

RECENTLY PATENTED INVENTIONS.

Engineering.

ROTARY SNOW PLOW.—John W. Haughwout, Omaha, Neb. This plow is mounted on the front end of a car on which is a motor connected with the main driving shaft, the latter extending through the front end of the car and being turned in either direction by the motor. The wheel on the outer end of the shaft has cone-shaped augers arranged radially, and having their front open ends partly covered by angularly arranged knives, each secured on a radial shaft in the middle of the opening of the auger. The knives are automatically reversed from the main driving shaft, as the motion of the latter is changed to rotate the wheel in either direction, whereby the snow will be cut and delivered to the augers to be discharged by centrifugal force to either side of the track.

CENTRIFUGAL FORCE PUMP.—Edward S. Nicholas and Joseph R. Turner, Greenville, Ohio. This pump is designed to raise light or heavy liquids, and to be used for filling tanks, irrigating lands, for oil pipe lines, water works, etc., being of simple and durable construction and very effective in operation. The casing has a center wall in the shape of an inverted cone, from the apex of which extends downward the suction pipe, an inverted cone-shaped spaced space being formed in which turns an inverted duplex or hollow cone, formed of two spaced concave disks with a short neck opening into the suction pipe, the hollow cone being rotated within the casing by suitable gears from a power shaft.

METALLIC PISTON PACKING.—Nicholas Pfau, Port Jervis, N. Y. This invention covers an improvement on a former patented invention of the same inventor. The packing consists of a series of interior blocks having angular exterior surfaces on which are fitted exterior segments, while longitudinally extending keys are fitted into the blocks and segments. The improved construction provided for by the patent is designed to prevent tangential displacement of the segments, displacement in any direction being impossible as long as the packing is in position on the piston.

Railway Appliances.

METALLIC TIE.—Ellison Saunders, Austin, Texas. The base plate of this tie has blocks cast solid therewith at its ends, stay rods or braces connecting the ends with each other, while the blocks form rests for the rails, and have inclined apertures for the reception of ordinary spikes to lock the rails thereto. By this invention no clamp plates are employed, the heads of the rods bearing against the solid outer ends of the rail seats, intergral with the body of the tie.

CATTLE CAR.—Ferdinand E. Canda, New York City. This car is divided into compartments by movable skeleton partitions of bars united by springs, the partitions being operated by endless chains secured to the lower bar, whereby when not in use they may be moved to a position beneath the roof of the car, so that the car may be used to transport cattle in one direction and freight in the other. There is no rigid connection between the bars, which are designed to cant or tilt within the grooves or runs in which the partition is mounted, and prevent the partition from moving too quickly in being lowered to position across the car.

TROLLEY GUIDE FOR ELECTRIC ROADS.—William E. Jackson, Jr., Augusta, Ga. This invention covers novel features of construction and combinations of parts for trolleys used with the overhead system of electric railways. The guide or finder is pivoted to the trolley pole below the wheel, and has curved arms of non-conducting material designed to automatically hold the trolley wheel against the wire, or cause it to come back to place on removal, when, the guide having placed the wheel in position, will automatically drop below the trolley wire, out of the way of overhead supports.

Mechanical.

WARPING MACHINE ATTACHMENT.—Charles Denn, Philadelphia, Pa. This is a cut marker and stop motion mechanism for attachment to any warper, whereby the operator will be prevented from making warps of different lengths or number of cuts by neglecting to cut the warp when the marker rings the alarm. The cut marker is carried by a change wheel shaft on which is a cam adapted for contact with a push bar carrying a propelling device engaging with a cut-defining rack connected with which is a shifting mechanism. The arrangement is such that when the limit is reached of a predetermined length of warp the machine is automatically stopped, and will remain stopped until set in motion again by the operator.

