

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**COMPOUND ENGINE.**—Johann Klein, Frankenthal, Germany. This improvement relates especially to the valves, providing a simple valve for connecting the cylinders of a compound engine, and for exhausting them. The steam inlet and outlet is effected in the two cylinders by one single valve, arranged close to the large cylinder, to slide in the steam chest. The valve is connected with the engine in the usual way to move in unison with the pistons, the passages of the large cylinder being very short and the clearance very small, and the passage of the steam from one cylinder to the other taking place in two separate chambers in the valve itself, and nearly the whole force of the steam being utilized.

## Railway Appliances.

**RAIL JOINT.**—John M. Stamp, Carterville, Mo. This joint is especially designed for jointing rails upon curves, the improvement providing a long joint or bridge over several ties, and making a support that will firmly and snugly hold the rails. In connection with a suitable base plate, having upright projections and flanges on each side, fish plates of novel form are used on the inside and outside of the rails, lapping the joint, the fish plates being especially designed to afford great strength and be easy of adjustment, while being comparatively light. To suit curves of different degrees it is designed that these fish plates be manufactured in numbers or series, with their inner surfaces convex or concave, each part to be stamped to indicate the curve intended for.

**RAILROAD FROG.**—Cassius C. Andress, New York City. This is a simple and durable frog, having a shifting rail, which may be easily operated in the same way that a switch rail is operated, and shifted to provide a safe and smooth crossing, being used when necessary for a switch rail. The device has a bed with fixed converging rails at the ends, and the shifting rail is held to swing between and register with the fixed rails, lugs secured to the bed limiting the movement of the shifting rail, so that there is no strain on the pins and bolts which hold the rails, as the pressure of the wheel flange on the rail jams the rail firmly against one of the lugs.

**STAKE POCKET FOR CARS.**—Justo P. Cagigal, San Augustin, Cuba. This is an improvement in pockets and also in stakes for flat cars, and in their arrangement, so that the cars may be conveniently loaded and unloaded, and the stakes easily fastened and unfastened and slipped to one side when necessary. The pockets are designed to be cheaply and strongly made, and means are provided for opening them and releasing the stakes, a number of the latter being held on a horizontal supporting rod.

**GUIDE ATTACHMENT FOR CARS.**—Thornton E. W. Fay, Philadelphia, Pa. A long rod is suspended longitudinally beneath the car, being firmly held to the car bottom by hangers, and this rod is adapted to loosely fit in and freely move through short open top sockets attached to the sleepers. The improvement is designed to effectually prevent the cars from jumping the track, and is especially adapted for use on curves and grades.

**CAR COUPLING.**—Gamaliel Jenkins, Queensbury, N. Y. A frame beneath the car is divided longitudinally by a partition and transversely by cross ribs, one of the latter serving as a stop for the drawbar of an opposite car, and the other serving as a drawbar support, the shank of the drawbar sliding through the frame, and having at its rear end a collar. The drawbar has a flattened head adapted to enter the frame of an opposing coupling, and a spring is arranged to twist the drawbar, whose position is fixed by a clutch. With this improvement the cars are automatically coupled as they come together, and they may be uncoupled from the sides or top. The arrangement provides for the use of two drawbars, one for each end of each car, so that if one should break the other would hold the cars.

**CAR COUPLING.**—William W. Smith, Traverse City, Mich. Two patents have been granted this inventor for devices which will automatically couple the cars as they come together, the uncoupling being readily effected from the sides or top of the car, so that the trainmen do not have to go between the cars, while both forms of coupling are of durable and inexpensive construction and very simple in their operation. According to one patent the drawbar has a mouth in its lower front end, leading to a narrow opening in the top, the link being secured to a sleeve on a transverse shaft in the lower opening, and a locking pin extending from the sleeve into the top opening. A crank shaft on the front end of the car has an arm and rod connection with the link by which the latter may be brought into any desired position, the pin moving in unison with the link. The coupling cannot be accidentally detached, and is not liable to clog with snow and ice. The other patent is for a coupling of the side-latching type, in which the drawhead has an integral forward horizontal tongue, a slotted latch block forming two horizontal flanges, a pivot bolt connecting the flanges and the tongue. A key is adapted to slide vertically in a slot of the drawhead and bear laterally on the inner edges of the latch block flanges, a latching shoulder being formed on the latch block.

