

RECENTLY PATENTED INVENTIONS.

Engineering.

ENGINE GOVERNOR.—Martin A. Green, Altoona, Pa. This governor is of a class which have a laterally movable eccentric upon the crank shaft of the engine, centrifugal weights operating in connection with centrifugal springs to vary the position of the eccentric, the invention covering an improved construction whereby the force exerted by the springs may be readily and accurately adjusted with reference to the opposing force exerted by the centrifugal weights.

LOCOMOTIVE EXHAUST NOZZLE.—John J. De Lancey, Binghamton, N. Y. This nozzle has an unobstructed open upper end, and in connection therewith is employed a flat plate having an unobstructed opening of the same size as the nozzle outlet, to one side of which it is pivoted to vibrate horizontally across it, its swinging motion being under the control of the engineer in the cab, whereby the exhaust may be regulated, thereby regulating the draught in the boiler.

WHEEL FOR ROAD ENGINES.—Rescue B. Page, Oakland, Cal. This wheel is so made as to prevent the sinking into the ground of the shoes used with it, also providing means whereby one of the shoes will at all times be in contact with the ground, and whereby the shoe to be lifted will be elevated first at that end facing the line of travel of the wheel, thus reducing suction.

BOILER LEVELER.—Ole O. Kravik, St. Carl, North Dakota. This invention provides a construction specially designed for portable boilers, to raise and lower their front ends when going up or down a grade without interfering with the turning of the front wheels, the devices therefor being simple, durable, and easily manipulated.

Railway Appliances.

CAR COUPLING.—Benjamin J. French and John H. Carroll, De Smet, South Dakota. The drawbar of this coupler is made in two hinged sections capable of lateral movement, the outer end of the bar terminating in a coupling hook, while a spring is attached to the drawhead and the hinge of the drawbar, and a shaft has a chain connection with the drawbar, the device being designed for use with the ordinary drawhead, to be manipulated from the top or sides of the car, and for coupling with an opposing coupler of greater or less height.

CAR COUPLING.—William H. Franks, Sonoma, Texas. This is a coupler of simple construction, to be manipulated from the top or sides of freight cars and from the sides or platform of passenger cars, the drawhead having an upwardly extending post in which is fulcrumed a lever, combination with peculiar forms of lock and link lifts, and various other novel features.

Mining, Etc.

CRUSHING ROLLS AND APPARATUS FOR REDUCING ORES.—Daniel Brennan, Jr., Bayonne, N. J. Three patents have been granted this inventor for radical improvements in machines for the reduction of ores, the crushing rolls of which comprise fixed and yielding rolls, the yielding rolls carrying pulleys and ropes provided with weights, there being a spring cushion for the weights, and screw rod stops of improved construction for the yielding roll, etc., whereby the rolls will have a steady and uniform pressure, but will yield should a drill point or other like article be passed in with the ore. For use in connection with the rolls a series of separator screens is provided, common to all the rolls, with conveying mechanism between the rolls and screens. The screens of the apparatus form receivers for the coarse products or tailings of each of the rolls, as well as distributors for the delivery of the tailings to the several rolls, thus facilitating the more speedy and economical reduction of the ores by assorting the material after its initial breaking, with special reference to the adjustment and capacity of the several rolls, the material being reassorted and redistributed to the rolls until reduced to the requisite degree of fineness. The feed regulator provided for use with these mills, though also capable of use for other purposes, has two superposed slides, arranged after a novel manner, and formed of sectional slides made up of relatively movable strips or individual slides, by means of which the ores, either coarse or fine, may be fully under the control of the operator, and the feed may be varied to supply more or less material at any particular point, or entirely cut off the supply at any point, the main object being to prevent any uneven wearing of the roll.

Mechanical.

PLATE PRINTING PRESS.—Wellington P. Kinder, Boston, Mass., and George H. Kendall, New York City. This invention relates to presses in which the inking, wiping and polishing of the plate are performed automatically, and provides improved mechanism for the wiping and polishing, and means for shifting the web over the face of the wipers and polishers, whereby the cloth will be applied in both services in both the forward and back stroke of the plate, while a perforating mechanism is provided in combination with the other improvements.

TOOL FOR DRESSING EMERY WHEELS.—Anson A. Reed, Worcester, Mass. In this device the shaft on which the cutter head is mounted is screw threaded between journals and has a collar, the cutter head consisting of a series of cutters and spacing collars clamped together by rivets or bolts and screw threaded interiorly to fit the shaft, the tool being adapted for use by hand or in the tool post of a lathe or similar machine.

SHOE TURNING MACHINE.—Jason H. Edgerly, Chicago, Ill. This machine has a hub pivoted on a support and provided with radially extending forms, which are changed to fit the varying sizes of shoes, a curved arm extending from the upper portion of the hub having its lower end opposite the toe of a form, to facilitate quickly turning shoes made as "turns" right side out.

Agricultural.

CUTTER BAR FOR HEADERS.—Charles E. Plumtree and Louis A. A. Tonne, Spokane Falls, Washington. This is a double cutter bar for a harvesting machine, a pitman connected with a lever operating one of the cutter bars, the other cutter bar being operated by another lever formed of two members united by a sliding connection, each of the members having a separate fulcrum, and the two-part lever being connected to and operated by the first lever.

Miscellaneous.

TAILORS' STOVE.—George Hay, Picton, Canada. This is a compact and convenient stove for quickly heating tailors' irons, the fire chamber having apertured side plates connecting with vertical side flues which intersect a horizontal flue above the side walls of the fire chamber, the stove being principally formed by readily assembled cast iron plates.

PLATFORM ROCKERS.—Richard H. Krall, Allentown, Pa. This invention covers an attachment providing means whereby the body of the chair may be readily locked to the platform, and held rigidly in an upright or inclined position, the device also acting as a safety check, preventing the body of the rocker from falling backward should an accident happen to the spring.

