

(No Model.)

W. D. P. AIMS, Jr.
FILTER.

No. 433,710.

Patented Aug. 5, 1890.

Fig. 1.

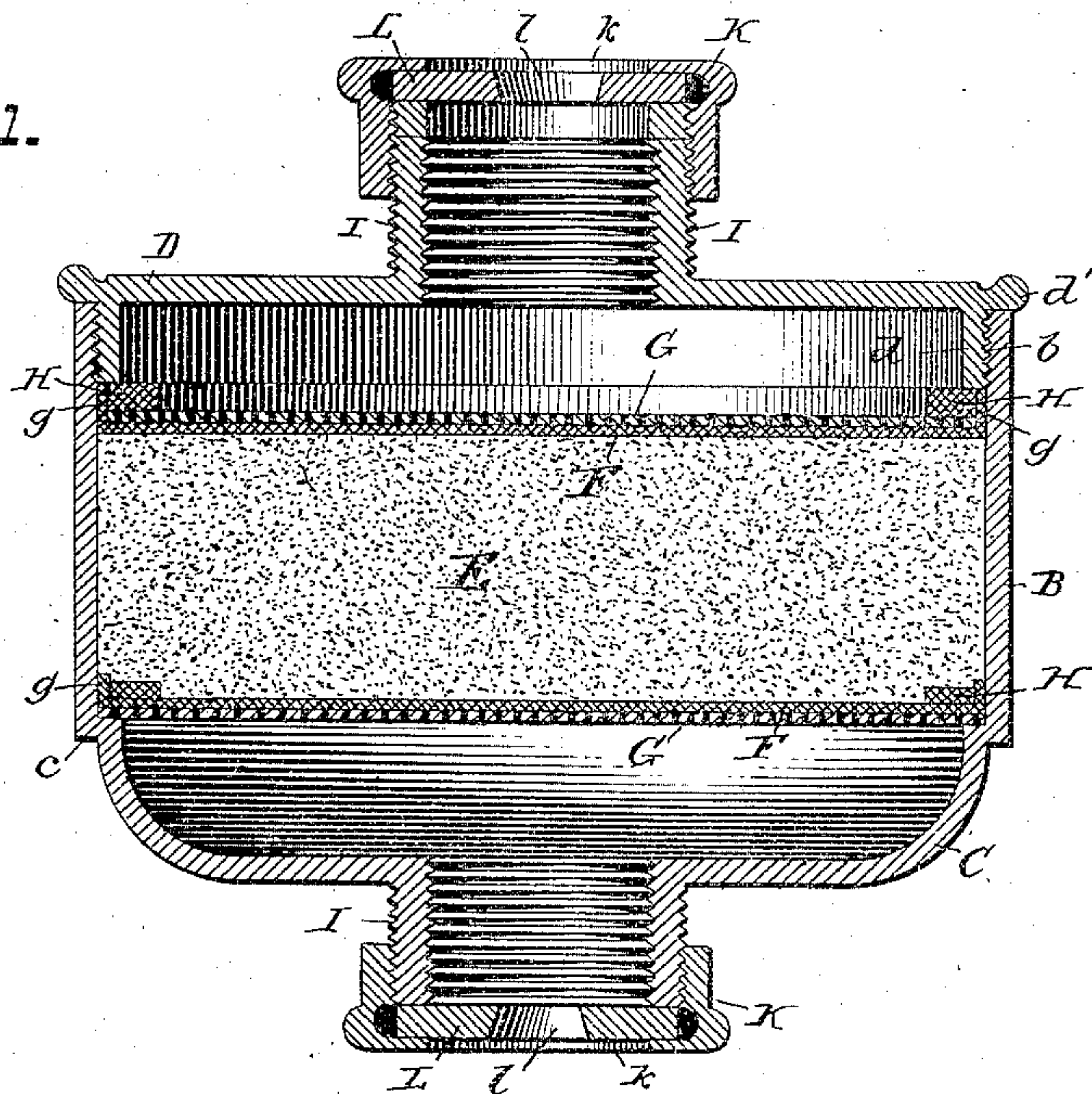
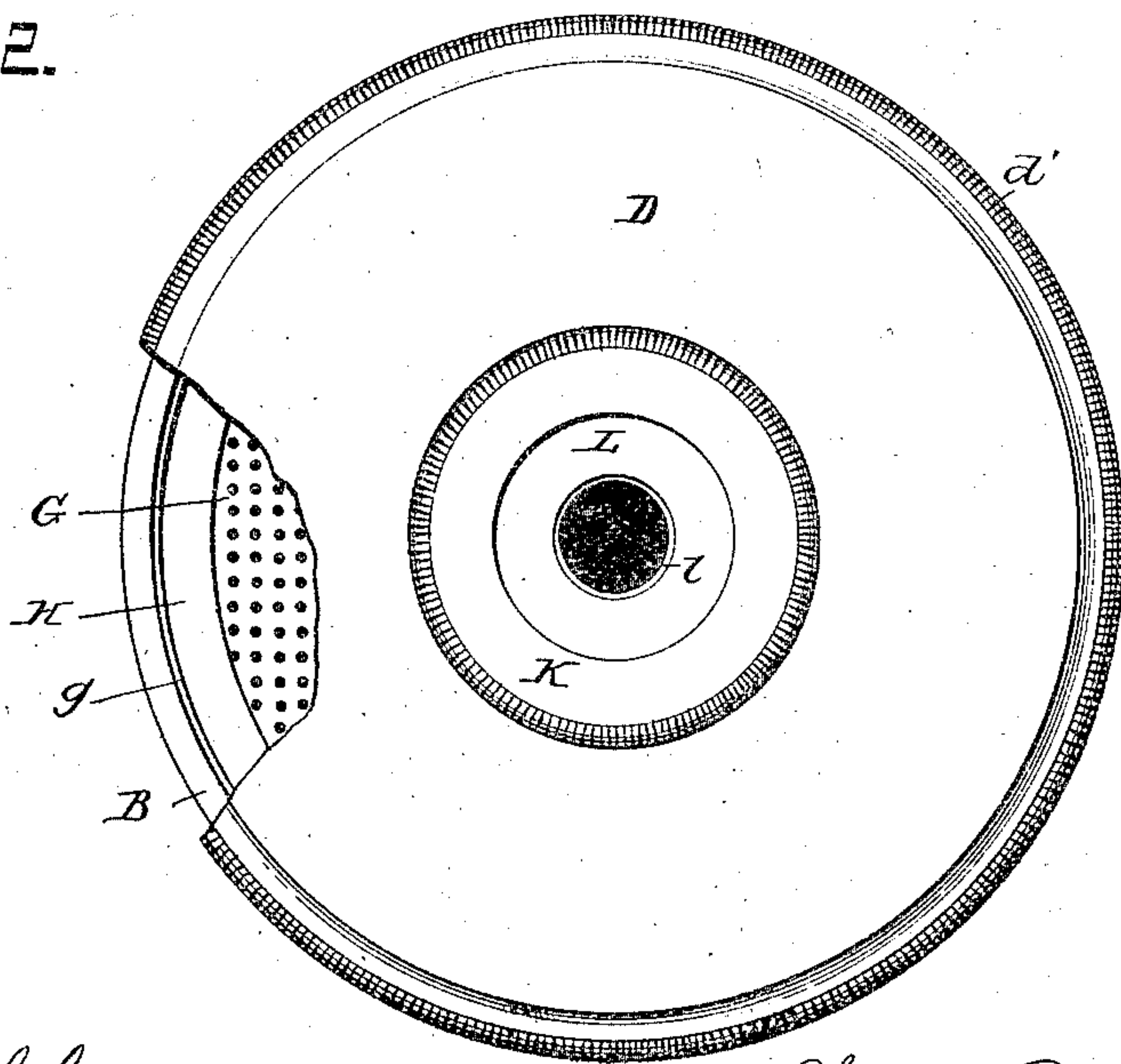


