

**RECENTLY PATENTED INVENTIONS.**  
**Engineering.**

**ROTARY ENGINE.**—Stephen H. Bloomer, East Portland, Oregon. This engine has a ring-shaped steam chamber in which operates a piston connected with and arranged to travel concentric with the main shaft, the peripheral edge of the piston having transverse sockets for packing, while around its edge is held a packing ring, whereby the positive operation of the piston is effected without danger of loss of power by undue leakage. By a novel arrangement of several cam disks which operate the cut-off valve and gate, the cut-off may be made when the piston is near the end of its stroke or at any point which may be desired.

**STEAM ENGINE GOVERNOR.**—Richard H. Payne, Aquone, N. C. In this governor the governor stem is controlled by balls and connected with a pivoted arm carrying the valve stem. A bell crank lever carries at one end a pulley resting on the driving belt, the other arm of the lever being adapted to engage an arm held on a rocking shaft controlling a spring supporting the governor stem. This improved construction is simple and durable, while it is very effective in operation, being arranged to actuate the valve at the slightest variation of speed, according to an increasing or diminishing load or steam pressure.

**Railway Appliances.**

**CAR COUPLING.**—John La Burt, New York City. In this coupling the drawhead has a horizontal recess from which a recess leads through the upper side of the drawhead, a locking arm being pivoted at its angle or being in the front corner of the horizontal recess to swing horizontally, a pivoted tumbler of novel form co-operating with the rear end of the locking arm and a rearwardly projecting handle. The device is of simple and inexpensive construction, and provides for the automatic coupling of the cars, while it is so made that it cannot possibly uncouple by accident and may be uncoupled by the brakeman without danger.

**CAR COUPLING.**—Robert Reardon, Savannah, Ga. This invention provides an improvement in automatic couplings in which coupling knuckles or hooks are used, and which frequently get out of repairs on account of the breaking of the hooks. For this purpose it provides a double or reversible locking hook or knuckle which may be quickly changed, so that either end may be used, also providing a positive locking mechanism which will hold the coupling hook in such a position that it cannot accidentally be displaced. A lever mechanism is employed by means of which the coupling may be unlocked without going between the cars.

**TRAMWAY BRAKE.**—Friedrich Adler, Prague, Austria-Hungary. This invention relates to a style of brake which is automatically applied to the wheels when the forward pull on the car lessens, while the momentum lost by the car in stopping is stored and applied to lessen the power necessary for starting. For this purpose a sliding drawbar is provided with a rack engaging a gear wheel mounted loosely on the axle, there being a mechanism for locking the gear wheel to the axle when the drawbar is pulled out in the act of starting the car, whereby the wheels of the car will be revolved by the engagement of the teeth of the rack with the gear wheel.

**RAILWAY SIGNAL.**—Colon M. Stanley, Montezuma, Ga. This is an improvement in that class of signals in which the signal arm is secured to a post at the side of the track, and provides means for easily raising and lowering the arm so that the lantern may be filled without difficulty. A crank-operated drum is mounted on the post, on which the arm is held to move vertically, and a weighted lever pivoted in the arm has at one end a brad to engage the post, a cable extending over guide pulleys on the top of the post connecting the drum and weighted lever. The construction is such that the arm cannot be accidentally dropped.

**Mechanical Appliances.**

**BORING AND TENONING MACHINE.**—Abel B. Sharp, Durango, Col. This machine is especially designed to form the tenons on spokes and bore the tenon apertures in felloes. A bracket held on a supporting beam has a bearing in which slides and turns a feed screw, a nut on the bearing being movable into and out of engagement with the screw, in which turns a shaft on which is held a tool-holding socket. A keeper held vertically adjustable in the beam is adapted to support the spoke in line with the shaft, and a collar held adjustably on the feed screw is adapted to regulate the depth of the tenon to be formed on the spoke.

**STAVE TRIMMING AND JOINTING MACHINE.**—William J. Wright, Cooperstown, Pa. By this machine the billet is first trimmed to the proper size, after which it is automatically fed into the machine through the various stages necessary to complete it, the stave in passing automatically controlling and setting the bevel-cutting and bilge-forming devices in exact proportions relative to the different widths. The invention is an improvement on a formerly patented invention of the same inventor, all of the machine operating automatically after the stave is fed to the trimmer saws, the several parts serving to give the proper bilge and bevel to all staves, irrespective of their thickness, length or width.

