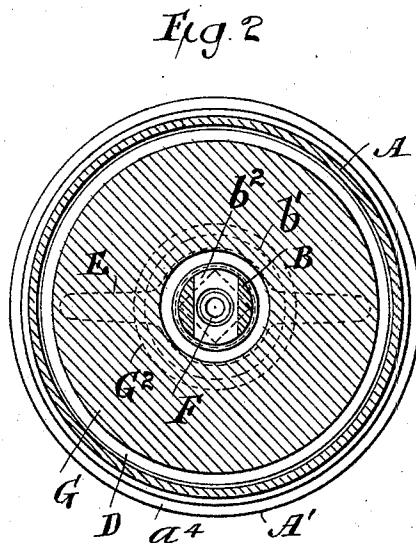
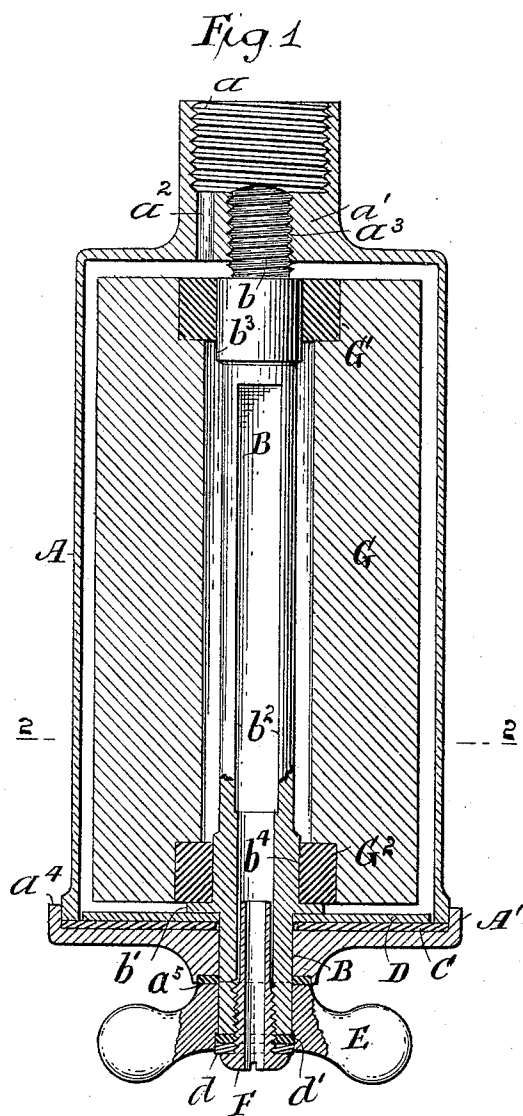


(No Model.)

W. A. HULL.
FILTER.

No. 606,218.

Patented June 28, 1898.



Witnesses.

Geo. Wadman
Emmett L. Simpson

Inventor.

Wolcott A. Hull
By his attorney
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UNITED STATES PATENT OFFICE.

WOLCOTT A. HULL, OF NEW YORK, N. Y.

FILTER.

SPECIFICATION forming part of Letters Patent No. 606,218, dated June 28, 1898.

Application filed May 7, 1897. Serial No. 635,510. (No model.)

To all whom it may concern:

Be it known that I, WOLCOTT A. HULL, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Filters, of which the following is a specification.

I will describe a filter embodying my improvement and then point out the novel features in the claims.

10 In the accompanying drawings, Figure 1 is central vertical section of a filter embodying my improvement. Fig. 2 is a transverse section taken at the plane of the dotted line 2 2, Fig. 1.

15 Similar letters of reference designate corresponding parts in both figures.

A designates a case made of any suitable material, preferably of metal, and of any desired shape. It may advantageously be made 20 cylindrical. It is entirely open at the bottom, but closed at the top, its top being provided with an internally-screw-threaded socket *a* for engagement with an external screw-thread upon a faucet. At the bottom of this socket 25 is a diaphragm *a'*, and through this extend any suitable number of holes—as, for instance, three equidistant holes *a''*. It also has a central tapped hole *a'''*, with which a screw *b* engages. The open lower end of the case has 30 a cover *A'* fitted to it. This cover is shown as having a rim *a''*, which snugly fits around the lower portion of the case.

