

*The*  
ELECTRONIC  
ENGINEERING  
MASTER INDEX

*A subject index to the contents of  
electronic and allied engineering publi-  
cations printed throughout the world  
from*

**January 1947 through December 1948**

NEW YORK  
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1950

*The*  
ELECTRONIC  
ENGINEERING  
MASTER INDEX  
1947-1948

## Other Indispensable Electronic Engineering References

### *The Electronic Engineering Master Index*

1925-1945 Edition.	320 pages.	\$17.50
1935-1945 Edition.	209 pages.	\$10.00
1946 Edition.	202 pages.	\$14.50
1949 Edition.*	240 pages.	\$17.50

### *The Electronic Engineering Patent Index*

1946 Edition.	476 pages.	\$14.50
1947-48 Edition.*	1000 pages.	\$19.50
1949 Edition.*	700 pages.	\$14.50

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## PREFACE

This 1947-1948 edition of the *Electronic Engineering Master Index* is the third volume in the series covering the electronic and allied engineering literature published throughout the world since 1925. The titles of all articles appearing in foreign-language magazines have been translated into English.

Containing more than 18,000 new entries, this volume indexes almost three times the number of publications listed in previous volumes. Among these publications are more than 230 of the major international scientific magazines, journals, and proceedings, resulting in the most comprehensive bibliography of the electronic and allied engineering arts published today.

Two entirely new sources for reference have been included in the present volume, the 5,500 electronic and allied patents issued by the U. S. Patent Office during 1947-48, and the declassified documents published by the U. S., British, and Canadian governments.

~~The patents are listed, in numerical sequence, under subject headings. Patent references have been included with the bibliographical listings in order to afford the user of the *Electronic Engineering Master Index* the utmost correlation between the described and patent phases of the art. The *Electronic Engineering Patent Index* for 1947-1948, designed to be used with this volume, includes schematic diagrams and claim descriptions of all patents listed here.~~

The listing of U. S., British, and Canadian declassified documents makes available much of the important war and postwar research in electronics, atomic physics, and allied fields. Included ~~here~~ is the important work done at the M. I. T. Radiation Laboratory, Naval Research Laboratories, and universities and colleges throughout the country. —

In the Bibliography of Engineering Books, we have listed the books published during 1947-1948 in the United States, as well as a few published abroad. It is hoped that with subsequent editions of the *Electronic Engineering Master Index* we will eventually list the books of all the technical publishers of the world.

The cumulative cross index of subjects at the end of this book has been greatly expanded from past editions, and serves as a guide to the present compilation, the 1925-45 edition, and the 1946 edition. The correlation between the page numbers shown in the subject cross index and the various volumes to which they refer is indicated on the bottom of each of the subject cross-index pages. Thus the entire bibliography of electronic literature from 1925 through 1948 may be conveniently surveyed by referring to this single subject cross index contained in the present edition.

We wish to thank Mr. Frank A. Petraglia for his contributions to the preparation of this volume.

JOHN F. RIDER

New York City, N. Y.  
December, 1949

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## Key to Abbreviations

Aug	August	Jan	January
Apr	April	Mar	March
bibliog	bibliography	Nov	November
contd	continued	Oct	October
Dec	December	p	page
diag	diagram	pt	part
ed	edition or editor	Sept	September
Feb	February	sup	supplement
fl	illustrations	v	volume

Each magazine article entry is presented as follows:

Title of article  
 Author or authors  
 Title of periodical  
 Volume number  
 Page number  
 Month and year

Sample entry:

Absolute capacitance standard with a resistive shield. T. Slonczewski. Rev Sci Instr 18:848-9 Nov '47

Government documents and reports are indicated by a code group at the end of the entry. Some code groups used are BDDA (British Declassified Documents); MDDC (Manhattan District Declassified Documents); WDL (War Department Library). The source of these reports is given in the List of Publications Indexed.

Sample entry:

Video amplifier and scope. E. W. Titterton. MDDC 829

Each patent entry is presented as follows:

Title of patent  
 Patentee  
 Patent Number  
 Number of claims

Sample entry:

Reverberation Meter, Edmond S. Winlund. 2,413,936, 3 cl

For additional information on patents, see "Pat Gazette" entry in the List of Publications Indexed.

## LIST OF PUBLICATIONS INDEXED

- Acoustical Soc Amer Jour**—See **Jour Acous Soc Amer**
- Aero Digest**—**Aero Digest**, \$3; single numbers 50c. Semi-monthly. **Aeronautical Digest Publishing Corp.**, 515 Madison Ave., New York 22, N. Y.
- Aero Eng Rev**—**Aeronautical Engineering Review**, \$3; single numbers 50c. Monthly. **Institute of the Aeronautical Sciences, Inc.**, 2 E. 61th St., New York 21, N. Y.
- Aerovox Res W**—**Aerovox Research Worker**, 60c; single numbers upon request. **Aerovox Corporation**, New Bedford, Mass.
- Air Trans**—**Air Transport**, **Now Aviation Week**, **McGraw-Hill Publishing Co., Inc.**, 330 West 42nd St., New York 18, N. Y.
- Alta Frequenza**—**Alta Frequenza**, **Associazione Elettra-tecnica Italiana**, Via San Paolo 10, Milan, Italy.
- Amer Inst Chem Eng Trans**—**American Institute of Chemical Engineers Transactions**, \$10; single numbers \$2. Bimonthly. **American Institute of Chemical Engineers**, 40 E. 41st St., New York, N. Y. Discontinued. **Now Chemical Engineering Progress**.
- Amer Jour Sci**—**American Journal of Science**, \$5; single numbers 15c. Monthly. **American Journal of Science**, **New Haven, Conn.**
- Amer Mach**—**American Machinist**, \$5; single numbers 60c. Bi-weekly. **McGraw-Hill Publishing Co., Inc.**, 330 W. 42nd St., New York 18, N. Y.
- Anal Chem**—**Analytical Chemistry**, 20th and Northampton St., **Easton, Pa.**
- Ann der Phys**—**Annalen der Physik**, Irregular. **Verlag von Johann Ambrosius Barth**, Leipzig, Germany.
- Ann Phys**—**Annales de Physique**, **Masson et Cie**, 120 Boulevard Saint Germain, Paris VI<sup>e</sup>, France.
- Ann Radioelec**—**Annales de Radioelectricite**, **Compagnies Francaises Associees de T.S.F.**, 79 Boulevard Haussmann, Paris, France.
- Ann Telecommun**—**Annales de Telecommunication**, Monthly. **Centre National d'etude des Telecommunications**, 24 rue Morere, Paris XIV<sup>e</sup>, France.
- Appl Sci Res**—**Applied Scientific Research**, **Martinus Nijhoff**, The Hague, Holland.
- Arch Elek**—**Archiv der Elektrischen Übertragung**, **Die-terich'sche Verlagsbuchhandlung**, Inh. W. Klemm, Wiesbaden, Spiegelgasse 9, Germany.
- Arch Forum**—**Architectural Forum**, \$5.50; single numbers \$1. Monthly. **Time, Inc.**, 350 Fifth Ave., New York 1, N. Y.
- Arch Record**—**Architectural Record**, \$4.50; single numbers \$1. Monthly. **F. W. Dodge Corp.**, 119 W. 40th St., New York, N. Y.
- Arch Tech (Messen)**—**Archiv für technisches Messen**, **Buchhandlung Ernst Ludwig**, Karlsplatz 7, Munich 2, Ger.
- Ark Mat Astr Fys**—**Arkiv för Matematik, Astronomi och Fysik**, **Almqvist och Wiksells Boktryckeri**—A.B., Stockholm, Sweden.
- ASTM Bull**—**American Society for Testing Materials Bulletin**, 1916 Race St., Philadelphia 3, Pa.
- Astrophys Jour**—**Astrophysical Journal**, \$12. Bimonthly. **University of Chicago Press**, Chicago, Ill.
- Atti del Congresso Internazionale della Radio**—**At the International Congress of Radio in Rome**, **Giovanni Bardi Publishing Company**, Salla de'Crecentini 16, Rome, Italy.
- Audio Eng**—**Audio Engineering**, \$3; single numbers 35c. Monthly. **Radio Magazines, Inc.**, 342 Madison Ave., New York 17, N. Y.
- Aust Jour Inst Tech**—**Australian Journal of Instrument Technology**, **Australian Society of Instrument Technology**, Box 277-B, G.P.O., Melbourne, Australia.
- Automotive & Aviation Ind**—**Automotive and Aviation Industry**, **Now Automotive Industry**, **Chilton Co., Inc.**, Chestnut & 56th St., Philadelphia 39, Pa.
- Aviation N**—**Aviation News**. See **Aviation W**.
- Aviation W**—**Aviation Week**, \$6; single numbers 60c. Weekly. **McGraw-Hill Pub. Co., Inc.**, 330 W. 42nd St., New York 18, New York.
- AWA Tech Rev**—**AWA Technical Review**, 551 Farrar-tatta Road, Ashfield, N.S.W., Australia.
- Barron's**—**Barron's**, \$16. Weekly. **Barron's Publishing Co.**, 10 New St., New York City, N. Y.
- B.B.C. Quart**—**B. B. C. Quarterly**, **British Broadcasting Co.**, **Broadcasting House**, London, W.C. 1, England.
- BDDA**—**British declassified documents**, **H. M. Stationery Office**, P.O. Box 669, Cornwall House, London, S.E. 1, England.
- Beama Jour**—**Beama Journal**, 10s; single numbers 1s. Monthly. **British Electrical & Allied Manufacturers' Assn.**, 36 Kingsway, London, W.C. 2, England.
- Bell Lab Rec**—**Bell Laboratories Record**, \$2; single numbers 25c. Monthly. **American Telephone and Telegraph Co.**, 195 Broadway, New York, N. Y.
- Bell System Tech Jour**—**Bell System Technical Journal**, \$1.50; single numbers 50c. Quarterly. **American Telephone and Telegraph Co.**, 195 Broadway, New York, N. Y.
- Bendix Radio Engineer**—**Bendix Radio Engineer**, \$2.00; Quarterly. **Bendix Aviation Corp.**, Baltimore 4, Md.
- Blast Furnace & Steel**—**Blast Furnace and Steel Plant**, \$2. Monthly. **Steel Publications, Inc.**, Box 177, Pitts-burgh 50, Pa.
- Broadcast News**—**Broadcast News**, \$2; single numbers 50c. Bimonthly. **Radio Corporation of America, Engi-neering Products Dept.**, Camden, New Jersey.
- Brown Bovert Rev**—**Brown Bovert Review**, Monthly. **Brown, Bovert & Company, Ltd.**, Baden, Switzerland.
- Busn W**—**Business Week**, \$6; single numbers 25c. Weekly. **McGraw-Hill Pub. Co., Inc.**, 330 W. 42nd St., New York 18, N. Y.
- Bull Acad Sci (U.S.S.R.) ser phys**—**Bulletin de L'Acad-emie des Sciences de l'U.S.S.R., Series Physiques**, **Cherkasski Per 2**, Moscow, Russia.
- Bull Am Met Soc**—**Bulletin of the American Meteorolog-ical Society**, **Prince and Lemon St.**, Lancaster, Pa.
- Bull Assoc Suisse Elec**—**Bulletin de l'Association Suisse des Electriciens**, **Secretariat General de l'A.S.E. et de l'U.C.S.** **Seefeldstrasse 301**, Zurich 8, Switzerland.
- Bull Ec Polyt (Jassy)**—**Bulletin de l'École Polytechnique de Jassy**, **Jassy**—Iasi, Roumania.
- Bulletin Scientifique AIM**—**The Scientific Bulletin of the Association of Engineers and Electricians**, **The Montefiore Electrotechnical Institute**, **Rue Saint Gillis 31**, Liege, Belgium.
- Bull Soc Franc Elec**—**Bulletin de la Societe Francaise des Electriciens**, **S-14 Avenue Pierre Larousse**, Mala-koff (Seine), France.
- Bull Tech Suisse Romande**—**Bulletin Technique de la Suisse Romande**, **Chauderon 475**, Lausanne, Switzer-land.
- CAA Jour**—**Civil Aeronautics Journal**; issued monthly by the **Civil Aeronautics Administration**, 75c. **Super-intendent of Documents**, Washington 25, D.C.
- Cables & Trans**—**Cables et Transmission**, **SOTELEC**, 20 Avenue de Segur, Paris, France.
- Canada Jour Res**—**Canadian Journal of Research**, Monthly. **National Research Council of Canada**, Ot-tawa, Canada.
- Chalmers Tekniska Hogskola**—**Chalmers Technical Uni-versity**, **Goteborg**, Sweden.
- Chem & Ind**—**Chemistry and Industry**, \$3; single num-bers 2s. Weekly. **Society of Chemical Industry**, 56 Victoria St., London, S.W. 1, England.

# LIST OF PUBLICATIONS INDEXED—Cont'd.

- Chem Eng**—Chemical Engineering Progress. \$6; single numbers 75c. Monthly. American Institute of Chemical Engineers, 120 E. 41st St., New York City, N. Y.
- Chin Jour Phys**—Chinese Journal of Physics. Chinese Physical Society, National Academy of Peiping, 42 Tung Huang Cheng Ken, Peiping, China.
- Coal Age**—Coal Age. \$15. Monthly. McGraw-Hill Publishing Co., 330 W. 42nd St., New York 18, N. Y.
- Communications**—Communications. \$2. Single numbers 25c. Monthly. Bryan-Davis Publishing Co., 52 Vanderbilt Ave., New York, N. Y.
- Compt Rend Acad Sci (Paris)**—Comptes Rendus hebdomadaires des Seances de l'Academie des Sciences. 55 Quai des Grand-Augustins, Paris, France.
- Comptes Rendus (Doklady)**—Reports of the Academy of Sciences of Russia. Wolkhonka 14, Moscow, U.S.S.R.
- Constr Methods**—Construction Methods. \$2. Monthly. McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York City, N. Y.
- CQ—CQ.** \$3; single numbers 35c. Monthly. 342 Madison Avenue, New York 17, N. Y.
- Current Science**—Current Science. Current Science Association, Bangalore, India.
- Distrib Elec**—Distribution of Electricity. 25s 8d; single numbers 6d. Quarterly. 51-3 Hatton Garden, London E.C. 1, England.
- Economist**—The Economist. 60s; single numbers 1s. Weekly. 22 Ryder St., St. James', London, S.W. 1, England.
- Elec Comm**—Electrical Communication. \$2; single numbers 50c. Quarterly. International Telephone & Telegraph Co., 67 Broad St., New York.
- Elec Eng**—Electrical Engineering. \$12; single numbers \$1.50. Monthly. American Institute of Electrical Engineers, 33 W. 39th St., New York 18, N. Y.
- Electronic Eng**—Electronic Engineering. 26s; single numbers 2s. Monthly. 23 Essex St., Strand, W.C. 2, England.
- Elec Ind & Inst**—Electronic Industries and Instrumentation. Two year subscription only. \$3; single numbers 25c. Caldwell-Clements, Inc., 450 Lexington Ave., New York 17, N. Y. Discontinued.
- Elec Mfg**—Electrical Manufacturing. Monthly. Gage Publishing Co., 1250 Ave. of the Americas, New York City, N. Y.
- Elec Rev (Land)**—Electrical Review. £3; single numbers 9d. Weekly. Electrical Review, Dorset House, Stamford St., London, S.E. 1, England.
- Elec West**—Electrical West. \$2; single numbers 25c. Monthly. McGraw-Hill Co. of California, 65 Post St., San Francisco 4, Calif.
- Elec World**—Electrical World. \$6; single numbers 35c. Weekly. McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York 18, N. Y.
- Elect Times**—Electrical Times. 35s; single numbers 6d. Weekly. Sardinia House, Sardinia St., London, W.C. 2, England.
- Electriean** — Electriean. 30s; single numbers 6d. Weekly. Benn Bros., Ltd., Bouverie House, 154 Fleet St., London, E.C. 4, England.
- Electrochem Soc Trans**—The Electrochemical Society Transactions. Electrochemical Society, Columbia University, New York 27, N. Y.
- Electronics** — Electronics. \$6; single numbers 75c. Monthly. McGraw-Hill Pub. Co., Inc., 330 W. 42nd St., New York 18, N. Y.
- Elektrotechnik**—Elektrotechnika. Indian Institute of Science, Bangalore, S. India.
- Elektron, Linz**—Das Elektron, Linz. Landstrasse 9, Austria.
- Elektron Wiss und Tech**—Das Elektron in Wissenschaft und Technik. Hanns Reich Verlag, Munchen 23, Martinsstrasse 8, Germany.
- Elektrotechnik und Maschinenb**—Elektrotechnik und Maschinenbau. Springer-Verlag, Molkerbastei 5, Vienna 1, Austria.
- Elektrotech Zeit**—Elektrotechnische Zeitschrift. Weekly. Verband Deutscher Elektrotechniker, Wegnestr. 13/15, Wuppertal-Barmen, Germany.
- Elektrotechnik**—Elektrotechnik. Verlag Technik G.M.B.H., Dorotheenstrasse 41, Berlin, N.W. 7.
- Elektrotechnika**—Elektrotechnika. V. Honved-u. 22, Budapest, Hungary.
- Electronica, Turin**—Electronica. Torino, Corso G. Matteotti, 46, Italy.
- Endeavour**—Endeavour. 26 Dover St., London, W. 1, England.
- Engineer**—Engineer. £3 3s; Canadian subs. £2 16s 6d; single numbers 1s 6d. Weekly. Engineer, 28, Essex St., Strand, London, W.C. 2.
- Engineering**—Engineering. £4 10s; single numbers 1s 6d. Weekly. Engineering, Ltd., 35 and 36 Bedford St., Strand, London, W.C. 2, England.
- Eng N**—Engineering News-Record. \$6; single numbers 35c. Weekly. McGraw-Hill Pub. Co., Inc., 330 W. 42nd St., New York 18, N. Y.
- Eriasson Tech**—Eriasson Technics. I. M. Eriasson, Stockholm, Sweden.
- Factory Management**—Factory Management and Maintenance. \$3; single numbers 35c. Monthly. McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York 18, N. Y.
- Fernmeldeteck Z** — Fernmeldetechnische Zeitschrift. Friedr. Vieweg & Sohn, Brunswick, Germany.
- FIAT Report**—FIAT Reports. H.M. Stationery Office, Kingsway, London, W.C. 2, England.
- FM & Tele**—FM and Television. \$3; single numbers 25c. Monthly. FM Company, Great Barrington, Mass.
- Franklin Inst Jour**—Journal of the Franklin Institute. \$5; single numbers \$1. Monthly. Franklin Institute, Benjamin Franklin Parkway, Philadelphia, Pa.
- Frequenz**—Frequenz. Fachverlag Schiele & Schon, Leuschnerdamm 13, Berlin, S.O. 36, Germany.
- Funk und Ton**—Funk und Ton. Verlag fur Radio-Foto-Kinotechnik G.m.b.H., Eichborndamm 141/167, Berlin-Borsigwalde, Germany.
- Funktech Monatshefte**—Funktechnische Monatshefte fuer Rundfunk, Hochfrequenztechnik und Grenzgebiete. Monthly. Weidemannsche Buchhandlung, Berlin, Germany.
- GEC Journal**—G.E.C. Journal. The General Electric Co., Ltd., Magnet House, Kingsway, London, England.
- Gen Elec Rev**—General Electric Review. \$4; single numbers 40c. Monthly. General Electric Co., Schenectady 5, N. Y.
- Gen Elec Rev.** See Rev gen Elect.
- Genie Civil**—Le Genie Civil. 280 fr.; single numbers 5 fr. Weekly. Genie Civil, 5 Rue Jules Lefebvre, Paris, France.
- Glass Ind**—Glass Industry. \$3.50; single numbers 35c. Monthly. 55 W. 42nd St., New York City, N. Y.
- Helv Phys Acta**—Helvetica Physica Acta. E. Birkhauser & Cie., A.G. Basel, Switzerland.
- Hochfrequenz und Electronk**—Hochfrequenztechnik und Electronkustik. Jahrbuch der drahtlosen Telegraphie und Telephonie. Monthly. Akademische Verlagsgesellschaft Becker und Eriker Kom.-Ges., Leipzig, Germany.
- Indian Jour Phys**—Indian Journal of Physics and Proceedings of the Indian Association for the Cultivation of Science. 210 Bowbazar Street, Calcutta, India.
- Ind Stand**—Industrial Standardization and Commercial Standards Monthly. \$4; single numbers 35c. American Standards Association, 29 W. 39th St., New York, N. Y.
- IngenVetensAkad Handl**—Ingeniorsvetenskapsakademien Handlingar. Grevturegatan 14, Stockholm 1, Sweden.
- Instruments**—Instruments. \$3. Monthly. Instruments Publishing Co., Inc., 921 Ridge Ave., Pittsburg 12, Pa.
- Iron Age**—Iron Age. \$5; single numbers 35c. Weekly. Chilton Co., Inc., Chestnut & 56th Sts., Philadelphia, Pa.; 100 E. 42nd St., New York 17, N. Y.
- Jour Acous Soc Amer**—Journal of the Acoustical Society of America. \$8 members; \$11 non-members; single numbers \$2. Quarterly. American Institute of Physics, 57 W. 56th St., New York 22, N. Y.
- Jour Aeronaut Sci**—Journal of the Aeronautical Sciences. \$12; single numbers \$1.50. Quarterly. Institute of the Aeronautical Sciences, Inc., 2 E. 64th St., New York 21, N. Y.
- Jour Amer Cer Soc**—Journal of the American Ceramic Society. \$15; single numbers \$1.50. Monthly. American Ceramic Society, 2525 N. High St., Columbus 2, Ohio.

# LIST OF PUBLICATIONS INDEXED—Cont'd.

- Jour Amer Inst Elec Eng**—See Elec Eng.
- Jour Ap Phys**—Journal of Applied Physics. \$7; single numbers 70c. Monthly. American Institute of Physics, 57 E. 55th St., New York 22, N. Y.
- Jour Brit Interplanetary Soc**—Journal of the British Interplanetary Society. 157 Friary Road, London, S.E. 15, England.
- Jour Brit IEE**—Journal of the British Institution of Radio Engineers. Single numbers 7s 6d. Monthly. 9 Bedford Square, London, W.C. 1, England.
- Jour Chem Educ**—Journal of Chemical Education. \$3; single numbers 50c. Bimonthly. Mack Printing Co., 20th and Northampton, Easton, Pa.
- Jour Fr Inst**—See Franklin Inst Jour
- Jour IEE**—Journal of the Institution of Electrical Engineers. Single numbers pt. 1 5s; pt. 2 7s 6d; pt. 3 6s. Monthly. The Institution, Savoy Place, Victoria Embankment, London, W.C. 2; E.&F.N. Spon., Ltd., 57 Haymarket, London, S.W. 1, England.
- Jour Math Phys**—Journal of Mathematics and Physics. Massachusetts Institute of Technology, Cambridge 39, Mass.
- Jour Opt Soc Amer**—Journal of the Optical Society of America. \$8.50. Monthly. American Institute of Physics, Inc., 57 E. 55th St., New York 22, N. Y.
- Jour Phys**—Journal of Physics. Irreg. Academy of Sciences of the U.S.S.R., Moscow, Russia.
- Jour Res Nat Bur Stand**—Journal of Research of the National Bureau of Standards. \$4.50; single numbers 60c. Monthly. Superintendent of Documents, Washington 25, D.C.
- Jour Roy Aeronautical Soc**—Journal of the Royal Aeronautical Society. £4 10s; single numbers 7s 9d. Monthly. Royal Aeronautical Society, 4 Hamilton Place, Piccadilly, London, W. 1, England.
- Jour Roy Soc Arts**—Journal of the Royal Society of Arts. York House, Portugal St., London, W.C. 2, England.
- Jour Sci Inst**—Journal of Scientific Instruments. 5s. Monthly. Institute of Physics, 19 Albermarle St., London, W. 1, England.
- Jour Soc Glass Tech**—Journal of Society of Glass Technology. 15s. Bimonthly. Society of Glass Technology, "Elmfield," Northumberland Road, Sheffield, England.
- Jour Soc Mot Pic Eng**—Journal of Society of Motion Picture Engineers. \$6.25 members; \$12.50 non-members; single numbers \$1.50. Monthly. Society of Motion Picture Engineers, 342 Madison Ave., New York 17, New York.
- Jour Telev Soc**—Journal of the Television Society. 5s. Quarterly. The Television Society, 68 Compton Road, London, N. 21, England.
- Jour West Soc Eng**—Journal of the Western Society of Engineers. \$3; single numbers 75c. Quarterly. Western Society of Engineers, 205 W. Wacker Drive, Chicago 6, Ill.
- Kungliga Tekniska Högskolan**—Royal Technical Univ. Valhallavägen, horsal 432, Stockholm, Sweden.
- Light & Lighting**—Light and Lighting. 15s. Monthly. 22 Victoria St., London, England.
- Light Metals**—Light Metals Monthly. 26s; single numbers 2s. Monthly. Bowling Green Lane, London, E.C. 1, England.
- Machine Design**—Machine Design. \$10. Monthly. Penton Publishing Co., Penton Bldg., Cleveland, Ohio.
- Machinery**—Machinery. 42s; single numbers 1s. Machinery Publishing Co., Ltd., National House, West St., Brighton, England.
- Marconi Rev**—The Marconi Review. Marconi's Wireless Telegraph Co., Ltd., Electra House, Victoria Embankment, London, England.
- Marine Eng**—Marine Engineering and Shipping Review. \$3; single numbers 35c. Monthly. Simmons-Boardman Publishing Corp., 39 Church St., New York 7, N. Y.
- Materials & Methods**—Materials and Methods. \$2; single numbers 60c. Monthly. 330 W. 42nd St., New York 18, N. Y.
- MDDC**—Manhattan District Declassified Documents. U. S. Atomic Energy Commission, Document Sales Agency, P.O. Box 62, Oak Ridge, Tenn.
- Mech Eng**—Mechanical Engineering. \$7; single numbers 75c. Monthly. American Society of Mechanical Engineers, 29 W. 39th St., New York 18, N. Y.
- Mech Handling**—Mechanical Handling. 14s; single numbers 1s. Monthly. Louis Cassler Co., Ltd., Dornet House, Stamford St., London, England.
- Metal Ind**—Metal Industry. 45s 6d; single numbers 9d. Weekly. Dorset House, Stamford St., London, S.E. 1; England.
- Metallurgia**—Metallurgia. The Kennedy Press, Ltd., Bedford St., London, W.C. 2, England.
- Metal Treat**—Metal Treatment. 10s; single numbers 1s. Quarterly. 49 Wellington St., Strand, London, W.C. 2, England.
- Metals & Alloys**—Metals and Alloys. \$2; single numbers 25c. Monthly. Reinhold Publishing Corp., 330 W. 42nd St., New York 18, N. Y.
- Metals Tech**—Metals Technology. 212 York St., York, Pa.
- Microtecnie (Lausanne)**—Microtecnie (Lausanne). Case Postale St. Francois, Lausanne, Switzerland.
- Min Cong Jour**—Mining Congress Journal. \$3. Monthly. American Mining Congress, 1102 Ring Bldg., Washington, D. C.
- Mod Plastics**—Modern Plastics. \$5; single numbers 75c. Monthly. Modern Plastics, Inc., 122 E. 42nd St., New York 17, N. Y.
- Mon Not R Astr Soc**—Monthly Notices of the Royal Astronomical Society. Single numbers 9s. Bimonthly. Burlington House, London, W. 1, England.
- Muirhead Technique**—Muirhead Technique. Muirhead & Co., Ltd., Beckenham, Kent, England.
- Nat Reseach Council Bul**—National Research Council, 2101 Constitution Ave., Washington, D. C. Price list of individual numbers sent on request.
- Nature**—Nature. 1s 6d. Weekly. McMillan & Co., Ltd., St. Martin's St., London, W.C. 2, England.
- Naturwiss**—Naturwissenschaften. Springer-Verlag, Jenbenstrasse 1, Berlin-Charlottenburg 2, Germany.
- Nauka i Zhizn**—Science and Life. Pushkinskaya ploshchad'5, Moscow, U.S.S.R.
- Nickel Bul**—Nickel Bulletin. Mond Nickel Co., Ltd., Grosvenor House, Park Lane, London, S.W. 1, England.
- NRC**—Report obtainable from National Research Council of Canada. National Research Council, Ottawa, Canada.
- Nucleonics**—Nucleonics. \$10; single numbers \$1. Monthly. McGraw-Hill Publishing Co., 330 W. 42nd St., New York 18, N. Y.
- N Z J Sci Tech**—New Zealand Journal of Science and Technology. Department of Scientific and Industrial Research, Wellington, N. Z.
- Observatory**—Observatory. 15s; single numbers 3s. Bimonthly. The Royal Observatory, Greenwich, London, S.E. 10, England.
- Onde Elec**—L'Onde Electrique. Bulletin de la Societe des Radiotelegraphistes. Monthly. Etienne Chiron, 40, Rue de Seine, Paris 6<sup>e</sup>, France.
- Oscillographer**—The Oscillographer. Bimonthly. Allen E. DuMont Laboratories, Inc., Clifton, New Jersey.
- Overseas Eng**—Overseas Engineer. 24s; single numbers 2s. Monthly. Bowling Green Lane, London, E.C. 1, England.
- Pat Gazette**—Official Gazette, United States Patent Office. \$16; including annual index \$18.75; single numbers 35c. Weekly. Superintendent of Documents, Government Printing Office, Washington, D. C. Individual patents 25c each. Order from Commissioner of Patents, Washington 25, D. C.
- PB**—Pamphlets issued by U. S. Department of Commerce, Office of Technical Services, Washington 25, D. C.
- Pet Processing**—Petroleum Processing. \$3. Monthly. National Petroleum Publishing Co., 1213 W. 3rd St., Cleveland 13, Ohio.
- Phil Mag**—The Philosophical Magazine. £5 2s 6d. Monthly. Taylor and Francis, Ltd., Red Lion Court, Fleet St., London, England.
- Phil Trans R Soc**—Philosophical Transactions of the Royal Society. Irreg. Cambridge University Press, 200 Euston Road, London, England.

