʹba s zolovbm istiraniyem v kotyelbnykh agryegatakh ele ktr. Stantsii, 1949, No. 7, S. 11-16

So: Letopis, No. 34

LOKSHIN, V. A. : LIL', V. S.: YAKOVLEV, I. A.

Steam Boilers

Increasing the work reliability of high-pressure boilers. Rab. energ. 2 no. 3, 1952.

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

1. LOKSHIN, V.A.

2. USSR (600)

4. Steam Boilers - Efficiencies

7. Examining the effect of operating factors on the circulation in a high-pressure boiler. Izv. VTI 21 no.10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

LOKSHIN, V.A.

Varavitskiy, I.B., Krol' L.B., and Lokshin, V.A., "The Operation of Injection Regulators in Superheating High-pressure Steam," Elektricheskiye stantsii /Electric Power Stations/, 1953, No 8, Pages 3-8.

LOKSHIN, V. A.

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Fuel Abstracts
June 1954
Steam Raising and
Steam Engines

V 4556. OPERATION OF HIGH [illegible]. Varavitskii, I.N., Frol, [illegible] and Lokshin, [illegible] [illegible] (Elr Sta., Moscow), Aug. 1953, vol. 24, 3-8): [illegible] results of industrial testing of high pressure horizontal and vertical [illegible] with [illegible] tubes show that these regulators ensure maintenance of [illegible] temperature within ± 10°C and even ±5°C over a wide load range. The length of the tube sections in which the steam condensation process occurred was 5 m. Maximum stress due to temperature change in the case of horizontal tubes was 14 million kcal/m²h and 20 million for vertical tubes. B.L.A.

[illegible] 3-54 IJP

LOKSHIN, V.A., kandidat tekhnicheskikh nauk; TALDYKIN, K.M., inshener.

Operational inspection of cleaning heating surfaces of furnaces by steam-blast. Elek.sta. 24 no.12:16-20 D '53. (MLRA 6:12)
(Furnaces)

LOKSHIN, V.A., kandidat tekhnicheskikh nauk.

Assisting the student of the new "Rules of technical operation of electric power plants and networks." Starting high-pressure boiler firing. Energetik 2 no.7:31-33 Jl '54. (MLRA 7:8)
(Steam boilers) (Electric power plants)

LOKSHIN, V. A.

AID P - 682

Subject : USSR/Engineering

Card 1/1 Pub. 29 - 17/24

Author : Lokshin, V. A., Kand. of Tech. Sci.

Title : Firing of high pressure boilers

Periodical : Energetik, 7, 31-33, Jl 1954

Abstract : The initial firing of high pressure boilers is discussed, particularly in reference to importance of cooling of rapidly heated convectional and radiant types of superheaters, economizers, tubing and other elements of the boiler. Specific precautionary measures are recommended for each boiler part designed for normal circulation of heating and cooling media.

Institution : None

Submitted : No date

LOKSHIN, V. A.

AID P - 730

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 23/26

Author : Lokshin, V. A.

Title : Dimensions of balls used in the coal pulverizing ball mills

Periodical : Energetik, 9, 35-36, S 1954

Abstract : In reply to a reader's question, the author gives a brief explanation concerning the selection of ball sizes.

Institution : None

Submitted : No date

Lokshin, V.A.

USSR.

5393. METHODS FOR IMPROVING SUPERHEAT CONTROL IN HIGH PRESSURE BOILERS. Krol, L.B. and Lokshin, V.A. (Elekt. Sta. (Pwr Sta., Moscow), Dec. 1954, vol. 25, 11-17). Existing Russian high pressure boilers with superheaters and superheat regulators operate on a highly inert system which does not lend itself to automatic control. It is suggested that they be equipped with radiation/convection superheaters with regulation by spray in series. In new boilers with convection superheaters, superheat should be carried out on a two-stage plan with surface condensers in the first stage and spray in the second. In existing boilers with convection condensers on the saturated steam side the superheat control system can be substantially improved by the second stage arrangement - spraying in series. For the spray, the high pressure preheater condensate together with power turbine condensate may be used. B.E.A.

LALAYANTS, A.M., redaktor; ABRAMYAN, A.A., redaktor; GUBERMAN, I.D., redaktor, DOKUNIN, A.V., redaktor; ZASADYCH, B.I., redaktor; IVANENKO, G.I., redaktor; LETOV, N.A., redaktor; MELAMED, Z.M., redaktor; LIVSHITS, I.I., LOKSHIN, V.A., redaktor; MONIN, G.I., redaktor; SUMCHENKO, V.A., redaktor; TOPCHIYEV, A.V., redaktor; SHEVALDIN, A.S., redaktor; SIROVA, V.A., redaktor; ANDREYEV, G.G., tekhnicheskiy redaktor; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor.

[Materials and equipment used in the coal industry; a reference manual] Materialy i oborudovanie, primeniaemye v ugol'noi promyshlennosti; spravochnik. Moskva, Ugletekhizdat. Vol.1.[Materials] Materialy. Pt.2. 1955. 544 p. (MIRA 9:5)
(Coal mines and mining--Equipment and supplies)

LOKSHIN, V.A.

LALAYANTS, A.M., redaktor; ABRAMYAN, A.A., redaktor; GRIBERMAN, I.D., redaktor; DOKUKIN, A.V., redaktor; ZASADYCH, B.I., redaktor; IVANENKO, G.I., redaktor; LETOV, N.A., redaktor; MELAMED, Z.M. redaktor; LIVSHITS, I.I., redaktor; LOKSHIN, V.A., redaktor; MONIN, G.I., redaktor; SUMCHENKO, V.A., redaktor; TOPCHIYEV, A.V., redaktor; SHEVALDIN, A.S., redaktor; SUROVA, V.A., redaktor; ANDREYEV, G.G., tekhnicheskiy redaktor; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor.

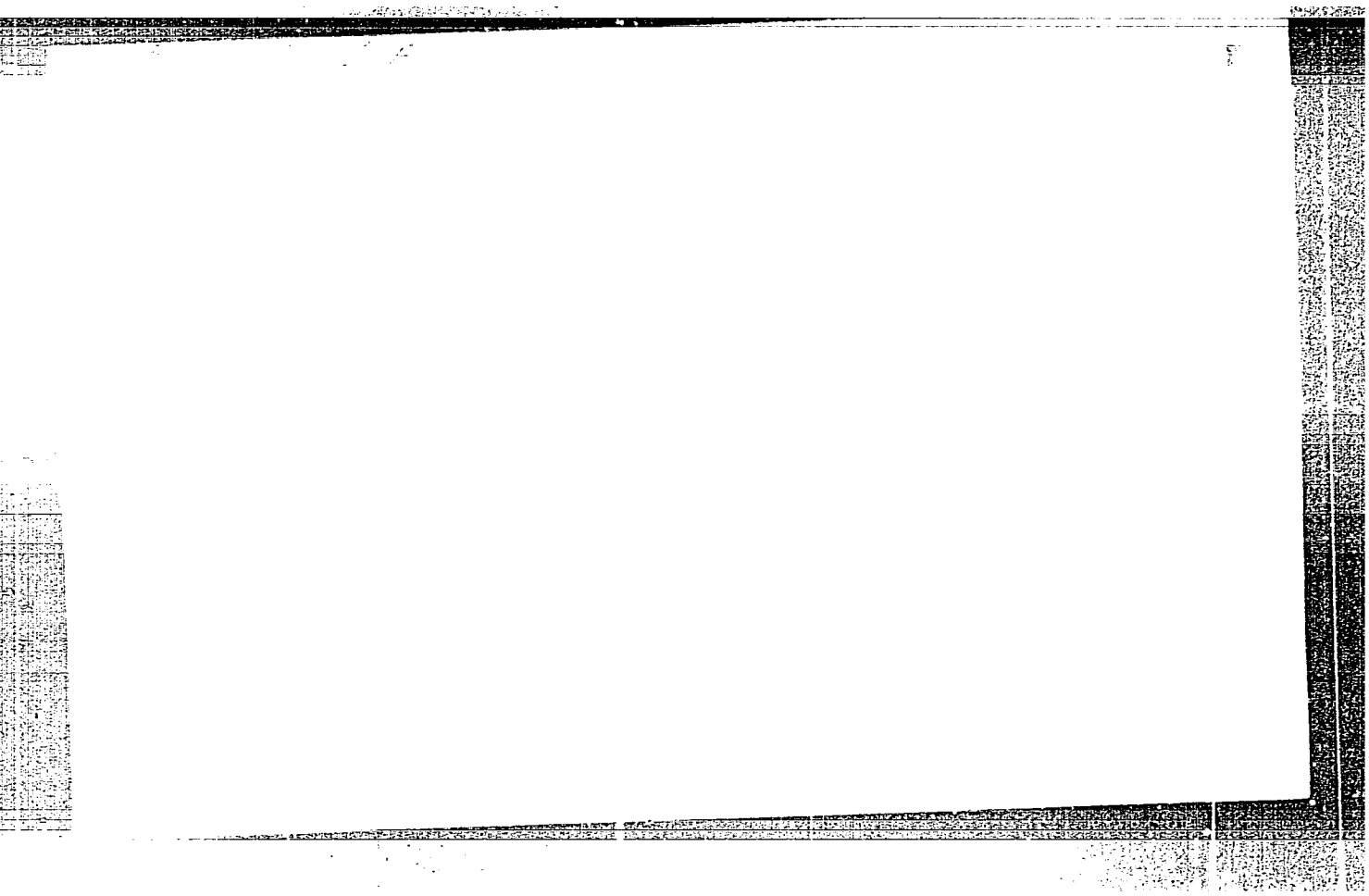
[Material and equipment used in the coal industry] Materialy i oborudovanie, primeniaemye v ugol'noy promyshlennosti; spravochnik Moskva, Ugletekhizdat. Vol.1 [Material---Wholesale prices in effect as of July 1, 1955] Materialy. Pt. 1.1955. 786 p. -- Optpvye tseny, vvedenye s 1 iiulia 1955. g. 192 p. [Microfilm] (MLRA 9:1)
(Coal mining machinery) (Coal mines and mining)

LOKSHIN, V.A.

LALAYANTS, A.M., glavnyy redaktor; AKRAMYAN, A.A., otvetstvennyy redaktor; GUBERMAN, I.D., redaktor; DOKUKIN, A.V., redaktor; ZASADYCH, B.I., redaktor; LETOV, N.A., otvetstvennyy redaktor; LIVSHITS, I.I., redaktor; LOKSHIN, V.A., redaktor; MELAMED, Z.M., redaktor; MONIN, G.I., redaktor; SUMCHENKO, V.A., redaktor. TOPCHIYEV, A.B., redaktor; SHEVALDIN, A.S., redaktor; YEGURNOV, G.P., redaktor; LYUBIMOV, N.G., redaktor izdatel'stva; ANDREYEV, G.G., tekhnicheskiy redaktor; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor.

[Material and eqyipment used in the coal industry; a reference manual] Materialy i oborudovanie, primeniaemye v ugol'noi promushlennosti; spravochnik. Moskva, Ugletekhizdat. Vol.2. [Equipment] Oborudovanie. Pt.1. 1956. 455 p. (MLRA 10:4)

(Coal mines and mining--Equipment and supplies)



APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000930420015-7"

CHARNGIN, V. G. (Engr.) and [illegible], V. A. (Cand. Tech. Sci.)

"Results of Experimental Investigation of the Influence of Non-Uniformity of Heat Exchange round the Perimeter of a Horizontal Steam Raising Tube."

report presented at sci. and tech. session on Heat Exchange during Change of Aggregate State of Matter (by Comm. on High Steam Conditions, Power Inst. AS USSR and Thermal Engineering Inst., AS Ukr, SSR, Kiev, [illegible] Sep 57.

All-Union Thermo-Technical Inst.

