

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**FEED WATER HEATER.**—Joseph Bell, Troutdale, Oregon. A casing is, according to this invention, connected at its lower part with the steam supply, and contains upwardly extending plates provided with projections, a water distributor being held above the plates and discharging thereon. A filter is arranged within the casing above the entrance of the steam supply to cause the steam to pass upward between the plates, and the feed-water is filtered after it is heated and previous to its entrance to the boiler. The invention is an improvement on a former patented invention of the same inventor.

**COAL SCREEN.**—James J. Coyne, Old Forge, Penn. This is an improved construction especially designed to receive anthracite coal from the breaker, screening the coal without regard to its condition as to moisture, and also brushing and polishing the coal. It consists of a rotary shaft with a series of interlocking hubs, the central hub of each series being loose on the shaft and the two outer hubs fixed to the shaft, while radial arms projecting from the loose hubs carry a tubular screen and adjustable radial arms project from the fixed hubs, brushes and blades connecting the outer ends of the arms of adjacent fixed disks.

## Railway Appliances.

**CAR COUPLING.**—Robert S. Russell, Brownsville, Texas. Pivoted within the drawhead is a coupling jaw having a horizontal hook at its forward end and a shoulder on the lower face of the rear end, the latter being weighted, while a rock shaft journaled beneath the drawhead carries an arm adapted to contact with the coupling jaw and shoulder. The improvement affords an automatic coupler designed to be very cheap and simple, always safe, and which may be coupled and uncoupled from the side of the car, with means for locking the parts in coupled or uncoupled position.

**CAR WHEEL.**—George H. Graham, Oak Park, Ill. The tire of this wheel has segmental recesses on its inner surface, the spokes having segmental rings fitting into the recesses, while the hub carries bolts forming pivots engaging the inner ends of the spokes. The inner ends of the spokes are formed with an eye in which fits a rubber cylinder through which passes the bolt of the hub, forming a rubber cushion on the inner end of each of the spokes. The improvement is designed to reduce to a minimum the chances of breaking from crystallization or other causes.

## Mechanical.

**WIND MOTOR.**—John Hoffman and Harvey F. Turner, Oakley, Kansas. This motor is of simple and durable construction, and arranged to transmit the combined force of a series of wind wheels to a common shaft. It comprises a tower in which is a central vertical shaft connected with a turn-table on the top of the tower, a rotary frame depending from the turn-table inclosing the tower, the frame having a ring on its lower end traveling about a circular track on the lower portion of the tower, while upper and lower horizontal wind wheel shafts are journaled on the rotary frame, vertically-extending shafts being geared to the horizontal shafts and in turn geared to the central vertical shaft.

**OIL CAN.**—Frank E. Small, Sing Sing, N. Y. This can has a flexible bottom and an upper and lower chamber, with a downwardly-opening valve controlling the communication between the two chambers, a spring normally holding the valve open, while a spout has unobstructed communication with the lower chamber. While the can is adapted for use in the ordinary ways it may also be made to eject oil with a great deal of force, to throw it to a considerable height, as may be desirable in oiling overhead mechanism or parts difficult to reach.

**CUTTING GLASS PLATES.**—William J. Wilson, Watford, England. Photographic plates which have been coated with sensitive emulsion are then divided into smaller plates of various standard sizes, and this invention provides a mechanism whereby the plates are held and presented in succession and in proper position to the cutting tools, the cutting then being effected by the relative motion of the plate and cutter, produced either by the movement of the cutter over the plate or the movement of the plate past the cutter.

**CAN CRIMPING MACHINE.**—James A. Peck, Brewster, N. Y. Simple and durable in construction and automatic in operation, this machine is designed to securely crimp the flanges of the covers on to can bodies. It has a vertically rotating carrier with an intermittent motion and having peripheral recesses to receive and discharge the cans, while there are two dies at opposite ends of the carrier to align with the recesses, and each having a beveled rim engaging the can covers, one of the dies having a rotary motion to impart a rotary motion to the can, and the other die being longitudinally movable. Bevel wheels journaled in fixed arms at opposite sides of the carrier engage the flanges of the covers opposite the beveled rims of the dies, pressing the flanges inward toward the rims.

