No. 680,902. Patented Aug. 20, 1901.

R. T. WEAVER.

FILTER.

(Application filed Apr. 26, 1901.)

(No Model.)

Fig. 1.

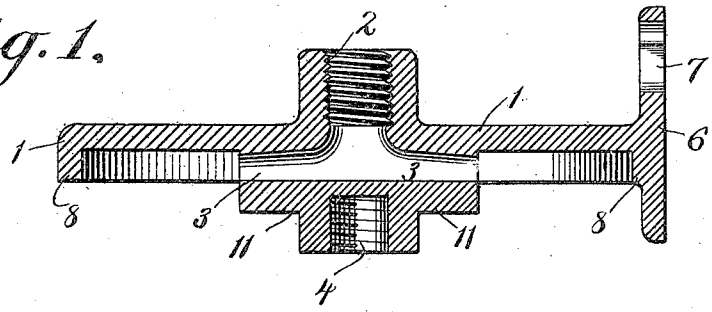
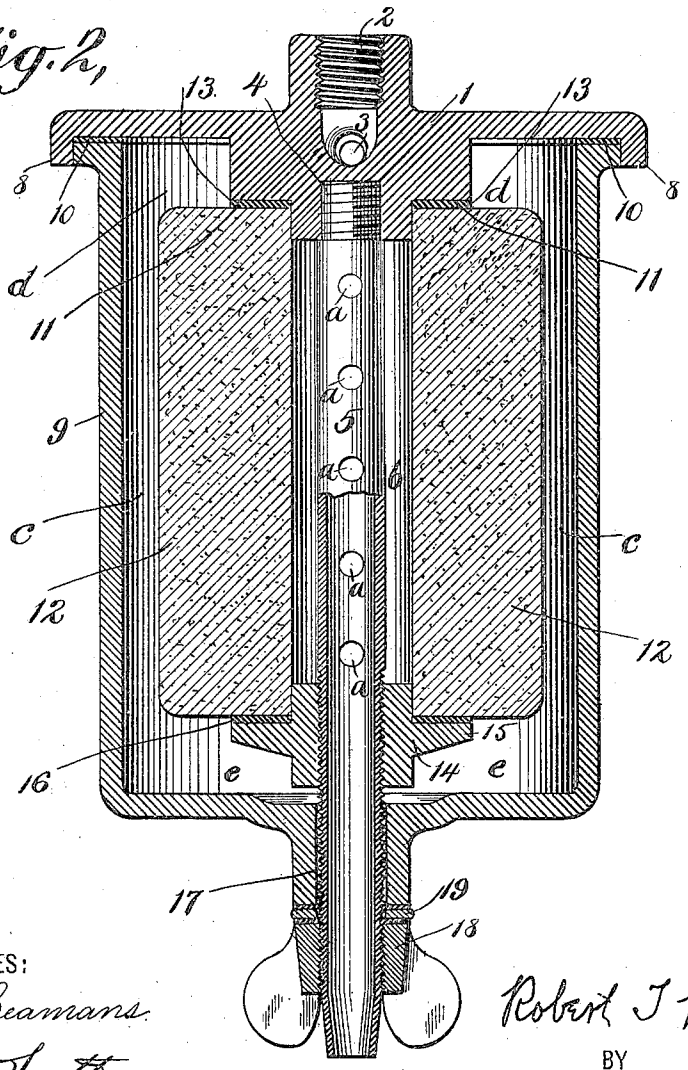


Fig. 2.



WITNESSES:

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ROBERT T. WEAVER, OF NEW YORK, N. Y., ASSIGNOR TO THE GENERAL ENGINEERING COMPANY, OF NEW JERSEY.

FILTER.

SPECIFICATION forming part of Letters Patent No. 680,902, dated August 20, 1901.

Application filed April 26, 1901. Serial No. 57,547. (No model.)

To all whom it may concern:

Be it known that I, ROBERT T. WEAVER, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Filters, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in filters, and is especially adapted for use in filtering water in private houses; but it may also be enlarged and used for filtering water in large quantities.

One object of my invention is to construct a satisfactory filter at low cost.

Another object is to so construct a filter that the filtering medium may be readily exposed for cleaning without removing the said medium from the part of the filter to which it is attached.

The invention consists in the construction, arrangement, and combination of parts, as hereinafter described, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a vertical central section of the plate or cap forming the top of the filter, this section being taken at a right angle to the line on which Fig. 2 is taken to clearly show the shape and location of the ports through which the water enters the filter. Fig. 2 is a vertical central section of the entire filter.

Similar numerals and letters of reference designate corresponding parts in both figures.

The part marked 1 designates a plate or cap which forms the top or cover of the filter. This cap is provided with an internally-screw-threaded socket 2 for engagement with external screw-threads on a faucet. It is also provided with two openings or ports 3 3, which communicate with the opening in the socket 2. This cap is also provided with another internally-screw-threaded socket 4, into which the upper end of the perforated pipe 5 is screwed, as will be more fully described hereinafter.

Connected to or formed integral with the cap 1 is a bracket 6, having an opening 7, by which the filter may be hung or supported in order to take a part of the strain off of the faucet to which the filter is attached. The cap has an annular rim or flange 8, which fits over the top of the casing 9, the bottom and sides of the casing being preferably formed in one integral piece, as shown in the drawings, a suitable packing 10 being placed between the cap and the top edge of the casing to form a water-tight joint. The socket 4 projects below the under face of the boss, in which are ports 3 3, and forms therewith a right-angled shoulder 11, to be used as a seat or support for the upper end of the block of filtering material 12, made, preferably, of porous stone and cylindrical in form. A gasket or washer 13 is placed between the shoulder and the cylinder to make a water-tight joint.

