No. 617,133. Patented Jan. 3, 1899.

W. H. VANCE.

FAUCET FILTER.

(Application filed Mar. 4, 1898.)

(No Model.)

Fig. 1.

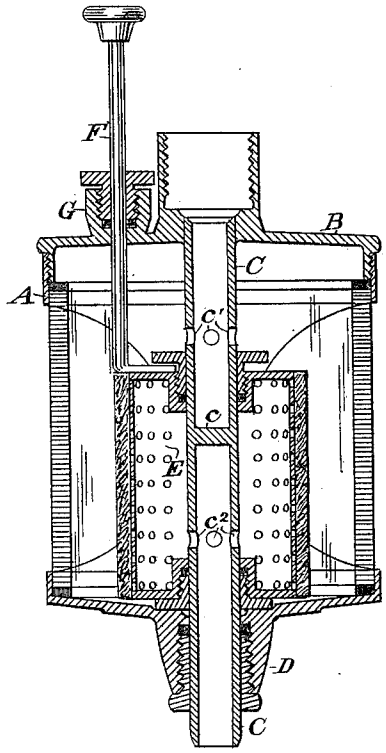
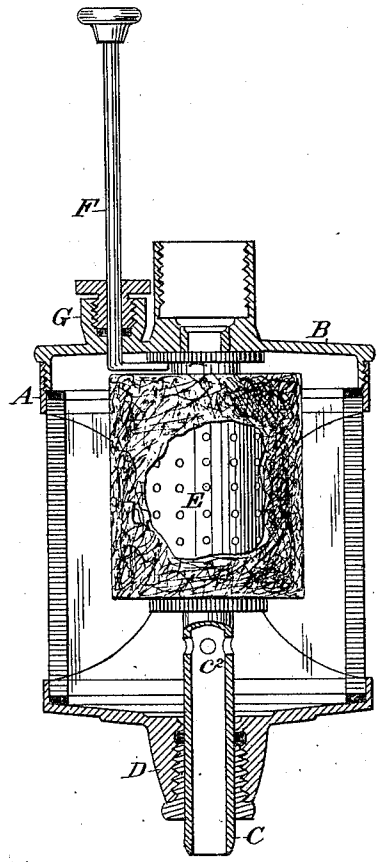


Fig. 2.



Witnesses,
J. Stanse
E. A. Brandau

Inventor,
William H. Vance
By Dewey Strong & Co.
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM H. VANCE, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF TWO-THIRDS TO FRANK W. WOLFE AND EDWIN D. WOLFE, OF SAME PLACE.

FAUCET-FILTER.

SPECIFICATION forming part of Letters Patent No. 617,133, dated January 3, 1899.

Application filed March 4, 1898. Serial No. 672,524. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. VANCE, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Faucet-Filters; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a filtering attachment for faucets.

It consists, essentially, of a casing the cap of which is adapted to be secured to the faucet, a hollow stem extending axially through the casing, having an intermediate partition, openings above and below the partition, so that water received into the upper end is discharged outwardly into the casing and is returned into the tube and discharged through the lower openings. A perforated cylinder is slidably fitted to the tube and carries the filtering material. When this filter is at the bottom of the casing-chamber, the water passes from the outside into the interior and thence to the discharge. When the casing is moved to the top, the water passes outwardly through the filter and returns thence through the lower openings to the discharge.

The invention also comprises details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a vertical section. Fig. 2 is a similar view showing the cylinder E in a raised position.

The object of my invention is to provide an easily-operated self-cleaning filter.

A is an outer casing, which may be of any suitable or convenient size to suit the character of the filter.

In the present case I have shown the filter of a size which enables it to be used in direct connection with a faucet; but it will be manifest that it may be made of any desired proportions and with any suitable connections.

