(Model.)

C. L. RIDGWAY.

FILTER.

No. 253,171. Patented Jan. 31, 1882.

Fig. 1.

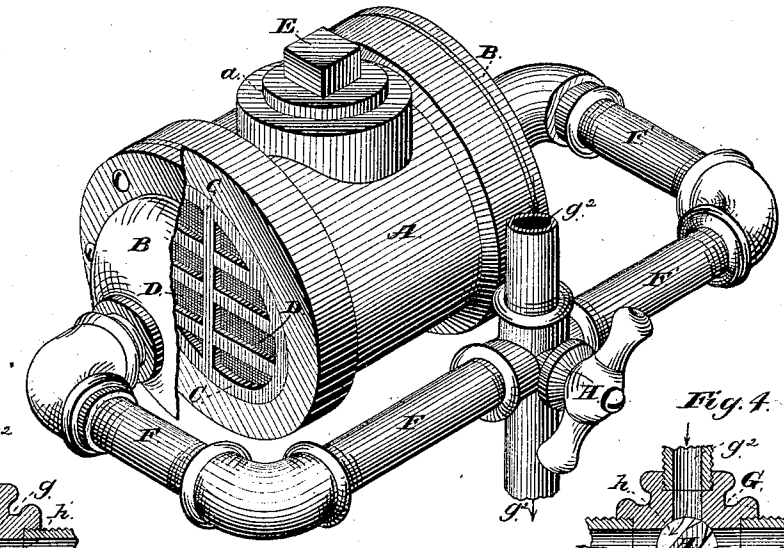


Fig. 3.

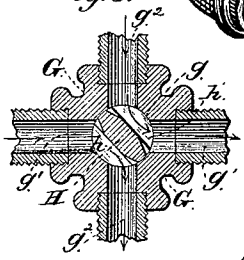


Fig. 4.

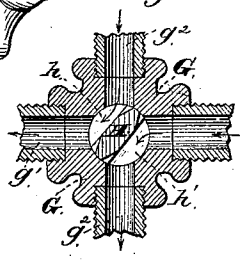
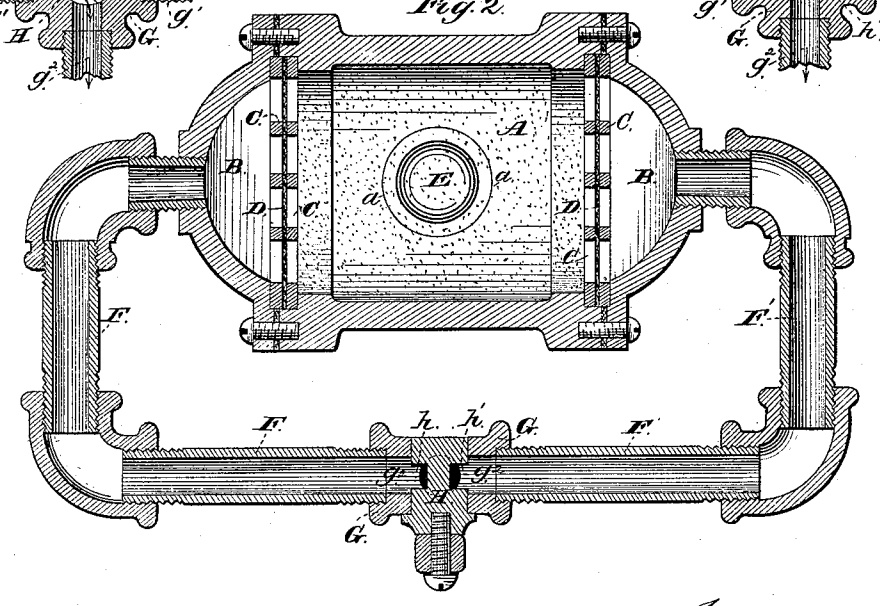


Fig. 2.



Witnesses.
Jas. C. Hutchinson.
Henry C. Hazard.

Inventor.
Chas. L. Ridgway, by
Geo. S. Prindle, his Attys

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

CHARLES L. RIDGWAY, OF BOSTON, MASSACHUSETTS.