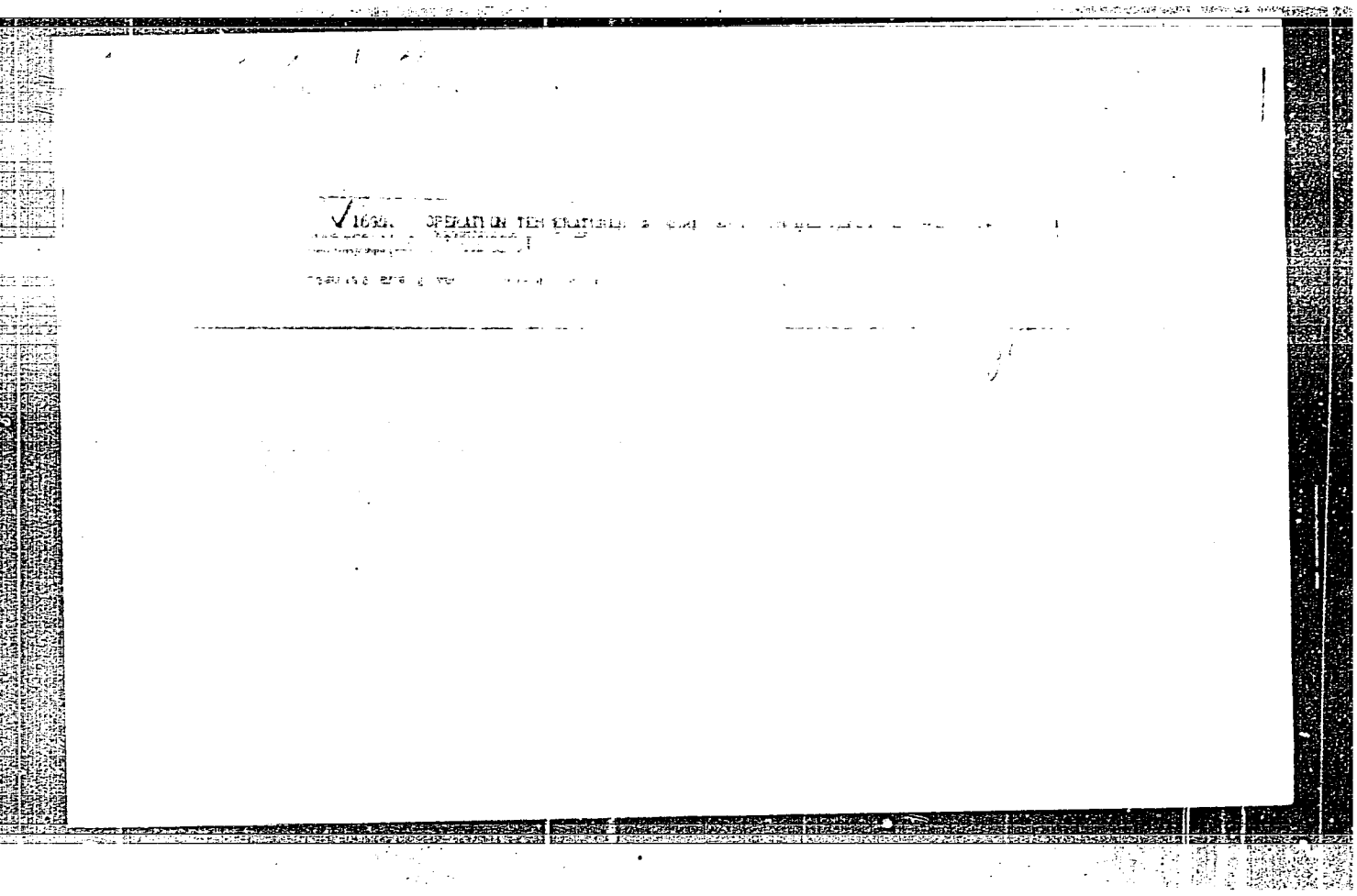
LOKSHIN, V.A.

LALAYANTS, A.M., redaktor; ABRAMYAN, A.A., redaktor; GUBERMAN, I.D., redaktor; DOKUKIN, A.V., redaktor; ZASADYCH, B.I., redaktor; LETOV, N.A., redaktor; LIVSHITS, I.I., redaktor; LOKSHIN, V.A., redaktor; MELAMED, Z.M., redaktor; MONIN, G.I., redaktor; SUMCHENKO, V.A.; TOPCHIYEV, A.V., redaktor; SHEVALDIN, A.S., redaktor; YEGURNOV, G.P., redaktor; LYUBIMOV, N.G., redaktor izdatel'stva; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor

[Materials and equipment used in the coal industry; a reference manual] Materialy i oborudovanie, primeniaemye v ugol'noi promyshlennosti; spravochnik. Moskva, Ugletekhizdat. Vol.2. [Equipment] Oborudovanie. Pt.2. 1957. 485 p. (MLRA 10:9)
(Coal mining machinery)

LALAYANTS, A.M., glavnyy red.; ABRAMYAN, A.A., red.; GUBERMAN, I.D., red.; DOKUKIN, A.V., red.; ZASADYCH, B.I., red.; LETOV, N.A., red.; LIVSHITS, I.I.; LOKSHIN, V.A.; MEIAMED, Z.M.; MONIN, G.I.; SUMCHENKO, V.A.; TOPCHIYEV, A.V.; SHEVALDIN, A.S.; YEGURNOV, G.P., red.; LYUBIMOV, N.G., red.izd-va; PROZOROVSKAYA, V.L., tekhn.red.

[Materials and equipment used in the coal industry; a handbook] Materialy i oborudovanie, primeniaemye v ugol'noi promyshlennosti; spravochnik. Moskva, Ugletekhizdat. Vol.2. [Equipment] Oborudovanie. Pt.3. 1957. 655 p. (MIRA 11:2)
(Coal mines and mining--Equipment and supplies)



LOKSHIN, V.A.

AUTHOR: Shvarts A.L. and Lokshin, V.A., Candidates of Technical Sciences (All-Union Thermotechnical Institute).

TITLE: Experimental investigation of moving heads during downward movement of a steam-water mixture in vertical tubes at pressures up to 180 atm. (Eksperimental'noye issledovaniye dvizhushchikh naporov pri opusknom dvizhenii parovdyanoy smesi v vertikal'nykh trubakh pri davleniyakh do 180 at.)

PERIODICAL: "Teploenergetika" (Thermal Power), 1957, Vol. 4, No. 6, pp. 12 - 17 (U.S.S.R.)

ABSTRACT: A recent investigation into the reversal of circulation in a multituba circuit with natural circulation at a pressure of 12 atm. makes it possible to represent the circulation characteristics of the tubes in the left quadrant of the circulation diagram. This left quadrant corresponds to a negative flow of water and has two branches. The righthand branch is a continuation of the circulation characteristic of the tubes in the region of small positive water flows and corresponds to downward movement of water combined with upward movement of steam. The left branch of this quadrant is the circulation characteristic corresponding to downward movement of the steam-water mixture when both phases are moving in the same direction.

Until now experimental data for the construction of the branch of the circulation characteristic corresponding to

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Experimental investigation of moving heads during downward movement of a steam-water mixture in vertical tubes at pressures up to 180 atm. (Cont.)

downward movement of the mixture was limited to tests carried out in the Central Boiler and Turbine Institute by D.F. Peterson and O.M. Baldina in 1937 at a pressure of 10 atm. with high steam contents in the mixture.

The present work is mainly devoted to the determination of so-called useful heads corresponding to this lefthand branch of the circulation characteristic over the pressure range of 35 to 180 atm. Besides this, measurements were carried out to study the special features of the structure of the downward flow of steam-water mixture and to determine the limiting speed of circulation with downward movement of the water (at which a bubble remains stationary and above which both liquid and gaseous components move together). This critical circulation speed approximately characterises the beginning of the left branch of the circulation characteristic of the tube in the left hand quadrant of the circulation diagram.

The experimental rig is described. It is connected to two steam mains, one at a pressure of 300 atm. and a temperature of 600 °C and the other at 130 atm. and 500 °C. The water was prepared by condensing part of the steam delivered to the rig in a special steam cooler with an output of 3 tons/h.

After leaving the cooler the condensate passed into a contact heater of the flow type where it was heated by steam to the necessary temperature. Appropriate controls are

Experimental investigation of moving heads during downward movement of a steam-water mixture in vertical tubes at pressures up to 180 atm. (Cont.)

provided to achieve the desired steam conditions.

After throttling, the steam-water mixture passed to separators from which the water passed to coolers and then on to the condensate tank whilst the steam was discharged into the atmosphere. The rig was modified during different stages of the work. In the first stage the useful heads were determined during downward flow in a pipe of 42/29 mm dia. on two independent sections located one below the other. The next stage included a new experimental section of diameter 70/55 mm for determination of useful heads of downward flow, having independent tapping of pressure drop on two parallel differential manometers. The limiting speed of steady downward flow of the mixture was determined on two glass, water-air models of 26 and 55 mm diameter. Air from a compressor at a pressure of 280 atm. was supplied to the pipe through a nozzle, the quantity of water delivered to the tube was adjusted so that the air bubbles remain stationary.

Two runs were made to determine the heat loss through the insulation of the rig to the surrounding medium and one to determine the heat absorption from the surrounding medium for the calorimeter-cooler. The steps that were taken to ensure

Experimental investigation of moving heads during downward movement of a steam-water mixture in vertical tubes at pressures up to 180 atm. (Cont.)

accuracy of the results are described.

The working-up of the experimental data on the moving heads consisted of determination of the speed of circulation, of the referred speed of the steam and of the total resistance with downward movement of the steam-water mixture, which we called the negative useful moving head, by analogy with rising movement. This terminology is advisable because in the circulation diagram the values of the useful heads and 'negative' useful heads are laid out on one and the same ordinate axis and in the latter case the heads correspond to negative flow of water, i.e. the downward flow.

Formulae are given for the rate of circulation, the enthalpy, and the negative useful moving heads.

Tests to determine the useful heads of downward flow of a steam-water mixture in a pipe of 29 mm internal diameter were carried out at pressures of 35, 100, 140 and 180 atm. and circulation speeds of 0.3, 0.5, 0.75, 1 and 1.5 metres/sec in the range of flows with the steam content of the mixture from 0 to 0.97 by volume; also on a pipe of internal diameter 55 mm at pressures of 35 and 100 atm. at circulation speeds of 0.3, 0.5, 0.6 and 0.7 metres/sec when the pressure is 35 atm. with the same range of steam content.

Experimental data on the useful head of downward flow for

Experimental investigation of moving heads during downward movement of a steam-water mixture in vertical tubes at pressures up to 180 atm. (Cont.)

the 29 mm pipe at p = 140 atm. is given in Fig. 4 and the corresponding figures for 55 mm tube at 100 atm. in Fig. 5. These figures show that, as with rising motion of the steam-water mixture, there are two regions of the relationship between the useful head and the referred steam speed at constant pressure.

For small values of referred steam speed there is a sharp increase in the useful head with the referred speed, then the curve bends over and becomes flatter. This reflects the nature of the relationship between the volume and weight steam contents. However, unlike the case of rising movement of steam water mixture with downward movement there is an intersection of the curves of negative useful moving heads relating to different speeds of circulation.

The experimental data obtained make possible for the first time the construction of the left branch of the circulation characteristic of the left hand quadrant of the circulation diagram over the pressure range from medium to super-high. By way of example, Fig. 6 gives curves of these characteristics for tubes with an internal diameter of 29 mm at a pressure of 100 atm.

A mathematical expression is given that represents the results

Experimental investigation of moving heads during downward movement of a steam-water mixture in vertical tubes at pressures up to 180 atm. (Cont.)

of tests on the determination of enthalpy (i.e. steam content) at the centre of the downward flow. The relationship is also plotted on graphs in Figs. 7 and 8 for 29 mm tubes at 35 and 100 atm., respectively.

The tests carried out on samples taken from the central part of the downward flow made it possible to establish that at low and moderate steam contents the centre of the downward flow is free of bubbles. In a flow of steam-water mixture moving downwards in a vertical tube the centre is the place with a maximum concentration of steam bubbles. Only at large volume steam contents in the central part of the flow is the steam content equal to the total steam content of the mixture.

