RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

WHEEL-HARROW.—Millard F. Potter and Henry J. Minar, Austin, Minn. The invention is a harrow of that type in which the harrow frame is made in sections, the two side sections of which are hinged, so as to be turned up on each side into a vertical position to facilitate transportation and to avoid stumps, stones, or other obstructions. The several drags run freely and independently of one another. The driver can ride to and from the field. It is impossible to turn the drags over the horses. In turning, the drags are not liable to be thrown against the wheels, nor the horses against the drags. The drags can be tilted to change the inclination of the teeth and raised bodily or on their hinges to free them of rubbish.

PACKING ATTACHMENT FOR GANG-PLOWS.—David E. Towle, Park River, N. D. This packing attachment consists of a frame, in which a wheel is mounted to turn. The rim of the wheel is inclined, is provided with recesses in its side edges, and is solid between opposite recesses. This peculiar formation of the rim tends to roughen the surface, while the wheels act to pack the soil in order to preventing drifting. In loose and sticky soil the benefit of packing is marked, for the plow works and cleans more efficiently in subsequent operations.

Engineering-Improvements.

ROTARY ENGINE.—William W. Watkins, Yuma, Arizona Territory. The engine comprises a rotary wheel having peripheral cups. Steam is admitted to the casing and discharged upon the wheel by means of a pipe having two branches extending around the wheel. The steam can thus be caused to impinge on the wheel at opposite points. Hence, by providing a rotary, two-way, cut-off valve in the main supply pipe, the steam can be deflected into either primary branch in order to cause the wheel to turn in either direction.

ROTARY ENGINE.—John J. Anthony, Moscow, Idaho. This engine is provided with a cylinder in which are a number of sliding abutments. On the cylinder-heads are chests. The rotary piston is provided with a number of piston-heads and is mounted to rotate in the cylinder, and is arranged to admit steam to the cylinder from both chests at the same time, into separate compartments of the cylinder. Separate exhaust-pipes lead from the cylinder. The abutments are controlled by cam-wheels having cam-grooves so arranged that the abutments are simultaneously moved outward or inward to allow the piston-heads to pass, the inward motion occurring immediately after the heads have passed the abutments.

AUTOMATIC CYLINDER-COCK.—Louis M. Morrow, Wasco, Ore. The invention provides a new cock designed for use on steam-engine cylinders and arranged automatically to open in order to discharge the water of condensation to prevent blowing out of the cylinder-head or bending of the piston-rod, at the time the engine is started, should the engineer fail to open the usual cylinder-cocks.

VALVE.—Timothy S. Martin, Butte, Mont. The object of the invention is to provide a simple mechanism for simultaneously operating a number of valves, closing one or more of them, while the others are opened and *vice versa*. The mechanism is applicable to valves controlling the admission of steam or water to radiators. When used on a steam-radiator, the device reduces the resistance to the boiler-pressure. For the steam, when cut off from the radiator, does not encounter a solid, closed valve, as in the ordinary construction, but passes through the valve-casing and back to the boiler, thereby obviating any resistance to the boiler-pressure.

Mechanical Devices.

BOTTLE-WASHER.—Edmund S. Purdy and Jesse W. Washburn, Portage, Wis. This machine comprises a rotating tank having ports in its sides. Shot-carrying pockets are arranged in the tanks, which pockets have outward openings. Plates are movable on the outer side of the tank and have ports designed to be placed in communication with the perforated shot-pockets. Boxes are arranged at the ports through the controlling-plate, for receiving the mouth end of the bottles. Free passage is given to the water from the tank to the bottles. After rinsing, the shot-pockets are opened to allow a free communication of the shot with the full length of the bottles. The shot-pockets are then closed and the bottle finally rinsed. The revolution of the tank insures the washing of the outside of the bottle.

ELEVATOR.—Peter S. Ebbert, Manhattan, New York city. In large stores, goods sold in the several departments and intended to be delivered to the customers, are generally sent to the top floor to be distributed among the wagons. It is the usual practice to carry the goods to the wagons in baskets, a process which requires much time and labor. The present invention provides a simple elevator, by means of which goods deposited in it at any floor are automatically discharged at the distributing floor or room, thus saving time and manual labor.

GRUBBING-MACHINE.—George R. McChesney, Manhattan, New York city. The lever of the grubbing machine is provided with a strengthening-strap attached to its front end. A saddle-plate is saddled on the front end of the lever, and has its ends engaged with the strengthening-strap. The strengthening-strap serves primarily to receive the strain on the lever, which strain is communicated directly to the lever by the saddle-plate. The construction is designed to prevent the breaking of the lever, which often occurs with the usual grubbing-machine.

