

conversion of continuous rotary movement into an oscillating or reciprocating rotary movement. The invention is especially designed for use in apparatus such as washing-machines, where it is desired to give an oscillating movement to a beater or the like for cleaning the clothes. The invention may be used in churns or otherwise wherever desired.

PUMPING APPARATUS.—F. J. DONOGHE, Gallitzin, Penn. An improved apparatus is provided in this invention for pumping various liquids, and also gases, more especially to force oil to heavy bearings or to raise water or pump air for use in air-compressors. The chief operating agent is a cam-wheel which acts upon devices connected with reciprocating pistons working in cylinders, whereby the liquid or fluid is taken in and ejected alternately. In connection with the apparatus the inventor employs a rotary valve of peculiar construction.

DRILL.—G. W. HAYS, Birmingham, Ala. This contrivance invented by Mr. Hays is an improvement in drills, being in the nature of a hand-drill having its handle-lever provided with pawl-points for operating the drill head or socket, and also furnished with a feed arranged for controlled operation in connection with the hand-lever.

Railway Improvements.

RAILROAD-TRACK SECURER.—J. H. CROWLEY, Duluth, Minn. The design of this invention is to furnish a securer adapted to keep the rails of a railroad-track from spreading apart or from turning or rolling. In adopting this securer, several advantages are found, namely, in locating spikes so as to minimize the breaking or splitting of ties and in preventing rapid deterioration of the same due to the clustering of spikes; in avoiding danger of spreading rails, especially around curves; in easily applying the tie-plates of the securer to a track already built; and in cases where it is necessary to shim under the tie-plates without disturbing the ties.

TIE-PLATE.—J. H. CROWLEY, Duluth, Minn. Mr. Crowley's invention relates to improvements in railway tie-plates or rail-chairs, the object being to supply a tie-plate of simple construction that may be manufactured at a comparatively low cost, and one that may be quickly placed in position, and when in place will be able to prevent spreading or rolling of the rails.

Miscellaneous Inventions.

METHOD OF PRODUCING WATER-MARKED PAPER.—E. R. and O. F. BEHREND, Erie, Pa. By an improved method these inventors secure, first, a genuine and indelible watermark which cannot be impaired or effaced by any test known to the trade, including the severe action of caustic soda, which is sufficient to obliterate the mark made by compression of the fibers on many grades of paper, and, second, the rapid and economic production of such watermarked paper with perfectly and sharply defined marks of any figure or pattern.

BRAKE FOR BABY-CARRIAGES.—W. H. RAMSAR, Cornwall-on-the-Hudson, N. Y. This device is a simple form of brake which is automatically applied and manually released when the handle-bar is grasped, and, further, the construction of the brake provides for its application to any baby-carriage without weakening the vehicle or impairing its appearance. The device may be used equally as well on grocers' push-carts and like wheeled apparatus.

MANUFACTURE OF PHOTOGRAPHIC FILMS.—L. M. J. ARMANDY, 3 Rue Brantôme, Asnières, Seine, France. In the manufacture of these films for photographic purposes the object of the inventor is to provide improved means whereby such films may be readily detached from their support or backing. The invention consists, essentially, in arranging between the support or backing and the sensitized film, a layer of suitable material capable of giving to the film a certain plasticity and of being readily dissolved out, during the ordinary operations of developing, fixing and washing.

GARTER-SUPPORTER.—MARY L. BUCKAU, New York, N. Y. The aim of this invention is to furnish a garter to or from which a support may be quickly and handily attached or detached. The support is adapted for attachment to the side of a corset, so that the hose may be comfortably held up by means of garters, and without the aid of clips, thus preventing laceration of the hose. From this position the garter is prevented from slipping and the wearer is assured of perfect safety even when the garter is worn comparatively loose.

WAISTBAND.—L. P. KLEIDERER, Louisville, Ky. This invention relates to improvements in waistbands for trousers and other garments, and the object is to provide a band with belt straps formed directly thereon. One novel feature is, that the waistband has adjacent parallel slits, between which, material is folded to form a belt-strap; and another, is in the waistband comprising an outer portion, and a lining; the outer portion having parallel slits, the material between them being folded inward to form a box-pleat, and the edges of the outer portion being turned against the lining and box-pleated inward of the straps.

NECKTIE-FASTENER.—J. H. FRANZ, Baltimore, Md. Mr. Franz's invention is an improvement in fasteners for the shields of

neckties which are provided with a bow of some suitable fabric. The fastener is formed of spring wire and so constructed that it is adapted to be held by attachment to the adjacent edges of turn-down collars.

FOOT-REST FOR CAR-SEATS.—L. JANSOHN, Brooklyn, N. Y. A simple form of foot-rest for car-seats is provided by the present invention which employs an improved mechanism for hanging the foot-rest between the side frames of the seat in such manner that the foot-rest will be automatically shifted relative to the position of the back and seat through the movement of the back.

