

## RECENTLY PATENTED INVENTIONS.

## Agricultural Implements.

**CORN-HARVESTER.**—PAOLI B. HORNER and CLARENCE E. HEDRICK, Clements, Kan. The heads of Kaifir corn ripen long before the fodder is ready to be harvested; and if the heads are left on the stalks until the fodder is fit for cutting, the seed shells off. The present invention provides a machine which is adapted to gather the heads at the proper time, leaving the stalks to mature. The machine is capable of adjustment for cutting tall or short stalks and of being worked by a single horse with one driver. When the machine is in operation the cutter may be elevated or depressed to top stalks of unequal height.

## Electrical Apparatus.

**ELECTROMEDICAL APPARATUS.**—MARCUS L. WHITFIELD, Memphis, Tenn. In apparatus for the treatment of diseases of the body, it has been impossible to obtain good results, because the current used was generated by outside means and passed into the body, so that it was conducted by the blood and not by the diseased portions, except those over which it had to pass on entering or leaving the body. By means of this new apparatus the entire body or any desired part can be treated by causing induction to take place in the diseased part, so that every particle of the body when placed within the influence of a changing magnetic field, interrupts lines of force to generate electricity and to form a conductor.

**BURGLAR-ALARM.** DANIEL L. WARTZENLUFT, Kutztown, Penn. The wires of the circuit of the alarm extend across a window or door. One of the wires carries a circuit-closer. Auxiliary circuit-closers have connection with the wires and comprise spring-pressed levers mounted on insulated plates with which levers the wires are connected. Spring-pressed contacts carried by the window-sash, have electrical connection with the plates. The circuit is closed and the alarm automatically actuated by the breaking or jarring of the window-pane, door panel, or transom across which the wires are stretched.

**TROLLEY-POLE.**—SILAS VERNON, Toronto, Canada. In ordinary trolley systems, in which the rail is used as the return conductor, the current leaks and destroys by electrolysis the neighboring water and gas pipes and the steel foundations of large buildings. The company also loses much by the leakage of the current into the ground. As the inventor of this improved trolley-pole employs a separate pole for the incoming current and a separate wire for the outgoing current the defects referred to are remedied. The pole may be readily applied to cars employing the present device.

**RESISTANCE.**—HUGO HELMBERGER, Thalkirchen, Prussia, Germany. The resistance consists of a non-conducting backing or supporting-plate and a facing of metallic foil impressed upon or into the plate. The resistance in addition to solidity, simplicity, cheapness of construction, and compactness, offers the advantages of a high electric resistance and of the greatest possible heat-radiating capacity.

## Mechanical Devices.

**KNITTING-MACHINE.**—MAX SALDIN, 400 Wool Exchange, Manhattan, New York city. This inventor has devised an ingenious attachment for straight knitting machines, by means of which mittens, sweaters, gloves, and other articles of wearing apparel can be knitted in such a manner that either single or separate tubular portions can be knitted at the same time. For example, in a mitten the wrist portion can be first knitted and then the thumb and finger portions, simultaneously, and properly spaced. In a sweater, the body can be knitted up to the sleeves, the two sleeves simultaneously, and finally the remaining body portion. The attachment has been in successful operation for several months.

**WIRE STRETCHER.**—JAMES S. SMITH, Beebe, Ark. The wire-stretcher comprises a lever pivoted between its ends. At one end of the lever stretching-hooks are pivotally connected, which are adapted at their free ends to engage the stretching-chain. A supporting guide-ring depends from the lever between the two stretching-hooks, through which the chain may freely pass. In addition to its usefulness as a wire-stretcher the invention will be found of service in stretching and splicing the separated ends of barbed wire.

**BALING-PRESS FOR COTTON.**—MORRIS R. MITCHELL, Jonestown, Miss. The invention is applicable both to up and down packing, single and revolving presses, and to other presses to which it may be adapted. Its purpose is to weigh the lint as it is put in the press, by the pressure exerted by the trampler in forcing it down of up against the block or movable end piece, and by the consequent recession of the springs supporting the end piece. The operator is notified by the ringing of a bell, to stop the tramping when the desired weight of bale is secured.

**WRENCH.**—GUY L. RAY and WILLIAM PEAK, Ourfay, Col. To the handle of the wrench a ratchet-ring is eccentrically pivoted, which ring is provided with circular series of teeth the opposite sides of which are radial to the pivot of the ring. Pawl devices engage the ratchet-ring and can be set to adjust the wrench to turn the head in either direction. The jaws slide radially in undercut seats in the head to adapt the wrench to different sizes of nuts or bolts.