COMBINATION-LOCK.—Niels P. Nielsen and Junius L. Murphy, Denver, Colo. The object of the invention is to provide an improved lock designed for use on bicycles and other machines, and arranged to protect the owner of the article from theft, both by locking a movable part and by rendering the removal of the entire lock impossible, without leaving traces on the article. Stolen property, by this means, can be readily identified.

Miscellaneous Inventions.

ANIMAL-YOKE.—George Lang, Billings, Oklahoma Territory. The yoke is provided with extensions which are designed to be entangled with or brought in contact with a fence whenever the animal attempts to cross the fence. Rocking-bars are employed bearing barbs which, when the "poke," as it is often called, strikes the fence, cause the shaft to rock and thrust the barbs into the neck of the animal to deter its further progress. Stock can be kept in an inclosure with only one wire; and barbed wire can be dispensed with altogether.

RAM.—George A. and Thomas F. Penrose, Meredith, Ark. The ram is intended to enable workmen conveniently to shift a rail longitudinally toward or from an adjacent rail. The ram comprises a clamp adapted to be fastened to one of the parts to be operated on. A lever is fulcrumed on the clamp; and a grip is mounted loosely on the other part but adapted to grip it firmly on being tilted. A link connects the lever to impart a tilting motion to the grip and bring the latter into a gripping position on its part. A plate, adjustably held on the grip, has a foot piece for holding the grip in a sliding position on its part.

BRUSH.—Julius C. Lüdke, Racine, Wis. The brush is made for the reception of soap and for the supply of a soap solution to the bristles. Hitherto the suds were allowed to run directly through the brush, so that the bristles were loosened. Mr. Lüdke has overcome the difficulty by providing lateral channels which prevent the suds from loosening the bristles.

AWNING.—Louis Wolf, Manhattan, New York city. The object of the invention is to provide an awning which can be easily manipulated, which is arranged to permit perfect ventilation, and which permits the head and main awning to be securely bound in closed position to render them storm-proof. The main awning is mounted on rods slidable in the window-frame. The head awning is provided with a base-frame, the side bars of which are pivoted on the slide-rods of the main awning.

WIRE-DRAWING MACHINE.—Moritz von Watzesch, Oberschoenweide, Prussia, Germany. The invention is a wire-drawing machine in which a vertical shaft driven from some source transmits its revolution to the wire-drum above, on which the wire drawn is to be wound. A friction-clutch is provided between the driving-gear and the vertical shaft so as to place the wire-drum entirely under the control of the operator. The friction-clutch is actuated by a lever mechanism regulated by a special mechanism.

ROTARY AMALGAMATOR.—Alfonso Z. Baldenebro, Mexico, Mexico. After escaping through the bottom of a channel, the material is spread upon a table, owing to the rotation of which, it runs down in spiral lines. During this travel it is subjected to the action of streams of water delivered from various nozzles, and also to the action of mercury. The amalgamated surface of the table will retain a very large proportion of the valuable material. The potassium cyanid will dissolve some of the gold, and the solution can be treated in any approved manner.

RUNNING-GEAR FOR VEHICLES.—Turner Byrd, St. Louis, Mo. The axles of this vehicle are so constructed that the ground-wheels can be firmly secured in place and that the axles, when connected with their beds, will have extended bearings and will turn with little friction. The front and rear axles are constructed in independent sections, having independent bearings and are adapted to axles of two, three, or four wheeled vehicles.

CONVERTIBLE HANDLE AND STRAP.—Alfred W. Furnivall, Astoria, Queens, New York city. The device comprises a strap designed to be folded upon itself and provided with clamping means at the ends of each fold, whereby the folds can be secured together. By this invention a strap can be adapted for use as a handle as well as for its ordinary use as a strap.

FORMER FOR GUTTER-HANGERS.—James E. Hynes, Hannibal, Mo. The object of the invention is to provide a former for wire hangers, whereby a piece of wire can be quickly formed into the desired shape to produce a strong and durable hanger very cheaply. Little skill is required to form a piece of wire into a strong and durable hanger conforming in its bottom portion to the cross-section of the gutter, so that the hanger fits snugly on the gutter and also forms a brace on the inside of the gutter to hold it firmly and stiffly in position, without the use of the soldered brace heretofore employed.

HAIR-CLAMP.—William J. Koenig, Manhattan, New York city. The purpose of the invention is to provide a clamp which can be applied to braided hair so as to prevent the loosening of the braid. This end is attained by a clamp formed in two sections and provided with a rubber lining, which serves not only to engage and hold the hair but also to form a spring tending to open the two sections of the clamp, and further to prevent injury to the hair of the wearer.

