

No. 794,107.

PATENTED JULY 4, 1905.

E. M. KNIGHT.
FILTER.

APPLICATION FILED DEC. 17, 1904.

Fig. 1.

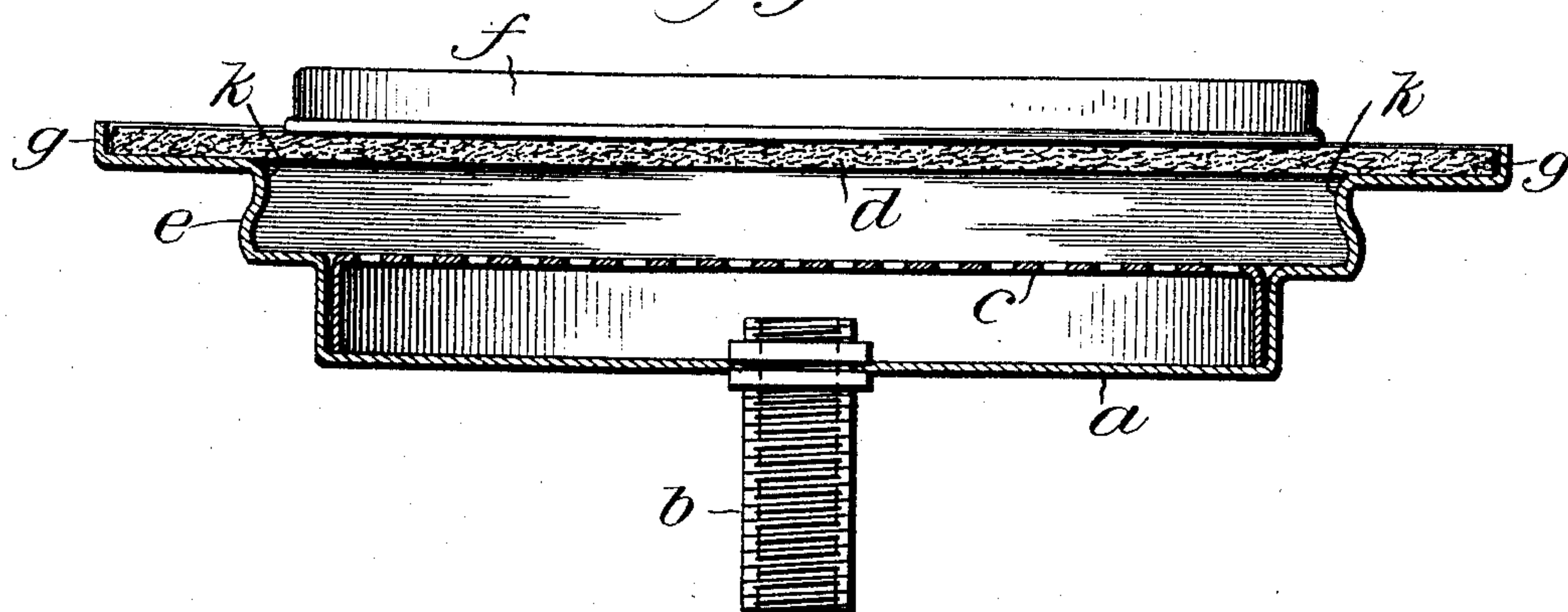


Fig. 2.