**Miscellaneous.**

**PRESSURE REGULATING VALVE.**—August Heithecker, Long Island City, N. Y. This is an improved valve adapted to be connected with a high pressure gas main, causing the gas to flow therefrom at a reduced and uniform pressure. The pressure of gas in the valve, in which is a horizontal diaphragm, is regulated by the resistance of a spring, which is increased or diminished, according to the gas pressure desired, by adjusting a collar by turning handles upon a nut. The valve is of very simple construction, and

may be nicely and positively adjusted so that the gas will flow at the exact pressure desired, while the valve will not easily clog up and get out of repair.

**ELECTRIC LOCK.**—Frederick Morgenthaler, Brooklyn, N. Y. An attachment by means of which a door may be locked in either an open or closed position is provided by this invention, the device being electrically operated and controlled by push buttons arranged in different parts of the building. The invention relates more particularly to the mechanism for holding the door open and for releasing the door, providing a positive means for effecting these objects, and simplifying the construction covered by a former patented invention for the same purpose. In a store equipped with this improvement the escape of a thief might sometimes be prevented, the attendant being able to close and lock the door by pressing a button.

**HAY RICKER.**—Maxon Chase, Lucerne, Mo. Combined with a suitable base and upright frames, arms, and fork, is a revolvable shaft, with elevating ropes, operating rope, pawl, and automatic locking and unlocking devices, the several parts being simply constructed and assembled and requiring but little power to operate them. The mechanism dispenses with weights and is safe at all times.

**OIL CAN.**—Noah G. Pomeroy, New Haven, Conn. This can is designed to be safely carried in the pocket without spilling any of its contents. Its nozzle has a loosely fitted piston or cleansing rod, adapted to clean oil apertures from any dust or dirt before the oil is supplied, and the device is especially adapted for use in oiling the bearings of bicycles and similar machines.

**AXLE LUBRICATOR.**—James S. Patten, Baltimore, Md. This is an improvement in axles having a reservoir for oil, and constructed to feed oil from the reservoir to the spindle or bearing for the wheel, the reservoir having a novel cover. The axle is chambered to form an oil reservoir, there being along the chambered portion external threads, while the cover consists of a band having internal threads meshing with those of the axle and provided with an opening movable into and out of register with the reservoir.

**COTTON BALING APPARATUS.**—Edmund M. Ivens, New Orleans, La. This invention relates to that class of baling machines which bale the cotton by what is known as the "roller process." Combined with a continuously operated folder or lapping device and a compressing platen is a rotatable press box having dual chambers arranged to alternately receive the cotton from the lapper and carry it over the compressing platen, with means for temporarily receiving the cotton from the folder when the cotton box is not under it, the oscillating lapper and folder frame being formed with extensible side sections.

**ROPE CLAMP AND STOPPER.**—Thomas P. Inglesby, St. Louis, Mo., and Thomas J. Davis, Richmond, Va. This device is adapted to clamp and hold different sized cords and ropes subjected to longitudinal load strain, preferably for holding a hoisting rope to permit its release from the drum of a hoisting machine so that another similar rope may be applied to the drum while the clamping rope is held with its load suspended. It consists principally of two longitudinally grooved grip blocks, with means to anchor one block to a staple object, while a bail clamp is loosely secured to the other block and adapted to slide endwise upon and removably hook fast to the anchored block, an adjusting screw engaging the clamp and one of the grip blocks.

**STIRRUP.**—Alain J. De Lotbiniere, Quebec, Canada. This stirrup has a yielding foot rest, the lower ends of the members of the bow section being provided with collars, and the foot rest having at its ends sleeves sliding upon such lower ends, a spring secured at the ends of each of the members bearing against the under side of the middle portion of the foot rest. By this means the weight thrown upon the stirrups, instead of being transmitted directly to the back of the horse, is taken up gradually by the foot rest, saving the horse from shock. The foot will also be readily released in case the rider is thrown, and the upward pressure of the spring causes the stirrup to be felt at all times, so there is no danger of losing it.

**ARTIFICIAL TOOTH.**—David B. McHenry, Grenada, Miss. This invention provides a means of securely fastening a partial plate of artificial teeth in the mouth. The plate is formed of rubber or similar material fitted to the general contour of the jaw, and studs, pins or screws are inserted in the natural teeth, or in permanently mounted artificial crowns, and projecting a short distance therefrom, while also removed from the gums a sufficient distance to admit of slipping the edge of the plate under the fastenings, the ends of the plate being adapted to spring inwardly.

