AID Nr. 976-7 24 May

CORROSION OF MOLYBDENUM [Cont'd] S/136/63/000/003/004/004

at humidities of 70 to 88%. An increase of test temperature from 15 to 35° C roughly doubled the corrosion rate at humidities up to 80%, bringing it to ~80 mg/m^2·day day at 35° C and 80% humidity. At a humidity of 96%, however, the corrosion rate jumped from 180 or 220 mg/m^2·day at 15 or 25° C, respectively, to 675 mg/m^2·day at 35° C. Additions of sodium nitride and sodium benzoate, which are effective as inhibitors of steel corrosion, had a negative effect in the case of molybdenum;both were found to accelerate corrosion. It can be assumed that the oxide film which forms on Mo in humid atmospheres is non-protective.

[WW]

Card 2/2

L 19853-65 EWT(m)/EPF(c)/T Pr-4 BSD/ASD(m)-3/ASD(p)-3/AFETR DJ

ACCESSION NR: AR4048157 S/0081/64/000/011/P034/P034

SOURCE: Ref. zh. Khimiya, Abs. 11P233

24
B

AUTHOR: Gintsberg, S.A., Ivanov, A.P.

TITLE: Oil-soluble additives to petroleum oils which increase their protective effect

CITED SOURCE: Tr. N.-i. tekhnokhim. in-ta by*t. obsluzh., vy*p. 3, 1963, 123-129

TOPIC TAGS: lubricating oil, oil additive, metal corrosion, spindle oil, cyclohexylamine, alkylresorcinol/ additive MSDA-11, additive MSDA-18

TRANSLATION: Tests on the protective effect of additives in spindle oil were carried out in a humidity chamber with an SO_2 content of 0.01 mg/liter and working in 3-hour cycles with temperature drops of 20-40C. The oil with the additive was applied to samples of the metals to be tested (low carbon steel, high carbon steel, gray iron, cast iron with spheroidal graphite, galvanized steel, plumbous bronze, aluminum, brass, aluminum-manganese bronze, babbitt) by immersion. The additives tested included: cyclohexylamine salts of C_6-, C_9- and C_{18} fatty acids; the dicyclohexylamine salt of a mixture of C_{10}-C_{12} fatty acids (additive MSDA-11); additive MSDA-18 (the composition of which is unknown);

Card 1/2

L 19853-65

ACCESSION NR: AR4048157

amides of a mixture of C_{10}-C_{16} fatty acids and a mixture of C_{16}-C_{20} fatty acids; the amide of caproic acid; alkylresorcinol; isoborneol; and the acid ester of sebacic acid. The best results were obtained with additives MSDA-18 and MSDA-11 and the amide of a mixture of C_{16}-C_{18} fatty acids, which are recommended for practical use. Good results were also obtained with alkylresorcinol and the acid ester of sebacic acid. A. Ravikovich

SUB CODE: FP, MM ENCL: 00

Card 2/2

GINTSBERG, S.A.; SHREYDER, A.V.

Evaluating the effectiveness of acid pickling inhibitors.
Zhur.prikl. khim. 38 no.3:689-691 Mr '65.
(MIRA 18:11)

1. Submitted April 19, 1963.

GINTSBURG

See also:

GINZBURG

GINSBURG

GINTSBURG, A., inzh.-polkovnik

Methods for repairing stations. Voen. sviaz. 16 no.3:34-35 Mr '58.
(MIRA 11:4)
(Radio stations--Maintenance and repair)

SOV/138-58-7-12/19

AUTHOR: Gintsburg, A.

TITLE: Experimental Work by Team Leader Z.S. Nikolayev in Charge of Calandering Plant on Facing Fabrics (Opyt raboty brigadira kalandrovozhatogo Z.S. Nikolayeva na obkladke tkani)

PERIODICAL: Kauchuk i rezina, 1958, Nr 7, p 37 (USSR)

ABSTRACT: Report from the factory "Krasnyy treugol'nik" (Red Triangle). A short account is given of Z.S. Nikolayev's methods of gaining the maximum possible output while in charge of his shift on mixing and calandering plant. One of his tricks is to use the tailing from one batch of material, which would normally be off-gauge due to decreased tension on the back roll, to gauge the necessary reset to the roll gap for the subsequent batch of material and thus save time and material when the new batch enters the calander. He manages to get 99.5% useful running time from the plant, as compared with 97-98% obtained by his colleagues. During 1957, Z.S. Nikolayev's team was

Card1/2

SOV/138-58-7-12/19

Experimental Work by Team Leader Z.S. Nikolayev in Charge of Calandering Plant on Facing Fabrics

nominated, more than once, as the best shop team in the factory.

ASSOCIATION: Zavod "Krasnyy Treugol'nik" (Red Triangle Works)

1. Industrial production--USSR 2. Personnel--Performance

Card 2/2

SOV/138-58-7-13/19

AUTHOR: Gintsburg, A.

TITLE: The Advanced Working Methods of Foreman O.G. Kokorina on the "Sole-fastening" Operation in Boot-making) (Peredovoy metod raboty mastera O.G. Kokorinoy na operatsii "nalozheniye podoshv" na sapozhkakh)

PERIODICAL: Kauchuk i rezina, 1958, Nr 7, p 38 (USSR)

ABSTRACT: Foreman O.G. Kokorina improved and speeded up the sole-fastening operation on women's shoes by eliminating two unnecessary motions and providing for a more careful application of glue to parts.

ASSOCIATION: Zavod "Krasnyy treugol'nik (Red Triangle Works)

Card 1/1 1. Shoes--Production 2 Personnel--Performance

GINTSBURG, A.B.

MD

Histochemistry of nucleic acids in the process of growth and functioning of silk-excreting glands of the China-oak silkworm. E. A. Shubnikova and A. B. Gintsburg. *Arkhiv Anat. Histol. i Embryol.* 31, No. 1, 56-64(1954); *Referat. Zhur., Khim.* 1954, No. 41284.—By making use of histochem. methods it has been found that the amts. of ribonucleic acid (RNA) in cytoplasm and deoxyribonucleic acid (DNA) in the nuclei increase during the process of development of silk-excreting glands. The synthesis of the secretion inside the nuclei is accompanied by an increased utilization of DNA. For the synthesis of the secretion in the cytoplasm RNA is required; an accumulation of RNA in cytoplasm occurs before the excretion and during the first hrs. of the activity of the silk-excreting glands. It seems that there is an interrelation between RNA and DNA during the growth and the physiol. activity of the silk-excreting glands.

E. Wierbicki

Iz kafedry gistologii (zaved yushchiy - professor G. I. Roskin) Moscow State University im. M. V. Lomonosova.

GINSBURG, A.S.

Work of the technical office at the [illegible] Plant.
Kauch. i rez. 16 no.5:37 My '57. (MIRA 10:7)
(Rubber industry)

SOV/112-59-2-2761

8(6)

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2, p 69 (USSR)

AUTHOR: Gintsburg, A. B.

TITLE: Generated-Voltage Busways at Large Hydroelectric Generating Stations (Shinoprovody generatornogo napryazheniya moshchnykh gidroelektrostantsiy)

PERIODICAL: V sb.: Energ. str-vo, Vol 1, M.-L., 1958, pp 40-42

ABSTRACT: Heavy-current shaped-conductor busways developed by the Leningrad Branch of the "Orgenergostroy" on the basis of laboratory investigations of new welding methods are described. The cost of manufacturing and mounting one running meter of box-type busway is 11 rubles vs 20.5 rubles in the case of a flat-bus busway. According to a table presented, the carrying capacity of channel-type and angle-type composite conductors is higher than that of box-type because the former have a longitudinal slit that helps to dissipate heat. Busways consisting of two channel shapes are considered. Structural assemblies have been developed for two channel types: 175 x 70 x 8 and

Card 1/2

SOV/112-59-2-2761

Generated-Voltage Busways at Large Hydroelectric Generating Stations

125 x 55 x 6.5; 35-mm gaps are left in assembling the former, and 15-mm gaps are left in the latter case. For convenience in fastening and in preventing vibration, the channels are tightly connected by sliding blocks. Special tools are developed for the above operations and also for butt welding of the busways. Brass bolts serve for connections. Bus holders are made of a diamagnetic material. Some mounting problems are touched upon. Advantages of welded joints over the bolt-type joints, as well as major welding methods are listed.

S.S.L.

Card 2/2

GINTSBURG, A.B., inzh.

Erection of the crossing of 110 kv. power transmission line across a river. Elek.sta.33 no.1:71-74 Ja '62. (MIRA 15:3)
(Electric lines--Overhead)

PHASE I BOOK EXPLOITATION SOV/3883

Gintsburg, A.K., V.A. Loktin, S.L. Reznikovskiy, B.G. Rozovskiy, M.A. Sulyutin, and A.A. Trakhov

Remont radiostantsiy (Repair of Radio Stations) Moscow, Voyen. Izd-vo M-va obor. SSSR, 1959. 327 p. No. of copies printed not given.

Ed.: P.S. Kiriyenko; Tech. Ed.: Ye.K. Konovalova.

PURPOSE: This textbook is intended for students of communication schools of the Soviet Defense Ministry, and may also be used by Defense Ministry personnel working in army communication repair shops, and by other radio specialists.

