

GROMOV, M.I., TSYLEV, L.M.

"Non-Blast-Furnace Desulphurization of Cast-Iron,"  
lecture given at the Fourth Conference on Steelmaking, A.A. Baikov, Institute of  
Metallurgy, Moscow, July 1-6, 1957

137-58-5-9051D

137-58-5-9051D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958. Nr 5, p 43 (USSR)

AUTHOR Gromov, M. I.

TITLE An Investigation of the Process of Desulfurization of Pig Iron in a Rotary Furnace (Issledovaniye protsessa desulfuratsii chuguna vo vrashchayushcheysya pechi)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to Int-t metallurgii AN SSSR (Institute for Metallurgy, Academy of Sciences, USSR), Moscow, 1957

ASSOCIATION Int-t metallurgii AN SSSR (Institute for Metallurgy, Academy of Sciences, USSR), Moscow

1. Iron--Desulfurization 2. Furnaces--Applications

Card 1/1

Gromov M.I.

130-3-2/21

AUTHORS: Gromov, M. I., Tsylev, L.M., Zakunin, A.M., Kotov, V.I.  
and Kaporulin, V. N.

TITLE: Desulphurization of pig iron outside the blast furnace.  
(Vnedomennoye obesserivaniye chuguna).

PERIODICAL: Metallurg, 1958, No.3, pp.3-6 (USSR).

ABSTRACT: The authors give diagrams (Fig.1) to show the various methods tried in the USSR and abroad for the external desulphurization of pig iron with soda, calcium carbide or other solid reagents. They suggest that their comparative neglect is due mainly to their relative inefficiency and low productivity. The French IRSID method they criticize on the additional grounds that it would be difficult to effect on a large scale, that special arrangements would be required for trapping the lime dust produced, that the finely divided reagent would be difficult to obtain and that nitrogen is not available at many works. They go on to describe a method developed at the Novo-Lipetskiy metallurgical works in which the liquid metal is treated with lime in a rotating vessel, coke being added to maintain a reducing atmosphere. B. Provotorov, A. Nikitin and L. Sidorin participated in this work. Experiments

Card 1/3

150-3-2/21

Desulphurization of pig iron outside the blast furnace.

showed that the desulphurization process is affected by the fluidity of the metal, the quantities of solids added per unit weight of metal, the sizing of the solids and the speed of rotation of the vessel. The internal diameter of the experimental vessels (Fig. 1) was 1050 mm and the length of the cylindrical part 1240 mm; one end was conical. With chrome-magnesite lining no build-up of slag on the walls or chemical disruption of the lining occurred. With speeds of rotation of 2.5 and 4.4 m/sec the sulphur content of the metal fell from 0.085 to 0.03-0.012%. The authors give a nomogram for determining the optimal speeds of rotation in relation to the viscosity of the metal and the vessel diameter, and this shows that the optimal speed for the experimental conditions was 9-10 m/sec which would have given more rapid desulphurization. The method is recommended to other works, the following being given as optimal conditions: lime with a minimal content of silica and carbon dioxide, under 2 mm in particle size and added in a quantity of 1% by weight of the iron; coke of particle size 1-3 mm to be added in a quantity of 0.3-0.5% of the weight of the iron; the entrance of slag or burner sand

Card 2/3

Desulphurization of pig iron outside the blast furnace. 17 - 3-3/82  
into the vessel and the formation of encrustations on  
the lining to be prevented. An editorial note says  
that the Gipromez organization is designing a 100-ton  
capacity vessel.  
There are three figures.

ASSOCIATION: Institut metallurgii AN SSSR i Novo-Lipetskiy  
metallurgicheskii zavod (Institute of Metallurgy  
AS USSR and the New-Lipetsk Metallurgical Plant.

AVAILABLE: Library of Congress.

Card 3/3

SOV/180-59-3-5/43

AUTHORS: Gromov, M.I. and Tsylev L.M. (Moscow)

TITLE: On the Mechanism of Desulphurisation of Pig Iron with Solid Lime

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 25-28 (USSR)

ABSTRACT: The existing theories on the mechanism of the transfer of sulphur from slag to metal are discussed. In order to study the mechanism of desulphurisation of pig iron (solid pig iron - solid lime and liquid pig iron - solid lime) experimental work has been carried out. In the first series of experiments ignited lime balls were placed in a crucible, surrounded by crushed pig (0.08 - 0.1% S) and heated to various temperatures (600 to 900°C) for periods of 20 minutes to 3 hours. In the second series lime balls were dipped into molten pig iron and retained in it for periods from 1 second to 15 minutes. The surface of the lime balls was then analysed by petrographic and X-ray methods. It was found that in no case did the lime surface contain iron but only CaO, CaS and in the case of solid iron CaSO<sub>4</sub>; the amount of which was decreasing with increasing temperature at which the experiment was carried out. On the basis of the results

Card 1/2

SOV/180-59-3-5/43

On the Mechanism of Desulphurisation of Pig Iron with Solid Lime

obtained, the following mechanism of the desulphurisation with solid lime is postulated: in liquid metal, sulphur is present in the form of sulphur ions which are adsorbed on the surface of the lime, replacing oxygen in the crystal lattice:



As however, oxygen is more electronegative than sulphur, its bond with calcium should be stronger and probably some additional forces are necessary to replace it in the lattice with sulphur. It is thought that carbon has a weakening influence on the calcium oxygen bond. The apparatus used for the experiments for dipping lime balls into molten iron is shown in Fig 1. There is 1 figure and 5 references, 3 of which are Soviet and 2 English.

SUBMITTED: January 26, 1959

Card 2/2

GROMOV, M.I., kand.tekhn.nauk, Moskva.

Natural gas in metallurgy. Priroda 49 no.9:60-61 S '60.

(MIRA 13:10)

(Iron--Metallurgy)

(Gas, Natural)



ARTEMENKO, I.A.; GROMOV, M.I.; TSYLEV, L.M.

Technological processes for extracting concentrates for producing  
thickeners. Biul.tekh.-ekon.inform. no.11:3-4 '60.

(MIRA 13:11)

(Ore dressing)

BOGDANOVICH, K.I.; GROMOV, M.I.

New soda substitute for the desulfuration of pig iron. Trudy  
Inst. met. no.12:16-19 '63. (MIRA 16:6)

(Desulfuration)  
(Calcium manganese oxide)

GROMOV, M.I. (Moskva); SHUBEKO, P.Z. (Moskva); TSYLEV, L.M. (Moskva);  
KOLESNIKOVA, L.L. (Moskva)

High speed magnetic roasting of iron ores in two-stage system  
vortex chambers. Izv. AN SSSR. Met. i gor. delo no.1:15-19  
Ja-F '64. (MIRA 17:4)

GROMOV, M. (M.)

"Distance," article published in Samoylet (Airplane), No. 1, Jan. 41, Moscow

M. Gromov, famous flyer and a "Hero of the Soviet Union," wrote a two-page article entitled "Distance" (of airplane flights) which appeared in the "Today and Tomorrow" section of the No. 1 issue of the magazine Samoylet, January 41. This is a popular article on the importance and possibilities of the long distance non-stop air flights. According to the author, the day is not too far off when it will be possible to make a non-stop flight around the earth in some 80-90 hours.

GROMOV, M.M., geroy Sovetskogo Soyuza, general-polkovnik aviatsii.

Participate in sport! Discussion with Air Force Colonel-General  
M.M. Gromov, Hero of the Soviet Union. Voen.snan. 31 no.8:1 Ag '56.  
(MLRA 9:11)

(Physical education and training)

GROMOV, M.<sup>M</sup>, geroy Sovetskogo Soyusa.