**ROD JOINT OR COUPLING.**—Isaac Jones, De Lancey, Pa. A simple and durable device readily applied or removed in case it is desired to couple or unscrew two drill rods, is provided by this invention. The two members of the joint are screwed together and formed with registering recesses on their outer surface, a key sliding in one of the recesses and engaging with its projecting end the recess in the other member, while liners held in the recess of the second member engage the sides of the key, and a bolt held in the first member has a head arranged in the path of the key to lock it in place.

## Agricultural.

**GRAIN DRILL.**—William H. Davis, Fond du Lac, Wis. This invention provides an improvement in what are known as "shoe drills," and the

front or fluke frame and the rear or wheel frame are pivotally jointed, the wheels in the rear frame running one in the rear of each fluke. A lever is arranged to relieve the fluke frame of the weight of the driver when desired, or it may be adjusted to cause the driver's weight to be exerted to hold such frames down. The depth at which the shoes run to penetrate the soil and form furrows is readily adjustable, and the invention covers various other novel features.

## Miscellaneous.

**CASH REGISTERING MACHINES.**—G. B. Massey, deceased (Sarah R. Massey and Stanley A. Bryant, administrators, Mamaroneck, N. Y.) An adding attachment is provided by this invention for a formerly patented invention of the same inventor, the improvement adding fractional parts of a dollar only, the dollars being added on the record strip of the machine. The rock shaft of the printing mechanism has a toothed sector engaging a pinion on the shaft of the number wheels, a spring pawl carried by the pinion engaging a notched wheel on the number wheel shaft, a volute spring carrying the notched wheel back after it has been moved by the pawl, while a spur wheel on the number wheel shaft carries a ratchet wheel to be engaged by the pawl, and numbering wheels with carrying mechanism are adapted to be engaged by the spur wheel on the number wheel shaft.

**FOLDING CHILD'S CARRIAGE.**—William Cook, New York City. The folding running gear frame of this carriage has side bars carrying stud axles on which are the wheels, and the folding body is supported on springs in the usual manner. The sides and ends of the body have pivotal connections between all their meeting ends, whereby the members of the body and the running gear frame, as well as a pivotally connected handle bar, will swing in unison and the carriage may be folded without disconnecting any of the connections. The construction is such that the stability of the carriage, when open in position for use, is not dependent on the fastening of latches by the servant or attendant, the parts being permanently fastened together. The collapsing can be readily effected by a slight pressure on the sides of the body, but only after the hinged bottom board has been raised. When erect the carriage is not noticeably different in appearance from non-folding ones, being manufactured of wood or rattan and in various designs.

**FURNITURE CASTER.**—Rob Roy Parrish, Portland, Oregon. This is an improvement in casters whose pintles or pivots are held in their sockets by means of springs, thus preventing accidental detachment of the casters, while their removal may be effected by the application of more or less force. The metal socket has an internal rib, and the pintle has an enlarged shoulder within the base of the socket, a spring attached to the pintle having downwardly-projecting arms normally out of contact with the socket, and the pintle not coming into contact with the rib when thrown into an inclined position.

**ASH SIFTER.**—Johann G. Bast, Brooklyn, N. Y. A device more especially designed for family use is provided by this invention—one which is simple and durable in construction, easily manipulated, and adapted for use on an ordinary ash pail. A flanged receptacle with a screen bottom fits in the upper part of the pail, the flange resting and turning on the edge of the pail, the receptacle having a fixed top part and a hinged lid locked by a bolt, while a covering strip is provided for covering the joint between the lid and the fixed top part.

**FIREPLACE BLOWER.**—Gutie H. Tuttle, Shorter's Depot, Ala. Vertical rods at the side of the fireplace pass through a cap fixed at the top, and an apron or curtain of fireproof material is secured at its upper end to the inside of the cap, eyes on the sides of the apron sliding on the rods. A handled bar on the lower end of the apron also slides on the rods, and may be locked to hold the apron down, springs normally drawing the apron into the cap. The blower is designed to be readily raised or lowered to increase or diminish the draught, while being very ornamental in appearance and suitable for use as a screen in summer time.

