

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**WATER TUBE BOILER.**—Charles Edgerton, Philadelphia, Pa. This is an improvement in high pressure boilers in which tubes are entered into the flattened side of a cylindrical drum, two sets of water tubes being connected with the drum, one for downward and the other for upward circulation. A series of narrow braces is arranged on the inside of the flat portion of the boiler between the tubes, and broad U-shaped braces are arranged in the same relation to the drum, but receiving between flanges the tubes for the downward circulation. The braces are of peculiar shape, are of one piece of metal without seam or weld, and are pressed into shape, their flat surface being very thoroughly stayed without the use of stay bolts. They also serve the purpose of strengthening the drum longitudinally and in all other directions.

**BOILER FURNACE.**—Dudley D. Fleming, Jersey City, N. J. This furnace is designed to contain many times the volume of fuel now used, and have a reduced grate area, maintaining a slower generation of the gases, by means of a regulated primary air supply and the combination therewith of water vapor. The combustible hydrogen and carbonic oxide gases are subjected to contact in properly constructed combustion chambers with a regulated secondary air supply, converting them into water and carbonic acid gas, a reaction which is continued to the point of escape in the chimney. The furnace is constructed in a series of sections, to be alternately charged or cleaned, always maintaining sufficient heat to ignite the gases in contact with the secondary air supply, or, when bituminous coal is used, to consume the carbon vapor or smoke.

## Railway Appliances.

**CAR COUPLING.**—Thomas Fales, Bridgeport, Cal. This invention relates to couplings of the pin and link type, which may be arranged to automatically couple meeting cars, the uncoupling being effected from the side, so that the trainmen need not go between the cars. The drawhead has a throat above which is a slot provided with link-holding devices, while movable on a vertical axis in a horizontal recess is an arm with one end projecting into the throat to engage the top of the link, the other end of the arm extending outwardly. The common link and pin coupling may be readily changed into one of the improved form, and care provided with the old couplings may be used together with such as have the improvement.

**METALLIC TIE.**—John S. Mitchell, Greensborough, Md. This tie comprises two casings, connected by crossed binding rods and a clamp, each casing having an arched or hemispherical top with downwardly extending flange embedded in the ground. Each casing has in its upper surface a man hole through which it may be packed with earth, and in the center of its top is a longitudinal recess to receive a strip of hard rubber on which rests the base of the rail, held in position by clamping plates.

**CONTROLLING CAR GATES FROM THE ENGINE.**—Seth A. Crone, New York City. According to this improvement one or two lines of pipe connect the platforms of the several cars of a train, with the main air reservoir on the locomotive, where there is a valve under the control of the engineer, to enable him to control, by means of suitable devices, the gates on each platform, opening those on one side while the others remain closed. Each of the gates may be readily opened and closed by an attendant on the car. The improvement is designed to be especially advantageous on elevated railroad trains, although it may be applied to all kinds of gates and doors.

## Electrical.

**BICYCLE ELECTRIC LIGHT.**—Francis E. Magee, Brooklyn, N. Y. In a suitable casing, secured to the rear fork of a bicycle frame, according to this improvement, is a generator whose armature is revolved by a band from a grooved wheel on the hub of the rear wheel of the bicycle, the device adding but very little to the weight of the bicycle, and generating a light of normal candle power when the rider is going at only a moderate speed, the generator being connected to a lamp on the front fork. The connections and windings of the two armature sections are arranged in the same direction, and a simple mechanism is provided whereby the current may be cut off or governed to prevent fluctuations or the burning out of a lamp.

**ELECTRIC LAMP.**—This is a further invention of the same inventor providing a lamp for traveling vehicles that will produce a strong and brilliant light, and in which the focus may be easily and quickly adjusted. It comprises a metal casing with lens in its forward end, a longitudinally adjustable reflector carrying an incandescent lamp socket, and means for effecting the adjustments and carrying the current to the lamp. All the metal parts are preferably made of aluminum.