ADJUSTABLE SWING.—William K. Miller, Troy, Kansas. Two doubled ropes are used in this swing, and the seat board has a shaft projecting from each end carrying a locking sleeve adapted to retain a rope end, with other novel features, whereby the swing may be readily adapted for height to suit different persons.

WINDOW SCREEN.—Christian C. Schupbach, Grand Island, Neb. This is a wire cloth device, applicable either in a stationary or sliding form, and which can be readily put in position, being adjustable for windows of different widths, while it is designed not merely to exclude flies, but to allow for their escape without letting in others.

DRAWER ATTACHMENT.—Edward W. Stone, Chicago, Ill. This is a stop attachment in which a novel form of angle iron turning in a socket is so applied that the drawer may be pulled outward essentially its entire width and yet sustained against falling from the cabinet, it being possible also to remove the drawer from its place when desired without disturbing the attached device.

WATER WHEEL.—Thomas A. McDonald, Durham, Canada. This is an improvement in wheels adapted to be anchored in a stream, whereby the force of the current may be utilized to drive machinery, and the hub of the wheel is divided into vertical clutch sections between which are introduced tongue-like extensions of paddles of peculiar form, having pockets thereon.

FOOT REST.—John K. Phillips, South Orange, N. J. This is an improved article of manufacture designed especially for use in shoe stores in the fitting on of shoes, giving increased convenience with economy of space, and there being in connection with the foot rest a sliding knee rest for use by the salesman, the latter rest being moved into the foot rest when not required for use.

KNITTING SEINES, ETC.—Nathaniel D. Sollers, Sollers, Md. This invention covers an improvement on a former patented invention of the same inventor, and provides a new mesh plate for the use of seine knitters in forming the loops or meshes of the seine, being designed to permit of the formation of the weaver's knot by what is known as the French method by a single passage of the needle in a rapid and convenient manner.

PERMUTATION LOCK.—Alphonse Metzger, Milton, Pa. Combined with a tubular lock case having a longitudinally grooved portion and annular external grooves are radially apertured rings having interchangeable pins projecting their apertures into the grooves, and a bolt having a notched edge to be engaged by the inner ends of the pins, with other novel features, the lock being so constructed that the bolt may lock various devices.

PIKE POLE.—Alfred E. Creigh, Roncerverte, West Va. This invention provides a socket piece for the end of the pole, and a pike or point having its shank formed to fit the socket, and so that it may be easily slipped in or removed therefrom when the clamping band is removed, whereby the point may be readily renewed when it becomes dulled.

PAVEMENT.—Frederick C. Schmidt, New York City. This invention provides a form of construction by which a pavement may be readily laid, and designed to prevent sagging of the paving blocks, which are laid between the transverse ribs of cast metal plates, the ends of these plates having flanges which rest in channels in the top of supporting beams laid on the ground.

FUNNEL.—William R. Cole, Pottsville, Pa. This is a device designed particularly for filling oil lamps, and for other uses where the filling up of the vessel cannot be readily observed, there being combined with the funnel tube a float and indicator to be lifted by the liquid when the vessel is full or nearly so, the float being attached eccentrically to a rod movably attached to the spout.

ATOMIZER.—Josef Schoettl, Brooklyn, N. Y. The spray pipe of this device is secured to a neck piece on a coupling head by a rib and groove connection which permits the pipe and its nozzle to be rotated on the neck piece, the atomizer being designed to facilitate the spraying of medicinal liquid preparations within the head and throat, and being a compact device, readily separable into its component parts.

DENTAL MALLET.—William H. Dibble, Brooklyn, N. Y. This mallet has a plugger at each end, with means for pneumatically delivering a blow simultaneously on each plugger, so that one blow neutralizes the other, the handle remaining stationary, and the entire effective force of the stroke being imparted to the pluggers.

VEHICLE WHEEL.—Victor F. Mogk, Seattle, Washington. This wheel has an inner tire with an annular channel in its periphery, and an outer elastic tire, with springs interposed between the tires, whereby the percussion resulting from travel is absorbed, and shock or jar is obviated, the tires coming together when the wheel is subjected to excessive weight.

FENCE.—Aaron F. Dickey, Friedens, Pa. This is a truss-supported fence of novel construction, whereby the fence may be raised to any desired height by drawing on the ends of the truss wire, and a span of fence from ten to twenty rods in length may thus be held up.

ORNAMENTAL NAIL HEAD.—Otto F. Wegener, Seattle, Washington. This is an improvement in ornamental hangers designed for use as picture nails, nails or screws for supporting brackets, etc., against the wall, the invention covering a novel form and combination of parts.

WINDOW SCREEN.—Thomas Robinson, Minneapolis, Minn. This invention relates to removable window screens, and is composed of two similar frames which when taken from the window may be folded to occupy small space, the screen in place being entirely outside the sash, so that the latter may be raised and lowered without interfering with the screen.

MOP WRINGER.—John Frost, Omaha, Neb. This is a simple and durable device for easily wringing a mop without soiling the hands, while at the same time the pail or bucket is not liable to be upset.

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.

SCIENTIFIC AMERICAN BUILDING EDITION. JANUARY NUMBER.—(No. 63.)

TABLE OF CONTENTS.