## Miscellaneous.

**SCOURING FIBROUS MATERIAL.**—John H. Bickley, West Medway, Mass. This invention relates to apparatus for the cleansing and washing of wool, and the treatment of various fibrous materials, providing for intermittently fading the wool or staple, and supplying the liquid with which it is treated, in a normally filled flushing flume or tube. A staple and liquid feeding wheel or drum is divided into a series of successive compartments, and a liquid supplying cistern above the wheel has a sprinkler with its discharge to one side of the axis of the wheel, there being an automatically engaging stop bar device by which the movement of the wheel is regulated.

**HOISTING MACHINE.**—John E. Ennis, Duluth, Minn. The elevation of bricks, mortar, and

other material in building construction, and other similar work, is especially provided for by this apparatus, which can be operated to bring the hoist cage floor always in the same horizontal plane with the workmen's platform. A vertically movable elevator frame is arranged to support alternately operated cages, in connection with vertically adjustable platform-supporting frames, and mechanism adapted to operate the elevator and the platform frames at the same time, and raise the platform to a greater degree than the elevator frame. The platform adjusting devices and the elevating supporting sheaves can be simultaneously elevated to variable heights by a single operating lever.

**FIRE ESCAPE.**—William E. Bradley, Middletown, N. Y. Suspended at a convenient point on a building, adjacent to a window, is a frame containing a winding drum and a governor, a brake pulley and brake mechanism, with a lowering cable on which is a hook. A person or weight to be lowered may be fastened to the hook, when the weight causes the cable to unwind with a regulated speed. The lowering to the ground is thus automatically effected, when the cable is automatically wound up again for further use. The device is light and portable but very strong, and not likely to get out of order.

**LUMBER TRUCK.**—Edward Dodge, Longview, Texas. This is a device of simple and durable construction to conveniently load and carry lumber to and from kilns and other places. It has a pair of double flanged wheels journaled in independent frames connected with each other by cross bars, forming a skid for the lumber to be carried. It is very strong and adapted to carry a heavy load, a number of the trucks being placed at suitable distances apart, according to the length of the lumber.

**TRACE.**—Ernest F. Saettler, Giddings, Texas. It is the design, according to this improvement, that the portion of the trace in which the eye is located, and which engages a singletree, will be rendered more durable. A re-enforcing plate is located between the straps at the eye portion, the plate having a slot registering with the eye of the trace, while slides receiving the edges of the plate extend over the edges of the trace at the eye, and are secured to the side surfaces of the trace.

**CALKING TOOL.**—Joseph O. Walton, Titusville, Fla. A roller is journaled in each end of the curved handle of this tool, one roller having a concave face, and there is a longitudinal groove in the handle adapted to receive a pivoted hook, one end of the handle being also provided with a pivoted chisel. The calking material may, with this tool, be thoroughly worked into the seams, or may be dug out of old seams with the hook.

**DESK OR CABINET.**—Theophilus Billington, Dallas, Texas. This cabinet may be economically manufactured, and is especially adapted for holding typewriting machines. When the cabinet is closed the machine will be completely concealed and protected, and when opened an extensive table is provided at each side of the machine. The table is provided with a drawer, and the roll top is constructed of a series of slats or strips connected by a flexible material.

**CENTRIFUGAL HONEY EXTRACTOR.**—Oscar M. Hill, Santa Paula, Cal. A frame, mounted to turn, carries shafts supporting the baskets, and the position of the shafts and baskets is reversed by a mechanism of special construction, so that the honey is extracted from both sides of the combs. The device is of very simple and durable construction, and the baskets carrying the combs can be reversed without interrupting the revolving of the frames supporting the baskets.

