

(No Model.)

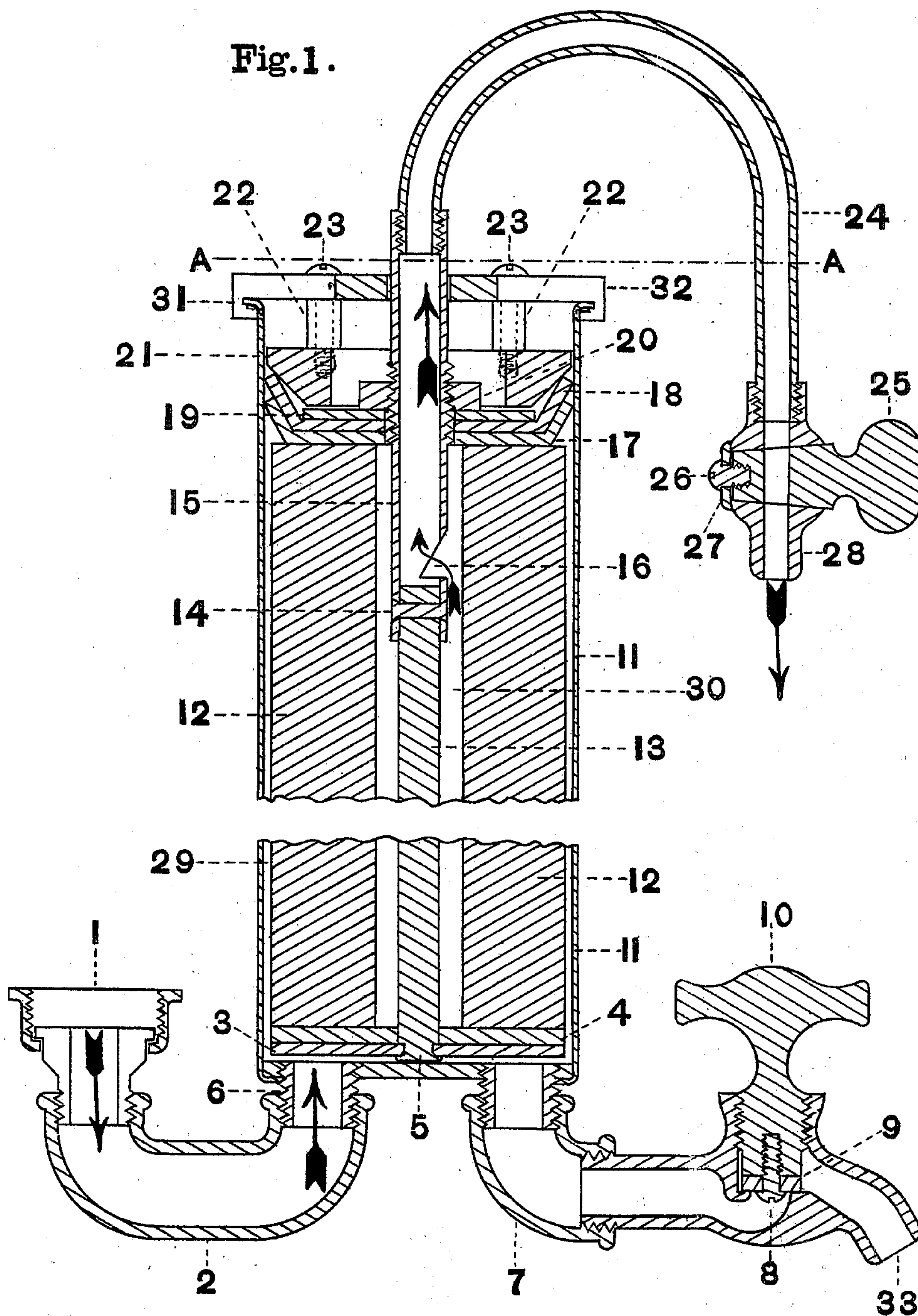
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J. W. McLEAN.
FILTER.

No. 598,254.

Patented Feb. 1, 1898.

Fig. 1.



