

Claim.—1st. The arms C carrying cutters being guided by wheels B. 2nd. The supports for carrying arms F F F G G G L L L L, and braces or stays D D D. 3rd. The lever or arm, the friction plates I and automatic action. 4th. The cutter plates E E E E. 5th. The safety chains K.

No. 16,848. Compound for Reducing the Friction of Cutting Tools when Cutting Threads on Bolts. (*Composition pour réduire la friction des outils à fileter les boulons.*)

Mitchell T. Buchanan, Ingersoll, Ont., 12th May, 1883; for 5 years.

Claim.—A compound composed of sal soda or soda ash, tallow or tallow soap, and water.

No. 16,849. Improvements on Heel Burnishing Tools. (*Perfectionnements aux brunissoirs des talons.*)

Hiram Bond, (assignee of Edouard Bourgeois,) Haverhill, Mass., U.S., 12th May, 1883; for 5 years.

Claim.—1st. The improved heel-burnishing tool having the convex portion 2. 2nd. The improved heel-burnishing tool having the convex part 2 and the bevelled part 3 relatively arranged as described. 3rd. The improved heel-burnishing tool having the parts 4 and 5 adapted to finish the heel and or bead at the upper portion of the heel. 4th. The improved heel-burnishing tool having the parts 4, 5 and 6 arranged and operating as described. 5th. The improved heel-burnishing tool having the parts 2 3 4 5 and 6 arranged and adapted to be secured to a rotary holder.

No. 16,850. Improvements in Stop Cocks. (*Perfectionnements dans les robinets.*)

John Milne, Hamilton, Ont., 12th May, 1883; (extension of Patent No. 8785.)

No. 16,851. Improvements in Flat Brushes. (*Perfectionnements aux pinceaux plats.*)

John L. Whiting, Boston, Mass., U.S., 12th May, 1883; (extension of Patent No. 9017.)

No. 16,852. Improvements in Flat Brushes. (*Perfectionnements aux pinceaux plats.*)

John L. Whiting, Boston, Mass., U.S., 12th May, 1883; (extension of Patent No. 9017.)

No. 16,853. Apparatus for Distillation of Oils. (*Appareil de distillation des huiles.*)

The Imperial Oil Company, London, Ont., (assignee of J. B. Merriam, Cleveland Ohio, U.S.) 12th May, 1883; (extension of Patent No. 9438.)

No. 16,854. Apparatus for Distillation of Oils. (*Appareils de distillation des huiles.*)

The Imperial Oil Company, London, Ont., (assignee of J. B. Merriam, Cleveland, Ohio, U.S.) 14th May, 1883; (extension of Patent No. 9438.)

No. 16,855. Improvements in Steam Vessels. (*Perfectionnements aux vaisseaux à vapeur.*)

Dudley W. Case, Bay, Mich., U.S., 14th May, 1883; for 5 years.

Claim.—1st. A vessel carrying her own means of propulsion and consisting of a water-tight bow section, an open midship section through which the water may freely flow, and a water-tight stern section detachably secured to the open rear end of the midship section. 2nd. A vessel consisting of a tight bow section, an open midship section and a tight stern section, in combination with means for detachably securing said stern section to the open midship section. 3rd. In combination with a tight bow section, of a vessel and a detachable tight stern section thereof, an open midship section, the front and rear ends of which are built of timber of different gravity. 4th. In combination with a vessel, an overhanging frame supported on top of the open midship section provided with means for loading said section.

No. 16,856. Improvements in Umbrellas. (*Perfectionnements aux parapluies.*)

James B. Wilson, Philadelphia, Penn., U.S., 14th May, 1883; for 5 years.

Claim.—1st. An umbrella runner having a slot for the reception of a holding pin, and having the sides of the said slot bent up to form bearings for a spring catch of locking lever. 2nd. The combination, with sleeve *b* and notch *b*, of the lever C having two catches above its pivotal point, one of said catches being above, the other below, the notch, and the said lever being pivoted on said sleeve. 3rd. The combination, with the sleeve *b* and notch *b* of an umbrella runner, of a locking or catch lever C fulcrumed on the sleeve and supported on the notch, to avoid contact with the umbrella stick. 4th. An umbrella slide having a longitudinal slot extending its entire length, the metal adjacent to the edges of the slide being bent outwardly whereby bearings or supports are afforded for a locking lever. 5th. The combination, with an umbrella slide and notch, of a lever having two catches or heads said lever being fulcrumed on said slide and having both its heads between its fulcrum and the notch. 6th. The combination with an umbrella slide and notch, of a lever having two catches or heads

on the same side of its fulcrum, said lever having a support on said notch and said heads being located between the notch and lever fulcrum. 7th. The combination, with the slide tube and locking or holding lever, of the springs K of U-shape or approximate form, having its sides attached to the tube, its crosspiece passing beneath the lever. 8th. The combination, with an umbrella slide and a lever carrier thereon, of a spring secured to said slide by lugs or lips struck up from the metal of said slide. 9th. The combination of sleeve *g* having flanges *g* *g*, locking lever *h* having two heads or catches *h* *h*, spring K secured under, or in lips, or struck-up portions of said sleeve, notch *i* having opening *i* and stick A with catch pins.