Determination of the critical speed of circulation for downward flow of a two-phase mixture, corresponding to the gas bubbles being stationary, was carried out on air water models of 26 and 48 mm diameter. For both diameters of pipe the speed was the same and for larger bubbles was 0.2 metres/sec and for small bubbles (3 - 5 mm dia.) 0.16 m/sec, which is in satisfactory agreement with published data. The rate of downward flow of water at which the bubbles remain stationary is close to the rate at which bubbles rise in the tube in still water. At water speeds somewhat above the critical value the rate of movement of bubbles was determined by measuring the time required for bubbles of a definite size to pass between upper

Experimental investigation of moving heads during downward movement of a steam-water mixture in vertical tubes at pressures up to 180 atm. (Cont.)

and lower marks on the tube. The tests were carried out for single bubbles and for groups of bubbles and the results are given on Fig. 9. The graphs show that at circulation speeds less than 0.4 m/sec there is sluggish carry-over of bubbles and therefore even a small quantity of steam entering the tube causes it to have a large true steam content which in a contour with natural circulation can interrupt downward flow of mixture in the tube. Therefore, although the steady rate of circulation of flow in a downward tube in which a mixture of given steam content is flowing is determined by the circulation characteristic of the tube and the magnitude of the useful head of the given circuit, it may be concluded that steady downward flow of the mixture is hardly likely to occur at circulation speeds less than 0.4 m/sec (at low and medium pressures). This speed should be established more accurately for high and super-high pressure steam-water mixtures.

9 figures, 2 Russian literature references.

Card 7/7

CHAPRYGIN, V.G., inzhener; LOSKIN, V.A., kandidat tekhnicheskikh nauk.

Temperature conditions for horizontal steam generating tubes under extra high pressures. Teploenergetika 4 no.9:58-63 S '57. (MLRA 10:8)

1. Vsesoyuznyy teplotekhnicheskiy institut.
(Boilers)

LOKSHIN, V. A.

96-1-1/31

AUTHORS: Chakrygin, V.G., Engineer and Lokshin, V.A., Candidate of Technical Sciences.

TITLE: Temperature Conditions of Operation of Vertical Steam-generating Tubes at Super-high and Super-critical Pressures with Downward Flow (Temperaturnyy rezhim raboty vertikal'-nykh paroobrazuyushchikh trub pri sverkhvysokikh i sver-khkriticheskikh davleniyakh i opusknom dvizhenii potoka)

PERIODICAL: Teploenergetika, 1958, vol.5, No.1, pp. 3 - 8 (USSR).

ABSTRACT: In the design of large boilers it is convenient to use tubes with downward flow; the hydrodynamics of downward flow of steam-water mixtures has been studied in detail in previous works. (Refs.2, 3). An expression is derived for the heat transfer coefficient under conditions of boiling of the steam-water mixture for the case of absence of a liquid film on the heating surface. Tests were made on a tube of an internal diameter 29 mm at pressures of 140 - 246 atm., with heat-flow rates up to 390 000 kcal/m^2hr. The super-high-pressure experimental rig is illustrated diagrammatically in Fig.1. The rig and the experimental procedure are fully described in Teplo-energetika, 1957, No.9.

The method of working out the test results is explained. F... gives the results of tests at pressures of 140, 160 and 1[illegible]

Card1/5

Temperature Conditions of Operation of Vertical Steam-generati... Tubes at Super-high and Super-critical Pressures with Downward ...

with a heat-flow rate of 230 000 kcal/m^2hr. Until the boi... point is reached, at a pressure of 180 atm., the wall tempe... rises gradually with the flow temperature, but when surfac... boiling occurs the wall temperature is constant for a give... pressure. An expression is given for the mean lines of the graph in Fig.2.

The influence of the heat-flow rate on the operational temp... tures of the tube at a pressure of 180 atm. are shown in Fig... The stepwise increase in wall temperature with increasing flo... rate will be noted: similar results were obtained at a pressure of 200 atm., as shown in Fig.4. In a certain range of operating conditions, a greater flow-rate of medium corresponds to a lower heat transfer coefficient. The results of tests at 210 atm. are generally the same as those at 200 atm. Tests at 220 atm., with heat transfer rates of 140 000 and 390 000 kcal/m^2hr are represented in Fig.5. Some results at a super-critical pressure (230 atm.) are given in Fig.6. When pressure, heat transfer rate and mass rate of flow are constan... the points lie near straight lines. There were no deviations from the general relationships in the region of second-order

Temperature Conditions of Operation of Vertical Steam-generating Tubes at Super-high and Super-critical Pressures with Downward Flow.

phase transition. Calculated values of metal temperature are also given in Fig.6; the agreement between the calculated and experimental temperatures is satisfactory. Similar experimental results were obtained at a pressure of 246 atm.
The experimental data is then analysed, revealing a number of regions of different internal cooling conditions. Below the boiling point, there are three regions: convective heat exchange in a turbulent flow of a single-phase liquid; surface boiling of liquid at a pressure below 210 atm; and surface-film boiling of liquid at pressures above 210 atm. (Fig.5).
Four characteristic zones were observed in the boiling range: a region of normal boiling with bubbles; a region of "developed" boiling in the absence of a liquid film on the heating surface; a region of conditions with varying wall temperatures; and a region of film-wise boiling of liquid near the boiling point.
The conditions pertaining to these various regions are discussed. Each of the heat exchange regions corresponds to a certain operational temperature of the tube and attention must be paid to those conditions which can lead to disturbance of normal cooling of the metal. Film-wise boiling with variable wall

Temperature Conditions of Operation of Vertical Steam-generating Tubes at Super-high and Super-critical Pressures with Downward Flow.

temperatures is a dangerous condition.
At super-critical pressures, heat transfer from the wall to the liquid takes place in a single-phase flow, the wall temperature changing smoothly with change of enthalpy.
Comparative tube wall temperatures for various pressures, as determined experimentally, are given in Fig.9. For the given conditions the highest wall temperatures are reached below the boiling point at a pressure of 220 atm.
Practical conclusions drawn from the results are that heated tubes with downward flow can operate reliably over a wide range of conditions at super-high and super-critical pressures.
Heating and evaporative surfaces can be used with downward flow at pressures of 140 - 200 atm., heat-flow rates of less than 400 000 kcal/m^2hr and mass flow-rates greater than 850 kg/m^2sec.
For the heating surfaces of super-critical-pressure boilers in the region of phase transition, even at high heat transfer rates (up to 300 000 kcal/m^2hr), tubes may be made of pearlitic steels for downward flow with a mass flow-rate of the order of 500 kg/m^2sec.
Card4/5 There are 9 figures and 5 Slavic references.

Temperature Conditions of Operation of Vertical Steam-generating Tubes at Super-high and Super-critical Pressures with Downward Flow. 96-1-1/31

ASSOCIATION: All-Union Thermo-technical Institute (Vsesoyuznyy Teplotekhnicheskiy Institut)

AVAILABLE: Library of Congress.

Card 5/5

AUTHOR: Lokshin, V.A. (Cand.Tech.Sci.) SOV/96-58-10-23/25

TITLE: On calculating the temperature of metal in radiation tubes of superheaters (K raschetu temperatury metalla trub radiatsionnykh paroperegrevateley.)

PERIODICAL: Teploenergetika, 1958, No.10. pp. 88-89 (USSR)

ABSTRACT: As steam conditions increase, radiation super-heaters are becoming more widely used. These heating surfaces are sensitive to disturbances in thermal conditions, particularly those likely to occur when the boiler is working under a fluctuating load. The external temperatures of the tubes then vary considerably whilst the internal temperature remains constant. Measurements have shown that the temperature of the outer surface of tubes in a main radiation superheater may reach 580°C; the corresponding temperature in the intermediate radiation superheater exceeds 600°C, and the temperature difference across the wall of the metal is 100°C. It is, therefore, very important to determine the temperature on the outside of the tubes of radiation super-heaters, but the standard method of calculation accepts a mean metal temperature as a basis for selecting the type of metal and for strength determinations. Unfortunately, there are not sufficient data for making strength calculations on tubes with allowance for variable thermal stresses; more work needs to be done on this subject. The maximum stresses may occur on the external surfaces of tubes; in such cases the external temperature

Card 1/2

On calculating the temperature of metal in radiation tubes of super-heaters. SOV/96-58-10-23/25

must be known for calculations of mechanical strength. A formula is given for calculating the outside temperature of tubes. It can lead to values 50°C higher than the standard formula, but should be used in the selection of metal for the tubes. For the time being, wall thickness determinations should be based on a mean temperature. There are 5 Soviet references.

Card 2/2

SOV/96-59-3-15/21

AUTHORS: Shvarts, A.L., Candidate of Technical Sciences and
Lokshin, V.A., Candidate of Technical Sciences

TITLE: A Method of Determining True Volumetric Steam Contents and Hydraulic Resistances from Experimental Values of Effective Circulatory Pressures (Metod opredeleniya istinnykh ob"yemnykh parosoderzhaniy i gidravlicheskikh soprotivleniy iz eksperimental'nykh znacheniy poleznykh dvizhushchikh naporov)

PERIODICAL: Teploenergetika, 1959, Nr 3, pp 72-75 (USSR)

ABSTRACT: A good deal of experimental data is now available about effective circulatory pressures in vertical tubes over the pressure range of 10-220 atm. The data can provide ways of using measured values of these pressures to give at least an approximate value of the hydraulic resistances and true steam contents over a wide range of pressure. To this end published works about direct measurements of true steam and gas contents are first analysed. The results of A.A.Armand are plotted in Fig.1 in the form of a relationship between the true gas content and the volumetric gas content for a water/air mixture in a vertical tube. It will be seen that over most of the

A Method of Determining True Volumetric Steam Contents and Hydraulic Resistances from Experimental Values of Effective Circulatory Pressures

range the graph is a straight line. This graph does not cover the range of small flows and accordingly the results of Schwarz, which covers such conditions, have been recalculated in the same coordinates and are plotted in Fig.2. It follows from this graph that for high steam contents the relationship is also approximately linear over most of the range. The departures from linearity are discussed in some detail. By means of formula (2) the lower boundary of linearity may be determined. In selecting a method to determine true steam contents from the pressure values, it is necessary to select a coordinate system which gives a similar straight-line relationship for the hydraulic friction losses, at least to a first approximation. The method of determining friction losses is then explained and, by way of example, data of the Central Boiler-Turbine Institute on effective circulatory pressures are

A Method of Determining True Volumetric Steam Contents and Hydraulic Resistances from Experimental Values of Effective Circulatory Pressure

plotted in Fig.3 and 4. Then an expression is derived for the pressures and its use is explained. There are 4 figures and 5 references of which 4 are Soviet and 1 German.

ASSOCIATION: Vsesoyuznyy teplotekhnicheskiy institut (All-Union Thermo-Technical Institute)

BIL', V.S., kand. tekhn. nauk; LOKSHIN, V.A.

Comparative investigation into the effect of temperature fluctuations on the reliability of welded joints of economizer pipes. Teploenergetika 6 no.12:68-71 D '59. (MIRA 13:3)

1.Vsesoyuznyy teplotekhnicheskiy institut.
(Boilers)

SOV/96-59-8-20/27

AUTHORS: Lokshin, V.A., Shvarts, A.L., Candidates of Technical Sciences

TITLE: The Calculation of Driving Heads and Hydraulic Resistances During the Motion of a Steam-Water Mixture in Vertical Rising Tubes

PERIODICAL: Teploenergetika 1959, Nr 8, pp 73-77 (USSR)

ABSTRACT: The previous article by the same authors published in Teploenergetika 1959, Nr 3, described a method of calculating true volumetric steam contents and hydraulic resistances from experimental values of useful driving pressures. The method was used to work up experimental data on useful driving pressures within the pressure range of 11 - 220 atm with tube diameters of 25.5 - 56 mm. Curves of the total useful head as a function of steam velocity referred to total tube section were constructed for each series of tests with volumetric steam contents less than 0.91. The method used in the previous article was applied to each series of tests to determine the values of the constants C in equation (6) of the previous article. The values of C

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so obtained were used to determine values of true steam content, which were plotted as function of volumetric flow steam content. An example of the procedure is given and the corresponding curve is plotted in Fig 1 for a pressure of 32 atm and tube diameter of 55.9 mm. Calculations were made of the total driving head: determinations could then be made of the friction losses, and curves were plotted of friction loss as function of flow rate, as exemplified in Figs 2 and 3. This linear relationship may be expressed by formula (1) which includes a coefficient A. To give a better idea of the influences of tube diameter and pressure on the values of C and A, curves of these coefficients as functions of pressure are plotted in Figs 4 and 5; test points are also plotted. It will be seen from Fig 4 that the relationship between C and the pressure is not a simple one. The curves of Fig 5 show that the frictional loss formula currently used is not valid at very high pressures, particularly when tubes are of small diameter. The procedure to be adopted when the volumetric steam content is greater than 0.91 is discussed, and a

The Calculation of Driving Heads and Hydraulic Resistances During the Motion of a Steam-Water Mixture in Vertical Rising Tubes

typical curve of true steam content as a function of volumetric steam content for a pressure of 62 atm is given in Fig 6. True steam velocity as a function of mixture velocity for a pressure of 62 atm is plotted in Fig 7. Further numerical examples are worked out, and it is concluded that a formula similar to equation (8) may be used in all cases of motion of a steam-water mixture in vertical rising pipes to determine the value of the true steam content. The constant C in this formula may be taken from the nomogram in Fig 9. Finally, equation (9) is given for calculations of useful driving heads, total driving heads and hydraulic resistances during motion in a vertical rising tube of steam-water mixtures of various steam contents at pressures up to the sub-critical. In equation (9) the coefficient C is determined from the nomogram of Fig 9 and the coefficient A from Fig 5, depending on the mixture pressure. Limitations on the use of the nomogram are explained. Values

 of useful driving heads calculated by means of the nomogram

The Calculation of Driving Heads and Hydraulic Resistances During the Motion of a Steam-Water Mixture in Vertical Rising Tubes

were found to be in good agreement with experimental values, as will be seen from the graph in Fig 10, which relates to a pressure of 111.5 atm and tube diameter of 25.5 mm. There are 10 figures and 3 Soviet references.