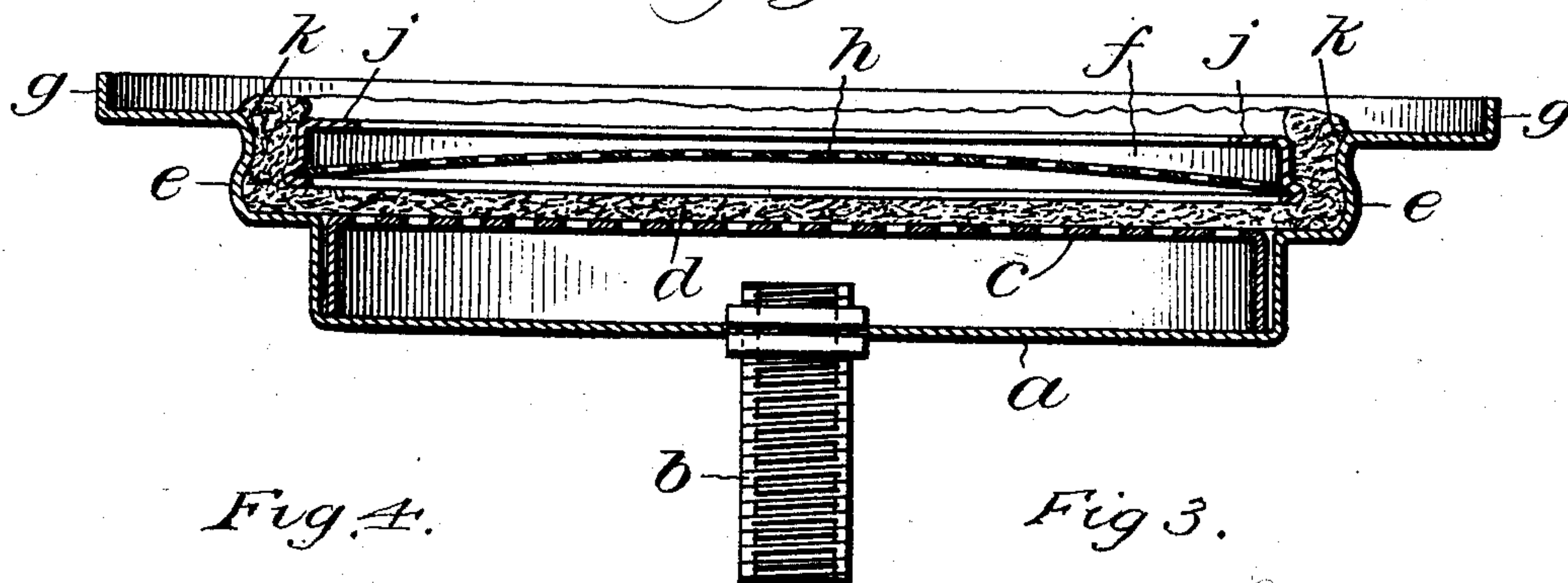


Fig. 4.