CIGARETTE OR CIGAR BOX.—S. GOLDFADEN, Brooklyn, N. Y. The box is so constructed that after being emptied or partly emptied cigarettes or cigars cannot be replaced therein, thus not only protecting the purchaser from buying inferior goods other than those indicated by the box label, but also protecting the manufacturer from false representations of goods contained in the box.

BRUSH.—H. F. EBERT, Brooklyn, N. Y. The invention provides certain useful improvements in brushes whereby the bristles are securely fastened in position in the socket and are not liable to break when the brush is in use. At the same time the cord or flexible binder is prevented from becoming loose or broken, thus insuring long life to the brush.

SLIVER-CAN.—J. B. CROUCH, Mayodan, N. C. Mr. Crouch's invention relates to improvements in sliver-cans adapted for use in connection with various kinds of spinning machinery. It provides a novel construction by which waste of the mass in the receptacle is overcome and the sliver remaining in the receptacle after the charge shall have been nearly exhausted may be more readily spliced than heretofore.

FOLDING BOX.—W. E. BURTON, New York, N. Y. The object of the invention is to provide an improved folding box made of paper or light material which is simple and durable in construction, very ornamental in appearance, and having its body or cover made from a single piece of paper adapted to be shipped flat to take up little room, and arranged to allow of quick and convenient conversion into the box body or cover without the aid of skilled labor.

LATCH.—J. W. CONNOLLY, Toledo, Ohio. Mr. Connolly's invention relates to door latches, its object being more particularly to produce a simple and efficient latch which can normally be released from only one side of the door, but which can be so arranged that it may be released from either or both sides of the door.

DEVICE FOR REMOVING SNOW.—J. SULLIVAN, New York, N. Y. The purpose of the invention is to provide a durable, economic and portable device for removing snow, the device being used in connection with a stream of running water from any convenient source of supply and having its outlet end adapted to enter any opening communicating with a sewer or like conduit.

DESIGN FOR A STOVE-LEG.—G. H. DROEGE, New York, N. Y. The design consists of a main scroll extending from one side of the leg to the other near the top and enclosing a central ornamentation, a central scroll panel, and intermediate scrolls. The main portion of the leg below the main scroll is decorated with a longitudinal box fluting.

TOY.—H. V. LOUGH, North Plainfield, N. J. This toy belongs to that class in which a disk is made to revolve alternately in opposite directions by alternately tightening and loosening a twisted cord. Means are provided for carrying two disks on the cord, one mounted to turn loosely upon the other, also means for checking the loosely mounted disk at each revolution. The disks are so constructed that they will rotate spirally with relation to each other, and each disk is differently colored to produce a kaleidoscope effect as the toy is operated.

CALCULATOR.—T. FREGOSO, Hermosillo, Mexico. This measuring instrument is more especially designed for surveyors, and is arranged to permit of accurately finding, without calculation, rectangular coordinates to any distances with any angle in the sexagesimal or centesimal system, to solve right angle triangles, and oblique angle triangles by giving immediately and accurately three required or unknown measurements, and when the other three measurements are known to reduce stadia distances to the horizon and to find the difference of elevation between any two points.

PENCIL-HOLDER.—E. E. LONG, Los Angeles, Cal. The improved holder will detachably hold a pencil at a given point, so that it will always be accessible for use, as for example, the device may be used in connection with a writing pad or tablet. The holder may be easily attached or removed without injury to the device.

STARTING-GATE.—P. MCGINNIS, London, Can. The invention relates to improvements in starting gates for racetracks, the object being to provide a gate of simple construction having a locking means so arranged as to be quickly and positively released to permit the gate to move to open position.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were issued for the Week Ending