Moscow - North Pole - United States. Kryl. rod. 8 no.7:14-15 J1 '57.  
(Aeronautics--Flights) (MIRA 10:9)

DUZ', Petr Dmitriyevich; SEMENOV, V.A., prof., doktor tekhn.nauk, general-mayor, zaslushennyy deystel' nauki i tekhniki, retsenzent; GROMOV, M.M., prof., general-polkovnik, retsenzent; ANOSHCHENKO, N.D., prof., retsenzent; BERKOVICH, D.M., kand. tekhn.nauk, red.; BELEVTSOVA, A.G., izdat.red.; ROZHIN, V.P., tekhn.red.

[History of aeronautics and aviation in the U.S.S.R.; period of the First World War, 1914-1918] Istoriiia vozdukhoplaveniia i aviatcii v SSSR; period pervoi mirovoi voiny, 1914-1918 gg. Moskva, Gos.nauchno-tekhn.izd-vo Oborongiz, 1960. 298 p.  
(Aeronautics--History) (MIRA 13:11)

GROMOV, Mikhail Nikolayevich, kand.ekon.nauk; TARARUKHIN, A., red.;  
PAVLOVA, S., tekhn.red.

[How to ensure correct labor organization] Kak obespechit'  
pravil'nuiu organizatsiiu truda. Moskva, Mosk.rabochii, 1960.  
30 p. (MIRA 13:12)  
(Moscow Province--Farm management)  
(Moscow Province--Agricultural wages)



GROMOV, M.N., kand. ekonom. nauk; KALASHNIKOVA, V.S., red.; GUREVICH,  
M.M., tekhn. red.

[How to shift to a new wage system on state farms] Kak pereiti na  
novuiu oplatu truda v sovkhozakh. Moskva, Izd-vo sel'khoz. lit-ry,  
zhurnalov i plakatov, 1961. 151 p. (MIRA 14:12)  
(Agricultural wages)

LOZA, G.M., prof.; BUZILOV, Yu.T., dots.; GROMOV, M.I., dots.;  
NIKIFOROV, M.A., dots.; FEFELOV, V.P., kand. ekon. nauk;  
SINYUKOV, M.I., dots.; SAL'KOVA, A.D., dots.; GRADITSKIY,  
P.A., dots.; TIKHONOVA, Ye.M., red.

[Practical aid for the organization and planning of produc-  
tion on collective and state farms] Praktikum po organizatsii  
i planirovaniu proizvodstva v kolkhozakh i sovkhozakh. Mo-  
skva, Kolos, 1965. 526 p. (MIRA 18:5)

RUDENKO, A.M.; SPITSA A.I.; GROMOV, M.S.

Virusological characteristics of poliomyelitis in Dnepropetrovsk  
Province. Vop. virus. 7 no.2:240-241 Mr-Apr '62. (MIRA 15:5)

1. Dnepropetrovskiy institut epidemiologii, mikrobiologii i gigiyeny.  
(DNEPROPETROVSK PROVINCE—POLIOMYELITIS)

GROMOV, M.V.

Treatment of fractures of the upper part of the humerus in children.  
Vest.khir.76 no.8:52-55 S '55 (MLRA 8:11)

1. Iz kliniki detskoy khirurgii (zav.prof. S.D.Ternovskiy) 2-go  
Moskovskogo meditsinskogo instituta im. I.V.Stalina na baze detskoy  
bol'nitsy im. prof. Filatova (glav.vrach M.N.Kalugina) Moskva,  
120-b, per Obukha, d.6, kv.13.

(SHOULDER, fractures  
in child, management)

(FRACTURES  
shoulder, in child., management)

GROMOV, M.V., dotsent; SHALEVICH, M.A.

Rare case of diffuse angiomatosis of the lower extremity in association with congenital rib dislocation. Khirurgiya no.9: 106-107 '61. (MIR, 15:5)

1. Iz kliniki travmatologii i ortopedii (zav. - prof. V.A. Chernavskiy) II Moskovskogo gosudarstvennogo meditsinskogo Instituta imeni N.I. Pirogova i patologoanatomicheskogo otdeleniya 4-y Gorodskoy klinicheskoy bol'nitsy (glavnyy vrach G.F. Pepko), Moskva.  
(ANGIOMATOSIS) (EXTREMITIES, LOWER--DISEASES)  
(RIBS--DISLOCATION)

GROMOV, M.V., dotsent

Alloplastic restoration of the ligament apparatus of the knee joint. Nauch.trudy Chetv.Mosk.gor.klin.bol'. no.1:95-104 '61.  
(MIRA 16:2)

1. Iz kliniki travmatologii i ortopedii (zav. klinikoy - prof. Chernavskiy, V.A.) 2-go Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I. Pirogova (dir. - dotsent M.G. Sirotkina).  
(KNEE--SURGERY) (LIGAMENTS--SURGERY) (SURGERY, PLASTIC)

GRCMGV, M. V.

GRCMGV, N. V.: "Enclosed fractures of the proximal portion of the shoulder in children and their treatment." Second Moscow State Medical Inst imeni I. V. Stalin. Moscow, 1956. (DISSERTATION For the Degree of Candidate in Medical Science.

So: Knizhnaya Letopis', No. 18, 1956

BUBENNIKOV, Aleksandr Vasil'yevich; GROMOV, M.Ya., prof., doktor  
tekhn. nauk, otv. red.; SAGITULLINA, R.I., tekhn. red.

[Descriptive geometry; principal methods for projecting  
geometric forms on a plane] Nachertatel'naia geometriia;  
osnovnye metody proektirovaniia geometricheskikh form na  
ploskosti. Moskva, Vses. sochnyi politekhn. in-t.  
Lektsiia no.1. 1959. 46 p. (MIRA 16:4)  
(Geometry, Descriptive)



BUBENNIKOV, Aleksandr Vasil'yevich; GROMOV, Mikhail Yakovlevich;  
IVANOV, N.N., red.; OVSYANNIKOVA, Z.G., red. izd-va;  
MURASHOVA, V.A., tekhn. red.

[Problems in descriptive geometry] Sbornik zadach po na-  
chertatel'noy geometrii. Moskva, Vysshaya shkola, 1963.  
282 p. (MLA 174)

BUKHMIREV, Aleksandr Ivanovich; BUKHMIREV, I. Yu., doctor tekhn.  
nauk, prof., str. prof.

[Descriptive geometry; point, straight line, plane,  
methods of modification of drawings, curves] Nachertat-  
el'naya geometriia; točka, priamai, ploshchad', splo-  
soby preobrazovaniia chertezhei, krivye linii. Moskva,  
Vses. zashchitnyi politekhn. inst, 1964. 354 p.  
(SIRA 18:6)

~~GROMOV, N.~~

Out-of-town session. Zdrav. Belor 5 no.2:69 F '59. Zdrav. Belor  
5 no.2:69 F '59. (MIRA 12:7)  
(WHITE RUSSIA--MEDICAL MYCOLOGY)

GROMOV, N.D.

With Krivoy Rog steel smelters. Metallurg 6 no.7:37-39 J1 '61.  
(MIRA 14:6)  
(Krivoy Rog--Metallurgical plants)

GROMOV, N.D.

Progressive practices are being shared with all steelmakers.  
Metallurg 6 no.10:37 0 '61. (MIRA 14:9)  
(Steel--Metallurgy)

S/028/62/000/010/001/001  
D201/D308

AUTHORS: Gromov, N.D., Kasatkin, N.M. and Kaplan, A.S.

