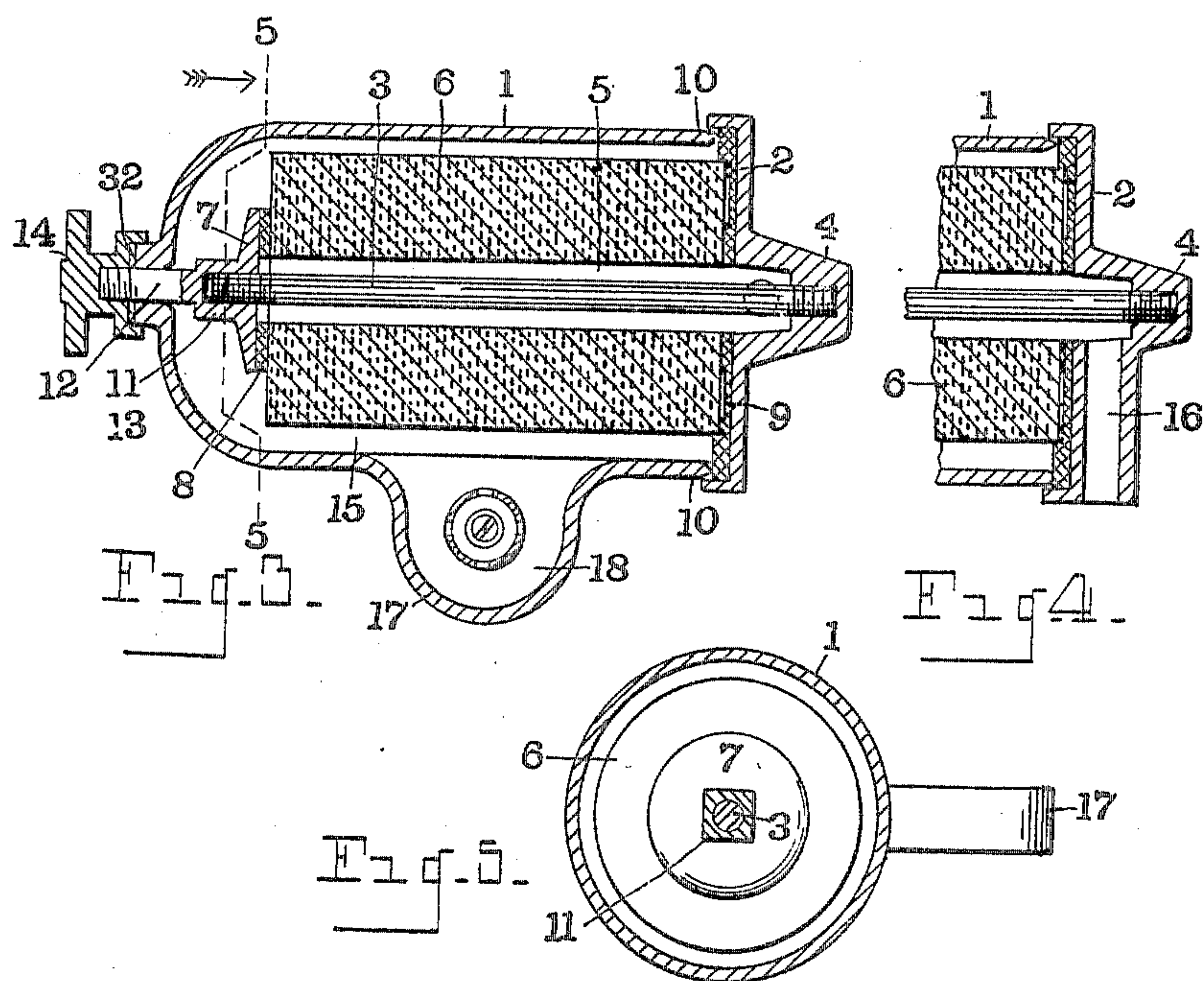
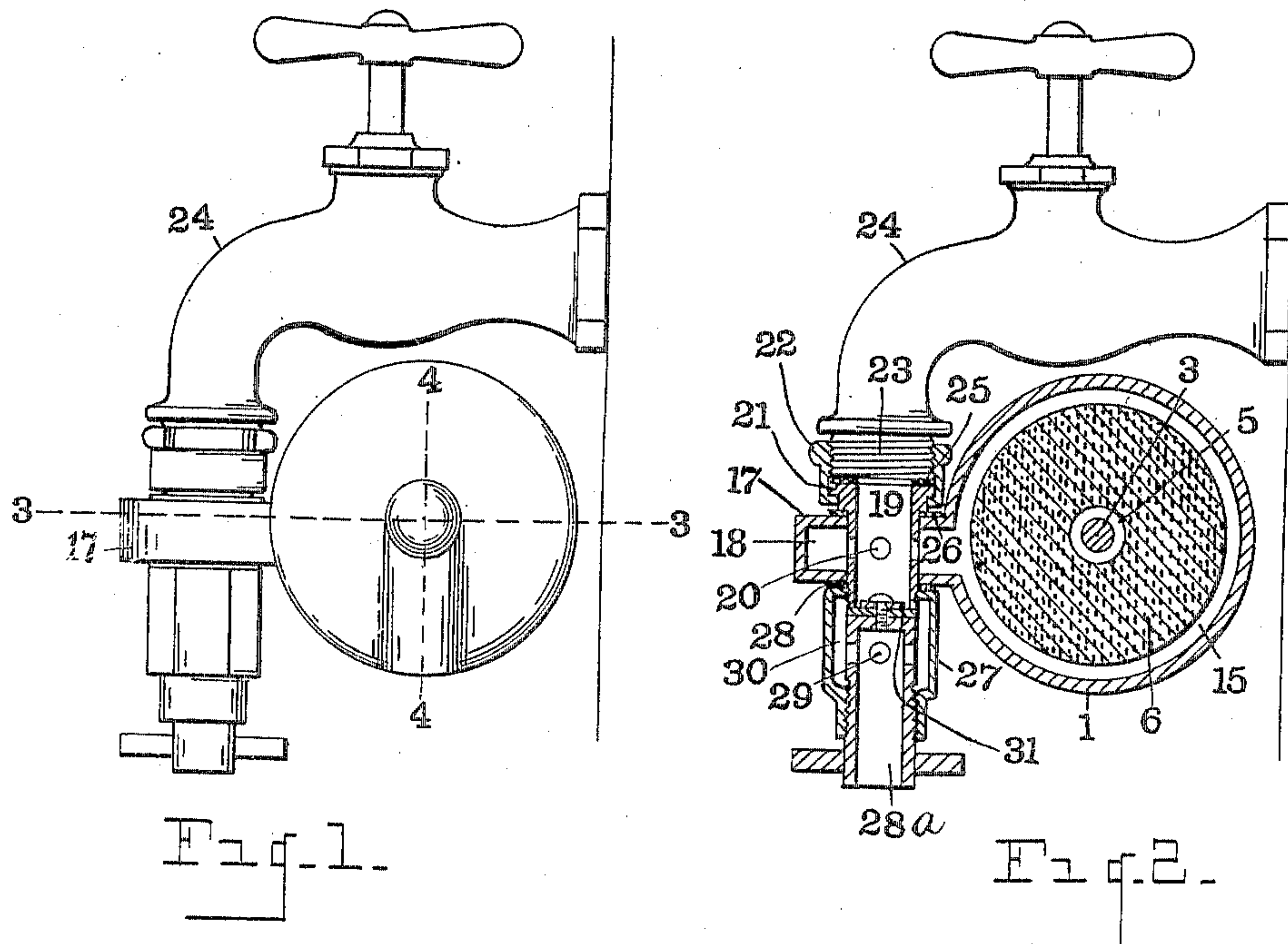


