

NEW BOOKS, ETC.

THE PRINCIPLES OF ALTERNATING CURRENTS. By Edgar T. Larner, A.I.E.E. New York: D. Van Nostrand & Co., 1908. 12mo.; pp. 136; illustrated. Price, \$1.50.

The man who is familiar with the mechanical and practical side of electricity, but who has not had a technical college training, is decidedly at a disadvantage in studying the principles of alternating current, owing to the scarcity of books on this subject which are not filled with complex and involved mathematics. In the preface of the present work the author states that his aim is to furnish this class of men with a non-mathematical treatise on alternating currents, but the difficulty of the task he has set out for himself is apparent on looking over the pages of the book. Undoubtedly, the use of mathematics has been reduced considerably, but nevertheless the student must be familiar with algebra and trigonometry before understanding this work. A valuable feature of the book is to be found in the exercises at the close of each chapter, which if worked out by the student will give him concrete practical examples of the principles enunciated in the preceding chapter.

RADIO-TELEGRAPHY. By C. C. F. Monckton, M.I.E.E. New York: The Van Nostrand Company, 1908. 8vo.; pp. 272; 173 figures. Price, \$2.

The remarkable advances in wireless telegraphy made since the first practical application of Hertzian waves twelve years ago, have been so rapid that it has been difficult to keep pace with them. For this reason there have been many books written on this subject. The present work brings the practice up to date in a fairly comprehensive manner.

ELECTRIC MOTORS. Their Installation, Control, Operation, and Maintenance. By Norman J. Meade. New York: McGraw Publishing Company, 1908. 12mo.; pp. 159; 126 figures. Price, \$1.

This book is particularly adapted to assist the practical man in the care and management of electric motors. The theory of electric motors is explained, and the various types are classified. The most useful part of the book is the chapter on Operating Hints, in which various handy suggestions for the care of the machines are given. Following this is a chapter on repairs, which explains how best to mend breaks and overcome defects that may arise in actual practice. The last chapter contains tables and formulas which are indispensable to the practical man. Mathematics have been almost entirely eliminated from the book.

HOW TO UNDERSTAND ELECTRICAL WORK. By William H. Onken, Jr., Associate Editor of the Electrical World, and Joseph B. Baker, Technical Editor U. S. Geological Survey. With Dictionary of Electrical Terms by Joseph H. Adams. New York: Harper & Bros., 1908. 8vo.; pp. 359; illustrated. Price, \$1.75.

Electricity is so much a part of every-day life that it is perfectly natural for the modern American boy to take a keen interest in every phase of the subject. The present work aims to answer all the questions the boy is liable to put. The subjects dealt with comprise not only the generation of electricity and its use for lighting, heating, power, and traction purposes, but also electricity in the home, on the farm, in the hospital, on board ship, and in various industries. The book also gives a chapter on Transmission of Intelligence, under which heading are included the telephone, telegraph, wireless telegraph, telautograph, etc. The Dictionary of Electrical Terms and Phrases makes a very useful appendix to the work. The book is copiously illustrated, diagrams being given where necessary to explain the arrangements of electrical circuits.

THE ELEMENTARY THEORY OF DIRECT-CURRENT DYNAMO-ELECTRIC MACHINERY. By C. E. Ashford, M.A., and E. W. E. Kempson, B.A. Cambridge: University Press, 1908. 12mo.; pp. 120; 75 figures. Price, \$1.

The aim of this work is to explain the underlying principles of direct-current dynamos in such a logical way that one is able to gain a comprehensive knowledge of the whole subject. The statements which are made are backed up with evidence, so that one is able to understand the cause of the various phenomena described. Thus the student will be prepared to deal with new types of machinery which are constantly being brought out, owing to his thorough grounding in the main principles.

ARTIFICIAL AND NATURAL FLIGHT. By Sir Hiram S. Maxim. New York: The Macmillan Company, 1908. 12mo.; pp. 166; 96 illustrations. Price, \$1.75.

This is a very interesting and readable volume, containing many of Sir Hiram's observations and investigations into the subject of soaring and mechanical flight. An elaborate preface and introductory chapter is followed by a chapter on air currents and the flight of birds, in which the author attempts to show that the soaring flight of birds is due largely to ascending currents of air. At the end of this chapter there is a table giving the weight in pounds for each square foot of wing surface of various well-known birds. One of the most interesting and valuable chapters is that

devoted to air propellers, in which some of the fallacies of inventors regarding these are shown, and some of the best forms of propellers are described. In another chapter giving hints on the building of flying machines, there is a table giving the actual and relative strengths of different kinds of wood which can be used. Sir Hiram also deals with tests of different aeroplane surfaces, and shows which are the most efficient, while there is also a chapter on "The Action of Aeroplanes and the Power Required Expressed in the Simplest Terms," in which a number of diagrams illustrate the way the air is supposed to act upon different curved surfaces. One of the closing chapters is devoted to some of the recent aeroplanes, and there is an appendix containing a description of Sir Hiram's aeroplane and the experiments therewith. We recommend this book heartily to all those interested in aeronautics.

