

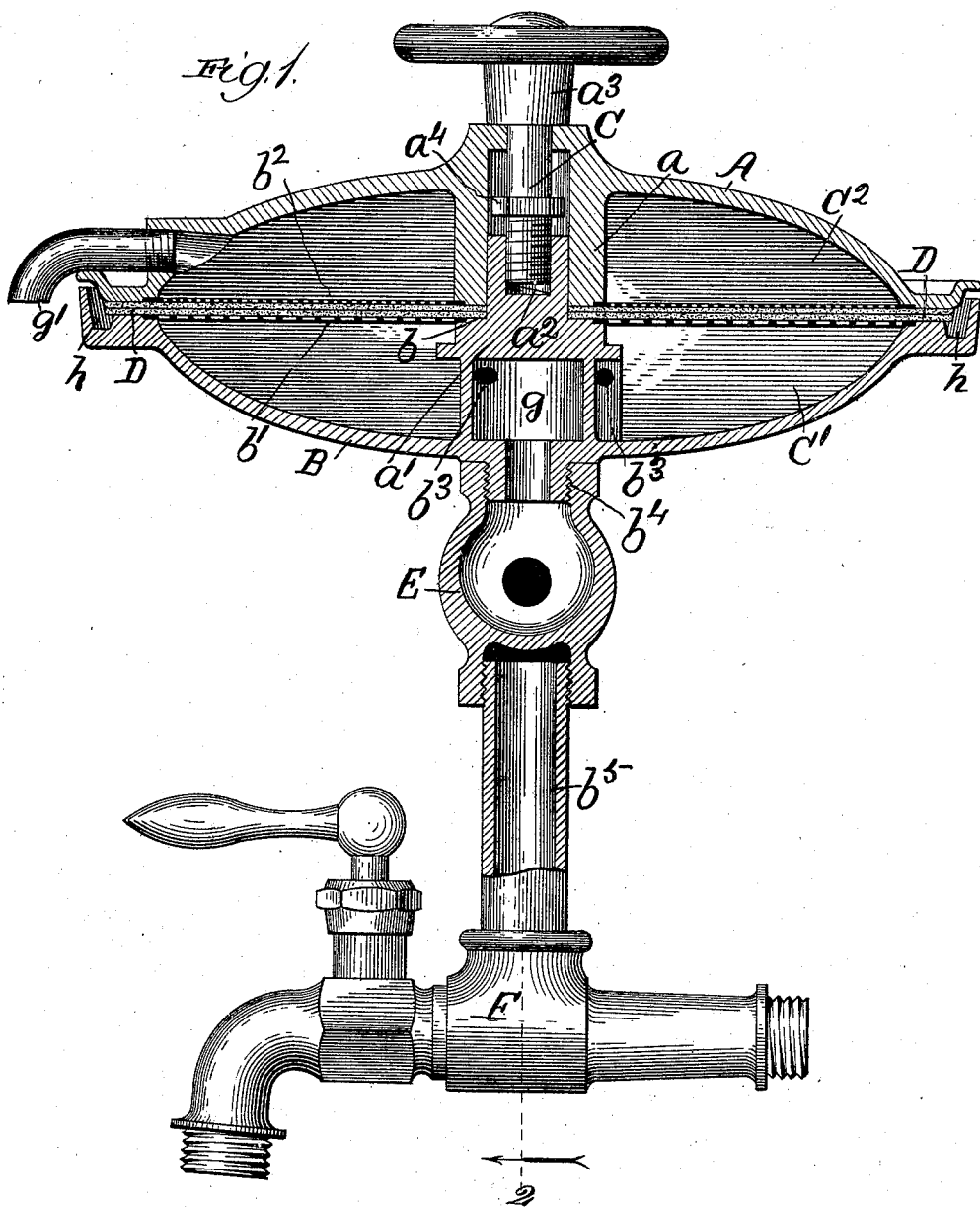
(No Model.)

2 Sheets—Sheet 1.

H. J. RICHTER.
FILTER.

No. 546,082.

Patented Sept. 10, 1895.