**MACHINE FOR CLEANING VEGETABLE FRUITS.**—MANUEL A. TORRE, Merida, Mex. Connected with a scutching-wheel are peripherally-grooved disks arranged with their peripheries in register. Belts engage the grooves to hold the material. The scutching-wheel is caused to operate first on the lower part of the leaves and then on the upper part. The disks and belts are so arranged as to allow the upper and lower portions of the leaves to be brought successively into the path of the scutching-wheel.

**STONE-SAWING MACHINE.**—JAMES S. YOUNG, Barre, Vt. This improved stone-sawing machine is especially designed for sawing granite, marble, or other stone blocks used principally for monuments. The machine is arranged to cut the blocks in such a manner that the center portions become detached as solid blocks for use as monuments or other purposes. The machine

also serves to make angular cuts. A number of saw-beams are pivoted at their ends to rock; and each carries a number of ained saws bodily movable transversely. The beams can be locked in position.

**POLISHING DEVICE.**—JOHN B. BUCHANAN, Newark, N. J. The device is designed to clean metal buttons or similar ornaments, while still secured to the garment, without injury to the material. The device may be readily applied and locked in position around the garment, so that the polishing member of the device may be conveniently operated and carried into or out of engagement with the button, without interfering with the position of the body of the device.

**COFFEE OR GRAIN MILL.**—CHARLES U. FARRAR, New Orleans, La. The mill comprises a casing in which grinding-wheels are mounted to rotate. One of the wheels is provided with a shaft; and the other has a hollow hub fitted to slide on the shaft. One wheel can be held non-rotatable relatively to the other. A nut rotatable in fixed bearings on the casing has right and left hand threads engaging corresponding threads on the shaft and hollow hub, whereby the grinding-wheels may be simultaneously adjusted toward and away from each other.

**LIFTING JACK.**—LEVI C. VICKREY, South Bend, Wash. The object of the invention is to provide means for controlling the pawls upon lifting-jacks, so that they may be readily shifted to lift or lower the ram, or for freeing the pawls entirely from the ram. Two pawls are adapted to engage the teeth of the ram; and a spring acts upon both pawls to hold them in engagement with the ram. An adjustable controlling-lever and spring connections from the controlling-lever to the pawls are provided, whereby the action of the spring between the pawls may be neutralized.

## Miscellaneous Inventions.

**APPARATUS FOR RAISING BITUMINOUS SAND FROM WELLS AND SEPARATING BITUMEN FROM ITS IMPURITIES.**—AUGUSTUS S. COOPER, San Francisco, Cal. In drilling for oil, maltha-bearing sands are often encountered. The viscosity of the maltha is such that the tools soon become so thickly coated that they can no longer be operated. Generally the maltha superposed on a more liquid bitumen is too thick and viscous to pump; but even when it can be pumped so much fine grit is entangled within its sticky folds that the pumps are soon worn out. Previous methods for removing the maltha have been unsatisfactory and profitless. In this new process hot water is employed, whereby the viscous bitumen is rendered more liquid, so that it separates from its impurities. These impurities sink and the floating bitumen can be readily skimmed or decanted.

**PUMP-VALVE STEM.**—PERRY S. HOUGHTON, Lindsey, Pa. The stem is provided with a central rod for attachment to the valve-seats. On the rod are sleeves, each forming a bearing for a valve. A collar held on the rod is adapted to be seated on one of the valve-seats and to form a rest for the upper sleeve. The inventor states that the stem is not liable to bend or bind the valve in its opening; the wearing surface can be reversed to give long life to the stem.

**CAN-OPENER.**—GEORGE ROBINSON, Pahiatua, Wellington, New Zealand. The device can be applied to cans of different shapes and employed to seal the body hermetically to the top or cover. The can opener is made of one or more strands of wire and is so formed that when one of its exposed ends is grasped, it will be gradually detached from the can body and cover, and the two parts will be completely and cleanly separated.

**EYEGLASS-CASE.**—WILLIAM M. PURDY, Manhattan, New York city. The purpose of this invention is to make a case of that kind which is open at one end, which is constructed mainly of flexible material, but which prevents bending upon transverse lines and serves to protect the clips. The outer walls of the case may be constructed of flexible leather, as in the ordinary case. But a core or stiffening-piece is inserted, which separates the two sides a sufficient distance to protect the clips and serves to prevent the case from bending and injuring the glasses.

**GARMENT-FASTENER.**—ARTHUR H. LOHS, Manhattan, New York city. This invention provides a simple means for securing the fastening device to a garment by the use of an anchoring-plate having teeth at its sides extended at an angle to the body of the plate. A keeper-plate at one end of the anchoring-plate is adapted to engage with the pin. A fastening device is provided for the anchoring-plate. The fastener can be secured to a garment without the use of thread.

