

(No Model.)

T. C. ANDREWS.
ATTACHABLE FILTER.

Patented Jan. 23, 1894.

513,292.

Fig. 1.

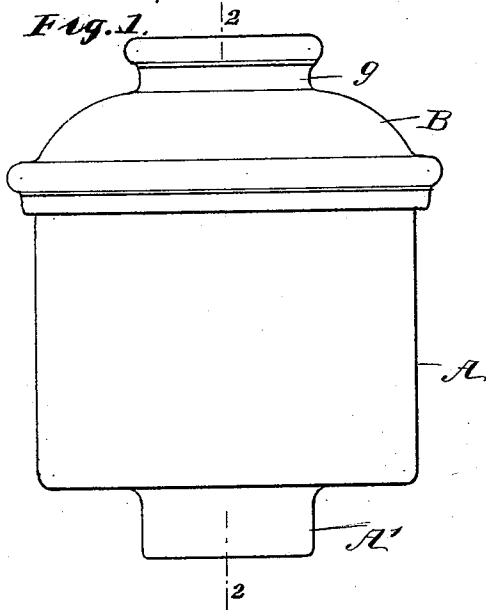


Fig. 2.

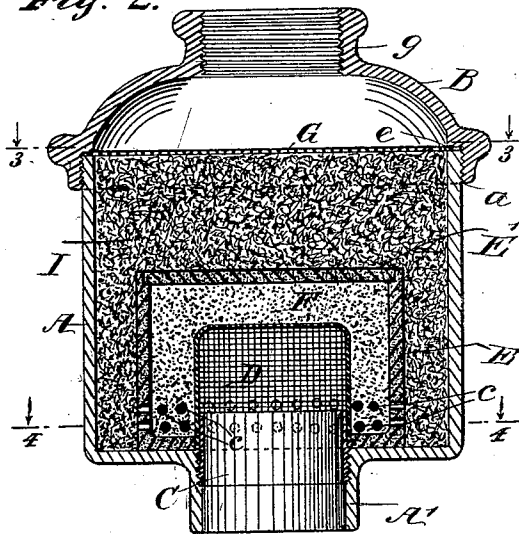


Fig. 3.

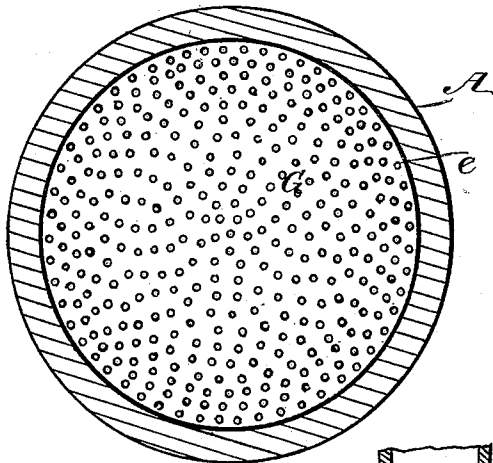


Fig. 4.

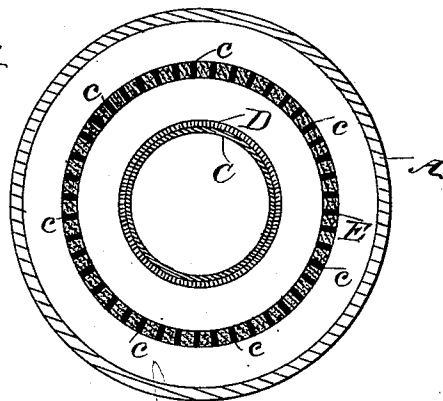
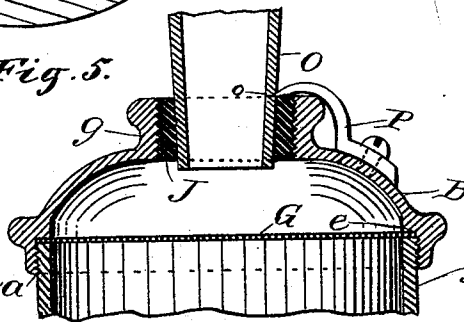


Fig. 5.



WITNESSES:

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THOMAS C. ANDREWS, OF NEW YORK, N. Y.

ATTACHABLE FILTER.

SPECIFICATION forming part of Letters Patent No. 513,292, dated January 23, 1894.

Application filed September 13, 1893. Serial No. 485,407. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. ANDREWS, of New York city, in the county and State of New York, have invented new and useful Improvements in Attachable Filters, of which the following is a full, clear, and exact description.

My invention relates to improvements in water filters, and particularly to such as are attachable to the spout of a hydrant or other fixed water supplying tap or faucet; and has for its objects, to provide a novel, simple and inexpensive filtering device, that will be readily attachable to a hydrant nozzle or other water tap, whether said nozzle or tap is exteriorly threaded, or is smooth, and which will be adapted to thoroughly cleanse and deodorize water passing through it.

