

RECENTLY PATENTED INVENTIONS.

Engineering.

ROTARY ENGINE.—Oscar E. Morse, Dillon, Montana. A piston carrier in which are transversely reciprocating pistons is mounted in the steam cylinder of this engine, the reciprocation of the pistons being caused by fixed eccentrics and eccentric plates during the rotary motion of the carrier. The pistons are rotated equally well in either direction, the steam acting on them at all times at a certain distance from their axes, producing a steady and even motion, and an automatic governor admits more or less steam as the speed increases or decreases.

Railway Appliances.

CAR FENDER.—Mariano Sparmo, New York City. This fender is so constructed that an object falling on its bed causes the front end to rise and prevent the object from rolling off, side and guard rails also cooperating to this end, and there being at the front of the dashboard a buffer to prevent injury to persons caught on the fender. A rock shaft operates a forward pivoted fender section and spring-controlled slides operate the rock shaft when a body falls on the bed, latches engaging the slides. The fender may be applied to any car without interfering with its brake or motor mechanism, and when not in use the fender may be slid beneath the car out of the way.

PLATFORM DUMPING CAR.—Scott Webber, Pigeon Cove, Mass. This car is especially designed for dumping heavy material, as stone blocks, a suitable distance from the side of the track, and the car has two trucks, a drawbar having swivel connection with each of the trucks. A rocker bed on each of the trucks is engaged by rockers on the platform, blocks being normally engaged between the rockers and their beds at each side, and mechanism being provided for moving the blocks of each side. On the drawbar are rubbing plates engaging opposite sides of the rockers and rocker beds to prevent displacement.

AIR BRAKE DEVICE.—Earl B. Stoner, Seaside, Oregon. This is an attachment for angle cocks, comprising a box or casing inclosing an automatic valve-like device. It is an automatic check valve attachment for the train pipe of a Westinghouse air brake system, permitting the passage of air around the angle or stopcock of the pipe when closed, so that the engineer is able to retain control of the system, even if the angle cock be carelessly or maliciously manipulated, thus preventing air from being shut off from the car so long as the hose is duly connected or coupled.

BERTH STEP.—Alfred E. Crow, New York. This inventor provides a simple device for use in reaching the upper berths of sleeping cars and vessels, consisting of a swinging frame, adapted when not in use to close into a recess of a berth rail, and so be entirely out of the way. A series of folding steps fold into the rail with the frame, the steps dropping automatically into position when the frame is swung open, and the steps being so connected with the frame that when the latter is swung up the steps will be automatically folded to enter the recess in the rail.

STATION INDICATOR.—Gustav Trese-reuter, Berlin, Germany. This is a device for use on the cars of street railways to indicate different points or crossings along the line. The indicator, carrying an endless band on which are marked the different stations, in a suitable casing, is driven by the movement of the car wheels, and means are provided, should the wheels slip on the track, for conveniently readjusting the mechanism. The device is very simple and inexpensive, and may be ordinarily operated without requiring any attention from the conductor.

MAIL CRANE.—Erastus L. Peirce, Topeka, Kansas. Upon an upright post at the side of the track are two pivoted arms, between which the top and bottom of the mail sack is removably secured, the upper arm having a straight extension beyond the pivotal point and the lower arm a cranked extension, and these extensions being connected by a rod. When the arms are swung down they take up but little room, and the mail bag may be conveniently secured to them and the arms swung up, without requiring a platform for the mail carrier to stand on while adjusting the pouch.

Electrical.

AUTOMATIC ALARM.—George B. Williams, Texarkana, Texas. This is a device, more especially adapted for employment in connection with dry pipe sprinkler systems for protection against fire, the alarm giving warning when the air pressure in the pipes falls below a certain point. The alarm indicates first the fall of the air pressure, and afterward gives warning when the water has entered the pipes of the system. Different forms of contact valve are provided, and different arrangements of circuit-closing devices, for more or less complicated systems.

Mining, Etc.