TITLE: Thermobimetals

PERIODICAL: Standartizatsiya, no. 10, 1962, 16-21

TEXT: The authors describe the principles underlying the proposed new specification of standards related to bimetallic strips. The new standard specification consists of the letters TB (TB) followed by a four-digit number. The first two digits correspond to the magnitude of the specific bending coefficient multiplied by 100. The third digit shows that the value of the nominal specific electrical resistance of the strip belongs to one of the groups of properties specified in a table of standards. The fourth digit indicates that the maximum operating temperature belongs to one of the groups of the same table. In the proposed new standard specification the heading 'Technical requirements' standardizes the sensitivity and electrical resistance of the material only. All other physical properties of the bimetal and of its separate components are indicated.

Card 1/2

Thermobimetals

3, 020/51, 000/110, 001, 001  
D201/D308

ted in an appendix to the specification which, for every standard type of bimetal, sets the limits of its specific bending factor  $A$  in  $1/^\circ\text{C}$ , the sensitivity  $M$ ,  $10^{61}/^\circ\text{C}$  and of the specific resistivity  $\rho$ ,  $\text{ohm}\cdot\text{mm}^2/\text{m}$ . A method for sensitivity testing is also included. The instrument for determining the specific bending coefficient has not yet been fully developed. The standard specification discussed here is to replace the two existing standard specifications for bimetal strips GOCT 5193-50 (GOST 5193-50) and GOST 5198-50. There are 4 tables and 4 figures.

Card 2/2

GROU CV, Nikolay (Nikolayevich) BOKOV, V.I., Inzh. Laureat Gos. premii  
rezident

[Intensification of steel production] Intensifikatsiya  
proizvodstva stali. Moskva, Izd-vo "Metallurgiya,"  
1964. 158 p. (SIRA 1581)



GROMOV, N.G.

DECEASED

1961/I

c1960

See ILC

AGRICULTURE/Mushrooms

~~GROMOV, N. I.~~

Viability and virulence of *Treponema pallida* at low temperature  
in a cadaver. Sbor.nauch.rab.Bel.nauch.-iusl.kozhno-ven.inst.  
4:251-253 '54 (MIRA 11:7)  
(TREPONEMA PALLIDA)

USSR/Pharmacology and Toxicology. Chemotherapeutic Preparations V-7  
Antibiotics

Abs Jour : Ref Zhur - Biol., No 15, 1958, No 71276

Author : Prokopchuk A.Ya., Gromov N.I., Raskina R.I.  
Inst : Belorussian Scientific Research Dermatovenereal Institute  
Title : Experience in the Treatment and Prophylaxis of Pyogenic  
Diseases of the Skin with Triple Dyes and Antibiotics  
(Synthomycin, Biomyacin and Terramycin)

Orig Pub : Sb. nauchn. rabot. Belorussk. n.-i. kozhno-venerol. in-t,  
1957, 5, 116-119

Abstract : No abstract

Card : 1/1

GROMOV, N.I., kand.med.nauk; MARIUPOL'SKIY, R.M., ordinator

Treatment of suppurative skin diseases with staphylococcus  
antiphagin. Zdrav.Belor. 3 no.10:59-60 0 '57.      (MIRA 13:6)  
(SKIN--DISEASES)

PEVZNER, Ye.S.; RASKINA, R.I.; GROMOV, N.I.

Our paste for washing and protecting the hands as a means of preventing dermatitis and suppurative skin diseases among metal workers. Sbor. nauch.rab.Bel.nauch.-issl.kozhno-ven.inst. 6:211-214 '59. (MIRA 13:11)  
(HAND--CARE AND HYGIENE)  
(OINTMENTS)

GROMOV, N.I., kand.med.nauk; PETRUSHA, I.S., vrach; SOSLAND, R.D., vrach

Terramycin in the prevention and treatment of suppurative skin diseases. Sbor.nauch.rab.Bel.nauch.-issl.kozhno-ven.inst. 6:276-278 '59. (MIRA 13:11)

(TERRAMYCIN)  
(SKIN--DISEASES)

GROMOV, N.I.; RASKINA, R.I.

Control of suppurative skin diseases in the industrial and peat  
enterprises of the White Russian S.S.R. Sbor.nauch.rab.Bel.nauch.-  
issl.kozhno-ven.inst. 6:365-367 '59. (MIRA 13:11)  
(WHITE RUSSIA--PEAT INDUSTRY--HYGIENIC ASPECTS)  
(SKIN--DISEASES)

GROMOV, N.I.

Two cases of Leiner's erythroderma desquamativum. Sbor.nauch.rab. Bel.  
nauch.-issl.kozhno-ven.inst. 6:368-369 '59. (MIRA 13:11)  
(SKIN--DISEASES)



GROMOV, N.I.

Case of trichosporosis nodosa. Sbor.nauch.rab.Bel.nauch.-issl.kozhno-  
ven.inst. 6:370-371 '59. (MIRA 13:11)  
(HAIR--DISEASES)  
(MEDICAL MYCOLOGY)

GRUMOV, N. K.      Cand. Tech. Sci.

Dissertation: "Rational System of Heat Supply for Cities." Power Engineering Inst  
imeni G. M. Krzhizhanovskiy, Acad Sci USSR, 24 Apr 47.

CC: Yechernyyaya Moskva, Apr, 1947 (Project #17226)

GROMOV, N.K.