1. Handsome colored plate of an elegant residence on Riverside Avenue, New York City. Cost \$60,000 complete. Floor plans, two perspective elevations, etc. Mr. Frank Freeman, New York, architect.
2. Plate in colors showing an attractive cottage at Maplewood, Chicago. Estimated cost \$3,000. Perspective view and two floor plans.
3. A cottage at Rutherford, N. J., erected at a cost of \$6,000 complete. Perspective elevation, floor plans, etc.
4. An elegant residence at Chestnut Hill, Pa., recently erected for Mr. Alfred C. Rex. Cost \$30,000 complete. Floor plans, perspective elevation, etc.
5. Sketch and floor plans of a residence at Stockton, Cal. Estimated cost \$10,000.
6. Cottage at Englewood, Chicago. Perspective view and floor plans. Cost \$4,200.
7. Residence on Powelton Avenue, Philadelphia, Pa. Cost 30,000 complete. Architect Thos. P. Lonsdale, Philadelphia. Floor plans, perspective elevation, etc.
8. A cottage at Jackson Park, Chicago. Estimated cost \$4,000. Floor plans, perspective elevation, etc.
9. Cottage on Munroe Avenue, Chicago. Two floor plans and perspective view. Cost \$300.
10. Residence at Wayne, Pa., from plans prepared by W. L. Price, architect, Philadelphia. Cost \$7,000 complete. Floor plans, perspective view, etc.
11. An attractive country church of moderate size recently erected at Glen Ridge, N. J. Estimated cost about \$15,000. Perspective view and floor plan.
12. Cottage at Lakeview, Chicago. Floor plans and perspective view. Cost \$3,000.
13. A stable combining both beauty and convenience, erected for Mr. A. C. Rex, at Chestnut Hill, Pa. Cost \$1,800. Plans and perspective.
14. A cottage at Austin, Chicago, Ill. Cost \$4,300. Two floor plans and photographic view.
15. Sketches of park entrance lodges.
16. Engraving of the Woman's Temperance Temple, Chicago, Ill., as it will appear when finished. Estimated cost of the Temple \$1,100,000.
17. View of Whitworth Memorial Hospital.
18. Miscellaneous contents: The marble industry.—Lighting streets of London.—Mahogany ties and marble bridges.—Staining floors.—The Peruvian temple of Pachacamac.—How to catch contracts.—Black birch.—Some of the merits.—Improve your property.—The SCIENTIFIC AMERICAN a help to builders.—An improved article for plastering, tiling, and cement work, illustrated.—The Sinclair double rocker, illustrated.—An improved veneer press, illustrated.—Our last year's volume.—The Albany Venetian blinds, illustrated.—A convenience for hospitals, families, etc., illustrated.—The education of customers.—The Buffalo hot blast heating system, illustrated.—The "Willer" sliding blinds, illustrated.—Mueller's water pressure regulator.—Artistic wall decorations.

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Notes & Queries

HINTS TO CORRESPONDENTS.

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(2660) E. J. E. asks: 1. What will preserve a proof of a photograph to keep it from fading? A. Dip the proof in a solution of hyposulphite of soda, 20 grains, dissolved in 5 ounces of water for ten minutes, then wash in changing water for two hours. 2. How should a young Canary bird be treated as to food, and the best method in teaching to sing? A. We can supply you with "Canary Birds, a Complete Guide for their Breeding, Rearing, and Treatment," price 75 cents. Also "The Canary Book, containing Full Directions for the Breeding, Feeding, and Management of Canaries, etc.," by Wallace, illustrated, price \$2.

(2661) C. R. asks why gas formed in an explosion of coal gas, i. e., the exhaust of gas engines, is not used for inflating balloons, as I should think it necessarily would be lighter than coal gas. A. It is not only heavier than coal gas, but is heavier than air. It consists of carbon dioxide and nitrogen; the vapor of water condenses immediately, leaving the other two gases.

(2662) A Subscriber asks: Is the film of incandescent lamps a kind of carbon? A. Yes.

(2663) A. M. F. asks for the best formula for making "blue print" solution.—A. See SCIENTIFIC AMERICAN SUPPLEMENT, No. 584, for full directions.

(2664) S. A. R. asks: Can you tell me how to transfer prints, etc., on an enamel surface, so that they may be fired? A. See Henderson's method in SCIENTIFIC AMERICAN SUPPLEMENT, No. 382.

(2665) Health Officer asks: Do you know of any process for the destruction of the gases and smoke emerging from stacks resulting from burning copper ore and evolving large quantities of sulphur and sulphurous gas? A. There is no practical way of

disposing of the trouble you mention. In some places the gases are saved and made into sulphuric acid, but this we presume does not apply to your case. If a water tower could be used, so as to wash the escaping gases, some improvement would be effected.

(2666) R. asks how to run white wax gums out in cubic form, while the paraffine is hot and melted. We have tried iron, glass, marble, wood, and tin, but find it sticks to them all. A. Use powdered starch. Place it in a tray and form the mould by pressing down into it a cube of wood, slightly tapered to make it "draw."

(2667) Subscriber asks for a recipe for replating knives, Rogers' make A. No. 1. A. In our SUPPLEMENT, No. 310, you will find electro-plating decreased. Steel should receive a light deposit of copper before silver plating.

(2668) A. B. F. asks how to make a glue or cement which will hold copper and zinc filings to leather when exposed to dampness or water. A. Try shellac and alcohol, or varnish the surface with copal or other varnish, and when tacky sprinkle on the filings.

(2669) A. T. O. asks: 1. What is the present market price of aluminum, and how much of it is there in a cubic foot of common blue clay? A. The price depends on the quantity. It is about \$4 a pound. The quantity in clay varies. It may be fifty per cent, generally it is much less. 2. How much carbon dioxide results from the complete combustion of 1 gallon of good kerosene? A. About 1 1/2 pounds. 3. I have applied strong water of ammonia to the red spots formed on a woolen coat by nitric acid, but it does not remove them. What shall I do? A. You cannot remove them except by instant application of ammonia. Any delay makes them ineradicable. 4. Would it be dangerous to grasp a "live" electric wire with both hands at once if the feet do not touch the ground or any other conductor? A. Not under ordinary conditions; it might be unpleasant. 5. Does increased speed in a dynamo result in increased voltage? A. Yes. 6. Is there anything in the following: "Smokers will be glad," says Invention, "to hear that tobacco may be employed to any extent without injury to health. Dr. Gauretlet, of Vichy, has discovered that by inserting in the pipe or cigar holder a piece of cotton wool steeped in a solution of pyrogallic acid, all the ill effects of nicotine will be neutralized. The mischief frequently caused to heart, mouth, and nerves is thus prevented, while the taste of the tobacco remains unaffected." A. We do not know. We doubt it.