ELECTRICAL ILLUMINATING ENGINEERING. By William Edward Barrows, Jr., B.S., E.E. New York: McGraw Publishing Company, 1908. 8vo.; pp. 216. Price, \$2 net.

Illuminating engineering is a comparatively new branch of applied electricity, and few good books on the subject have been written. For this reason the present work will be appreciated. It is based on notes compiled by the author for use in his classes, and it makes an excellent textbook for the student of illuminating engineering.

THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC AND PHOTOGRAPHER'S DAILY COMPANION FOR 1909. Edited by George E. Brown, F.I.C. London: Henry Greenwood & Co., 1908. New York: George Murphy, Incorporated. 16mo.; 1336 pages (text and ads.). Price, \$1.

This is always a welcome visitor with its vast collection of formulae and valuable articles. It grows bigger and bigger every year, and is twice as large as the volume of 1887, which we have before us. Even the latter with its 360 pages seemed large in those days.

THE BOOK. Its History and Development. By Cyril Davenport, V.D., F.S.A. New York: D. Van Nostrand Company, 1908. 12mo.; pp. 258. Price, \$2.

The author begins his subject with rock inscriptions, and then follows marks on wood, Indian palm-leaf books, ideographs, and alphabets. The physical side of the book—its anatomy—is then considered. This is in turn followed by chapters on paper, printing, illustrations, bindings, etc. This book is one of the "Westminster Series," the volumes of which give much information which is either not available to the general public, or if available, is widely scattered.

MASONRY AND REINFORCED CONCRETE. By W. L. Webb, C.E., and W. H. Gibson, C.E. Chicago: American School of Correspondence, 1909. 8vo.; 444 pp.; fully illustrated with photographs and diagrams. Price, \$3.

This work, symmetrical with other textbooks of the Chicago School, discusses fully the materials used in masonry and ferro-concrete work, and their requisite qualifications, methods of testing, and simple formulae for the calculation of all ordinary strains and stresses. Clear instructions are given for the obtaining of various special finishes and for the care in handling and placing upon which the success and permanence of all concrete work so much depends.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending January 26, 1909,

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

Table listing inventions with patent numbers, including items like Adding machine, Aerial navigating apparatus, Airship, Alarm system, Alloys, Amusement device, Animal slaughtering instrument, etc.

Legal Notices

PATENTS

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Every patent secured through us receives special notice in the Scientific American. Ours is the Oldest Agency for securing patents; it was established over sixty years ago.