No. 804,572.

PATENTED NOV. 14, 1905.

G. ANDERSON.
FILTER.

APPLICATION FILED APR. 29, 1905.



Witnesses:
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By *His* Attorney

Inventor

By His Attorneys *George Anderson,*
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UNITED STATES PATENT OFFICE.

GEORGE ANDERSON, OF DETROIT, MICHIGAN.

FILTER.

No. 804,572

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed April 29, 1905. Serial No. 257,992.

To all whom it may concern:

Be it known that I, GEORGE ANDERSON, a citizen of Great Britain, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Filters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to water-filters; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to provide a filter having the requisite capacity of simple and inexpensive construction in which the arrangement is such that the body of the filter will stand in a horizontal position below the water-cock or between the discharge end thereof and the wall from which the cock projects, thereby placing the filter in position where it is entirely out of the way, although readily accessible. A further arrangement provides for drawing the water directly from the cock without passing through the filter, when desired. The above object is attained by the construction illustrated in the accompanying drawings, in which—

Figure 1 is an elevation showing my improved water-filter attached to a water-cock. Fig. 2 is a central transverse section through the filter, the water-cock appearing in elevation. Fig. 3 is a horizontal section, as on line 3 3 of Fig. 1. Fig. 4 is a fragmentary view, in vertical section, through the end of the filter, as on line 4 4 of Fig. 1. Fig. 5 is a transverse section through the case of the filter and the tie-rod and nut thereon, as on line 5 5 of Fig. 3.

Referring to the characters of reference, 1 designates the shell or case of the filter, which is preferably in the form of a hollow cylinder. The end 2 of the case is removable and is retained in place by a tie-rod 3, one end of which screws into the interiorly-tapped boss 4 of said end. The body of said tie-rod extends horizontally through the central opening 5, formed longitudinally through the filtering-stone 6, the opposite end of said tie-rod screwing into a blind-nut 7, which bears upon the washer 8, interposed between said nut and the end of the stone around said central opening.