(2670) F. E. A. asks: 1. Is there any way you know of in which kid gloves can be cleaned without wetting them, that will work as well as wetting them? A. Stale bread is sometimes used for this purpose. The gloves are put on and the softer part of the bread is broken up into crumbs and the hands are rubbed one over the other as in the act of washing, the crumbs being thus rubbed over all parts of the gloves. Spongy rubber is often used for glove cleaning. It is applied in the same manner as in cleaning drawings, &c., it is rubbed over the soiled parts of the glove. 2. What are first class lantern slides painted with to produce the greatest transparency and brilliancy without light, etc., affecting the colors? Also how to apply the colors without showing brush marks when enlarged? A. Transparent oil colors are generally used. They are mixed with varnish and carefully applied. Large masses of color are sometimes applied to the back of the glass, where they will be out of focus, and while they tint the picture the brush marks will not show. The finest lantern pictures are tinted with colors insoluble in Canada balsam, and the slide cover is cemented on with balsam.

(2671) B. F. E. asks: 1. How is dry battery compound made, such as is simply dissolved in water, with no other addition? A. The bichromate battery compound is made by mixing sulphuric acid with dry powdered bichromate of potash. As the dust of the bichromate of potash is poisonous, and as the fumes given off during the mixture are deleterious, we would not advise a novice in chemistry to try to make the compound. Special appliances are needed to avoid unpleasant consequences. 2. When wire is said to be burned out, is it consumed or simply destroyed as a conductor, I mean in a small dynamo? A. An armature wire is burned out when the insulation of the wire is destroyed. In addition to this result of a heavy current, the wire may be fused. 3. How much wire should be wound on a magnet core (such as used for bells) to make it five ohms resistance, No. 28 wire? A. 74 feet, or about 1/2 ounce. 4. What is the resistance of 50 feet of No. 30 wire? A. About 2 1/2 ohms. 5. Should a zinc and carbon be same size and thickness? A. They need not necessarily be of the same thickness. The carbon may be thicker.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

December 23, 1890.

AND EACH BEARING THAT DATE.

(See note at end of list about copies of these patents.)

Adjustable chair, E. Pynchon 443,197
Adjustable screen and window shade fixture, combined, T. Chope 443,115
Advertiser's reply coupon, A. W. Kithredge 443,141
Air moistening apparatus, G. B. Allen 443,172
Air purifying apparatus, G. Sobotka 443,300
Annomia soda apparatus, J. P. Barnum (r) 443,135
Axle nut, carriage, I. Sharaf 443,117
Bag. See Mail bag.
Bag fastener, J. F. Schultz 443,298
Mail and car therefor, detachable, L. N. Lusk 443,100
Ball ear for cake baskets, etc., J. E. White 443,213
Balance escapement, C. E. Emery 443,172
Baling machine, G. B. Allen 443,172
Baling machine, twine, A. C. Miller 443,103
Banjo, B. E. Bradbury 443,159
Bar. See Gate bar.
Barrel hanger, O. Federson 443,147
Bath tube, stand or over flow pipe for, J. Barrett 443,310
Battery. See Galvanic battery. Secondary battery.
Bed and lounge, combined, H. Burgess 443,389
Bell cord attachment, G. A. La Fever 443,396

