

(No Model.)

2 Sheets—Sheet 1.

W. E. TONNER & W. B. LINDSAY.
FILTER AND CLEANER.

No. 584,732.

Patented June 15, 1897.

Fig. 1.

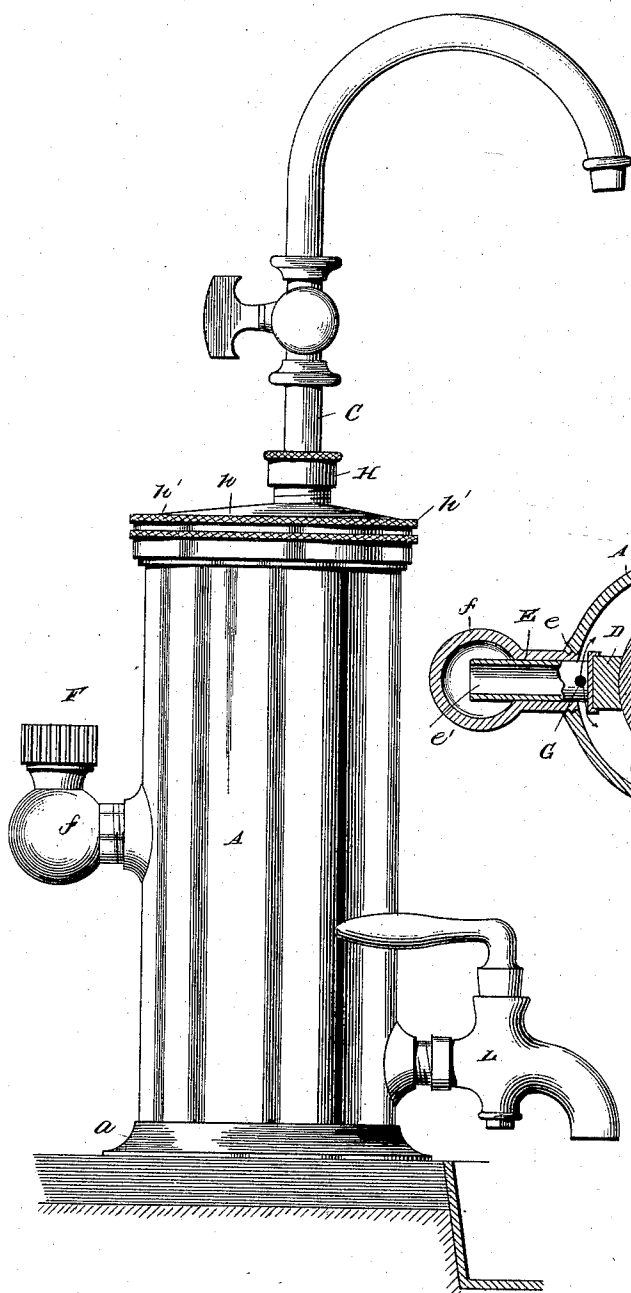
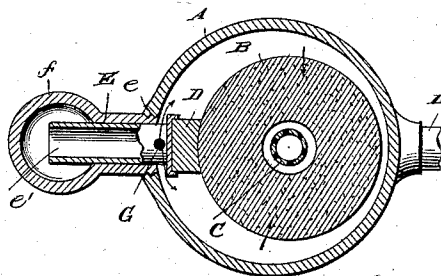


Fig. 3.