COVERAGE: The book deals with radio repair. Detailed information is given on materials and components, testing and repair of components, assembly and disassembly of radio equipment, measurements during testing and repair of radio stations, various methods of radio repair, and repair of power supply sources, transmitters, and receivers. M.A. Sulyutin wrote Ch. I; A.K. Gintsburg wrote Ch. II;

Card 1/11

V.A. Loktin wrote Ch. III; B.G. Rozovskiy wrote Ch. IV; S.L. Reznikovskiy wrote Chs. V, VII, VIII, and Section 3 of Ch. VI; and A.A. Trakhov wrote Ch. VI (excepting for Section 3). No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

GINTSBURG, B.A.

Use of aloe extract in the treatment of pyorrhea alveolaris. Stomatologiia, Moskva no.2:56 1951. (CLML 20:11)

1. Of Voronezh Polyclinic (Director -- Honored Physician RSFSR A.N. Volkovenko).

GINTSBURG, S. B.

"Quality of a Screw Surface With the Use of the Whirling Threading Method in Chemical Machine Building." Thesis for degree of Cand. Technical Sci. Sub 29 Jun 50, Moscow Inst of Chemical Machine Building.

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

GINTSBURG, B. B.

137-58-1-2043D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 277 (USSR)

AUTHOR: Gintsburg, B. B.

TITLE: Laboratory Work in Metallography in Specialized High Schools (Laboratornyye raboty po metallovedeniyu v srednikh spetsial'nykh uchebnykh zavedeniyakh)

ABSTRACT: Bibliographic entry on the Author's dissertation for the degree of Candidate of Pedagogic Sciences, presented to the Leningr. gos. ped. in-t (Leningrad State Pedagogical Institute), Leningrad, 1957

ASSOCIATION: Leningr. gos. ped. in-t (Leningrad State Pedagogical Institute), Leningrad

1. Metallurgy-USSR

Card 1/1

GINTSBURG, B.B.; GUDKOV, N.N.; MIKHAYLOV, N.M., otv. red.

[Technology of metals and structural materials; program and test assignments with methodological instructions on their performance. Methodological manual for students of subjects not related to mechanical engineering in special correspondence high schools (based on 7 grades; 120 hours)] Tekhnologiia metallov i konstruktsionnye materialy; programma, zadaniia dlia kontrol'nykh rabot s metodicheskimi ukazaniiami po ikh vypolneniiu. Metodicheskoe posobie dlia uchashchikhsia nemashinostroitel'nykh spetsial'nostei zaochnykh srednikh spetsial'nykh uchebnykh zavedenii (na baze 7 klassov; ob"em 120 chasov). Moskva, Vysshaia shkola, 1963. 65 p.
(MIRA 17:10)

1. Russia (1923- U.S.S.R.) Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya. TSentral'nyy metodicheskiy kabinet po srednemu spetsial'nomu obrazovaniyu.

GINTSBURG, B. YA.

Teoriia i raschet porshnevykh kolets. Moskva, Mashgiz, 1945. 122 p. diagrs.

Bibliography: p. 120-[121].

Theory and design of piston rings.

DLC: TJ533.G5

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

GINTSBURG, B. YA.

O kriteriiakh iznosa i dolgovechnosti dvigatelei vnutrennego sgoraniia. (Vestn. Mash., 1950, no. 7, p. 23-29)

Criteria of the wear and durability of internal combustion engines.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

PHASE I BOOK EXPLOITATION SOV/3919
SOV/46-M-6

Gintsburg, B. Ya.

Teplovaya napryazhennost' porshney dvigateley vnutrennego sgoraniya (Thermal Stresses in Pistons of Internal-Combustion Engines) Moscow, 1958. 133 p. (Series: Moscow. Nauchno-issledovatel'skaya laboratoriya dvigateley, Trudy, No. 6) 1,000 copies printed.

Tech. Ed.: S.N. Zav'yalov.

PURPOSE: The book is intended for automotive and combustion engineers.

COVERAGE: The book presents an account of stresses and strains in pistons of internal-combustion engines. A piston having a uniform flat head and an axially symmetrical skirt was chosen for the stress-strain analysis. Analogy theorems may be used to derive a reliable calculating device for determining thermal stresses in pistons of different parameters. Practical criteria for estimating thermal stresses in a piston of arbitrary design are set out in the last chapter. No personalities are mentioned. There are 19 references: 10 Soviet and 9 English.

Card 1/6

ARINKIN, Viktor Vasil'yevich; GINTSBURG, B.Ya., prof., doktor tekhn. nauk, retsenzent; BASHNTSYAN, A.A., inzh., red.; MODEL', B.I., tekhn.red.

[Increasing the performance of the piston set of the D100 diesel engine] Povyshenie rabotosposobnosti porshnevoi gruppy dizelia D100. Moskva, Gos.nauchno-tekhn.izd-vo mashinostr. lit-ry, 1959. 109 p. (MIRA 12:10)
(Diesel engines)

S/122/63/000/003/005/008
A004/A127

AUTHOR: Gintsburg, B.Ya., Professor, Doctor of Technical Sciences

TITLE: Gasket rings with internal pressure

PERIODICAL: Vestnik mashinostroyeniya, 43 no. 3, 1963, 31 - 35

TEXT: Gasket rings with internal pressure differ from standard piston rings in that they produce pressure on the inner surface. The author gives a report on the expediency of using such rings, describes their design characteristics and presents a number of formulae for the calculation of various factors affecting the design of gasket rings with internal pressure. A detailed description is given of the manufacturing technology of this type of gasket rings and the individual working operations are enumerated. There are 10 figures and 1 table.

Card 1/1

GINTSBURG, B.Ya., doktor tekhn. nauk; MINAYEV, N.I.; IPPOLITOV, Ye.S.; SHAKHMAZARYAN, V.M.

Improving starting characteristics of a diesel engine. Avt. prom. 31 no.3:12-14 Mr '65. (MIRA 18:7)

GINTSBURG, B.Ya., doktor tekhn.nauk, prof.; RABINOVICH, A.Sh., kand.tekhn.-nauk

"Investigating piston rings of tractor-type engines" by V. G. Goncharenko. Reviewed by B.IA.Gintsburg, A.Sh. Rabinovich. Vest.mashinostr. 42 no.9:84-87 S '62. (MIRA 15:9)
(Piston rings) (Goncharenko, V.G.)

L 2166-66 EWT(m)/EPF(o)/EWP(j)/T/ETC(m) RM/WW
ACCESSION NR: AP5024508 UR/0191/65/000/010/0042/0044 31 B

AUTHOR: Gintsberg, E. G. 44,55; Chibisova, Ye. I. 44,55; Kovarskaya, B. M. 44,55

TITLE: Polarographic investigation of the products of thermo-oxidative destruction of polyester resins based on maleic and chlorendic anhydrides and ethylene glycol 15,44,55

SOURCE: Plasticheskiye massy, no. 10, 1965, 42-44

TOPIC TAGS: polyester plastic, polarographic analysis, oxidative degradation, chemical mechanics

ABSTRACT: The products obtained from thermal oxidation of a polyester resin were analysed polarographically to help establish the mechanics of the destructive process. The polyester investigated was based on diethylene glycol, maleic and chlorendic anhydrides (1. 1:0. 4:0. 6 molar ratio), cured with benzoyl peroxide and diethanolamine in styrene (30% styrene in the initial solutions). It was heated at 240C for 1-4 hours under an initial oxygen pressure of 200 mm Hg. Formaldehyde, acetaldehyde, benzaldehyde and maleic acid were identified. No fumar-

