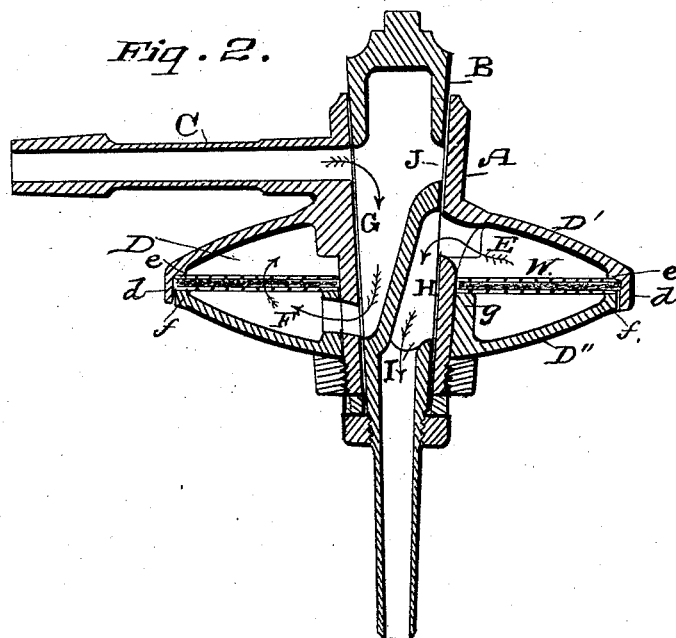
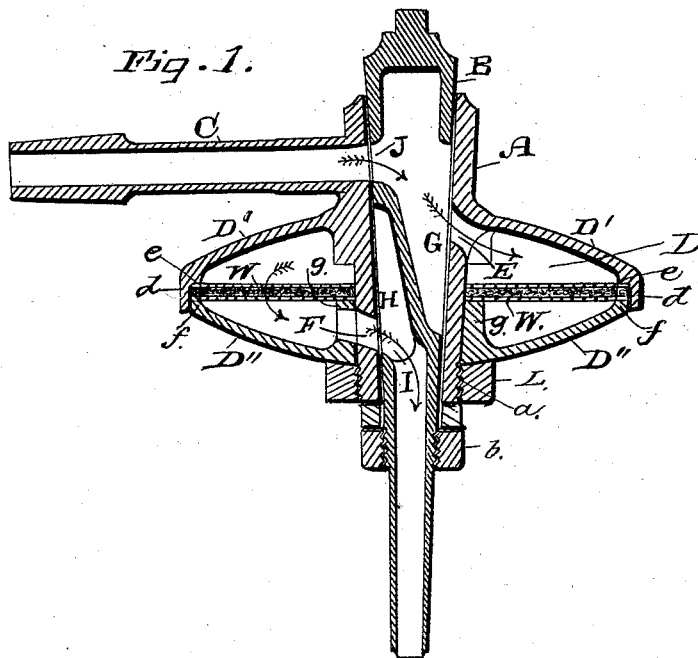


(No Model.)

J. G. DIVOLL.
FILTER.

No. 419,843.

Patented Jan. 21, 1890.



Witnesses,
Geo. H. Strong,
J. H. Hurd

Inventor,
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attys

UNITED STATES PATENT OFFICE.

JAMES G. DIVOLL, OF OAKLAND, CALIFORNIA.

FILTER.

SPECIFICATION forming part of Letters Patent No. 419,843, dated January 21, 1890.

Application filed October 15, 1888. Serial No. 288,143. (No model.)

To all whom it may concern:

Be it known that I, JAMES G. DIVOLL, of Oakland, Alameda county, State of California, have invented an Improvement in Filters; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an improved filter; and it consists in the construction and combination of devices which I shall hereinafter fully describe and claim.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical section taken through the faucet with the plug in position to receive the water and deliver it above the filter. Fig. 2 is a similar section with the plug reversed, so as to deliver the water below the filter.

A is the barrel, in which the plug B is ground to fit. The pipe C opens into the upper part of the barrel, and is connected with the faucet or other source of supply, so that water is brought through it to the filter. Around the barrel and below this supply-pipe is formed the enlarged two-part casing D, of sufficient diameter and depth to hold a filtering-diaphragm W, adapted to support any suitable or desirable amount of filtering material. The upper section D' of the casing is formed with a flange with a shoulder *e*, and the lower section D'' of said casing is formed with a turned-up flange *f*, adapted to be fitted within the flange *d* of the upper section and against the shoulder *e*, said section D'' having also a flange or hub *g*, which surrounds the barrel and through which the part F is made, as shown. The filtering-diaphragm is seated between the adjoining surfaces of the flange *f* and the shoulder *e*, and its central portion rests upon the top of the hub or flange *g* of the lower section D'', whereby said diaphragm is firmly seated and braced.

Above and below the filtering-diaphragm are made openings E and F, which pass through the side of the barrel, and when the plug is turned the various openings in the plug may be made to conform to those in the side of the barrel, as will be hereinafter described.

G is a slot of considerable length made in the side of the plug, and the upper end will communicate with the supply passage or pipe

C when the plug stands with the slot G upon that side. The lower end of the slot will communicate with the passage F, which is below the filtering-diaphragm, and water flowing in through the pipe A will pass downward through the slot G, thence out of the opening F and upward through the filtering-diaphragm, thence passing into the opening E, and thence into a slotted opening H in the side of the plug opposite to the opening G and lower down. From this opening the water passes outward through the hole I in the lower end of the plug and is discharged. When the water has been running through the filter a sufficient time in this direction, it is desirable to reverse it for the purpose of cleansing the filter, and the plug is then turned half-way round, so as to stand in exactly the opposite direction from that first described. A hole is made through the plug at J, so that when in this position water may enter from the pipe C and pass into the slot G, which is now at the opposite side. Passing down this slot, the water reaches the opening E and passes out into the filter-chamber above the filter, passing thence downward through the filter. It then passes into the opening F and into the discharge-opening I in the lower part of the cock, as above described. The barrel is threaded at its lower end, as shown at *a*, and upon this threaded portion, which projects below the lower cap of the casing D, is screwed a nut L. By removing the lower nut *b*, which is screwed on the plug, and the adjacent washer, and then unscrewing the nut L the lower cap of the casing may be removed, thereby rendering the filtering material accessible and permitting the internal parts to be cleaned, removed, or changed with but little delay and inconvenience. By this construction it will be seen that by simply turning the plug half round the passage of the water through the filter-chamber may be reversed, and this may take place as often as found desirable. In cases where the water to be filtered is very much loaded with impurities it will be necessary to reverse the flow of the water quite frequently. The entire flow may be cut off by turning the plug at right angles with the two positions in which the filtering is carried on.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

An improved filter consisting of a two-part casing, the upper section of which is formed
5 with an internal shoulder *e* and with a barrel and a pipe for attaching the filter to a source of supply, and the lower section being provided with an outer flange adapted to be seated against said shoulder and an inner
10 flange or hub surrounding the barrel of the upper section, a filtering-diaphragm seated between the flange *f* and the shoulder *e* and having its inner portion resting upon the hub

or flange, a turning plug with its ports, a nut L below the lower section of the casing, 15 adapted to removably hold said section and filtering-diaphragm in position, and a second nut below the nut L, engaging the plug to hold the same, substantially as described.

In witness whereof I have hereunto set my 20 hand.

JAMES G. DIVOLL.

Witnesses:

S. H. NOURSE,

H. C. LEE.