ACETYLENE-GAS LAMP.—William F. Goeltz, William M. Gilbert and John Frain, Waterbury, Conn. By moving the body-cup upward with relation to the water-fount, a water valve is moved off its seat. By allowing air to pass downward into the water-fount, water flows to the carbid. The flow of water can be instantly checked by shutting the air-opening. By providing the carbid-receiver with a removable cover carrying the governor, it is obvious that the receiver can be thrown away after the carbid has been consumed, and a new receiver put in place, thus obviating the necessity of cleaning the receiver. The lamp is characterized by the simplicity and ingenuity of its construction.

Designs.

RADIATOR.—John F. Thomson, Manhattan, New York city. The design combines an auxiliary heating apparatus with a radiator of novel construction in order to obtain a greater heat-radiating capacity.

HANDLE FOR SPOONS, FORKS, AND SIMILAR ARTICLES.—Joseph Smith, Taunton, Mass. Six patents have been granted to this designer for handles to be used on forks, spoons, knives, and the like. The designs are all noteworthy for the artistic taste displayed.

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.

Business and Personal.

Notes & Queries

HINTS TO CORRESPONDENTS.

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.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(7898) H. G. D. writes: Having need of several small glass disks of a uniform diameter, I find the lathe much more expedient in cutting them than the method by hand. I cut the glass into squares a bit larger than the required diameter, and taking each in turn I place them against the face plate of the lathe, holding them in place by a piece of wood for a center and the usual tail stock for a bearing, with a common cheap wheel glass cutter clamped in the tool rest. I had no difficulty in getting a clean, even cutin every case. The swing of the lathe seems to be the only limit to this method and the time consumed is less than that required to make a pattern by the ordinary method.

(7899) J. W. E. asks: 1. What in your opinion causes stripping or peeling of nickel plating? A. The usual causes are too strong a current, too acid a bath, or insufficient cleaning and pickling. 2. Is there any loss or waste of nickel in the electric bath? A. There should not be any waste in the action of the current upon the bath. 3. Is there anything with which the wires can be coated upon which the articles are suspended, so they will not become coated with nickel? A. Gutta percha covered wires will prevent most of the tronble. Greasy wires will not take a coating.

NEW BOOKS, ETC.

AMES ON FORGERY. Its Detection and Illustration. With Numerous Causes Célèbres. By Daniel T. Ames. San Francisco and New York: Published by the author. 1900. 8vo. Pp. 293. Sheep. Price $2.

This is the most entertaining law book we ever remembered to have seen. The author is a specialist, a well-known handwriting expert who has had over 1,200 cases come under his cognizance. So much now depends upon the slant of writing or a small break or change in the character that it behoves all lawyers to become acquainted with some of the phases of the subject; he can do this the best by a careful perusal of this book with its numerous cases.

DIE MODERNE CHEMIE. Eine Schilderung der chemischen Grossindustrie. Von Dr. Wilhelm Bersch. Parts 26-30. Vienna: A. Hartleben. 1900. Price per part, 70 cents.

With Part 30, Dr. Bersch's undertaking is ended. Reviewing the work as a whole, it cannot be denied that it embodies a clear, popular description of the most important chemical proce ses which are now used. The illustrations in the main are excellent; some of them have been taken from the Scientific American, notably those relating to the manufacture of Bessemer steel.

VON LOEBELL'S JAHRESBERICHTE URBER DIE VERAENDERUNGEN UND FORTSCHRITTE IM MILITAERWESEN. XXVI. Jahrgang: 1899. Herausgegeben von v. Pelet-Narbonne, Generalleutnant z. d. Berlin: Ernst Siegfried Mittler und Sohn. 1900. Octavo. Pp. 573. Price, paper, $4.

The Twenty-sixth volume of Von Loebell's "Jahresberichte" discusses the development of military science in the year 1899. The first part is devoted to a treatment of the changes made during the past year in the various armies of the world and includes a description of the South American forces, which, hitherto, found no place in the "Jahresberichte." The second part treats of military science, particularly of tactics, scouting and armament and likewise includes an excellent bibliography of military literature for 1898-1899. The last part is composed of critiques of the military events which occurred in 1898-1 99. Of particular interest to Americans is the discussion of the Cuban campaign of 1898. The criticisms made, although sharp, are nevertheless impartial; they are all the more valuable for their having been made by men who know whereof they speak. The Transvaal war is chronicled up to the retreat of Buller across the Tugela River, on February 8.

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