Card 1/2

L 2166-66
ACCESSION NR: AP5024508

ic acid was present. Orig. art. has: 4 figures

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: OC, MT

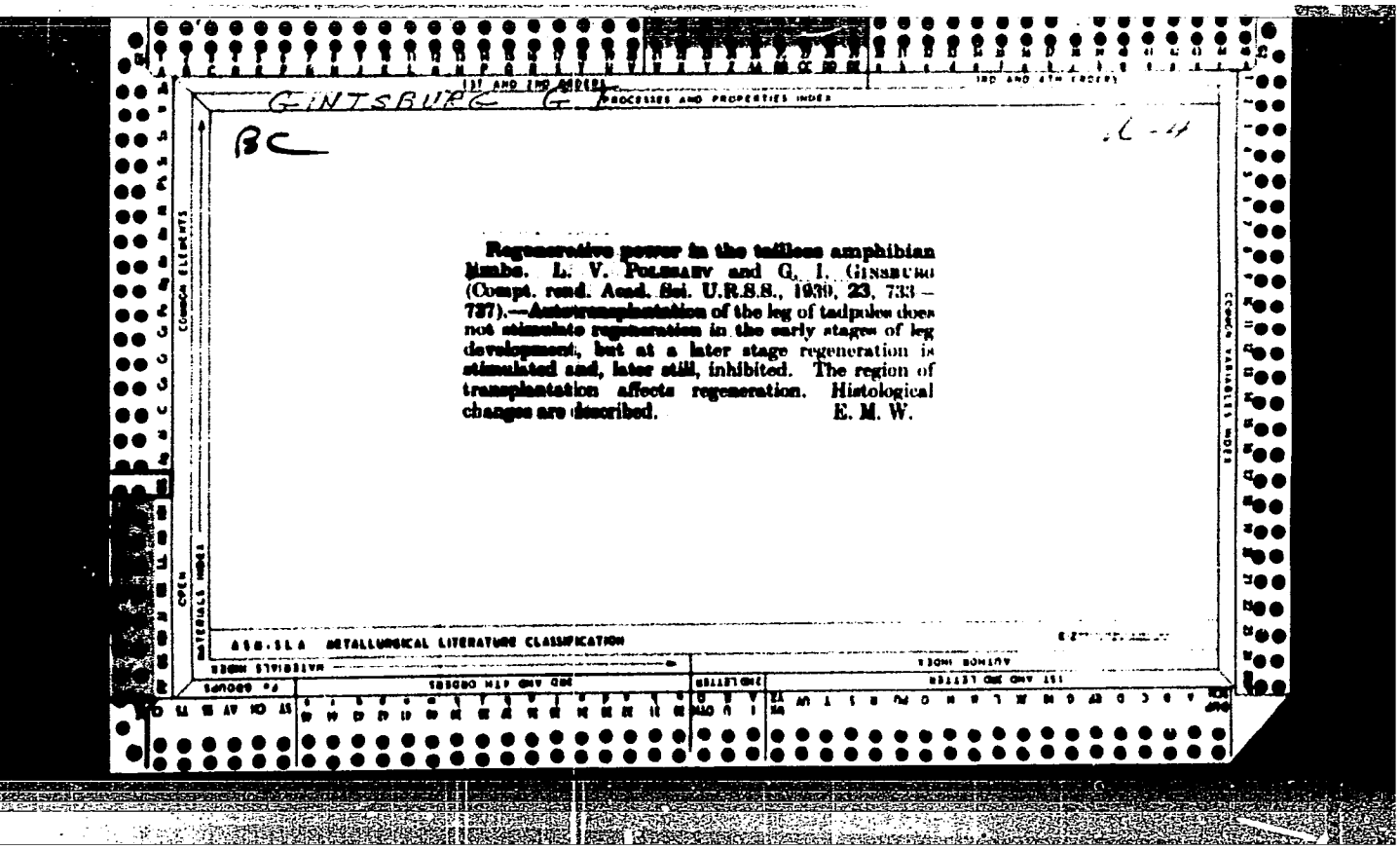
NR REF SOV: 007 OTHER: 002

Card 2/2

TRINCHER, K.S.; GINTSBURG, E.I.

Kinetics of the enzymatic destruction of the cell membrane of an erythrocyte. Biofizika, 7 no.2:244-247'62.(MIRA 16:8)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(ERYTHROCYTES) (TRYPSIN)



GINTSBURG G.

BC

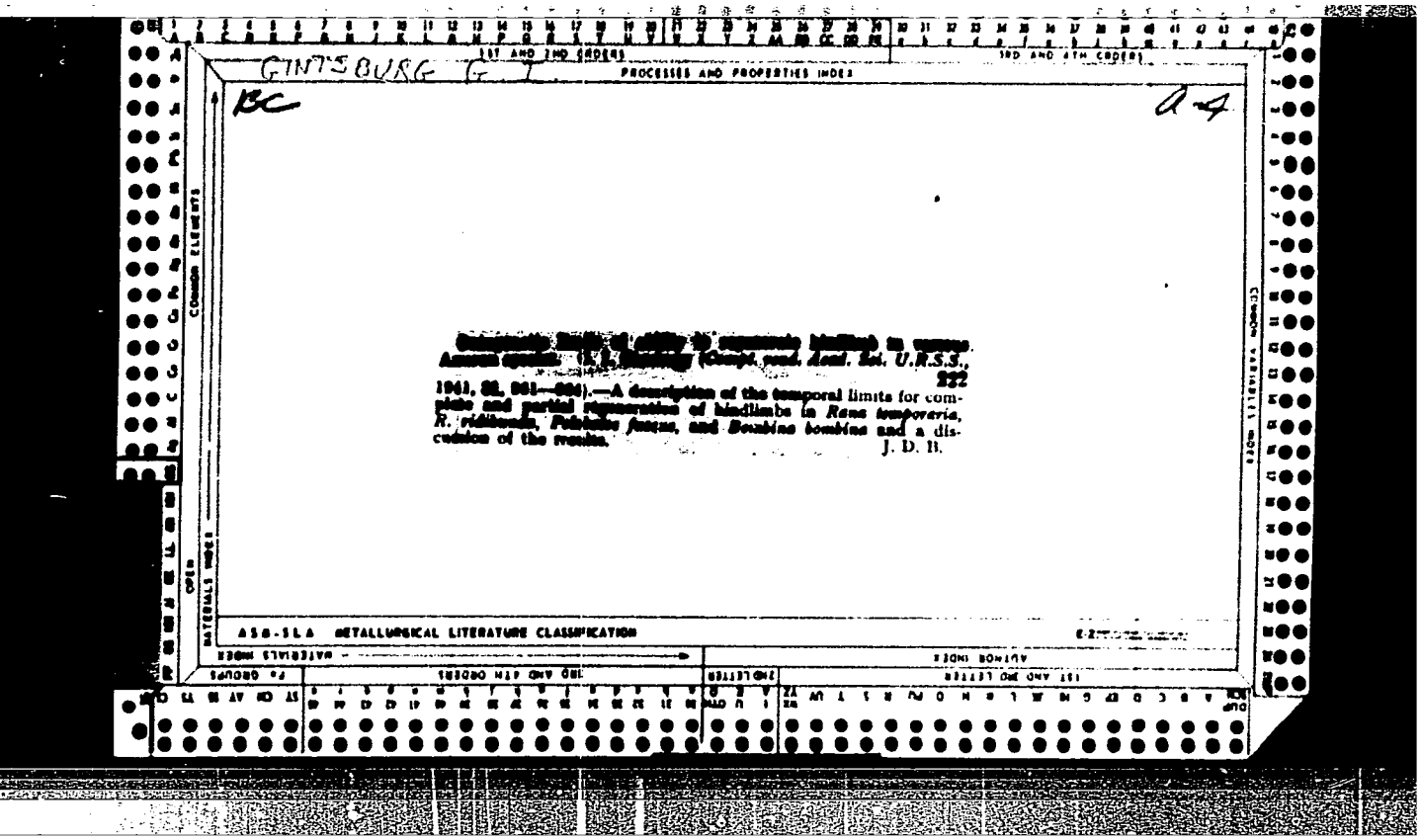
C-4

Regenerative power in the tailless amphibian limbs. L. V. Polezhaev and G. I. Ginsburg (Compt. rend. Acad. Sci. U.R.S.S., 1939, **23**, 733–737).—Autotransplantation of the leg of tadpoles does not stimulate regeneration in the early stages of leg development, but at a later stage regeneration is stimulated and, later still, inhibited. The region of transplantation affects regeneration. Histological changes are described. E. M. W.

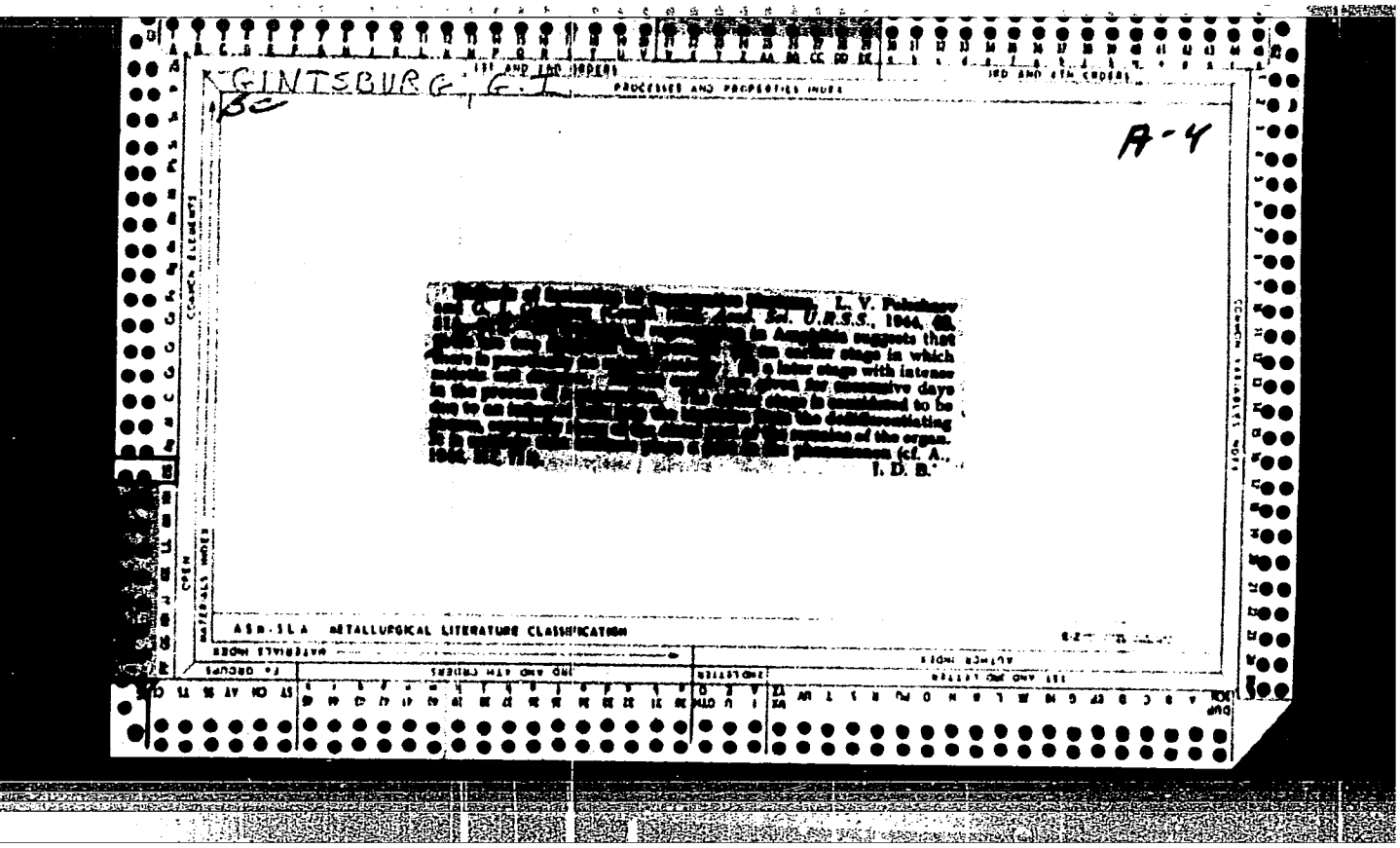
GINZBURG, G. I.

