

AGRICULTURAL INVENTIONS.

A combined harrow, cultivator, and plow has been patented by Mr. Solomon Franklin, of Pine Bluff, Ark. It is made with inclined tubular side bars having cultivator-teeth and connected by arched cross bars with standards carrying adjustable plows, with other novel features, for pulverizing the soil and throwing it to or from the plants, and to regulate the depths to which the teeth and plows enter.

MISCELLANEOUS INVENTIONS.

A gate has been patented by Mr. John G. Wilson, of Cameron, Texas. This invention covers a novel construction and arrangement of parts for a farm gate which can be opened from either side by a person on horseback or in a vehicle, or by a pedestrian.

A type writing machine has been patented by Mr. Edward R. Roe, of Dixon, Ill. A type disk and index circle and indicator are used, but the object of the invention is to simplify the construction and arrange the parts to operate more rapidly.

A hoisting and lowering apparatus has been patented by Mr. Isaac I. Lancaster, of Tacoma, Washington Ter. This invention relates to apparatus for hoisting and lowering objects with a winch and jack, consisting in a novel arrangement of springs which actuate the pawls in various uses of the machine.

A watch case has been patented by Mr. Victor Nivois, of New York city. This invention consists in setting jewels in the cap plate of the watch case and protecting them with the back plate of the case, the back plate having openings formed in it to reveal the jewels.

The sinking of hydraulic piles forms the subject of a patent issued to Mr. Lowell E. Blake, of El Paso, Texas. This invention covers the use of a jet of water supplied at the entering point of the pile, in connection with a weight at its upper end, for the sinking of wooden or other piles in quicksand, etc.

A step ladder has been patented by Mr. Wright Pearson, of Jamestown, N. Y. It is of novel construction in several important features, and has a hand rail whereby one can steady himself, and so a paint vessel or tool box can be conveniently held to facilitate any kind of overhead work.

A feed rack has been patented by Mr. Benjamin F. Waggoner, of Litchfield, Ill. It is for feeding hay and other fodder to stock, and is so made as to prevent the fodder from being wasted and prevent hogs from having access thereto, while it can be readily moved from place to place.

A music stool has been patented by Mr. George A. Ramseyer, of Dobbs Ferry, N. Y. It is so made as to be used with or without a back, and so that when the back is folded down it does not interfere with the ordinary use of the stool, and the stool may then be packed in small space for shipment.

A fishpond trunk has been patented by Mr. William S. Mallard, of Darien, Ga. It is so devised that the overflow water of a pond may be used to operate a waterwheel, or to pass off without working the wheel, but in either case the escape of the fish from the pond will be prevented.

A clothes line support has been patented by Mr. William C. Young, of Paterson, N. J. The device is to be hung by its roller end on the upper part of the clothes line, keeping the two parts of the line at a uniform distance apart, supporting the lower line from the upper, while the supporters will not run together and against the clothes.

An adjustable mirror bracket has been patented by Mr. John J. Langdon, of South Pueblo, Col. This invention covers a special combination of parts and details whereby a mirror can be easily adjusted higher or lower according to the size of the person, and can be inclined laterally and to the horizontal plane.

A kitchen safe and flour chest has been patented by Mr. William Knowles, of Rockville, Ind. It has two flour chests with inclined bottoms and screen, a conveniently arranged dough board, receptacles for seasoning materials, a box for holding bread, all specially arranged to promote convenience in usual kitchen or household use.

A spring armored hose pipe has been patented by Mr. Joseph A. Coultans, of Brooklyn, N. Y. This invention consists in spiral armor formed of spring steel wire, the internal diameter of the spiral being smaller than the external diameter of the pipe, so the coils form a spiral spring that binds closely at every portion of its length.

A saw swaging device has been patented by Mr. Henry Williamson, of Bay City, Mich. Combined with a box is a device for gripping the saw teeth, and a shaft on which a die is formed for swaging the teeth, the device being simple in construction, strong, and durable, and one which can be used on gang or circular saws.

A hacker for chipping pine trees has been patented by Mr. Randolph M. Barron, of Castleberry, Ala. The cuttinghead is of the usual loop form, but instead of being made all in one piece is of sectional construction, having a separate bit piece to enter within the body part and held adjustably in place, so the tool can be used a long time by just changing the bits.

A shovel fastener for cultivators has been patented by Mr. George W. Lilly, of Center, Mo. The shank of the standard has a longitudinal rib or elongated cog, in combination with a novel construction of fastener with grooves to fit said rib or cog, so the shovel may be adjusted to occupy different positions laterally and also different depths.

A drilling apparatus has been patented by Mr. John Hunter, of Kingston, Ont., Canada. Its construction is such that the tension or friction can be made light enough to run small drills, such as are usually operated by bows, or it can be adapted for heavy work, being calculated for all the ordinary work of watchmakers and jewelers.

