PLONSKIY, A.F., Cand Tech Sci—(diss) "Control of the frequency of piezoelectric ~~vibration~~ oscillating systems." Mos, 1958. 15 pp (Mos Electrical Engineering Inst of Communications), 110 copies (KL,32-58,109)

L 11656-66 EWP(e)/EWT(m)/EWP(b) WH

ACC NR: AP6000787 SOURCE CODE: UR/0106/65/000/009/0001/0009

AUTHOR: Plonskiy, A. F.; Filipskiy, Yu. K.

ORG: none

TITLE: State of the art and prospects of quartz stabilization [A review]

SOURCE: Elektrosvyaz', no. 9, 1965, 1-9

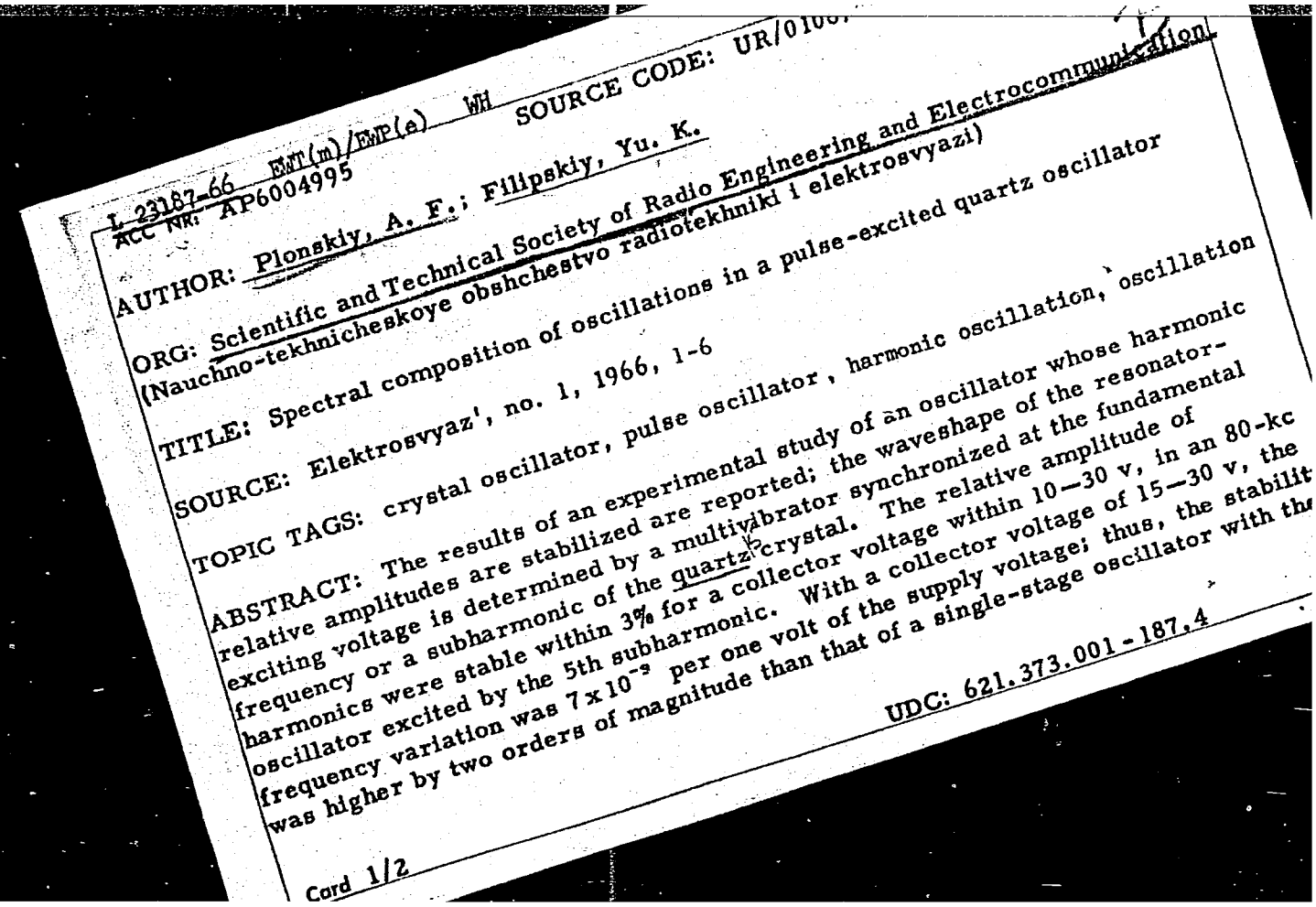
TOPIC TAGS: frequency stabilization, crystal stabilization

ABSTRACT: Based on 1950-64 Soviet and 1952-62 Western published sources, a review of crystal (quartz) stabilizers, their circuits, and modes of operation is offered. These ways for enhancing the stability of crystal-controlled oscillators are recognized: (1) Higher Q-factor of crystal resonator; (2) Its higher temperature stability; (3) Perfecting oscillator circuits. These topics are covered: Superhigh Q-factor resonators (quartz bars, beveled bars, quartz lenses); Stepping up temperature stability (thermostatic control, reactance-thermistor compensator, p-n-junction capacitance compensator); Operation stability in transistorized oscillators (reactive instability, phase instability, nonlinear correction, inertial nonlinearity, AGC, pulse excitation). A quartz servo oscillator circuit described by Leo Norman (Proc. IRE, 1958, no. 1) is also mentioned. Orig. art. has: 5 figures and 10 formulas.

SUB CODE: 09 / SUBM DATE: 23Apr65 / ORIG REF: 008 / OTH REF: 009

Card 1/1

UDC: 621.316.726.1:621.372.412



L 23187-66 EWT(m)/EWP(e) WW SOURCE CODE: UR/0106/

ACC NR: AP6004995

AUTHOR: Plonskiy, A. F.; Filipskiy, Yu. K.

ORG: Scientific and Technical Society of Radio Engineering and Electrocommunication (Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi)

TITLE: Spectral composition of oscillations in a pulse-excited quartz oscillator

SOURCE: Elektrosvyaz', no. 1, 1966, 1-6

TOPIC TAGS: crystal oscillator, pulse oscillator, harmonic oscillation, oscillation

ABSTRACT: The results of an experimental study of an oscillator whose harmonic relative amplitudes are stabilized are reported; the waveshape of the resonator-exciting voltage is determined by a multivibrator synchronized at the fundamental frequency or a subharmonic of the quartz crystal. The relative amplitude of harmonics were stable within 3% for a collector voltage within 10—30 v, in an 80-kc oscillator excited by the 5th subharmonic. With a collector voltage of 15—30 v, the frequency variation was 7×10^{-3} per one volt of the supply voltage; thus, the stabilit was higher by two orders of magnitude than that of a single-stage oscillator with th

UDC: 621.373.001-187.4

Card 1/2

L 23187-66

ACC NR: AP6004995

8

same crystal. Also, the short-time (1 msec to 2 sec) frequency instability was measured on a 400-kc oscillator pulse-excited at the 5th subharmonic. The spectral-line width of the above oscillator was 10^{-9}, while in a single-stage oscillator it was only 10^{-8}. Orig. art. has: 6 figures and 5 formulas.

SUB CODE: 09 / SUBM DATE: 12May65 / ORIG REF: 008

Card 2/2 egc

ACC NR: AP7002023 SOURCE CODE: UR/0142/66/009/005/0646/0651

AUTHOR: Plonskiy, A. F.; Filipskiy, Yu. K.

ORG: none

TITLE: Quartz oscillator with pulse excitation operating on ultralow subharmonics

SOURCE: IVUZ. Radiotekhnika, v. 9, no. 5, 1966, 646-651

TOPIC TAGS: crystal oscillator, transistorized oscillator

ABSTRACT: A transistorized quartz crystal oscillator with a pulse excitation is described. The oscillator uses excitation pulses whose recurrence frequency corresponds to the 501—1001-st sub-harmonic of the quartz crystal frequency. The oscillator circuit (see Fig. 1) consists of an unstable multivibrator (T_1 and T_2),

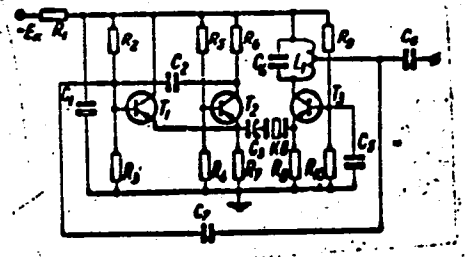


Fig. 1. Quartz crystal oscillator

UDC: 621.373.42

ACC NR: AP7002023

a quartz crystal (K_8), and a common base amplifier (T_3) tuned to the quartz frequency. The quartz crystal is connected in a low-resistance loop ($R_7 + R_8 < r_q$, where r_q is the active resistance of the quartz crystal) in order to maintain its high Q-factor. Pulses generated by the multivibrator are applied to the crystal, where they excite a number of free and forced oscillations. Oscillations at the basic quartz frequency selected by the tuned amplifier are used to synchronize the multivibrator. Oscillators with excitation by the 571-st sub-harmonic were built with evacuated AT-cut quartz crystals ($f = 400$ kc, $Q = 10^5$) and P402 transistors. The oscillator stability factor ($\frac{\Delta f}{f}$) was $(2.5\text{--}3.0) \times 10^{-9}$ for 5X supply voltage variation; the bandwidth ($\frac{\delta f}{f}$) was 6×10^{-10}. Orig. art. has: 5 figures and 1 table. [IV]

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 004/ ATD PRESS: 5110

Card 2/2

PLONSKIY, [illegible]; PILIPSKIY, Yu.K.