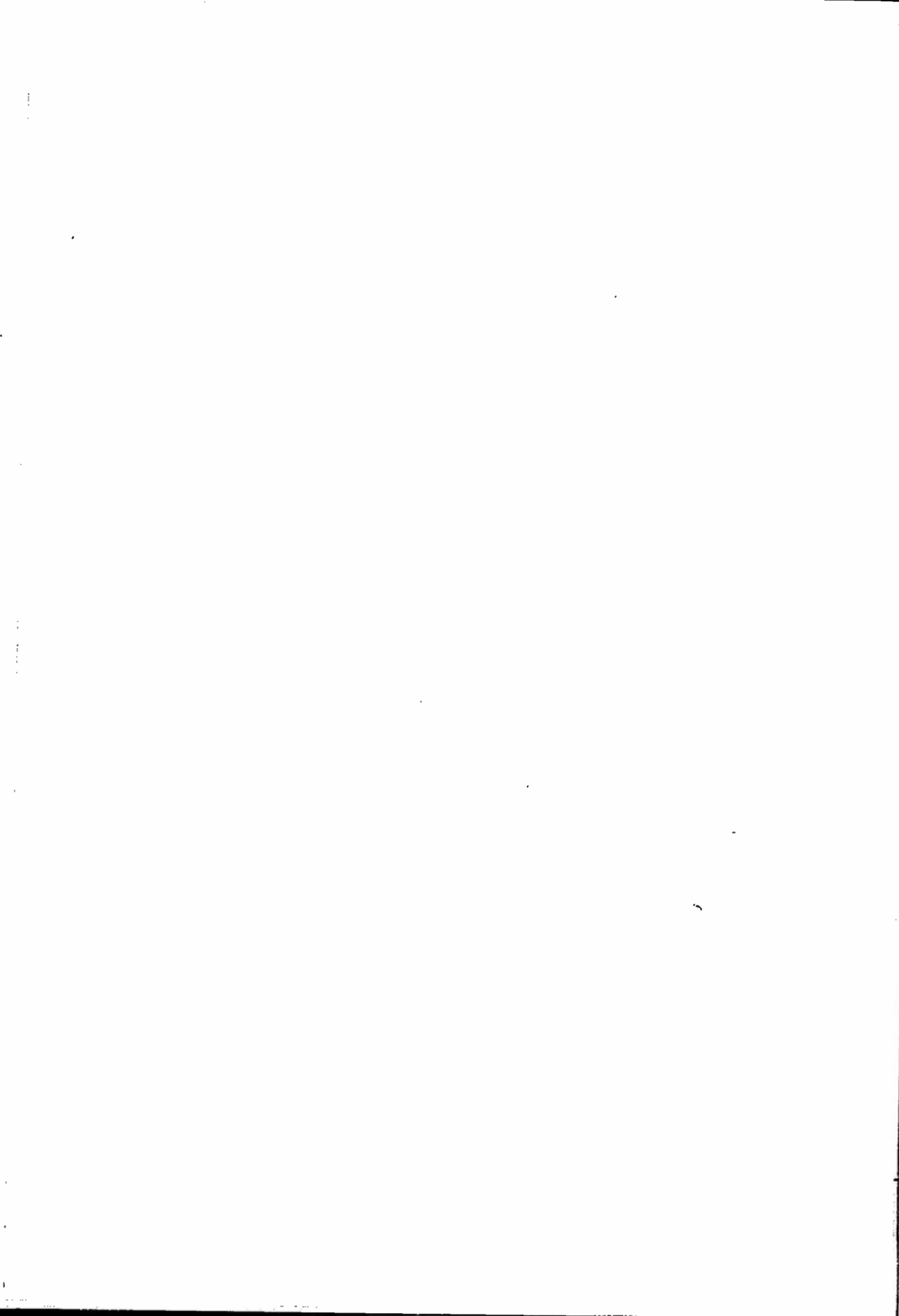
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# ELECTRONIC ENGINEERING MASTER INDEX

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Meters  
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- High Voltage Condenser, Byron B. Minnium, 2,449,-308, 5 cl
- Electrical Condenser, Christopher E. G. Bailey, 2,449,577, 6 cl
- Tubular Container for Electrical Condensers or Other Apparatus, Percy Archibald Sporing and Charles Piercy Johnson, 2,450,310, 7 cl
- Electric Capacitor, Ralph G. Flowers and Leola Wills Flowers, 2,450,650, 1 cl
- Tubular Container for Electrical Condensers or Other Apparatus, Percy Archibald Sporing and Charles Piercy Johnson, 2,451,125, 1 cl
- Electrical Condenser, Harold P. Heller, 2,451,338, 6 cl
- Electrical Condenser, Roy Mayne Barnard, 2,452,-540, 4 cl
- Electrical Capacitor, George H. Floyd, jr., 2,454,049, 2 cl
- Electric Capacitor, John D. Stacy, 2,454,102, 10 cl
- Critically Damped Capacitor, Ralph E. Marbury, 2,454,192, 2 cl
- Condenser Structure, Karl A. Duerk, 2,456,114, 2 cl
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- Indicating Apparatus, Larned A. Meacham, 2,414,477, 16 cl
- Sweep Control Circuits, John W. Rieke, 2,414,486, 7 cl
- Beam Deflection Control Circuit, William A. Fitch, 2,414,939, 3 cl
- Cathode-ray Indicator, Henry E. Rhea, 2,415,566, 11 cl
- Cathode-ray Tube Circuit, Paul A. Jeanne, 2,416,320, 6 cl
- Cathode-ray Apparatus and Method of Controlling the Ray, Merton R. Miller and Arthur N. Ogden, 2,418,133, 6 cl
- Cathode-ray Magnetic Focusing Device, Philip T. Sproul, 2,418,487, 20 cl
- Sweep Synchronizing and Beam Blanking Device, Peter S. Christaldi and John Richard Banker, 2,419,118, 7 cl
- Device for Electromagnetic Deflection of a Cathode-Ray, Harold van Suchtelen, 2,420,156, 5 cl
- Deflecting Circuit, Earl Schoenfeld, 2,420,200, 5 cl
- Deflection Signal Generator for Polar Scanning of Cathode-Ray Tubes, Lloyd J. Bobb, 2,421,312, 19 cl
- System for Energizing the Electrodes of Cathode-Ray Devices from the Deflecting Circuit, Waldemar J. Poch, 2,421,520, 5 cl
- Interlacing System, Waldemar J. Poch, 2,421,521, 7 cl
- Indicating System, Enoch B. Ferrell, 2,423,829, 4 cl
- Analysis and Representation of Complex Waves, Ralph K. Potter, 2,425,003, 9 cl
- Deflection Circuit, Kurt Schlesinger, 2,425,491, 10 cl
- Signal Portraying Apparatus, Howard M. Crosby, 2,425,999, 7 cl
- Cathode-ray Tube Control Circuit, Rene J. Hardy, 2,426,208, 11 cl
- Return Trace Blanking and Mixing, Morris Spector, 2,426,419, 3 cl
- Signal Portraying Apparatus, Robert B. Dome, 2,426,439, 11 cl
- Remote Indicator for Radio Pulse Systems, Gifford E. White, 2,426,654, 9 cl
- Control Circuits for Cathode-Ray Apparatus, John Mathieson Dodds and Graham John Scoles, 2,427,263, 3 cl
- Cathode-ray Tube Modulator in a Pulse Multiplex Transmitter, William D. Houghton, 2,427,500, 11 cl
- Radio Wave Reflectivity Indicating System, Waldemar A. Ayres, 2,428,351, 15 cl
- Optical Time Base Generator, Erwin W. Kammer, 2,428,369, 5 cl
- Deflection Device for Cathode-ray Tubes, Charles Edward Torsch, 2,428,947, 7 cl
- Automatic Focus Control for Cathode-ray Tubes, Pasquale F. Galella and Joseph A. Brustman, 2,430,331, 8 cl
- Cathode-ray Device for Indicating the Axis of a Symmetrical Signal, James F. Craib, 2,431,990, 10 cl
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- Cathode-ray Beam Deflecting Circuit, Simeon I. Tourshou, 2,440,418, 13 cl
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- Luminescent Material, Herman C. Froelich, 2,415,129, 5 cl
- Cathode-ray Tube Projector, Constantin S. Szegho, 2,415,311, 3 cl
- Discriminative Alkali Halide Screen, Gorton R. Fonda, 2,416,574, 8 cl
- Magnetic Focussing Device, Eugene M. Fry, 2,416,687, 19 cl
- Cathode-ray Tube Coating, Albert Steadman, 2,419,177, 2 cl
- Cathode-ray Tube with Inclined Target, George Ross Kilgore, 2,420,176, 3 cl
- Cathode-ray Tube for Generating Oscillations, Maximiliaan Julius Otto Strutt and Aldert van der Ziel, 2,420,846, 8 cl
- Method of Manufacturing Screens in Cathode-ray Tubes, Constantin S. Szegho, 2,423,626, 1 cl
- Cathode-ray Screen having Contrasting Colors and Unlike Rates of Decay of Luminescence, Gorton R. Fonda, 2,423,830, 8 cl
- Cathode-ray Tube, Karl C. Augenstein and Albert Rieth, 2,423,924, 3 cl
- Cathode-ray Tube with Magnetic Compensating Means, Claude Langdon Richards, 2,425,125, 6 cl
- Cathode-ray Tube with Shielded Deflecting Plates, Gerhard Liebmann, 2,425,682, 17 cl
- Cathode-ray Tube Support, Elmer Brinton Cain, 2,428,928, 8 cl
- Gun Structure for Cathode-ray Tubes, Stanley J. Koch and Robert E. Rutherford, 2,429,824, 6 cl
- Cathode-ray Tube with Revolving Magnets and Adjustable Sleeve, Waldemar J. Poch, 2,431,077, 4 cl
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- Mounting for Electronic Devices, Philip T. Sproul, 2,435,613, 12 cl
- Electron Gun for Cathode-ray Tubes, Rudolph O'Larte and George Vollet, 2,436,264, 15 cl
- Cathode-ray Tube, Eric Pohle, Joseph Rutledge and Irving E. Lempert, 2,436,265, 2 cl
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- Incremental Deflection of Cathode-ray Beam, Richard L. Snyder, 2,436,677, 7 cl
- Cathode-ray Tube and Visual Indicating System for Apparatus including Cathode-ray Tube, Henry Wolfson, 2,436,847, 1 cl
- Deflection Coil and Yoke for Cathode-ray Tubes, Richard B. Gethmann, 2,437,513, 9 cl
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- Wave Generator, Madison Cawein, 2,440,895, 14 cl  
 Electron Gun Mounting, Stanley V. Rogue, 2,441,-315, 7 cl  
 Focusing System, Gustave L. Grundmann, 2,442,-975, 2 cl  
 Movable Anode Structure, Igor B. Bensen, 2,443,-021, 3 cl  
 Cathode-ray Apparatus, Donald R. De Tar, 2,443,-025, 5 cl  
 Electromagnetic Deflecting Yoke and Circuit, Richard Barton Gethmann, 2,443,032, 7 cl  
 V-opening Screen, Lloyd H. Banning, 2,443,176, 1 cl  
 Parallel Cathode-ray Tube, Harold E. Morgan, 2,443,634, 2 cl  
 Luminescent Materials, Herman C. Froelich, 2,443,-728, 5 cl  
 Cathode-Grid Assembly for Cathode-ray Tubes, Joseph Kellar, 2,443,916, 7 cl  
 Control Device for Cathode-ray Focusing Coils, Jasper Holland Asling, 2,443,973, 10 cl  
 Saw-tooth Wave Generator, Harry Branson, 2,444,-330, 12 cl  
 Electrooptical Indicating Apparatus, Robert J. Shank, 2,444,407, 2 cl  
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 Picture Receiver Utilizing Anomalous Reflection from Silver, Elmer J. Gorn, 2,445,774, 11 cl  
 Phosphor Screen, Ross E. Shrader, 2,446,248, 2 cl  
 Cathode-ray Device Mounting, Philip T. Sproul, 2,446,674, 13 cl  
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 Magnesium Germanate Phosphors, Ferd E. Williams, 2,447,448, 2 cl  
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 Valve suitable for Use with Cathode-ray Tubes and for other Purposes, George Noel Brett and Ernest Alfred Smith, 2,449,838, 2 cl  
 Compensating Device, Antony Wright, 2,449,969, 13 cl  
 Cathode-ray Storage Tube Apparatus and Method of Operation, Paul K. Weimer, Vladimir K. Zworykin and Irving Wolff, 2,451,005, 18 cl  
 Cathode-ray Signal Utilizing Means, King E. Gould and Pierre Mertz, 2,451,484, 21 cl  
 Cathode-ray Tube Support and Positioning Means, Donald B. Keim, 2,451,832, 4 cl  
 High Emission Cathode, Benjamin Fox, 2,452,044, 5 cl  
 Luminescent Screen, Humboldt W. Leverenz, 2,452,-523, 4 cl  
 Cathode-ray Tube, Paul K. Weimer, 2,452,010, 2 cl  
 Sweep Circuit, John W. Rieke, 2,452,683, 2 cl  
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 Saw-tooth Voltage Generator, George W. Downs, jr., 2,453,787, 2 cl  
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 Cathode-ray Deflection Tube with Electron Lenses, Reinhold Rudenberg, 2,454,345, 14 cl  
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 Cathode Beam Tube and Circuit Therefor, Richard L. Snyder, jr., 2,454,410, 7 cl  
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- Electric Overload Protective Device, John B. Cataldo, 2,420,300, 6 cl
- Enclosed Circuit Breaker Position Indicator, Walter Haines Schymik, 2,420,842, 5 cl
- Circuit Breaker, Gilbert J. Easley, 2,420,872, 11 cl
- Oil Circuit Interrupter, Winthrop M. Leeds, 2,420,888, 6 cl
- Electric Circuit Interrupter, Ralph S. Bennett, 2,421,236, 10 cl
- Circuit Interrupting Device, Harold E. Strang and Alick H. Powell, 2,421,658, 6 cl
- Protective Equipment for Circuit Makers and Breakers, William O. Schultz, 2,421,718, 5 cl
- Circuit Breaker, Fred G. von Hoorn, 2,422,508, 3 cl
- Circuit Breaker, Otto Jensen, 2,422,784, 8 cl
- Circuit Breaker, Frank J. Pokorny, 2,422,799, 2 cl
- Electric Circuit Breaker, Sidney R. Smith, jr., 2,424,126, 39 cl
- Circuit Interrupter, Roswell C. Van Sickle, Robert E. Friedrich and Francis J. Fry, 2,424,343, 10 cl
- Circuit Interrupting Device, Frederick B. Adam, 2,424,909, 1 cl
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- Switch System to Prevent Arcing of Contacts, Marcian A. Scheg and Oscar H. Dicke, 2,425,570, 8 cl
- Thermal and Magnetic Trip Circuit Breaker, Melvin Bingenheimer, 2,425,983, 8 cl
- Circuit Interrupter and Control Therefor, William M. Scott, jr., 2,426,243, 15 cl
- Gas Blast Circuit Breaker, Philip L. Taylor, 2,426,250, 9 cl
- Circuit Breaker Contact, Arthur S. Caswell, 2,426,387, 2 cl
- Electric System for Producing Intermittent or Flashing Light, Harold E. Edgerton, 2,426,602, 26 cl
- Combined Fuse and Circuit Interrupting Device, Ralph J. Baskerville, 2,427,181, 7 cl
- Electric Circuit Breaker, Harold Ernest Cox, Dollis Hill and Thomas Webster Wilcox, 2,427,195, 15 cl
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- Thermal Circuit Breaker, Stephen S. Grady, 2,429,225, 9 cl
- Circuit Breaker with Blowing Device, Maurice Jean Gay, 2,429,311, 5 cl
- High-voltage Circuit Interrupter, Ralph H. Earle and Roald H. Amundson, 2,429,347, 16 cl
- Electric Circuit Breaker, Bernard Marie Hilaire Paul Fernier, 2,430,008, 2 cl
- Circuit Breaker, Benjamin P. Baker, 2,431,222, 10 cl
- Over-current and Under-current Protective Switch, Frederick James Pavitt, 2,431,886, 15 cl
- Ignitron Control System for Circuit Breakers, William E. Pakala, 2,432,927, 10 cl
- Local and Remote Control System for Circuit Breakers, Herman B. Wortman, 2,432,959, 5 cl
- Electric Circuit Interrupter, Benjamin R. Hermann, 2,433,666, 2 cl
- Voltage-limiting Arc Interrupter, Ralph R. Pittman, 2,434,010, 5 cl
- Voltage-limiting Arc Interrupter, Ralph R. Pittman, 2,434,011, 1 cl
- Combined Electromagnetic and Thermal Protective Circuit Breaker System, Harold M. Wilson, 2,434,186, 3 cl
- Circuit Interrupter, Douglas J. Marsden, 2,434,422, 5 cl
- Fluid Pressure Operated Circuit Breaker, James M. Cumming, 2,434,549, 10 cl
- Plug Type Circuit Breaker, Victor H. Van Sant, 2,434,728, 7 cl
- Circuit Maker and Breaker, Austen M. Curtis, 2,434,909, 4 cl
- High Voltage Circuit Interrupter, Ralph H. Earle, 2,434,994, 17 cl
- Pointer-controlled Periodic Circuit Breaker, Knut Hugo Appelviken, 2,435,027, 2 cl
- Circuit Breaker, Frank Adam and Floyd S. Green, 2,435,114, 1 cl
- Circuit Breaker, Wilbur L. Carlson, 2,435,128, 7 cl
- Electric Circuit Breaker, Alexander C. Boisseau and Ralph E. Bold, 2,435,190, 8 cl
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- Circuit Interrupter, John C. Ponstingl, 2,435,322, 10 cl
- Circuit Interrupting Device, Carl L. Schuck, 2,435,472, 3 cl
- Circuit Interrupter, Herbert L. Rawlins, 2,435,844, 23 cl
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- Circuit Breaker Operating Means, Ralph R. Bush, 2,436,194, 5 cl
- Electric Circuit Interrupter, William E. Paul, 2,436,665, 17 cl
- Electric Current Interrupter, Stuart O. Fiedler and Johan Bjorksten, 2,437,225, 6 cl
- Circuit Breaker, Hans P. Luhn, 2,438,067, 3 cl
- Insulated Reinforced Circuit Breaker Contact Bar, Herbert C. Graves, jr., 2,439,084, 3 cl
- Combined Electromagnetic and Thermal Circuit Breaker, William E. Stilwell, jr., 2,439,402, 5 cl
- Thermostatic Device, Ralph W. De Lancey, 2,439,455, 1 cl
- Latching or Tripping Mechanism of Circuit Breakers, Floyd S. Green, 2,439,511, 3 cl
- Electric Circuit Breaker, Ronald Norton Buttrey, 2,439,126, 5 cl
- Selective Tripping of Circuit Breakers in a System, Herbert C. Graves, 2,439,165, 16 cl
- Bimetallic Circuit Breaker, Willard F. Emigh, 2,440,937, 9 cl
- Electric Circuit Breaker, Thomas W. Wilcox, 2,440,995, 2 cl
- Circuit Breaker Control System, Arnold Haller, 2,441,412, 14 cl
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- Small Voltage Interrupter, Max D. Liston and Clark E. Quinn, 2,442,299, 5 cl
- Safety Thermal Circuit Breaker, Alfred F. Jackson, 2,442,693, 2 cl
- Circuit Breaker, Donald R. Wise, 2,443,090, 3 cl
- Circuit Breaker, George A. Matthews, 2,443,260, 15 cl
- Circuit Interrupter, William E. Berkey, 2,443,650, 7 cl
- Vibrating Interrupter System, Harold J. Brown, 2,443,675, 11 cl
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- Device Comprising a Mercury Cathode Tube for Interrupting Electric Currents of High Voltage. Johannes Gijsbertus, Wilhelm Mulder and Albert Bouwers, 2,445,075, 7 cl
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- Circuit Maker and Breaker, Charles E. Pollard, jr., 2,445,406, 3 cl
- Circuit Breaker, Gayne D. Gamel and Walter S. Hawkins, 2,445,426, 11 cl
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- Circuit Breaker Operating Mechanism, Alexander C. Boisseau, 2,445,558, 1 cl
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- Contact Maker and Breaker, Oscar A. Shann, 2,447,032, 5 cl
- Switch Construction, Chester W. Brown, 2,447,112, 15 cl
- Mounting or Receptacle and Circuit Breaker for Tubes or Lamps and Their Circuits, Herman Ruesch, 2,447,365, 4 cl
- Compressed Gas Circuit Interrupter, Benjamin P. Baker and Raymond H. Leitzel, 2,447,627, 9 cl
- Circuit Breaker, Oliver S. Jennings, 2,447,652, 6 cl
- Cam Operated Circuit Breaker, Clair D. Lake and Michael Fiehl, 2,447,806, 3 cl
- Circuit Interrupter, Winthrop M. Leeds and Benjamin P. Baker, 2,447,949, 21 cl
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- Circuit Making and Breaking in Response to Power Failure, Michael E. Hiehle, 2,448,371, 5 cl
- Latch-trip Type Circuit Breaker, Albert B. Rypinski, 2,448,470, 1 cl
- Circuit Breaker, Anthony Van Ryan, 2,448,695, 12 cl
- Circuit Breaker—hold-in Mechanism, William M. Scott, jr., 2,449,013, 18 cl
- Power Converter, Nils E. Lindenblad, 2,449,077, 13 cl
- Circuit Breaker, Ernst Eichenberger, 2,449,208, 8 cl
- Circuit Breaker, Orvel G. Killian and Bascum O. Austin, 2,449,486, 5 cl
- Circuit Interrupter, Albert P. Strom, 2,449,518, 29 cl
- Tripping and Interlocking Device for Circuit Breakers, Joseph W. Seaman, 2,449,820, 10 cl
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- Circuit Breaker, Carl E. Bazley, 2,450,268, 1 cl
- Circuit Maker and Breaker, John T. L. Brown, 2,450,499, 2 cl
- Circuit Breaker Operating System, Alexander C. Boisseau, Benjamin S. Beall, Edward J. Frank and Roger W. Lowery, 2,450,628, 9 cl
- Automatic Switching System, Ralph A. Geiselman and William H. Cuttino, 2,451,939, 5 cl
- Circuit Breaker, Ture Lindstrom and Albert H. Baylis, 2,451,962, 26 cl
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- Circuit Breaker, Ezra S. Smith, 2,453,546, 4 cl
- Gas Blast Circuit Breaker, Hans Thommen, 2,453,555, 10 cl
- Device for Adjusting Breaker Units, Theodore J. Basista, 2,453,774, 1 cl
- Circuit Interrupting Device, Everard F. Kohl, 2,454,067, 16 cl
- Circuit Breaker, Fred G. von Hoorn, 2,454,106, 5 cl
- Circuit Interrupter, Benjamin P. Baker and Donald C. Harker, 2,454,121, 7 cl
- Gas-blast Electric Circuit Breaker, Donald Foster Amer, 2,454,586, 20 cl
- Electric Circuit Interrupter, Charles L. Stroup, 2,454,849, 7 cl
- Automatic Reclosing Circuit Breaker, William D. Kyle, jr. and Carl Schindler, 2,455,067, 5 cl
- Electrical Cutout, William O. Schultz, 2,455,704, 3 cl
- Thermal Circuit Breaker, Benjamin E. Getchell, 2,455,753, 3 cl
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- Method of and Means for Forming Coils, George H. Erb, 2,424,974, 5 cl
- Spherical Coil for Variometers, Edward E. Combs, 2,425,304, 4 cl
- Coil Construction, Edgar M. Soreng, 2,425,443, 4 cl
- Receiving Coil for Train Communication Apparatus, Edgar W. Breisch, 2,426,724, 9 cl
- Mechanism for Controlling the Drawer Carrying the Coils of a Wireless Receiver, Jean Camille Roger-Petit, 2,427,745, 1 cl
- Coil and Support Construction, Benjamin B. Bauer, 2,428,826, 13 cl
- Electric Coil, Alvah O. Ericksberg and Joseph T. Osterman, 2,434,492, 4 cl
- Method of Making Electric Coils, Joseph T. Osterman and Alvah O. Ericksberg, 2,434,511, 9 cl
- Coil Winding Apparatus, Cyril L. Schaefer and Nils H. Swanson, 2,434,591, 9 cl
- Electric Winding, Franklin R. D'Entremont, 2,436,207, 18 cl
- High-frequency Coil, Howard Walker, 2,439,277, 5 cl
- Coil, Nathan Sterenbuch, 2,439,827, 7 cl
- Spherical Coils for Variometers, Edward E. Combs, 2,441,564, 7 cl
- Electrical Coil and Method of Making the Same, Almy D. Coggeshall and Bror W. Erikson, 2,442,587, 5 cl
- Coil and Core Arrangement, Howard E. Somes, 2,444,475, 6 cl
- Electrical Coil, Herbert P. Heath, 2,444,737, 13 cl
- Reactor, John J. Root, 2,445,408, 5 cl
- Coil Mounting, Robert T. Thompson, 2,445,979, 8 cl
- Coil and Mounting Therefor, Anthony J. Ruscito, 2,447,366, 1 cl
- Waterproof Electrical Coil, Charles H. Braithwaite, jr., 2,447,631, 10 cl
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- Calculating Device, Justin S. Compton, 2,416,793, 21 cl
- Electric Indicating and Totalizing Apparatus, Harold W. Schaefer, 2,416,849, 8 cl
- Computer, Doyle E. Wilcox, 2,417,098, 10 cl
- Electric Computer, Ernst F. W. Alexanderson, 2,417,229, 10 cl
- Potentiometer Circuit, Clarence A. Lovell and John F. Müller, 2,417,425, 6 cl
- Potentiometer Circuit, David B. Parkinson, 2,417,442, 4 cl
- Computing Device for Photographic Cameras, Alfred Simmon, 2,418,370, 7 cl
- Multiplying Machine, Frank Reginald Saxby, 2,419,502, 34 cl
- Electron Computing Device, Jan A. Rajchman, 2,420,013, 4 cl
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- Apparatus for Effecting Navigational Calculations, Bryan Harold Cabot Matthews, 2,424,178, 5 cl
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- Calculation Checking Device, Hans P. Luhn, 2,425,549, 5 cl
- Apparatus for making computations electrically, Wolfgang B. Klemperer and Everett H. Pier, 2,427,463, 5 cl
- Mathematical Squaring Device of the Electron Tube Type, Michael T. Bagley, 2,428,541, 4 cl
- Electronic Computer, Arthur W. Vance, 2,428,596, 6 cl
- Electronic Computing Device, Jan A. Rajchman, 2,428,811, 19 cl
- Electronic Computing Device, Jan A. Rajchman, 2,428,812, 18 cl
- Electronic Computer, Jan A. Rajchman, 2,428,990, 9 cl
- Electronic Computing System, Philip J. Herbst, 2,429,227, 7 cl
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- Relay Design Calculator, William Keister, 2,431,696, 11 cl
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- Record Controlled Adding and Comparing Machine, Arthur H. Dickinson, 2,434,487, 6 cl
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- Data Smoothing Network, David C. Bomberger, 2,435,195, 9 cl
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- Electronic Computer for Transforming Polar into Recti-linear Coordinates, Jan A. Rajchman, 2,436,178, 4 cl
- Electrical Calculator, Sydney V. Perry, 2,436,666, 6 cl
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 Calculating Device, Robert E. Mumma, 2,442,428, 19 cl  
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 Electrically Operated Calculating Apparatus for Converting Numbers from Binary to Decimal Form, George Clifford Hartley and John Ridd Gould, and Leslie Baines Haigh, 2,444,042, 9 cl  
 Electronic Computer, Leslie E. Flory, 2,445,215, 12 cl  
 Rate Taking Circuit, William F. Frost, 2,445,773, 19 cl  
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 Electric Device with Electron Barrier, Edwin Joseph Merrell, 2,415,184, 2 cl  
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 Insulator Supported Adjustable Bus Clamp, Irving Frederick Matthyse, 2,415,649, 5 cl  
 Electrical Connection Plug, Robert Bauer, 2,415,722, 4 cl  
 Alternating Current Bus Bar Construction, Comfort A. Adams, John R. Fetcher and George Stocker, 2,416,670, 10 cl  
 Connector for Conductor Wire, John Nicolazzo, 2,416,943, 2 cl  
 Multiple Circuit Connector of the Plug Type, Hans P. Luhn, 2,417,369, 5 cl  
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 Electrical Socket, Kenneth M. McLaughlin, 2,419,460, 6 cl  
 Shockproof Connector Device, Joseph F. O'Brien and Earl S. Boynton, 2,419,585, 18 cl  
 Sealing High-tension Wires in Sockets, William O. Henschke, 2,419,583, 3 cl  
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 Anchor for Plural Electric Conductors, Carl H. Judisch, 2,421,456, 5 cl  
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 Socket Structure, William Frear, 2,421,780, 10 cl  
 Coaxial Cable Connector, Edward Clarke Quackenbush, 2,422,982, 5 cl  
 Electrical Connector, Basil A. Bels, 2,423,548, 7 cl  
 Electric Socket, Edward T. Collins, 2,424,435, 8 cl  
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 Revolving Electrically Conductive Joint, Francis N. Bard, 2,424,545, 12 cl  
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 Electrical Connector, Beverly A. Lundy, 2,424,938, 1 cl  
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 Multunit Wiring Receptacle, Harvey Hubbell and Joseph F. Healy, 2,424,988, 11 cl  
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- Rotatable Coupler, Emile Labin and Armig G. Kandolan, 2,426,226, 1 cl
- Outlet Box Unit, Joseph F. O'Brien and Earl S. Boynton, 2,426,235, 3 cl
- Flexible Connector, Warren G. Taylor and Charles L. Baxter, 2,426,251, 12 cl
- Electrical Connector, Basil A. Bels, 2,426,429, 11 cl
- Solderless Terminal Lug for Electrical Conductors, Fred G. Krueger, 2,426,831, 5 cl
- Insulated Conductors having Fabric Layers Impregnated with Ester Gum Saturants, Samuel E. Brillhart and Alvin N. Gray, 2,426,858, 19 cl
- Electrical Coupling Disconnecter, Martin D. Bergan, 2,427,182, 13 cl
- Electrical Receptacle, Earl S. Boynton, 2,427,349, 3 cl
- Overload Controlling Plug, Thomas Adams Dear, 2,427,390, 5 cl
- Electrical Connecting Conductor, Martin D. Bergan, 2,427,518, 1 cl
- Coupling System, Robert M. Ryder, 2,427,693, 10 cl
- Semiconducting Coated Conductors and Semiconducting Spacers Therefor, William B. Atkinson, Lawrence R. Hill and Harry H. Barker, 2,427,700, 10 cl
- Jack and Plug Type of Electrical Connector, Arthur Liebscher, 2,429,026, 1 cl
- Magnetic Ground Device, Mathew Savon, 2,429,526, 3 cl
- Plug Ejector, Lunceford P. Gillentine, 2,430,011, 2 cl
- Junction Box with Electrical Connectors, Herman C. Vedder, 2,431,002, 1 cl
- Battery Terminal Connector, Abraham Tisman, 2,431,092, 2 cl
- Electrical Terminal Clip, Lewis W. Buell, 2,431,366, 2 cl
- Electrical Connection Means, Charles S. Penfold, 2,431,583, 4 cl
- Electrical Connector Block, Richard A. Engelhardt, 2,431,999, 8 cl
- Resistance Conductor, William Alleva and Herbert Blackburn, 2,432,268, 1 cl
- Clamp Type Connector, Anthony Van Ryan, 2,432,635, 1 cl
- Electrical Connector, John M. Van Vleet, 2,432,636, 3 cl
- Electrical Connector, Scipione M. Del Camp, 2,432,966, 4 cl
- Electrical Connector, Anatole M. Gurewitsch, 2,432,989, 2 cl
- Ultra High Frequency Energy Coupling, John F. Zaleski, 2,433,011, 14 cl
- High-frequency Coupling Device, William G. Tuller, 2,433,074, 4 cl
- Bus Bar Connector, Duncan D. Forbes, 2,433,209, 6 cl
- Lead-in Connection for Electron Discharge Tubes, Leslie G. Lawrence, 2,433,375, 1 cl
- Electrical Connector, Denison B. Hull, 2,434,211, 5 cl
- Electric Contact, Edmund Merriman Wise, 2,434,305, 13 cl
- Electrical Connector, Harry G. Sullivan, 2,434,475, 2 cl
- Ultra High Frequency Conductor, Ernest C. Okress, 2,434,509, 6 cl
- Multiplex Jack and Plug, William H. Alford, 2,434,534, 4 cl
- Electrical Connector for Coaxial Cables, Elmer G. Hills, 2,434,742, 8 cl
- Electric Cord, Edward B. Feaster, 2,434,793, 3 cl
- Multiple Contact Jack, Allen J. Gardenhour, 2,435,136, 8 cl
- Cable Connecting Device, George C. Webster, 2,435,989, 5 cl
- Electrical Connector, Harold Locktov, 2,436,217, 4 cl
- Electrical Test Clip, Clifton C. Wright, 2,436,280, 3 cl
- Connecting Device and Method of Making the Same, Ernest V. Soreny, 2,436,832, 8 cl
- Detachable Electrical Connector, Edgar W. Brelsch, 2,436,914, 4 cl
- Swivel Electrical Connector with Floatable Means, Alf E. Anderson, 2,436,949, 7 cl
- Electrical Connector, Edward J. Allen, 2,437,180, 2 cl
- Connector, Benjamin C. Webster, 2,437,339, 4 cl
- Disengageable Electrical Circuit Connector, Richard C. Marholz, 2,438,371, 4 cl
- Wire Connector, Herman L. Gordon, 2,438,779, 13 cl
- Terminal Clips, Chin Jim Fot, 2,438,850, 2 cl
- Plug and Jack Assembly, Eugene L. Mentor, 2,439,744, 3 cl
- Electrical Connector, Hugo H. Wermine, 2,439,767, 10 cl
- Bus-bar Structure, Charles F. Wagner and Lawrence L. Fountain, 2,439,956, 5 cl
- Electrical Connector, Rudolph A. Hecht, 2,440,270, 13 cl
- Cable Connector, John S. Larkins, jr., 2,440,279, 6 cl
- Electrical Socket, Charles L. Paulus and Raymond K. Stout, 2,440,288, 12 cl
- Electrical Panel Board, John G. Jackson, 2,440,824, 7 cl
- Electric Connector for Corona Discharge Devices, Edgar B. Nichols, 2,440,828, 3 cl
- Electrical Connector, Herbert M. Rogers, 2,440,876, 1 cl
- Extensible Electric Conductor, Felix Jean Marie Dansard, 2,441,236, 2 cl
- Electric Utility Connection, Anthony Wayne, 2,441,461, 1 cl
- Switchboard, Herbert C. Graves, jr., Walter Hains Schymik and Clayton Bradbury, 2,441,485, 6 cl
- Electrical Connector, Charles H. Reynolds, 2,441,921, 1 cl
- Electric Wire Terminal, Sylvester L. Gookin, 2,442,767, 4 cl
- Cathode Line Connector System, James Henry Nye, 2,442,778, 9 cl
- Interconnection Device, Robert E. Paris, 2,442,984, 15 cl
- Bonding Cable Terminal Bracket, Hubert A. Elkins, 2,443,000, 3 cl
- Connector, Beverly A. Lundy, 2,443,509, 1 cl
- Electrical Contact Socket, Edward Clarke Quackenbush, 2,443,513, 3 cl
- Lead-in Construction for Electrical Devices, Donald O. Schwennesen, 2,443,545, 4 cl
- Electrical Connector, Harry D. Else and Joseph E. Mulheim, 2,443,654, 4 cl

