

either water or air. The piston is operated until the obstructions are removed.

FOOT GEAR PATTERN.—Adolf Ehrenreich, New York City. This invention consists principally of a main or foundation plate forming the outlines of shoe patterns, and slides held adjustable on the main plate give outlines for various parts of the pattern. The improvement is readily adjustable for any size and style of shoe or other foot gear.

PENCIL OR PEN HOLDER FOR SLATES OR DRAWING BOARDS.—Philip E. Hannum, Cartersville, Mo. The improved holder appliance consists of a case attached to the end strip of the frame, preferably by means of clamping flanges. The case has different compartments for the reception of a knife, rule, erasers, etc., and on its cover are serrated sections for conveniently sharpening a pencil.

CAROUSEL.—Milton T. Weston, Kenton, Ohio. This is a merry-go-round in which a number of carriages are made to revolve around a central point through the exertions of the occupants of the carriages. It is of simple, strong, and inexpensive construction, designed to be perfectly balanced in operation, and having an operative mechanism comparatively free from friction.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

SCIENTIFIC AMERICAN BUILDING EDITION.

FEBRUARY, 1895.—(No. 112.)

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- 1. Elegant plate in colors, showing an artist's home at Bronxwood Park, N. Y. Perspective elevation and floor plan. Cost complete \$3,800. Mr. A. F. Leicht, architect, New York City. A unique design.
2. A residence at East Orange, N. J., recently completed for Geo. R. Howe, Esq. Two perspective elevations and floor plans. A pleasing design. Mr. Jas. H. Lindsey, architect, Newark, N. J.
3. A cottage at Glen Summit, Pa., erected for H. H. Harvey, Esq. Two perspective elevations and floor plans. A handsome summer cottage with some novel architectural features. Messrs. Neuer & Darcy, architects, Wilkesbarre, Pa.
4. A residence at Forest Park, Springfield, Mass. Two perspective elevations and floor plans. A combination of the Colonial style with French chateau features. Mr. Louis F. Newman, architect, Springfield, Mass.
5. "Sunnyside." The residence of Robt. S. Walker, Esq., at Flatbush, L. I. Three perspective elevations and floor plans. An exquisite design. Mr. Frank Freeman, architect, New York City.
6. A picturesque and well appointed residence erected for the late E. E. Denniston, Esq., at School Lane, Pa. Cost complete \$32,000. Perspective elevation and floor plans. Mr. Geo. T. Pearson, architect, Philadelphia, Pa.
7. A residence at Nutley, N. J., recently erected at a cost of \$5,800. Perspective elevation and floor plans. Mr. E. R. Tilton, architect and designer, New York City.
8. A cottage in the Colonial style at Southampton, L. I. Two perspectives and floor plans. Mr. C. H. Skidmore, architect.
9. Hall and Library at Glen Ridge, N. J., erected at a cost of about \$12,000. Mr. Wilbur S. Knowles, architect, New York City. Perspective view and floor plans.
10. A dwelling in the Colonial style at South Orange, N. J. Cost complete \$4,500. Mr. P. C. Van Nuys, architect, Newark, N. J. Two perspective elevations and floor plans.
11. Two views showing a most successful alteration in the Colonial style of the Blinn homestead at Cambridge, N. Y. One view showing the original structure as built over one hundred years ago and the other showing the additions and changes recently made. Mr. H. Inman Furlong, architect, New York City. Perspective views and floor plans.
12. A cottage in the Colonial style at Cushing's Island, Me., erected for Francis Cushing, Esq. Two perspective elevations and floor plans. Cost complete \$2,000. Mr. John C. Stevens, architect, Portland, Me. A unique and picturesque design for a model summer home.
13. A Colonial house at Westogue, Conn., being erected for the summer residence of Arthur M. Dodge, New York City. Perspective view and floor plans. Messrs. Child & De Goll, architects, New York.
14. Miscellaneous contents.—Improved method of manufacturing hydraulic cement.—A complete Pompeian house.—Inventions reduce the cost of building.—Those dreaded draughts. How they are caused and avoided in window-tight rooms.—Fire proof buildings.—The great staircase in the Capitol Building at Albany, N. Y.—Porous glass for windows.—Mexican onyx.—The Manhattan Life Building, New York.—View showing the water-proofing of the walls by the Caffal process.—A traveling lawn sprinkler, illustrated.—Egyptian cement plaster.—Ornamenting glass.—A bridge of concrete.—A new model parlor door hanger, illustrated.

