

## Recent American and Foreign Patents.

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## NEW MECHANICAL AND ENGINEERING INVENTIONS.

## IMPROVED SMELTING FURNACE.

John L. Sturdy and John A. May, Goderich, Ontario, Canada.—This invention relates to the combination and arrangement of a cupola, two furnaces, and two steam boilers, discharging jets of steam into the combustion passages of the cupola for creating draft in a smelting furnace, whereby efficiency in operation is secured.

## IMPROVED SHOE FOR SCAFFOLDINGS.

Henry Batt, Kentish Town, London, Eng., assignor to Leonard G. Tabraham, Boston, Mass.—In this invention a shoe or box is provided with hooks on the upper corners of its sides, and teeth forming an extension of the bottom, whereby the device is adapted for attachment to a joist or vertical timber, and to receive and support the end of a horizontal timber.

## IMPROVED TRACTION WHEEL FOR LOCOMOTIVES.

Jean Larmanjat, Paris, France.—This invention relates to an improvement upon that form of traction wheel in which spring seated teeth are arranged to project radially from the wheel, which teeth secure a better hold, and at the same time yield to any obstruction that may present itself; and the improvement consists in the means for controlling the teeth, whereby they may be allowed to project to engage with a rock bar to increase the traction, or be withdrawn into the periphery of the wheel, as may be desired.

## IMPROVED APPARATUS FOR PROPELLING CARS.

John B. Tibbits, Hoosick, N. Y.—This invention relates to apparatus for propelling street and railway cars by means of steam engines or other similar motors; and it consists of a frame suspended centrally from the car frame, and carrying two shafts, upon which friction wheels are secured. The supports for the said shafts are capable of both vertical and lateral motion.

## IMPROVED CAR COUPLING.

Floyd Heavener, Laramie City, W. T.—This invention relates to an improved car coupling, adapted to couple automatically with cars of different heights of drawbars, and with cars having the ordinary form of link and pin coupling. The drawbar is enlarged at its front end, and provided with horizontal partitions which form a tier of vertical series of throats with tapering mouths, which are made of such depth and width as to receive the coupling link.

## IMPROVED WINDWHEEL.

James P. Preston, Gold Run, Cal.—The advantages claimed for this windwheel are that it may be readily adjusted while running, it is acted upon by wind blowing from any direction, and as the vanes are curved so that their inner edges are nearly at right angles with the course of the wind, the action of the wind is positive, and the greatest amount of the power of the wind is realized; also that the wind has free and unobstructed discharge from the wheels.

## IMPROVED COOLING APPARATUS FOR STAND PIPES OF GAS RETORTS.

David R. Shiras, Sharon, Pa.—This invention is to prevent the stand pipes of gas retorts from reaching a sufficiently high temperature to cause an accumulation of carbon or baked tarry matter in the stand pipes to enable the manufacturer to heat the retorts to the maximum temperature without causing a stoppage in the stand pipes, and thereby increase the production of gas, as well as improving its quality and greatly diminishing the time occupied distilling the charge. To the ordinary stand pipe, which conducts the gas from the mouth of the retort to the hydraulic main, is a curved pipe surrounding the same, which is perforated from the under side, so as to direct the number of jets of water against the stand pipe.

## IMPROVED SCREWDRIVER.

Andrew J. Curtis, Monroe, Me., assignor to himself and Edmond H. Neally, of same place.—This invention consists of a screwdriver having a sliding sleeve, with spring jaws or tweezers extending over the end of the screwdriver, and being spread by a conical collar of the same back of the driving edge. When the pressure on the sleeve is removed the tweezers slide back and clasp the screw, so as to admit the ready insertion of screws into soft wood without requiring holes, or the taking hold of the same, and removing them when turning loosely in the worked-out screw holes.

## IMPROVED STEAM BOILER AND SUPERHEATER.

Solomon N. Carvalho, New York city, assignor to himself and James M. Pattee, of same place.—The object of this invention is to economize fuel in the generation of steam, and to superheat the steam from the boiler in a separate and independent steam dome, so as to prevent priming, and permit pure dry steam only to go to the cylinder of the engine. It is intended to provide in the lower part of the boiler an enlarged heating surface that assists in and accelerates the generation of steam and the more perfect utilization of the fuel. A hollow water back or loose reservoir is placed in the combustion chamber of a boiler, and a water-conducting pipe that leaves the highest point of the water back at the side of the boiler, enters from the outside of the boiler into a separate steam dome, that is connected by a pipe and check valve with the main steam dome. A heating water pipe is arranged in the shape of a serpentine coil in a separate steam dome, and conducted then through the shell of the boiler. The steam in the steam dome is superheated and made drier, being brought by the pipe to greater pressure and elasticity than the steam in boiler, so as to be used with greater effect in the cylinders of the engine, to which the steam dome is connected by suitable pipes. From the superheater the pipe runs longitudinally through the boiler to the back of the same, then down along the boiler, and enters at the bottom or lowermost part, which is usually the coldest on account of the insufficient passage of the fire gases through the lower flues.