Present state and prospects for the development of quartz stabilization systems. Elektrosviaz' 19 no.9:1-9 S '65. (MIRA 18:9)

PLONSKIY, A.F.

Frequency stability of a crystal oscillator and effects of the upper harmonics. Izv.vys.ucheb.zav.; radiotekh. 7 no.5:610-616 S-O '64.
(MIRA 18:4)

PLONSKIY, A.F.

Calculation of the Q factor of thermally compensated quartz resonators. Izvy. vys. ucheb. zav.; radiotekh. 6 no.5:562-564 S-O '63. (MIRA 17:2)

1. Rekomendovana kafedroy radioelektroniki Odesskogo politekhnicheskogo instituta.

PLONSKIY, A.F.

Piezoelectric oscillator with shock excitation and subharmonic feedback. Izv. vys. ucheb. zav.; radiotekh. 4 no.5:618-620 S-O '61. (MIRA 14:12)

1. Rekomendovano kafedroy konstruirovaniya i tekhnologii proizvodstva radioapparatury Chelyabinskogo politekhnicheskogo instituta.

(Oscillators, Transistor)

34267
S/142/61/004/005/013/014
E192/E382

9,2583 (1040, 1147, 1159)

AUTHOR: Plonskiy, A.F.

TITLE: Shock-excited piezo-electric oscillator with subharmonic feedback

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 4, no. 5, 1961, 618 - 620

TEXT: The author developed a method of quartz-crystal frequency stabilization based on shock excitation of the free oscillations in quartz by means of synchronized pulses applied to the electrodes of the quartz resonator at a subharmonic frequency. Since the quality factor of quartz resonators is very high, the decrease in amplitude of the oscillations between the pulses is negligible. The oscillator system consists basically of an amplifier, a frequency-divider and a quartz-crystal resonator. The frequency-divider is based on a multivibrator circuit and generates a waveform whose frequency is near to the third (or another odd) subharmonic of the quartz-crystal frequency. The pulses from the output of the multivibrator are applied to the crystal where they excite its free

Card 1/3

3h267

Shock-excited ....

S/142/61/004/005/013/014
E192/E382

15 - 25 V. A shock-excited oscillator operating at 500 kc/s (with feedback at the fifth subharmonic) was also investigated and it was found that the generated frequency was practically independent of the supply voltage.
There are 7 figures and 2 Soviet-bloc references.

ASSOCIATION: Kafedra konstruirovaniya i tekhnologii proizvodstva radioapparatury Chelyabinskogo politekhnicheskogo instituta (Department of Construction and Production Technology of Radio Equipment of Chelyabinsk Polytechnical Institute)

SUBMITTED: March 12, 1960 (initially)
February 27, 1961 (after revision)

Card 3/3

POLAND/Human and Animal Physiology. Thermoregulation. T-3

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55370.

Author : Dutkiewicz, I.S., Plonski, I., Spioch, F., Strzoda, L.
Inst :
Title : Changes in the Blood Circulation System of People Resting in Conditions of Humid Heat.

Orig Pub: Acta physiol. polon., 1956, 7, No 4, 435-447.

Abstract: When 468 healthy, 20-45 years old life savers (from a mountain area) were placed in a restful position into a heat chamber with a 50° [C] temperature and a relative humidity of 50 percent, their maximal arterial pressure (AP) decreased considerably during the first 30 minutes. The decrease which followed then was insignificant, for the lowest AP amounted to 68 mm of the mercurial

Card : 1/3

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55370.

column. During the first 60 minutes of the experiment a significant decrease of the minimal AP was observed, later, it remained on the same level. In 25 percent of the tested persons a decrease of the minimal AP down to zero was observed, although their wellbeing remained unchanged as compared to the other subjects. During the first 30 minutes of the experiment the blood pressure increased considerably. Subsequent increases were insignificant. After another 30 minutes they reached a constant high level, which did not change until the end of the experiment. After 30 minutes the average pulse rate increased to 115, and reached 138 beats per minute at the end of the test. In 325 workers an examination of the arterial tonus did not reveal specific changes of any kind.

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55370.

This fact could be explained, however, by the inexactness of the oscillometric method. The average body temperature increased to 39.5° [C], and it sometimes reached 40.5° [C]. Thus, the conclusion may be drawn that it is unadvisable to stay longer than 2 hours under the conditions described above.

PLONSKI, Jerzy

Effect of high temperature on the organism in man. Effect of humid heat on physical work capacity. Polski tygod. lek. 14 no.48:2103-2106 30 Nov 59.

1. (Z Instytutu Medycyny Pracy w Przemysle Weglowym i Hutniczym w Zabrzu-Rokitnicy; dyrektor: prof. dr med. BrunonNowakowski i z Centralnej Stacji Ratownictwa Gorniczego Przemyslu Weglowego w Bytomiu; dyrektor: mgr. inz. Kazimierz Cehak).
(HEAT, eff.) (HUMIDITY) (PHYSICAL FITNESS)

DUTKIEWICZ, J. S.; PLONSKI, J.; SPIOCH, F.; STRZODA, L.

Changes occurring in human blood circulation during relaxation and humidity. Acta physiol. polon. 7 no.4:435-447 1956.

1. Z Sekcji Fizjologii Pracy Inst. Med. Pracy w Przem. Weglowym i Hutniczym oraz z Zakladu Fizjologii Slaskiej A.M. w Rokitnicy. Kierownik: prof. dr. Br. Zawadzki.

(BLOOD CIRCULATION, physiol.
eff. of humidity & relaxation (Pol))
(HUMIDITY, eff.
on blood circ. (Pol))
(RELAXATION, eff.
same)

PLONSKI, W.

"Studies in Improving the Quality of Porous Felt Plates", P. 331, (PRZEGLAD BUDOWLANY, Vol. 26, No. 10, October 1954, Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 4, No. 3, March 1955, Uncl.

PLONSKI, W.

3050

691.31 : 691.13 : 699.86

Płoński W. Mineral Cork — a New Insulating Material

„Korek mineralny — nowy materiał zimnochronny". Materiały Budowlane No 5, 1953, pp 111—112

The fact that what has hitherto been the best insulating material, cork, is in short supply has led to experiments with mineral cork, in the form of slag-wool boards saturated with asphalt. The first phase in these experiments was the preparation of a formula for the emulsion, the second — the actual production of boards. The method of preparing the emulsion was drawn up on a laboratory and semi-technical scale. The manufacture of mineral wool boards is similar to that of fibre board. Tests have shown that mineral cork possesses excellent insulating properties, second only to natural cork.

H

POLAND/Chemical Technology. Chemical Products and Their Applications. Ceramics. Glass. Binding Materials. Concrete. - Binding Materials. Concrete and Other Silicate Construction Materials.

Abs Jour : Ref Zhur-Khimiya, No 6, 1959, 20275

Author : Plonski, Wladislaw
Inst : -
Title : New Insulation Materials.

Orig Pub : Przegl. budowl., 1957, 29, No 3, 105-106

Abstract : The production of thermoinsulating materials from a base of dolomite (D) is described. One type of such materials is "sovelit" (I), obtained by calcination of D at 950°, quenching in water, saturation with CO_2 (at

Card : 1/3

PLONSKI, I.