EXTRACTING METALS FROM THEIR ORES.—Henry G. Williams, Pueblo, Col. This inventor provides a method of and apparatus for the extraction of metals by the chlorination or wet process, the ore having the usual preliminary preparation, such as pulverizing, roasting, etc. The method consists in simultaneously introducing the precipitating agent and an independent agitating blast of steam into the solution of metal, to secure admixture and agitation by a whirling motion and the agglomeration of the precipitated particles of metal, continuously separating the precipitate by settlement and filtration.

Mechanical.

COMBINATION TOOL.—Oscar E. Morse and Everett H. Brumage, Dillon, Montana. This is a combined hatchet, hammer, and nail puller. In the head of the tool is a recess into which the nail-pulling device may be withdrawn, and locked in withdrawn position. Its shank extends up a tubular opening in the handle, where a dog pivoted in a lateral recess is adapted to en-

gage a screw in the end of the shank, locking it so it cannot rattle.

SAW SET.—Fred W. Brown, Wolcott, N. Y. This device comprises a base to which is pivoted a movable clamping arm adapted to engage the saw, the base having an anvil surface with swaging recesses in front of the end of the clamping arm. The anvil has recesses of different depths, whereby the saw teeth may be set to a greater or less extent, and the whole device is very simple and inexpensive.

MACHINE GUARD.—George F. Fisher, North Tonawanda, N. Y. This invention relates to wood-working machines, such as hand joiners, variety moulders, shapers, etc., providing therefor a guard to prevent accidents to the attendants. A hood or guard, made in sections arranged to telescope horizontally and longitudinally, is held above the cutter and transversely of the table, to expose more or less of the cutter and of the work as may be necessary at one time. The hood yields readily to permit placing the work, and may be swung to one side to give access for repairs and other purposes.

DRILL SHARPENER.—Ole Larson and John W. Carlson, Warner, Idaho. A simple and easily adjusted and operated machine by which to sharpen "Burlough" or grooved drills is provided by these inventors. The drill holder is movable along a framing and is held in suitable position by a lever and detent, and there is an opening in a drill guide for the passage of the drill, holding pieces being movable toward and from such opening. A handle lever is connected with an armed wheel engaging movable sharpening bits to move the latter as desired.

LEATHER WORKING MACHINE.—Robert Steyer, Dohna, Germany. For stretching, finishing and dressing leather, this inventor provides a machine consisting essentially of a frame adapted to carry and regularly move the hide or side, in connection with a revolvable shaft carrying a series of stretching and finishing tools yieldingly engaging the leather to finish and stretch it.

BOX MACHINE.—Otis A. Sanford, Newcastle, Cal. To make wooden boxes rapidly and automatically, this machine comprises a mechanism to support and move the end boards, and to place and nail one side board thereon, turning the end boards with the side board through an angle of ninety degrees, then placing and nailing in position a bottom board, again turning the box to bring the unfinished side uppermost, and finally placing and nailing the second sideboard and discharging the box from the machine, the several mechanisms being operated by common power.

MANUFACTURING WIRE BALE TIES.—Albert Henley, Lawrence, Kansas. To form ties of uniform length without waste of material, and without undue strain or wear on the parts of the machine, this invention provides for a traveling head with a revolvable spindle for forming the twist in the end of the wire, a pair of gripping jaws holding the wire in place during the twisting of the loop by the spindle. The wire to be formed into ties unwinds from a spool, and passes through a wire-straightening device of any approved construction to one of the heads of the machine.

Agricultural.

POTATO CUTTER.—Albert J. Wood, Wilder, Kansas. For cutting potatoes for seeding purposes, or for slicing or cutting vegetables, the potatoes or other vegetables are fed by a vertical plunger to the knives, being automatically centered by a cradle or hopper, yet being capable of yielding to the plunger, so as not to be unnecessarily bruised. The knife frame, with a series of knives, is removably placed in a supporting frame, a crossing knife being located below the frame knives, while the hopper over all the knives has spring-controlled gate members, fingers entering the spaces between the frame knives, between which also the plunger reciprocates within the hopper.

