

## RECENTLY PATENTED INVENTIONS.

## Agricultural Implements.

**PLOW.**—WILLIAM M. TILLER, Point Peter, Ga. The plow consists of a standard composed of a bar bent upon itself at its middle to form opposite arms separated to produce a slot. A cross-bar is provided, bent at its central portion to conform with the standard and with an opening for the bolt, which secures a longitudinally-slotted bar to the standard. Drag-bars, provided with shovels, have at their front ends shoulders bearing in front of the cross-bar, and near these ends bolt-holes register with the longitudinal slot of the cross-bar. Bolts secure the drag-bar to the cross-bar; and the cross-bar is in turn bolted to the standard.

## Electrical Apparatus.

**ELECTRIC METER.**—PAUL EIBIG, Annenstr. 16, Berlin, Germany. This electric registering apparatus comprises a double-working mechanism with balance-lever adjustment in which the stationary current-feed coils act upon two pairs of tension-coils mounted on balance or double armed levers, and oscillating constantly under the influence of two clockworks, as in the case of horizontal pendulums. With a small amplitude, the action of the current-feed coils being such as either to attract or to repel the two pairs of tension coils. The difference thus obtained in the operation of the two clockworks serves as a means for measuring the amount of electricity used.

**VOLT AND AMPERE METER.**—JAMES D. ROSE, Victoria, British Columbia, Canada. The present invention provides a novel volt and ampere meter which is not affected by heat or atmospheric changes. The instrument comprises two air-tight cylinders or casings equal in capacity, with means for regulating the initial pressure in the casings. A resistance arranged in one of the cylinders or casings is adapted for connection with an electric conductor. The variations in pressure caused by the passing of a current through the resistance in one of the cylinders or casings controls an indicator.

**BINDING-POST.**—WILLIAM ROCHE, Jersey City, N. J. The post comprises a core screw-threaded exteriorly and slitted longitudinally from the end inward. The screw-thread extends inwardly beyond the inner end of the slot. A clamp or nut is constructed to screw on the core and has a funnel-shaped interior enlargement at one end of its bore. The slotted core is of service when it is desired to connect a wire with another which is already fastened at both ends, without detaching the fastened wire at either end. A clamping-nut works on the screw-threaded core and holds the wire against twisting or slipping, with no danger of breaking it.

## Engineering-Improvements.

**ROTARY ENGINE.**—WILLIAM F. JAMES, Quintana, Tex. The engine has a casing acting as the cylinder or steam-space, and a disk mounted on a shaft and rotating within the cylinder. The disk has a projecting piston filling the steam space, and the casing has a hinged abutment which drops down behind the piston and closes the steam space of the cylinder. A lug at the upper end of the abutment seats upon the casing and limits the inward swing of the abutment. The abutment and casing have a registering plunger and a receiving-recess, forming a dash-pot to check the seating action.

## Mechanical Devices.

**LOCKING OR UNLOCKING MEANS FOR EMERGENCY EXIT-DOORS.**—THOMAS E. HEWITT, 115 Newington Causeway, London, S. E., England. The invention provides a means for securing and releasing the emergency exit doors of public buildings, and has for its object to enable the door to be bolted both at the top and bottom, and yet to be instantly and automatically unfastened in case of emergency or panic, not only without the application of pressure against the door or its fastenings, but even without the exercise of volition on the part of the persons seeking to escape.

**FILLING-BOX FOR COTTON PRESSES.**—OLE A. THORSEN and JOHN E. SHUTT, Ganado, Tex. The filling-chamber for forming the bales before their insertion into the press, has its sides and ends separable. The sides are mounted on arms at one end. Pivots are provided at the outer ends of the arms; and links connect the arms near their pivots with the adjacent end section of the chamber, whereby the end section is moved outwardly by the swinging outward of the sides. By providing ball-bearings the sides are swung with little exertion. The boxes are firmly supported without using rollers or tracks.

**WASHING-MACHINE.**—JOHN W. FISHER, New Philadelphia, Ohio. The machine belongs to that class in which a reservoir provided with a corrugated surface, contains a rubber which swings over the bottom to wash the clothes. On the body portion of the washing-machine a cover is mounted with which links are pivotally connected. A rubber is pivotally connected with the cover; and a number of the links are slotted to permit the rubber to be swung on a pivot or to be moved up and down.