To these ends my invention consist in the peculiar construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of the improvement. Fig. 2 is a sectional side view on the line 2—2, in Fig. 1. Fig. 3 is a sectional plan view on the line 3—3, in Fig. 2. Fig. 4 is a sectional plan view on the line 4—4, in Fig. 2; and Fig. 5 is a sectional side view of the upper portion of the filter, showing a novel means for its attachment upon the nozzle of a water tap.

The case A of the filter is made of sheet metal, or may be cast into form, being a cylindrical chamber of suitable dimensions for efficient service, the dome-shaped cover B having a threaded engagement with the upper edge of the case, as shown at *a*, in Figs. 2 and 5. A short cylindrical discharge nozzle A' is centrally projected from the lower end of the case A, having an internal diameter of a proper caliber to receive the short thimble C, which is externally threaded of a proper length from its lower end, to engage the interior threaded formation at the upper end of the nozzle A', as shown in Fig. 2. There is a portion of the thimble C, located within the case A, and on it the lower end portion of the inverted screen cup D, is slid and secured, thus adapting the cup for an attachment to the case in a manner which will permit its ready

removal. The screen cup D may be produced from foraminated sheet metal or of a disk of screen wire cloth struck into form, the reticulations being fine enough to restrain coarsely granulated silex from passing through, but discharging water freely. The concentric arrangement of the screen cup D, within the case A, produces an annular space between the walls of the parts named, and within said space there is a porous cup E introduced, the bottom wall of which is centrally apertured in circular form of a diameter to closely embrace the lower end of the screen cup, as shown in Fig. 2. The diameter of the circular porous cup E is so proportioned that its vertical wall is removed a correct distance from the inner side surface of the case A, affording an annular space of reduced dimensions, the porous cup occupying about one half of the space between the screen cup D and wall of the case. The side wall of the porous cup is numerously perforated near its bottom, as indicated at *c*, in Figs. 2 and 4, these holes being small enough to retain the contents of the porous cup when it is filled with the granular silex F; and on the cup a lid E' is closely fitted to close its upper end. A disk G formed of foraminated sheet metal, or if preferred of screen wire cloth, is provided of a diameter that is about equal with the external diameter of the case A, whereon it is located when the parts of the filter are assembled, the shoulder formed at *e*, on the cover B, serving to clamp the disk in place. A sufficient degree of convexity is given to the cover B, to provide an ample water space above the foraminated disk G, and at the center of the cover a projecting circular neck *g* is formed of a proper diameter, which part is externally threaded to screw upon the threaded discharge end of an ordinary fixed water supply tap or faucet. (Not shown.) The case A is packed with granulated charcoal I, that has been properly purified, this filling being placed in the space afforded between the disk G, porous cup E and inner surface of the case.

It will be seen that when the device has been prepared for service as indicated in Fig. 2, unpurified water that is introduced from the source of supply into the neck of the cover B, will spread over the numerously per-

forated disk G, and thence pass downwardly into the compacted granular charcoal I. After the water has percolated through the mass of charcoal, it will pass into the porous cup E, through the perforations c, and thence through the silex into the screen cup D, from which it escapes downwardly and out of the nozzle A'.

When the filter is to be attached to a sink basin spigot, or like fixed water faucet that is not threaded on the discharge end of its body, the novel means for a secure retention of the filter shown in Fig. 5, is employed, which in part consists of a ferrule J, preferably formed from vulcanized gum, of a diameter to screw into the threaded neck g, and receive the tapered discharge end portion O, of a water faucet that is unthreaded.

The part which forms the lock proper for the detachable connection of the filter with the nozzle O, comprises a small bracket plate P, that is secured upon the cover B, having a lip o, so bent as to adapt its sharp free end to project over the upper end of the neck g, and lie in the path of the nozzle O, so that the lip will bear upon the body of the nozzle when the latter is inserted within the ferrule J.

When the filter is applied for connection to the tapering end portion O of the water faucet, the case A is pushed upwardly and at the same time rotated, which will cause the impinging lip o, to cut a slight spiral indentation in the nozzle, of sufficient depth to securely hold the entire device in position for service on the faucet, its removal being easily effected by a reversal of rotation and a downward pull applied to the case A.

Having thus fully described my invention,

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

1. In a filter, the combination with a case centrally apertured at its base for the discharge of liquid, and a removable cover for the case, attachable to a water supply, of a central screen cup within the case having a threaded connection between it and said case, a concentric porous cup, a perforated disk above the porous cup, a filling of silex in the porous cup, and a filling of charcoal in the case, substantially as described.

2. In a filter, the combination with a cylindrical case, a cylindrical water discharge nozzle depending centrally therefrom, and a dome-shaped cover attachable to the case and also to a water supply, of a thimble securable in the discharge nozzle, an inverted screen cup fast on the upper part of the thimble, a concentric porous cup apertured centrally in its bottom to fit on the screen cup, and perforated in series through its side near its bottom, a foraminated disk between the top edge of the case and its cover, granular silex in the porous cup, and granular charcoal in the case, substantially as described.

3. In a filter, constructed substantially as described, a connecting device between said filter and a plain water faucet, comprising a yielding ferrule insertible in the threaded neck of the filter cover, and a sharp lipped bracket plate fast to the cover and projecting its lip over the top of the yielding ferrule, substantially as described.

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Witnesses:

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