

RECENTLY PATENTED INVENTIONS.

Engineering.

SMELTING FURNACE.—Herman Huber, Kansas City, Mo. This invention is for an improvement designed to facilitate the working of smelting or stack furnaces with less draught, the gases being caused to rise uniformly and pass to the downtake flue with comparatively little resistance, whereby the loss of precious metals in the fumes and flue dust is reduced to a minimum. The invention consists principally of a removable hood adapted to be set on the top of the stack and provided with a flue for connecting with the downtake flue separate from the stack. The feed floor is not obstructed, and the comparatively low hood takes up but little room and does not interfere with the draught of the furnace.

STEAM BOILER TUBE CLEANER.—John H. Voorhees, Brooklyn, N. Y. This is a tool in which a tube is arranged to be fed through a conducting sleeve, and has opposite openings through which are fed cutters, a tapering expanding device working between the shanks of the cutters. The tool may be loosened within the tube, and its cutting edges may be brought into greater or less contact with the inner surface, not only for the purpose of removing the scale, but to the extent, if desired, of removing a shaving of metal from the interior of the tube. The tool is readily fed lengthwise of the tube at the desired speed, and the adjustment of the cutting portion of the tool is easily effected.

Railway Appliances.

EXTENSION CAR STEP.—Samuel J. Evans, Elkhorn, West Va. This invention provides an extension step which may be conveniently folded, when not in use, under the usual platform step of the car. On the outside of the risers of the fixed step are hangers carrying bearings for hubs on brackets carrying the extension step, a swinging arm engaging a locking bolt to lock the pivoted step in lowered position, or to fold it under the fixed step, either operation being effected by the movement of a hand lever on the car platform.

NUT LOCK.—Townson Hand, North Vernon, Ind. This is an inexpensive, easily applied device by which to securely lock the nuts of rail joints and of bridges, vehicles, etc. The nut is provided with seats in the form of an annular groove for a locking plate, and this plate has a crimped or bulged portion whereby a plate may be lengthened by hammering, and also providing for the introduction of the hook of an anchor plate. In using the improvement on fish plates, the locking plate is locked in position by an anchor, having a hook engaging the plate and a base portion spiked to the tie.

Electrical.

ARC LAMP.—John Rae, New York City. A lamp in which the light will be principally thrown downward, without casting shadows of the carbon or lamp frame, has been devised by this inventor, a spark arrester being also provided to prevent the escape of sparks and small pieces of hot carbon. The lamp frame has a holder which supports a transparent or translucent chimney inclosing the adjacent ends of the carbon rods, the chimney top being also supported by the lamp frame with an intervening air space. An outside flaring shade and reflector throws the light downward and under the center of the lamp.

STREET VENTILATING FAN.—Vespasian V. Hedges, Coffeyville, Kansas. This invention contemplates motor casings revolvable upon posts at the intersection of streets and alleys, and in electrical communication with a central power house, there being fans on a shaft driven by the motor, and means for making and breaking the circuit by the rotation of the casing on its support. Means are provided near the bottom of each post for turning the fans in the line of the street in the direction in which it is desired to create the current of air.

ELECTRIC CONDUIT RAILWAY SYSTEM.—William L. King, Winston, N. C. According to this improvement the main current conveying wire is preferably embedded in a suitable cement packed in the bottom of a conduit, and above the cement, within the conduit, are two working conductors arranged in sections of suitable length, insulated from one another at the ends, the top of the conduit having a longitudinal slot for the passage of a spring trolley connection with the motor on a car. Electro-magnets and armature levers are employed to direct the current from the main wire to the working conductors, and the arrangement is such that the current passing through the car motor is under the complete control of the motorman.

Mechanical.

LOOM HARNESS.—Joseph Hampson, Fall River, Mass. In looms for weaving figured goods, more especially leno muslins, usually woven with several harnesses, this inventor has devised an improvement in the construction of the leashes and the doups, to prevent the frequent breaking of the doups, and the consequent loss of time and material in making repairs. The improved doup apparatus consists of a series of plates having middle apertures through which the doups pass, and having a warp thread ring attached to their looped ends, leashes securing the plates and the heddle frames, to one of which the ends of the doups are attached.

