PANIAN, Zdravko, sanitetski potpukovnik, dr.

Effect of noise on ocular function. Vojnosanit. pregl. 20 no.1/2:19-26 Ja-F '63.

1. Vazduhoplovno-medicinski institut u Zemunu.
(VISION) (NOISE) (STRABISMUS)
(COLOR PERCEPTION) (ADAPTATION, OCULAR)

S

PANIAN, Zdravko, sanitetski potpukovnik dr

Visual illusions during flight. Vojnosanit. pregl. 19 no.12:832-836 D '62.

1. Vazduhoplovnomedicinski institut u Zemunu, Ocno odeljenje.
(ILLUSIONS) (AVIATION MEDICINE)

MAVER, Hubert, Dr.; HORVAT, Agnesa, mr., ph.; PANIAN, Zdravko, dr.

Vitamin A and carotene levels in blood and dark adaptation.
Lijrc. vjes. 78 no.11-12:535-545 Nov-Dec 56.

1. Iz Odjela za higijenu prehrane Centralnog higijenskog zavoda i Ocnog odjeljenja Vojne bolnice u Zagrebu.
(VITAMIN A, in blood
eff. on dark adaptation (Ser))
(CAROTENE, in blood
same)
(ADAPTATION, OCULAR,
blood levels of vitamin A & carotene in dark adaptation (Ser))

PANIAN, Zdravko, Major d-r

Hyaloid arterial system residues of the eye. Voj.san.pregl.,Beogr. 12 no.3-4:178-181 Mar-Apr 55.

1. Vojna bolnica u Zagrebu Ocno odjeljenje.
(RETINA, blood supply,
hyaloid artery residues)

PANIBRATCHENKO, N.

Review of the book by V.A. Skogorev "Integrated labor organization in stopes and development headings in coal mines." Ugol' 39 no.7:78 Jl '64. (MIRA 17:10)

1. Upravlyayushchiy trestom Petrovskugol'.

PANIBRATCHENKO, N.

Continuous improvement of mining practices. Mast.ugl. 5 no.10: 7-9 O '56. (MLRA 9:12)

1. Glavnyy inzhener shakhtoupravleniya imeni Kiseleva tresta Chistyakovantratsit.
(Donets Basin--Coal mines and mining)

PANIBRATCHENKO, M.I.; SVETLOV, V.M. [Svietlov, V.M.]

Increasing production of coal. Nauka i zhyttia 6 no.9:
25-26 S '56. (MIRA 13:5)

1. Glavnyy inzhener shakhty imeni Kiseleva tresta "Chistyakovantratsit," Stalinskaya oblast' (for Panibratchenko).
(Stalino Province--Coal mines and mining)

GRINBERG, Ya., inzh.; PANIBRATETS, N., inzh.; ODINTSOV, G., inzh.

Potentialities of increasing the efficiency of tank vessel operations. Mor. flot 23 no.9:10-11 S '63. (MIRA 16:11)

1. Chernomorskoye parokhodstvo.

PANIBRATETS, N.A.

Factors affecting the preservation of cargoes transported by sea. Trudy TSNIIMF no.29:105-111 '60. (MIRA 15:11)
(Merchant ships—Cargo) (Preservation of materials)

STOSIC, Darko, dr (Simina 22a, Beograd); RUZICIC, Nikola, dr, redovni profesor; MILOSEVIC, Perisa, dr, docent; PANIC, Bozidar, inz., asistent; MARTINOVIC, Borka, asistent

Study of the degree of homogenization in the mixtures of livestock fodder by applying radioactive isotopes. Technical and economical aspects. Tehnika Jug 17 no.6:Suppl.: Radioizotopi zrac 1 no.6:1050-1056a Je '62.

1. Savetnik Savezne komisije za nuklearnu energiju, Beograd. 2. Poljoprivredni fakultet Univerziteta u Beogradu (for Ruzicic, Milosevic Panic). 3. Institut za primenu nuklearne energije u poljoprivredi, veterinarstvu i sumarstvu, Zemun (for Martinovic).

PANA ICEIL, G.

Rational use of seasoned wood. p. 7

TEHNICA NOUA, Bucuresti, Vol 3, No. 35, Feb., 1956

SO: East European Accessions List (EEAL) Library of Congress, Vol 5, No. 7, July, 1956

PANIC,B.; TROJ,M.; HRISTIC,V.

Methods of studying the biosynthesis of vitamin B_{12} with the aid of radioactive cobalt ^{60}Co; abstract. Glas Hem dr 27 no.9/10:533-534 '64

1. Institute for Applying Nuclear Energy in Agricultural, Veterinary, and Forestry Sciences, Belgrade-Zemun.

JOVANOVIC, Radoslav; PANIC, Jakov

Appearance of acid magmatic rocks on the southern slopes of the Prenj Mountain. Publ Teh fak Sarajevo 1 no. 1: 59-60 '58.

DAMJANOVIC,Radomir; PANIC,Jovan; STEVANOVIC,Dacilo

Subcorneal pustular dermatosis. Srpski arh. celok. lek. 87 no.11:1050-1054 N '59.

1. Dermatovenerološka klinika Medicinskog fakulteta u Beogradu, Upravnik: prof. dr Sima Ilic; srecka bolnica u Somboru, Upravnik: dr Ljubomir Lazic.
(SKIN dis.)

GILIC, Miladin, sanitetski pukovnik dr; PANIC, Jovan, dr

On a case of ophthalmo-maxillary nevus fusco-coeruleus (Ota) and a case of blue nevus (Jamamoto). Voj.san.pregl., Beogr. 18 no.1: 75-79 Ja '61.

1. Vojnomedicinska Akademija u Beogradu, Kozno-venericno odeljenje
(NEVUS PIGMENTED case reports)
(EYE neopl)
(FACE neopl)

STOJKOV, N.; PANIC, R.

Clinical pictures of tuberculosis in children who received the BCG vaccine. Bul sc Youg 7 no.6:170 D '62.

1. Fizioloska klinika Medicinskog fakulteta, Sarajevo.

PANIC, Rade

Our experience with the treatment of Koch's bacillus positive chronic infection before the appearance of indirect resistance. Tuberkuloza 16 no.5:442-446 S-D '64

1. Bolnica za tuberkulozu pluca, Kasindo (Direktor: dr. Nenad Giunio).

STOJKOV, Nevena; PANIC, Rade

Clinical forms of pulmonary tuberculosis in BCG-vaccinated children. Tuberkuloza 15 no.1:24-28 Ja-Mr '63.

1. Klinicka bolnica za plucne bolesti i tuberkulozu medicinskog fakulteta, Sarajevo - Sef: prof. dr Spiro Janovic.
(TUBERCULOSIS IN CHILDHOOD)
(TUBERCULOSIS, PULMONARY)
(BCG VACCINATION)

S

LEYKIN, Ya., kandidat tekhnicheskikh nauk; PANICH, A., inzhener.

Quality improvement and increased output of buckwheat grits.
Muk.-elev. prom. 20 no.4:15-17 Ap '54. (MLRA 7:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy insititut zerna i produktov ego pererabotki.
(Buckwheat)

PANICH, A.

LEYKIN, Ya., kandidat tekhnicheskikh nauk; PANICH, A., inzhener

Study of new varieties of buckwheat and millet. Muk.-elev.prom. 21 no.6:15-18 Je'55. (MLRA 8:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov yego pererabotki
(Buckwheat) (Millet) (Grain milling)

ITSKOVICH, G.M.; KISELEV, V.A.; CHERNAVSKIY, S.A.; BOBKOV, K.N.; PANICH, B.B.; BAZHENOV, D.V., red.

[Preparation of a course project on machine parts; reference manual] Kursovoe proektirovanie detalei mashin; uchebno-spravochnoe posobie. Izd.4., perer. Moskva, Mashinostroenie 1964. 594 p. (MIRA 18:5)

BAGREYEV, Vladimir Vladimirovich; VINOKUROV, Anatoliy Ivanovich; KISELEV, Vyacheslav Aleksandrovich; PANICH, Boris Pentsionovich; ITSKOVICH, Georgiy Mikhaylovich; KONDRASHOV, D.A., inzh., retsenzent; RUBASHKIN, A.G., inzh., retsenzent; ARKUSHA, A.I., nauchn. red.; KOZINTSOV, B.S., nauchn. red.; VASIL'YEVA, N.N., red.; YEROMITSKAYA, Ye.Ye., red.; SHAURAK, Ye.N., red.; KRYAKOVA, D.M., tekhn. red.

[Collection of problems in technical mechanics] Sbornik zadach po tekhnicheskoi mekhanike [By] V.V.Bagreev i dr. Leningrad, Sudpromgiz, 1963. 551 p. (MIRA 16:8)
(Mechanical engineering--Problems, exercises, etc.)

ITSKOVICH, G.M.; PANICH, B.B.; YERDAKOV, V.I.; CHERNAVSKIY, S.A., red.; ANOSHINA, K.I., red. izd-va; PAVLOVA, V.A., tekhn. red.

