

## RECENTLY PATENTED INVENTIONS.

## Agricultural.

**MOWING MACHINE.**—William O. McGee and Charles L. Downing, Gallatin, Mo. In this machine the gearing is reduced to a minimum, the machine having but comparatively few parts, and being light and strong while yet designed to be highly effective. It has a forward drop frame carrying a cutter bar with elongated eye, and a sickle shaft having an eccentric working in the eye of the cutter bar, there being beveled gearing between one end of the transverse shaft and the sickle shaft, while a pinion on the other end of the transverse shaft meshes with a driving gear on the axle, there being a shifting lever connected with a pivoted foot lever conveniently reached from the driver's seat.

**CORN PLANTER.**—James K. Patterson, Crete, Neb. An automatic dropping means for corn planters is provided by this invention, comprising an auxiliary frame hinged to the rear frame of the planter and carrying a shaft rotated by a wheel which rests upon the ground when the frame is dropped to horizontal position, but which clears the ground when the frame is raised. Contact arms fixed upon this shaft and on a longitudinal shaft coaxial to reciprocate a dropping mechanism, the distance between the hills being determined by the diameter of the wheel which contacts with the ground when the frame is dropped and by the number of the arms.

**FERTILIZER DISTRIBUTER.**—Walter T. Johnstone, Macon, Ga. To more effectively distribute guano and other fertilizers upon the soil, this invention provides a new agitating device for stirring the fertilizer while the machine is in motion, the agitator having propulsion blades designed to pulverize the material so that it will be distributed upon the ground in a loose or separated condition. One of the blades of the agitator wheel, when the machine is in motion, pushes the guano over the discharge opening of the hopper, and the next blade pushes the guano in the opposite direction, thus insuring an even and positive feed, the machine being readily adjustable to limit the amount of fertilizer to be distributed.

**MARKER FOR PLANTERS.**—Reuben I. Brundage, Cairo, Neb. This invention provides an attachment for planters which can be shifted from side to side and brought into action at either side of the machine with two motions, its adjustment being effected without stopping the team and without the driver dismounting. The marker is of simple construction and readily adjustable, and may be raised to clear an obstruction while the planter is in motion, and dropped immediately after passing the obstruction.

## Bicycles, Etc.

**BICYCLE BRAKE.**—Elmer E. Robison, Anger, O. This brake is applied by holding back on the pedals, or back pedaling, there being fixed to the end of the crank hanger adjacent to the fixed crank a circular disk having an outwardly bent annular flange, with which brake shoes are brought into engagement by the toggle action of links actuated from the pedal crank when back pressure is exerted upon the pedals, springs moving the brake shoes out of contact with the flange when the back pressure is relaxed.

**SKIRT GUARD.**—Caroline E. Miller, Minneapolis, Minn. This is a device designed to be arranged upon a bicycle to protect the skirt of a female rider from the wind. It comprises a wire frame adapted to be secured to the front brace of the bicycle frame and extend laterally at each side, the frame having a cover consisting of two sections, one of which has a flap below the frame at the center, and is designed to lap over and button to the adjacent portion of the other section. The shape of the frame is such that it is not likely to bend under the wind pressure, and the cover may be of any suitable light material, as rubber gauze or similar fabric.

## Mechanical.

**GANG PUNCH.**—Levi Fisher, Brantford, Canada. To facilitate the ready adjustment of punches and dies according to the work in hand, and locking them in position to insure proper punching, this invention provides a punch stock fitted in a head, and adapted to carry a pressure pin engaged by the punch and a coupling screwing on the punch stock for pressing the pin in engagement with the head, as well as for clamping the punch stock in place on the head. Longitudinally split dieholders are arranged to receive and hold the dies, being fitted loosely in a groove formed in the base block while a pressure bar fitted in the groove engages with its inner beveled edge the forward faces of the dieholders. With this improvement a wide variety of work may be done without special and separate attachments.

