

## ENGINEERING INVENTIONS.

A car axle box has been patented by Mr. Joseph Fischer, of Elizabeth, N. J. Combined with a journal box is a shaft, two rotary pumps, and a pulley, the device being so operated by the revolutions of the axle as to continually feed oil upon the journal.

A car coupling has been patented by Mr. John Cuneo, of Vicksburg, Miss. It has twin arms or jaws in approximately the same plane, with cross rod extending between them in the rear of their engaging portions, and one arm having a cam or wedge block arranged and operating close to the shoulder of the jaw end of the arm, with other novel features.

A car coupling has been patented by Mr. Lewis H. Shufar, of Crawfordsville, Ind. The drawbar has suitable guides, and the forward end of the drawhead rests on a bent supporting plate for necessary side play as the carrounds curves, there being parts for link supporter and link adjuster, with other novel features, to facilitate the coupling of cars without requiring trainmen to stand between them.

A car coupling has been patented by Mr. Perry F. Randebaugh, of Florence, Kan. The drawhead has a hook with bolts for securing it, there is a depending link pivoted to the pin on which the hook is journaled, and there is an upper link pivoted in the rear end of the drawhead, with a lever for operating the same, the device being adapted for coupling or uncoupling cars from the top or either side.

## AGRICULTURAL INVENTIONS.

A harvester has been patented by Mr. Frederick Laqua, of Thielmanton, Minn. The tongue is made in two sections, jointed, and so connected that the forward end of the harvester will be kept from rising too high or dropping too low, the construction being especially designed to take the weight off the horses' necks.

A planter has been patented by Mr. Robert J. Gardner, of Lovelady, Texas. Combined with a seed planter is a main frame having side beams, and a standard carrying a shovel with a presser in its rear, the hopper and planting mechanism being arranged to drop the seed directly in the furrow formed by the shovel and presser.

A cotton cultivator has been patented by Mr. James H. Fowles, of Orangeburg Court House, S. C. It is made to run directly over the seed furrow before or after the plants appear above the ground, breaking the crust and preventing grass from starting, and the cultivating teeth are held at all times projecting directly to the rear of the framing or carriage.

A plow has been patented by Messrs. George W. D. and Lawrence L. Porter, of Fayetteville, Tenn. This invention covers devices by which the standard and beam are so connected that the angle of the standard may be changed to adjust the plow as desired for the particular work being done, and the handles may also be adjusted to suit the convenience of the plowman.

A machine for packing soil beneath the surface has been patented by Mr. Benjamin F. Waggoner, of Litchfield, Ill. The frame is carried by several wheels, so arranged that each of them shall bear an equal weight, and they will be forced into the ground as the machine is drawn across a field, to pack the soil beneath the surface so that it will be firm enough to retain moisture and support the roots of plants.

## MISCELLANEOUS INVENTIONS.

A writing pad cover has been patented by Mr. Gustave Hood, of Newark, N. J. This invention consists in the novel construction and combination of various parts, affording receptacles for envelopes, postal cards, pen holder, and pencil.

A shaving mug has been patented by Mr. Thomas Maylor, of Oak Harbor, Washington Ter. In this mug there is such an arrangement of lamp and water cup that the shaving water may be conveniently heated, while a lather cup is pivoted thereto.

A crayon and eraser holder for blackboards has been patented by Mr. Irving W. Barnhart, of Flint, Mich. Combined with a blackboard trough is a wire-netting or perforated piece held above its bottom, to hold the crayons and erasers, so they will not accumulate dust from the rubbing off of the board.

A wagon seat lock has been patented by Mr. Jared Blakeslee, of Story City, Iowa. The device is under the seat, and quite flat against its risers, so as to be out of the way of goods, and the heads of the lock studs, standing outside of the lock plates, serve to prevent the spreading of the sides of the wagon body.

A window ventilator has been patented by Mr. John G. Bronson, of Chicago, Ill. The siderail of the sash has a longitudinal slot in which are fixed slots inclining downward from the inside to the outside, and a screen is secured on the inside and outside of the rail to keep out the dust, mosquitoes, etc.

A shaft holder has been patented by Mr. Amandus Getzschmann, of Omaha, Neb. It is formed of a top leather part and a curved metal rod held thereon, a series of anti-friction rollers or thimbles being mounted on the rod, the object being to prevent binding of the shafts and wear of the holder.

A portable hay and grain cover has been patented by Mr. John M. Sweeney, of Monmouth, Ill. It consists of a series of boards having fastenings on their inner faces, with an eye at one end and a hook on the other, with which a roof-like cover can be quickly made and readily taken off when not required.