WITNESSES:

L. E. Snow.
Thos. Bernis

INVENTOR

James W. McLean
BY
J. E. Snow.
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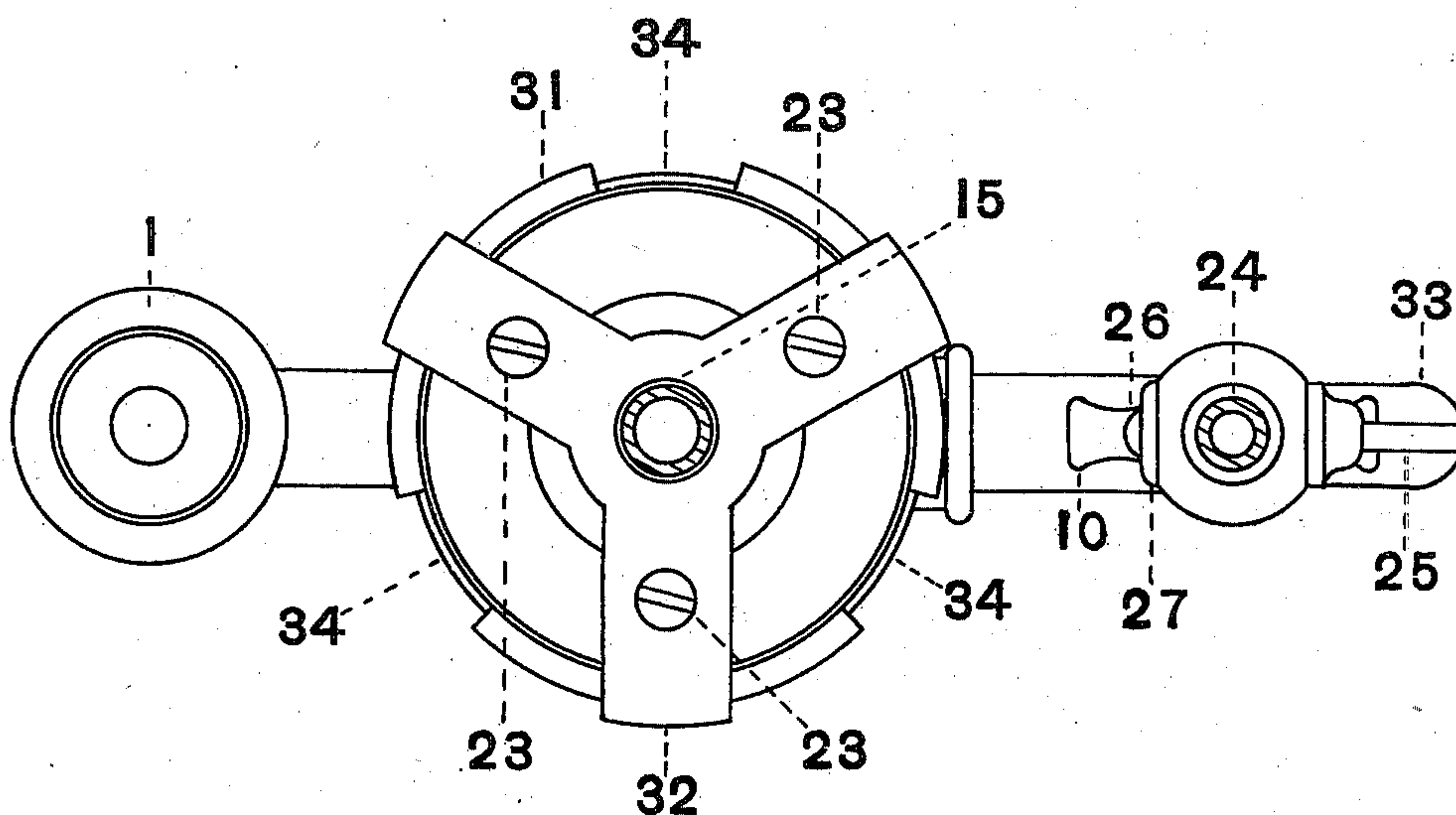
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Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES W. McLEAN, OF JOPLIN, MISSOURI.

FILTER.

SPECIFICATION forming part of Letters Patent No. 598,254, dated February 1, 1898.

Application filed March 6, 1897. Serial No. 626,187. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. McLEAN, a citizen of the United States, residing at Joplin, in the county of Jasper and State of Missouri, have invented a new and useful Improvement in Filters, of which the following is a specification.

My invention relates to packing for filters so arranged that the stone or other material used for filtering can be easily and quickly removed for the purpose of cleansing and at the same time have a perfect water-tight packing.

In the drawings, Figure 1 is a side sectional view of a filter arranged for the use of my packing. Fig. 2 is a top view of the filter, taken on the line A A in Fig. 1, showing how the top bracket is secured to the shell of the filter.

Similar numerals of reference indicate corresponding parts in both figures of the drawings.