Belt, electric, J. L. Pratt 443,226
Belting, leather, C. Brugger 443,452
Bicycle, F. B. Hunt 443,482
Bit. See Horse bit.
Bitters, P. Hebert 443,236
Blacking stand, M. Hanson 443,441
Block. See Printing block.
Blotter, C. Galle 443,205
Body brace, R. Ray 443,113
Boiler. See Hot water boiler. Steam boiler.
Boilers, air heating flame bed pipe for steam, W. E. Ritchie 443,334
Boilers and salt making, purifying water for, J. L. Alberger 443,189
Boilers, water strainer for steam, M. H. Detrick 443,220
Bolt, F. W. Wallace 443,418
Book binding, H. G. Razall 443,352
Book, check or other like, E. E. Purdy 443,286
Book for indexes, Moore & Warren 443,196
Book, order, H. A. Foster 443,189
Boot or shoe last, sacks & Richmond 443,199
Boot scraper and cleaner, L. B. Gibson 443,437
Bottle wiring mechanism, Lacasse & Wile 443,194
Bottles, apparatus for controlling and registering the delivery of, R. Jewell 443,365
Box. See Butter box. Fire alarm box. Hat or bonnet box. Jewel box. Lunch box. Musical box.
Box closure, Stanley & Wrightson 443,120
Brace. See Body brace.
Bracket. See Shingling bracket.
Brake. See Car brake. Vehicle brake. Wagon brake.
Brick machine, G. W. King 443,321
Brick machine, H. H. Stukenberg 443,413
Brushing machine, R. T. Palmer, Jr. 443,179
Buckle, J. A. Traut 443,245
Buckle, suspender, O. Oppenheimer 443,258
Burnt casket, J. D. Eason 443,303
Burner. See Gas burner. Hydrocarbon burner. Oil burner. Oil or other liquid fuel burner.
Butter box, G. E. Dumas 443,271
Button machine, H. Thurston 443,417
Cable grip, E. Denny 443,392
Calculating machine, G. W. Goetz 443,416
Canal digging machine, J. McMullen et al. 443,458
Car brake, W. Henry 443,384
Car coupling, N. E. Smith 443,466
Car seat, W. B. Beal 443,311
Car seat, W. A. Wright 443,338
Car seat, H. Schreiner 443,211
Car, stock, S. Lazarus 443,287
Cars, omnibuses, etc., registering and recording apparatus for tram, T. Gregory 443,090
Card clothing, tool for setting up bent teeth of, Gardner & Reid 443,253
Carding machine, materials, machine for, J. P. Thompson 443,414
Carding machine, J. P. Thompson 443,415
Carding wool, etc., machine for and method of, J. P. Thompson 443,416
Carpet fabric, Ingrain, W. B. Keefer 443,095
Carpet throw, J. E. Davidson 443,163, 443,164
Carrier. See Straw carrier.
Cart, four wheel dog, W. H. Barlow 443,227
Cart, road, H. Duffey 443,222
Cash drawer and desk, S. Messerer 443,217
Cash register, electric, W. J. Bundy 443,475
Casket holder, H. Schreiner 443,469
Caskets or other articles, support for, W. White 443,469
Ceiling, metallic, W. R. Kinnear 443,323, 443,324
Chains, apparatus for treating drive, J. D. Storie 443,302
Chains for shipment, machine for preparing drive, J. D. Storie 443,303
Chair. See Adjustable chair. Convertible chair. Dental chair.
Channelling machine, W. H. Bryant (r) 443,471
Check row attachment, J. C. Barlow 443,471
Checks, apparatus for issuing, J. S. Reehill 443,333
Churn, L. H. Shambaugh 443,400
Circuit breaker and closer, Potter & Cartwright 443,401
Cleaner. See Tricarb cleaner.
Clepsis, safety, J. F. Forrest 443,393
Clip or paper holder, E. D. Rockwell 443,310
Clocks, electro-mechanical central system for regulating, C. A. Mayrhofer 443,291
Clock. See Tricarb cleaner.
Cloth sponging apparatus, G. Kraft 443,325
Cloth washing machines, guide eye for, H. J. Kennedy 443,285
Clothes line, S. Smith 443,411
Club, Policeman's, A. W. Smith 443,263
Coal gas, J. W. Davidson 443,430
Coffee boilers and method of making the same, J. P. C. Lagard 443,154
Coin operated receptacle, W. Macnamar 443,368
Coloring and tinting, composition for, F. W. Fewings 443,361
Comb. See Curry comb.
Combination lock, D. R. Breed 443,218
Computators in dynamo machines, machine for dressing the, G. P. Cummings 443,270
Confectionery, machine for dropping, T. Hoelder 443,281
Converter, J. T. W. Walton 443,127
Conveyer for carrying crushed stone, F. St. Clair 443,458
Corking bottles and wiring the corks therein, machine for, Wile & Lacasse 443,185
Corn sheller and cutter, combined, S. Loree 443,143
Cornice, metal, W. R. Kinnear 443,322
Corking bottles and wiring the corks therein, machine for, Wile & Lacasse 443,185
Coupling. See Car coupling.
Crank connection, D. A. Cameron 443,267
Cultivator, W. H. Fuller (r) 443,134
Cultivator, listed cord, D. W. Plowman 443,148
Curry comb, J. Bailey 443,215
Curtain fastener, J. B. Walton 443,127
Curtain fixture, J. Dorn 443,188
Curtain fixture, C. G. Gussel 443,091
Curtain pole support, H. J. Gilbert 443,175
Curtain ring, J. Lines 443,248
Cut-out. See Edge trimming cutter. Rod or pipe cutter. Stalk cutter.
Cutting mechanism, Lacasse & Wile 443,193
Dental chair, E. T. Starr 443,152
Dental plunger, J. L. Mewborn 443,399
Denture, artificial, J. E. Low 443,414
Distilling and carbonation, apparatus for, T. McGowan 443,228
Door check, J. H. & J. Sherry 443,262
Door or analogous device, H. I. Berners 443,350
Door, screen, W. R. Lyle 443,448
Drainage holder, J. J. Connelly 443,133
Drill, or auger, G. H. Sellers 443,297
Dry apparatus, M. W. Rappleye 443,150
Dust pan, W. D. Martin 443,327
Dye, yellow red, C. Schraube 443,408
Edge trimming cutter, J. F. Freeman 443,434
Electric heater, W. K. Scheurzel & Hess 443,407
Electric motors, mounting for, A. L. Riker 443,227
Electric street light, G. M. Kim 443,097
Electric wires and their coverings, apparatus for painting, R. W. Heppell 443,237
Electrical distribution, system of, Rowland & Dunbar 443,181
Electrode, secondary battery, I. Kitee 443,454, 443,455
Electrotype, E. H. Hanson 443,278
Elevator, C. E. Foster 443,273
Elevators, electric safety device for, Holmes & Grosvenor 443,282, 443,283
End gate, wagon, J. W. Lesan 443,099
Engine. See Steam engine.
Envelopes, device for feeding, W. Heidelbergmann 443,093
Expandible wheel, H. F. Hall 443,276
Fabric. See Carpet fabric.
Feed apparatus or carrier, Lacasse & Wile 443,098
Feed or carrier mechanism, Wile & Lacasse 443,114
Feed regulator, W. Grubben 443,139
Fence gate, wire, A. D. Neff 443,146
Fermented liquids, apparatus for the manufacture of, H. Gotter 443,190
Filter, bull, F. Butler 443,129
Filter, water, J. J. Ruddle 443,182
Fire alarm box, J. J. Ruddle 443,182
Fire alarm system, Feary & Speicher 443,478
Fire departments, hook and ladder turn table truck for, G. M. Kim 443,096
Fire escape, G. W. Bowman 443,388
Fire or incising apparatus for railway cars, W. H. Beach 443,385
Fireplace, M. King 443,239, 443,240
Fishing device, C. A. Kunzel 443,286
Fork. See Velociped fork.
Form setting and type casting machine, G. Corsa 443,086
Fountain. See Quill drinking fountain.
Frame. See Mosquito bar frame.
Friction wheel, J. Meier 443,102
Fruit picker's knife, T. B. Jordan 443,178
Furnace. See Calcining or analogous furnace.
Furnaces, fuel crushing and feeding device for, N. W. Pratt 443,109
Gauge. See Pressure gauge.
Gallacetophenone, M. V. Nencki 443,402
Galvanic battery, H. J. Brewer 443,219
Game apparatus, T. A. Goodwin 443,439
Game counter, O. Harding 443,279
Game, field, W. Brown 443,422
Garment supporter, C. J. Seldner 443,465
Gas and electric light fixture, C. Felton 443,483
Gas, apparatus for the manufacture of coal, J. J. Thomas 443,153
Gas burner for stoves or other heaters, A. J. Doty 443,221
Gas, manufacturing, L. Stevens 443,122
Gate. See End gate. Fence gate.
Gate, M. E. Boughton 443,484