**ANNUNCIATOR DROP.**—William Schwagerman, Yonkers, N. Y. This is a drop which, in its elevated or normal position, will not be discharged from its support when the annunciator is subjected to severe or constant jar or violent agitation, as in its elevated position the drop rests on the heads of the armatures and they form an effective lock. The armature is of the twin type, and so arranged as to automatically pass to locking engagement with the drop when the latter is raised. When the magnet is energized, it attracts the armatures to bring them together and free the drop.

## Miscellaneous.

**GRAIN ELEVATOR.**—James D. Ream and Moses Lewis, Broken Row, Neb. This invention provides a construction designed to relieve the buckets of surplus grain, and to permit of charging the casing with surplus grain without removing the latter from the casing. The elevator has the usual elevating buckets, and there are relief chambers on opposite sides of the grain receiving compartment, each chamber having an inlet and an outlet gate to connect the interior of the chambers with the casing. The sprocket chains are of novel construction, and may be run in either direction without danger of disconnecting the links.

**CONFECTIONERY MACHINE.**—Simeon J. Hicks, Chicago, Ill. This is a machine more especially designed for forming wafers or patties in a cheap and economical manner. A hopper in the frame of the machine has chambers for the passage of the moulded articles, there being a main shaft journaled above the hopper and plungers movable in the chambers of the hopper, a spring moving the plungers in one direction and cams on the shaft moving them in the other direction. The machine is of simple construction, and arranged to be readily taken apart for cleaning and repairs.

**METER.**—John H. Dixon, Marietta, Ohio. This invention relates to meters having flexible diaphragms and valves controlling the inflow and outflow of the liquid, and comprises a measuring chamber in which the diaphragm is secured, a valve controlling the inflow and outflow, and a telescoping stem connected with the diaphragm, while a lever pivotally connected with a member of the stem has a spear-shaped end engaged by a spring-pressed arm, there being a connection between the lever and the valve rod. By the up and down movement of the telescoping stem the lever is set in motion to actuate the registering device to indicate the amount of gas or other fluid discharged.

**MUSICAL INSTRUMENT.**—Henry E. Hibsham, New York City. In auto-harps, this invention provides a system of key-operated levers which normally provide to mute the strings. There is a locking device for each series of rows of keys by which, when one or more keys are manipulated to raise certain levers from certain strings, the levers will be held in their upper position automatically until other keys of the same series are pressed, when the levers held raised will be automatically released, and the levers last raised locked in elevated position.

**MEANS FOR SOUNDING COMBS.**—Alfred Herring, Jersey City, N. J. In musical instruments using combs to produce the desired tones, this invention provides improved means for sounding the teeth of the combs to produce soft and melodious tones and completely obviate the harsh, metallic sounds caused by picking the combs as heretofore. The instrument comprises a comb, and reeds or like vibrators having felted or cushioned portions arranged to intermittently engage the teeth of the comb, the vibrators being actuated by pressing on a key which opens a valve connected with an opening in the wind chest.

**MANIFOLD CASH SALES BOOK.**—John H. Murphy, New York City. This book has a flexible back with stiffening strip engaged by side arms, which open to permit the entire back to swing downward for inserting new leaves. The leaves are transversely perforated near the middle, a spring-pressed bar holding the leaves and a transfer sheet in place. The book is designed to enable a salesman to quickly and conveniently write out a duplicate sales slip on a doubled-up leaf and remove it in separate parts from the book, making an entry of each sale.

**WASHING MACHINE.**—Joseph Lachance, Little Falls, Minn. The body of this machine is in the form of an elongated suds box, within which are rubbing plates extending over the sides, bottom and top, and at one side of the inlet opening is a baron which a wringer may be fastened. The body is pivotally supported on a rack or frame, to which are pivoted oppositely arranged levers, arms of which engage opposite ends of the suds box and are connected with treadles, and by working the levers the body is rocked, moving the clothes in contact with the rubbing slats until the cleansing is effected.

