

### RECENTLY PATENTED INVENTIONS.

#### Agricultural Implements.

**LAWN-MOWER.**—WILLIAM NEWBY, Pittsburg, Pa. The revolving cutter-blades of this mower radiate from a common center. The stationary cutter-blade has its edge turned toward the rotary cutter and is held by a revolving support at an angle to the cutting edge. Both cutters have an adjustable support. An auxiliary adjusting device is arranged to carry the rotary cutter toward the stationary cutter; and another device acts to separate the two cutters. The auxiliary devices are carried by the adjustable support. The cutter by reason of this construction may be adjusted at any desired angle relative to the ground.

**POISON-DISTRIBUTER.**—FRANK L. RICHTER, Cuero, Tex. The invention provides a machine for distributing poison upon plants, which machine is under the complete control of one man and is arranged to distribute poison simultaneously upon three to seven or more rows of plants. The distributing-nozzle may be readily adjusted to pass over plants of different heights. The ingredients of the poison are thoroughly mixed in a receptacle independent of the distributing-receptacle during the period in which the machine is in operation. Such preparations as wood-ashes, sugar, and arsenic can be employed.

#### Engineering-Improvements.

**GOVERNOR FOR TRACTION-ENGINES.**—CARL K. THOE, Oslo, Minn. The inventor has devised an improvement on governors in which an eccentric is shifted across the driving-shaft by centrifugal force. The governor is arranged to insure a proper distribution of steam under varying conditions of operation, especially when reversing the engine, to keep the initial cylinder-pressure equal to the boiler-pressure and to cut off the steam in exact variation of the load and pressure. A more perfect distribution of steam is obtained than with the valve-gear now in use, especially as the lead of the valve is varied according to the speed and to the cut-off and compression. There is no lead when the engine is started; and consequently no back-lash is produced to retard the engine.

**ROTARY GRATE-FURNACE.**—CHARLES GROLL, Roubaix, France. The invention is an improvement in that class of smoke-consuming furnaces in which the combustible is automatically distributed upon a grate having a rotary movement which is either continuous or intermittent. The main improvement is found in a construction of the grate-bars which provides for the air a series of broken passages, the effect of which is to increase the division of the air.

**SELF-FEEDING SMOKE-CONSUMING FURNACE.**—CHARLES GROLL, Roubaix, France. The furnace comprises a rotary grate, which may be of the type described in the foregoing notice; a casing located radially above the grate and spaced therefrom; and a coal-distributor provided with a spring-actuated coal-ejector. A coal-feeder is movably mounted in the casing and has inclined channels arranged to receive coal from the distributor and to deliver it upon the grate. A mechanism is provided for shaking the coal-feeder. The distributor enables wet coal to be used; and the quantity of coal passing through each series can be obtained either by varying the number of cells or by changing the dimensions. The furnace may be operated either with natural or forced draft.

#### Mechanical Devices.

**HYDRAULIC AIR COMPRESSOR.**—LEE E. MITCHELL, Boston, Mass. The purpose of this invention is to provide a device which will be operated by a flow of water to compress air. The compressor comprises a tank having an air-discharge valve, an air-inlet pipe extending upwardly within the tank and terminating in a valve-seat upon which is adapted to rest a valve guided in movement by the pipe. A sleeve surrounds the pipe and carries at its upper end a float and at its lower end a water-pan. Connections are provided for securing opposite action of the valves. A rock-shaft having a counterpoise is operatively connected with the water-controlling valves and the sleeves surrounding the air-inlet pipe.

**PAPER-COATING MACHINE.**—WILLIAM H. WALDRON, New Brunswick, N. J. This machine has a number of coating-rollers arranged at an angle to each other, and a turning device for the paper between the coating-rollers. The device serves to turn the paper after it has passed over one coating-roller, to present its other face to the second coating-roller. The apparatus is to be used as an adjunct to a paper making machine, but is also adapted to be used separately, if desired.

**STREET-SWEEPER.**—ALVIN BROWN, Aurora, Ill. There are two principal features in this invention which deserve to be emphasized. One is the peculiar construction of the main frame and the other is the special arrangement of the dirt-chamber and movable dirt receptacles, which are so constructed as to be arranged within each of the sweepers to receive the dirt. When filled, they are run out upon rails to a truck, upon which a number of them are carried away to the dump; while other empty receptacles are placed on the sweepers. The arrangement enables the sweepers to work constantly, thus saving time and permitting one driver and one team to take a number of dirt-receptacles to the dump at one time.

