

RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

PLOW.—JOHN W. REAVES, Morgan, Ark. The invention provides a simple and effective means whereby cultivator blades or teeth may be arranged at one or both sides of a "bull-tongue" plow-blade or adapted for use in connection with the share of a turning-plow. The device is characterized by its simplicity and effectiveness.

Mechanical Devices.

WATER-WHEEL.—MARK A. BROWN, Douglas, Ga. The water-wheel is of the type in which the water operates upon a series of blades or buckets. On the bottom of a casing the motor-wheel is mounted to revolve. A shaft is held to rotate with the wheel, but is free to slide relatively thereto, and is provided at its lower end with a ball bearing below the bottom of the casing. Owing to the sliding connection of the wheel with the shaft, the weight of the machinery connected with the other end of the shaft is supported by the balls and the bearing. The operation of the wheel is not affected by axial vibration.

COMBINATION-TOOL.—FREDERICK C. ENGELHARDT, Manhattan, New York city. The tool is to be used by machinists for repairing articles of metal or wood. In standards supported by a base, a lathe-spindle is mounted. On its inner end the lathe-spindle carries a lathe-chuck. A holder, mounted to slide on the base, is provided with a box-receptacle constituting a socket to receive dies for cutting bolt threads. The box-receptacle has vertical grooves in its side walls, extends out through the bottom, and has horizontal grooves in the walls at the bottom, intersecting the vertical grooves. Set-screws in the side walls of the box-receptacle hold material in place.

PICKER MECHANISM FOR LOOMS.—EPHRAIM M. KEFFER, Hespeler, Ontario, Canada. By means of this invention the picker-stick and connected parts are prevented from being broken in case the picker-stick is accidentally locked against movement by the shuttle's lodging on the top of the picker, thereby preventing the picker-stick from actuating the picker and throwing the shuttle through the open shed.

CAN-LABELING MACHINE.—WILLIAM H. LEISTER, Westminster, Md. The cans are rolled along a chute or track and are successively operated upon. A portion of the adhesive material is applied to the can; and the can is then rolled upon a pile of labels, picking off the upper label by means of the adhesive material and then wrapping the label about the can, the other end of the label being pasted so that, as it is wrapped about the can, it will be secured in place. The novel features of the invention are an improved means of feeding the cans to the chute by means of receiving-tracks; a device which enables cans of different sizes to be labeled; a mechanism for regulating the rate at which the cans are fed; a device for applying a small quantity of paste to the can; a label-feeding mechanism; and a seaming appliance.

HOISTING-GRIP.—JOHN PIÉRY, Brooklyn, New York city. The hoisting-grip comprises a casing in which gripping-jaws are arranged and mounted to move toward or from each other in order to grip or release the cable. The jaws are provided near their upper ends with outwardly-extending ears or lugs formed with elongated slots. Pins or bolts extend through the slots. In the casing cam-levers are pivoted, the cam ends of which are adapted to move into or out of engagement with the jaws to grip the cable or rope. Links pivoted to the outer ends of the levers are connected with a hoisting device. Upon an upward pull, the links cause the levers to move the jaws into gripping contact with the hoisting rope or cable. The device is simple and durable in construction.

GRINDING-MACHINE.—FRED A. NYSTROM, Cosmopolis, Wash. The invention is designed to grind the faces of band-saw wheels and to render these faces true to insure proper running of the band. The machine comprises two oppositely-extending swinging frames, in one of which a grinding-wheel is mounted and in the other of which a pulley is held. Between the grinding-wheel and the pulley, gearing is arranged, whereby the former is operated from the latter. An adjusting device for the frame carrying the grinding-wheel is provided.

CLIP-FORMING MACHINE.—GEORGE E. SOPER, Kankakee, Ill. The invention relates to improvements in machines for forming or bending metal into U-shape to form clips while the metal is cold, thus saving the expense of heating and the extra work of handling hot metal. Manufacturers find it necessary to heat the stock before bending, so that when formed, the opposite members of the clip will remain parallel when cold; for, in the ordinary method of cold bending, the ends of the members spring out of parallelism. According to the present invention, the metal strip is so bent that, when finished, the side members of the clip will be spaced apart equally throughout their length.