Witnesses

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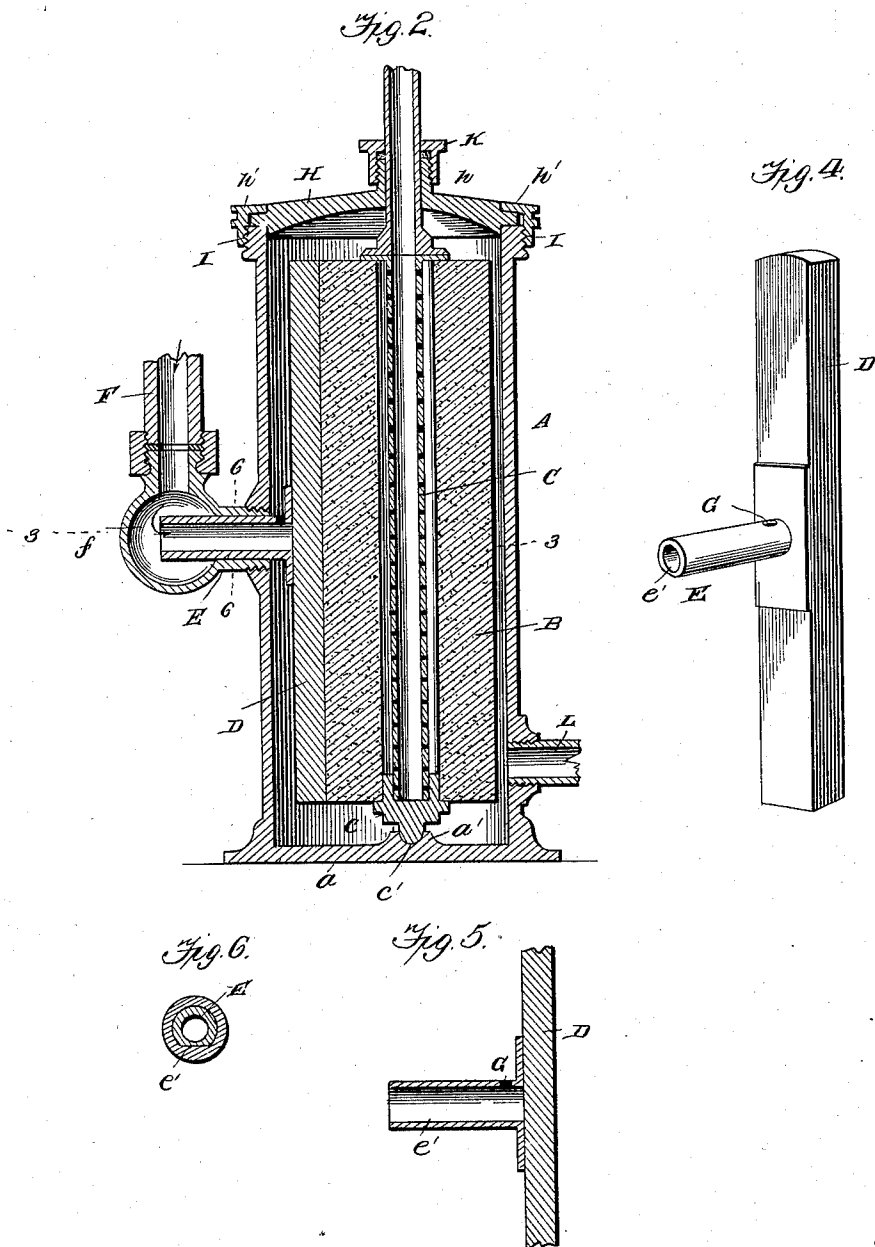
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UNITED STATES PATENT OFFICE.

WILLIAM E. TONNER AND WILLIAM B. LINDSAY, OF STEUBENVILLE, OHIO.

FILTER AND CLEANER.

SPECIFICATION forming part of Letters Patent No. 584,732, dated June 15, 1897.

Original application filed October 28, 1895, Serial No. 567,143. Divided and this application filed May 1, 1897. Serial No. 634,749. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM E. TONNER and WILLIAM B. LINDSAY, of Steubenville, in the county of Jefferson and State of Ohio, have invented an Improvement in Filters and Cleaners, of which the following is a specification.

This invention relates generally to filters, and particularly to that class thereof known as "porous-wall" filters, in which the water is forced through the walls of a porous cylinder or receptacle.

More particularly stated, the invention is a device for cleaning the exterior of such receptacle and is an improvement upon the device shown, described, and claimed in our applications filed May 14, 1895, Serial No. 549,310, and June 10, 1895, Serial No. 552,237.

This application is also a division of the application filed October 28, 1895, Serial No. 567,143.

This invention consists in the peculiar construction of the several parts and the novel manner of combining or arranging the said parts, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a side view of our filter, partly broken away. Fig. 2 is a vertical longitudinal section. Fig. 3 is a horizontal section on line 3 3 of Fig. 2. Figs. 4 and 5 show details of construction. Fig. 6 is a vertical transverse section on line 6 6 of Fig. 1.

