

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—Joseph Rigby and George W. Reed, Seattle, Washington. In this coupling a spring-seated block is arranged to slide in the throat of the drawbar and hold the pin up until the block is forced in by the entering link, when the pin drops to couple the cars, the device insuring greater smoothness and certainty, and its working being definitely under the control of the operator.

CAR AXLE.—Charles W. Wolfe, Albany, N. Y., and Thomas H. Campbell, Green Island, N. Y. This is a sectional axle with wheels capable of independent rotation, so that a car supported by them will round curves of shorter or longer radius to either side, materially reducing friction and wear of railway equipment, the invention covering various novel features of construction and combinations of parts.

RAIL SWEEPER.—Neil Campbell, New York City. Two sweepers are ordinarily employed upon each car, one at each end diagonally across the track, and capable of attachment to the bottom of any car, the construction being designed for convenient manipulation to engage or disengage the sweeper with or from its driving mechanism and the track, the sweeper being driven directly from the wheels of the car or axle.

GONDOLA CAR.—Thomas Watkins, Coal Bluff, Pa. This is a car primarily designed for the transportation of coal, coke, ores, etc., and for the quick and easy unloading of the contents of the car without the labor of shoveling, the invention covering various novel features of construction and combinations of parts.

ELEVATED RAILWAY.—Thomas C. Clarke, Shrewsbury, N. J. This invention consists of a longitudinally-extending triangular girder, with side brackets projecting therefrom at suitable intervals and serving to support the double tracks, the construction being designed to take up but little room in the streets, and not seriously obstruct the passage of light and air.

Electrical.

BILGE WATER ALARM.—James W. Jones, New York City. This device consists of a float having an electrical contact point, an electrical signaling apparatus, and a fixed contact point, against which the float contact point bears when the water rises above a certain predetermined height, whereby an alarm will be sounded.

TELEGRAPH KEY.—John S. Kaylor, of Biemarck, Ill. Combined with the leg and contact point of the key is a sliding bolt, spring contacts forming a positive electrical connection therewith, with a spring for moving the bolt forward into the leg and a curved switch lever for withdrawing it, whereby the switch will not be liable to be opened accidentally, and will close automatically when released.

Mechanical.

GAINING MACHINE.—Joseph W. Baker, Chatham, Pa. This is a machine especially adapted for use in the formation of the gains in the string pieces or jacks of a stairway, movable clamps providing for the adjustment of a bed plate or frame to bring the cutter head to a position to operate to form either the tread or riser gains.

SAW FILING AND SETTING MACHINE.—William H. Parry, New York City. This is an improvement in machines which have a saw that is alternately clamped and released and moved the distance of one tooth during the reciprocating movement of a file holder that slides in a guideway adapted to vibrate in a vertical plane, the invention covering various novel features and combinations of parts.

Agricultural.

PLANT PROTECTOR.—Henry T. Shepherd, Bentonport, Iowa. This device consists of a wire screen cover adapted to wholly inclose the plant to protect it from the ravages of insects, without excluding the sun, air, and moisture, the protector being readily anchored in place, and designed more especially for use over melons, to protect them from bugs and cutworms.

Miscellaneous.

SPONGE HOLDER.—Burchard H. A. Siefken, Omaha, Neb. This is a device which will maintain an upright position, whereby the sponge will the longer retain its moisture, and be prevented from coming in contact with books, papers, or other articles, while it has a cap, so that it can be carried in the pocket without any leakage of water.

LEG FOR FOLDING BEDS.—Frederick Bennett, New York City. This is a leg so arranged that upon lowering the bed it will fall by gravity to the proper position for supporting the bed and be securely locked, and upon elevating or closing the bed will fall back to full concealment, the invention covering various novel features of construction and arrangement of parts.

HEAD AND BACK REST.—Charles Gurney, Piffard, N. Y. This is a portable device, consisting of a casing with an opening in its back, a spring-pressed plate being mounted in the casing with an arm hinged to the plate, and is designed more especially for use with a railway car seat, the parts being adapted to fold compactly and so designed that they may be brought to fit the person of almost any user.

PICTURE NAIL.—Aloysius Hauger, New York City. This is a nail in which the head portion is hinged to the body or stem, and adapted to fold toward the stem and unfold therefrom, whereby the stem may be driven into a wall or support without danger of injuring the head.

WINDOW CLEANER.—Francis Redmond, Ranelagh, Dublin, Ireland. This an improvement in window cleaners having a rotary brush, pad, or

mop, carried by a handle with mechanism for operating the rubber by hand, the improvement being designed to facilitate the work without weakening the support of the rubber.