[Engineering mechanics: a program, tasks for control operations, and brief instructions for fulfilling them for instruction engineering students in correspondence schools of technology and their branches] Tekhnicheskaia mekhanika; programma, zadaniia dlia kontrol'nykh rabot i kratkie ukazaniia k ikh vypolneniiu dlia uchashchikhsia stroitel'nykh spetsial'nostei zaochnykh tekhnikumov i otdelenii. Moskva, Gos. izd-vo "Sovetskaia nauka," 1957. 106 p. (MIRA 14:6)

(Building—Study and teaching)

SHNEYEROV, Ya.A.; SAVCHENKOV, V.A.; PANICH, B.I.; MONAKHOVA, L.V.; SOTNIK, I.S.; SOKOLOVSKIY, P.I.; MULIN, N.I.

Using reinforcements of St.5ps semi-killed steel. Stal' 24 no.11: 1025-1030 N '64. (MIRA 18:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut metallov, TSentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy i Nauchno-issledovatel'skiy institut betona i zhelezobetona.

ZHIKHAREVICH, S.A.; KARAULOV, A.G.; SAFRONOVA, I.P.; PANICH, B.I.; DRYAPIK, Ye.P.; DYMARSKIY, M.Ya.; MOISEYENKO, A.I.; TARZEYAN, P.G.

Replacing steel, circular-flanged ingot stools by graphite-containing ones. Ogneupory 28 no.10:437-443 '63. (MIRA 16:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Zhikharevich, Karaulov, Safronova). 2. Ukrainskiy nauchno-issledovatel'skiy institut metallov (for Panich). 3. Kommunarskiy metallurgicheskiy zavod (for Dryapik, Dymarskiy, Moiseyenko, Tarzeyan).

S/133/61/000/003/003/014
A054/A033

AUTHORS: Panich, B. I., Candidate of Technical Sciences; Khmirov, V.I., Ingineer, and Ul'yanov, D.P., Engineer

TITLE: FLoating hot dozzle with ceramic ring

PERIODICAL: Stal', no. 3, 1961, 225 - 227

TEXT: When using stationary dozzles in casting killed steel, horizontal cracks sometimes occur in the ingot, due to delayed shrinkage. These cracks are mainly found at the top, under the feeder. In order to prevent the sticking of the ingot, floating dozzles (ceramic or metallic), based on American designs are used at the Kuznetskiy kombinat (Kuznets Combine). It was found that the bottom of steel dozzles contacting with the liquid metal was destroyed. To prevent this the zavod im. Dzerzhinskogo (Plant im. Dzerzhinskiy) used floating dozzles with ceramic rings. The lower part of the dozzles (produced for the Bessemer-process and 4.4 t ingots) can be replaced as they are fixed to the dozzle-construction by 4 bolts. The test dozzles had a smaller diameter than the conventional ones. In this way the H/D ratio

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S/133/61/000/003/003/014
A054/A033

Floating hot dozzle with ceramic ring

is increased and this improves the heat conditions of the dozzle. As a result their volume could be decreased by 2 %. As the special stand to fit the ceramic rings to the dozzle is not yet available, a projection is mounted to prevent the ceramic ring from fracturing when the dozzle is fitted. The dozzles are lined with chamotte mortar, 80 mm thick. In the first tests the ring was fixed to the dozzle with a metal clamp, (Figs. 1, 4) but this intricate method was soon abandoned and replaced by mounting the ring in the liquid siliceous refractory mass used for coating the dozzle and drying it over a burner. The ceramic rings were tested in producing railway steel, which was poured from the top through an intermittent spout. It was found that when ceramic rings are used under the dozzles, the intermittent spout can be dispensed with, if the following conditions are observed: 1) the gap between the ingot mold walls and the dozzle must not be more than 10 mm; 2) the metal flow must stop when the dozzle is filled to a height of 30 - 40 mm; 3) the pouring breaks should be about 30 - 40 seconds. By abandoning the intermittent spout, the pouring time could be reduced to 50 %, transverse cracks in the ingot were eliminated and the surface of the rails made of these ingots is much smoother. Moreover, only 11 - 14 % of the casting has to be cropped instead of the conventional 15.5 - 18.2 % and the amount

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S/133/61/000/003/003/014
A054/A033

Floating hot dozzle with ceramic ring

of metal used for the riser can be decreased by 1.5 - 2.0 %. However, the ceramic rings still show the following deficiencies: 1) the lower part of the dozzle is not fixed firmly enough to the upper part; 2) the taper of the lining is inadequate (10 %), rendering it difficult to remove the dozzle from the ingot. The taper should be increased to 13 - 15 %; 3) the dozzle is not heavy enough. It happens, that it rises when the upper part of the riser is being filled and then metal flows out from the riser. Moreover, the production and especially the drying of the ceramic rings is labor-consuming and complicated. Tests are being made to use wooden frames instead of these rings, as they are easily made and handled. There are 2 figures and 2 tables.

ASSOCIATION: Ukrainskiy institut metallov, zavod im. Dzerzhinskogo (The Ukrainian Institute of Metals, the Plant im. Dzerzhinskiy)

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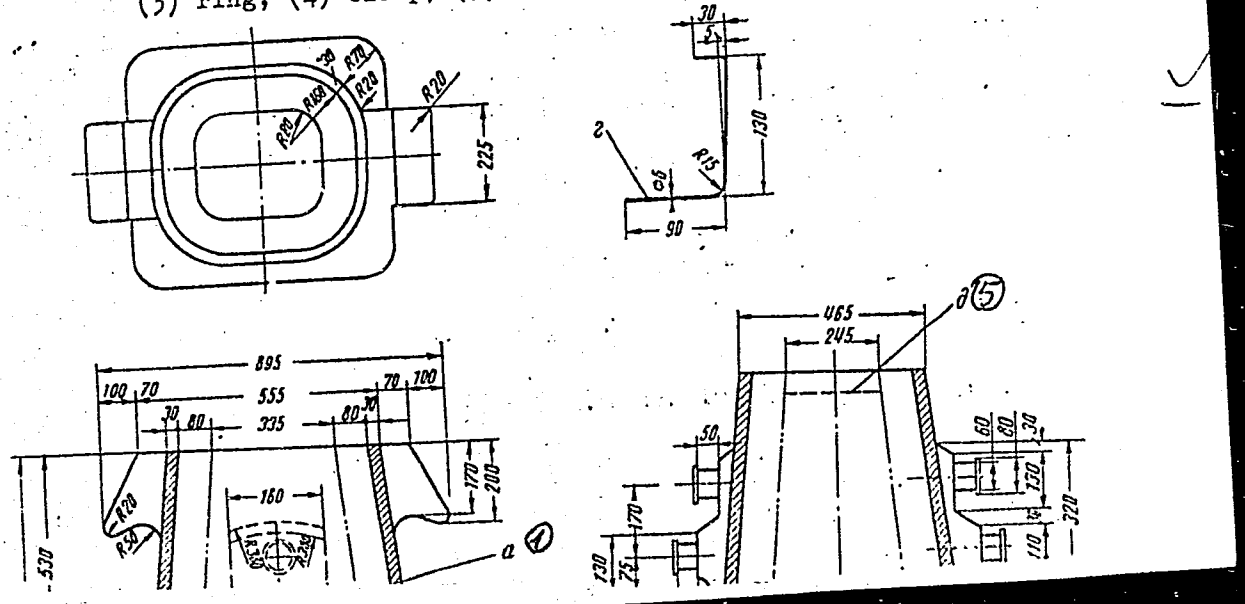
S/133/61/000/003/003/014
A054/A033

Floating hot dozzle with ceramic ring

Figure 1: Floating dozzle (test specimen) of the Plant im. Dzerzhinskiy (1) upper part of the dozzle, (2) lower part of the dozzle, (3) ring, (4) clamp, (5) metal level.



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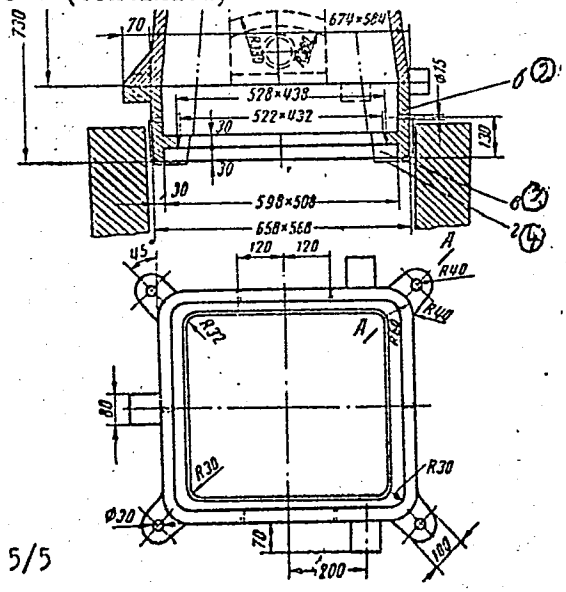
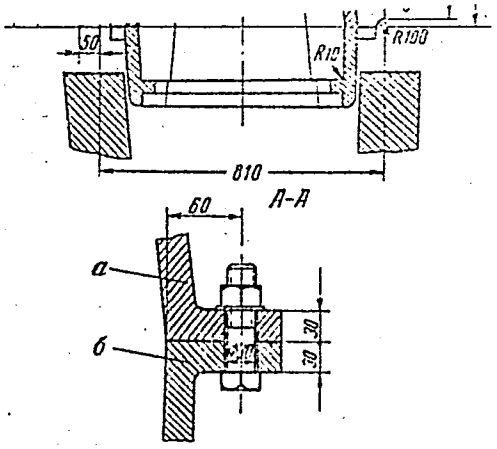
A054/A033

Floating hot dozzle with ceramic ring

Figure 1 (continued)





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PANICH, B.I., kand.takhn.nauk; KHMIROV, V.I., inzh.; U°YANOV, D.P., inzh.