**BOX-SEALING MACHINE.**—JOSEPH T. CRAW, Jersey City, N. J. The object of this invention is to seal the flaps of paper boxes so that the snags or other granulated material contained in the boxes can not escape. The machine applies a sealing compound such as glue or gum to the top and bottom surfaces of a sealing strip or to a series of connected strips capable of ready separation. A casing is likewise provided, whereby one or more empty or filled boxes may be received and held and the sealing-strips simultaneously applied to all the boxes at one end, so that all the boxes in the casing at one end may be simultaneously sealed. The individual devices may be used either separately or collectively.

**SELF-WEIGHING SCALE.**—ALVA W. B. JOHNSON, Mount Vernon, Ill. The scale is provided with a scoop and with an elevator for removing the surplus material from the scoop. A motor drives the elevator, and a solenoid controls the connection between the elevator and motor. A clutch is provided comprising a spring-pressed member controlled by the solenoid and rotated by the motor. The other member of the clutch

is adapted to be engaged by the spring-pressed member and is geared with the elevator. As soon as the current is shut off in the solenoid, the clutch disconnects the elevator and motor, so that the momentum of the motor will not affect the elevator. The elevator will thus come to a standstill. The load in the scoop is, consequently, not reduced beyond the true load.

**MACHINE FOR GRANULATING TOBACCO.**—ARCHIBALD PICKEN, Roanoke, Va. This machine has a reciprocating cutter-head comprising a frame or carrier to which blades or cutters are secured, having their cutting edges stepped. Each step projects in advance of the preceding. A transverse cutter is likewise secured to the head. By the stepped construction, the tobacco is cut with three successive cuts, and is not disarranged as in other machines in which the whole cut is made at once by a single blade. As the cutter-head descends, the transverse cutter cuts off the portions of tobacco previously slitted by the upright cutter, thus securing the granulation desired.

## Railway-Apparatus.

**CAR.**—JAMES F. DUNN, Salt Lake City, Utah. The invention provides a construction involving a timber cap for protecting the ends of the draft-timbers in railway cars, by which means to prevent the timbers from being chafed and split, to which action they are especially liable during the use of the car. The invention also involves a peculiar arrangement of these caps with respect to the draft-timbers and sills of the car, so that an exceedingly durable and effective structure is attained.

**FROG.**—ABRAM VAN BRUNT, Brooklyn, New York city. Ordinarily when the points of frogs are broken, the whole frog must be removed and a new one inserted, which operation involves much expense and inconvenience. The present invention is designed to prolong the life of the frogs indefinitely and embodies features of construction by which the points of the frogs and crossings are rendered removable from the main portions so that new points may be substituted for old ones.

**DUST-GUARD FOR CAR-WINDOWS.**—HUGH B. SHUTTS, Shawneetown, Ill. Dust-guards for car-windows are usually made detachable and are not in position except when put in use. The present device is intended to be attached to the car-window at all times so that a passenger may operate it whenever desired. The guard is mounted at one side of a window-frame and sash to swing inward and outward. At one side of the frame and adjacent to the guard a lever is fulcrumed connected by a link with the guard. The device is folded inward by the engagement of the sash with the lever.

**AXLE LUBRICATOR, WIPER, AND DUST-GUARD.**—JAMES S. PATTEN, Equitable Building, Baltimore, Md. The means for applying the lubricator comprise rollers held in a frame pivoted transversely and centrally on a spring so as to allow due "play" of the rollers corresponding with the positions of the axle-journal. The means for wiping the journal and preventing the waste and escape of the lubricant include side-bars or wipers arranged laterally over the rollers and supported by springs, and spring-supported combined dust-guards and oil-baffles conforming with the required position for best performance of their function. The entire apparatus is the result of long observation and practical experience with devices for lubricating car and locomotive axles.