## IMPROVED RELIEF APPARATUS FOR ROLLING MILLS.

Edward C. Hegeler and Frederick W. Matthiessen, La Salle, Ill.—The object of this invention is to prevent the breakage of rolls and roll gear by connecting the screws that regulate the distance between the rolls with rubber cushions, which permit the rolls to separate under extraordinary pressure, but do not yield under the usual working pressure.

## IMPROVED DEVICE FOR TRANSMITTING MOTION.

Peter Derkum, Richmond, Ind.—This invention consists of a revolving shaft with double driving wheels, which are connected by a straight and cross belt with pulleys of separate shafts, transmitting the power from the same by friction disks with beveled edges to a conical pulley of a vertical revolving shaft, to which the moulding knives or other working devices are attached. The object is to provide a device for transmitting motion from a horizontal crank shaft to a vertical shaft, to be used for working moulding and other machines in which a steady and continuous motion is required.

## IMPROVED FURNACE.

Henry C. Richmond, Allegheny City, Pa.—This invention is an improvement upon that form of furnace in which steam jets are employed to inject or carry in by induction atmospheric air to the combustion chamber to consume the smoke; and it consists mainly in the particular construction of an air and steam pipes having concentric nozzles arranged within the front part of the furnace, and combined with a fire tile for the pipes to protect them from excessive heat.

## NEW MISCELLANEOUS INVENTIONS.

## IMPROVED SCHOOL DESK.

William Walgrain, Charles F. Buscall, and Kate Buscall, New York city.—This invention consists in a box for the reception of books, constructed so that the front shall be made to answer the purpose of a rest or easel when the box is placed in a vertical position.

## IMPROVED STIRRUP.

Charles E. Wallin, Salt Lake City, Utah Territory.—This invention is designed to prevent the noise and chafing produced by the stirrup strap, to provide a degree of elasticity for the rider's foot, and to straighten and reinforce the stirrup against splitting. The improvements consist, first, in interposing between the upper ends of the stirrup a metal and a rubber roller, both of which encompass the pivot bolt to form a bearing for the strap; and secondly, in reinforcing the body of the stirrup by a peculiar arrangement of metallic straps or bands.

## IMPROVED GRAIN STEAMER.

Edward C. Jones, Independence, Mo.—This invention relates to an improved device for steaming grain just before it is ground for the purpose of softening the cuticle, and thereby facilitating the removal of the bran. The improvements consist principally in the construction and arrangement of a deflector located in the casing, and adapted to scatter or spread the descending grain, and at the same time to spread and divert the steam through the grain in its descent. The invention also consists in the combination of said deflector with the steam and draft pipes and their valves, and with the chutes and their cut-off slides.

## IMPROVED GROUND SQUIRREL EXTERMINATOR.

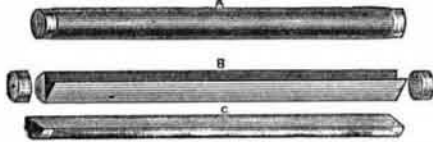
Henry Dreyer, Oakland, Texas.—In this apparatus a coal fire is started in a furnace and the end of a pipe is inserted in the hole leading to the nest of the gophers or ground squirrels, and the soil is packed around it. After the coal is fully kindled, sulphur is put in and a slide closed, so that the action of a fan blower will force the fumes through all the branch passages of the nest, and the whole colony of gophers will be destroyed in a few minutes.

## IMPROVED POSTAGE OR REVENUE STAMP.

David G. Beaumont, Austin, Texas.—These stamps are made of two thicknesses of paper, the lower one, to which the mucilage is applied, and the upper one, upon which the stamps are printed. The upper paper has incisions cut in and across it, parallel with each other, and at suitable distances apart. This paper is then laid smoothly upon the lower paper, and the two are secured together with mucilage. The stamps are printed upon the paper thus prepared, and the paper is thus punctured between and around the stamps in the usual way. The upper paper may also have incisions formed in it through the body of the stamps, and at right angles with the main incisions.

