

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**BOILER FEEDER AND METER.**—John E. Winder, Pacific, Mo. This invention relates to boiler feeders heretofore patented by the same inventor. A water receptacle containing a float is connected with the boiler, a steam chest being connected with the receptacle and with the boiler, there being a valve in the steam chest. The entire amount of water taken into the receptacle is indicated on a register or meter, the device being simple and durable in construction and automatic in operation.

## Railway Appliances.

**CAR COUPLING.**—David Altman, Macon, Ga. This is an improvement on a former patented invention of the same inventor, and provides a coupling which is simple and easy of operation, and by which the cars can be coupled and uncoupled without requiring the trainman to go between them. The drawhead has the usual flaring mouth, and is provided with a coupling pin opening in its top, adjacent to which are guide frames to retain levers extending to both sides of the car and adapted to properly manipulate the pin.

**RAILWAY SIGNALING APPARATUS.**—John D. Taylor, Piketon, Ohio. Two patents have been granted this inventor, one of which covers an improvement on his previous patent, and provides for the transmission of signals with certainty and accuracy. It consists in the combination of a polarized relay for receiving the signal from the main line and operating the local circuit and electrically-operated signal receiving and transmitting devices. The other invention is designed to place the control of trains on any system of blocks in the hands of one man, who will have an efficient means of knowing the exact location of all trains, and will consequently know just what signals to give to following trains. The current for operating the system is furnished from a battery or dynamo at the block dispatcher's office, and the intermediate and terminal stations are provided with distinctive sets of apparatus. The danger system is automatically set, and cannot be changed except by the block dispatcher, the system being designed to obviate errors by incompetent operators and reduce the cost of operating the block signaling system.

## Electrical.

**CURRENT REGULATOR.**—Joseph A. Williams, Cleveland, Ohio. This is a device for attachment to dynamos, to regulate the current by moving the brushes toward or away from the neutral line. A compound thermostatic bar is combined with the circuit wires of a dynamo, and a pair of compound thermostatic bars are oppositely arranged with respect to each other, and connected with the movable brush-holding bar, while current-shifting devices are arranged to throw the current into one or the other of the secondary compound thermostatic bars.

**THERMOSTAT.**—Jesse C. Sims, Maynard, Mass. A mercury thermometer tube of the usual description has oppositely arranged lateral branch tubes in which are sealed platinum wires, which touch the mercury as it rises in the tube. On opposite sides of the thermometer are rods carrying sliding metallic blocks adapted to be clamped in a desired position, the blocks having holes and binding screws for connection with wires. The blocks are set opposite and near the point on the thermometer scale at which it is desired to sound an alarm or close a circuit, and wires from the blocks are connected with the alarm it is desired to operate, when, on the rising of the mercury in the tube to form a contact with the wires, the circuit is closed and the alarm is sounded. To indicate a falling temperature the apparatus is placed on a closed circuit, the falling mercury then breaking the circuit and sounding the alarm.

## Mechanical.

**AUGER.**—William Brede and Leon A. De la Nux, Paauhau Mill, Hamakua, Hawaii. This is a tool in which the cutters are detachably attached to the web of the shank in such a manner as to be expeditiously and conveniently applied and removed, the cutters defining the hole to be cut and preventing the web upon entering the wood from tearing its upper surface. The web has dovetail tapering recesses in its edges, at each side of which are downwardly tapering spurs, the cutters fitting in the recesses and a pin passed through the cutters and the web.

**STOVE PIPE FITTING TOOL.**—Elliott D. Fisher, Franklinville, N. Y. This is a tool for expanding one end of a stove pipe joint and correspondingly contracting the end of a similar pipe joint to adapt them for a sliding connection. It is a compact and simple implement with a hollow conical body having an annular slightly sloping shoulder formed on it near its center of length, an inward curvature produced on the edge of its small end and a flaring mouth on its larger end.

**BELT COUPLING.**—William P. White, Voluntown, Conn. This coupling consists of two outwardly bent coupling pieces having interlocking hooks and eyes with transverse slots, clamps entering the concave portions of the coupling pieces and having projecting hooks adapted to extend through the slots of the coupling pieces. The device forms a simple and durable coupling of metal, designed to be quickly and easily applied, fastening the ends of the belt so they are not liable to tear, while the united portions will run smoothly over the pulley.

**BRICK PRESS.**—John P. Alston, Renovo, Pa. This press has a vertical steam cylinder in the upper end of its frame, the piston operating a plunger, below which is supported a mould, in the bottom of which is a plunger supported by a crosshead, the plungers being so connected that on the raising of the upper plunger the lower plunger will rise to expel the brick, which are removed by an equal and steady pressure so that they will not be injured. The operation is automatic, and the frame is mounted on wheels

so that it may be conveniently moved about as desired according to the location of the material and the supply of the motive agent.