**PEDESTAL BRACE-BOLT.**—JAMES F. DUNN, Salt Lake City, Utah. The present invention provides an effective means for bracing the pedestal, which means may be readily removed in a downward direction without interfering with the spring-rigging of the locomotive. The pedestal jaws have slots formed in their lower ends and opening downward and terminating at their outer ends in recesses. A bolt extends through the slots. At each end of the bolt are means for drawing the bolt into operative position, these means also serving to enter the recesses in the pedestal-jaws to prevent the dropping of the bolt through the slots.

## Miscellaneous Inventions.

**PIPE-COUPLING.**—ARTHUR B. HENRY, Ormsby, and TIMOTHY F. MULLIN, Bradford, Pa. This pipe-coupling for gases and liquids has internally-threaded end sections and an intermediate smooth section. Annular grooves at the inner ends of the threaded sections receive packing-rings. Pipes screw into the threaded end sections of the sleeve and have their ends reduced to form annular flanges for fitting into the packing-rings. Shoulders abut against and press the outer side edges of the packing-rings. The coupling prevents leakage on expansion and contraction of the pipe and avoids injury to the packing by the crosswise action of the fluid passing through the coupling.

**DRAINING ATTACHMENT FOR VESSELS.**—LUCIUS A. DOBLE, Huron, S. D. The attachment is designed to hold the cover on a kettle so as to permit the water in which the food has been cooked to be drained off. The attachment comprises clamping members for engaging over the upper edge of a vessel, with which clamping members, brace members are connected, terminating in a handle. The clamping and brace members have interlocking loops adapted to be engaged by the bail of the vessel. A locking member is extended from the clamping member. The device can be adjusted to various sizes of vessels.

**WICK RAISING OR LOWERING ATTACHMENT FOR BURNERS.**—ROBERT W. MCFARLAND, Paulton, Pa. The invention provides a wick raising and lowering device especially adapted for use upon lanterns and capable of being operated from the bottom of the lantern. The attachment comprises a wick-spindle provided with a pinion which is received by a section of a hanger mounted to swing upon the burner and provided with a locking device. One end of a shaft is mounted in the hanger, the other end being loosely mounted in the base of the lantern. A gear is carried by the shaft, adapted to engage the pinion of the wick-spindle to raise and lower the wick.

**CHEESE-CURD AERATOR.**—CHARLES J. MOORE, Deer Creek, Minn. In warm weather it is a matter of considerable difficulty to cool cheese-curd to the proper temperature for pressing. It is the purpose of this in-

vention to provide an apparatus whereby the curd may be rapidly cooled and all poisonous gases removed. The apparatus in question is an aerator comprising a rotating cylinder with a hopper at one end for the passage of the material. A tubular shaft at one end of the cylinder is extended through the hopper and connected by a spider with the cylinder. Fingers on the shaft press the material through openings in the bottom of the hopper. A fan-shaft carrying a fan provides the necessary blast for the cooling of the curd and removal of impurities.

**SACK-HOLDER.**—ELI MONDEN, Rawlins, Wyo. The holder is designed to support sacks when receiving ore, grain, or any other material, and is composed of a frame open at one side, on which frame sack-supporting bars are mounted to swing both laterally and vertically. A hopper has swinging connection with one of the bars and acts to guide the material into the sack.

**EYEGGLASS GUARD OR CLIP.**—ROBERT KABS, Garretson's, Richmond, New York city. The guard or clip comprises a bracket-arm to which a sleeve is pivoted so that it can be laterally adjusted thereon. In the sleeve a body-plate is longitudinally adjustable. The glasses to which the attachment is applied can be adjusted by the wearer to move the lenses up or down in a vertical plane or laterally to or from the eyes, so the guards or clips can be quickly adapted to any shape of nose.

**COMBINATION-TOOL.**—BENIAMINO IBELLI, Brooklyn, New York city. This combination-tool is used mainly for mechanical purposes and includes a two-part foldable rule, the members of which are recessed to receive a jointed knife-blade; an extensible, graduated measure that will form a square when partially folded; a weighing device having a compressible spring to indicate degrees of weight on an extension-bar; a foldable hook on the bar; and a manicure-tool.