**SPRING.**—Alexander C. Bell, New Alexandria, Pa. This is an improvement which may be characterized as a "jolt receiver," and is applicable to buggies, carriages, cars, ambulances, bicycles, beds, car and school seats, etc. The invention comprises a support to which the springs proper are held, while a lever having sliding connection with the support has rigid arms extending over the springs, links connected with the lever arms extending through the springs proper. The construction obviates a solid center and furnishes a yielding spring bearing at all points.

**PEN OR PENCIL HOLDER.**—Edward G. Wickwire, Larned, Kansas. This is a holder adapted to be readily applied to any article of wearing apparel, without injury to the garment. It is made of a single piece of spring wire bent to form an X-shank, a coil at the upper end of each member and pins extending downward at the rear, the wire being also bent at its lower ends into coils. The holder has clamping sections to hold the pen or pencil in upright position, and keepers are provided for the pins, rendering them safety pins.

**STAMPING OUT CARTONS, ETC.**—Arthur Friedheim, Berlin, Germany. This invention provides a device for making beveled edged photographic mounts and similar articles, the bevel being made at the same time the cards are cut from the sheet. From a plate attached to a vertically moving plunger or die are pivotally suspended a number of knife holders, the knives being arranged diagonally so that the cutters incline outwardly, and cut the material obliquely on the descent of the plunger.

**SASH HOLDER.**—Charles H. Beer and Charles H. Beer, Jr. (the Charles Manufacturing Company, 317 East 125th Street, New York City). This is a device for preventing the rattling of window sashes, and consists of a spring rod bent at its middle to form a transverse coil, its terminals being adapted to engage the upper and lower sashes of a window, while the coil bears against a portion of the window frame. The device is extremely simple and inexpensive, and operates to push the upper sash outward against the outer bead of the window frame, pushing also the top rail of the inner sash outward against the lower rail of the top sash.

**DOOR SECURER AND KEY RING CHAIN.**—George F. Bailey, Peabody, Mass. This is a simple device for readily locking a door in closed position or supporting a key ring chain from a trousers button. An oval plate with elongated opening to hook onto a button has at one end a flange adapted to engage the opening of

the striker, and to the other end of the plate is attached a chain carrying a key ring and having at its outer end a hook. When the plate is placed in position and the door closed, the chain is extended around the shank of the door knob, and the hook is made to engage one of its links, preventing the opening of the door until the hook is disengaged.

**TROUSERS PRESSER AND STRETCHER.**—Robert B. Colley, St. Heliers, Island of Jersey. This device comprises a pair of presser boards with metal cross bars which enable pressure to be applied by wing nuts screwing on coupling screws hinged to one set of cross bars and engaging slots in the ends of the other set of cross bars. The lower board is a single piece, but the upper board is in three separate portions, two narrow end clamping portions serving to hold the garment stretched and a long intermediate presser portion.

**BRUSH CLEANER.**—Theodore L. Harlow, Gardner, Mass. This is a device adapted to be placed as a fixture in mucilage bottles, etc., and so shaped that both sides of the brush and one of its vertical edges may be cleaned simultaneously by simply drawing the brush through a portion of the cleaner. The device is preferably made of a single piece of round wire, to fit in a groove at the bottom of the neck of the bottle, and comprises two loops connected by a cross bar, there being downwardly extending parallel cleaning sections at one side of the cross bar and a bowed section in the same plane as the loops.

**VENDING DEVICE.**—George O. Ranson, Portland, Oregon. This is a device in which the receptacle represents a human face with eye and mouth openings, there being movable eyeballs and detachable teeth, the latter connected with the eyeballs and with packages of merchandise, so that as a tooth is drawn the eyeballs express pain and return to their normal position on the detachment of a package of merchandise, the latter being drawn through the mouth opening. The device is designed to afford amusement to children while making a purchase.

**MUCILAGE BOTTLE.**—Stephen O. Prescott, Pittsburg, Kansas. This is a bottle designed to discharge the mucilage in such a manner as to dispense with a brush, and may be employed to apply the mucilage with great nicety, either in a narrow line or a broad band. The body of the bottle is of rubber or similar material, and has a wedgelike tip to act as a substitute for a brush, with an outlet for the passage of the mucilage when the body is compressed.