FRICITION-BRAKE.—FRIEND N. and HARRY W. WHITCOMB, Barre, Vt. This friction-brake is designed for use on power capstans and other machinery. The mechanism comprises a brake-wheel; a split brake-ring having one end forked and carrying brake blocks on its outer face to engage the brake-wheel; and a shaft mounted in the forked end of the ring. An eccentric is secured to the shaft between the members of the fork of the ring, with its working face projecting beyond the end of the ring. The drum can be readily braked by turning the shaft to open or close the ring and move the blocks into or out of engagement with the brake-wheel.

DEVICE FOR EMPTYING TANNING-LEACHES.—BENJAMIN SYKES, Curwensville, Penn. The combined agitating and collecting device consists of a series of arms which radiate from a hub and which closely approach the inner face of the leach. Each stirrer-arm is provided with collecting-blades, the shanks of which are adjustably bolted to the stirrer-arms. These collecting-blades serve to plow the tan from the center of the leach and direct it to the sides, so that by means of the stirrer-arms it can be pushed to a discharge-opening.

Dental Inventions.

DENTISTRY.—AUGUST P. JOHNSON, Ada, Minn. The invention is an improvement in the construction and

attachment of pivot-teeth. The crown or artificial tooth has a symmetrical conoidal cavity. A post or anchor is baked in the crown and fixed in the center of the cavity. A convex, metal cap, made separately or independently of the crown and post, has a central opening adapted to receive the post and allow adjustment therein. The cap fits the cavity, whatever may be the adjustment of the crown. The crown can be set at an angle to the root, instead of in alignment with it, without affecting the accuracy of the fit. The crown has all the merits of the well-known Richmond crown with none of its defects.

DENTIST'S STOOL.—GEORGE B. MCKINNEY, Barry, Ill. This improved stool is so constructed that it will have a yielding or spring action laterally in any direction, the spring-section permitting this action being a portion of the standard or upright of the stool. The seat of the stool can be conveniently raised, lowered, and held firmly in adjusted position.

Vehicles and Their Accessories.

TRACE-LOCK.—THOMAS J. HALSTEAD, Dallas, Tex. The trace-lock consists of a ferrule adapted for attachment to a whiffletree, and a button carried by the ferrule, which button can be placed and held in either a horizontal or a vertical position and be operated by one hand as readily in the dark as in the light.

THILL-COUPLING.—WINSTON K. PENDLETON, Ocoee, Fla. The object of the invention is to provide a thill-coupling of comparatively few parts, easily detached from and attached to the axle, and with which the shaft or pole can be coupled quickly and securely. The pole is held by jaws having recesses at their upper ends. A base-plate extends beneath the axle, is connected with the jaws, and has an aperture near its rear end. A bolt extends loosely through the aperture near its rear end. A clip engages the bolt and extends over the axle. Ears on the clip are arranged to enter the recesses in the jaws. The shaft or pole is securely held from withdrawal.

HANDLE-BAR.—ALEXANDER BRES, Schenectady, N. Y. This bicycle handle-bar comprises the usual stem to which a head is secured having tubular ends in which fluted pins are inserted. The gripping-bars have their tubular ends interiorly fluted and arranged to fit over the tubular pins and into the tubular ends of the head. The gripping-bars can be readily raised or lowered and moved nearer together or farther apart to suit the convenience of the rider.

Railway Appliances.

RAILWAY-CAR CHOCK.—JOHN T. CONDON, Le Mars, Iowa. When cars are switched to a siding, it sometimes happens that, by reason of too great momentum or failure of the brakes, they will pass off the siding and on the main track again. The invention provides a simple device for preventing the cars from passing off the side track. The device consists of a lever-controlled, hook-shaped beak which can be lapped over the track to obstruct the car-wheels.

Miscellaneous Inventions.

