L. DION.

FILTERING FAUCET.

APPLICATION FILED JULY 26, 1910.

1,022,470.

Patented Apr. 9, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

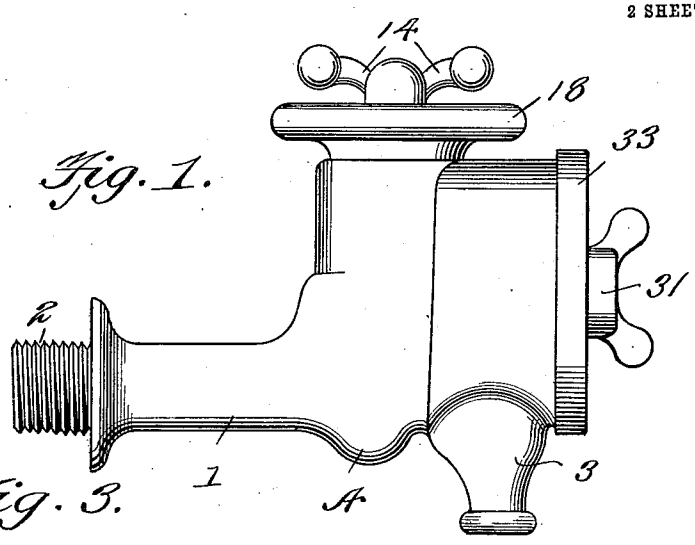


Fig. 3.

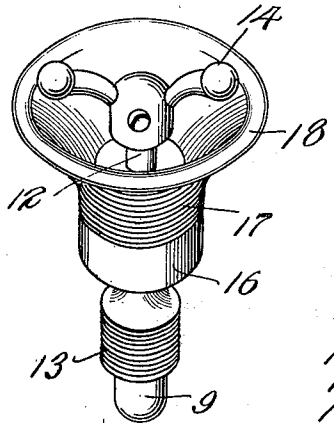
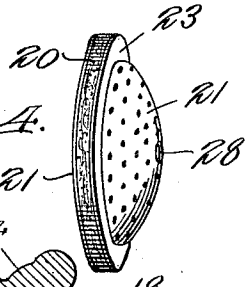


Fig. 4.



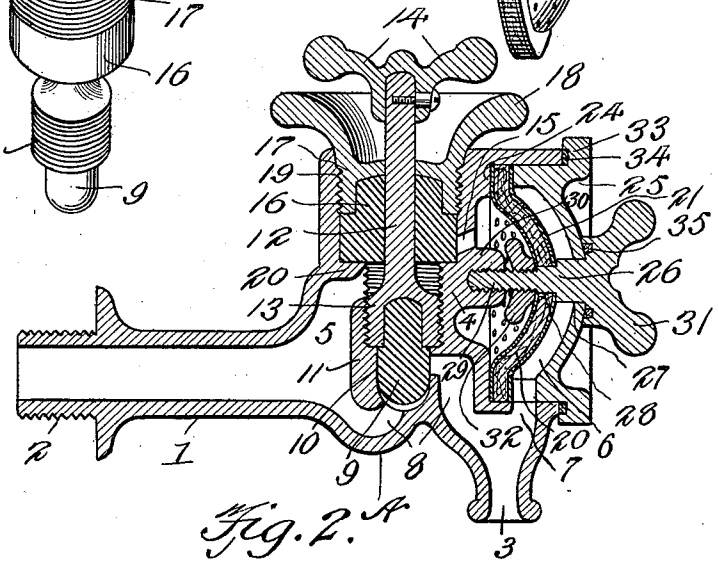


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 5.