The cap B of the filter fits closely by screw-threads or otherwise upon the top of the casing, having a suitable packing-ring to form a tight joint. Through the center of the cap is made an opening, and a pipe C extends downwardly from said opening, passing through a stuffing-box D in the lower part of the casing, and its open lower end forms the discharge of the filter. This pipe has a partition or diaphragm *c* interposed in its length within the casing, and above this diaphragm are holes c' and below it holes c^2, so that water passing into the upper end of the passage will be first delivered outwardly into the casing through the holes c' and then returned into the pipe below the diaphragm through the hole c^2.

The filter consists of a cylindrical chamber E, the periphery of which is foraminous or numerously perforated. The heads of the chamber are tight and are fitted with stuffing-boxes, so as to slide upon the central tube C. The sliding is effected by means of a rod F, passing through a stuffing-box G upon the cap B of the casing and having its inner end bent and connected with the slidable chamber in any suitable manner. In the present case the connection is made by flattening the bent portion of the rod, so that when turned to one side this portion passes under a collar or flange of the stuffing-box gland, so that when the rod is slidably moved through its stuffing-box it will carry the perforated chamber with it. Around this chamber is fixed a filtering material, which may be of any suitable fibrous, porous, or other filtering character.

The operation of the apparatus will then be as follows: When the slidable chamber is pushed down within the outer casing, so that the discharge-openings c^2 are within it, the inlet-openings c' will be exposed above the chamber. The water then being allowed to enter will pass through the inlet-openings into the casing exterior to the chamber and thence will flow through the filtering material to the interior of the chamber and find its exit through the discharge-opening c^2. Whenever it is desired to cleanse the filter or for other purposes to reverse the flow, the slidable chamber is drawn up until the inlet-passages c' will discharge into the interior of this chamber. When in this position, the exit-passages c^2 will be exposed below the lower end of the slidable chamber and the operation will then be reversed—that is, the water entering the passages c' will discharge outwardly through the filtering medium and will

consequently wash off any deposit which may have formed upon the exterior of the filter while running in the first position. This being done the flow through the filter will act in the same manner as before, the filtered water being delivered into the exterior casing and thence flowing into the discharge pipe or passage through the opening c^2.

In this manner I produce a simple, cheap, and efficient reversible filter which may be used either as a faucet-filter or on the same principle upon a larger scale.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a filter, an exterior casing, a pipe or passage extending through the casing having a diaphragm interposed in its length between the top and bottom of the casing, openings through the sides of the pipe, both above and below the diaphragm, a hollow filter-chamber, the ends of which fit slidably and closely upon the tube, and means for sliding the chamber so that the openings in the tube may be exposed above or within the chamber, and the openings below correspondingly exposed within or below the chamber.

2. In a filter, an exterior casing, a tube extending through the chamber adapted to receive the supply at the upper end and discharge it exterior to the casing at the lower end, a diaphragm formed in the length of the tube within the casing, openings from the tube into the casing above and below the diaphragm, a foraminous filter-chamber having closed ends slidable and forming a tight joint upon the central tube and a connection whereby the chamber may be moved so as to expose the openings in the tube to admit water exterior to the chamber and the openings below the tube to convey the water away from the interior of the chamber, or by reversing the position of the chamber, to admit water to the interior of the chamber through the upper openings and discharge it through the lower openings exterior to the chamber.

3. In a filter of the character described, an exterior casing having a hollow tube extending through it with inlet-opening at the top and discharge-opening at the bottom, a diaphragm closing the tube at a point intermediate between the ends of the casing, passages opening from the tube into the casing both above and below the diaphragm, a slidable hollow filter-chamber fitting water-tight about the tube and a sliding rod passing through the stuffing-box in the outer casing and connecting with the filter-chamber, whereby the latter may be moved upon the tube to inclose the inlet-passages and expose the outlet-passages below, or to expose the inlet-passages above and inclose the outlet-passages.

In witness whereof I have hereunto set my hand.

WILLIAM H. VANCE.

Witnesses:
S. H. NOURSE,
JESSIE C. BRODIE.