LAMP BURNER.—Thomas Wall, Brooklyn, N. Y. This is a burner in which the parts are firmly secured together without the use of solder, and at small cost, a novel form of die and plunger being employed, and the invention covering other special details of construction and combinations of parts.

DRAWER EQUALIZER.—Joseph H. Knaus, Fayette, Mo. This invention covers a peculiar arrangement of links and levers joined together after the manner of toggle levers in the rear of the drawer, for securing its even and regular movement, and so that when pulled from one side or the other it will not be liable to become cramped or jammed.

LABYRINTH PUZZLE.—William F. Trulsen, New York City. This is a shallow rectangular box in which fits a sheet metal piece with stamped ribs forming groups of grooved passages, of which only one correct passage leads from a central recess to an exit opening near one corner of the box, a ball being adapted to traverse the passages and escape therefrom.

HYDROCARBON BURNER.—John Adams, Nashville, Tenn. Three patents in this line have been granted to this inventor, one of which more especially covers a burner designed for heating stoves, another for a burner for use in cooking stoves, and adapted to burn a mixture of petroleum or other liquid hydrocarbon and steam, these burners being designed for use in the fire-pot of an ordinary stove, while the third invention is intended to adapt the burner to a wider range of use where it is desirable to establish a forced draught by compressed air or steam.

NON-CONDUCTING COVERING.—Joseph L. Stillman, Fresno, Cal. This is a covering for pipes, to prevent freezing or loss of heat, and is composed of felt, red flannel, Osnaburg cloth, and paper, arranged in layers, with a special composition incorporated between the layers.

COAL MINING MACHINE.—William Job, Columbus, Ohio. This machine consists of a traveling adjustable frame mounted on swiveled rollers, and having a drill and cutter, adapted to drill a hole and then cut a seam laterally therefrom in such way that the blocks of coal detached from their place in the seam may be readily removed.

LOCK.—Charles E. Hennies, Atlanta, Ga. The bolt of this lock has notches in its upper and lower edges, with a spring-actuated tumbler adapted to hold the bolt in an unlocked and partially locked position, a spring-actuated stop holding the bolt in a locked position, while the tumbler, stop, and bolt are so constructed that two keys are necessary to lock and unlock them, and these keys must be manipulated in a definite manner.

WEIGHT AND PRICE SCALES.—Joseph T. Bright, Lexington, Ky. In these scales a tilting graduated beam is connected with a lever under the platform, and operates other levers on which the platform rests, the weight that slides on the beam being adjusted to indicate the value of the quantity of the article desired, while a dial pointer is adjusted by a screw to indicate the amount in pounds.

FILTER.—Charles G. Purdy, Brooklyn, N. Y. This invention covers a packing or joint for filter tubes, consisting of a central elastic apertured disk and two apertured guard plates at each side thereof, all adapted to an opening in a partition separating the unfiltered and filtered fluid chambers of a filter, and to make a joint with the filtering tube nozzle.

CARPET CLEANING MACHINE.—William Bowman, Battle Creek, Mich. This invention consists of a revolvable case or carrier formed with a number of pockets and provided with retainers, to prevent the bunching of the carpets placed in the machine and provide for a proper action in connection with each carpet.

MUCILAGE DISTRIBUTER.—Magnus J. Falson, Gloucester, Mass. This is a vessel having a small education port, connected with which is a spring spreader, carrying a rubber packing normally closing the port, whereby mucilage, glue, or paste held in the vessel may be delivered by simple pressure and evenly spread upon the parts to be connected.

TYPEWRITER CABINET.—John E. Davis, Washington, N. J. This invention consists of a supporting shelf pivotally connected at one end to the desk, rollers or blocks on the desk supporting the shelf in a closed or extended position, whereby the machine may be conveniently supported for use and inclosed when not in use, the cabinet then forming a writing desk.

PIANO.—Arthur W. Davidson and Charles Sigmund, Philadelphia, Pa. This is an improvement in the construction of upright pianos, providing means whereby the pin block will be securely attached to the back timbers or bracings of the instrument, and also to utilize the attaching mediums as conductors and transmitters of sound, tubular or trumpet-shaped bolts being used.

CLOTHES HANGING APPARATUS.—James A. McMahon, Brooklyn, N. Y. This invention relates to apparatus on the inside of the window, and used with a movable endless line running over pulleys and extending to a point outside of the house, the garments being hung on the line inside of the window and prevented from being soiled in passing over the window sill, while danger from leaning out of the window to handle the line is avoided.