A fire proofing and wood preserving compound has been patented by Mr. William H. Polleys, of Melrose, Wis. It is composed of borax, potash, alum, mica cut in muriatic acid, glue, salt, and water, mixed in stated proportions, and applied to different articles of wood after a specified manner.

A fence post has been patented by Mr. Benjamin Wheeler, Jr., of Zanesville, O. It is made of artificial stone in a continuous piece, with a wooden core, transverse grooves for fence wires, and a mortise for the abutting ends of fence rails, one wall of the mortise communicating with the wooden core.

A washboard has been patented by Mr. Ephraim Bailey, of West Newbury, Mass. This invention relates to a novel construction and arrangement of sectional and many sided rollers in a washboard, in the manner of supporting them centrally, and in alternating them with each other, so they will revolve more easily and lessen the labor of washing.

A sand arrester for driven wells has been patented by Mr. Charles W. Huffman, of Richmond, Ohio. It is placed just below the pump, and consists of an outer inclosing tube within which there projects a continuation of the well pipe, in combination with a screen detachably connected with the outer inclosing tube.

A coat has been patented by Mr. Wilson A. Fulmer, of Harleysville, Pa. It is provided with stiffening layers of canvas and hair cloth and a stay at the lapel, the arrangement of the whole being such as to help make the coat fit well and remain in proper position and shape on the breast without being buttoned.

A door check has been patented by Mr. Joseph A. Coultans, of Brooklyn, N. Y. The device has a spring in combination with the door frame or casing, and a corrugated fixed track with spring roller carrier and attached roller, the whole intended to hold doors more or less open and prevent them from slamming when closing.

A razor has been patented by Mr. Samuel J. Dyer, of Brooklyn, N. Y. This invention covers a construction of blade and blade holder, with ordinary handle, whereby the blade can be honed with a double bevel on its edge, and the blade can be perfectly adjusted to give absolute width and angle to be affected by the honing.

A neck yoke strap has been patented by Mr. George H. Lynds, of Sterling, Kan. It has a fastening composed of a layer of wire extending around the neck yoke and pole openings, the metal concealed within the body of the strap, but so placed as to give greatly increased strength when the wear is great and breakage often happens.

A life preserver has been patented by Mr. Paul Kingston, of Hastings, Minn. It is made of waterproof flexible fabric, on a frame, to the ends of which a bow and stern bar are hinged, and has inflatable sacks connected together and with an air pump, the device being one which can be folded compactly and capable of being converted into a boat.

A gate has been patented by Mr. James H. Carpenter, of Hyndman, Pa. It has balancing arms so pivoted that the gate may be easily operated, with other novel features, its construction being such that it is well adapted for use on side hills and other localities where a horizontally swinging gate cannot be employed.

A dumping cart has been patented by Mr. Thomas Hill, of Jersey City, N. J. The tail board has combined with the axle or frame radius rods, or pivoted connections, whereby, on raising the front or tipping the rear end of the body, the tail board will be automatically opened, and will be closed and held closed on returning the box to its nominal position.

A machine for filing gin saws has been patented by Messrs. James S. Mosley and Thomas J. Mancill, of Atlanta, Miss. Combined with a frame and vertical plate are crank wheels and shaft to vibrate the file holders, while the pitman may have a longer or shorter stroke, and the machine can be adjusted for filing gin saws with teeth of different sizes.

A folding bed has been patented by Mr. Ernst N. Doring, of New York city. Combined with stationary and movable sides are curved tracks and pivot wheels, of novel construction, which operate so that the pivoting points of the movable sides will adjust themselves as the bed is being opened and folded.

A sidewalk clearer has been patented by Mr. Charles E. Bartram, of Fredonia, N. Y. It is made with a base frame widened toward its forward end, with a bottom, flanges at its sides and rear, a handle, and carried by wheels and an axle, the device being adapted to facilitate the removal of snow and ice from sidewalks.

A process of preserving brewers' grains has been patented by Mr. William Ihnc, of Medford, Wis. It consists in first draining, then treating the grains successively with a solution of common salt, a solution of dextrine, and a solution of permanganate of potassa, and afterward filtering and subjecting to pressure to form compact cakes of convenient size.

A pipe holder and lifter has been patented by Mr. E. Stillman Babcock, of Milton, Wis. Combined with a jaw block is a pivoted clamping lever, an eccentric pivoted therein, and a lever for raising or lifting the pipe, the device being more especially adapted for raising pipes from artesian, oil, and other wells, and lowering the same.

