

RECENTLY PATENTED INVENTIONS.

Engineering.

STOPPING AND STEERING BOATS.—

Henry A. Sheldon, Arcadia, R. I. Wings which may be laterally projected from the boat at opposite points not far back from the bow are provided by this inventor, in connection with a novel operating mechanism, in which steam power is applied through curved cylinders, actuating a curved piston rod, to move either one or both the wings to an outward position, at right angles to the hull, or to an inner position in line with the side of the hull. The motor mechanism is controllable from the pilot house, and affords means for conveniently adjusting the wings as may be desired.

Railway Appliances.

CAR FENDER.—William A. Morris,

Brooklyn, N. Y. Under each platform is a frame with outwardly and downwardly extending curved guideways, to receive the side bars of a fender covered with a suitable netting, and having at its front end wheels or shoes adapted to travel on the track rail. The side bars have each a rail to prevent a person picked up from falling off the fender. Centrally on the inner end of the fender is an eye adapted to connect with a bolt sliding on the under side of the platform, the motorman or gripman, by simply pressing with his foot upon a stud, disengaging the bolt from the eye and permitting the fender to slide downward and forward, in position to readily pick up a human being. When the fender is not desired for use, it is moved upward on its guideways and held in withdrawn position under the platform by the engagement of the eye with the bolt.

SWITCH LOCK.—John W. Tew, Rome, Ga., and John D. Riggs, Selma, Ala. This is an automatic safety lock to prevent the interference of unauthorized persons with a switch. It is an improvement on a formerly patented invention of the same inventors, and comprises a lock projection or bolt normally in position at the side of one of the movable switch sections, to lock such section and its mate from movement, tripping plates being so connected with the operating devices that the weight of a passing locomotive withdraws the bolt and permits the switch to be thrown by hand or in any other manner. The construction is simple, having no parts likely to get out of order, and this invention relates particularly to improvements in the devices for operating the bolt.

NUT LOCK.—David C. Wetsel, Carrollton, Pa. This is a device especially adapted for locking nuts on fish plate bolts of railroad tracks. The nut has a shoulder adapted to fit against a shouldered locking block with a radial wing at each side, a fish plate recessed on one side near the bolt receiving one of the wings. The improvement affords convenient means for quickly locking the nut on a bolt, permitting the nut also to be partly or entirely removed from the bolt.

CAR BELL RINGER.—Samuel A. White and Augustus M. Glover, Savannah, Ga. This is an improvement in bell-ringer attachments operated from the axle of a car. A hinged bar is arranged near projections revolving with the axle and connected with two springs of different tension acting in opposite directions, the springs being also connected with a rod beneath the car to which tension may be applied to overcome the stronger spring, allowing the weaker one to throw the bar into contact with the projections on the axle, thus working an alarm. The attachment includes a suitable operative connection with a foot piece on the car platform, by pressing upon which the alarm will be sounded, but will cease as soon as the foot pressure is removed.

MAIL BAG HANGER.—George M. Patterson, Gertrude, Ga. This improvement comprises a standard with an upper and a lower arm, the arms being provided with bag-retaining devices, each having a number of hooks or cleats to which a mail bag may be attached, the devices being adapted for complete rotation and to be automatically placed in position for use by the movement imparted when the bag is removed. When the bag is caught by the gathering arm of the mail car it may be readily drawn from its support.

Electrical.

SIGNAL SYSTEM.—Webster Gillette, New York City, and Alexander S. Williams, Long Island City, N. Y. This improvement comprises a closed conductor connecting two stations, a battery arranged for cutting into the closed conductor for signaling, and a telephone support with switch contacts for completing the local and line circuits. The system may be used in connection with the existing wiring of hotels, factories, small telephone exchanges, or with smaller wiring arranged specially for use under this improved system. While the conductors are all closed, the circuits of the batteries are open, and the conductors are always in condition for sending and receiving signals and for use for telephonic communication.

SHIP'S LOG AND COURSE INDICATOR.—

John P. Rogers, Moncton, Canada. This invention includes a log to be towed as usual, and printing and registering mechanism carried on the vessel to automatically record the distances, so printing the mileage figures that the deviation of the ship from a prescribed course will be indicated. Electrically operated means are provided for controlling the printing and registering mechanism, and affording a reliable circuit breaker in the log proper to make and break the circuits and set the controlling mechanism in operation. A wind-indicating device is connected with the apparatus to indicate leeway in the same manner as the current indicator, the effect of the wind on the log line being counteracted by the disk of the wind indicator and its electrical connections.

Mechanical.

