

BELEVTSSEV, T.N.; SAPITSKIY, K.F.; PONOMAREV, I.M.

Book entitled "Advancing and retreating system in mining" published by the Southern State Institute of Mine Planning. Reviewed by T.N. Belevtsev, K.F.Sapitskii, I.M.Ponomarev. Ugol' 31 no.3:46 Mr '56.
(MIRA 9:7)

1.Trest Stalimugol' (for Belevtsev). 2.Donetskiy industrial'nyy institut (for Sapitskiy, Ponomarev).
(Coal mines and mining)

TOKAREV, G.I., gornyy inzhener; ~~SAPITSKIY, K.V.~~ kandidat tekhnicheskikh nauk.

Discussion of the topic "Mine of the near future." Ugol' 31 no.6:
34-36 Je '56. (MLRA 9:8)

1. Trest Ordshonikidseugol' (for Tokarev);
2. Donetskyy industrial'nyy instytut (for Sapitskiy)
(Coal mines and mining)

SAPITSKIY, Konstantin Fedorovich, kandidat tekhnicheskikh nauk; ZVYAGIN,
P.Z., otvetstvennyy redaktor; SHUSHKOVSKAYA, Ye.L., redaktor
izdatel'stva; ZAZUL'SKAYA, V.F., tekhnicheskii redaktor

[Determining the most efficient length for longwalls used in the
Donets Basin mine combine] Opredelenie ratsional'noi dliny lavy
pri vyemke kombainom "Donbass." Moskva, Ugletekhizdat, 1957. 75 p.
(MIRA 10:7)

(Donets Basin--Coal mines and mining)

GUROV, D.P., student; SAPITSKIY, K. F., nauchnyy rukovoditel', kand. tekhn.nauk

Possible alternative for the chamber system in mining Berestovoe seam with use of the Gumennik cutter-loader. Sbor. nauch. rab. stud. SNO DII no.2:153-158 '57. (MIRA 11:12)

1.Gornyy fakul'tet Donetskogo industrial'nogo instituta im. N.S. Khrushcheva. 2.Predsedatel' Soveta studencheskogo nauchnogo obshchestva Donetskogo industrial'nogo instituta im. N.S. Khrushcheva (for Sapitskiy).

(Donets Basin--Coal mines and mining)
(Coal mining machinery)

SAPITSKIY, K.F.

ZHIZLOV, N.I., kand.tekhn.nauk, nauchnyy rabotnik; ZBORSHCHIK, M.P., inzh.;
nauchnyy rabotnik; ZEMLYANSKIY, L.V., inzh., nauchnyy rabotnik;
KOREPANOV, K.A., kand.tekhn.nauk, nauchnyy rabotnik; MALOV, V.P.,
kand.tekhn.nauk, nauchnyy rabotnik; MEDVEDEV, B.I., kand.tekhn.
nauk, nauchnyy rabotnik; NOVITSKIY, A.M., kand.tekhn.nauk,
nauchnyy rabotnik; PROKOP'YEV, V.P., nauchnyy rabotnik; SAPITSKIY,
K.F., kand.tekhn.nauk, nauchnyy rabotnik; YAKUSHEVSKIY, A.Yu.,
kand.tekhn.nauk, nauchnyy rabotnik; LIPKOVICH, S.M., dotsent, red.;
SHUSHKOVSKAYA, Ye.L., red.izd.; BERESLAVSKAYA, L.Sh., tekhn.red.;
ALADOVA, Ye.I., tekhn.red.

[Working gently sloping seams at great depths] Razrabotka pologo-
padaushchikh plastov na bol'shikh glubinakh. Pod obshchei red.
S.M.Lipkovicha. Moskva, Ugletekhizdat, 1958. 209 p. (MIRA 12:2)

1. Stalino. Donetskiy industrial'nyy institut. 2. Donetskiy
industrial'nyy institut (for all except Lipkovich, Shushkovskaya,
Bereslavskaya, Aladova)
(Coal mines and mining)

GOYKHMAN, Gerts Izraylevich, prof. [deceased]; LIPKOVICH, Samuil Moiseyevich, dotsent; ZHIZLOV, Nikolay Il'ich; SAPIISKIY, Konstantin Fedorovich; SEREDNYAKOV, P.Ya., otv.red.; SHUSHKOVSKAYA, Ye.L., red.isd-va; NADEINSKAYA, A.A., tekhn.red.; PROZOROVSKAYA, V.L., tekhn.red.

[Manual of problems on underground coal mining] Zadachnik po podzemnoi razrabotke ugol'nykh mestorozhdenii. Moskva, Ugletekhizdat, 1958. 327 p. (MIRA 12:2)
(Coal mines and mining)

SAPITSKIY, K.F., kand. tekhn. nauk; MALOV, V.P., kand. tekhn. nauk

Determining an efficient face length for mining with the
DU-1 narrow range cutter-loader. Ugol' Ukr. 2 no.2:7-8 F '58.
(MIRA 13:3)

(Coal mines and mining) (Coal mining machinery)

LIPKOVICH, S.M., dots., kand.tekhn.nauk; SAPITSKIY, K.F., kand.tekhn.nauk

Changing standards for the mine atmosphere has an important practical
significance. Ugol' Ukr. 3 no.2:44-45 F '59. (MIRA 12:3)
(Mine ventilation)

MALOV, V.P.; SAPITSKIY, K.F. [Sapitskyi, K.F.]

Development of systems for working anthracite formations of
the Chistyakovo area of the Donets Basin. Nar.z ist.tekh. no.5:
96-111 '59. (MIRA 13:5)
(Donets Basin--Coal mines and mining)

POLYAKOV, A.I., inzh.; SAPITSKIY, K.F., kand.tekhn.nauk

Effect of blocks left in the mined-out areas on gas emission
in the workings of overlaying seams. Ugol'.prom. no.4:80-83
Jl-Ag '62. (MIRA 15:8)

1. Chistyakovskiy trest predpriyatiy ugol'noy promyshlennosti
Donbassa Ministerstva ugol'noy promyshlennosti SSSR (for Polyakov).
2. Donetskii politekhnicheskii institut (for Sapitskiy).
(Mine gases)

MOROZ, V.D., gornyy inzh.; SAPITSKIY, K.F., dotsent, kand.tekhn.nauk

Experience in using the chamber method in mining Donets Basin
mines. Ugol' 37 no.5:24-27 My '62. (MIRA 15:6)

1. Donetskij politekhnicheskij institut.
(Donets Basin--Coal mines and mining)

SAPITSKIY, K.F., dotsent, kand. tekhn. nauk

Calculation of collapsible pillars during chamber and chamber
and pillar systems of working coal seams. Ugol' 39 no.3:
13-16 My'64. (MIRA 17:5)

1. Donetskii politekhnicheskii institut.

SREBNYY, M.A.; SAPITSKIY, K.F.; POLYAKOV, A.I.

Work practices of the designer and constructor groups in
Chistyakovantratsit Trust mines. Ugol' 36 no.10:38-40 0 '61.
(MIRA 14:12)

1. Trest Chistyakovantratsit kombinata Stalinugol'.
(Donets Basin--Coal mines and mining)

SAPITSKIY, K.F., kand. tekhn. nauk; PONOMAREV, I.M., gornyy inzh.

Fields of application for room and pillar mining systems in the
Donets Basin. Ugol' Ukr. 4 no.12:10-12 D '60. (MIRA 13:12)

1. Donetskii politekhnicheskii institut.
(Donets Basin--Coal mines and mining)

FOMKIN, F.L., dots.; ~~SAPITSKIY, N.I.~~; KHALOV, O.A., kand. ekon. nauk; SHIKHANOVICH, L.I.; MEREDOV, A.M., starshiy nauchnyy sotr.; ATAYEV, Ch.A., kand. ekon. nauk; KONDAKOV, V.F., kand. ekon. nauk; LAVRINENKO, V.T., kand. ekon. nauk; KOZLOV, N.Ye., refer.; SHUMEYKO, T.I., red. izd-va; ZUBOVA, N.I., tekhn. red.