**EYELLET PUNCHING MACHINE.**—Thomas A. Perrins, Ansonia, Conn. In this machine a stripper plate is employed having holes for the cutting punches and openings fitting the eyelets to be cut, with sections of its under surface before and after the section containing the punch holes raised or offset from the perforated sections, while there are presser plates beneath the raised parts of the stripper. The sheet is fed to the punching press with the barrels of the eyelets up, instead of down as heretofore, this being designed to produce a smoother and handsomer eyelet, while the quality of the product is not affected by the size of the eyelet, a small eyelet being as readily and perfectly produced as a larger one.

## Miscellaneous.

**HORSE RACING.**—James F. Harding, Port Deposit, Md. A convenient and readily adjustable means for quickly affixing the race track number for horses to the sleeve or shoulder of the jockey riding each horse is provided by this invention, the device being in charge of and attended to by each jockey instead of necessitating the attention of the judges, etc., with the attendant delay. It consists of a frame or holder, to be attached to the seam of the coat at the shoulder by a hook and a rubber band, the frame holding a series of numbered disks, and having an opening through which

the number on any exposed disk may be plainly seen, the arrangement being such that the rider can readily change the disks to present to view the desired number.

**ELEVATOR SAFETY STOP.**—Eugene X. Genoud, Newark, N. J. To stop an elevator in case of the breakage of the suspending cable, according to this invention, racks are fixed at the sides of the elevator well, and levers pivoted on the cage carry gear wheels adapted when the levers are swung outward to engage the racks, springs acting to make firm such engagement of the wheels, and there being a restraining connection between the wheels and the elevator supporting mechanism.

**WATCH PROTECTOR.**—Benjamin Greenberg, Boston, Mass. To securely hold a watch in its pocket so that it cannot be removed by a straight pull upon the watch or chain, but only by a special action on the holder, this inventor has patented a device comprising two opposing plates which embrace the watch, their bottom edges connected by a spring and one of the plates having a flange on its upper edge, with a notch accommodating the watch stem, while on the other plate are pins adapted to engage a garment pocket. To free the watch, a thumb or finger must be used to partially open the plate casing.

**CAN HANDLING DEVICE.**—Asmus Jensen, Louisville, Ky. To facilitate moving cans, jars, buckets, etc., from high shelves or other places out of convenient reach, this invention provides a pole with end bracket on which tongs are pivotally mounted, a link being pivotally connected to each shank of the tongs and with a pull rod extending to the other end of the pole, where it is adapted to be engaged by a rack.

**CURTAIN STRETCHER.**—James J. Oliver, Brooklyn, N. Y. To facilitate the stretching of window curtains or other draperies, in drying or for other purposes, this invention provides a stretching frame having side rails and a bottom rail, each side rail having an attached guide plate, while beads are secured to the bottom rail, yokes being attached to the beads and embracing the guide plates, and thumb screws carried by the beads engaging the guide plates to hold the parts rigidly.

**SUPPORT FOR CURTAIN POLES, ETC.**—John Kroder and Henry Reubel, New York City. This support consists of knobs adapted to be screwed into the window casing, one end of the pole or rod fitting snugly into a recess in one of the knobs, while the other knob has an elongated recess formed by two bores, into which the other end of the pole or rod may be passed, being locked in position by turning the support into proper position, although the pole or rod may be readily removed when it is desired to remove or replace the curtains.

**SHUTTER FASTENER.**—John C. Steelman, Linwood, N. J. This is a simple device for securely holding a shutter in open position, consisting of a bracket to which is pivoted a forked keeper having an apertured extension in which is a lug, there being also a lug on the inner portion of its body and a latch pivoted to the bracket in rear of the keeper. To release the shutter, one simply swings the catch upward. The device is inexpensive and does not mar the lower edge of the shutter.

**SMOKE, SOOT AND SPARK DESTROYER.**—George J. Terrell, Meriden, Conn. According to this invention, the chimney proper is closed at its upper end, from which a pipe leads to the lower portion of an auxiliary chimney, a circulating fan being arranged in such pipe, while a stand pipe in the auxiliary chimney connects with a suitable water supply and is furnished with spray nozzles, from which the water is directed downwardly and laterally in jets to cover the entire transverse area of the auxiliary chimney, thus wholly destroying the smoke, soot and sparks.