"Concerning the Factors which Cause the Loss of Regenerative Capacities in Tissues among Anura Extremities."

Dok. An., 30, No 6, 1941.



[redacted] (Compt. rend. Acad. Sci. U.R.S.S., 1941, 32, 221—224).—A description of the temporal limits for complete and partial regeneration of bindlimbs in *Rana temporaria*, *R. ridibunda*, *Pelobates fuscus*, and *Bombina bombina* and a discussion of the results. J. D. B.



GINZBURG, G. I.

" Studies in Repeated Regeneration." Dok. AN., 45, No 6, 1944.

Mbr., Inst. Exptl. Biol., Kazakh Acad. Sci., -1939-41;

Mbr., Inst. Cytology, Histology & Embryology, Acad. Sci., -1941-;

Mbr., 2nd Moscow Med. Inst. imeni Stalin, -1941-.

GINETSINSKIY, G. I.

Mbr., Institute of Cytology, Histology, and Embryology, Acad. Sci. (-1947-)

"The Participation of Regionally Different Skin in the Regeneration of the Extremities in the Tadpole, Ranea Temporaria," Dok. AN, 58, No. 2, 1947

GINTSBURG,G. I.

"Influence of Foreign Skin on Development and Regeneration of Extremities in Anuran Amphibians."

Dok. AN, No 5, 1948.

GINTSBURG, G. I.

PA 43/43T63

USSR/Medicine - Regeneration
Medicine - Skin

Feb 1948

"Role of the Epithelium and Corium of Regionally Different Skin in the Regeneration of the Limbs of Amurous Amphibians," G. I. Gintsburg, Inst Cytology, Histology, and Embryol, Acad Med Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 4

Describes experiments which led to conclusion that the corium of regionally different skin does not play active part in regeneration of a limb but evidently retards its dedifferentiation. Submitted by Academician I. I. Shmal'gauzen, 25 Nov 1947.

43T63

GINTSBURG, G. I.

"Role of Skin in the Regeneration of Organs. Regional Participation of Dissimilar Skin in the Regeneration of Extremities in Tailless Amphibians." Sub 20 Dec 51, Moscow Oblast Pedagogical Inst.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

OTRSPL, Vol. 5, No.1

Gintsburg, O.I. (A.N. Severtsov Institute of Animal Morphology U.S.S.R. Academy of Sciences), Reciprocal influence of the transplant and the host in different aged transplants of extremities in tailless amphibia, 153-6

Akademiya Nauk, S.S.S.R., Doklady, vol. 78, no.1, 1951

GINTSBURG, G. I.

Homoplastic transplantation of certain embryonic tissues and organs to adult mammals. Doklady Akad. nauk SSSR. 81 no. 3: 477-480 21 Nov 1951. (CIML 21:3)

1. Presented by Academician A. I. Abrikosov 15 September 1951.
2. Institute of Animal Morphology imeni A. N. Severtsov, Academy of Sciences USSR.

GINTSBURG, G.I.

Conditions and significance of wound epithelization for regeneration of extremities in Amphibia. Doklady Akad. nauk SSSR 82 no.5:813-816 11 Feb 52. (CIML 21:5)

1. Presented by Academician K.I. Skryabin 27 December 1951.
2. Institute of Morphology of Animals imeni A.N. Severtsov, Academy of Sciences USSR.

BARAKINA, N.F.:GINTSBURG, G.I.:KORCHAK, L.I.:POLEZHAYEV, L.V.:ROGAL', I.G.

Repair of cranial defects. Doklady Akad. nauk SSSR 87 no. 4:673-675 1 Dec 1952. (CIML 23:5)

1. Presented by Academician A. I. Abrikosov 5 October 1952. 2. Institute of Animal Morphology imeni A. N. Severtsov of the Academy of Sciences USSR.

A GINTSBURG, G. I.

Replacement for skull defects in mature rats and dogs. Dokl. AN SSSR 87, No 5, 1952, pp 869-872.

When grafts consiting of bone of newly-born animals or of embryos are transplanted into the injured skull of adult animals, the tissue of the graft is resorbed and replaced by freshly formed bone. Unless a graft is made, only scar tissue is formed. Within the age limits studied (i.e., from embryos to newly-born animals), the effectiveness of the graft increases with the age of the donor animals. Presented by Acad. A. I. Abrikosov 6 Oct 1952.

GINTSBURG, G.I.

Replacement of bone defects of the skull in mammals. Trudy Inst. morf.zhiv. no.11:158-174 '54. (MLRA 8:2)
(Skull--Surgery) (Bones--Transplantation)

GINTSBURG, G.I.

EXCERPTA MEDICA Sec.2 Vol.9/8 Physiology,etc. Aug56

3614. GINTSBURG G.I. *Changes in the central nervous system during regeneration of limb muscles (Russian text) DOKLADY AKAD. NAUK SSSR 1955, 105/5 (1110-1113) Illus. 4

In young albino rats the entire skeletal musculature was removed from the left hind lower leg, but large nerves and blood vessels were left intact. In one group the excised muscles were cut up with scissors and the pulp replaced in the wound. Asepsis was not strict and infection occurred, particularly in animals with the reintroduced muscle tissue. Changes in the ventral horn cells of the spinal cord were seen in both types of preparations. In rats with 'empty' wounds, paleness of nerve cells could be detected after one day (the same on both sides of cord!), but in 20-30 days the cells regained their normal appearance. In rats with 'stuffed' wounds, even when there was no infection, the changes in the ventral horn cells were more marked and longer lasting, with proliferation of glia cells, while restorative changes were incomplete even 100 days after operation.

Kleitman - Chicago, Ill.

Inst. Animal Morphology im. A.N. Severtsov AS USSR

GINTSBURG, G.I.

Some data on the role of the micronucleus in the accumulation of nucleic acids in Paramecium caudatum. Zhur. ob. biol. 22 no.6: 452-458 N-D '61. (MIRA 14:11)

1. Institute of Animal Morphology, U.S.S.R. Academy of Sciences, Moscow.

(CELL NUCLEI) (NUCLEIC ACIDS) (INFUSORIA)

GINTSBURG, G.I.

Autoradiographic study on thymidine-H^3-inclusion in the process of oogenesis. Zhur. ob. biol. 24 no.1:71-73 Ja-F'63. (MIRA 16:11)

1. Institut morfologii zhivotnykh imeni A.N.Severtsova AN SSSR, Moskva.

GINTSBURG I. A. Characteristics of tumour cells in the CSF in cases of malignant tumour Vop. Neirokhir. 1949, 13/6 (28-34) Illus. 4

Polymorphism of the cells, polynuclear cells - especially those with 3 nuclei - big nuclei and their polymorphism, the presence of conglomerates and the structure of the tissue in the form of epithelial layers or glandular forms, are the characteristic features.

Herman - Lódź

So: NEUROLOGY & PSYCHIATRY, Section VIII Vol 4 No 1-6

GINTSBURG, I.B., inzhener.

The construction of apartment houses with small apartments. Biul. tekh.inform. 3 no.6:4-8 Je '57. (MIRA 10:10)
(Leningrad--Apartment houses)

GINTSBURG, I.B., inzh.