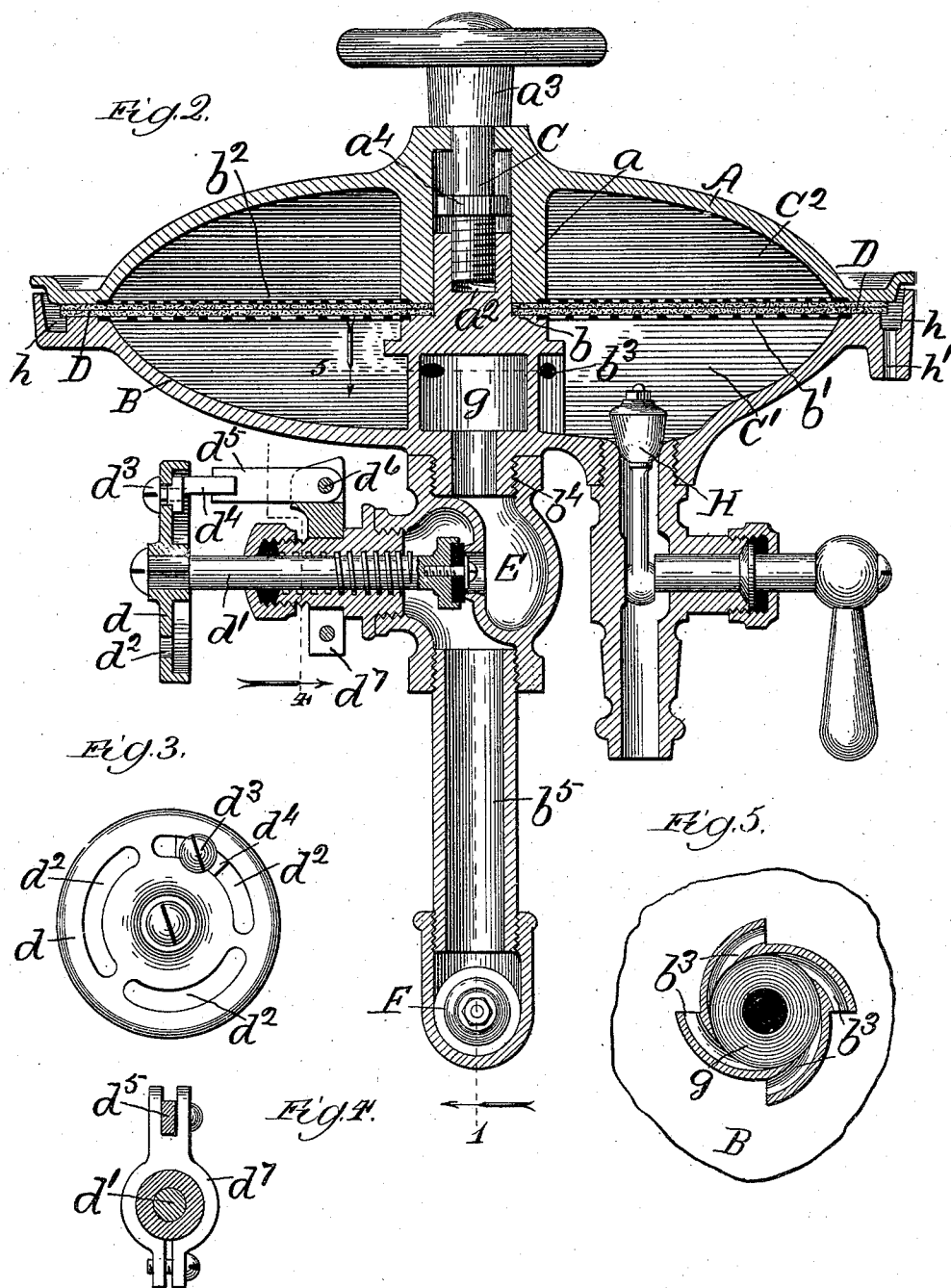
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UNITED STATES PATENT OFFICE.

HARRY J. RICHTER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE INTERNATIONAL FILTER COMPANY, OF ILLINOIS.

FILTER.

SPECIFICATION forming part of Letters Patent No. 546,082, dated September 10, 1895.

Application filed November 30, 1894. Serial No. 530,385. (No model.)

To all whom it may concern:

Be it known that I, HARRY J. RICHTER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Filters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in liquid-filters, and has for its object to provide a device of this character that is simple in construction, conveniently taken apart for repairs or other purposes, and easily cleansed.

In the drawings, Figure 1 is part elevation and part section, the section being on line 1, Fig. 2, looking in the direction indicated by the arrow; Fig. 2, a vertical section on line 2, Fig. 1, taken at right angles with reference to Fig. 1; Fig. 3, an elevation of the handle-disk of the valve controlling the admission of the liquid into the filter; Fig. 4, a vertical section on angular line 4, Fig. 2; and Fig. 5, a broken-away horizontal section on line 5, Fig. 2.

