

RECENTLY PATENTED INVENTIONS.

Engineering.

LOCOMOTIVE SIGNAL AND BRAKE.—

Samuel J. K. Hassall, Penrith, New South Wales. This invention provides a mechanism by which the brakes will be applied and a whistle sounded automatically by a danger signal, the apparatus to be applied to any locomotive, and connected with an air-pressure brake. A part of the invention consists of an adjustable or striking plate or bar to be placed on the side of the line, the contact of the apparatus with such plate causing the brakes to be applied and a whistle to be sounded. The striking plate is placed some distance in advance of the ordinary signal, and is so connected as to always give the alarm and apply the brakes on a train approaching a signal set to indicate danger.

SIGNAL WHISTLE.—William M.

Smouse, Gettysburg, South Dakota. This is a simple form of locomotive whistle more especially designed to automatically sound a signal on the approach of the engine to highway crossings or other places. A valve connects the steam supply with a cylinder containing a piston, or with a port leading to the whistle proper, and crossing an apertured plate moving with the piston. A downwardly extending rod carries a friction roller adapted to travel on a plate placed alongside the rail near crossings, whereby the whistle is automatically operated, requiring no attention from the engineer, while the sounds or blasts can be varied for any desired signal.

SPARK ARRESTER.—John E. Zimmer-

man, Trinidad, Col. Within the smokestack, according to this invention, are top and bottom cross bars which support a central vertical rod, around which is secured a spiral wire netting sheet, contacting at its outer marginal edge with the inner walls of the stack. All sparks and cinders passing upward are thus so interrupted in their movement, and kept so long a time in the smokestack, that they will be extinguished or broken up.

Railway Appliances.

CAR AXLE BOX.—John Donnelly,

Brooklyn, England. The axle box shell consists of a corrugated and embossed steel plate, bent to box-like form and welded at the abutting edges, while a cast iron liner or distance block is adapted at its under side to form the journal brass bearing, being hollow to serve as a grease box if required, and having flanged ends and sides fitting against the top of the box, with a central post also bearing against the top of the box directly beneath the carrying spring. The top of the shell on which the carrying spring bears is thus supported as not to be exposed to any bending strain, a direct crushing strain only being transmitted through the metal.

CAR COUPLING.—Henry Gallagher,

Savannah, Ga. The drawhead of this coupler is formed with an inner longitudinally extending face containing a vertically disposed semicircular recess in which turns a half bolt connected with an arm and pin, a rod connected with the arm reaching to one side of the car, and there being means for locking the arm in place. The construction is simple and durable, and the coupling is effected automatically, it not being necessary for the trainmen to step between the cars.

CAR COUPLING.—John H. Crumb,

Burlingame, Kansas. Combined with a drawhead having cavities for receiving an ordinary link and holes for the link pins, and provided with a nib, is a spring-actuated hook to engage the nib on the coupling of an adjacent car, the hook having shoulders to engage the spring to hold the hook either open or closed. The coupling is automatic, and may be uncoupled from either the top or side of the car, and may also be used as an ordinary coupling, using a link, while provision is made for simultaneously closing the air brake pipe with the uncoupling of the coupling.

Mechanical.

CRUSHING ROLL.—Daniel Brennan,

Jr., Bayonne, N. J. This invention relates to rolls consisting of a center or core and a removable shell which may be renewed when worn, the improvement providing for the accurate and secure fixing of the shell to the center without the necessity of boring the shell. The invention embraces a novel manner of arranging and securing the wedge blocks, a keeper assuring the proper position of the shell longitudinally of the center.

BOLTING REEL.—Cyrus Bolenbaugh

and Ezra B. Wagner, Warsaw, Ind. A series of cylindrical agitator plates is fixed to turn on the main shaft, but without longitudinal movement, while a separate and independent outer bolting cloth frame is supported at its ends from the shaft by springs, a reciprocating sleeve or collar on the shaft reciprocating the bolting cloth frame against the action of its springs. The invention also embraces other novel features designed to form a bolting reel of simple and durable construction which will efficiently grade the material passing through it.

BRICK CUTTING MACHINE.—Charles

T. Fitch and Andrew Schantz, Perth Amboy, N. J. Levers are fulcrumed at the sides of a main table on which slides a feed table, there being a connection between the levers and the feed table, and a cutter comprising a head is connected with the levers, while a shaft is journaled in the frame and wires are stretched between the head and the shaft. The cutters are actuated directly from the levers, and the feed table indirectly. The blocks of clay as soon as cut are automatically pressed from the cutters and delivered to a table, to be removed thence for drying.

