

## RECENTLY PATENTED INVENTIONS.

## Agricultural Implements.

**PLANT-SETTER.**—JOSEPH C. MORRIS, Tampa, Fla. By means of this instrument openings for plants can be made in the ground and plants growing in sandy soil can be watered without causing the operator to assume a fatiguing, stooping posture. The plant-setter is provided with a vessel in which water is stored. A tubular shaft is attached to the vessel and has an opening within the vessel. A drill is attached to the shaft and has an opening therein communicating with the opening in the shaft. A valve normally closes the opening in the drill and is connected with a lever. By operating the lever, the water may be allowed to flow through the drill into the ground, thus providing sufficient moisture to nourish the roots of the plants to be placed in the hole.

**BRUSH-CUTTING MACHINE.**—ALFRED L. HASTINGS and LUCIUS M. SCOTT, San José, Cal. This machine is provided with curved rake-teeth, the upper ends of which are hung loosely on a shaft supported in the frame of the machine. The points of the teeth extend in a forward direction close to the ground. Knife-guards supported on a transverse rod, extend between the rake-teeth at the rear and above the points thereof, the lower edges of the guards being curved upwardly and forwardly from the rake-teeth, and the lower ends of the guard-points extending below the top surface of the rake-teeth, when the latter are in operative position. Revolvable S-shaped cutters are secured on a transverse shaft journaled in the frame forward of the rod carrying the guards, and operate in conjunction with the guards to cut the brush passing up the teeth and onto the curved edges. The cutters are rotated by moving the machine over the ground.

**STUMP-BURNER AND INSECT-EXTERMINATOR.**—VICTOR RIEKE, Franklin, Minn. This apparatus comprises a wheeled vehicle, a rotary table on the vehicle, one or more concentrating lenses adjustably mounted on the table, and a heat-plate carried by the vehicle and receiving the rays of the sun after these rays have been brought to a focus by the lenses. In burning stumps or cracking stones, the vehicle is brought close to the stump or stone, and the table adjusted so as to cause the lenses to concentrate the sun's rays upon the object. In destroying insects, the rays are concentrated upon the heat-plate, the vehicle with its heated plate being then passed over the grass to destroy the insects by the radiation of the heat.

## Mechanical Devices.

**ORE-CONCENTRATOR.**—DAVID D. LORD, Colorado Springs, Col. This ore-concentrator comprises a series of inclined plates, a drum having pockets to receive material from the plates, a receiver forward of the upper end plates and a vertically-movable gate between the receiver and the plates. A cylinder is mounted to rotate in the lower portion of the receiver and has a series of chambers extended through it, these chambers having outward openings into the receiver, independent pipe connections with the chambers and valve-controlled outlets leading into boxings at the lower portion of the receiver. The receiver is half-filled with water and the crushed ore placed therein. Water is injected into the chambers of the cylinder and forced out through slots. By adjusting the valves, the amount and force of the water used in separating the ore may be regulated.

**SEED-CLEANER.**—WILLIAM A. RICE, Jerseyville, Ill. By means of this invention most forms of grain can be quickly and conveniently cleaned. The device consists essentially of an endless belt passing about rollers up an incline, located at one or more points on its course. The seed is delivered upon the belt at the bottom of the incline, and is prevented by gravity from passing up the incline. The foreign matter is, however, caught by the belt and carried over a roller.

**COIN-FREED MACHINE.**—MARTIN HOMMEL, Geisingen, Germany. The purpose of the present invention is to provide cloak-rooms and similar places with devices by means of which the services of a special attendant are rendered unnecessary, the articles deposited being safeguarded against theft. The device in question consists of a holder so arranged that hats, cloaks, sticks, or the like, after the insertion of a coin, can be securely fastened by means of a key. This key is at the same time automatically delivered to the user. When used again to unlock the holder, the key is held automatically in position, so that it cannot be taken away while the holder is released.