A process of uniting gold and vulcanite has been patented by Mr. Jehu H. Wood, of Lebanon, O. It consists essentially in the application of a solution of chloride of silver to the plastic gutta percha or rubber prior to the application of the gold and to the vulcanization of the mass, whereby a union is made between gold and vulcanite.

A chain saw has been patented by Mr. Walter S. Shipe, of Minerva, O. It is composed of single and double links jointed together by shouldered rivets, the links fitted with cutters dovetailed to pass between lugs on the side of the links, the cutters forming cutting and clearing teeth, and the machine being adapted for felling trees and cutting logs.

A support for rock drills has been patented by Mr. George W. Nixon, of Rockwood, Tenn. This invention provides a base against which a drill propelled by a ratchet lever or similar device may push to force itself into the rock, and means whereby the ratchet drill may be quickly readjusted after it has extended to its limit.

A mosquito net frame has been patented by Mr. Thomas A. Watson, of Houston, Texas. Combined with two side posts having pivots are horizontal arms working thereon, a bar connecting the tops of the posts and an extensible bar connecting the arm ends, so the net may be easily swung over a bed or folded back out of the way.

A door opener has been patented by Mr. Charles E. Whitney, of Brooklyn, N. Y. It is made with a slot in the striker to receive a pin on a gear wheel, which is operated by a rack bar and spring, whereby the striker will be locked in place by the pin, and the striker cannot be forced back from the outside while the door opener is easily operated.

An emery and sandpaper machine for dressing leather has been patented by Mr. Frederick H. Meyers, of Philadelphia, Pa. Combined with an abrading wheel is a pivoted lever and devices for moving it toward the wheel, with a cushioned support on the lever, so the leather will give more or less, and not be heated or burned by the wheel.

A trace holder for back bands has been patented by Mr. Alonzo Collins, of Chetopa, Kan. A recessed metal plate is riveted to the lower end of the back band, the plate having apertures, while there is a detachable hook for holding the trace chain, with a shield, a shank, and a catch, the device being adjustable to fit horses of different sizes.

A car axle box has been patented by Mr. Jesse S. Williams, of Beaver Dam, Ky. In combination with the axle is a journal box with a chamber for holding a lubricant, and an interior cap block so fitted as to close the outlet of the chamber and bear on the rotating axle, being opened by the jar of travel to permit the flow of the lubricant to the axle.

A combination lock has been patented by Messrs. Thomas H. Cole, of East Albany, and Charles McCarrick, of Tivoli, N. Y. It has sliding tumblers, any suitable number of which may be used for complicating the lock, which may be of a hasp or other form, and combinations may be made very easily by moving a pin to different positions, enabling a great many changes of combinations to be made.

A thill coupling has been patented by Mr. Alverow McDowell, of Hudson, Ind. Combined with a clip having jaws is a bolt in the jaws, with caps on the ends of the bolt and having angular arms which overlap between the jaws, and are held by a screw passed through them and resting against the thill eye, making a device which is simple and strong and does not rattle.

A self-closing faucet has been patented by Mr. Andrew J. Homan, of New York city. The construction is such that when the valve is open water or other fluid will pass freely, but the fluid pressure will always act on the inside of the closed forward end or head of the valve to close it to its seat when the pressure on the button is relaxed, unless the valve is held open by a pin and cam device.

An automatic tap has been patented by Mr. Adam J. Geyer, Jr., of Rahway, N. J. It has an externally screw-threaded outer shell and a sliding inner shell, with a protecting cap or cover hinged to its head in such position that the cap is adapted to be closed over the tap when the coupling nut and pipe are removed, and a stamp may be so pasted over that the tap cannot be opened without mutilating the stamp.

A safety attachment for horned cattle has been patented by Mr. William P. Simonds, of Compentine, Iowa. It consists of levers to be applied to the horns and connected to a nose ring, the levers being centrally fulcrumed upon the horns in such way that any attempt of the animal to use its horns will cause pain, and break the animal of any habit or desire to use its horns.

A cattle guard has been patented by Mr. Leslie T. Hardy, of Houston Mines, Va. This invention relates to a form of guard where rollers are arranged in bearings in the track bed of a railroad, to revolve from contact with the hoof of an animal, and so deter the latter from passing over, these rollers being hollow and having metal pieces to make a sound to frighten the animal.

A fence has been patented by Mr. John W. Read, of West Salem, Ohio. This invention covers improvements on a former patented invention of the same inventor, hangers for the lower rails being combined with the supports or posts and top rails of a fence, with other novel features, whereby the fence will stand firmly in heavy winds, and can be made, set up, and removed quickly.

An ore separator has been patented by Mr. David F. McKim, of Cable City, Montana Ter. This invention covers a novel construction and combination of parts to promote the more convenient adjustment and steadier working of the ore receiving belt, and to provide better regulation of the water supply to the belt, so as to insure the better separation and closer grading of the ores.