No. 16,857. Means for Regulating the Supply of Water to House Service Pipes and Cisterns. (*Moyens de régler l'alimentation de l'eau des tuyaux de service et citernes des maisons.*)

Alfred St. C. Buxton, Frederick O. Ross, London, Eng., and Jacob E. Bloom, Cincinnati, Ohio, U.S., 14th May 1883; for 5 years.

Claim.—1st. The method of automatically cutting off the supply of water to house service pipes from street mains or source of supply when the temperature falls to the freezing point and re-instating the flow to said service pipes when the temperature again rises. 2nd. The method of automatically cutting off the supply of water to house service pipes and emptying said pipes when the thermometer or temperature falls to the freezing point. 3rd. The combination of a valve or valves controlling the entrance of water to the house service pipes, and means for automatically actuating said valves. 4th. The combination of a valve or valves opening and closing a cistern or supply reservoir, and means for automatically or mechanically actuating said valves when a fall or rise of temperature occurs. 5th. The combination of the devices shown at figures 1, 4, 5 and 6 together with those shown at figures 7, 8, 9 and 10 which can be operated by hand. 6th. The combination and arrangement shown in figures 1, 4, 5, 6, 7, 8 which are actuated by electricity. 7th. The combination shown in figures 10, 11 and 12 operated by hand and by means of an electrical trip-gear. 8th. The combination of parts of valve and pipes A B C, plug E, level D, adjustable weight F and automatic cut out G, whereby waste of battery power is avoided. 9th. A valve provided with an internal port as shown in figure 4. 10th. The arrangement and combination of valves and ports shown in figure 5, with rocking shaft and cam. 11th. The valve as shown in figure 7. 12th. The arrangement of ventilated cock openings, two channels as shown at figure 3 with ventilated port and plug. 13th. The arrangement of port and ports and valve as shown in figure 9. 14th. The swift or ventilating valve shown at figure 2. 15th. The mercurial thermometer combined with one or more glycerine bulbs shown in figures 1, 4 and 11 arranged to release the tripping gear at any desired temperature, for governing or controlling the combinations shown in said figures. 16th. The combination of electrical batteries, electro-magnets and thermometers, with the arrangements of valves as shown in figures 1, 4 and 11, for the purpose of drawing water from the service pipe S, the main supply having been previously cut off before the freezing point is reached. 17th. The combination shown at figure 13 consisting of a two way plunger cock, in which the plunger is provided with a recess so placed that, when the opening through A to the house service is closed, the water filling the pipes can escape by means of recess and channel C, the devices being controlled by means of an electrical thermometer, electro-magnet and trip-gear. 18th. The combination shown at figure 14 consisting of a two-way cock E operated by a lever fastened at both ends to piston and rod as shown at figure 14, Q being the cylinders, R the piston, the two-way cock T controlling the action of the cylinders Q and automatically turning the water on or off, when a current is sent round the magnets operating the small controlling cock T. 19th. The combination shown at figure 15 consisting of the main pipe A, piston R having two swift-valves S and plugs P, the double ported cock T actuated by the lever D and electro-magnets H, such electro-magnets forming part of the electric circuit governed by a thermometer so arranged as to reverse the action of the valve N (figure 16) operating the piston R and valve E. 20th. The combination of a cistern or supply reservoir, a pipe leading therefrom to the house service pipes, a valve or valves controlling the admission of water to said pipe or pipes, said valve or valves being actuated by a cord or lever through the intervention of an electro-magnet armature lever and electrical thermometer which is in circuit with the magnet, and a tap connected with the house service. 21st. The combination or combinations shown at figure 17 consisting of two-way cock iron core and solenoid or solenoids V U, such solenoids may be hollow cylinders, brass slit lengthwise or of ebonite wood or other good insulating substance, the cores may consist of iron tube or may be solid or they may be permanently magnetized, in which case, by the reversal of the current, one solenoid can be made to attract and repel the magnetized core so operating the valve. 22nd. The combinations described and shown at Figs. 19, 20, 21, in which leather or rubber clack valves are employed in place of metal, other suitable substances may be used for forming the valve which can be operated by hand or by electricity. 23rd. The combination shown at Figs. 22, 23, wherein a permanent magnet is used for the purpose of controlling water supply, such magnets being wound in such a way as either to decrease their magnetic effect or depolarize them when a current is sent round their coils, or they can be so arranged by winding and connecting to the battery that their magnetism is increased, or such a combination can be used as that their effect may be increased or decreased at will, so that the valves may be controlled automatically.

No. 16,858. Electric Perforator for Automatic Printing Telegraphs. (*Perforateur électrique pour les télégraphes automatiques imprimants.*)

Albert F. Johnson and Frank B. Johnson, Brooklyn, N.Y., U.S., 14th May, 1883; for 5 years.

Claim.—1st. In an electrically operated perforator for automatic printing telegraphs, the combination of a series of punching rods *h*, each representing one particular letter or character, the punching