## IMPROVED COMBINED BLOTTER AND RULER.

Mark P. McElhinney, Montreal, Quebec, Canada, assignor to Robert W. Simpson, of same place.—This invention consists in an improved blotting



ruler formed of two semi-cylindrical strips with blotting paper B and C, wrapped around them. The flat surfaces of the two parts are then brought together, as at A, and rings or caps are slipped upon their ends, the slight elasticity of the blotting paper being sufficient to keep said caps securely in place.

## IMPROVED HOG HANGER AND CARRIER.

Jacob Meyer, Hollowayville, Ill.—This invention is intended to furnish an improved device for carrying and hanging hogs in convenient manner; and it consists of a carrying frame with hinged braces, fixed legs, and a top round or crossbar, with suspension hook for the hogs.

## IMPROVED SPOOL CASE.

Benjamin R. Hamilton, South Deerfield, Mass.—This invention has reference to a case for holding different sizes of spool cotton or silk thread, and paying it out as used without the inconvenience of the threads becoming entangled or being drawn back into the case by the rolling of the spools; and the invention consists of a spool case of any desired form or size, with hinged partitions between the spools and exit holes for the threads, provided with rubber, felt, or other binding substance that retains the thread.

## IMPROVED PEN AND PENCIL CASE.

Richard M. Collard, New York city.—This invention consists in a pen and pencil case having both ends extensible, and both pen and pencil applied at one end, in combination with a double spirally grooved tube for moving the pencil stock, and an inclosing tube therefor, when this tube is fixed rigidly to the outer short case, and a short distance beyond one end.

## IMPROVED BEER CASK.

John Hoffman, Toledo, O.—This improvement relates particularly to closing the ends of a metal tube extending from end to end of the cask, and fastened to the heads, for the purpose of facilitating cooling or warming the contents, by means of adjustable caps, pivoted to rings or boxes which are attached to the heads of the cask, and inclose the ends of the tube.

## IMPROVED TOY PISTOL.

James Barry, New York city.—This invention is a toy to be used for exploding fulminate paper; and it consists of a tube having in it a side opening, and an anvil upon which the paper is laid, and a spring-acted plunger for striking the fulminate paper.

## NEW HOUSEHOLD INVENTIONS.

## IMPROVED COFFEEPOT.

Willis H. Sherwood, St. Joseph, Mo.—This invention consists essentially in the combination, with a water pot or receptacle, of a perforated steam pipe with detachable screw cap, for the purpose of using the coffee pot with steam; and secondly, of a funnel-shaped mouth of the filling tube closed by a cap with safety valve that may be opened at will to interrupt boiling by the thumb screw.

## IMPROVED SASH FASTENER.

Frederick J. Hoyt, New York city.—This invention consists in the combination of a base plate, bent lever pawl, a rack plate, rod, and spiral spring with each other to adapt them to be applied to the sashes of a window; in the combination of a base plate, bent lever pawl, rack plate, screw rod, and nut for locking the pawl in place when engaged with the rack plate; and in the combination of a base plate, bent pawl, rack plate,

screw rod, and nut for locking the pawl in place when withdrawn from the rack plate.

## IMPROVED DISH WARMER.

James H. Wright, New York city.—This invention consists in a papier-maché block recessed upon the upper side, and lined with sheet metal to adapt it to receive and hold a heating iron. The case is divided into two compartments by a horizontal partition, with the papier-maché block or receiver that receives and holds the iron. The object of this invention is to furnish an improved device for keeping platters and other dishes warm when placed upon the table, and which shall be so constructed as to prevent the heat from injuring the table.

## IMPROVED SAD IRON.

Thomas H. McCaffrey, Providence, R. I., assignor to himself, Henry J. Gorman, and William J. Armstrong, of same place.—This is a reversible sad iron, that is heated by gas, and used continuously by reversing the heated side from time to time.

## NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

## IMPROVED SASH FASTENER.

David T. Gerrish, Lewiston, Me.—This invention consists of a sash with countersunk recesses or sockets made square at the upper and rounded off at the lower side, so as to be supported on a spring-acted catch operated by a thumb piece projecting through a face plate of the window casing. The catch to work the upper sash is applied to a bolt that passes through a tubular bolt of the catch of the lower sash, the end of the inner bolt having also an operating thumb piece.

## IMPROVED SASH BALANCE.

Adam Kolb and Charles Osberghaus, Sandusky, O.—This invention consists in a casing containing a serrated cam or pawl for clamping the cord and a lever for moving the cam for releasing the cord. When the cord is drawn downward through the casing the serrated cam binds it firmly at any desired point. When it is desired to release the cord it is drawn outward, so as to move the lever and by this means throw the cam upward out of engagement with the cord.

