ENGINEERING INVENTIONS.

A car coupling has been patented by Mr. John A. Craig, of Lauderdale, Miss. Combined with the drawhead is a peculiarly operating bail-shaped rod link lifter, which is designed to so work that ordinary pin and link couplings may be coupled automatically.

An oscillating engine has been patented by Mr. Charles P. Waldron, of New York city. This invention consists of a new link movement for operating the slide valve of oscillating steam engines, and also of improved means for discharging water from the cylinder of the engine, making an engine which is very convenient and easy to attend, while the link mechanism will not readily get out of order.

A method of casting car wheels has been patented by Mr. William Wilmington, of Toledo, Ohio. This invention relates to an improvement upon a method of casting car wheels formerly patented by the same inventor, its object being to regulate and facilitate the melting of rich ferromanganese before entering the mould, and to incorporate its elements in varying quantities in different parts of the car wheel, particularly those parts forming the tread and flange parts.

A steam boiler has been patented by Mr. Samuel P. Hedges, of Greenport, N. Y. This invention is to improve the construction provided for in a former patented invention of the same inventor, to prevent steam from carrying water with it into the steam pipe, and consists in combining centrally perforated and concaved plates with the upright cylinder, its outwardly projecting tubes, etc., so the ascending water and steam will be separated, and dry superheated steam delivered to the steam pipe.

MECHANICAL INVENTIONS.

A metal punch has been patented by Mr. Gilbert McDonald, of Augusta, Kan. It consists principally of a wedge having cogs or teeth formed upon its edges interposed between the power and the plunger which carries the punching or cutting tool, being more especially designed for tinners and blacksmiths, for punching or cutting plates of metal, hot or cold.

AGRICULTURAL INVENTIONS.

A plow gauge has been patented by Mr. James B. Law, of Darlington, S. C. This invention covers a novel construction by means of which the shoe may be raised or lowered at its rear end, while the forward end remains fixed, so the depth of plowing may be regulated, and the pitch of the plowshare may be directed to throw the earth more or less from the furrow.

A corn planter has been patented by Messrs. Albert Thurstin and Frederick Jacoby, of O'Fallon, Mo. This invention covers a special construction and combination of parts and details, with reference to the row marker, hill markers, driver's seat, seed box, slide gate, and other novel features, in a machine to plant corn in accurate check rows.

A corn planter has been patented by Mr. Albert J. Wood, of Wilder, Kan. This invention covers novel details of construction whereby the seed dropping slide may be operated from the drive wheel, and the mechanism can be readily thrown into and out of gear, making a machine which insures accuracy in planting corn and other seeds in hills.

A potato planter has been patented by Messrs. Alva J. Agee and Alex Fraser, of Cheshire, O. The box for carrying the potatoes to be planted is mounted on a suitable sulky frame, and has a chute, gate, and dropping tube, the attendant regulating the discharge of potatoes from the chute so that only one potato will rest on the gate at a time; covering hoes follow, so constructed as to regulate the quantity of earth covering the potatoes.

A corn husking machine has been patented by Messrs. John Johnston and Burnet B. Stewart, of Algonquin, Ill. It is intended to husk corn which has been cut and shocked, and provides mechanism to pull the ear from the stalks as they are fed to the machine, to brush the husks back toward and over the butts of the ears, to sever the butts and husks from the ears, and to discharge the stalks, husks, and husked corn ears separately, the several mechanisms acting successively and for the most part automatically, so as to do a large amount of work with little labor of attendants.

MISCELLANEOUS INVENTIONS.

A pump driver has been patented by Mr. John W. Runyan, of Catawba, Ohio. This invention relates to a class of devices used for storing and transmitting power, and has for its object to provide means whereby an old style clockwork and weight may be utilized to work a pump.

A pencil or crayon holder has been patented by Mr. Max Rubin, of Philadelphia, Pa. This invention provides a specially contrived case, of simple construction, but so made that the lead, when loose, cannot escape or project from the case, and so the lead cannot be made to project further than a fixed distance.