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- Electrical Socket, Louis A. McNabb, 2,443,743, 1 cl  
 Electric Plug Adapter, William J. Miller, 2,443,797, 6 cl  
 Electrical Connector, Cliff Baker, 2,443,975, 16 cl  
 Electrically Conducting Adhesive, Norman Hixon Collings and Raymond John Heaphy Beverton, 2,444,034, 2 cl  
 Mounting and Connecting Apparatus, Walter W. Fritsch, 2,444,037, 3 cl  
 Connector Device, Le Roy T. Miller, 2,444,058, 2 cl  
 Antenna Lead-in Connector, Lewis H. Finneburgh, jr. and Theodore R. Finke, 2,444,189, 8 cl  
 Electrical Clip, Harold S. Johnson, 2,444,229, 4 cl  
 Connector, Duncan J. Macpherson, Palma A. Le-fevre and William Escott, 2,444,459, 1 cl  
 Current Distribution Duct, John G. Jackson and Ralph H. Kingdon, 2,444,648, 18 cl  
 Connector Plug, Louis J. Irrgang, 2,444,739, 1 cl  
 Antenna Connector, Robert E. Kester and Henry R. Smith, 2,444,934, 2 cl  
 Radio Plug Adapter, Edgar L. Metz, 2,445,033, 3 cl  
 Universal Bus-bar Support, Charles P. West, 2,445,463, 5 cl  
 Electric Terminal and Coil, Marion W. Sims, 2,445,587, 3 cl  
 Contact Clip, Martin M. Clayton, 2,445,604, 8 cl  
 Connecting Plug, Wilbur O. Detweiler, 2,445,608, 1 cl  
 Cable Connector, Walter Peters, 2,445,633, 4 cl  
 Electrical Plug and Socket Connections, Frederick Talbot Shaw, 2,445,927, 2 cl  
 Terminal and Clamp Therefor, Glen Wood Harper, 2,445,946, 3 cl  
 Wire Grip for Electrical Fittings, Floyd W. Clark, 2,446,262, 6 cl  
 Electrical Cable Connector, Donald MacInnes, 2,446,542, 3 cl  
 Electrical Appliance Cord, John F. Cavanagh, 2,446,907, 4 cl  
 Electric Socket, Walter Edward Hill and Thomas Daniel Guy Wintle, 2,446,926, 2 cl  
 Electrical Terminal, Jesse J. Jorgensen, 2,447,254, 1 cl  
 Self-locking Electric Outlet and Plug, Charles H. Reed, 2,447,597, 9 cl  
 Electric Plug, Charles H. Dolan, II, 2,448,086, 3 cl  
 Terminal Connector for Electrical Conductors, William J. Larkin, 2,448,268, 5 cl  
 Electrical Plug, Alexander M. Williams, 2,448,339, 1 cl  
 Electrical Connector, Charles Antony, jr. and David Mannheim, 2,448,509, 5 cl  
 Coupling, George W. Purdy, 2,448,548, 9 cl  
 Insulated Electrical Conductor, Charles C. Smith, 2,448,633, 2 cl  
 Connector for Electric Cables and the Like, Vincent D. Burke, 2,448,766, 5 cl  
 Coaxial Line Connector, John D. Johannesen, 2,449,073, 3 cl  
 Rotatable Electrical Connection, Dwight M. Phillips, 2,449,138, 6 cl  
 Separable Connector, Julian Rogoff, 2,449,251, 8 cl  
 Electrical Connector, Vernon E. Carlson, 2,449,450, 8 cl  
 Electrical Connection, Frank J. Matan, 2,449,496, 2 cl  
 Electrical Connector, Richard J. Violette, 2,449,570, 6 cl  
 Cable Connector, William M. Lawhorne, 2,449,660, 2 cl  
 Coaxial Line Coupling, George C. Devol, 2,449,983, 15 cl  
 Electrical Connector, James C. Macy, 2,450,050, 4 cl  
 Electrical Connector, James C. Macy, 2,450,202, 12 cl  
 Electrical Connector, Charles W. Dann, 2,450,271, 4 cl  
 High-voltage Terminal, William Dubilier, 2,450,273, 4 cl  
 Electrical Cord, George E. Henning, 2,450,429, 7 cl  
 Bridge for Junction Boxes, Henry Kershaw, 2,451,393, 4 cl  
 Coupling Device for Concentric Conductor Lines, Albert L. Robinson, 2,451,413, 7 cl  
 Electric Wire Terminal, Robert H. Bentley, 2,451,466, 16 cl  
 Terminal Clip for Electrical Conductors, Stephen N. Buchanan and Ormiston J. Breen, 2,451,800, 3 cl  
 Electrical Conductor, Cecil George Lemon, 2,451,839, 14 cl  
 Radio-frequency Joint, Winfield W. Salisbury, 2,451,876, 25 cl  
 Swivel Type Coaxial Connector, Doyle Warren, 2,452,168, 6 cl  
 Electrical Connector, Cecil L. Basham, 2,452,422, 1 cl  
 Lead Connector for Electronic Discharge Devices, Charles V. Litton, 2,452,582, 17 cl  
 Electrical Connecting Means and Radio Shielding Means Therefor, Jakob R. Frei, 2,452,847, 8 cl  
 Electrical Connector, James O. Johnson, 2,452,932, 2 cl  
 Power Distribution System of the Bus Bar Duct Type, Herman John Hammerly, 2,453,314, 3 cl  
 Tinsel Wire Connector, Martin D. Bergan, 2,453,615, 2 cl  
 Electrical Connector, Howard E. Somes, 2,453,731, 6 cl  
 High Frequency Power Output Control, Lester S. Lappin and Richard P. Corporon, 2,453,994, 2 cl  
 Plug Assembly, Avery G. Richardson and Murray Kaplan, 2,454,838, 3 cl  
 Electrical Connector, George M. Anderson, 2,454,760, 4 cl  
 Electrical Connector, Kenneth Neijstrom, 2,454,829, 1 cl  
 Radio Tube Socket, Albert W. Franklin, 2,455,300, 2 cl  
 Holder for Thermionic Tubes, George Wagstaff, 2,455,324, 2 cl  
 Inductance Clip, Joseph F. Frese, 2,455,772, 5 cl  
 Terminal Member, Cyril J. Foster, 2,456,118, 1 cl  
 Connector for Cords or Cables, Wilmer H. Churchill, 2,456,554, 3 cl  
 Solderless Contact Terminal, Sidney M. Weisberg, 2,456,601, 2 cl  
 Electrical Connector, Peter J. Bach and James H. Simpson, 2,456,764, 10 cl  
 Electrical Connector, Paul L. Bour, 2,457,119, 7 cl  
 Connector for Electric Receptacles, Karl Hoehn, 2,457,235, 3 cl  
 High-voltage Bushing, Edward Uhlig, 2,457,419, 7 cl  
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See Frequency Changers

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- Radio Direction Finder, David G. C. Luck, 2,432,777, 6 cl
- Direction Finder, Lowell E. Norton, 2,432,926, 4 cl
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- Sound Wave Direction Determinator, Robert W. Fairweather, 2,434,644, 6 cl
- Direction Finding Instrument, Warren P. Mason, 2,434,945, 5 cl
- Acoustic Indicator for Directional Receivers, Donald A. Quarles, 2,434,957, 8 cl
- Radio Direction Finder, Robert H. Worrall, 2,434,977, 6 cl
- Directive Radiant Energy Locating and Indicating System, Raymond C. Locke, 2,436,655, 14 cl
- Three-dimension Radio Direction Finder, Karl G. Jansky, 2,437,690, 8 cl
- System for Determining the Direction of a Source of Sound, Charles Hamlin Waterman, 2,438,526, 9 cl
- Radio Direction Finding System, Avery G. Richardson, Frank O. Chesus and Frank G. Thomas, 2,438,946, 5 cl
- Electromagnetic Wave Direction Indicator, Rene Hardy, 2,440,268, 9 cl
- Radio Direction Finder, Paul G. Hansel, 2,440,682, 8 cl
- Tridimensional Radio Direction Indicator, Joseph Lyman, 2,440,777, 17 cl
- Direction Finder, Edward D. Blodgett and Donald S. Bond, 2,441,658, 9 cl
- Direction Finder, Edward D. Blodgett, 2,443,718, 3 cl
- Electromagnetic Wave Direction Responsive Apparatus, Rene Hardy, 2,445,779, 11 cl
- System for Radio Direction Finding and Similar Purposes, Rene Jean Hardy, 2,447,502, 5 cl
- Radio Direction Finder, Alfred R. Starr, 2,448,006, 17 cl
- Direction Finder, Nathan Marchand, 2,448,041, 14 cl
- Radio Direction Finder, William Joseph O'Brien, 2,449,175, 5 cl
- Radio Direction Finder, Trevor H. Clark, 2,449,978, 3 cl
- Electric Goniometer for Radio Direction Finders, John H. Newitt, 2,450,014, 13 cl
- Radio Direction Finding Means for Aviation Trainers, Karl A. Kail, 2,450,240, 2 cl
- Direction Finding System, Gustav Guanella, 2,451,823, 19 cl
- Directive Radio Antenna, Howard I. Becker, 2,452,349, 6 cl
- Direction Finder, Henri G. Busignies and John L. Allison, 2,452,546, 22 cl
- Direction Finder, Maxwell K. Goldstein, 2,452,564, 2 cl
- Direction Finding System, John H. Newitt, 2,452,675, 1 cl
- Radio Direction Finder, Edward N. Dingley, jr., 2,454,783, 4 cl
- Radio-electric Receiver, Particularly for Watch on Broad Frequency Bands, Rene Hardy, 2,454,797, 25 cl
- Radio Position Finding System, James A. Ebeling, 2,455,164, 5 cl
- Radio Direction Finding System, Charlton Stanford Agate and Arthur Henry Cooper, 2,456,666, 16 cl
- Coupling Arrangement, Henri G. Busignies, Trevor H. Clark and Arbor G. Everhart, 2,457,123, 4 cl
- Proximity and Direction Indicator, Frank Ellison Best, 2,457,199, 3 cl
- See also*
- Aircraft Direction Finders  
Aircraft Navigational Aids  
Antennas Directional  
Beacons  
Marine Radar  
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**DISCHARGE Devices**

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- Electron Discharge Device, James O. McNally, 2,413,725, 8 cl
- Electron Discharge Device, John W. West, 2,413,738, 15 cl
- Electron Discharge Device, John W. West, 2,414,500, 10 cl
- Electron Discharge Apparatus Incorporating High Frequency Resonators, John Heaver Fremlin, 2,414,517, 8 cl
- Electron Discharge Device, Clifford E. Fay and John W. West, 2,414,805, 12 cl
- Electron Discharge Tube for Ultra High Frequencies, John Henry Owen Harries, 2,415,349, 16 cl
- Non-sputtering Electrode for Mercury Arc Devices, Leonard M. Wittlinger, 2,415,548, 3 cl
- Electron Discharge Device with Beam Deflecting Resonator, Louis Malter, 2,415,749, 11 cl
- Electron Discharge Tube, John Heaver Fremlin, 2,416,299, 3 cl
- Secondary Emissive Shell Resonator Tube, Carlyle V. Parker, 2,416,303, 9 cl
- Electron Discharge Device, William Hotine, 2,416,318, 5 cl
- Dispenser Type Cathode Electric Discharge Device, Elliott J. Lawton, 2,416,661, 13 cl
- Electron Discharge Device, John R. Pierce, 2,416,714, 10 cl
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- Electron Discharge Device, Thomas L. Eaton, 2,416,914, 13 cl
- Electron Discharge Device, Raymond W. Sears, 2,417,450, 20 cl
- Electron Discharge Device, Douglas A. S. Hale and Victor L. Ronci, 2,418,117, 5 cl
- Electron Discharge Device Having Coupled Coaxial Line Resonators, Lloyd P. Smith, 2,419,172, 17 cl
- Electrical Gaseous Discharge Device Having Constant Starting Characteristics, Paul W. Stutsman, 2,419,236, 6 cl
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- Electron Discharge Tube, John Foster, 2,419,544, 4 cl
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- Electron Discharge Device, Charles V. Litton, 2,419,578, 14 cl
- Ultra High Frequency Electron Discharge Device Circuit, Charles A. Rosencrans, 2,419,793, 11 cl
- Electron Discharge Device, Gerrit Hendrik Petrus Alma and Bernhardus Gerhardus Dammers, 2,420,345, 3 cl
- Electronic Discharge Device, Harry L. Loudon, 2,422,427, 4 cl
- Spark Gap Discharge Device, Charles Depew, Wallace A. Depp and Alfred N. Luce, 2,422,659, 13 cl
- Electric Discharge, Ultra High Frequency Generating and Switching Tube, Alfred Vang, 2,423,858, 4 cl
- Electron Discharge Device, Joseph D. Schantz, 2,423,998, 7 cl
- High-frequency Electronic Tube, David H. Sloan, 2,424,002, 21 cl
- Gaseous Electric Discharge Lamp, Howard Haynes and Lynn S. Ickis, jr., 2,424,457, 12 cl
- Coil Electrode, Raymond H. Stuart, 2,424,518, 6 cl
- Electric Discharge Device and Electrode Assembly Therefor, William S. Brian, 2,425,593, 15 cl
- Electron Discharge Device, Frederick B. Llewellyn, 2,425,748, 24 cl
- Electron Discharge Apparatus, Frederick B. Llewellyn, 2,426,626, 17 cl
- High-frequency Electric Discharge Device, Donald A. Wilbur, 2,426,656, 10 cl
- Control for Discharge Devices, Gilbert E. Gustafson, 2,426,680, 7 cl
- Spark Gap Device with Cold Electrodes, Edward G. F. Arnott, 2,427,086, 4 cl
- Electric Discharge Device, Edward B. Noel, 2,427,737, 4 cl
- Beam Type Electron Discharge Device, William H. Warren, 2,427,888, 6 cl
- Baffle Arrangement for Vapor Electric Devices, Harold Winograd, 2,428,000, 10 cl
- Electron Discharge Tube for Ultra High Frequencies, Frank Douglas Goodchild and Willem Harry Wolsey, 2,428,020, 14 cl
- Electron Discharge Device, Paul W. Stutsman, 2,428,048, 2 cl
- Means Producing a Steep Wave Front Potential for Control of Electric Discharge Devices, Jean A. Augier, 2,428,604, 5 cl
- High-frequency Electric Discharge Device, James E. Beggs, 2,428,609, 4 cl
- Electric Discharge Device of the Gas Filled Type, Stanley R. Fitzmorris, 2,428,661, 29 cl
- High-frequency Electric Discharge Device, Richard B. Nelson, 2,428,888, 5 cl
- Electron Discharge Device, Edgar K. Wimpy and Leo C. Werner, 2,429,301, 8 cl
- Circuit for Electric Discharge Devices, Eugene Lemmers, 2,429,415, 4 cl
- Control System with Gas Discharge Tube, Phillip J. Cade, 2,429,451, 14 cl
- Ignition Plunger for Electric Discharge Devices with Liquid Cathode, Ervin B. Steinberg, 2,430,653, 3 cl
- Electric Discharge Device, James E. Beggs, 2,430,856, 6 cl
- Electron Discharge Device, Karel van Gessel, 2,431,097, 10 cl
- Electric Discharge Device, Johannes Gijsbertus Wilhelm Mulder, 2,431,136, 4 cl
- External Anode with Cooling Fins, Carl H. Scullin, 2,431,144, 5 cl
- Electron Discharge Device Employing a Cavity Resonator, Leon S. Nergaard, 2,431,273, 19 cl
- Electron Discharge Apparatus, Frank Douglas Goodchild and Christopher Henry Foulkes, 2,431,638, 4 cl
- Velocity Modulation Electron Discharge Apparatus, Eugene Feenberg, 2,431,688, 10 cl

**DISCHARGE Devices, Patents—Cont'd.**

- Electrode Mounting in Electron Discharge Tube, Clayton E. Murdock and Robert Leigh Norton, 2,431,767, 11 cl
- Ionc Discharge Device, Charles Depew, 2,432,513, 15 cl
- Electron Discharge Device Employing Resonators, Andrew V. Haeff, 2,432,571, 19 cl
- Electron Discharge Device, Andrew V. Haeff, 2,433,044, 7 cl
- Electron Discharge Apparatus, Albert M. Skellett, 2,433,403, 9 cl
- Tube Construction, Charles M. Walker and James Raymond Eisan, 2,433,410, 3 cl
- Electric Discharge Tube, Robert C. Hilliard, 2,433,813, 6 cl
- Circuit arrangement utilizing a plurality of electron discharge devices, Everett T. Burton, 2,434,259, 13 cl
- Grid Structure in Electron Discharge Devices, Anson J. Gerner, 2,434,494, 2 cl
- Filament Tensioning Means in Electron Discharge Device, Leo C. Werner, 2,434,529, 3 cl
- Light Sensitive Electric Discharge Device, Elmer D. McArthur, 2,434,622, 20 cl
- Electric Space Discharge Circuits, Fred H. Kroger, 2,434,704, 46 cl
- Control Switch for Discharge Lamps, Wilber M. Johnson and Leonard Cook, 2,434,768, 3 cl
- Electron Discharge Device, Maurice Arditl, 2,434,895, 10 cl
- Electronic Tube and Control Therefor, Palmer H. Craig, 2,435,202, 3 cl
- Electron Velocity Sorting Discharge Device, Paul L. Hartman, 2,435,586, 2 cl
- Supporting Structures for the Electrodes of Electron Discharge Devices, François Joseph Gerard van den Bosch and Ernest Thomas James Tapp, 2,436,734, 3 cl
- Control Circuit for Gas Discharge Tubes, Paul W. Stutsman, 2,436,835, 6 cl
- Coaxial Spark Gap, Edward M. Wiler, 2,436,845, 6 cl
- Ultra High Frequency Electric Discharge Device, William J. Scott and Christopher J. Milner, 2,437,130, 3 cl
- Electrical Discharge Device Employing a Pool-type Cathode, Howard E. Zuvers, 2,437,146, 6 cl
- Space Discharge Device, William C. Brown, 2,437,240, 3 cl
- Electron Discharge Apparatus, Albert M. Skellett, 2,437,274, 9 cl
- High-power Microwave Discharge Tube, Percy L. Spencer, 2,437,279, 11 cl
- Annular Electronic Tube, Albert G. Thomas, 2,437,365, 4 cl
- Electron Discharge Tube with Partially Coated Grid, Eduard Gerardus Dorgelo, 2,437,941, 3 cl
- Electron Discharge Device, Donald L. Snow, 2,438,132, 19 cl
- Mercury Pool Electronic Device, Edward G. F. Arnott, 2,438,139, 7 cl
- Gaseous Discharge Device, F. Alexander, 2,438,356, 5 cl
- Circuit for Electric Discharge Devices, Theodorus Hehenkamp, 2,438,556, 3 cl
- Electric Gas Discharge Tube, Pieter Schouwstra, 2,438,579, 6 cl
- Electron Discharge Device, Paul Georges Chevigny and Gerard J. Lehmann, 2,438,899, 10 cl
- Condenser Discharge Control Circuit, Sidney Frankel and Martin Silver, 2,438,907, 10 cl
- Electron Discharge Device, David B. Langmuir, 2,439,173, 10 cl
- Electron Discharge Device, Homer G. Anderson, 2,439,786, 2 cl
- Movable Electrode Tube, William C. Marshall, 2,439,942, 9 cl
- Electron Discharge Device Employing Cavity Resonators, Andrew V. Haeff, 2,440,089, 15 cl
- Gas Discharge Lamp, Miles Pennybacker, 2,440,832, 4 cl
- Electron Discharge Device of the Magnetron Type, John S. Donal, jr., Barremore B. Brown and Carmen Louis Cuccia, 2,440,851, 8 cl
- Electron Discharge Device, Luther Grant Hector, George W. Baker and Peter A. Muto, 2,441,224, 7 cl
- Electrode for Discharge Devices, William P. Zabel, 2,441,863, 2 cl
- Excitation System for Vapor Electric Valves, John L. Boyer and Herbert A. Rose, 2,441,987, 13 cl
- Electron Discharge Device, Victor L. Ronci, 2,442,378, 6 cl
- Electric Discharge Device Comprising an Exhaust System, Frans A. Heyn, 2,442,493, 4 cl
- Mixing Tube, Gerrit Hendrik Petrus Alma, Henny Cohn and Hendricus J. Landsbergen, 2,442,576, 4 cl
- Exhaust Tube Arrangement in Flat Disc Press Electron Discharge Devices, Hendricus Johannes Lemmens, Johan Lodewijk Hendrik Jonker and Otto Louis van Steenis, 2,442,608, 6 cl
- High-frequency Translating Apparatus, Liss C. Peterson, 2,442,662, 7 cl
- Gaseous Discharge Device, Paul W. Stutsman, 2,443,205, 13 cl
- Envelope and Electrode Structure for Electric Discharge Devices, Kenneth C. De Walt, 2,443,444, 2 cl
- Electron Discharge Device of the Cavity Resonator Type, Thomas H. Kinman and Leonard J. Davies, 2,443,463, 4 cl
- Electron Discharge Tube, Marcus A. Acheson and Paul Haas, 2,443,528, 3 cl
- Electron Discharge Tube, Paul Haas, 2,443,535, 13 cl
- Electrode for Gaseous Discharge Devices, Samuel C. Miller, 2,443,633, 6 cl
- Wave Guide Discharge Tube Socket Assembly, James M. Lafferty, 2,443,917, 4 cl
- Electronic Discharge Device, Arthur F. Short, 2,444,068, 6 cl
- Electron Discharge Device of the Magnetron Type, Louis A. Williams, 2,444,080, 4 cl
- Flexible Electrode Support for Electron Discharge Devices, Ross Wood, 2,444,082, 8 cl
- Ion-discharge Tube, Johannes Gijsbertus Wilhelm Mulder, 2,444,204, 10 cl
- Electric Discharge Lamp, Stanford Winston Cram, 2,444,397, 2 cl
- Electric Gaseous Discharge Lamp Circuit, Carl M. Larime, 2,444,408, 2 cl