HEEL SWEEP BRACE.—Augustus C. Ferrell and Thomas J. Hamrick, Carroll, Texas. This improvement comprises a brace for heel sweeps of strong and inexpensive construction, by which the wings of the sweep will be prevented from closing, and that portion of the sweep through which the heel bolt passes will be materially strengthened. The brace comprises three bars of completely adjustable character, the device being applicable to all kinds and sizes of sweeps.

CREAM SEPARATOR DISKS.—William J. Bash, Battle Creek, Neb. A holder for use in cleaning these disks is provided by this improvement, the holder supporting the disks so they may be subjected to the action of a jet of steam and turned so that every part of the disks will be effectually cleaned. The disks are thoroughly heated to loosen the dirt, which is thrown off by the centrifugal motion as they are rotated by the steam, the heated disks drying immediately when the steam is shut off.

Miscellaneous.

CYCLOMETER.—Fred M. Carroll, Union City, Pa. This is an instrument to be attached to any vehicle for registering the aggregate number of miles traveled during a specified time, and having also an independent registering device to show the distance traveled each day, the auxiliary register being independent of the other, though operated by the same mechanism. In a suitable casing a series of recording disks are loosely mounted on a spindle, there being a worm and worm wheel from which the disk spindle is extended for actuating the disks from the wheel of the vehicle, while a pointer mounted on the spindle travels over a dial, and registering wheels independent of the disks are operated by the pointer.

TYPEWRITING MACHINE.—Horace G. Perry, Suisun City, Cal. In this machine are sets of typebars with single characters and sets with duplex or multiple characters, adapted to print short words or syllables, as "an," "as," "is," etc., there being an escape-ment device to feed the carriage different distances corresponding to the space occupied by the characters on the different type bars. The improvement is designed to afford a machine of simple and inexpensive character

which shall have certain important advantages over other machines, and which may be operated with rapidity and nicety.

EXTENSION JOINT FOR BRICKWORK.—Seymour G. Smith, Plainfield, N. J. This improvement is especially applicable in the construction of furnaces, retorts, chimneys, etc., and all brickwork subjected to heat. It consists of placing transversely in the wall a sheet of asbestos or other non-combustible material, the sheet being interwoven with the brick as the different courses are laid, so that joints are broken upwardly and in depth, the sheets thus forming a zigzag line both vertically and transversely, and their side edges being flush with the faces of the wall. They are preferably placed about three feet apart in a wall, thus rendering the wall sufficiently elastic to compensate for the expansion of adjacent sections.

HINGE.—Edwin F. Tilley, New York City. This is an improvement in hinges not permanently connected by the usual pintle, but so constructed that they may be mounted on each other and yet be easily separated. The hinge consists of two sections, one formed with an opening extending through it and having closed sides, one side of the opening being beveled, while the other section has a tongue which fits within the opening, and has its side adjacent to the beveled side of the opening also beveled to conform to the opening side. The improvement is especially adapted to folding couches and beds, tool chests, etc.

PICTURE EXHIBITOR.—George W. Brown, Colorado Springs, Col. This is an improvement in devices adapted for advertising purposes, and comprises a revolving and endwise movable drum in a casing provided with a sight aperture, there being means for rotating the drum and moving it endwise, while the drum, when it reaches the end of its movement, stops automatically and returns to its original position. On the surface of the drum is a spiral strip on which may be arranged pictures or printed matter.

CONVERTIBLE BED AND FIRE ESCAPE.—Henry Marcheter, Wallaceburg, Canada. When in folded condition, this improvement affords a simple, all-metallic spring bed, forming an elastic bed bottom when in position on a bedstead, but it may be readily extended through a window to hang pendent as a ladder. The improvement comprises a number of bed sections, each consisting of two metal strips to the ends of which are secured U-shaped springs, link bars uniting the ends of the sections, and the springs being adapted to form steps when the sections are unfolded.