Floating riserheads with ceramic rings. Stal' 21 no.3:225-227 Mr '61. (MIRA 14:6)

1. Ukrainskiy institut metallov, i zavod im. Dzerzhinskogo.
(Risers(Founding)) (Steel ingots)

ZHIKHAREVICH, A.S.; KARAULOV, A.G.; PANICH, B.I.; SHEYKO, I.I.; POLYAKOV, V.F.; KHALEMSKIY, S.F.

Replacement of cast steel plugs used in the top pouring of steel by ceramic graphite-bearing inserts. Metallurg 6 no.11:18-19 N '61. (MIRA 14:11)

(Steel ingots)

PANICH, B.I., kandidat tekhnicheskikh nauk.

Reducing the amount of cut-off discards in ingot rolling. Metallurg 2 no.1:36 Ja '57. (MLRA 10:4)

1. Ukrainskiy institut metallov.
(Rolling (Metalwork))

AUTHOR: Panich, B. I., Cand. Tech. Sc. (The Ukrainian Institute of Metals). 377

TITLE: A rational method of heating the top surface of ingots. (Ratsional'nyy sposob utepleniya zerkala slitka).

PERIODICAL: "Stal'" (Steel), 1957, No.4, pp.371-372 (U.S.S.R.)

ABSTRACT: Various methods of heating the top surface of ingots of rail steel were investigated. It was found that the use of lunkerite (18% aluminium powder, 5% of 45% ferro-silicon, 30% of ground coke breeze, 25% of ground chamotte and 22% of bauxite) does not produce any improvement in comparison with a 50/50% lime-coke mixture. On the other hand, the use of insulating covers (50-60% wood filings, 20-25% ground chamotte or blast furnace slag and 20-25% of clay) decreases the depth of the shrinkage cavity. To prevent the formation of bridges in the top part of the shrinkage cavity some heating insulating mixture (1 kg/ton) should be placed under the cover. The above covers are made for a single use. They weigh 8-9 kg. 1.5-2% economy in metal for shrinkage head is obtained. There are 2 tables and 1 figure.

PANICH, B.I.

25(1) PHASE I BOOK EXPLOITATION SOV/2494

Trishevskiy, Igor' Stefanovich, Boris Il'ich Panich, and Nikolay Antonovich Nikolayenko

Slitki i izlozhnitsy (Ingots and Ingot Molds) Kiyev, Gostekhizdat UkrSSR, 1959. 221 p. 2,200 copies printed.

Ed.: L. Raytburd; Tech. Ed.: K. Gusarov.

PURPOSE: This book is intended for engineers and technicians in the steelmaking, rolling, and founding industries, as well as for students of vuzes and tekhnikums.

COVERAGE: The authors discuss mold designs for casting heavy ingots in the production of rimmed- and killed-steel blooms and slabs. They make suggestions for calculating ingot and mold dimensions to assure minimum waste. Also discussed are mold failure and its prevention and modern methods of ingot-mold making. In the Appendix diagrams of molds and hot tops used at larger Soviet steel plants are presented. No personalities are mentioned. There are 39 references: 25 Soviet, 3 German, and 11 English.

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TABLE OF CONTENTS:

AVAILABLE: Library of Congress

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GO/jb
11-6-59

PANICH, B.I., kand. tekhn. nauk; TRISHCHINSKIY, I.S., inzh.

Design parameters of molds used in casting large ingots. Stal'. (MIRA 11:5)
TSNIICHM no.15:6-18 '57.
(Molding (Founding))

PANICH, B.I.

PANICH, B.I., kandidat tekhnicheskikh nauk.

Efficient method of heating the face of an ingot. Stal' 17 no.4:371-372 Ap '57. (MLRA 10:5)

1.Ukrainskiy institut metallov.
(Steel ingots)

AUTHOR: Panich, B.I., Candidate of Technical Sciences, Ukrainian Metals Institute.

TITLE: Reduction of amount of trimming in ingot rolling (Sokrashchenie obrezi raskata slitkov.)

PERIODICAL: "Metallurg" (Metallurgist), 1957, No. 1, p. 36, (U.S.S.R.)

ABSTRACT: The use of ingot moulds with spherical bottoms has enabled the amount of tail trimming to be reduced to 1% of the total rolled length and to decrease the number of defects due to sub-crust blisters.
2 figures (photos).

PANICH, B.I.:

PANICH, B.I.: "Some problems in perfecting the technology of casting rail steel". Stalino, 1955. Min Higher Education USSR. Donets Order of Labor Red Banner Industrial Inst imeni N.S. Khrushchev. (Dissertations for the Degree of Candidate of Technical Sciences).

SO: Knizhnaya letopis' No 44, 29 October 1955. Moscow.

SHNEYEROV, Ya.A.; MONAKHOVA, L.V.; PANICH, B.I.; SAVCHENKOV, V.A.; POLYAKOV, V.F.; ARISTOV, N.P.; GELLER, Yu.A.

Mechanical properties of semi-skilled and capped St 3ps and St 3kp steels. Metalloved. i term.obr.met. no.9:2-8 S '65. (MIRA 18:10)

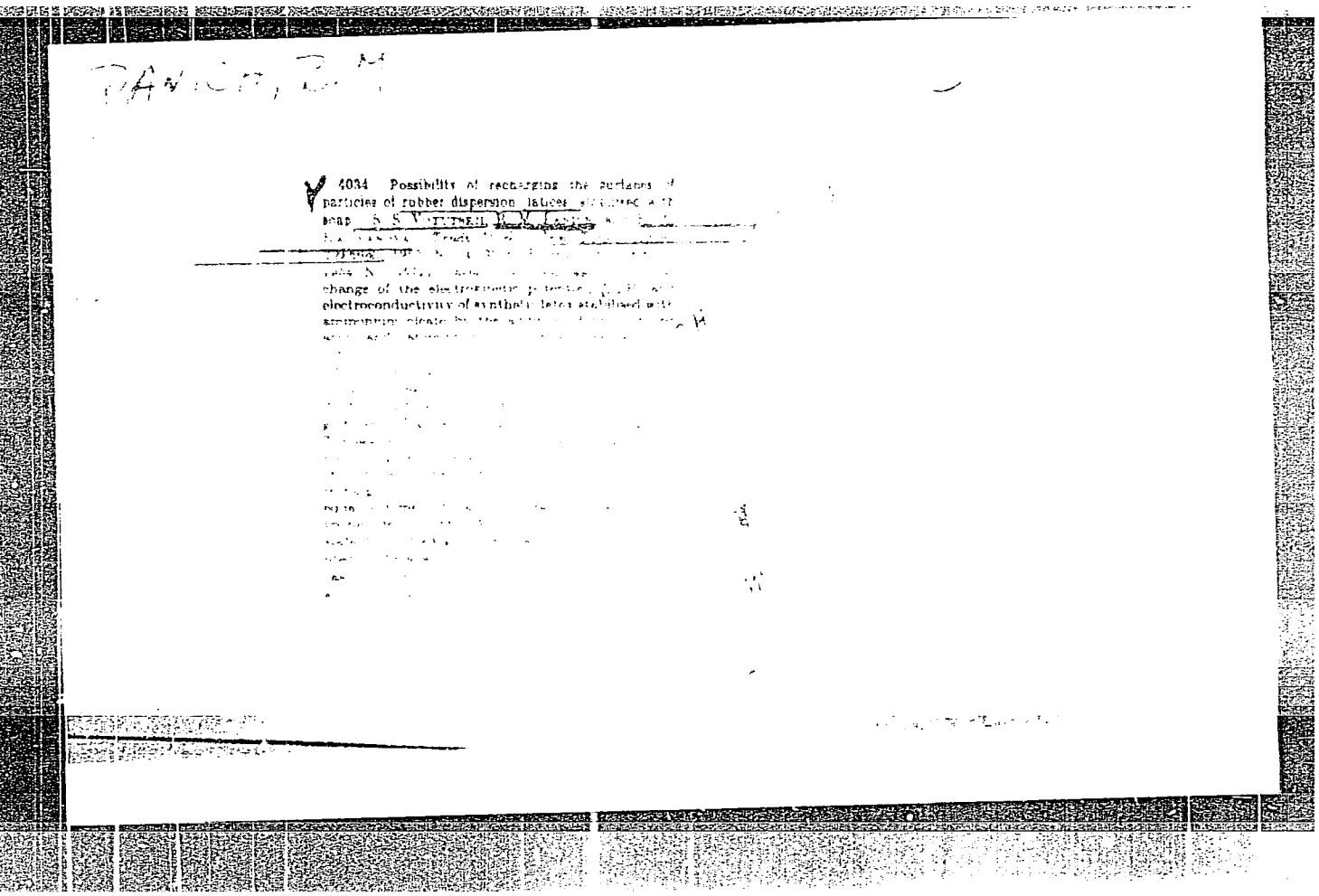
1. Ukrainskiy nauchno-issledovatel'skiy institut metallov.