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- Electrode Structure for Multigrid Electron Discharge Tubes, Johan Lodewijk Hendrik Jonker, 2,444,740, 3 cl
- Electron Discharge Device, Phillip J. Cade, 2,444,915, 3 cl
- Ignition Circuits for Vapor Discharge Devices, John W. Dawson and Hans Klemperer, 2,444,921, 3 cl
- Luminous Electrical Discharge Device, Clarence H. Van Orden, 2,445,012, 4 cl
- Electron Discharge Device and Associated Circuit, Robert P. Stone, 2,445,237, 7 cl
- Electron Discharge Device and Associated Circuit, Bernard Joseph Mayo, 2,445,404, 4 cl
- Electron Discharge Device Utilizing Cavity Resonators, Stuart T. Martin, jr., 2,445,447, 9 cl
- Electrical Discharge Device and Base, Ward W. Watrous, jr., 2,445,462, 11 cl
- Electric Discharge Device, Eugene Lemmers, 2,445,678, 10 cl
- Modulable Electric Discharge Lamp, Eugene Lemmers, 2,445,679, 1 cl
- Electron Discharge Device of the Velocity Modulation Type, John Heaver Premlin and Christopher Strachey, 2,445,771, 6 cl
- Electronic Discharge Tube and Circuits Therefor, Jacob Kruithof and Lucien Alfred Benoit Cabes, 2,445,782, 3 cl
- Cathode Structure, James E. Beggs, 2,445,993, 12 cl
- Ultra High Frequency Electric Discharge Device and Cavity Resonator Apparatus Therefor, Elmer D. McArthur and James E. Beggs, 2,446,017, 11 cl
- Electrode, Erwin F. Lowry, Arnold L. Peacock and William E. Leyshon, 2,446,157, 12 cl
- Differentiating Discharge Tube, Madison Cawein, 2,446,260, 7 cl
- Very High Frequency Electric Discharge Tube, Kornelis Swier Knol and Johannes Marinus van Hofweegen, 2,446,374, 4 cl
- Electron Tube Structure, Elmer D. McArthur, 2,446,379, 10 cl
- Electron Discharge Device, Palmer P. Derby, 2,446,531, 5 cl
- Control Circuit for Gas Discharge Tubes, John H. England, 2,446,533, 7 cl
- Electrical Discharge Tube, John S. Hickey and William H. Teare, 2,446,765, 6 cl
- Ultra High Frequency Electric Discharge Device, 2,446,825, 1 cl
- Device for Regulating Electrical Discharge, Tullio Tognola and Maurice S. Thorn, 2,447,377, 8 cl
- Grid Electrode for Electron Discharge Devices, Roger Gluntz, 2,447,501, 7 cl
- Electric Discharge Tube, Nicolaas Warmoltz, 2,447,781, 1 cl
- Coated Anode for Electron Discharge Devices, Paul D. Williams, 2,447,973, 1 cl
- Electron Discharge Tube, Paul W. Stutsman, 2,448,559, 6 cl
- Cathode Structure for Electron Discharge Devices, Charles R. Blazier and Douglas A. S. Hale, 2,448,573, 10 cl
- Electric Discharge Device, Hal Frederick Fruth, 2,449,113, 4 cl
- Electric Discharge Tube Base, Pieter Harm Fenema, Johan George Kronouer and Frits Prakke, 2,449,374, 4 cl
- Electron Discharge Device, Howard L. Steele, jr., 2,449,794, 15 cl
- Electron Discharge Vessel, Arno Brasch and Wolfgang Huber, 2,449,872, 18 cl
- Reversely-connected Electric Discharge Device System, Arthur F. Cann, 2,450,032, 2 cl
- Electric Discharge Device, Harry Kenneth Ishler, 2,450,197, 17 cl
- Thermionic Discharge Tube with Electronic Velocity Filter, Andres Levaldi, 2,450,602, 11 cl
- Protective Device and the Manufacture Thereof, Ward W. Watrous, jr., 2,451,184, 9 cl
- Electron Discharge Device Employing Cavity Resonator Apparatus, Charles A. Rosencrans, 2,451,240, 5 cl
- Electron Discharge Device for Ultra High Frequencies, Philip T. Smith and Howard R. Hegbar, 2,451,249, 17 cl
- Dark Trace Screen, Humboldt W. Leverenz, 2,451,292, 4 cl
- Rugged Gaseous Discharge Triodes, Arnold R. Moore, 2,451,297, 2 cl
- Ultra High Frequency Electron Discharge Device, Christopher Henry Foulkes, 2,451,328, 4 cl
- Electron Discharge Device having an Electron Beam Passage and Aligning Means Therewith for the Cathode, Paul M. Dickerson, 2,451,813, 6 cl
- Electrical Discharge Device and Base, Irving Zambakian and Ward W. Watrous, jr., 2,451,900, 18 cl
- Electrical Discharge Tube Circuits, Ashley P. Bock, 2,451,910, 4 cl
- Electric Discharge Device, David Lorimer Smart, 2,451,988, 8 cl
- Gaseous Discharge Lamp Circuit, Albert E. Feinberg, 2,452,026, 4 cl
- Electrical Discharge Tube, James D. Le Van, 2,452,062, 7 cl
- Velocity Modulation Electron Discharge Tube, Charles G. Smith, 2,452,075, 15 cl
- Thermally Tunable Electron Discharge Device, Percy L. Spencer, 2,452,078, 3 cl
- Electron Discharge Apparatus, Raymond W. Sears, 2,452,157, 16 cl
- Electron Discharge Device Employing Cavity Resonators, Leon S. Nergaard, 2,452,317, 8 cl
- Electron Discharge Device Utilizing Cavity Resonators, Leon S. Nergaard, 2,452,318, 7 cl
- Method of Regeneration of Electron Discharge Devices, Jiri Stivin, 2,452,401, 7 cl
- Electron Discharge Apparatus using Velocity Modulated Beams, William Thomas Gibson, 2,452,561, 4 cl
- Electric Discharge Tube with Deflection Control, Adrianus Johannes Wilhelmus Marie van Overbeek, 2,453,647, 5 cl
- Electrode Structure, Duryea E. Elmendorf, 2,453,978, 1 cl
- Method of Fabricating Electron Discharge Devices, William A. Hayes, 2,454,318, 6 cl
- Grid Support Structure, Lucien B. Curtis, 2,454,377, 9 cl
- Button Stem for Electron Discharge Devices, Thomas J. Henry, 2,454,384, 10 cl



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- Ultra High Frequency Electric Discharge Device, James M. Lafferty, 2,454,560, 52 cl
- Electric Discharge Tube, Wilhelmus Antonius Roovers, 2,454,572, 4 cl
- Electric Space-discharge Device, Lester H. Smith, 2,454,757, 6 cl
- Ultra High Frequency Device, Wilmer L. Barrow and Walter W. Micher, 2,454,761, 27 cl
- Electron Discharge Apparatus, Christopher Henry Foulkes, 2,454,786, 10 cl
- Vacuum Tube and Mounting Therefor, William Thomas Gibson, 2,454,791, 6 cl
- Cathode Assembly for Electron Discharge Devices, Jack A. Morton and Lawrence J. Speck, 2,455,381, 8 cl
- System for Operating Electric Discharge Tubes, Camillo Masciarelli, 2,455,791, 1 cl
- Improved Electrode and Envelope Structure for Electric Discharge Devices, James E. Beggs, 2,455,851, 13 cl
- Control Grid for Electric Discharge Devices and Method of Making Same, Arthur R. Koch, 2,455,868, 7 cl
- Multielement Electron-discharge Device, Percy L. Spencer, 2,455,957, 7 cl
- Discharge Tube, Theodorus Hagenberg, 2,455,993, 3 cl
- Electric Discharge Device, Joseph A. Wainwright, 2,456,474, 7 cl
- Electrode Structure for Electron Discharge Tubes, Earl K. Smith, 2,456,540, 19 cl
- Electron Discharge Device for Ultra High Frequencies, Don G. Burnside, 2,456,579, 27 cl
- Secondary Electron Emission Tube, Walter Soller, 2,456,654, 6 cl
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*See also*

Capacitors  
Gaseous Tubes  
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*See also*

Propagation of Waves  
Radar

**DYNAMOTORS**

*See* Motors and Generators

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- Electron Microscope, Simon Ramo, 2,420,560, 2 cl
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- Intermittent Motion Device, Philip J. Konkle, 2,415,390, 9 cl
- Electric Welding Current Control, Lawrence J. Puls, 2,415,532, 8 cl
- Electrical Control Circuits, William Henry Bruns, 2,415,457, 19 cl
- Welding Method and Apparatus Therefor, David Sciaky, 2,415,708, 22 cl
- Automatic Means for Controlling the Power Fed to an Oscillator Load, Harry Reifel and Ervin L. Crandell, 2,415,799, 18 cl
- Electromanual Railroad Switch Lock and Signal Circuit Control with Emergency Release, Oscar S. Field and Ralph W. Hewes, 2,416,986, 10 cl
- Control System, Ervin G. Bailey and Paul S. Dickey, 2,417,049, 29 cl
- Electrical Control System, Charles F. Kettering, 2,417,112, 11 cl
- Position Regulation System, Walter Schaelchlin and Erling Frisch, 2,417,784, 10 cl
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- Steering Apparatus, Henry V. Putnam and Merrill G. Leonard, 2,419,164, 4 cl
- Means for Automatically Controlling the Melting of Coating on Continuous Metallic Strip, Robert W. Holman, Gerald R. Meyers and George H. Rendel, 2,419,214, 11 cl
- Apparatus for Detecting and Indicating and/or Measuring Ice Formation on Vehicles, Camille Clare Sprankling Le Clair, 2,419,454, 14 cl
- Amplified Stethoscope, Merle F. Thibos, 2,419,471, 11 cl
- Electric Furnace Control, Ronald F. Davis, 2,419,988, 16 cl

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 Fuel Pressure Responsive Burner Control, Fred B. Aubert, 2,430,040, 11 cl  
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 Mechanism for Controlling Welding Current, Raymond L. Miller, 2,430,989, 5 cl  
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 Balanced Resistance Type Temperature Control Apparatus, David N. Crosthwait, jr. and Everett W. Werts, 2,431,790, 4 cl  
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 Method of and Apparatus for Weld Control, Herbert D. Van Sciver, 2,433,967, 18 cl  
 Weld Control System with Current Compensation, Herbert Doane Van Sciver, 2,434,132, 6 cl  
 Multiple Regulator System, Herbert Ziebolz, 2,434,189, 8 cl  
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- Radio Control Apparatus, Richard C. Marholz, 2,438,760, 8 cl
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- Register Switch Utilizing a Plurality of Discharge Tubes, Martinus den Hertog and Lucien Alfred B. Cabes, 2,447,495, 12 cl
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- Temperature Control Apparatus, Cleophas E. Anderson, 2,448,289, 2 cl
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- Fully Automatic Desurfacing Control System, James H. Bucknam, 2,448,657, 4 cl
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- Generating Electric Traction and Control System, Torsten O. Lillquist, 2,449,399, 12 cl
- Control Apparatus, Harold S. Ackerman, 2,449,538, 5 cl
- Electric Control Circuit, Harold W. Ainsworth, 2,450,216, 4 cl
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Connectors  
Dielectrics and Dielectric Losses  
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Noise  
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Radar Interference

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Radar

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Gain measuring test unit. W. E. Norman. *Il diags Radio & Tv N* 40:61-3 Sept '48  
Graphical power-level computations; reference sheet. D. G. Nutting. *Electronics* 21:122 Aug '48  
Measurement of capacitance, inductance and resistance with the double voltage divider. O. Zinke. *Funk und Ton* no 1 pp 11-20 '47  
Measurements at very high frequencies. D. B. Sinclair. *Tecn Electronica* 2:219-32 Sept, 317-32 Oct '47. In Italian  
Method of determining and monitoring power and impedance at high frequencies. N. F. Morrison and E. L. Younkers. *Proc I.R.E.* 36:212-16 Feb '48  
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**MEASUREMENTS, Circuit Constants—Cont'd.**

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**MEASUREMENTS, Distance**

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Electronic micrometer. M. L. Greenough. *Radio N (Eng. edition)* 38:11 Aug '47

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Accuracy of temperature measurements on coil surfaces. H. Martin Beide and Bernard M. Cain. *Trans AIEE* 66:586-90 '47



## MEASUREMENTS—Cont'd.

Voltage, current, capacitance and resistance measuring devices. *Radio News* 39:112 May '48  
Z-Calipers, A. G. Long. *Electronic Eng* 19:187 June '47

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Accuracy of temperature measurements on coil surfaces. H. Martin Beide and Bernard M. Cain. *Trans AIEE* 66:586-90 '47

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- Heat Detection Device, John Evans, 2,437,085, 13 cl
- Resistance Thermometer, George Keinath, 2,444,410, 2 cl
- Temperature Measuring System with Maximum or Minimum Selector, John P. Boston, 2,444,421, 5 cl
- Temperature Responsive Measuring System, Anthony J. Hornfeck, 2,447,338, 15 cl
- Piezoelectric Temperature Measuring and Control System, Richard K. Blackburn, 2,456,811, 2 cl

*See also***Bolometers****MEASUREMENTS, Voltage, Current and Power**

- Apparatus for measuring power loss in small ferromagnetic samples subject to an alternating magnetic field. K. H. Stewart. *Jour Sci Instr* 24:159-62 June '47
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- High-frequency Thermocouple, Odell G. McAninch, 2,431,953, 4 cl
- Dissipative Load and Wattmeter for Ultra High Frequency Electric Power, Eric Balliol Moullin, 2,435,597, 6 cl
- Rectifying Network for Measuring Alternating Currents, Lionel Jofeh, 2,440,200, 6 cl

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Wattmeters

## MEASUREMENTS, Wave Form and Phase

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Reflectometer for Transmission Lines and Wave Guides, Nathaniel I. Korman, 2,423,390, 14 cl

Nonfrequency-selective Reflectometer, Carl G. Sonthelmer and Nathaniel I. Korman, 2,423,416, 17 cl

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*See also*

Noise  
Phase Meters  
Waveform Analysis  
Wavemeters

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- Linear Speed Indicator, Claude M. Hines, 2,415,492, 1 cl
- Selective Indication Apparatus, Willard P. Place, 2,415,654, 4 cl
- Electrical Measuring Instrument, Frederick J. Lingel, 2,416,835, 5 cl
- Recorder with Magnetically Positioned Indicator, Rew E. Woolley, 2,417,339, 1 cl
- Mass Spectrometer, John A. Hipple, jr., 2,417,797, 2 cl
- Permanent Brake Magnet for Electricity Meters, August Hungerbühler and Woldemar Labhardt, 2,418,261, 3 cl
- Drift Meter, Stephen Doba, jr., 2,418,465, 4 cl
- Magnetic Vane Type Ratiometer, Howard D. Warshaw, 2,419,612, 6 cl
- Electrocardiotachometer, Victor Guillemin, jr., 2,419,682, 6 cl
- Compensated Photoelectric Photometer Circuits, Monroe Hamilton Sweet, 2,420,058, 19 cl
- Indicator Circuit for Signals Below Audibility, Harry J. Woll, 2,420,404, 4 cl
- Magnetometer, Leland L. Antes, 2,420,580, 7 cl
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- Multiunit, Single Scale Oximeter, Bernard Smaller, 2,423,855, 4 cl
- Power Factory Indicating Apparatus, Harold A. Strickland, jr., 2,425,133, 7 cl
- Tachometer Calibrator, Delbert J. Ward, 2,425,289, 26 cl
- Pointer Return Device, Clarence A. de Giers and Abraham Edelman, 2,425,366, 7 cl
- Supporting Means for the Moving Elements of Electrical Indicating Instruments, Howard Butler, 2,425,595, 7 cl
- Magnetic Couple for Flowmeters or the Like, Nathaniel Brewer, 2,425,691, 11 cl
- Means for Reading the Indication of Measuring Instruments, George Clifford Hartley, 2,426,209, 2 cl
- Force Determining Device, Hans D. Isenberg, 2,426,396, 4 cl
- Meter Pivot, Robert D. Hickok and Lawrence D. Montgomery, 2,427,529, 2 cl
- Magnetic Field Strength Indicator, Edwin P. Felch, jr. and Thaddeus Slonczewski, 2,427,666, 21 cl
- Multiple Self-balancing Metering System, Henry M. Schmitt, 2,427,881, 15 cl
- Ratiometer, Earl W. Fleming, 2,428,209, 5 cl
- Meter Control Device and System, Frederick G. Kelly, 2,428,229, 11 cl
- Meter Box, Ernest G. Johansson, 2,429,093, 9 cl
- Means for Metering High-frequency Current, Joseph A. Frabutt, 2,429,614, 6 cl
- Electrical Measuring Instrument, Myron S. Wilson and Francis M. Learned, 2,430,317, 9 cl
- Bus Bar Mounted Ammeter, Stephen S. Grady, 2,430,465, 7 cl
- Electrical Remote-reading Position-indicating Apparatus, Albert G. Conrad and Fritz E. Hiller, 2,430,757, 4 cl
- Gauging Device, Arthur W. Wiseman and J. Willard Welker, 2,431,099, 5 cl
- Phase Indicator, Morris Dichter, 2,431,794, 4 cl
- Spring Controlled Index Registering Photoelectric Exposure Meter, Earl W. Clark, 2,433,648, 3 cl
- Earth Inductor Compass, Henry Lehde, 2,434,324, 1 cl
- Efficiency Meter, John R. Boykin, 2,434,544, 5 cl
- Balanced Alternating Current Excited Vacuum Tube Meter, John M. van Beuren and Elton Conrad, 2,434,822, 4 cl
- Vacuum Tube Meter, John M. van Beuren and Elton Conrad, 2,434,823, 2 cl
- Measuring and Controlling Apparatus, Harry S. Jones, 2,436,720, 22 cl
- Magnetic Field Measuring Device, Robert E. Burroughs, 2,437,374, 1 cl
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Electrical Measuring Instrument, Douglass A. Young, Lawrence J. Lunas and Bernard E. Lenehan, 2,438,027, 16 cl

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Speed Responsive Apparatus, Laurens Hammond and John M. Hanert, 2,439,295, 4 cl

Flickering Beam Photometer, Edwin I. Stearns, jr., 2,439,373, 2 cl

Heartbeat Rate Indicating Apparatus, Ralph E. Sturm, 2,439,495, 27 cl

Electrocardiograph, Paul Traugott, 2,439,640, 7 cl

Volt-ampere Meter, Harry C. Wendt, 2,439,835, 4 cl

Selective Metering System with Supervised Control Device, John L. Bower, 2,440,002, 4 cl

Electrical Hook-on Meter System, Thomas B. Brown, 2,440,244, 9 cl

Magnetic Gradiometer, Charles H. Fay, 2,440,503, 4 cl

Double Concentric Air Gap Permanent Magnet Instrument, Frank Baranowski, jr., 2,440,535, 3 cl

Electronic Comparator Densitometer, Elihu Craig Thomson, 2,442,910, 13 cl

Strain Gauge Center of Gravity and Gross Weight Meter, Peyton M. Magruder and Welcome W. Bender, jr., 2,443,045, 4 cl

Data Transmitting and Indicating System, Walter Koenig, jr., 2,443,623, 8 cl

Manometer, Charles Morgan Wolfe, 2,445,200, 19 cl

Fluxion Meter, Charles A. Hisserich, 2,447,336, 13 cl

Field Control for Transformer Torquemeter Signal Coils, Edmund C. Capuzzi, 2,447,734, 3 cl

Magnetometer, Charles H. Fay, 2,447,849, 3 cl

Magnetometer, John D. Seaver, 2,447,880, 5 cl

Detonation Meter, Raymond G. Piety, 2,448,322, 16 cl

Detonation Meter, Deslonde R. de Boisblanc, 2,448,323, 5 cl

Plural System of Sequentially Responsive Instruments, Robert H. Postal, 2,448,461, 10 cl

Flutter Predicting Apparatus, Maurice A. Biot and Thomas H. Wiancko, 2,448,698, 7 cl

Electric Field or Potential Indicator, Ross Gunn, 2,449,068, 8 cl

Inductive Electrical Indicator with Compensated Damper, Horace M. Norman, 2,451,404, 4 cl

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Impulse Transmitter for Metering Systems, Carl Oman, 2,451,971, 2 cl

Electrical Ratio Meter Circuit, Knud J. Knudsen, 2,452,244, 18 cl

Rectifier Type Measuring Instrument, Harold B. Conant, 2,452,551, 6 cl

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Electrical Measuring Instrument, Ambrose J. Petzinger and Rodney V. Adams, 2,454,201, 11 cl

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Pressure Meter, Frank Rieber, 2,455,021, 7 cl

Dual Electric Instrument, Roswell W. Gilbert, 2,455,167, 2 cl

Accelerometer, High E. Webber, 2,455,394, 16 cl

Ionization Gauge Circuits, Gerhard R. Nagel and Merriam E. Johnson, 2,455,437, 1 cl

Light Responsive Displacement Indicator, David E. Sunstein, 2,455,532, 8 cl

Method of and Apparatus for Measuring the Electrical Properties and Surface Characteristics of Materials, Morris Muskat and Norman D. Coggeshall, 2,456,012, 2 cl

Salinity Metering System, Anton M. Feller, 2,456,117, 4 cl

Electrical Measuring Instrument, Herbert A. Bernreuter, 2,456,171, 13 cl

Mass Spectrometer System, Alfred O. C. Nier and Edward P. Ney, 2,456,426, 12 cl

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Mass Spectrometry, Robert V. Langmuir, 2,457,162, 10 cl

Means and Method of Indicating Acceleration, Charles R. Abraham, 2,457,620, 2 cl

Torque Meter, Edward J. Martin and Walter E. Sargeant, 2,457,700, 12 cl

Electrical Measuring System, Clare M. Rifenbergh, 2,457,727, 11 cl

Electron Multiplier Tube Circuits, Monroe H. Sweet, 2,457,747, 20 cl

*See also*

Analyzers  
 Bolometers  
 Chronometers  
 Frequency Meters and Measurement Systems  
 Galvanometers  
 Instrumentation  
 Measurements  
 Ohmmeters  
 Oscilloscopes and Oscillographs  
 Phase Meters  
 Q Meters  
 Test Equipment  
 Voltmeters  
 Wattmeters  
 Wavemeters

## MICROPHONES

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- Microphone Boom, Byron F. Ryan and Elmer H. Smith, 2,421,437, 15 cl
- Microphone, Roelof Vermeulen, 2,421,820, 9 cl
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- Crystal Microphone, Warren P. Mason and Herbert J. McSkimin, 2,433,383, 6 cl
- Balanced Granular Microphone, Louis R. Burroughs, 2,435,920, 8 cl
- Microphone Assembly, Gabriel M. Giannini, 2,437,088, 5 cl
- Condenser Microphone, Noble E. Brewer, 2,445,821, 7 cl
- Microphone Adapted to be Actuated by a Bone Structure of a User, William R. Blair and Albert E. Woodruff, 2,451,317, 9 cl
- Combination Microphone and Control Means for Dictating Machines, Gustav F. Braun, 2,452,830, 4 cl
- Microphone Pickup and Volume Control, Harry De Armond, 2,455,567, 2 cl
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Electronic Commutator, David Saville Muzzey, Jr. and Robert Du Wayne Miller, 2,417,809, 1 cl

Pulse Modulation Signalling System, Dennis Illingworth Lawson, 2,418,268, 9 cl

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Phase Modulation, Nathaniel I. Korman, 2,430,126, 10 cl

Modulation Limiter, Dudley E. Foster, 2,430,978, 5 cl

System of Light Modulation, Elihu Craig Thomson, 2,432,104, 3 cl

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Automatic Modulation Control Circuit, Kingsbury H. Davis, 2,432,512, 10 cl

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Electric Generator, Claude A. Bowlus, 2,428,781, 6 cl

Waterproof Winding Element, Frank J. Sigmund and William S. Hlavin, 2,428,816, 3 cl

Step-by-Step Motor, Petrus van Santen Kolf, 2,428,882, 9 cl

Single-phase Induction Motor Control, Harold E. Crozier, 2,429,040, 8 cl

Dynamolectric Machine and Driving Connection, James D. McDonald, 2,429,067, 18 cl

Generator or Motor Field Structure, Michael Barlick, 2,429,180, 4 cl

Split Phase Motor Control, Lewis W. Buell, 2,431,025, 3 cl

## MOTORS &amp; Generators, Patents—Cont'd.

- Dynamolectric Machine, Cecil William Haviland Minchin, 2,431,067, 6 cl
- Brushholder Cross Connection, Charles F. Jenkins and Rawdon E. Rambo, 2,431,255, 8 cl
- Synchronous Motor, Arthur H. Sanborn, 2,432,070, 4 cl
- Alternating Current Generator, Edmund R. Morton, 2,432,117, 4 cl
- Winding of Electric Machines, Arthur P. Adamson, 2,432,267, 25 cl
- Self-starting Single-phase Motor, Anders Ossian Jørgensen, 2,432,573, 1 cl
- Reversible Direct-current Motor, Romeo M. Nardone, 2,432,582, 3 cl
- Electromagnetic Motor, Sture Eduard Werner and Anders Ossian Jørgensen, 2,432,600, 5 cl
- Electrical Dynamometer, Aage M. Jacobsen, 2,432,900, 8 cl
- Motor-generator, Lewis C. Packer, 2,433,390, 2 cl
- System for Parallel Operation of Generators, William G. Neild, 2,433,621, 7 cl
- Core for Electrical Devices, John C. Granfield, 2,433,660, 6 cl
- Electronic Brake Control Apparatus, Claude M. Hines, 2,435,310, 8 cl
- Dynamolectric Machine, Joseph Nader, 2,435,692, 4 cl
- Self-propelled Transmitter, Shafi-Uddin Ahmed Choudhury, Leonard Jack Clark and Arthur Hemborough Maggs, 2,436,200, 4 cl
- Self-starting Synchronous Motor, Eugene L. Schellens, 2,436,231, 10 cl
- Alternating Current Motor Starting by Means of Capacitors, Merritt A. Hyde and Ralph E. Marbury, 2,436,302, 2 cl
- Dynamolectric Machine, John D. Miner and Joseph E. Mulheim, 2,436,320, 8 cl
- Dynamolectric Machine, Thomas M. Linville, 2,436,654, 11 cl
- Shaded-pole Synchronous Motor, Alfred F. Welch and John R. Enochs, 2,437,142, 11 cl
- Rotor for Synchronous Electric Motors, Jay Rose, 2,437,922, 1 cl
- Control Mechanism, Paul R. Gley, 2,440,083, 5 cl
- Delayed Start Alternating-current Motor, Olen G. Coffman, 2,440,896, 4 cl
- Electrical Circuit, James Robert Lindsay, 2,441,497, 4 cl
- Power Factor Control, Alpheus J. Dolan, 2,441,995, 7 cl
- Dynamolectric Machine, Paul D. Ross, 2,442,213, 3 cl
- Synchronous Electric Motor, Cyrus Swift, 2,442,316, 12 cl
- Synchronous Induction Motor, William A. Tolson and Carl A. Meneley, 2,442,626, 6 cl
- Electric Motor Construction, Edmund O. Schweitzer, jr., 2,442,782, 6 cl
- Magnetic Rotator for Telescribers, Wallace A. Lauder and Edward F. Cahoon, 2,442,853, 6 cl
- Alternating-current Commutator Dynamolectric Machine, Carl S. Roys, 2,442,861, 10 cl
- Induction Motor, John P. Glass, 2,443,104, 3 cl
- Commutator Brush Holder, Martin J. Neuner, 2,443,266, 10 cl
- Dynamolectric Machine, Clairmont J. Herman, 2,443,455, 11 cl
- Dynamolectric Machine, Clairmont J. Herman, 2,443,456, 5 cl
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- Electrical Brush for High Altitude Operation, Dimiter Ramadanoff, 2,445,003, 10 cl
- Rotary Amplifier, Bernard Litman, 2,445,788, 5 cl
- Shaded Pole Motor, Clarence B. Walworth, jr., 2,445,813, 18 cl
- Breakerless Magneto, Edward F. Wargin and Joseph R. Harkness, 2,446,446, 5 cl
- Submersible Motor Structure, Carl J. Blom, 2,446,521, 10 cl
- Electric Motor Armature, Nils D. Levin, 2,446,708, 9 cl
- Combined Magneto and Alternator, Kenneth A. Harmon, 2,446,761, 3 cl
- Cooling of Electric Machines, Vaino A. Hoover, 2,447,339, 1 cl
- Rotatable Electrical Device, Lawrance W. Wightman, 2,447,383, 2 cl
- Locking-bar Motor-frame Assembly, Arthur E. Goodwin and Leon R. Ludwig, 2,447,645, 2 cl
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- Reversible Single-phase Motor, Omar C. Walley, 2,447,675, 10 cl
- Flywheel Magneto, Albert I. Alstrom and Allen L. Brownlee, 2,447,727, 5 cl
- Commutator, Robert I. Roth, 2,447,819, 2 cl
- Dynamolectric Machine, Harold M. Martin, 2,448,381, 10 cl
- Motor Drive for Brushes and the Like, Gilbert B. Mirus, 2,448,614, 2 cl
- Electric Timing Motor, Joseph Lemire, 2,448,812, 2 cl
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- Surge Generator, Stanley D. Livingston, 2,448,897, 6 cl
- Dynamolectric Machine, Maurice D. Stahl, 2,449,021, 5 cl
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- Method of Manufacturing Commutators, George L. Moeller, 2,449,309, 1 cl
- Fan-cooled Motor, James H. Penney, 2,449,502, 6 cl
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- Brush for Dynamoelectric Machines, Charles A. Thomas, 2,450,698, 3 cl
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- Series Generator-fed Motor System, Stanley A. Bobe, 2,451,909, 4 cl
- Rotary Amplifier, Willard G. Cook, 2,451,921, 10 cl
- Inductor Generator Equipment, Especially for Induction Heating, Francis J. Johns, 2,451,954, 20 cl
- Electric Slip-ring and Brush Connection, Erling M. Knudsen, 2,451,959, 7 cl
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- Electric Motor, Alex Berteau, 2,453,358, 4 cl
- Electric Motor, Alex Berteau, 2,453,359, 1 cl
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- Dynamoelectric Machine, Adolph C. Hugin, 2,453,509, 15 cl
- Dynamoelectric Machine Core Surface Treatment, Robert T. Reardon, 2,453,539, 10 cl
- Synchronous Electric Motor, Emra D. Bacon, 2,454,026, 15 cl
- Dual Generator Ventilation, Clarence A. Atwell and Erich O. Mueller, 2,454,120, 4 cl
- Two-speed Single-phase Motor, Theodore E. M. Carville, 2,454,136, 8 cl
- Electric Motor, Francis H. Gerlach and John D. Miner, jr., 2,454,155, 3 cl
- Frame Structure of Dynamoelectric Machines, Francis J. Johns, 2,454,180, 20 cl
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- Explosion-proof Motor, Donald M. Berges, 2,454,371, 5 cl
- Combination Step-by-step and Induction Motor, Joseph T. McNaney, 2,454,519, 10 cl
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- Brush Mounting for Electric Motors, Eric Bylund, 2,454,909, 3 cl
- Synchronous Electric Motor, Thomas Mungall, sr., 2,455,134, 4 cl
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- Electric Motor, Carlos B. Livers, 2,456,967, 14 cl
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- Dynamoelectric Machine, Andre Valentin, 2,457,014, 5 cl
- Resistance Sine Wave Generator, Avery G. Richardson and Trevor H. Clark, 2,457,178, 3 cl
- Alternating Current Commutator Machine, Frederick W. Baumann, 2,457,517, 10 cl
- Capacity Brush Holder, Joseph M. Brian, 2,457,525, 6 cl
- Electrical Motor, Harrison D. Brailsford, 2,457,637, 7 cl
- Fluidproof Winding Element, Frank J. Sigmund and William S. Hlavin, 2,457,740, 12 cl