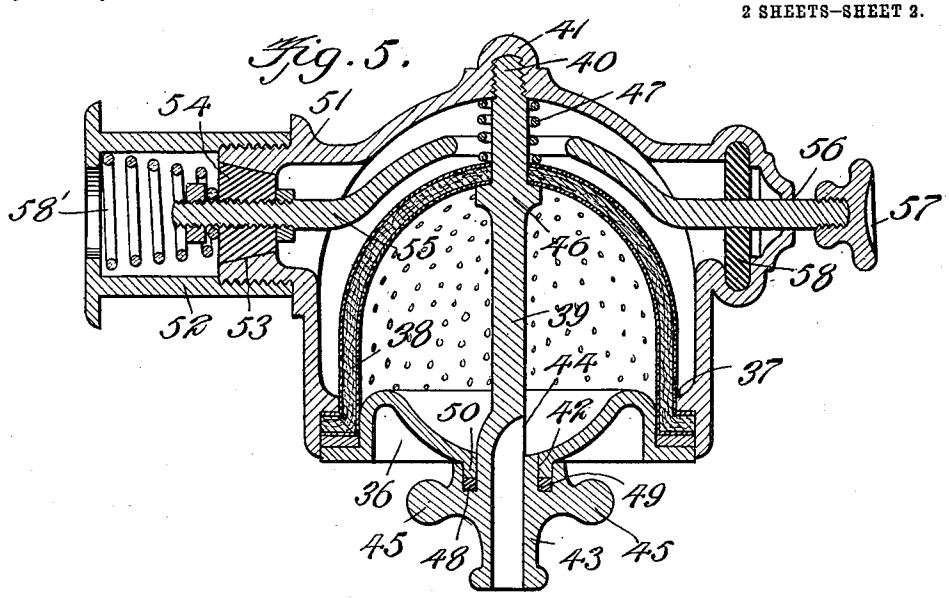


Fig. 6.

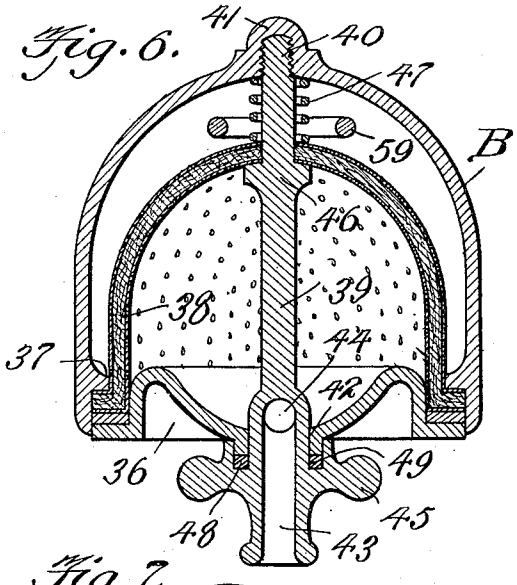
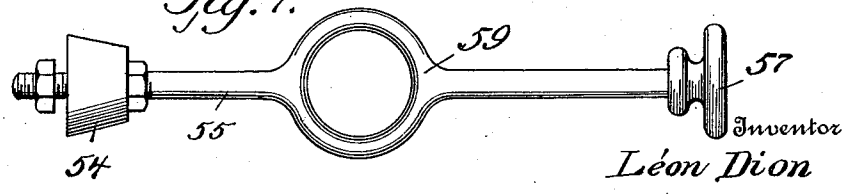


Fig. 7.



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UNITED STATES PATENT OFFICE.

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FILTERING-FAUCET.

1,022,470. Specification of Letters Patent. **Patented Apr. 9, 1912.**

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To all whom it may concern:

Be it known that I, LÉON DION, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Filtering-Faucets, of which the following is a specification.

This invention relates to a faucet of that type in which a filtering element is contained therein so as to remove sediment, other impurities and germs from the water or liquid passing out of the faucet.

The invention has for one of its objects to improve and simplify the construction and operation of apparatus of this character so as to be comparatively simple and inexpensive to manufacture, reliable and efficient in use, of such design that the filtering element can be readily renewed by persons of ordinary skill, and composed of few parts compactly arranged so that the faucet will be of neat and attractive appearance.

Another object of the invention is the provision of a novel filtering element which has a large area exposed to the percolating water and which is fastened in place in a simple and effective manner so that renewals can be easily made.

Another object is the employment of a novel arrangement of valves whereby filtered or unfiltered water can be drawn from the faucet at will.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a side view of a filtering faucet designed to dispense filtered or unfiltered water according to the desire of the user. Fig. 2 is a central vertical section taken longitudinally of the faucet. Fig. 3 is a perspective view of the valves removed from the casing of the faucet. Fig. 4 is a perspective view of the filtering element. Figs. 5 and 6 are, respectively, vertical, longitudinal and transverse sections of a filtering faucet designed for use in connection with water coolers and the like. Fig. 7 is a plan view of the valve and stem of the faucet shown in Figs. 5 and 6.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawings, A designates the body or casing of the faucet which is a brass or other casting of suitable configuration, the body having a neck 1 that is adapted to be connected at 2 with the service pipe for receiving water or other liquid and at the forward part of the casing is a downwardly-extending spout or nozzle 3 through which filtered or unfiltered water can be discharged. Extending vertically across the body or casing A is a partition 4 that divides the interior of the casing into an inlet chamber 5 and a filtering chamber 6, the latter communicating with the spout through a passage 7 and the former through a passage 8 that is interrupted at an intermediate point by a cut-off valve 9. This valve is disposed in a cavity 10 formed in a boss 11 on the partition 4, and when the valve is raised or opened the water flows from the chamber 5 through part of the passage 8, cavity 10, and the other part of the passage 8, to the spout 3. The valve is opened and closed by means of a stem 12 which has an enlarged head 13 at its bottom which screws into the upper part of the cavity 10 so that by turning the stem the valve can be raised and lowered from and to its seat. On the upper end of the stem is a removable handle 14 by which the stem can be conveniently turned.