A fire escape has been patented by Mr. Samuel Snyder, of White Sulphur Springs, Montana Ter. Combined with a winch drum journaled in a frame is a rope secured thereon, a brake pulley formed on the drum, a brake band around the pulley, and a rope secured to the brake band, so the descent can be regulated by the descending person, or by one in the room or in the street.

A boiler tube cutter has been patented by Mr. George M. Odgers, of Elizabeth, N. J. The cutter stock is cylindrical and has a transverse slot to receive the cutter, with a longitudinal aperture and adjusting bar, with other novel features, to facilitate cutting out the tubes of steam boilers and promote simplicity in the construction and convenience in the use of boiler tube cutters.

A check rein holder has been patented by Mr. William D. Taber, of Rockville, R. I. It consists in a frame, a clamping device arranged to clamp the check strap in a space between itself and the frame, and the frame having a side space or slot communicating with the space in which the check strap is clamped, so a horse may be checked higher or lower, or unchecked from a single line from the vehicle.

NEW BOOKS AND PUBLICATIONS.

A SYSTEM OF IRON RAILROAD BRIDGES FOR JAPAN. By J. A. L. Waddell. Published by the Tokio University, Tokio, Japan.

Professor Waddell went to Japan some three years ago as an instructor in the University, and to attend to practical engineering work, but found there was no work in that country for foreign engineers, and he had but seven students in the engineering department. This work on bridge engineering, therefore, which has been printed by the Japanese University, is left as a sort of memorial and professional record of the author's stay in Japan. It is a most elaborate treatise, in two volumes, one being occupied by tables and plates alone, and for a large variety of bridges every detail of construction is set forth with such completeness that the bridge engineer can here find all his plans ready made.

MODERN MOULDING AND PATTERN MAKING. By Joseph P. Mullin. D. Van Nostrand, New York.

To the moulder who wishes to become a pattern maker, or to understand the more difficult work of his own department, so as to make up new and out of the way jobs intelligently, this book cannot fail to be a valuable aid. Too many moulders are only able to do simple classes of work, the same kinds of pieces with very little variation from year to year, never supposing that in learning to do this they have only acquired the rudiments of their trade. This, we are glad to say, is not the general disposition of American mechanics, but there are some who would like to push themselves forward in the more difficult parts of their business who find it no easy task to do so, from the jealousy or indifference of those who might be their teachers. This book treats of foundry work of many difficult kinds, giving practical examples, with the clear illustrations and plain description which one would expect from a workman who has had experience in all the details of the work concerning which he writes.

TOPOGRAPHICAL DRAWING. By Lieut. R. S. Smith, U. S. A., and Charles McMillan, C. E. John Wiley & Sons, New York.

This is a delightful simple and practical book, and one which had long use, as originally written by Professor Smith, at the West Point Academy; it is now revised by Professor McMillan, of Princeton, and forms a text book admirably adapted to aid a beginner to the attainment of a high grade of excellence in field sketching, platting, plain and colored drawing, and the reducing, enlarging, and copying of maps or plans. Much of the work shown is similar to that done by the United States Coast Survey, and the plates of conventional signs and tints, with the methods given of laying on the latter, as also the numerous illustrations showing the professional usage in representing a wide variety of subjects, make the book one likely to be of lasting value to those doing such work as a profession, as well as the student.

TOPOGRAPHICAL SURVEYING BY MEANS OF THE TRANSIT AND STADIA. By J. B. Johnson. John Wiley & Sons, New York.

This book describes a system of surveying which has grown up in this country within the last twenty years, and which is conceded to be especially well adapted to preliminary work in railroad and canal surveys, drainage basins, reservoir, dam, and bridge work, and for obtaining contours of the ground over extended areas. It is written by a Professor of Civil Engineering in Washington University, but while sufficiently elementary for students, is intended to be of practical use to the engineer in the field.

Received.

EXTERIOR BALLISTICS. By Captain James M. Ingalls, Instructor, U. S. Artillery School, Fort Monroe. Published as the authorized text book of the class.

THE ELEMENTS OF RAILROADING. By Charles Paine. The Railroad Gazette, New York.

CHEMICAL PROBLEMS. By Karl Stammer and W. K. Hoskinson. P. Blakiston, Son & Co., Philadelphia.

Wood working machinery forms the subject of a handsome quarto catalogue, profusely illustrated, which has been recently issued by Messrs. Rowley and Hermance, of Williamsport, Pa., describing the great variety of such machines they make.

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If an invention has not been patented in the United States for more than one year, it may still be patented in Canada. Cost for Canadian patent, \$40. Various other foreign patents may also be obtained. For instructions address Munn & Co., SCIENTIFIC AMERICAN patent agency, 361 Broadway, New York.

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