Fig. 2.



Witnesses

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Inventor

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FILTER.

SPECIFICATION forming part of Letters Patent No. 433,710, dated August 5, 1890.

Application filed February 11, 1890. Serial No. 339,965. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. P. AIMS, Jr., a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Filters, of which the following is a specification.

My invention relates more particularly to that class of filters adapted to be used more especially in households or other similar places in connection with the usual domestic water-supply; and it has for its object to provide a simple, cheap, and efficient apparatus which shall be capable of effectually purifying the water and capable of being attached to any of the ordinary forms of faucets or cocks.

To this end my invention consists in a filter constructed and arranged substantially as hereinafter more particularly pointed out.

Referring to the accompanying drawings, Figure 1 is a vertical section on the preferred embodiment of my improved filter. Fig. 2 is a plan view, a portion being broken away.

The case A may be made of any suitable material, although I prefer metal, which is non-oxidizable under the influence of the liquid with which it is to be used, and while the shape of the case may vary to suit the purposes for which it is intended I have found the form shown in the drawings to be a convenient and effective one. The case is formed with a body portion B, preferably cylindrical in shape, and constructed at one end to form the cap C. The other end of the case is provided with a removable cap D, having a flange *d*, with an external screw-thread adapted to engage with a similar screw-thread *b* on the interior of the body portion B. The outside of the cap is milled or ruttended at D', and the body portion is also similarly milled or ruttended in order to detach or secure the parts together.

The filtering medium E is composed of finely-powdered bone-black or animal charcoal, and this I have found from actual experience to be the most effective filtering medium, in that it operates to remove all the various impurities of the water and at the same time does not contaminate it, and it will last a comparatively great while without renewal, and when by chance it becomes foul it can be cleansed by reversing the direction of the

flow of the fluid through the filter. In order to effectually retain this filtering medium in the filter, I place at either side of the body of the medium a covering of fabric F, preferably in the form of felt, and outside of this felt I place a disk G of foraminous material, and these disks are made slightly smaller than the internal diameter of the case, while the felted fabric is made slightly larger. In this way the edges of the foraminous material fit inside the turned-up edges *g* of the felted fabric and aid in securing a tight joint against the walls of the filter to prevent the material escaping, when the felt and the fibers become more compacted, increasing the tightness of the joint. In order to further aid in securing this joint and holding the parts in place, I provide a ring H, preferably of elastic or flexible material, which is placed upon the foraminous diaphragm or plate F and bears against the upturned edges *g* of the felted fabric G and securely presses them against the side walls of the case. This ring, being elastic or flexible, is sprung into position and completes the joint between the felted fabric and the case, and at the same time forms a bearing for the internal edge of the screw-threaded flange *d* of the cap D.

While I may make both caps or ends C D removable, I prefer and find it necessary to make only one removable, the other, as C, being formed in one piece with the body B of the filter, and, if desired, an offset or ledge *c* may be formed therein to receive and support the ring H and the diaphragms F G.

In order to provide ready means of attaching this filter to any of the ordinary cocks or faucets in general use, the ends of the caps are formed with nipples I, which are screw-threaded on their internal and external edges and are of such a size as can be readily attached to the ordinary screw-faucet either internally or externally. Fitted to the nipples I are the screw-caps K, which are screw-threaded internally to fit the external screw-thread of the flanges, and the central portion of the cap is cut away to form an opening *k*, and between the cap and the flange I place a washer or gasket L, having a smaller opening *l*, which washer, being of flexible material, is adapted to fit over an ordinary goose-neck spigot and to tightly hold the filter in posi-

tion thereon. Of course it will be understood that when the flange is to be screwed onto the cock the cap and its gasket are removed; but through the medium of the internal and external screw-threaded flange and the perforated cap I provide means for attaching them to any of the ordinary faucets or cocks in common use.

I am aware that it is not broadly new to make a reversible-filter, nor to use foraminous diaphragms in connection therewith; nor is it broadly new to provide an elastic washer to fit a nozzle of a pipe and to hold a device thereon. In my apparatus, however, I have combined these old features with other features and made a new article of manufacture which is capable of use in various connections, and I provide a filtering medium with means for retaining it in position under all conditions and supply a simple, cheap, and effective household article.

What I claim is—

1. A reversible filter for attachment to the ordinary cocks and faucets, consisting of a case having at each end an internally and ex-

ternally screw-threaded nipple, and a perforated cap screwed to said nipple having a perforated elastic washer confined between the nipple and cap, whereby the filter may be attached to an internally or externally threaded cock or to an ordinary goose-neck spigot, substantially as described.

2. A reversible filter consisting of a case having nipples on its opposite ends, a filtering medium inclosed in the case, a diaphragm of felted fabric on each side of the medium, a disk of foraminous material on the fabric, elastic rings resting on the foraminous material and engaging the upturned edges of the felted fabric, and a screw-cap fitting the body portion of the filter and engaging the elastic washer, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. D. P. AIMS, JR.

Witnesses:

THEODORE D. BENTLEY, Jr.,
SHERMAN G. BENTLEY.