FURNACE.—JOHN S. L. RODRICK, 101 Fifth Street, Washington, N. W., District of Columbia. A series of upright superheating-chambers encircle the fire-pot and combustion-chamber and discharge at their upper ends into pipes or supplemental flues which lead into the main heating-flues. By this construction a large number of superheating-chambers is provided, the heat from which flues may be directed into any desired one of the main heating-flues to increase the heat supplied to the main flue and to induce the heat up through the flue.

REFRIGERATOR.—CARL SANDER, Brooklyn, New York city. In this construction a door, when opened, will occupy a position in the compartment out of the way and will automatically cause a sliding support for material in the compartment to be carried out of the refrigerator so that the material is readily accessible. When the door is closed, the sliding support re-enters the refrigerator.

COTTON-VALVE.—GEORGE W. WILLIAMS, Waco, Tex. The invention relates to a valve for controlling the passage of cotton from the cotton-bin or warehouse to the elevator by which it is carried to the gins. The valve may be used in connection with an elevator consisting of two divisions, so that one division may be cut out while the other is in operation.

COMBINATION REAMER, TAP, AND COUNTER-SINK.—CARL BOENTGEN, Astoria, Ore. Mr. Boentgen has devised an improvement in tools for boring and reaming bung-holes in casks and threading the edges of the holes to adapt them for the reception of screw-threaded bushings having a lateral peripheral flange. The invention is embodied in two separable parts or tools which are constructed to be used separately and also co-operatively, so that one serves as a pivot-post or guide for the other during the formation of the counter-sink.

ATTACHMENT FOR FIREARM-BARRELS.—READ M. WASHINGTON and ALFRED W. CAPT, Dallas, Tex. The attachment is designed to modify or prevent the noise made when a weapon is discharged and to suppress the smoke almost entirely when black powder is used. The mechanism employed includes a deflecting-plate, a discharge-chamber with a discharge-opening, and a spring-controlled valve. When the bullet is discharged, the gases are deflected downwardly by the deflecting-plate, against the valve. The pressure of these gases forces the valve against the discharge-opening, so that the smoke is imprisoned until the pressure in the barrel is sufficiently reduced to permit the spring to open the valve.

SYRINGE.—CHARLES A. BUCKLIN, Manhattan, New York city. At the upper end portion of the syringe-barrel a hollow, enlarged, and longitudinally-tapered container is formed. The barrel is extended beyond the end of the container. A cup-shaped gland for the syringe-piston stem is adapted to engage with the barrel. A flange on the gland serves as a cover for the container, the flange and gland being integral.

BOOT-HEEL.—CHARLES E. KELLER, Los Angeles, Cal. The inventor has devised a yielding heel for boots and shoes, which heel comprises a rubber-pad to which a spring is attached. The heel is thereby rendered more

durable than if constructed entirely of rubber, and yet provides an effective cushion.

GOLD-SEPARATOR.—FRANK P. HOPKINS and LOUIS MANZKE, Spirit Lake, Iowa. Two rotary cylinders are inclined in opposite directions, one arranged above the other. The upper cylinders have two cylindrical screens of different mesh, and a gravel-screen. A chute feeds the pay-dirt from the upper cylinder to the interior screen of the lower cylinder. The coarse material from the upper cylinder is discharged into a rotary pipe and is then passed into a series of receptacles. An air-blast separates fine sand from the values passing into receptacles.

SURGEONS' CASE.—EMIL A. EDLEN, Moline, Ill. The purpose of the invention is to provide a case for carrying surgical instruments. Special attention has been paid to the provision of means for transporting the instruments safely and for permitting their convenient sterilization, as well as the sterilization of other material, such as gauze, bandages, and the like.

HOSE-COUPLING.—SHELDON JOSEPH, Columbus, and WILLIAM H. CLARK and WILLIAM J. CLARK, Salem, Ohio. The coupling is designed to be used where the internal pressure is less than the external pressure. One section of the coupling has within its head a metallic tubular extension separated from the contiguous surface of the head by an annular chamber. The other mating section of the coupling is provided with a flexible tube adapted to enter the chamber of the first-named section between the wall of the head and the tubular extension.