Between the bottom of the case and the cover a packing *C* of soft india-rubber or 35 other suitable material is interposed. Above the packing a plate *D*, of some stiff material, such as metal, is arranged, and it extends almost to the inner side of the case *A*.

A rod *B* extends through the cover and at 40 the upper extremity is provided with a screw *b*. Just above the plate *D* the rod *B* is provided with an annular shoulder *b'*, which bears upon said plate and holds it in proper relation to the cover, so that the plate may retain the 45 packing *C* in place within the cover whenever the cover shall be removed from the case.

Around the rod *B* where it protrudes from the central hole which is provided in the cover for its reception there is a packing *a''* of soft 50 rubber or other suitable material, and it is shown as arranged in a recess formed in the outer portion of the cover.

Beyond the cover a handpiece *E* is arranged, this being made in the form of a ring surrounding the rod *B* and two wings extending from 55 diametrically opposite portions of the ring. The interior of the handpiece where it fits the rod *B* and the adjacent portion of the rod *B* are made polygonal or otherwise adapted to interlock, so that the handpiece may be 60 used as a means for turning the rod to engage its screw *b* with the top of the case *A*. The handpiece *E* is fastened in place by means of a metal plate *d*, which extends across the end of the rod *B* and into a recess in the under 65 side of the ring portion of the handpiece, a packing *d'* of soft rubber or other material being interposed between said metal plate *d* and the end of the rod and the ring portion of the handpiece. The plate *d* is secured in 70 position by means of a screw *F* of tubular construction, having a head that overlaps the plate *d*, and an externally-screw-threaded portion that engages with a screw-thread formed internally in the rod *B*.

75 The rod *B* is hollow almost from end to end. Just below its screw *b* it has a long slot *b''* and below that it is made tubular to its extremity. The screw *F* is tubular from end 80 to end.

G designates a block of filtering material—such, for instance, as suitably porous stone. It is of annular form and surrounds the rod *B*. It is of such a size that a space will be left all around it within the case *A*. Water 85 entering the case *A* will pass to the outside of the stone and thence flow inwardly through the pores of the latter to the slotted portion of the rod *B*, whence it will escape to the tubular lower portion of said rod and the screw *F*. At or near the ends the block of 90 filtering material *G* is provided with packings *G'* *G''*, which may advantageously consist of annular blocks of rubber seated in recesses in the block of filtering material and adapted to snugly fit the rod *B*. To facilitate the 95 forming of a tight joint, the rod may have cylindric portions *b'''* *b''''*.

What I claim as my invention, and desire to secure by Letters Patent, is— 100

1. In a filter, the combination with a case having a detachable cover, of a block of filtering material arranged within the case, a hollow rod passing through the cover and the

block of filtering material and detachably engaged with the top of the case and provided with an opening or openings for the passage of fluid and means fitted to said rod beyond the cover for turning said rod, and clamping the cover in place, substantially as specified.

2. In a filter, the combination with a case having a detachable cover, of a block of filtering material arranged within the case, a rod passing through the cover and the block of filtering material and detachably engaged with the top of the case, and means for turning said rod consisting of a handpiece detachably fitted to the rod and a hollow screw for securing said handpiece to the rod, substantially as specified.

3. In a filter, the combination with a case having a detachable cover, of a block of filtering material arranged within the case, a rod passing through the cover and the block of filtering material and detachably engaged with the top of the case, a packing arranged within said cover, a plate for holding said packing in place, and means for securing the said plate to the cover, substantially as specified.

4. In a filter, the combination with a case

having a detachable cover, of a block of filtering material arranged within the case, a packing arranged within said cover, a plate for holding said packing in place, means consisting of a rod passing through the cover and the block of filtering material and detachably engaged with the top of the case for securing said plate and consequently said packing in place, and means for turning said rod consisting of an end piece and a hollow screw for securing said end piece to the rod, substantially as specified.

5. In a filter, the combination of a case, a detachable cover, a packing-securing plate adjacent the cover, a block of filtering material, and a single central rod for fastening the packing-securing plate to the cover and the block of filtering material to the cover and for uniting all of these parts with the case, substantially as specified.

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

WOLCOTT A. HULL.

Witnesses:

JAMES ASHWORTH HOWARTH,
G. S. BARROWS.