**AUTOMATIC FIRE-SPRINKLER.**—LEROY A. WESTON, Adams, Mass. The fire-sprinkler is used in connection with a system of water-pipes laid along the walls or ceiling of a room and provided at intervals with openings closed by a valve held to its seat by a support. The support is made in sections held together by a fusible joint, so that when the temperature of a room becomes dangerously high, the joint will fuse, causing the separation of the sections of the valve-support and the consequent outlet of the water through the valve. The invention is concerned with the provision of an improved valve-support which increases the efficiency of the apparatus by rendering the fusible sections more sensitive.

**PLUNGER-HEAD FOR TILE-PRESSES.**—BENJAMIN D. TRAITL and WILLIAM C. LEIBER, Manhattan, New York city. The purpose of this invention is to provide a tile-press with a plunger-head which will form a tile with undercut depressions in one face into which the cement or bonding material is forced to hold the tiles effectively in the setting. The plunger-

head is formed with a cavity and yieldingly sustains a die-plate. A plug moves diagonally in the die-plate, its upper end projecting in the cavity of the plunger-head and bearing against the head. A spring is passed transversely through the upper end of the plug and has its ends twisted to bear on the upper face of the die-plate, whereby the plug is raised relatively to the die-plate.

**FIRE-ESCAPE.**—DLUREJ N. JERAULD, Newport, Ky. The fire-escape comprises a reel on which a lowering-rope is wound. A lever guides the rope from the reel to the outside of the building and has a brake-arm carrying a brake-band engaging the reel. A rewinding device is provided for the reel, which device comprises a reel gear-wheel secured on the reel, a spring, and a second gear-wheel in mesh with the first gear-wheel and connected with one end of the spring. The fire-escape takes up but little room and enables a person to descend from a window with the utmost rapidity, the speed being automatically regulated according to the weight of the person.

**CLOTH-MEASURING DEVICE.**—JESSE H. KING, Escatawpa, Miss. The device is intended for measuring and recording the lengths of bolts of cloth or for measuring off any required strip from a bolt, and is provided with a receptacle in which the bolt lies. The end of the cloth is taken from the reel and passed over a roller upon which it is held by a presser-plate. The cloth is received by a reel supported by a standard, hinged at its base so as to swing away from the reel and leave its end free, to permit the removal of the cloth. The reel is rotated by gearing so constructed that the speed of rotation may be multiplied. The roller has a worm formed upon the outer end of its shaft, which worm engages a worm-wheel, to the upper side of which a registering-disk or dial is secured.

#### Railway-Contrivances.

**CAR-COUPLING.**—VALENTINE ERBACH, Scranton, Pa. The car-coupler is so constructed that a one-piece draw-head will present all the advantages of a draw-head of the pivoted-knuckle type. The draw-head is provided with fixed knuckles adapted to interlock with similar knuckles upon the opposing draw-head. A pin in the draw-head can be automatically operated during the act of coupling and used in connection with a link when desirable; by its means cars can be uncoupled even when there is little or no slack.

**RETAINING VALVE.**—JOSEPH S. LAPISH, American Fork, Utah. This automatic retaining-valve for Westinghouse air-brakes comprises a cylinder forming the escape for the brake-cylinder and having connection by a triple-valve slide-valve with the auxiliary reservoir. A spring-pressed piston in the cylinder is adapted to be forced outward by the pressure from the auxiliary reservoir to close the brake-cylinder escape. The piston is also adapted to return by the pressure of its spring to open the brake-cylinder escape.

**BALL-BEARING.**—FREDERICK H. HEATH, Hotel Gerard, New York. This ball-bearing for car-axles comprises a spherical journal-bearing upon which a series of curved resilient spacing-rings are secured. Balls are placed between the spacing-rings. Cage-rings are provided, having holes to inclose the balls partly. Staples or loops carried by the rings further inclose the balls, and a suitable journal-box surrounds the balls.

**AERIAL RAILWAY.**—MAURICE BROCHET, Levallois-Perret, France. In the aerial railway devised by this inventor, a train of cars is caused to travel overhead upon a structure supported by pillars. The train is so constructed as to form practically a rigid self-supporting beam or girder, so that the stationary parts connecting the pillars act mainly as guides for the train and in some cases as supports for electric wires, but are not strictly necessary for supporting the train. The rigid connection between the cars can be temporarily suspended to enable the train to travel on curves or over points where the grade varies.

