

mechanical movements, two relatively movable parts which, upon or within their parallel inner faces, are each provided with a circular track or bearing, in combination with a double cone that is placed between, and has rolling contact with, said tracks, and is adapted to furnish a rolling gyrating bearing for the upper part, substantially as and for the purpose shown. 3rd. As an improvement in mechanical movements, two relatively movable parts, which have parallel inner faces and are each provided within or upon its inner face, with a circular guide track or bearing, in combination with a double cone that is placed between, and has rolling contact with, each of said faces and guide tracks, and is adapted to furnish a rolling gyrating bearing for the upper part, substantially as and for the purpose set forth. 4th. As a means for enabling a relatively gyratory motion to be produced between two parts which have parallel inner faces, and in combination therewith, a double cone that is placed between, and has rolling contact with, said faces, substantially as and for the purpose shown and described. 5th. As a means for supporting a part parallel with, and enabling the same to be gyrated over, a relatively stationary part, the combination therewith of two or more double cones, which are placed between, and have rolling contact with, the contiguous parallel faces of said parts, substantially as and for the purpose specified. 6th. As a means for supporting a part parallel with, and gyrating the same over a relatively stationary part, the combination therewith of two or more double cones that are placed between, and have rolling contact with, the contiguous parallel faces of said parts, and a crank which engages with said relatively movable part, and operates to move the same bodily in a circular plane, substantially as and for the purpose shown. 7th. As a means for supporting a part parallel with, and enabling the same to be gyrated over, a relatively stationary part without change of circumferential position, the combination therewith of two or more double cones that are placed between the contiguous parallel faces of said parts, and having rolling contact with parallel circular guide tracks, which are provided upon or within each of said faces, substantially as and for the purpose set forth. 8th. As a means for supporting a part parallel with, and gyrating the same over, a relatively stationary part without change of circumferential position, the combination therewith of two or more double cones that are placed between, and have rolling contact with, parallel circular guide tracks, which are provided upon or within the contiguous parallel faces of said parts, and a crank that engages with said relatively movable part and operates to move the same bodily in a circular plane, substantially as and for the purpose shown and described.

No. 28,804. Flour-Bolt. (*Blutoir*.)

Henry J. Gilbert, Dayton, Ohio, U.S., 4th April, 1888; 5 years.

Claim.—1st. In a flour-bolt, the combination, with the bolting reel, of a series of internal oscillating buckets hung therein, and cam mechanism connecting each bucket with the end of the bolt, whereby the revolution of the reel causes the positive oscillation of the buckets and determines their position, substantially as described. 2nd. In a flour-bolt, the combination, with the bolting reel, of a series of internal oscillating buckets hung therein, projections on the end of the buckets, and a cam at the end of the bolt with which the projections at all times engage, to cause the positive oscillation of the buckets and positively control their position at all times, substantially as described. 3rd. The combination, with a bolting reel, of a series of buckets journaled therein and provided at one end with crank-arms, and a cam with which said crank arms are at all times engaged, so arranged as to cause the positive oscillation of the buckets and at all times positively control their position, substantially as described. 4th. In a flour-bolt, the combination, with the reel, of the series of oscillating buckets therein, each provided with a projection, and a circular cam groove at one end of the bolt, with which said projections engage, arranged eccentric to the axis of the reel, whereby the position of the buckets is at all times regulated and controlled, substantially as described. 5th. In a flour-bolt, the combination, with the reel of the series of oscillating buckets therein, each provided with a projection, and a cam groove with which said projections co-operate, and which regulates and controls their position at all times, so arranged with reference to the direction of rotation of the reel as to cause the bucket to carry up the material and gradually pour it on the descending side of the reel, substantially as described. 6th. The combination of a bolting reel, a series of pivoted elevator buckets therein, which carry clay to the upper portion of the reel, and a cam for controlling the position of the said buckets at all times, so arranged as to discharge their contents upon the cloth upon the descending side of the reel, substantially as described. 7th. The combination of an inner reel, self-adjusting oscillating buckets therein, rings fitted and free to revolve upon the ends of the inner reel, one ring being formed with internal gear teeth, the rods connecting the rings, an outer bolting cloth attached to the rings, a pinion meshing with the gear teeth and driven from the inner reel, and rollers supporting the ring at each side of the pinion, substantially as and for the purpose described.

No. 28,805. Process and Apparatus for Purifying and Filtering Water. (*Procédé et appareil pour purifier et filtrer l'eau*.)

Omar H. Jewell, Chicago, Ill., U.S., 4th April, 1888; 15 years.

Claim.—1st. A filter tank, in combination with a pump, a feed pipe rising to the top of the filter tank, a discharge pipe extending from the bottom of the tank up through the latter, a wash pipe extending from the upper portion of the feed pipe down through the filter to the bottom thereof, water distributors at the lower end of the wash pipe under the filter bed, and a separate discharge opening in the upper part of the filter for the escape of wash water, substantially as and for the purposes specified. 2nd. A filter tank A, in combination, with the pump B, the feed pipe B¹ extending to the upper part of the tank proper and then bent horizontally, the discharge pipe C extending from the bottom of the filter bed up through the tank and out at the upper portion thereof, the wash pipe D extending from the upper portion of the feed pipe to the lower part of the filter bed, and provided with water distributors D¹ at its lower end, and the valves b², b³, b⁴ and b⁵, substantially as and for the purposes specified. 3rd.