111111

USSR/Engineering - Heating  
Power Supply

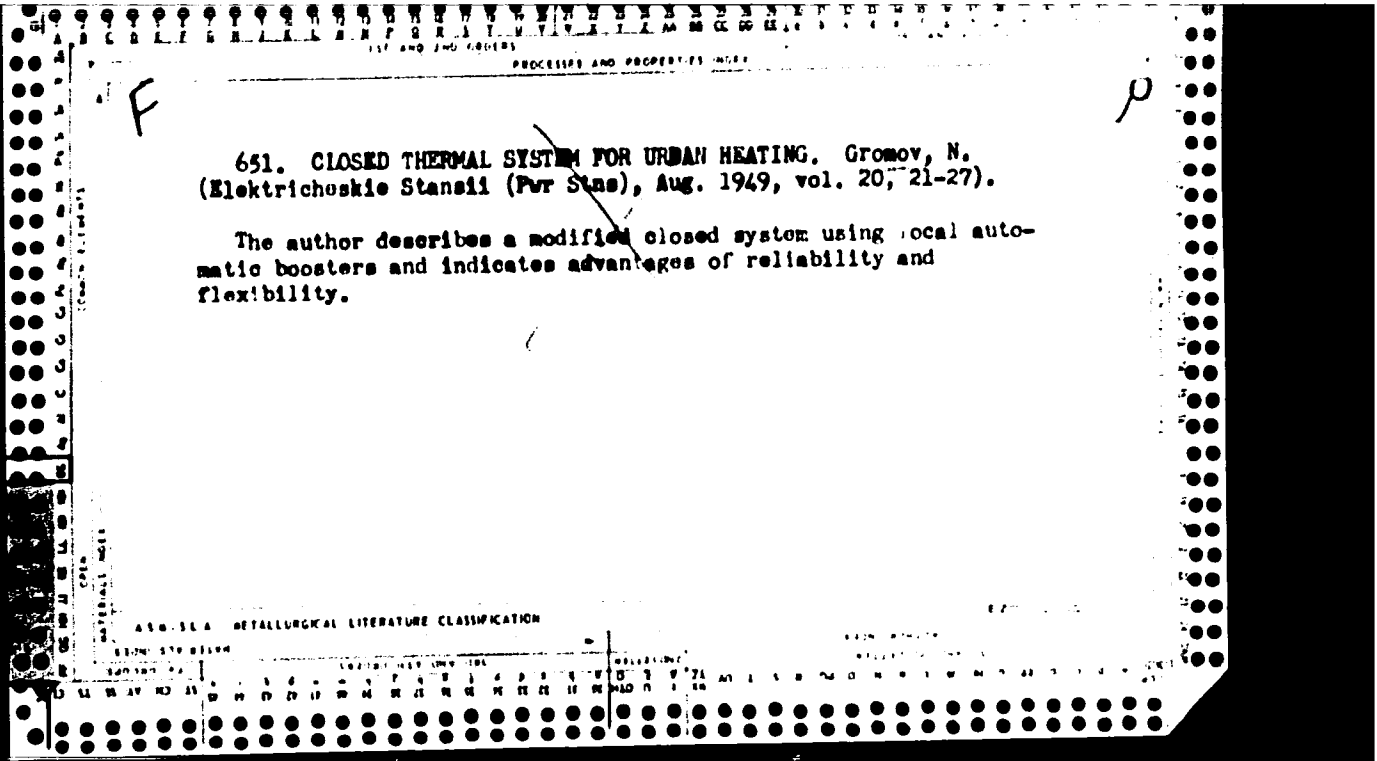
Nov 49

"Some Results in Moscow District Heating and  
Power Supply and Tasks for the Immediate Future,"  
N. K. Gromov, Cand Tech Sci, 4 pp

"Elek Stants" No 11

Describes Moscow stations and pipe systems which  
supply about 550 dwellings, over 100 schools and  
hospitals, over 300 institutions, and over 80 in-  
dustrial enterprises. However, all these repre-  
sent only about 15% of possible users of district  
heating, and system is still being extended. In-  
cludes two sketches.

156T26



GROMOV, N.K., inzhener; GERBKO, A.A., inzhener.

Twenty-five years of Soviet central heating systems. Gor.khoz.Mosk. 23 no.11:  
11-17 N '49. (MIRA 6:11)  
(Moscow--Heating from central stations) (Heating from central stations--  
Moscow)

GROMOV, N.K.

Basic problems of operating the heat supply system of Moscow. Gor.khoz.Mosk.  
25 no.10:6-10 0 '51. (MLBA 6:11)

1. Gromov, N.K., glavnyy inzhener Teploseti Mosenergo.  
(Moscow--Heating from central stations)  
(Heating from central stations--Moscow)

LANIN, I.S.; KHARITON, M.I.; GROMOV, N.K., redaktor.

[Control of corrosion in heating networks] Opyt bor'by s korroziei v teplo-  
vykh setiakh. Pod red. N.K.Gromova. Moskva, Gos.energ.isd-vo, 1953. 51 p.  
(MIRA 6:10)

(Corrosion and anticorrosives) (Heating from central stations)

ГРОМОВ, Н. К. - ЛУК'ЯНОВ, В. И. - ФИЛИПОВ, М. Ф.

Moscow - Heating from Central Stations

Practical systems for district heat supply in Moscow.  
Gor. khoz. Mosk. no. 1, 1953

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



GROMOV, N.K., kandidat tekhnicheskikh nauk.

Basic problems in the dependable operation of city central heating systems. Gor.khoz.Mosk. 28 no.6:21-24 Je '54.(MLRA 7:7)  
(Moscow--Heating from central stations) (Heating from central stations--Moscow)

СКОЛОВ НИКОЛАЙ КОНСТАНТИНОВИЧ

SOKOLOV, Yefim Yakovlevich, professor, redaktor; GROMOV, Nikolay Konstantinovich;  
SAFONOV, Aleksandr Petrovich; PAKSHVER, V.B., redaktor; FRIDKIN,  
A.M., tekhnicheskiy redaktor.

[Operation of heating systems] Eksploatatsiia teplovykh setei. Pod  
red. E. Ia. Sokolova. Moskva, Gos.energ.isd-vo, 1955. 352 p.  
(Heating) (MLRA 9:1)

AID P - 2907

Subject : USSR/Electricity  
Card 1/2 Pub. 26 - 4/32  
Author : Gromov, N. K., Kand. Tech. Sci.  
Title : Immediate problems in automation of district heating systems  
Periodical : Elek.sta, 7, 14-18, J1 1955  
Abstract : The author reports on the conditions and operation of district heating networks and on "chaotic" hot water distribution. The article deals with different types of automatic inlet regulators used for heating hot water and ventilation systems. Their diagrams are given. The article further reports on experiments made by the District Heating Network of the Moscow Power System and the Engineering and Construction Institute im. Kuybyshev. The All-Union Technical Institute im. Dzerzhinskiy was put in charge of working out new methods for the installation of automatic regulators. Five diagrams.

AID P - 2907

Elek. sta, 7, 14-18, J1 1955

Card 2/2 Pub. 26 - 4/32

Institution : None

Submitted : No date

*С. П. К.*

GROMOV, N.K., kand.tekhn.nauk; SOKOLOV, Ye.Ya., doktor tekhn.nauk.

District heating in the U.S.S.R. on the anniversary of the  
October Revolution. Elek.sta. 28 no.11:71-74 N '57. (MIRA 10:11)  
(Heating from central stations)

SENKOV, F.V., kand.tekhn.nauk; KONOVALOVA, A.P., inzh.; KONONOVICH, Yu.V.,  
inzh.; YELISEYEVA, A.S., tekhnik; POLYAKOV, V.F., tekhnik; GROMOV,  
N.K., kand.tekhn.nauk, retsenzent; VOL'FKOVICH, M.Ye., retsenzent;  
CHABROV, I.M., red.

[Regulation of the daily allowance of heat supply to apartment  
houses and public buildings; scientific report] Reshiy autochno-  
go regulirovaniia otpuska tepla zhilym i obshchestvennym zdaniam;  
nauchnoe soobshchenie. Pushkin, Akad.kommun.khoz.im.K.D.Pamfilova,  
1959. 73 p. (MIRA 13:5)  
(Heating from central stations)

SOV/96-59-4-3/21

AUTHOR: Gromov, N.K., Candidate of Technical Sciences

TITLE: Measures to Reduce the Cost and Construction Time of Heating Systems (Meroprivatlya po snizheniyu stoimosti i strokov stritel'stva teplovyykh setey)

PERIODICAL: Teploenergetika, 1979, No 4, pp 17-20 (USSR)

ABSTRACT: One of the main reasons why, in many cases, district heating does not give the designed fuel economy is that the heat output of the turbines is not fully used because of the slow rate of construction of heating systems. This occurs because a number of technical and organizational problems are unsolved, particularly because of the high cost of heating systems. It is important that the lag in the construction of heating systems should be quickly overcome. The influence of pipework and other equipment is first considered. At the present time there is a very heavy demand for steel piping and great economy in its use is important. A most effective way of economizing steel pipe is to cut down the wall thickness. Possibilities in this direction are somewhat limited by the restricted range of tube available. One of the

Card 1/4

NOV/90-59-4-3/21

Measures to Reduce the Cost and Construction Time of Heating Systems

reasons why tube wall thicknesses have to be kept up is because of corrosion troubles. Bituminous protective coatings have been relatively successful in cutting down corrosion troubles. Other types of protective paint have not been so good. Pipes should be wrapped with paper to prevent damage to the protective covering in transport. The design organisations should pay more attention to cathodic protection. Since steel tubes are in such short supply and require careful protection it may be advantageous to use non-metallic tubes such as asbestos cement, glass or plastic. In particular the first results with asbestos cement and glass tubes are promising. The method of installation and the type of heat insulation used have important effects on the cost of construction of heating systems. Several promising new heat insulating materials have recently been developed notably, cellular ceramics and thermo-pearl. Such materials should be carefully tried out in practice. It is considered justifiable not to provide thermal insulation on the return line in large heating mains of 300-1000 mm diameter

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007/96-59-4-3/21

Measures to Reduce the Cost and Construction Time of Heating Systems

even where fuel is expensive. This question should be specially considered in each particular case. Sometimes, in order to avoid waste, heating lines have been laid that were not big enough to provide adequately for future development and parallel lines have then had to be laid at much greater overall cost. This kind of trouble is best overcome by avoiding selectivity in the provision of heat supply and by providing heat supplies simultaneously on a fully developed scale for each particular district. In order to ensure economy at consumers' installations they must be provided with appropriate instruments and automatic control equipment but unfortunately the output of automatic control equipment is quite inadequate. Various other types of equipment that are also in short supply are mentioned. Special efforts should be made to rationalise and mechanise the construction of heat supply lines, primarily by the use of factory produced components.