A method of quick carbonation in order to get building material from line and dolomite. p. 53.
Achievements in nuclear physics applied in the building materials industry. Tr. from th Russian. p. 59.
(INDUSTRIA CONSTRUCTIILOR SI A MATERIALEOR DE CONSTRUCTII. RUMANIA. Vol. 7, no. 1, Jan. 1956.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

PLONSKIY, A., kand.tekhn.nauk

Molecules as "radio tubes." Znan. sila 36 no. 4:40-41 Ap '61. (MIRA 14:4)

(Radio—Receivers and receiving) (Miniature electronic equipment)

S/032/60/026/012/028/036
B020/B056

AUTHOR: Plotinskiy, L. Ye.

TITLE: A Device for Studying the Processes of Film Formation in Steel

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 12, pp.1422-1424

TEXT: The principle of the "filmoscope" developed by the author is based upon the increased emissivity of the surface of the liquid steel during its oxidation. In steel with non-oxidized surface, the coefficient of the emissivity is about equal to 0.45, which value rises to 0.8-0.9 in the presence of an oxide film. The scheme of the "filmoscope" is given in Fig.1, and that of the device for investigating film formation on the surface of liquid steel in Fig. 2. The device described in Fig. 2 is also used to study the film formation under the action of various gases. For this purpose, the "filmoscope" is fastened in a bell, through which the gas is allowed to pass. The bell contains a thermocouple and a scraping-iron for removing slags. The bell was further placed under a crucible, and the latter was inserted into the inductor of a high-frequency furnace. The

A Device for Studying the Processes of Film Formation in Steel

S/032/60/026/012/028/036
B020/B056

"filmoscope" permits studying the formation of films in the furnace, in the closed casting mold during filling with steel, in the channels, in the steel current, in vacuum steel casting, and, besides, permits the investigation of the effect of the deoxidation of the steel upon film formation. There are 2 figures and 2 Soviet references.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Construction)

Card 2/2

PIK, L.I.; PLONSKIY, S.S.

Practice of creating horizontal control by the trilateration method. Geod. i kart. no.7:15-18 Jl '63. (MIRA 16:8)
(Triangulation)

VORONIN, V.A.; PIK, L.I.; PLONSKIY, S.S.

Practice of using the GD-300 geodimeter. Geod. i kart. no.9: 27-31 S'62. (MIRA 15:10)

(Geodimeter)

VORONIN, V.A.; PIK, L.I.; PLONSKIY, S.S.

Testing the GD-300 optical distance meter. Geod.i kart. no.6:14-23 Je '60. (MIRA 13:7)
(Range finders--Testing)

PLONSKIY, V.

They master a complete military knowledge. Kryl. rod. 3 no.2: 12b-12c F '52. (MLRA 8:8)
(Military education)

SEMENOV, Semen Mikhaylovich; PLONSKIY, V., red.; POKHLEBKINA, M., tekhn. red.

[Ivan Ivanov and his family]Ivan Ivanov i ego sem'ia. Moskva, Mosk. rabochii, 1962. 84 p. (MIRA 16:3)
(Moscow—Cost and standard of living)

IGNAT'YEV, S.P.; PLONSKIY, V., redaktor; STROYEV, M., general-mayor aviatsii, konsul'tant; TYSHKEVICH, Z., tekhnicheskiy redaktor.

[The strength of our wings] Sila nashikh kryl'ev. [Moskva], Izd-vo TsK VLKSM "Molodaia gvardiia," 1951. 100 p. (MIRA 8:5)
(Russia — Air Force)

PLONSKIY, V.

Borovsk organizations of the All-Union Volunteer Society for Assistance to the Army, Air Force, and Navy. Kryl. 3 no.4:12-13 Ap '52. (MLRA 8:8)
(Borovsk--Military education)

NOVIKOV, Afanasiy Yegofeyevich; PLONSKIY, V.O., red.; PONOMAREVA, A.A., tekhn. red.

[The northwestern provinces of the R.S.F.S.R.] Severo-Zapadnye oblasti RSFSR. Moskva, Izd-vo "Sovetskaia Rossiia," 1958. 30 p. (MIRA 15:2)

1. Pavil'on "Leningrad i Severo-Zapadnyye oblasti RSFSR" Vsesoyuznoy sel'skokhozyaystvennoy vystavki (for Novikov).
(Russia, Northwestern—Agriculture)

BABLYUK, Boris Timofeyevich; PLONSKIY, V.O., red.; LUKINA, L.Ye., tekhn.red.

[Treasures of the Amaka taiga] Klady Amakinskoi taigi. Moskva, Izd-vo "Sovetskaia Rossiia," 1959. 133 p. (MIRA 12:11)
(Yakutia--Diamonds)

TUULMETS, A.V.; PARTS, E.O.; PLOOM, L.R.

Thermal effects of the reaction of methyl- and ethyl magnesium bromide with some ketones. Zhur.ob.khim. 33 no.10: 3124-3126 O '63. (MIRA 16:11)

1. Tartuskiy gosudarstvennyy universitet.

PLOSCARU, E.

"On the banks of the Borcea River."

p. 10 (Drumul Belsugului) No. 12, Dec. 1957
Bucharest, Rumania

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

S/262/62/000/013/005/005
1007/1207

AUTHOR: Płosa, Josef and Rahnenfeld, Andrzej

TITLE: Feed control of fuel pumps

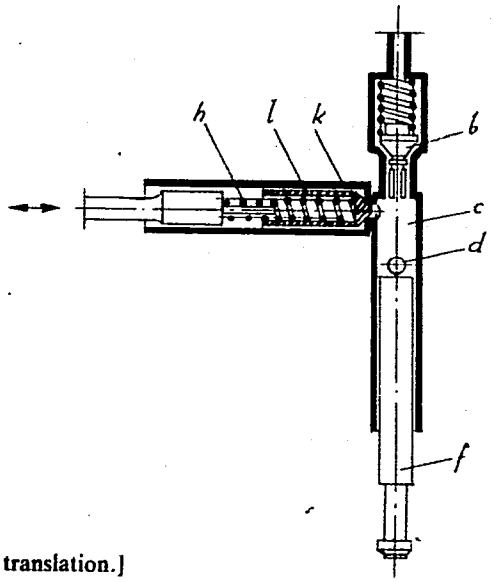
PERIODICAL Referativnyy zhurnal, otdel'nyy vypusk. 42. Silovyye ustanovki, no. 13, 1962, 76, abstract 42.13.504 P. Polish patent, class 46 c-2, 115/01, no. 43172, July 18, 1960

TEXT: The fuel, pressure-fed into the pump through the port (d) (See figure) during the intake stroke of the plunger (f) fills cavity (c). If during suction the pressure in the cavity exceeds the force of spring (h), the small piston (l) shifts to the left, and part of the fuel, fed through the valve (b) to the nozzle, will be diverted into the collector (k). On the next suction (intake) stroke of the plunger, the fuel enters the cavity (c) not only through the port (d), but also from the fuel collector, under the action of the spring whose tension is controlled by means of a regulator. There are 2 figures.

Card 1/2

Feed control of...

S/262/62/000/013/005/005
I007/1207



[Abstracter's note: Complete translation.]

Card 2/2

PLOSCARU, O

The design of furniture, a current problem. p. 93.

INDUSTRIA LEMNULUI. (Asociatia Stiintifica a Inginerilor si Tehnicienilor din Romînia si Ministerul Industriei Lemnulu. Bucuresti, Rumania. Vol. 8, no. 3, Mar. 1959.

Monthly List of East European Accessions (EEAI) IC, Vol. 8, no. 7, July 1959.

Uncl.

PLOSCARU, O.

Ion P. Florescu's Fabricarea produselor finite din lemn (Manufacture of Finished-Wood Products); a book review. p. 475.

INDUSTRIA LEMNULUI. (Asociatia Stiintifica a Inginerilor si Technicienilor din Rominia si Ministerul Industriei Lemnului) Bucuresti, Rumania.
Vol. 7, no. 12, Dec. 1958.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 6, June 1959.
UNCL

PLOSCARU, O., ing.

Use of exotic veneers in finishing the surface of furniture. Ind lemnului 14 no.7:260-263 Jl '63.

PLOSCARU, O.

An improved installation for the direct feeding of spraying pistol with air and nitrocellulose lacquer. pl 429

INDUSTRIA LEMNULUI. (Asociatia Stiintifica a Iginerilor si Tehnicienilor din Rominia si Ministerul Industriei Lemnului, Bucuresti, Rumania
Vol. 8, no.11, Nov 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no.2, Feb. 1960

Uncl.

PLOSCARU, O.

Furniture exhibited at the International Fair in Cologne. p. 419.
(INDUSTRIA LEMNULUI. RUMANIA. Vol. 5, no. 9, Sept. 1956.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

PLOSCARU, C.