*See also*

Generators, Electrostatic  
Motors and Generators, Controls

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- Patents**
- Electric Circuit Controller, Joseph M. Tyrner, 22-907, 15 cl
- Motor Overload Protection, Percy W. Robinson, 2,414,331, 7 cl
- Antiplugging Device, Charles J. Burgy, 2,414,357, 8 cl
- Electric Motor Position Control System, Francis L. Moseley, 2,414,384, 45 cl
- Control System, William H. Formhals and George E. King, 2,414,516, 13 cl
- Speed Regulating System, Walter R. Harris and John Z. Linsenmeyer, 2,414,524, 6 cl
- Torque Regulator, Simon L. Lindbeck, 2,414,539, 5 cl
- Grid Glow Timer Motor Control, Lawrence Pierce, 2,414,553, 4 cl
- Control Device, Lester G. Tubbs, 2,414,569, 4 cl
- Regulating System, Lester G. Tubbs, 2,414,570, 5 cl
- Follow-up Control System, Ernst F. W. Alexander, Martin A. Edwards and Kenneth K. Bowman, 2,414,685, 13 cl
- Follow-up Control System, Martin A. Edwards, 2,414,689, 17 cl
- Positional Control System, Martin A. Edwards, 2,414,690, 13 cl
- Prevention of Interference from Operation of Step-by-Step Motor, Richard F. Post, 2,414,787, 12 cl
- Follow-up Control System, Ernst F. W. Alexander, 2,414,919, 16 cl
- Follow-up Control System, Martin A. Edwards and Hugh M. Ogle, 2,414,936, 9 cl
- Antihunt Electrical Control System, Ralph K. Bonell, 2,415,080, 3 cl
- Motor Control Circuit, Robert H. Hill and Edward M. Claytor, 2,415,170, 18 cl
- Induction Motor Load Relay System, Eric Pell, 2,415,189, 14 cl
- Stabilizing Circuit for Synchronous Motors, Harold L. Barney, 2,415,405, 4 cl
- Electrical Control Apparatus, Richard C. Webb, 2,415,469, 8 cl
- Follow-up System, Ernst F. W. Alexander, 2,416,562, 5 cl
- Follow-up Control System, Sidney Godet, 2,416,579, 5 cl
- Electric Motor Control System, Anton W. Schmitz and Burnette P. Chausse, 2,416,597, 10 cl
- Polyphase Induction Motor Braking System, Eric Pell, 2,417,012, 10 cl
- Control Apparatus for Reversible Motors, Frederick R. Farrow, jr., 2,417,593, 10 cl
- Starter for Electric Motors, Edward P. Smith, 2,417,710, 27 cl
- Plural Series Alternating Current Motor Control System, Lloyd J. Hibbard, 2,417,755, 15 cl
- Auxiliary Device for Stopping Motors, Michel N. Yardeny, Robert Bernas and Leon Kardorf, 2,417,795, 4 cl
- Electric Motor Speed Control Circuits, Paul Glass, 2,417,868, 14 cl
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- Polyphase Speed Synchronizing System for a Plurality of Rotating Machines, Frederick E. Crever, 2,419,058, 14 cl
- Means for Reproducing Motion, Joel D. Peterson and Paul F. Bechberger, 2,419,087, 14 cl
- Motor Control, Francis J. Johns and Herbert W. Howard, 2,419,141, 1 cl
- Electric Motor Control for Series-parallel Operation, Robert M. Strong, 2,419,178, 8 cl
- Position Regulator, Clinton R. Hanna and Edward R. Wolfert, 2,419,210, 10 cl
- Induction Motor Speed Control, Lawrence S. Williams, 2,419,431, 5 cl
- Control System, Thomas H. Petch, jr. and Hugh W. C. Liddiard, 2,419,462, 8 cl

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- Electrical Time Controlled Release Actuator, Russell Sabor, 2,419,659, 8 cl
- Electrical Circuit, James Robert Lindsay, 2,419,686, 3 cl
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- Induction Motor Control System, Harold J. Rathbun, 2,420,192, 14 cl
- Remote Speed Control of Electric Motors, James L. Anderson, 2,420,346, 4 cl
- Motor Governor, George M. Deming, 2,420,360, 6 cl
- Control System, Edward S. Bristol, 2,420,415, 11 cl
- Self-Synchronously Controlled Induction Motor Follow-Up Apparatus, Arthur P. Davis and George Agins, 2,420,467, 21 cl
- Position Control System, Arthur Pattison Davis, 2,420,816, 2 cl
- Thuck Electric Motor Control, Fred H. Bogart, 2,420,855, 7 cl
- "Rectox" Motor Control System, William H. Formhals, 2,420,873, 3 cl
- Regulating System, Harold C. Jenks, 2,420,881, 8 cl
- Variable Voltage Motor Control System, George E. King and William H. Formhals, 2,420,884, 8 cl
- Control System, Omar C. Walley, 2,420,922, 10 cl
- Motor Control for Hoists, John M. Newman, 2,421,080, 8 cl
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- Controller for Induction Motors, Eric Pell, 2,421,431, 7 cl
- Apparatus for Controlling Electric Motors, Orrin W. Livingston, 2,421,632, 22 cl
- Regulating System, Walter Partington, 2,421,645, 10 cl
- Automatic Starting Arrangement for Synchronous Motors, Leslie W. Germany, 2,421,931, 7 cl
- Regulating System, Harold C. Jenks, 2,422,551, 5 cl
- Electronic Control for Motors, Konstanty P. Puchowski, 2,422,567, 22 cl
- Electric Motor Control System, James W. Conklin, 2,423,228, 2 cl
- Electrical Follow-up Motor Control System, John W. Dawson, 2,423,438, 8 cl
- Continuous Balance Motor Control System, Karl Rath, 2,423,617, 8 cl
- Synchronous Motor Control System, Elroy I. Eigenberger, 2,424,227, 6 cl
- Control System for Electric Hoists, Walter Schaechlin and Kurt Mahnke, 2,424,255, 7 cl
- Motor Plugging Brake, Clinton L. Denault, 2,424,306, 10 cl
- Electric Propulsion System, Erling Frisch, 2,424,310, 5 cl
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- Antidisparity Motor Control System, William R. Schall, jr. and Lloyd H. Van Dermark, 2,425,442, 16 cl
- Single-phase Motor Starter Circuit Control, Richard T. Cornelius, 2,425,459, 3 cl
- Motor Starting and Protective Apparatus, John D. Bolesky and Lewis W. Buell, 2,425,668, 6 cl
- Rotor-slot Ventilation for Dynamoelectric Machines, Harry E. Criner and Bennie A. Rose, 2,425,997, 4 cl
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- Ward-Leonard Control System, Walter R. Harris, 2,426,019, 15 cl
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- Electric Motor Controlling Apparatus, Edmund W. Kuhn, 2,426,029, 7 cl
- Dual Motor Control, Charles D. Davidson, 2,426,488, 16 cl
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- Speed Control System, Charles J. Young, 2,427,175, 14 cl
- Generator Protector, Lewis W. Buell, 2,427,440, 2 cl
- Automatic Control Means for Electrical Generating Systems, Henry F. Kaelin, 2,427,462, 5 cl
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- Synchronous Motor Control System, Leonard Freinkel, 2,428,019, 4 cl
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- Electric Motor Control Circuits, Walter P. Albert, Richard C. Davis, Robert H. Gumley and William H. T. Holden, 2,428,767, 11 cl
- Magnetic Motor Starting Switch, James D. Cole, 2,428,784, 7 cl
- Remote-control Means for Direct-current Motors, Edgar Leonard Olsen, 2,428,984, 5 cl
- Control System for Two-phase Induction Motors, James E. Tarr, 2,429,651, 13 cl
- Electronic Control System for Dynamoelectric Machines, Jerry L. Stratton, 2,430,310, 5 cl
- Control for Synchronized Pump Motors, Herman H. Curry, 2,430,917, 3 cl
- Electric Motor Control System for Locomotives, Dana R. Staples and Ralph A. Miller, 2,431,145, 5 cl
- Alternating Current Motor Control, Herbert W. Graybrook, 2,431,242, 2 cl
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- Electronic Current Limiter System for Machine Tool Motors, Frank E. Dudley and Jacob E. Dinger, 2,431,316, 16 cl
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- Motor Control with Emergency Stop, Oswald M. Bundy, 2,431,459, 12 cl
- Method of Starting Synchronous Machines, Robert Keller and Eugen Handschin, 2,431,486, 3 cl
- Electric Valve Control for Dynamoelectric Machines, Elmo E. Moyer and Donald Eldred, 2,431,578, 2 cl
- Multiple Prime Mover Control and Synchronization, George Forrest Drake, 2,431,687, 18 cl
- Follow-up Control System, Benjamin J. Fisher, jr., 2,432,302, 3 cl
- Control System, Willard G. Cook, 2,432,861, 11 cl
- Control System, William H. Formhals and Frank C. Fennell, 2,432,876, 11 cl
- Electrical Regulator, Harold G. Haas, 2,432,883, 7 cl
- Electrical Regulator, Harold G. Haas and Joseph P. Russo, 2,432,884, 1 cl
- Electrode Feed Control System, Cyril C. Levy, 2,432,909, 9 cl
- Stop Motion System for Knitting Machines, Edward Vossen, 2,432,953, 10 cl
- Speed Control for Ward-Leonard Systems, Eivind U. Lassen, 2,433,130, 3 cl
- Controller for Polyphase Alternating Current Motors, Eric Pell and Norbert L. Schmitz, 2,433,153, 8 cl
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- Regulator Circuit, Edward G. Haven, 2,433,665, 3 cl
- Drive Mechanism for Machine Tools, William F. Ridgway, 2,433,786, 12 cl
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- Temperature Responsive Motor Control System, James L. Breese, 2,434,347, 8 cl
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- Electrical Motor Control Apparatus, Henry E. Hartig, 2,435,965, 17 cl
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- Two-phase Motor Control, John H. Andresen, 2,437,064, 10 cl
- Electronic Motor Control Circuits, George A. Waldie, 2,437,140, 1 cl
- Speed Governor, Roscoe R. Lobosco, 2,437,301, 19 cl
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- Machine Tool Control, Anthony J. Hornfeck, 2,437,603, 2 cl
- Electric Motor Speed Controller, Montford Morrison, 2,437,611, 7 cl
- Oscillator Controlled Follow-up System, Charles F. Coake, 2,437,661, 7 cl
- Follow-up Control, Sidney Gódet, 2,437,951, 6 cl
- Induction Motor Control by Electric Brake, Herbert Stirling Carnegie and Harry Dolan, 2,437,996, 10 cl
- Control System, Theodore P. Kinn and David R. Tashjian, 2,438,009, 2 cl
- Electric Motor Control System, George E. King, 2,438,010, 5 cl
- Controller for Motor-driven Printing Presses and Other Machines, Cyril P. Feldhausen and Robert M. Lommen, 2,438,276, 9 cl
- Electric Motor Control System, John Robert Pattee, 2,439,096, 9 cl
- Induction System, Alfred A. Stuart, jr., 2,439,701, 8 cl
- Electrical Control System, John H. Homrighous, 2,439,735, 9 cl
- Alternating Current Generator Fed Motor Control System, Walter Schaelchlin and Herman H. Curry, 2,439,951, 4 cl
- Inverse Feed-back Motor Control, Herbert C. Waterman, 2,440,130, 7 cl
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- Variable Frequency Continuous Balance Motor Control System, Karl Rath, 2,440,486, 8 cl
- Remote Position Control System, Michel N. Yardeny, 2,440,838, 5 cl
- Control for Electric Work and Feed Motors, George E. King, 2,441,155, 9 cl
- Reversible Motor Control System, Knute Arnold Holst, 2,441,632, 1 cl
- Speed Control for Motive Devices, Chester Mott, Alfred F. Chouinard and Robert L. Harding, 2,442,013, 9 cl
- Reversing Control for Capacitor Motors, Samuel Noodleman, 2,442,208, 12 cl
- Antihunt Electrical Control System, Thomas R. Harrison and Lloyd B. Cherry, 2,442,329, 16 cl
- Variable Voltage Drive, Elroy I. Eigenberger, 2,442,346, 11 cl
- Phase and Amplitude Control Circuit for Electronic Function Generators, Maurice Leighton Greenough, 2,442,597, 6 cl
- Remote-controlled Electric Motor System, 2,442,654, 9 cl
- Dual Control Apparatus for Continuous and Pre-selected Multiturn Motion, Michel N. Yardeny, 2,442,739, 9 cl
- Control System, Otto Maag, 2,442,819, 5 cl
- Synchronous Electric Signaling System, Julius Louis Cooper and Philip A. Heist, 2,442,997, 13 cl
- Control System, Martin A. Edwards, 2,443,028, 18 cl
- Speed Ratio Control, Robert D. McComb, 2,443,048, 7 cl
- Work and Feed Motor Control System, George E. King, 2,443,656, 10 cl
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- Regulating System, Homer M. Rustebakke, 2,443,665, 2 cl
- Speed Indicator, George Frank Tagg, 2,443,668, 1 cl
- Control System, Frederick E. Crever, 2,444,248, 6 cl
- Synchronous Motor Control System, Gerhart W. Heumann and Robert B. Taylor, 2,444,253, 5 cl
- Delayed Restarting System for Polyphase Motors, George E. Kaiser, 2,444,295, 7 cl
- Generation System, Winchester R. Wood and Edgar E. Gaudet, 2,444,799, 5 cl
- Induction Motor Damping System, Lloyd B. Cherry, 2,445,289, 10 cl
- Control System for Paper Machine Drives, Rest R. Baker and Walter R. Harris, 2,445,416, 6 cl
- Induction Motor Braking System, Louis W. Herchenroeder and Arden L. Scott, 2,445,430, 7 cl
- Dual-voltage Motor Control System, Earl H. Hornbarger, 2,445,434, 6 cl
- Induction Generator Starting Gear, Lawrence D. Jennings and Joseph Naymik, 2,445,435, 2 cl
- Motor Control System, George E. King, 2,445,439, 6 cl
- Electrical Induction Apparatus, Paul Narbutovskih, 2,445,450, 8 cl
- Dynamic Braking System, Frederick D. Snyder, 2,445,460, 7 cl
- Electric Motor Follow-up Type of Control, Clinton H. Dederick, 2,445,515, 6 cl
- Connecting System for Alternating Current Circuits, Harold T. Seeley, 2,445,804, 3 cl
- Induction Motor Braking System, Frederick D. Snyder, 2,445,806, 2 cl
- Motor Control Switching System and Device Therefor, Daniel J. Bloomberg, Sherman Oaks and Waldon O. Watson, 2,445,820, 9 cl
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- Electric Control System, Burnice D. Bedford, 2,445,991, 4 cl
- Recalibrating Motor Control System, Wallace E. Belcher, jr., 2,446,153, 7 cl
- Electric Proportioning Control Apparatus with Reset, William H. Wannamaker, jr., 2,446,163, 15 cl
- Leveling Support, Willis H. Gille, 2,446,325, 8 cl
- Motor Protective Switching System, Marshall C. Harrold, 2,446,474, 3 cl
- Motor System with Voltage Limiting Feedback, Albert P. Upton, 2,446,563, 10 cl
- Adjustable Switch Operator, John M. Wehner, 2,446,681, 14 cl
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- Photoelectric System for Remote Indication of Angular Position, Waldo H. Kliever, 2,447,344, 16 cl
- Single-phase Motor Control, Harry F. Clark, 2,447,488, 19 cl
- Electric Vehicle Control System, Andrew H. Candee, 2,447,633, 5 cl
- Phase Control System for Vapor Electric Converters, John P. Ferguson, 2,447,642, 7 cl
- Ship Propulsion Control, Erling Frisch and Marion R. Lory, 2,447,643, 21 cl
- Regulating System, Erling Frisch, 2,447,644, 5 cl
- Torque Control System for Electric Reel Motors, Alonzo F. Kenyon, 2,447,654, 8 cl
- Regulating System, Herbert S. Kirschbaum, 2,447,655, 4 cl
- Dynamic Braking System for Series Motors, George R. Purifoy, 2,447,666, 5 cl
- Control System, William F. Eames, 2,447,935, 20 cl
- Self-synchronous Controlled Motor System, William Christian Grabau, 2,448,025, 6 cl
- Control System for Variable-speed Alternating-current Motors, Jurt Mahnke and James W. York, 2,448,040, 9 cl
- Apparatus for Electric Generator Current Control and Voltage Regulation, Harold Edmund Merrifield, 2,448,068, 3 cl
- Control System for Engine Generator Units, Dana R. Staples and John J. Stamm, 2,448,284, 5 cl
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- Electrical Instrument Follow-up System, Edwin C. Burdick, 2,448,575, 11 cl
- Aided Tracking Aiming Mechanism, Peter J. McLaren, 2,448,612, 9 cl
- Process and Apparatus for Monitoring Synchronizing Generators, Harold Edward Beste, 2,448,762, 10 cl
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Motor System Using Voltage Regulating Transformer, Joseph G. Sola, 2,448,925, 8 cl  
Control System for Synchronous Motors, Leonard Freinkel, 2,449,065, 6 cl  
Method of and Apparatus for Setting Self-Synchronous Machines on Zero, George Alfred Muir, 2,449,083, 7 cl  
Braking Device for Electric Motors, Bernard Max Hayman, 2,449,223, 6 cl  
Circuit Control Means for Motor Vehicles, Everett E. Summersett, 2,449,338, 3 cl  
Electronic Control Circuit, George A. Waldie, 2,449,797, 2 cl  
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Traction Motor Control System, Franklin H. Pritchard, 2,450,300, 11 cl  
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Letoff for Looms, Albert Palmer and Victor F. Sepavich, 2,450,484, 26 cl  
Control Means for Motor-driven Letoffs, Albert Palmer and Victor F. Sepavich, 2,450,485, 5 cl  
Traction Motor Control System, Harold S. Ogden, 2,451,237, 15 cl  
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Control for Motor-driven Apparatus, John M. Newman, 2,452,257, 9 cl  
Electric Motor Control Apparatus, David L. Markusen, 2,452,311, 5 cl  
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Electric Motor Control System, Karl A. Lang, 2,452,769, 9 cl  
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System of Generator Regulation, William J. Rady, 2,453,341, 6 cl  
Regulator System, Herbert Ziebolz, 2,453,563, 4 cl  
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Induction Motor Starting Relay, Robert E. Prouty, Ralph E. Bish and Richard L. Adams, 2,453,720, 17 cl  
Self-synchronous System for Reproducing Motion or Position, Emmett P. Rodemann, 2,453,815, 10 cl  
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Bus Transfer System, Earl B. Ankenman, 2,454,117, 9 cl  
Control System, Edwin L. Harder, 2,454,164, 6 cl  
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Electrical Control System, Herman H. Curry, 2,454,778, 14 cl  
Single-phase Induction-motor Control System, Harry B. Fuge, 2,454,968, 9 cl  
Electric Motor Control Apparatus, Raymond H. Griest, 2,455,247, 3 cl  
Control of Alternating Current Motors, Richard B. Hunter, 2,455,491, 14 cl  
Generator Control System, Anthony H. Lamb, 2,456,199, 7 cl  
Protective System for Electric Motors, Harold S. Ogden, 2,456,427, 9 cl  
Electronic Tube Motor Device, Montford Morrison, 2,456,441, 8 cl  
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*See also*

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 Relays  
 Remote Control  
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*See also*

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 Ground Speed Indicator, Earl I. Anderson and Allen Barco, 2,422,064, 5 cl  
 Radio Navigational System, Herbert Fletcher, 2,423,305, 4 cl  
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- Automatic Dead Reckoning Device, Robert O. Ripere, 2,425,346, 14 cl
- Remote Indicating Magnetic Compass System, Allen T. Sinks, 2,426,470, 9 cl
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- Electrical Guidance System for Surface Vessels, Edward N. Dingley, jr., 2,428,360, 2 cl
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- Radio Navigation System, George D. Hulst, jr., 2,430,570, 25 cl
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- Course Softening System, Thomas M. Ferrill, jr., 2,439,044, 20 cl
- Radio-frequency Navigation System, William J. O'Brien, 2,440,755, 8 cl
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 Cathode-ray Tube Circuits  
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See also

- semi-conductors  
 vacuum Tubes, Electron Multipliers  
 electron Emission

**PHOTOELECTRIC Tubes, Control Uses**

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**See also**

Antenna Calculations  
Electromagnetic Fields  
Mathematics  
Physics

**PROPAGATION of Waves, Ground Wave**

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- Internal-fault Selective Reclosing-relay, John L. Blackburn, 2,416,677, 4 cl
- Flame Failure Safeguard, Elihu Craig Thomson, 2,416,781, 14 cl
- Sealing Means for Submersible Electric Motor-pump Units, Jack E. Piccardo, 2,418,194, 4 cl

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- Protective Apparatus for Polyphase Alternating Current Units, Jacob Daniel Lewis, Mathew Troster, jr. and Norman William Sederberg, 2,419,269, 13 cl
- Electrical Protective Alarm System, Herbert M. Laford, 2,419,957, 8 cl
- Fusible Fire Alarm, Frank W. Jackson, 2,420,481, 3 cl
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- Protection of Alternating Current Electric Power Systems, Philip H. Light, 2,421,630, 9 cl
- Pank Mounted Lightning Arrester, Konstantin K. Paluev, 2,421,644, 5 cl
- Approach Protective System, Glenn H. Browning, 2,421,771, 10 cl
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- Protective Device for Tube Envelopes, Norman B. Krim, 2,424,990, 10 cl
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- Protective Means for Carrier Wave Transmitting Systems, David H. Peckham, 2,426,579, 14 cl
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- Detecting and Alarm System, Clyde W. Baird, 2,435,996, 10 cl
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- Electrical Burglar Alarm System, Francis C. W. Stelter, 2,438,076, 3 cl
- Pressure Indicator, Carl E. Grinstead and Robert N. Frawley, 2,439,047, 4 cl
- Protective Arrangement for Translating Devices, William N. Gittings, 2,439,247, 7 cl
- Warning Signal System for Refrigerators, Roscoe D. Bean, 2,439,331, 4 cl
- Automatic Fire Alarm System, Thomas J. Tate, 2,439,502, 1 cl
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- Receiver Protective Device, Walter Hausz, 2,439,656, 7 cl
- Current Limiting Fuse, Carl L. Schuck, 2,439,674, 2 cl
- Automatic and Manual Control System for Circuit Breakers, Myron J. Brown, 2,439,920, 13 cl
- Protective Fuse for Electrical Apparatus Immersed in a Dielectric Liquid, John K. Hodnette, 2,439,931, 3 cl
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- Interlocking Means for Electrical Testing Apparatus or the Like, Irvin W. Folk, 2,440,505, 5 cl
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- Supervisory Alarm System for Telephone Interrupters, Kurt Mullerheim, 2,442,427, 6 cl
- Radio Protective System, Winfield R. Koch, 2,442,695, 10 cl
- Traffic Protection Apparatus, Henry A. Talbert, 2,442,735, 7 cl
- Slow Down Signal for Automobiles, James D. Chessrown, 2,442,971, 5 cl
- Electric Arc Extinguishing Apparatus, Nicholas F. Arone and Eugene W. Boehne, 2,443,017, 16 cl
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- Dust Guard for Electric Cord Take-up Reels, Bernard J. Tamarin, 2,443,701, 1 cl
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- Interlocking Mechanism, Charles H. Bayer, 2,444,240, 7 cl
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- Vacuum Tube Lock, Kurt Emde, 2,449,646, 1 cl
- Electrical Protective Device, Harold Robert Treece and Ralph Alan Wilkinson, 2,449,961, 5 cl
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- pparatus for and Method of Pulse Limitation and Amplification, Irving Wolff, 2,423,671, 7 cl

- Pulse Control System, Donald E. Norgaard, 2,427,687, 5 cl
- Electric Impulse Receiving and Timing Arrangement, George Clifford Hartley and William John Reynolds, 2,428,023, 12 cl
- Pulse Delay Circuits, Max I. Rothman and Walter H. Neiman, 2,429,844, 3 cl
- Electrical Impulse Sending Device, Gerald Deakin, 2,434,910, 11 cl
- Pulse Amplitude Selective System, Donald D. Grieg, 2,434,921, 21 cl
- Pulse Amplitude Selector System, Donald D. Grieg, 2,434,922, 23 cl
- Electric Pulse Delay Circuit, Bernard M. Oliver, 2,435,598, 18 cl
- Pulse Communication, Philip J. Reich, 2,437,970, 5 cl
- Pulsed Network, Kenneth J. R. Wilkinson, 2,443,488, 7 cl
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Pulse Generator, Elmo E. Crump and Lawrence G Kersta, 2,419,201, 15 cl

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Impulse Generating System, Gerard J. Lehmann, 2,419,574, 4 cl

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Pulse Generator, Walter N. Dean, 2,435,958, 10 cl  
Pulse Generator, Jack M. Manley and Eugene Peterson, 2,436,395, 7 cl

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Means for Supplying Pulses of Modulated Current, Paul N. Bossart, 2,437,315, 14 cl

Pulse Generator, Walter A. Knoop, jr., 2,438,706, 4 cl

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- Scotch receiver includes a lamp. Homer L. Davidson. Radio Craft 19:35 Oct '47
- Selecting components for broadcast receivers. G. D. Reynolds. Electronic Eng (London) 20:307-13 Oct '48
- Ser-cuits—analysis of console type receivers. Service 16:22 Oct '47
- Servicing of radio and television receivers. R. C. G. Williams. Jour Inst Elec Eng 94 pt 1:156-8 Mar '47
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- Radio Receiver, Emile Labin, 2,416,328, 10 cl
- Multi-channel Receiving System, Emile Labin and Donald D. Grieg, 2,416,330, 5 cl
- Radio Receiver, Nathan Marchand, 2,416,336, 6 cl
- Radio Receiver System, Harold H. Beverage, 2,416,791, 11 cl
- Phase or Amplitude Modulation Receiver, Murray G. Crosby, 2,416,795, 6 cl
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- Signal Detection System, Warren H. Bliss and J. Ernest Smith, 2,418,750, 20 cl
- Wave Translator, Donald D. Grieg, 2,419,547, 14 cl
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- Power Reduction Circuit for Radio Receivers, George M. Brown, 2,420,518, 4 cl
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- Radio Reception Means, Frank C. Strebe and William L. Comyns, 2,422,374, 6 cl
- Control System for Radio Receivers, Carl Edward Atkins, 2,424,216, 13 cl
- Pulse Receiving System, Clarence W. Hansell, 2,424,274, 8 cl
- Permeability-tuned Short-wave Spread-band Receiver, W. Francis Sands, 2,424,506, 9 cl
- Radiant-energy Receiver, Gilbert C. Larson, 2,425,102, 5 cl
- Control Arrangement for Discharge Devices, Leslie Brakel and Robert T. Thompson, 2,428,008, 6 cl
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- Radiated-signal Receiving System, Harold M. Lewis, 2,430,296, 21 cl
- Radio Alarm and Two-way Telephone System, Irving F. Byrnes, 2,431,167, 7 cl
- Correction of Transmission Errors, Gabriel M. Giannini, 2,432,003, 5 cl
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- Multiband Radio Receiver, Alfred C. Matthews, 2,441,028, 5 cl
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- Radio Receiver or Amplifier Arranged to be Fed from Direct Current Mains, 2,449,685, 3 cl
- Receiver for Pulse Waves, Paul F. M. Gloess, 2,449,985, 3 cl
- Radio Receiver Circuit Arrangement, Jan van der Heem, 2,452,340, 4 cl
- Interference Reducing Radio Receiver, Gerard J. Lehmann, 2,454,814, 5 cl