A horse power for hay carriers has been patented by Mr. John S. Grabill, of Hayesville, Ohio. The object of this invention is to improve the construction of horse powers under a former patented invention of the same inventor, that they shall be lighter, stronger, and more convenient for use.

A dumping scow has been patented by Mr. John Dunn, of Jacksonville, Fla. This invention combines with a scow a tilting deck or decks, with special details of construction and combinations of other parts, to facilitate the dumping of a load from a scow, either altogether or in separate parts or quantities.

A portable laboratory for dentists and jewelers has been patented by Mr. Noah W. Caughy, of Baltimore, Md. It is in the nature of a secretary bureau, to be closed for compactness and to contain the machinery, tools, and materials generally used by dentists and jewelers, with the laboratory necessary for use therewith.

A tilting chair has been patented by Mr. Adam Demand, of Sheboygan Falls, Wis. This invention covers devices whereby the tension of the springs which resist the tilting back of the chair is regulated by a yoke piece, so the seat leveling springs may be adapted to a nicety for the chair to be comfortably tilted back by heavier or lighter persons.

A button hole cutter has been patented by Mr. Max Kamak, of New York city. The object of this invention is to facilitate the adjustment of the device according to the desired length of the cut, there being, on a button hole cutter, a sliding key between the legs at the joint, which key can be adjusted for cuts of different lengths.

The manufacture of hydraulic cement forms the subject of a patent issued to Mr. Robert Bryce, of Louisville, Ky. The process consists in grinding together limestone and Leitchfield marl or shale in certain proportions, using a limited amount of moisture, compressing into bricks, and burning and grinding the bricks.

A road or tramway for vehicles has been patented by Mr. Moses A. Martindale, of Elkhart, Ind. Combined with trough-shaped rails and connecting gauge bars are plates to enable taking a deep hold on the ground, with various novel features of plan and construction to make an efficient tramway over common wagon roads.

An apple paring and slicing machine has been patented by Mr. William T. Elliott, of Meredith, N. H. This invention covers a special construction and arrangement of parts for a machine to be run either by hand or power, one which will be very rapid in its action, as well as practical, durable, and effective in its action.

A furnace for manufacturing illuminating gas has been patented by Mr. Frederic Egner, of St. Louis, Mo. This invention covers an improvement in the class of gas furnaces whose gas exit pipe is located but a short distance above an air inlet, and connected with an exhauster for the purpose of drawing off the gas and also creating a vacuum in the furnace.

A paper wreath has been patented by Mr. Charles Kaufmann, of New York city. It is made of a circular piece of paper, cardboard, etc., having its edges cut or punched out, as the contours of a wreath of natural leaves, and having its face printed in colors, in imitation of natural leaves, on which circular piece separate leaves are held at their stem ends.

A food steamer has been patented by Mr. Le Roy S. Bunker, of Valton, Wis. This invention provides for the use of a round boiler more strong and durable than those usually employed, and the boiler can be lifted off from the base, or when in place may be held by clamps, affording an improved means for cooking food for farm stock.

A feed cooking apparatus has been patented by Mr. Joseph J. Cox, of Lawrence, Kansas. It is a steaming and boiling apparatus, a long boiler being combined with a furnace having separate chambers under the center of the boiler, and separate flues for the chambers extending to opposite ends of the boiler, so a small furnace may be used, with great economy of fuel.

A machine for removing ice and snow has been patented by Mr. Jacob F. Riethmayer, of Lansdale, Pa. It is adapted to be moved by hand, for removing snow and ice from sidewalks and pavements, etc., and is so operated that its plow may be set at either side, according to the direction in which the snow is to be thrown off, and has a scraper with teeth for breaking or loosening up ice or hardened snow.