Aspects from the production of the upholstery section of the Bucharest IPROFIL. P. 480.
(INDUSTRIA LEMNULUI. RUMANIA. Vol. 5, no. 11, Nov. 1956.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

Urology

RUMANIA

TARCOVEANU, Gh., Dr, Col, TRINCA, D., Dr, Lt-Col, and PLOSCARU, V., Dr, Lt-Col [affiliation not given]

"Considerations on Urolithiasis Patients Hospitalized in the Surgery Section of the Pitesti Military Hospital in Recent Years (1961-1965)."

Bucharest, Revista Sanitara Militara, Vol 62, No 4, Jul-Aug 66, pp 691-697.

Abstract: A discussion and analysis of 184 cases of urolithiasis treated at the Pitesti Military Hospital during a five-year period, representing 2.9 percent of the total number of surgical cases during the period. Male patients accounted for 118 cases and females for 66 cases, and more of the patients came from an urban environment than from a rural one. The basic diagnostic step was the direct radiography of the urinary apparatus. A variety of therapeutic methods was used.

Includes 16 references, of which 10 Rumanian, one Russian, one French and 4 English-language. -- Manuscript submitted 5 October 1965.

1/1

PLOSHCHADNOV, K.D.

Increase the role of veterinary medicine in agriculture. Veterinariia 32 no.10:18-21 O '55. (MLRA 8:12)

1.Predsedatel' ispolkoma Shuyskogo rayonnogo Soveta deputatov trudyashchikhsya Ivanovskoy oblasti.
(VETERINARY MEDICINE)

PLOSHCHANNIKOVA, Ye.A., assistent

Fertilizer application to Jerusalem artichoke. Sbor.nauch.trud. Ivan.sel'khoz.inst. no.16:77-81 '58. (MIRA 13:11)

1. Kafedra rasteniyevodstva Ivanovskogo sel'skokhozyaystvennogo instituta.
(Jerusalem artichoke--Fertilizers and manures)

FILIPPOV, M. N.; PLOSHCHANIKOVA, YE. A.

Jerusalem Artichoke

Cultivating the Jerusalem artichoke. Korm. baza 3 no. 7, 1952.

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

L 8444-66 EWT(m)/EWA(h)

ACC NR: AP5025706 SOURCE CODE: UR/0286/65/000/018/0057/0057

AUTHORS: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A.

55 55 55

ORG: none

TITLE: A device for checking radiation meters. 19.55 Class 21, No. 174729

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 57

TOPIC TAGS: radiation monitor, radiometry, radiometer, filter, mercury

ABSTRACT: This Author Certificate presents a device for checking radiation meters. It contains a radiation source, a shielded housing with a collimated channel, an attenuating filter, mechanisms for moving and fixing the position of the source, and an effective area (see Fig. 1). To simplify the design, increase the measurement range, and reduce the checking time, a liquid metal (e.g., Hg) is used as the attenuating filter. The radiation source is placed directly inside the filter and can be moved.

Card 1/2 UDC: 621.039.55

L 8444-66

ACC NR: AP5025706

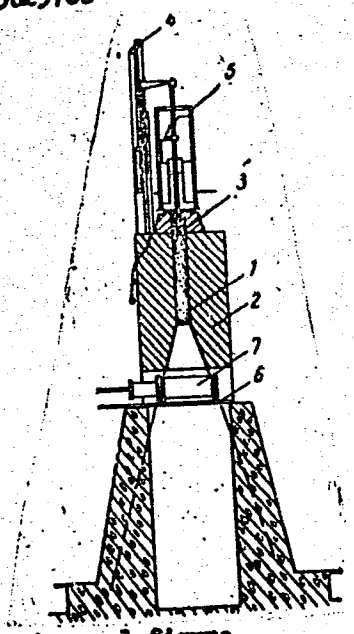


Fig. 1. 1 - Radiation source; 2 - shielded housing; 3 - liquid-metal attenuating filter; 4 - mechanism for moving source; 5 - mechanism for fixing source; 6 - effective area; 7 - sensing element of radiation meter.

Orig. art. has: 1 figure.

SUB CODE: 18/ SUBM DATE: 17Apr64

BVK
Card 2/2

L 5067-66 EWT(m)/EPF(c)/EWP(j)/T/EWA(h)/EWA(l) WW/RM
ACC NR: AP5022645 UR/0089/65/019/002/0201/0203
539.16.07

AUTHOR: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A.

TITLE: The use of polyethylene pipes in pipelines of dosimetric air sampling system

SOURCE: Atomnaya energiya, v. 19, no. 2, 1965, 201-203

TOPIC TAGS: nuclear reactor, atomic energy plant equipment, air pollution control

ABSTRACT: The radioactive-air samplers are usually equipped with pipelines made of aluminum or stainless steel pipes. The possibility of their replacement by non-corrosive polyethylene pipes is discussed. The authors describe their experiments with the polyethyline pipes having a 20 mm diameter and 4 mm wall thickness. The results of their tests showed that the polyethylene pipes could be used at temperatures up to 60 C, pressures up to 3 kg/sq cm and rarefactions of 600 mm Hg. At the beginning of 1962, the air sampling pipelines of the VVR-M reactor were equipped with polyethylene pipes and tubes. Their total length was about 3000 m. No trouble was experienced during two years

Card 1/2

090/0453

L 5067-66

ACC NR: AP5022645

3

of operation of this stationary dosimeter system at the Physicotechnical Institute im. A. F. Ioffe of the SSSR Academy of Sciences. Orig. art. has: 1 photo showing the mounted pipes. 4455

ASSOCIATION: none

SUBMITTED: 05Sep64 ENCL: 00 SUB CODE: NP, MT

NO REF SOV: 000 OTHER: 000

Card 2/2 hd

ACC NR: AP6030165 SOURCE CODE: UR/0120/66/000/004/0224/0225

AUTHOR: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A.

ORG: Physicotechnical Institute, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Single action KD-1 electromagnetic air valve with switch on signals

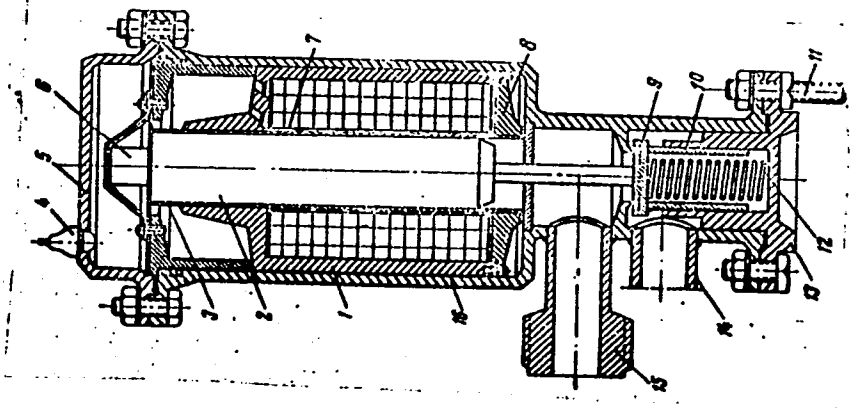
SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 224-225

TOPIC TAGS: reactor control, valve, isotope separation, radioactivity measurement, radiation dosimetry, radiation instrument, ELECTROMAGNETIC PROPERTY

ABSTRACT: In 1962 the dosimetric control system of the VVR-M reactor was equipped with 65 KD-1 electromagnetic air valves of single action with switch on signals. The valves have been operating continuously for 2 years, each switching at least 50,000 times during this period without a single breakdown. Monthly inspections of the tightness of the air control system disclose that the valves are: overall dimensions - 250 x 120 mm^2, weight - 4.6 kg, flow-passage cross-sectional area - 16 mm, working voltage - 48 v, type of current - d.c., working current - 0.3 a, signal circuit voltage - 0.5 a, spring pressure on locking piston - 4 kg, stroke of locking piston - 5 mm, temperature of heating surface of valve body at an ambient temperature of +20 C - 45 C, and air leakage at 750 torr - 0.003 l/min, at most. A diagram of the valve is shown below. Orig. art. has: 1 figure.

Card 1/2 UDC: 621.039.586/587

ACC NR: AP6030165



The KD-1 electromagnetic valve

1. solenoid case, 2. plunger, 3. brass guiding bush, 4. insulating bead, 5. valve hood, 6. KV-9A limit switch, 7. solenoid coil case, 8, solenoid case lid, 9. teflon ring, 10. locking piston, 11. dowels, 12. spring, 13. valve base, 14. intake pipe, 15. suction pipe

SUB CODE: 18 / SUBM DATE: 27Apr65

Card 2/2

ACC NR: AP6030165 SOURCE CODE: UR/0120/66/000/004/0224/0225

AUTHOR: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V, A.