**PORTABLE OVEN.**—William O. Silvey, Middleport, Ohio. This is a simple and cheap construction adapted to be heated by an ordinary lamp burning oil or gasoline, and especially adapted for raising any kind of bread, or for keeping articles warm. The oven is also provided with means for heating an inner chamber either by steam or hot air, which may be kept warm for a long time, and which has thermostatic means for regulating the amount of heat to maintain the exact temperature desired.

**CALCULATOR.**—Jose H. y Bolado, Aguas Calientes, Mexico. A series of cylinders fitted one upon another and each provided with an enlarged portion having apertures, and a reduced portion having a set of numerals appearing through the apertures of the next following cylinder, form the principal feature of this invention. The device has the general appearance of a lead pencil, to be readily carried in the pocket, and carries movable leads, while it can be arranged to perform mechanically a variety of arithmetical and mathematical calculations, as multiplication, division, extraction of roots, and other problems treating of relative proportions.

**WINDOW SHADE FIXTURE.**—William W. Wythe, Orange, N. J. Two adjustably connected brackets are adapted to hold the shade roller, a guiding cord extending over pulleys secured to the brackets,

the cord being secured at opposite sides of the window frame at points above and below the brackets, while an adjustable suspending cord is secured to one of the brackets and to the window frame. The fixture is adapted to conveniently suspend a window shade in front of a window to admit light at the top or any other part of the window, and it may be readily adjusted to suit the width of any shade.

**LADDER.**—Francis S. Sprague, Coldwater, Mich. This is a step ladder which is light, strong and inexpensive, and of which the side pieces, legs, and steps may be readily taken apart and packed in small space for carriage. The construction and connection of the steps is such, also, that the improvement may be employed in forming other ladders without legs. The steps are held in connection with the side pieces by means of swinging stirrup-like straps or loops, the steps having pins or projections on their under sides to engage with the free or swinging lower ends or portion of the straps or loops.

**GATE LATCH.**—Charles J. Ericson, Salt Lake City, Utah. This is a simple and inexpensive device for attachment to gates of all kinds, either single or double acting, but more especially designed for garden or front gates swinging both ways. It consists of an angled and curved bolt attached to or formed integrally with a rock shaft having at its ends hand levers for operating the bolt, an adjusting screw passing through the bolt for limiting its drop, and a metallic plate for holding the rock shaft in place on the gate, guiding the bolt, and covering the opening in the gate stile containing the bolt. The bolt is balanced to close perfectly from either side by its own gravity, and the gate will close when left only partially open.

**GATE HINGE.**—The same inventor has likewise obtained a patent for a double-acting gate hinge, preferably made from sheet metal, although it may be made of cast or malleable iron, brass, or bronze. It consists of two rectangular tubular parts formed alike and oppositely arranged with respect to each other, each having at one end a pair of perforated ears, while a link is pivoted between the ears. The two parts are applied, respectively, to the lower part of the gate post and the stile of the gate, the upper part of the gate having an eye which turns on an angled hook projecting from the post.

**MEASURING FAUCET.**—Herman M. Nye, Avoca, Neb. This is an improvement on a formerly patented invention of the same inventor, to cheapen and simplify the construction of measuring faucets for air-tight barrels or receptacles, providing a faucet by means of which any liquid may be quickly drawn and accurately measured. The improvement also adapts the faucet for use in connection with highly combustible or explosive liquids, and provides a suitable air vent in the liquid receptacle, and means for straining the liquid as it is drawn.

**FOUNTAIN.**—Fridolin Pascalar, Rochester, N. Y. This fountain is especially adapted for use in churches and other places to hold holy water for distribution. A lower open vase of any approved form constitutes its lower portion, and supported against the wall just above is a water storage receptacle on the plan of an inverted bottle whose mouth is held below the level of the water in the vase. By this means, as the water in the vase portion or fountain is used the supply is constantly replenished, so that it does not get below the level of the mouth of the reservoir until all the water in the latter has been used up, thus preventing waste and obviating the necessity of frequent renewals. The reservoir portion, being filled, is readily moved to place with the hand upon its mouth, the vase first having been sufficiently filled.