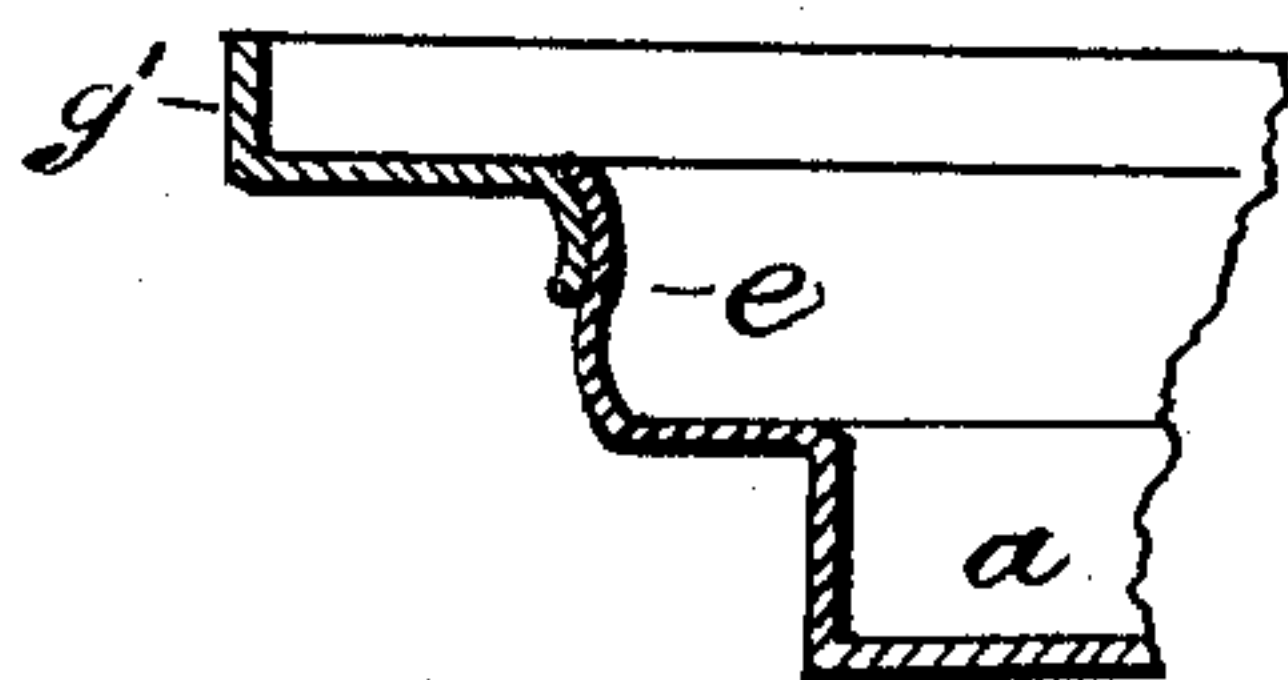
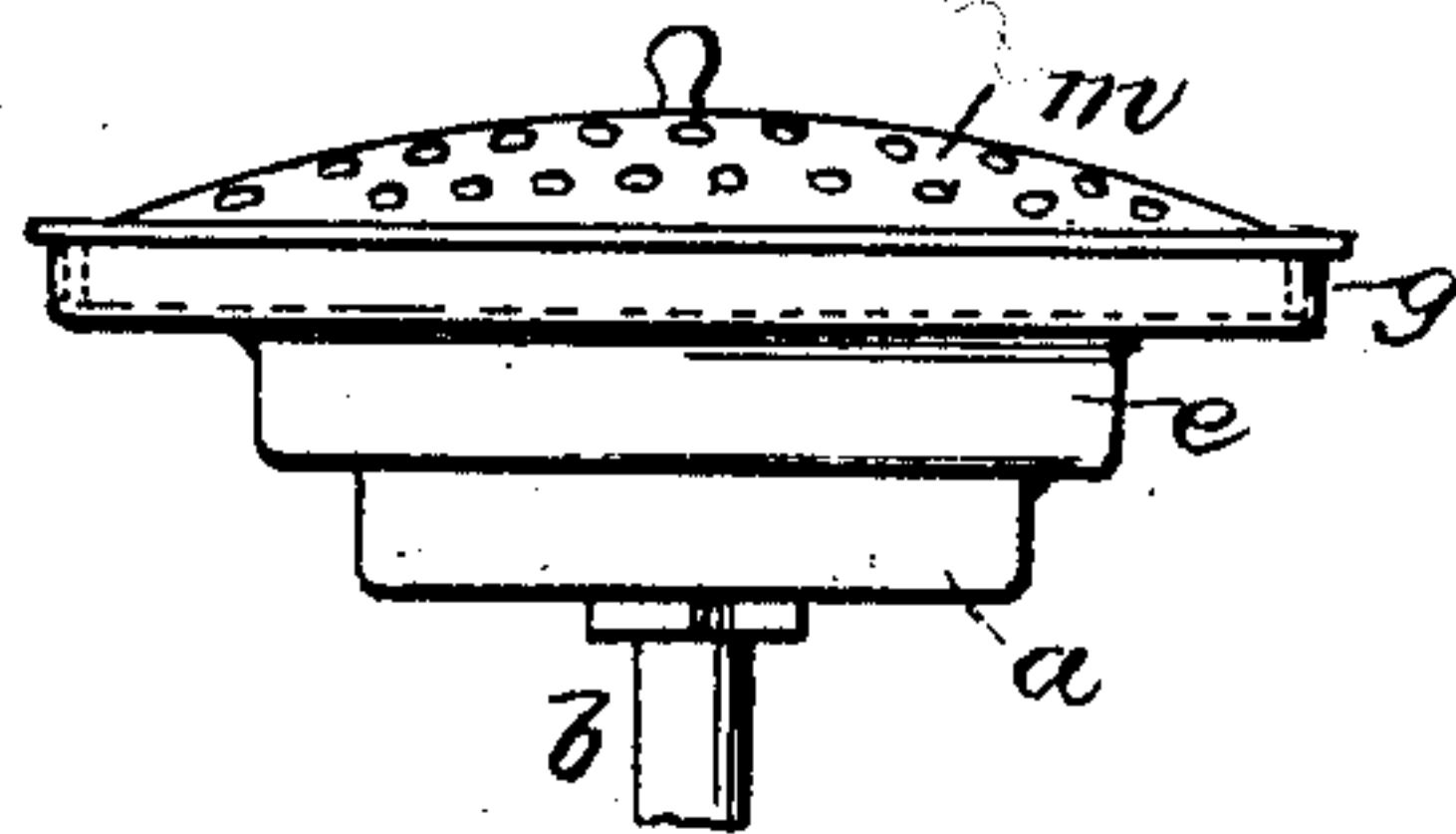