DUMPING CART.—Charles Gibbs, New York City. This cart has a bottom pivoted to it at its rear end and is provided with a hoisting mechanism at its front end, with other novel features, whereby the load may be dumped quickly and conveniently while the body of the cart remains in its horizontal position, the end gate not being opened and the operator remaining at the front of the cart.

NEW BOOKS AND PUBLICATIONS.

CYCLOPEDIA OF THE MANUFACTURES AND PRODUCTS OF THE UNITED STATES. New York: The Seeger & Guernsey Company.

This is a very large classified trade directory, designed to afford the address of a manufacturer, and in most cases a long list of manufacturers, of almost any article a customer might be looking for. The index to articles fills 173 closely printed pages, and the directory proper 855 pages, the classification being so thoroughly carried out that it is easy to find any general description of goods or any special and limited subdivision thereof.

THE AMERICAN NEWSPAPER DIRECTORY. New York: George P. Rowell & Co. Pp. 1452.

This is the twenty-second year of publication, by a leading firm of advertising agents, of an annual volume giving location, size of sheet, and subscription price of all the newspapers in the country. Great care has been taken to make the work as complete as possible, and to give the best information obtainable relative to the circulation of each publication.

L'ANNEE ELECTRIQUE. Paris: Baudry et Cie. 1890. Pp. viii, 381.

Under eleven different headings forming the titles of as many chapters the history of electrical work for the year 1889 is given in this work. The electrical world is in a state so typically one of transition and development that these annual records of invention and discovery, embodying a summary of the world's progress in the science, are of the greatest utility, and should be studied by all. The last chapter on necrology brings to us the recollection of the losses of the year: Gaston Plante, the inventor of the storage battery; L. Gaulard, celebrated as one of the originators of the distribution of electricity by the converter system; J. P. Joule, the great physicist and investigator of the thermo-mechanical laws and relations, being among the most eminent.

THE PASTOR'S DAUGHTER. By W. Heinburg. Translated by Mrs. W. J. Davis. New York: Worthington & Co.

THE FEET OF LOVE. By Anne Reeve Aldrich. New York: Worthington & Co.

These are beautifully printed and bound novels with which to while away a summer hour agreeably. They are each embellished with good specimens of photographic illustrations.

SCIENTIFIC AMERICAN BUILDING EDITION.

MAY NUMBER.—(No. 55.)

TABLE OF CONTENTS.

1. Elegant plate in colors representing a tasteful cottage of moderate cost at Buffalo, N. Y. Perspective elevation, floor plans, sheet of details, etc.
2. Colored view of a residence at St. George, Staten Island, N. Y. Estimated cost \$30,000. Floor plans, perspective elevation, sheet of details, etc.
3. Stone residence, corner of St. Nicholas Place and 150th Street, New York city. S. Burrage Reed, architect.
4. New buildings at Eastgate and Bridge Streets, Chester.
5. Engravings of the residence of J. M. Johnson, Binghamton, N. Y. Perspective elevations and floor plans. Cost \$19,000 complete.
6. Perspective view of the office buildings of the Gotthard Railroad in Lucerne.
7. An English cottage. Perspective and floor plans.
8. A cottage recently erected at Binghamton, N. Y., cost complete \$3,800. Plans and perspective.
9. A residence in the Gothic style erected at New Brighton, S. I. Floor plans and perspective.
10. Excellent design of a country house recently erected at Belle Haven, Conn. Cost \$14,250. Oscar S. Teale of New York, architect. Perspective views and floor plans.
11. A double dwelling at Yonkers, N. Y., erected at a cost of \$8,000. Plans and perspective.
12. Residence of Chas. Kappes, Esq., at Stapleton, Staten Island, N. Y. Cost complete \$4,000. Perspective elevation and floor plans.
13. Cottage at Greenwich, Conn., erected at a cost of \$7,250 complete. Floor plans and perspective.
14. Miscellaneous Contents: High buildings.—Bad flues.—Imitation ebony.—Destruction of asphalt pavement by gas.—Art of building.—Improved dumb waiters, illustrated.—An improved skylight, illustrated.—Rogers miter planer, illustrated.—Dumb waiters and hand power elevators.—A fine window in the Convent of the Sacred Heart, illustrated.—Improved sash pulleys, illustrated.—A hot air and hot water heater, illustrated.—Colors for mortar.—Improved adjustable grooving head, illustrated.—An improved window screen frame, illustrated.