Gearing, changeable speed, Martin & Corser 443,370
Generator. See Steam generator.
Gearing, changeable speed, for, A. G. Neville 443,405
Grab hook, O. Boiteau 443,473
Grain binder, J. G. Gilmer 443,176
Grain cleaning machine, A. Laidlaw 443,396
Grain scourer and cleaner, A. Moore 443,372
Grate bar, W. J. Owens 443,401
Grinding mill, L. Cameron 443,485
Grinding mill, L. Poulain 443,295
Hammer, horseshoe, G. T. Peters 443,377
Hanger. See Barrel hanger. Pipe hanger.
Harness, C. W. McDorman 443,106
Harrow, J. Runkle 443,115
Harvester wheel, J. V. Woragen 443,126
Hat or bonnet box, millinery, A. C. Mack 443,397
Heater. See Hydrocarbon liquid heater. Water heater.
Heel burnishing machine, C. J. Addy 443,420
Heel machine, T. W. Downie 443,162
Highways, construction of, C. E. Keach 443,330
Hinge, spring, H. A. J. Rieckert 443,380
Hog trough, H. A. Rose 443,228
Holder. See Casket holder. Drapery holder. Shade holder.
Hook. See Grab hook.
Horse shoe, L. W. E. Smith 443,158
Horse spreading device, Hague & Bolles 443,362
Horseshoeing jack, J. Allen 443,346
Hose support, fire, J. A. Offer 443,490
Hot water boiler, D. L. Winnell 443,412
Hot water boiler, M. Nicholson 443,329
House. See Carriage house.
Hydrocarbon and other oils for burning, preparing, J. H. Macy 443,235
Hydrocarbon burner, R. T. Davies 443,316
Hydrocarbon liquid heater, W. R. Addicks 443,214
Indicator, C. E. Brunthaver 443,314
Inkstand, E. W. Taylor 443,244
Insulator, W. L. R. Emmet 443,174
Insulator, electric, F. Bain 443,157
Ironing, finishing, and drying machine, H. C. Chasles 443,131
Jack. See Horseshoeing jack.
Jewel box, T. J. Hermann 443,094
Jewelry, J. Bonner 443,425
Jewelry, interchangeable die for the manufacture of, H. B. Veit 443,383
Kitchen, field, K. Hahn 443,206
Knife. See Fruit picker's knife.
Knitting machine, splitting thread gripper and slackener for, Pepper & Davis 443,412
Knob attachment, C. Preston 443,208
Knob, door, J. E. Gaitley 443,223
Ladder step, C. L. Smith 443,289
Lamp shade, J. T. Simpson 443,109
Lamp, table, J. E. Smith 443,212
Lantern support, vehicle, A. Hering 443,267
Lasting machine, S. Braggins 443,451
Lasting machine, E. S. Combs 443,429
Lathe, J. D. Silberzahn 443,335
Lawn sprinkler, R. Franken 443,384
Leather, machine for preparing, F. J. Faulkner 443,433
Lettering machine, bookbinder's, G. H. Reynolds 443,379
Light. See Electric street light.
Lock. See Combination lock. Master key cylinder lock.
Lock, water, J. E. Sparks 443,479
Locomotives and cars, device replacing derailed, H. Schreiner 443,200
Locomotives, steam brake mechanism for, Dunbar & Austin 443,272
Locomotive, steam, J. E. & W. J. Garlick 443,225
Loom picker, C. H. Wagg 443,407
Loom shedding mechanism, E. Hollingworth 443,444
Looms, batten-operating mechanism for power, Devigne & Durand 443,161
Lubricating device, J. S. Whitney 443,255
Luggage, trunk, trunkway 443,163
Mail bag, Terpening & Thomas 443,220
Mail sack crane, J. F. Mains 443,320
Marking textile fabrics, D. S. Oiphant 443,375
Masonry, tool for pointing, J. A. Blanchard 443,387
Master key cylinder lock, H. B. Sarzent 443,261
Mechanical drawing, apparatus for, J. A. H. 443,472
Mat, W. C. Price 443,331
Microscopical examination of photographic pictures, apparatus for facilitating the, H. Duncan 443,359
Mill. See Grinding mill. Rod mill.
Milk, J. P. Spill 443,338, 443,339
Mosquito bar frame, P. M. Owen 443,412
Motion, device for transmitting, J. T. Pedersen 443,259
Motion, machine for converting, E. Coburn 443,132
Motion, mechanism for converting, W. T. Kellogg 443,284
Motor. See Spring motor. Wave and tide motor.
Musical box, C. A. Roepeke 443,114
Musical instrument, S. Tanaka 443,305
Musical instruments, music sheet for mechanical, G. H. Chinnock 443,352
Nitro-cellulose, preparing, G. M. Mowbray 443,166
Oil burner, J. F. Coates 443,477
Oil can attachment, C. J. Hill 443,140
Oil or other liquid fuel burner, crude, T. Willis 443,342
Ore concentrator, J. Tulloch 443,171
Organ stop action, N. M. Boynton 443,426
Organ stop action, composition for coating mouldings therewith, machine for, B. C. J. Andersson 443,421
Pad. See Water closet seat pad.
Paint, J. H. Baker 443,422
Pan. See Dust pan.
Paper cutting machine, A. Malm 443,398
Paper, packing frame for shipping, W. Brown 443,474
Paper, white safety, A. Schlumberger 443,116
Photographic cameras, stop or diaphragm for, L. G. Buzelov 443,386
Piano attachment, F. S. Warren 443,156
Piano, grand, for upright, S. Hansing 443,277
Picker. See Loom picker.
Pin. See Suspender securing pin.
Pipe hanger, E. Rutzler 443,198
Planter, chopper, and cultivator, J. L. Murdock 443,286
Planters, seed dropping attachment for, Helvern & Schroeders 443,143
Plov, J. Silbermann 443,229
Post driver, Birney & Lease 443,424
Poultry drinking fountain, Burrell & Roblee 443,428
Power. See Propelling power.
Press. See Paper press.
Pressure gauge, recording, J. B. Edson 443,360
Printer's quoin, H. A. Hempel 443,280
Printing block or form, McCurdy & Wines 443,373
Printing machine, oil cloth, W. H. Townsend 443,306
Printing machine, ticket and card, T. Wrigley 443,129
Printing machine, T. H. Allen 443,101
Propelling power, T. H. Allen 443,168
Propulsion of vessels, J. Schroeder 443,298
Pulley, V. W. Coddington 443,369
Pulley, separable, V. W. Coddington 443,369
Pulleys to shafts, device for securing, J. W. Stanfield 443,121
Punch and die, F. B. Bristol 443,353
Rail fastening device, W. Goldie 443,474
Rail fastening, joint, etc., F. Back 443,309
Rail girder, W. C. Wood 443,470
Railway crossing signal, B. H. St. John 443,124
Railway electric, E. M. Bentley 443,084
Railway electric, R. M. Hunter 443,451
Railway signal, automatic, A. J. Griffin 443,440
Railway switch, electrically operated, S. J. Powell 443,167
Railway switch operating system, S. L. Powell 443,149
Recorder. See Tricarb recorder.
Register. See Wire reel.
Register. See Cash register.
Regulator. See Feed regulator. Temperature regulator.
Respiration, device for inducing full, C. C. Davis 443,204
Respirator, K. Illine 443,191
Rhubarb, J. H. Bartlett 443,249
Ring. See Curtain ring.
Rod mill, W. Swinbank 443,304
Rod or pipe cutter, H. Diebel 443,431
Rolling mills, screw connection in metal, H. J. Ritzler 443,387
Saddle riding, J. J. Carson 443,207
Saddle, riding, J. D. Northrup 443,241
Sash balancer, W. Cashner 443,391
Sash fastener, E. M. Cutley 443,356
Satchel frame attachment, E. C. Goepel 443,138
Sawmill carriages, automatic offsetting device for, A. E. Smith 443,336
Sawing machine, D. S. Abbott 443,231
Scourer. See Grain scourer.
Screen. See Adjustable screen. Window screen.
Seal, envelope, M. Renshaw 443,406
Sealing machine, M. Jensen 443,445
Sea. See Carriage house.
Secondary battery, I. Kitee 443,456, 443,457
Shedding machine, C. Harman 443,395
Shade holder, adjustable window, J. A. Durnbaugh 443,173
Sheet metal manufacture of, W. Garrett 443,137
Shoe, last, J. H. G. 443,172
Shelving support, J. Campbell 443,355
Shingling machine, Jones & Noonan 443,255
Shingling bracket, T. T. Templin 443,467
Ship's davit, J. A. Hargan 443,318
Shirt and suspenders, combined, H. Peiter 443,376
Shoe, last, E. M. Parkhurst 443,330
Shoe nailing machine, E. D. Childs 443,357
Sifter and spice bin, flour, W. McKinley 443,400