**MAIL-BAG DELIVERER AND RECEIVER.**—HUGH A. ORCHARD, Roodhouse, Ill. The railway mail-bag catcher consists of inner and outer uprights connected by a slide-rod. A catching-arm is provided with a ring sliding on the rod, the middle of the arm being detachably secured to the inner upright by spring-operated catch devices. A stop on the slide-rod limits the movement of the bag-catching arm. The bag can be set to be taken by a car coming in either direction, a hook on the car seizing the ring, and sweeping the bag into the car without shock or danger of striking the car.

**GUARD FOR CAR-AXLEBOXES.**—JAMES S. PATEN, Baltimore, Md. As the result of continued experiments and tests on cars in regular service this inventor improved the wooden and metallic dust-guards which he has already devised. The present guard comprises members slidable on each other and provided with outwardly extending ribs along their semicircular inner edges, the entire portion of the latter, thus thickened and broadened being bevveled for the purpose of enabling the dust-guard to be easily and quickly applied to the axle.

**RAILWAY-CROSSING.**—GEORGE P. KEITH, Rochester, Ind. The crossing consists of two connected rails and carries locking-bars adapted for engagement underneath the rails of the main tracks. An air-pressure actuated rod supports the crossing. Connections between the locking-bolts and the rod enable the bolts to be moved to their releasing position upon a rotary movement of the rod. The rotative movement of the rod swings the crossing into the desired position. The crossing may be easily and quickly operated to place the rails of either one of the two intersecting tracks in continuity, so that a train may pass over without undue jarring.

**EXPLOSIVE SIGNALING APPARATUS FOR RAILWAYS.**—WILLIAM R. SYKES, Station Road, High Street, Clapham, London, S. W., England. The apparatus comprises a gravity-operated cartridge magazine having a series of pairs of cartridge-chambers adapted to be brought into firing position under the control of an escapement, one pair at a time. A pair of gravity hammers normally held raised, explode the cartridges and are automatically reset by the force of the explosion. The fall of the hammers is electrically controlled so as to render the discharge dependent on the position of the signal lights. When the parts fail to act, an electrical

warning is given. The discharge and the operation of the cartridge-chambers is rendered dependent on the passage of a train.

#### Miscellaneous Inventions.

**PICTURE-FRAME.**—HENRY R. TURNER, Helena, Ark. The invention consists in forming corner-pieces for a picture-frame from a piece of tin or other metal by bending two edges of the sheet at right angles to it and punching a hole in the corner opposite to that in which the right-angled edges meet. Four of these plates are slipped over the four corners of the picture and then wired together.

**INHALER.**—LOVELAND M. FRANCIS, Phoenix, Arizona Territory. The inhaler has a cylindrical body portion, in the ends of which tapering shields are carried. The small ends of the shields are projected into the body portion to hold a sponge between them and to form a space for the reception of liquid. Besides serving as a means for holding medicinal preparations to the nostrils, the device is also applicable to respirators or devices for protecting persons from poisonous gases by placing over the nostrils a means for purifying the atmosphere before it is inhaled.

**MINING-CAISSON.**—ANTHONY F. LUCAS, Beaumont, Tex. The caisson is made in cylindrical sections which are successively bolted one on top of the other to form a continuous, tight, vertical caisson, which is gradually sunk to bed-rock by hydraulic action. The caisson is provided with a boring-face, with means for extending the lower section into bed-rock and securing it therein with a watertight connection, and with special means for turning the entire caisson to produce a boring action to facilitate its downward movement through the stiffer bodies of clay.

**COTTON-PICKER'S SPRING SPINE-SUPPORTER.**—SAMUEL C. POTTS, Apple Valley, Ga. By means of this device the back of a cotton-picker is relieved from the strain of a stooping position. The support comprises a main bar of spring material which can be attached to the shoulders. A cross-bar fixedly secured to the main bar near its lower end is arranged for attachment to the hips. The main bar extends below the hip-bar and is provided at its lower extremity with straps for attachment to the thigh.