**DIE FOR BUTTON MACHINES.**—Leo Prange, Brooklyn, N. Y. This die is formed by breaking a piece of hard metal into two parts, the broken surface of each part constituting the face of the die, the grain of the fractured surface forming a stipple into which ornaments are sunken, the dies being especially adapted for pressing glass or jet buttons.

**MECHANICAL MOVEMENT.**—Jesse Morningstar, Archbold, Ohio. According to this invention, a circular strap is held on a cam wheel adapted to be driven and provided with trunnions, a shaft with a forked end being engaged by the trunnions, and the shaft being adapted to carry a crank arm to connect with the device to be driven. The device is simple in construction and designed for effective use on various machines, especially for converting the rotary motion of the main driving shaft of a mower into a reciprocating motion to actuate the knives.

## Miscellaneous.

**SLATE ATTACHMENT.**—Maud Wyman, Oakland, Cal. This is an appliance for assisting pupils in learning to write or draw letters, figures, etc. It consists of a box containing a slate, above and beneath which at the upper and lower sides are journaled parallel shafts carrying endless bands, upon which the letters or figures are displayed. Means are provided for actuating the bands to expose such letters, etc., so that they may be copied upon the slate.

**WAISTBAND.**—A novel waistband designed to connect pants and shirt waists with a yielding connection has been patented by Mr. Frederick Spitz, of New York City. In this invention the band is provided with a series of eyelets arranged in pairs one above the other, with loops of cord extending through the eyelets and secured to the face of the band, by a loop formed of the material of the band. On the portion of the cord loop projecting inside the band is placed a metallic slide to regulate the length of the portion of the loop which receives the button of the shirt waist. This waistband is principally designed for use on children's clothing, but it may be applied with equal advantage to sporting suits.

**FISH PRESERVE DAM.**—Samuel McElroy, Brooklyn, N. Y. This invention provides an improved dam specially designed for streams and ponds containing game fish, permitting the free discharge of the ordinary and extraordinary stream and storm flow without allowing the fish to escape. Combined with the ordinary weir is an auxiliary weir of novel construction, with screens, on the up stream side of the dam, alongside the ordinary weir, and adapted to discharge into it, the auxiliary weir forming a sufficient outlet for any surplus water, while the fish are retained.

**RECOVERING VAPORIZED SOLVENTS.**—James R. Whiting, New York City, and William A. Lawrence, Waterville, N. Y. This invention covers an improved method of extracting the active principles and valuable contents of hops by bringing the hops in contact with petroleum, ether, etc., as practiced under a former patented invention of the same inventors. The invention provides for the more rapid and complete recovery of the vaporized solvents in the extractor among the hops after the solvents containing the extract have been drawn off, accomplishing this object by the use of steam, while the steam is at all times kept from contact with the hops.

**WELL DRILL APPLIANCE.**—Edmund R. Bristol, Jordan, Minn. This is a device for removing broken piston rods from wells. A tube is adapted to be passed into the well having a head on its lower end with a central opening less in diameter on the top than on the bottom, the head passing with its central opening on the end of the broken piston rod, while a tool slides in the tube and has a wedge on its lower end adapted to pass into the head to wedge past the broken end of the rod. The device is of simple construction and designed to be durable and efficient.

**LAMP.**—Frederick S. Dellenbaugh, Mount Vernon, N. Y. This is a device for the burning of a solid substance, as a stick of paraffine, with a wick, to afford an absolutely safe lamp for use at sea, on railways, or in the household, while being clean and giving a brilliant light. The lamp may be of any desired size or shape, but in its body is held the burner tube with slots through which melted paraffine is passed to the wick, the tube being fitted with a lifter which constantly forces the stick of paraffine up against a stop.

**FOUNTAIN INKSTAND.**—Charles W. Rohrkaste, Beaver Falls, Pa. This device has a casing in which is an ink well, a funnel sliding down into the ink well through a top opening in the casing, while a flexible cylinder is secured to the well and to the casing. The air is confined in the ink well, and when one presses on the funnel, the pressure of the air on the ink causes the latter to rise into the flaring mouth of the funnel. This inkstand can be readily taken apart for filling and cleaning.

**FIRE PROTECTOR.**—Willie F. Bean and Frederick W. Dunnell, Springfield, and George B. Noyes, Lawrence, Mass. This invention provides a curtain of asbestos or other suitable material, attached to a spring-actuated roller above a window of a building, whereby the curtain may be quickly drawn over the window as a protection from fire in an adjoining building. The curtain is also designed to be moved in a frame, so that it may be operated from the outside of the building if desired, in connection with a life-saving car.