1 designates the point at which the water passes into the pipe 2, and 6 shows pipes through which the water passes into the filter.

3 designates a metal washer or plate secured to the rod 13 by means of the riveted end 5.

4 designates a rubber washer.

11 designates the outer shell of the filter.

12 designates the stone or other material to be used for filtering the water.

13 designates a rod secured to the washer 3 at the bottom by means of the riveted end 5, and to the pipe 15 by means of the rivet 14.

29 indicates the space between the shell of the filter and the stone 12 or other material to be used for filtering the water, and 30 designates the space into which the water passes after it passes through the stone 12 and before it passes into the pipe 15, the course of which is indicated by the arrows.

16 indicates the opening in the pipe 15 into which the filtered water passes.

17 designates a cup-shaped rubber packing with a flared mouth. 18 designates a similar rubber packing with a flared mouth.

19 indicates a metallic washer which is firmly pressed against the cup-shaped packing 18 by a nut, (indicated by 20.)

21 designates a metal ring with a beveled lower edge adapted to fit into and expand

the flaring mouths of the rubber packing-cups 17 and 18.

22 designates a metal collar placed between the ring 21 and the bracket 32 and held there rigidly by means of the screws indicated by 23.

31 designates the flared portions of the top of the shell of the filter, adapted to fit under the hook-shaped ends of the bracket 32, making it impossible to lift the bracket straight up or separate it from the shell by lifting it straight up.

23 designates screws passed through the bracket 32 and through the collars 22 and threaded into the ring 21.

34 designates openings or parts of the flared mouth of the shell 11, cut away to allow the hooked points of the bracket 32 to pass under the flared parts of the shell 11 not cut away.

7 designates an elbow connected to the bottom of the shell 11 for the purpose of drawing off the water that may stand in the filter when the current is shut off at 1 and during the time the filter is being cleaned.

8 indicates where the water passes the leather valve 9, and 10 indicates the T-shaped handle for closing and opening the valve 9, and 33 designates where the unfiltered water passes out.

24 designates a pipe secured to pipe 15.

25 indicates a valve for drawing off the filtered water for use, and 28 designates the point at which the filtered water leaves the filter.

The operation of the filter is as follows: When the water is turned in at the point indicated by 1, it passes through the pipe, as indicated by the arrows, and strikes the plate 3 with such force as to cause it to rise, bearing with it the packing 4, bolt 13, stone 12, pipe 15, and the rubber cups 17 and 18, which are pressed against the flaring ring 21, causing their upper flaring tops to expand and fit tight against the shell 11, thus making a water-tight joint and preventing the water from passing out and causing it to pass through the stone 12 and into the opening 30, and from there into the pipe 15 at the notched or cut-away part 16, then following the course indicated by the arrows, and passing out at 28.

To clean the filter, the water is shut off at the point 1 and the bracket can, after the pressure is shut off, be easily turned so the hooks

come opposite the openings in the flared top of the shell, (indicated by 34,) and then the entire filter may be lifted out of the shell 11 and cleansed and replaced by the same means
5 without tools of any kind.

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

1. The combination of the washer 3, the
10 rubber packing 4, the stone or other filtering material 12, the rod 13, secured to the pipe 15, by the rivet 14, having the opening 16, the rubber packing 17 and 18, the washer 19, the nut 20, the ring 21, the bracket 32, and the
15 shell 11, substantially as set forth.

2. A filter having a bracket with hooked points, adapted to fit over the flared parts of a shell and having secured thereto a beveled ring adapted to fit into cup-shaped rubber
20 packing and expand same when pressure is placed on the under side of same, substantially as shown and described.

3. A filter comprising the casing, a porous body located within the said casing, metallic
25 plates secured to the lower portion of the porous body, elastic cup-shaped packing se-

cured to the upper portion of the said porous body, said elastic packing being held in position by means of a beveled ring rigidly secured to the said cover bearing upon a plate
30 upon the packing.

4. A filter comprising the casing, an inlet-pipe at its lower extremity, a porous body located within the said casing having plates secured to the lower portion thereof, cup-shaped elastic packing at its upper portion, said packing being held rigidly in position by means of a beveled metallic ring secured to the said cover, bearing against a plate seated upon the said packing, a rod secured at its
40 lower end to the plates at the bottom of the said porous body, its upper end being connected to the outlet-pipe, said outlet-pipe being provided with an opening for the reception of the filtered water.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in the presence of two witnesses.

JAMES W. MCLEAN.

Witnesses:

CLEUEN JENKIN,

JOHN C. FAULKENDER.