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(6428) B. L. T. asks: 1. Where can I obtain a table giving the safe capacity in amperes of different sizes of German silver wire? A. Use the copper wire table, taking German silver wire of 2-7 times the diameter of the copper wire given as safe. 2. How can I obtain an illustration of the conduit and grip used on the Broadway cable system? A. See SCIENTIFIC AMERICAN, No. 20, Vol. 68.

(6429) A. B. R. asks: 1. Could 2 or 3 cells storage battery be used to run simple electric motor in "Experimental Science," if so, how many plates per cell and what size? To be run 100 hours. A. Yes. Use two square feet of positive plate. 2. In cab of locomotive running, the brass eye through which bell cord passes out of cab to engine bell becomes charged apparently with frictional electricity, as it emits sparks when whistle is blown. This occurs at night in very dry cold atmosphere. The eye is insulated by the wood of the cab. Three small air pipes are very close and one large steam pipe about eight inches away. Can you explain the phenomenon? A. It is due to the production of so-called frictional electricity, exactly as in the old-fashioned frictional electric machine.

(6430) C. S. B. asks (1) what size wire to use for 1/2 horse power motor for fields and armature. Also the number of sections for armature and number of loops to each coil? A. See our SUPPLEMENT, No. 600. 2. Can you give me the formula for some compound to use on tape for insulating purposes that will not dry out soon? A. If you add castor oil to shellac varnish, it will dry with extreme slowness.

(6431) H. C. L. asks: 1. Would like to be informed in the SCIENTIFIC AMERICAN how to make a cauterizing cell? A. Any low resistance cell will answer for cauterizing. 2. What is the internal resistance of a standard gravity battery? A. Two to six ohms is a good allowance. 3. Of a Leclanche? A. One or two ohms. 4. What size ports are necessary for cylinder 6 inches diameter, 12 inches stroke, at 40 pounds steam pressure, to make 30 strokes per minute? A. Steam ports 3/16 inch by 4/16 inches, and exhaust ports 1/4 inch by 4/16 inches, as yours is a slow-running engine. 5. What is the rule for such a calculation? A. A good rule for ordinary speed engines is to make the steam ports 1-15 of area of cylinder, and exhaust ports twice the area of steam ports. Arrange width and length to suit any peculiarities in construction of the steam chest.

(6432) A. S. asks: Which is the best kind of glue to use for sticking paper on cast iron pulleys? A. Cast iron pulleys may be lagged with leather without the use of rivets, by first brushing over the surface with acetic acid, which will quickly rust it and give a rough surface; then attach the leather to the face of the pulley with cement composed of 1 pound of fish glue and 1/2 pound of common glue.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

February 19, 1895,

AND EACH BEARING THAT DATE.

