

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 5/4 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 1/4 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 1/4 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.)

- Adding machine, J. E. Minott. 548,837
Advertising purposes, mechanical flower for, J. E. Wenser. 549,039
Air blast apparatus, hydraulic, H. A. & I. H. Rogers. 549,022
Air compressing apparatus, E. Chaquette. 548,800
Air moistening apparatus, E. Wade. 548,898
Alarm. See Audible alarm. Burklar alarm. Circuit breaker alarm. Fire alarm.
Amalgamator, R. Wing. 548,792
Anchor bolt, C. H. Lever. 549,069
Angle bar, rail chair, rail joint, etc., W. F. Gould. 548,705
Audible alarm, for valves, etc., W. F. Murphy. 548,887
Automatic sprinkler and system, C. E. Buell. 548,742
Axle and skein support for wagons, C. Miller. 548,885
Bag fastener, F. H. Andral. 548,947
Barrel attachment, W. L. Rushton. 548,724
Barrels, method of and machinery for making. H. Campbell. 548,626
Basket making machine, C. Votaw. 548,680
Bath. See Sweating bath.
Battery grid and plate and preparing grids, secondary, J. J. Rooney. 549,079
Battery plate and preparing it, secondary, J. J. Rooney. 549,023
Bearing, adjustable, E. J. Muller. 548,810
Bearing, universal, F. J. Muller. 548,809
Bed, folding, W. A. & W. C. Wales. 548,857
Bedstead, invalid, A. M. Douglas. 548,778
Beer, etc., for consumption, preparing, M. Warren. 548,790
Beverages, apparatus for dispensing carbonated, E. S. Fetty. 548,751
Beverages, apparatus for production of, B. Wilda. 548,940
Bicycle fastener, D. Williamson. 549,086
Bicycle lock, A. Noteman. 548,888
Binder, temporary, J. Schonenberger. 549,080
Block. See Tackle block.
Blouse and underwaist, combined, H. J. Kramer. 548,883

- Boiler. See Steam boiler. Water tube boiler.
Boiler, E. R. Stettinius. 549,031
Bolt. See Anchor bolt.
Bolt plate, king, E. Clark. 548,957
Bolting reel, W. S. Hill. 548,916
Boots or shoes, machine for scoring insoles for, Scott & Dancel. 549,028
Bottle, imitator, W. F. Morrow. 548,886
Box. See Fruit box. Junction box. Lunch box. Whist box.
Box staying machine, J. Mobs. 549,002
Bracket. See Chair bracket. Scaffold bracket. Bracket, C. A. Baker. 549,046
Brake. See Car brake. Electric brake. Vehicle Carriage. Wag. No. 1 brake.
Brake beam, H. B. Robichaux. 549,021
Brake beam, F. H. Seymour. 548,695
Brake device, F. E. Herdman. 548,828
Brake shoe, W. W. Whitcomb. 548,939
Brick kiln, Horn & Irwin. 548,708
Brick press, Wallace & Fenfield. 548,968
Brush, grinding device, W. Lewis. 548,070
Bung, G. F. Bokel. 548,625
Burglar alarm, electric, M. Anthony. 549,045
Burner. See Hydrocarbon burner.