The part marked 5 is a perforated pipe, the perforations being marked *a a a*, having both ends screw-threaded, as shown. The upper end of this pipe screws into the socket 4.

The part marked 14 is an internally-screw-threaded nut having projecting therefrom an annular flange 15. This nut is screwed onto the lower end of the pipe 5 and supports and secures in place the filtering-cylinder, a gasket or washer 16 being placed between the cylinder and the flange 15 on the nut to form a water-tight joint.

The casing 9, above referred to, is provided with an opening 17, through which passes the lower end of the tube or pipe 5. Also screwed onto the lower end of the tube 5 is a thumb-nut 18, which holds the casing in place. A rubber gasket 19 is placed between this nut and the casing to make a water-tight joint between the casing and the pipe 5.

The parts are assembled as follows: The perforated pipe 5 is screwed into the socket 4, the washer or gasket 13 is put in place, the filtering-cylinder is put over the pipe 5, and in its seat 11 the nut 14, having the washer 16 in place, is screwed onto the lower end of the pipe and close up to the lower end of the filtering-cylinder, so as to hold the cylinder in place. The casing 9 is then placed around the filtering-cylinder and seated against the cap 1, having the gasket 10 between. The lower end of the pipe passes through the opening 17 in the casing, and the thumb-nut is then screwed onto the lower end of the pipe to hold the casing in place, the gasket

19 being between. When the parts are thus assembled, a passage *b* is left between the pipe 5 and the inner face of the filtering-cylinder, and another passage *c* is left between this cylinder and the casing. Passages *d* and *e* are also left between the upper and lower ends of the filtering-cylinder and the cap and casing, and these spaces communicate with the space *c*.

In use my filter operates as follows: The filter is attached to the faucet by the internally-screw-threaded socket 2, and in order to further support the filter a screw or nail may be passed through the opening on the hanger into a convenient wall or bracket. When the water is turned on, it passes through the ports 3 3, down through the passages *d c*, through the porous filtering-cylinder into the passage *b*, through the perforations *a a* in the pipe 5, down through this pipe, and is discharged at the lower end of this pipe thoroughly filtered.

In order to clean the filter, it is only necessary to unscrew the thumb-nut 18 and remove the casing 9, leaving the filtering-cylinder exposed, it being held in place against the cap by the nut 14 on the pipe. The outer surface of the filtering-cylinder may then be scraped and washed without removing the cylinder from its position. When cleaned, the casing is replaced and held in position by the thumb-nut, and the filter is ready for operation again.

I have illustrated my invention in a simple form; but many changes in the shape and in other details might be made without departing from the spirit of it.

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

1. In a filter, the combination of a casing, a cap or cover, having an internally-screw-threaded socket for engagement with a faucet, and ports communicating with the socket and the inside of the filter, and another screw-threaded socket on the cap for receiving a perforated pipe, filtering material in the casing, a perforated pipe passing through the filtering material and casing, screwed into the socket in the cap, a nut having flanges screwed onto the lower end of the pipe to hold the filtering material in place, and another nut screwed onto this end of the pipe to hold the casing in place.

2. In a filter, the combination with a casing, a cap or cover having a screw-threaded socket for engagement with a faucet, and ports substantially at right angles to and communicating with the socket and also with the inside of the filter, the casing also having another socket to receive a perforated pipe, a downwardly-projecting rim or flange on the cap fitting over the top of the casing, the cap and casing being detachably connected, of a filtering material in the casing, having an opening therein larger than the perforated pipe, a perforated pipe passing through the casing and the filtering-block, a flanged nut on the lower end of the pipe to hold the filtering material in place, and another nut on the pipe to hold the casing in place.

3. In a filter, the combination of a casing and a cap, the two being detachably connected together, the cap having two screw-threaded sockets on opposite sides, one of the sockets adapted to fit on a faucet and the other to receive a screw-threaded pipe, the cap also having therein ports communicating with the faucet-socket on the inside of the filter, filtering material in the casing, having an opening therein larger than the diameter of the perforated pipe, so as to leave a passage or channel between the filtering material and the pipe when the parts are assembled, the outside of the filtering material being smaller than the inside of the casing, so as to leave another passage between the two, a perforated pipe passing through the casing and cylinder and screw-threaded into its socket in the cap, a flanged nut on the lower end of the pipe to hold the filtering material in position, and another nut on the same end of the pipe to hold the casing in position.

4. In a filter, the combination of the cap, 1, having sockets 2, 4 and ports 3, 3, a flange, 8, on the cap, a casing, 9, detachably fitted to the cap under the flange, and having a water-tight connection, the filtering material 12, the perforated pipe 5, screw-threaded to the under side of the cap and passing through the filtering material, the nut 14, having a flange, 15, screwed onto the lower end of the perforated pipe, the gaskets or washers 13, 16, between the filtering material and the cap 1, and nuts 14, 15 to make water-tight connections between the parts, the thumb-nut 18 on the lower end of the perforated pipe 5 to hold the casing in place, and a washer, 19, between the thumb-nut and casing to make a water-tight joint between the casing and the perforated pipe, all the parts arranged and fitted substantially as shown and described.

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

ROBERT T. WEAVER.

Witnesses:
H. M. SEAMANS,
I. V. SCOTT.