

NEW BOOKS AND PUBLICATIONS.

ELECTRICITY FOR EVERYBODY. Its nature and uses explained. By Philip Atkinson, A.M., Ph.D. New York: The Century Company, 1895. Pp. 240. 12mo. 100 illustrations. Price \$1.50.

This is avowedly a book for popular reading. The author has kept constantly in mind the difficulty of his subject and has striven to divest his book of the confusing technicalities of the science. There is no sacrifice of strict scientific accuracy, but as little detail as possible has been included. Some of the latest applications of electricity, as electrical heating and cooking, are described.

VITRIFIED PAVING BRICK. By H. A. Wheeler E.M. Indianapolis: T. A. Randall & Company, 1895. Pp. 84. 12mo. Price \$1.

This is a timely publication in view of the present active discussion on the subject of good roads, especially as it is devoted to a class of pavements that seem to have a great future in this country. They are now in use in about four hundred cities and towns, yet vitrified brick pavements do not seem to be as well known as their merits deserve. The advantages of this form of pavement are smoothness, ease of traction, freedom from mud, moderate noise, small expense of repairs, and comparatively moderate cost of construction. The book goes into the details of manufacture, testing and paving. The tables are of the utmost value.

COMPEND OF MECHANICAL REFRIGERATION. By J. E. Siebel, Director Zymotechnie Institute, Chicago. Chicago: H. S. Rich & Company, 1895. Pp. 256. 16mo. Price \$2.50.

A comprehensive digest of applied energetics and thermodynamics for the practical use of ice manufacturers, cold storage men, contractors, brewers and others interested in the application of refrigeration. This is a very important contribution to the literature of a subject which until recently has been very inadequately treated. The tables and formulæ are of great practical value, the subject of thermodynamics, refrigeration in general, the ammonia compression system, ice making and storing, cold storage, brewery refrigeration, the absorption system, other compression systems, installation, etc., are treated in turn. In the appendix is a bibliography of literature on thermodynamics, etc., which will prove very valuable. The work deals with the principles involved rather than the features of individual machines.

OLD SOUTH LEAFLETS. Sir Henry Vane's Defense, 1662; A Free Commonwealth. By John Milton; Cromwell's Second Speech, 1654; Pym's Speech against Strafford, 1641; Ship Money Papers, 1654; Sir John Eliot's Apologie for Socrates; Letters of Hooper to Bullinger; The English Bible. Boston: Published by the Directors of the Old South Work, Old South Meeting House. 12mo pamphlets.

THE PRACTICAL APPLICATION OF DYNAMO ELECTRIC MACHINERY. By C. K. MacFadden and W. D. Ray. Chicago: Laird & Lee, 1895. Pp. 167. 16mo. 38 illustrations. Price \$1.

There are many good books on the various branches of electrical work, but they are often of such a technical nature as to bar the uneducated reader from obtaining much benefit from them. The close study of this book will place the average beginner on such a foundation as to make the other more complete electrical books more easily understood. It will prove of particular value to dynamo tenders and motor men.

COMPRESSED AIR. Practical information upon air compression and the transmission and application of compressed air. By Frank Richards. New York: John Wiley & Sons, 1895. Pp. 203. 12mo. 23 illustrations. Price \$1.50.

Owing to the general scarcity of practical information about air compression and the uses of compressed air and the wide diffusion of misinformation and prejudice upon this subject, the work is of special interest. One of the most interesting features of the work is the last chapter, which gives a remarkable list of the various applications of compressed air. The list includes only the direct applications of compressed air to specific uses, and not its employment in an air motor, or where it takes the place or does the work of a steam engine or other power developer. Great attention is paid in this work to economical air compression and the commercial aspect of the use of compressed air.

DICK AND JACK'S ADVENTURES ON SABLE ISLAND. By B. Freeman Ashley. Chicago: Laird & Lee, 1895. Pp. 312. 12mo. Price 50 and 75 cents.

HOW TO DRAIN A HOUSE. By George E. Waring, Jr., C.E. New York: D. Van Nostrand Company, 1895. Pp. 223. 16mo. 33 illustrations. Price \$1.25.

This is the second edition of a book of practical information for householders, with annotations bringing the work up to date. It treats of house drains and health, foundation and cellar, foul drainage, plumbing, the sewer gas question, traps, the soil pipe, sewage disposal, etc. The first edition of the work was very favorably received.