A churn has been patented by Mr. George J. Clark, of Ayersville, O. The churning device is held on the cover, and can be easily removed with it to clean the cream box, while the construction is such that by turning a craft rockingshafts are operated, and dasher plates thereon alternately raised and lowered in opposite directions.

A washing machine has been patented by Mr. John B. Richardson, of Pleasant Plains, Ill. It is a covered tub with interior projecting ribs, a clothes wheel journaled in the tub carrying peripheral bars or slats, provided on their outer faces with cords for holding the clothes to the wheel, springs being arranged to prevent tearing strains on the clothes by the tie cords.

A slate pencil sharpener has been patented by Hattie Scott, of Detroit, Mich. Combined with an abrading disk, and gearing for revolving it, is a support adjacent to the disk, with a curved line and a number of notches for receiving the pencils, the lower part of the grindstone dipping into water and preventing the slate dust from spreading.

A washing machine has been patented by Mr. William T. Venable, of Christiansburg Precinct, Ky. In a suitable tub or box is a circularly reciprocating disk, operated by crank handles, and from this disk

wooden or metal pins project downward, the pins whirling the clothes about and agitating the water, with other novel features.

A pistol for shooting marbles has been patented by Mr. James W. Smith, of Jersey City, N. J. A coil spring held in a pocket on the under side of the barrel is connected with a rod in the barrel, and the trigger, in such way that by pulling the latter the rear head of the rod is disengaged, and very forcibly ejects the ball.

A cut-off table for tile machines has been patented by Mr. Charles W. Crawford, of Brazil, Ind. It consists of a series of rollers in a horizontal adjustable frame, with two rows of rollers attached to inclined frames, adapted to advance or recede relatively as desired, the table facilitating the carrying off of tiles, guiding them laterally and supporting them to prevent flattening and chafing.

Photographic sensitive paper forms the subject of a patent issued to Mr. Thomas C. Roche, of Brooklyn, N. Y. It is made with the body of the paper inclosed between two sensitive films of gelatine silver emulsion, all carried on a single sheet of paper, to be used in the camera for the production of negatives or in printing frames for positive pictures, in the usual manner.

A self-adjusting chain sling has been patented by Mr. William Smith, of Brooklyn, N. Y. It consists of a number of chains united to an upper link or ring, each chain carrying a link or ring at its lower end, and each chain passing through the link carried by the adjacent chain upon one side, the device being more especially for grappling submarine, but also applicable for hoisting heavy goods.

A wax heater for sewing machines has been patented by Mr. Benjamin F. Landis, of St. Joseph, Mo. The wax reservoir is hung lower than the bottom of the shuttle race, with a water boiler and combustion chamber beneath, and the arrangement is such that the heated air is moistened to have a mellow action on the thread, while establishing a current in the proper direction.

A water closet has been patented by Mr. Philip Brady, of New York city. The bowl of the soil pipe has a valve chamber just below the bowl, and a pipe connected therewith extends upward to a point below the top of the bowl and then down, while connected with the soil pipe below the valve chamber is a valve and ventilating pipe connected with an overflow pipe, so that the overflow can be used on baths, basins, etc., as well as on water closet bowls.

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## Notes &amp; Queries

## HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information, and not for publication.

References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all, either by letter or in this department, each must take his turn.

Special Information requests on matters of personal rather than general interest, and requests for Prompt Answers by Letter, should be accompanied with remittance of \$1 to \$5, according to the subject, as we cannot be expected to perform such service without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each. Minerals sent for examination should be distinctly marked or labeled.

(1) G. A. asks the best and quickest way to dip brass and dry it after rinsing, so as to retain its bright color. A. Wash in hot soap suds with a soft brush, rinse in clean hot water, and dry in sawdust. Boxwood sawdust is best. Beach, maple, or white pine will do.

(2) E. R. S. asks: In a solid brick wall is there any more weight upon one brick than another? A. Not at the same height.

(3) J. M. B. asks what the coating used on soil pipe is composed of, and the process of putting it on. A. Coal tar, heated in an iron vat of suitable size for dipping the pipe, which is warmed to make it dry, and dipped and drained hot.

(4) C. S. writes: I heard it stated by a scientific engineer that if the scientific principles of mechanics were carried out in constructing a locomotive, it would not run. A. The scientific engineer was probably a scientific crank, or he would have explained the meaning of his assertion.