ORG: Physicotechnical Institute, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Single action KD-1 electromagnetic air valve with switch on signals

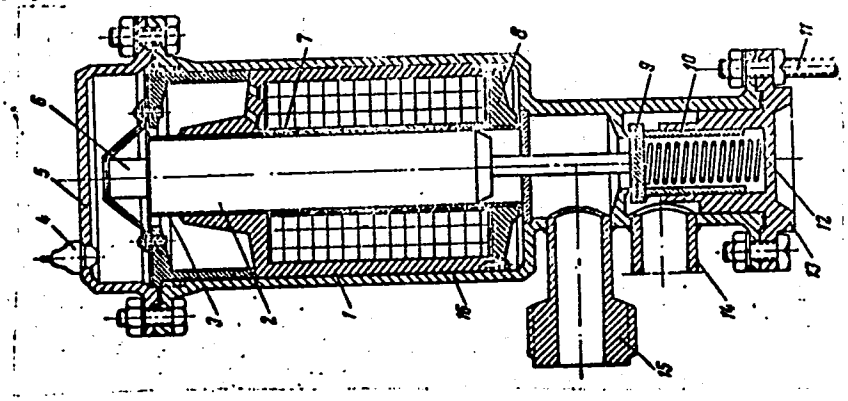
SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 224-225

TOPIC TAGS: reactor control, valve, isotope separation, radioactivity measurement, radiation dosimetry, radiation instrument, ELECTROMAGNETIC PROPERTY

ABSTRACT: In 1962 the dosimetric control system of the VVR-M reactor was equipped with 65 KD-1 electromagnetic air valves of single action with switch on signals. The valves have been operating continuously for 2 years, each switching at least 50,000 times during this period without a single breakdown. Monthly inspections of the tightness of the air control system disclose that the valves are: overall dimensions - 250 x 120 mm^2, weight - 4.6 kg, flow-passage cross-sectional area - 16 mm, working voltage - 48 v, type of current - d.c., working current - 0.3 a, signal circuit voltage - 0.5 a, spring pressure on locking piston - 4 kg, stroke of locking piston - 5 mm, temperature of heating surface of valve body at an ambient temperature of +20 C - 45 C, and air leakage at 750 torr - 0.003 l/min, at most. A diagram of the valve is shown below. Orig. art. has: 1 figure.

Card 1/2 UDC: 621.039.586/587

ACC NR: AP6030165



The KD-1 electromagnetic valve

1. solenoid case, 2. plunger, 3. brass guiding bush, 4. insulating bead, 5. valve hood, 6. KV-9A limit switch, 7. solenoid coil case, 8, solenoid case lid, 9. teflon ring, 10. locking piston, 11. dowels, 12. spring, 13. valve base, 14. intake pipe, 15. suction pipe

SUB CODE: 18 / SUBM DATE: 27Apr65

Card 2/2

ACC NR: AP7000795 (A,N) SOURCE CODE: UR/0089/66/021/005/0386/0386

AUTHOR: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A.

ORG: none

TITLE: Improvement of the system of stationary dosimetric control of the VVR-M reactor

SOURCE: Atomnaya energiya, v. 21, no. 5, 1966, 386

TOPIC TAGS: nuclear reactor operation, nuclear reactor control, radiation dosimetry, nuclear safety/ VVR-M nuclear reactor, USIT-1 dosimeter

ABSTRACT: This is a summary of article no. 112/3573, submitted to the editor and filed, but not published in full. The shortcomings of the earlier system are briefly summarized and it is reported that in the improved system, used for the reactor at the Physicotechnical Institute im. A. F. Ioffee, AN SSSR, these shortcomings have been eliminated to a considerable degree. The air-control system has a more highly branched network of sampling lines, with provision made for manual, semi-automatic, and automatic control. Both counter-type and ionization-chamber pickups can be used to determine the concentration of radioactive gases in the air. Control over the exhaust of the radioactive gases is by means of continuous pumping and is continuously monitored by means of an automatic recorder. The γ radiation is monitored by two type USIT-1 instruments, with additional "cactus" type instruments being used in the hot chambers and in the pump room of the first loop and on the cover of the reactor.

Card 1/2 UDC: 621.039.58

ACC NR: AP7000795

Automatic visual and sound alarms are provided. It is claimed that the improved system satisfies present sanitary norms and technological requirements, and that experience accumulated in 2.5 years of operation will lead to further improvements.

SUB CODE: 18/ SUBM DATE: 14Jan66

Card 2/2

YATSYUK, A.I., kand. tekhn. nauk; LYUBIMOV, V.G., kand. tekhn. nauk;
PLOSHCHANSKIY, S.M.

Flexible abrasive wheels for wood polishing. Bum. i der. prom.
no.3:13-16 Jl-S '64. (MIRA 17:11)

PLOSHCHENKO, B.K.

Automating the condensate stations of a petroleum refinery. Mash. i neft. obor. no.5:26-31 '65. (MIRA 18:6)

1. Omskiy filial Spetsial'nogo konstruktorskogo byuro po avtomatike v neftepererabotke i neftekhimii.

PLOSHCHENKO, M.D.

Constructive achievements of machinery operators in Dnepropetrovsk Province. Mekh. sil'. hosp. 9 no. 7:12-13 Jl '58. (MIRA 11:8)

1. Dnipropetrovs'ke oblasne upravlinnya sil's'kogo gospodarstva.
(Dnepropetrovsk--Agricultural machinery--Exhibitions)

PLOSHCHENKO, N.D.

[Grain combines equipped for harvesting corn] Zernovye kombainy, pereoborudovannye dlia uborki kukuruzy. Dnepropetrovsk, Dnepropetrovskoe obl. izd-vo, 1955. 49 p. (MLRA 10:4)
(Combines (Agricultural machinery))
(Corn (Maize)--Harvesting)

L 29289-66 EWT(1)/FCC GW

ACC NR: AP6019302 SOURCE CODE: UR/0203/65/005/004/0770/0771

AUTHOR: Popov, N. P.; Ploshchenko, O. S.

ORG: Institute of Terrestrial Magnetism, the Ionosphere and Radio Wave Propagation, SO AN SSSR (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln SO AN SSSR)

TITLE: Observations of vertically moving disturbances at Irkutsk

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 4, 1965, 770-771

TOPIC TAGS: atmospheric disturbance, solar activity

ABSTRACT: The article cited below describes vertically moving disturbances of a U-form which appear in the region of critical frequencies of the F2 layer and then move along the F2 layer in the direction of a decrease of frequency. There is a seasonal variation in the frequency of occurrence of such movements. In summer they are observed much less frequently than in winter. In autumn the frequency increases sharply, attaining a maximum in winter. With a decrease of the relative values of Wolf numbers the relative frequency of vertically moving disturbances also decreases. The frequency of appearance of such movements increases with sunrise and decreases sharply with sunset. The frequency of their occurrence may be determined to some degree by the state of ionization of the F2 layer. It can be postulated that vertically moving disturbances are a manifestation of the influence of solar activity on the earth's atmosphere. Orig. art. has: 2 figures. [JPRS]

SUB CODE: 04, 03 / SUBM DATE: 03Aug64 / ORIG REF: 004 UDC: 550.388.2

Card 1/1

KOCHO, V.S., doktor tekhn.nauk, prof.; GRANKOVSKIY, V.I., inzh.;
PLOSHCHENKO, Ye.A., inzh.

Thermal balance of 500 and 250 t. open-hearth gas furnaces.
Izv. vys. ucheb. zav.; chern. met. no.3:52-66 Mr '58. (MIRA 11:5)

1.Kiyevskiy politekhnicheskiy institut i Voroshilovskiy
metallurgicheskiy zavod.
(Open-hearth furnaces)
(Heat)

ANTONOV, G.I.; HERMAN, Sh.M.; PLOSHCHENKO, Ye.A.; DRYAPIK, Ye.P.; SHAKHOV, N.A.; NAYDEK, V.L.

Gas flow distribution in regenerators of 500-ton open-hearth furnaces. Stal' 22 no.4:306-309 Ap '62. (MIRA 15:5)
(Open-hearth furnaces) (Gas flow)

CHERNOGOLOV, A.I., kand.tekhn.nauk; VOYNOV, Yu.A., inzh.; PLOSHCHENKO, Ye.A., inzh.