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Table listing inventions with patent numbers, including items like Boiler automatic feed device, Bottle cleaner, Bottle stand, Bolt weevil exterminating device, Book leaves, machine for crimping, Books, magazines, pamphlets, etc., machine for creasing covers, Boots and shoes, toe box for use in the manufacture of, Bottle and other vessels, Hunter & Palmer, Bottle washing apparatus, G. Truesdell, Bottles or other vessels, closing device for, J. E. Fagerstrom, et al., Box hanger and ground clamp, combined, S. Aelmann, Box packing machine, stuffing, R. R. Stirling, Brake, M. Lingenfelder, Brake mechanism, G. S. Ackley, Brake shoe, R. L. Brown, Braking or signaling system, automatic, F. H. Shepard, Brick mold, C. S. Wert, Brick molding and pressing machine, O. M. Reif, W. W. Lowe, Bridle, safety, H. P. Mattson, Brush, tooth, A. M. Stryker, Buckle, cross line, W. R. Smith, Building block, reinforced molder, G. A. Peterson, Bundle carrier, J. Trotter, Bundle tying device, F. E. Spears, Bushing, H. J. Gilbert, Button blank conveying and distributing apparatus, I. De Francis, Cabinet, corn testing, C. B. Joslin, Cabinet, rural free delivery, W. A. Tomison, Cake coating machine, P. D. Harton, Calculating machine attachment, T. J. Falvey, Camera, B. O. Walker, Camera focusing attachment, W. F. Polmer, Candle, spark emitting, F. J. Welter, Caoutchouc, manufacturing solutions of, E. O. Isenhardt, Cap, washable, K. Neidhart, Car axle box lid, F. Hachmann, Car brake, C. B. Fairchild, Car changeable sign, street, R. L. Halleman, Car coupling, O. Hecathorn, Car doors, means for operating and locking, J. G. Horazdovsky, Car, dumping and loading, G. C. Wortman, Car fender, F. A. Nelson, Car machine, I. De Francis, Carcass splitting machine, W. B. Wallwork, Carpet stretcher, M. A. Smith, Cartridge for mining purposes, E. & S. Purcell, Casing head, C. A. Waitz, Chair fan, rocking, J. Dauster, Change delivering means, E. B. Gallaher, reissue, 12,913, Chemical compounds, manufacturing, C. F. Carrieff, Jr., Chronometer, baby tender, Wilson & Field, Chuck, A. I. Jacobs, Cigar press, N. Weiss, Circuit controlling device, H. Geisenhoner, Cistern cut-off, A. Fink, Clothes line reel, T. Scally, Coin holder, E. S. Bell, Collar fastener, adjustable, J. A. Ward, Jr., Combs of combing machines, device for positioning pins for the, T. Townsend, Concrete building construction mold, E. J. Drayer, Concrete floor construction, F. C. Taxis, Concrete pipes, apparatus for laying, E. L. Ransome, Concrete pipes, method and apparatus for molding, E. L. Ransome, Concrete post, reinforced, J. Needs, Concrete supporting beam, reinforced, J. Needs, Concrete wall mold, W. Turkington, Conit, resilient flexible, L. S. Armstrong, Control system, E. W. Stull, Control system, multiple voltage, R. P. Jackson, Controller, J. F. Menning, Copy holder, C. F. Stehlin, Core, winding, J. H. Gately, Cork extractor, C. M. King, Cork puller and time indicator, combined, K. E. Farker, Corn gatherer, S. J. McNaughton, Cotton gin, C. C. Epps, Cotton gin, R. B. Lumpkin, Crate, A. G. Felker, Crate, B. F. Ferguson, Cream ripener and like machine, J. T. Hanna, Crystals, manufacture of large, J. Bock, Cultivator replanting attachment, E. D. Beers, Curtain roller, T. Digney, Cut-off, automatic, Miller & Hansen, Davenport or couch folding, J. Kiefer, Dental swaging apparatus, H. B. Zendeck, Derrailer, R. Hamilton, Derrailing device, safety, F. Pelissier, Dinitroglycerin explosive and making, A. Mikolajczak, Diseases, apparatus for magnetic treatment of, R. S. Clymer, Dispensing container, W. A. Kirkpatrick, Display apparatus, W. F. Allert, Display box, papeterie, C. H. Weaver, Display, G. R. Ford, Ditcher and road grader, J. D. Martin, Ditching machine, T. Linga, Door check and closer bracket, J. H. Shaw, Door hinge, L. W. Hartsig, Door lock, sliding, G. M. Blair, Door retainer, C. S. Hendrick, Draft rigging, W. C. Hendryx, Drill, W. L. Harbert, Dry placer machine or concentrator, H. P. Curtis, Drying apparatus, E. Petersen