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SOV/96-59-4-3/21

Measures to Reduce the Cost and Construction Time of Heating Systems

To avoid disputes general standards should be developed  
for the inspection and acceptance of heating systems.

ASSOCIATION: Mosenergo

Card 4/4

14(6)

SOV/91-59-5-2/27

AUTHOR: Gromov, M.K., Engineer

TITLE: The Technical Foundations of Thermofication of Moscow  
(Tekhnicheskiye osnovy teplofikatsii Moskvy)

PERIODICAL: Energetik, 1959, Nr 5, pp 3-6 (USSR)

ABSTRACT: This is an account of recent developments in the Moscow thermofication system, and covers such matters as thermal equipment of power plants, water and steam networks, hydraulic and thermal regimes of water networks, technical equipment of networks and thermal points, organization of service, and a few recommendations on what should be done in order to secure the best results from the whole thermofication system. The annual output of heat delivered in 1958 to the Moscow consumers reached 9 million "Mkcal". Extensive thermofication has reduced the attending personnel by 10,000. Since the end of WWII, the old AP-25 and AP-25 turbines (25,000 kw, 29 atm, 400°C) were

Card 1/4

001/01-50-5-1/21

The Technical Foundations of Thermofication of Moscow

gradually replaced by high-pressure VT-25 turbines (25,000 kw, 90 atm, 400°C). They are planned to be supplemented with 50,000-100,000 kw turbines; soon. Old boilers will be replaced by gas-fired, peak boilers developed by the VTI. The principal pumps are 1000-1200 ton/hour pumps, the principal pre-heaters have capacities of 500-550 m<sup>2</sup>. The water for the heating networks is now heated up to 150°C, which results in elimination of water accumulators in residential houses. Water is fed in under 9-11 atm. Over 3000 water elevators, the TETs pumping stations and four substations, two of which are fully automatic, ensure the proper circulation. Radius of hot water network has grown to 7 km. Networks of separate TETs are interconnected. The maximum radius of hot steam (3-1.6 atm) increased to 3 km. About 45% of used steam returns to TETs. The Moscow heating network has underground pipes,

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307/91-59-5-2/27

The Technical Foundations of Thermofication of Moscow.

of two-pipe type. The VTI and the plant "Krasnyy Stroitel'" have developed a new type of twin-pipe line, consisting of two asbestos-cement pipes put upon each other, with a mineral wadding in between. They tested well in dry grounds. The Mospodzemstroy successfully uses the prefabricated blocks containing an asbestos-cement and steel pipes, with a mineral wadding in between. The automatic relay regulator developed by the ORGRES have found wide application on the thermal mains. The Moskovskiy energeticheskiy institut (Moscow Institute of Energetics) has developed a device called "Dis-petcherskiy raport" (Dispatcher's Report), which, using only two telephone wires, communicates 6 parameters of steam from any point of the steam network. This device is undergoing modification aimed at enabling it to automatically inspect 50 control points at one time. The municipal thermal net-work is subdivided into 6 districts,

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SOV/91-59-5-2/27

The Technical Foundations of Thermofication of Moscow.

operated and controlled by the Dispatcher Point  
of the Tepicet'. There are 3 tables.

Card 4/4

GROMOV, N.K.

Production tasks of the seven-year plan for the development of district heating systems in Moscow. Gor.khoz.Mosk. 33 no.2:14-18 F '59.  
(MIRA 12:3)

1. Glavnyy inzh. Upravleniya teploseti "Mosenergo."  
(Moscow--Heating from central stations)

GROMOV, N.K.

Prevention of corrosion in a heat supplying network. Energetik 9  
no.8:34 Ag '61. (MIRA 14:8)  
(Heating from central stations) (Pipelines--Corrosion)



GROMOV, N.K., red.; DUKHOVNAYA, S.M., red.; FRIDKE, L.M., tekhn. red.

[Single-pipe systems of heat distribution networks] Odnorubnye  
sistemy teplovykh setei; sbornik statei. Moskva, Gosenergoizdat,  
1962. 207 p. (MIRA 15:5)  
(Heating from control stations)

MITTEL'MAN, L.M., kand.tekhn.nauk; GROMOV, N.K., inzh.

Concerning S.E.Shitsman's article "Methodology for accounting for  
and standardization of technical and economic indices of thermal  
electric power plants." Elek. sta. 33 no.8:89-91 Ag '62.  
(MIRA 15:8)

(Electric power plants--Standards) (Shitsman, S.E.)

GROMOV, N. K.

Concerning the rinsing-out of the thermal networks. Energetik  
10 no.8:32 Ag '62. (MIRA 15:10)

(Electric power plants)

GROMOV, N.K., inzh.

Development of centralized heating in Moscow. Teploenergetika  
11 no.11:7-12 N '64. (MIRA 17:12)

1. Teploset' Moskovskogo rayonnogo upravleniya energeticheskogo  
khozyaystva.

VUKALOVICH, M.P.; GROMOV, N.K.; IMERITSKIY, M.I.; KARTOSHKIN,  
M.D.; KOBRINA, R.B.; LEONOVA, A.Ya.; TROYANSKIY, Ye.A.;  
MANUYLOV, P.N.; SHUKHER, S.M., red.

[Heat engineer's handbook] Spravochnaia knizhka teplo-  
tekhnika. Izd.2., perer. i dop. Moskva, Energiia, 1964.  
287 p. (MIRA 17:12)

AKSENOV, Mikhail Alekseyevich. Prinsipal uchastiye GRCMCV, N.K.,  
kand. tekhn. nauk; SINEL'NIKOVA, L.N., red.

[Heating networks; sources and consumers of thermal energy.  
Installation, maintenance, and repair of networks] Teplovye  
seti; istochniki i potrebiteli tepla. Ustroistvo, obsluzhiva-  
nie i remont setei. Moskva, Energiia, 1965. 351 p.  
(MIRA 18:9)

MAI'TSEV, B.G.; GROMOV, N.N., kandidat ekonomicheskikh nauk, retsenzent;  
MORIN, L.A., inzhener, retsenzent; EIKHENVAL'D, A.V., kandidat  
ekonomicheskikh nauk, redaktor; MATVEYEVA, Ye.N., tekhnicheskii  
redaktor.