STAVE JOINTING MACHINE.—William

J. Wright, Cooperstown, Pa. This invention relates to a former patented invention of the same inventor,

providing improved means for operating the bilge-forming devices. The bilge formers are held to reciprocate on a main frame, and the drive shaft is formed with a gear which reciprocates a rack frame, normally held out of operative connection, while lifting devices arranged to be operated by the passing stave are operated to throw the rack frame in mesh with the gear, in connection with means for carrying the stave. To cut staves for barrels of uniform length but different diameters it is only necessary to place between the guides formers having the proper bilge gauge.

SAW.—Albert Smith, New York City.

This invention consists of a spring-pressed guard fitted to slide alongside the saw blade, the rear end of the guard pressing against a coiled spring in a tube in the handle of the saw. The improved implement is more especially designed for cutting keyholes in doors, etc., the operator taking hold of the guard to guide the saw.

Agricultural.

TURNING PLOW.—Philip J. Ebersohl,

Centerville Station, Ill. This invention provides a quickly and easily applied plow attachment which will effectually serve to turn weeds, stubble, corn stalks, etc., under the ground. It consists of a spring-pressed shaft adjustably attached to a face plate and carrying a turning fork whose lateral movement is regulated by a stop mechanism, a drag being connected with the fork. The attachment is readily adjusted to any desired position, or it may be lifted from the ground and from close proximity to the mould board when necessary.

SEED PLANTING MACHINE.—Robert

B. Snell and Burton Smith, Monument, Kansas. A combined disk harrow and seed drill is, by this invention, provided with a novel form of feed regulator and delivery tube, the lateral being flexible, longitudinally adjustable, lock-lapped, of sheet metal, formed of a single piece and coiled spirally, with edges folded toward each other in manner to form a lock. Combined with the seed hopper also are parallel movable gauge strips in its bottom, having zigzag edges and a spring for holding the edges in contact.

HARVESTING MACHINE.—William J.

Randolph, Millersville, La. In this machine the cutting mechanism and binding table are arranged in front of the main drive wheel, so that the grain need not be elevated to carry it to the binding table, and the drive wheel can be made large in diameter and wide to readily pass over soft ground, the machine being especially adapted for harvesting rice, as well as grain of any description. The invention also covers other novel details and combinations of parts.

Miscellaneous.

CARBURETOR.—William and James

Falley, Lafayette, Ind. The enrichment of natural gas by supplying it with sufficient hydrocarbon to render the gas fit for illuminating purposes is the especial object of this invention. Instead of the gas being directed over a carbureting liquid, or through perforated absorbent partitions saturated with such liquid, a carbureting vessel is provided in which the gas enters at the top of the casing, passes downward and then up through a perforated plate, through the body of the liquid hydrocarbon, to the outlet at the top. The hydrocarbon liquid is by this process kept constantly agitated, facilitating the taking up of the good qualities of the liquid by the gas.

GENERATOR.—William R. Macdonald,

Allegheny, Pa. This invention provides a heater having a fire box and water tubes and water compartments, a steam generator being arranged in the water heater and heated from the fire box, while the pipes of an ammonia gas generator extend into and through the water tube compartments and steam generator to derive the necessary heat to produce the gas. This generator is designed to comfortably heat and cool and supply fresh air to apartments, the pipes and radiators used in winter for heating being employed in summer for refrigerating purposes.

PILE PROTECTOR.—John W. Lowman,

Vicksburg, Miss. According to this invention the head or face of the pile is provided with a woven wire facing, which is incorporated with the impact face of the pile by the first blow of the hammer, the fibers of the pile retaining the facing in place, and the latter preventing the splitting of the head of the section.

HOSE BRIDGE.—John H. Gloninger,

Pittsburg, Pa. This invention provides a device for supporting a hose at an elevation, to provide a passage beneath for vehicles, street cars, pedestrians, etc., without interfering with the flow of water through the hose. The device has pivotally connected and vertically adjustable legs, with tackle, hoist block and cable, guide ropes being attached to the legs, and clamps for engaging the hose. The device can be quickly set up, and may be folded into compact form and small space for convenient transportation and storage.

HOSE NOZZLE GUIDE.—James N.