A lantern has been patented by Mr. Luther B. Wood, of Omaha, Neb. It is designed to burn lard oil or other heavy oil, where means are employed for warming the oil in the reservoir of the lantern, and is contrived to make the lantern heat its own oil, and in such way that the temperature of the oil may be regulated by turning the tubes a greater or less distance from the flame.

A churning device has been patented by Messrs. Sylvanus B. Wood, Hervey Wood, and Thomas W. Wiley, of Callisburg, Texas. According to this invention, the cream can is closed and locked in position in a peculiarly constructed frame, so that it rests in a frame which may be rocked by a spring bar by a person standing at the side, so the contents of the can will be thoroughly agitated.

A brick truck has been patented by Mr. Daniel J. C. Arnold, of New London, Ohio. The invention consists in a pallet truck with two or more shelves or series of racks arranged one above the other over the wheel axle or springs, and disposed and constructed so that the load may be readily balanced, being especially adapted for carrying bricks as they are dumped from the moulds on the pallets.

A window screen holder has been patented by Mr. Henry C. Barlow, of Dallas, Tex. Wires are secured on the casing of the window frame with bends near their upper ends, and hook eyes are held on the sides of the screen frame and surrounding the wires, making an improved device for a sliding window screen so the screen may be held in front of the upper or lower sash, as desired.

A roller shelf book case has been patented by Mr. Walter N. Conant, of Toledo, Ohio. This invention covers a peculiar construction and arrangement of parts, so that the books, while being put into and removed from the case, will not come into contact with anything but rollers, and will thus be prevented from being rubbed or marred by coming in contact with the stationary parts of the case.

A washing machine has been patented by Mr. Samuel L. Wagener, of Nepeau, Carlton County, Ontario, Canada. This invention relates to machines in which a convex-shaped vibrating rubber, with bars on its acting surface, works within a fixed concave, also having bars for rubbing and working the clothes, but covers a novel construction and arrangement of the bars on the vibrating rubber and in the concave.

A fastening for bag, pocketbook or purse frames has been patented by Mr. Louis B. Prahar, of Brooklyn, N. Y. It is made with a case having two latches held in place by two springs, and a plate and rod engaging with the inner ends of the latches, so the fastening can be unlocked from the ends or center, the whole device being simple in construction and operation and inexpensive to manufacture.

A brush for flour bolting machines has been patented by Mr. Jonathan B. Richards, of Pettigrew Mills, Ark. This invention provides such a construction that the brushes can be easily adjusted to suit a reel of any size, of which they will brush the entire surface, and they can be fixed to drop more or less, thus preventing the brushes from exerting an undue pressure on the reel.

A heater frame for lamps and gas burners has been patented by Mr. Alfred M. Rickerby, of Brooklyn, N. Y. The device consists of two tripods with tubular posts, one tripod to fit snugly in the collar of a lamp, and another to fit a gas burner, the outer ends of the arms having projections to receive the posts, the frame being very inexpensive, and capable of being taken apart and packed snugly.

A fire ladder has been patented by Mr. Constantin Lazarevitch, of Brooklyn, N. Y. The invention consists principally of a folding brace or support attached to the ladder and truck arranged for bracing the ladder directly from the ground when the sections of the ladder are elevated for use, the sections of the ladder also having permanent water pipes for adapting it when elevated to be used as a water tower.

A sod ground pulverizer has been patented by Mr. Abijah L. Gordon, of Helix, Oregon. It is made with a frame having a shaft carrying two cylinders with tapered and scalloped digging flanges, so the sods will be cut and torn in pieces without being turned or raised from their places, the construction being such that the cylinder bearings can be readily oiled, and dust and soil will be excluded.

An explosive weight for torpedoes has been patented by Mr. James E. Gallagher, of Olean, N. Y. The object is to insure the explosion of torpedoes placed in oil wells, the weight to be dropped after the torpedo having also, by this invention, a cartridge and fuse, so the weight can be fired, and in case it misses striking the torpedo, the latter will be exploded by the explosion of the cartridge.