[Planning in a foreman's section] Opyt planirovaniia na uchastke  
mastera. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry,  
1954. 81 p. (MIRA 8:1)

(Machinery industry--Accounting)

STARSHENKO, D.I., kandidat tekhnicheskikh nauk; GROMOV, N.P., redaktor;  
MIKHAYLOVA, V.V., tekhnicheskiiy redaktor

[Comprehensive groove designing of shaped profiles] Razvernutaya  
kalibrovka fazonnykh profilei. Moskva, Gos.nauchno-tekhn.izd-vo  
lit-ry po cherno i tsvetnoi metallurgii, 1952. 247 p.(MLBA 8:10)  
(Rolling mills)



GROMOV, N.P., kandidat tekhnicheskikh nauk, nauchnyy redaktor; NEPOMNYA-SHCHIY, N.V., redaktor; PETROVA, N.S., tekhnicheskiiy redaktor

[Press working of metals; collection of articles] Obrabotka metallov davleniem; sbornik statei. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii. No.3. 1954. 267 p. (MIRA 7:10)  
(Rolling (Metalwork))

TARNOVSKIY, I.Ya., doktor tekhnicheskikh nauk, professor; GROMOV, N.P.,  
redaktor; STARODUBTSEVA, S.N., redaktor; ATTOPOVICH, M.K., tekhnicheskii  
redaktor

[Deformation during the plastic molding of metal; forging and  
rolling] Formoizmeneniye pri plasticheskoi obrabotke metallov;  
kovka i prokatka. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po  
chernoi i svetloi metallurgii, 1954. 534 p. (MLRA 7:9)  
(Deformations (Mechanics)) (Forging)  
(Rolling (Metalwork))



GROMOV, N.P., kandidat tekhnicheskikh nauk, redaktor; VALOV, N.A., redaktor,  
ARTOPOVICH, M.K., tekhnicheskii redaktor.

[Press working of metals; a collection of articles] Obrabotka metallov  
davleniem; sbornik statei. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry  
po chernoi i tsvetnoi metallurgii. No.4, 1956. 239 p. (MLRA 9:4)  
(Rolling (Metalwork))

GROMOV, N.P., kand. tekhn. nauk; GOLOVANENKO, S.A., kand. tekhn. nauk;  
~~KASATKIN, N.M., inzh.~~

New thermostatic bimetals. Vest. elektroprov. 27 no.8:32-33 Ag '56,  
(MLRA 10:9)

1. Institut pretsizionnykh splavov Tsentral'nogo nauchno-issledovatel'-  
skogo instituta chernoy metallurgii.  
(Thermostat) (Metals)

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157-1957-12-25288

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 334 (USSR)

AUTHORS: Gromov, N. P., Il'ichev, A. I., Kasatkin, N. M.

TITLE: Manufacture of Alloys With a Rectangular Hysteresis Loop  
(Proizvodstvo splavov s pryamougol'noy petley gisterezisa)

PERIODICAL: Sb. tr. Tsent. n.-i. in-t chernoy metallurgii, 1956, Nr 15,  
pp 259-273

ABSTRACT: Research on alloys was conducted in three areas: a) creation of a texture in Fe-Ni alloys, b) utilization of the texture of certain alloys by means of thermomagnetic treatment, c) utilization of the increase in residual inductance of some alloys with a reduction in the thickness of the strip to  $5\mu$ . Basic technological operations and peculiarities are given for the production of strips composed of three alloys: 65 NP, 45 NKP, and 34 NKMP. Magnetic properties of strips of various thickness, prepared from these alloys, are also shown.

P. N.

Card 1/1 1. Alloys-Development 2. Alloys-Applications 3. Alloys-  
Manufacture

GROMOV, N.P., kand. tekhn. nauk, nauczyny red.; VALOV, N.A., red.  
----- izd-va; ISLENT'YEVA, P.G., tekhn. red.

[Rolling practice and pipe manufacture] Prokatnoe i trubnoe pro-  
izvodstvo; sbornik statei. Moskva, Metallurgizdat, 1958. 384 p.  
(MIRA 15:9)

(Rolling (Metalwork)) (Pipe mills)

GROMOV, N.P.

KOROLEV, Andrey Andreyevich, kand.tekhn.nauk, dots.; KUZ'MIN, A.D., kand.  
tekhn.nauk, retsenzent; DVINYANINOV, S.A., inzh., retsenzent;  
GROMOV, N.P., kand.tekhn.nauk, red.; OSIPOVA, L.A., red.izd-va;  
EL'KIND, V.D., tekhn.red.

[Rolling mills; construction and design] Prokatznye stany; konstruk-  
tsiya i raschet. Moskva, Gos. nauchn.-tekhn.izd-vo mashinostroit.  
lit-ry, 1958. 450 p. (MIRA 11:4)  
(Rolling mills)



SOV/126-6-5-9/43

AUTHORS: Borodkina, M.M., and Gromov, H.P.

TITLE: Study of the Texture of a 50% Fe-50% Ni Alloy in the Form of Strip of Various Thicknesses (Izucheniye tekstury splava 50% Fe-50% Ni v vide lenty razlichnoy tolshchiny)

PERIODICAL: Fizika Metallov i Metallovedeniya, 1958, Vol 6, Nr 5, pp 819 -- 824 (USSR)

ABSTRACT: The deformation and recrystallisation textures of strip of various thicknesses of the alloy 50NP (Permalloy) was studied by the pole figure method. Strip of thickness 0.05, 0.02, 0.01 and 0.005 mm was obtained by hot rolling without intermediate annealing. Two series of X-ray photographs, in which the specimen was turned through  $10^\circ$  between each exposure, were used to construct pole figures taken at a vertical and horizontal position to the rolling direction. The texturegraphs were taken by a Laue-type camera in a Mo-irradiation. For the study of the texture of different layers, the strip specimen was electrolytically polished. The most pronounced orientations were found to be (110)  $[112]$ , (112)  $[111]$  and (236)  $[533]$ .

On annealing a strip of 0.05 mm thickness, a distinct

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SOV/126-6-5-9/43

Study of the Texture of a 50% Fe-50% Ni Alloy in the Form of Strip of Various Thicknesses

cubic recrystallisation texture, (001) [100], forms. The difference in deformation texture between strip of 0.005 mm and 0.05 mm thickness consists in the orientation (110) [112] being less pronounced and the number of disorientated crystals being greater in the thinner strip (see Figure 1). A decrease in strip thickness from 0.5 to 0.005 mm leads to gradual disappearance of recrystallisation texture (see Figure 4). The method of deformation influences the deformation texture and the effect of recrystallisation texture disappearance in a very thin strip (see Figure 8). The reason for the disappearance of recrystallisation texture appears to be the part played by the surface layers of a very thin strip, which are characterised by a weakening in the orientation (110) [112] and by an increase in the number of disorientated crystallites (see Figure 9). Figures 2 and 3 represent pole figures of deformed strip of 0.05 and 0.005 mm thickness, respectively, and Figures 5 and 7 pole figures of annealed strip of 0.05 mm and 0.003 mm thickness, respectively.

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SOV/126-6-5-9/43

Study of the Texture of a 50% Fe-50% Ni Alloy in the Form of Strip  
of Various Thicknesses

There are 9 figures and 5 references, 3 of which are  
Soviet, 1 German and 1 English.

ASSOCIATION: Institut pretsizionnykh splavov TsNIICHM  
(Institute of Precision Alloys of TsNIICHM)

SUBMITTED: January 31, 1957

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PHASE I BOOK REPRODUCTION 307/3140  
 Moscow, Tsentrallyy nauchno-issledovatel'skiy institut Chernyy metallurgii.  
 Institut pretsizionnykh splavov

Precision alloys (Precision Alloys) Moscow, Metallurgizdat, 1979. 265 p.  
 (Series: Itsi; Sbornik zakonov, v. 2) 2,150 copies printed.

