

RECENTLY PATENTED INVENTIONS.  
Engineering.

**STEAM BOILER.**—Samuel P. Hedges, Greenport, N. Y. Combined with opposing series of horizontally non-aligning manifolds or headers are inclined concentric tubes connecting the corresponding manifolds of each series, with other novel features designed to secure perfect circulation, and whereby a single tube or section of tubes may be readily removed and replaced, and the tubes be conveniently cleaned.

**PRESSURE REGULATOR.**—Charles Dubois, Leadville, Col. The valve casing is provided with inlet and outlet apertures, and a hollow piston valve having a spiral port extends through its walls, a spring being arranged to bear upon the piston valve, and a valve-operating cap connected with the valve spindle, making a simple and efficient valve for regulating the pressure of steam or air.

**STUFFING BOX.**—William E. Brockett, Berlin, Wis. This invention covers a novel construction and arrangement of parts whereby the packing prevents the escape of steam along the piston rod or stem, while the casing is mounted yieldingly upon a spring or springs to permit a vibrating motion of the stem or rod, thus preventing the breaking or bending of the stem or parts of the stuffing box.

Electrical.

**REGULATING ELECTRIC CURRENTS.**—Joseph W. Balet, New York City. This invention provides a method of regulating the current in dynamo and motor circuits by which any surplus will be sent into storage batteries for use as needed, and to control the charging of the secondary batteries, so that the charging current shall cease in a particular battery when the maximum charge is reached and be returned to the battery when it is discharged.

Railway Appliances.

**LOCOMOTIVE AXLE BOX.**—Ransford T. Chase, Houston, Texas. Combined with a pedestal is an axle box mounted to slide vertically therein, a second axle box being mounted with one side in a bearing in the pedestal, and a connecting rod secured to the latter axle box and pivotally connected with the first named axle box, whereby the centers of the axles will always remain the same distance apart.

**RAILROAD SNOW PLOW.**—Charles A. McCarthy and John P. Moran, Sault de Ste. Marie, Mich. The body of the plow is made similar to a box car, and has a vertical wedge-shaped mould board at its front end, in combination with vertically rotating snow wheels on the two faces of the mould board, and smaller vertically rotating snow wheels in front of and above the lower wheels, the mechanism being driven by an independent engine, and designed to throw the snow a great distance from the track.

**CAR COUPLING.**—Isaac L. Whiddon and Julian S. Bashaw, Chipley, Fla. The drawheads are made with overlapping portions, and have laterally sliding and rotary catches mounted therein, with springs for holding the catches in engagement, and other novel features, the object being to provide a coupling which will couple automatically, and which may be uncoupled from either side of a car.

**CAR COUPLING.**—Wiley M. Grisham, Winchester, Ill. In this coupling the drawhead has a way for the coupling hook formed with an incline, so which to direct the hook, with a transverse horizontal opening for the coupling pin, the latter having a flange or wing arranged in the closed position of the pin to form an extension or continuation of the incline for the coupling hook, the coupling pin having a rack operated by a toothed wheel.

**RAIL TIE AND FASTENING.**—Jacob Frysinger, Milan, Ill. This tie consists of upper and lower plate-like bars and an intermediate edgewise disposed plate-like bar let into grooves or channels of the upper and lower bars, the chairs consisting of clamp plates resting upon the upper bar and held in place by bolts passing through the upper and lower bars.

**CAR SEAT.**—Edward B. Golet, Fort Worth, Texas. This is a car seat of simple construction, wherein the parts are so arranged that the back of the seat may be adjusted to almost any angle desired, while the seat is also provided with a leg or foot rest adapted to be adjusted to the convenience of the occupant of the seat.

**CAR DOOR.**—Edward B. Golet, Fort Worth, Texas. This is a sliding door for use on the side of a car, there being at each side of the door opening vertical posts, and a rail or track below and above the opening on which the door is supported by hangers, the tracks having an inclined surface and extending outwardly in a horizontal line with the car, in such way that when the door is opened it is carried a distance outward from the car, and when closed it comes quickly and conveniently to place.