Investigating diagrams of the reversal of open hearth furnace valves (with summary in English). Stal' 19 no.1:31-42 Ja '59. (MIRA 12:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki i zavod im. Voroshilova.
(Open-hearth furnaces)

SOV/137-58-8-16498

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 38(USSR)

AUTHORS: Teplitskiy, B.M., Ploshchenko, Ye.A.

TITLE: First 500-ton Open-hearth Furnace Placed in Operation at the im. Voroshilov Metallurgical Plant (Pervyy opyt ekspluatatsii 500-t martenovskoy pechi na metallurgicheskom zavode im. Voroshilova)

PERIODICAL: Byul. nauchno-tekhn. inform. Ukr. n.-i. in-t metallov, 1957, Nr 2, pp 25-30

ABSTRACT: The furnace (F) employs approximately 60% of cast iron in the charge of the scrap-ore process. A mixture of coke and blast-furnace gases serves as fuel, the flame being enriched with fuel oil. The Venturi-type nozzles are equipped with ducts at their ends permitting the passage of compressed air. The thermal regime is controlled automatically. The chromium-magnesite crown is of the buckstay-and-tie-rod type. It was established, during actual operation, that the gas opening should be raised by 150-200 mm, the slope of the rear wall be changed from 53°50' to 48°, and the diameter of the air/waste-gas valve be increased to 1800 mm. Compared with the 250-ton

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First 500-ton Open-hearth Furnace Placed in Operation (cont.)

furnace, the 500-t furnace has a somewhat smaller oxidizing capacity, but the conduct of the smelting procedures remains essentially identical. See also RZhMet, 1958, Nr 7, abstract 17383.

V.G.

1. Open hearth furnaces--Operation

SOV/137-58-10-20563

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 31 (USSR)

AUTHORS: Kocho, V.S., Granovskiy, V.I., Ploshchenko, Ye.A.

TITLE: An Investigation of the Thermal Functioning of Open-hearth Furnaces in Which Compressed Air is Delivered in the Checker Port (Issledovaniye teplovoy raboty martenovskikh pechey, rabotayushchikh s podachey szhatogo vozdukha v golovki)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Chernaya metallurgiya, 1958, Nr 1, pp 112-116

ABSTRACT: 4000-4500 m^3 compressed air from blast-furnace turbo-blowers is delivered per hour into the ends of the gas tank of the 220-t ovens at the Voroshilovsk Metallurgical Plant. The employment of compressed air improves the fuel combustion process, thus making it possible to reduce the excess-air coefficient from 1.5-1.8 to 1.05-1.15. Heating of the gas checkers is increased by 100-150°C. The tank-lining life is increased from 80 to 200 heats, and dust loss is reduced. The slag pockets require cleaning every 280-350 instead of 130-160 heats. The rate of C burn-off during the finishing period is 8 to 15% greater. When compressed air is employed, the melting

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SOV/137-58-10-20563

An Investigation of the Thermal Functioning of Open-hearth Furnaces (cont.)

period is 20 minutes shorter, and the working period 13 minutes. The unit consumption of fuel, in conventional units, is 13% less. Delivery of compressed air makes it possible to maintain higher heat inputs and obtain higher output rates from the furnaces. The heat intake of the bath rises by 40-60% with an air consumption of 2000 m^3/hr, and even more at 4500 m^3/hr. In the second half of the furnace, heat absorption declines when air is supplied, sometimes going to values close to zero. For a 250-500-t furnace, the optimum compressed-air delivery is 3000-5000 m^3/hr; the precise amount requires determination by experiment in each individual instance.

G.G.

1. Open hearth furnaces--Operation 2. Open hearth furnaces--Thermodynamic properties
3. Oxygen--Applications

Card 2/2

SOV/133-59-1-7/23

AUTHORS: Chernogolov, A.I., Candidate of Technical Sciences, Voynov, Yu.A. and Ploshchenko, Ye.A., Engineers

TITLE: An Investigation of Schedules for Reversing Open-hearth Furnace Valves (Issledovaniye grafikov perekidki klapanov martenovskoy pechi)

PERIODICAL: Stal', 1959, Nr 1, pp 31 - 42 (USSR)

ABSTRACT: The influence of reverses on the radiation intensity of heat in the working space of an open-hearth furnace was investigated together with experimental determinations of the actual time necessary to fill gas and air ducts with gas and air on one side of the furnace and their displacement into a common flue on the other side of the furnace as well as the change of gas pressure in the working volume. The investigation was carried out on a 500-ton furnace during which schedules of the Giprostal' and Stal'proyekt were tested. The furnace was fired with a coke-oven blast furnace gas mixture carburised with oil. The distribution of the reversing installation and mechanical graphs of reversing are shown in Figures 1 and 2. Heat radiation to the bath and towards the front walls were measured simultaneously using VNIIMT and EPP-09 instruments,

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respectively. The comparative measurements of the intensity of semi-spherical heat radiation onto the bath and directed (towards the front wall) radiation during reverses according to Giprostal' and Stal'proyekt schedules at various consumptions of coke-oven gas (V_K), blast-furnace gas (V_D), blown air (V_{VV}) and oil (G_M) as well as various pressures in the furnace (Δ_p) are shown in Figures 3-6 and Table 1. It was found that during melting and refining periods, the radiation of heat onto the bath during reversing, according to both schedules, decreases not more than by 1% of the whole heat radiated during the half cycle of the heat exchange. During the period of heating up, this decrease amounts to 1.5%. In respect of heat radiated only from the moment of the beginning of the decrease in radiation to the moment of its re-establishment the decrease in radiation amounts to 4-5% (Figure 7). The time interval during which the decrease in radiation takes place due to reversing amounts to 45 sec. It is considerably higher than the calculated break in the flame (15 sec).

An Investigation of Schedules for Reversing Open-hearth Furnace Valves

The smoothing influence of the lining of the working space of the furnace is less reflected on the directional heat radiation towards the front wall than on the intensity of semi-spherical radiation of heat to metal. Therefore, measurements of the directional radiation with the radiation pyrometer gave more accurate indications of the influence of reversing on the flame, the disappearance of the flame from one side and its reappearance on the other. The decrease in the directional radiation lasts about 35 sec and amounts to 1.5-3.5% of its initial value. Thus, it was established that reversing according to both schedules is not accompanied by a considerable decrease in the amount of heat radiated during the heat-exchange cycle and that both schedules are satisfactory. The duration of the passage of gas and air into the working space from one side of the furnace and their displacement by the combustion products into the common flue on the other side of the furnace was investigated during reversing according to the Giprostal' schedule. The entrance of air into the furnace was determined on the basis of the oxygen content in the fume-air mixture in the air vertical flue and the

An Investigation of Schedules for Reversing Open-hearth Furnace Valves

entrance of the mixed gas on the basis of CO_2 content in the gas vertical flue. The moments of displacement of gas and air into the common flue were determined on the basis of changes in the chemical composition of gases in the waste-gas valves of the furnace. The experimental results are shown in Figures 8-12. The entrance of air and gas into the furnace takes place without any sharp transfer from combustion products to air and mixed gas. The actual time of the complete displacement of one type of atmosphere by another one is a few times longer than that calculated on the assumption that the combustion products are displaced frontally (without mixing) by air and gas. Changes in the gas pressure in the furnace during reverses are shown in Table 2 and Figures 13-14. It was found that on reversing according to Giprostal' schedule, the gas pressure in the furnace is lower. There are 14 figures and 2 tables.

ASSOCIATION: VNIIMT, and zavod im. Voroshilova (Imeni Voroshilov Works)

BERMAN, Sh.M.; YAN'SHINA, A.P.; ANTONOV, G.I.; PLOSHCHENKO, Ye.A.; SHAKHOV, N.A.; MOVLYAVA, A.P.

Testing non-fired forsterite brick in the checkered brickwork of air regenerators of 500-ton open-hearth furnaces. Ogneupory 26 no.6:272-273 '61. (MIRA 14:7)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Berman, Yan'shina, Antonov). 2. Alchevskiy metallurgicheskiy zavod (for Ploshchenko, Shakhov, Movlyava).
(Forsterite) (Open-hearth furnaces)

KOCHO, V.S.; GRANKOVSKIY, V.I.; DRYAPIK, Ye.P.; SABIYEV, M.P.; PLOSHCHENKO, Ye.A.

Accelerations of open-hearth furnace operations without oxygen. Izv. vys. ucheb. zav.; chern. met. 6 no.4:150-155 '63. (MIRA 16:5)

1. Kiyevskiy politekhnicheskiy institut.
(Open-hearth furnaces)
(Compressed air)

GOROKHOV, L.S., inzh.; ABROSIMOV, Ye.V., kand.tekhn.nauk; SHCHERBAKOV, V.A., inzh.; STUL'PIN, Ye.A., inzh.; SABIYEV, M.P., inzh.; PLOSHCHENKO, Ye.A., inzh.