Signal. See Railway signal. Railway crossing signal.
Signaling apparatus, electrical, A. B. Wyckoff 443,157
Skiving machine, J. R. Scott 443,409
Sora and conversation chair, combination, J. Stienen 443,301
Soldering machine, can, G. E. Lockwood 443,280
Sole cutting machine, A. M. Stickney 443,126
Spectacles, J. E. Briggs 443,460
Spring. See Vehicle spring.
Spring motor, F. Briggs 443,113
Sprinkler. See Lawn sprinkler.
Square, C. L. Norwood 443,459
Stalk cutter, M. B. Banowetz 443,449
Stamp and file, combined cancelling, C. M. Powers 443,405
Stamping metal bars, apparatus for, E. E. Slick 443,119
Stand. See Blacking stand.
Steam boiler, B. F. Binnix 443,217
Steam drier, rotary, H. D. Winton 443,201
Steam engine, J. T. Case 443,475
Steam engine, portable, E. Howland 443,481
Steam generator, J. J. Burwell 443,354
Stoker, automatic, N. W. Pratt 443,116
Stone, artificial, G. Buchner 443,250
Stool, self-operating lady's, J. E. Blanc 443,202
Stove, R. D. Soper 443,457
Stove center, W. C. Metzger 443,184
Stove, gas, J. W. Danforth 443,088
Straw carrier, J. C. Good 443,488
Sulky, McMurray & Fisher 443,401
Supporter. See Garment supporter.
Suspender securing pin, H. L. Shaver 443,118
Switch. See Railway switch.
Tapping stay bolt holes, device for, J. T. Connelly 443,234
Teeth, apparatus for moulding caoutchouc palate plates for artificial, L. Pritzius 443,576
Telegraph, printing, E. V. Essick 443,154 to 443,156
Telegraph, printing, F. B. Rae 443,111
Telegraph transmitter, S. W. Smith 443,381
Telephone circuit and apparatus, J. L. McQuarrie 443,145
Temperature regulator, J. F. McElroy 443,294
Thill couplings, anti-rattler for, C. A. Carman 443,251
Thimblecase, balance escapement for, W. P. Hansen 443,363
Time recorder, watchman's, I. D. Fuller 443,435
Tongs, pipe, P. J. Bode 443,312
Track cleaner, J. J. Wheat 443,247
Tricycle, J. Mitchell 443,292
Trucks, safety attachment for car, R. J. Spearing 443,382
Trunk tray elevating and supporting device, B. Gaston 443,436
Twisting mechanism, Lacasse & Wile 443,192
Type making mechanism, G. Corsa 443,085
Valve, balanced, portable, F. C. Olin 443,397
Valve, balanced steam, G. H. Chappell 443,450
Valve for hydraulic elevators, safety, W. H. Huitgren 443,208
Valve gear, W. Sechrist 443,463
Valve, steam engine, A. R. Bolius 443,253
Vane, balanced, portable, F. C. Olin 443,397
Vehicle brake, A. W. Schenborn 443,449
Vehicle spring, hydrostatic, J. Randall 443,112
Velociped fork, H. Bell 443,266
Vending apparatus, J. S. Wallace 443,240
Vending apparatus, J. A. Williams 443,343, 443,344
Vending machine, G. H. Gilliland 443,371
Wagon brake, H. L. Monroe 443,371
Wagon wheel, W. H. Sullenger 443,225
Waist and skirt, combined, C. Caen 443,390
Watch balances, making hair springs for, J. Logan 443,256
Watch case, C. W. Hathaway 443,482
Watches, balance escapement for, A. Bannatyne 443,243
Watches, cannon pinion for, F. P. Allen 443,384
Water closet, P. White 443,419
Water closet bowl, H. C. Weeden 443,341
Water closet seat pad, J. Tiffany 443,107, 443,104
Water supply and discharge to and from cylinders, controlling device for, A. & F. E. Turner 443,468
Water wheel, L. M. Sharps 443,151
Watering trough, stock, W. Kouns 443,446
Wave and tide motor, J. M. Lloyd 443,287
Washing machine, J. H. H. 443,324
Welding apparatus, electric, H. Lemp 443,424
Well sinking machine, A. Cameron 443,456
Wheel. See Expandible wheel. Friction wheel. Harvesting wheel. Wagon wheel. Water wheel.
Whip, J. Bolick 443,232
Whip socket, E. Miller 443,483
Whip socket and rein holder, W. H. Peffley 443,242
Window balcony for flowers, J. B. March 443,369
Window fastener, storm, A. P. Andrews 443,438
Window screen, C. K. Hann 443,492
Window storm door, for F. T. Aiken 443,445
Wire, manufacturing steel coated, F. Sedgwick 443,464
Wire reel and stretching machine, combined, J. Harper 443,442
Wood and fiber, treating, W. A. Horrall 443,288
Wood, embalming, Land & Van Buskirk 443,447
Wood, green and roasted, for carding vegetable fiber in, Cole & Pedder 443,358
Yrench, Biel & Urban 443,216
Yarn washing and dyeing apparatus, G. A. Green 443,171
Yoke attachment, neck, A. L. Kotze 443,142
Yoke neck, O. Boyton & Thompson 443,272
Yoke, ox, S. A. Smith 443,243