Agricultural.

**CORN PLOW.**—William Quillen and Francis A. Dake, Almena, Kansas. This is a machine designed to cultivate both sides of a row of corn or other plants at one passage, and is made with upwardly arched end frames, longitudinal side bars, standards with runners at their lower ends, longitudinal guard frames and shovels, with other novel features, the plow being designed to run steadily and stay in the ground, cleaning out all weeds and grass in the row, and loosening up the dirt close to the corn.

**HARROW FOR LAND ROLLERS.**—James W. Weir, Princeton, Ind. This is a device for harrowing adapted to be attached to land rollers of ordinary construction, being readily attachable to the front of the rollers, and designed to pulverize the larger particles of dirt clods, that the roller may more effectually do its work, a lever permitting the driver to lift the harrow out of operative position as desired.

Mechanical.

**CUTTER HEAD.**—Henry L. Haskell, Ludington, Mich. In this device the knife holder has a flanged base and a head with a transverse knife-receiving slot, a threaded aperture extending up through the base and head into the knife slot, and enlarged at its lower end, the invention relating especially to the knives and manner of securing them to the cutter heads of moiding machines.

**ORE CRUSHER.**—Jacob Rodermond, New York City. In a suitable receptacle, to which the ore to be crushed is fed, is journaled a vertical shaft with bifurcated upper end, crushing rollers with independent axles being pivoted in the bifurcated shaftend, while opposing horizontal arms carrying adjustable shovels to follow the rollers are secured to the shaft between the rollers, the apparatus being designed as an improvement upon the Chilean mill.

**RICE HULLER.**—Henry Scholfield, New York City. This machine has a tubular sectional body with vertical angular grooves, combined with a rotary hub and a series of flexible and spaced rubbers, each section being secured in an arc of a circle to the hub, with guide plates between each set of rubbers, whereby the hull will be completely removed from the grain, and each grain will be rubbed or scoured.

**MIDDINGS PURIFIER.**—George W. Bell, River Falls, Wis. This machine is designed to purify middings or flour by means of currents of air, and the invention covers novel features of construction and arrangement of parts whereby all the finer and heavier particles of dust are designed to be removed.

**PRINTING PRESSES.**—Touro Robertson, New York City. This invention provides a numbering attachment for printing presses, whereby bonds, checks, tickets, etc., may be numbered consecutively, or one or more units may be skipped, as desired, without changing the numbering head or essentially altering its mechanism.

Miscellaneous.

**GATE VALVE.**—Charles H. Shepherd, New York City. This is a removable gate valve for temporary application to drain and sewer pipes, and is made with a transversely slotted pipe having a collar formed integrally therewith with apertured ears, a cover adapted to close the slot of the pipe, and a gate valve adapted to the bore and slot of the pipe, the improvement being intended to avoid the difficulty from ordinary forms of corrosion.

**TAG FASTENER.**—William H. D. Ludlow, Tecumseh, Neb. This device is somewhat like a pair of scissors, having at the end of one of its blades a bent tagging extension, pointed, and with an eye for carrying the tag, thread or cord, for putting tags on goods of light and heavy texture, and drawing the string through the goods for the attachment of the tag.

**SUSPENDER BUCKLE.**—Louis Steinberger, New York City. The body of the buckle is in the form of a flat plate bent over at its sides to form grooved guides to receive margins of the strap, and also slotted to receive crosswise a loose spring gripping plate or bar, between the inner face of which and the back surface of the body the main strap passes, the buckle being readily slid in either direction and automatically effecting its own engagement.

**LETTER CLASP.**—Louis Steinberger, New York City. This is a clasp made of a piece of spring wire bent and crossed upon itself to form opening and closing frames, to be used for holding letters or loose papers in the pocket or elsewhere, for carrying attached single or double tablets, or for holding books open while being read, etc.