**BUGGY-TOP.**—JOHN C. LAMBERT, Tonica, Ill. By reason of the construction provided in this invention, the canopy or top of a buggy may be raised and lowered without reaching to the outside of the top. Merely by a rearward movement of his body, the occupant of the vehicle is enabled to drop the top or canopy. The attachment consists simply of a bar arranged to secure the top at its back portion, the bar being provided with side-arms pivotally connected with the middle joints of the side or main braces. By pressing upon the top-back, the bar will break the middle joints of the braces; and the top will then drop.

**COMBINATION-TOOL.**—WILLIAM D. ARNOT, Fitchburg, Mass. In the construction of this tool are combined a depth-gage, external or internal square, a caliper-gage, and a caliper-rule. All these parts are so compactly arranged that the entire tool can be carried in the pocket.

**NEWSPAPER-FILE.**—PHILIP C. NEWBAKER, Danville, Pa. The file has two strips laid loosely alongside each other and formed each with registering longitudinal grooves receiving the paper and with additional registering longitudinal grooves. A flat bar is mounted in the additional grooves and is adapted to be turned to spread the strips. U-shaped springs embrace the back edges of the strips adjacent to the additional grooves and serve to hold the strips firmly in engagement.

**CURB-BIT.**—WILLIAM H. AUGHEY, Petroleum Center, Pa. The curb-bit is adapted for the use of both tender-mouthed and hard-bitted animals. The cheek-pieces of the bit are provided at their upper ring-sections with a central bar extending from the bottom of the ring to a point near the top. A curved cross-bar is

attached to the upper portion of the ring-section and connected with the vertical bar. A segmental bar curved in an opposite direction to the cross-bar is connected therewith at the ends and also with the lower portion of the central cross-bar, forming thereby a segmental slot at one side of the ring which receives the nose-strap of a vicious horse. Great purchase can be obtained upon the mouth of the animal by reason of this construction.

**STRING-PACKAGE.**—JAMES E. BELLER, Auditor's Office, Treasury Department, Washington, D. C. The package is essentially composed of a number of independent and disconnected string rings, each of which partially overlies the preceding or adjacent ring so that there is always an overlying or uppermost ring which can be lifted and removed without disarranging the others. The package can be conveniently stored and shipped.

**ASSAYING-FURNACE.**—ORLAND W. MARTIN and ADOLPH J. PETTER, Los Angeles, Cal. This combined assayer's furnace and muffle employs gaseous or vaporized fuel and requires but one burner for both the melting and cupeling chambers. The furnace is compact so as to be easily portable and is also adapted to rotate on a central pivot to permit firing at each end by means of one burner. The bottom of the smelting or crucible chamber is also made removable to facilitate cleaning the chamber and recovering bullion without the removal of any brickwork.

**AXLE-LUBRICATOR.**—HARMON D. MOISE, Sumter, S. C. The axle has its spindle provided with a longitudinal groove or channel. The inner end of the spindle has a reservoir fitted with a cover having a feed-opening and cap. Within the reservoir opposite the opening is a shoulder or bearing for the oil-feeding wick. A simple and novel construction is therefore provided to utilize capillary attraction in feeding the oil from the reservoir to the strip lying along the spindle.

**HOG-CATCHER.**—JESIAH B. HERR, Norton, Kans. The hog-catcher consists of a hook composed of a length of wire twisted together. In connection with the hook a latch and cord are used. In operation the latch is opened and the hook is caught over the animal's leg; the latch is then closed by the cord, thus tightly grasping the leg and securely holding the animal.

**CLOTHES-DRIER.**—BRUNO KIPPELS, Moorhead, Minn. Connected with a post having eyes in vertical alignment are a series of detachable, rectangular frame-sections, one of whose vertical bars has hooks and the other two eyes correspondingly arranged, whereby the sections are adapted for pivotal attachment to the post and to each other.

**WRITING-CASE.**—RICHARD M. DENZIG, Elkhart, Ind. The writing-case is constructed to hold bills, letters, or documents. The cover automatically locks itself to the case when closed. When the cover is closed, the entire case resembles a book. The lock used is a simple form of keyless lock.

## Designs.

**PILLOW-TOP.**—RAFFAELLO ASTARITA, Manhattan, New York city. This designer has secured patents for five novel pillow-tops which are noteworthy for the fitness of feeling displayed. The drawings accompanying the specification were made by the designer himself and are certainly striking examples of artistic designing as well as excellent draftsmanship.

