

## ENGINEERING INVENTIONS.

A car door fastener has been patented by Mr. Eugene F. Hardin, of Lincoln, Neb. It consists essentially of a catch, in connection with which is arranged a sealing attachment and a retaining block, the device being one which can be quickly applied, is cheap and durable, and will prevent any accidental opening of the door.

A car coupling has been patented by Mr. John Harding, Jr., of Wellington, Kansas. The invention consists in the peculiar construction and arrangement of a hinge plate on top of the drawbar, and a weighted drop hinged to or near the front end of the plate and bearing a coupling pin, all combined with the drawbar, the device making an automatic coupling.

A steam trap has been patented by Mr. Samuel Bonser, of Dover, N. H. The head plate has a central aperture, above which a filter is held, and there is a divided cylinder having an annular chamber and an outlet, with tubular spindle, spindle cap, cylindrical tube and connecting tube, with other novel features, making a simple device for discharging the water of condensation from steam heating or other steam apparatus.

A device for preventing the explosion of boilers has been patented by Mr. Bendix Meyer, of Gleiwitz, Prussia, Germany. It consists of a plate or cover held on a packing surrounding the outlet steam pipe, a weighted rod or stem holding the cover or plate on the packing, while a stop prevents the plate or cover seating itself on the outlet pipe after the packing is removed or thrown out by the pressure of steam from the boiler.

A gas furnace has been patented by Mr. William W. Waplington, of West Middlesex, Pa. The invention is an improvement on a former patented invention of the same inventor, and provides for using practically all the internal surfaces of the flues for regenerative purposes, with a simple and inexpensive form of gas and air valves, being adapted for both natural and artificial gas, and providing special means for utilizing the heat usually wasted in the ash pit of gas producers.

## AGRICULTURAL INVENTION.

A cultivator attachment has been patented by Messrs. Edward Harris and John N. Tiger, of Waverly, Neb. Combined with graduated and adjustable bars and a suspended shoe are standards carrying adjustable curved knives, making a simple attachment for either a riding or walking cultivator, whereby listed corn, corn in rows, or any vegetable planted in rows, may be expeditiously and effectively worked.

## MISCELLANEOUS INVENTIONS.

A combined pencil holder and cigar cutter has been patented by Mr. Paul E. Gonon, of New York City. It consists of a tube with an aperture for the insertion of a pointed cigar end, a cutting tube to slide over the aperture, with spring held therein, and a pencil holder held in the other end of the tube.

A toy blow gun has been patented by Mr. Edward L. Evatt, of La Grangeville, N. Y. The invention covers an improved construction of a gun to be used as a child's toy, or as a blow gun for shooting a dart at a target, by applying the mouth to the rear end of the tube.

An animal power, or tread machine, has been patented by Mr. Eli B. Studebaker, of Fredonia, Kansas. The invention covers novel features of construction and the combination of parts in a machine which may be readily adjusted to accommodate the strength of the animals working it and the desired power and speed of the machinery to be driven.

A process of refining gold and silver has been patented by Messrs. Darley C. Johnson and John P. Ryan, of Brooklyn, N. Y. It consists in placing the alloy of base and precious metals in a cupel, melting the alloy, and covering the surface with pulverized asbestos, with various other features, whereby the cost as well as the waste of refining will be decreased.

An improved bin has been patented by Mr. Holger C. E. Petersen, of New York City. It is designed to be of ornamental appearance, with a compact and substantially dust proof frame, from which the bin may be readily removed and cleaned, and wherein the weight is so distributed that the bin is easily turned upon its axis.

A combined saw jointer, saw set, and gauge has been patented by Mr. John H. Sodee, of Seattle, Washington Ter. It embraces a frame with a guide arm and stationary jaw, in combination with a sliding jaw and cam for operating it, the invention covering various novel parts and details and combinations of the same.

A door attachment has been patented by Mr. William W. Allen, of East Pepperell, Mass. Combined with a latch and an extension thereon is a branch chain connected with the outer end of the extension, a main chain fastened at both ends and held in an angular position by the branch chain, with other novel features, whereby a door can be held locked in open position.

A coat adjuster has been patented by Mr. David H. Purves, of Waddington, N. Y. It is to enable aged, infirm, or sick people to easily put on overcoats or other garments without help, and consists of a garment holder with a vertically movable clamp and lock, with a relatively stationary trip or releasing device to release the lock when the clamp and lock are moved upwardly.