**PHOTOGRAPHIC PLATE HOLDER.**—Matthias Flammang, Newark, N. J., and Frank Moniot, New York City. This is a holder which enables the operator to accurately adjust the screen relatively to the sensitive plate, according to the nature of the object to be photographed, and comprises a main frame adapted to receive a negative auxiliary frame movable toward and from the negative and having inclined slots, pins sliding in the main frame engaging the slots of the auxiliary frame, and lazy tongue in the latter frame having holders for a screen plate. The shifting devices for the screen plate extend through the frame to the outside.

**NECK STRAP FOR HORSES.**—Reuben F. Newman, Manassas, N. J. This is a strap having a portion to extend around the neck of a horse, with a leader or hitching strap extending therefrom, but instead of the ordinary ring and snap hook attachment, there is a ring at one end of the neck portion, and the connection between the neck and hitching portion forms a stop for the movement of the ring in one direction, while a spring stop limits the movement of the ring in the opposite direction, the hitching portion being wholly separated from the ring.

**MAKING ALUMINATE.**—Dmitry A. Péniakoff, Huy, Belgium. This invention is for a process for producing alkaline aluminates and chlorine by heating a substance containing alumina in the presence of an alkaline sulphate and sulphuretted hydrogen gas obtained by mixing with oxygen and then brought in contact with alkaline chloride, to produce chlorine and alkaline sulphate. The whole process is very simple, and has also been patented in many foreign countries.

**BICYCLE SKIRT.**—Julius N. Lewinson, New York City. This is an improvement in divided skirts and trousers combined, according to which the rear portion of the skirt is so made that it may, for a portion of the distance from the waistband down, be readily opened, and when the opening is closed an apron will cover the skirt opening, so that the skirt at the back upper portion will have the appearance of an ordinary walking skirt.

**AWNING.**—Charles A. and William E. Metzger, Rutland, Vt. This invention provides simple and inexpensive means for hanging an awning, the hanging devices not being removed when the awning is disconnected from its support. The devices do not detract from the appearance of the awning, and when the latter is drawn up its folds do not interfere with the pulley through which the draw rope passes. The invention also provides hangers especially adapted for attachment to a rod used as a support for the awning, the hangers being attachable at any point on the rod and readily attached or removed.

**FISH NET LIFTING DEVICE.**—John W. Atwood, Malden, Mass. This is a lifting machine for taking up nets, trawls, or set lines or ropes, and consists principally of a revolvable drum carrying at its periphery clamps adapted to engage the net or line and release it after drawing it a suitable distance. Each clamp consists of an elastic block whose top is engaged by an adjustable plate, while a movable block directly opposite is actuated by a lever pivoted on the drum. The drum carrying shaft is revolved by an engine or other motor, and a revolving brush removes the line or net from the clamps as soon as they open.

**PLUMB SUPPORT.**—John H. Weir, New York City. This is a device for the use of masons, carpenters, etc., to permit of quickly lowering the bob without imparting to it a swinging motion. Within a suitable casing adapted to be held in one hand, and having at its lower end a lug to which one end of the cord is attached, are two outwardly springing arms having

inner bent perforated portions through which the return portion of the cord is passed, the pressing inward on the arms by the thumb and finger bringing the perforations in line and permitting the cord to run freely, while the cord is locked when the pressure on the arms is released.

**VEHICLE RUNNING GEAR.**—Benjamin F. Haldeman, Pittsburg, Pa. For farm, coal and similar wagons, this invention provides a substitute for the rigid reach ordinally used to connect the front and rear axles. It is particularly applicable to wagons having a rear platform spring, and consists of an inverted U-shaped lever and links connected with the rear axle and fifth wheel, a spring rigidly secured to the fifth wheel being flexibly connected at its rear end with the lever. The improvement is self-adjusting to the load and allows the front wheels to be turned under the body.

