

ENGINEERING INVENTIONS.

An electrical governor has been patented by Mr. Frank E. Prichard, of Cedar Falls, Iowa. It is designed to control the speed of water wheels and other motors by means of an electric current, a ratchet wheel being connected with the valve or gate, engaging an oscillating lever carrying pawls, in connection with electro-magnetic mechanism for controlling the pawls and a centrifugal governor for connecting the current.

A rotary excavator for removing snow has been patented by Mr. Edward Leslie, of Orangeville, Ontario, Canada. It is mounted on the forward end of a car in connection with a cylindrical casing, having a revolving wheel provided with radial fans, and outer and inner sets of knives held in front of the wheel, the invention being an improvement on a former patented invention of the same inventor.

AGRICULTURAL INVENTIONS.

A cotton planter has been patented by Mr. Jacob R. White, of Greenville, Ala. It is designed to plant cotton and other seed in rows or drills, opening the soil, dropping the seed regularly, and then covering the seed, all in one passage of the machine over the field.

A plow standard has been patented by Mr. William H. Hodgson, of Winona, Minn. This invention relates to an improved union whereby a plow standard may be connected to a beam, the parts being so arranged that the vertical angle of the beam may be adjusted as desired, a lateral adjustment of the beam being also provided for.

A combined planter and fertilizer distributor has been patented by Mr. James M. Pope, of Canton, Miss. It is adapted for planting small grain, corn, or cotton, for distributing a fertilizer, and for covering the seed and fertilizer after they have been deposited in the ground, the invention covering various novel features of construction and combinations of parts.

MISCELLANEOUS INVENTIONS.

A spindle-driving device for spinning machines, etc., has been patented by Mr. Leedham Binns, of Philadelphia, Pa. It is for driving by one hand two spindles on opposite sides of a spinning or spinning and twisting frame, or on opposite sides of the drum which drives the spindles.

A waterproof paint has been patented by Mr. Matts Fred, of Hancock, Mich. It consists of charcoal, boiled linseed oil, litharge, binoxide of manganese, and other ingredients mixed and combined after a specified manner, in proportions explained for different uses.

A paper box has been patented by Mr. Albert H. Zugalla, of Brooklyn, N. Y. This invention covers a box to be cut and folded from a single piece of material, which, when folded and properly interlocked, will form a complete box, dispensing with all fastening or gluing of the parts.

A bolt has been patented by Mr. George D. Murdoch, of Brooklyn, N. Y. It is a separator for cleaning bone black, sulphur, coffee, or any dry matter required to be freed from dust, the invention covering a novel construction and combination of parts in a bolt to do such work in an expeditious, simple, and effective manner.

An instrument for dividing angles has been patented by Mr. Adolfo Saenz Yanez, of New York City. It is an instrument for dividing sectors and angles into equal parts, made of a thin plate preferably provided with a semicircle, and having a diameter pass through its center which forms the base of the instrument.

A shackle has been patented by Messrs. Leonidas C. Ferrell and David Israel, of Donaldsonville, La. It consists of a safety belt provided with a lock and with hand cuffs for holding the prisoner's hands down in front of him in an easy position, and one which will prevent him from running rapidly or offering great resistance.

A sleigh has been patented by Mr. Nelson G. Reynolds, of Bangor, Mich. It is of that class in which the runner knees are secured to the body by a connection that will permit of oscillation or tilt of the body upon the runners, or vice versa, the connection being strong, simple, cheap, and not liable to get out of order.

Combined outside and inside calipers form the subject of a patent issued to Mr. Oliver D. Warfield, of Chicopee Falls, Mass. The device has legs formed with inclined arms at one end and bowed arms at the other, semicircular threaded recesses and a pivot screw therein, a screw-threaded rod, an adjusting nut, and a spring.

A vehicle wheel has been patented by Mr. Joseph Blais, of Duluth, Minn. Caps are fitted on the outer ends of the spokes having outer sockets, and a split metallic rim fitted to run circularly in the sockets, with other novel features, designed to afford a wheel of great strength and elasticity, with convenient and effective adjustability for shrinkage.