**PORTABLE BATH.**—Alfred H. Cox and Isaac N. Haley, New York City. This is a simple, compact, and convenient device, which may be collapsed to form into a small package for carriage, and affords means to administer a shower or other bath of warm or cold water in a room without injury to carpets or furniture. The tub has a convex bottom from which extends a drain pipe, there being rigging for raising and lowering the tub, and a water-proof screen wall being suspended from above the tub and attached to it by its lower edge. A clean water supply device having a spray nozzle is adapted to discharge water near the top of the screen wall.

**ROPE REEL.**—Hermann O. Kunath, Evansville, Ind. This is an inexpensive device which may be made of waste pieces or strips of wood, and consists of two crossed inclined pieces, centrally secured together, to which, a short distance from their ends, are secured side and end pieces, one of the side pieces forming the handle. The improvement affords a strong form of construction, the reel not being liable to be broken by hard or common use, and not being likely to split or warp from changes in the weather.

**STAND FOR SIDEBORDS, ETC.**—Ferdinand K. Maximilian, New York City. This is designed as a new article of manufacture, comprising a mirror having a suitable backing and so made as to size and form as to serve as a stand or support for glasses on sideboards, hotel bars, etc., the construction being such that any form of lacquered backing plate may be used, and the cost of manufacture thus lessened.

**CHECK REIN WORKER AND HOOK.**—Oliver Kennedy, Brunswick, Ga. This is a simple device applicable to any harness for use in connection with an ordinary check rein, to enable the driver to check or uncheck the horse without leaving the carriage. Attached to the saddle is a base plate carrying side arms in which are rollers serving as guides for the operating rein, while on the rein end of the plate is a keeper hav-

ing a pawl adapted to engage a catch riveted to the rein. When the horse is to be unchecked, the pawl is raised and the check released by pulling backward on and then slowly releasing the rein, quickly loosening the rein after pulling back causing the pawl to engage the catch and hold the horse checked.

**ROLL PAPER HOLDER AND CUTTER.**—Edwin E. Sentman, Philadelphia, Pa. This is a device adapted to contain wrapping paper or toilet paper in rolls, the holder being so constructed that the loose end of the paper will be always readily accessible, and the paper may be quickly and conveniently cut in desired lengths. By a novel construction and combination of parts, the roll is readily placed in the holder and the reel removed therefrom, and, by means of a simple tension device, the roll may be more or less tightly held, to turn more or less freely.

**BOX.**—Frank H. Palmer, Brooklyn, N. Y. A single piece of spring wire, secured at one end to the box body, forms a convenient handle, and is so bent that its other end holds the lid, a convenient box being thus formed for holding shoe blacking, grease, and similar substances, so that the user can quickly remove and replace the cover without soiling the hands.

**SASH RAIL FASTENER.**—Lorenzo M. Bronson, Richmond Hill, N. Y. This invention provides a sash lock to be applied to the meeting rails of window sashes, designed to operate automatically to lock the sashes and draw them together when the window is closed. Two registering cases are secured to the meeting rails, and a weighted tumbler having teeth pivoted in the upper sash is adapted to protrude into the lower sash, while spring-pressed arms pivoted in the lower case are adapted to engage the teeth of the tumbler.

**WINDOW SHADE FIXTURE.**—George Biehn, Tacoma, Washington. This invention provides a sliding plate with an arm and head connected therewith to form a sliding bracket, with other novel features, a clamp and bracket being arranged on each side of the window frame, adjustable for a shade roller of any ordinary length. The device is simple and inexpensive, may be secured to a window frame of any kind without the use of screws or nails, and easily adjusted to hold a shade at any desired height, while it can be almost instantly put up or taken down.

**ZITHER.**—Vetal Bessier, Brooklyn, N. Y. The fret board of this instrument is hollowed out on its under side and has its front edge fastened to the front edge of the sounding board, so that the hollowed-out portion extends transversely over and clear of the soundingboard to form a clear space for the full development of the sounds. A metallic frame is also secured to the sounding board, its two parallel ends forming the pitch and tuning pin plates, and the sides extending over the board and attached at their ends to the frame ends. The finger rest is made adjustable lengthwise of the instrument, to allow it to be set more or less to the right hand to accommodate different sized hands of children or adults, while allowing them easily to finger the strings at the proper places.