[Studies on the economics of the agriculture of the Turkmen S.S.R.] Ocherki po ekonomike sel'skogo khoziaistva Turkmenskoi SSR. Ashkhabad, Turkmengosizdat, 1962. 446 p. (MIRA 16:5)

1. Zaveduyushchiy otdelom ekonomiki sel'skogo khozyaystva Turkmenskogo nauchno-issledovatel'skogo instituta zemledeliya (for Shikhanovich). 2. Turkmenskiy nauchno-issledovatel'skiy institut zemledeliya (for Meredov).
(Turkmenistan--Agriculture--Economic aspects)

1. NEPENIN, YU. N. SAPITSYNA, L. N.
2. USSR (600)
3. Wood Pulp - Testing
4. Influence of highly caustic cooking on chemical properties of sulfate pulp.
Bum. prom. 27 No. 6 - 1952.

9. Monthly List of Russian Acquisitions, Library of Congress, February, 1953. Unclassified.

SAPKAREV, J.

Oligochaeta in the hanging talcous waters of Ohrid Lake. Bul so Jug
6 no.1:9-10 Mr '61. (EEAI 10:9/10)

1. Naturwissenschaftlich-Math. Fakultät, Skopje.

(Oligochaeta)

SAPKAREV, J.

Quantitative composition of oligochaete fauna of the Lake Prespa.
Bul sc Youg 6 no.4:101-102 D '61.

1. Zooloski institut Prirodno-matematickog fakulteta Univerziteta,
Skopje.

SAPKAREV, J.

Oligochasta of Lake Ohrid. Bul sc Youg 7 no.4/5:114-115
Ag-0 '62.

1. Prirodno-matematski fakultet, Skopje.

SAPKAREV, J.

Hirudinea fauna in Macedonia. Pt. 1. Bul sc Youg 8 no.
1/2: 7-8 F-Ap '63.

1. Zooloski institut Prirodno-matematskog fakulteta,
Univerzitet, Skopje, Hidrobioloski zavod, Ohrid.

SAPKO, A. I.

133-10-9/26

AUTHOR: Dmitriyenko, M. G. and Sapko, A. I.

TITLE: Design Deficiencies of Arc Furnaces of the DCB Type.
(Konstruktivnye Nedostatki Dugovykh Pechey Serii DCB)

PERIODICAL: Stal', 1957, No.10, pp. 902-904 (USSR).

ABSTRACT: The design of arc furnaces of the DCB series (capacity up to 30 tons), produced by "Elektropech" is outlined and some of their design features are criticised. It is suggested that the segments and the roller tubes of the furnace body rolling out device should be replaced by a roll out trolley and to increase the design reliability of all hydraulic drives. For large furnaces, the use of swinging roofs is proposed.

ASSOCIATION: Dneprospetsstal' Works and Dnepropetrovsk Metallurgical Institute. (Zavod Dneprospetsstal' i Dnepropetrovskiy Metallurgicheskiy Institut).

AVAILABLE: Library of Congress

Card 1/1

SAPKO, A.I.

DUBROV, N.F., kand. tekhn. nauk; MIKHAYLOV, O.A., kand. tekhn. nauk;
 FEL'DMAN, I.A.; DANILOV, A.M.; SOROKIN, P.Ya., kand. tekhn. nauk,
 starshiy nauchnyy sotrudnik; BUTAKOV, D.K., kand. tekhn. nauk,
 dots.; SOYFER, V.M.; LATASH, Yu.V., mladshiy nauchnyy sotrudnik;
 ZAMOTAYEV, S.P.; BEYTEL'MAN, A. I.; SAPKO, A.I.; PEFUKHOV, G.K.,
 kand. tekhn. nauk; YEDNERAL, F.P., kand. tekhn. nauk, dots.;
 LAPOTYSHKIN, N.M., kand. tekhn. nauk, starshiy nauchnyy sotrudnik;
 ROZIN, R.M.; NOVIK, L.M., kand. tekhn. nauk, starshiy nauchnyy
 sotrudnik; LAVRENT'YEV, B.A.; SHILYAYEV, B.A.; SHUPKIN, N.I.;
 GNUCHEV, S.A., kand. tekhn. nauk, starshiy nauchnyy sotrudnik;
 LYUDMAN, K.F., doktor-inzh., prof.; GBUZIN, V.G., kand. tekhn.
 nauk; BARIN, S.Ya.; POLYAKOV, A.Yu., kand. tekhn. nauk; FEDCHENKO,
 A.I.; AGNYEV, P.Ya., prof., doktor; SAMARIN, A.M.; BOKSHITSKIY,
 Ya.M., kand. tekhn. nauk; GARNYK, G.A., kand. tekhn. nauk;
 MARKARYANTS, A.A., kand. tekhn. nauk; KRAMAROV, A.D., prof.,
 doktor tekhn. nauk; TEDER, L.I.; DANILOV, P.M.

Discussions. Biul. TSNIIGHM no.18/19:69-105 '57. (MIRA 11:4)

1. Direktor Ural'skogo instituta chernykh metallov (for Dubrov).
2. Direktor Tsentral'nogo instituta informatsii chernoy metallur-
 gii (for Mikhaylov).
3. Nachal'nik nauchno-issledovatel'skogo
 otdela osobogo konstruktorskogo byuro tresta "Elektropech'" (for
 Fel'dman).
4. Nachal'nik martenovskoy laboratorii Zlatoustovskogo
 metallurgicheskogo zavoda (for Danilov, A.M.).
5. Laboratoriya
 protsessov stalevareniya Instituta metallurgii Ural'skogo filiala
 AN SSSR (for Sorokin).

(Continued on next card)

DUBROV, N.F.—(continued) Card 2.

6. Ural'skiy politekhnicheskiy institut (for Butakov). 7. Starshiy inzhener Bryanskogo mashinostroitel'nogo zavoda (for Soyfer).
8. Institut elektrosvarki im. Patona AN URSS (for Iatash). 9. Nachal'nik Tsentral'noy zavodskoy laboratorii "Uralsmazavoda" (for Zamotayev). 10. Dnepropetrovskiy metallurgicheskiy institut (for Sapko). 11. Moskovskiy institut stali (for Yedneral). 12. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Gnuchev, Lepotyshkin). 13. Starshiy master Leningradskogo zavoda im. Kirova (for Rozin). 14. Institut metallurgii im. Baykova AN SSSR (for Novik, Polyakov, Garnyk). 15. Nachal'nik tekhnicheskogo otdela zavoda "Bol'shevik" (for Lavrent'yev). 16. Starshiy inzhener tekhnicheskogo otdela Glavspetsstali Ministerstva chernoy metallurgii (for Shilyayev). 17. Zamestitel' nachal'nika tekhnicheskogo otdela zavoda "Elektrostal'" (for Shutkin). 18. Freybergskaya gornaya akademiya, Germanskaya Demokraticheskaya Respublika (for Lyudeman). 19. Zaveduyushchiy laboratoriyey stal'nogo lit'va Tsentral'nogo nauchno-issledovatel'skogo instituta tekhnologii i mashinostroyeniya (for Gruzin). 20. Starshiy master elektrostaleplavil'nykh pechey Uralvagonzavoda (for Barin). 21. Zamestitel' nachal'nika elektrostaleplavil'nogo tsekha zavoda "Sibelektrostal'" (for Fedchenko). 22. Zaveduyushchiy kafedroy metallurgii stali i elektrometallurgii chernykh metallov Leningradskogo politekhnicheskogo instituta (for Ageyev). 23. Zamestitel' direktora Instituta metallurgii im. Baykova AN SSSR, chlen-korrespondent AN SSSR (for Samarin).

(Continued on next card)

DUBROV, N.F.---(continued) Card 3.

24. Nachal'nik laboratorii Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii (for Bokshitskiy). 25. Zaveduyushchiy kafedroy elektrometallurgii Sibirskogo metallurgicheskogo instituta (for Kramarov). 26. Nachal'nik elektrostaleplavil'nogo tsekh Kuznetskogo metallurgicheskogo kombinata (for Tedor). 27. Nachal'nik elektrometallurgicheskoy laboratorii Kuznetskogo metallurgicheskogo kombinata (for Danilov, P.M.).