Interrelation of the conditions of carbon oxidation and the introduction of additives with the thermal parameters of the ore boil during smelting in large furnaces. Stal' 23 no.5: 404-408 My '63. (MIRA 16:5)
(Open-hearth process)

ZAKHAROVA, Ye.V.; LYADOV, K.P.; LYAKHOV, P.A.; PLOSHCHENKO, Ye.A.

Performance of a basin-type sinter cooler. Obog. rud. 8 no.3:25-29 '63. (MIRA 17:1)

Sov/133/58-9-4/29

AUTHORS: Kocho, V. S. (Dr.Tech.Sciences, Professor), Grankovskiy, V. I., (Engineer), and Ploshchenko, Ye. A. (Engineer)

TITLE: An Investigation of the Thermal Performance of a 500 Ton Open Hearth Furnace (Issledovaniye teplovoy raboty 500-t martenovskoy pechi)

PERIODICAL: Stal', 1958, Nr 9, pp 782-788 (USSR)

ABSTRACT: A study of the thermal performance of a 500 ton open hearth furnace at the Voroshilov Works was carried out and a comparison of some of the data obtained with corresponding data for 250 ton furnaces is given. The object of the investigation was to obtain information on the possibilities of improving the furnace performance as well as to obtain some design data for 700-800 ton furnaces. The 500 and 250 ton furnaces were lined with basic refractories (mean service life of chrome-magnesite roofs from 400 to 450 heats). The furnaces were fired with a mixture of coke oven and blast furnace gas carburized with fuel oil. Compressed air was supplied (from blast furnace blowers) to the flame. Material and thermal balances of the 500 ton furnace are

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An Investigation of the Thermal Performance of a 500 Ton Open Hear[illegible] Furnace

given in Tables 1 and 2 respectively. Heat absorption and the coefficient of utilization of heat were investigated using the method of "instantaneous reverse heat balance" which is based on measurements carried out during short time intervals. The dependence of the intensity of straight heat currents on the amount of compressed air supplied to the flame - Fig.1; the dependence of the coefficient of utilization of heat (A) and heat absorption (B) on the pressure under the roof during the individual smelting periods - Fig.2; the dependence of straight heat currents during the refining period on the coefficient of excess of air - Fig.3; the dependence of the coefficient of utilization of heat and coefficient of heat absorption on the thermal load, with a supply of compressed air of 4000 m^3/hr, during the individual smelting periods - Fig.4; the dependence of the duration of melting period on the specific heat consumption and on the concentration of carbon after melt out at various thermal loads - Fig.5; the dependence of the duration of the melting period and specific heat consumption on the concentration of carbon after melt out at various thermal loads - Fig.6. On the basis of the results obtained optimum thermal operating

An Investigation of the Thermal Performance of a 500 Ton Open Hearth Furnace

conditions for the 500 ton furnace were established (Table 3) which decreased the consumption of conventional fuel from 125 to 108 kg/ton at a duration of heats not exceeding 11.5 hours. In view of relatively lower heat losses per ton of smelted steel, the consumption of fuel in 500 ton furnaces is somewhat lower (15-20 kg of conventional fuel) than in 250 ton furnaces. The use of compressed air has a positive effect on the thermal work of the 500 ton furnace, as it permits decreasing the coefficient of excess air to 0.9-1.05. At thermal loads of 35-40 mil. k cal/hr an average 5000 m^3/hr of compressed air is required (varying the supply according to thermal loads during the individual smelting periods from 4000 to 5500 m^3/hr). On the basis of the results obtained it can be expected that the character of the distribution of thermal currents and heat exchange conditions in 700-800 ton furnaces under design will be approximately the same as

An Investigation of the Thermal Performance of a 500 Ton Open Hearth Furnace

in 500 ton furnaces. A decrease in specific heat losses in 700-800 ton furnaces should somewhat improve the coefficients of the utilization and absorption of heat in comparison with 500 ton furnaces. There are 3 tables, 6 figures and 5 Soviet references.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut i zavod im. Voroshilova (Kiyev Polytechnical Institute and the Works im. Voroshilov)

Card 4/4

SOV/133-59-6-14/41

AUTHORS: Sabiyev, M.P., Ploshchenko, Ye.A. and Mikhno, B.P.

TITLE: Mechanisation of the Removal of Slag from Slag Pockets of Open Hearth Furnaces (Mekhanizatsiya udaleniya shlaka iz shlakovikov martenovskikh pechey)

PERIODICAL: Stal', 1959, Nr 6, pp 521-523 (USSR)

ABSTRACT: On the proposal of L.D.Yupko and B.P.Mikhno, a new type of isolated removable slag pockets without walls with an independent support for the roof was developed and introduced on all gas fired furnaces of the Alchevsk Works. The design and mode of operation of the slag pockets are shown in Fig 1-3. The design consists of an independent stationary roof and movable double walled box of a rectangular cross section, both halves of which are made from plate 20 mm thick with reinforcing ribs. The two halves of the box are bolted together. Rollers are connected directly to the bottom of the box. The box is placed along the axis of the slag pocket on rails. The internal walls of the box are lined as follows: bottom loose layer - 30 mm, layer of foamed chamotte 115 mm, silica lining of the

Card 1/2

Mechanisation of the Removal of Slag from Slag Pockets of Open Hearth Furnaces

bottom - 195 mm, the same of the walls at the bottom - 345 mm, the same of the walls at the top - 215 mm. Roofs of the removable slag pockets are supported by water cooled plates mounted on beams and [I] shaped columns. Under normal operating conditions the wear of roofs of slag pockets is uniform and amounts to 25 - 30 mm per campaign at 400 - 450 heats. The durability of the roofs increased from 600 - 1000 heats to 1200 - 1500 heats. The duration of repairs on transfer to removable slag pockets decreased from 7.7% of the total calendar time to 5.5% which is equivalent to an increase in the output of 5000 tons per year per furnace. There are 3 figures.

ASSOCIATION: Alchevskiy zavod im. Voroshilova
(Alchevsk Works imeni Voroshilov)

PLOSHCHENKO, Ye. A.

KOCHO, V.S., prof., doktor tekhn. nauk; GRANKOVSKIY, V.I., inzh.; MOLCHANOV, Yu.D., inzh.; PLOSHCHENKO, Ye.A., inzh.

Heating open-hearth furnaces of 500 ton capacity with hot coke gas. (MIRA 11:5)
Biul. TSNIICHM no.1:11-15 '58.
(Open hearth furnaces)

KOCHO, V.S., doktor tekhn.nauk, prof.; GRANKOVSKIY, V.I., inzh.; PLOSHCHENKO, Ye.A., inzh.

Investigating thermal processes in open hearth furnaces operating with compressed air fed into the bulkheads. Izv. vys. ucheb. zav.; chern.metal no.1:112-116 Ja '58. (MIRA 11:5)

1.Kiyevskiy politekhnicheskiy institut i Voroshilovskiy metallurgicheskiy zavod.
(Open-hearth furnaces)

ANTOSYAK, V.G.; BERMAN, Sh.M.; PLOSHCHENKO, Ye.A.

Stability of refractory linings on 500-ton open-hearth furnaces.
Ogneupory 25 no.1:24-30 '60. (MIRA 13:6)
(Open-hearth furnaces)
(Refractory materials)

Ploshchenko Ye. A.

130-58-2-6/21

AUTHORS: Kocho, V.S., Doctor of Technical Sciences, Professor, Grankovskiy, V.I., Molchanov, Yu.D. and Ploshchenko, Ye.A.

TITLE: Open-hearth Furnace Operation on High-calorific Value Low-pressure Gas (Rabota martenovskikh pechey na vysokokaloriynom goryachem gaze nizkogo davleniya)

PERIODICAL: Metallurg, 1958, Nr 2, pp 9 - 12 (USSR).