INCUBATOR.—JOHN MABUS, Minier, Ill. The purpose of the invention is to furnish a means for turning eggs in an incubator without opening the cover. The incubator has a member movable longitudinally to turn the eggs and movable transversely to be passed in and out of the incubator. Combined with this apparatus is a reciprocating-bar to which fingers are attached, which engage lugs or projections on the members of the incubator.

HAT-SIZE INDICATOR.—ABRAM B. LUSTIG, Manhattan, New York city. The indicator has separable sections, each of which corresponds with one of the hats in a box. If a hat be removed from the box, the corresponding section of the indicator may be detached, the remaining portion of the indicator thus showing not only that one hat has been taken out, but also what sizes are still left.

SAW.—RALPH ROCKWELL, Oracle, Arizona Territory. The top and front portion of this buck-saw are made of a single length of material having a channel along its top or outer portion. A back or handle portion extends above the top of the frame. To this upward extended portion a tie-rod is attached, which is carried through the slot of the front and then through an opening in the front near its lower end. A frame thus made is light and strong. The usual lateral vibrations are obviated, since the frame consists of but two sections connected by the handle.

LIFE-PRESERVER.—PASQUALE ANGELLIL, 27 Mulberry Street, Manhattan, New York city. The life-preserver consists essentially of two parts, a carbid receptacle and a water compartment, communication between the two being cut off by a spring-pressed valve held in a normal, closed position by some filling soluble in water. When the preserver is in use, sea-water dissolves the filling, thereby removing the resistance to the valve-spring and opening the passage between the carbid and water receptacles. The acetylene gas generated serves to inflate the life-preserver. The parts can be separated whenever they are to be cleaned.

Designs.

BOOK-HOLDER.—EDWIN S. WOHR, Geneseo, Ill. The base of the holder is a parallelogram with laterally and vertically extending supports for the books.

GAME-BOARD.—JAMES L. ROBERTSON, JR., Manhattan, New York city. The design provides a miniature football game-board furnished with figures upon which the various plays are indicated, such as goal from the field, end play, tackle play, center play, kick off, answer to kick off, goal play, return kick, and answer to kick.

NOTE.—Copies of any of these patents can 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.

NEW BOOKS, ETC.

PRELIMINARY REPORT ON THE STRUCTURAL AND ECONOMIC GEOLOGY OF MISSOURI. Jefferson City, Mo.: Bureau of Geology and Mines. 8vo. Pp. 259.

The reports of the Geological Survey of Missouri are always excellent, and the present one is no exception to the rule. We regret to note that Dr. John A. Gallaher, the State Geologist, died recently.

AMERICAN METAL MINING—GOLD. By Theodore F. Van Wagen, E. M. Denver, Col.: H. R. Van Wagen & Company. 1900. Pp. 20. Price 15 cents.

TABLES OF PLATE AND RIVET VALUES, FOR THE USE OF BOILER DESIGNERS, BOILER MAKERS, ETC. By Thomas H. Craft, Cleveland, Ohio. Three-fold table.

ENGINE TESTS. By George H. Barrus, S. B. New York: D Van Nostrand Company. 1900. 8vo. Pp. 339. Price \$4.

The volume embraces the results of over a hundred feed water tests and other investigations of steam engines, conducted by the author. It is believed that the data here presented will prove of value to the engineering profession and to owners and intending purchasers of steam plants and to any who are interested in the economical production of power. The tests are fully described and the data presented is elaborate. The book is a solid contribution to the literature of steam engineering.

MUNICIPAL IMPROVEMENTS. A Manual of Methods, Utility and Cost of Public Improvements for the Municipal Officer. By W. F. Goodhew, C. E. Third Edition. Illustrated. New York: John Wiley & Sons. 1900. 12mo. Pp. 207. Price \$1.75.

The aim of the writer of this work has been to assist members of municipal councils, etc., in obtaining a good perspective view of the general plan and scope of various public improvements contemplated during their administration. The trend of the education of all such persons has usually been along other lines, but there is no reason why they should not have an intelligent grasp of the broad facts relating to the municipality, so as to enable them to pass intelligently upon the various measures proposed and enable them even to initiate such measures.