(Steel--Metallurgy)

AUTHORS: Sapko, A.I. and Dobrov, V.P.

130-58-5-8/16

TITLE: Improving the Construction of Arc Electric Furnace Cooling Equipment (Uluchsheniye konstruktsiy okhladitel'noy armatury dngovykh elektropetchey)

PERIODICAL: Metallurg, 1958, Nr 5, pp 17 - 20 (USSR).

ABSTRACT: The authors state that more than half the idle time of electric-arc steel-melting furnaces is due to failure in cooling equipment and go on to discuss progress in the last 10-12 years in the design of such items. Various roof-ring designs have been tested at the "Dneprospetsstal'" Works, both uncooled cast and welded Siemens types being found unsuitable for large furnaces. The Works' own design of water-cooled ring (made of I-beams) (Figure 1, A) proved satisfactory for furnaces below 30 tons capacity but for larger ones a more rigid design was produced by the works (Figure 1, B). The authors recommend that designs of the latter type with enlarged ring diameter (Figure 3) should, because of their minimisation of thermal shocks, be widely considered. Good results over a long period have been obtained with a welded combined slag-door arch (Figure 6), which the authors recommend for adoption on large furnaces. For electrode rings, the authors favour a

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130-58-5-8/16

Improving the Construction of Arc Electric Furnace Cooling Equipment

welded ring of a shortened type (Figure 7, 6) but they considered that this, too, could be improved. There are 7 figures.

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SOV/130-58-6-9/20

AUTHORS: Sapko, A.I., Dobrov, V.P. and Kucherov, V.D.

TITLE: Mechanization of the Preparation of Powdered Materials in the Melting of Electric Steel (Mekhanizatsiya prigotovleniya poroshkovykh materialov pri vyplavke elektrostali)

PERIODICAL: Metallurg, 1958, Nr 6, pp 20 - 22 (USSR)

ABSTRACT: The authors point out that although large quantities of finely ground materials (such as ferrosilicon, coke, hot-top compound) are required for producing quality and high-quality steels, there is generally insufficient mechanisation of the preparation of these powders. They list the defects of most preparation methods and describe several improvements developed and introduced at the "Dneprospetsstal" Works. One is a special drum for crushing ferrosilicon (Figure 1) which can deal with 0.5 t/h. The drum consists of two end plates mounted on a driven shaft and connected peripherally to each other with square, manganese-steel bars, the whole being hermetically enclosed in a casing. The drum discharges through a screen (Figure 3) into a box (Figure 2); oversize is returned in another box. The authors state that similar equipment with balls can be used for coke and charcoal. For preparing hot-top compound, a special mixer has been provided (Figure 4) into

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Mechanization of the Preparation of Powdered Materials in the Melting
of Electric Steel

SOV/130-58-6-9/20

which screened and weighed components are charged; mixing takes 15 - 20 min. after which the powder is discharged into a box which is transported by narrow-gauge track to a special bunker in the casting bay. On the basis of experience at "Dneprospetsstal", the authors conclude that crusher-roll mills are particularly undesirable. They suggest that for automation to be introduced, all equipment for preparing the powders should be concentrated and that automatic weighing of hot-top mixture components and special feeders for supplying material from the bunkers to the crushing equipment should be developed. There are 4 figures.

ASSOCIATION: Zavod "Dneprospetsstal" ("Dneprospetsstal" Works)
and Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

Card 2/2

1. Metallurgy - USSR
2. Powder alloys - Preparation
3. Steel - Manufacture

SAPKO, A.I.

Investigating gaps in mechanisms for moving the electrodes of
arc steel furnaces. Biul. TSHIICHM no. 8:40-41 '58. (MIRA 11:7)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Electric furnaces)

SOV/130-58-9-9/23

AUTHOR: Sapko, ~~A.I.~~ and Sapko, Z.I., Engineers

TITLE: Contribution on the Possibilities of Overloading Arc Steel-melting Furnaces (O vozmozhnostyakh peregruzki dugovykh staleplavil'nykh pechey)

PERIODICAL: Metallurg, 1958, Nr 9, pp 20 - 21 (USSR)

ABSTRACT: An analysis is reported of the operation of 20-40 ton arc furnaces at the "Dneprospetsstal" Works with special reference to the ratio of the diameter of the molten metal surface to its depth. The main conclusions drawn are that it is not rational to increase productivity by overloading (increasing the charge weight over the rated value) by over 30% for a value of the ratio of 6.6; construction of furnaces with ratios over 5.35 leads to incorrect crane-capacity and incomplete furnace utilisation; the correct way of increasing productivity is by improving the power supply (raising the transformer secondary voltage, improving

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SOV/130-58-9-9/23

Contribution on the Possibilities of Overloading Arc Steel-melting
Furnaces

automatic control, etc.), intensification of melting by
lancing with oxygen, better design of mechanical and
electrical equipment.

1. Electric furnaces--Operation
2. Electric furnaces--Performance
3. Steel--Production

Card 2/2

AUTHOR: Sapko, A.I. (Engineer) SOV/110-58-10-14/24

TITLE: Problems of improving the design of operating mechanisms for automatic power-control systems on steel-melting arc-furnaces. (Voprosy uluchsheniya konstruktsii ispolnitel'nykh mekhanizmov sistemy avtomaticheskogo regulirovaniya moshchnosti dugovykh staleplavil'nykh pechey)

PERIODICAL: Vestnik Elektromyshlennosti, 1958, No.10. pp. 54-57 (USSR)

ABSTRACT: The article opens with a general discussion of sensitivity and operating speed of control systems in relation to electric furnaces. In large furnaces, although the electrodes and their holders are usually massive, the kinetic energy of the motor rotor is usually much greater than that of the electrode and electrode drive mechanism. Therefore, it is not necessarily possible to increase the sensitivity of the system by increasing the power of the motor. Very often improvements in mechanical design of the drive will achieve more. Experimental studies were made of the rope-driven electrode drive on a 40-ton furnace, to investigate the influence of backlash and clearances in the mechanism on the sensitivity and speed of control of arc furnaces. The experimental installation is illustrated schematically in Fig.1. The backlash and electrode displacement were determined by selsyns working under transformer conditions. Oscillograms taken during the operation of the system are given in

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Problems of improving the design of operating mechanisms for automatic power-control systems on steel-melting arc-furnaces.

Fig.2. The bad effects of backlash in causing instability, over-compensation and general lack of sensitivity are revealed in the discussion of the results. The mechanical causes of insensitivity are much more important than the electrical in this case. The mechanism is much improved if the flexible rope drive is replaced by a rigid linkage. Friction can be reduced by replacing one worm drive by two normal gear drives. A more fundamental solution is to use hydraulic drive for the electrode mechanism. Such a drive is sketched in Fig.3. and its operation explained. This regulator has very few moving parts, and no elastic linkages or springs, the maximum speed of electrode displacement being limited only by the rigidity of the electrode holder bracket. It would appear from published data that the electrode speed could be 3 - 6 m/minute. A diagram of the power consumption of a five-ton arc furnace fitted with a hydraulic regulator is given in Fig.4. and it will be seen that the performance is very good. There are 4 figures, 4 literature references (3 Soviet and 1 German).

SUBMITTED December 26, 1957.

1. Control systems--Design
2. Control systems--Performance
3. Electric furnaces--Control systems

Card 2/2

SOV/133-58-10-15/31
AUTHORS: Krivitskiy, M.Ye., Dubrovin, G.A., Sysoyev, A.V. and Sapko, A.I.
TITLE: Modernisation of the Slabbing Mill at the Zaporozhstal' Works (Rekonstruktsiya slabinga zavoda "Zaporozhstal'")
PERIODICAL: Stal', 1958, Nr 10, pp 910-916 + 1 plate (USSR)
ABSTRACT: The second stage of modernisation of the above slabbing mill is described and illustrated. Main points: replacement of the top roll positioning and balancing arrangements and the drive of vertical rolls by a more rational mechanism operated by a 50 atm, hydraulic system. As a result of this modernisation the output of the mill increased approximately by 25%. There are 8 figures.
ASSOCIATIONS: Zavod "Zaporozhstal'" ("Zaporozhstal'" Works) and Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

Card 1/1

SOV/133-58-6-16/33

AUTHORS: Dmitriyenko, M.G., Sapko, A.I., Engineers

TITLE: Mechanisation of Labour-consuming Processes in the
Electric-smelting of Steel (Mekhanizatsiya trudoyemkikh
protssessov pri vyplavke elektrostali)

PERIODICAL: Stal', 1958, Nr 6, pp 525 - 529 (USSR).