Butter moulding and cutting machine, R. A. Simpson. 548,821
Cable grip, Z. T. Prior. 549,033
Cable hoist, W. Dusedau. 548,973
Cachou de Laval, treating, R. Vidal. 549,082
Can. H. T. Porter. 549,015
Can labeling machine, Cornell & Knapp. 548,896
Can labeling machine, G. B. Dunbar. 548,733
Can opener, J. H. Miller. 548,917
Canada thistles, composition for destroying, R. M. Curtiss. 548,966
Car bolster, J. C. Wands. 548,858
Car brake, J. P. Martin. 548,648
Car coupling, E. N. Gifford. 548,914
Car coupling, A. Shelton. 548,889
Car door, J. H. Fleet. 548,975
Car door, freight, C. K. Chamberlain. 548,955
Car, dumping, C. L. Chapman. 549,089
Car fender, H. Brandt. 548,986
Car fender, S. A. Darrach. 548,987
Car fender, E. Doerr. 548,961
Car fender, G. L. Favorite. 548,974
Car fender, J. Kerrigan. 549,088
Car fender, J. O'Donnell. 548,815
Car guard, street, H. A. Howe. 548,805
Car trolley, electric motor, J. M. Kennedy. 548,997
Carbonator, G. Noll. 549,004
Card filleting upon cylinders, apparatus for winding, J. S. Dronsfield. 548,632
Carding machine doffer comb, C. G. Reilly. 548,788
Carpet fabric, engrain, T. B. Dornan. 548,747
Carpet, pile, E. B. Allen. 548,735
Carpet stretcher, F. M. Zander. 548,831
Carriage wrench, J. W. Carver. 548,806
Cartridges, machine for heading sheet metal, shells for, W. Mason. 548,882
Cash register and indicator, A. B. Hayden. 548,873
Caster, furniture, G. D. Clark. 548,825
Centrifugal machine, F. F. Metzger. 548,817
Chair, L. A. Chibchester. 548,669
Chair bracket, W. I. Bunker. 548,864
Chopper. See Cotton chopper.
Chuck, T. E. Cherry. 548,773
Cigar dasher, J. J. A. Morath. 548,858
Cigar dasher, rotating mechanism, D. Barter. 548,861
Cigar bunching machine, J. R. Williams. 548,886
Cigar lighter, G. W. La. Bar. 548,806
Cigar wrappers and binders, machine for cutting out, J. R. Williams. 548,902
Cigarette machine, J. R. Williams. 548,887
Cigarette making machine, J. R. Williams. 548,888
Circular bread automatic, J. H. Devine. 548,822
Cistern, O. O. & W. Walker. 549,033
Clock, electric programme, L. H. Watters. 548,928
Closet seat wall attachment, P. J. Cahill. 548,907
Clothes pins, machine for making, P. J. Scharbach. 548,802
Coal receptacle and elevator, C. L. Chapman. 549,030
Coin winding machine, J. Wood. 548,817
Collapsible tube, W. S. Scales. 548,800
Concrete construction, E. L. Ransome. 548,657
Condensing and evaporating, art of and apparatus for, E. D. Melien. 549,001
Cooking outfit, F. H. Buzzboot. 549,066
Copied effect on written or printed matter, means for producing, C. E. Adamson. 548,734
Cord making and braiding machine, W. R. Schurmann. 549,026
Corn shock tier, G. O. Houck. 549,066
Cotton chopper, H. Stader. 548,632
Counting machine, S. C. L. H. 548,794
Coupling. See Car coupling. Yoke coupling.
Crane for street sprinklers, by Grant, P. Eley. 548,910
Crane, traveling, W. Russell. 548,725
Cultivating machine, wheeled, E. S. Keeler. 548,642
Cultivator and insecticide distributor, combined, J. Y. Leach. 548,713
Cultivator tooth, Hedges & Crafton. 548,838
Current motor, polyphase alternating, F. S. Huntington. 548,709
Currents, distribution system for alternating, A. L. Seales. 548,789
Curtain pole, A. R. Welch. 548,810
Cut-off mechanism, automatic, W. M. Williams. 548,733
Cut-out, automatic time, F. B. Badt. 548,804
Cutter. See Weed cutter.