**DOOR SPRING.**—Charles W. Harvey, Los Angeles, Cal., and Charles J. Root, Bristol, Conn. The bracket or support of this device has a vertical socket, and a drum with a ribbon or the like, with an actuating spring, while the spring shaft is extended beyond the head of the drum, such extension fitting in the vertical socket. The device is very simple and inexpensive, while it can be easily adjusted to suit right or left hand doors, and the tension of the spring can be readily increased or diminished.

**DOOR CHECK.**—Herman A. J. Rieckert, New York City. By this invention toggle levers are adapted to be supported on the door casing and press on the door, a spring formed by a hollow ball of flexible material being connected with a joint of the toggle levers. The device is very simple and durable in construction, and adapted for use on doors mounted to swing in both directions, serving to retain the door in a closed position and prevent it from swinging forward beyond the normal position when opened in either direction.

**UMBRELLA HOLDER.**—Joseph C. Garratt, Brooklyn, N. Y. This is a stand designed more especially for holding umbrellas in stores or shops when on exhibition or sale, allowing quite full exaration of them without unnecessary handling, and so that they present an attractive appearance to buyer and seller and are locked safely against theft. In each end of a suitable base, preferably of ornamentally moulded wood, is screwed a post, which may be a metal tube, and these posts give support to bent wire end parts adapted to hold two series of crossed umbrellas at each side of another series of central upright umbrellas.

**BOOT BLACKING BRUSH.**—Robert L. Stevens, Ward, Pa. This is a machine for polishing boots by the wearer without stooping over. A pair of horizontal rock shafts are journaled beneath a foot rest near the bottom of a vertical frame, the rock shafts carrying brushes on opposite sides of the foot rest, while a hand lever extends upward from each rock shaft. The boot or shoe, having been daubed with blacking, is placed on the foot rest, when the hand lever is reciprocated, rocking the shafts and reciprocating the brushes along the foot rest, thereby cleaning or polishing the boot or shoe.

**ICE CREEPER.**—Rollin A. Camp, Saginaw, Mich. This is a device to prevent pedestrians from slipping on ice or frozen surfaces. It consists of a plate formed in sections, one section being slotted and having a flange and the other having a cam, while each section has a series of apertures and a spur, the spur of one section projecting through the apertures of the other section. The device is simple and inexpensive, and can be readily put on or taken off the boot or shoe, or applied over a rubber or other overshoe.

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MAY NUMBER.—(No. 67.)

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## Notes &amp; Queries

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(2996) J. B. S. writes: SCIENTIFIC AMERICAN SUPPLEMENT, No. 779, page 12444, central column, about 2 inches from the bottom: "This lamp has no chimney and burns ordinary paraffine oil with a blue flame like a Bunsen gas jet." Be kind enough to describe the lamp or burner producing the blue flame. A. This burner is an atomizer similar to those used for spraying perfumery, medicine, etc. You will find it described on page 101 of "Experimental Science."

(2997) R. M. W. asks: How can tortoise shell be polished? A. After the tortoise shell is scraped smooth with a piece of glass, rub it with fine sand paper or Dutch rushes; repeat the rubbing with a bit of felt dipped in very finely powdered charcoal, and, lastly, apply rotten stone or putty powder, and finish with a piece of chamois skin dampened with a little sweet oil, or still better, rub it with subnitrate of bismuth applied by the palm of the hand.

(2998) W. D. F. asks: How can I test drinking water for the presence of lead? A. Test by acidulating the water with hydrochloric acid and running hydrogen sulphide gas through it; this is preferable, but if the gas cannot be readily made, hydrogen sulphide water will answer. If sufficient lead be present, a black precipitate will be formed. Lead pipes in time become covered with a coating which prevents the water from coming in contact with the metal.

(2999) H. E. asks: Which are the three largest navies in the world at present? A. English, French, Russian.

(3000) J. W. W. asks: How can graphite rod be soldered or fastened to copper wire, or what kind of solder is necessary, and is there such a solder as copper solder? A. You can cast lead around the end of your graphite rod, or you can copper the rod by the galvanic method. The wire can be soldered to the lead or copper by means of soft solder or by the galvanic method, in which case copper is the solder.

(3001) J. S.—Loof or loofah is the name of the fruit of *Luffa Aegyptiaca*, a plant belonging to the order Cucurbitaceae, which includes the pumpkin, squash, cucumber, the various kinds of melons, etc. The fruit is fibrous and netted within and is cut up when dry and used as a fleshrubber in Turkish baths. Hence the fruit has been called the towel gourd. The fibrous substance of the fruit is also used for washing dishes.