ABSTRACT: Mechanization of the charging of slag-making materials,
fettling of electric furnaces and supply of oxygen into the
metal bath on the Dneprospetsstal' Works is described and
illustrated. It is pointed out that further work on improve-
ment of charging and fettling machines for electric furnaces and
tuyeres for blowing oxygen into the metal bath is necessary.
There are 4 figures.

ASSOCIATIONS: Zavod "Dneprospetsstal'" (Dneprospetsstal' Works)
and Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

Card 1/1

1. Electric furnaces--Equipment
2. Electric furnaces--Operation
3. Steel--Manufacture

18(5)

SOV/148-59-1-17/19

AUTHOR: Sapko, A.I., Engineer

TITLE: Investigation of Automatic Control Systems in Electric Arc Steel Furnaces (Issledovaniye sistem avtomaticheskogo regulirovaniya dugovykh staleplavil'nykh pechey)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Chernaya metallurgiya, 1959, Nr 1, pp 145-153 (USSR)

ABSTRACT: The author investigates different systems of automatic control in electric furnaces in order to select the most efficient, raising the capacity and reducing electric power consumption. Experiments with different control systems were carried out on a 40-ton furnace at the "Dneprospetsstal' Plant" and on a 5-ton furnace with an electro-hydraulic servo-mechanism at the Yaroslavl' Automobile Plant. V.A. Marinchenko, A.P. Medvedkov and N.I. Sirenko participated in the experiments. Measurements of various parameters were registered by oscillographs; measuring of gaps in electric winches and measurement of elastic deformation of the rope were performed with the use of selsyns, according to a method which was successfully used by Engineer A.N. Lenskiy under the

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SOV/148-59-1-17/19

Investigation of Automatic Control Systems in Electric Arc Steel Furnaces

scientific supervision of S.N. Kozhevnikov, Corresponding Member of AS Ukr SSR, at the Chair of Automation at DMetI. Investigation of relay-contact control systems of electric furnaces proved that the current intensity varied periodically and that self-oscillating processes took place due to gaps and to elasticity of connections in the electrode-shifting mechanism. The electro-mechanical control system was also investigated, and the analysis of oscillograms has shown that it has a series of advantages. Certain advantages of the electro-mechanical control system can only be utilized in the case of an improved design of the electrode-shifting mechanism. The author recommends the employment of an electro-hydraulic servo-mechanism and the highly-sensitive and high-speed hydraulic control system. Electro-hydraulic drive of electrode shifting with electro-mechanical control ensure stable and accurate automatic control and proved more satisfactory than electro-mechanical drive with the same control system. There are 4 diagrams, 1 table, 2 graphs, 5 sets of oscillograms and 1 Soviet reference.

Card 2/3

SOV/148-59-1-17/19

Investigation of Automatic Control Systems in Electric Arc Steel Furnaces

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk
Metallurgical Institute)

SUBMITTED: June 18, 1958

Card 3/3

SAPKO, A.I., inzh.

Analytical investigation of electrode regulation systems considering a substantial nonlinearity of the actuating mechanism.
Izv.vys.ucheb.zav.; chern.met. 2 no.8:157-170 Ag '59.
(MIRA 13:4)

1. Dnepropetrovskiy metallurgicheskiy institut. Rekomendovano kafedroy mekhanicheskogo obrudovaniya metallurgicheskikh zavodov Dnepropetrovskogo metallurgicheskogo instituta.
(Electrometallurgy--Equipment and supplies)
(Automatic control)

SOV/133-59-4-11/32

AUTHOR: Sapko, A.I., Engineer

TITLE: Arc Furnace with a Tilting Gantry (Dugovaya pech' s naklonyayushchimsya portalom)

PERIODICAL: Stal', 1959, Nr 4, pp 327-330 (USSR)

ABSTRACT: A new design of an electric arc furnace with a tilting gantry developed by the author for furnaces of the DSV-20 type with simultaneous increase in the furnace capacity to 30 tons is described and illustrated. The original idea of a tilting gantry for the electric furnace is ascribed to Yedneral and Torfimovich. The following advantages are claimed for the new design: a) comparatively small number of mechanisms and therefore a lower weight and cost of the furnace; b) an increase in the furnace serviceability and c) comparatively small area occupied by the furnace. There are 4 figures.

ASSOCIATION: Dnepropetrovskiy Metallurgicheskiy Institut (Dnepropetrovsk Metallurgical Institute)

Card 1/1

AUTHOR: Sapko, A.I., Engineer

SOV/133-59-6-18/41

TITLE: Investigation of Regulators and Mechanisms for
Moving the Electrodes of Steel Smelting Furnaces
(Issledovaniye regulyatorov i mekhanizmov
peremeshcheniya elektrodov staleplavil'noy pechi)

PERIODICAL: Stal', 1959, Nr 6, pp 526-531 (USSR)

ABSTRACT: Soviet specialists developed satisfactory automatic power regulation circuits for arc furnaces (Ref 1, 2) but they paid insufficient attention to improving the design of execution mechanisms, which would enable full utilisation of the potentialities of these circuits. In this paper the technique and results of experimental investigations are described of a system of automatic regulation of a 40-ton steel smelting furnace and methods of improving the design of the execution mechanism are outlined. The author proposes using a hydraulic servo mechanism. Unlike the design of Whiting (Ref 3 and 4), which is fitted with a single pump, this servo system is fitted with two pumps. The following conclusions are arrived at:

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1) It is essential to exclude entirely, or to reduce to

SOV/133-59-6-18/41

Investigation of Regulators and Mechanisms for Moving the
Electrodes of Steel Smelting Furnaces

a minimum, the play; the delay in the response due to play is eight to ten times larger than that caused by the insensitivity and inertia of the electric circuit of the relay-contact regulators.

2) The connection between the electrode holders and the motor must be as rigid as possible in order to increase the efficiency of the execution mechanism and to improve the quality of the automatic regulation.

3) The author considers it important to develop and introduce in Soviet electric furnaces regulators with hydraulic execution mechanisms. There are 7 figures and 4 references, 2 of which are Soviet, 1 German and 1 English.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

Card 2/2

SAPKO, A. I., Cand Tech Sci -- (diss) "Research into systems of mechanisms of migration of electrodes in arc steel-smelting furnaces." Dnepropetrovsk, 1960. 20 pp; with charts; (Ministry of Higher and Secondary Specialist Education Ukrainian SSR, Dnepropetrovsk Order of Labor Red Banner Metallurgical Inst im I. V. Stalin); 150 copies; price not given; bibliography at end of text; (KL, 21-60, 125)

S/133/60/000/004/003/010
A054/A026

AUTHOR: Sapko, A.I., Engineer

TITLE: Investigation of the Operation of the Mechanisms of ДСТ-80
(DSP-80) Type Steel-Melting Arc Furnace 18

PERIODICAL: Stal', 1960, No. 4, pp. 314 - 318

TEXT: At the Novosibirsk ZETO the prototype of the new DSP-80 type steel-melting furnace was developed according to the design submitted by the Trest Elektropech' (Elektropech' Trust), having the following principal data: nominal capacity 80 tons; transformer capacity 25,000 kva; maximum secondary voltage of the transformer 417 v; nominal current intensity of the furnace 34.5 ka, electrode diameter 550 mm, minimum diameter of the decomposition of the electrode 1,650 mm, motion of electrode 3,000 mm; speed of the electrode motion for the nominal revolution rate of the motor 1.75 m/min; internal diameter of the furnace shell 6.300 mm; diameter of the bath at the level of the flame-bridge 5,100 mm; depth of the bath from the flame-bridge 1,000 mm; specific energy consumption on smelting 420 kw-h/ton; weight of the metal construction 430 tons. The furnace works with