TRISHEVSKIY, Igor' Stefanovich; PANICH, Boris Il'ich; NIKOLAYENKO, Nikolay Antonovich; RATTBURD, L., red.; GUSAROV, K., tekhn.red.

[Ingots and ingot molds] Slitki i izlozhnitsy. Kiev, Gos. izd-vo tekhn.lit-ry USSR, 1959. 221 p. (MIRA 12:7)
(Steel ingots)

DOLGOPOLOV, A.F.; PANICH, B.I.; MINEVICH, V.Ya.

Surface quality improvement of a top cast semikilled steel ingot. Sbor.trud. UNIIM no.11:104-108 '65. (MIRA 18:11)



4034 Possibility of recharging the particles of rubber dispersion latices

change of the electroconductivity of synthetic latex stabilized with

L 10834-67 FSS-2/EWT(1)/EWP(m) TT/GW

ACC NR: AR6034627 SOURCE CODE: UR/0313/66/000/008/0015/0015 57

AUTHOR: Panich, I. M.; Khivrenko, A. P.; Grigorevskiy, V. M.

TITLE: Motion of satellite 1965 06V

SOURCE: Ref. zh. Issledovaniye kosmicheskogo prostranstva, Abs. 8.62.122

REF SOURCE: Astron. tsirkulyar, no. 347, noyabrya 18, 1965, 2-3

TOPIC TAGS: artificial earth satellite, satellite motion, photometric analysis

ABSTRACT: During photometric analysis, an unusual change was detected in the cycle of the artificial earth satellite (ISZ), 1965, 06V (Cosmos-53—rocket). From 13 February to 20 September 1965, the satellite cycle increased 7.4 times, while in other cases such an increase, as a rule, did not exceed 30—40%. [Translation of abstract]

SUB CODE: 22/

Card 1/1 UDC: [522.6+621.396]:629.19

TSELINKO, M.G. (Zhitomir); OREKHOV, V.P. (Ryazan'); PANICH, K.I.; FEDOROV, I.V. (g. Kurgan); KUL'CHITSKIY, A.P. (g. Kurgan); A.M. (pos. Tovarkovskiy Bogoroditskogo rayona, Tul'skoy oblasti); GALLOVA, M. (Bratislava, Chekhoslovatskaya Sotsialisticheskaya Respublika; YANOVICH, I. (Bratislava, Chekhoslovatskaya Sotsialisticheskaya Respublika); KADLECHIK, I. (Bratislava, Chekhoslovatskaya Sotsialisticheskaya Respublika); PETRAK, M. (Bratislava, Chekhoslovatskaya Sotsialisticheskaya Respublika); PRITOKA, O. (Bratislava, Chekhoslovatskaya Sotsialisticheskaya Respublika); LBOV, A.G.

Suggestions and advice. Fiz. v shkole 22 no.6:62-64, 96 N-D '62. (MIRA 16:2)

1. 636-ya shkola, Moskva (for Panich). 2. Chkalovskaya srednyaya shkola Gor'kovskoy oblasti (for Lbov).

PANICH, K.I.

Subject plan assignment and quizzes. Fiz. v shkole 22 no.2: 64-65 Mr-Ap '62. (MIRA 15:11)

1. 636-ya odinnadtsatiletnyaya shkola g. Moskvy.
(Physics--Study and teaching)

PANICH, K.I. (Moskva)

On conducting a physics practicum. Fiz.v shkole 16 no.1:66-71 Ja-Fe '56. (MLRA 9:3)

1. 636-ya srednyaya shkola.
(Physics--Experiments)

PANICH, Kulya Ikhelev; DROZHZHIN, Yu.N., redaktor; PONOMAREVA, A.A., tekhnicheskiy redaktor

[Experience in organizing laboratory work in physics] Iz opyta organizatsii laboratornogo praktikuma po fizike. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1956. 87 p. (MLRA 10:4)
(Physics--Study and teaching)

PANICH, M.S.

FEDOROVA, O.F., kandidat pedagogicheskikh nauk, redaktor; PANICH, M.S., redaktor; LEVONEVSKAYA, L.G., tekhnicheskiy redaktor

[School and labor; a collection of papers on polytechnical training in school] Shkola i trud; sbornik o politekhnicheskom obuchenii v shkole. [Leningrad] Lenizdat, 1957. 202 p. (MIRA 10:11)
(Technical education)

PANICH, O. I.

16(1) PHASE I BOOK EXPLOITATION SOV/2660

Vsesoyuznyy matematicheskiy s"yezd. 3rd, Moscow, 1956

Trudy. t. 4: Kratkoye soderzhaniye sektsionnykh dokladov. Doklady inostrannykh uchenykh (Transactions of the 3rd All-Union Mathematical Conference in Moscow. vol. 4: Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy institut.

Tech. Ed.: G.N. Shevchenko; Editorial Board: A.A. Abramov, V.G. Boltyanskiy, A.M. Vasil'yev, B.V. Medvedev, A.D. Myshkis, S.M. Nikol'skiy (Resp. Ed.), A.G. Postnikov, Yu. V. Prokhorov, K.A. Rybnikov, P. L. Ul'yanov, V.A. Uspenskiy, N.G. Chetayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERAGE: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The book is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted to the editor by non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, the title of the paper is cited and, if the paper was printed in a previous volume, reference is made to the appropriate volume. The papers, both Soviet and non-Soviet, cover various topics in number theory, algebra, differential and integral equations, function theory, functional analysis, probability theory, topology, mathematical problems of mechanics and physics, computational mathematics, mathematical logic and the foundations of mathematics, and the history of mathematics.

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PANICH, O.I.

One partial differential equation of the fourth order to which the plane problem on flow in Osseen's linearization of the Navier-Stokes system of equations is reduced. Nauch.dokl.vys. shkoly; fiz.-mat.nauki no.3:57-63 '59. (MIRA 13:6)

1. Odesskiy gosudarstvennyy universitet imeni I.I. Mechnikova.
(Differential equations, Partial)
(Hydrodynamics)

PANICH, O.I.

Basic boundary value problem for a polyharmonic equation of the fourth order. Nauch.dokl.vys.shkoly; fiz.-mat.nauki no.3: 64-70 '59. (MIRA 13:6)

1. Odesskiy gosudarstvennyy universitet imeni I.I. Mechnikova.
(Differential equations, Partial)

PANICH, O.I. (Odessa)

Potentials for a polyharmonic equation of the fourth order. (MIRA 13:6)
Mat.sbor. 50 no.3:335-368 Mr '60.
(Harmonic functions)

ACC NR: AP6034750 SOURCE CODE: UR/0020/66/170/005/1020/1023

AUTHOR: Panich, O. I.

ORG: Odessa Electrical Engineering Communications Institute (Odesskiy elektrotekhnicheskiy institut svyazi)

TITLE: Elliptic boundary value problems with a parameter only in the boundary conditions

SOURCE: AN SSSR. Doklady, v. 170, no. 5, 1966, 1020-1023

TOPIC TAGS: elliptic function, boundary value problem, dirichlet problem

ABSTRACT: In this paper elliptic boundary value problems are considered. The equations of these boundary problems do not depend on the parameter, but the boundary conditions do. The case when both the equations and the boundary conditions depend on the parameter was examined by M. S. Agranovich and M. I. Vishik (UMN, 19, v.3(117), 1964). They found the criteria for which the problem has a unique solution for fairly large values of the parameter. The above results are generalized by the present author for the case when only boundary conditions depend on the parameter. The need for the solution of such a problem arose when equivalent regulation of elliptic boundary problems with the help of potentials was studied. A special representation of normal derivative solutions of the elliptic system is obtained through use of Dirichlet boundary data. This paper was presented by Academician I. G. Petrovskiy

UDC: 517.43

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ACC NR: AP6034750

10 Jan 1966. The author expresses his gratitude to L. R. Volevich for valuable comments. Orig. art. has: 12 formulas.

SUB CODE: 12/ SUBM DATE: 04Jan66/ ORIG REF: 007

Card 2/2

TITLE: On the solvability
of Maxwell equations

than the thing. The generalization ... irregularity of the normal ... introduces new difficulties arising from the ...

PANICH, O. I.

Use of the method of potentials in solving a system of Oseen's equations describing a steady flow of a viscous incompressible fluid past a plane contour. Part 2. Izv. vys. ucheb. zav.; mat. no.4:118-121 '62. (MIRA 15:10)

1. Odesskiy gosudarstvennyy universitet imeni I. I. Mechnikova.

(Differential equations) (Hydrodynamics)

PANICH, O.I.

Solution of a system of Oseen equations for the steady flow around a plane contour of a viscous incompressible fluid using the method of potentials. Izv.vys.ucheb.zav.; mat. no.6:73-84 '62. (MIRA 15:12)

1. Odesskiy gosudarstvennyy universitet imeni I.I.Mechnikova.
(Differential equations) (Hydrodynamics)

PANICH, O.I.

Using the method of potentials in solving a system of Oseen's equations describing the steady flow of a viscous incompressible fluid past a plane contour. Part 1. Izv. vys. ucheb. zav.; mat. no.3:98-110 '62. (MIRA 15:9)

1. Odesskiy gosudarstvennyy universitet imeni I.I. Mechnikova.
(Hydrodynamics)

S/140/62/000/006/002/006
E031/E435

10.1200

AUTHOR: Panich, O.I.