ASSOCIATION: Vsesoyuznyy teplotekhnicheskiy institut (The All-Union Thermo-Technical Institute)

LOKSHIN, V.A., kand.tekhn.nauk; MOISEYEV, G.I., inzh.; PAVLENKO, L.I., inzh.; TALDYKIN, K.M., inzh.; VARICHEV, V.A., inzh.

Thermal conditions during the operation of high-pressure radiation wall-type superheaters. Elek.sta. 30 no.1:21-26 Ja '59. (MIRA 12:3)

(Superheaters)

LOKSHIN, V.A., kand. tekhn. nauk; TALDYKIN, K.M., inzh.

Temperatures in the strengtheners of boilers. Elek sta. 30 no.2:78 F '59. (MIRA 12:3)
(Boilers)

LOKSHIN, V.A., kand.tekhn.nauk; PAVLENKO, L.I., inzh.; TALDYKIN, K.N., inzh.; TARAVKOV, S.S., inzh.

Temperature conditions in the operation of air preheaters with a high degree of air heating. Elek.sta. 32 no.4:24-28 Ap '61. (MIRA 14:7)

(Air preheaters)

LOKSHIN, V.A., kand.tekhn.nauk; PAVLENKO, L.I., inzh.; TALDYKIN, K.M., inzh.

Thermal characteristics of radiation-convectional steam superheaters. Energomashinostroenie 7 no.5:7-9 My '61. (MIRA 14:8)

(Superheaters)

SHNEYEROVA, R.I., inzh.; SHVARTS, A.L., kand.tekhn.nauk; MIROPOL'SKIY, Z.L., kand.tekhn.nauk; LOKSHIN, V.A., kand.tekhn.nauk

Experimental study of the real steam contents and useful heads in tilted pipes. Teploenergetika 8 no.4:63-67 Ap '61. (MIRA 14:8)

1. Energeticheskiy institut AN SSSR i Vsesoyuznyy teplotekhnicheskiy institut.

(Boilers)

KLITIN, N.P., inzh.; NECHAYEV, V.A., inzh.; LOKSHIN, V.A., kand.tekhn.nauk

Results of testing the GTU-600-1.5 plate regenerator. (MIRA 14:8)
Teploenergetika 8 no.5:11-17 My '61.

1. Yuzhnoye otdeleniye Gosudarstvennogo tresta po organizatsii i ratsionalizatsii elektrostantsiy; Khar'kovskiy tekhnologicheskiy institut i Dneproenergo.
(Gas turbines)

KLITIN, N.P., inzh.; LOKSHIN, V.A., kand.tekhn.nauk

Heat transfer and resistance of finned bundles. Teploenergetika 8 no.7:53-57 Jl '61. (MIRA 14:9)

1. Vsesoyuznyy teplotekhnicheskiy institut.
(Gas turbines) (Air preheaters)

[illegible], V.[illegible], kand. [illegible]; [illegible], G.I., inzh.

[illegible]ness of steam [illegible] pipes from alloy[illegible] steel. Teploenergetika [illegible] '61. [illegible]

1. Vsesoyuzny[illegible] [illegible] institut.
(S[illegible])
([illegible] pipes)

LOKSHIN, V.A., kand.tekhn.nauk; PAVLENKO, L.I., inzh.; TARAVKOV, S.S., inzh.

Testing of a small economizer for boilers fired with anthracite fines under a system of upward gas flow. Teploenergetika 9 no.5:10-15 My '62. (MIRA 15:4)

1. Vsesoyuznyy teplotekhnicheskiy institut i Rostovenergo.
(Boilers--Testing)

TULIN, S.N., inzh.; LOKSHIN, V.A., kand. tekhn. nauk

Experimental check of generalized design formulas of tubes with wire ribbing. Vest. elektroprom. 34 no.7:35-39 Jl '63. (MIRA 16:8)

KLITIN, N.P., inzh.; LOKSHIN, V.A., kand. tekhn. nauk

Heat transfer and resistance of longitudinally ribbed pipes.
Teploenergetika 11 no.5:79-83 My'64. (MIRA 17:5)

1. Vsesoyuznyy teplotekhnicheskiy institut.

LOKSHIN, V.A., kand. tekhn. nauk; TAIDYKIN, K.M., inzh.

Increase in the reliability of high-pressure feedwater economizers. Elek. sta. 35 no.7:6-16 Jl '64. (MIRA 17:11)

SHNEYEROVA, R.I., inzh.; SHVARTS, A.L., kand. tekhn. nauk; MIROPOL'SKIY, Z.L., kand. tekhn. nauk; LOKSHIN, V.A., kand. tekhn. nauk

Hydraulic resistance in the upward motion of a steam and water mixture in inclined pipes. Teploenergetika 11 no.7:24-26 Jl '64. (MIRA 17:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy teplotekhnicheskiy institut i Energeticheskiy institut im. Krzhizhanovskogo AN SSSR.

VIKHREV, Yu.V., inzh.; LOKSHIN, V.A., kand. tekhn. nauk

Temperature conditions of horizontal steam generating pipes at sub-critical pressures. Energomashinostroenie 11 no.7:40-43 Jl '65.
(MIRA 18:7)

VIKHREV, Yu.V., inzh., dissertant; LOKSHIN, V.A., kand. tekhn. nauk

Experimental study of temperature conditions in horizontal steam generating pipes at supercritical pressures. Teploenergetika 11 no.12:79-82 D '64 (MIRA 18:2)

1. Vsesoyuznyy teplotekhnicheskiy institut.

MOSEYEV, G.[illegible] kand.tekhn.nauk; LOKSHIN, V.A., kand.tekhn.nauk; RIMAN, V.M.,

Study of an experimental double-sight radiation supermeter sirena. Elek. sta. 36 no.8:9-13 Ag '65. (MIRA 18:9)

PERMYAKOV, B.A., inzh.; LOKSHIN, V.A., kand. tekhn. nauk

Study of heat transfer from a [illegible] to an air and [illegible] stream. Teploenergetika 11 no.9:58-60 S '64. (MIRA 18:8)

1. Vsesoyuznyy teplotekhnicheskiy institut.

LIPETS, A.U., inzh.; LAFA, Yu.I., inzh.; FOMINA, V.N., inzh.; LOKSHIN, V.A., kand. tekhn. nauk

Aerodynamic resistances of compact checkerboard tube clusters. Teploenergetika 12 no.6:32-34 Je '65. (MIRA 18:9)

1. ZiO i Vsesoyuznyy nauchno-issledovatel'skiy teplotekhnicheskiy institut.

LIPETS, A.U., inzh.; ZHOLUDOV, Ya.S., inzh.; LOKSHIN, V.A., kand. tekhn. nauk; ANTONOV, A.Ya.

Use of pipes with internal longitudinal fins in an intermediate superheater. Teploenergetika 12 no.8:23-27 Ag '65. (MIRA 18:9)

TULIN, V.N., inzh.; LOKSHIN, V.A., kand. tekhn. nauk; BATENIN, B.A., inzh.; DANILOV, I.A., inzh.

Industrial tests of a cooling unit with aluminum tubes designed by the All-Union Scientific Research Institute for Metallurgical Machines. Elek. sta. 36 no.9:8-12 S '65. (MIRA 18:9)

VOROB'YEV, G.A.; NANIY, V.P.; GEGESHIDZE, G.A.; LIPETS, A.U.; LOKSHIN, V.A.; ANTONOV, A.Ya.; GEL'TMAN, A.E.; IL'INA, L.V.; RUBIN, V.B.

Inventions. Energ. i elektrotekh. prom. no.4:50 O-D '65. (MIRA 19:1)

L 03766-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/WW/HW/JG

ACC NR: AR6029496 SOURCE CODE: UR/0137/66/000/006/D036/D036

AUTHOR: Donskoy, A. V.; Kostygov, A. S.; Klitin, N. P.; Lokshin, V. A.; Stepanov, A. V.

TITLE: Production of longitudinally ribbed pipe from molten metal and the investigation of thermal and manufacturing properties of the pipe

SOURCE: Ref. zh. Metallurgiya, Abs. 6D251

REF SOURCE: Uch. zap. Leningr. gos. ped. in-ta im. A. I. Gertsena, no. 265, 1965, 12-32

TOPIC TAGS: pipe, ribbed pipe, convective heat exchange

ABSTRACT: Longitudinally-ribbed pipes produced from molten metal by the A. V. Stepanov method possess a combination of properties which in a number of cases, makes them suitable for use in the production of heat-exchange equipment. The convective heat exchange in clusters of longitudinal pipe has a pattern identical to internal heat exchange in channels during longitudinal joining. The production technology of longitudinally ribbed pipes is discussed in detail. Orig. art. has: 14 figures. L. Kochenova. [Translation of abstract] [AM]

SUB CODE: 13/

Card 1/1 UDC: 621.771.35

LOKSHIN, V.D.

AKOL'ZIN, L.Ye.; BOROZDOV, I.A.; BEDILO, V.Ye.; TERESHKIN, F.N. Prinimali uchastiye: BELYAYEV, F.R.; BEREZHNOY, N.V.; BUBYR', V.A.; VARSHAVSKIY, I.N.; DUDKO, V.P.; YERSHOV, V.S.; DUGIN, Ye.V.; DUKALOV, M.F.; IVANOV, P.S.; KONAREVA, V.F.; MONIN, M.I.; MOGILKO, A.P.; PANCHENKO, A.I.; POKALYUKOV, S.N.; PRIKHOD'KO, N.D.; RUBIN, I.A.; SIDORENKO, P.A.; TYUTYUNIK, Ya.I.; KHMEL'NITSKIY, L.Ya.; BONDAR', V.I.; KRIVTSOV, A.T.; LOKSHIN, V.D.; SOFIYENKO, N.P. RABINKOVA, L.K., red.izd-va; BOLDYREVA, Z.A., tekhn.red.

[Types of mine cross section] Tipovye secheniia gornykh vyrabotok. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu. Vol.4. [Cross section of mines supported by a sectional reinforced-concrete lining of URP-11 panels for 1-, 2- and 3-ton railroad cars] Secheniia vyrabotok, zakreplennykh sbornoi zhelezobetonnoi krep'iu iz plit URP-II, dlia 1-, 2- i 3-tonnykh vagonetok. 1960. 278 p.
(MIRA 13:12)

1. Khar'kov. Gosudarstvennyy proyektnyy institut Yuzhgiproshakht.
(Mine timbering)

LOKSHIN, V.L.; YAMPOL'SKIY, V.G.

Methodology for the approximate calculation of induced resistances of dipoles. Radiotekhnika 17 no.11:23-29 N '62. (MIRA 15:11)
(Antennas (Electronics))

S/108/62/017/011/003/007
D413/D308

4,1700

AUTHOR: Lokshin, V.L. and Yampol'skiy, V.G.

TITLE: An approximation technique for calculating mutual impedances of ~~vibrators~~ dipoles

PERIODICAL: Radiotekhnika, v. 17, no. 11, 1962, 23-29

TEXT: The precise formulas for the mutual impedance are too complex for use in design calculations on multi-element arrays, while the published curves only cover a few of the cases needed in practice. The authors present a new approximation to the general formula, and compare the results from it with accurate calculations for various cases. The new formula appears to give good agreement for the resistive component of mutual impedance provided the vibrators are not much longer than full-wave and whatever the distance between them: the reactive component is not accurately given when the separation is less than $\lambda/2$, since the basis of the approximation breaks down, but a correction can be developed to take account of this. There are 11 figures.