**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.

## NEW BOOKS, ETC.

**GESCHICHTEN VOM RHEIN.** Erzählt von Menno Stern. New York, Cincinnati and Chicago: American Book Company. 1899. 12mo. Pp. 272.

No stream in Europe has figured so prominently in folk-lore or is of such historic interest as the River Rhine, and the legends which cling to it constitute an inexhaustible mine of material for German story writers. That Mr. Stern should have collected these tales for the use of his students in German, speaks well, both for his judgment as a teacher and as an author; for they are undoubtedly excellent material for conversation and composition in the classroom as well as of considerable interest to those who have traveled along the Rhine. The legends have been told with a certain delightful simplicity which impart to them a literary merit second only to their educational value.

**A B C OF BEE CULTURE.** By A. I. Root. Revised by E. R. Root. Medina, Ohio: The A. I. Root Company. 1899. 8vo. Pp. 437. Price \$1.25.

This is a veritable encyclopedia of everything relating to bee culture, and it has reached the unprecedented sale of 67,000 copies. The book is filled with illustrations showing every construction of hive and utensil used by the bee culturist. All terms are accurately defined and there are many illustrations of bee farms. It is a most interesting book even for those who are only indirectly interested in bee culture.

**JOURNAL AND PROCEEDINGS OF THE ROYAL SOCIETY OF NEW SOUTH WALES.** Sydney, N. S. W. 1898. Pp. 268.

The volume is accompanied by a number of plates and is composed of various papers read by members of the society. It is interesting to note what is being done with science, in what we are apt to consider an out-of-the-way part of the world.

**LABORATORY MANUAL. Experiments to Illustrate the Elementary Principles of Chemistry.** By H. W. Hillier, Ph.D. New York: The Macmillan Company. 1899. Pp. 100; 100 blank pages.

This book is written for the use of college students of general chemistry. The experiments are admirably arranged. The directions are concise and the questions asked are reasonable and will tend to give the student an excellent idea of what modern chemical laboratory work really means.

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(7758) J. W. writes: 1. I have looked in vain in your SUPPLEMENT catalogue (ed. of 1897) for a good illustrated article on the telegraph sander. If there is such a SUPPLEMENT or book giving a complete list, with illustrations, I should like to know it. A. We do not know where you can find a description of a telegraph sander with directions for making it. It is a very old instrument. Call upon the local telegraph operator. He will doubtless allow you to examine and measure a sander, and will tell you what wire it has upon it. You can then make one like it. 2. Can magnetism be refracted like light or sound? Is it possible to stop or at least considerably diminish its strength when made to pass through certain substances? Are there such substances? Which, if any? A. Magnetism has never been refracted like light. It is not supposed to be due to vibrations as light is, but to vortices in the ether of space. We are not prepared to say that it cannot be refracted. It is not possible to stop or diminish its strength. It is possible to put iron in the paths of the flow of the magnetism. The magnetic lines pass with greater ease through iron than through any other substance. They therefore leave the air or other substance and go into the iron. The space within the iron is found to contain no lines of magnetic force. Iron is the only substance which can do this.

(7759) E. R. A. writes: 1. I have started to make a 2-inch spark coil, primary wound with No. 14 wire and secondary of 2½ pounds of No. 36. Such a design is for a battery to work. I would like to know if I could not use a second primary over the first (that is the No. 14 wire) so as to use the coil on a 110 volt incandescent lamp circuit, with a Wehnelt interrupter, or use the battery at will. What size and how much wire will be necessary? A. In order to use a Wehnelt interrupter upon your coil you will not need a longer primary. If you need to make any change, it is to replace your primary with one wound with No. 12 or even No. 10 wire for either a battery or the higher voltage current of the street. No. 14 wire is rather small. You will need to wind two layers of wire for the primary. The Wehnelt interrupter is put into the circuit without other resistance. 2. Can you tell me where I can get some of the metal potassium for experimental purposes? A. The metal potassium can be had of any dealer in chemicals. A druggist would obtain it for you.

(7760) W. I. W. Co. ask: Could you inform us what the mixture is for zincs for potash batteries, the kind of acid they should be cleaned with, also where we can buy the mercury? A. The zinc for any battery may be either cast or rolled of a size to fit the jar selected. To amalgamate a zinc.—Take sulphuric acid and pour one gill into ten gills of water. Do not pour the water into the acid. Wash the zincs in this mixture with a cotton swab. Then rub mercury over the zinc till it is coated. If there is any trouble in making the mercury adhere, put the zinc into the acid wash again. You can buy mercury through any apothecary. Be careful to keep the mercury away from contact with anything except the zinc.