**POISON DISTRIBUTER.**—Wiley P. Towne, Delta, La. This is a machine having a powder receptacle, with openings connected with flexible tubes or hose having rose nozzles, and a blower entering the receptacle, whereby the powder is distributed in close proximity to the plants to be treated, the wind not blowing it either in the direction of the driver or horses.

**SOFA AND BED.**—Charles T. Hard, East Liverpool, Ohio. This is an article of furniture adapted to be conveniently and expeditiously converted from one use to another, and is so constructed that when used as a bed the bottom will beamply supported and elevated essentially the same distance from the floor as the equivalent portion of an ordinary bed.

**EGG COUNT REGISTER.**—Alvin F. Harrison, Greeley, Kansas. This register consists of a case with toothed and numbered disks slightly overlapping each other, the disks having a pin and pivoted lever with spring arm, with other novel features, whereby a party counting eggs can leave the work of counting at any time and will always have an accurate register of his count.

**FIGURED WOODEN PLATES.**—Robert Himmel, Berlin, Germany. This invention covers a method of producing fancy figured wooden plates, for use instead of inlaid work in furniture, etc., and consists in first burning and pressing the wooden plate between metallic surfaces having patterns on them, and then smoothing and polishing the embossed surface of the plate.

**HACK SAW.**—George N. Clemson, Middletown, N. Y. This saw has every third tooth arranged in the same plane as the body of the saw, the remaining teeth being set in the usual way to give the saw clearance and prevent it from pinching in the kerf, whereby lateral vibration will be prevented, more perfect work secured, and the usefulness of the saw prolonged.

**MEDICATED BOUGIE.**—Thomas Christy, London, England. This is a wire instrument, with stem of straight wire bent at one end to form a ring handle, and having a wire extend beyond the straight end and bulging in the middle, the instrument being designed to facilitate the local treatment of various diseases.

**UMBRELLA HOLDER.**—August Denhard, Bonn, Germany. This holder consists of a main frame of hinged sections which may be folded into small compass, and is adapted to be attached to the clothing, and formed with a fastening device or projection at its upper end, combined with a clamp for grasping and firmly holding an umbrella handle.

**HAMMOCK.**—Herbert M. Small, Baldwinville, Mass. This hammock has a seat and back portion, with hooks at the upper end of the latter and a looped rope secured to the forward corners of the seat, with adjustable hooks on the parallel parts of the rope, etc., whereby passengers who have to travel in ordinary passenger cars at night may be able to sleep with ease and comfort.

**INDEX.**—John P. Findley, Blanchard, Pa. This index is formed in sections on opposite sides of a central starting point of the book, the leaves of the sections being cut away from this point to expose portions of the leaves corresponding to each desired division of the subject matter, making an improved method of forming the index of books.

**BILLIARD TABLE.**—Charles G. Brockway, Pine Bluff, Ark. This improvement covers a special construction of the table rail and cushion, whereby a better ventilation and adjustment is secured between the bed, the rail, and the cushion, while a solid bearing is obtained for the rail to hold the parts firmly to the adjustment to which they are set.

**TELESCOPIC MIRROR.**—August Janzon, Iron Mountain, Mich. This is an attachment consisting of a metal or other suitable plate, having a central constructed aperture, a clamp being attached to the plate to hold it upon the outer end of the telescope, with its contracted aperture over or on the outside of the object lens, while a mirror is hinged to one side of the plate, the device being also intended for use with opera glasses, etc.

SCIENTIFIC AMERICAN  
BUILDING EDITION.

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TABLE OF CONTENTS.