SUBMITTED: January 3, 1962

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LOKSHIN, V.S., polkovnik zapasa; PARKOV, V.P., polkovnik;
MURAV'YEV, A.I., red.

[A wonderful alloy] Chudesnyi splav. Moskva, Voen. izd-vo M-va oborony SSSR, 1965. 414 p. (MIRA 18:3)

LOKSHIN, V.Sh., redaktor; POLOSINA, A.S., tekhnicheskiy redaktor

[Four-speed drqw works for drilling; technical conditions for checking in for major repairs and for returning after repairs] Lebedki chetyrekhskorostnye dlia bureniia; tekhnicheskie usloviia na sdachu v kapital'nyi remont i na postavku posle remonta. Vedomstvennaia normal' Ministerstva N567-56. [Moskva] 1.v. (MLRA 9:12)

1. Russia (1923- U.S.S.R.) Ministerstvo neftyanoy promyshlennosti. (Oil well drilling--Equipment and supplies)

LOKSHIN, V.Sh., red.; KHLEBNIKOVA, L.A., tekhn.red.

[TV02-4x6 5/8 and TV03-4x6 5/8 internal release pipe grabs; technical specifications for delivery] Trubolovki vnutrennie osvobozhdaiushchiesia TV02--4x6 5/8 i TV03-4x6 5/8; tekhnicheskie usloviia na postavku. [Moskva, 1957] 5 p. (Vedomstvennaia normal' Ministerstva N811-56) (MIRA 11:1)

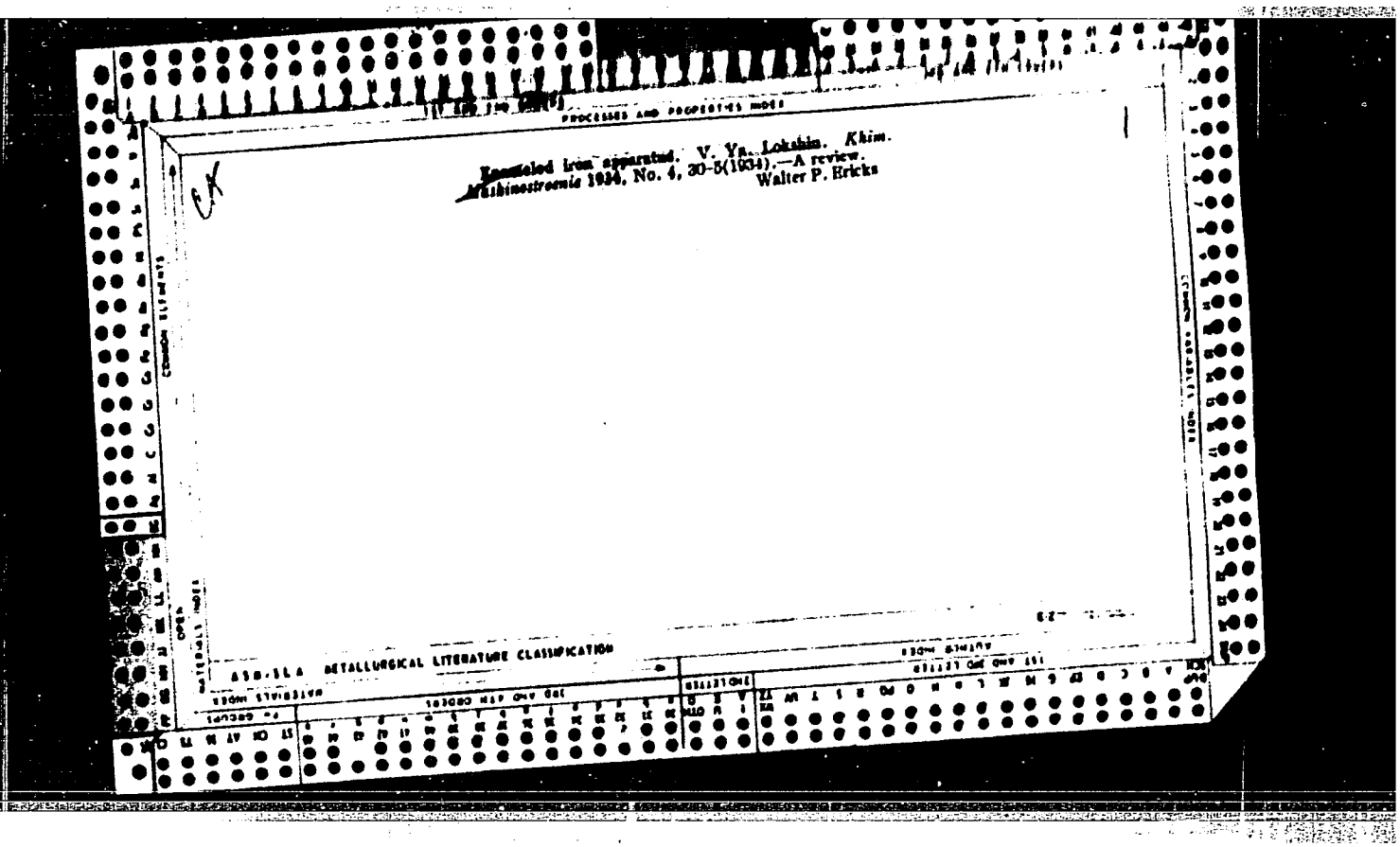
1. Russia (1923- U.S.S.R.) Ministerstvo neftyanoy promyshelnnosti. (Oil wells--Equipment and supplies)

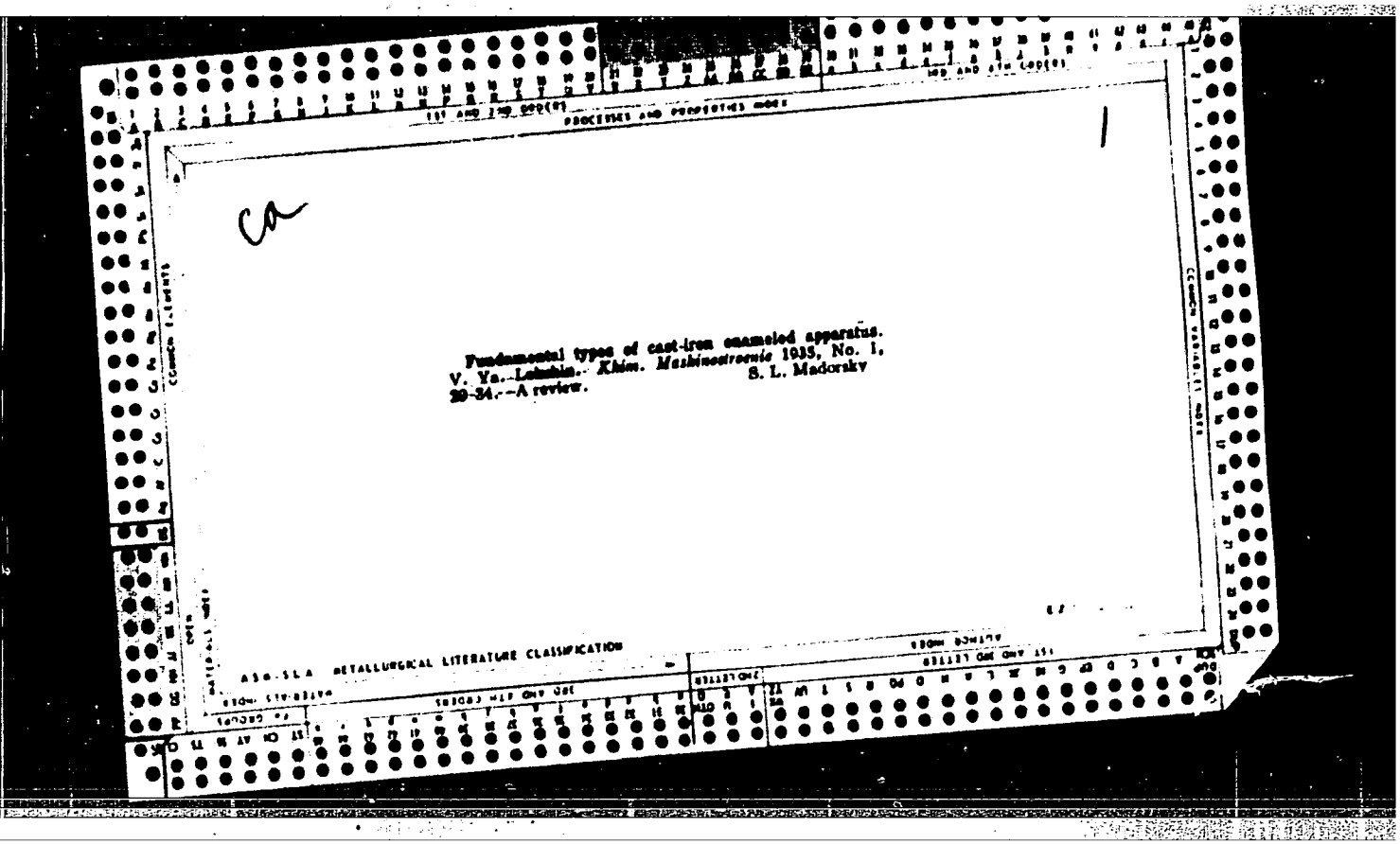
LOKSHIN, V.Sh.

LOKSHIN, V.Sh., red.; KHLEBNIKOVA, L.A., tekhn.red.

[Supplementary gear box for the LT2M windlass] Demul'tiplikator lebedki LT2M; tekhnicheskie usloviia na sdachu v kapital'nyi remont i na postavku posle remonta. [Moskva, 1957] 6 p. (Vedomstvennaia normal' Ministerstva N809-56) (MIRA 11:1)

1. Russia (1923- U.S.S.R.) Ministerstvo neftyanoy promyshlennosti. (Windlass)



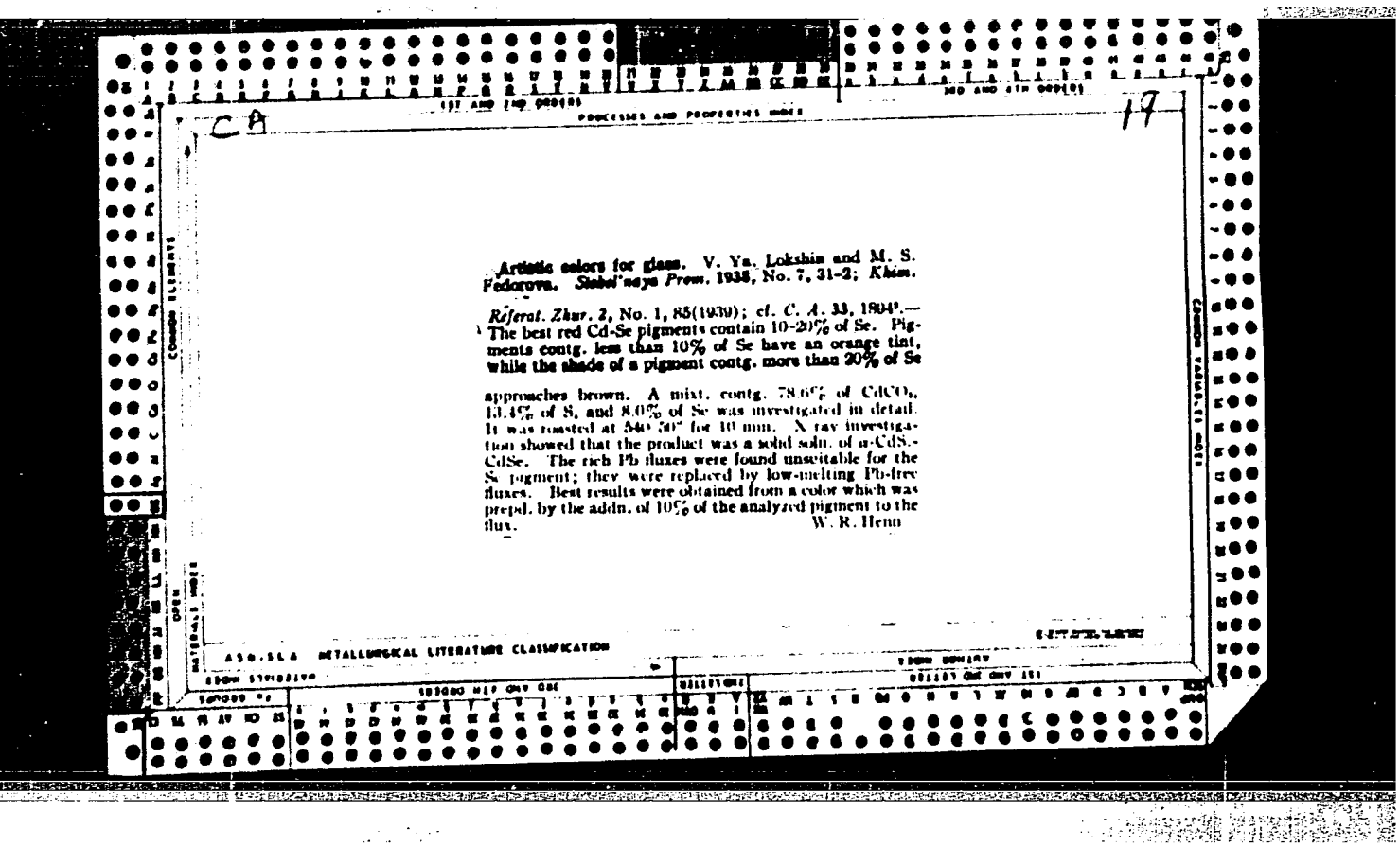


Fundamental types of cast-iron enameled apparatus.
V. Ya. Lukshin. *Khim. Mashinostroenie* 1935, No. 1, 29-34.—A review.
S. L. Madorsky