The body of the filter consists of two separable parts A and B, and is of an oval flattened form in cross-section, thus presenting a large filtering-surface within a compact space.

The upper or cap part A is provided interiorly with a sleeve extension a . The part B is provided interiorly with a hub extension a' , which is adapted to fit into the sleeve a , as shown. This hub is provided in its upper end with a screw-threaded recess a^2 for the engagement of the inner threaded end of a screw clamping-bolt C, which is loosely inserted through the body part A and has a shouldered head a^3 , forming the exterior end thereof, which fits closely to the body-surface. Thus the two parts comprising the body may be closely clamped together or the cap part conveniently removed. The nut a^4 on the bolt C serves to loosely connect the bolt and body part or cap A in taking off or replacing the same.

The filtering-chamber is divided into two compartments C' and C^2 by a number of filtering-pads D, the outer edges of which are clamped between the corresponding surfaces

of the body parts. These pads are cut out in the center so as to fit down around the hub a' and rest on the annular shoulder-surface b , which is in the same plane with the end of sleeve a , thus forming a tight joint around the outer edge and in the center when the body parts are firmly clamped together. The filtering-pads are also clamped between and stiffened by the perforated disk-plates $b' b^2$.

The hub is provided at intervals with a number of spirally-arranged inlet-passages b^3 , Fig. 5, through which the water or other liquid enters the filtering-chamber in a horizontal plane, so that the force of the incoming volume will not come in direct contact with the filtering-diaphragm.

The inlet-valve E of the filter is connected to the under side of the body part B, as at b^4 . This valve is in turn connected with the ordinary hydrant-faucet F by a tube b^5 , through which the water passes to the filter. By this arrangement the water may be drawn directly from the faucet when it is not desired to pass it through the filter.

The disk hand-grasp d on the stem d' of the inlet-valve E is provided with one or more elongated slots d^2 , Fig. 3, through which is inserted a screw d^3 , engaging with a gage-finger d^4 , Fig. 2. One end of stop d^5 is pivoted, as at d^6 , to a collar d^7 , Figs. 2 and 4, the opposite or loose end of the stop lying in the pathway of the gage-finger. The gage-finger may be set to give the inlet-valve just the required opening, as contact with the stop d^5 will prevent it from being opened too far, thus regulating the volume of water admitted. When the water flows in slowly, the chamber g in the hub a' breaks the force of the current. By raising the stop d^5 the inlet-valve may be thrown wide open.

In operation the liquid to be filtered enters the lower receiving-compartment C' of the filtering-chamber and then percolates upwardly through the filtering substance into the reservoir-compartment C^2 , the filtered liquid running out through the bib-tube g' .

An outlet-valve H is inserted in the lower body part and opens into the receiving-compartment. When it is necessary to flush and clean out the receiving-compartment, it may be done by opening the inlet-valve E far

enough to admit a full stream, which, entering through the horizontal spirally-arranged inlet-passages in the hub, has the effect of imparting a centrifugal action or swirl to the body of water and force the same out through the valve H, thus thoroughly washing out and cleansing the filter without the necessity of taking the same apart each time.

5 The lower body part is provided in its edge with an annular groove *h*, which will receive the drip that may be expressed when the parts are clamped together and which is conducted off through passage *h'*.

10 The filtering diaphragm or pads may be composed of any suitable substance or material and are easily and quickly renewed when no longer serviceable.

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

20 1. In a filter, the combination with the inlet valve, of a disk hand grasp mounted on the stem thereof and provided with a slot, a screw inserted therethrough, a gage finger secured to said screw, and a stop lying in the

pathway of said gage finger, substantially as described.

2. In a filter, the body consisting of two separate parts, one part provided with a hub and the other with a central sleeve which embraces said hub, the clamping bolt passing through the sleeve and engaging a screw thread in the hub, said bolt having a shoulder engaging the body section to which the sleeve is attached and being provided with a hand grasp, and the pad having a central perforation to surround the hub, all combined substantially as described.

3. The filter body in sections and means for clamping these sections together, the diaphragm or pad having its edges clamped between the sections, and a drip trough connected to the edge of one of the sections, all combined substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY J. RICHTER.

Witnesses:

L. M. FREEMAN,

L. B. COUPLAND.