

No. 658,379.

Patented Sept. 25, 1900.

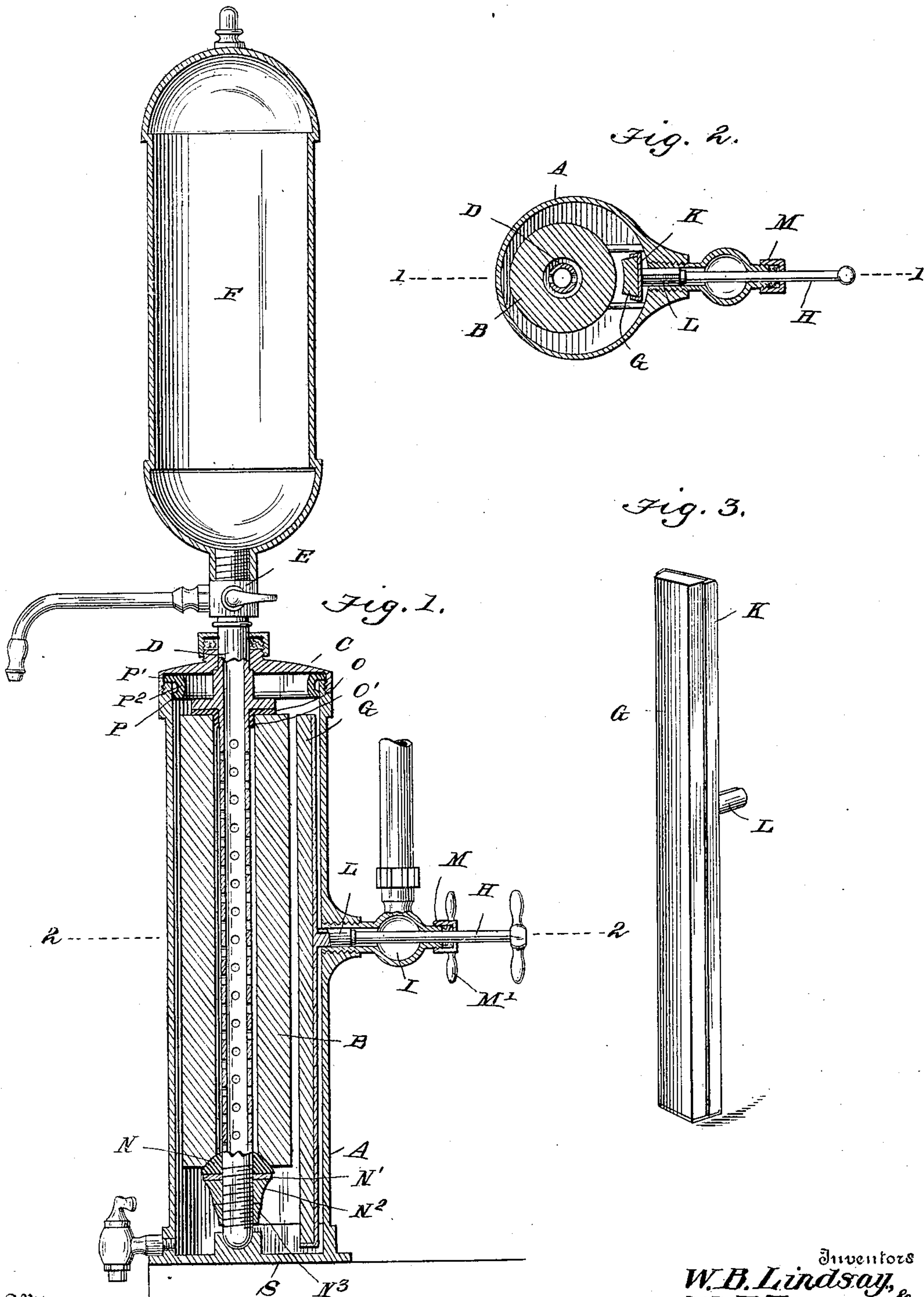
W. B. LINDSAY & W. E. TONNER.

FILTER.