**WIND-WHEEL APPARATUS.**—CASSIUS S. GRAVES, Bad Axe, Mich. With an upright support and a hollow driven shaft hung from the support and rotatable thereon, is connected a crown-wheel secured on the upper end of the driven shaft and rotatable on the support. A hollow cross-head revolvable on the upper part of the driven shaft is provided with a lateral arm having a loose bearing on the upper side of the crown-wheel. A wind-wheel having a pinion meshed with the crown-wheel rotates on a shaft projecting from the cross-head. A vane is hinged to swing laterally on a shaft projecting from the cross-head. By means of a flexible connection extending from the vane through the cross-head and hollow driven shaft, the vane is controlled and enabled to cause the wind-wheels constantly to face a wind-current. The advantages claimed for this invention are its simplicity and cheapness.

**MECHANISM FOR CONVERTING MOTION.**—FRED C. THOMPSON, Burton, Wash. This mechanism is provided with a shaft to which a wheel is fixed. Two disks loosely mounted on a shaft are arranged one on each side of the wheel. Each disk carries a clutch which engages the wheel and imparts movement thereto when the disks move each in a certain direction. A gear-wheel is employed in connection with each disk. Two sectors swinging independently on a common axis respectively engage the gear-wheels and are capable of oscillating in a plane transversely to the shaft, whereby the shaft is continuously driven. Independently reciprocal rods are connected with and swing the sectors. The mechanism is particularly applicable to wind-mills.

## Railway Appliances.

**RAILROAD-TIE PLATE.**—SIMON D. S. NARBER, Le Grand, Ia. The plate for railroad-ties provided by

this invention is an improvement upon a similar contrivance patented by the same inventor. The present device has a base-plate lying flat and solidly on top of the tie and adapted to fit underneath the rail. The base-plate has a groove or recess on its underside transversely to the rail and opening at its edges. Forked clamp-bolts are also provided, one prong of which is adapted to lie above the tie but to lock under the base plate in the groove or recess, and the other on top of the base-flange of the rail. A fastening device at the outer end of the clamp-bolts secures the latter to the tie.

## Miscellaneous Inventions.

**ARTIFICIAL LIMB.**—REDMON F. SMITH, Gallatin, Mo. It is the purpose of this invention to provide an artificial limb for legs amputated either above or below the knee. With the lower member a foot is connected. A sleeve forms the lower part of this member and has on opposite sides vertical slots provided with upwardly-inclined notches. A foot shank-piece is adapted to fit in the sleeve and has lateral, headed pins adapted to slide in the slots and engage the notches. The leg-members are pivoted together. To the lower portion of the upper member a spring is permanently attached at the rear side. With transversely fixed cross-bars the lower portion of the spring has free sliding contact, the spring working on the upper bar as a point of leverage.

**DISPLAY-CASE.**—WILLIAM H. GASSAWAY, Victor, Col. The display-case of this inventor belongs to that class of display-stands provided with a central post having trays or shelves. The case revolves about a vertical axis. The corner posts are connected at the top by two curved arches. Shelves, in two sizes, are placed alternately on the center-post and are securely held in position by spring-brackets. The construction is such as to permit the stand to revolve and display the articles placed on the shelves.

**UMBRELLA.**—THOMAS A. WILKINSON and ANNA C. WILKINSON, Cincinnati, O. In this folding umbrella, various improvements are embodied by means of which the umbrella may be folded into a small space. The ribs of the umbrella are composed of members sliding one upon the other at their meeting ends, and provided with devices that connect the members and lock the outer one when extended. One of these members has a curved portion at its locking end, which portion may be straightened to unlock the members and permit the umbrella to collapse. The umbrella-stick is jointed so that it can be readily folded.

**FOLDING-UMBRELLA.**—THOMAS A. WILKINSON and FREDERICK A. WILKINSON, Cincinnati, O. In order that the umbrella provided by this invention may be readily folded, the ribs are made in inner and outer sections slidably connected by loops spaced apart. The portions between the loops form a spring, which is shortened by extending the rib to position for use. A stretcher is pivoted to one of the sections and has a cam by which the sections are clamped together when the umbrella is opened for use. The umbrella-stick is jointed to permit it to be readily folded.