A riding saddle has been patented by Mr. Peter J. Peffey, of Boise City, Idaho Ter. Combined with the tree is a front strap having bifurcated ends, the cantle jockey having reduced ends and lips, with other novel features, whereby one or two girths may be used to accurately fit the saddle, the saddle being adapted to any shape horse and the change being quickly made.

A carpet-stretching machine has been patented by Mr. Leonard Hinkle, of Kenton, Ohio. It has a toothed drawbar, with a head having an opening fitted over the bar, the lower part of the opening having a pawl-like edge to engage the lower teeth of the drawbar, with other novel features, making a stretcher which can be operated by one standing erect, and which will not injure the carpet.

A device for handling cans and bottles has been patented by Mr. David D. Brown, of Brooklyn, N. Y. It consists of a frame of novel construction with spring-held arms, lips for grasping necks of bottles, etc., and other novel features, whereby cans, bottles, and similar goods may be readily and safely removed from shelves above the operator's head and as safely replaced.

A cotton gin rib attachment has been patented by Mr. John E. Kelly, of Marshallville, Ga. It is an efficient device for repairing the worn parts of gin ribs, thus saving the expense of new ones, and has a brittle holder underneath the rib, that the saws pass through, which not only extinguishes any fire that may be generated, but cards the cotton and improves the staple.

A nut lock has been patented by Mr. William Adair, of Leesville, Ohio. By this invention the plate itself is made the locking device, the nuts and the openings in the plate being so made that the latter locks the nuts when they are turned slightly backward on their bolts, the nuts being cut away at their inner corners, and the plates having slots of corresponding form and size.

A waterproofing compound has been patented by Mr. Ferdinand Kreutzer, of New York City. It is for use on leather and fabrics, and intended to render them soft and durable without injury to the material or acting upon the dyes, and consists of raw linseed oil, zinc vitriol, and fat soap, in specified proportions, and combined and cleared after a special described manner.

A bale tie has been patented by Mr. Frederick T. Warburton, of Newport News, Va. Combined with a buckle having a transverse slot with parallel upper and lower sides are band sections having enlarged ends, the slot being wider than the combined thickness of the body of the band and one of its thick ends, but narrower than the combined thickness of both the ends.

An apparatus for wiping metal-coated wire has been patented by Mr. Charles E. Matteson, of Easton, Pa. A circular pipe is held a short distance above a casing through which the wire passes, in combination with inwardly and downwardly projecting pipes, with other novel features, for wiping wire to remove the surplus metal and give it a smooth surface after it leaves the bath.

A thill coupling has been patented by Mr. John W. Yous, of Mound City, Mo. The thill or pole iron has side lugs or trunnions arranged to enter a horizontal recess extending forward from the main vertical recess of the axle clip, the parts being held together by a spring-carrying wedge, thus dispensing with the use of bolts and the ordinary form of rubber anti-rattler.

A neck yoke has been patented by Mr. Fred F. Wheeler, of Ocheyedan, Iowa. It is so made that, should the tugs become detached, the yoke will not be slid off the pole by the forward motion of the horses, while it will revolve free horizontally or laterally upon the pole, yet action in the direction of the longitudinal axis of the pole will be limited by the forward or rearward throw of the yoke.

A process of producing designs upon celluloid has been patented by Mr. Albert Le Roy, of Paris, France. It consists in first printing the design upon any suitable material, then damping and applying upon a celluloid sheet and subjecting both to pressure between hollow steam-heated plates, thus fixing the design permanently upon the celluloid by the simultaneous influence of heat, pressure, and steam.

An automatic fan has been patented by Mr. Charles E. Pierce, of New York City. An oscillating shaft bears a pinion which engages with the segmental gear of an escapement, the motor being either a spring or a weight, and the shaft operating a vibrating arm to which a fan is attached, making a convenient device for driving away flies, cooling rooms, etc.

A clamp has been patented by Mr. Frederick F. Houston, of Chicago, Ill. The clamp head has a thrust block and follower with opposing inclined faces, opposite wedge blocks being fitted between them, with means for drawing one of the wedge blocks toward the other, with a cam lever fitted to the thrust block adapted to bind the latter to a timber, the device being specially adapted for holding work while gluing or otherwise joining the parts.