The water to be filtered passes from the chamber 5 to the chamber 6 through a port 15 in the partition 4. This port is adapted to be closed by a valve 16 located above the valve 9 and connected with the hub 17 of a wheel or handle 18, said hub being externally threaded to screw into an opening 19 in the top of the valve casing. The valve 16 is adapted to seat on an annular shoulder 20 in the casing so as to prevent water from

passing through the filtering chamber. The stem 12 for the cut-off valve 9 passes axially through the valve 16 and wheel or handle 18 therefor. The valve 16 being of rubber or any other suitable material will serve as a packing around the stem 12.

The valves 9 and 16 are separately actuated so that filtered or unfiltered water can be delivered, as required. In opening the valve 9 for the unfiltered water, the handle 14 is turned so as to raise the valve and open the passage 8, the opening movement of the valve being limited by the valve 16 that forms a stop when in closed position. When filtered water is required, the valve 9 will, of course, be closed and the valve 16 opened by turning the wheel 18 in a direction to raise the valve, and in doing this the port 15 will be uncovered so that water can pass into the filtering chamber 6. The opening movement of the valve 16 is limited by the handle 14 of the valve 9 so that each valve device acts as a stop for the other in limiting its opening movement, and in this manner the valve devices can never become deranged.

The filtering chamber 9 contains a filtering element 20 which consists of a wafer of any suitable material that will intercept sediment, germs and the like, and this filtering material is inclosed between cup-shaped sheets 21 of reticulated material. These sheets impart to the filtering element, which is initially in the form of a wafer, the cup shape shown, and in this manner a large area will be exposed to the water to be filtered. The plates 21 are formed with peripheral flanges 23 so that the filtering element can be effectively clamped in place against an annular shoulder 24 on the partition 4 by a cover plate 25 that closes the open front side of the filtering chamber. The cover plate sets into the chamber 6 and is clamped against the filtering element by a bolt 26 that passes through openings 27 and 28 in the cover plate and filtering element and has a threaded portion 29 which screws into a boss 30 formed on the partition 4, the winged head 31 of the bolt bearing against the outer face of the cover plate. On the threaded portion 29 of the bolt is a nut 32 which clamps the cover plate and filtering element on the bolt before these two parts are inserted in the casing of the faucet. By assembling the parts in this manner on the bolt in the first place permits the filtering element to be applied properly to the faucet with the least trouble to an inexperienced person. On the cover plate is an annular flange 33 which has interposed between it and the casing of the faucet a packing ring 34 so as to prevent water from leaking from the casing, and in the head 31 of the bolt 26 is a packing ring 35 which bears against the outer face of the cover plate so as to prevent leakage around the bolt.

Referring now to Figs. 5 to 7, inclusive, the faucet shown consists of a bell-shaped casing B which is open at its bottom and closed by a plate 36 that fits into the open bottom of the casing. The casing has an internal flange or shoulder 37 adjacent its bottom and clamped between this flange and the plate 36 is the filtering element 38 which is approximately hemispherical. The plate 36 and filtering element are held in place by a clamping member or bolt 39 which passes vertically through the center of the faucet with its upper end 40 threaded in a socket 41 on the crown of the faucet, while its lower end passes through an opening 42 in the plate 36 and terminates in a spout 43, which passage opens at 44 into the bottom of the chamber closed by the plate 36. On the lower end of the clamping bolt 39 are outwardly-extending wings 45 affording convenient means for gripping the spout by the hand in order to turn the bolt when clamping or unclamping the parts of the faucet. The clamping member 39 is formed with a shoulder 46 to support the crown part of the filtering element, and the filtering element is held against the shoulder by a spring 47 inserted between the casing and filter. A packing ring 48 is set in an annular recess 49 in the spout end of the member 39, and on the plate 36 is an annular flange 50 that enters the recess 49 and bears against the packing ring so that a right joint will be formed.

The casing B is formed at its rear side with a hollow boss 51 that forms an inlet and on this boss is threaded a sleeve or connector 52 by which the faucet can be secured to a cooler in any suitable manner. The boss 51 has a conical valve seat 53 with which engages a cut-off valve 54 that is fastened to a stem 55 extending horizontally through the valve casing and passing out through an opening 56 in the front thereof, the front end of the valve stem being provided with a push button or knob 57. Where the valve stem passes out of the casing a packing 58 is provided to prevent leakage of water. The valve 54 is held seated by a spring 58′ arranged in the part 52 so as to press the valve inwardly. When the push button is pressed backwardly, the stem moves the valve open against the tension of the spring 58′, and when pressure is removed from the push-button the spring will re-seat the valve and cut off the water. The valve stem has its intermediate portion formed into a ring 59 so as to permit the upper end of the clamping element 39 to pass through the stem. Obviously, when the valve is opened, water enters the casing

and fills the space above the filtering element 38 which is constructed like the filtering element previously described. The water percolates through the filtering element and flows out through the spout 43.