**RUNNER FOR VEHICLES.**—CHARLES S. SEXTON, Blue Earth City, Minn. The runner is adapted for attachment both to straight and bent axles and can be adjusted to track. An oscillating axle-clamp is provided and likewise checks for limiting the movement of the clamp, thus obviating the necessity of straps to prevent the body's turning over. A construction is provided whereby the draft will be below the center of the axle, causing the runners to travel smoothly and have but little tendency to tip or travel upon their noses.

**BALL-BEARING FOR BICYCLES.**—FREDERICK H. HEATH, Hotel Gerard, Manhattan, New York city. The present invention provides an improvement in spherical and ball bearings, that is to say, bearings in which one of the two members or surfaces between which the balls run is formed on spherical lines. The bearing consists of a hub, a cup-member fitted therein, and a spherical member carried by the axle. A cone member is fitted to the spherical member so as automatically to adjust itself thereon. And a series of balls is fitted between the cup and cone. There is no binding or cramping action.

**FURNACE FOR HEATING SOLDERING-IRONS.**—GEORGE BICKELHAUPT, Manhattan, New York city. In the casing of the furnace a burner is arranged, consisting of a number of oppositely-extending arms. A support consisting of oppositely-extending arms carries a shaft adapted to rock in the casing and to be locked to hold the support in a central position relatively to the burner. A furnace thus constructed is light and can be connected by a rubber tube with a gas-pipe.

**VENTILATING ATTACHMENT FOR WINDOWS.**—GEORGE M. WAGNER, Philadelphia, Pa. By means of the construction devised by this inventor, one or more panes can be simultaneously removed from the main sash and securely held in a position enabling them to be readily closed. The ventilation is accompanied by no objectionable draft. The attachment is especially adapted to all forms of windows having prism glass and serves to keep the prisms in the same position when opened and when closed to obtain the full benefit of the deflected light. The attachment opens inwardly instead of outwardly, thereby permitting the use of bars or screws outside of the window.

**TOOL.**—MERVIN W. TOZER, Dunton, Colo. The invention is an improvement in tools having handles in which a number of tool-bits are carried. The handle has separated jaws and multiple bits between them. Jaws and bits have holes for receiving a clamping and pivot bolt, through which holes another bolt passes having an apertured head adapted normally to engage the outer surface of one jaw to clamp the jaws together. The jaw in question has projections on opposite sides of the bolt which are adapted to coact with the apertured head to hold the tang of an extra tool, the bolt-head meanwhile being raised from contact with the jaw, and the clamping-pressure being communicated to the jaw through the tool-tang and projections.

**CABINET AND SAFE.**—DANIEL N. SHOEMAKER, Cainesville, Mo. The cabinet provides separate storage-compartments for all materials used in baking, and a safe to receive the bread or cake when baked, the safe being so constructed that it can be ventilated or tightly closed. The cabinet has a kneading-board and bins of simple construction, which can be locked with their tops uppermost and turned bottom upward for cleaning purposes.

**RAILWAY TICKET.**—GRANT S. ATHERTON, Brooklyn, New York city. The object of the invention is to provide a passenger, transportation, or theater ticket designed to prevent so-called "scalping" on the part of speculators. The ticket consists of a sheet having its longitudinal edges folded over the central portion to form three layers and doubled transversely about midway between its ends. The sheet is also transversely folded adjacent to one end in an upward direction, so that the folded end portion is between the other end portion and the central portion of the sheet. The overlapping folds are fastened or sealed together. The

ticket is to be opened only by the conductor and is otherwise void.

**HYDRANT.**—CHARLES L. BURKHART, Dayton, Washington. When not in use, this hydrant can be moved wholly below the ground surface, thus preventing any possibility of freezing. The hydrant comprises a supply pipe, with which a chamber communicates. A hydrant pipe is vertically movable through the upper and lower walls of the chamber and is adapted to rotate, and is provided with ports through which the water may pass from the chamber when the pipe is in its uppermost position and through which the water may discharge when the ports are below the chamber.

**WATER-FILTER.**—EMIL T. DREIER, Hanapepe, Kauai, Hawaii. This water-filter for house use has a casing with a water-supply connection. A cylinder extends within the casing and has a longitudinal bore therein and exteriorly connecting passages extending outwardly from the bore. A carbon filtering-stick in the bore communicates at one end with a discharge-passage.