A cow milker has been patented by Mr. Philip M. Hobbs, of Wymore, Neb. It consists of two hand levers somewhat in the form of a pair of scissors, one of the levers being adapted to be rocked in a vertical plane, one having a teat-receiving recess and the other a projection to fit therein, two of the milkers being used at the same time, one grasped by each hand, and two teats being operated upon by each device.

A saw gunner has been patented by Mr. Lewis J. Grant, of Lamont, Mich. It comprises a die frame with a handle and spring carrying a punch block, combined with a handle having a head with bearings on the under side of the die frame, and an arm secured to the die block and having its lower end connected to a pin secured eccentrically in the head, with other novel features, the device being very handy, and always ready for use.

A grain car door has been patented by Mr. William T. Spillane, of Casselton, Dakota Ter. The door-supporting frame is mounted upon a horizontal way, and a vertically adjustable door is carried by the frame, the parts being so arranged that the door may be raised to rest within the frame, and the frame

and door moved to one side to clear the doorway, the device being a substitute for the ordinary detachable grain doors.

A glass beveling machine has been patented by Mr. Thomas F. Gilroy, of New York City. Combined with a grinding wheel having a swinging frame is a revolving shaft mounted therein carrying the glass disk to be beveled, and a screw-threaded spindle engaging with a gear wheel nut actuated by a hand wheel for raising or lowering the frame, with other novel features, making a simple, durable, and effective machine.

A sash fastener has been patented by Mr. William R. Abrams, of Ellensburg, Washington Ter. The invention covers a novel construction and combination of parts, in connection with a dog journaled in the casing, whereby the edge of the window will be engaged at any point, and effectually prevent the upper sash from being drawn down or the lower sash from being raised, and not interfere with the operation of either sash in an opposite position.

An automatic chuck for all kinds of brass work, such as steam, water, clock, and watch works, has been patented by Mr. Patrick J. Cahill, of Leeds, Mass. It is to take the place of spring chucks, and will grip from the smallest holds up to five tons without friction, being very economical. It has a sliding chuck head operated by hand or treadle, with springs for opening and closing the jaws, and four of them have been working for the past year in the works of the Haydenville Manufacturing Co., Haydenville, Mass.

A dress guard for vehicles has been patented by Mr. Charles L. B. Martin, of Montclair, N. J. It is a folding shield, which may be placed over that portion of the wheel against which a lady's dress is liable to drag in getting in or out of a carriage, and is in the form of two circular troughs, formed of back and side pieces, preferably of leather, united by links, and with a hook which may be adjusted to bear against the rear face of one of the spokes and hold the shield in place. This shield prevents the soiling of the garments on the wheel, and when not in use may be folded and kept beneath the seat.

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## NEW BOOKS AND PUBLICATIONS.

SCIENTIFIC HORSESHOEING. By William Russell. Cincinnati: Robert Clarke & Co. Pp. xxv., 211.

This book intelligently considers, anatomically and practically, the question of the proper shoeing of horses, and affords a great deal of information which it would be well for all owners of horses to be possessed of. The author has for many years had a high reputation as a successful horseshoer, and in this book points out many of the errors existing where horseshoeing is done by those ignorant of their business or careless in its performance, and the great evils which result therefrom. The book has numerous illustrations explanatory of the structure and functions of the horse's foot, and showing the effects of good and bad shoeing.

WILSON'S QUARTER CENTURY IN PHOTOGRAPHY. By Edward L. Wilson. New York. 1887. Edward L. Wilson. Pp. 528.

In this work we have an admirable body of photographic information. From notes published at various times by some three hundred leading authorities, amateur and professional, a running series of foot notes is composed. Above these, and serving as the basis for their imparted character of commentary, comes the text, rather less in extent than the notes. The whole forms an exceedingly attractive *alla-parada* of notes and observations. Illustrations of all sorts of devices and assistances in photography are given in liberal profusion. The text is a consecutive and valuable treatise by itself. The notes are made up of selections from the Philadelphia Photographer. The author and editor of the work speaks of it as an anniversary publication for himself, he, twenty-five years ago, having entered a photographic establishment as employe. This volume commemorates his devotion of a quarter of a century to his art. From what has been said of the scheme of the book, it is evident that a review is impos-