FILTER.

SPECIFICATION forming part of Letters Patent No. 253,171, dated January 31, 1882.

Application filed April 9, 1881. (Model.)

To all whom it may concern:

Be it known that I, CHAS. L. RIDGWAY, of Boston, in the county of Suffolk, and in the State of Massachusetts, have invented certain new and useful Improvements in Water-Filters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my improved filter, a portion of one head being broken away to show the strainer-head. Fig. 2 is a horizontal central section of the same, and Figs. 3 and 4 are vertical central sections of the cock used for controlling the movements of water with relation to said filter.

Letters of like name and kind refer to like parts in each of the figures.

My invention has for its object cheapness of construction and ease of manipulation; and to this end it consists in the construction and combination of parts forming the filter, substantially as and for the purpose hereinafter specified.

In the annexed drawings is shown a cylindrical casing, A, which has each of its ends inclosed by means of a dome-shaped head, B, that is arranged with its convex side outward. Within each end of said casing is formed a right-angled rabbet, *a*, which receives two open plates, C, that are each preferably composed of an outer ring and a number of cross-bars extending between the sides of said ring at right angles to each other.

Between the plates C and C is placed a disk, D, of wire-cloth, reticulated sheet-metal, or other like material, and the whole has such thickness as to cause the outer plate to project beyond the end face of the casing A and to receive the head B, as shown in Fig. 2. A water-tight joint is secured between said parts by any of the usual means; but thin rubber gaskets are preferably employed for such purpose. The space between the disks or strainers D is filled with charcoal or other filtering material, which is placed in or removed from the same through openings *a'*, that are provided within the upper and lower sides of the casing A, which openings are closed by means of screw plugs or caps E. The disks or strainers D are supported and protected against injury by the plates C and C, and are enabled to withstand the outward pressure of the filtering contents of the casing.

At the axial center of each head B is inserted a pipe, F or F', which from thence extends horizontally outward, forward, and thence inward, as seen in Figs. 1 and 2, and at a point opposite to the longitudinal center of the casing A is connected with the opposite pipe by means of a four-way-cock casing, G, which is arranged with the axis of its water-ways occupying a vertical plane.

At the center of the casing G is provided a round tapering opening, *g*, which is located at the intersection of the horizontal and vertical water-ways g' and g^2, and receives a correspondingly-shaped plug, H, that is fitted to and held in place within said opening in the usual manner, and is provided within opposite sides of its periphery with grooves or ports *h* and *h'*, as seen in Figs. 2, 3, and 4.

The water-supply may be admitted through either of the vertical water-ways g^2, but is preferably admitted through the upper, and discharged from the lower, of said water-ways, and by properly adjusting the position of the plug H said water may be caused to pass through the filtering material from either direction; or it may be permitted to pass directly through without filtration. When the plug H is adjusted to the position shown in Fig. 3 water from above will pass to the right through the port *h'*, water-way g', and pipe F' into and through the filter casing A, and from thence through the pipe F, water-way *g*, and port *h* into and from the water-way g^2, while by turning said plug one-fourth of a revolution (to the position shown in Fig. 4) the course of the water will be reversed, as seen by the arrows of said figure. If the plug H is placed in the position shown in Fig. 2, with its ports arranged vertically, water will pass directly through the water-ways g^2 without entering the filter. When from the passage of water in one direction the filtering material has become clogged with matter removed from said water a reversal of the current will cause the speedy removal of such deposit and render the filter again effective.

Having thus fully set forth the nature and

merits of my invention, what I claim as new is—

In combination with the cylindrical shell A B B, filled with filtering material, and having its ends connected by means of the pipes F and F′, the casing G, placed at the intersection of said pipes, and provided with an axial opening, g, and with four radial water-ways, g' and g^2, and the plug H, fitted within said axial opening, and having within opposite sides of its periphery ports h and h', each of which may be caused to simultaneously coincide with and connect two of said radial water-ways, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of April, 1881.

CHARLES L. RIDGWAY.

Witnesses:
JAMES E. HUTCHINSON,
HENRY C. HAZARD.