MOP.—Eugene Stebinger, Portland, Oregon. This improvement consists of a handled roller frame carrying a roller, there being pivoted thereon a second frame carrying a roller, the mop fabric passing between the rollers, while a mop head carrying the fabric slides on guides held on the frame. The construction provides for quickly and conveniently wringing the mop fabric without using the hands directly in such work, facilitating the use of hot water, lyes, etc., in cleaning floors, without detriment to the hands.

CUFF BUTTON.—William G. Sutton, Winston, N. C. This is a button with a clamping device adapted to engage the coat sleeve, holding the cuff always in the same position relative to the sleeve without exposing part of the clamping device or hiding the head of the button. There are serrations on the under side of the head at one side and a spring is extended from the shank to an engagement with the head.

FOOT BRUSH.—Peter Morck, Chicago, Ill. This is an improvement in brushes adapted to engage the sole of the shoe, to subject it to a scraping and a brushing action. The invention provides for stationary side brushes and a vertically movable bottom brush, the latter being made up of sections between which are stationary scrapers so arranged that when the brushes are depressed the foot will rest on the scrapers. Two brush sections are preferably placed side by side, each adapted to receive one foot.

RATTLE.—George C. Smith, Fishkill-on-the-Hudson, N. Y. This is a toy consisting of a rubber body with elastic rings at its ends, one being a teething ring, while the other ring embraces a rattle consisting of a casing having inclosed balls and an exterior groove. The device is very simple and inexpensive.

CHOCOLATE DIPPER.—Cyprien Gouset, New York City. This is one of several successive patents of the same inventor for improvements in dip-pers, for immersing candies in chocolate solutions, and provides a cheap and easily applied cover for each pocket of a dipper to prevent the displacing of the drops or candies in the dipper during the dipping process, the cover being of an open structure, to not interfere with completely coating the articles. The cover offers but little surface for the accumulation of solidified chocolate, and readily closes or opens the pockets.

OIL CLOTH, ETC., CUTTER.—James W. Lewis and Sirius E. Kochendarrer, Hollidaysburg, Pa. For cutting oil cloth, linoleum, carpets, window shades, etc., these inventors provide a cutter of which the support has a straight edge with a rail on its upper surface, in connection with a U-shaped frame from one member of which projects a knife, a shoe being pivoted between the members of the frame and grooved to receive the rail of the support, while a handle projects from the top of the frame.

WAGON BRAKE ROD.—John W. Cook and Charles Scott, Woodburn, Oregon. This is an improvement in brake rods which have one end secured to the operating lever on the box and the other end to a lever on the running gear, the rod being quickly lengthened or shortened by an attachment consisting of two plates or jaws, one with studs and the other with apertures to receive the studs, there being a sleeve on the shanks of the plates or jaws to lock them together. By this means the brake rod can be easily and quickly removed to permit the removal of the box or body from the running gear.

LUBRICATOR FOR VEHICLE AXLES.—James C. Whisman and Louis F. Gerding, St. Joseph, Mo. According to this improvement the axle spindle has in its top a longitudinal tapering groove, in which fits a tapering bar with a head, and a nut on the spindle

has an annular groove into which the head of the bar projects. The lubricant is applied to the bar before its insertion in the groove, and the bar presses the lubricant in contact with the journal or box in the hub of the wheel, it not being necessary to remove the latter from the axle.

NECKTIE.—Pozzo Camillo, New York City. According to this improvement the ends of the tie are passed through channels in a front clamping piece, covered with material similar to the tie, the dimensions of the channels and the elasticity of the clamping piece being designed to hold the clamping piece at any desired place, and the neckband being thus practically adjustable to different widths of bows or scarfs.

TROUSERS SUPPORTER.—Henry Shrier, New York City. This improvement is more especially designed for the use of riders of bicycles, horses, etc., and comprises a trunksupporter yieldingly secured to the waistband of the trousers, the trunks having short leg portions with elastic bands and elastic loops for closing side openings. The supporter is designed to support the abdomen irrespective of the movement of the leg portions of the trousers.