STARCH MACHINE.—John A. Ostberg, Des Moines, Iowa. This is a continuous automatic machine for manufacturing starch, and has an endless water-tight carrier with supports carrying an endless apron to which the starch mixture is delivered, to be received by a porous apron on another carrier, in combination with a continuous starch table and a series of knives for cutting the starch into lumps. An endless carrier receives and passes the lumps through a crusting oven, and in connection with other carriers are cutters and saws, whereby the starch is fully prepared by one continuous operation, giving a more uniform product and saving time and labor.

TYPE MOULD.—Thomas Mitchell, Brooklyn, N. Y., and John Milne, Long Island City, N. Y. In this mould a base block is cut to afford two sides for a type matrix and two swinging cope bars are formed to afford two other sides to the matrix, with a gate channel between the bars, and two die blocks removably held against the open ends of the matrix. The invention provides a simple and practical mould for producing type with letters or figures on each end.

WIRE FENCE MACHINE.—Hezekiah Miller, Brayton, Iowa. This invention provides a wire

spool carrier and winder, consisting of a wheeled truck having shaft bearings at its forward end and handles at its rear end, the spool shaft having a bevel gear on one end, in which meshes a pinion on a shaft extending to a universal joint between the handles of the carrier, where there is a handle, by rotating which the spool shaft is turned. The machine can be readily moved about in winding or unwinding wire, facilitating the setting up or taking down of a fence by one man.

Agricultural.

MOWING MACHINE MECHANISM.—William F. Shuey, Swoope, Va. This is an improved cutting mechanism, wherein the cutter bar is provided with knives passing through guards and arranged in divisions, each having a number of equal sized knives, two adjacent divisions or sections being separated by a knife of a different size from those contained in the division or section. The mechanism is simple and durable, reducing the motive power required, and preventing the choking of the knives, while it is not necessary to back up for a start on heavy grass, as the knives cut alternately.

PORTABLE CORN CRIB.—Charles I. Cook and Henry M. Britton, Odebolt, Iowa. This crib has a cylindrical body formed of spaced slats connected by cables, and with an upper and lower door, with a ventilator of vertical and spaced slats secured together, an air conductor extending from the ventilator to the side of the crib, which has a cover, and an inclined rack opposite the lower door. The invention is an improvement on a former patented invention of the same inventors.

CORN CRIB AND GRANARY.—Charles I. Cook, Albert E. Cook, and Henry M. Britton, Odebolt, Iowa. This is a portable structure designed to be quickly and easily set up or taken down and removed, and adapted to safely hold the various grains. The wall of the crib is formed of flexibly connected slats, mounted on a suitable floor and having braces extending from the top of the wall to the ground and to the floor, with a suitable lining and cover. The floor is made in sections, and the whole may be rolled or folded into small compass, to be easily carried about.

CORN PLANTER.—James Kleihauer, Jr., Elk Creek, Neb. This is designed to be a light draught planter capable of checking without the use of a check line, a marker being provided in connection with the planter which may be conveniently shifted for use at either side of the machine. The frame carrying the drop slide and boxes has a hinged connection with the axle, while a driver's seat is adjustable upon the hinged connection, a rack being connected with the driver's seat, with a lever, whereby the frame may be raised and lowered, and the seat shifted, as desired. The machine is designed to be economically built and durable.

Miscellaneous.

SNAP HOOK.—William T. Morris, Paris, Ark. This is a hook specially adapted to be applied to backbands to hold the traces of plow harness, and consists of a hook depending from a loop, and having its end bent laterally and inwardly toward and under the loop. Upon the inside of the main hook bar is a plate spring, whose free end impinges upon the inner face of the outer limb of the hook.

AN IMPROVED OIL LAMP, patented by Mr. Oliver Sweeney, of New York City, provides an improved means of suspending a lamp. The upper end of the rod attached to the lamp is provided with a spherical head which is received in a concave seat in a stirrup attached to a suspending rod or tube. The reservoir of the lamp is provided with a rod working in the guide thereof, and carrying a valve at its upper end, for controlling the admission of light to the reservoir. This invention is an improvement upon the lamp for which letters patent of the United States were granted to the same inventor on May 18, 1883.