1. Plate in colors showing elevation in perspective and floor plans for a dwelling costing about four thousand dollars. Sheet of details, etc.
2. Elegant plate, in colors, of a residence of moderate cost, with floor plans, details, etc.
3. Perspective and floor plans of a modified Queen Anne cottage, at East Orange, N. J. Cost, six thousand five hundred dollars.
4. A cottage at East Orange, N. J. Plans and perspective.
5. Page engraving of a stairway in the Chateau de Chantilly. By Mr. H. Daumet.
6. Scenes at Zaandam, Holland, where the Czar Peter the Great learned shipbuilding in 1697.
7. Engraving of the new station and offices of the Great Indian Peninsular Railway, Bombay.
8. Perspective and plans of the new Biological Laboratory, Princeton College, New Jersey.
9. A residence at Roseville, New Jersey, costing five thousand dollars. Plans and perspective.
10. A cottage at Roseville, New Jersey, costing seven thousand dollars. Perspective elevation and floor plans.
11. The Orange Valley Church. Cost, sixty thousand dollars. Perspective and ground plan.
12. A residence at Fordham Heights. Cost, thirty-four thousand dollars. Elevation and floor plans.
13. Perspective view of the new Trinity Methodist Episcopal Church, Denver, Colorado.
14. Designs for wall paper decorations. Flower scroll, designed by A. F. Brophy. Strap ceiling, designed by G. A. Andsley. Arabesque panel decorations, paper for staircases, designed by Lewis F. Day.
15. Perspective and floor plan of an attractive carriage house in the Queen Anne style. Cost, nine hundred and fifty dollars.
16. Miscellaneous Contents: Something for architects and builders to remember.—Interior finish.—Sketch of Nathaniel J. Bradlee.—Colored decoration of churches.—On estimating.—Crushing of masonry.—The oldest architectural drawing.—Mahogany.—Flexible foundations.—Treatment of the ceiling.—The teredo.—The oldest timber.—Compressive strength of bricks and piers.—Repetition of ornament.—The Thomson-Houston electric system for street railways, illustrated.—An excellent system of heating.—The Ball high speed engine.—Beading, rabbet, slitting, and matching plane, illustrated.—The Sturtevant system of heating and ventilating, illustrated.—H. W. Johns' liquid paints.—Soapstone laundry tubs and kitchen sinks, illustrated.—Carpenter's vice, illustrated.—Metallic hip shingles, illustrated.—Corrugated iron lath.—Weather vanes, roof ornaments, etc.

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NEW BOOKS AND PUBLICATIONS.

TRANSACTIONS OF THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS. Vol. V. Meetings of September 20, 1887, October 11, 1887, November 9 and 15, 1887, December 6, 1887, December 20, 1887, January 10, 1888, February 14, 1888, April 10, 1888, May 16, 1888, June 19, 1888, and October 9, 1888. New York City: published by the Institute. Pp. xii, 435.

In the present age of electrical engineering it is imperatively necessary to keep abreast of the times by reading the proceedings of the societies devoted to the subject. In this volume the proceedings of ten meetings held in 1887 and 1888 are given. It is needless to emphasize their value. Illustrations are given when necessary. The concluding section of the work is devoted to an index of current electrical literature, divided into months, beginning with December, 1887, and ending with September, 1888. The volume has as a frontispiece an excellent photograph of F. L. Pope, the well known electrical expert.

SEA SIDE AND WAY SIDE. No. 3. By Julia McNair Wright. Boston: D. C. Heath & Co., publishers. 1889. Pp. x, 297. Price 55 cents.

This is the third of the well known nature readers, which have won such popularity in our schools. It is gotten up very handsomely, and from the interest of its topics and the pleasing way in which they are set forth may be recommended to teachers.

SUGAR: A HANDBOOK FOR PLANTERS AND REFINERS. By Charles G. Warnford Lock, F. L. S., Benjamin E. R. Newlands, F.I.C., F.C.S., and John A. R. Newlands, F.I.C., F.C.S. E. & F. N. Spon, London and New York. 1888. Pp. xxiv, 920. Price \$10.

This exhaustive work treats of the titinar subject in all its phases. Beginning with the cultivation of the sugar cane, the work is carried down through the processes of the extraction and purification of the juice, the reduction of sugar therefrom, the analytical methods, and patented and other processes. The mechanical treat-