**METHOD OF REFINING CUPRIC-SULFATE SOLUTIONS.**—OTTO KAR HOFFMAN, Argentine, Kan. By this new method, the crude cupric sulfate solution is refined, thereby dispensing with the usual refining of the material. Any copper matte or sulfureted copper ore, rich or poor in copper, after roasting furnishes a suitable material. The method employed consists in first neutralizing the solution, then heating it, adding cupric acid, and finally injecting air into the solution to precipitate the impurities. The crystals obtained are purer and more permanent than those usually found in the market, because they contain no free acid.

**RECKONER.**—CHARLES TREGONING, Manhattan, New York city. By means of this device, various amounts may be added or subtracted and the sum total or difference obtained. The device is so constructed that any one of a number of multiplication-tables may be instantly brought to view. The reckoner also contains one hundred or more addition-tables and one hundred or more subtracting-tables, and is particularly adapted to assist children in mastering the rudiments of arithmetic.

**ATTACHMENT FOR WATCH-LATHES.**—CHARLES M. WILLIS, Browns, Ill. The present invention provides an attachment for watch-lathes by which various elements of clocks and watches may be effectively held by the lathe, the attachment taking the place of the usual face-plate of the lathe. The attachment includes a disk provided with equidistant openings near its periphery. Between the openings are radial slots. Clamping-fingers are adapted to be secured to the disk by having their fastening devices passed either through the opening or through the slots, whereby provision is made for securing a piece of work or a work-holder to the disk.

**FLOUR SIFTER AND MIXER.**—ANNIE D. SMITH, West Orange, N. J. The invention provides a new and improved flour sifter and mixer, which besides being of durable construction, is arranged to permit a ready opening up of the flour and a thorough and uniform incorporation of the baking-powder with the flour. All lumps are broken up and the mixture is gradually forced through the meshes of the sieve in a finely-divided state.

**NUT-LOCK.**—RICHARD H. THOMSON, Osceola Mills, Penn. The lock comprises a nut having a pocket communicating with the bore of the nut. One wall of the pocket extends eccentrically to the bore. A roller is mounted in the pocket. A spring is attached to the nut within the pocket and bears against the outer side of the roller to throw the roller inwardly toward the bolt. When the roller and the spring are removed from the pocket, the nut can be used in the same manner as nuts of ordinary construction.

**MAIL-POUCH.**—THOMAS H. STOKES, Lincoln, Ill. The mail-pouch has its back portion extended beyond the front at its mouth. A plate is bent over the edges of the extended portion of the back and is orificed to receive the staple. The rear sides of the plate has a card-socket at a point downward from the orifice and opening at the side thereof adjacent to the mouth. A staple is secured to the front of the pouch adjacent to the mouth, whereby the extended back of the pouch may be folded down in front of the pouch to engage the staple, thus serving to hold the bag closed and also to retain the card in the pocket.

**DEVICE FOR HOLDING BLOTTERS.**—JAMES M. RIX, Warner, N. H. The device can be attached to a desk and is provided with a stand. The device is so constructed that a blotter plially connected therewith, can be readily and conveniently carried to any portion of the desk and automatically returned to the device when released. The blotter can be made to remain on the desk or table as long as required without disconnecting it from the device, and can be exposed at all times and quickly detached.

**CARPENTER'S SQUARE.**—ROBERT H. MILLER, Morristown, N. J. The square has two legs formed of separate pieces connected by a mortise and tenon. The tenon has a notch in one edge at its base, and the mortise has a groove in its edge in line with the notch. A locking-bar is mounted to slide in the groove and engage the notch in the tenon. A pivoted block occupies the groove beyond the locking bar, and when longitudinally extended fills the remainder of the groove. The legs can readily be separated and placed within a comparatively small box or chest.

**STUMP-BURNER.**—JOHANN A. O. BREDEWEYER, Seattle, Wash. The stump-burner is made in sections superimposed the one on the other, to form a tapering body serving to inclose the stump. A hood is mounted on

the uppermost section of the body and is provided with a smoke-outlet pipe. Sliding doors command draft-ports in the several sections of the body, and draft-conductors in communication with the orifices are situated within the body and extend downwardly from the openings to cause the draft to pass down into the body of the burner and toward the base of the stump.