**KITCHEN CABINET.**—Albert C. Carr, Middlesborough, Ky. This is a simple and inexpensive construction comprising an upper compartment, a central drawer compartment, and a lower bin compartment, there being a cupboard in the upper compartment and hinged bins at each end of the cupboard, there being also a detachable board or cover adapted for use as a shelf, and a bin formed with a series of compartments.

**THEATRICAL APPLIANCE.**—Frederick Wohlgenuth, Philadelphia, Pa. This invention provides a device to aid in producing the illusory effect of a bicycle race on the stage. It consists in a bicycle mounted to have its wheels free from contact with the surface on which it appears to run, its front and rear wheels geared together, and its pedals free to be operated by the rider, the supports of the machine being secured to and projected up from a carriage adapted to be moved over the stage. The carriage carries suitably arranged dust-making devices, operated by the motion of the bicycle wheels, whereby the illusory effect of the race is rendered more effective.

**LAWN TENNIS COURT MARKER.**—Herman Reichwein, Spring Lake, N. J. The casing of this device is open at its base and carries a dust-reciprocating box with a perforated bottom, any suitable white powder being carried in the box. The device has a forward supporting wheel, and is pushed over the ground by means of handle bars, when the powder is evenly sifted in a continuous line as the marker is pushed by the operator.

**TRAP.**—Hubbard S. Goff, Arch Beach, Cal. This is a trap for taking fish or game of any description. Its body consists principally of two bow frame jaws, upon the outer rounded portion of which are hooks, a spring normally drawing the jaws to engagement. The trap may be conveniently set or baited without danger to the manipulator, and it may be placed in a horizontal or suspended in a vertical position, according to the use to be made of it.

**WATER CLOSET DEVICE.**—Walter R. Webster, Pine Grove, Cal. This is a device for automatically closing the covers of closets or other receptacles. It operates by the combined action of a metallic or other spring and air-cushioning cylinder and piston devices, through the intervention of suitable levers and connections. It effects the gradual closing of the cover, without noise or bang.

**CATAMENIAL BANDAGE.**—Anna Chapman, Jersey City, N. J. This invention covers a novel

construction and combination of parts whereby the improved appliance is adapted for quick adjustment and removal of parts, affords comfort in use, and facilitates the renovation of portions requiring it.

**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.**

**PHILOSOPHICAL NOTES ON BOTANICAL SUBJECTS.** By E. Bonavia, M.D. With 160 illustrations. London: Eyre & Spottiswoode. 1892. Pp. ii, 368.

The author presents the subject of botany from the standpoint of evolution and very graphically treats on plant structure and life.

**A HISTORY OF WATCHES AND OTHER TIMEKEEPERS.** By James Francis Kendal. London: Crosby Lockwood & Son. 1892. Pp. ii, 252. Price \$1.

By numerous illustrations, personal, historical and archaeological references, this work is rendered of great interest to the ordinary as well as to the professional reader. The author, a member of the firm of Kendal & Dent, is evidently qualified from study and literary taste, as well as from his trade knowledge, for the work has undertaken. The work appears to us to be one of great interest, and is presented in the most attractive manner.

**L'ANNEE ELECTRIQUE OU EXPOSE ANNUEL DES TRAVAUX SCIENTIFIQUES, DES INVENTIONS, ET DES PRINCIPALES APPLICATIONS DE L'ELECTRICITE A L'INDUSTRIE ET AUX ARTS.** Par Ph. Delahaye. Paris: Baudry et Cie. 1892. Pp. vii, 347.

The title of this work tells its own story. The entire field of electricity, from electric light to medical electricity, is treated. It discloses the wonderful activity of workers in the science, and forms an excellent compendium of a year's progress. While it has excellent and clear illustrations, we think that a more liberal use of the artist's pencil would have been desirable.

**SCIENTIFIC AMERICAN BUILDING EDITION.**

**JUNE NUMBER.—(No. 80.)**

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3. Engravings and floor plans of the Crescent Block of six houses erected on Golden Hill, at Bridgeport, Conn. An excellent design. Total cost of six houses \$55,000 complete. Messrs. Longstaff & Hurd, architects, Bridgeport, Conn.
4. A handsome residence at Babylon, Long Island, N. Y., recently erected for F. H. Kalbfleisch, Esq. Cost \$17,500 complete. Two perspective views and floor plans. H. J. Hardenberg, New York, architect.
5. A school house at Upper Montclair, N. J. Perspective view and ground plans. Cost \$12,200 complete, including heating and ventilating apparatus. Geo. W. Da Cunha, architect, New York.
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