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S/133/60/000/004/003/010
A054/A026

Investigation of the Operation of the Mechanisms of ДСП-80 (DSP-80) Type
Steel-Melting Arc Furnace

mechanized overfeed system, with the turning of the furnace vault suspended by four chains onto the portal frame. The vault is lifted and turned by independent mechanisms operated electrically. Two gear racks for tilting the furnace are actuated by electromotors. The furnace shell, the mechanism for turning the portal frame and the mechanism for reversing the bath are mounted on the base of the furnace support. The vault is lifted by a worm wheel reducing gear electrically operated. The vault turns simultaneously with the portal frame mounted on the base plate which is arranged on a vertical shaft. This shaft revolves in two radial-spherical bearings of 750mm diameter supported by a self-aligning ball socket. The revolving of the bath around the vertical shaft covers about 40°; the furnace shell is supported by four pedestals via an annular rail. Being in operation for one year it was found that the new type furnace has the following advantages: there is no moving platform with all the necessary mechanisms for lowering, lifting and travelling. In the auxiliary equipment, in contrast to the Soviet and foreign practice, no self-locking mechanisms were applied for til-

Card 2/4

S/133/60/000/004/003/010
A054/A026

Investigation of the Operation of the Mechanisms of ДСП-80 (DSP-80) Type Steel-Melting Arc Furnace

ting the furnace, rotating the bath and turning the vault and all gear racks of the DSP-80 type furnace tilting mechanisms which are connected in the old types with one common transmission shaft, have here separate drives and consequently there are fewer breakdowns. The removal of the slag was solved in a satisfactory manner. Special features of the mechanism for rotating the bath are two non-self-locking drives, open pedestals and supporting rolls with antifriction bearings instead of the conventional friction type bearings. Hereby the power consumption of the driving motors was reduced and breakdowns occurring in the conventional type eliminated. A weak point of the unit is the electrode control gear in the operation of which a delay can be observed due to the elastic deformation of the steel wire and a play in the transmission and a considerable statical moment of the motor when lifting the electrode caused by the unbalanced progressively moving parts (of a weight of about 4.5 tons). The drawbacks could be eliminated by substituting the electromechanical system for an electrohydraulic tem. There are 4 figures, 1 set of figures and 1 table.

✓

Card 3/4

S/133/60/000/004/003/010
A054/A026

Investigation of the Operation of the Mechanisms of ДСП-80 (DSP-80) Type
Steel-Melting Arc Furnace

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk
Metallurgical Institute) ✓

Card 4/4

S/148/60/000/010/018/018
A161/A030

AUTHORS: Sapko, A.I.; Edemskiy, V.M.

TITLE: An Analysis of Automatic Power Regulation Systems in Arc Steel Furnaces

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1960, No. 10, pp. 179 - 190

TEXT: The decisive effect of lagging in the various transmission links of automatic electrode feeding mechanisms is proven. Such lagging in automatic control systems of other metallurgical machines is mentioned with reference to a work by S.N. Kozhevnikov (Ref. 1) who cited examples illustrating that even the most sensitive and precise control systems have no effect when the work mechanisms are not accurate. It is mentioned that Tsentral'naya laboratoriya avtomatiki Energochermata (The Central Automation Laboratory of Energochermat) has completed the development of a fine automatic electrode control system for arc furnaces, including an electronic computer, which is another example of useless precision in the electric control system because of a crude work mechanism with gaps and flexible links. Various existing automatic control system designs are analyzed using

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S/148/60/000/010/018/018
A161/A030

An Analysis of Automatic Power Regulation Systems in Arc Steel Furnaces

the approximate analysis method with simplified block diagrams of A. Lang (Ref. 2) (A. Lang, "Regelungstechnik", 1957, pp. 117 - 122). A general block diagram for all systems is used (Fig. 1) and simplified more, into an equivalent diagram (Fig. 2), and calculations are made using experimentally determined characteristics of separate links in different systems and values of A. Lang. Curves are plotted illustrating that it is theoretically impossible to achieve any considerable increase in the electrodes feed when gaps and flexibility are present in the work mechanisms. The results of calculations show that the electrodes feed speed could be increased 3 - 5 times if the lags in the transmission system were eliminated. The following conclusions are made: 1) The most important trend in improvement of automatic regulation is reducing of the lag, i.e., design improvement in the work mechanisms, and choice of the proper drive. 2) The experience and the calculations prove that even in the latest furnaces with rack transmission a lag of 100 m · sec has to be taken into account. A complete elimination of gaps and flexibility in the links would result in the increased speed of the electrodes displacement (it would be trebled in the case of a magnetic and an electro-mechanical regulator). 3) The application of sensitive (inertia-free)

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A161/A030

An Analysis of Automatic Power Regulation Systems in Arc Steel Furnaces

and more complex (and less dependable) electric regulator systems is senseless in combination with imperfect work mechanism designs (e.g., with rope drive), for the practical effect will be negligible. 4) In the development of new automatic regulation systems and modernization of those already existing, systems fully eliminating delays from gaps and flexibility as well as systems eliminating the effect of inertia are of high practical interest. One example of a system nearly fully eliminating lags is a hydraulic system with two pumps - one pump evacuating and the other forcing the fluid, without reversing the motor for lifting and lowering the electrode. [Abstracter's note: Reference 6 in connection with this system is an obvious misprint for only five references are listed at the end of the article]. Another serious attempt in this sense is the application of electromagnetic couplings permitting the lowering and lifting of the electrode without a reverse of the motor. There are 7 figures and 5 references: 4 Soviet and 1 German.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: April 21, 1960

Card 3/5

SAPKO, A.I., kand.tekhn.nauk; CHERNOV, L.A., inzh.

Design of the tilting arrangement on arc furnaces. Stal' 21
no.12:1085-1087 D '61. (MIRA 14:12)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Electric furnaces--Equipment and supplies)

SAPKO, A.I.; SVIRIDENKO, L.G.; BOBROV, V.P.; GLADKIY, D.F.; BUZUNOV, I.S.;
PICHAK, G.V.

Remote control of steel-pouring ladle plugs. Metallurg
7 no.6:18-21 Je '62. (MIRA 15:7)

1. Dnepropetrovskiy metallurgicheskiy institut i Dnepropetrovskiy
staleplavil'nyy zavod vysokokachestvennykh i spetsial'nykh
staley.

(Electric furnaces--Equipment and supplies)
(Remote control)

SAPKO, Aleksandr Ivanovich; GURVITS, A.I., red.; MIKHAYLOVA, Ye.P.,
~~red. 1zd-va; ISLENT'YEVA, P.G., tekhn. red.~~

[Tender and operator of an electric steel smelting plant]
Slesar'-mekhanik elektrostaleplavil'nogo tsekha. Moskva,
Metallurgizdat, 1962. 190 p. (MIRA 15:10)
(Steel—Electrometallurgy)
(Electric furnaces—Maintenance and repair)

SAPKO, A.I., kand.tekhn.nauk; DOBROV, V.P., kand.tekhn.nauk;
DEM'YANETS, L.A., inzh.; KRAVCHENKO, V.A., kand.tekhn.nauk;
DEKCHANOV, H.M., inzh.

Electrohydraulic voltage regulators on arc furnaces for the
manufacture of ferroalloys. Met. i gornorud. prom. no.4:19-25
Jl-Ag '62. (MIRA 15:9)

1. Dnepropetrovskiy metallurgicheskiy institut (for Sapko,
Vobrov, Dem'yanets). 2. Zaporozhskiy zavod ferrosplavov
(for Kravchenko, Dekhanov).
(Electric furnaces) (Automatic control)

S/130/63/000/001/002/008
A006/A101

AUTHOR: Sapko, A. I.