The Scientific American Architects and Builders Edition is issued monthly. \$2.50 a year. Single copies, 25 cents. Forty large quarto pages, equal to about two hundred ordinary book pages; forming, practically, a large and splendid MAGAZINE OF ARCHITECTURE, richly adorned with elegant plates in colors and with 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 next issue.

For Sale—New and second hand iron-working machinery. Prompt delivery. W. P. Davis, Rochester, N. Y. Acme engine, 1 to 5 H. P. See adv. next issue.

Tuerk water motors at 12 Cortlandt St., New York.

Fruit Evaporators. Treccott Mfg. Co., Fairport, N. Y.

Friction Clutch Pulleys. The D. Frisbie Co., N. Y. city.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

Platinum scrap, old wire, etc., bought, Willis & Clements, 38 S. 10th St. Philadelphia.

Send to H. W. Knight & Son, Seneca Falls, N. Y., for catalogue of pattern letters and figures.

For Sale—U. S. patent on a novel, practical, and durable toy. Address lock box 257, Springfield, Mo.

Best Ice and Refrigerating Machines made by David Boyle, Chicago, Ill. 140 machines in satisfactory use.

Best drying machines for grain, sand, clay, fertilizers, wet feed, etc. Made by S. E. Worrell, Hannibal, Mo.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Drop Forgings. Bronze Forgings. Upward of 3,000 different articles. Billings & Spencer Co., Hartford, Conn.

Veneer machines, with latest improvements. Farrel Fdry. and Mach. Co., Ansonia, Conn. Send for circular.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv., p. 173.

Screw machines, milling machines, and drill presses. The Garvin Mach. Co., Lait and Canal Sts., New York.

Mechanical engineer and draughtsman (32), fourteen years' experience, is open to engagement. Address H. B. H., 22 N. Water St., Philadelphia.

Guild & Garrison, Brooklyn, N. Y., manufacture steam pumps, vacuum pumps, vacuum apparatus, air pumps, acid blowers, filter press pumps, etc.

English tanned walrus, hippopotamus, giraffe, elephant and buffalo leather for polishing metals. All kinds mfrs.' supplies. Greene, Tweed & Co., 83 Chambers St., N. Y.

The Holly Manufacturing Co., of Lockport, N. Y., will send their pamphlet, describing water works machinery, and containing reports of tests, on application.

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.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

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.

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.

(2235) C. W. asks: 1. Can blue ferro-prussic prints be tinted gray or green, or can prints be made in any tint on the same principles by simple water manipulations? A. See SCIENTIFIC AMERICAN SUPPLEMENT, No. 584. 2. How can I varnish or give a glazy look to engravings, cardboard, etc., which will be pliable and elastic? A. Spread over the prints with a brush a collodion varnish. To 32 parts of collodion add 1 part of castor oil. 3. Is there any cheap, easy, and quick method of making ink prints direct from negatives or from films? A. No. See book, "Practical Guide to Photographic and Photomechanical Printing," by W. K. Burton, price \$1.50.

(2236) A. H. asks: 1. Can you give me the process by which the wax upon the Edison phonograph cylinder is hardened? A. The composition is a secret. 2. Is there any known solvent for carbon? A. Melted iron and some other metals. 3. Is it possible to conceive an indivisible particle of matter? A. This probably passes comprehension, and can only be affirmed as a definition. 4. What works do you consider the most complete upon physics? A. We recommend and can supply Hopkins' "Experimental Science," price \$4. Ganot's "Physics," \$5. Ganot's "Natural Philosophy," \$3.

(2237) H. G. L. writes: Please give me a simple test for phosphate of lime. A. Dissolve the mineral in nitric acid and add a drop to several cubic centimeters of a nitric acid solution of ammonium molybdate. A yellow precipitate indicates phosphoric acid. The test is interfered with by the presence of silicic or arsenic acid. These will not be apt to trouble you. Natural phosphates generally are accompanied by calcium carbonate.

(2238) W. V. B. asks how dextrine should be treated to eliminate the disagreeable odor it always has. A. Dissolve 10 parts dextrine in 18 parts water. When it has become clear, decant or siphon off, and mix the clear solution with 1½ to 2 per cent of 95 per cent alcohol. Decant the liquid from the precipitated dextrine, which will be dissolved in water and evaporated to dryness. Or dissolve in water and filter through animal charcoal.