A tricycle has been patented by Mr. Carl G. E. Hennig, of Paterson, N. J. This invention relates to a former patented invention of the same inventor, and consists principally in the addition of other treadles applied to the crank axles, so attached that they act at the dead center of the axle; also in the construction of the fifth wheel, and the employment of pivoted seats that accommodate themselves to the rider.

A filter has been patented by Mr. David Biggs, of Castleton Corners, N. Y. It is a vessel divided into two compartments by a vertical partition, each compartment having a filtering medium and a separate outlet cock, and the vessel having an inlet pipe with a three-way cock by which water can be admitted into either compartment, making a filter simple in construction, which can be cleaned easily, and can readily be connected with the water pipe.

A bag holder and lifter has been patented by Mr. John A. Hamsch, of Traverse City, Mich. The apparatus comprises a step-like platform arranged to move up and down uprights or guides by means of a rope and windlass operated by suitable gears, an upright ratchet rack, and a peculiar click controlled from the platform for locking it when raised, or at any desired point, and bag-holding devices connected with the frame of the apparatus.

A bucket or receptacle for malt liquors has been patented by Mr. Saxo W. A. Wiegell, of New York city. The top is provided with one large and several small openings, with a movable cover to close them, so the bucket may be filled through the large opening, and the cover closed, that the strength of the liquor cannot escape, the contents being drawn off through the small holes without materially exposing the liquor to the air.

A cider and wine press has been patented by Messrs. David G. Higinson, of Spring Valley, N. Y., and Cornelius S. De Baun, of Westwood, N. J. It has spring pressed rollers, endless belts, and guide rollers, and a hopper-shaped spout, with special details of construction, so that the juice will be expressed from the pomace as it comes from the grater in a continuous operation, and all handling of the pomace will be avoided.

A grain measuring apparatus has been patented by Messrs. Omar P. Wagner and Oscar E. Wagner, of Pontiac, Ill. With a vessel having a removable bottom is a revolving vessel with gates hinged on its bottom, a cam for operating the movable bottom of the fixed vessel, and a rod connected with the gates on the bottom of the revolving vessel, and with the cam shaft, etc., making an improved apparatus for automatically measuring grain or other cereals.

An anti-friction bearing has been patented by Mr. John Flannery, of New York city. Combined with the shaft, journal box, and a collar on the shaft are disks, on which anti-friction rollers are mounted, arranged between the collar and the ends of the box, thus reducing the friction of propeller shafts in their bearings and at the same time permitting the bearing to be drawn up tight, so that there will be little or no lost motion lengthwise, and the friction will not be increased.

A fiber rubbing machine has been patented by Mr. Alexander Scott, of Cronly, N. C. This invention consists in combinations of spirally or transversely fluted rollers, through which the fibrous material is passed as the rollers are revolved, and jets of water are delivered, the water being then pressed out by suitable wringer rollers, and the material picked or carded, the machine being especially adapted for rendering the fiber of pine needles useful for upholstery purposes or for spinning.

A perforated glass plate for making medicinal tablets has been patented by Mr. John E. Schreck, of New York city. The object of this invention is to provide a plate which shall not be affected by the acids or quicksilver contained in the medicinal ingredients of the tablets, guide pins being made to force the finished tablets out of the holes. A mould for making the plates has also been patented by the same inventor, in which the lower die has perforations and the upper die a follower, so the plates can be readily cast and removed from the mould.

A fork prong rolling machine has been patented by Mr. Philippe D. Dupont, of Summerville, Vt. It comprises a combination of specially grooved half rolls and a frame, on the outside of which the rolls work, with a recess or space for certain of the prongs while the other prongs are being rolled, the machine being especially adapted for rolling or drawing the prongs of agricultural forks, half round prongs, such as used in potato diggers, etc. The same inventor has also patented a machine for pointing or sharpening the prong ends of forks, including spade forks, potato diggers, and other agricultural implements, the machine having duplicate sets of peculiarly constructed and operating radial hammers or dies, with special details, so the pointing or sharpening may be done with great celerity and precision.