ABSTRACT: Blast-furnace gas is normally added to coke-oven gas for firing open-hearth furnaces to improve flame quality. The low calorific value of blast-furnace gas, however, lowers the theoretical flame temperature and an investigation has been carried out by the imeni Voroshilova (imeni Voroshilov) metallurgical works together with the Kiyevskiy politekhnicheskiy institut (Kiev Polytechnical Institute) of furnace firing without the addition. The authors mention this work in which pure coke-oven gas was used with the addition of turbine air into the side of the gas port and describe the adoption of practice with reduced (halved) quantities of blast-furnace gas which followed the completion of the first part of the work. On 250 and 500-ton furnaces, the blast-furnace gas consumptions were 3 000 and 4 500 m^3/hour, respectively, the coke-oven gas consumptions remaining unchanged and the specific fuel consumption being equivalent to the decrease in blast-furnace

Cardl/3

Open-hearth Furnace Operation on High-calorific Value Low-pressure Gas

gas consumption. By increasing the port cross-sections, an equally high temperature (about 1 350 °C) was obtained for gas and air checkers. The slag pockets filled less rapidly, a higher furnace temperature and increased heat flows were obtained with the new practice: measurements with VNIIT-designed probes on a 500-ton furnace are shown graphically. Three experimental heats were carried out on a 500-ton furnace without blast-furnace gas and the averages of the main operating results for this and ordinary operation are tabulated (Table 1): the authors discuss these briefly and point out that there seems to be an optimal gas pre-heat temperature. They consider the functioning of the gas checkers with pure coke-oven gas. A failure of the lining of the gas ports on a 500-ton furnace led to the combustion products losing enough heat to prevent over-heating of the gas checkers and the furnace was worked on coke-oven gas continuously for 1 1/2 months. The operating results show (Table 2) mean decreases of 0.7 hours and 21.8 kg/ton for tap-to-tap time and consumption of standard fuel, respectively. The authors recommend the coke-oven gas firing of furnaces without blast-furnace gas, the cross-sectional area of the gas ports being reduced to reduce the flow of combustion products

Open-hearth Furnace Operation on High-calorific Value Low-pressure Gas

by 20 - 30% and high-pressure air being supplied to the sides of the gas ports; blast-furnace gas should still be supplied during reversals.
There are 1 figure and 2 tables

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Card 3/3

1. Open hearth furnaces-Operation 2. Coal gas-Applications

PLOSHCHENKO, YE.A.

GARBUZ, G.A., inzh.; SABIYEV, M.P., inzh.; PLOSHCHENKO, Ye.A., inzh.

Operation of a 500-ton open-hearth furnace. Stal' 17 no.11:976-982 N '57. (MIRA 10:12)

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(Open-hearth furnaces)

PLOPEANU, D.

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Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 36 (USSR)

AUTHORS: Kocho, V. S., Granovskiy, V. I., Ploshchenko, Ye. A.

TITLE: Heat Balances of 500 and 250-t Gas-fired Open-hearth Furnaces (Teplovyye balansy 500 i 250-t gazovykh martenovskikh pechey)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Chernaya metallurgiya, 1958, Nr 3, pp 52-56

ABSTRACT: 500 and 250-t furnaces are heated by a mixture of coke and blast-furnace gas with an average thermal load of 36.8×10^{10} and 25.0×10^{10} kcal/hr. The hearth areas of the furnaces are, respectively, 96.76 and 74.0 m^2, steel (St) production being 8.65 and 6.75 t/m per day and heat time 12.4 and 10.33 hours. The necessary calculations and tables are provided. The input and a portion of the output side depend upon the batch. The fundamental heat losses of 500 and 250-t furnaces are approximately identical; they consist of carry-off of heat and combustion products (30% and 33%, respectively) and loss in the cooling elements (12.24% and 13.7%). The remaining losses (by radiation, through the brickwork, etc.) are of somewhat smaller magnitude but they are greater in the 250-t furnace in virtually all

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cases. In accordance with the heat balances, the average unit consumption of conventional fuel is 123.6 kg/t for a 500- and 137 kg/t for a 250-t furnace. The greater efficiency of 500-t than of 250-t furnaces is due to the reduced heat loss per t of St, the better utilization of heat in the melting chamber, and the higher rate of steel production (by 50-65%).

V. G.

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SOV/133-59-9-8/31

AUTHORS: Kocho, V.S., Doctor of Technical Sciences, Sabiyev, M.P., Grankovskiy, V.I., Ploshchenko, Ye.A. and Molchanov, Yu.D., engineers

TITLE: An Investigation of the Operation of a 250 Ton Open Hearth Furnace Fired with Coke Oven Gas

PERIODICAL: Stal', 1959, Nr 9, pp 796-802 (USSR)

ABSTRACT: Possibilities of firing open hearth furnaces with a low pressure hot gas of a high calorific value without carburization are discussed. Literature data are quoted indicating that autocarburization of gas can be obtained by preheating the gas to a temperature at which decomposition of methane, with the partial formation of higher hydrocarbons and carbon particles, takes place. Experience in firing a 250 ton open hearth furnace with preheated coke oven gas of the usual pressure instead of a mixture of coke oven and blast furnace gas is described. For this purpose the cross-sectional area of the outlets from dog houses was reduced from 0.45 to 0.22 m^2 and the gas port was lowered. Compressed air in an amount of 3000 to 3500 m^3/hr was introduced through the back faces of the dog houses. The above measures permitted

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increasing the velocity of the gas-air mixture from the dog house to 100 to 120 m/sec. The pressure in the gas vertical flue increased to the atmospheric pressure and at maximum thermal loads to 10 mm H_2O. The temperature of the upper checkers of gas regenerators was maintained at 1200 to 1250°C. The consumption of oil remained the same as on firing with mixed gas. During the melting period, the flame was covering the bath satisfactorily but during the refining period at low thermal loads the length of the flame was insufficient. In this case, an improvement can be obtained by decreasing the coefficient of excess air to 0.9 to 1.0. Changes in the operating indices of the furnace on transfer to firing with hot coke oven gas are given in tables 1 and 2. The preliminary results obtained indicated that, in respect of productivity and fuel consumption, the furnace operation was satisfactory. Further investigation of the problem of heating open hearth furnaces with a hot low pressure gas of a high calorific value and, in

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particular, the development of an optimum furnace design is recommended. There are 6 figures, 2 tables and 10 references, 8 of which are Soviet and 2 English.

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PLOSHCHENKO, YE. A.

133-11-4/19

AUTHORS: Garbuz, G.A., Sabiyev, M.P. and Ploshchenko, Ye.A., Engineers.

TITLE: From Experience in Operating a 500-ton Open-hearth Furnace (Opyt raboty 500-t martenovskoy pechi)

PERIODICAL: Stal', 1957, No.11, pp. 976 - 982 (USSR)

ABSTRACT: Main design features of a 500-ton open-hearth furnace and the operating results obtained during its first campaign are described. The furnace was put into operation in March, 1956. It was built in a melting shop designed for 250-ton furnaces. Main dimensions are given in the table and Fig.1. The roof is made from magnesite-chrome and regenerators from forsterite bricks. The first campaign lasted 381 heats with a mean output per heat of 489.5 tons and mean duration of 13.21 hours. The furnace was producing rimming steels (mainly Ct.3KП) with 58-65% hot pig and 35-42% scrap. A comparison of the dependence of the duration of heat, melting and refining periods and velocity of decarburisation during ore and pure boiling on the carbon content after melting for the 500-ton and a 250-ton furnace is given in Fig.2. Thermal conditions of the furnace operation are discussed in some detail and illustrated in Figs. 3-7. It is concluded that the results of the furnace operation were satisfactory, but somewhat lower than as designed, mainly due to organisational-technical defects (insufficient

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supply of coke-oven gas, stoppages in the supply of burden materials, ladles, etc), as well as due to large metal losses during teeming and the following design defects: too low position of gas outlet, insufficient diameter of the waste gas valve on air duct (150 mm instead of 1 800 mm required) and insufficient capacity of slag ladles.
There is 1 table and 7 figures.

ASSOCIATION: Giprostal' and Voroshilov Metallurgical Works (Voroshilovskiy metallurgicheskiy zavod)

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AUTHORS: Antosyak, V. G., Berman, Sh. M., Ploshchenko, Ye. A.

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TITLE: The Durability of the Refractory Walling of 500-t Martin Furnaces

PERIODICAL: Ogneupory, 1960, Nr 1, pp 24 - 30 (USSR)

ABSTRACT: In this paper, the authors describe the stability of 500-t Martin furnaces on account of concluded campaigns. The following furnace parts and their lining and durability, expressed in the number of melts, are given: the main- and head crown of the furnace (see Table); the front and the back furnace wall; the lining of the gas caissons (Fig 1); the lining of the lid of the charging window; the crowns of the slag containers and regenerators (Fig 2); the checkerworks of gas- and air generators (Figs 3, 4, 5, and 6); the checkerworks of regenerators of a Martin furnace with oil heating; the lining of smoke valves and channels. To sum up, the authors mention that the stability of the main crowns of 500-t Martin furnaces is insufficient. The stability has to be increased by the use of refractory highly compact magnesite

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