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- Frequency Modulation Receivers  
 Microwaves, Reception  
 Reception  
 Television Receivers

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 Modern 1-tuber. Harry Winfield. Radio Craft 10:42 Dec '47  
 Noise-free code reception. D. L. Hings. il diags Electronics 20:125-7 June '47  
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 Ser-cuits—ham receivers. Service. 16:34 Mar '47  
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- Antenna Calculations  
 Manufacturing Techniques

**RECEIVERS, Panoramic**

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- Panoramic reception. S. A. W. Jolliffe and J. D. Peat. Marconi Rev 12:27-33 Jan to Mar '49

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- See also*

Frequency Monitors  
Radar

**RECEIVERS, Phono-Radio**

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- Experimental volume expander and scratch suppressor. C. G. McProud. Audio Eng 31:13-15, 41 Aug 1 '47
- How to modernize old radio phonographs. Walter I. Fischman. Radio Maint 4:16-17, 47 Sept '48
- New phonograph pickup principle. A. E. Hayes, jr. Audio Eng 31:14 Oct '47
- New synchronous motor for radio-phonograph combination. H. H. Everett. il Radio N 37:84+ Feb '47
- Phono amplifier and power supply. il diag Radio N 38:78+ Aug '47
- Two-tube phono amplifier. H. Keroes. il diag Radio N 39:45 May '48
- Unique radio-phonograph mechanism: Philco 1201. il diag Machine Design 19:138-9 May '47

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Phonographs

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- Circuit analyses of current types of battery and three-way portables using tube and selenium-rectifying systems. Service 17:28 July '48
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- Four-watt portable for all-around use. Lyman E. Greenlee. Radio Electronics 20:36 Oct '48
- Home-made midget receiver. L. G. Woollett. Electronic Eng 18:352 Nov '46
- Improving the midget radio. John Kwietiskas. Radio Craft 18:51 July '47
- Miniature all-wave 3-tube receiver. W. E. Miller. il diag Radio N 37:44-5 Mar '47
- Novel two-tube picnic portable. G. A. Marsh. diag Radio N 39:132 May '48
- Personal radio features plastics; transparent polystyrene face plate. il Mod Plastics 25:95 Jan '48
- Pocket ear; pocket type radio with tube for conducting sound into ear; used by television stage directors in studio operation. J. L. Hathaway and W. Hotine. il diags RCA Rev 8:139-46 Mar '47
- Portable FM/AM receiver. Alvin A. Baer. Service 16:16 Oct '47

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- Apparatus for Supporting Portable Radio Sets, Donald H. Mitchell, 2,421,516, 15 cl
- Portable Radio Receiver, Gilbert E. Gustafson, 2,447,576, 2 cl

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- Admiral cartridge circuit details, crystal pickup compensation circuits, power microphones, radio-phonograph switch applications, speech equalization methods. (Servicing helps column). P. M. Randolph. Service 17:31 July '48
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- Alignment methods. Irving Dlugatch. Radio Maint 14-16 Dec '47
- Amplifier, absorption-loop installation, hum, checking coils for electrolysis. (Servicing helps column). Service 16:18 Mar '47
- Amplifier checking by signal injection. Rufus P. Turner. Radio Ser Deal 9:11-12, 40 June '48
- Analysis of Admiral model 6RT44-7B1. Radio Craft 18:40 Apr '47
- Analysis of AirKing model 4604, Learadio model 565 and others. Radio Ser Deal 8:23 May '47
- Analysis of automatic 614X, 616X, electronic labs intercom model 2660 and others. Radio Ser Deal 8:20 Mar '47
- Analysis of Buick model 980744-5. J. Richard Johnson. Radio Maint 3:42 Sept '47
- Analysis of coil checkers. Radio Ser Deal 8:20 Apr '47
- Analysis of Emerson 505. Radio Ser Deal 8:32 Jan '47
- Analysis of Farnsworth GK 100 series, RCA model 65BR9. Radio Ser Deal 8:22 Dec '47
- Analysis of GE farm radio model 280. Radio Craft 18:36 May '47
- Analysis of GE models 219, 20, 21, RCA 612V series and others. Radio Ser Deal 8:22 Aug '47
- Analysis of GE model 303. Radio Maint 3:18 Oct '47
- Analysis of General Tel. 51, Grunow model 701 (chassis 7A), Packard-Philco auto radio model P-1835, Philco Model 938 K auto radio, Philco model 41-608, Sonora Model WAU 243. P. M. Randolph. (Servicing helps column). Service 17:26 Sept '48
- Analysis of Hoffman 108 ST. Radio Ser Deal 8:32 Jan '47
- Analysis of Magnavox CR-189. Radio Ser Deal 8: 20 Sept '47
- Analysis of Motorola auto radio 1946 CR-6. Radio Craft 18:38 June '47
- Analysis of Motorola 77FM21 FM-AM combination. R. F. Scott. Radio Craft 19:30 Mar '48

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- Analysis of National NC-173. Radio Craft 19:32 Oct '47
- Analysis of Sentinel model 286 PR. Radio Craft 19:36 Nov '47
- Analysis of Teletone Series D. Radio Ser Deal 8:14 Feb '47
- Analysis of Thordarson t-31W50 amplifier, Packard-Philco model P-4635 and others. Radio Ser Deal 8:24 Oct '47
- Analysis of Westinghouse model H-138, Crosley models 106-CP and 106-CS, and others. Radio Ser Deal 8:34 Apr '47
- Application of the 'scope in AF servicing. Alvin A. Baer. Service 17:24 Apr '48
- Auto radio installation and servicing. Service 16:16 Sept '47
- Auto receiver servicing. Willard Moody. Service 16:18 Feb '47
- Birth of a service note. Harry D. Hooton. Radio News 39:50 Mar '48
- Block diagrams. Radio Ser Deal 8:21 Sept '47
- Buffer capacitor reference circuits, automobile battery ground data, vibrator specification information, auto service hints, 'scope in auto servicing. (Servicing helps column). P. M. Randolph. Service 17:24 May '48
- Cathode followers, replacing E-M with PM speakers, TV antenna installation notes. (Servicing helps column). Service 16:26 Sept '47
- Circuit analysis. J. Richard Johnson. Radio Maint 3:14, 24, 28 June '47
- Circuit analysis—New circuit designs. J. Richard Johnson. Radio Maint 3:24 May '47
- Clock movements for program selection and on-off control. Picture tube parts. Service notes on Philco, RCA, Detrola, Emerson, and Stromberg-Carlson receivers. Vibrator testing with a 'scope. (Servicing helps column). P. M. Randolph. Service 17:31 Oct '48
- Converting battery sets for AC/DC. Service 16:32 Aug '47
- Converting battery sets for AC line service, TV RF power supplies, crystal pickup circuits. (Servicing helps column). Service 16:31 Oct '47
- Converting farm sets for AC. Alfred Shortcut. Radio Craft 19:44 Aug '48
- Causes for modulation hum, distortion in phase inverters, magnetic tape recorders, auto radio servicing notes. (Servicing helps column). Service 16:31 Dec '47
- Efficient servicing. J. E. Cunningham. Radio News 40:45 Sept '48
- Efficient test and repair bench. C. A. Brown. Radio Craft 18:22 May '47
- Electronamic tube tester. L. S. Rich. Radio Ser Dealer 8:19 Dec '47
- Engineering approach in servicing. Frederick E. Bartholy. Service 17:16 Feb '48
- English repair methods. Eugene A. Conklin. Radio Craft 18:56 Sept '47
- FM alignment with a signal generator and a VTVM. G. N. Goldberger. Service 16:20 Aug '47
- FM alignment with an R-F signal generator and oscilloscope. Service 16:16 May '47
- FM/AM chassis for custom installations. Service 16:15 Sept '47
- FM receiver alignment. Irving Abend. Radio N 38:66 Oct '47
- FM receiver servicing technique. Milton S. Kiver. Radio Craft 19:30 June '48
- FM servicing. Willard Moody. Service 16:20 Mar '47
- Gremlins—or intermittents? John T. Frye. Radio Maint 3:10 Oct '47
- High speed servicing. Arthur Liebscher. Radio Ser Deal 9:14-15, 29-30 Feb '48
- Hum, alignment problems (squealing), vibrator servicing. (Servicing helps column). Frank C. Keene. Service 16:20 Jan '47
- King of tube checkers. Radio Craft 18:22 May '47
- Make a test unit for your service kit. H. Leeper. Radio News 40:41 July '48
- Mixer inputs with twin triodes, pentodes and cascaded circuits for up to eight inputs. (Servicing helps column). Charles P. Elliott. Service 17:28 Jan '48
- Multiple inputs in P.A. systems. (Servicing helps column). Service 16:48 July '47
- New French radio parts. E. Aisberg. Radio Craft 18:40 May '47
- Notes on servicing. Harry A. Nickerson. Radio Craft 18:58 July '47
- Ohm's law in radio servicing. Willard Moody. Radio Maint 4:12 July '48
- Old tube tester is still useful. H. Leeper. Radio Craft 19:36 Oct '47
- Open and close cases—Locating shorts and opens. John T. Frye. Radio Maint 3:6 May '47
- Oscillators and power supply troubles. C. C. Roberts. Radio Ser Deal 8:11 May '47
- Oscillator coil tracking, FM antenna installations, replacing electrodynamic with PM speakers and receivers. (Servicing helps column). Service 16:13 Apr '47
- Pepping up midgets. K. E. Stewart. Radio Craft 19:38 Sept '48
- Practical radio course. Alfred A. Ghirardi. Radio N pt 51-53 37: Jan-May '47; pt 54-57 38: July-Dec '47; pt 58-60 39: Jan-Mar '48
- Quick fault finding. H. E. Leeper. Radio Craft 18:29 Aug '47
- Radio L. L. Synchrovox 645A receiver. Radio en France no 2 pp 23-5 '47
- Radio performance tests. Radio Electronics 20:28 Nov '48
- Radio servicing hints. Fred A. Orth. Radio News 40:60 Aug '48
- Radio set and service review. Radio Craft 18:24 Aug '47
- Replacing the rectifier. Radio Craft 18:64 Jan '47
- Reviewing the Hallicrafters S-40. Radio Craft 18:28 Apr '47
- Rural radio servicing. Jack Darr. Radio Maint 3:8-11, 20-28 Dec '47
- Schematic diagrams of popular receivers. Radio Ser Deal 9:26 Jan '48; 9:21 Feb '48; 9:28 Mar '48; 9:26 Apr '48; 9:34 May '48; 9:25 June '48; 9:20 July '48; 9:18 Aug '48; 9:26 Sept '48; 9:28 Oct '48; 9:28 Nov '48

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- Service shop tools. Alfred A. Ghirardi. Service 17:38 June '48
- Servicing AC/DC models, old and new. Jack Darr. Service 17:10 July '48
- Servicing a noisy set. H. A. Nickerson. Radio Electronics 20:26 Nov '48
- Servicing by ear. John T. Frye. Radio Maint 3:12-14, 24-25 Jan '47
- Servicing farm radios. Harry Leeper. Radio Craft 19:50 July '48
- Servicing in the desert. W. Bowen. Service 16:15 Oct '47
- Servicing old timers. G. L. P. Meredith. Service 16:20 Apr '47
- Servicing taxicab radio. Samuel Freedman. Service 17:10 Dec '48
- Servicing two-way cab radio. T. M. Alanen. Service 16:12 Dec '47
- Servicing 3-way portable receivers. Willard Moody. Radio Ser Deal 8:22 June '47
- Servicing with the vacuum tube voltmeter. J. E. Cunningham. Radio Maint 4:18-19, 44-45 Sept '48
- Signal tracer, record changer repair. (Servicing helps column). P. M. Randolph. Service 17:28 Feb '48
- Simple tracer-amplifier. Homer L. Davidson. Radio Craft 19:32 Aug '48
- Simple troubleshooting aid. Salvatore J. Mondello. Radio N 38:88 Sept '47
- Simplified set checking. Rufus Turner. Radio Ser Deal 8:9 June '47
- "Sparx" at work—Serviceman's tool. Radio Ser Deal 8:25 Apr '47
- Speedy AC-DC servicing. John Bowles. Radio Craft 18:28 May '47
- Substitution boxes. Rufus P. Turner. Radio Ser Deal 8:13-15 Sept '47
- Testing of communication type radio receivers. W. J. Bray and W. R. H. Lowry. Jour Inst Elec Eng 94 pt 3A: no 12 pp 313-321 '47
- This radio services itself. Roberto Brenta. Radio Craft 19:26 Dec '47
- Tips on soldering. R. W. Kise. Service 17:38 Mar '48
- Tools and service aids for the new service shop. Alfred A. Ghirardi. Service 16:24 Jan '47
- Tools and service aids for the new service shop. Alfred A. Ghirardi. Service 16:48 Oct '47
- Training students in receiver servicing. G. N. Patchett. Electronic Eng 15:390-91 Feb '43
- Troubleshooting receiver distortion. K. E. Stewart. Radio Maint pt 1 4:16 May '48
- Troubleshooting receiver distortion. K. E. Stewart. Radio Maint 4:24 June '48
- Universal-type speaker test unit. Connecting antenna-cathode type volume controls. Use of emergency-type signal tracer. (Servicing helps column). Service 16:30 May '47
- Use of the isolation transformer, application of resistors for checking series-connected filament circuits in AC/DC receivers, servicing notes on auto sets. (Servicing helps column). Service 16:31 Nov '47

- Using a 'scope in servicing. Radio Ser Deal 8:16 Apr '47
- Using a signal tracer for capacity checking, code practice and auto set testing. Service notes on Philco, Admiral and Chevrolet receivers. (Servicing helps column). P. M. Randolph. Service 17:22 Aug '48
- Using scopes for radio servicing. Douglas Carpenter. Radio Ser Deal 9:21-2 Apr '48
- Wireless servicing manual. W. T. Cocking. Illife and Sons. London 328 pp 10s 6d

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- Method of Lining Up Uncontrolled Tuned Radio Apparatus, Sidney Y. White, 2,422,381, 2 cl
- System for Aligning Receiver and Transmitter Circuits, John F. Byrne, 2,447,392, 1 cl

**See also**

- Reception, Testing  
Television Servicing

**RECEIVERS, Short-Wave**

- Any DX today? observation of maximum usable frequency. D. W. Heightman. QST 32:25-31+ Jan '48
- "Halo" for six meters. F. H. Stites. diags il QST 31:24-7 Oct '47
- High frequency reception in strong noise fields. I. M. Bickford. diag Radio N 39:168 Apr '48
- Improved receiver for two meters. C. F. Hadlock. QST 31:35-40 Mar '47
- Low frequency converter. R. C. Amundsen. il diag Radio N 40:49+ July '46
- Measurement of the sensitivity of receivers for short waves. Hochfrequenztech u. Elektroakust 59:143-44 '42
- 10 meter converter requires no tuning. Daniel Schulman and Nathan G. Dorfman. Radio Craft 19:30 Oct '47
- 1-10 meter receiver. I. Queen. Radio Craft 19:23 Feb '48
- New 6-10-11 meter converter. F. Lester. il diag Radio N 38:51-3 Aug '47
- Simple converter-preselector. F. C. Jones. diags CQ 3:31-4 June '47
- Simple 10-meter converter. C. W. Roeschke. il diag Radio N 37:56 Feb '47
- Simplicity in a converter; makes possible coverage of 6, 10, and 11 meter bands. C. W. Roeschke. il diags Radio N 39:54-5+ Mar '48
- Simplified single-sideband reception. O. G. Villard, jr. il diags Electronics 21:82-5 May '48
- Ten-meter converter. G. F. Masin. il diags Radio N 39:52-3 Jan '48
- Three-tube short wave receiver. H. L. Davidson. il diags Radio N 37:58-9 Apr '47
- Two-meter converter. A. D. Middleton. il diags Radio N 39:70-1+ Apr '48

**RECEIVERS, Superheterodyne**

- Abacs for the calculation of the oscillatory circuits of superheterodynes. R. Bussat. Radio France pp 14-16 Dec '47
- Additive and multiplicative mixing. J. W. Whitehead. Wireless World 53:486 Dec '47

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Solenoid, Louis Fuchs, 2,415,739, 4 cl

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Electric Contact Device, Albert Wassmer, 2,416,970, 1 cl

Mercury Switch Relay, Carl H. Larson, 2,417,763, 14 cl

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Counting Relay System, Fullerton S. Kinhead, 2,417,831, 16 cl

Solenoid, John C. Koonz, La Vern Edward Quinnell and Ralph H. Severance, 2,417,832, 5 cl

Contact Element, Philip L. Alger, 2,418,810, 1 cl

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Sequence Relay, Hazen C. Pratt, 2,419,032, 10 cl

Electrostatic Relay, Myron A. Bostwick, 2,419,111, 2 cl

Time Pulsing Relay Device, Louis A. Scholz, 2,419,232, 8 cl

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- Transmission System, Martin Silver, 2,419,601, 3 cl  
 Document Operated Switch for Photographic Copying Cameras, John K. Holbrook, 2,419,836, 1 cl  
 Carrier Current Protective Relaying System, Andrew J. McConnell, 2,419,904, 13 cl  
 Circuit Controlling Means, Herbert L. Bone, 2,420,065, 5 cl  
 Circuit Controlling Device, Hubert T. Sparrow and Benjamin Cyr, 2,420,105, 13 cl  
 Relay Type Cross-totalizing Device for Record Card Data, Arthur H. Dickinson and John N. Wheeler, 2,420,167, 7 cl  
 Loss-of-load Relaying, Shirley L. Goldsborough and Harvey P. Sleeper, 2,420,878, 23 cl  
 Electromagnetic Relay Circuit, Bertram Morton Hadfield, 2,421,148, 5 cl  
 Electromagnetic Switch, Harold E. Schleicher, 2,421,290, 8 cl  
 Relay, Theodore Obszarny, 2,421,641, 7 cl  
 Electromagnet Relay Construction, Theodore Obszarny, 2,421,642, 3 cl  
 Balanced Relay, Robert S. Curry, jr., John H. Horman, August C. Kircher and Herbert Winsker, 2,422,396, 5 cl  
 Electromagnetic Relay, Fredric E. Wood, 2,422,764, 4 cl  
 Dynamically Balanced Relay, Alfred Skrobisch, 2,422,861, 6 cl  
 Time Delay Relay, Robert C. Ring, 2,422,986, 5 cl  
 Electric Relay, Osborne I. Price, 2,423,116, 6 cl  
 Electromagnetic Relay, William Henry Drury Yule, 2,423,135, 12 cl  
 Electromagnetic Relay, Clement M. Theillaumas, 2,423,126, 5 cl  
 Overload Relay, George C. Armstrong, 2,424,297, 12 cl  
 Electrical Signaling System, Amedee A. C. Heron, 2,424,566, 11 cl  
 Sensitive Relay, Charles P. Fisher, 2,425,092, 16 cl  
 Split-phase Relay, Alfred H. Faulkner, 2,425,179, 8 cl  
 Magnetic Relay, Vincent A. Johnson and Fredric E. Wood, 2,425,190, 9 cl  
 Relay Structure, Fredric E. Wood, 2,425,275, 4 cl  
 Relay with Adjustable Armature Mounting, Frank X. Rees, 2,425,562, 4 cl  
 Shockproof Contactor and Relay, Walter Schaelchlin and Delbert Ellis, 2,425,648, 17 cl  
 Impedance Type Distance Relay, Shirley L. Goldsborough, 2,425,735, 2 cl  
 Impedance Type Distance Relay, William K. Sonnemann, 2,425,759, 5 cl  
 Distance-type Product-responsive Relay, Shirley L. Goldsborough, 2,426,013, 2 cl  
 Distance Type Product Responsive Relay, Bernard E. Lenehan, 2,426,033, 9 cl  
 Distance-type Relay with Current-compensated Voltage Restraint, William K. Sonnemann, 2,426,062, 4 cl  
 Electromagnetic Relay, Stanley Herbert Towner, 2,426,253, 5 cl  
 Switching System, Aloysius J. Busch, 2,426,595, 6 cl  
 Electrical Relay, Andrew Hufnagel, 2,426,970, 4 cl  
 Electric Valve Protective System, Samuel R. Durand, 2,427,450, 10 cl  
 Adjustable-pull Solenoid, Leland H. Snyder, 2,427,630, 6 cl  
 Polarized Direct-current Contactor, Donald W. Exner, 2,427,719, 4 cl  
 Capacitor Closed Relay having Retentive Magnetic Circuit, Frederick D. Snyder, 2,427,750, 2 cl  
 Capacitor Closed Relay having Reduced Holding Current, Frederick D. Snyder, 2,427,751, 1 cl  
 Electromagnetic Regulator, William G. Neld, 2,427,806, 5 cl  
 Vacuum Tube Circuit for Operating Relays, Madison G. Nicholson, jr., 2,428,125, 10 cl  
 Telegraph Relay, John A. Herbst, 2,428,218, 7 cl  
 Step-by-step Actuator for Electromagnetic Switches, Stanley T. Hunt and Frederick W. F. Goffe, 2,428,569, 4 cl  
 Solenoid and Plunger Therefor, Harry G. Kipke, 2,428,712, 8 cl  
 Circuit Controlling Device, Allan P. Charbonneau, 2,428,832, 10 cl  
 Method of Making Electric Contact Devices, Arthur M. Cohen, 2,429,048, 4 cl  
 Single Contact Distance Relay System, Shirley L. Goldsborough and Herbert W. Lensner, 2,430,871, 18 cl  
 Thermally Responsive Electrical Relay System, Clement M. Theillaumas, 2,431,352, 2 cl  
 Polar Relay, Arben H. Adams, 2,431,444, 6 cl  
 Single Pulse Relay, Kurt Schlesinger, 2,431,832, 5 cl  
 Single Limit Switch Reversing Control, Gerhart W. Heumann, 2,432,313, 3 cl  
 Current Responsive Time Delay Relay, William C. Morris, 2,432,328, 6 cl  
 Manual Control System for Switches for Trolley Vehicles, Raymond P. Hanna and Norman J. Rosen, 2,432,882, 8 cl  
 Shockproof Electromagnetic Contactor, Ralph B. Immel, 2,432,899, 12 cl  
 Thermal Relay with Replaceable Tripping Unit, Hermon L. Van Valkenburg, 2,433,720, 11 cl  
 Sound Operated Relay System, Harvey C. Hayes, 2,433,845, 4 cl  
 Control Circuit, William A. Ray, 2,434,433, 9 cl  
 Electromagnetic Device, Owen L. Taylor, 2,434,601, 6 cl  
 Polarized Electromagnetic Relay, Oscar S. Field, 2,435,001, 3 cl  
 High Frequency Relay Employing an Electron Discharge Device, Paul L. Hartman, 2,435,585, 4 cl  
 Overload Relay, John H. St. John, 2,435,607, 6 cl  
 Electrical Control Apparatus, Arthur E. Dodd, 2,436,293, 12 cl  
 Electromagnetic Relay, Owen L. Taylor, 2,436,339, 2 cl  
 Predetermined-current-drop Relay System, DeWitt D. Merrick, 2,436,444, 3 cl  
 Solenoid with Plunger, Walter Ernst, 2,436,992, 4 cl  
 Brake Control Device, Carolus L. Eksbergian, 2,437,423, 4 cl  
 Electromagnetic Operator, William A. Ray, 2,437,893, 8 cl  
 Polarized Relay, Arthur C. Davis, 2,437,726, 8 cl  
 Electromagnetic Timing Relay, Theodore F. Rosing and Edwin W. Seeger, 2,437,756, 4 cl  
 Thermistor Circuit Interrupter Control System Responsive to Load Circuit Conditions, Prafulla Kumar Chatterjea, 2,438,495, 5 cl

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- Electromagnetic Apparatus, Kenneth Herbert Fox, 2,438,745, 2 cl
- Method and Means for Adjusting Contacts, Franklin C. Gill, 2,439,362, 4 cl
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- Relay Circuits and Relay, Anthony H. Lamb, 2,440,861, 9 cl
- Electromagnetic Device with Armature, Laurence C. Biggle, 2,440,888, 9 cl
- Two-step Relay, Michael B. Staszak, 2,441,041, 5 cl
- Automatically Locking Relay, Robert P. De Anthony, 2,441,137, 2 cl
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- Signaling System, Myron C. Goddard, 2,444,039, 3 cl
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- Relaying System, Bernard E. Lenehan, 2,449,490, 6 cl
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- Electromagnetic Switch, William E. Stilwell, jr., 2,450,924, 2 cl
- Safety Locking and Unlocking Two-hand Control, Basil J. Yanchenko, 2,451,010, 4 cl
- Shockproof Electromagnet with Armature, Paul J. Reifschneider, 2,451,239, 4 cl
- Totalizer Indicator Control, Charles M. Candy and William Walter Owen, 2,451,319, 2 cl
- Progressive Selecting Circuit, Amos E. Joel, jr., 2,451,489, 5 cl
- Relay System, Ralph E. Hersey, 2,452,051, 12 cl
- Relay, Leland J. Stacy, 2,452,079, 1 cl
- Electromagnetic Switching Device, Peter F. Rossman, 2,453,267, 4 cl
- Relay Control System, Joel H. Tedder, 2,453,281, 1 cl
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- Electrical Relay System, Sherman B. Hall, 2,454,161, 3 cl
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- Reverse Current Relay and System, William R. Holmes, 2,455,060, 7 cl
- Electromagnet with Pivotaly Mounted Armature, Lynn H. Matthias, 2,455,690, 2 cl
- Relay Yoke, Fredric E. Wood, 2,456,036, 3 cl
- Electrical Relay, Arthur E. Dodd, 2,456,112, 4 cl
- Nonchattering Alternating Current Solenoid and Plunger, Hardin Y. Fisher, 2,456,394, 9 cl
- Differential Relay, Josef Stoecklin, 2,456,541, 5 cl
- Relay, Ferdinand C. Iglehart, 2,456,945, 7 cl
- Glow Relay, Arnold L. Peacock and Bergitte A. Jensen, 2,457,487, 3 cl
- Time Element Electromagnetic Device, Ludwig S. Walle, 2,457,617, 9 cl
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- Electric Relay for Use with Alternating Current of Variable Frequency and Voltage, Cyril Ernest Randall, 2,457,724, 3 cl
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- Remote Control Means for Electrical Circuits, Dallas A. Miller and Fred Deauville, 2,419,276, 2 cl
- Remote-control Metering System, Willis Robert Dresser, 2,419,487, 12 cl
- Dual Remote-Control Apparatus, Michel N. Yardeny, 2,420,026, 4 cl
- Remote Control System, Willard P. Place, 2,420,093, 5 cl
- Electric Follow-Up System, Stanley James Smith, 2,420,501, 1 cl
- Damping Device for Remote Control Apparatus, Arthur P. Davis, 2,420,523, 2 cl
- Modulated Radio Pulse Remote Control System, Stanley B. White, 2,420,693, 11 cl
- Remote Control Apparatus for Electric Motors, Arthur P. Davis, 2,420,817, 19 cl
- Control System and Telemetering Circuit, Willard A. Derr, 2,420,871, 10 cl
- Remote Control of Deflection in Cathode-ray Tubes, Madison G. Nicholson, jr., 2,422,975, 9 cl
- Electrical Signaling System with Remote Control, Charles De Vriendt and Constant De Zeeuw, 2,423,077, 2 cl
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- Remote Control System, Lucien Devaux, 2,428,014 cl
- Frequency Responsive Remote-control System Walter van B. Roberts, 2,429,771, 4 cl
- Indicating Device for Remote-control System Michel N. Yardeny, Robert Bernas and Charlie Prindle, 2,430,902, 8 cl
- Remote Control System, George W. Baughman, 2,431,631, 5 cl
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- Microwave Operated Mechanisms, Richard G. Clapp, 2,435,423, 10 cl
- Remote Control System, Paul K. Eckhardt, 2,435,821, 8 cl
- Remote Control System, Lloyd V. Lewis, 2,437,326, 9 cl
- Precision Radio Remote-control System, Edgar L. Rockwood, 2,437,558, 2 cl
- Remote Control System, Harry G. Evers, 2,439,205, 2 cl
- Remote-control System, George Forrest Drake, 2,440,255, 12 cl
- Remote Control Mechanism, Eugene M. Fry, 2,441,808, 4 cl
- Linear Movement Self-synchronous System, Robert S. Childs, 2,441,869, 12 cl
- Control Station, Erwin J. Panish, 2,442,509, 20 cl
- Remote Control System, Arthur P. Jackel, 2,442,603, 11 cl
- Remote-control Apparatus, James A. Potter, 2,443,639, 14 cl
- Remote-control System Particularly for Arc Welding, Frank Rimmington, 2,443,776, 11 cl
- Remote Radio Tuning Control System, Eugene F. McDonald, jr., 2,445,031, 14 cl
- Control System, Willard A. Derr, 2,445,422, 3 cl
- Electric Signaling System, Edward Albert Henry Bowsher, Harold Mountjoy Muschamp d'Assis-Fonseca and Hugh Jennings Ward, 2,445,759, 6 cl
- Selective Signaling System, Charles E. Ammann and Rodney W. King, 2,446,037, 10 cl
- Aircraft Control System, Harold E. Wells, 2,446,149, 5 cl
- Remote Control System, Harold O. Peterson, 2,446,607, 1 cl
- Proportional Remote Control, Harold E. Haynes, 2,447,121, 4 cl
- Remote-control System, Lynn G. Riley, 2,447,669, 7 cl
- Recall Control Means, Frank T. Pascoe and Arthur L. Jerome, 2,449,176, 19 cl
- Bidirectional Selective Remote Control System, Leon Kogane, 2,449,391, 2 cl
- Remote-control System for Prime Mover Dynamo Plants, John L. Moncrief, 2,450,904, 6 cl
- Radio Remote-control System, Joseph M. Brian, 2,451,150, 4 cl
- Automobile Radio Remote Control, Eugene F. McDonald, jr., 2,452,384, 13 cl
- Electric Remote Control and Indication System, Eric Malcolm Swift McWhirter and Hugh Jennings Ward, 2,452,589, 32 cl
- Remote-control Apparatus with Adjustable Gap, Michel N. Yardeny and Robert Bernas, 2,453,106, 7 cl