FORGE.—Aaron Rice, Northport, Ala. The hearth of this forge has a water compartment under its basin, connected by pipes with the lower end of a boiler, the pipes being preferably one above another to establish a circulation. The boiler drives an engine which operates a blower with a blast pipe projecting

over the basin of the hearth, a water jacket on the front of the boiler surrounding the blast pipe.

MACHINE FOR CURLING HAT BRIMS.—

Joseph Ives, Newburg, N. Y. The machine has a wheel with concave flange, a small wheel or button with convex face being adapted to press the hat brim against the flanged wheel, while a shoe made concave in the direction of its length has a concave groove in the edge. A gage is provided for guiding the hat, springs for pressing the button against the brim, a cam for withdrawing the button, and means for heating the shoe, flanged wheel and button. As the hat is passed between the revolving flanged wheel and button, under the application of heat, the brim is given the proper curvature, being received and prepared for curling by the shoe, and also preserved in such curl as it leaves the wheel and button.

Agricultural.

CUTTER FOR HARVESTERS, ETC.—

Frederick Friesz, Shenandoah, Iowa. According to this invention the cutters of reapers, harvesters, and similar machines are made in stellated form, to rotate individually upon their own axis, and collectively around a guide of predetermined construction, the cutters presenting themselves successively in position for cutting. They are designed to be operated by means of an endless chain belt with the least possible friction, the cutters clearing themselves from the grass or grain cut, preventing clogging.

HEDGE AND LAWN EDGER.—Myles Y.

Warren, Philadelphia, Pa. This is a simple, inexpensive and light machine for trimming lawns and hedges by being pushed along the borders. Its wheel-supported frame has one straight side with blades at its front edge, the opposite side near the front being inclined toward the straight side, and the bottom of the frame extending outward beyond the inclined side and having at its front a scraper. On the shaft, on the inner face of the straight side of the frame, are radial arms which press the twigs, grass, etc., against the blades, in advance of which, near the ground, is a small circular cutter.

Miscellaneous.

RECOIL OPERATED AUTOMATIC ORD-

NANCE.—Alfred A. McKnight, Wilmington, Ohio. According to this invention a frame in which the barrel is supported and movable has separated abutments, a lever pivoted to and movable with the barrel having an arm connected with and operating the breech block, while a second arm extends between and is operated by the separated abutments. The hammer is pivoted to and the trigger supported on the framing, the reciprocating barrel having portions by which to cock the hammer and pull the trigger. The several moving parts are designed to be operated, after the first firing, by the force of the recoil, or by springs acting in opposition thereto, the gun barrel being moved rearwardly, the hammer cocked, the breech block lowered, the cartridge thrown out and a new one inserted, the barrel moved forward, the breech block readjusted, and the hammer cocked and the gun fired.

SWORD SCABBARD.—Henry O. Weller, Butte, Montana. This scabbard has an opening in one of its walls at the mouth, and the sword hilt has a lug shaped to enter and fill the opening. The construction of the scabbard is such that the sword may be guided therein more quickly and conveniently than in the ordinary scabbard, a beveled recess in its upper end serving as a guide to direct the sword to the mouth of the scabbard.

VOTING MACHINE.—Frank H. Gilbert, Ridgefield, Washington. This machine provides a sheet or tape to be passed between punch bars with apertures corresponding to the candidates to be voted for, means for puncturing the sheet or tape, and a concealing slide, whereby neither the following voter nor the inspector may discover who was voted for. Its construction is designed to facilitate voting without mistake by an ignorant person, and when each vote is cast an alarm is sounded, when the official in charge may place the recording material in position to receive the next vote, means being also provided for making a duplicate record, one of the records to be removed from the machine without allowing access to the other record.

CARBON HOLDER FOR BLANK BOOKS.—

Lewis A. Lipman, New York City. The book, according to this invention, has at its back a thickened leaf of greater length than the other leaves, the leaf being folded in at the edge of the book, and thus constituting a holder of great simplicity and cheapness for the carbon sheets, which may be readily removed as desired.

INK WELL.—Joseph Morton, New York City. As an improved article of manufacture, this inventor has devised an ink well designed to prevent the ink from marring the beauty of the crystal effect of the well body. The body is of glass or crystal, and removably fitted in its central recess is an exteriorly polished cup-shaped ink well, of metal, adapted to reflect the light and add greatly to the appearance of the entire ink well, the ink being invisible through the sides of the well body.

SASH BALANCE.—Joseph H. Bane, Barre, Mass. According to this improvement a pinion loosely mounted on a spindle is adapted to engage a rack on a sash, there being a pawl and ratchet connection between the pinion and spindle, and a brake engaging the spindle. The improvement may be applied to an old as well as a new window, and its action is not interfered with by warping of the window frame or sash, the window being raised and lowered as conveniently as if the old balance were employed. The locking device is at one side of the sash and roller bearings at the opposite side.