PORTABLE BUILDING.—Mr. Lorenzo D. Jones, Rocky Ford, Ga., has patented a portable building, the parts of which may be quickly assembled to produce a substantial structure without a permanent connection of the several sections comprising it. This invention consists in a novel method of arranging the flooring, side walls and partitions of the house, and in fasteners for securing the parts to each other. The sections of the walls and partitions are connected by latching clamps and corner bracket irons, which are slotted so that they may be readily removed from the studs projecting from the walls. A removable hood for windows and doors is provided, and a porch is attached to the building, which is held in place by fastenings which are easily detached.

AN IMPROVED WASTE AND WATER PIPE VALVE, and connection for wash basins, etc., has been patented by Mr. James R. Whiting, of New York City. This device is intended to prevent the escape of sewer gas into buildings through the waste pipe. In this invention, the waste pipe and water or main supply pipes are provided with gate valves having racks on their stems, and a rock shaft is provided with gears meshing with the racks of the valve stems, the whole being operated by a vertical shaft and gears. The construction is such as to cause the water supply pipe and waste pipe to open and close simultaneously, so that the siphoning of the trap will be avoided, and the escape of sewer gas into the room will be prevented.

BASIN FIXTURE.—Herman Pietsch, Flatbush, N. Y. This invention relates more particularly to stationary wash basins and similar conveniences. The bowl is made with an exterior outlet valve and valve casing constructed to also form an escape for the overflow when the overflow apertures in the bowl are stopped; an overflow trap is also formed in the valve casing, including a removable strainer-like catch box for foreign substances passing through the main outlet of the basin.

TACK DRIVER.—Michael G. Mains, Oberlin, Ohio. This is a device for use in laying carpets, and by means of which one may drive the

tacks and lay the carpet while standing in an upright position. It also provides means for feeding the tacks so that they will not be spilled upon the carpet, and the separate tacks will not have to be handled. The device has a case with a raceway for the tacks, spring-pressed parallel inclined arms mounted on the lower portion of the case and extending beneath the raceway, while a plunger is held to move in a slideway. The device, in an inclined position, is also adapted for use as a carpet stretcher.

HANDLE AND BRUSH.—Thomas Russell, Fort Douglas, Utah Ter. This is a combination device, the handle being adapted for canes, umbrellas, etc., and the brush suitable for use on clothes and hats and similar articles. The handle is hollow, and has a screw-threaded portion by which it is attached to the cane or other article, while the brush body fits within the central portion of the handle and is held in place by means of screws.

REMEDIAL COSMETIC.—Patrick Rion, Chicago, Ill. This is a composition of milk, ammonia, and other ingredients, for the treatment or toning and freshening of the human skin. It contains nothing deleterious, and does not check or obstruct perspiration.

NUT LOCK.—Aaron C. Vaughan, Shane's Crossing, Ohio. The novel feature of this nut lock consists of a locking washer formed of a metal bar bent into annular form, its ends being provided with recesses, the extremities being beveled and projecting normally in opposite directions from the plane of the body of the washer, whereby the latter is rendered elastic under compression.

WISE.—Charles Wies, Faulkton, South Dakota. This is an attachment for vises to enable tapered bodies to be clamped therein, and consists of two parts, one of which laps at its ends and is detachably secured to one of the jaws of the vise, and the other part is centrally pivoted to the fixed part, so as to rock. The meeting faces of the two parts are beveled from their centers to their ends.

MILK COOLER.—John F. Banks, Bluffton, Texas. This invention consists of a water receptacle adapted to be inserted into a milk bucket or can, about which latter is loosely held a cloth jacket, the upper edge of the jacket being slitted at intervals to form a series of wicks which are dipped into the contents of the water receptacle. The water is carried by capillary attraction exteriorly of the milk receptacle and cools its contents.