CAN SOLDERING MACHINE.—Nelson Troyer, Astoria, Ore. This machine is especially designed to solder the ends of elliptical or oval sheet metal cans, the parts, when properly assembled in a hopper, being automatically fed to an endless carrier, connected with an endless carrier. The cans are then conveyed to a suitable flux and turned thereon to present the entire edge to the flux, after which they are raised and carried to a receptacle with molten solder, in which they are turned as in the flux, the soldered cans being finally automatically discharged from the machine. The chucks are adapted to enter an empty can for the soldering of one end, but in the case of a filled can its outer surface is clamped to effect the soldering. The machine is designed to solder twenty thousand cans in ten hours, with but two attendants.

PUMPING POWER.—George M. Carter, John H. Drew and Charles L. Drew, East Prairie, Mo. This is a machine in which there is a chain of gearing between the motor and a pump rod operating crank, and the governor comprises a rotary hollow shaft operated by the gearing, there being, on the upper end of the shaft, a frame to which angle levers are pivoted. A shaft connecting with the angle levers extends through the hollow shaft, and a brake lever is pivoted at one end to the machine frame and at the other end to the lower end of the shaft, a friction wheel on a gear shaft engaging with the brake lever. A lever pivoted to the machine frame has at one end an adjustable weight, its other end having a link connection with the brake lever. The machine is designed to be operated by a falling weight, giving considerable power and a regular rate of speed.

Agricultural.

HARVESTER AND BINDER.—Robert P. Lockhart, Patoka, Ind. This is a machine to be drawn or pushed by a traction engine, a number of very wide swaths being cut as the machine moves across the field, and the grain, after binding, being deposited in line on the ground at the side opposite the reapers. The main frame of the machine supports reapers which successively increase in lateral projection, and binder tables to receive the cut grain therefrom, carrier belts receiving the bundled grain from the tables, and the conveyors of each machine being graduated in length so that the sheaves may be delivered in alignment.

PLOW.—Richard H. Purnell, Rosedale, Miss. This invention is for an improvement in plows which carry a sweep or scraper, and provides for adjusting the sweep, in a simple and practical way, to any desired depth. The plow standard has a curved series of holes in its rear portion, and a pair of side bars pivoted at their front ends to the front lower edge of the standard have at their rear ends a clamping bolt passing through one of the holes of the standard, the sweep or scraper being rigidly attached to the front ends of the side bars and adjustable with them. The angle of the sweep and the altitude of its front edge may be readily changed without any adjustment of the clevis, harness or other appliances.

HARVESTER SHOCKER ATTACHMENT.—Marf R. Huber, Marysville, Kansas. This invention provides a car or truck adapted to travel at one side of the harvester, there being on the truck receptacles to receive bundles or sheaves and deliver them in upright position on the ground to form a shock, the receptacles being operated from the harvester platform or a point near the driver's seat. The mouths of the barrel-like receptacles are on the side that faces the elevator or conveyor frame, and while a lower receptacle is being filled another is in an upper horizontal position and contains a number of sheaves, the sheaves of the latter receptacle, as it is carried downward, being delivered on end to the ground, where they will stand upright to form a shock of considerable size.

COTTON CHOPPER AND CULTIVATOR.—John Cocks, Greensborough, Ala. A dragging cotton chopper frame, according to this invention, is made in triangular form, with cotton chopping hoes or sweeps along its front edge and in a row at right angles to the line of draft, an axle with supporting wheels being arranged along the front edge and above the chopper frame, while chains adjustably connect the chopper frame to the running gear and adjust its front edge vertically. A supporting wheel and handles are arranged at the rear apex of the triangular frame, the machine being designed to cut away a portion of the cotton plants in a row, to leave them in hills, and being converted into a cultivator with but slight changes.