A LABORATORY COURSE IN EXPERIMENTAL PHYSICS. By W. J. Loudon, B.A., and J. C. McLennan, B.A. New York: Macmillan & Company, 1895. Pp. 302. 8vo. 50 illustrations. Price \$1.90.

The book contains a series of elementary experiments specially adapted for students who have had but little

acquaintance with the higher mathematical methods. There is also an advanced course of experimental work in acoustics, heat, and electricity and magnetism which is intended for those who have taken the elementary course. The experiments seemed to be fully explained, but in many cases they are supposed to be tried with the elaborate and expensive apparatus of Koenig and other makers—apparatus which the student does not always have at hand.

LADD'S DISCOUNT BOOK. Compiled and edited by William J. Ladd. Unpagged. 8vo. Price \$3. Double indexed edition \$4.

This book contains more than one hundred thousand calculations. The tables will be found very complete and will prove of value for finding the net cost of goods and for making lists for specified discounts and for making discounts for specified lists, also for comparing prices, etc. A few days' use by buyer, price clerk, or manufacturer, or any one who has to handle the unwieldy discounts of to-day, will verify the claim of the compiler that the book is accurate, rapid, and without practical.

THEORY AND PRACTICE OF THE SIZING OF PAPER. New York: The Arabol Manufacturing Company, 1895. Pp. 32. 12mo.

SIMPLE METHODS FOR DETECTING FOOD ADULTERATION. By John A. Bower. London: Society for Promoting Christian Knowledge, 1895. Pp. 118. 16mo. 36 illustrations. Price 80 cents.

The experiments are simple, consisting for the most part of the application of simple chemical and microscopical tests as well as of specific gravity.

TABELLEN UBER DIE BLECHDICKEN UND DURCHMESSER DER FLAMMROHRE VON DAMPFKESSELN. Im Auftrage des Internationalen Verbandes der Dampfkessel-Ueberwachungs-Vereine. Herausgegeben von G. Eckermann. Hamburg: Boysen & Maasch, 1895. Pp. 26. 18mo. Tables. Price 2 marks.

Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & Co., 361 Broadway, New York.

SCIENTIFIC AMERICAN BUILDING EDITION.

OCTOBER, 1895.—(No. 120.)

TABLE OF CONTENTS.

- 1. Plate in colors of a handsome cottage at Rochelle Park, New Rochelle, N. Y. Two perspective elevations and floor plans. Cost \$9,000 complete. Mr. H. S. Rapelye, architect, Mount Vernon, N. Y. A pleasing design for a suburban residence.
2. Cottage at Kennebunkport, Me., recently erected for B. S. Thompson, Esq. Perspective elevation and floor plans. A very attractive residence in the English style of architecture. Mr. Henry P. Clark, Boston, architect.
3. A cottage at Flatbush, N. Y., recently erected at a cost of \$4,000. Perspective elevation and floor plans. John J. Petit, architect, Brooklyn, N. Y. An attractive design.
4. An all shingled cottage at Mount Vernon, N. Y. Perspective elevation and floor plans. A neat design in the Colonial style. Mr. Louis H. Lucas, New York City, architect.
5. A suburban cottage at Flatbush, L. I., recently erected at a cost of \$8,000 complete. Perspective elevation and floor plans. Messrs. Rowe & Baker, New York City, architects. An attractive design in the Colonial style.
6. A dwelling at Glenwood, Yonkers, N. Y. Perspective elevation and floor plans. Messrs. D. & J. Jardine, architects, New York City. A most unique design.
7. Three perspective views and floor plans of a residence at New Rochelle, N. Y. Architects, Messrs. Stephenson & Greene, New York City. A well treated design.
8. A Colonial residence at Mountain Station, N. J. Two perspective elevations and floor plans. Mr. H. C. Pelton, architect, New York City.
9. A house at New Haven, Conn., recently erected at a cost of \$3,500 complete. Two perspective elevations and floor plans. A modern economical cottage design. Architects, Messrs. Stilson & Brown, New Haven, Conn.
10. A Colonial cottage at Bronxville, N. Y., recently completed at a cost of \$4,600. Perspective elevation and floor plan. Mr. W. H. Rahman, architect, New York City.
11. Miscellaneous Contents: Buff brick—Tower tanks for water works, illustrated.—An old Baltimore firm.—Compo-Board instead of plaster—Translucent fabric, a substitute for glass.—Ventilation and heating of school buildings.—Ornamental glass.—A light and strong lifting jack, illustrated.—An improved circular saw, illustrated.—An improved wood working machine, illustrated.—Stamped steel ceilings, side walls and wainscoting, illustrated.—Spring hinges.—Mallory's standard shutter worker and fly screen.—An improved nail set, illustrated.