TITLE: The solution of Oseen equations for the steady flow round a flat plate by a viscous incompressible fluid by the method of potentials. III

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika. no.6, 1962, 73-84

TEXT: The present paper is a continuation of two previous articles by the author (Izv.VUZ. Matematika. no.3, 1962 and no.4, 1962) in which the boundary problem,

$$\Delta^2 u - 2k\frac{\partial \Delta u}{\partial x} = 0$$

$$u\Big|_L = f_0, \quad \frac{\partial u}{\partial n}\Big|_L = f_1$$

from which the solution of the stated problem can be determined, was studied. In this part the case of k tending to zero, i.e. for small Reynolds numbers, is discussed. The solution has

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S/140/62/000/006/002/006
E031/E435

The solution of Oseen ...

been sought in the form

$$u(P) = \hat{w}_1(P,\lambda) + w_2(P,\mu)$$

where the potentials are those previously defined. Integral equations for λ and μ in the limiting case of k tending to zero are derived. It is shown that the corresponding homogeneous equations have only a null solution, from which it follows that the actual (inhomogeneous) equations have unique solutions. In considering the character of the flow for small Reynolds numbers, it is shown that the velocity components tend to zero as k tends to zero. Expressions are deduced for the pressure and the resistance of the medium in the limit. The pressure remains determinate. The case of a straight circular cylinder is considered to illustrate the theory. The expressions for the velocity components and the principal terms in the pressure are only valid near the cylinder but they are completely valid for calculating the resistance of the medium.

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PANICH, O.I.

Solution of the basic boundary value problem for a polyharmonic equation of the fourth order in a plane with the method of potentials. Part 3. Izv. vys. ucheb. zav.; mat. no.6:89-96 '61. (MIRA 15:3)

1. Odesskiy gosudarstvennyy universitet imeni I.I.Mechnikova.
(Boundary value problems) (Potential, Theory of)

PANICH, O.I.

Solution of the fundamental boundary value problem for a 4th order polyharmonic equation on a plane by the method of potentials. Part 2. Izv. vys. ucheb. zav.; mat. no.4:66-77 '61. (MIRA 14:7)

1. Odesskiy gosudarstvennyy universitet imeni I.I. Mechnikova.
(Boundary value problems) (Integral equations)
(Potential, Theory of)

34767
S/140/62/000/001/008/011
C111/C444

16.3500 16.3800

AUTHOR: Panich, O. I.

TITLE: The solution of the basic boundary value problem for the polyharmonic equation of fourth order in the plane by the potential method IV

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, no. 1, 1962, 118-129

TEXT: The present paper is a continuation of the former publications of the author (Izv. vuzov. Matem., no. 3, 1961; no. 4, 1961; no. 6, 1961) There one had introduced potentials w_1 and w_2, by aid of which one could reduce the boundary value problem

$$\Delta^2 u + 2a\Delta u + bu = 0 \qquad \text{(I)}$$

$$u\Big|_L = f_0, \quad \frac{\partial u}{\partial n}\Big|_L = f_1 \qquad \text{(II)}$$

to a system of regular Fredholm integral equations of second kind which had possessed a unique solution in the case of positive roots of the characteristic equation. In the present fourth part the case $a = b = 0$

Card 1/4

The solution of the basic boundary ... is considered. The potentials w_1 and w_2 have in this special case the shape

$$w_1^{(0)}(P,\lambda) = \frac{2}{\pi}\int_L \lambda(Q)\,\psi_1^{(0)}(P,\,Q)\,dS_Q, \qquad (9.1)$$

$$w_2^{(0)}(P,\mu) = \frac{1}{\pi}\int_L \mu(Q)\,\ln\frac{1}{R(P,Q)}\,dS_Q \qquad (9.2)$$

where

$$\psi_1^{(0)}(P,\,Q)=\frac{\cos^2\theta(P,\,Q)}{R(P,\,Q)}-\varkappa(Q)\cos^2\theta(P,\,Q)-$$

$$-\frac{1}{4}\frac{\partial}{\partial s_Q}\left\{\varkappa(Q)\frac{\partial}{\partial s_Q}\left[R^2(P,\,Q)\ln\frac{1}{R(P,\,Q)}\right]\right\}, \qquad (9.3)$$

$\varkappa$ is the curvature of the closed boundary L, θ is the angle between the inner normal in Q and the vector $\bar{R}$ (from Q tq P). The limits of the potentials on the boundary are written down, and one investigates the properties of the potentials (among others in dependence on the kind of the boundary). $w_2^{(0)}(P,\mu)$ is the usual potential of a simple layer and is shortly discussed. Thoroughly investigates is $w_2^{(0)}$,

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especially one points out those properties which cannot be observed in the general case, and which only occur for a = b = 0, e. g. it is stated (theorem 3): If $\lambda \equiv \overline{C} = \text{const}$, and if the fourth derivatives of the parameter representation of L satisfy the Hölder condition in every system of coordinates, then there is $w_1^{(0)}(P,\overline{C}) \equiv 0$ in the interior domain S_i of L, $\equiv -\overline{C}$ on L and $\equiv -2\overline{C}$ in the exterior domain S_e. Adjoining the interior and the exterior problem are formulated: I. Determine a solution u of $\Delta^2 u = 0$, being continuous in S_i together with the first four derivatives, where $u \in C_3$ in $S_i + L$, $u|_L = f_0$, $\frac{\partial u}{\partial n}\Big|_L = f_1$, $f_0 \in H_3$, $f_1 \in H_2$ and where the fifth derivatives of the parameter representation of L satisfy the Hölder conditions. The solution with the set-up

$$u(P) = w_1^{(0)}(P,\lambda) + w_2^{(0)}(P,\mu) + A\overline{w}(P) \qquad (10.13)$$

where $\Delta\overline{w} = \overline{v}$ in S_i, $\overline{w} \in H_3$ in $S_i + L$, v the solution of an auxiliary system, is reduced to a solvable system of integral equations.

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The solution of the basic boundary ...

II. Determine a solution u of $\Delta^2 u = 0$, possessing four continuous derivatives in S_e, where $u \in C_3$ in S_e+L, $u\big|_L = f_0$, $\frac{\partial u}{\partial n}\Big|_L = f_1$ and u is quasiregular at infinity, e. g. $u = O(R_0)$; $\frac{\partial u}{\partial x}, \frac{\partial u}{\partial y} = O(1)$; $\Delta u = O\left(\frac{1}{R_0^2}\right)$, $\frac{\partial \Delta u}{\partial x}, \frac{\partial \Delta u}{\partial y} = O\left(\frac{1}{R_0^3}\right)$.

By the removal of certain logarithmical terms one forms out of $w_1^{(0)}$ an auxiliary potential $\hat{w}_1$, and by aid of the set-up $u(P)=\hat{w}_1(P,\lambda)+w_2^{(0)}(P,\lambda)$ one proves the unique solvability of the problem II.

There are 2 Soviet-bloc references and one non-Soviet-bloc reference.

ASSOCIATION: Odesskiy gosudarstvennyy universitet im. I. I. Mechnikova (Odessa State University im. I. I. Mechnikov)

SUBMITTED: February 3, 1959

PANICH, O.I.

Solution of the fundamental boundary value problem for a polyharmonic fourth-order equation on a plane by the method of potentials. Izv. vys. ucheb. zav.; mat. no.3:80-90 '61. (MIRA 14:7)

1. Odesskiy gosudarstvennyy universitet imeni I.I. Mechnikova.
(Boundary value problem)
(Differential equations)
(Potential, Theory of)

26458
S/140/61/000/003/004/009
C111/C333

16.3800

AUTHOR: Panich, O. I.

TITLE: The solution of the fundamental boundary value problem for a polyharmonic equation of fourth order in the plane with potential method. I

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, no. 3, 1961, 80-90

TEXT: The author investigates the boundary value problem

$$\Delta^2 u + 2a\Delta u + bu = 0 \qquad (I)$$

$$\left.\begin{aligned} u|_L &= f_0 \,, \\ \frac{\partial u}{\partial n}\Big|_L &= f_1 \end{aligned}\right\} \qquad (II)$$

where a, b are constants, L the boundary of the domain, $\frac{\partial}{\partial n}$ —

Card 1/9

The solution of the fundamental . . .

derivative along the exterior normal. The author constructs potentials which reduce this problem to a regular system of Fredholm integral equations of second class, the solubility of which is proved.

The present first part of the paper, consisting of 4 parts according to the author, contains a long introduction and the first two sections of the first chapter.

In the introduction the author gives a survey on the possible boundary value problems for (I) and announces three further chapters. In the first chapter he constructs potentials which are investigated in the second one; in the third chapter the solubility of the problem (I),(II) is proved if the roots of the characteristic equation are positive; in the fourth chapter the biharmonic equation is investigated.

In § 1 the author gives potentials for the polyharmonic equation of fourth order which are partially known and partially set up in an earlier paper of the author (Ref. 10: O potentsialakh dlya poligarmonicheskogo uravneniya chetvertogo poryadkh)[On the potentials for the polyharmonic equation of fourth order], Matem. sb., t.50

The solution of the fundamental . . .

(92):3, 1960).