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

Table listing various inventions with their corresponding patent numbers. Includes items like Air blowing machine, Air compressor, Air cooling apparatus, Alarm gauge testing mechanism, Axiel box, Bait, artificial, Baling press, Battery, Bed and crib, Bed and sofa, Bed bottom, Bed bottom, spring, Belt, electric, Belt tightener and shifter, Bicycle, Bicycle saddle, Blasting, Bleaching, Boiler cleaning compound, Boiler or other furnace, Bolt, Book lock, Boot or shoe, Box form wrapper, Box nailing machine, Box or crate machine, Brick building, Brick machine, Broiler, coffee roaster, C. E. Fleming, Brush, electric, Bubble blower, Buckle, Bungee or tapping device, Buzlar al rm, Burner for crude oils and steam, Button, Button, tack fastener, Buttons, fastening for link cuff, Calking joints of pipes and mains, apparatus for, Cane weaving, crossing needle for, Cane, electrical pump attachment for oil, Car coupling, Car coupling, L. T. Backus, Car coupling, W. L. Hoffecker, Car coupling, J. R. Macee, Car coupling, Seeley, Jr., and Hoffecker, Car fender, street, R. L. Burleson, Car, freight, J. E. Simons, Car guard, C. P. Stimpson, Car step, E. S. Stevens, Car, stock, W. S. Johnson, Cars, electrical alarm for street, Carding machine, Carding machine feeding mechanism, Case, See Blacking case, Case, electrical, and apparatus for treatment of, Chain link bending machine, Chair, See Folding chair, Chair table arm, C. B. Demarest, Check protector, Fitt & Sittmann, Check row wire reel, G. D. Haworth, Checking and unchecking device, Chopping knife, S. Norris, Cigar or pipe tip, J. S. B. Hartsock, Circuit making and breaking device, S. W. Stratton, Clamp, See Seal clamp, Clock synchronizer, electric, C. M. Crook, Clocks, electric winding and synchronizing device for, C. M. Crook, Clocks, electric winding mechanism for, C. M. Crook, Clothes line operator and holder, E. & C. E. Hecht, Clothes pin, S. T. Johnson, Clutch, friction, J. M. Dodge, Cock or faucet, S. H. Lunt, Cope, blue disarr, P. Paganini, Corn stubble cutter, Ivins & Dunphy, Coupling, See Car coupling, Rod coupling, Cream separator, centrifugal, C. Hohnsbehn, Cultivating land, steam engine for, T. Cooper, Cultivator, W. T. M. Brunnner, Cultivator, R. Franzen, Cultivator, M. Weber, Curbing, metallic, I. L. Landis, Cutter, See Corn stubble cutter, Danger signal, O. T. Wood, Dental engine, electrically operated, W. E. Wheeler, Dental implements, electrical apparatus for operating, O. H. & A. F. Pieper, Derailing switch, E. Samuel, Digging, See Post hole digger, Potato digger, Distilling and aerating apparatus, water, J. H. Vinton, Door check and closer, pneumatic, J. S. Strawder, Door locking device, P. Paganini, Dowel setting machine, Foster & Sippel, Drier, See Sand drier, Drier, W. F. Jobbins, Drill, See Rock drill, Seed drill, Dust collector, L. O. Stevens, Ear drum, artificial, A. V. Sanford, Eaves trough hanger, S. L. Lewis, Electric current distributing system, G. B. Penock, Electric light switch, H. W. Lawrence, Electric line work, tower wagon for, J. H. Leonard, Electric machine, magnet, H. J. Smith, Electrical alarm or bell, Atwood & Aylsworth, Electrical conductor, Atwood & Aylsworth, Elevator, See Water and sand elevator, Elevator, L. A. Corron, Elevator, T. Tresler, Elevators, automatic safety gate for, J. T. Hobbs, End gate fastener, W. Walker, Engine, See Dental engine, Gas engine, Pumping engine, Engine, Davis & Barton, Envelope, S. Vance, Envelope threading machine, S. P. Denison, Excavating machine, G. W. King, Fabric piling machine, J. B. O'Bryan, Fabrics, machine for inserting threads into, S. M. Pierce, Fan, electric rotary and revolvable air circulating, S. M. Pierce, Faucet and attachments therefor, Wright & Grover, Fence, portable, E. B. Duncan, Filing case, L. K. Oppenheimer, Filter, G. Descamps, Fire extinguisher, Meyrose & Bradley, Fireproof floor, F. Von Emperger, Floor clamp, W. G. Wallace, Fly frame, W. W. 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