19

Red paint for glass. V. Ya. Lokshin and M. S. Prdo-rova. *Steklo i Keram.* 14, [7] 31 (1957). Paints used for glass are the easily melting Pb or Pb and B Pb compds. with a pigment. This finely ground paint is applied on the ware and fired in muffle kilns at 500° to 580°. The compn. of several red paints developed in Russia is analyzed. M. V. Condoide

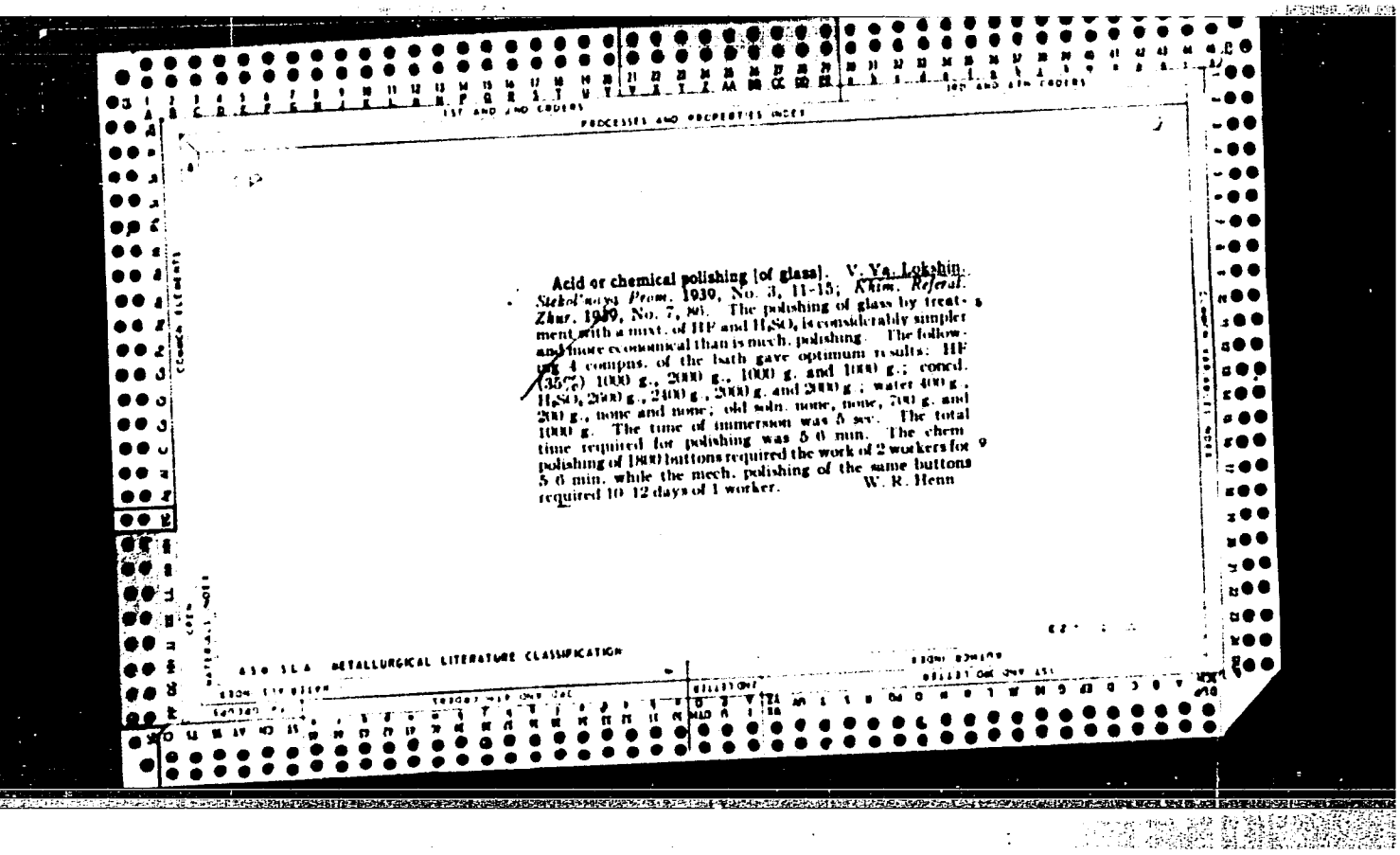
METALLURGICAL LITERATURE CLASSIFICATION



CA 17

Artistic colors for glass. V. Ya. Lokshin and M. S. Fedoseeva. *Stekol'naya Prom.* 1938, No. 7, 31-2; *Khim. Referat. Zhur.* 2, No. 1, 85(1939); cf. *C. A.* 33, 1804⁹.—The best red Cd-Se pigments contain 10-20% of Se. Pigments contg. less than 10% of Se have an orange tint, while the shade of a pigment contg. more than 20% of Se approaches brown. A mixt. contg. 78.6% of $CdCO_3$, 13.4% of S, and 8.0% of Se was investigated in detail. It was roasted at 540-50° for 10 min. X ray investigation showed that the product was a solid soln. of α-CdS.-CdSe. The rich Pb fluxes were found unsuitable for the Se pigment; they were replaced by low-melting Pb-free fluxes. Best results were obtained from a color which was prepd. by the addn. of 10% of the analyzed pigment to the flux.

W. R. Henn



Acid or chemical polishing [of glass]. V. Ya. Lokshin. *Stekol'naya Prom.* 1939, No. 3, 11-15; *Khim. Referat. Zhur.* 1939, No. 7, 80. The polishing of glass by treatment with a mixt. of HF and H_2SO_4 is considerably simpler and more economical than is mech. polishing. The following 4 compns. of the bath gave optimum results: HF (35%) 1000 g., 2000 g., 1000 g. and 1000 g.; concd. H_2SO_4 200 g., 2400 g., 200 g. and 2000 g.; water 400 g., 200 g., none and none; old soln. none, none, 700 g. and 1000 g. The time of immersion was 5 sec. The total time required for polishing was 5 6 min. The chem. polishing of 1800 buttons required the work of 2 workers for 5 6 min. while the mech. polishing of the same buttons required 10 12 days of 1 worker. W. R. Henn

Yellow etching or cementation of glassware. V. Ya. Loksiin. *Stekol'naya Prom.*, 1940, No. 6, p. 18; *Chem. Zentr.*, 1940, II, 3532; *Chem. Abs.*, 36, 5065 (1942).—A mixture of finely ground chamotte 5 to 20 parts and Ag_2CO_3 or AgCl 1 part was made to a paste with turpentine (1 ml. per gm.) in which 5 to 10% rosin was dissolved. To increase the intensity of the color, 25 to 30% (of the dry substance) of iron sulfate was incorporated. This compound gave satisfactory yellow etching.

LOKSHIN, V. YA.

Techniques of enameling metal articles Moskva, Gos. izd-vo mestnoi promyshl. RSFSR, 1951. 342 p. (52-37712)

TS700.L6

1. Enamel and enameling. 2. Cast-iron. 3. Sheet-steel.

LOKSHIN, V YA.

7658. LOKSHIN, V. YA. -- Uproshchennyy metod opredeleniya plavkosti emaley, M., promstroyizdat, 1954. 12 s. s chert. 22 sm. (M-VO Prom-Sti Stroit. Materialov SSSR. Tekhn. Sovet i Tekhn. Upr. Tsentr. Byuro Tekhn. Informatsii. Inform. Soobsheheniya). 600 ekz. Bespl. --avt. ukazan na oborote tit. L. -- (55-3201)

666.26

SO: Knizhnaya Letopsis', Vol. 7, 1955

LOKSHIN, V.Ya., kandidat tekhnicheskikh nauk; RAYNIS, I.S., redaktor; MEL'NIKOVA, N.V., tekhnicheskiy redaktor

[Technology of enameling metal parts] Tekhnologiia emalirovaniia metallicheskikh izdelii. Izd. 2-e, dop. Moskva, Gos. izd-vo mestnoi promyshl. RSFSR, 1955. 422 p. (MLRA 8:8)
(Enamel and enameling)

LORKSHIN, V. Ya.

15(2)

AUTHOR: Vargin, V.V. SOV/72-58-12-22/23

TITLE: Conference on Enamels and Metal Enameling (Soveshchaniye po emalyam i emalirovaniyu metallov)

PERIODICAL: Steklo i keramika, 1958, Nr 12, pp 47-48 (USSR)

ABSTRACT: The organizers of the conference were: Leningradskoye oblastnoye nauchno-tekhnicheskoye obshchestvo promyshlennosti stroitel'nykh materialov (Leningrad Oblast Scientific and Technical Society of the Industry of Building Materials); Leningradskiy sovnarkhoz (Leningrad Council of National Economy) and Leningradskiy tekhnologicheskiy institut imeni Lensoveta (LTI) (Leningrad Technological Institute imeni Lensovet (LTI). The program of the conference included: the most important problems of enamel synthesis, enameling of metal products and industrial apparatus. About 250 experts took part in the conference representatives from works in the UkrSSR, Ural, Novosibirsk, Ulan-Ude, Kuznetsk, Dzerzhinsk, as well as functionaries of the universities, of the scientific research and design institutes in Leningrad, Moscow, Novocherkassk, Dnepropetrovsk, Sverdlovsk, Riga, Khar'kov, and other towns. More than 40 reports were given and discussed. Professor K.S. Yevstrop'yev, director of the LTI imeni Lensovet, in his opening speech stressed the great economic importance of the problem of enameling

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metal products and apparatus.

Ye.I. Litvinova (LTI imeni Lensovet) reported on the influence of metal quality on the formation of "fish-scales" in enameling.

A.A. Appen, Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry of the AS USSR), spoke on the present stage of the problems of calculating the properties of glass and enamels according to their composition.

N.V. Serebryakova (LTI imeni Lensovet) gave a survey of foreign literature on enamels and metal enameling.

M.B. Lifshits, Nauchno-issledovatel'skiy institut sanitarnoy tekhniki (Scientific Research Institute of Sanitary Engineering) reported on the enameling of products in the electric field of a corona discharge.

I.G. Petrunya, Luganskiy zavod imeni Artema (Luganskiy Works imeni Artema)

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spoke of new types of enameled steel products made in this factory.

Yu.P. Nikitin, Ural'skiy politekhnicheskiy institut (Ural'skiy Polytechnical Institute) reported on the character of interaction between metals and melted enamels.

N.S. Smirnov, Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural'skiy Scientific Research Institute of Ferrous Metals) reported on the influence of the condition of the steel surface on the formation of the enamel coat.

A.I. Borisenko, Institute of Silicate Chemistry of the AS USSR, spoke on the new method of obtaining thin silicate coats of semi-colloid solutions.

Ye.N. Podkletnov spoke on a new enameling method with heating of the products by high-frequency currents.