**TROLLEY-POLE.**—VIRGIL A. MASON, Austin, Tex. The improvements embodied in this invention seek to provide a simple construction whereby a trolley-pole may yield laterally to conform with curves and may yield vertically at its upper end to pass hangers and other obstructions on the wire. To permit the lateral play of the trolley-wheel, the inventor provides the pole with a flattened portion setting vertically edgewise, thus giving sufficient strength vertically and permitting the lateral bending of the pole to enable the wheel to adjust itself to the wire when passing curves. To permit the pole to adjust itself vertically, the inventor makes his pole in a butt-section and a wheel-section, the former being pivotally connected with the car and the latter jointed to the butt-section. By means of a spring, the wheel is pressed firmly against the wire, the construction, however, enabling the pole to yield downwardly in order to pass obstructions on the wire.

**GATE.**—BENJAMIN H. HESTER, McAlester, Indian Ter. The purpose of this invention is to provide a gate which may be automatically operated by the person riding or driving toward and from the gate. When a vehicle approaches the gate, its front wheel will operate a lever to release a detent momentarily, causing the gate to swing one step and bringing one of four stop projections on the gate into contact with the detent. The detent will then be released by the hind wheel of the vehicle and the gate will be opened. These operations of the tripping lever and the resulting opening of the gate will lower a weight, which will be rewound by the pressure of the vehicle on the lever. As the vehicle moves through and from the gate, its wheels will actuate another tripping-lever, to operate the detent-bolt twice, causing the weight to readjust the gate to its closed position.

**INCUBATOR.**—EDGAR B. FISHER, United, Pa. This incubator comprises a casing, a hot-air-tank in the upper portion, and partitions extending from the hot-air-inlet end of the tank nearly to the opposite end, thus providing three communicating chambers. The center chamber is shallower at the hot-air inlet end than at the other end. A hot-air flue communicates with the center chamber at its shallow end. A jacket surrounds the flue and a conduit leads from the jacket to the interior of the casing below the hot-air-tank. A water-vessel is provided to supply, by means of the conduit, the moisture necessary to the hatching of the eggs.

**EXPANSION-BOLT.**—JAMES F. DOWNES, New York city. This expansion-bolt comprises a sleeve formed as a short tube-section, having longitudinal slots therein extending inwardly from one end and an exterior peripheral bead or flange at the split end. A cone is adapted to enter the split end of the sleeve and has a cylindrical section at its small end whereby the sleeve is enabled to hold the cone without being itself expanded. A threaded bolt draws the cone into the sleeve.

**GUN-SUPPORT.**—AUGUST W. ZUBERBIER, Logan, Minn. In order to enable a gun to be balanced or supported when being carried to relieve the gunner from fatigue, this inventor has devised a support consisting of an adjustable strap passing around the shoulders, the members of which converge and meet at their lower ends, being continued for a short distance after meeting. A hook, shaped to receive the gun, is held between the meeting ends of the strap and inclosed thereby, whereby a covering is formed for the hook.

**TRUNK-FASTENING.**—GEORGE A. TUCKFIELD, Salt Lake City, Utah. The trunk-fastening provided by this inventor belongs to that class in which chains or ropes are made to encircle the trunk so that by means of a tension device the chain or rope may be properly strained. The present fastening consists of a main chain having connection with a turnbuckle. A branch chain is attached to the main chain, and is capable of connection with the turnbuckle. A lock holds the branch chain in the connection.

**AUTOMATIC CUT-OFF FOR WATER-SPOUTS.**—WILLIAM A. MADDIN, Muscogee, Indian Ter. In its natural position this cut-off is designed to conduct the water that first falls on the roof to the waste pipe; but after a short period, when the roof has been washed by the first flow of water, the cut-off will automatically so change its position as to direct the flow of water from the roof to the cistern-pipe until the rain ceases, whereupon the cut-off will again return to its normal or natural position. The cut-off may be held stationary whenever so desired, and the water may be made to flow continuously to the waste pipe.

**MUSIC-SHEET AND TURNING DEVICE THEREFOR.**—ALMON J. PIERCE, New York city. With rollers and a motor for rotating the rollers at a uniform speed, are connected music-sheets having the time of the music printed thereon and the staves differently spaced so as to accommodate the time of the music to the speed of the motor. As the forward movement of the motor is uniform in velocity, it is necessary so to print the staves of the music-sheet as to compensate for the relation between the speed of the motor and time of the music.