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Remote Control System, Carleton H. Wright, George A. Chadwick and Paul W. Burk, 2,453,173, 2 cl

Remote Control System, John J. Root, 2,453,386, 9 cl

Radio Remote-control Apparatus, Michel N. Yardeny, 2,454,022, 10 cl

Remote Control for Electric Transmission Systems, Willard A. Derr, 2,454,140, 10 cl

Remote Control for Displaceable Objects, Clinton H. Dederick, 2,455,568, 28 cl

Remote Control with Multiple-speed Governor, Michel N. Yardeny, 2,455,901, 8 cl

Remote Control Switching Device, Daniel G. Crowley, 2,456,256, 2 cl

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Apparatus for Remotely Repeating Angular Indications, Rene Hardy, 2,419,550, 3 cl

Distortion Correcting Impulse Repeater, Harold J. McCreary, 2,422,309, 9 cl

Intermediate Telegraph Repeater for Long Line Spans, Richard B. Hearn and Carleton B. Sutfitt, 2,422,677, 12 cl

Multitexchange Impulse Repeating System, George Thomas Baker, 2,429,911, 10 cl

Start-stop Electronic Regenerative Telegraph Signal Repeater, Warren A. Anderson and Richard E. Mathes, 2,430,547, 7 cl

Equalizing Repeating System, Theodore Lindenberg, jr. and Sabert N. Howell, 2,433,771, 17 cl

Start-stop Electronic Regenerative Repeater, Harold F. Wilder, 2,435,257, 20 cl

Position Repeating Device and System, Thomas M. Ferrill, jr. and Arthur E. Harrison, 2,442,764, 8 cl

Repeating System, Oscar A. Shann, 2,444,067, 9 cl

Repeater Control System, Henri G. Busignies, 2,444,426, 5 cl

Repeater Indicator for Pulse Echo Distance Measuring Devices, Rogers M. Smith, 2,451,000, 12 cl  
Circuits for Repeating Square Shaped Wave Forms, William Frank Glover, 2,452,563, 2 cl

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Manufacturing Techniques

## SUPERCONDUCTORS

Destruction of superconductivity by current. Russell B. Scott. *Jour of Research NBS* 41:581 Dec '48

Magnetic quenching of superconductivity. J. W. Stout. *Phys Rev* 71:741 May 15 '47

Magnetic transmission curves in superconducting tantalum. R. T. Webber. *Phys Rev* 71:471 Apr 1 '47

On the theory of superconductivity. F. J. Wisniewski. *Compt Rend Acad Sci* (Paris) 226:1964 June 14 '48

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Surface impedance of superconductors and normal metals at high frequencies: parts 1-3. A. B. Pippard. *Proc Roy Soc A* 191:370-415 Nov 18 '47

*See also*

Physics

## SUPERSONICS

*See* Ultrasonics

## SWEEP Generators

Basic design principles for sawtooth current generator. V. F. Samollov. *Radiotekhnika* (Moscow) 2:63-77 Mar '47. In Russian, with English summary

Electrical sawtooth oscillations. H. Hertwig. *Funk und Ton* 2:300 June; 469-74 Sept '48

FM sweep generators. Bob Stang. *Radio Craft* 19:25 June '48

Generation of linear time bases. Dr. V. R. Hedeman, jr. *Bendix Radio Eng* 2:1 Oct '45

Hard valve single sweep time base. *Electronic Eng* 15:418 Mar '43

How to use sweep generators with TV receivers. *Radio News* 40:46 Nov '48

Improving fly-back time on a Miller timebase. V. Attree. *Electronic Eng* (London) 20:97 Mar '48

Line scanning systems for television. A. M. Spooner and E. E. Shelton. *Electronic Eng* 18:302-307 Oct '46

Linear saw-tooth generators. A. W. Keen. *diags Wireless Eng* 25:210-14 July '48

Special applications of ultra-high-frequency wide-band sweep generators. J. A. Bauer. *Il diags RCA Rev* 8:564-75 Sept '47

Sweep generator for FM and TV. McMurdo Silver. *Radio Maint* 4:24 May '48

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- Mechanically actuated sweep. J. H. Taylor. Bendix Radio Eng 2:14 Apr '46
- Miller time base. B. H. Briggs. RSGB Bull 22: 198-202 June '47
- Modern electromagnetic sweep technique. A. de Saint-Romain. Radio Franç pp 35-43 Feb '48
- Oscillograph amplifier design. Oscillographer 1: Aug-Sept '37
- Single stroke sweep for the cathode-ray oscillograph. Oscillographer 1: Mar '37
- Single sweep time base. D. McMullan. Electronic Eng pt 1 18:21-23 Jan '46; pt 2 18:47-50 Feb '46
- Sweep generators. John F. Rider. Radio Ser Deal 9:11-5, 42-5 Nov '48
- TV sweep circuits. Allan Lytel. Radio Electronics pt 1 20:62 Oct '48
- Using sweep generators for FM alignment. McMurdo Silver. Radio Maint pt 1 4:6-9 Feb '48; pt 2 4:8-10, 24-26 Mar '48
- Wide-range sweeping oscillator. II diags Electronics 20:112-15 Aug '47

## Patents

- Saw-tooth Wave Generator, Sven H. M. Dodington, 2,416,292, 7 cl
- Self-synchronized Saw-tooth Generator, Waldemar J. Poch, 2,418,425, 2 cl
- Linear Saw-tooth Generator, Edwin K. Stodola, 2,419,606, 11 cl
- Apparatus for Generating Sweep Voltages, Howard E. Etter, 2,423,931, 7 cl
- Sweep Circuit, Hughes M. Zenor, 2,426,256, 12 cl
- Modified Sweep Circuit for Cathode-ray Tubes, Warren H. Bliss, 2,428,926, 4 cl
- Modified Sweep Circuit for Cathode-ray Tubes, William A. Miller and Eugene R. Shenk, 2,431,766, 1 cl
- Saw-tooth Wave Generator, Donald E. Norgaard, 2,436,663, 4 cl
- Modulated Saw-tooth Sweep Generator, William A. Higinbotham, 2,436,890, 2 cl
- Modified Sweep Circuit, William A. Miller and Eugene R. Shenk, 2,441,246, 4 cl
- Magnetic Sweep Generator, John D. Kraus and Carlton A. Mizen, 2,446,837, 2 cl
- Saw-tooth Generator with Automatic Amplitude Control, Millard E. Ames, jr. and David E. Sunstein, 2,448,069, 22 cl
- Sweep Circuit for Cathode-ray Tubes, Maurice E. Byrne, 2,449,549, 5 cl
- Time Base Sweep and Intensifier Pulse Generator, John M. Lester, 2,455,373, 17 cl
- Device Adapted to Produce Sawtooth Oscillations, Johan Haantjes, 2,456,700, 3 cl
- Electronic Saw-tooth Pulse Generator, George C. Sziklai, 2,456,754, 9 cl
- Saw-tooth Wave Generator, Reuben Lee, 2,456,961, 5 cl
- Wave Generating System, Albert Preisman, 2,457,176, 4 cl
- Electronic Saw-tooth Wave Generator, Frank J. Blas and Harold W. Lord, 2,457,522, 2 cl

## See also

- Cathode-ray Tube Circuits
- Oscillators
- Oscilloscopes
- Radar
- Television, Receivers

## SWITCHES, Electrical

- Bridge erosion in electrical contacts and its prevention. W. G. Pfann. Trans AIEE 67 pt II 1528 '48
- Characteristics and application of precision, snap acting switches. A. L. Riche. Trans AIEE 67 p II:1549 '48
- Electric time-switch for closing circuits at accurately regular intervals. J. A. Crawford and A. J. Jaffey. MDDC 1602
- Mechanical switch for use in some bioelectric measurements. R. C. Hoyt. Rev of Scientific Instr 18:61 Jan '47
- New outdoor air switch and a new concept of contact performance. S. C. Killian. Trans AIEE 67 pt II:1382 '48
- Service restoration with automatic air-break switches. Kenneth N. Reardon. Trans AIEE 67 pt I:64 '48

## Patents

- Electric Switch, David W. Johnson, 22,856, 15 cl
- Electric Selection Controlling Circuit, Gerald Deakin and Henry F. Herbig, 22,861, 21 cl
- Housing for Electric Switches, Rudolf Popp, 22,882, 15 cl
- Electric Circuit Controller, Henry R. Johnson, 2,414,307, 7 cl
- Electric Circuit Control, Paul J. McCullough, 2,414,315, 6 cl
- Switching Device, Edward L. Stephanson, 2,414,342, 10 cl
- Switch, Ward W. Watrous, jr., 2,414,622, 5 cl
- Electric Switch, Herschel C. Bolley, 2,414,713, 4 cl
- Snap-Action Switch, Walter A. Tratsch, 2,414,778, 1 cl
- Timing Unit for Centrifugal Switches, Ernst Walter Rickmeyer, 2,414,836, 10 cl
- Electrode Attachment, Ernst Walter Rickmeyer, 2,414,897, 8 cl
- Electromagnetic Switch, William D. Kyle, jr. and Carl Schindler, 2,414,956, 10 cl
- Pressure Controlled Switch, John B. Parker, 2,415,034, 2 cl
- Circuit Closer, Harold P. Detwiler, 2,415,086, 4 cl
- Switch, John H. Horman, 2,415,134, 9 cl
- Push-button Switch, William C. Linton, 2,415,297, 5 cl
- Slide Button Switch, William C. Linton, 2,415,298, 4 cl
- Snap Switch, William E. Stilwell, jr., 2,415,448, 6 cl
- Snap Acting Thermostat, Raymond L. Dougherty, 2,415,473, 14 cl
- Thermal Snap-acting Switch, Philip E. Willman, 2,415,546, 6 cl
- Switch, Max Leroy Jeffrey, 2,416,626, 6 cl
- Electric Switch, Robert L. Brady and Alexander C. Wall, 2,416,897, 8 cl
- Switching Means, David C. Prince, 2,416,951, 8 cl
- Centrifugal Switch, George T. Wright, 2,416,973, 14 cl
- Push-button Switching Apparatus, George E. Haner, 2,417,161, 13 cl
- Snap Switch, Oscar H. Kaminky, 2,417,169, 7 cl

## SWITCHES, Electrical, Patents—Cont'd.

- Switch, John H. Horman, 2,417,200, 6 cl  
 Mechanism for Controlling Electric Circuits, Frederick B. Little, 2,417,368, 7 cl  
 Electromagnetic Switch, Joseph F. O'Brien and Earl S. Boynton, 2,417,438, 7 cl  
 Thermostatic Switch, Edwin L. Cline, 2,417,860, 18 cl  
 Switch for Air-conditioning Apparatus, John T. Carlson, 2,417,911, 40 cl  
 Split-phase Motor Thermal Starting Switch, Harry F. Clark, 2,417,912, 13 cl  
 Switch, Richard T. Cornelius, 2,418,068, 5 cl  
 Overtravel Switch Actuator, Norman C. Fetter, 2,418,222, 6 cl  
 Switch, Carl E. Bazley, 2,418,329, 3 cl  
 Electric Switch, Salvatore Minnici, 2,418,363, 2 cl  
 Centrifugal Switch, Elmer T. Spaller, 2,418,373, 22 cl  
 Switch, Herbert E. White, 2,418,384, 3 cl  
 Switch, Edward G. Miller and Ralph E. Engberg, 2,418,556, 2 cl  
 Switch, Frank C. Wallace, 2,418,564, 3 cl  
 Multiple Purpose Electric Switch, Hugh W. Batcheller, 2,418,616, 11 cl  
 Thermostatic Switch, Richard H. Jordan, 2,418,647, 4 cl  
 Electric Switch, James C. Hamilton, 2,418,831, 5 cl  
 Snap Switch, Gerhardt Blair, 2,418,965, 3 cl  
 Electric Switch, Chester I. Hall, 2,419,072, 2 cl  
 Time Operated Switch, Siegfried G. Isserstedt, 2,419,077, 25 cl  
 Electric Switch, Sidney Unger, 2,419,180, 6 cl  
 High-frequency Switching System, Paul D. Zottu, 2,419,307, 15 cl  
 Telecommunication Switching System, Gerald Deakin, 2,419,540, 22 cl  
 Radio Transmitter-receiver Switching System, James E. Keister, 2,419,564, 6 cl  
 Electric Switch, Helge Carling, 2,419,627, 1 cl  
 Electric Switch, John H. Leslie, II, 2,419,685, 4 cl  
 Setback Switch, Robert G. Ferris, 2,419,828, 8 cl  
 Electrical Switch, Robert M. Bleakney and Everly J. Workman, 2,420,028, 2 cl  
 Electrical Switch, Olav Froland, 2,420,074, 4 cl  
 Switch Operating Mechanism, Ira W. Paterson, 2,420,441, 7 cl  
 Switching Device, Howard E. Somes, 2,420,449, 3 cl  
 Electrical Switch with Kinetic Energy Dissipating Means, Samuel H. Kast, 2,420,485, 10 cl  
 Electric Switch, David D. Beveridge, 2,420,768, 6 cl  
 Thermostatic Switch, William B. Griffith, 2,420,775, 5 cl  
 Snap Switch, Robert Hetherington, 2,420,880, 14 cl  
 Indicating Knob for Switches and the Like, Ray Simpson, 2,420,985, 3 cl  
 Switch Mechanism, Harold W. Price, 2,420,997, 1 cl  
 Pressure Actuated Switch, Carl Gustaf Hard af Segerstad, 2,421,149, 5 cl  
 Adjustable Thermostat Switch, John Leonard Schwartz, 2,421,292, 5 cl  
 Starter Switch, Charles Penk, 2,421,519, 2 cl  
 Electric Switch, Stephen S. Grady, 2,423,099, 15 cl  
 Reversal Responsive Switch, John Eaton, 2,423,693, 10 cl  
 Contactor, Delbert Ellis and James H. Alspach, 2,424,308, 7 cl  
 Thermostatic Control, Leslie M. Brown, 2,424,433, 7 cl  
 Appliance for Closing a Switch for Parallel Connection of Two Networks or a Network with Incoming Generator, Andreas Gantenbein and Jose Jäckle, 2,424,447, 11 cl  
 Nonnumerical Rotary Homing Type Switch, Reginald Taylor and George Thomas Baker, 2,424,519, 10 cl  
 Electric Switch, Alexander K. Whyte and William J. Aldis, 2,424,527, 8 cl  
 Switching Arrangement for Electrical Apparatus, Lloyd C. Wimmer, 2,424,529, 3 cl  
 Electrical Switch, Edmund Doucette, 2,424,745, 6 cl  
 Sequential Electric Switching System, Frederick R. Jackson, jr., 2,424,826, 5 cl  
 Coaxial Switch, Henry R. Smith, 2,425,010, 3 cl  
 Heating Apparatus Switch, Earl K. Clark, 2,425,030, 7 cl  
 Safety Switch Device, William P. Lear, 2,425,038, 20 cl  
 Emergency Release for Electric Switch Locks, William C. McWhirter, 2,425,111, 9 cl  
 Electric Snap Switch, Edward P. Meyer, 2,425,159, 9 cl  
 Temperature Compensated Switch, Elihu Craig Thomson, 2,425,164, 3 cl  
 Electronic Keying Circuit, Fred M. Berry and William R. Lewis, 2,425,667, 5 cl  
 Thermostatic Control of Electric Heating Pads, Malcolm E. Porter, 2,425,686, 8 cl  
 Thermostatic Switch Assembly, Frank Robert Bean, 2,425,717, 17 cl  
 Electric Switch, Edward J. Frank and Hugh P. Fitzpatrick, 2,426,009, 10 cl  
 Current Responsive Switch, Joseph W. McClain, 2,426,038, 8 cl  
 Control Switch, Eugene D. Reiber, 2,426,051, 3 cl  
 Electric Switch, Hermon L. Van Valkenburg and Carl A. Schaefer, 2,426,129, 19 cl  
 Ultra High Frequency Switch, Orville E. Dow, 2,426,186, 7 cl  
 Circuit Controller, James P. Houck and Dewees H. Shallcross, sr., 2,426,306, 11 cl  
 Temperature Responsive Control Mechanism, Ludvik J. Koci, 2,426,620, 25 cl  
 Manual Reset Thermostatic Switch in Protective Systems, Victor G. Vaughan, 2,426,906, 11 cl  
 Control Device, Robert C. Boyd, 2,426,919, 14 cl  
 Push-button Switch Construction, Christian Miller, 2,427,015, 10 cl  
 Auxiliary Headlight System, Bruno Tabacchi, 2,427,076, 4 cl  
 Switch, David Gordon Clifford, 2,427,089, 6 cl  
 Program Formulator, John N. Grieveson, 2,427,207, 18 cl  
 Electrical Switch, Oscar H. Hasselbaum, 2,427,277, 5 cl  
 Multiple Switch, Harry Weiner, 2,427,483, 10 cl  
 Electronic Switching Device, Wilcox P. Overbeck, 2,427,533, 11 cl  
 Thermal Switch, Leo R. Peters, 2,427,741, 1 cl  
 Transmission Line Switch, Jay Jesse Ayres, 2,427,940, 6 cl  
 Thermostatic Switch, Charles R. Blosser and Earl K. Clark, 2,427,946, 6 cl  
 Signal Switch, Herschel C. Bolley, 2,428,447, 12 cl



## SWITCHES, Electrical, Patents—Cont'd.

- Electrically Heated Thermoresponsive Switch, George C. Armstrong, 2,428,539, 3 cl
- Rotating Electric Liquid Switch, Cornelis Johan Aandewiel, 2,428,589, 5 cl
- Electromagnetic Control Switch, Charles C. Whitaker, 2,428,599, 2 cl
- Electric Switch, Martin F. Koenig and Alvin W. Krieger, 2,428,848, 8 cl
- Electrical Circuit Controller, Howard J. Murray, 2,429,069, 2 cl
- Switch, James A. Rugh, 2,429,074, 3 cl
- Electrical Selector Switching Apparatus, Glen Peterson, 2,430,886, 3 cl
- Multiple Contact Electric Switch, Cecil Oswald Browne and Alan Dower Blumlein, 2,431,023, 6 cl
- Setback Switch, John W. Busacker and Richard L. Maneval, 2,431,027, 4 cl
- Rotary Type Snap Action Electric Switch, Edward V. Platt and William J. Aitken, 2,431,197, 13 cl
- Electrical Contact Element and the Method of Making Same, George W. Lambert, 2,431,334, 7 cl
- Magnetic Switch, Vernon Durbin and Max Knobel, 2,431,377, 3 cl
- Control System, Francis Percy Elliott, 2,431,381, 5 cl
- Switch Mechanism, Virgil H. Fry, 2,431,747, 4 cl
- Thermostatic Switch, John O. Rosche, 2,431,771, 7 cl
- Push-button Switch, John Lewis Andrews, 2,431,904, 11 cl
- Switch Mechanism, Robert W. Goff, 2,431,929, 9 cl
- Mercury Switch, Ernst Walter Rickmeyer, 2,431,964, 9 cl
- Float Operated Circuit Closer, Allan E. Sheldon, 2,432,045, 1 cl
- Electrical Apparatus, Arthur Dorne, 2,432,230, 2 cl
- Electric Switch for Clothes Washing Machines and the Like, 2,432,273, 6 cl
- Electric Switch, Robert P. Dimmer, 2,432,294, 6 cl
- Electrical Switch Device, Henry R. Hesse, 2,432,476, 14 cl
- Electrical Switching Apparatus, Milo F. Miller, 2,432,581, 4 cl
- Electric Switch, Joseph W. McClain, 2,432,782, 2 cl
- Circuit Controller, James M. Wallace and Herbert J. Crabbs, 2,432,955, 12 cl
- Electric Switch, Anthony G. Seifried, 2,433,163, 12 cl
- Limit Switch Actuator, Earl G. White, 2,433,180, 3 cl
- Contact Structure for Electric Switches, Harold E. Schleicher, 2,433,710, 12 cl
- Electric Switch, Frank P. Gasser, 2,433,753, 4 cl
- Control Means for Sequentially and Selectively Adjusting Variable Reactances over a Band of Frequencies, Marvin A. Wolff, 2,433,805, 12 cl
- Rotary Switch, Donald P. Mossman, 2,433,920, 7 cl
- Equilibrated Inertia Switch, Don Carlos Wiseley, 2,433,968, 10 cl
- Illuminated Safety Switch, Joseph F. Courtney, 2,434,065, 9 cl
- Flasher, Henry R. Gross, 2,434,070, 10 cl
- Electronic Switching Circuits, Igor E. Grosdoff, 2,434,153, 6 cl
- Electrical Switch, Olav Froland, 2,434,315, 5 cl
- Selecting Finger for Crossbar Switches, Rolf Albin Svensson and Hans Olov Karlström, 2,434,373, 12 cl
- Electric Time Switch, Marcus H. Rhodes, 2,434,471, 14 cl
- Tap Changing System, Orin P. McCarty, 2,434,501, 11 cl
- Socket Cover and Plug Interlocking Switch, Phela McShane and David E. Renshaw, 2,434,576, 10
- Switch Controlling Assembly, Walter T. Knaut, 2,435,143, 2 cl
- Switch, Ernst Walter Rickmeyer, 2,435,602, 11 cl
- Coaxial Switch, Thomas A. Newkirk, 2,435,978, 4
- Disconnect Switch, Fred H. Cole, 2,436,290, 2 cl
- Switch, Howard W. Graybill and Paul Olsson, 2,436,296, 7 cl
- Switch Element, Ernst Walter Rickmeyer, 2,436,609, 9 cl
- Timing Switch, Ernst Walter Rickmeyer, 2,436,602, 24 cl
- Thermostatic Switch for Controlling Electric Circuits, Thomas Curzon, 2,436,633, 4 cl
- Switch Construction, Stanley R. Du Brie, 2,436,681, 10 cl
- Rotary Selector Switch, Gordon E. Gray, 2,436,751, 8 cl
- Plunger Switch, Ernst Walter Rickmeyer, 2,436,891, 2 cl
- Clock-controlled Switch, Theodore Svoboda, 2,436,906, 1 cl
- Thermostatic Switch, Calvin J. Werner, 2,436,901, 3 cl
- Switch, Irwin W. Eisenberg, 2,436,958, 1 cl
- Delayed Action Electric Switch, Perley A. Nelson and William R. Nelson, 2,437,037, 4 cl
- Electrical Control System, Malcolm H. Sheldor, 2,437,712, 7 cl
- Electric Circuit Controller, Bert W. Roth, 2,437,791, 16 cl
- Selector Switch, Frank Edgerton, 2,438,042, 18 cl
- Electric Switch, John A. Opper, 2,438,373, 8 cl
- Unshorting Switch, Robert B. Brode, 2,438,383, 6 cl
- Electric Circuit, William Henry Bruns, 2,438,535, 7 cl
- Centrifugally Operated Switch, Harry L. Lambert, 2,438,810, 13 cl
- Ultra High Frequency Switching Device, Henry J. McCarthy, 2,438,873, 5 cl
- Preset Switch, Manfred L. Glogau, 2,438,970, 7 cl
- Electrical Switch, Charles Adin Fox, 2,439,164, 5 cl
- Electric Switch, William E. Paul, 2,439,264, 9 cl
- Radio Time Switch, Arthur William Haydon, 2,439,732, 2 cl
- Electric Switch, Royal-G. Nelson, 2,439,747, 6 cl
- Float-operated Switch, Charles N. Reavis, 2,439,753, 1 cl
- Automatic Electric Switch, Robert E. Swisher and George W. Gates, 2,440,028, 7 cl
- Rotary Switch Contact Assembly, Walter L. Dietrich, 2,440,578, 14 cl
- Switch, Edward N. Jacobi, 2,440,690, 8 cl
- Switch and Plug Box, Walter J. Bauroth, 2,441,465, 17 cl
- Periodic Switch, Milo F. Miller, 2,441,501, 1 cl
- Push Button Switch, Henry A. Baumer, 2,441,614, 7 cl
- Thermostatic Switch, Norman James Smith, 2,441,725, 12 cl
- Centrifugal Switch, Willis Z. West, jr. and Morgan F. Gamble, 2,441,914, 9 cl
- Single-phase Motor Control Switch, Samuel Noodleman, 2,442,207, 5 cl

## SWITCHES, Electrical, Patents—Cont'd.

Motor Switch, Mounting and Terminal Board, Glenn D. Willits, 2,442,227, 7 cl  
 Electrical Switch, Charles Adin Fox, 2,442,593, 6 cl  
 Limit Switch, Raymond J. Schaedler, 2,442,711, 8 cl  
 Circuit Controlling Switch, John S. Garvin, 2,442,766, 6 cl  
 Electrical Switch Structure, Ira E. McCabe, 2,442,981, 14 cl  
 Electric Switch Contact, Joseph W. McClain, 2,443,047, 2 cl  
 Nonarcing Switch Contact, William E. De Coursey, 2,443,230, 6 cl  
 Suspension Switch, Nathaniel Bradford Birge, 2,443,441, 5 cl  
 Switching Means, Chester I. Hall, 2,443,452, 3 cl  
 Centrifugally Operated Switch, Harry L. Lambert, 2,443,659, 1 cl  
 Switchgear, Elmer A. Rothfus, 2,443,664, 8 cl  
 Switchgear Apparatus, Roy S. Tusing, 2,443,669, 4 cl  
 Directly Heated Thermocouple, Joseph A. Becker, John N. Shive and Thomas R. Griffith, 2,444,027, 10 cl  
 Timing Switch, Eugene L. Schellens, 2,444,146, 4 cl  
 Electromagnetic Switch, Jerome F. Dries, 2,444,157, 2 cl  
 Pressure Responsive Switching Device, Donald O. Kocmich, 2,444,163, 13 cl  
 Automatic Electric Toolholding Switch, Edwin H. L. Englund, 2,444,188, 1 cl  
 Switch, David Samiran and George W. Replogle, 2,444,471, 3 cl  
 Electrical Switch, Louis M. Puster, 2,444,529, 7 cl  
 Terminal Switch with Thermostatic Safety Release, Donald Wentworth Scofield, 2,444,680, 10 cl  
 Electrical Switchgear, Wilfred F. Skeats, 2,445,588, 3 cl  
 Fluid Operated Switch Assembly, Frank Robert Bean, 2,445,756, 17 cl  
 Inertia-actuated Switch, Allan C. Chambers, 2,445,873, 3 cl  
 Warp Switch, Burton E. Shaw, 2,446,307, 2 cl  
 Electric Switch, William Schmid, 2,446,789, 5 cl  
 Thermal Timing Switch Apparatus, Frederick W. Hottenroth, jr., 2,446,831, 10 cl  
 Switch, Oliver C. Traver and Ludwig S. Walle, 2,446,859, 7 cl  
 Centrifugal Switch, Vaughn H. Hardy, 2,446,923, 10 cl  
 Thermostatically Operated Electrical Switching Device, John Edward Sherlock, 2,446,961, 3 cl  
 Switch Construction, Glenn R. Runke, 2,447,137, 18 cl  
 Starting Switch, Frederick C. Dazley and John M. Pistey, 2,447,318, 8 cl  
 Electrical Switch, Sara Maria Iribarren de Olariaga, Luis Bulgarini and Percy Forster, 2,447,320, 10 cl  
 Wave-signal Translating System, Maurice K. Taylor and Ian Norman Vaughan-Jones, 2,447,375, 11 cl  
 Electrical Switch, Leo C. Zehnpfennig, 2,447,452, 2 cl  
 Electrical Switch, Leo C. Zehnpfennig, 2,447,453, 1 cl  
 Rotary Switch, Ray R. Simpson, 2,447,718, 4 cl  
 Mechanism for Precision Switches, Edwin August Miller, 2,448,230, 3 cl  
 Selector Switch for Phonograph Circuit, Arthur Paul Marcus and Frank C. Filo, 2,448,380, 7 cl