HAND PLANTER.—John F. Ganson, Lodge Pole, Neb. For depositing young plants in the ground, this inventor provides a simple and inexpensive implement which has a spade point and a shoe with movement to and from the point, the shoe being connected with the receiver or reservoir in which the plant to be placed is introduced. The shoe has a foot to engage the ground and act as a gage and as a trip for the shoe, placing the shoe in such position, when the spade has entered the ground a proper distance, as will admit of the plant conducted by the receiver entering the opening prepared to receive it. As many receivers are employed as there are shoes for each implement, all being attached at their upper ends to the handle portion of the planter and pivoted at their lower ends to the spade stocks.

Miscellaneous.

BICYCLE REST.—Lewis Smith, Brooklyn, N. Y. To hold the bicycle in an upright position when the rider has dismounted and to lock the pedal cranks to the frame in such manner that the bicycle cannot be used until the rest has been detached from it, this inventor provides a device which may be carried in the pocket or about the person. It is preferably made in two sections of stout wire, the links of the two sections playing one upon the other and being connected by a clamp, the rest being so made that it can be readily lengthened or shortened and quickly locked to the frame of the wheel, a padlock being employed to secure the keeper over the head.

BICYCLE BEARING.—Edward A. Green, Battle Creek, Mich. A bearing from which dust is thoroughly excluded and dispensing with oil holes has been designed by this inventor. A spring-controlled washer is used in connection with the ordinary bearing, the washer closing the space between the cup and cone of the bearing. The washer is so placed as to admit of a lubricating material being introduced directly into the space in which the balls of the bearing are placed, and an oil can with slightly curved spout may be employed to introduce oil directly into the ball chamber of the bearing by pressing the washer outward or away from the outer edge of the cup, and introducing the spout into the space.

TOBOGGAN.—Harry P. Herron, Los Angeles, Cal. The body of this toboggan may be of the usual form, and at its ends are downwardly inclined spring arms in which are improved ball bearings carry-

ing a roller at the front end and one at the rear end. A steering shaft connects the forward set of arms, whereby the toboggan may be steered by a hand bar, or this steering gear may be locked and the toboggan steered by the foot of the operator from the rear.

TIRE FASTENING.—Angus McL. Williamson, Philadelphia, Pa. This invention provides means for securing rubber tires to the felloes of vehicle wheels in such way that the fastening of the tire will not cut or destroy the rubber. A band secured to the felly has outwardly projecting side flanges in which the rubber tire is seated, and a rod passed through the tire is connected at its opposing ends by a loop bolt whose shank is passed through the band and felly and made fast by a nut and washer.

GAS REGULATOR.—Myron J. Amick, New York City. To regulate the pressure and flow of gas through the supply pipes of buildings, this inventor has devised a regulator in which the valve controlling the gas supply is capable of seating itself perfectly even when the regulator is considerably out of plumb. The valve is a double valve, the main valve having a lateral movement upon its stem and adapted to be seated against the wall of the inlet opening of the regulator, while the second valve seats itself against the main valve to prevent the passage of gas. The regulator has a mercury seal, but air may be admitted in suitable quantities without danger of the mercury leaking.

WASTE OIL PURIFIER.—Rudolph Metz, Philadelphia, Pa. This purifier consists of a circular tank in which are hot water columns so distributed that the oil will receive a warm and gentle heat throughout the entire area of the tank, but will in no way be brought into contact with steam coils or other medium for supplying the heat. The tank has a double bottom, the heating connections of the columns being made below the upper bottom. In the top of the tank is a pan and strainer into which the waste oil is poured, the purified oil being drawn from one or more faucets at different heights on the exterior of the tank.

SEWING MACHINE FAN ATTACHMENT.—Berthold E. Meyer, Springfield, Mo. This is a simple and inexpensive device, not liable to get out of order, and readily attachable to the flywheel of a machine. The invention consists principally of a slotted ring-shaped frame having apertured bosses, and hook bolts in the slots of the frame to engage the spokes of the flywheel while fan wings have shanks which engage the bosses, to which they are secured by set screws, the fan wings being readily set at any desired angle.