Table listing inventions with patent numbers, including items like Dynamo-electric machines, regulation of, W. F. Dawson, Eating utensil, hygienic, C. M. Daly, et al., Electric apparatus, B. G. Lamme, Electric carrier system, S. H. Libby, Electric furnace, J. H. Reid, Electric heater, G. H. Hill, Electric hoist, W. O. Dunty, Electric light shade, T. Smith, Electric meter, R. C. Lanphier, Electric recording instrument, L. T. Robinson, Electric speedometer and odometer, H. Bonbright, Electric switch, B. W. Macy, Electric terminal clip, G. McIntyre, Electric wire cleat, A. L. Vickers, Electric generators, automatic tension regulator for, A. Nicol, Electrical indicating instrument, R. C. Lanphier, Electromagnetic stamp battery, J. P. Lynn, Elevator door automatic check and release mechanism, K. S. Evans, Engine electric circuit controller, internal combustion, C. Cuno, Engine fuel-injecting nozzle, internal combustion, K. J. E. Hesselman, Engine valve gearing, explosion, R. Hennig, Engine vaporizer, internal combustion, K. J. E. Hesselman, Engine vaporizing apparatus, liquid fuel internal combustion, H. E. Krijthe, Envelop, J. R. Ritchie, Envelop fastener, J. Crooks, Envelop, safety, A. B. Knowlton, Esters, making isobornyl, C. Weizmann, Excavating machine, C. H. Ruth, Excavator controlling mechanism, J. B. Webber, Jr., Explosive and making the same, A. La Motte, Extender and decliner, combination automatic, W. G. Classen, Eyelet, F. H. Richards, Fan deflector, electric, M. M. Wood, Faucet, Fitzgibbon & Travis, Feed bag supporter, J. E. Colgan, Fence, J. L. Noll, File indicator, duplicate sales slip, M. A. Lumbar, Filling moistening apparatus, H. F. Straw, Filter, A. T. Poirer, Fire extinguisher with double nozzle, chemical, C. Graff, Flask clamp, J. H. Jones, Flood gate, automatic, O. Olson, Floor or like construction, H. N. Wilson, Floor or wall, tiled, A. C. Eggers, Floor surfacing machine, J. B. Dyer, Floors, composition of matter for polishing and dressing, I. H. Peco, Flower pot support for jardiniere, J. Clements, Flying machine, H. Bea, Folding chair, D. W. Hook, Furnace arch, F. Girtanner, Furnace door frame, L. L. Knox, Furnace door frame guard or fender, L. L. Knox, Furnace grate, R. Allen, Fuse, percussion, C. Puff, Garment, G. A. Baumann, Garment adjuster and fastener, combined, W. W. Lowe, Garment clasp, H. H. Taylor, Garment hook eye, L. A. Yeiser, Gas generator, M. Kennedy, Gas generator, acetylene, J. F. Hoffman, Gas light fixture, J. Maas, Gas lighting and extinguishing apparatus, O. H. Hines, Gas syringe with branched-out discharge pipe, K. Schmidt, Gas water heater drip cup, J. E. Donnelly, Gate opening mechanism, J. E. Buckman, Gearing, Press & Lewis, Girder, E. A. Moccetti, Glass and dish cleaner, W. S. Callery, Grader, adjustable road, J. H. Koontz, Grain separator, C. A. Torrence, Graphophone, T. P. Hall, Grinding machine, A. E. Ayer, Grinding mill, ball, C. E. Wyman, Gun, carriages to the ground, anchoring wheels, J. A. Deport, Gun projectile, rifled, P. B. Meyer, Guns having recoiling barrels, breaking mechanism for, K. Voller, Hair pin, A. G. Needs, Hand bag, etc., T. R. Weidemann, Hand bag, C. T. Slade, Handle, J. O. Davidson, Handle for removable closures for receptacles, A. H. S. Swan, Harness connector, J. A. Rupp, Harness hanger, J. A. Pierson, Harness pneumatic pad, Kelly & Rankin, Harrow, S. F. Horner, Hay press, M. D. Guthrie, Heating device, electric, A. E. Reimers, Hoisting hook, E. Stretch, Hook and eye, W. M. Corthell, Hose on manifolds, machine for mounting, S. J. Sill, Hydrating, production of, F. Raschig, Ice cream freezer, J. B. Fitzhugh, Index center, multiple spindle, E. P. Miller, Indigo white and making same, stable, R. Wimmer, Insulated rail joint, J. MacMartin, Insulating compound, P. J. Cannon, et al., Insulator pin, S. J. Edmiston, Intermittent coupling, automatic, C. Trog, Ironing board, A. Paradis, Ironing table, folding, J. P. Rauth, Journal, brasses, device for raising, G. W. Leavitt, Key-seating attachment, A. R. Murray, Ladder bracket, L. T. Burns, Ladle machinery, C. W. Aveling, Lamp and making the same, electric, C. P. Steinmetz, Lamp, arc, C. A. B. Halvorson, Jr., Lamp chimney holder, T. Murphy, Lamp, inverted gas, F. M. Brooks, Lamps, system of lighting by arc, R. Fleming, Lantern, W. S. Hamm, Lantern, L. Herman, Lantern, J. A. Mosher, Lantern burner, W. S. Hamm, Leaves, apparatus for turning over, J. Beveridge, Letter box support, Wallace & Hart, Lima or analogous petroleum and related oils, desulfurizing, C. I. Robinson, Linotype machine trimming mechanism, Bilington & Hollwell, Loading device, tramway, C. A. Case, Locomotive economizer, W. Wiley, Loom, circular, C. Thibodeau, Loom picker check, Pierce & Aspin, Loom warp stop-motion, G. M. Foster, Lubricator, C. D. Schroeder, Machine tool holder, Cumner & Ostrander, Magnet or the like, field, C. P. Bary, Magnetic separator, C. M. Green, Mail bags, etc., apparatus for catching and delivering, J. B. Touquet, Mail box, A. A. Kellogg, Mail catcher, W. Sears, Mailing tube, W. A. Seymour, Material handling apparatus, H. W. Blaisdell, Mats, carpets, etc., device for holding down, W. T. Milward, Measuring device, power, A. A. Rickert, Measuring instrument, H. Darwin, Mechanical movement, A. W. Redin, Medical electrical device for medical and therapeutical purposes, F. A. Ligovsky, Metal bodies, producing compound, J. F. Monnot, Metal salts, forming, W. H. Allen, Metals, covering, C. Hellmich, Metallic wires against oxidation, etc., protecting, W. Hancock, Meter fitting, water, H. I. Dilts, Milk, desiccating, J. H. & C. H. Campbell, Mill, See Grinding mill, Mill sieve, fanning, T. Chipera