Testing reinforced concrete autoclaves. Biul.tekh.inform. 5 no.2:7-9 F '59. (MIRA 12:4)
(Autoclaves--Testing) (Precast concrete construction)

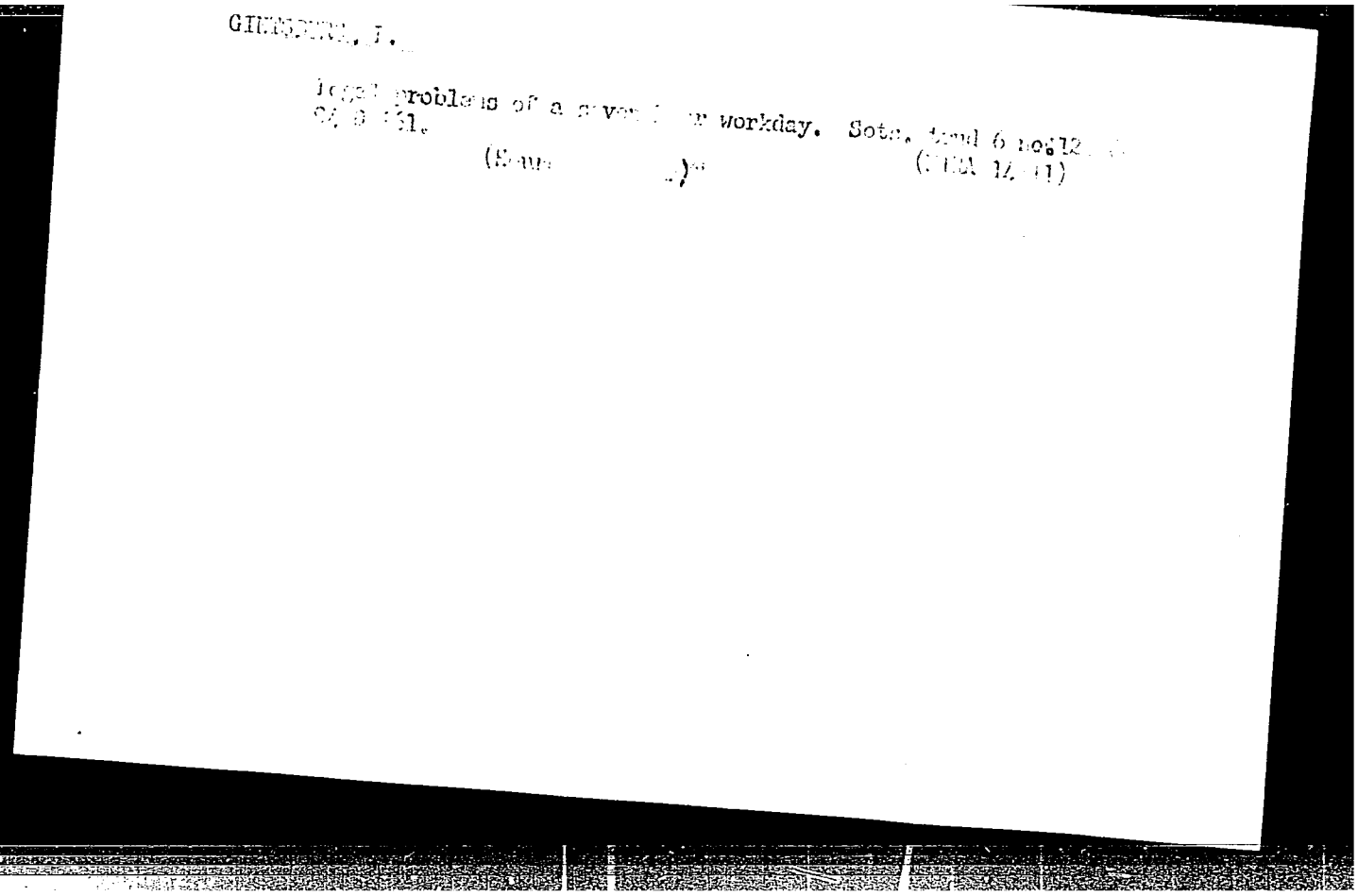
GINTSBURG, I.B., inzh.

Using assembly-line method in building apartment houses along the Lanskoye Highway. Biul. tekh. inform. po stroi. 5 no.7:11-14 Jl '59. (MIRA 12:10)

(Leningrad--Apartment houses) (Assembly-line methods)

GINTSBURG, L., doktor yurid.nauk

Vacations for workers and employees. Sots.trud 4 no.12:41-43 D '59. (MIRA 13:6)
(Vacations, Employee)



GINSBURG, I.

[illegible] problems of a seven [illegible] workday. Sots. trud 6 no.12 [illegible]
64: 8 '61.

(Hours of Work) (CIRA 14:11)

GINTSBURG, L.L.

Engineering method of calculating automobile brakes. Avt.trakt. prom. no.10:17-20 O '54. (MLRA 7:10)

1. ATE-1
(Automobiles--Brakes)

GINTSBURG, L.L., aspirant

Stability of hydraulic power steering gear. Izv.vys.ucheb. zav.; mashinostr. no.7/8:134-144 '58. (MIRA 12:8)

1. Moskovskiy vecherniy mashinostroitel'nyy institut.
(Automobiles--Steering gear)

AUTHOR: Gintsburg, L.Ia.

TITLE: The Choice of a Booster System for Steering Mechanism (Vybor komponovki usilitelya mekhanizma rulevogo upravleniya)

SOV/113-59-2-4/20

PERIODICAL: Avtomobil'naya promyshlennost', 1959, Nr 2, pp 6-9 (USSR)

ABSTRACT: The author describes hydraulic and pneumatic booster systems for the steering mechanisms of motor vehicles as designed by American, English, and French firms. He also gives the set-up diagram (Fig 6) of the pneumatic booster system in YAAZ-214 automobile and its brief description. The distributor in this system is mounted on the steering-wheel column and is connected by rod with the pneumatic booster mounted on the right longeron of the frame. There are 6 diagrams, 2 photos, and 2 Soviet references.

ASSOCIATION: NAMI

Card 1/1

GINTSBURG, L. L., Cand T ch Sci (diss) -- "Investigation of the operation of a hydraulic amplifier for automobile steering". Moscow, 1960. 16 pp (Min Higher and Inter Spec Educ RSFSR, Moscow Automotive Mech Inst), 120 copies (KL, No 14, 1960, 132)

GINTSBURG, L.L.

Calculating and selecting parameters of the hydraulic servo system for power steering. Avt.prom. no.1:29-32 Ja '60. (MIRA 13:5)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Motor vehicles--Steering gear)

GINTSBURG, L.L.

Comparative testing of hydraulic and pneumatic servomechanisms for power steering. Avt.prom. no.2:3-5 F '60. (MIRA 13:5)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Automobiles--Steering gear)

GINTSBURG, L.L.

Investigating vibrations of steering wheels of automobiles caused by the hydraulic booster of the steering gear. Avt.prom. no.7: 9-14 Jl '60. (MIRA 13:7)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Automobiles--Steering gear--Vibration)

GINTSBURG, L.L., kand.tekhn.nauk; VENDEL', V.Ye.

Using the electric measurement method for the study of steering gear. Avt. prom. 27 no. 5:24-27 My '61. (MIRA 14:5)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Automobiles--Steering gear) (Electric measurements)

GINTSBURG, L.L., kand. tekhn. nauk

Shimmy of front wheels of motor vehicles. Avt. prom. 28 no.7:8-12 Jl '62. (MIRA 16:6)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Motor vehicles—Wheels—Vibration)

GINTSBURG, L.L., kand. tekhn. nauk; SYRKIN, G.A.

Hydraulic pumps of power steering boosters. Avt. prom. 29 no.7:27-30 Jl '63. (MIRA 16:8)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut i Moskovskiy avtozavod imeni Likhacheva.
(Automobiles—Steering gear)

GINTSBURG, L.L., kand. tekhn. nauk; FITTERMAN, B.M., kand. tekhn. nauk

Some problems of the maneuverability of motor vehicles.
Avt. prom. 30 no.8:28-32 Ag '64.
(MIRA 17:11)

1. TSentral'nyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.

GINTSBURG, L.L., kand. tekhn. nauk; FITTERMAN, B.M., kand. tekhn. nauk

Maneuvrability of motor vehicles. Avt. prom. 30 no.11:24-29 N '64 (MIRA 18:2)

1. TSentral'nyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.

ACC NR: AP7004800 (A) SOURCE CODE: UR/0413/67/000/001/0140/0141

INVENTOR: Gintsburg, L. L.; Trikoz, A. A.