Let $a = b = 0$; the equation $\Delta^2 u$ has the fundamental solutions

$$\varphi_1^{(0)}(P,Q) = \ln \frac{1}{R(P,Q)} \qquad (1.1)$$

$$\varphi_2^{(0)}(P,Q) = R^2(P,Q) \ln \frac{1}{R(P,Q)} ; \qquad (1.2)$$

where $R(P,Q)$ is the distance between P and Q. With the aid of (1.1), (1.2) the following potentials are constructed:

$$v_1^{(0)}(P,\nu) = \frac{1}{\pi} \int_L \nu(Q) \frac{\partial \varphi_1^{(0)}(P,Q)}{\partial \bar{n}_Q} ds_Q = \frac{1}{\pi} \int_L \nu(Q) \frac{\cos \vartheta(P,Q)}{R(P,Q)} ds_Q \qquad (1.3)$$

$$v_2^{(0)}(P,\nu) = \frac{1}{\pi} \int_L \nu(Q) \varphi_1^{(0)}(P,Q) ds_Q \qquad (1.4)$$

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The solution of the fundamental ...

$$v_3^{(0)}(P,\nu) = \frac{1}{4\pi}\int_L \nu(Q)\,\frac{\partial\varphi_2^{(0)}(P,Q)}{\partial n_{\bar{Q}}}\,ds_Q \qquad (1.5)$$

$$v_4^{(0)}(P,\nu) = \frac{1}{4\pi}\int_L \nu(Q)\,\varphi_2^{(0)}(P,Q)\,ds_Q \qquad (1.6)$$

where $\frac{\partial}{\partial\bar{n}}$ -- derivative with respect to the interior normal, ds -- element of arc, θ -- angle between $\bar{n}_Q$ and $\overrightarrow{QP}$.

The characteristic equation

$$p^2 + 2ap + b = 0 \qquad (III)$$

is assumed to have the roots $p_1=k_1^2>0$, $p_2=k_2^2>0 (k_1>0, k_2>0)$.

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The solution of the fundamental ...

Then (I) has particular solutions $K_0(k_1R)$, $K_0(k_2R)$, where $K_0(z) =$

$= \left[1 + \frac{z^2}{4} + \ldots\right] \ln \frac{1}{z} + \Phi(z)$ and $\Phi(z)$ is an even entire function.

If it is put

$$\varphi_1(P,Q) = \frac{K_0(k_1R) + K_0(k_2R)}{2} = \ln \frac{1}{R} + \frac{k_1^2 + k_2^2}{8} R^2 \ln \frac{1}{R} + \ldots \qquad (1.10)$$

$$\varphi_2(P,Q) = \frac{4}{k_1^2 - k_2^2} \left[K_0(k_1R) - K_0(k_2R)\right] =$$

$$= R^2 \ln \frac{1}{R} + \frac{k_1^2 + k_2^2}{16} R^4 \ln \frac{1}{R} + \ldots, \qquad (1.11')$$

if $k_1 \neq k_2$, and

$$\varphi_2(P,Q) = \frac{2}{k} RK'_0(kR) = R^2 \ln \frac{1}{R} + \frac{k^2}{8} R^4 \ln \frac{1}{R} + \ldots \qquad (1.11'')$$

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The solution of the fundamental . . .

if $k_1 = k_2 = k$, then the following potentials satisfy (I)

$$v_1(P,\nu) = \frac{1}{\pi}\int_L \nu(Q)\ \frac{\partial}{\partial n_Q}\left[\varphi_1(P,Q) - \frac{k_1^2 + k_2^2}{8}\varphi_2(P,Q)\right] ds_Q \qquad (1.12)$$

$$v_2(P,\nu) = \frac{1}{\pi}\int_L \nu(Q)\left[\varphi_1(P,Q) - \frac{k_1^2 + k_2^2}{8}\varphi_2(P,Q)\right] ds_Q \qquad (1.13)$$

$$v_3(P,\nu) = \frac{1}{4\pi}\int_L \nu(Q)\ \frac{\partial \varphi_2(P,Q)}{\partial n_Q}\ ds_Q \qquad (1.14)$$

$$v_4(P,\nu) = \frac{1}{4\pi}\int_L \nu(Q)\,\varphi_2(P,Q)\,ds_Q \qquad (1.15)$$

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The solution of the fundamental ...

$$v_5(P,\nu) = \frac{2}{\pi}\int_L \nu(Q)\left[\frac{3}{2}\,\frac{\partial\varphi_1(P,Q)}{\partial\bar{n}_Q} - \frac{1}{4}\,\frac{\partial^3\varphi_2(P,Q)}{\partial\bar{n}_Q^3}\right] ds_Q \qquad (1.16)$$

$$v_6(P,\nu) = \frac{1}{\pi}\int_L \nu(Q)\left[\varphi_1(P,Q) - \frac{1}{2}\,\frac{\partial^2\varphi_2(P,Q)}{\partial\bar{n}_Q^2}\right] ds_Q \qquad (1.22)$$

where (1.16) has the property that it yields a jump of the function itself on L, while the normal derivative is regular.

§ 2 treats the representation of the solutions of boundary value problems by potentials; e. g. the representation

$$u(P) = v_5(P,\lambda) + v_6(P,\mu) \qquad (2.1)$$

reduces the problem (I), (II) to a regular system of integral equations, the investigation of which, however, turns out to be very complicated.

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The solution of the fundamental ...

Therefore the author proposes to find the solution of (I), (II) in the form

$$u(P) = w_1(P,\lambda) + w_2(P,\mu) \qquad (2.10)$$

where

$$w_1(P,\lambda) = \frac{2}{\pi}\int_L \lambda(Q)\,\gamma_1(P,Q)\,ds_Q \qquad (2.2)$$

with

$$\psi_1(P,Q) = \frac{3}{2}\frac{\partial\varphi_1(P,Q)}{\partial n_Q} - \frac{1}{4}\frac{\partial^3\varphi_2(P,Q)}{\partial n_Q^3} - \\ - \varkappa(Q)\left[\varphi_1(P,Q) - \frac{1}{2}\frac{\partial^2\varphi_2(P,Q)}{\partial n_Q^2}\right] - \\ - \frac{k_1^2+k_2^2}{8}\varphi_2(P,Q) - \frac{1}{4}\varkappa'(Q)\frac{\partial\varphi_2(P,Q)}{\partial s_Q} - \frac{1}{4}\varkappa(Q)\frac{\partial^2\varphi_2(P,Q)}{\partial s_Q^2} \qquad (2.3)$$

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The solution of the fundamental ...

and

$$w_2(P,\mu) = \frac{1}{\pi}\int_L \mu(Q)\,\Psi_2(P,Q)\,ds_Q \qquad (2.8)$$

with

$$\Psi_2(P,Q) = K_0\left[k_1 R(P,Q)\right] \quad . \qquad (2.9)$$

The author mentions: S. L. Sobolev, J. N Vekua, Z. Ya. Shapiro, Ya. B. Lopatinskiy. There are 2 figures, 8 Soviet-bloc and 3 non-Soviet-bloc references.

ASSOCIATION: Odesskiy gosudarstvennyy universitet imeni J. J. Mechnikova (Odessa State University imeni J. J.Mechnikov)

SUBMITTED: February 3, 1959

Card 9/9

31916
S/140/61/000/006/005/007
C111/C444

16.3500

AUTHOR: Panich, O. J.

TITLE: The solution of the basic boundary value problem for a polyharmonic equation of fourth order in the plane by the method of potentials. III.

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, no. 6, 1961, 89-96

TEXT: Searched is the solution of

$$\Delta^2 u + 2a\Delta u + bu = 0 \qquad \text{(I)}$$

$$u\Big|_L = f_0, \quad \frac{\partial u}{\partial n}\Big|_L = f_1 \qquad \text{(II)}$$

where L is the boundary of a domain and $\frac{\partial}{\partial n}$ is the derivative with respect to the outside normal. This problem had been considered by the author already in JVUZ 3 and 4, 1961, there it was called problem IV_{01}. There were constructed potentials which allowed to reduce the problem to a regular system of Fredholm integral equations of second

Card 1/4

The solution of the basic boundary ...

kind. These potentials $w_1(P, \lambda)$ and $w_2(P, \lambda)$ were investigated in the second part of the paper. In the present third part of the paper for the case of positive roots of the characteristic equation

$$p^2 + 2ap + b = 0 \qquad \text{(III)}$$

the existence and uniqueness of the solution of problem IV_{01} is proved. There one distinguishes between the inner and the outer problem. With the notations of part I and II of the paper the exact formulations read as follows: The inner problem IV_{01}: Searched is a function u which satisfies the following conditions:

a) in the domain S_i u possesses continuous derivatives up to the fourth order and satisfies

$$\Delta^2 u + 2a\Delta u + bu = 0 \qquad (7.1)$$

b) $u \in C_3$ in $S_i + L$

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The solution of the basic boundary . . .

c) u satisfies

$$u\Big|_L = f_0, \quad \frac{\partial u}{\partial n}\Big|_L = f_1 . \qquad (7.2)$$

The existence and the uniqueness of the solution is proved under the assumptions of $L \in \Pi_5$, $f_0 \in H_3$, $f_1 \in H_2$. The outer problem: Searched is a function u,

a) possessing continuous derivatives up to the fourth order in S_e, and satisfying

$$\Delta^2 u + 2a\Delta u + bu = 0 \qquad (8.1)$$

b) $u \in C_3$ in $S_e + L$

c) satisfying

$$u\Big|_L = f_0, \quad \frac{\partial u}{\partial n}\Big|_L = f_1 \qquad (8.2)$$

d) $u \to 0$ at infinity.