**CHURN.**—William F. Martin, Ambia, Texas. The churn body, according to this invention, may be of any suitable construction, but the improvement provides for the ready and convenient attachment thereto of a frame supporting gears and shafts and a crank handle by means of which the dasher rod is operated. The construction facilitates the easy and rapid operation of the dasher rod, and the frame may be readily adjusted to churn bodies of different sizes.

**DRESS SKIRT.**—Mark Aronson, New York City. This is a lady's garment so made that it may be perfectly fitted on various sized waists, obviating the usual sagging of the waist band and heavy plaited portion at the back of the skirt, and entirely dispensing with the slit or opening in the back of the skirt. The waist band is connected in front, so that it may be perfectly fitted, and the cut-out portion here, as well as the fastening device, is designed to be closed by a flap forming a graceful trimming for the skirt.

**BREAST SUPPORTER.**—Marie Tucek, New York City. A plate curved to conform to the wearer's body at the front has partial pockets at opposite sides at the top to engage the under side of the breasts, shoulder straps connected with the ends of the plate crossing each other at the back. The top edges of the plate are made concave and the pockets are preferably of silk, canvas, or similar material.

**PORTABLE CONFESSIONAL.**—Michael H. Sullivan, Fall River, Mass. This is a neat and ornamental structure, which may be put up without tools and has two places for the reception of oral communications from penitents to a confessor occupying a central compartment. It folds compactly into a substantially rectangular package for convenient transport.

**DEVICE FOR ADMINISTERING MEDICINE.**—F. H. Olmsted, Yokohama, Japan (inquiries to be made of F. H. Henry, 54 Wall Street, New York). This is a graduated glass receiver for liquid medicine, connected at one end with a rubber hand bulb, and having at its other end a detachable tube to be inserted in a bottle from which medicine is to be drawn, whereby the receiver may be charged with the amount of medicine to be given, as measured by the marks on the receiver. A removable mouth is provided to facilitate the giving of medicine from the receiver to infants. The device can be made at a low price, and the glass receiver can readily be thoroughly cleaned.

**INDICATOR FUNNEL FOR CANS.**—Henry B. Watson, Glen Cove, N. Y. This is a simple and inexpensive attachment, more especially designed to facilitate the pouring of oil from an oil can into a lamp or

other vessel, to avoid spilling and prevent overflow. The funnel has a looped supporting arm, and in the funnel slides an indicating float; it is preferably attached to the can spout by a conical sleeve, such a length being given to the arm as to allow the funnel to swing freely, while at the looped end of the arm is a counterbalance weight, automatically adjusting the funnel to suit the inclination of the can body and spout.

**TWINE HOLDER AND TAKE-UP.**—William Bentley and James D. Fuller, Lethbridge, Canada. From a suspensible holder cup adapted to deliver the twine strand freely is suspended a take-up device, consisting of a tubular casing in which is a vertically sliding weight by means of which the operation of a tension bar is regulated. The too free delivery of the twine is thereby prevented, while the twine is fed as needed, and after the desired length has been severed, the strand is locked to prevent further unwrapping of the ball.

**CIGARETTE ROLLING CASE.**—Eugene Schmidt, Stillwater, Minn. This is a pocket case to hold tobacco, paper, matches, etc., for the convenience of smokers of cigarettes. It is of stamped sheet metal, and arms jointed to the cover are attached to a roller in such a manner that when the case is closed the roller passes along on the bottom, carrying a sheet of silk or other flexible material, in a trough-like bend of which a sheet of paper and the tobacco have been placed, the cigarette being discharged complete.

**SPINNING TOP.**—Nathaniel McLaren, New Perth, Canada. This is an improvement in tops rotated by an internal spring, the spring being coiled upon a rotatable spindle and held under tension by a ratchet mechanism which is released at the will of the operator.