ORG: None

TITLE: A hydraulic power steering drive with hydraulic feedback for transportation vehicles. Class 63, No. 190224

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1967, 140-141

TOPIC TAGS: hydraulic equipment, mechanical power transmission device, drive train

ABSTRACT: This Author's Certificate introduces: 1. A hydraulic power steering drive with hydraulic feedback for transportation vehicles. The installation contains a double-action master cylinder with two pistons connected by a rod and forming a central and two terminal working cavities. The rod connecting the pistons is power-driven from the steering wheel. The unit also incorporates a hydraulic pump, a reservoir for the working fluid, a power cylinder with rod connected to the turning mechanism, and a distributor with a cylindrical slide valve. The terminal cavities of the distributor are connected to the working cavities of the master cylinder. The remaining distributor cavities are connected by pipelines to the working cavities of the power cylinder, to the hydraulic pump and through a filter to the reservoir. The device

Card 1/3 UDC: 629.113.014.514-522.2

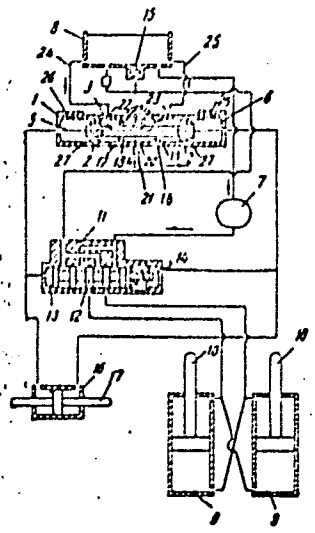
ACC NR: AP7004800

also contains a hydraulic feedback cylinder with rod connected to the turning mechanism and working cavities connected to the terminal cavities of the distributor. To achieve correspondence between the positions of the steering wheel and the positions of the turning mechanism, the central cavity of the master cylinder is equipped with annular projections on the inside encircling the rod with sealing rings on the sides facing the inner surfaces of the piston. An opening between these annular projections connects the central cavity to the overflow line. On the other side of each projection at a distance greater than the length of the piston is an opening connecting the central cavity to lines passing through choke valves to the reservoir. The working cavities of the master cylinder are made with bypass channels which connect these cavities to the central cavity when the pistons are at their extreme positions. 2. A modification of this drive in which unilateral ring-shaped sealing sleeves are used on the pistons in the master cylinder for compensating fluid leakage.

Card 2/3

ACC NR: AP7004800

1--master cylinder; 2--piston; 3--rod; 4--central cavity of the master cylinder; 5 and 6--terminal cavities of the master cylinder; 7--hydraulic pump; 8--reservoir; 9--overflow cylinder; 10--rod; 11--distributor; 12--slide valve; 13 and 14--terminal cavities of the distributor; 15--filter; 16--feedback cylinder; 17--rod; 18--projection; 19--sealing ring; 20--opening; 21--overflow line; 22 and 23--openings; 24 and 25--pipeline; 26--bypass channel; 27--ring-shaped sealing sleeve.



SUB CODE: 13/ SUBM DATE: 23Jul65

Card 3/3

GINTSBURG, Leonid Yakovlevich; PASHERSTNIK, A.Ye., professor, otvetstvennyy redaktor; KHAVINA, L.K., redaktor izdatel'stva; GUSEVA, I.N., tekhnicheskiy redaktor

[Leave for industrial workers and salaried employees] Trudovye otpuska rabochikh i sluzhashchikh. Moskva, Izd-vo Akad.nauk SSSR, 1957. 129 p. (MLRA 10:7)
(Vacations, Employee)

GINTSBURG, M.

Increasing the life of brake shoes and clutch disks. Za rul. no.6:17 Je '57. (MLRA 10:7)
(Motorcycles--Maintenance and repair)

GINTSBURG, M.

Easying automobile engine starting in winter. Za rul. 16 no.12:12d D '58. (MIRA 12:1)
(Automobiles--Cold weather operation)

AKIMOVA, I., inzh.; GINTSBURG, M., izobretatel'.

Heat the engine but not the radiator. Tekh.mol. 29 no.3:11 '61. (MIRA 14:3)

(Automobile drivers)

GINTSBURG, M.

Let us talk about starting. Za rul. 21 no.8:18 Ag '63.
(MIRA 16:11)

GINTSBURG, M.

Selecting a lubricating oil. Za rul. 21 no.6:27 Je '63.
(MIRA 16:11)

GINZBURG M. [A.]

V. Ginzburg

The Investigations of The Ionosphere by the Moon Radio-Location Method

The Progress of Physical Science, Moscow
Vol. 45, No. 1, September 1951, pp. 147

From: Monthly list of Russian Accessions
December 1951, Vol. 4, No. 9, p. 38

GINTSBURG, M. A. (Engr)

Dissertation: "The Propagation of Electromagnetic Waves in a Limited Anisotropic Medium." Cand Tech Sci, Moscow Order of Lenin Power Engineering Institute imeni V. M. Molotov, 13 Jun 54. (Vechernyaya Moskva, Moscow, 9 Jun 54)

SO: Sum 318, 23 Dec 1954

USSR/ Physics - Waves in gyrotropic media

Card 1/1 Pub. 43 - 3/11

Authors : Ginzburg, M. A.

Title : About waves in "gyrotropic media" (media in which the circular plane of polarization can be observed)

Periodical : Izv. AN SSSR ser. fiz. 18/4, 444-455, Jul - Aug 1954

Abstract : Analytical studies of electromagnetic waves and propagation in "gyrotropic media" are presented. The propagation of a flat electromagnetic wave is analyzed. The physical meaning of the results obtained is explained. An analogy between the time-space components of electromagnetic waves (Maxwell's equation) and those of an oscillatory coupled system with small oscillations (pendulums) is established. Further, the propagation of a non-homogeneous electromagnetic wave in a wave guide filled with a "gyrotropic medium" is studied. A more generalized form for Maxwell's equations is derived (for a gyrotropic medium). Then, gyrotropic wave-guide excitation is analyzed. Finally the propagation of an electromagnetic wave in a wave-guide with a "gyrotropic medium" (ferrite) in a transverse magnetic field is considered. Fifteen references: 7-USSR; 8-English (1885-1954).

Institution : ...

Submitted : April 24, 1954

GINTSBURG, M. A.

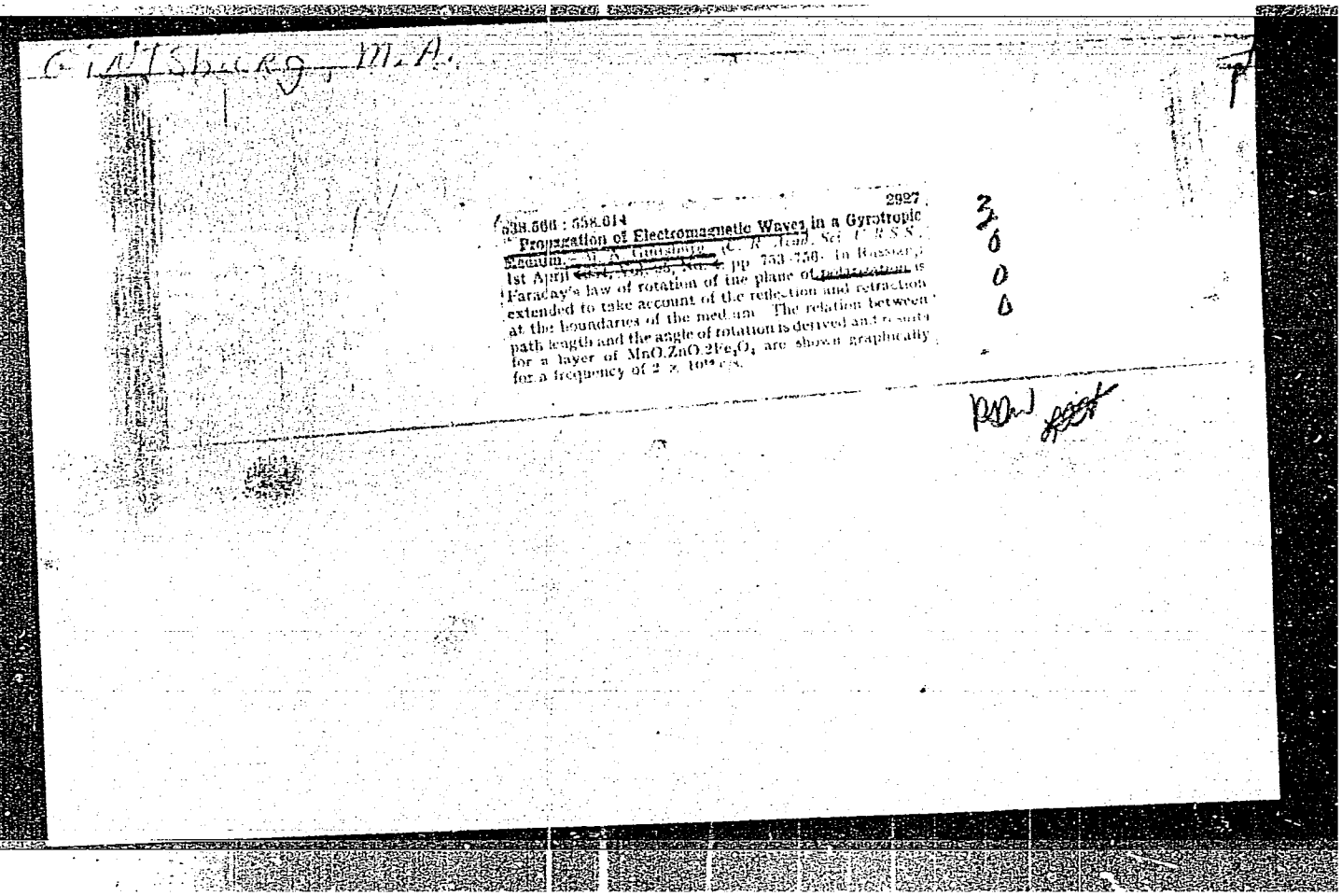
Ginzburg, M. A. A gyrotropic wave guide. Doklady Akad. Nauk SSSR (N.S.) 95, 489–492 (1954). (Russian) 1/2

The author first considers the propagation of electromagnetic waves in a circular guide of infinite length completely filled with a "gyrotropic" medium, i.e., a medium which is simultaneously gyroelectric and gyromagnetic. He finds that the waves undergo a Faraday rotation and that the configuration of the electromagnetic field is such that purely E-type and purely H-type waves cannot exist but rather a mixture of the two is present. [See H. Gamo, J. Phys. Soc. Japan 8, 176–182 (1953); these Rev. 14, 823; H. Suhl and L. Walker, Physical Rev. (2) 86, 122–123 (1952).] He extends these deductions to the case where the guide is shorted at both ends by perfectly conducting plates, i.e. the resonator case.