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The solution of the basic boundary ...

The same assumptions hold for L, f_o, f_1.

The author mentions S. L. Sobolev.

There are 3 Soviet-bloc and 4 non-Soviet-bloc references. The reference to English-language publication reads as follows: Robert B. Davis: Asymptotic solutions of the fourth boundary partial differential equations. J. Rational Mech. and Analysis, v. 5, no. 3, p.605, 1956.

ASSOCIATION: Odesskiy gosudarstvennyy universitet im. I. I. Mechnikova (Odessa State University im. I. I. Mechnikov)

SUBMITTED: February 3, 1959

Card 4/4

16.3800

32734
S/140/61/000/004/007/013
C111/C222

AUTHOR: Panich, O. J.

TITLE: The solution with the aid of the potential method of the fundamental boundary value problem for the polyharmonic equation of fourth order in the plane. II.

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, no. 4, 1961, 66-77

TEXT: The present paper is a continuation of (Ref. 1, O. J. Panich, Resheniye odnoy krayevoy zadachi dlya poligarmonicheskogo uravneniya chetvertogo poryadka na ploskosti metodom potentsialov, I. [The solution with the aid of the potential method of a boundary value problem for the polyharmonic equation of fourth order in the plane. I.] Izv. vuzov, Matem., Nr. 3, 1961).

In (Ref. 1) the author considered the equation

$$\Delta^2 u + 2a\Delta u + bu = 0 \qquad (1)$$

and he defined the potentials $v_1(P,\nu)$, $v_2(P,\nu)$,..., $v_6(P,\nu)$ for it.

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S/140/61/000/004/007/013
C111/C222

The solution with the aid of the ...

The properties of the potentials v_k are identical with the properties of the corresponding potentials $v_k^{(o)}$ for the biharmonic equation $\Delta^2 u=0$. Basing on these properties the author investigates the potential w_1 introduced in (Ref. 1) and he calculates the values of w_1 and its normal derivative on the boundary. 29 theorems are formulated altogether, e.g.

Theorem A: If $\lambda \in H_m(A, \alpha)$ on L, m = 0,1 and $L \in \Pi_3(B, \alpha)$, then $w_1(P, \lambda) \in H_m(cA, \alpha')$ in $S_i + L$ and $\overline{S}_e + L$.

Theorem B: If $\lambda \in H_p(A, \alpha)$ on L, $p \geqslant 2$ and $L \in \Pi_{p+1}(B, \alpha)$, then $w_1(P, \lambda) \in H_p(cA, \alpha')$ in $S_i + L$ and $\overline{S}_e + L$.

Theorem C: If $\lambda \in I(A)$ on L and $L \in \Pi_3(B, \alpha)$ then $\tilde{w}_1(P, \lambda) \in H_o(cA, \alpha')$ on L.

Theorem E: If $\lambda \in I(A)$ on L and $L \in \Pi_3(B, \alpha)$, then $\frac{\partial \tilde{w}_1(P, \lambda)}{\partial n_p} \in H_o(cA, \alpha')$ on L.

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S/140/61/000/004/007/013
C111/C222

The solution with the aid of the ...

Here L is a simple curve dividing the plane into the inner part S_i and the outer part S_e; $\bar{S}_e$ is an arbitrary finite part of S_e. It holds $f(x) \in H_p(A,\alpha)$, $0 < \alpha \leq 1$ if for all $k = 0,1,\ldots, p$ it holds $\left|f^{(k)}(x)\right| \leq A$, $\left|f^{(k)}(x_1) - f^{(k)}(x_2)\right| \leq A\left|x_1 - x_2\right|^{\alpha}$. A curve belongs to the class $\Pi p(A,\alpha)$ if its parameter representation belongs to $Hp(A,\alpha)$,

The author mentions N. M. Gyunter. There are 3 Soviet-bloc references.

ASSOCIATION: Odesskiy gosudarstvennyy universitet im. J.J.Mechnikova (Odessa State University im. J. J. Mechnikov)

SUBMITTED: February 3, 1959

Card 3/3

KOROLEV, P.G. [Korol'ov, P.H.]; PANICH, P.N. [Panych, P.N.]

Dust protecting device for the land wheel bushing of the P-5-35M plow. Mekh. sil'. hosp. 9 no.10:28-29 O '58. (MIRA 11:10)

1. Ukrainskaya akademiya sel'skokhozyaystvennykh nauk.
(Plows)

CA

2

Determination of the rheological characteristics of structured liquids with the aid of the rotation viscometer. R. M. Fanish and S. S. Voyutskiĭ. *Zavodskaya Lab.* 15, No. 3(1949).—The limiting viscosity η_∞, the extrapolated viscosity η_0 at very low rates of shear, and the crit. rate of shear (ds/dt), of a rubber dispersion "revultex"-derid, at 18° with the aid of a cylindrical rotation viscometer from plots of the angular velocity against the load, resp., by the cotangent of the slope of the rectilinear portion, the tangent of the slope of the tangent at $\omega = 0$, and the point at which the curve of η against ds/dt goes over into a straight line parallel to the axis of abscissas, were practically identical with the values obtained by measurements with a capillary viscometer. The curves of η against ds/dt obtained with the 2 instruments coincide.

N. Thon

CA

2

The mechanism of gelation of latexes. R. M. Pankh, K. A. Kal'yanova, and S. S. Voyutskil (Inst. Fine Chem. Technol., Moscow). *Kolloid. Zhur.* 12, 50-61(1950).—The latex of synthetic rubber is stabilized with NH_4 naphthenate and NH_4OH. To understand the mechanism of the gelation of the latex by ZnO, the action of the components of the latex on ZnO was studied. (1) H_2O at 25° dissolves within 1 hr. 0.00016 mol. ZnO per l.; the soly. is raised by NH_3, e.g., to 0.0000 and 0.032 in 1.47 and 8.3 *N* NH_3, resp., whereas the soly. in NaOH (up to 0.1 *N*) is not greater than in H_2O. This shows that Zn is present in NH_3 as $[Zn(NH_3)_4]$ ions. The soly. in *N* NH_3 is independent of temp. (2–60°). It is greatly increased by NH_4NO_3 (e.g., from 0.003 to 0.044 by 75 g./l. of NH_4NO_3) which diminishes the dissocn. to NH_3 and OH ions. The soly. of ZnO in 2% NH_4 oleate + aq. NH_3 is greater than in aq. NH_3 alone. When the NH_3 concn. is great (e.g., 1.85 *N*), the amt. of oleic acid in the soln. is equiv. to that of Zn. (2) Latex, in which NH_3 was displaced by boiling with a trace of NaOH and whose pH was then adjusted to 11.3 with NaOH, did not set in the presence of ZnO presumably because $[Zn(NH_3)_4]$ ions were absent. (3) The pH of mixts. of aq. NH_3 and aq. HCHO decreased for 24 hrs. or more (e.g., from 9.1 to 6.4); this shows that the condensation is very slow. The soly. of ZnO in aq. NH_3 was reduced by HCHO when the decrease of pH caused by HCHO was considerable. The time *t* of gelation of latex (without ZnO) was reduced by addn. of HCHO. If *c* is the final concn. of HCHO, the curves "log *t* against *c*" were almost parallel to that of "pH against *c*". When 0.25 g. ZnO, stabilized with casein, was introduced into 20 ml. latex (solid residue 39%) + 6 ml. aq. HCHO, *t* was much smaller than when ZnO alone or HCHO alone was present, as long as the system contained less than 1.4% HCHO; at higher *c* ZnO had but a weak effect on the gelation, presumably because $[Zn(NH_3)_4]$ ions are destroyed by HCHO. The $[Zn(NH_3)_4]$ ions accelerate gelation because they compress the diffuse double layer round the latex particles; Zn^{++} ions from $Zn(OH)_2$ cannot achieve this, as the soly. of $Zn(OH)_2$ is too small. The colloidal soap $[Zn(NH_3)_4](RCOO)_2$ does not prevent mutual attachment of latex globules and structure formation in the sol.

