

C. F. HUBER.
WATER FILTER.
APPLICATION FILED AUG. 23, 1909.

967,776.

Patented Aug. 16, 1910.

2 SHEETS—SHEET 1.

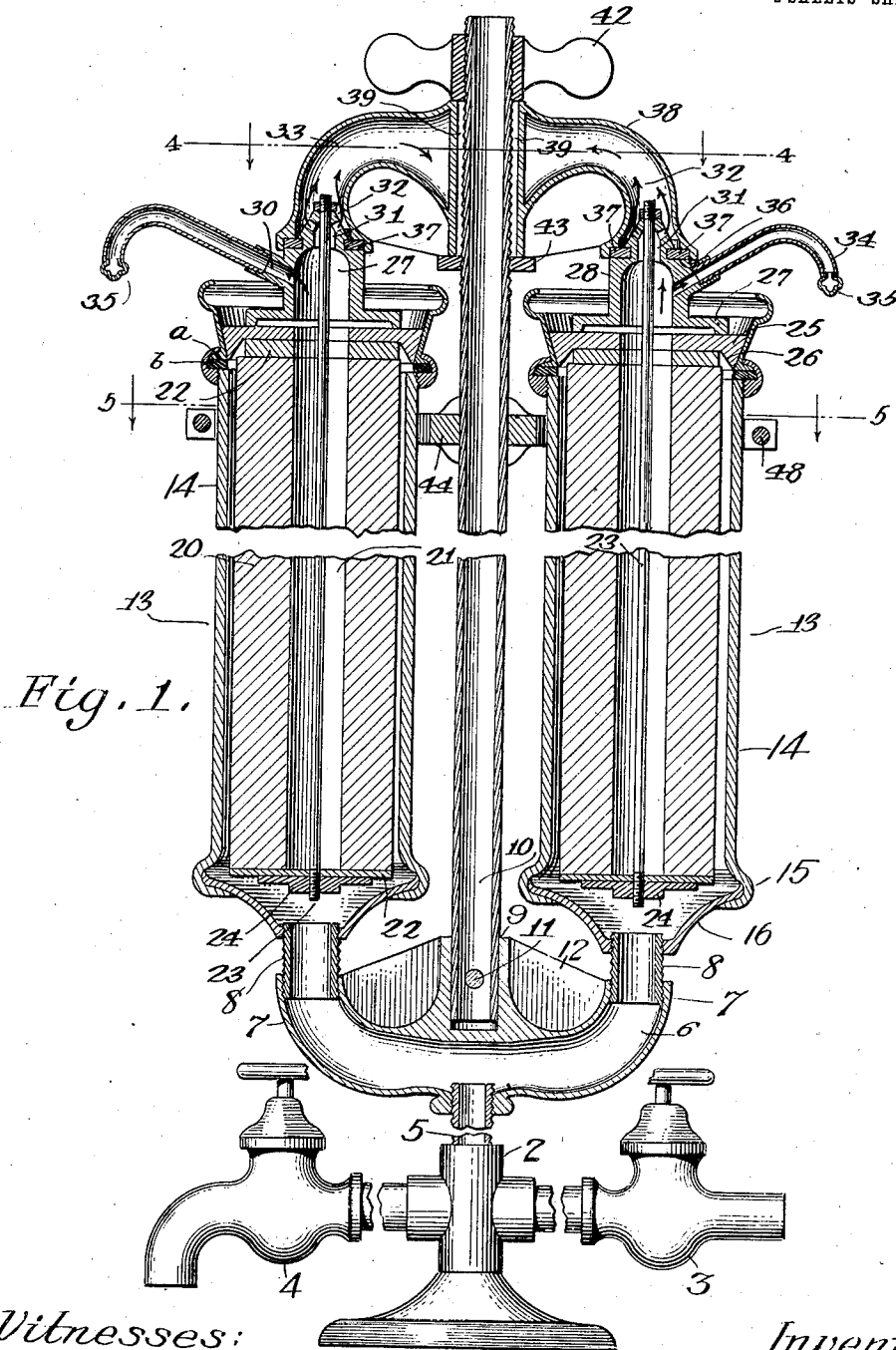


Fig. 1.