In carrying out our invention we employ an outer case A, having a bottom *a*, on which is produced a socketed boss *a'*.

The filtering-cylinder B is of porous material and has a discharge-pipe C extending thereinto, said pipe being closed at the bottom by means of a nut *c*, which has a lug *c'*, adapted to fit in the socketed boss *a'*, and thus act as a pivot for the filtering-cylinder when it is desired to revolve the same. The porous filtering-cylinder is arranged eccentrically within the outer case and nearer the front side than the rear, the purpose of which is to allow more space for the introduction of a cleaner or scraper D, which is preferably composed of natural stone of the character described in our Patent No. 528,104, granted

October 23, 1894. This scraper D has a piston E centrally mounted upon the rear side, which piston projects through the opening *e* in the outer case and into the water-supply pipe F, which is preferably constructed with a globe-shaped chamber *f*, into which the rear end of the piston extends. This piston is made hollow and may be left open or partially closed at the rear end, and near the forward end is provided with an upwardly-opening aperture G, from which the water issues into the outer case and around the exterior of the filtering-cylinder.

The piston is made flat on one side, as shown at *e'*, and the end of the supply-pipe is similarly shaped, so that when said piston is set in a vertical position it cannot turn or become misplaced. The water passes through the supply-pipe and piston out through hole G, and in doing so the cleaner of stone is pressed against the side of the filtering-cylinder. The cylinder being eccentric to the case and having a discharge-tube projecting through the top, said tube is made in two parts—namely, the cap-piece *h*, through which the pipe projects, and the clamping-ring *h'*, which binds the cap-piece to the top of outer case, and a suitable packing-ring I being interposed to prevent leakage, and a stuffing-box K surrounds the discharge-pipe, which is preferably constructed with a detachable curved end and a regulating-cock, whereby the discharge of filtered water can be regulated.

The discharge-faucet L is located at one side of outer case near the bottom and is used when cleaning the filter, as presently described.

In operation the water is admitted through the coupling and passes through the supply-pipe and tubular piston into the outer case or receptacle, entirely surrounding the filtering-cylinder. The water entirely incloses the exterior surface of the filtering-cylinder, and thus renders the filtering operation quicker and easier.

When it is desired to clean the exterior surface of the filtering-cylinder, the discharge-faucet is opened and the cylinder revolved by simply turning the discharge-pipe, and as the water is around the entire exterior sur-

face the cleaning operation can be accomplished very quickly and easily, and an abundance of hydraulic pressure will always be had through the medium of the tubular piston.

5 While we have mentioned a natural-stone cleaner as best adapted for cleaning the filtering-cylinder, it is obvious that a metallic cleaner can be employed without departing from the spirit of our invention.

10 We desire it to be understood that we do not broadly claim herein the eccentric arrangement of the filtering-cylinder in order to provide room for a cleaner, nor the eccentric top and clamping-ring, such being claimed in
15 our application, Serial No. 567,143, filed October 28, 1895, and hereinbefore referred to.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

20 1. In a filter of the class described the combination with the outer case and the inner filtering-cylinder, the cleaner and the supply-pipe, of the tubular piston attached to the cleaner, having a longitudinal bore, and an upwardly-discharging aperture communicating
25 with said bore, said piston having a flattened side, substantially as and for the purpose set forth.

2. In a filter of the class described, the combination with the outer case and the inner filtering-cylinder, of a natural-stone scraper arranged between said outer case and inner filtering-cylinder, a tubular piston attached to said scraper and having a flattened lower side, the water-supply pipe, the discharge-pipe, and the discharge-faucet, all arranged substantially as shown and described.

3. In a filter, the combination with the outer cylinder, of a filtering-cylinder situated therein, an eccentric top to said filter, the discharge-pipe and draw-off cock, the inlet arranged about midway the height of the cylinder, a piston movable in said inlet-pipe, a cleaner rigidly fixed to the inner end of said piston, said piston being tubular in form and closed at the inner end and having an opening in the upper side causing the stream to project upward toward the top of the cylinder, the inner cylinder being revoluble, and the cleaner being fixed, substantially as shown and described.

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WILLIAM B. LINDSAY.

Witnesses:

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