A water trap for gas mains has been patented by Mr. Alexander Chambers, of Toledo, Ohio. It consists of an arm secured by one end to the outlet valve and carrying a float on its other end, a lever fulcrumed in the float chamber carrying a float, with means for locking the valve arm until the water nearly fills the casing and raises the lever and its float.

A composition for lining vessels has been patented by Mr. James A. Blanchard, of Brooklyn, N. Y. It is to fit such vessels for use in inclosing compounds of a corrosive nature, either in a solid, fluid, or semi-fluid state, and is made of resin, pitch, and other ingredients, compounded and applied in a specially described manner.

A calf weaner has been patented by Messrs. Henry W. and Walter Fuller, of Seneca,

Kansas. It consists of a detachable nose piece having side and front spikes, and a lattice work frame with side and bottom and upwardly projecting spikes, formed in two portions projecting downward and diverging and pivoted to the nose piece.

A snap hook has been patented by Messrs. Edwin Crippen and William King, of New Orleans, La. The body of the hook is reduced at its lower end and curved to form an open hook, over the entrance to which a spring is held in the usual manner, the upper part of the body being formed with apertured cheek pieces for attaching the shackles to the hook.

A hand propelling device for sewing machines has been patented by Kate P. Beaird, of Tyler, Texas. A rod is jointed to the fly wheel after the manner of a pitman, and is fashioned into a handle extending obliquely up toward the operator, being combined with and held in place by a guide frame which may be attached to the framework of the machine.

A corner iron for carriage bodies, seats, etc., has been patented by Mr. Joseph Doty, of Wellsville, N. Y. Its body has longitudinal side mortises, with spaced partitions at the lower end and an apertured cap, whereby two or more boards required to meet at an angle may be firmly attached to form a corner, either round, square, oblique, or angular.

A gate has been patented by Mr. George Ford, of New Harmony, Ind. The gate is made of two sections, arranged between two latch posts, and is pivoted centrally so that any resisting action of the wind on one side of the pivot will be counteracted, and the gate may be turned as freely in windy as in other weather, with various other novel features.

A sash balance has been patented by Mr. Thomas Jones, of Danville, Pa. Combined with a rack adapted to be secured to the window sash is a frame for insertion in the window frame, having a spring-actuated pinion and angle lever with arm engaging the pinion, and other novel features, the main object being to dispense with weighted sash lines and the ordinary sash fastener.

A tire-upsetting machine has been patented by Mr. Robert Rutter, of Butte City, Montana. The heads or seats for the tire are formed with standards and bosses projecting therefrom, in connection with gripping cams recessed to receive the bosses, the construction relieving the strain on the pins that connect the gripping cams to the stationary and sliding heads.

A cash carrier has been patented by Mr. Louis J. Bishop, of Cleveland, Ohio. Combined with a track wire and cash carrier mounted thereon are friction rollers, with curved-face propelling arms fulcrumed to operate in opposite directions on the friction rollers with a wiper-arm action, a spring clasp holding the carrier at the end of its route, and forming an elastic buffer to receive its impact.

A balance apparatus for ascertaining counts or numbers of yarn has been patented by Mr. Emil Staub, of Leipsic, Saxony, Germany. The counts or numberings are reduced to a single weight, which is fixed at one end of a balance arm, at the other end of which is a hook, a pattern or templet being prepared for each system of numbering according to which the samples have to be cut.

An ice creeper has been patented by Messrs. William W. and Edward F. Preston, of Bismarck, Mich. It is designed to be applied to rubber overshoes, and has a shank or main plate, a turnover pivoted or lever spur frame, and a spring controlling the latter, making a reversible ice creeper, for adjustment beneath the heel, or which may be folded up within the shank of the sole.

The manufacture of buttons forms the subject of a patent issued to Mr. Daniel A. Ladd, of Newark, N. J. It is a method consisting in first forming a shank and an approximately spherical hollow and apertured body, inserting the end of the shank and finally compressing the body to the form of the head of a button, the improvement being especially applicable in the manufacture of collar buttons.

A roller for producing alto-relievo ornamentation has been patented by Mr. John H. Thaison, of Chicago, Ill. It is made with a rim on the face of which are produced sunken or intaglio patterns, the rim being cut away to conform to the outer margins of the patterns, and also cut through to conform to inside openings, for producing ornamentation in plastic composition applied to picture frame mouldings, etc.