WHEAT STEAMER.—Nathan C. Blackburn and Edgar E. Howell, Fairbury, Neb. This is a steamer of simple and inexpensive construction, in which the grains of wheat passed through will be thoroughly steamed and heated by the action of steam without wetting the wheat. The steamer has channels or ducts for the passage of the wheat, steam jets acting in the channels on the wheat during its passage, and the channels being enlarged where the steam jets are located, so that sufficient room is given for the wheat to be thoroughly and uniformly surrounded and steamed.

TYPE BINDER.—Joseph Seide, New York City. This is a simple device designed to save time and labor, as compared with the usual method of tying up small jobs with a string. The invention provides for the use of side bars in which are longitudinal beveled channels, with an outwardly extended opening at the ends, while end bars have lugs engaging in the channels of the side bars, and have projections to engage the beveled portions. The binder may be locked up with the job, and it is practically impossible for the type to become loose or fall out.

UMBRELLA RIB AND STRETCHER.—Daniel H. Redmond and Chalkley B. Baldwin, Philadelphia, Pa. This is an improvement on a formerly patented invention of the same inventors, providing for a recessed rib with interior head and peculiar clip, making it possible to locate the pivot connecting the stretcher to the rib within the recess without weakening the rib by letting the pivot into it. The present invention simplifies the construction, reducing the space required for the insertion of the stretcher, and dispensing with the interior head and the necessity of a separate pivot, the pivot being formed integral with the clip. The construction is very simple and strong, and there are no small parts liable to get lost.

CLOCK STRIKING MECHANISM.—Henry Hall, Portsmouth, Ohio. This is a device particularly designed for use in Masonic lodges, to sound what is technically known as "low twelve." It provides for slowly sounding a gong or cathedral chime, and, when set in operation from the exterior of the casing, automatically makes the required number of strokes at the predetermined interval apart. The casing is provided with sounding boards and posts arranged to produce an equalization of vibratory action, and the mechanism is automatically checked when the desired number of alarms have been sounded.

CAN OPENER.—John L. Haynes, Pawling, N. Y. This is a tool to be grasped and operated by both hands, without having to hold the can with one hand, it being practically impossible for the tool to slip from the can during the operation of cutting. It comprises two lever arms pivoted together, while a fulcrum arm extended from the pivot is adapted to engage the side of the can, there being a cutter on each lever arm, and the cutter of one arm overlapping that of the other arm.

BOTTLE SEALING DEVICE.—Andrew M. Cowart, Punta Gorda, Fla. This bottle has a breakable cap to fit over its neck, there being keyways in the cap and neck and an aperture in the cap in line with its keyway through which a non-removable key is inserted to lock the cap against removal, the key being preferably cemented in place. When the cap is thus fastened in place its top must be broken off to reach the cork, so that the contents of the bottle may not be removed and replaced by substitutes without detection.

ROTARY WATER METER.—James G. Summers, Charleston, West Va. In this meter a revolving hub is arranged within an outer casing and carries on its outer periphery hinged pistons or wing valves which

are opened outwardly at the inlet for water, the pressure of which causes the hub to revolve until they come to the outlet, when they fold inwardly in moving past the abutment between the inlet and the outlet ports. This meter is designed to be simple, durable and accurate, starting of itself when the water is being used, registering exactly the amount of flow, and stopping when the use of the water is discontinued.

DEMONSTRATING FINANCIAL PROBLEMS.—Oliver Elison, Concord, Neb. A device designed to facilitate an explanation of the meaning of bimetalism, ratio, silver and gold monometalism, etc., has been devised by this inventor, and consists of a frame in which are pivoted two plates, representing gold and silver, having openings over which are located windwheels, with latches to hold the wheels in the same plane or at an angle to the frame. The free circulation of the wheels of the two plates represents the parity of the metals, but when the silver plate is brought into the wind the device represents gold monometalism. The vane which controls the device represents the government controlling money.