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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FILTER.

SPECIFICATION forming part of Letters Patent No. 794,107, dated July 4, 1905.

Application filed December 17, 1904. Serial No. 237,204.

To all whom it may concern:

Be it known that I, EDWARD MARTIN KNIGHT, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Filters, (for which I have obtained British Patent No. 28,328, dated December 24, 1903,) of which the following is a specification.

This invention relates to filters of the kind in which the filtering medium is constituted by an asbestos pad clamped in a suitable holder; and the said invention has for its object the provision of an improved form of holder of a cheaper and more efficient construction than those heretofore in use and one that is more easily manipulated when inserting the filtering-pads.

The holder comprises a suitably-shaped base having an outlet or outlets for the filtered water and a perforated floor on which when in use the filtering-pad rests, said pad being securely held in place by means of a ring of such a diameter as to be adapted to wedge the edge of the filtering-pad between its outer periphery and the edge of the holder.

The invention consists of the parts and the constructions and combinations of parts which I will hereinafter describe and claim.

The chief feature of my said invention is the provision of a guide on the holder to center the filtering-pad when inserting the same in the holder, so as to insure that it shall be placed properly.

In the accompanying drawings, Figure 1 shows in central section my improved filter with fixed guide, a filtering-pad being shown in position previous to the pressing in of the retaining-ring shown in elevation; and Fig. 2 is a central section showing the filtering-pad and retaining-ring in their final position. Fig. 3 is a side elevation, on a reduced scale, showing a perforated cover for the filter. Fig. 4 is a sectional view of a portion of the holder, showing a modified construction of rim.

a is the base of the holder, which may be spun or struck from a single piece of sheet metal.

b is an outlet for the filtered water, and c is a removable perforated floor on which the filtering-pad d rests.

The edge or wall of the holder is extended, as at e , above the level of the perforated floor, and the diameter of the holder at this part is enlarged, so as to leave an annular space between the wall e and a ring f , inserted therein to retain the filtering-pad in position. The wall of the holder is continued to form a concentric rim g , by means of which the filtering-pad, which is preferably of the same diameter as the said rim, is arranged centrally to the holder before the retaining-ring f is pressed into position within the part e of the holder. The ring f is shown provided with a perforated floor h to protect the filtering-pad and with an inturned edge j to facilitate its withdrawal when changing the pad. The holder may be provided with a cover m , perforated to admit the water or other liquid to be filtered, which cover may be fitted within the rim g .