**TOY PISTOL.**—Carl Neuhaus, Vienna, Austria. This is a self-cocking pistol more especially designed to explode paper percussion caps. The invention consists principally of a fixed block, a casing containing a ribbon of percussion caps and adapted to pass in front of the block to be exploded by a hammer, the hammer imparting a traveling motion to the ribbon.

**RUBBER TOY.**—Orville Carpenter, Pawtucket, R. I. The toys are, according to this invention, made of varying thicknesses of rubber, the thin parts of rubber being in those portions of the toy which may be selected to represent the form in greatly exaggerated size, and this exaggeration is then produced as the body of the toy is squeezed in the hand, the thin parts becoming puffed out or elongated, making some exceedingly grotesque and comical figures.

**SURGICAL APPLIANCE.**—Frank Orth, 89 Brown Street, Anderson, Ind. This is an apparatus to be fastened to the body, by means of which, under certain conditions, an application or douche of cold water will be automatically made on a part of the body.

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.

## NEW BOOKS AND PUBLICATIONS.

**"THE ELECTRICIAN" ELECTRICAL TRADES DIRECTORY AND HANDBOOK FOR 1893.** Eleventh year. London: George Tucker. 1893. Pp. cxxxi, 844. Price \$3.

This work is a very valuable contribution to the current biography of electricity, independent of its very exhaustive directory of the names of electrical concerns and individuals connected with the electrical and allied industries. In the biographies we note that they are well kept up to date, and the portraits with them are of special value.

**BUILDINGS AND STRUCTURES OF AMERICAN RAILROADS.** By Walter G. Berg. New York: John Wiley & Sons. 1893. Pp. xxxiv, 500. Price \$7.50.

In this beautiful work the publishers give a second contribution to American railroad engineering which may rank as a worthy companion to their recent work upon the locomotive engine. The title of the work describes its contents. It is enough to say that in it passenger depots of the largest and smallest size and train sheds are treated, while in the smaller line signal towers, protection sheds, sleeping quarters, reading rooms, and the smallest details of the structural work of railroads are included. A very exhaustive table of contents and a very full index illustrate the principles followed by the publishers in all of their technical publications.

**DES INGENIEURS TASCHENBUCH.** Published by the Academic Society "Hutten." 15th edition. 1892. Berlin: W. Ernst & Sohn. New York: Gustav E. Stechert, 828 Broadway. Price \$3.

This well known engineer's hand book has again been thoroughly revised to make it one of the foremost reference books in all branches of engineering, and to bring it up to the requirements of the present day. It is not issued by a single individual, but by a German society having as its contributors for the different branches the most eminent talent to be found in the German and Austrian empires. It contains nearly 1,500 pages of valuable reference matter.

**PUMPING MACHINERY.** A practical hand book relating to the construction and management of steam and power pumping machines. By William M. Barr. Philadelphia: J. B. Lippincott Company. 1893. Pp. 447. Price \$5.

This work purports to be a type of hand book on the subject of steam and power pumping machines. It appears to be a valuable contribution on the subject, treating on all kinds of pumping engines, with numerous examples of high duty machines. Under the Worthington engine, we find the compensating cylinders with their accumulators treated of at considerable length. It is so for other features of all the different classes of pumping apparatus. The details of the subject, such as valve and

packings, are also included, and numerous cuts add to the value of the work.

**A TREATISE ON PUBLIC HEALTH AND ITS APPLICATIONS IN DIFFERENT EUROPEAN COUNTRIES.** By Albert Palmberg. Translated from the French edition and the section on England edited by Arthur News-holme, M.D. London: Swan Sonnenschein & Co. New York: Macmillan & Co. 1893. Pp. xx, 539. Price \$5.