**GATE.**—Albert Davison, Belvidere, Ill. This is a farm gate which may be readily lifted to set it above the snow or to let small animals pass through, and such adjustment may be easily effected without detaching any of the operating parts, the bolt seats permitting its latching and unlatching at different vertical adjustments. The several parts for raising and letting down the gate are arranged to operate without opening or shutting it, facilitating the work of farmers in separating small from large stock.

**GATE LATCH.**—William J. Hays, Decatur, Ill. In combination with a gate having a vertical bar and a keeper at its free end, according to this improvement, are two latches pivoted to the ends of the bar and projecting beyond the front end of the gate to engage the strikes, while a lever pivoted at its lower end to the inner end of the lower latch carries a pin which overhangs the inner end of the upper latch, the upper end of the lever engaging a cross wire to lock the two latches.

**ROLLER SKATE.**—George T. Bond, Topeka, Kansas. The skate, according to this improvement, is made with a single roller, some six inches high or thereabout, and having a hub, wire spokes and a pneumatic tire. A supporting frame with side uprights, braces and leg strap are designed to give efficient support to the leg and ankle of the skater, the improved skate being adapted for general out-of-door use.

**FRUIT DRIER.**—Arthur B. Shearer, Arroyo Grande, Cal. According to this invention, a main compartment is provided with end doors and a track between for the tray cars, there being at one side of the track a condensing wall or partition cooled by a water spray and a blast of cool air, while a fan forces hot air from a heater or furnace across the track space and its fruit laden cars against the condenser wall. A blower is provided for withdrawing the air from the drying chamber and returning it to the furnace. The cars are provided with a horizontally turning rack adapted to receive any desired number of fruit trays.

**BEDSTEAD JOINT.**—Daniel D. Curtis, Sidney Center, N. Y. This is a bed rail fastener designed to be very secure and without vertical or lateral motion, taking also the weight of the rail from the screws attaching the body of the fastener to the rail. It is preferably made of metal, and has rear openings or apertures and forward hooks to enter sockets in the head and foot boards, and the bottom of the body is provided with two or more horizontal flanges, which are preferably integral with the body and struck up therefrom.

**FOLDING COT.**—David T. Helprin, New York City. This is a cot which folds, not only in the direction of its sides, but also in the direction of its ends, by which it may be made to occupy a small space in storing it, but may be readily brought fully out into rigid position as a cot. The frame consists of side bars having a hinge connection, and with sockets at their outer extremities, the legs being pivotally attached to the socket portions, while cross bars have heads arranged to enter the sockets and engage with the legs, the bed section being attached to the cross bars and sections of the side bars, the bed being cut away opposite the sockets.

**NON-REFILLABLE BOTTLE.**—Dolph Edwards, Sanford, Fla. To provide a bottle which cannot be refilled without partially destroying it, according to this invention, the neck of the bottle is made with an internal circumferential groove, to which leads a perforation from the exterior. The neck is long enough to receive a lower sealing plug, and an upper securing plug, the latter having a groove coinciding with the internal groove of the neck and permitting of the insertion of a key of wire or other suitable material in the coincident grooves to lock the securing plug in place. By forcing the wire entirely in, so that it cannot be withdrawn, the contents of the bottle cannot be obtained without breaking off the neck at a circularly grooved portion between the two plugs, although, by leaving the key with a protruding portion, it may be withdrawn and the sealing plug removed, allowing the bottle to be used as an ordinary bottle.

## Designs.

**LADY'S COLLAR.**—David Kisch, New York City. This design is for a collar open at the back, and with two opposite side portions having angular front points and an intermediate piece with downwardly extending a gular lower edge.

**SOAP DISH OR HOLDER.**—Edward L. Snyder, Brooklyn, N. Y. This dish has a top which slopes downward from its margin to a central opening, communicating with an enlarged space below, there being an end opening in the body of the dish to this space.

**PICTURE FRAME.**—Alfred J. Ripley, Long Branch, N. J. This is a frame made with a surface representing cloth decorated with playing cards and chips, and having also a depression simulating a "kitty" opening.

**NOTE.**—Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send name of the patentee, title of invention, and date of this paper.