LOCK AND STAY FOR WIRE FENCES.—

Cyrus M. Suter, Ashton, Ill. This improvement consists of a locking plate with longitudinal slots extending from the ends inwardly to within a short distance of the center of the plate, and forming two jaws at each end of the plate, which is to be used in connection with a link of wire adapted to extend across a runner, the wire having a loop at each end and being bent near its center. A simple and inexpensive method is thus afforded of

securing the runners of wire fences from vertical movement.

CART.—Amasa L. Smith, Carnes, Iowa.

The axle of this cart has an integral yoke-like body, and the running gear is so constructed that it is adapted to receive a dumping body or a barrel-like receptacle, which may be quickly taken up from the ground by the manipulation of the running gear without being touched by the operator, and may also be gently dropped upon the ground. It is especially adapted for use as a sloop cart.

HORSE WEIGHT.—David B. Macon-

chic, Toronto, Canada. This is a hollow weight block with bail-like handle, and in the block is a spring-controlled strap roller to which is attached a self-wrapping halter that may be extended from the weight as desired, automatically returning within the weight when the animal is detached from the halter and the weight is placed in the vehicle.

GARMENT HANGER.—Edgar W. Hor-

ner, Connelville, Pa. This is a device to support trousers with the waistband hanging downward, to remove bagginess at the knee. The trousers may be clamped in the hanger without marking them at the point of contact, and the device is also adapted to serve as a support for a coat and vest, or other garments.

CLOTHES HANGER.—John H. J. Ron-

ner, New York City. This device consists of separable jaws with opposite clamping faces and a suspending hook extended between them, forming a simple and inexpensive means of holding an entire suit of men's clothes, while also adapted to support other garments. The clothes are so held as to prevent their becoming creased or losing their shape.

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.

APRIL, 1895.—(No. 114.)

TABLE OF CONTENTS.

1. An elegant plate in colors, showing a Colonial cottage recently completed for Frank L. Purdy, Esq., at Glen Ridge, N. J. Two perspective elevations and floor plans. An attractive design. Architect, Charles P. Baldwin, Esq., Newark, N. J.
2. Two perspective elevations and floor plans, showing a residence recently completed for George N. Tyner, Esq., at Holyoke, Mass. An elegant design in the Romanesque style of architecture. Mr. H. H. Gridley, Springfield, Mass., architect.
3. A cottage at Nutley, N. J., erected at a cost of about \$4,000. Perspective elevation and floor plans. Architect, Mr. E. R. Sifton, N. Y. A simple but tasteful design.
4. A Colonial residence at Orange, N. J., recently erected for John Hammond Bradshaw, M.D. A pure example of modern Colonial architecture. Two perspective elevations and floor plans. Messrs. Roessiter & Wright, New York City, N. Y., architects.
5. An attractive residence at Indiana, Pa., recently erected for Mr. Harry McCreary, at a cost of \$4,350 complete. Perspective elevation and floor plans. Architect and builder, Mr. E. M. Lockard, Indiana, Pa.
6. Two perspective elevations and floor plans of a handsome residence erected for Samuel S. McClure, at Armour Villa Park, Bronxville, N. Y. A good example of a square rigged house. Cost \$8,000 complete. Mr. Henry S. Rapelyea, architect, Mount Vernon, New York.
7. A cottage at Glen Ridge, N. J. An attractive residence in the Elizabethan style. Two perspective elevations and floor plans.
8. A carriage house at Orange, N. J., recently erected for John Hammond Bradshaw, M.D. The design is treated in the modern Colonial style to correspond with the architecture of his residence. Ground plan and perspective elevation. Messrs. Roessiter & Wright, architects, New York.
9. An elegant residence at Flatbush, L. I., recently erected at a cost of \$11,000 complete. Two perspective elevations and floor plans. Architect, J. G. Richardson, Esq.; builder, J. C. Sawkins, Esq., both of Flatbush, L. I. An attractive design.
10. A house at Park Hill, N. Y., recently erected for Messrs. Loreni & Morrow, at a cost of \$6,500 complete. Perspective elevation and floor plans. Mr. Edmund J. Maurer, architect, New York.
11. Miscellaneous Contents: Moderne Innen-Decoration.—The evolution of an old building, with 4 views.—Wood stains.—Wood finish chemically and microscopically examined.—A tubular frame house.—To destroy hothouse insects.—Venetian blinds, illustrated.—An improved spring hinge, illustrated.—Cement mortar.—A blind architect.—Frozen water closets.—An electrical mail box, illustrated.—The anchor fence post, illustrated.—Hardwood matching heads, illustrated.—Porcelite.—The Rider engines, illustrated.—The Security sash balance, illustrated.—Improved woodworking machinery, illustrated.