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BUILDING EDITION.

APRIL NUMBER.—(No. 66.)

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2. Colored plate of an attractive residence erected at Bridgeport, Conn. Cost \$6,900 complete. Floor plans and two additional photographic elevations.
3. A cottage costing \$2,700 complete, erected for Mr. R. H. Keller, at Rutherford, N. J. Three elevations and plans. Mr. U. D. Peck, architect, Rutherford, N. J.
4. Photographic view and two floor plans of a cottage at Austin, Chicago. Estimated cost \$3,300.
5. A row of new dwellings on West 82d Street, New York. Cost of each house \$30,000 complete. Messrs. Berg & Clark, New York, architects.
6. Cottage recently erected at New Haven, Conn. Cost \$6,850 complete. Floor plans and photographic perspective elevation.
7. An attractive dwelling erected at Yonkers, New York, at a cost of \$6,000. Photographic elevation and floor plans.
8. Two photographic views of the beautiful residence of Mr. Noakes, on Riverside Park, New York City, a colored view of which appeared in the March issue.
9. Sketch of a sixteen story office building to be erected at Chicago. Cost \$750,000.
10. Sketch of a water-cooled building. One of the novelties proposed and patented for the World's Fair at Chicago.
11. Recently erected English houses. Plans and perspective views.
12. Miscellaneous contents: How to catch contracts.—Toggle bolt for electrical and other fixtures, illustrated.—Composition for retarding the setting of plaster.—Quarrying marble.—The education of customers.—Iron and steel for building purposes.—An improved sanitary earth closet, illustrated.—Stamped metal ceilings, illustrated.—The Plaxton hot water heater, illustrated.—A hot water heater for soft coal, illustrated.—An improved woodworking machine, illustrated.—An improved casing for steam pipes, illustrated.

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Notes & Queries

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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.

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(2983) W. C. H. asks (1) what should be the chemical composition of a wax that is highly conductive of electricity, yet, when exposed to a dynamo current of high intensity, or to atmospheric electricity, such as lightning, that would melt under above named circumstances? A. We can only suggest a mixture of metallic bronze powder or plumbago with paraffin. 2. What is the cheapest and most effective battery motor for experimental work? A. Simple motors are described in our SUPPLEMENT, Nos. 641, 783 and 767.

(2984) Ceylonese asks what sign painters use to stick gold leaf, silver leaf, and tin foil on glass. A. Take as much insinuating as will lie on a quarter dollar; place in a cup, which half fill with boiling water, stir. Fill the cup with alcohol, and strain through a silk handkerchief. Apply to the surface; when sticky attach the leaf or foil. When dry, rub up with cotton, resize, and regild if necessary. When dry, resize three or four times. Paint the backs of the letters with coach black.

(2985) T. J. S. writes: There is a process by which plating with gold is done direct from the anode without the chloride of gold in the solution. How can it be done? A. Use a bath of cyanide of potassium solution. This will dissolve the gold, which will next be deposited on the cathode.

(2986) G. B. asks for a receipt for silvering hollow glass balls. A. Lead and tin, of each 2 ounces, bismuth 2 ounces, mercury 4 ounces. Melt together in order given. Have the globe perfectly clean and dry. Warm it, melt the amalgam and pour it in, and roll it about until the glass is coated. Too high a heat in use will spoil them.

(2987) T. W. H. writes: I have trouble in mixing the articles to make heel ball. Will you inform me as to the proper way? A. The following is a typical formula: Hard suet and beeswax, of each 4 ounces, powdered gum arabic, sugar candy and Venice turpentine, of each 1 ounce, ivory black and lamp black, of each 2 ounces. The solid ingredients must be in finest powder. Melt wax, turpentine and suet together, add the gum arabic, sugar candy and black, and stir thoroughly.

(2988) R. N. A.—A solution of potash or lye is used to soften prints, by means of which, and heavy pressure, they are transferred to boxwood and