Having thus described the invention, what I claim as new, is:—

1. A faucet comprising a casing divided by a partition into inlet and filtering chambers, a spout attached to the casing for receiving water from either chamber, a valve controlling the flow of water from the inlet chamber to the spout, a stem connected with the valve for seating and unseating the same, a valve controlling the flow of water to the filtering chamber, said last-mentioned valve having a central passage through which the stem of the first-mentioned valve extends, a handle connected with the stem, and a handle connected with the second valve.

2. A faucet comprising a casing divided into inlet and filtering chambers, a common spout for filtered or unfiltered water, a valve for permitting unfiltered water to pass to the spout from the inlet chamber, and a second valve for permitting water to pass from the inlet chamber to the filtering chamber, said valves being arranged in line with each other and each forming a stop for limiting the opening movement of the other.

3. A faucet comprising a casing divided by a partition into inlet and filtering chambers, a spout connected with the chambers, a valve controlling the flow of water from the inlet chamber to the spout, a stem connected with the valve, a handle for the stem, a valve controlling the flow of water from the inlet to the filtering chamber and forming a packing around the valve stem, and a handle for the last-mentioned valve disposed below the handle on the said stem.

4. A faucet comprising a casing, a partition therein for dividing the casing into inlet and filtering chambers, said partition having a cavity partially internally threaded, a spout, passages connecting the spout with the filtering chamber and with the inlet chamber through the said cavity, a valve in the said cavity for cutting off the flow of water from the inlet chamber to the spout, a stem connected with the valve and threaded in the said cavity, a handle on the outer end of the stem for turning the same to seat and unseat the valve, a second valve surrounding the stem and arranged to control the flow of water from the inlet to the filtering chamber, and a handle threaded in the casing and connected with the second valve for opening and closing the same.

5. A faucet comprising a casing, a spout connected therewith, a filter in the casing, separate valves arranged on a common axis in the casing for permitting filtered or unfiltered water to pass from the faucet, and separate handles at the top of the faucet for independently operating the valves.

6. A faucet comprising a casing, a spout at the bottom thereof, a filtering element in the casing, a passage in the bottom of the casing for permitting unfiltered water to discharge from the spout, a valve controlling the said passage, a vertically-extending stem connected with the valve and extending out of the casing, a handle on the upper end of the stem, a valve arranged in the casing above the first-mentioned valve and below the handle to permit water to pass to the filtering element, and a handle connected with the second-mentioned valve and threaded in the casing for opening and closing said valve.

7. A faucet comprising a casing formed with a filtering chamber, a plate closing one side of the filtering chamber, a wafer filtering element clamped in the chamber by its periphery being disposed between the casing and the plate, a clamping means passing through and securing together the plate and filtering element and engaged with the opposite wall of the chamber, and a spout communicating with the filtering chamber.

8. A faucet comprising a casing provided with a filtering chamber, a spout communicating with the chamber, a removable plate closing the chamber, a filtering element held in the chamber by the said plate, a clamping member passing through the plate and filtering element screwed in the wall of the chamber opposite from the plate, and means on the outer end of the member forming a handle for turning the same.

9. A faucet comprising a casing having a removable part and formed with a filtering chamber, a spout communicating with the chamber, and a filter in the chamber, said filter consisting of a cup-shaped structure made of a wafer of filtering material clamped between reticulated cup-shaped plates, and means for clamping the plates and material together and for removably attaching the filter as a unit to the said removable part of the casing.

10. A faucet comprising a casing having a filtering chamber, a valve-controlled inlet leading to the chamber, a spout connected with the chamber, a removable plate forming one wall of the chamber, a filtering element clamped in the chamber by the plate, a bolt passing through the filtering element and plate and threaded in the wall of the chamber opposite from the plate, a head on the outer end of the bolt, and a nut on the bolt for clamping the plate and filtering element between the head of the bolt and nut.

11. A faucet comprising a casing having a filtering chamber, a valve-controlled inlet leading to the chamber, a spout connected

with the chamber, a removable plate forming one wall of the chamber, a filtering element clamped in the chamber by the plate, a bolt passing through the filtering element and plate and threaded in the wall of the chamber opposite from the plate, a head on the outer end of the bolt, a nut on the bolt for clamping the plate and filtering element between the head of the bolt and nut, a packing ring between the plate and casing, and a packing ring between the head of the bolt and the said plate.

In testimony whereof I affix my signature in presence of two witnesses.

LÉON DION.

Witnesses:
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