The Scientific American Building Edition is issued monthly. \$2.50 a year. Single copies, 25 cents. Thirty-two large quarto pages, forming a large and splendid MAGAZINE OF ARCHITECTURE, richly adorned with elegant plates and fine engravings, illustrating the most interesting examples of Modern Architectural Construction and allied subjects.

The Fullness, Richness, Cheapness, and Convenience of this work have won for it the LARGEST CIRCULATION of any Architectural Publication in the world. Sold by all newsdealers. MUNN & CO., PUBLISHERS, 361 Broadway, New York.

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

"U. S." metal polish. Indianapolis. Samples free. Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. For best hoisting engine. J. S. Mundy, Newark, N. J. Screw machines, milling machines, and drill presses. The Garvin Mach. Co., Laight and Canal Sts., New York. A beautifully illustrated 1896 calendar, 11x14 in., will be mailed free on application. Wm. Jessop & Sons, Ltd., 91 John St., N. Y. Emerson, Smith & Co., Ltd., Beaver Falls, Pa., will send Sawyer's Hand Book on Circulars and Band Saws free to any address. Thompson Dynamo-electric Machinery. Fifth edition. Send address for descriptive circular when ready. Spon & Chamberlain, 12 Cortlandt St., New York.

For the original Bogardus Universal Eccentric Mill, Foot and Power Presses, Drills, Shears, etc., address J. S. & G. F. Simpson, 26 to 36 Rodney St., Brooklyn, N. Y. The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, #4; Munn & Co., publishers, 361 Broadway, N. Y. A capable mechanical engineer wishes position as manager of some electric street railway interest. Is familiar with every detail of construction and can design and erect new work. Good references. Address Engineer, care of Scientific American office, New York.

Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication. References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn. Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(6655) C. N. R. asks how to prepare brewer's yeast. A Brewer's yeast is prepared as follows: 72 lb. unkilned malt and a handful of hops are gradually stirred in a clean tub containing 7 gal. of water of 170° F.; and to this 5/8 gal. water of 90° is added. The tub is then covered tightly and left quiet. After some time it is cooled rapidly. This is accomplished by setting in cans filled with cold water. When the temperature of the mash has reached 70°, the tub is covered again and allowed to stand for some twelve hours longer, when 1/2 gal. fresh beer yeast are to be stirred in. After another twelve hours have elapsed, pierce a hole in the layer formed by the husks of the malt and dip 3/4 gal. of the liquor beneath, then stir the whole up and dip 1 1/2 gal. from it (husks and liquor). This is the mother leaven, from which yeast can be generated all the year round by using it in the way described instead of the ordinary beer leaven. To the remainder in the tub add 5 gal. wort of 90°, and make use of it within two hours. The mother yeast also must be used the same day for fermenting another portion.

(6656) E. J. B. says: Can you inform me how to preserve plants with their natural colors? A. A recent improved receipt for preserving plants with their natural colors is to dissolve 1 pint salicylic acid in 600 parts alcohol, heat the solution up to boiling point in an evaporating vessel and draw the plants slowly through it. Shake them to get rid of any superfluous moisture and then dry between sheets of blotting paper under pressure in the ordinary manner. Too prolonged immersion discolors violet flowers, and in all cases the blotting paper must be frequently renewed. The novelty appears to be the salicylic acid.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

October 29, 1895,

AND EACH BEARING THAT DATE.

(See note at end of list about copies of these patents.)

