I. BRACH.

WATER-FILTER.

No. 182,638. Patented Sept. 26, 1876.

Fig. 1.

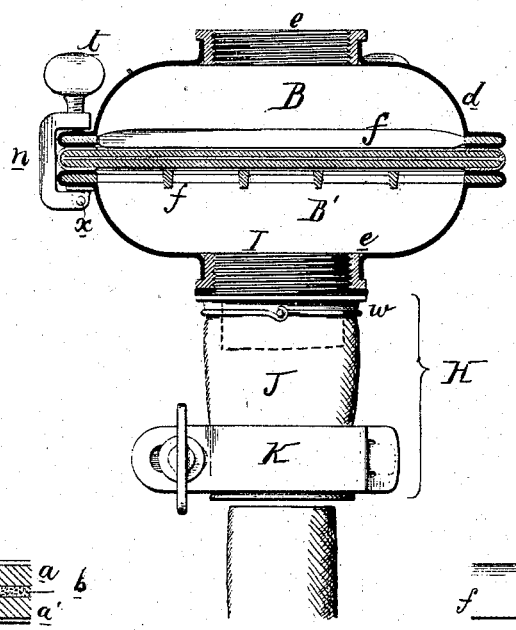


Fig. 3

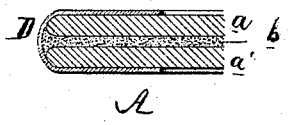
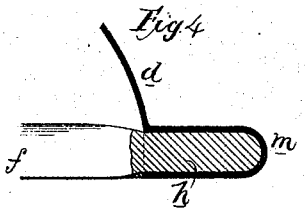


Fig. 4



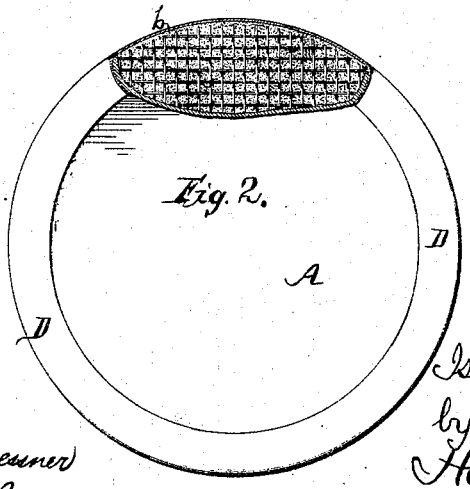


Fig. 2.

Witnesses
Hermann Moessner
Henry Howson Jr.

Isidor Brach
by his Attorneys,
Howson and Son

UNITED STATES PATENT OFFICE.

ISIDOR BRACH, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN WATER-FILTERS.

Specification forming part of Letters Patent No. **182,638**, dated September 26, 1876; application filed August 25, 1876.

To all whom it may concern:

Be it known that I, ISIDOR BRACH, of Philadelphia, Pennsylvania, have invented certain Improvements in Water-Filters, of which the following is a specification:

My invention consists of certain improvements, fully described hereafter, in that class of filters in which a filtering-disk is confined between two parts of a casing, my invention being directed to improvements in the filtering-disk, in the construction of the casing, and in devices for connecting the filter to a pipe.

In the accompanying drawing, Figure 1 is a view partly in section of my improved filter; Fig. 2, a view of the filtering-disks, part of one of the disks being removed in order to show the intervening wire-gauze; Fig. 3, a sectional view of the filtering-disks drawn to an enlarged scale; and Fig. 4, an enlarged view, showing the mode of constructing the casing.

The filtering-disk consists of two pieces, *a* and *a'*, preferably of felt, with an intervening piece, *b*, of wire-gauze. D is a rubber band, placed over the edge of the filtering-disk, and overlapping the same, as seen in Fig. 3.

The wire-gauze may be omitted, but I prefer it for the following reasons: First, it maintains the filtering medium in a comparatively stiff condition; and secondly, the meshes of the wire-gauze present cells in which can be lodged charcoal or other filtering material.

By making the rubber band in one piece, overlapping the filtering-disk, three objects are attained: First, it serves to maintain the several parts of the filtering-disk in a compact condition ready for sale and use; second, it presents an efficient packing medium for the flanges of the two parts B and B' of the casing; and third, it prevents leakage at the edge of the filtering-disk.

Each of the two parts B and B' of the casing of the filter is constructed in the following manner: Each part consists of the sheet-metal body *d*, screw-thimble *e*, and grate *f*. This grate is secured to the body in the manner best observed in Fig. 4, the said body being of sheet metal spun up and bent over the edge *h* of the grate, which is thus firmly secured to the said body. At the same time a rigid flange, *m*, is formed. The filtering-disk is confined between the flanges of the two parts B and B' of the casing by means of clamps *m*, each clamp being hinged at one end to the flange of the part B' of the casing, and having at the other end a thumb-screw, *t*, for bearing against the flange of the other casing.

I provide each filter with a coupling device, H, consisting of the tubular metal screw I, short rubber tube J, and a hinged metal clamp, K. The tubular screw I is adapted to the screw-thimble *e* of either part of the casing, and one end of the short rubber tube J is bound to a projection on the tubular screw I by a wire, *w*, or otherwise.

By means of the clamp K the outer end of the rubber tube J can be expanded or contracted to suit pipes of different sizes.

I claim as my invention—

1. The within-described filtering-disk, composed of two pieces, *a* and *a'*, of felt or other filtering fabric, and a rubber ring, D, lapped over the edge of the disk, all as set forth.

2. The combination of the two pieces *a* and *a'* of felt, intervening piece *b* of wire-gauze, and the rubber ring D.

3. The within-described filter-casing composed of two parts, B and B', each part consisting of the screw-thimble *e*, grate *f*, and sheet-metal body *d*, secured to the thimble lapped over the edge of the grate, and forming with the latter a flange, *m*, all as set forth.

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

ISIDOR BRACH.

Witnesses:

HENRY HOWSON, Jr.,

HUBERT HOWSON.