At the opposite end of the case is a washer 9, which is interposed between the stone and the end 2, a portion of said washer projecting beyond the stone and engaging the end of the case, as at 10. By means of this arrangement the end 2 may be drawn tightly into place against the washer interposed between its inner face and the end of the stone by a turning of the nut 7 through the application of a wrench to the square end 11 thereof, at the same time compressing the washer 8 between said nut and the opposite end of the stone, thereby preventing the entrance of water to the central passage 5 of the stone except through the body of the stone itself. The nut 7 has a threaded stem 12, which projects through the rounded end 13 of the case and receives a thumb-nut 14, whereby through the turning of said nut the opposite end of the case may be drawn against the washer 9, as at 10, making a tight closure to prevent the escape of water between the end of said case and the washer. The water-space 15, which surrounds the stone within the case, enables the entire surface of the stone to be brought into action, and the washers around the central opening 5 compel the water to first pass through the stone before entering said opening, through which the water may flow to the vertical channel 16, formed in the end 2 of the case, and open at its lower end to permit the water to discharge therefrom.

Upon the side of the case is a hollow housing 17, having a water-chamber 18 therein which communicates with the water-space 15 of the filter. Passing through the housing 17 is a tube 19, having openings 20 in the wall thereof which communicate with the water-chamber 18, and having at its upper end a shoulder 21, adapted to be engaged by a union-coupling 22, provided with internal threads adapted to screw onto the threads 23 of the water-cock 24, there being upon the upper end of the tube 19 a washer 25, making a tight closure against the end of said cock, and there being a washer 26 between the upper face of the housing 17 and the shoulder upon said tube 19, making a tight closure between the tube and case at its upper end. The lower end of the tube 19 is threaded to receive the tapped sleeve 27, which screws thereon, there being a washer 28 interposed between the upper end of said sleeve and the lower face of the housing 17, making a tight closure between the lower end of the tube 19 and said housing. The lower end of the sleeve

27 is internally threaded, and screwing into said sleeve is a hollow stem 28^a, having apertures 29 at its upper end which communicate with the water-space 30 within the sleeve 5 27, which surrounds said stem. The upper end of the stem 28^a is closed, and secured thereon is a washer 31, which is adapted to bear upon the lower end of the tube 19. By unscrewing said tube said washer is carried 10 from its seat and the water is permitted to flow directly through the tube 19 and stem 28^a without passing through the filter when the valve of the water-cock is opened.

By closing the valve 31 the water which 15 passes through the water-cock will first fill the chamber 18 and pass therefrom into the water-space 15 surrounding the stone 6, through which it passes to the inner passage-way 5 and flows from said passage through 20 the discharge-opening 16. By this arrangement the water may be filtered which passes through the water-cock, and the filter is so positioned as to be out of the way and not interfere with the placing of a vessel under said 25 cock when it is desired to draw the water directly therefrom, as before described, making a simple and compact filter which may be cheaply manufactured.

To prevent the escape of water around the 30 stem 12 of the nut 7, a washer 32 is placed between the boss on the end of the case through which said stem passes and the thumb-nut 14.

Having thus fully set forth my invention, what I claim as new, and desire to secure by 35 Letters Patent, is—

1. In a water-filter, the combination of the case, a filtering-stone therein having a central channel therethrough, a discharge-opening in the end of the case communicating with said 40 channel, there being a water-space within the case surrounding said stone, a housing projecting laterally from the body of the case having a chamber communicating with the water-space within the case, a union for connecting the water-chamber of the housing with 45

a water-cock, and a valve for affording a direct passage of water through said housing.

2. In a filter, the combination with a water-cock, of an oblong case adapted to lie below and in the rear of said cock, a filtering substance located centrally within said case and 50 a water-egress leading therefrom, a hollow housing projecting laterally from the case and communicating with the interior thereof, a union for connecting said housing with the 55 water-cock, a tube depending from and communicating with the housing and a valve therein for affording a direct passage of water through said housing.

3. In a water-filter, the combination of an 60 oblong case, a filtering substance therein through which the water is adapted to pass and an egress leading therefrom, a lateral housing upon the case communicating with the interior thereof, a tube passing through 65 said housing having apertures communicating with the water-space therein, means for connecting a water-cock with the upper end of said tube, a sleeve upon the lower end of said tube and a valve therein for affording a direct 70 passage of water through said tube.

4. In a water-filter, the combination of an oblong case adapted to lie below the body of the water-cock, a filtering substance within said case, the wall of the case having an egress- 75 passage leading therefrom, a lateral housing projecting from the case and communicating with the interior thereof, a tube passing through said housing and communicating therewith having at its upper end means for 80 attachment to a water-cock, and having at its lower end a valve to control the direct passage of water therethrough.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE ANDERSON.

Witnesses:

E. S. WHEELER,
I. G. HOWLETT.