DESIGNS.

Bread, loaf, J. M. Loew 20,420
Brushes, mirrors, etc., back of, A. F. Jackson 20,423
Cake, R. Merzon 20,429 to 20,433
Handle for spoons, etc., A. F. Jackson 20,427, 20,428
Organ case, L. K. Fuller 20,419
Range and boiler, H. T. & C. A. Spring 20,447
Rug, J. Pezel 20,435
Rug, A. Pezel 20,436
Risers or shears, R. S. Pearsall 20,439
Sink trap, H. C. Montgomery 20,441
Stand ornamental, G. R. Biffman 20,425
Statue of a fireman, C. G. Buehler 20,426
Stove, heating, Bascom & Ritchie 20,423, 20,424

TRADE MARKS.

Cartridges for firearms, Creedmore Cartridge Company 18,723, 18,724
Clothing for men and youths, Hirschberg & Steinman 18,726
Coffee, breakfast, G. F. Gilman 18,734
Coffee, green and roasted, H. Crook & Co. 18,729
Crockery, glass and plated ware, E. Lobe & Co. 18,719
Eye lotions and cosmetics, Oculine Manufacturing Co. 18,721
Fertilizers, Read Fertilizer Company 18,737
Fertilizers, artificial, Eureka Fertilizer Company 18,735
Hosery, 18,720
Insect powder, Fernoline Chemical Company 18,732
Luminescent, Fernoline Chemical Company 18,733
Meats, smoked, East St. Louis Packing and Provision Company 18,730, 18,731
Perfumery, C. B. Woodworth & Sons 18,722
Remedy for throat and lung troubles, Beoles Drug Co. 18,725
Salt, digestive table, G. & G. Stern 18,738
Starch, laundry, Bee Hive Starch Co. 18,728
Starch, laundry, Burns & Hunt 18,739
Tea, G. F. Gilman 18,735
Tea, coffee and chocolate, J. C. Barkley 18,727
Watch springs, L. Combremont 18,740

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