This excellent and exhaustive work deserves warm commendation as a contribution to the sanitary engineering of European countries. Such works are of special service in America, where, while sanitary engineering has attained a great development, it is in danger of becoming too much Americanized. A work of the present sort, bringing us face to face with the best European practice in these matters, will be found of particular value to our sanitary engineers, as we are too apt to believe that we in this country possess all the requisite knowledge of the subject, while it may be doubted that we possess even the best in many respects.

**THE VOLTAIC CELL: ITS CONSTRUCTION AND ITS CAPACITY.** By Park Benjamin. Illustrated. New York: John Wiley & Sons. 1893. Pp. iv, 562. Price \$5.

In this large work we at last have what, on its face, would appear to be an analytical and satisfactory treatment of a very large subject. The author in it describes a great number of different batteries, with numerous illustrations where required. He treats of the theory of the cell, of its measurements, of different cells classified into general divisions, and after giving some general practical data, devotes a section to the storage cell or secondary battery. A final chapter is devoted to the various sources of electricity and the bibliography of the subject. It will be seen, therefore, that Mr. Benjamin has done an excellent work in putting all this information into shape. As frontispiece we have a reproduction from Sulzer's book of 1767, giving in a foot note what is claimed to be the first suggestion of the voltaic cell.

**FROM DARKNESS TO LIGHT.** Author's edition. San Francisco, Cal.: Terrence Duffy, author and publisher. 1893. Pp. vi, 280.

Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & Co., 361 Broadway, New York.

## SCIENTIFIC AMERICAN BUILDING EDITION.

APRIL, 1893, NUMBER.—(No. 90.)

## TABLE OF CONTENTS.

1. Elegant plate in colors, showing an attractive cottage at Villa Park, Mt. Vernon, N. Y. Floor plans and perspective elevations. Cost \$4,500 complete. Mr. Walter Stickels, architect, Mt. Vernon, N. Y.
2. Plate in colors showing the handsome Queen Anne residence of the Hon. Craig A. March, at Plainfield, N. J. Two perspective views and floor plans. Mr. Chas. H. Smith, architect, New York. An excellent design.
3. A dwelling near Longwood, Mass., erected at a cost of \$5,200 complete. Perspective views and floor plans. A model design.
4. A dwelling at Chester Hill, Mt. Vernon, N. Y., erected at a cost of \$4,750 complete. Floor plans, perspective view, etc. Mr. W. H. Symonds, architect, New York.
5. Engraving and floor plans of a residence at Oakwood, Staten Island, N. Y., erected at a cost of \$3,540 complete. Mr. W. H. Mersereau, architect, New York.
6. A stable erected at Bridgeport, Conn. A unique design.
7. A residence at Wayne, Pa. A very picturesque design, treated in the Queen Anne and Colonial styles. perspective elevation and floor plans. Cost, \$6,250 complete. Messrs. F. L. & W. L. Price, architects, Philadelphia.
8. Engraving and floor plans of a Queen Anne residence at Newton Highlands, Mass. Cost, \$6,000. Messrs. Rand & Taylor, architects, Boston.
9. A square-rigged house, recently erected at Allston, Mass. Cost, \$2,600. Plans and perspective elevation. Mr. A. W. Pease, architect, Boston, Mass.
10. The Fifth Avenue Theater, New York. View of the main front, showing the terra cotta decorations; also view showing the iron framework, erected by the Riverside Bridge and Iron Co., and a view showing the fireproof arching, erected by the Guastavino Fireproof Construction Co.
11. Sketch of a dining-room fireplace.
12. Miscellaneous contents: An improved woodworking machine, illustrated.—A new edge moulding or shaping machine, illustrated.—The box industry.—Natural gas at Geneva, N. Y.—Plaster of Paris floors.—Inside sliding window blinds and screens, illustrated.—City pavements.—The Alberene laundry tub, illustrated.—The "Murray" phaeton, illustrated.—An elegant bath tub, illustrated.—To thaw out frozen pipes.—Improved plane irons, 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.