Table listing inventions with patent numbers and names of inventors. Includes items like: Adding machine, J. E. Minott; Advertising purposes, mechanical flower for, J. E. Wensler; Air blast apparatus, hydraulic, H. A. & I. H. Rogers; Air compressing apparatus, E. Chaquette; Air moistening apparatus, E. Wade; Alarm, See Audible alarm, Burkler alarm; Circuit breaker alarm, Fire alarm; Amalgamator, R. Wing; Anchor bolt, G. H. Lever; Angle bar, rail chair, rail joint, etc., W. F. Gould; Audible alarm, for valves, etc., W. F. Murphy; Automatic sprinkler and system, C. E. Buell; Axle and skein support for wagons, C. Miller; Bag fastener, F. H. Andall; Bag folding, W. A. & W. C. Wales; Barrel attachment, W. L. Rushton; Barrels, method of and machinery for making; Basket making machine, C. Votaw; Bath, See Sweating bath; Battery grid and plate and preparing grids, secondary, J. J. Rooney; Battery plate and preparing it, secondary, J. J. Rooney; Bearing, adjustable, E. J. Muller; Bearing, universal, F. J. Muller; Bed, folding, W. A. & W. C. Wales; Bedstead, invalid, A. M. Douglas; Beer, etc., for consumption, preparing, M. Warren; Beverages, apparatus for dispensing carbonated, E. S. Fetty; Beverages, apparatus for production of, B. Wilda; Bicycle fastener, D. Williamson; Bicycle lock, A. Noteman; Binder, temporary, J. Schonenberger; Block, See Tackle block; Blouse and underwaist, combined, H. J. Kramer;