NEW BOOKS AND PUBLICATIONS.

THE CIVIL ENGINEER'S POCKET BOOK. By John C. Trautwine. Revised, corrected, and enlarged by John C. Trautwine, Jr. John Wiley & Sons, New York. Price $5.

Since its first edition in 1871, "Trautwine's Pocket Book" has attained wide popularity among engineers, this issue making the twenty-second thousand which has been published. The writer disclaimed at the outset the idea of publishing a work for the information of "experts," but put forth his book for the benefit of young members of the profession, leaving out the following of problems into the higher mathematics, and endeavoring to be as practical in treatment and simple in statement as so comprehensive a work would allow. In the revised edition this principle has not been departed from, but the contents have been rearranged, some of the articles rewritten, and large additions have been made, the book now consisting of nearly 900 pages, on mensuration, trigonometry, surveying, hydraulics, hydrostatics, instruments and their adjustments, strength of materials, masonry, bridges and culverts, dams, railroads, earthwork, etc.

HOW TO DRAIN A HOUSE. Practical information for householders. By George E. Waring. Henry Holt & Co., New York. Price $1.25.

This is the last of several works by the same author on a branch of sanitary engineering in which he has come to be considered an acknowledged authority. Good plumbing, the best materials, and simplicity of detail, as far as possible, are hereinsisted on, and have always been the guiding considerations recommended by the author.

WATCH AND CLOCK MAKING. By David Glasgow. Cassell & Co., New York. Price $2.

This is an excellent addition to the series of Manuals of Technology already published by the same house. It is designed as a book of reference for the practical workman, and also as a text book for technical classes, giving a history of the development of different improvements, and the requisite information to judge of their value.

PRAIRIE EXPERIENCES IN HANDLING CATTLE AND SHEEP. By Major W. Shepherd. O. Judd Company, New York.

This book contains the experiences of an English army officer on a summer's visit to the United States, together with his comments thereon. He does not keep very closely to his subject, but rather gives us his ideas on this and a host of other topics, much as one would be likely to do while simply enjoying a summer holiday, making a book which probably many will read in a good deal the same way.

THE AMERICAN BOY'S HANDY BOOK. WHAT TO DO AND HOW TO DO IT. By D. C. Beard. New York: Charles Scribner's Sons, 1882.

The title of this quite prettily gotten up book leads us to expect a great deal from its contents, for we agree with Master Randolph Miller, Miss Daisy's brother, that "American boys are the *best* boys," and we naturally expect their books to be the *best* books. Mr. Beard has the boys' welfare much at heart in writing his book, and while a little more completeness would have added much to its value, it will prove a prize to an active, ingenious lad, blessed with some constructive talent. The fanciful division into seasons has been more of a disadvantage, we think, than a gain. There are many distinctively summer and winter sports which would be treated very appropriately under those heads; but to carry the division further is to sacrifice more in arrangement than is gained by the distinctions. Thus the subject of fishing finds place in three different parts of the book; but since the most juvenile disciple of Izaak Walton will understand that the fish must come before he can be caught, an exhaustion of the subject under one chapter would seem more convenient, and as a reference book make it more "handy." The spirit of the book, however, is very praiseworthy, for all its devices are clearly and pleasantly described, and have the great merit of being eminently attainable. Short articles, covering a portion of its contents, appeared in *St. Nicholas*, and the favor with which they were received has already given the book a hearty reception.

THE INTERNATIONAL NAUTICAL MAGazine for April is the initial number of a publication whose particular mission is announced to be the enlightenment of seafaring men in regard to current events in both the mariner and political world. If so commendable a purpose is realized, the magazine will make itself welcome in many a cabin, and, we would like to add, forecastle, but unfortunately Jack Tar is not much given to reading. The contents of the first number are fairly interesting, and the reader, perhaps now at the antipodes, will find in them a ready means for bringing his information up to date.