**BRACE FOR PIANO KEY BOTTOMS.**—Herman McClellan, Toronto, Canada. This brace has a vertical member shaped at its lower end as an inverted truss and having on its inner face a longitudinal rib, a horizontal member integral with the upper edge of the vertical member extending over the rib, which is adapted for engagement with the under face of the key bottom, the horizontal member engaging with its upper face. With this improvement the key bottom of an upright piano may be constructed of wood and the bottom preserved in perfect form, being effectually prevented from warping, while the brace is light in weight, strong, quickly applied, and does not interfere with the keyboard or the action.

**VENTILATOR FOR HATS.**—Martin F. W. Kochner, Brooklyn, N. Y. A face plate and back plate are applied on the inside and outside of an opening made in the crown of the hat, and a shutter with openings is held to revolve between the plates, or be adjustably held in any desired position. The device is especially applicable to the side, more or less air being admitted to the interior of the hat crown as desired, or the ventilator being closed to exclude the air entirely.

**STIPPLING IMPLEMENT.**—John B. Pahl and John B. G. Gaudelas, New York City. This is a light and convenient implement consisting of a handled frame carrying a pivoted impression roller with a papillary surface, and sliding ink-distributing rollers and sliding ink supplying fount, springs pressing the fount toward the impression roller, with the distributing rollers located intermediately. The device is adapted for the production of artistic effects upon lithographic stones or other material that is to be subsequently etched.

**ANKLE SUPPORT FOR SKATES.**—Luke W. Kenney, New York City. A U-shaped body is adapted to be secured to a flange of the heel plate of the skate, the members of the body extending upon each side of the ankle, and pivoted yokes extending forward and rearward from the upper ends of the members, straps from the yokes passing around the leg just above the ankle. The device is very simple and quickly applied, and allows free motion in a heel and toe direction while preventing a lateral motion likely to dislocate or strain the ankle.

**DESIGN FOR A PIN.**—Julius A. Bidwell, Ivanpah, Cal. This design consists of a circular figure apparently embossed upon a semicircular figure, one appearing to support the other, there being a dollar sign (\$) upon the full figure and a portion of a similar sign on the other figure.

**DESIGNS FOR A BADGE.**—Charles A. Ball, Marion, Ind. Two design patents for badges have been granted this inventor. In one, on both the obverse and reverse sides, a dove rests on a floral spray of golden rod, the dove and the golden rod surmounting a ribbon-like panel decorated with the U. S. coat of arms, while suspended from the panel is a disk representing on one side the landing of Columbus and on the other side the Woman's Building of the Columbian Exposition. In the other badge, an eagle with an olive

branch is crouching above a ribbon-like panel in which is the U. S. coat of arms, while suspended beneath is a disk showing on one side the landing of Columbus, and on the other side the Administration Building of the Columbian Exposition.

**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.

**VALVE GEARS FOR STEAM ENGINES.** By Cecil H. Peabody. New York: John Wiley & Sons. 1892. Pp. v, 128, with 33 additional folding plates. Price \$2.50.

The plain slide valve, shifting eccentrics, link motions, radial valve gears, double valve gears, and drop cut-off valve gears are the headings of the topics of this book, as summarized in the contents. The subjects are treated from a practical standpoint, mathematics, however, being used where desirable. The numerous plates are of very material advantage, and the text closes with an index.

**BOYD'S COPARTNERSHIP AND RESIDENCE BUSINESS DIRECTORY OF PHILADELPHIA CITY.** Boyd's Directory Office, Philadelphia, Pa.

The business interests of Philadelphia are admirably represented in this volume. Its two main divisions are an alphabetical directory of business houses, followed by a directory of the same classified by the nature of the businesses. This is followed by the city register and street directory, the whole making a most creditable representation of the business world of our Pennsylvania neighbor.

**HOW TO LIGHT A COLLIERY BY ELECTRICITY.** By Sydney F. Walker. London: Whittaker & Co. New York: Macmillan & Co. 1892. Pp. 36. No index. Price 75 cents.

This is a reprint from the transactions of the British Society of Mining Students, and appears to be a very practical treatment of the subject of the lighting of coal mines by the incandescent electric light.

## SCIENTIFIC AMERICAN

## BUILDING EDITION.

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