## Designs.

**FOOTSTOOL.**—FRANK L. UNDERWOOD, Vermont, Ill. The leading feature of the design consists of a top with a ridge flanked by horizontal portions. The footstool is chiefly ornamental.

**PLATE OR SIMILAR ARTICLE.**—EDWARD BOOTE, East Orange, N. J. The leading features of this design are to be found in a series of scroll-stems in circular order, festoons of foliage and floral sprays draped at the scroll-stems, and a circular panel in which are a chain of flowers, buds, and branches of wild-rose.

**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.

**INSECTS: THEIR STRUCTURE AND LIFE.** A Primer of Entomology. By George H. Carpenter. London: J. M. Dent & Company. New York: The Macmillan Company. 1899. 16mo. Pp. 404. 183 illustrations. Price \$1.75.

This is one of the best books on insects which we have seen. It is handsomely printed and the illustrations are most of them on a good scale. The diagrams are particularly helpful. It is a thoroughly scientific book on the subject and will be appreciated by all those who are interested in the subject.

**FIRST APPENDIX. SIXTH EDITION OF DANA'S MINERALOGY.** By Edward S. Dana. New York: John Wiley & Sons. 1899. 8vo. Pp. 75. Price \$1.

This appendix contains full descriptions of the species announced as new since the publication of the "System." There are no fewer than 160 new names, and their place and general scheme of classification is shown in the list given in the Introduction. The arrangement is alphabetical, rendering an index unnecessary. It is not necessary to praise the splendid "System" of the two Danas, and it is the most authoritative work on the subject in the English language and possibly in any other language.

**NORTH AMERICAN SLIME MOULDS.** By Thomas H. McBride, A.M., Ph.D. New York: The Macmillan Company. 1899. 8vo. Pp. 231. 18 plates. Price \$2.25.

This book is an admirable example of the esteem in which scientific works are now held in the United States. There was a time when a book of this kind would never have been accepted by any publisher, owing to the fact that the circulation would be so small. Now, however, the demand for scientific literature has increased so that the admirable book before us can be placed upon the market at a moderate price. The author has acquitted himself of a difficult task with great credit, and the publishers are to be congratulated upon the production of a handsome book.

**A CYCLOPEDIA REVIEW OF CURRENT HISTORY.** Second Quarter. 1899. Boston: Current History Company.

This publication occupies a unique field. It is really a short annual cyclopaedia, dealing with important current events. The present issue, for example, takes up wireless telegraphy, the Peace Congress, the Samoan difficulty, the Dreyfus affair, etc. There is hardly any important event in the world's history not to be found chronicled here.

**A TEXT BOOK OF PLANT DISEASES CAUSED BY CRYPTOGRAMMIC PARASITES.** By George Masee, F.L.S. London: Duckworth & Company. New York: The Macmillan Company. 1899. 16mo. Pp. 457. Price \$1.60.

The aim of this book is to enable those directly occupied in the cultivation of plants and with but a limited period of time available for study to determine the nature of diseases caused by parasites of vegetable origin, and to apply in the most approved manner those curative and preventative methods which experience has shown to be most successful in combating the particular form of disease under consideration and finally to include in the daily routine of work precautionary measures which, without being costly, frequently prevent a slight disease from assuming the proportions of an epidemic.

**MODERN AMERICAN SCHOOL BUILDINGS.** Being a Treatise upon and Designs for the Construction of School Buildings. By Warren R. Briggs, F.A.I.A. New York: John Wiley & Sons. 1899. 8vo. Pp. 411. Price \$4.

The subject is treated with rare ability. Schoolhouses of all sizes and costs are dealt with and the work gives precisely the information which is always sought by principals and school boards. Many of the problems connected with the designing of schools are thought out, saving many costly and doubtful experiments. Special attention is given to heating, ventilation and sanitary arrangements. It is an admirable contribution to American architectural literature. We regret to note, however, a serious omission, there is no index.

**DISCOURSES ON METHODS.** By René Descartes. Chicago: The Open Court Publishing Company. 1899. 16mo. Pp. 87. Price 25 cents.

Descartes' classical work has been translated in French and collated with the Latin by John Veitch, LL.D., and is an admirable edition for those who wish to know something concerning a work by a great philosopher and mathematician.