He then computes an explicit expression for the Faraday rotation in terms of the guide radius and the components of the dielectric and permeability tensors under the simplifying restriction that the rotational components of the

GINCBURG, M. A.

tensors are small enough to be considered as perturbations. He also suggests the possibility of determining the Faraday rotation by the " variational method of Ritz and Galerkin" (the reviewer presumes the author is referring to what is often called the "Ritz method"). Lastly he treats the case where the center conductor of a coaxial line is a gyrotropic substance. [See A. A. T. M. van Trier, Appl. Sci. Research B, 3, 305–371 (1953).] *C. H. Papas* (Pasadena, Calif.).



GINSBURG, M.A.

2927.
538.566 : 558.014
Propagation of Electromagnetic Waves in a Gyrotropic Medium. M. A. Ginsburg. (C. R. Acad. Sci. URSS, 1st April [illegible], pp 753-756. In Russian.)
Faraday's law of rotation of the plane of [illegible] is extended to take account of the reflection and refraction at the boundaries of the medium. The relation between path length and the angle of rotation is derived and results for a layer of $MnO.ZnO.2Fe_2O_3$ are shown graphically for a frequency of 2×10^{12} c/s.

3
0
0
0

FD-3052

USSR/Physics - Waveguides

Card 1/1 Pub. 153 - 21/23

Author : Gintsburg, M. A.

Title : Letter to the editor. Anisotropic waveguide

Periodical : Zhur. tekh. fiz., 25, February 1955, 358-363

Abstract : The writer considers a waveguide filled with an anisotropic medium, the Maxwell equations for the normal waves of such a waveguide reducing to equations of the 4th order for one unknown function, which is the component E or H. He treats here the special case of a medium with symmetric tensors e_{ik} and m_{ik} and obtains from the Maxwell equations a 4th-order equation in the E_z component of E. He obtains the exact solution for the rectangular anisotropic waveguide, and notes that for a different contour of the cross section one can employ variational methods, keeping in mind that the above mentioned equation for the normal wave $E_z \cdot \exp[i(kz-wt)]$ is the Euler-Ostrogradskiy equation for a certain functional F given. Two references: B. A. Vvedenskiy and A. G. Arenberg, Radiovolnovody [Radio waveguides], 1946; L. A. Vaynshteyn, Zhur. tekh. fiz., 23, 646, 1953.

Institution : -

Submitted : April 29, 1954

GINTSBURG, M. A.

24-10-17/26

AUTHOR: Gintsburg, M. A. (Moscow)

TITLE: Fracturing rocks by means of high frequency electromagnetic fields. (Razrusheniye gornykh porod vysokochastotnymi elektromagnitnymi polyami)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.10, pp.93-95 (USSR)

ABSTRACT: The main results described in this paper were presented at a seminary of the Institute of Mining, Ac.Sc., U.S.S.R. (Institut Gornogo Dela AN SSSR), May 23, 1955. In this paper a new method is described of breaking up rocks and other solid bodies by means of non-uniform heating inside a high frequency magnetic field. The experiments were carried out on iron ore specimens (iron quartzites) from the Kursk Magnetic Anomaly. Their mineralogical composition was: quartz, magnetite, hematite, amphiboles and carbonates. The experiments comprised tests with a uniform magnetic field of H = 100 Oe, 240 c.p.s., using quartzite specimens weighing between 5 and 20 kg; the time until appearance of the first fracture was 1 to 2 mins. The tests were stopped when cracks went right through and sub-divided the specimen into several parts (after 4 to 8 mins). The average temperature of the heated rock was

Card 1/3

Fracturing rocks by means of high frequency electromagnetic fields.

300 to 450°C and, as a result of the heating, the rocks became extremely brittle. Furthermore, experiments were carried out with the field of a circular turn so that the magnetic field was concentrated inside the turn and only a small volume of the specimen was heated, whereby the parameters were as follows: H = 100 to 200 Oe, f = 240 c.p.s., turn diameter d = 9 cm. The first fractures appeared after about 35 secs. The duration of crack formation does not depend on the specimen size, since the coefficient of heat conductivity of rocks is very small; however, cracks which start in the heated volume propagate throughout the entire body of the rock and lead to splitting up of large rock blocks (0.5 to 1 ton) with a small expenditure of energy since the heated volume is small. For splitting up a specimen of 500 kg the calculated power requirement is about 7 kW and for a breaking up time of 12 mins this corresponds to an energy requirement of 1.5 kWh. Thereby, the power taken up by the generator from the supply system is about 50 kW and, therefore, it is necessary to design a special generator for supplying current for breaking up ferromagnetic rocks. The magnetic method of breaking up rocks is also suitable

SOV/162-58-3-6/26

9(5)

AUTHOR: Gintsburg, M.A.

TITLE: Surface Waves at the Boundary of a Gyrotropic Medium (Poverkhnostnyye volny na granitse girotropnoy sredy)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Radiotekhnika i elektronika, 1958, Nr 3, pp 38-47 (USSR)

ABSTRACT: The author discusses surface waves at the boundaries of gyrotropic and isotropic media. The Maxwell equations show that the waves are propagated only in one direction (valve effect) when both media have certain magnitudes of ε and μ (electrical and magnetic permeability). The conditions are presented for the propagation of direct and inverse waves along the boundary of the division. The results of the investigation are used for analyzing gyrotropic plates, a more complicated independent system. The results of this paper may be used as a first approximation for solving surface wave problems in the ferrite plate of a wave guide. The magnitudes μ, ε and γ, obtained from the equation

Card 1/3

Surface Waves at the Boundary of a Gyrotropic Medium

$$\mu_0(u^2 - \varepsilon\mu_1)^{\frac{1}{2}} + \mu_1 (u^2 - \varepsilon_0\mu_0)^{\frac{1}{2}} = \mu_0 \Gamma u$$

may be placed (if the plate is not too close to the walls of the wave guide) as a first approximation $h=h^{(o)}+\Delta h, \gamma=\gamma^{(o)}+\Delta\gamma$, into the transcendental equation of a wave guide with a thick ferrite plate, and using Newton's method, corrections $\Delta h, \Delta\gamma$ to be introduced into the walls, may be found. (The magnitude u has the physical meaning of a factor for the delay of the waves by the boundary of the division, showing how many times the phase speed of a surface wave is slower than the speed of a plane wave of the same frequency in a vacuum). Instead of the walls of a wave guide, one may assume a second ferrite plate with a field in the opposite phase, as suggested by B.Z. Katsenelenbaum. For satisfying the boundary conditions at both metal walls, two infinite rows of such plates are required. The author expresses

Card 2/3

Surface Waves at the Boundary of a Gyrotropic Medium

his gratitude to B.Z. Katsenelenbaum for considering the results of this paper. There are 6 graphs, and 7 references, 3 of which are English and 4 Soviet.

PRESENTED: Presented at a seminary on radio-spectroscopy at the Fizicheskiy institut AN SSR imeni Lebedeva (Institute of Physics imeni Lebedev, AS USSR)

SUBMITTED: February 13, 1958

GINTSBURG, M.A.

Surface waves on the boundary of gyrotropic media.
Zhur.eksp. i teor.fiz. 34 no.6:1635-1637 Je '58. (MIRA 11:9)
(Electromagnetic theory)

SOV/56-35-4-41/52

24(3)
AUTHOR: Gintsburg, M. A.

TITLE: The Exchange-Effects in Ferromagnetic Resonance (Obmennyye effekty pri ferromagnitnom rezonanse)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 4, pp 1047-1049 (USSR)

ABSTRACT: The present paper elaborates a uniform law for the dispersion of transversal electromagnetic and spin waves, which takes both the relativistic and exchange-interaction into account. With a shortening of the wavelength (on the condition ω = const) the relative significance of the displacement currents is reduced more and more, but the amount of the exchange forces increases. Instead of transversal electromagnetic waves, spin waves are in this case obtained. The author proceeds from the usual equations of motion of magnetization:
$dM/dt = \gamma \left\{ (H_{ex} a^2 / M_s) [M \Delta H] + [MH] \right\}$. Here H_{ex} denotes the effective field of the exchange forces, a - the lattice constant, M_s - the saturation magnetization, H - the magnetic field

Card 1/2

strength of the sample, γ - the ratio between the magnetic moment of the electron and its spin moment; $\gamma = 2.8$ megacycles/Oersted. The author puts $\vec{M} = \vec{M}_s + \vec{m}$, $\vec{H} = \vec{H}_i + \vec{h}$. Here $\vec{H}_i$ denotes the internal statistical field in the sample, $\vec{h}$ and $\vec{m}$ the high-frequency components of the magnetic field and of magnetization respectively. Expressions are derived for the components of the tensor of magnetic permeability and for the dispersion law (i.e. for the correlation between ω and k). This dispersion equation has 3 radicals corresponding to the three branches of dispersion. The aforementioned dispersion equation goes over (if displacement currents are neglected) into the equation of statistical approximation (i.e. into the dispersion law of the spin waves). The character of the dispersion curves can be investigated in the best manner for the special cases $\theta = 0$ and $\theta = \pi/2$. For $\theta = 0$ the dispersion equation has three positive solutions. For $\theta = \pi/2$ 2 waves are possible: one of the type E and one of the type H. There are 4 references, 2 of which are Soviet.