**PROCESS OF PRODUCING CARBIDS AND METALS OR ALLOYS SIMULTANEOUSLY.**—HEINRICH ASCHERMANN, Cassel, Germany. The inventor of the present process claims that he has secured a greater saving of energy in electric furnaces than can be obtained by the use of metal sulfids. He has at the same time secured the production of carbids, by adding a sufficient quantity of carbon to a mixture of an oxide of one metal and a sulfid of a different metal. Under the action of the electrical current, the inventor states that the carbon will combine with the metal having the greater affinity therefor, while the other compound will be reduced to the metallic state. The carbid, it is claimed, is as pure as that produced in the ordinary way, while the consumption of current is, according to the inventor, at least forty per cent less.

**FIRE-ESCAPE.**—JAMES REIDY and JAMES NAUGHTON, Pontoosac, Mass. This invention provides an improvement in fire-escapes of that class in which a spool carrying a cable is used, means being provided by which the spool's turning may be controlled. The fire-escape comprises a frame formed in two parts, hinged together and provided with shaft bearings in the hinged joint, means being provided by which the two parts may be rotated together. A shaft is mounted in the bearings in the frame and has a thrust-bearing at one end. The spool is journaled on the shaft and is engaged by friction-disks held against rotation. The upper section of the frame is provided with a cable-guide. A belt, by means of which a person may be lowered, is suspended from the lower section of the frame.

**ROTARY RACK.**—JOHN F. FINAN, Lonaconing, Md. By this device the inventor seeks to provide a simple construction of rack in which the arms supporting the garments are carried by slides operating in an upright post of special construction, the slides being so arranged and engaged that one, two, or all may be raised at one operation. The arms are so arranged relatively to the slides and coating parts that the slides may be set to hold the arms at half-mast. The slides may be divided transversely into sections, so that one or more arms may be adjusted for use independently of the others.

## Designs.

**GAME-BOARD.**—JAMES P. NOLAN, Westfield, Conn. The leading feature of the design consists of a star-shaped figure arranged within a rectangular base, the edges of which base are raised. Following the outline of the star is a five-sided figure.

**PUZZLE-CASE.**—JAMES H. McNEILL, Mineral City, Va. This design provides a puzzle-case having a conical bottom provided at the apex with a cavity. A vertical inclosing wall surrounds the bottom. The puzzle consists in attempting to roll a ball up the conical bottom so as to cause the ball to fall through the cavity.

**EGG-CARTON FILLER.**—ROBERT J. BARKLEY, Chanute, Kan. The leading feature of this design consists in an oblong filler presenting three longitudinal strips, crossed by other strips, with the outer two strips of the first named three at the end portions of the second named transverse strips. These transverse strips extend beyond the longitudinal strips, the projecting ends being parallel with adjacent vertical slits appearing in the outer longitudinal strips.

**CLIPPING-HOLDER.**—CHARLES E. SCHWARTZ, Stanford University, Cal. This design has as its leading feature connected covers and a flap extending from one end of one of the covers. The clipping is attached to the flap and folded in any convenient manner. Over the folded clipping the cover is bent. Upon the outside of the cover are written or printed the subject and source of the inclosed clipping. The device is an improvement over the old form of preserving clippings, its simplicity and cheapness being noteworthy.

**BICYCLE HANDLE-BAR.**—ROGER B. EAMES, South Framingham, Mass. The leading feature of this design consists of an L-shaped member and an arm extending rearwardly and laterally at an angle to the stem of the L-shaped member. The reversible position of the handles deserves attention. While the handle-bar can be used with both hands, the inventor states that it can also be operated with one hand, and that when so used increased control is obtained. It is provided with this handle a bicycle can be made to stand against a wall without danger of having the front wheel run back and upsetting the bicycle.

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(7514) F. J. T. asks: What would be the horse power of the smallest dynamo which would furnish current sufficient for the amateur furnace described in SUPPLEMENT, No. 1182? A. The electrical furnace is rated to use about 10 amperes at 110 volts. A dynamo capable of giving this current should have about 2 horse power in the engine which runs it. This furnace is but a little one.

(7515) R. B. C. asks for a formula for a good cheap liquid laundry bluing. I wish to manufacture it on a small scale. A. Water, 15 parts; dissolve in this 1½ parts indigo carmine. Add ¾ part gum arabic.

## INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

OCTOBER 25, 1898,

AND EACH BEFORE THAT DATE.

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