PRACTICAL HINTS ON JOINT WIPING FOR BEGINNERS IN PLUMBING. New York: David Williams Company. 1900. 16mo. Pp. 66. Price 25 cents.

A practical series of articles have been combined and published in pamphlet form, and the book will prove useful to all plumbers and also to those who have occasion to do joint wiping on copper pipes, and on brass, iron, and tin pipes.

MEXICAN CUSTOM HOUSE TARIFF. English Translation from the Official Edition. Translated and revised by J. P. Taylor. City of Mexico: F. P. Hoeck & Co. 1900. 12mo. Pp. 180. Price \$2.50 United States currency.

A very useful book for all who have business with Mexico.

A HUNDRED YEARS OF GERMAN BRIDGE BUILDING. By George C. Mehrtens. Berlin: Julius Springer. 1900. Folio. Pp. 135.

This book was published for the Paris Exposition of 1900, by a number of German firms of bridge builders, and the edition is intended for the use of engineers who visit the Exposition. The subject is admirably treated, the illustrations are good and there are 195 half-tone and line engravings. A vast amount of information is given in the large volume. It is a very satisfactory contribution to engineering literature, and reflects great credit upon the firms concerned in its production.

ACETYLENE. A Hand Book for the Student and Manager. By Vivian B. Lewes, F.I.C. London: Archibald Constable & Company. New York: The Macmillan Company. 1900. 8vo. Pp. 97. Price \$7.

The author is a well known gas engineer who has contributed a large number of papers of great merit to the scientific press. The book which he has produced is one of the most excellent technical works which it has ever been our pleasure to review. The author's style is lucid and his treatment of the subject is most thorough and shows an intimate acquaintance with every detail of the subject. The publisher has done his part by printing the book beautifully, and the contents of the paragraphs are briefly noted in red ink marginal notes, adding a great deal to the value of the book. The half-tone engravings are excellent and well printed; in all there are 228 engravings. The book is divided into three parts—scientific, technical and a digest of legal enactments and English patents. One of the most interesting illustrations is a lamp post for an independent generator. In country districts this will undoubtedly prove of great value.

HOW TO MAKE AND HOW TO MEND. By an Amateur Mechanic. London: Swan Sonnenschein & Company, Limited. New York: The Macmillan Company. 1900. 16mo. Pp. 288. Price \$1.25.

The book has no Preface and the arrangement is entirely alphabetical. It tells how to make a number of simple articles such as electric bells, toy balloons, boats, butterfly cabinets, how to clean carpets, plaster casts, how to draw curves, how to do dyeing, egg blowing, to tie knots and many other subjects of the same general kind. The material is most heterogeneous, but the book will probably prove of value to amateurs who wish to do little odd jobs around the house.

PREHISTORIC IMPLEMENTS. A Reference Book. By Warren K. Moorehead, assisted by others. Cincinnati, Ohio: Robert Clark & Company. 8vo. Pp. 429, 621 figures. Price \$3.

The author antagonizes the reader at once by stating that there are twenty-seven men who may be considered as scientific archaeologists, and that there are twenty-three others connected with museums, in various capacities, and it is from the reports and other publications of these twenty-seven authors that much of the information printed in this book has been obtained. The book is very well illustrated and the engravings show 3,000 specimens. The author states that 5,450 persons in the United States and Canada are more or less interested in the study of prehistoric archaeology, Mr. Moorehead having kept a card index of such persons. To them the book will undoubtedly be of considerable interest, and it will tend to inform the student and beginner, and stimulate the study of implements in museums and private collections.

HYDRAULIC POWER ENGINEERING. By G. Croydon Marks. New York: D. Van Nostrand Company. London: Crosby Lockwood & Son. 1900. Pp. 360, 200 illustrations. Price \$3.50.

This work may be regarded as a successor to a smaller volume of the same author on "Hydraulic Machinery." In the present book an attempt is made to give an outline discussion and description of the main points and principles requiring attention by engineers having the responsibility of designing or constructing works and appliances for the utilization of water for the transmission of power. It is an elaborate treatise and is well illustrated. The author understands the subject thoroughly and is able to present recent practice.