Additional sponsoring Agency: USSR. Gosstatiznauy planovyy komitet  
 Ed.: D. I. Gubriyevskiy. Ed. of Publishing House: Ye. I. Levitskiy. Tech. Ed.:  
 P. G. Ilyantsev.

PROPOSE: This collection of articles is intended for technical personnel  
 and scientific workers in the metallurgical, instrument-manufacturing,  
 and electrical-equipment-manufacturing industries. It may also be  
 useful to students of schools of higher technical education.

COVERAGE: This collection of articles presents the results of studies of  
 precision alloys made in recent years by the Central by Science  
 Research Institute of Ferrous Metallurgy (Central Scientific  
 Institute of Ferrous Metallurgy) and other scientific  
 institutions. The articles discuss the properties of such alloys  
 which can be used for precision instruments and electrical materials  
 and alloys and their physical and chemical properties. Examples of  
 electrical resistance and thermal expansion and the effect of  
 irradiation on properties of alloys are considered. Problems  
 connected with the determination of magnetic susceptibility and with  
 rolling of bimetallic strips are reviewed. An analysis of alloys used  
 in manufacturing high-temperature transformers and strain gauges is  
 presented. No personalities are mentioned. References follow several  
 of the articles.

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Apshar', I. I. On the Problem of the Nature of the K-state in Alloys	177
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Semenov, E. V. On the Problem of the Electrical-Resistance Anomaly of the High Alloy	226
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18(0)

PHASE I BOOK EXPLOITATION SOV/2316

AKademiya nauk SSSR. Institut nauchnoy i tekhnicheskoy informatsii

Metallurgiya SSSR, 1917-1957; [t.] II (Metallurgy in the USSR, 1917 - 1957; Vol 2) Moscow, Metallurgizdat, 1959. 813 p. Errata slip inserted. 3,000 copies printed.

Ed. (Title page): I. P. Bardin, Academician; Ed. (Inside book): G. V. Popova; Tech. Ed.: P. G. Islent'yeva.

PURPOSE: This book is intended for metallurgists.

COVERAGE: The articles in this collection present historical data on the achievements of Soviet metallurgy, both ferrous and nonferrous, during the period 1917-1957. Advances in theory and practical application are thoroughly discussed. Many of the articles describe the present status of individual branches of metallurgy and give an idea of what may be expected in the future. Advances made in other countries are also discussed. The articles are accompanied by a large number of references. For further coverage, see Table of Contents.

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2

Metallurgy in the USSR (Cont.)

SOV/2316

TABLE OF CONTENTS:

Tselikov, A. I., Corresponding Member, USSR Academy of Sciences; Ye. S. Rokotyay, Doctor of Technical Sciences; N. P. Gromov, Candidate of Technical Sciences. (Ts NIIMASH and TsNIICHM) Production of Rolled Stock 3

The authors present a historical review of the production of rolled stock in czarist Russia and the Soviet Union from 1721 to 1957. Developments in rolling technique and in the design of rolling mills for various purposes are discussed.

Yermolayev, N. F., Engineer; and P. K. Teterin, Candidate of Technical Sciences. (TsNIICHM) Production of Steel Tubes 38

The article briefly outlines the history of steel-tube production in the USSR (beginning in 1893) and in other countries. The main methods of manufacturing seamless and welded steel tubular products at various Soviet and non-Soviet plants are described. There is some discussion of equipment.

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SOV/126-8-5-21/29

AUTHORS: Borodkina, M.M., and Gromov, N.P.

TITLE: Study of Deformation and Recrystallization Textures of an Iron-Nickel Alloy<sup>6</sup>(48% Ni) in Relation to the Degree of Deformation<sup>6</sup> in Cold Rolling<sup>16</sup>

PERIODICAL: Fizika metallov i metallovedeniya, Vol 8, 1959, Nr 5, pp 761-769 (USSR)

ABSTRACT: The alloy was made in an induction furnace and had the following composition (wt.%): 47.75% Ni, 0.03% C, 0.55% Mn, 0.22% Si, 0.007% S, remainder iron. As a result of forging and hot rolling a strip of 6 mm thickness was obtained. By means of cold rolling the annealed isotropic cold-rolled material, strips of the alloy to be investigated were obtained, of approximately 50  $\mu$  thickness, with a reduction of between 11 and 99.4%, and of 5  $\mu$  thickness, with a reduction of between 73.7 and 99.92%. The initial thickness of the rolled material was between 19  $\mu$  and 6 mm (Table 1). Rolled materials of various thickness without preferential orientation were obtained by cold working with a reduction not exceeding 60% and subsequent annealing at 950 °C. The hot-rolled annealed strip of 6 mm thickness ✓

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SOV/126-8-5-21/29

Study of Deformation and Recrystallization Textures of an Iron-Nickel Alloy (48% Ni) in Relation to the Degree of Deformation in Cold Rolling

was also isotropic. The isotropy of the rolled material was verified by X-ray photographic and ionization methods. Annealing was carried out in a vacuum container ( $10^{-2}$  mm Hg) at 1100 °C for one hour; cooling was carried out at the rate of 100 °C/hour down to 600 °C; thereafter the container was cooled in air. Measurement of magnetic properties was carried out by a ballistic method. For the study of texture, besides the X-ray photographic method an X-ray ionization method with construction of quantitative pole figures was applied. Recording of intensity during exposure for the construction of entire pole figures was carried out by means of a texture attachment to the apparatus URS-50I (Ref 2). The intensity for a standard specimen free from texture, made from powder of the alloy under investigation and having an absorption factor identical with that of the investigated specimen,  $\mu t$  ( $\mu$  - coefficient of linear absorption,  $t$  - thickness of the specimen) was taken as unity. Standard specimens were ✓

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Study of Deformation and Recrystallization Textures of an Iron-Nickel Alloy (48% Ni) in Relation to the Degree of Deformation in Cold Rolling

also used for determination of corrections associated with drop in intensity with increase in the angle of deflection of the specimen. Figs 1 and 2 are X-ray patterns of specimens deformed to various degrees of reduction and of the same specimens after annealing at 1100 °C; the thickness of the specimens in Fig 1 is 50 μ and that in Fig 2, 5 μ. Figs 3 and 5 are pole figures of deformed (upper row) and annealed (lower row) strips; the thickness of strip in Fig 3 is 50 μ and that in Fig 5 is 5 μ. Fig 4 shows orientations of the texture of Fe-48% Ni alloy. The results of measurements of magnetic properties of the annealed specimens of 50 μ thickness were found to be in good agreement with the change in texture (Table 2). The authors arrive at the following conclusions: 1) as the degree of deformation increases a change in the intensity ratio of the orientations takes place. 2) after annealing a cubic recrystallization texture is observed only when as a result of deformation the texture with the intense

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SOV/126-8-5-21/29

Study of Deformation and Recrystallization Texture of an Iron-Nickel Alloy (48% Ni) in Relation to the Degree of Deformation in Cold Rolling

components (110)  $[\bar{1}\bar{1}2]$  and (110)  $[3\bar{3}5]$  is formed, which corresponds to a deformation of 99.0%. Further increase in deformation leads to a weakening of the orientations (110)  $[\bar{1}\bar{1}2]$  and (110)  $[3\bar{3}5]$ , and after annealing, to a weakening of the cubic recrystallization texture (100)  $[001]$  and a fall in magnetic properties. 3) Not only the texture of the surface layers but also an excessive degree of deformation affects the cubic texture of a strip of 5  $\mu$  thickness. 4) The nature of the strip texture change of a Fe-Ni alloy (48% Ni) with increase in degree of deformation appears to indicate that the formation and growth of recrystallization nuclei during annealing takes place in an orientated manner.