Brewster, Coney Island, N. Y. According to this invention a ball having a through bore to receive the nozzle is fitted in a suitable support or socket in the wall of a building, or partition of a room, or the deck of a vessel, etc., to permit the insertion of a hose nozzle, so that the water may be directed to the interior and the fire successfully attacked without the necessity of the firemen entering the room or apartment, and the draught occasioned by opening doors will be avoided. The diameter of the ball is according to the thickness of the wall, and the socket and ball embody several novel features.

MINE CAR.—Homer Durand, Stark-

ville, Col. This car has the bottom of its body extended beyond the ends, the extension being cut away at the center to form two projections adapted to engage and open a door in a mine shaft, as the car travels down the track in the shaft.

GUN STOCK ATTACHMENT.—Ralph

Townsend, New York City. This is a device to check

the recoil of the gun, and consists of a band of yielding material surrounding the butt, a rigid stock plate being connected with the band at its outer margin, and ports of elastic material extending forward from the inner face of the stock plate, an air chamber being formed between the butt of the stock and the rear end of the device, and the chamber having outlets or vents through the band. The device may be readily applied to any gun, and when used the recoil will have little or no effect upon the shoulder.

CABLE CUTTING DEVICE.—John

Squires and Charles Petrie, St. Johns, Newfoundland. A lever is fulcrumed upon a hanger adapted to travel on the cable, the hanger carrying a knife having a sliding movement and connected by a link with the cable, and the lever being connected at one end to a cord. The device is designed to be sent down a cable to a point near the anchor, when by pulling on the cord the cable may be cut close to the anchor, in the event of a sudden storm or emergency when there is not time to heave up the anchor.

VENDING MACHINE.—Adolph F.

Schneider, New York City. The mechanism of this machine is simple, compact and durable, and the machine is designed to deliver merchandise of any description. The construction is such that if the delivery mechanism is operated when a coin has not been placed in the machine no injury will result, and should one or more coins become fastened in the throat of the machine the operative mechanism will not be in the least affected.

FENCE.—Alfred P. Le Gros, Louisville,

Ky. This invention relates to fences to be made from cast or stamped sheet metal, as distinguished from a twisted wire fence. Loop or strap-like connections are made to freely link together the body parts of adjacent sections, while picket-like legs at one end of each section have eyes or loops in which enter pintle-like projections. The fences are mainly designed as an ornamental border for flower beds, etc., the sections being easily fitted together and quickly erected.

TUNING PIN.—William A. Smith,

Butte City, Montana. This pin has a tapering shank fitting at an angle in a conical slanting aperture in the metallic backing of the frame, the small end of the shank being threaded and engaged by a nut abutting against the rear surface of the backing. The pin is not liable to turn in its bearings, is cheap to manufacture, is arranged to take up wear, and adapted to keep the instrument in tune for a long period.

TWINE HOLDER.—John E. Tracy and

Arthur N. Graham, Chicago (No. 162 East Washington street, room 62). This is an improvement in suspensible holders for receiving a ball of twine, the device freely delivering the twine as required for use, and automatically winding up the slack strand, to prevent waste or inconvenience from the trailing end of the twine ball lying around in the way.

IRONING TABLE.—Richard D. Philip

and Charles Voorhees, Flora, Ind. This table has two pivoted legs, one folding within the other, a brace bar of a spring character connecting the lower portions of the legs, whereby the board may be quickly opened in position for use or folded in compact form.

RECLINING CHAIR.—George Weber,

New York City. This invention covers various novel details of construction and combination of parts for a chair of commodious form and shapely appearance, the adjustment of parts being readily changed to make it into an arm chair, a rocking chair, an extension reclining chair, or a couch, the members being also adapted for compact folding together to facilitate storage or shipment.

CLOTHES LINE SUPPORTING LINK.—

Andrew Brunner, New York City. A wooden link bar longitudinally slotted is diagonally severed through one of its members, and strengthened at the ends by transverse pintles having washers, the pintles forming supports for pulleys. The device forms an inexpensive link connection for two strands of an endless clothes line, traveling upon the upper and sustaining the lower strand, whereby the hanging of clothes upon or removing them from the line is facilitated.

BUST FORM.—Ellen Donnelly, New

York City. A casing, preferably filled with mixed cotton and sawdust, is shaped to simulate the human figure, including the arms, and extending upward in the casing is a standard with a cross-bar, the arm sections having a ball and socket connection with each other and with the cross-bar. The form thus made is desirably elastic and yielding, and the arms may be manipulated somewhat as a human arm.