TITLE: Electrohydraulic drive for the electrode displacement in an electric arc furnace

PERIODICAL: Metallurg, no. 1, 1963, 14 - 17

TEXT: Information is given on a redesigned system of a hydraulic drive (Figure 1) replacing electromechanical drives with rope transmission. The oil is pumped from the container through a reverse valve to the collector with a safety valve. From the collector the oil is supplied through filters and throttles with regulators under the hydrocylinder plungers, and then pumped back to the container through filters and pressure valves. The hydrocylinders are mounted on the operational space of the furnace; their plungers are closely connected with the electrode holders. The throttle with the regulator controls the oil consumption from the collector, supplied to the plungers, independent of the load upon the plunger. The operation of the throttle is described in detail. The industrial tests made with the hydraulic drive system showed the

Card 1/3

Electrohydraulic drive for the..

S/130/63/000/001/002/008
A006/A101

high reliability of its operation. There are 2 figures.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metal-
lurgical Institute)

✓

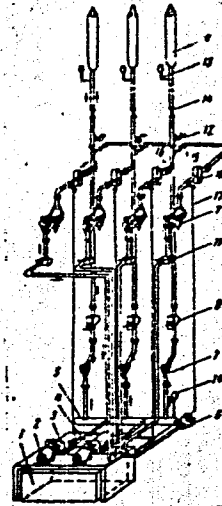
Card 2/3

Electrohydraulic drive for the...

S/130/63/000/001/002/008
A006/A101

Figure 1. Assembly system of the electrohydraulic drive of an electric arc furnace

Legend: 1 - container; 2 - drive engine;
3 - blade pump; 4 - reverse valve; 5 - collector;
6 - safety valve; 7 - plate filters; 8 - throttles;
9 - hydrocylinders; 10 - gear pumps; 11 - pres-
sure valves; 12 - pressure relay; 13 - manometers;
14, 15, 16 - stopcocks.



Card 3/3

SAPKO, A.I., kand.tekhn.nauk; DOBROV, V.P., kand.tekhn.nauk; DEM'YANETS, L.A.,
inzh.; DEKHANOV, N.M., inzh.; VOLKOV, V.F., inzh.; KRAVCHENKO, V.A.,
inzh.; BOYTSOV, L.I., inzh.; SEMENOVICH, B.V., inzh.; FRISH, M.I.,
inzh.

Investigating power regulators with electromechanical and
electrohydraulic drives on ferroalloy refining furnaces. Stal'
22 no.4:321-324 Ap '62. (MIRA 15:5)
(Electric furnaces)

SAPKO, Aleksandr Ivanovich; EDEMSKIY, V.M., red.

[Executive mechanisms of the power regulators of electric arc furnaces] Iсполnitel'nye mekhanizmy regulatorov moshchnosti dugovykh elektropechei. Moskva, Gosenergoizdat, 1963. 110 p. (Biblioteka elektrotermista, no.16)
(MIRA 17:5)

SAPKO, A.I.; PASECHNIK, M.S.

Packing of arc furnace electrodes. Metallurg. 10 no.9:19-20 S '65.
(MIRA 18:9)

1. Dnepropetrovskiy metallurgicheskiy institut.

Sapko, D. D.

ANTHELMINTIC

"Prospects for the Cultivation of *Chenopodium Ambrosioides* L. in the Soviet Union". by D. D. Sapko, All-Union Scientific Research Institute of Medical and Aromatic Plants, Meditinskaya Promyshlennost' SSSR. No 5, May 1957, pp 35-40.

Helminthiasis - ascaridiasis and ancylostomiasis - are common in the Soviet Union, particularly in the rural areas; finding an effective preparation for this condition is, therefore, of prime importance.

In modern pharmacopoeia, two preparations are most prominent: one is extracted from *Chenopodium anthelminticum* L., the other is derived from *Chenopodium ambrosioides* L. The first one* requires tropical conditions for its growth; the second one may be grown in a temperate climate, and is suitable for cultivation in the Soviet Union.

The purpose of this study was:

1. Pharmacologically, to investigate the respective effectiveness

Card 1/2

- 38 -

SAPKO, J. D.

USSR/Cultivares Plants. Medicinal, Ether Oleaginous, M
and Poisonous Plants.

Abs Jour : Ref Zhur-Biol., No 15, 1958, 63396

Author : Sapko, D.

Inst : _____

Title : A New Moldavian Ether Oleaginous Crop.

Orig Pub : Zemledeliya i zhivodnovodstvo Moldavii, 1957,
No 8, 76-77

Abstract : Chenopodium oil, an effective anti-hel-
minth, is extracted from Mexican tea (Che-
nopodium ambrosioides L.), which is found
on a perennial weed on the Black Sea Coast,
the Banks of the Dnieper, in the Caucasus,
and in other regions of the USSR. The plant
was raised as an annual crop in Moldavia,

Card : 1/4

USSR/Cultivated Plants. Medicinal, Ether Oleaginous, M
and Poisonous Plants.

Abs Jour : Ref Zhur-Biol., No 15, 1958, 63396

with good results. The plant does not require much soil and produces good yields on solonets [saline], weakly carbonate soils. It is sown in the first days of April, and the period of its vegetation amounts to 150 days. It seems that it should be possible to sow *Chenopodium ambrosioides* L. as a winter crop since the drops put out shoots well, and if the weather is dry after the plant was sown, the shoots are found to be very sparse or they do not come out at all. The plant is sown on the surface of the soil, in furrows which are 2-3 centimeters deep which should then be rolled and mulched with humus (0.5 centimeters). Six to 8 kilograms

Card : 2/4

USSR/Cultivated Plants. Medicinal, Ether Oleaginous, M
and Poisonous Plants.

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68396

variant, 98.6 kilograms of oil are extracted which contain 36.6 percent of escaridiol. Botanical description of the species are presented, and the dates at which phenological phases occur, are also given. Seed of the Mexican tea plant may be obtained from the Botanical Garden of the Moldavian Branch of the USSR Academy of Sciences. -- An. A. Zaytseva

Card : 4/4

SAPKO, D.D., Cand Bio Sci--(diss) "Medicinal varieties of Chenopodium.
~~(economic)~~ (Systematics, distribution, and economic evaluation). [Tartu],
1958. 16 pp (Tartu State U), 100 copies (KL, 47-58, 131)

-27-

SAPKO, D.D.

Hybrid medicinal goosefoot. Bot. zhur. 43 no. 5:701-703 My '58.
(MIRA 11:7)

1. Botanicheskiy sad Moldavskogo filiala Akademii nauk SSSR,
Kishinev.

(Goosefoot)

SAPKO, D.D.

Systematic position of *Chenopodium anthelminticum* L. Bot.
zhur. 45 no.6:905-910 Je '60. (MIRA 13:7)

1. Botanicheskiy sad Moldavskogo filiala Akademii nauk
SSSR, Kishinev.
(Goosefoot)

36558
S/128/62/000/004/008/010
A004/A127

18.1110

AUTHORS: Grebenyuk, V.P.; Yefimov, V.A.; Sapko, V.N.