Cutting machine, J. R. Scott. 548,927
Dampier, fireplace, F. T. Ripley. 548,889
Dental bit and impression cup, combined, A. E. Hays. 549,754
Dental engine, Hood & Reynolds. 548,988
Dental hot air syringe, H. S. Stackhouse. 548,766
Dental mouth mirror, F. L. Platt. 548,817
Disinfectant, water closet, C. H. Ames. 548,871
Door check, liquid, E. C. Le Bourgeois. 548,881
Door fastener, A. D. Fritts. 548,911
Door operating apparatus, A. Thorn. 548,986
Draught and buffer mechanism, P. Brown. 548,863
Drapery rack or stand, M. A. Heimann. 548,875
Drive machine tools, variable, W. Ames. 548,807
Dry battery, J. T. Todd. 548,730
Dumping apparatus, J. D. Kelly et al. 548,986
Dyeing machine, H. L. Freeman. 549,063
Eolipses, apparatus for observing, S. C. Drew. 548,868
Egg tester, Hains & Machee. 548,803
Electric brake, E. Case. 548,817
Electric current indicator, A. C. Crebore. 548,701
Electric generator, turbine, C. E. Sargent. 548,890
Electric machine, dynamo, N. Whitehead. 548,684
Electric meter, R. O. Hood. 548,750
Electric motors, automatically controlling, F. E. Herdman. 548,830
Electric motors, device for regulating current admitted to, F. E. Herdman. 548,829
Electric motors, safety and limit switch for, G. F. Card. 548,949
Electric switch, C. Cassidy. 548,744
Electric switch, H. Ross. 548,819
Electric traction, H. Chabault. 548,627
Electrode for applying electric currents, E. F. Davis. 548,777
Elevator, J. W. Gentry. 548,752
Elevators, pneumatic signal device for, S. B. J. Opys. 548,721
Embroidering machine, Haas & Lintz. 548,984
End gate, vehicle, C. Zweik. 548,662
Engine. See Dental engine. Gas engine. Gas and oil engine. Gravity engine. Rotary engine. Steam engine.
Evaporator, P. C. Hewitt. 548,986
Exhibit, mechanical scenic, W. Keast. 548,879
Exhibitor, goods, G. L. Heyman. 548,987
Explosives, operating mechanism by, C. E. Buell. 548,741
Farm gate, W. A. McDaniel. 548,720
Faucet, measuring, J. J. Wells. 548,768
Feedwater heater, W. S. Simpson. 548,867
Feedwater regulator and alarm, automatic, T. F. Morrin. 548,783
Fence gate, wire, G. C. Barrett. 548,795
Fences, combined wire tightener and spring tension for wire, W. A. Badger. 548,737
Fender. See Car fender.
Fibrous materials preparatory to spinning, apparatus for condensing, F. V. M. Raabe. 549,018
Fifth wheel, G. W. Mauk. 549,000
File, indexed, C. W. Northrop. 548,814
Filter, A. L. Emery. 548,062
Fire alarm and fire extinguishing apparatus, automatic, P. M. Brown. 549,055
Fire door, elevator, R. W. Hare. 548,872
Fire extinguisher, M. J. Kent. 548,996
Fire extinguishing device, chemical, W. H. Eads. 548,790
Firearm, magazine, W. Mason. 548,715
Firearm sight, adjustable, F. W. Dobbel. 548,891
Fishing nets or lines, apparatus for lifting, R. W. M. Connable. 548,964
Flower pot, M. Simpson. 548,763
Fog signal, H. J. Chapman. 548,638
Folding table, H. S. Styer. 548,938
Fruit box, ventilating, G. D. Worswick. 549,043
Fuel raising device, E. F. Sailor. 548,762
Furnace. See Metal heating furnace.
Furnaces, charging apparatus for blast, F. C. Roberts. 548,658
Fuse, detonating, Alger & Maxim. 548,088
Fuse, detonating, Maxim & Alger. 549,072
Garment, netting, D. Basch. 549,048
Gas and oil engine, J. J. Norman. 548,922
Gas, apparatus for manufacturing, T. H. Paul. 548,816
Gas burner, furnace, Pickett & Ewing. 549,013
Gas engine, G. F. Conner. 548,628
Gas engine, explosive, J. R. Bridges. 548,772