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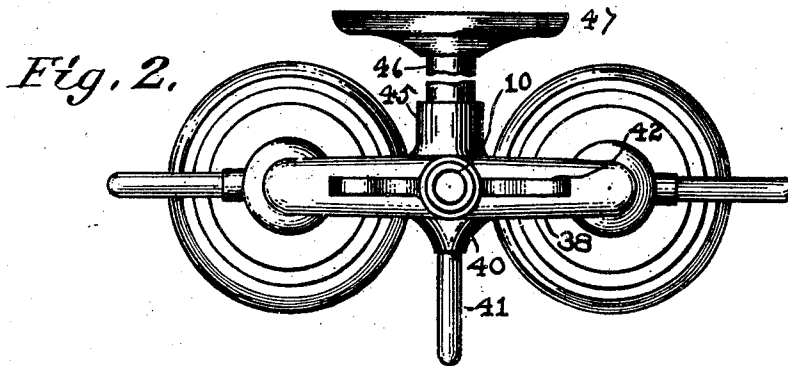


Fig. 3.

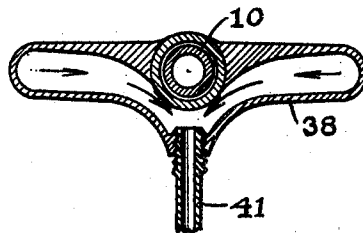
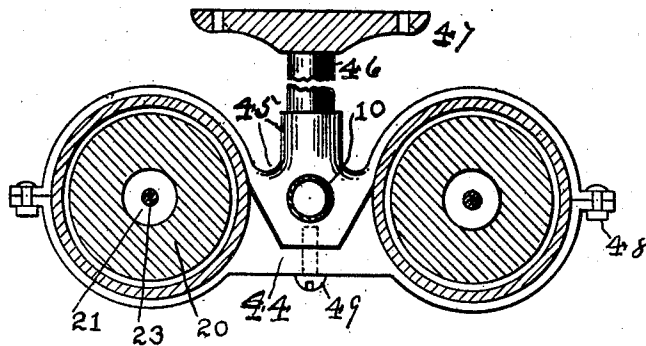


Fig. 4.



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UNITED STATES PATENT OFFICE.

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WATER-FILTER.

967,776.

Specification of Letters Patent.

Patented Aug. 16, 1910.

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To all whom it may concern:

Be it known that I, CHARLES F. HUBER, a citizen of the United States, residing in the city of Omaha, in the county of Douglas and State of Nebraska, have invented a new and useful Improvement in Water-Filters, of which the following is a specification.

The object of my invention is to increase the quantity of filtered water obtained from the ordinary supply service; to facilitate the separation of parts composing the filter for the purpose of cleaning and their readjustment; to strengthen and cheapen the general construction; provide for the delivery of the filtered water in any desired direction, and for the support of the filter in any desired position.

The manner in which I accomplish my object is described in the following specifications and illustrated in the accompanying drawings, in which:

Figure 1 is a central vertical sectional view. Fig. 2 is a top plan view of Fig. 1. Fig. 3 is a section on line 4—4 Fig. 1, part being broken, and Fig. 4 is a section on line 5—5 Fig. 1, a part being broken.

In the drawings 1 is a base adapted to support the filter. Screwed on this base is a four way pipe fitting 2. Connected in the horizontal apertures of this fitting is a water supply valve 3 and a drain cock 4. In the vertical aperture of the fitting is a nipple 5. Screwed on this nipple is a bridge fitting 6. The ends 7 of this bridge are threaded internally for the support of the nipples 8. The center 9 is bored to receive the end of a pipe rod 10 adapted to be secured therein by a thumb pin 11, adapted to fit and extend through the bridge and pipe. Extending from the ends 7 to the center 9 are webs 12. Screwed on each of the nipples 8 is a cylinder 13. The body 14 of each of these cylinders is a tube of any suitable length and diameter expanded to form the bottom flange 15 which is adapted to receive and hold the curved portion 16 which is permanently connected by pressure of the flange, or by soldering. The top 17 of each cylinder is threaded externally for the attachment thereto of the top portion. Each of these top parts consists of a ring 18 internally threaded to fit the part 17 of the cylinder, and recessed above the threaded part. Flanged into this recess is the bottom part *a* of a funnel portion 19 which is secured to the ring by a ring of solder melted

therein. Insertible in each cylinder is a filter stone 20. The exteriors of these stones are spaced from the interiors of the cylinders to provide for a surrounding body of water. 60 Through the center of the stone is a cylindrical water passage 21, for the water percolating through the stone. On each end of the stone is an elastic washer 22 to form a water-tight joint. Extending through these 65 washers and passage 21 is a rod 23 threaded at each end. Secured on the bottom end is a flanged nut 24 adapted to hold the washer 22 firmly against the stone.