GINTSBURG, M.A. [translator]

Theory of electromagnetic wave propagation in gyromagnetic media [from "Rev. Mod. Phys." 28,3, 1956]. P. Epstein. Usp. fiz. nauk 65 no.2:283-311 Je '58. (MIRA 11:9)
(Ferrates) (Radio waves) (Epstein, P.)

GINTSBURG, M.A.

Radar measurements of the thickness of ice layers. Izv.AN SSSR.Ser.geofiz. no.6:872-874 Je '60. (MIRA 13:6)
(Glaciological research) (Radar)

3.2320 (1049,1502)
11.1530

30936
S/570/60/000/017/006/012
E032/E114

AUTHOR: Gintsburg, M.A.

TITLE: Electric double layer at the surface of a satellite

SOURCE: Akademiya nauk SSSR. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln. Trudy, no.17(27). Moscow, 1960. Rasprostraneniye radiovoln i ionosfera. 187-202.

TEXT: A satellite moving through the ionosphere becomes charged and an electric double layer is formed at its surface. A knowledge of the properties of this layer is important to the theory of the interaction of a satellite with the ionosphere, since the double layer determines the boundary conditions and has an effect on the physical processes which occur in the immediate neighbourhood of the satellite. Three equations are available in the literature for the description of the electric field in the double layer. These equations, however, are different and predict different potential distributions. The aim of the present review is to examine these differences. The review was completed in January 1959. The first approach is to use the classical double-

Card 1/6

Electric double layer at the surface ..

layer theory as used in electrochemistry and the chemistry of colloids, where charged particles (ions) in the double layer are in a state of thermodynamic equilibrium and are therefore described by the Maxwell-Boltzmann distribution

$$F(u, x) = Ce^{-\frac{mu^2}{2kT} - \frac{e\varphi}{kT}} \qquad (1)$$

where: u is the velocity, φ the potential, e and m the charge and mass of the particles, and t the temperature. The present author discusses the one-dimensional case only, i.e. the case where the potential φ is a function of a single coordinate only. Knowing the distribution function for the ions and the electrons, one can calculate the field in the double layer by solving the one-dimensional Poisson equation:

$$\frac{d^2\varphi}{dx^2} = +4\pi n_0 \varepsilon \left(e^{\frac{\varepsilon\varphi}{kT_e}} - e^{\frac{-\varepsilon\varphi}{kT_i}} \right) \qquad (4)$$

Card 2/6

Electric double layer at the surface ..

It is shown that the solution of the Poisson equation for the case where the distribution given by Eq.(1) holds, is

$$\varphi = \frac{kT}{\varepsilon} \; 2 \ln \frac{e^{z/2}(1 + e^{-\xi}) + (1 + e^{-\xi})}{e^{z/2}(1 - e^{-\xi}) + (1 + e^{-\xi})} \qquad (9)$$

where: $\xi = x \sqrt{2}/R_d$, R_d is the Debye radius, $z = \varepsilon\varphi_c/kT$, φ_c is the potential of the satellite, and ε is the numerical value of the electronic charge. The double layer may be divided into two regions: in the first region $\varepsilon |\varphi| /kT > 1$, i.e. the potential energy of an electron or an ion within the layer is greater than the thermal energy, while in the second layer $\varepsilon |\varphi| /kT \ll 1$ and the potential energy may be looked upon as a small correction to the thermal energy. In the thermal region the space-charge consists largely of ions and the electron concentration falls off exponentially, while in the second region the space-charge is made up of ions and electrons, both concentrations being small. As an example, it is estimated that at 300-400 km from the earth's surface the maximum thickness of a

Card 3/ 6

double layer is of the order of 1 cm. On this theory the field strength at the wall of a satellite increases exponentially (in absolute magnitude) with the potential φ_c, reaching 47 kV/cm at $\varphi_c = -3$ V. It is this property which, together with the dependence of the capacitance of the double layer on φ_c, may be used to compare the theory with experiment and to select the correct model for the double layer by independent measurements of E and φ_c. The second approach is to use the Langmuir-Bohm equation (Ref.6: I. Langmuir, Phys. Rev., v.34, 876, 1929; Ref.7: D. Bohm, The characteristics of electrical discharges in magnetic fields, ed. by A. Guthrie and R. Wakerling. McGraw Hill, N.Y., 1949, chap.3). Here, as before, the electron distribution is assumed to be of the Boltzmann type but the ion distribution is not. On this approach the Poisson equation assumes the form:

$$\frac{d^2\varphi}{dx^2} = -4\pi\varepsilon n_0 \left[\sqrt{\frac{\varphi_0}{\varphi}} - e\frac{\varepsilon(\varphi - \varphi_0)}{kT} \right] \qquad (12)$$

Card 4/ 6

Electric double layer at the surface...

This equation cannot be integrated and must be solved numerically. The advantage of Eq.(12) is that in deriving it, it is not necessary to assume either a perfectly reflecting wall or thermodynamic equilibrium. However, this equation does not take into account the thermal motion of ions which is, in fact, neglected. The third approach is due to R. Jastrow and C. Pearse (Ref.2: J. Geophys., Res., v.62, 413, 1957). Here the Poisson equation is of the form:

$$\frac{d^2\varphi}{dx^2} = 4\pi n_o \varepsilon \left(e^{\varepsilon\varphi/kT} - 1\right) \qquad (16)$$

and again, the potential distribution can only be evaluated by numerical methods. The paper is concluded with a general discussion of the effect of the magnetic field on the above phenomena. Acknowledgments are expressed to the workers of IZMIRAN, G.M. Sosnovskaya and Yu.G. Ishchuk, for assistance. There are 19 figures and 11 references: 5 Soviet-bloc and 6 non-Soviet-bloc. The four most recent English language references read as follows:

Electric double layer at the surface...

Ref.2: R. Jastrow, C. Pearse. J. Geophys. Res., v.62, 413, 1957.
Ref.3: E. Verwey, J. Overbeck. Theory of stability of lyophobic colloids, N.Y. - Amsterdam, 1948.
Ref.5: R. Smith-Rose, Proc. IRE, November 1958.
Ref.7: D. Bohm. The characteristics of electrical discharges in magnetic fields. ed. by A. Guthrie and R. Wakerling. McGraw-Hill, N.Y., 1949, chap.3.

Card 6/6

30938
S/570/60/000/017/008/012
E032/E114

3,2310 (1049, 1502)

AUTHOR: Gintsburg, M.A.

TITLE: Surface waves on the boundary of a plasma in a magnetic field

SOURCE: Akademiya nauk SSSR. Institut zemnogo magnetizma, ionosfery i rasprostraneniye radiovoln. Trudy, no.17(27). Moscow, 1960. Rasprostraneniye radiovoln i ionosfera. 208-215.

TEXT: This paper was first read at a seminar of the Otdel dlinnykh radiovoln (Division of Long Radio Waves) of IZMIRAN in December 1958.
The problem is formulated as follows. Consider two semi-infinite media separated by the plane $y = 0$ (Fig.7). The z-axis is in the direction of the magnetic field, the half-space $y > 0$ is occupied by air ($\varepsilon_0 = \mu_0 = 1$) and the half-space $y < 0$ is occupied by plasma. The properties of the plasma are characterised by the tensor

Card 1/ 7

30938
S/570/60/000/017/008/012
E032/E114

Surface waves on the boundary of ...

$$\begin{vmatrix} \varepsilon_1 - i\varepsilon_2 & 0 \\ i\varepsilon_2 & \varepsilon_2 & 0 \\ 0 & 0 & \varepsilon_3 \end{vmatrix} \qquad (1)$$

When the waves are propagated in the direction perpendicular to the magnetic field there are two possible types of normal waves, namely type H ($E_z \neq 0$, $H_x \neq 0$, $H_y \neq 0$, $E_x = E_y = H_z = 0$) and waves of the type E ($H_z \neq 0$, $E_x \neq 0$, $E_y \neq 0$, $H_x = H_y = E_z = 0$). Of these, only the E waves can propagate along the boundary of the plasma. It is shown that in the plasma

$$E_x = \frac{1}{ik_o\varepsilon_\perp}\left[\frac{\partial H_z}{\partial y} - i\Gamma\frac{\partial H_z}{\partial x}\right] = \frac{\gamma_2 - \Gamma h}{ik_o\varepsilon_\perp} H_z \qquad (3)$$

where: $k_o = \omega/c$ is the wave number in vacuum, $\Gamma = \varepsilon_2/\varepsilon_1$, and

$$\varepsilon_\perp = (\varepsilon_1^2 - \varepsilon_2^2)/\varepsilon_1.$$

Card 2/ 7