When the parts of the filter have been arranged together, as shown in Fig. 1, the filtering-pad then being concentric with the holder, the ring f is pressed down to the position shown in Fig. 2, being guided by the rounded or beveled edge k , formed between the concentric parts g and e , the conformation of the edge k acting through the substance of the filtering-pad. An equal amount of the filter-pad is thus arranged all round the space between the ring f and the wall e , and this portion of the filtering-pad is tamped or calked in the said space, effectually preventing leakage at the sides of the filtering-pad, as is liable to occur when the filtering-pad is not truly central. In lieu of the fixed guide g a removable guide may be used, as shown at g' in Fig. 4.

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

1. An improved filter comprising a holder provided with a perforated floor on which the filtering-pad is to be seated, a pad-retaining ring, and a rim or guide on the holder for facilitating the placing of the pad centrally

thereof whereby it may be properly seated by said ring.

2. The combination with a filtering-pad, of a hollow holder having means for supporting the pad and having a guide for centering the pad relative to the holder.

3. The combination with a filtering-pad, of a hollow holder having a pad-seat and means for normally supporting the pad above said seat, said holder having a guide for centering the pad relative thereto.

4. The combination with a filtering-pad, of a hollow holder having a centrally-located pad-seat and means for normally supporting the pad above said seat said supporting means having a rim or wall which surrounds the pad and centers the same in the holder ready for seating.

5. An improved filter comprising a holder having pad-supporting means and having a rim or guide, a filtering-pad adapted to rest upon said supporting means, and a combined pressure device and pad-retainer adapted to fit within the rim or guide of the holder and to position the pad therein and to circumferentially compress the pad to form a tight joint between the pad and holder.

6. In a filter the combination of a holder having a surrounding raised seat and a rim bounding the same and forming a pad-guide thereto, a filter-pad adapted to fit said seat, and a pad-retaining means engaging the pad and adapted to seat the same and circumferentially compress the edge thereof against said rim or guide.

7. In a filter the combination with a holder having a base portion provided with a surrounding elevated seat portion and an outstanding guide-wall bounding the same and thence extended parallel with the seat portion, upon which extended portion the filtering-pad is initially supported, a filtering-pad supported upon said extended portion, and a pad positioning and retaining means of less diameter than the space between the said outstanding guide-wall and adapted to press the pad into said space and against said seat portion and said wall.

8. In a filter, a holder comprising a base having a seat portion the edge of which is turned outwardly to form a circumscribing wall said

wall being extended parallel with the seat portion to form the initial support for the pad, a filtering-pad adapted to be supported upon said extended parallel portion, and a retaining member of less diameter than the space bounded by said wall and adapted to engage the pad and force it into said space and upon the seat portion of the base, and circumferentially compress the edge of the pad against said wall.

9. In a filter, a holder comprising a hollow base having a seat portion surrounding its upper edge said seat portion having its edge turned outwardly to form a wall which circumscribes said seat portion and said wall having its outer edge turned parallel with the seat portion and thence outwardly to form a rim which circumscribes said parallel portion, a filtering-pad fitting upon said parallel portion within the circumscribing rim thereof whereby its edge is supported upon said parallel portion and its central portion lies in the plane of the space bounded by the wall which connects the parallel portion with the seat portion, and a retaining ring or member of less diameter than said space and adapted to engage said central portion of the pad and force the same into said space and against said seat portion whereby the pad conforms to said wall and seat, said ring circumferentially compressing the edge of the pad against said wall to form a tight joint.

10. An improved filter comprising a holder having pad-supporting means and having a rim or guide, a filtering-pad adapted to rest upon said supporting means, and a combined pressure device and pad-retainer adapted to fit within the rim or guide of the holder and to position the pad therein and to circumferentially compress the pad to form a tight joint between the pad and holder, and a perforated floor in the holder supporting the central portion of the seated pad.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDWARD MARTIN KNIGHT.

Witnesses:

JOSEPH L. MUNN,
LOUIS A. ZIEGLER.