P.A. Rozhdestvenskiy, Lys'venskiy metallurgicheskiy zavod (Lys'venskiy Metallurgic Works) gave informations on new enamels used by the factory.

T.I. Polyutash, Novosibirskiy metallurgicheskiy zavod (Novosibirskiy Metallurgic Works) reported on the dependence of the moistening angle and the enamel deliquescence on the correlation of boric and non-boric salts.

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P.G. Paukah, Latviyskiy gosudarstvennyy universitet (Latvian State University) reported on the investigation of fritted prime enamels for coating cast iron.

V.Ya. Lokshin, Scientific Research Institute of Sanitary Engineering, spoke on the influence of chemical composition on some properties of easily fusible powder enamels.

By the LTI imeni Lensovet the following reports were given:

L.L. Ostorova on prime-less steel and aluminum enameling.

M.V. Sarahryakova on non-plumbic silicate enamels for aluminum.

G.A. Kudryavtseva on slightly colored antimony enamels.

Yu.V. Mazurek on the investigation of a systematic series of oxides for obtaining blue and brown pigments.

The Novocherkassk Polytechnical Institute gave the following reports:

K.P. Azarov on new methods of enamel testing, and on the influence of iron oxide on the physico-chemical properties of the prime coat.

V.G. Zorin on the importance of the gas phase in the burning process of the prime coat.

Ye.N. Chistova on phosphate enamels.

Ye.I. Podreykina on prime-less coats.

Collaborators of the Dnepropetrovsk Chemical-Technological Institute reported:

G.I. Belyayev on the acid content and basicity of enamels, and on the influence of the composition on some properties of prime enamels.

Yu.D. Barinov on the damping of enamels by antimony.

L.V. Purin, Leningradskiy khimiko-pishchevoy kombinat (Leningrad Chemical Foodstuff Kombinat) and S.I. Solyanik (NIIKhIMMASh) on the experiment of manufacturing enameled chemical apparatus of steel.

A.M. Semenova spoke on the causes of blistering of prime enamels at the Zaporozhskiy "Metizmyy" zavod (Zaporozh'ye "Metizmyy" Works) and the methods of preventing this fault.

V.L. Savchenko, Luganskiy Works imeni Artem, reported on the successful application of vibration grinding for crushing sand and non-boric enamel layers, as well as on the experiment of using white titanium enamels.

V.G. Buyev reported on the improvement in the burning technology of enamel coats in connection with the change-over of furnaces to gas, as well as on prospects of muffle-less burning.

V.A. Oborin reported on the work of the design office of the enamel manufacture at the Lys'venskiy Metallurgic Works.

D.I. Yegorov, representative of the State Office for Planned Economy on the planned production volume for the next years, as well as on the standard specifications of borax consumption provided.

The members of the conference passed resolutions for obtaining an improvement in the quality of enameled products, as well as for increasing their production and creating a new technology and new production methods.

LOKSHIN, V. YA.

SOV/6060

PHASE I BOOK EXPLOITATION

Vargin, V. V., Professor, ed.

Emalirovaniye metallicheskikh izdeliy (Enameling of Metal Articles). Moscow, Mashgiz, 1962. 546 p. Errata slip inserted. 7500 copies printed.

Reviewer: A. S. Ragozin, Engineer; Ed.: M. V. Serebryakova, Engineer; Eds. of Publishing House: I. A. Borodulina, A. I. Varkovetskaya, and T. L. Leykina; Tech. Ed.: L. V. Shchetinina; Managing Ed. for Literature on Machinery Manufacture (Leningrad Division, Mashgiz): Ye. P. Naumov, Engineer.

PURPOSE: This book is intended for specialists in enameling, technical personnel of plants, and personnel of scientific research laboratories and institutes. It can also be used by teachers and students of schools of higher education.

COVERAGE: The book provides a brief discussion on raw materials and processes for melting enamels, describes in detail furnaces for melting enamels,

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and offers some recommendations for selection and calculation of furnaces. A special section [Ch. IV, sect. 8] on heat-resistant coatings is included. A flowsheet is given for centralized production of enamels. The properties and preparation of slips are also comprehensively described. The production of new enameled products such as pipelines, architectural and building materials, and aluminum articles is described. Individual chapters were written both by plant personnel and by technical personnel of scientific research institutes and schools of higher eduction. [See: Table of Contents.] No personalities are mentioned. There are 638 references, mainly Soviet, with many English and some German.

TABLE OF CONTENTS [Abridged]:

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Enameling of Metal Articles

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Enameling of Metal Articles SOV/6060

AVAILABLE: Library of Congress
SUBJECT: Metals and Metallurgy
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BN/pw/jk
10-31-62

ACCESSION NR: AP3012256 S/0125/63/000/011/0095/0095

AUTHOR: Lokshin, V. Ye.; Puzrin, L. G.

TITLE: Electron beam welding of thick metal parts

SOURCE: Avtomaticheskaya svarka, no. 11, 1963, 95

TOPIC TAGS: electron beam welding, thick metal welding, 1Kh18N9T stainless steel, AISI 321 steel, heavy section welding

ABSTRACT: Specimens of 1Kh18N9T [AISI 321] stainless steel 100 mm thick were electron-beam welded at the Institut elektrosvarki im. Ye. O. Paton (Electric Welding Institute). The parts were held together without a gap and welded from both sides. Welding equipment was a U-3 electron-beam welder, a U-146 electron gun, and an OB-449 power source. Because of the high concentration of energy, the welding required a minimum powder of only 19 kw, which in two-pass arc welding is only sufficient for joining metal parts 15—18 mm thick. The heat-affected zone of the electron-beam weld was very narrow.

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ACCESSION NR: AP3012256

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 02Dec63	ENCL: 00
SUB CODE: ML	NO REF SOV: 000	OTHER: 000

Card 2/2

ACCESSION NR: AP4004595 S/0020/63/153/004/0810/0811

AUTHOR: Lokshin, V. Ye.; Puzrin, L. G.

TITLE: Some data on weld formation in electron beam welding

SOURCE: AN SSSR. Doklady*, v. 153, no. 4, 1963, 810-811

TOPIC TAGS: electron beam welding, weld formation, weld shape, electron beam pressure, molten metal pressure, welding

ABSTRACT: By the use of electron beam welding, welds with an extremely low form coefficient (less than 1/10) and a relatively large depth of penetration can be achieved. It has been assumed that the electron beam pressure permits a depth of penetration of several dozen mm, but a simple calculation proves this to be wrong. Thus, the electron beam pressure is at least one or two orders of magnitude lower than the ferrostatic molten metal pressure in the welding crater. The assumption that the depth of penetration is achieved because of the evaporation of metal in the zone heated by the electron beam is also wrong, since when a metal plate is melted by the electron beam, a fillet weld with reinforcement is formed. The authors therefore measured the pressure developing during electron beam welding by special experiments using scales attached to an induction coil in a vacuum chamber. When carbon steel was welded at 10 kv, 80 ma, 65 m/hour and optimal focusing, the pressure was 430 mg.; at the same time, the rated pressure of the electron beam was

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ACCESSION NR: AP4004595

only 2.8 mg. This shows that the pressure on the molten metal during electron beam welding is commensurate with the molten metal pressure in the welding vessel and that the pressure of the electrons is insignificant. Other experiments showed that the overall pressure varies directly with the density of the electron beam. Orig. art. has: 1 figure.

ASSOCIATION: Institut elektrosvarki im. Ye. O. Patona, Akademiya nauk USSR (Institute of Electric Welding, Academy of Sciences Ukr SSR)

SUBMITTED: 08June63 DATE ACQ: 24Dec63 ENCL: 00

SUB CODE: ML / NO REF SOV: 001 OTHER: 001

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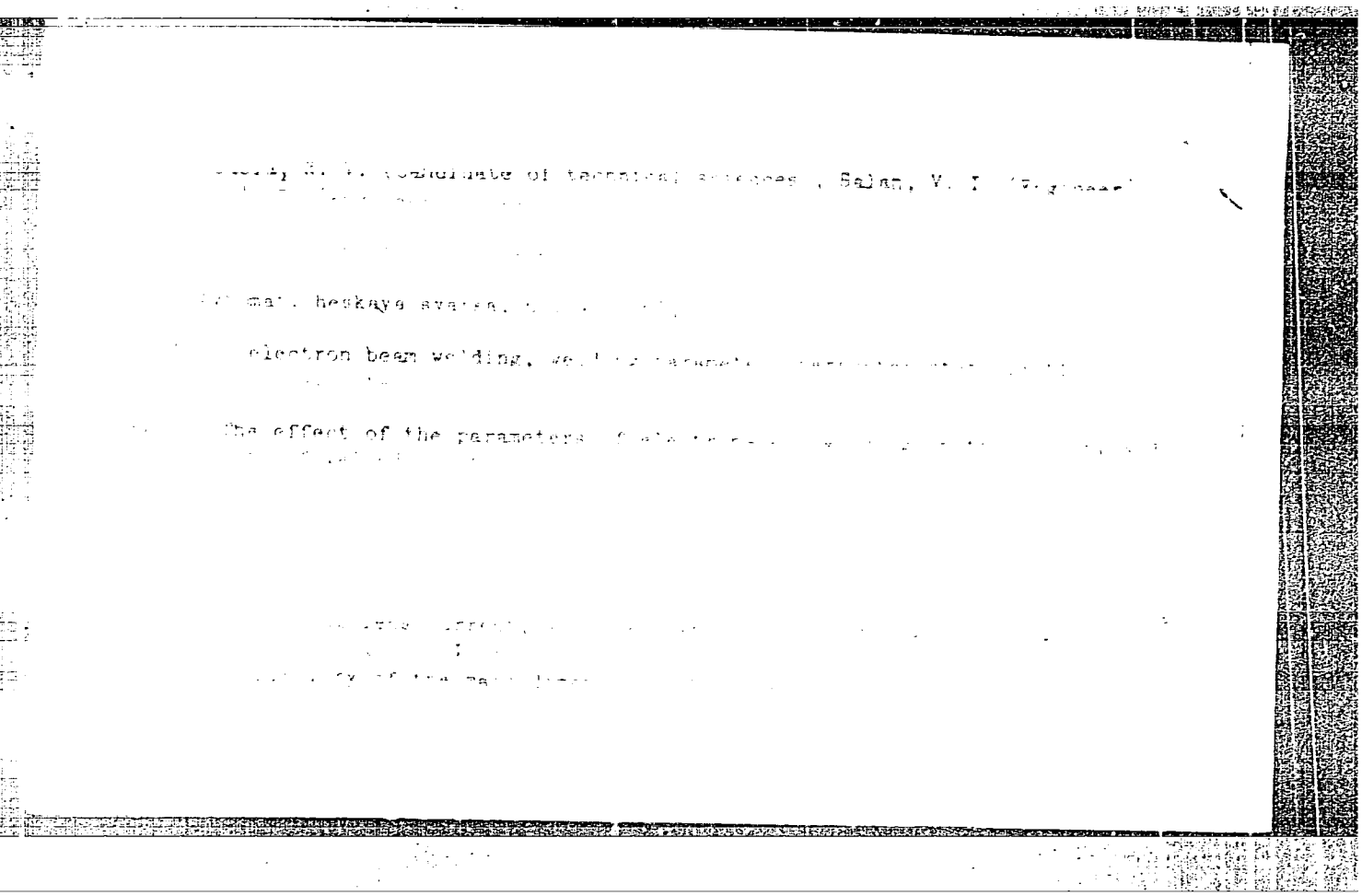