## IMPROVED VEHICLE WHEEL.

Martin J. Racer, La Grange, Texas.—The object of this invention is to provide a vehicle wheel that is capable of being expanded so as to fit the tire, to obviate the necessity of removing, contracting, and replacing the tire.

## IMPROVED FIFTH WHEEL.

Sanford P. Stillman, Westerly, R. I.—This invention consists of an axle and rocker having outer segmental guide rails and inner concentric rails or plates, the latter having toothed grooves and an intermediate spurred or toothed friction roller. The guide rails swing on a center bolt of the reach, while the rocker is steadily retained on the bed rails by a central connecting arm, bearing, by a notched part, on the flange of the inner rail or plate of the rocker.

## NEW AGRICULTURAL INVENTIONS.

## IMPROVED GATE.

Joseph T. Piggott and Albertus W. Hoyt, Newbern, Ill.—The object of this invention is to furnish an improved flood gate streams; and the invention consists in the combination of sill, posts, and crossbeam, gates, hinged trapdoors, stop hooks, latch hooks, catches, and weights, ropes or chains, and swiveled pulleys. When the water rises, so as to have sufficient force to close the trapdoors, the hooks will be raised, and the gates allowed to swing open. As the water subsides the gates will be drawn shut by weights attached to the ends of ropes or chains.

## IMPROVED CULTIVATOR.

James Sherrill, Harrisburg, Oregon.—The plow standard is pivoted between and at the ends of elastic bifurcations of the beam, and has a wedge-shaped projecting end beyond the pivot, the bifurcations converging from the top downward to hold the standard end. The plow beams have their forward ends bent sidewise into U form to receive a crossrod of the draw frame. The draw frame is formed of a crossrod, a curved bar, a crossbar, and parallel bars in combination with plow beams, clevis, and adjustable supporting bars.

## IMPROVED MOWER AND REAPER KNIFE SHARPENER.

Zarda Frost, Kinmundy, Ill., assignor to himself and William H. White, of same place.—This invention consists in the combination in a grinding apparatus for mowing and reaper knives, of a centrally pivoted base plate, a swinging spring and treadle-acted frame, and a hinged vibrating and spring-cushioned supporting bar.

## IMPROVED HARROW.

John W. Carpenter, Bridgewater, Va.—This harrow is so constructed that the teeth may be adjusted vertical, at a forward inclination, or at a rearward inclination, without stopping the team. To the inner side of the projecting ends of each side bar of the frame is attached a hook to receive the ends of the draw chain, to the center of which the draft is applied. This construction enables the draft to be changed from one side to the other, so that the wear may keep the teeth sharp. To the side bars of the frame are pivoted the ends of rollers, to which the teeth are attached.

## IMPROVED STANCHION.

Zalmon W. Smith, Addison, N. Y.—This stanchion turns on central top and bottom pivots of a top crosspiece and the flooring, which pivots extend into socket holes of the top and bottom crosspieces of the stanchion. The lower crosspiece is supported on a lock iron or set screw, which projects into a groove of the lower pivot, which groove is not extended entirely around the circumference of the pivot, so as to admit only the turning of the stanchion into suitable inclination to either side, sufficient to admit of free side and up and down motion of the head of the cow.

## IMPROVED PORTABLE CORN CRIB.

Benjamin F. Bedwell, Overton, Mo.—This crib is readily taken apart by drawing out hinge pins, disconnecting various stays and rods that hold it together, when it may be readily packed in small compass and transported from place to place. It may also be readily set up by first setting up the two ends and back, then placing the slatted doors and crossbar that is inside of the doors, erecting the posts, and connecting them by rods, putting on the middle rafter, the roof boards, and, last of all, the binding strips by which the roof boards are secured.

## IMPROVED STUMP PLOW.

Washington Painter, Albion, Ill.—The object of this invention is to provide a stump plow that may be used in rough newly cleared timber land, that will readily cut the smaller roots, and will jump over or escape the larger roots. To the beam of the plow is attached a colter of peculiar form, which is held in position by a plate of rhomboidal form, having lugs, and is clamped to the beam by a bar and bolts. The plate is further secured to the beam by bolts, and by letting it into the side of the beam. The corners of the plate are disposed so as to offer the greatest resistance to the leverage of the colter.

## IMPROVED DUMPING WAGON.

Charles S. Bateman, Battle Creek, Mich.—This invention is an improved dumping wagon, which is so constructed that it will dump itself when unfastened and started forward, and which may be made to discharge part or all the load at a time.