TITLE: Formation and elimination of cracks in steel castings

PERIODICAL: Liteynoye proizvodstvo, no. 4, 1962, 31 - 33

TEXT: The authors point out that the main defects of steel ingots are longitudinal and transverse cracks. Among the forces affecting the formation of cracks, the authors mention in the first place the force originating owing to a deceleration of shrinkage of the primary skin. They present formulae for calculating the stresses originating in the ingot skin for the cases of a uniform and nonuniform skin thickness and stress the point that the quantity of sulfur and hydrogen impurities in the steel affect the tendency of steel to hot-crack formation to a considerable extent. It is stated that large additions of aluminum localize the harmful effects of sulfur. Apart from the effect on the modulus of elasticity, the steel composition affects the magnitude of the coefficient of linear shrinkage, which decreases with an increase of the carbon content. Therefore, steel with a C-content of some 0.2% possesses the greatest tendency to crack formation. It is stated that a nonuniform formation of the clearance be-

Card 1/3

S/128/62/000/004/008/010
A004/A127

Formation and elimination of cracks in

tween the crystallizing ingot and the mold and the washing away of the crystallizing skin by the circulating flow of liquid steel contributes to a local thinning of the skin and thereby to the formation of cracks. It was found that the clearance between ingot and mold is formed in the first place at the ingot corners and, to eliminate corner cracks, the rounding-off radius at the ingot corners should amount to 0.1 of the length of the shorter ingot side, or less. According to data obtained by G.P. Ivantsov the heat-transfer coefficient from the ingot to the mold decreases by a factor of 4 - 5 after the formation of the clearance. After the complete or partial separation of the ingot from the mold walls, the destroying action of the hydrostatic pressure force of the liquid metal of the ingot core affects the skin of the solidifying metal. Calculations have revealed that the magnitude of bending moments arising under the effect of hydrostatic pressure forces are the lower, the more points of the ingot skin are pressed against the mold wall. The authors point out that, to create favorable conditions for the crystallization and shrinkage of the ingot, the inner surface of the ingot mold should have a wavy profile. They present details on the most expedient wave shape and state that the most dangerous stresses depend on the cooling intensity of the ingot surface. The use of heat-insulating coatings of the mold makes it possible to reduce the cooling intensity of the ingot surface by a fac-

Card 2/3

Formation and elimination of cracks in

S/128/62/C00/004/008/010
A004/A127

tor of 1.4 and thus to decrease the tendency to crack formation. The best results were obtained with a coating consisting of 43% red clay, 26% refractory clay, 6% fluorspar and 25% lime. The authors comment on the hydrodynamics of steel pouring, mold design and steel shrinkage conditions in the mold, factors that affect the ingot surface quality to a great extent. It is pointed out that the best ingot surface is obtained with a total casting duration of the ingot which is approximately equal to the time of clearance formation in the lower ingot part. The speed and temperature of the circulating steel flow along the front of the crystallizing metal determines to a considerable extent the thickness of the crystallizing skin. Concluding, the authors emphasize that in the production of large-size ingots, top casting is to be preferred to bottom casting.

Card 3/3

X

YEGIMOV, V.A.; OSIPOV, V.P.; SAPKO, V.N.; LEGENCHUK, V.I.; SIVTSOV, G.V.;
BYKOV, G.D.

Measures for improving the top pouring of steel. Vop. proizv.
stali no.9:79-95 '63. (MIRA 16:9)

~~Yakovlev~~, Ye.A.; SAPKO, V.N.; GREBENYUK, V.P.; PIORO, E.Ch.; SHCHASTNYI,
P.M.; KSENZUK, F.A.; SHIRINSKIY, D.I.; TOLSTYKH, V.I.

Rapid top pouring of rimmed steel into ribbed ingot molds. Metal-
lurg 8 no.11:17-19 N '63. (MIRA 16:12)

YEFIMOV, V.A., doktor tekhn. nauk; KUZEMA, I.D., kand. tekhn. nauk;
ZHIGULA, A.V., inzh.; SAPKO, V.N., inzh.; KISSEL', N.N.,
inzh.; CHERNYSHEV, I.S., inzh.; ZARUBIN, N.G., inzh.;
STRYAPIN, I.Ya., inzh.; OLESHKEVICH, T.I., inzh.; SONIN, G.V.,
inzh.; FUKALOV, V.P., inzh.

Rapid top pouring of rimmed steel from ladles with a
capacity from 350 to 480 tons. Stal' 24 no.1:30-32 Ja '64.
(MIRA 17:2)

SOV/130-58-9-9/23

AUTHOR: Sapko, A.I. and Sapko, Z.I., Engineers

TITLE: Contribution on the Possibilities of Overloading Arc Steel-melting Furnaces (O vozmozhnostyakh peregruzki dugovykh staleplavil'nykh pechey)

PERIODICAL: Metallurg, 1958, Nr 9, pp 20 - 21 (USSR)

ABSTRACT: An analysis is reported of the operation of 20-40 ton arc furnaces at the "Dneprospetsstal" Works with special reference to the ratio of the diameter of the molten metal surface to its depth. The main conclusions drawn are that it is not rational to increase productivity by overloading (increasing the charge weight over the rated value) by over 30% for a value of the ratio of 6.6; construction of furnaces with ratios over 5.35 leads to incorrect crane-capacity and incomplete furnace utilisation; the correct way of increasing productivity is by improving the power supply (raising the transformer secondary voltage, improving

Card 1/2

SOV/130-58-9-9/23

Contribution on the Possibilities of Overloading Arc Steel-melting
Furnaces

automatic control, etc.), intensification of melting by
lancing with oxygen, better design of mechanical and
electrical equipment.

1. Electric furnaces--Operation
2. Electric furnaces--Performance
3. Steel--Production

Card 2/2

SAPKOV, G. N. (Engr)

"Transient Processes and Determination of Optimum Electromagnetic Load Parameters for Telegraph Circuits With Distributed Constants." Cand Tech Sci, Faculty of Telephone and Telegraph Communications, Moscow Electrical Engineering Inst of Communications, 1953-1954. (VS, Feb 55) [Brief abstract available]

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)

SO: SUM No. 556, 24 Jun 55

MANSUROV, Nikolay Nikolayevich [deceased]; POPOV, Viktor
Stepanovich; SAPKOV, G.N., red.

[Theoretical electrical engineering] Teoreticheskaja elektro-
tehnika. Izd.9, ispr. Moskva, Energiia, 1965. 624 p.
(MIRA 18:12)

LASTOVSKIY, Mikhail Sergeyeovich; BALDUGIN, Aleksandr Alekseyevich; SAPKOV,
G.N., inzhener, redaktor; BOBROVA, Ye.N., tekhnicheskii redaktor

[Telegraphic communication in railroad transportation] Telegrafnaya
svyaz' na zheleznodorozhnom transporte. Moskva, Gos. transp. zhel-
deor. izd-vo, 1956. 419 p. (MLBA 10-2)

(Telegraph)

(Railroads--Communication systems)

MANSUROV, Nikolay Nikolayevich [deceased]; POPOV, Viktor Stepanovich.
Prinimal uchastiye SAPKOV, G.N., kand. tekhn. nauk;
ZHUKHOVITSKIY, B.Ya., dotsent, kand. tekhn. nauk, red.;
VORONIN, K.P., tekhn. red.

[Theoretical electrical engineering] Teoreticheskaya elektro-
tekhnika. Izd.8., perer. Moskva, Gos.energ.izd-vo, 1961. 655 p.
(MIRA 15:2)

(Electric engineering)

LAIUT, V., ing.; SAPLACAN, A., ing.

Fulfillment of tasks and engagements made at the Ocna
Mures Salina. Rev min 13 no.8:368-369 Ag '62.

SAPLACAN, Liviu

MEJL

pp
216

1. "Productive Varieties of Hybrids," Professor S. GIOSAN, pp 3-4.
2. "Machines for High Farm Yield," Liviu SAPLACAN, Graduate of Technical Sciences and Biological-Inspector of the ICA (Institutul de Cercetari Privind Mecanizarea Agriculturii); p. 4.
3. "Productive Livestock Breeds," Engr. Z. RATCU, Director of the ICA Institute of Veterinary Zootechnical and Technical Research Institute; p. 5.
4. "Yielders and Orchards on Eroded Soils," Professor Dr. M. TEGU; p. 5.
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SAPLACAN, Liviu, candidat in stiinta tehnice

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1. Scientific Deputy Director, Enterprise of Metallic Constructions
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1. Institut mikrobiologii AN SSSR.

SAPLIN, M.S., inzh.

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MASS I BOOK KRYLOVSKAYA NOV/5027

Машинно-исследовательский институт электротехнической математики

Вопросы точности и конструктивности электролитических машин. Вып. 14 (Problems of the Calculation and Design of Electronic Computers, v. 14) Moscow, Mashgiz, 1960. 124 p. Errata only inserted. 3,000 copies printed.

М.С. Саплин, доктор технических наук; М.С. Саплин, доктор технических наук; А.Д. Акимов, техн. эк.; Б.И. Мобай, инженер; М.С. Саплин, инженер по машинному строительству и инструментальному делу; П.П. Пустовый, инженер.