(Application filed July 22, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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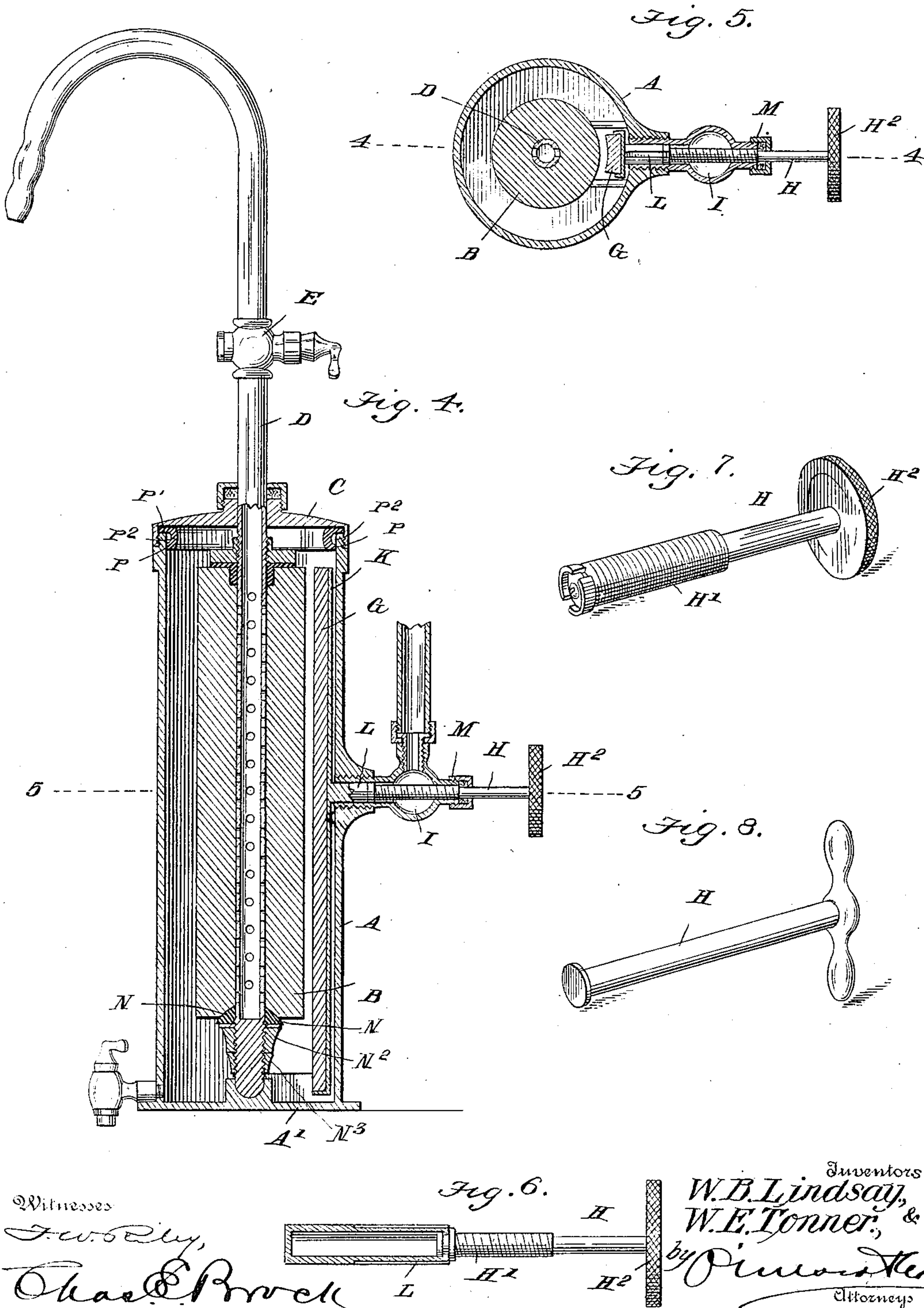
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UNITED STATES PATENT OFFICE.

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

FILTER.

SPECIFICATION forming part of Letters Patent No. 658,379, dated September 25, 1900.

Application filed July 22, 1899. Serial No. 724,822 (No model.)

To all whom it may concern:

Be it known that we, WILLIAM B. LINDSAY and WILLIAM E. TONNER, citizens of the United States, residing at Steubenville, in the county of Jefferson and State of Ohio, have invented new and useful Improvements in Filters, of which the following is a specification.

This invention relates generally to filters, and more particularly to that class thereof known as "porous-wall" filters.

The invention relates also to certain improvements upon Patents No. 584,732, dated June 15, 1897, and No. 590,764, dated September 28, 1897.

The object of the present invention is to provide a positive means for adjusting the cleaner against the filtering-cylinder when it is desired to clean the said cylinder; and with these objects in view the invention consists, essentially, in providing an adjustable rod connected to the cleaner and adapted to work through the water-supply pipe which leads into the cylinder.