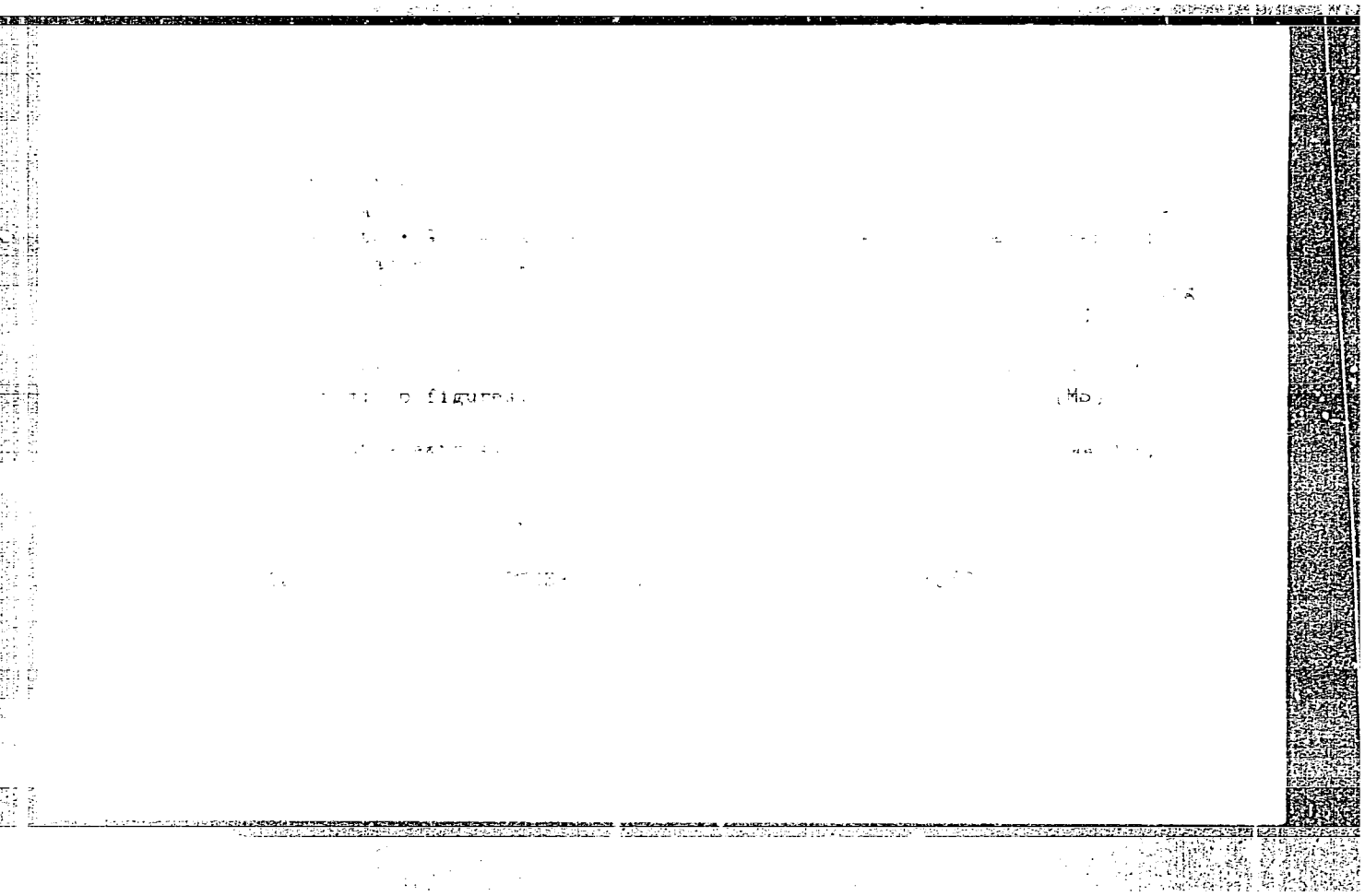

Avt. svarochesk[illegible]

TAGS: vacuum heat treatment, temperature [illegible] low temperature [illegible]
method

ABSTRACT: Author Certificate No. 164090 has been issued for a new method of temperature control for metal parts heated in vacuum developed at the Electric Welding [illegible]

[illegible] heated [illegible] metal parts being heated [illegible] temperature [illegible] ambient [illegible] emission current [illegible]

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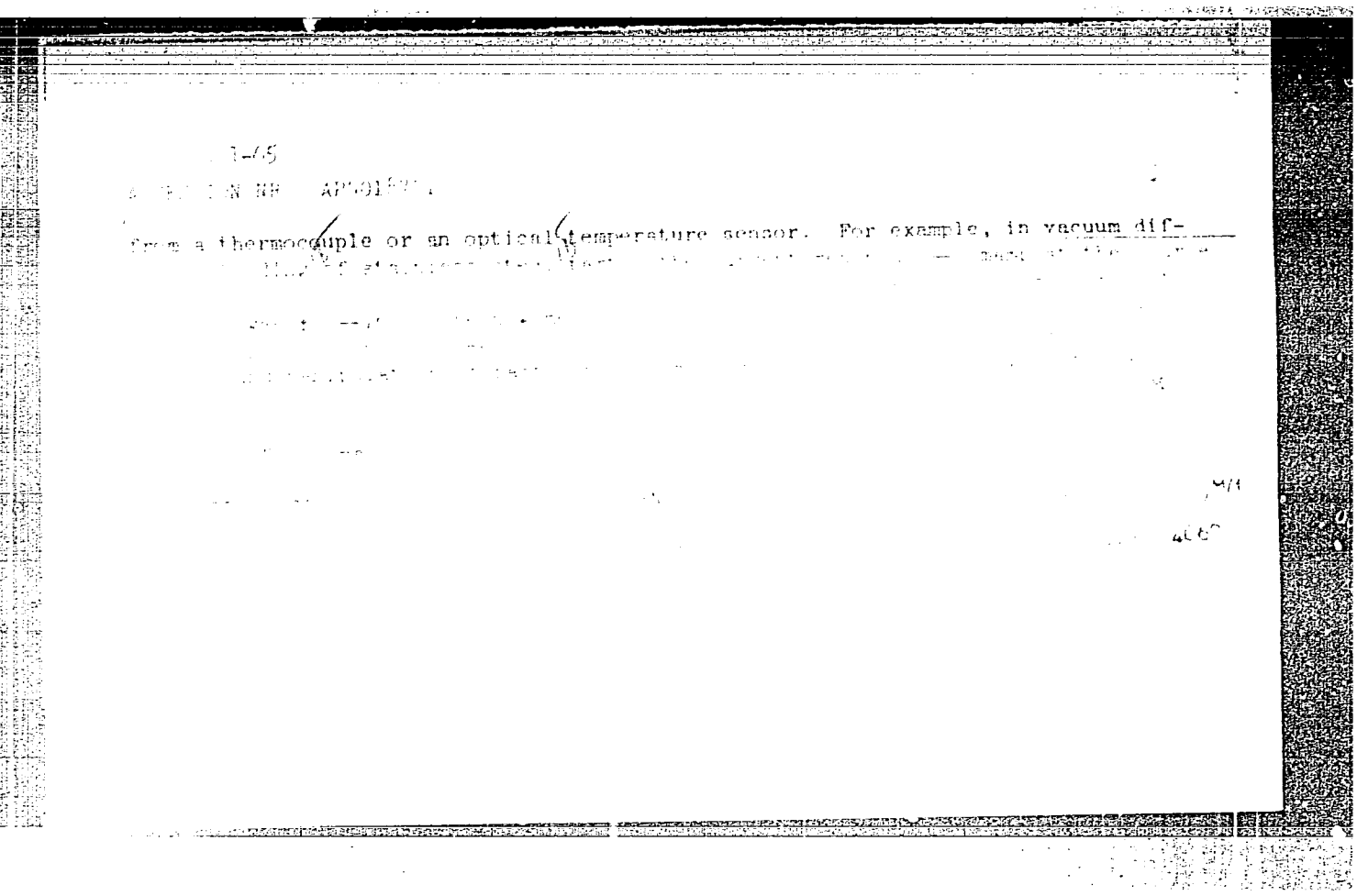

1-45

APPLICATION NR AP 01

from a thermocouple or an optical temperature sensor. For example, in vacuum dif-

KOBOLA, N.V.; SALAN, V.I., OBOLONSKIY, A.M., TOKHIN, V.F.

Stabilization of electron beam welding conditions. Avtom. svar. 18 no.4 23-27 Ap '65. (MIRA 18:4)

1. Institut elektrosvarki imeni Patona AN UkrSSR.

Lokshin, V. Yu.

AUTHOR: Lokshin, V. Yu., Engineer. 122-2-6/23

TITLE: An automatic production line for the manufacture of chisel-type ploughshares. (Avtomaticheskaya liniya dlya proizvodstva dolotoobraznykh lemekhov)

PERIODICAL: "Vestnik Mashinostroyeniya" (Engineering Journal), 1957, No.2, pp. 36 - 43 (U.S.S.R.)

ABSTRACT: A production line recently erected at the Altaisk Plant for Agricultural Machinery (Altaiskiy Zavod Selskokhozyaystvennogo Mashinostroyeniya) for manufacturing 1.1 million ploughshares per year is described. The apparent simplicity of the component is outweighed by its complex space geometry and absence of references bases. The blanks are cut from a special hot rolled recurrent section to eliminate the machining of the share chisel. The finish machining is carried out before bending the profile to simplify the grinding whilst the variable radius and helical curve have not yet been formed. The profile is then bent hot to eliminate springback. The production line consists of several divisions with intermediate storage to ensure flexibility. The new specially developed recurrent section is shown. The profile is cut, blanked, pierced and marked by press work. Machining consists of counter-boring of three holes, grinding of the working surface

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An automatic production line for the manufacture of chisel-type ploughshares. (Cont.) 122-2-6/23

and sharpening of the cutting edge and heel. The grinding and sharpening are performed on a special seven-spindle grinding mill constructed of standard units. The edge and heel sharpening require one spindle each, the grinding of the working surface (performed by the wheel face inclined at 40^{0}) four spindles, and the grinding of the back, one spindle. The subsequent hot operations involve bending in a hydraulic press and heat treatment. The heating operations are performed by induction, at 2 500 cps. for bending and tempering and at 8 000 c.p.s. for quenching. Abrasive liquid cleaning for appearance is carried out with one part of silica sand in four parts of water under 4 kg/cm^{2} pressure. The layout of the production line is described. The mechanisms specially designed to ensure accurate automatic setting up of the grinding and sharpening operations are illustrated semi-diagrammatically. In sharpening the cutting edge, a weight loading is adopted, so that the grinding wheel follows the blank. The heating and finishing operations are entirely automatic. The use of automatic controls for all operations obviates the need for 100% inspection and a 2-3% sampling is practised. The automatic line reduces the labour cost to one quarter compared with present day continuous production. The removal of press

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An automatic production line for the manufacture of chisel-type ploughshares. (Cont.) 122-2-6/23

shop waste requires further mechanisation.

Card 3/3 There are 12 figures, including 4 photographs.

AVAILABLE: Library of Congress

Lokshin, V. Yu.

122-2-1/33

AUTHORS: Vlasov, S.N. and Lokshin, V.Yu., Engineers

TITLE: Experience with the Setting-up of Automatic Production Lines (Opyt otladki avtomaticheskikh liniy)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, No. 2, pp. 3-6 (USSR)

ABSTRACT: The familiarisation stage in setting to work automatic production lines as experienced at the First National Ball Bearing Plant (1GPZ) and the "Altaysel'mash" ploughshare factory has proved to be of the same duration as the design and construction stage. The cost of blanks amounts to 40-60% of the total production cost and so the supply of blanks with minimum allowances is a major consideration. Thus, the introduction of blanks for ploughshares cut from a special "periodic" profile yielded an annual saving of 1.5 million roubles. Generally, the introduction of advanced methods, in spite of higher first cost, is advantageous. Examples are: induction heating for the overall heat treatment of the ploughshares and the extensive use of centreless grinding in the ball race production line. The highest quality and consistency of cutting tools and abrasive wheels is essential. Non-uniform grinding wheels can reduce the utilisation of multi-spindle automatic machines from 85 to 50%. The configuration of the automatic production line and its sub-division into

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Experience with the Setting-up of Automatic Production Lines

several self-contained sections with adequate storage between them is the next most important element. The introduction of magazine chutes in the ploughshare production line has increased its utilisation by 10%. The combination of storage between sections in series and the provision of parallel sections has made it possible to achieve in the ball bearing plant a utilisation exceeding 70% from its very start. Transporter installations with a storage capacity ensuring independent working of the subsequent sections for at least 20 minutes have proved their value. In the original design of the ball-bearing and ploughshare production lines, the servicing and maintenance of equipment did not receive sufficient attention. The wear resistance of components in the transporter installations has been inadequate. All rapidly wearing assemblies must be easily accessible and interchangeable. Reliable lubrication needs thorough attention. Standardisation of typical units can be taken to considerable length. All creative groups should be drawn in to assist during setting to work. Initial faults due to manufacturing or assembly errors are revealed early and are easily remedied. They are not repeated. More profound design errors basically due to inadequate wear resistance or stiffness reappear and are best dealt with in groups and not immediately