On the top washer 22 is a rubber gasket 70 25 having a flanged part 26. This flanged part is adapted to fit the interior tapering part of funnel top 19 and to be expanded by the pressure of the water pressing upward between the flange 26 and the stone. Rest- 75 ing on the gasket 25 is a flange part 27 of a cylinder 28. The main interior 29 of this cylinder coincides with the water passage 21 in the stone. Extending diagonally upward from this interior is a water passage way 30. 80 Extending vertically is a center water passage 31 of sufficient diameter to permit a flow of water around the rod 23 and through the holes indicated by the arrows 32. The rod 23 extends through the top of this part 85 28 and a nut 33 thereon is adapted to be rotated and press the flange 27 down on the gasket 25 and draw the flanged nut 24 against the washer 22, thereby making water-tight joints between those parts and 90 the stones. Screwed into each water passage 30 is a water spout 34 provided with a removable stopper 35. Secured in an annular channel and shoulder 36 on each of the cylindrical members 27 is an elastic washer 95 37. Adapted to rest on these washers is a water way bridge 38. Extending vertically through the center of this bridge is an aperture 39 through which the pipe 10 is insertible. In the front center of the bridge is an 100 extension 40 threaded internally for the support of a spout 41. The flow of the water from the holes 32 in the member 27 through the bridge 38 and spout 41 is indicated in Fig. 4 by the arrows. The part of the tube 105 10 over which the bridge is free to slide and to rotate is threaded externally as shown in Fig. 2 and provided with a thumb nut 42 and a lock nut 43. When the tube 10 is secured by the pin 11 in the bridge 6 and the 110 bridge 38 placed on the washers 37 the rotation of the thumb nut 42 acting on the

bridge 6 and bridge 38, presses the bridge 38 down upon the washers and forms a water-tight connection between the bridge 38 and members 27. Around the body 14 of both cylinders 13 is a divided ring bracket 44. Through the central part of this bracket is an aperture through which the tube 10 is free to slide. The rear part 45 of the bracket is threaded internally and a nipple 46 inserted. This nipple may be of any desired length and support a plate 47 by which the filter can be secured on a wall or other vertical support, or in place of the flange 47 any pipe fitting can be used to which the bracket may be connected. When so supported or connected the front portion of the bracket can be removed by means of the bolts 48 and screw 49 and the cylinders be thereby released.

When my device is constructed as described and illustrated it is used and cleaned as follows: The base 1 of the filter is placed on a suitable horizontal support, or the part 47 is attached to a vertical support, or the part 47 can be removed and the nipple 46 or part 45 of the bracket 44 can be connected with any suitable pipe fitting, or rod support, and the filter be held thereby. The valve 3 can be connected with a water supply service and the valve 4 be closed. When the valve 3 is opened the water flows through the bridge 6 into both cylinders. The pressure of the water in the cylinders surrounding the stones presses the flanged part 26 of the rubber gasket 25 outward from the stone against the funnel part 19 thereby forming a water-tight joint. As the water percolates through the stones it flows through the passage ways, 29, 30, 31 and 32 into the spout 34, bridge 38 and spout 41, and can be delivered through either by closing the others by the stoppers 35. The pressure of the bridge 38 upon the washers 37 to form a water-tight connection is produced by the joint effect of the pin 11 inserted through the bridge 6 and tube 10, and the thumb nut 42, and can be adjusted by the joint pressure of the nut 42 and lock-nut 43 on the bridge 38 and rod 10. By the removal of the pin 11 from the bridge 6, the bridge 38 and rod 10 can be instantly disconnected from the washers 37 and their supporting parts, and the stones be removed from the cylinders by aid of the spouts; the stones be cleaned, the cylinders cleaned, and drained through the valve 4; the stones and bridge 38 be replaced and parts be secured by the insertion of the pin 11 in the bridge 6. The fitting 2 can also be adjusted in relation to the position of the cylinders so the valves 3 and 4 can be placed in the position desired.