There are 5 figures, 2 tables and 15 references, of which 5 are Soviet, 3 German, 6 English and 1 French. ✓

Card  
4/4

ASSOCIATION: TsNIICHM

SUBMITTED: January 10, 1959

ADRIANOVA, V.P.; ANDREYEV, T.V.; ARANOVICH, M.S.; BARSKIY, B.S.; GROMOV, N.P.;  
GUREVICH, B.Ye.; DVORIN, S.S.; YERMOLAYEV, N.F.; ZVOLINSKIY, I.S.;  
KABLUKOVSKIY, A.F.; KAPELOVICH, A.P.; KASHCHENKO, D.S.; KLIMOVITSKIY,  
M.D.; KOLOSOV, M.I.; KOROLEV, A.A.; KOCHINEV, Ye.V.; LESKOV, A.V.;  
LIVSHITS, M.A.; MATYUSHINA, N.V.; MOROZOV, A.N.; POLUKAROV, D.I.;  
RAVDEL', P.G.; ROKOTYAN, Ye.S.; SMOLYARENKO, D.A.; SOKOLOV, A.N.;  
USHKIN, I.N.; SHAPIRO, B.S.; EPSHTEYN, Z.D.; AVRUTSKAYA, R.P., red.  
izd-va; KARASEV, A.I., tekhn.red.

[Brief handbook on metallurgy, 1960] Kratkii spravochnik metallur-  
ga, 1960. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i  
tsvetnoi metallurgii, 1960. 369 p. (MIRA 13:7)  
(Metallurgy)

POLUKHIN, Petr Ivanovich; FEDOSOV, Naum Maksimovich; KOROLEV, Andrey  
Andreyevich; MATVEYEV, Yuriy Mikhaylovich; SMIRNOV, V.S., prof.,  
doktor tekhn.nauk, retsenzent; LAUR, G.K., retsenzent; GROMOV,  
N.P., dotsent, kand.tekhn.nauk, red.; GOROBINCHENKO, V.M., red.  
isd-va; DOBRYNINSKAYA, L.V., tekhn.red.

[Rolling mill practice] Prokatnoe proizvodstvo. Moskva, Gos.  
nauchno-tekhn.isd-vo lit-ry po chernoi i tsvetnoi metallurgii,  
1960. 966 p. (MIRA 13:10)

1. Zamestitel' glavnogo inzhenera Magnitogorskogo metallurgicheskogo  
kombinata (for Laur).  
(Rolling (Metalwork))

ZAROSHCHINSKIY, Mikhail Leont'yevich; FOLUKHIN, P.I., prof., doktor  
tekh. nauk, retsenzent; GRUMOV, N.P., prof., retsenzent;  
FEDOSOV, N.M., prof., retsenzent; VAGIN, A.A., red. izd-va;  
DOBUZHINSKAYA, L.V., tekh. red.

[Technological principles of rolling mill design] Tekhnologi-  
cheskie osnovy proektirovaniia prokatnykh stanov. Moskva,  
Metallurgizdat, 1962. 443 p. (MIRA 15:12)  
(Rolling mills--Design and construction)

POLUKHIN, Petr Ivanovich, prof., doktor tekhn. nauk; GRDINA, Yu.V.,  
prof., ~~doktor tekhn.~~ nauk; ZARVIN, Yevgeniy Yakovlevich, prof.;  
GROMOV, N.P., prof., nauchnyy red.; GOLOBINCHENKO, V.M., inzh.,  
red. izd-va; ATTOPOVICH, M.K.[deceased], tekhn. red.

[Rolling and heat treatment of railroad rails] Prokatka i termi-  
cheskaia obrabotka zheleznodorozhnykh rel'sov. [By] P. I. Polukhin  
i dr. Moskva, Metallurgizdat, 1962. 510 p. (MIRA 16:2)  
(Rolling (Metalwork)) (Railroads--Rail)

S/776/62/000/025/007/025

**AUTHORS:** Gromov, N. P., Zusman, Sh. I., Agaronik, V. Ya., Barkaya, D. S.

**TITLE:** On the lengthwise uniformity of the resistance of an extremely thin wire.

**SOURCE:** Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov. no. 25. Moscow, 1962. Pretsizionnyye splavy. pp. 104-116.

**TEXT:** This paper reports the results of an experimental investigation, performed at the TsNICHM (Central Scientific Research Institute of Ferrous Metallurgy), intended to develop a methodology and construct equipment for the continuous inspection of the uniformity of the electrical resistance (ER) of extremely thin wires in the source of their motion. The problem is of the greatest importance for a variety of calculating and telemechanical devices in which the uniformity of the electrical resistance of potentiometer wire is a decisive element in determining the accuracy of measurements and telemetered information. The equipment newly constructed was used for the determination of the uniformity of the resistance of Ni-Cr wire 20-50  $\mu$  in diam. The experimental equipment comprises an idling feed spool and motor-driven take-up spool, between which the wire is guided by textolite guide rollers while in contact with a pair of spaced-apart contact rollers made of stainless steel

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with a Cr-plated surface. Diam of the contact rollers is 50 mm, that of the guide rollers 20 mm. A braking load is applied to the feed spool. Measurements can be made at contact distances of 1 m or 0.5 m. The linear velocity of the wire is 23-25 m/min. The resistance measurements were performed by means of a DC bridge of the type MBV (MVU) 49, a high-speed potentiometer of the type БП102 (BP102), and various auxiliary equipments. The theory of the dependence of the ER of the wire on the mechanical stresses prevailing therein is briefly outlined for given values of the Poisson coefficient and the Young modulus of elasticity. The results of an experimental illustrative test are shown graphically, illustrating the linear variation of the dependence up to the elastic limit for a 0.04-mm diam Ni-Cr wire. The conditions necessary to avoid any plastic bending stresses that may arise in contact with the guide and contact rollers are specified. Problems arising from the characteristics of the measuring equipment, the contact equipment, and the deformations of the wire while passing through the contact equipment, and the verification of the functioning of the entire equipment are discussed. It is found that the method and the equipment adopted here are suitable for the continuous measurement of the uniformity of the ER of micron wire along its length in the course of its motion. It is established that the degree of uniformity of the ER becomes less favorable with decreasing thickness of the wire. It is shown that cold-hardened wire exhibits a significantly better uniformity of the ER along its length as compared with

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On the lengthwise uniformity of the resistance . . . .

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wire that has been subjected to heat treatment. The source of the impairment of the uniformity in the latter is attributed primarily to the quenching of the wire in the furnace system. It is shown that significant impairments in the uniformity of the ER of a wire along its length can be produced by careless unwinding and rewinding.

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GROMOV, N.P.; ZUSMAN, Sh.I.; AGARONIK, V.Ya.; BARKAYA, D.S.

Uniformity of resistance along the length of extremely thin wire.  
Sbor. trud. TSNIICHM no.25:104-116 '62. (MIRA 15:6)  
(Electronic apparatus and appliances--Testing)  
(Electric resistance)

GROMOV, N. P.; KASATKIN, N. M.; KAPLAN, A. S.

Laminated metals. Standartizatsiia 26 no.10:16-21 0 '62.  
(MIRA 15:10)

(Laminated metals)

GROMOV, N. P.; KAL'MENEV, A. A.

Effect of tension on the position of the neutral cross-section  
during rolling. Izv. vys.ucheb,zav.; chern.met 7. no. 5:81-84  
'64. (MIRA 17:5)

1. Moskovskiy vecherniy metallurgicheskiy institut.