**KNOB ATTACHMENT.**—CHARLES J. ERICSON, Salt Lake City, Utah. To provide a door-knob attachment which will securely lock the knob on the screw-spindle and to prevent transverse play of the spindle in the lock, is the purpose of the present invention. The knob-shank has a fixed clutch member and an opposing clutch member is longitudinally movable on the spindle but held from turning. A forked plate is arranged to straddle the spindle in rear of the movable clutch-member and to be secured directly to the door in rear of the escutcheon. The parts of the fork are longer than the diameter of the movable clutch member, whereby the plate alone holds the movable clutch-member from rearward movement, thereby enabling the fastening to be used with any style of escutcheon.

**PACKING FOR STUFFING-BOXES.**—HERMANN KIRSCHNING, Berlin, Germany. The packing is made of asbestos threads in the form of rings, ropes, and the like. The invention secures simplicity in the mode of plaiting the asbestos threads by the help of a spiral or serpentine wire, attains greater elasticity, and facilitates the making of the packing in various shapes.

**NECK-YOKE CENTER.**—CHARLES W. McDONALD, Gallatin, Mo. The invention is concerned with improved means for adjustably connecting a neck-yoke or spreader-bar with the pole of a vehicle. Connected with a neck-yoke and a clip-band having two projecting spaced flanges is a cam-block pivoted between the flanges. A pole-ring also has two spaced flanges between which the cam-block is pivoted at right angles to the other pivot-bolt. A clamping-dog is pivoted so as to lie between the flanges of the pole-ring and to receive pressure from a toe on the cam-block.

**MANTLE FOR ELECTRIC-ARC LAMPS.**—PAUL MERSCH, Avenue Hoche 9, Paris, France. The purpose of this invention is to enhance the lighting power of an arc lamp, the radiated heat being partly reflected on the carbon and partly absorbed, whereby the mantle is rendered incandescent and the arc-light given a milder and warmer tint. The effect of the oxygen of the air is diminished by the greater rarefaction of the air thus produced in the close neighborhood of the carbon electrode. The mantle is made of clay, alumina, and kaolin.

**COMBINED ROCKING-CHAIR AND LOUNGE.**—OLE A. BROWN, Lawrenceburg, Tenn. The combined rocking-chair and lounge consists of rockers connected at their forward ends by a fixed foot-board, and of an adjustable back. A foot-rest is pivotally mounted between the rockers beyond the fixed foot-board. A flexible strip is connected with the pivoted foot-rest and back, whereby when the pivoted foot-rest is folded back, the fixed foot-board may be used by a person in the chair.

**ICE CREAM FREEZER.**—FREDERICK P. BURR, Middletown, Conn. When the ice-packed receptacle is partially filled with the cream to be frozen, it is rotated alternately in opposite directions. The cream is caused to flow up the inner wall of the receptacle to form a hollow center; at the same time the liquid freezing-mixture is caused to travel in the vessel and to move up on the external surface of the receptacle to insure a thorough cooling and final freezing of the cream. Since the freezing-mixture is several degrees colder than the ice, a rapid freezing of the cream takes place, because only a thin layer of cream is opposite the layer of external freezing-mixture. The rapid change in the direction of rotation causes a very quick freezing.

#### Designs.

**BROOM-RACK.**—HENRY C. BOTHWELL, McArthur, Ohio. The leading feature of the design is a compartment-receptacle, with standards, cross-bars, and apertured longitudinal bars. The rack is designed for use in grocery stores.

**PUZZLE-BOARD.**—JAMES H. WHITE, Bronx, New York city. The board comprises essentially a maze and the puzzle consists in starting from a point near the edge and endeavoring to reach the center along certain lines by jumping alternate spaces. The puzzle or, more properly, the game is played with a checker-like object.

**LACE-FASTENING.**—HENRY A. FRYE, New York city. The fastening for shoe-laces has its top or crown rounded transversely on its upper side and provided with a slot having a flaring end for the reception of the lace.

**SHIRT-PATTERN.**—WILLIAM GERHARDT, Manhattan, New York city. The essential features of the design consist in the approximately straight side edges and the top edge having gore-like incisions, between which is a concave edge and outward of which are straight edges running into concave edges. By means of this pattern a shirt can be cut from a single piece of linen, thereby considerably facilitating the making of the material into a garment.

**CASING FOR WATER-HEATERS.**—CHARLES O. F. YOUNGSTROM, Phoenix, Arizona Territory. The casing constitutes a neat means for inclosing the heater and is constructed with a straight edge so that it can be placed against a wall.

**NOTE.**—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.