The Scientific American Building 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 new dealers. 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.

Try us for manufacturing your wire or sheet metal specialties. The Enterprise Mfg. Co., Akron, Ohio.

"C. S." metal polish. Indianapolis. Samples free.

Marine Iron Works, Chicago. New catalogue free.

For pile driving engines. J. S. Mundy, Newark, N. J.

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

Best Handle Mach'y. Trevor Mfg. Co., Lockport, N. Y.

Screw machines, milling machines, and drill presses.

The Garvin Mach. Co., Light and Canal Sts., New York.

Emerson, Smith & Co., Ltd., Beaver Falls, Pa., will send Sawyer's Hand Book on Circulars and Band Saws free to any address.

Canadian and foreign patents negotiated. Industrial

companies formed in Europe. References. P. O. box 528, Toronto, Canada.

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 elec-

tricity is "Experimental Science," by Geo. M. Hopkins.

87 mail. 44; Munn & Co., publishers, 36 Broadway, N. Y.

Competent persons who desire agencies for a new

popular book, of ready sale, with handsome profit, may

apply to Munn & Co., Scientific American office, 361

Broadway, New York.

To anyone of the name of Fullton or Fulton, particu-

lars wanted as to name, date, and place of birth of self,

father, and grandfather. Address, with full informa-

tion, Robt. Fulton, Dunedin, New Zealand.

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.

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.

(6471) G. E. M. says: Please give a receipt for a paste for pasting the labels on tin cans. A. Make a paste by dissolving rye flour in a solution of caustic soda, dilute with water, stirring all the time. Add to this paste Venetian turpentine—a few drops for each ½ pound flour. Adheres firmly to all metals, tin foil, glass, etc.

(6472) P. J. R. says: Kindly tell me how mushrooms are canned? A. Choose freshly gathered mushrooms, white, full, and firm; cut away the gritty part near the stalk, and throw the mushrooms into a basin of cold water; wash them quickly and drain them on a cloth. Put in a stew pan the juice of a lemon, an equal quantity of water, and a pinch of salt. The above quantities are calculated for 2 pounds of mushrooms. Turn each mushroom, put them into the stew pan containing the lemon juice, and toss them to impregnate them with the liquid. Cover the stew pan, put it over a brisk fire, and boil the mushrooms for four minutes, tossing them occasionally; and pour the whole into a basin. When cold, put the mushrooms in quart tins, cover them entirely with the liquor in which they have been boiled, filling up the tins with cold water, previously boiled if the liquor is insufficient. Solder on the covers and boil the tins in water for two hours.

(6473) E. H. says: Can you give me the ingredients and proper mixture of Angostura bitters? A. Four ounces gentian root; 10 ounces each calisaya bark, Canada snake root, Virginia snake root, licorice root, yellow bark, allspice, dandelion root, and Angostura bark; 6 ounces cardamom seeds; 4 ounces each balsam of tolu, orangetis, Turkey rhubarb, and galanga; 1 pound orange peel; 1 pound alkane root; 1½ ounce caraway seed; 1½ ounce cinnamon; ½ ounce cloves; 2 ounces each nutmegs, coriander seed, catechu and wormwood; 1 ounce mace; 1½ pound red sanders wood and 8 ounces turmeric. Pound these ingredients and steep them for fifteen days in 50 gallons proof spirit; before filtering, add 30 pounds honey.

(6474) M. D. H. asks: 1. Can a No. 10 steel wire can be used to run around an iron pulley, and what size pulley and groove? A. Yes; pulley should be 3 feet diameter with V groove rounded at bottom to fit the wire. 2. And also size of pulley that a ¾ inch wire hoisting rope will wind around and be serviceable? A. A 20 inch to 2 foot drum or pulley for the wire rope, according to the flexibility of the rope.

(6475) L. E. D. writes: 1. I have a storage cell of 8 volts and 40 ampere hours which I charge with 6 gravity Crowfoot cells (6x8) connected in series. They do not charge it more than one-third. When connected in multiple series, they do not charge it at all. Can you tell me where the trouble is? A. You need for proper charging at least nine Crowfoot batteries in series, to obtain sufficient voltage. 2. Please give formula for calculating battery and amperage of several cells of primary battery when the voltage and amperage of one cell is known. A. These calculations are made by Ohm's law. The amperage depends on the resistance of the entire circuit, the voltage on the number of cells in series.