A baling press has been patented by Mr. Andreas Mattijetz, of Giddings, Texas. It has a slotted baling box and plunger held to slide therein, arms rigidly connected with the plunger and having racks on their under sides, a shaft with pinions meshing with the racks, with other novel features, making a simple and durable press which may be operated by hand or power.

A method of preserving submerged timbers has been patented by Mr. Hiram L. Ricks, of Eureka, Cal. The invention consists in forming in the piles or timbers longitudinal or transverse passages, or both, and connecting the piles or timbers by pipes which communicate with a tank containing fresh water, which by pressing outwardly displaces the salt water and keeps the timbers constantly soaked with fresh water.

A galvanic battery forms the subject of two patents issued to Mr. Horatio J. Brewer, of New York City. The jar, by one of the patents, has its mouth formed by an outwardly extending flange, the electrodes being held together by elastic bands, of which the upper one rests on the flange of the jar, thus supporting the electrodes in the jar and also forming a tight joint to prevent the spilling of the exciting liquid. By the other invention, the porous cup itself forms the cover for the jar, at the same time permitting the insertion of the zinc rod, which is prevented from coming in contact with the electro-negative sediment in the bottom of the jar.

NEW BOOKS AND PUBLICATIONS.

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A TREATISE ON ELECTRICITY AND MAGNETISM. By E. Mascart and J. Joubert. Translated by E. Atkinson. Vol. II. Methods of Measurement and Application. London: Thomas De la Rue & Co. 1888. Pp. 792. Price \$5.00.

The second volume of this work treats in the fullest manner of the mathematics of electrical measurements. The formulae are given in the fullest detail, and the eminence of Professor Atkinson's name as translator adds to the standard quality due to Professors Joubert and Mascart. The illustrations are all thoroughly pertinent, and are of the plain and more useful type whose use now prevails in electrical books. A copious index of references to both volumes is given. Numerous tables of electrical constants are included in the text.

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2. Plate, in colors, of a cottage costing nineteen hundred dollars, with floor plans, sheet of details, etc.
3. Perspective view and floor plans of a house costing four thousand five hundred dollars.
4. Perspective elevation and floor plans of a dwelling costing two thousand two hundred dollars.
5. Floor plans and perspective view of a house costing three thousand two hundred dollars.
6. Plans and perspective elevation of a dwelling for two thousand eight hundred dollars.
7. A dwelling costing four thousand five hundred dollars. Perspective and floor plans.
8. Sketch of a dwelling in New Haven, Conn., with floor plans.
9. A city house of moderate cost.
10. Perspective view of a country house in Connecticut.
11. Floor plans and perspective view of a seaside residence erected at Long Branch, N. J. Cost, four thousand five hundred dollars.
12. Elevation and floor plans of economical working-men's homes at Krupp's Steel Works, Essen, Rhineland Prussia.
13. Engraving and plan of a town hall or church.
14. View of Country residence of Mr. Kurtz—F. Gebhardt, architect, Ellwangen.
15. Page of engravings showing temporary trestle for supporting the cracked ceiling of the Assembly Chamber, Capitol Building, Albany, N. Y.
16. Vicarage House, Herrington, Durham.
17. Full page perspective view of the Caldwell Hotel, at Birmingham, Ala., Edouard Sidel, architect.
18. Page of drawings representing some of the exhibits of the late display of the Architectural League, of New York. A Spanish Grille. A French Farm House. A row of New Houses, New York. J. H. Duncan, architect.
19. Miscellaneous contents: Trees for Marsh and Mountains.—Rats and Matches.—Wood, Plaster, and Concrete.—Bulbous Plants for Apartments, three engravings.—Color in Greek Temples.—Fever from Sewer Gas.—New Use for Dynamite.—Wall Plates.—The Underpinning of the Great Yarmouth Town Hall.—A Relic of Old London.—Use of Sawdust and Shavings.—Dry and Damp Rot.—The Rose Acacia for Walls.—Moss for Plants.—Wood's Patent Extension Plumb and Level, illustrated.—The Painting of Iron Roofs.—The Reed Rocking Gate, illustrated.—The Dunning Hot Water Boiler, illustrated.

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