**GARMENT DRAUGHTING PATTERN.**—Marie Lucke, New York City. To facilitate the convenient and accurate draughting of ladies' seamless waists and skirts, with but a single seam in the body, this invention provides a waist pattern having an angular base on which is adjustably held a waist arm pivotally connected with a slide held adjustably on the base, a front arm being held adjustably on the slide, and there being an arm scye having two adjustable members, one adjustable on the slide and connected by links with the front arm, while the other scye member is connected with the shoulder measuring device connected with the back arm held adjustably on the base. The necessary graduations are arranged on all the adjustable parts.

**SASH LOCK.**—George A. Stedman, New York City. This invention provides improvements in locks to be attached to the upper rail of the lower sash and the upper surface of the lower rail of the upper sash to prevent the opening of the window. Attached to each sash is a plate having upwardly projecting arms which are sloping on their opposite sides, a link engaging each of these sides to prevent the moving of the sash from the outside. The device adjusts itself to considerable variation in the height of the sashes, from shrinkage or other cause.

**OPENER FOR ENVELOPES OR WRAPPERS.**—Frank E. Munn, New York City. According to this invention, the envelope is made with a small wire located almost wholly within and a small portion only visible on the outside of the envelope, a length of wire extending along the edge inside the flap, with its ends bent over and almost entirely covered, but with a small portion exposed, by taking hold of which one edge of the envelope may be torn open. The same principle is applied as a wrapper fastening, the wire being placed mainly between the wrapper and the material inclosed.

**FLOWER JAR.**—Stephen D. Engle, Hazleton, Pa. This jar is made of porous material, and with a cavity for the reception of water, the jar being so formed as to permit the roots and earth to be laid and held around its outer surface, thus presenting the appearance of a solid mass of earth and plants or a solid ball of vegetation. The roots and earth are held in position by wires, for fastening which projections are formed in the upper edges of the neck and in a socket at the bottom.

## Designs.

**PAIL.**—Ellen J. Joy, Stoops, Pa. This pail is larger at the top than at the bottom, and is designed for use in scrubbing and cleaning, etc., having in one side a fluted panel, like a washboard, on which the mop or scrubbing cloth may be rubbed.

**BICYCLE BAGGAGE CARRIER.**—A. J. Gilfillan and W. H. White, Eufeka Manufacturing Company, Nyack, N. Y. This carrier is a neat and inexpensive device readily attached by a set screw to the rear of the saddle support, and has tapering arms extending in opposite directions, on which a bag, satchel or other article may be conveniently carried and be entirely out of the way.

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## Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

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## Notes &amp; Queries

## HINTS TO CORRESPONDENTS.

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**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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(7376) C. S. asks for an explanation of the theory of how the variations in the pressure of the atmosphere affect the salts contained in what is known as the chemical barometer. A. The chemical barometer usually contains a substance which readily absorbs moisture from the air. Calcium chloride is often used. This grows heavier when damp and lighter when dry. If cobalt chloride is dissolved in alcohol and applied to paper or any other surface, it is blue or rose color when warm and dry and pink when moist. These changes are produced by moisture, and not by the pressure of the air. You will find these instruments described in Hopkins' "Experimental Science," price \$4 by mail.

(7377) W. G. W. asks: What causes the stretching force on the rubber cord of a return ball when swung about the hand—centrifugal or centripetal? A. It is the so-called centrifugal force, which is the amount of force necessary to bend the ball from a straight path at right angles to the cord at any moment into the circular or other curve in which the cord compels it to move.

(7378) R. W. M. asks for a receipt for something that will render wood battery cells acidproof. A. Mix together equal parts by weight of gutta-percha and paraffine. Melt them both over a water bath, melting the gutta-percha first. Have the wood dry and warm and coat the cells evenly with the heated composition. It may be smoothed with a hot iron.