PUZZLE.—Henry F. Keil, New York

City. In a flanged or dished board or plate, adapted to be oscillated or reciprocated by the hand, is held a number of balls of various sizes and one large hollow ball, of sufficient size to permit the smaller balls to enter and be held in it. The game of puzzle consists in keeping all the balls in motion, and causing the smaller ones to enter and be held in the larger one.

DESIGN FOR A WINDOW SHADE.—

William F. Patterson, Jersey City, N. J. This design consists of a pictorial representation of the landing of Columbus, surrounded by a border of combined scroll and leaf like character and shielded like figures.

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.

ELECTRICITY AND MAGNETISM, BEING A SERIES OF ADVANCED PRIMERS OF ELECTRICITY. By Edwin J. Houston, A.M. New York: The W. J. Johnston Company, Limited. London: Whittaker & Co. 1893. Pp. 306. Price \$1.

Professor Houston in this work really produces a concise treatise on the titular subject. The book purports to be a series of advanced primers, so we presume

the eighteen chapters are each to be considered a separate primer. The last chapter, a sort of *resumé*, is termed a primer of primers.

THE PRINCIPLES OF PATTERN MAKING.

By a Foreman Pattern Maker. London: Whittaker & Co. Pp. viii, 178. Price 90 cents.

This work is one of decided merit from the eminently practical treatment of the subject, the number of illustrations used and its extensive glossary. The day is rapidly passing by when an advanced workman can subsist without literature. In the production of such works as this, the publishers are doing an excellent service to the mechanical world.

A MANUAL OF BACTERIOLOGY. By

George M. Sternberg, M.D. New York: William Wood & Co. 1892. Pp. xii, 886.

It is perfectly obvious that Dr. Sternberg's immense work, one destined to take a fixed position as a classic in the science, cannot be adequately reviewed here. It is a large octavo with nearly 750 pages of text, 268 engravings, in addition to heliotype and chromolithographic plates. It contains a bibliography of 108 pages and a reasonably full index. This much tells of the make-up of the book. Dr. Sternberg's world-wide reputation must be relied on to tell the rest. Any one examining it must be irresistibly attracted toward its subject and feel like following in the steps so ably and fully indicated by the author; for the work does not merely describe micro-organisms, but gives the different methods of culture and of identification, treats of photography of bacteria, of all the methods and appliances used in their culture, and of experiments on animals. In the earlier sections it gives numerous illustrations to illustrate the apparatus and the use made of it.

TIME AND TIDE. A romance of the

moon. By Sir Robert S. Ball. Second edition. London: Society for Promoting Christian Knowledge. New York: E. & J. B. Young & Co. 1892. Pp. 192. Price \$1.

We have before now reviewed some most attractive little works coming in this "Romance of Science" series. Sir Robert Ball is known among the most interesting expositors of astronomy in the popular sense that we have, and these two lectures, for of such the book is composed, are to be confidently recommended to our readers. As a matter of interest we note on the frontispiece is a view of the moon from one of Mr. Rutherford's beautiful photographs, which tribute to the work of our American amateur photographer must be duly appreciated.

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2. Plate in colors showing a residence at Armory Hill, Springfield, Mass. Two perspective views and floor plans. Mr. Francis R. Allen, architect, Boston, Mass. An excellent design.
3. A cottage at Brookline Hills, Mass., erected at a cost of \$4,825 complete. Perspective views and floor plans. Messrs. Shepley, Rutan & Coolidge, architects, Boston. A picturesque design.
4. A dwelling erected at Holyoke, Mass., at a cost of \$6,500. Floor plans, perspective, etc. Mr. G. P. E. Alderman, architect, same place.
5. A very attractive and convenient stable and carriage house erected at Plainfield, N. J., at a cost of \$1,500 complete. Messrs. Rossiter & Wright, New York, architects.
6. A residence recently erected at Plainfield, N. J., at a cost of \$9,175 complete. A picturesque design. Two perspective elevations and floor plans. Messrs. Rossiter & Wright, architects, New York.
7. An elegant residence recently erected at Malden, Mass., for Mr. B. G. Underwood. Two perspective views and floor plans, together with a view of the Holland stairway. Cost complete about \$11,000. Mr. Frank L. Smith, architect, Boston.
8. A substantial residence at Holyoke, Mass. Perspective elevation and floor plans. Mr. H. H. Gridley, architect, Springfield, Mass. An excellent design.
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