TEMPERING AND TOUGHENING METALS.—Zachariah T. Clark and Jonathan R. Neill, Portland, Oregon. This invention is for a liquid compound in which are linseed oil, sweet oil, sulphuric acid, blue vitriol, common salt and unslaked lime, in which a heated metal to be tempered and toughened is immersed for a few seconds, the compound being designed to act without checking or warping the metal, and give a uniform temper without trouble or mistake.

TANK HEATER.—Andrew W. Johnson, Peter T. Herreid, and Thomas Herreid, Blair, Wis. For heating water, cooking feed, etc., these inventors have devised a heater to be set in a tank and effectively heat the surrounding substances without any appreciable loss of heat. The casing of the heater has a double top and in its lower portion is a combustion chamber, at one end of which is a draft channel leading down from the top, while at the other end is a chimney set in a thimble in the double top. There is a manhole in the top for the introduction of the fuel, a cover fitting the manhole at its lower and upper ends.

MERRY-GO-ROUND.—William X. Simpson, Aurora, Ill. This improvement combines the motion ordinarily obtained in this class of apparatus with a see-saw motion, designed to obviate the dizzy sensations caused in many persons by the rotary motion. The vertically rotating shaft with which are connected the inner ends of the car-carrying arms is surrounded by a bed in which are segmental cam grooves, and guide bars connected with the arms are adapted to travel in the cam grooves of the bed.

COMMODE.—Cora G. Mann, Brooklyn, N. Y. This is a device adapted for attachment directly to a bed and having a seat which may be adjusted vertically as desired, its back being placed at an angle to or parallel with the side board of the bed, and the device being so arranged that the patient may pass from the bed to the commode without exposure.

Designs.

HANDLE BAR.—Robert W. Murphy, New York City. This bar extends centrally upward, then laterally, and then downward and rearward, the central side portions and the ends both having hand grips.

TOE CLIP FOR VELOCIPEDES.—David Basch, New York City. This clip is return-bent and tapered, presenting a wide opening at the bend, and the bent members at the sides of the opening having diagonal corrugations.

FRAME FOR DRILLING MACHINES.—Foster Milliken, New York City. Two patents have been granted this inventor for different styles of frames, one with a cruciform base and the other substantially rectangular, both moved about on roller supports and both having bicycle saddle-like seats and handle bars for the operator.

COLLAR.—Herman Rosenthal, New York City. This design is for a collar apparently separated into two divisions, one formed of plaits in regular rucking order, while in the other the plaits are longer and are graduated in length from the center to the ends of the collar.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send name of the patentee, title of invention, and date of this paper.

NEW BOOKS AND PUBLICATIONS.

PHOTOGRAMS OF THE YEAR 1896. A pictorial and literary record of the best photographic work of the year. London (England): Dawbarn & Ward, 6 Farringdon Avenue. Pp. 112. Price \$1.

A very interesting pictorial compilation of the best work made known in 1896, as exemplified in the several exhibitions in England, the United States, and other countries. Besides this, there is an excellent literary review of the pictures.

The first portion of the book contains a review of the technical progress in 1896, describing the discovery of X-ray photography; then follows a review and full page illustrations of some of the most important pictures of the year, including the works mostly by English photographers. Another section is confined to "Pictorial Photography in the United States, 1896," by Alfred Stieglitz; still another to "Photography in Canada," by Rldridge Stanton. Also a portion on "Photographic Advance in Australia, 1896," by W. F. Ponder. The latter half of the book contains articles on "The Great Exhibitions," criticism by Gleeson White, with notes by a technician. There are fine examples of portraiture, landscapes, marine views, figure composition, interiors, and genre work. The idea of the book is excellent, since it places before one's view the latest pictorial progress by the best workers. We commend it to the attention of all photographers and others desiring to keep in touch with pictures of the times. The book is admirably printed; it is also well edited by the editors of the Photogram.