ПУТЕМ: This collection of articles is intended for scientists and technicians working in computing-machine building and related fields.

СОДЕРЖАНИЕ: This collection of articles presents the results of investigations carried out in the design and development of electronic computers. It examines the realization of some general and special algorithms by means of digital and analog computers, investigates errors in the realization of functional relationships in electronic analogs, and reviews problems of computing and designing the external outfit and arrangement of digital computers based on various principles of operation. Methods of organization and characteristics of stabilized supply sources for digital computers based on methods of computing standard errors and their influence on the reliability are examined. Particular attention is paid to the reliability of the results of calculations. References are given.

ПРЕДМЕТНЫЕ УКАЗАНИЯ

Машинно-исследовательский институт электротехнической математики

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GORSHKOV, D.S., inzh.; SAPIN, V.S., inzh.; TUROVSKIY, T.A., inzh.

Throwing-down devices for automatic sizing of logs on longitudinal conveyers. Mekh. i avtom.proizv. 16 no.1:49-51 Ja '62. (MIRA 15:1)
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~~SAPLINA, G.~~

Fumigating high-moisture peas with chloropicrin. Muk.-elev. prom.
22 no.8:13-14 Ag '56. (MIRA 10:8)

1. Tsentral'naya opytno-proizvodstvennaya laboratoriya Ministerstva khleboproduktov SSSR.
(Chloropicrin) (Peas--Disinfection)

Sapogin, L.G.

S/181/60/002/007/015/042
B006/B070

AUTHORS: Sapogin, L. G., Ivko, V. M.

TITLE: An Apparatus for Measuring and Recording the Resistance of Semiconductors in the Coordinates $\log R = f(1/T)$

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 7, pp. 1482-1488

TEXT: Usually, the conductivity of a semiconductor is measured by a compensation method, and results are shown as curves $\log \sigma = f(1/T)$ on a graph. This method has a number of inaccuracies and sources of error which are discussed in the introduction. The authors have developed an instrument (whose block diagram is shown in Fig. 1), which consists essentially of a combination of a logarithmic and a hyperbolic amplifier, and allows the curve $\log R = f(1/T)$ to be recorded directly, without the disadvantages of the earlier methods. The apparatus works as follows: When a semiconductor is placed in the field of an alternating current of constant magnitude (originating from a sound generator of the type 3Г-10 (ZG-10)), the potential appearing on the probe of the semiconductor is

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Card 1/3

An Apparatus for Measuring and Recording the
Resistance of Semiconductors in the
Coordinates $\log R = f(1/T)$

S/181/60/002/007/015/042
B006/B070

proportional to the resistance of the latter. The logarithm of this potential is taken by the logarithmic amplifier, and recorded by an automatic electronic potentiometer of the type ЭПП-09 (EPP-09) (or, even better, by a two-coordinate recording instrument). The function $M \log R = f(N/T)$ is recorded on the band of the apparatus, the coefficient M depending on the dimensions of the sample, and N on the thermocouple. N is determined from the characteristics of the hyperbolic amplifier. The theory of determination of the temperature dependence of the conductivity of semiconductors is discussed at first. Later, the logarithmic amplifier (Fig. 2 shows the exact connections), and the hyperbolic amplifier (Fig. 3 connections, Fig. 4 calibration curve) are described in detail. Finally, the measurement of a high-resistance sample is described. The apparatus was tested on samples of Ge, Te, Si, and other elements. Fig. 6 shows the curves of some measurements on Ge, Te, and Si. The values obtained are for Ge: $\Delta E_0 = 0.78$ ev, and for Te: $\Delta E_0 = 0.4$ ev. The authors thank V. P. Zhuze, A. N. Goldobin, A. N. Kharin, and G. V. Dudko for discussions. There are 6 figures and 3 references: 2 Soviet

Card 2/3

An Apparatus for Measuring and Recording the
Resistance of Semiconductors in the
Coordinates $\log R = f(1/T)$

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B006/B070

and 1 US.

ASSOCIATION: Taganrogskiy Radiotekhnicheskiy institut (Taganrog
Radiotechnical Institute) ✓c

SUBMITTED: February 8, 1960

Card 3/3

SAPOGIN, L.G.

Method of gas analysis of binary mixtures. Zav.lab. 28 no.10:
1197-1199 '62. (MIRA 15:10)

1. Taganrogskiy radiotekhnicheskiy institut.
(Gases—Analysis)

ACCESSION NR: AP4025088

S/0139/63/000/006/0053/0057

AUTHOR: Sapogin, L. G.

TITLE: Effect of injecting electrons into p-type semiconductors on the magnitude of field emission

SOURCE: IVUZ. Fizika, no. 6, 1963, 53-57

TOPIC TAGS: field emission, vacuum tube, p n junction, anode potential, semiconductor, p type semiconductor, electron injection

ABSTRACT: Under the assumptions of weak electric fields and a Maxwell-Boltzmann statistic the expression for field emission is given as

$$j = en \left(\frac{\kappa T}{2\pi m} \right)^{1/2} \exp \left(- \frac{4}{3} \frac{\kappa_0}{F} \cdot \chi^{3/2} \right)$$

where

$$\kappa_0^2 = \frac{8\pi^2 m}{j^2}$$

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ACCESSION NR: AP4025088

A set of experiments is performed in a vacuum tube with a p-n junction and a current of 0 to 5 ma through the junction. The emission current is registered as a function of anode potential at various current injection rates and also for various surface temperatures. The results show only a qualitative agreement with theory because of lack of information on field penetration depths in the p-type semiconductors and emitting surface integrity. The general result of an increase in emission rate with an increase in the magnitude of injection current is confirmed. "The author is grateful to K. V. Gerchik." Orig. art. has: 9 equations and 4 figures.

ASSOCIATION: Taganrogskiy radiotekhnicheskii institut (Taganrog Institute of Radio Technology)

SUBMITTED: 03Aug62

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: PH

NO REF SOV: 008

OTHER: 005

Card 2/2

L 6795-65 EWT(1)/ENG(k)/T IJP(c)/ASL(f)/AFWL/ASD(a)-5/AEDC(a)/SSD/BSO/
 ACCESSION NR: AP4043882 AS(mp)-2/ESL(g)/S/0139/64/000/004/0194/0195
 ESD(t)/RAEM(t) AT

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AUTHORS: Sapogin, L. G.; Letunov, Yu. P.

TITLE: On the change in the thermal conductivity of a semiconductor
 under the influence of current

SOURCE: IVUZ. Fizika, no. 4, 1964, 194-195

TOPIC TAGS: semiconductor, thermal conductivity, heat transfer,
 electron drift, phonon

ABSTRACT: The authors considered a semiconductor sample in the presence of a temperature gradient dT/dx to which a longitudinal electric field E is applied. Solution of the Boltzmann equation with Maxwell-Boltzmann statistics yields for the heat flow an equation

$$J_Q = \tau e E - 2\tau \frac{dT}{dx} = \tau \left(eE - 2 \frac{dT}{dx} \right)$$

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which shows that the amount of heat transferred depends on the current flowing through the semiconductor. This agrees with the phenomenological formula for the coefficient of thermal conductivity of a semiconductor, $\kappa = Cv\lambda/e$ (C -- heat capacity, v -- electron velocity, λ -- electron free path), and demonstrates that the bulk of the heat is transported by the drifting electrons and that application of an electric field can either increase or decrease the electron drift. Here the remaining symbols are standard. If the electric current and the heat flux flow in the same direction, the thermal conductivity decreases, vice versa. It is further shown that zero heat flux cannot be obtained in principle, owing to the phonon thermal conductivity and the Joule heat release. Orig. art. has: 8 formulas.

ASSOCIATION: Tanganrogskiy radiotekhnicheskiy institut (Tanganrog Radio Institute)

Card 2/3

L 6795-65
ACCESSION NR: AP4043882

SUBMITTED: 17Apr63

ENCL: 00

SUB CODE: SS, TD

NR REF SOV: 000

OTHER: 000

Card 3/3