AWNING.—James S. Sanders, Durango, Col. A frame of curved bars, according to this improvement, is arranged across the window frames to serve as guides for vertical slide bars secured to the edges of the sections of the awning, one of which is secured at each side of the window opening. The awning sections are designed to be evenly opened and closed, as desired, by means of operating cords secured to the slide bars.

CRUDE OIL BURNER.—Thomas J. Brough, Baltimore, Md. For burning the heavier oils, this invention provides for a separation of the oil in the burner itself into a lighter and easily vaporized oil and a heavier oil to be drawn off and burned through a separate nozzle or otherwise utilized. The fire chamber is composed of a series of coils, a burner at the lower end discharging into a central space and there being a chamber for separating the light from the heavy oil in one of the convolutions of the coils, directly within the influence of the burner's heat, a pipe from such chamber leading away the heavy oil.

FENCE WIRE STRETCHER.—Hugh Robinson, Exeter, Neb. This device comprises a toothed bar, one end of which is connected by a chain to the post, there being fulcrumed on the outer end of the bar a hand lever on which is a clamping device to engage and clamp the wire to be stretched, a link connected with the hand lever engaging the teeth of the bar. The device is very simple, can be readily attached to the post at the desired height for the wire, and is easily manipulated by a single person.

GATE.—Orville M. Blood, Elburn, Ill. This gate may be opened or closed from either side by a person on horseback or in a vehicle. The invention provides a cheap and strong working mechanism, not liable to get out of order, there being on the gate a slide bar engaged by a keeper and also a bracket on the slide bar, while a brace is pivoted to the bracket and to the gate. Tilting connecting levers are arranged at right angles to the gate when closed, and an adjustable pull rod connects the levers and bracket.

Designs.

BUILDING BLOCK.—George H. Bodine, Zanesville, Ohio. This block is exteriorly of rectangular form, with plane uniform surfaces on five sides, while in its sixth side is a cylindrical pocket with concaved bottom.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

NEW BOOKS AND PUBLICATIONS.

LETTERING FOR DRAUGHTSMEN, ENGINEERS AND STUDENTS. A practical system of freehand lettering for working drawings. By Charles W. Reinhardt. New York: D. Van Nostrand Company. 1895. Pp. 23, Plates IX. Price \$1.

The lettering of a drawing to many draughtsmen is the most difficult portion of the work. Successful letterers work by freehand. The author of this manual designs it for practical work, and therefore for freehand lettering, and we feel that it will be acceptable to many as embodying an excellent system of teaching and of learning this somewhat difficult art.

CHEMICAL TECHNOLOGY; or, Chemistry in its Application to Arts and Manufactures. Edited by Charles Edward Groves, F.R.S., and William Thorp, B.Sc. Vol. II. Lighting, Fats and Oils. By W. Y. Dent. Stearine Industry. By J. McArthur. Candle Manufacture. By L. Field and F. A. Field. The Petroleum Industry and Lamps. By Boverton Redwood. Miners' Safety Lamps. By B. Redwood and D. A. Louis. Philadelphia: P. Blakiston, Son & Company, 1012 Walnut Street. 1895. Pp. xvi, 398. Price \$4.

This second volume of chemical technology, now issuing from the press of T. Blakiston, Son & Company, is devoted to lighting, covering fats and oils, the stearine industry, candle manufacture, petroleum industry and lamps, and miners' safety lamps. All we can say of it is that it is so thorough in its treatment and so complete that it is quite futile for us to attempt to review it. The single volume of about 400 pages contains, on the average, nearly one cut for each page. Its contents and list of illustrations alone take nearly ten pages, while an excellent index closes the work. It forms the second volume of the technology, of which the third volume is nearly ready. The first volume has been devoted to fuel and its applications. The third one will be devoted to