Electric Switch, Alvin W. Krieger, 2,448,444, 7 cl  
 Switch, Carl E. Mosley, 2,448,615, 14 cl  
 Electric Control Switch, William J. Aitkin, 2,448,650, 1 cl  
 Pin Anchored Electric Outlet and Switch, Donald S. Ross, 2,448,832, 16 cl  
 Electric Switch, Ellen Graves Taylor, 2,448,841, 3 cl  
 Quick Action Switch, Richard J. Domonkas, 2,449,109, 2 cl  
 Step-by-step Automatic Tuning Control, George L. Sansbury, 2,449,178, 13 cl  
 Telltale Control Switch, Raymond Richard Fredrick, 2,449,213, 7 cl  
 Electromagnetically Controlled Switch, Herman J. Hammerly, 2,449,221, 14 cl  
 Electrical Contacts, Stanley David Hopper and Ernst Heinrich Hermann Hassler, 2,449,479, 7 cl  
 Switch Arrangement, Octavio Jose Alvarez and Ertogroul Osman, 2,449,799, 6 cl  
 Electrical Control Instrument, Edward N. Jacobi, 2,450,144, 9 cl  
 Electric Switch, Raymond N. Rowe, 2,450,256, 14 cl  
 Pneumatic Timing Switch for Electric Circuits, Earl C. Deane, 2,450,329, 7 cl  
 Push-pull Selector Switch, David W. Johnson, 2,451,224, 29 cl  
 Selector Switch, David W. Johnson, 2,451,225, 14 cl  
 Electrical Device, Werner I. Staaf, 2,451,308, 2 cl  
 Combined Thermal and Magnetic Flasher Switch, Henry R. Gross, 2,451,618, 2 cl  
 Method of Transposing Connections, William D. Kyle, jr. and Anthony Van Ryan, 2,451,622, 1 cl  
 Switch Device, Carl G. Kronmiller, 2,451,751, 5 cl  
 Reverse Action Switch Control, Robert H. Bentley, 2,451,905, 9 cl  
 Electric Switch, Don E. Moran and Samuel F. Jarvis, 2,452,065, 4 cl  
 Switch, George H. Berkholder, 2,452,425, 6 cl  
 Switching Device, Henry C. Harrison, 2,452,568, 9 cl  
 Multiple Switch, Charles Frank Gomez, 2,452,747, 1 cl  
 Protective Switch, Sidney R. Smith, jr., 2,452,961, 2 cl  
 Multiple Function Switch, Louis Emile Ponsy, 2,453,035, 9 cl  
 Butt Contact Mounting for Rotary Switches, Harold E. Schleicher, 2,453,161, 16 cl  
 Electrical Switch, Joseph A. Kavanagh, 2,453,231, 3 cl  
 Electric Switch, George C. Crowley, 2,453,498, 1 cl  
 Snap Switch, Leo J. Kmiecik, 2,454,185, 8 cl  
 Push-button Switch Construction, Leo L. Verkuil, 2,454,295, 7 cl  
 Base and Contact for Electrical Devices, William Makenny, 2,454,326, 6 cl  
 Switch Operating Mechanism, Paul T. Repka, 2,454,341, 11 cl  
 Electric Switch, George B. Benander, 2,454,540, 10 cl  
 Electric Range Switch, Frederic P. Gates, 2,454,646, 15 cl  
 Circuit Controller, Glen V. Jefferson, 2,454,702, 5 cl  
 Multiple Contactor, Joseph F. Frese, 2,454,788, 5 cl  
 Control Switch Assembly, Abraham Hollins and Jesse Hollins, 2,454,873, 1 cl  
 Time Switch, Edgar R. Schott, 2,454,887, 6 cl  
 Shockproof Electromagnetic Circuit Controller, Paul G. Edwards and Harold W. Herrington, 2,455,049, 4 cl

**SWITCHES, Electrical, Patents—Cont'd.**

- Radio Circuit Selector Switch, Gordon R. Pennington, 2,455,137, 14 cl  
 Centrifugal Switch, Jules H. Sreb, 2,455,620, 9 cl  
 Electric Switch Actuating Mechanism, Reynold A. Ohlson, 2,455,799, 10 cl  
 Electric Switch, Stephen S. Grady, 2,455,927, 6 cl  
 Electrically Controlled Switch, Osborn I. Price, 2,455,947, 4 cl  
 Double Throw Switch, Howard W. Graybill, 2,456,502, 6 cl  
 Switching Arrangement for Selectors, Bert W. Roth, 2,456,893, 4 cl  
 Electric Switch, James Leslie Ashford, 2,457,115, 2 cl  
 Sealed Switch, Harvey Hubbell, 2,457,153, 14 cl  
 Electric Switch, Raymond N. Rowe, 2,457,497, 9 cl  
 Apparatus for Sequentially Keying and Connecting a Plurality of Oscillators to a Common Output Circuit, Rudolf F. Wild and Fred J. Curran, 2,457,790, 7 cl

*See also*

- Circuit Breakers and Interrupters  
 Motors and Generators, Controls  
 Relays  
 Vibrators

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- Photoelectric Inspection Circuit, Werner A. Gieseke, 2,415,167, 2 cl
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- Photoelectric Apparatus for Scanning Rounds, Samuel C. Hurley, jr., 2,415,176, 4 cl
- Apparatus for Photoelectric Camming, Samuel C. Hurley, jr., 2,415,177, 6 cl
- Photoelectric Inspection of Rounds, Samuel C. Hurley, jr., 2,415,178, 1 cl
- Photoelectric Inspection Device, Samuel C. Hurley, jr., 2,415,179, 3 cl
- Stroboscopic Tuning Apparatus, John H. Mayberry, 2,415,215, 2 cl
- Electric Gaseous Discharge Lamp Testing Unit, Morris J. Lifshitz, 2,415,502, 14 cl
- Nondestructive Electrical Testing of Metals, Cecil Farrow, 2,415,789, 19 cl
- Detonation Indicating System, Alfred Crossley and David L. Elam, 2,416,614, 7 cl
- Method and Means for Magnetic Inspection, Taber de Forest, 2,416,824, 8 cl
- Machine for Testing and Assorting Resistance Elements, Stanley L. Handforth and Charles R. Johnson, 2,417,488, 36 cl
- Spectroscopic Source Unit, Maurice F. Hasler and Roland W. Lindhurst, 2,417,489, 19 cl
- Quick Response Control System for Dynamometers, Russell L. Findley and Jay R. Wrathall, 2,417,745, 1 cl
- Testing System for Nontyping Selectors, Daniel Emore Foley and Walter Daniel Johnson, 2,418,401, 4 cl
- Electron Tube Tapping Device for Defect Testing, Charles A. Vogt, 2,418,437, 10 cl
- Tester Jack, Frederick J. Lingel, 2,418,517, 6 cl
- Testing of Magnetic Materials, Theodore Zuschlag, 2,418,686, 9 cl
- Testing System for Impulse Generators, Hugh D. MacPherson, 2,419,580, 5 cl
- Testing and Indicating System, Marcellus B. McDavitt, 2,419,583, 10 cl
- Method and Apparatus for Detecting Suspended Matter in Fluids, Leon E. Pamphilon, 2,419,914, 19 cl
- Method and Apparatus for Testing Centrifugally Actuated Members, Leo T. Meister, 2,421,036, 8 cl
- Stroboscope, Robert T. Bayne, 2,421,182, 15 cl
- Apparatus for Testing Electric Coils, Frederick James Watson and Felix Moutran, 2,421,227, 2 cl
- Method and Apparatus for Magnetic Testing, Foster B. Doane, 2,421,775, 4 cl
- Apparatus for Testing Electrical Insulation, Wentworth D. Boynton, 2,422,288, 2 cl
- Art of Ascertaining the Atomic Structure of Materials, Perry C. Smith, 2,422,807, 3 cl
- Electrical Conductivity Cell, William F. Wolfner, II, 2,422,873, 1 cl
- Magnetic Testing Apparatus, John E. Clarke, 2,423,552, 7 cl
- Bifrequency Magnetic Testing Apparatus, Frederick Kellerman, 2,423,891, 7 cl
- Electrical Testing Apparatus, Lloyd D. Hansen, Andrew S. Hegeman, jr., and Harry N. Snook, 2,424,275, 19 cl
- Synchronization Tester, William A. Bohannon, 2,425,081, 1 cl
- Ignition Testing Device, John W. Horton, 2,425,321, 5 cl
- Magnetic Testing Apparatus, Raymond W. Brown, 2,425,361, 2 cl
- Means for and Method of Locating Faults in Electrical Conductors, Dale H. Nelson and James R. Cosby, 2,425,554, 6 cl
- Pulse Relay Testing System, John C. Coykendall, 2,425,600, 4 cl
- Visual Indicator for Teletypwriting Line-test Key, William Hoinkis and Donald B. Perry, 2,425,803, 2 cl
- Apparatus for Detecting Flaws in Rails, Walter C. Barnes and Henry W. Keevil, 2,425,857, 4 cl
- Magnetic Field Detector, Arthur G. Laird and Thaddeus Slonczewski, 2,426,622, 7 cl
- Beverage Inspection Machine, Paul Weathers, 2,427,319, 7 cl
- Leak Indicator for Gas-filled Conductor Cable, Haig Shiroyan, 2,427,627, 6 cl
- Method and Apparatus for Magnetically Testing the Hardness of Paramagnetic Objects, Gustav Frederickson, 2,427,774, 5 cl
- Magnetic Testing Method and Apparatus, John Gray Pruitt and Elmer Reagan Oberdorf, 2,428,471, 6 cl
- Impulse Testing Apparatus, Roger K. Ghormley, 2,428,488, 15 cl
- Capacitative Feed-back Device for Electrical Testing, Stanley D. Eilenberger, 2,428,700, 5 cl
- Testing Apparatus for Radio Alarm Systems, John Douglas Holland and Duncan Dove Robinson, 2,429,624, 12 cl
- Apparatus for Testing Spark Plugs, Theodore J. Mesh, 2,430,069, 4 cl
- Mold Analyzer, Frank L. Moncher, 2,430,237, 17 cl
- Moisture Indicator, Sanford F. Essig, 2,431,742, 2 cl
- Relay Testing Device, Enoch B. Ferrell, 2,432,092, 7 cl
- Diesel Engine Testing Apparatus, John D. Morgan and Percy B. Levitt, 2,432,168, 7 cl
- Testing Machine, Paul F. Darby, 2,432,390, 14 cl
- Machine for Testing and Marking Parts Magnetically, Albert J. Newman, 2,432,786, 7 cl
- Magnetic Testing Device, James A. Sams, 2,432,811, 5 cl
- Oscillograph System for Testing Electrical Contact Making Devices, Harry R. Shillington, 2,432,944, 4 cl
- Electric Coil Testing Device, Joseph K. Thompson, 2,432,948, 7 cl
- Inspection of Annular Objects, Samuel C. Hurley, jr., 2,433,558, 1 cl
- Photoelectric Article Gaging Apparatus, Werner A. Gieseke, 2,433,559, 4 cl
- Method and Apparatus for Magnetic Testing, Cecil Farrow, 2,434,203, 10 cl



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- Continuity and Short Circuit Test Set, Harry N. Snook, 2,434,336, 7 cl
- Intervalometer Calibration Checker, Joseph A. Fahrner, 2,435,210, 1 cl
- Apparatus for Electrically Testing Material, Thomas T. Goldsmith, jr., and Estle Ray Mann, 2,435,680, 7 cl
- Dynamometer Control System, John R. Wrathall, 2,436,345, 5 cl
- Dynamometer Control System, John R. Wrathall and Joe G. Ivy, 2,436,346, 8 cl
- Apparatus for Detecting Imperfections in Insulating Materials, Dick E. Stearns, 2,436,615, 3 cl
- Magnetic Inspection Apparatus, Taber de Forest, 2,436,918, 4 cl
- Apparatus for Determining the Relative Differences of Speed of Two Rotary Elements, Jaime Salles, 2,437,048, 2 cl
- Dynamometer, Jay R. Wrathall, 2,438,026, 8 cl
- Apparatus for Determining Balance in an Electrical Network, Abraham Walter Jacobson and Elliott M. Whitney, 2,438,288, 15 cl
- Method of and Apparatus for Indicating the Condition of an Atmosphere, William F. Ertzman, 2,438,550, 18 cl
- Magnetic Flaw Detector, Edward G. Parvin, 2,439,184, 3 cl
- Check Circuit for Inspection Apparatus, Roger E. Schell, 2,439,490, 10 cl
- Bridging Switch for Testing Series Light Circuits, Richard T. Wood, 2,439,500, 2 cl
- Electrical Insulation Testing Apparatus, Clay E. Lewis, 2,439,940, 3 cl
- Electronic Tube Tester, Robert D. Hickok, 2,440,607, 6 cl
- Magnetic Testing Apparatus and Method, Claude M. Summers, 2,440,984, 7 cl
- Magnetic Testing Means, Boley A. Andrews, 2,442,393, 1 cl
- Magnet Tester, Valoran Russell, 2,442,618, 6 cl
- Magnetic Testing and Indicating Apparatus, Butler J. Haskins, 2,442,649, 3 cl
- Testing Device for Electric Tools and Appliances, Joseph H. Kirkpatrick, jr., 2,442,771, 2 cl
- Distributor Testing Apparatus and Circuit, Alan C. Williams, 2,444,014, 8 cl
- Method and Apparatus for Determining the Magnitude of a Condition, William H. Bussey, 2,444,726, 7 cl
- Electrical Strain Measuring Apparatus, Claude M. Hathaway, 2,445,880, 6 cl
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- Line Fault Indicating System, James S. Astin, 2,447,625, 2 cl
- Method and Means for Detecting Flaws in Magnetizable Objects, Grant W. Coon, 2,447,899, 10 cl
- Supersonic Inspection, Vincent G. Shaw, 2,448,399, 2 cl
- Test Socket, Oliver James Morelock, 2,448,452, 6 cl
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- Proximity Fuse Testing Apparatus, Nels Johnson and William E. Bradley, 2,448,889, 11 cl
- Electrical Testing Device, Francis W. Clayden, 2,449,057, 8 cl
- Apparatus for Detecting Variations in Load Impedances, William S. Duttera, 2,449,739, 3 cl
- Electrical Coil Tester, Anthony G. Brown, 2,450,577, 1 cl
- Condenser Tester, Elmer W. Aiken, 2,450,872, 1 cl
- Electrical Conductivity Testing Machine, Paul F. Darby and Lloyd A. Nevala, 2,451,613, 2 cl
- Cable and Cable Connector Fatigue Testing Machine, Joseph Luther McFarland and Kenneth Matzinger, 2,452,588, 3 cl
- Electrical Test Circuit, Roy J. Teetsell, 2,452,614, 2 cl
- Apparatus for Testing Insulation of Electrical Cables, Karl H. Zimmermann, 2,452,624, 1 cl
- Meter Testing Device, Arthur E. Booth, 2,453,191, 2 cl
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- Temperature Controlled Test System, Glenn L. Prudhon and Russell W. Spikula, 2,455,520, 11 cl
- Capacitor Testing Instrument, Alan C. Williams, 2,455,543, 4 cl
- Limiter Circuit for Electric Testing Apparatus, Frederick A. Meunier, 2,455,792, 8 cl
- Frequency Modulated Radio Testing System, Robert L. Harvey, 2,455,996, 3 cl
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- Apparatus for Testing and Marking Insulated Conductors, George E. Henning, 2,456,704, 6 cl
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Meters  
Receivers, Servicing  
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*See also*

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- Electronic Applications, Control Uses  
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- Impulse Actuated Electromagnetic Relay with Time Delay, Horace G. Miller, 2,434,948, 9 cl
- Timing Unit for Switches, Ernst Walter Rickmeyer, 2,435,603, 3 cl
- Electronic Timing Apparatus, Montford Morrison, 2,436,725, 4 cl
- Time-delay Switch, Cecil B. Ivester, 2,437,197, 7 cl

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- Electronic Delay Circuits, David E. Kenyon, 2,442,-769, 13 cl  
 Time-delay Relay System, Rosser L. Wilson, 2,443,-437, 13 cl  
 Electronic Timer, John William Lauricella, 2,444,-210, 7 cl  
 Thermal Time-delay Switch, Vernon N. Tramon-tini, 2,446,029, 1 cl  
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 Time-delay Network, Michael J. Di Toro, 2,454,865, 4 cl  
 Magnetostrictive Time-delay Device, Leslie F. Cur-tis, 2,455,740, 16 cl  
 Variable Time Delay, Electronic Apparatus, David E. Sunstein, 2,456,466, 3 cl  
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*See also*

Oscillators, Blocking  
 Timing Systems

**TIME Signals**

- Electronic crystal clock. V. E. Heaton. *il Mech Eng* 69:158-9 Feb '47. Also with *diag Product Eng* 18:141 May '47  
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 Timing Systems

**TIMING Systems**

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Precise Measurement of Time Intervals, Gerard J. Lehmann, 2,416,333, 19 cl

Electronic Time Indicating Device, Oliver T. Fran-cis, 2,417,070, 13 cl

Synchronizing System, Louis A. de Rosa, 2,418,112, 14 cl

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Audible Timer, Kingdon Lane, 2,420,887, 8 cl

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 Timing Device, Joseph H. Reid, 2,421,130, 2 cl  
 Watch Timing Recorder, Thomas B. Gibbs, 2,421,781, 6 cl  
 Electric Valve System, Benjamin Cooper, 2,421,994, 30 cl  
 Electrical Control Circuit, Benjamin Cooper, 2,421,995, 7 cl  
 Electric Control Circuits, Benjamin Cooper, 2,421,996, 5 cl  
 Time Measuring System, Edmond Bruce, 2,422,654, 7 cl  
 Time Measuring System, George Hecht, 2,422,655, 4 cl  
 Timing Circuit, Larned A. Meacham, 2,422,696, 7 cl  
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 Automatic Timing Control for Scarfing Apparatus, George C. Ehemann, jr. and Paul H. Fickenscher, 2,424,270, 4 cl  
 Signaling System, Bertram M. Harrison, 2,424,981, 9 cl  
 Timing Apparatus, Thomas B. Gibbs, 2,425,613, 23 cl  
 Aperiodic Pulse Timing System, Stuart C. Hight, 2,426,216, 10 cl  
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 Pulsation Timing System, Clarence B. Stadum, 2,431,284, 14 cl  
 Synchronizing System, Robert C. Moore, 2,431,577, 6 cl  
 Electrical Timing Arrangement, Anthony Nemet, 2,431,705, 8 cl  
 Variable Potential Integrating Device, Richard C. Dehmel, 2,432,140, 6 cl  
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 Timing Wave Device, William D. Hershberger, 2,432,196, 9 cl  
 Synchronous Timer, George G. Smith, 2,432,346, 4 cl  
 Electrical Timing System, William Ross Aiken, 2,433,254, 2 cl  
 Electronic Timing Apparatus, William Henry Bruns and Harold Edward Galanty, 2,433,424, 9 cl  
 Time Measuring Apparatus, Guilford L. Hollingsworth, 2,433,667, 7 cl  
 Electronic Phototimer, Chester S. Heppeard, 2,434,157, 12 cl  
 Timing Circuits, Clyde E. Smith, 2,436,872, 13 cl  
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 Timing System, Louis A. de Rosa, 2,438,904, 13 cl  
 Photoflash Synchronizing Device for Cameras, William Castedello, 2,439,417, 11 cl  
 Electronic Cycling Circuits, Richard H. Haungs, 2,442,238, 13 cl  
 Electromagnetically Operated Timing Mechanism, William Hyde Hastings Kelk and Denis Owen Burns, 2,442,497, 8 cl  
 Timing System, Mark Audier, 2,442,578, 6 cl  
 Electronic Sequence Timer, Joseph J. Neff, 2,443,398, 3 cl  
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Electronic Timer, William E. Large and Wilbur R. Morton, 2,443,660, 5 cl  
 Electrical Timing Device, Cecil Hill Smith and Herman Lindars, 2,444,619, 12 cl  
 Apparatus for Measuring Short Time Intervals, Henry J. Kurtz, 2,444,935, 2 cl  
 Supersonic Measuring Apparatus, Pierre Biquard, 2,447,485, 4 cl  
 Electronic Timing Apparatus, E. Craig Thomson, 2,450,460, 4 cl  
 Electronic Timing Control System, Gustav E. Undy, 2,451,997, 11 cl  
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 Timing Circuit, Edward C. Hartwig, 2,454,168, 7 cl  
 Synchronizing System, John H. Homrighous, 2,454,651, 13 cl  
 Averaging Mechanism, Hendrik W. Bode, 2,455,035, 5 cl  
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*See also*

Chronometers  
 Chronoscopes  
 Counters  
 Measurements

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Vibrator, Harald Svenning Wenander, 2,437,983, 2 cl

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 Vibrator Power Supply, Robert J. Aust, 2,453,612, 2 cl  
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 Voltage Regulator, George F. Starnes, 2,419,176, 5 cl  
 Armature Mounting for Carbon Pile Voltage Regulators, John Gartner, 2,419,491, 6 cl  
 Voltage Control and Stabilizing Circuits, Arthur H. Lord, jr., 2,419,496, 11 cl  
 Amplitude Limiter Circuit, Winfield R. Koch, 2,420,248, 6 cl  
 Differential Voltage Control System, Harold E. Haynes, 2,421,560, 8 cl  
 Voltage Regulator, John McCall Brumbaugh, 2,423,368, 6 cl  
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 Voltage Regulator for Generators, Joseph W. Allen, 2,425,296, 6 cl  
 Control Network, Edwin L. Harder, 2,426,018, 21 cl  
 Voltage Regulator, Waldemar J. Poch, 2,427,109, 5 cl  
 Voltage Regulator, Emerson C. Barwick, 2,427,544, 5 cl  
 Control System, Edwin L. Harder and Homer M. Rustebakke, 2,428,566, 9 cl  
 Voltage Control Apparatus, Wilmer C. Anderson, 2,428,693, 14 cl  
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 Regulator, William S. Graff-Baker, 2,445,171, 4 cl  
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 Electronic High-voltage Regulator, George W. Cook, 2,452,037, 3 cl  
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 Motors and Generators, Controls  
 Power Supplies

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 Volume Control, Edmund G. Lodge, 2,437,166, 8 cl  
 Mechanical Signal and Volume Control for Miniature Radio Changes, Carl W. Muller, 2,438,126, 14 cl  
 Automatic Volume Control for Pulse Systems, Daniel S. Pensyl, 2,440,289, 11 cl  
 Automatic Volume Control Means, Martin Katzin, 2,441,577, 8 cl  
 Recording Apparatus Volume Level Indicator, Paul Stead Gay, 2,449,291, 1 cl  
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 High-power Radio-frequency Air-calorimeter-wattmeter, Paul J. Ovrebo, 2,421,758, 4 cl  
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*See also*

Cavity Resonators  
Impedance Matching  
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Ultra High Frequency  
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## See also

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Frequency Meters and Measurement Systems  
Waveform Analysis

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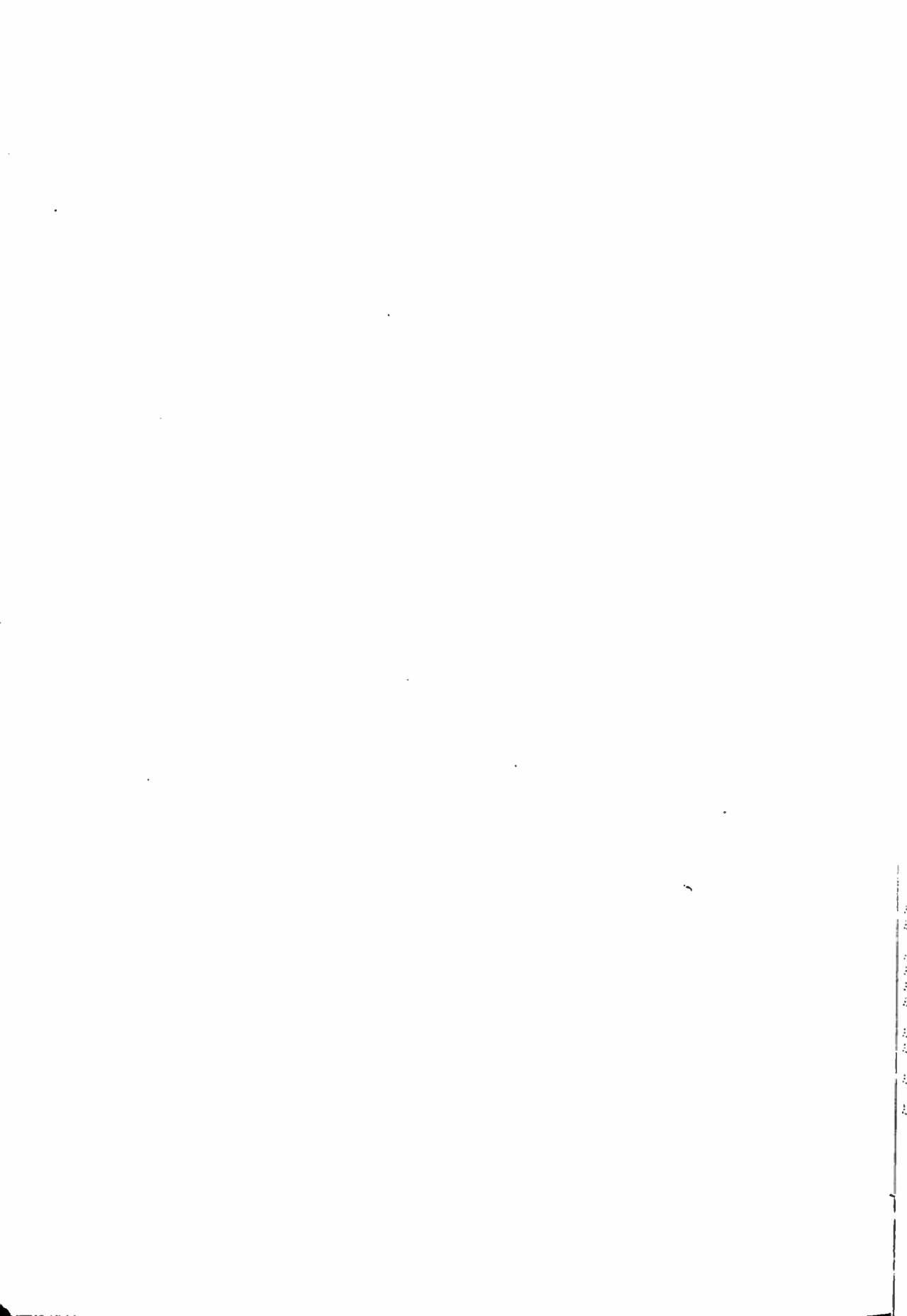
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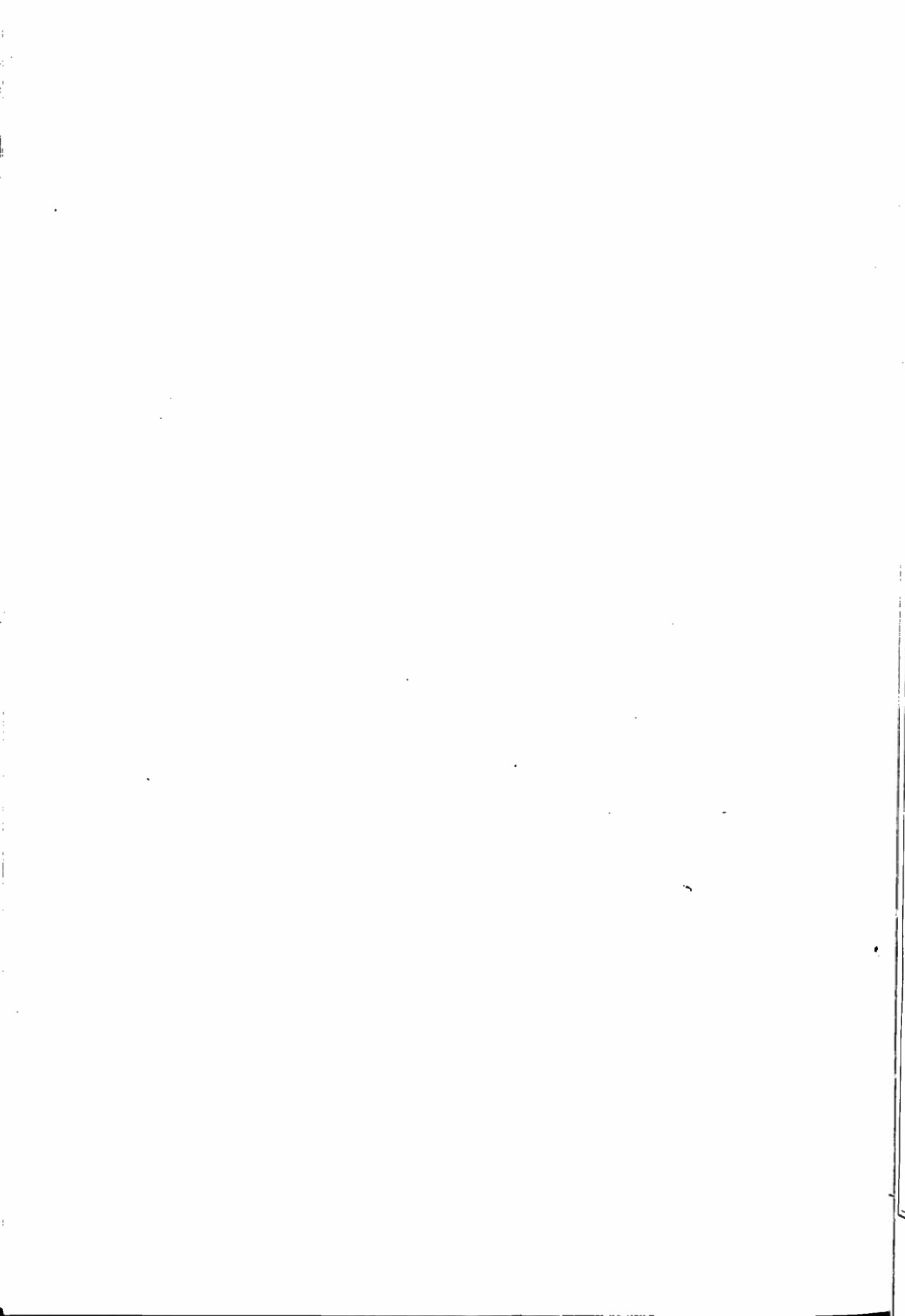
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