(7379) W. A. M. asks: 1. What is meant by referring to an incandescent lamp as consuming  $\frac{1}{2}$  ampere of current? Is the consumption on the basis of  $\frac{1}{2}$  ampere per hour? A. A current flow of  $\frac{1}{2}$  ampere is necessary to bring the filament of a lamp to full incandescence. We speak of a current of 1 ampere as we would speak of a stream of water flowing in a channel 1 foot wide and 1 foot deep. This has no direct relation either to time or quantity of water. The quantity of water that will flow past a point in this channel is determined by the velocity of the stream and by the time during which it flows; so the quantity of electricity that shall flow through a conductor which is carrying 1 ampere depends on its pressure (volts) and upon the time. This quantity is reckoned in coulombs. A coulomb is the quantity which flows in 1 second when the current is 1

ampere, and the current will be of 1 ampere when the pressure is 1 volt and the resistance 1 ohm. The basis of charging for electric current used is the ampere hour, which is a current of 1 ampere flowing for 1 hour. 2. In regard to fuse wire, if a branch cut-out or other such device is fused to carry say 10 amperes, how should each side of the cut-out be provided—with 5 ampere fuses or 10 amperes on each side, as in the case of a double pole cut-out? A. With 10 ampere fuses, since the same 10 amperes which flows out one side flows back again on the other after it has done its work. 3. Is it practical to fasten armature core disks direct to the armature shaft with key and not insulate them from the shaft? A. Yes; that is the present mode of construction. 4. I had a 2 horse power shunt wound motor in service driving cut-off saw, when suddenly, after I had been using saw several days previous to this occurrence, the belt slipped off pulley on motor. Motor was stopped by me quickly, but when I attempted to start again in the usual way, the armature would not revolve as freely as before; in fact, it would stick on a certain side when this side would pass a certain point on the pole pieces, and we have never been able to use motor since. Since we found no short circuits or burned out coils in armature or fields, we are at a loss to understand this action and would thank you for an explanation to this, and also the other questions. A. It would seem as if the shaft were bent so as to bind at one side.

(7380) A. W. B. asks: 1. How long will plunge battery (as described on page 401, "Experimental Science") last if used about six hours a week to run motor  $\frac{1}{2}$  horse power? A. The duration of the plates in a plunge battery depends on the thickness of the zinc.  $\frac{1}{8}$  inch is a good thickness. These should last six months at least. The carbons never wear out. The liquid would require renewal each week. 2. Will not round stone jars answer as well for cells? A. The advantage of a square or rectangular jar is in the compactness of the battery. If that is of no consequence, any other form is just as good. 3. Would like to find out the cost to keep and maintain said battery. A. The cost depends only on the price of sodium bichromate, sulphuric acid, mercury for amalgamation and zinc at your place. This we do not know.

(7381) F. A. S. asks: 1. What size wire should the magnets of a relay that are about 1 inch long be wound with to work on a line of No. 12 galvanized iron wire  $\frac{1}{2}$  mile long, with ground return and some 200 feet of No. 18 office wire in the same circuit? A. Wind the relay magnets with No. 30 silk covered copper wire. It is hardly necessary to use a relay and local battery to work a sounder on a line only  $\frac{1}{2}$  mile long. The main battery at the ends of the line should be sufficient. 2. How many 6x8 Crowfoot batteries should it require to work the line with no other instruments cut in? A. Not more than six cells—three at each end of the line.

## NEW BOOKS, ETC.

**THE PSYCHICAL CORRELATION OF RELIGIOUS EMOTION AND SEXUAL DESIRE.** By James Weir, Jr., M.D. Louisville, 1897. Pp. 338. 12mo. Price \$2.

"The author of this monograph has been incited to its publication by the commendations of three of the most eminent critics and editors of magazines in the United States, to whom it was submitted in manuscript. In this essay he discusses his subject from a physio-psychical standpoint, and believes that he has kept intact the canons of scientific investigation, observation and discussion."—Extract from preface.

**THE HOUSE WARMING MANUAL.** Containing essays on steam heating, hot water heating, warm air heating. Arranged for publication by Sidney P. Johnston. Second edition. Chicago: The American Artisan Press. 1898. Pp. 270. 8vo.

Articles on steam heating, hot water and warm air heating, are included in this work. The heating engineer can find no field so fruitful of results as the study of current practice of the brightest of our practical heating men. The articles in this volume have been carefully selected from those submitted in The American Artisan House Warming competition from all sections of the country. These cannot but prove a valuable aid to those interested in this great and constantly widening field of technical endeavor. The book is illustrated with floor plans and elaborate estimates.

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## INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

MARCH 8, 1898,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

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