What I claim and desire to secure by Letters Patent is:

1. In a water filter, the combination with

a pair of cylinders, each cylinder having a removable funnel shaped top and a flanged in bottom; of an inverted bridge connecting the bottoms of the cylinders, adapted to support the cylinders; to conduct water from a supply service to the interior of the tanks support, means for holding filter stones in said cylinders under water pressure; a pair of filter stones insertible in the cylinders and having water-tight connections therewith, and means for conducting the filtered water from the stones, said means being connected with said bridge, whereby the stones are held in position in the cylinders.

2. In a filter, the combination with a pair of cylinders, each cylinder having a closed bottom and a removable funnel shaped top, and a bridge connecting the bottoms of the cylinders, said bridge constituting a support for the cylinders and water supply connection with both cylinders and a water supply service; of a pair of stones insertible in said cylinders, provided with means adapted to fit the funnel portion of the cylinders and constitute water-tight connections of said parts, and with means for the delivery of the filtered water from the interior of the stones, and means for holding said stones in said cylinders against the pressure of water therein.

3. In a water filter, the combination with a pair of cylinders, each consisting of a tube threaded at one end and flanged at the other, a bottom secured by said flange, a ring supported on the threaded top and a funnel portion flanged into said ring and soldered therein; of a bridge connecting the bottoms of said cylinders constituting a support and water passage connecting the interiors of the cylinders and with a water supply service, and a filter stone insertible in each cylinder provided with means adapted to form water-tight connections between the stone and funnel portion of each cylinder, and outlets for the water filtered through the stones, and means for removably securing the stones in position in the cylinders, as and for the purposes described.

4. In a water filter, the combination with a pair of cylinders, each having a removable funnel shaped top and closed bottom, a bridge connecting said bottoms, constituting a support for the cylinders and water passage between a water supply pipe and the interior of the cylinders and to support a center rod between the cylinders, a pair of filter stones insertible in the cylinders, means attached to the stones adapted to form a water-tight joint between the funnel portion of the cylinders and said stones, and outlet for the filtered water; of a bridge connecting the water outlets on said stones, adapted to conduct filtered water from said outlets to a central outlet in said bridge, and

adjustable means adapted to connect said bridge and the bridge connecting the bottoms of the cylinders, whereby said stones are held in position in the cylinders and the
 5 filtered water be delivered from the outlets attached to the stones or from the center of said bridge.

5. In a water filter, the combination with a pair of cylinders, each having a removable
 10 funnel shaped top and water inlet bottom, an inverted bridge connected to the bottoms of the cylinders and having a central bore, said bridge constituting a support for the
 15 cylinders, a central connecting rod and means for connection with a water supply service, a pair of filter stones, means thereto
 20 attached adapted to form water-tight joints with said funnel tops and outlets for the filtered water, and a bridge connecting said
 25 outlets and conducting water therefrom to a central outlet in the bridge, said bridge having a central bore; of a connecting rod slidable through said bridge and into the inverted bridge, the upper part threaded for
 a nut, and lower end bored for a pin, and a thumb nut rotatable on the threaded part of the rod and a pin insertible in said inverted bridge and through said rod, whereby said bridge can be adjusted on said outlets

on the stones and hold them in position in
 the cylinders. 30

6. In a water filter, the combination with a pair of cylinders, an inverted bridge connecting them, bored to support a central rod,
 filter stones insertible in said cylinders, a
 35 bridge connecting said stones having a central bore; of a connecting rod insertible in said bores in said bridges and a nut rotatable on the rod and a pin insertible in the
 inverted bridge whereby said rod is ad- 40
 justably connected to said bridges and the stones held in position in the cylinders.

7. In a water filter, the combination with a pair of cylinders, having an inverted
 bridge connection, filter stones insertible in 45
 said cylinders, a bridge connecting said stones, a rod insertible in said bridges, and means for adjustably securing the rod in
 the bridges whereby said stones are held in position in said cylinders; of a divided ring 50
 bracket adapted to be adjustably secured to said cylinders and to support said filter on a wall or other vertical structure.

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Witnesses:

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