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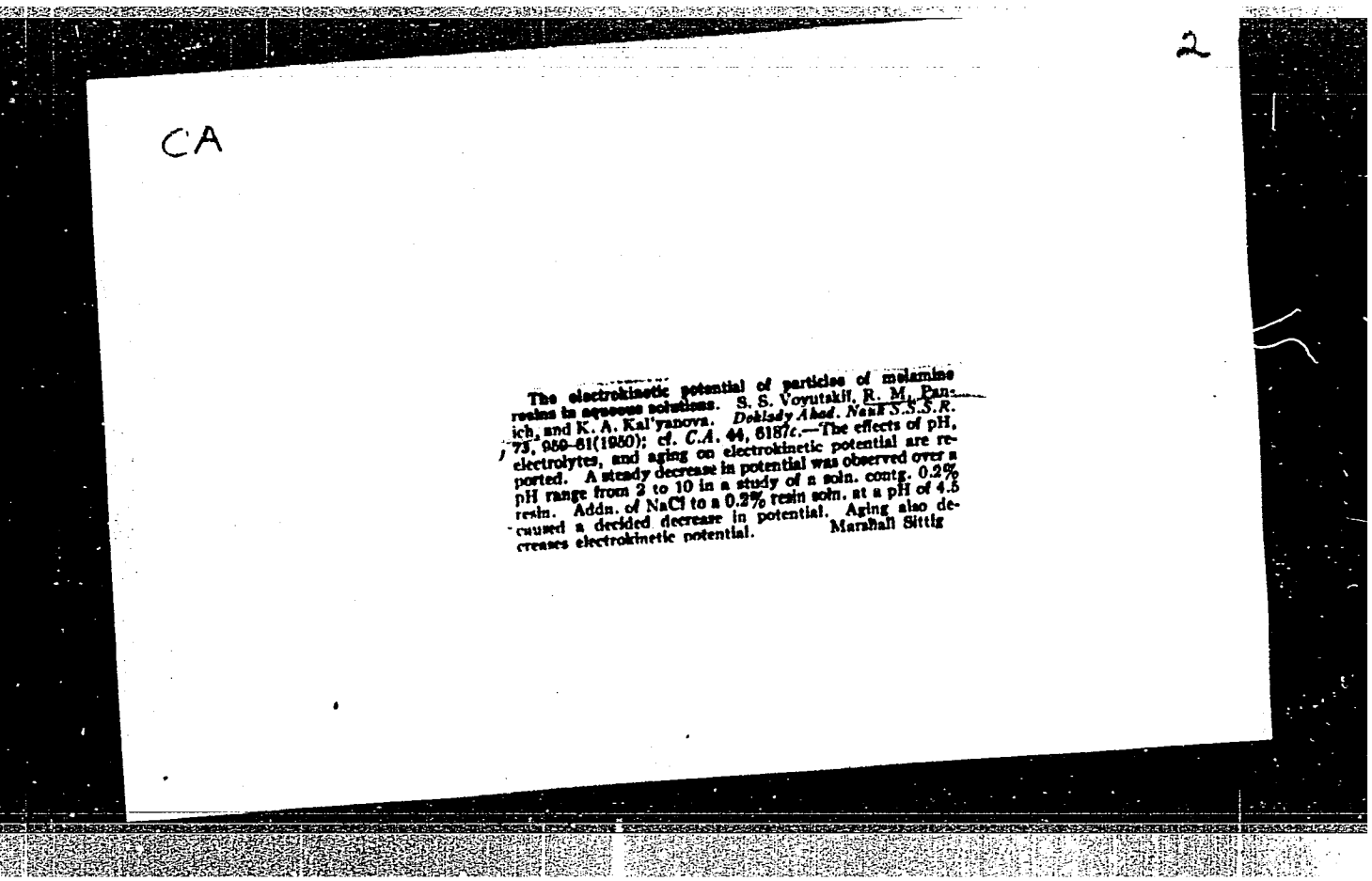

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The electrokinetic potential of particles of melamine resins in aqueous solutions. S. S. Voyutskii, R. M. Panich, and K. A. Kal'yanova. *Doklady Akad. Nauk S.S.S.R.* 73, 959–61(1950); cf. *C.A.* 44, 6187*c*.—The effects of pH, electrolytes, and aging on electrokinetic potential are reported. A steady decrease in potential was observed over a pH range from 2 to 10 in a study of a soln. contg. 0.2% resin. Addn. of NaCl to a 0.2% resin soln. at a pH of 4.5 caused a decided decrease in potential. Aging also decreases electrokinetic potential. Marshall Sittig

The mechanism of gelation of latexes. II. Microscope study of structure formation during gelation. S. S. Voyutskii, R. M. Panich, and K. A. Kal'yanova (Inst. Fine Chem. Technol., Moscow). *Kolloid. Zhur.* 13, 89-93(1951); cf. *C.A.* **44**, 3770c. Suspensions of smoked sheet rubber (100 parts) stabilized with 12 parts Na oleate and contg. also 4 parts benzene are flocculated by ZnO but gelate when ZnO and NH_3 are added. In the gel the rubber particles (2-10 μ diam.) are joined to each other by a Zn NH_4 soap.
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CH

The electrokinetic potential of melamine resin particles in aqueous solutions. S. S. Voyutskii, R. M. Punich, and K. A. Kal'yanova (Inst. Fine Chem. Technol., Moscow). *Kolloid. Zhur.* 13, 242-8(1951).—See *C.A.* 45, 6012g.
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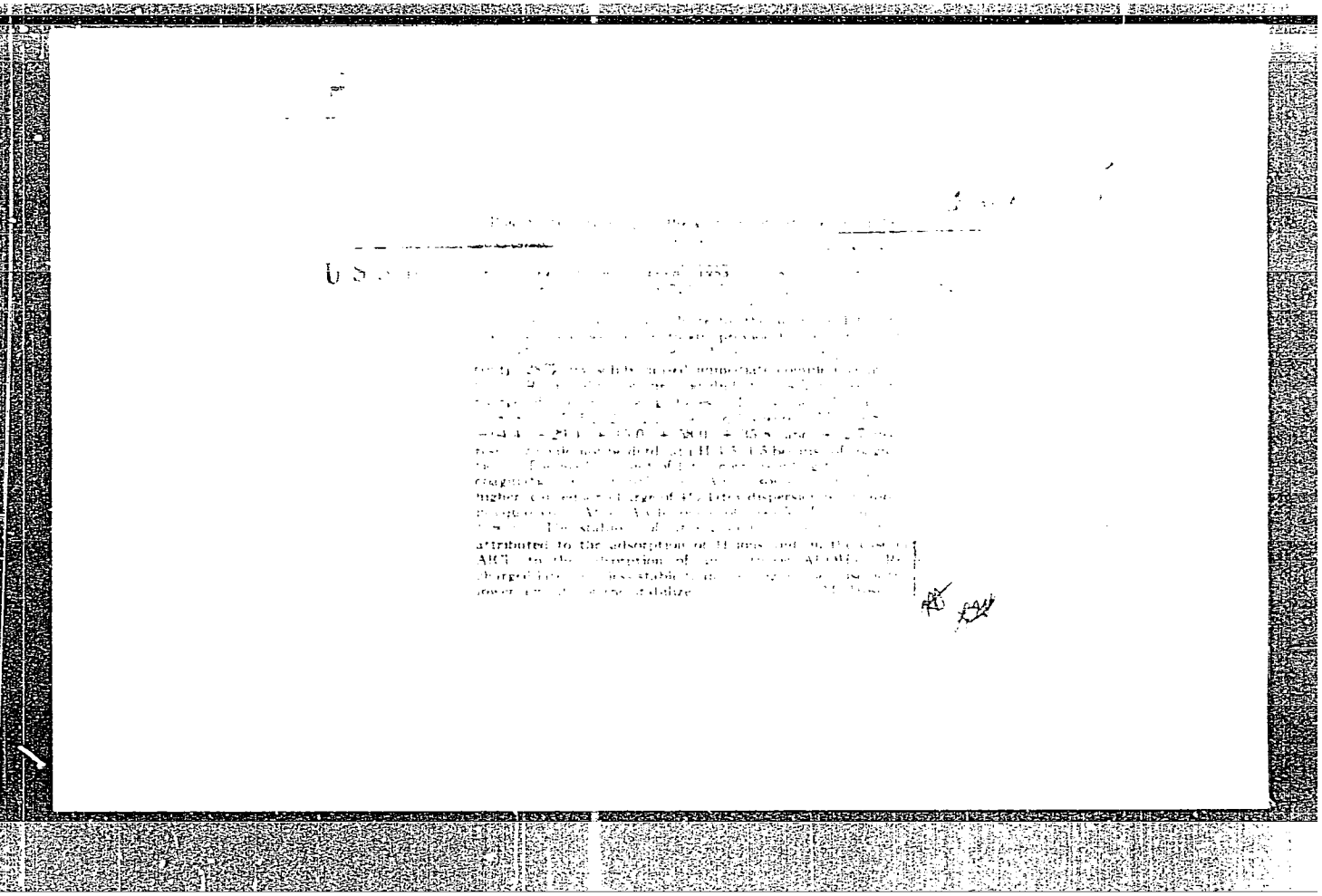
The mechanism of gelation of latexes. R. M. Panich, K. A. Kalyanova, and S. S. Voyutskil (Lomonosov Inst. Fine Chem. Technol., Moscow). *Rubber Chem. & Technol.* 25, 690-608(1952).—See *C.A.* 44, 3770c. C. C. Davis



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Properties of latexes prepared with the aid of nonionic stabilizers. Part 2: Butadiene-styrene latexes. Koll. zhur. 27 no.4:589-592 Jl-Ag '65. (MIRA 18:12)

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ABSTRACT: Professor, Doctor of Chemical Sciences, S. S. Voyntskiy is a prominent expert in the fields of colloidal chemistry and of the physics and chemistry of high-molecular weight compounds. His studies include the following topics: physics and chemistry of latexes; compatibility and plasticization of polymers; leather substitutes, special cardboards, and paper; and nonwoven filtering materials. His studies on the cohesion and adhesion of polymers resulted in the development of the diffusion theory of adhesion. Voyntskiy is associated with the following institutions: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov; Institute of Light Industry; and the Scientific Research Institute of Leather Substitutes. [BO]

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