Table listing inventions with patent numbers and names of inventors. Includes items like: Boiler, See Steam boiler. Water tube boiler; Bolt, See Anchor bolt; Bolt plate, king, E. Clark; Bolting reel, W. S. Hill; Boots or shoes, machine for scoring insoles for, Scott & Dancel; Bottle, imitator, W. F. Morrow; Box, See Fruit box. Junction box x. Lunch box; Whist box; Box staying machine, J. Mobs; Bracket, See Chair bracket. Scaffold bracket; Bracket, C. A. Baker; Brake, See Car brake. Electric brake. Vehicle Carriage, Waggon brake; Brake beam, H. B. Robinschun; Brake beam, F. H. Seymour; Brake device, F. E. Herdman; Brake shoe, W. W. Whitcomb; Brick kiln, Horn & Irwin; Brick press, Wallace & Fenfield; Brush, grinding device, W. Lewis; Bung, G. F. Bokel; Burglar alarm, electric, M. Anthony; Burner, See Hydrocarbon burner; Butter moulding and cutting machine, R. A. Simpson; Cable grip, Z. T. Prior; Cable hoist, W. Dusedau; Cabon de Laval, treating, R. Vidal; Can, H. T. Porter; Can labeling machine, Cornell & Knapp; Can labeling machine, G. B. Dunbar; Can opener, J. Moller; Canada thistles, composition for destroying, R. M. Curtiss; Car bolster, J. C. Wands; Car brake, J. P. Martin; Car coupling, E. N. Gifford; Car coupling, A. Shelton; Car door, J. H. Fleet; Car door, freight, C. K. Chamberlain; Car, dumping, C. L. Chapman; Car fender, H. Brandt; Car fender, S. A. Darrach; Car fender, E. Doerr; Car fender, G. L. Favorite; Car fender, J. Kerrigan; Car fender, J. O'Donnell; Car guard, street, H. A. Howe; Car trolley, electric motor, J. M. Kennedy; Carbonator, G. Noll; Card filleting upon cylinders, apparatus for winding, J. S. Dronfield; Carding machine doffer comb, C. G. Reilly; Carpet fabric, engrain, T. B. Dornan; Carpet, pile, E. B. Allen; Carpet stretching machine, M. Zander; Carriage wrench, J. W. Carver; Cartridges, machine for heading sheet metal, shells for, W. Mason; Cash register and indicator, A. B. Hayden; Caster, furniture, G. D. Clark; Centrifugal machine, F. F. Metzger; Chair, L. A. Chibchester; Chair bracket, W. I. Bunker; Chopper, See Cotton chopper; Chuck, T. E. Cherry; Cigar dasher, J. J. A. Morath; Cigar dasher, rotating mechanism, D. Barter; Cigar bunching machine, J. R. Williams; Cigar lighter, G. W. La. Bar; Cigar wrappers and binders, machine for cutting out, J. R. Williams; Cigarette machine, J. R. Williams; Cigarette making machine, J. R. Williams; Circular bread automatic, J. H. Devine; Cistern, O. O. & W. Walker; Clock, electric programme, L. H. Watters; Closet seat wall attachment, P. J. Cabill; Clothes pins, machine for making, P. J. Scharbach; Coal receptacle and elevator, C. L. Chapman; Coil winding machine, J. Wood; Collapsible tube, W. S. Scales; Concrete construction, E. L. Rausome; Condensing and evaporating, art of and apparatus for, E. D. Melien; Cooking outfit, F. H. Buzzboot; Copied effect on written or printed matter, means for producing, C. E. Adamson; Cord making and braiding machine, W. R. Schurmann; Corn shock tier, G. O. Houck; Cotton chopper, H. Studer; Counting machine, S. C. L. Hays; Coupling, See Car coupling. Yoke coupling; Crane for street sprinklers, by Grant, P. Eley; Crane, traveling, W. Russell; Cultivating machine, wheeled, E. S. Keeler; Cultivator and insecticide distributor, combined, J. Y. Leach; Cultivator tooth, Hedges & Crafton; Current motor, polyphase alternating, F. S. Hunting; Currents, distribution system for alternating, A. L. Seales; Curtain pole, A. R. Welch; Cut-off mechanism, automatic, W. M. Williams; Cut-out, automatic time, F. B. Badt; Cutter, See Weed cutter; Cutting machine, J. R. Scott; Damper, fireplace, F. T. Ripley; Dental bit and impression cup, combined, A. E. Hays; Dental engine, Hood & Reynolds; Dental hot air syringe, H. S. Stackhouse; Dental mouth mirror, F. L. Platt; Disinfectant, water closet, C. H. Hays; Door check, liquid, E. C. Le Bourgeois; Door fastener, A. D. Fritts; Door operating apparatus, A. Thorn; Draught and buffer mechanism, P. Brown; Drapery rack or stand, M. A. Heimann; Drive machine tools, variable, W. Ames; Dry battery, J. T. Todd; Dumping apparatus, J. D. Kelly et al.; Dyeing machine, H. L. Freeman; Eolipses, apparatus for observing, S. C. Drew; Egg tester, Hains & Machee; Electric brake, E. Case; Electric current indicator, A. C. Crebore; Electric generator, turbine, C. E. Sarcent; Electric machine, dynamo, N. Whitehead; Electric meter, R. O. Hood; Electric motors, automatically controlling, F. E. Herdman; Electric motors, device for regulating current admitted to, F. E. Herdman; Electric motors, safety and limit switch for, G. F. Card; Electric switch, C. Cassidy; Electric switch, H. Ross; Electric traction, H. Chabaut; Electrode for applying electric currents, E. F. Davis; Elevator, J. W. Gentry; Elevators, pneumatic signal device for, S. B. Opdyke; Embroidering machine, Haas & Lintz; End gate, vehicle, C. Zweik; Engine, See Dental engine. Gas engine. Gas and oil engine. Gravity engine. Rotary engine. Steam engine; Evaporator, P. C. Hewitt; Exhibit, mechanical scenic, W. Keast; Exhibitor, goods, G. L. Heyman; Explosives, operating mechanism by, C. E. Buell; Farm gate, W. A. McDaniel; Faucet, measuring, J. J. Wells; Feedwater heater, W. S. Simpson; Feedwater regulator and alarm, automatic, T. F. Morrin; Fence gate, wire, G. C. Barrett; Fences, combined wire tightener and spring tension for wire, W. A. Badger; Fibrous materials preparatory to spinning, apparatus for condensing, F. V. M. Raabe; Fifth wheel, G. W. Mauk; File, indexed, C. W. Northrop; Filter, A. L. Emery; Fire alarm and fire extinguishing apparatus, automatic, P. M. Brown; Fire door, elevator, R. W. Hare; Fire extinguisher, M. J. Kent; Fire extinguishing device, chemical, W. H. Eads; Firearm, magazine, W. Mason; Firearm sight, adjustable, F. W. Dobbel; Fishing nets or lines, apparatus for lifting, R. W. M. Connable; Flower pot, M. Simpson; Fog signal, H. J. Chapman; Folding table, H. S. Steyer; Fruit box, ventilating, G. D. Worswick; Fuel rating device, E. F. Sailor; Furnace, See Metal heating furnace; Furnaces, charging apparatus for blast, F. C. Roberts; Fuse, detonating, Alger & Maxim; Fuse, detonating, Maxim & Alger; Garment, netting, D. Basch; Gas and oil engine, J. J. Norman; Gas, apparatus for manufacturing, T. H. Paul; Gas burner, furnace, Pickett & Ewing; Gas engine, G. F. Conner; Gas engine, explosive, J. R. Bridges;