The invention consists also in certain details of construction and novelties of combination, all of which will be fully described hereinafter and pointed out in the claim.

In the drawings forming part of this specification, Figure 1 is a vertical longitudinal section of a filter constructed in accordance with our invention, the dome being attached to the upper end of the discharge-pipe. Fig. 2 is a horizontal section on the line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of the cleaner. Fig. 4 is a vertical longitudinal section of a filter constructed in accordance with our invention, the filtering-cylinder being arranged concentrically instead of eccentrically, the dome being omitted, and the cleaner operated by means of a screw-plunger. Fig. 5 is a horizontal section on the line 5 5 of Fig. 4. Fig. 6 is a detail view showing the plunger and means for connecting the same to the cleaner. Fig. 7 is a detail perspective view of the said screw-plunger, and Fig. 8 is a detail perspective view of the sliding-rod plunger.

In carrying out our invention we employ an outer cylinder or case A, which is preferably made from a drawn tube and provided with a base A'. A filtering-cylinder B of

tripoli-stone or other suitable material is arranged to rotate within the said outer case or cylinder, and in Fig. 1 we have shown the said filtering-cylinder arranged eccentrically, while in Fig. 4 we have shown it arranged concentrically. A suitable cover C is screwed upon the top of the outer cylinder or case, and passing through the said cover or top is a discharge-pipe D, which extends entirely through the filtering-cylinder and is provided with a series of perforations, through which the filtered water may enter. A suitable construction of cock E is placed upon the pipe D in order to control the flow of water, and in Fig. 1 we have shown a reservoir or dome F, adapted to receive and hold the filtered water. The cleaner G, of natural stone, is arranged between the filtering-cylinder and the cylindrical casing or shell, said cleaner being preferably constructed of natural stone and is adapted to be brought into contact with the exterior surface of the filtering-cylinder whenever it is desired to clean said cylinder, it being understood that the cylinder is rotated while the cleaner is held against it, thereby cleaning away all sediment accumulating upon the said cylinder. In order to project and hold the cleaner against the filtering-cylinder, we employ a plunger-rod H, which works through the inlet-pipe I, leading into the outer case or shell, said plunger-rod being rotatably connected to the cleaner, as hereinafter explained, and by moving said plunger-rod inwardly the cleaner can be brought into contact with the filtering-cylinder, and by drawing the same outwardly the cleaner can be moved away from said filtering-cylinder. In practice we prefer to arrange a plate K upon the back of the cleaner, which plate is provided with a stud L, adapted to project into the inlet-pipe and to which the inner end of this plunger-rod is connected. This plunger-rod may be made smooth throughout its entire length and operated by a direct pull or push, as most clearly shown in Figs. 1 and 2. The said plunger-rod may be threaded, as shown at H', and moved in or out by turning the hand-wheel H². The inner end of the plunger-rod is preferably swiveled to the outer end of the stud L, as most clearly shown in Fig. 6; but it will of course be understood that any

other loose connection may be employed. The plunger-rod works through a stuffing-box M, passing through the rear end of the discharge-pipe, and this stuffing-box is preferably constructed with the head or flange M' to afford a suitable grip for the fingers while operating the sliding plunger-rod.

It will thus be seen that we provide a filter embodying all of the features of our previously-patented invention, and we also provide a positive means for moving the cleaner to and from the filtering-cylinder.

In order to enable the filtering-cylinder to be turned in both directions without danger of disturbing the joint at the bottom thereof, we provide a rubber packing-gasket N, the upper surface of which is convexed and fits into a slight concavity produced in the bottom of the filtering-cylinder, said gasket being held in place by means of a metal washer N' and the locking jam-nuts N² and N³. At the upper end of the cylinder we also provide a gasket which has a circular interior depending flange O' extending down into the interior of the cylinder.

In order to provide a tight packing-joint for the top or cover and at the same time

provide one which will not bind and prevent the cover being removed, we employ a packing-ring or gasket P, having an outward-projecting flange P', which fits between the top of cylinder and the cover, the body of the packing-ring being concaved or grooved, as shown at P², so that when the pressure of water is placed thereon, the said ring will be flattened out and provide a perfectly-tight joint.

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

In a filter of the kind described, the combination with the outer casing, the shell, the inner filtering-cylinder and the cleaner, of the plate attached to said cleaner and provided with a stud, and a plunger-rod loosely connected to the said stud and working in the inlet-pipe and leading into the outer shell or case, substantially as shown and described.

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Witnesses:

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