The wash pipe D, in combination with water distributors D¹, consisting of cups provided with a fixed perforated diaphragm d¹, hollow stem d² and a sliding disk cap or cover d³, arranged at the bottom of the filter tank and connected to the wash pipe, substantially as and for the purposes specified. 4th. A filter tank, in combination with a feed pipe, a pump for forcing water to the tank through said pipe, and a tank or reservoir containing a chemical reagent and connected by a suitable pipe with the suction pipe of the pump, substantially as and for the purposes specified. 5th. A filter tank, in combination with a feed pipe, a pump for delivering water through said pipe to the filter, a tank or reservoir for chemical reagents, a pipe connecting said reservoir with the suction pipe of the pump to feed the said reagent thereto, and a pipe connecting the said tank with the water supply, whereby water may be furnished to the chemical tank, as required, substantially as and for the purposes specified. 6th. A filter tank A, in combination with a feed pipe B¹, a pump B provided with suction pipe b, a reservoir E for chemical reagents, a pipe c connecting the interior of said reservoir with a suction pipe c¹, a pipe c² connecting the discharge chamber of the pump with the upper portion of the said reservoir, and a float valve at the inner end of the pipe c², within the said reservoir, substantially as and for the purposes specified. 7th. The filter tank, in combination with the wash pipe, conical cups in which the ends of the wash pipe terminate within the filter bed, and a loose disk seated in the mouth of the cups and movable on a suitable guide, substantially as and for the purposes specified. 8th. The filter tank, in combination with the wash pipe terminating in branches within the filter bed, the conical distributing cups D¹ at the ends of the said branch pipes, the perforated diaphragms d¹ fixed within the cups and provided with stems, and the loose disks d² mounted on said stems and fitted to the mouths of the cups, substantially as and for the purposes specified. 9th. In an apparatus for purifying water, the combination, with suitable electrodes and an electric generator, of a water tank or receptacle enclosing said electrodes, and provided with an inlet and outlet, whereby the water is subjected to electrolysis in passing through said tank or receptacle, substantially as and for the purposes specified. 10th. In an apparatus for purifying water, a filter tank containing a suitable filtering medium, and provided with inlet and outlet pipes, in combination with electrodes arranged within the tank, so that the inflowing water passes between them, and an electric generator connected to said electrodes, substantially as and for the purposes specified. 11th. In an apparatus for purifying water, a filter tank, in combination with a dome mounted upon the tank and communicating therewith, suitable electrodes arranged within said dome, a water supply pipe opening into the dome and arranged to deliver water between the electrodes, an outlet pipe for discharging water from the filter, and an electric generator connected to the electrodes, substantially as and for the purposes specified. 12th. In an apparatus for purifying water, a filter tank in combination with the electrodes arranged therein, and electric generator connected to the electrodes, a supply pipe for delivering water to the filter, and a tank or reservoir for chemical reagents connected with the water supply, substantially as and for the purposes specified. 13th. In an apparatus for purifying water, a filter tank in combination with a suitable supply and discharge pipes, electrodes arranged within the tank, an electric generator connected to said electrode, a pump for delivering water to the receiver, and a reservoir for chemical reagents connected to the suction pipe of the pump, substantially as and for the purposes specified. 14th. The filter tank, in combination with the feed pipe and a chemical tank, in which the receptacle for the chemical substance is provided with glass walls, substantially as and for the purposes specified.

No. 28,806. Machinery for Making Weather Strips for Doors, Windows, etc. (*Machine à fabriquer les bourrelets des portes, fenêtres, etc.*)

Josiah Poyton, New York, N.Y., U.S., 4th April, 1888; 10 years.

Claim.—1st. A machine that will automatically produce, by a single operation, a corrugated metallic binding strip and firmly secure the same to the lapped corded edges of a flexible hollow rubber cushion, when drawn within the coiled recess of said metallic binding strip, so that the opposite or free edge of said metallic strip is formed into a smooth rounded edge, by being underlapped, to firmly press down upon the base of the thin hollow cushion, when the same is nailed to the sill of a window or jams of a door, substantially as above described. 2nd. The horizontal forming device, shown at m, m¹ and v, under plate d, also the bevelled rollers n, n¹ and r, operating with the metallic rubber guide e, e¹, constructed as shown and described and operating in combination with a, b, c, o, o¹ and f, the whole constructed, arranged and operating for the specific purpose set forth.

No. 28,807. Separating Machine. (*Emetteur*.)

Noah W. Holt, Manchester, Mich., U.S., 4th April, 1888; 5 years.

Claim.—1st. In a separating machine, an aspirating chamber and a dust separating chamber surrounding the aspirating chamber, in combination with a fan which takes air and light material from the aspirator and delivers it to the separating chamber, these parts being inclosed within an outer shell or casing, substantially as set forth. 2nd. In a separating machine, the combination of an aspirator, a surrounding separating chamber, a fan and air passages connecting the aspirating chamber, the fan and the dust separating chamber, whereby air currents are caused to pass continuously through and within the machine, substantially as set forth. 3rd. In a separating machine, the combination, with a vortex chamber, of a fan within the circumference of the said chamber, a shell of less diameter arranged substantially concentric to the walls of said chamber, and a flange depending from the upper part of the machine within the said inner shell, substantially as set forth. 4th. In a separating machine, the combination of an aspirating chamber, a separating chamber which is inclosed on all sides, and means, substantially as described, for producing a continuous air current through the material to be purified or separated, substantially as set forth. 5th. In a separating machine, the combination of the outer