January 20, 1903, AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing various inventions and their corresponding patent numbers, including items like Accumulator plate, Aerator, Ammunition apparatus, Automatic brake, Band cutter and feeder, Bank, money, O. Burns, Bath, See Copying bath, Battery connection, W. W. Keirstead, Bedstead, invalid, S. W. Bennett, Bee smoker, T. F. Bingham, Beer cooler, J. D. Hendrix, Bicycle handle bar, J. W. Leavitt, Blast furnace, L. Bentley, Blower, pressure, A. W. Case, Boiler fire, detachable, J. E. Drake, Book casing, metal, M. J. A. Deydier, Book index leaf, H. J. Browne, Book, manifold, E. B. Williams, Boot or shoe cleaner, D. McEachern, Boring machine, deep, V. Petit, Boring tool, deep, F. Buschmann, Bottle dropping mouthpiece, W. L. Strauss, Bottles, etc., machine for filling, R. W. Huss, Box, or case, B. L. Gale, Boxes, etc., implement for opening, N. Savaria, Brake and friction operating mechanism, combined, H. N. Covell, Brake beam, J. H. Baker, Bread cutter, A. Anderson, Brick kiln, J. H. Park, Brooder, M. M. Johnson, Buckle, clamp, C. B. Granger, Buckle, harness, W. Houghton, Can body machine, C. B. McDonald, Car coupling, E. O. Evans, Car coupling, J. Timms, Car door or slide, railway, L. Daniel, Car draft gear, S. F. Klohs, Car fender, C. A. Taylor, Car switching, J. E. Swanson, Car-switching device, G. C. Wiedemayer, Card, playing, E. Case, Carriage spring, T. B. Dowling, Casement, A. R. Huskisson, Cattle guard, C. J. Richardson, Cement, making, H. E. Rusager, Chain making apparatus, J. H. Baker, Chains, manufacture of, J. H. Baker, Cheese cutter, E. Z. & Z. H. Crowell, Churn, C. W. Van Deuzen, Churn, D. O. Kneeland, Cigarette making machine, L. B. Baron, Clamp, W. S. Graham, Clock, electric, W. J. Dudley, Cloth piler, Crain & Gwinn, Coat and hat hanger, C. Schlicker, Coat rack, automatic, A. J. Battle, Coffin, R. E. Van Patten, Coke oven lorry, C. W. Umboltz, Collar holder, O. S. Lucas, Compass, beam, J. P. Emswiler, Concrete mixing and measuring machine, W. H. Brown, Condenser, F. Lamplough, Conveyor, W. E. Winant, Conveying and loading crops or merchandise, machine for, R. Scott, Cooker, steam, W. S. Hunt, Copying bath, letter, R. Spurgh, Core bar, contractible, Crosby & Aurn, Corn husker and folder shredder, I. G. Berty, Corset attachment, E. Bell, Cotton gin, P. F. King, Crane, overhead traveling, C. L. Taylor, Crate, egg, W. O. Anderson, Cream separator, M. Johnsrud, Cross tie and clamp, metallic, J. Olloman, Cultivator, A. E. Marsh, Cultivator, W. S. Neal, Cultivator seed planting attachment, T. O. Kirk, Cuspitor, S. L. Feathers, Cuspitor, McClanahan & Bell, Cycle saddle, J. A. Kruseman, Dental napkin holder, H. A. King, Derrick, E. P. Arsenau, Derrick cableway, G. H. Evans, Desk, J. C. Edgess, Disk drill, S. E. Davis, Display cabinet, C. V. Findley, Door lock, portable, A. W. Swanburg, Draft rigging, G. W. Friesz, Dredge, electric clam, E. Chaquette, Drilling and boring machine, horizontal spindle, G. H. Smith, Drilling and boring machines, adjustable attachment for horizontal spindle, G. H. Smith, Dust pan, G. A. McIntire, Dyeing raw stock, W. J. McConville, Ear ornament, A. Geiger et al., Electric cut out, thermal, T. E. Scantlin, Electric furnace, E. G. Acheson, Electric motors, controlling, W. H. Chapman, Electrical switch, quick break, F. A. La Roche, Electrotherapeutic apparatus, Ames & Clement, Elevator leg, L. Burmeister, Elliptic spring, T. A. Shea, End gate lock, F. M. Oakes, End gate wagon, F. G. Nagley, Evaporator, brine, O. Sachse, Excavating machine, D. W. Miller, Exhibiting curtains for sale, device for, H. Day, Explosive engine, H. J. Hurd, Fare register, J. F. Ohmer, Fare registers, means for operating, J. F. Ohmer, Fare registers, mechanism for operating, Ohmer & Tyler, Feed water heater, G. F. Comer, Feeding regulator, automatic, F. Woerner, Fence gate, wire, L. C. Lawson, File and pocket attachment, hill, G. H. Maurer, Filter, F. Stiner, Filter, barrel, B. Tully, Filter, centrifugal, G. Moore, Finger guard, D. McMillan, Fire, protector from, M. Murry, Flea trap, G. T. Godfrey, Forced draft furnace, F. J. Maly, Forming tool, Yeatman & Messinger, Fruit box, R. H. Shoemaker, Jr., Furnace air heater, smelting, J. L. Giroux, Furniture, etc., wrapper for, A. J. Bunnell, Fuse or junction box, electrical, M. H. Johnson, Fuse, safety, J. Sachs, Game apparatus, Harris & Holmes, Game apparatus, F. P. de Grandchamp, Garment clasp, C. H. Reimard, Gas distributing apparatus, W. H. Wigmore, Gas engine, Robertson & Matson, Gas generator, acetylene, T. H. J. Leekband, Gas, making, R. Tulloh, Gas meter, Dick & Ehrenzeller, Gas, producing, J. F. Stacey, Gas regulating valve, T. Wilson, Gas valve and burner, combined, E. L. Moore, Gate, J. Hodgins, Glass, decorating art, Alke & Moss, Glass, manufacturing art, Alke & Hadley, Goal, D. Foulis

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