

No. 796,519.

PATENTED AUG. 8, 1905.

G. M. KNEUPER.

FILTER.

APPLICATION FILED AUG. 11, 1904.

Fig. 1.

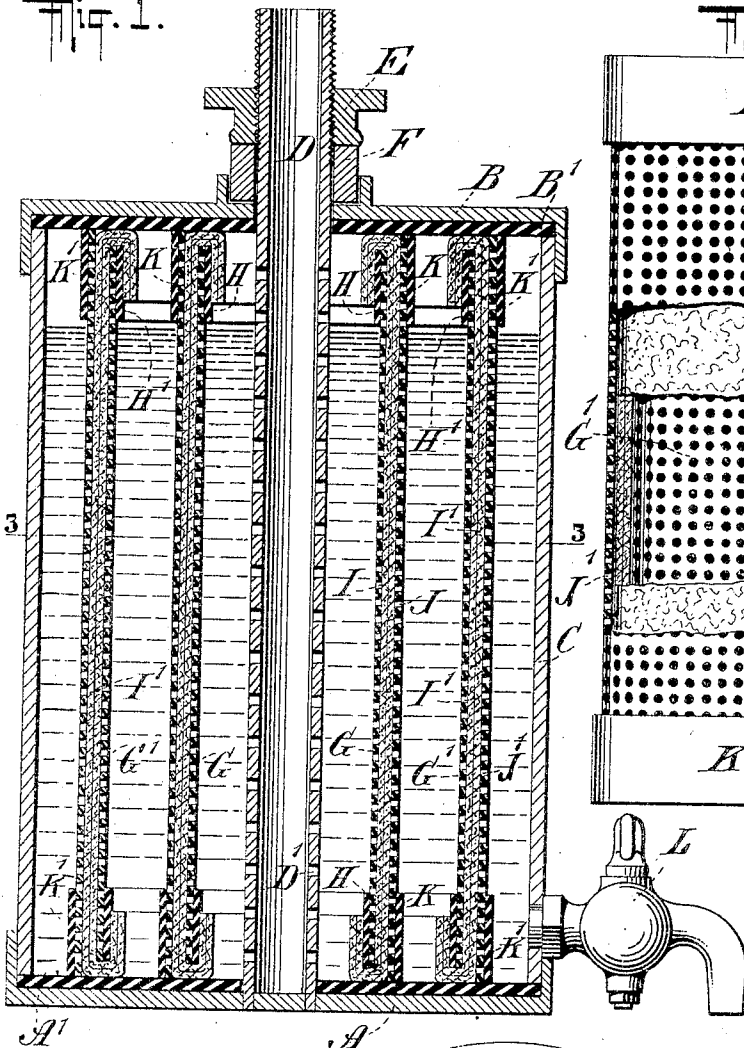


Fig. 2.

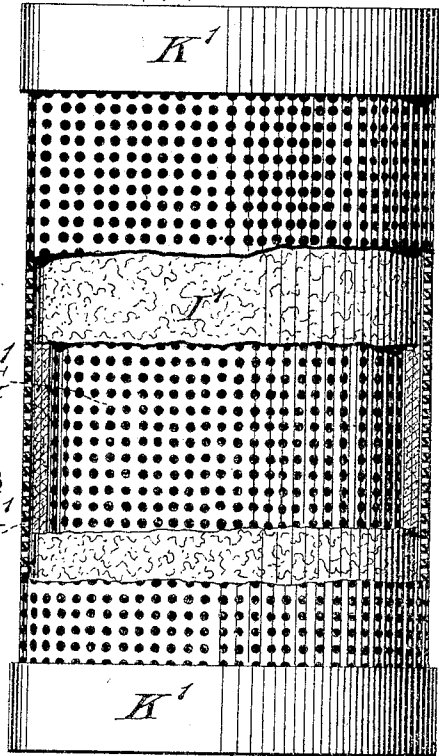
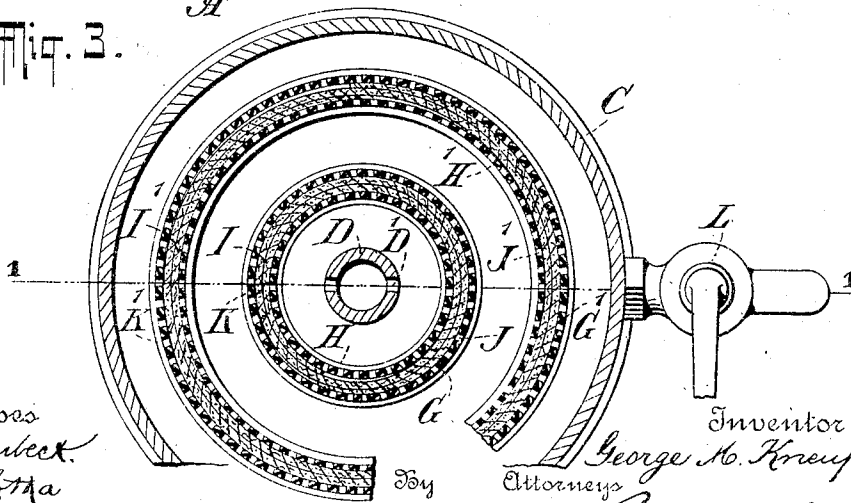


Fig. 3.



Witnesses
J. A. Kneuper
John L. Latta

Inventor
George M. Kneuper
Attorneys
Dresen & Thumuth

UNITED STATES PATENT OFFICE.

GEORGE M. KNEUPER, OF NEW YORK, N. Y.

FILTER.

No. 796,519.

Specification of Letters Patent.

Patented Aug. 8, 1905.

Application filed August 11, 1904. Serial No. 220,340.

To all whom it may concern:

Be it known that I, GEORGE M. KNEUPER, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Filters, of which the following is a specification.

My invention relates to filters, and has for its object to provide a simple and very efficient apparatus for filtering liquids.

The invention will be fully described hereinafter and the features of novelty pointed out in the appended claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a sectional elevation on line 1 1 of Fig. 3, showing a filter embodying my invention. Fig. 2 is a detailed view of one of the filtering - cylinders with parts broken away, and Fig. 3 is a horizontal section on line 3 3 of Fig. 1.

The apparatus shown in the drawings comprises a bottom A, a top B, and a side wall C, which are connected in any suitable manner, but preferably so that they may be readily separated. For this purpose the top and bottom may be provided with flanges projected toward each other and adapted to surround the cylindrical side wall C, the edges of which rest against a rubber disk or gasket A' B', respectively. These rubber gaskets also engage the filter cylinder or cylinders to be described presently. The top and bottom may be connected by a tube D, secured to the bottom and extending loosely through the top, the upper end of the said tube being threaded to receive a nut E, which exerts pressure on the top B either directly or through the medium of an interposed collar F. The tube D is provided with perforations D' within the receptacle, and its upper end is adapted for connection with a source of supply of liquid under pressure.

The filtering bodies or cylinders consist of an inner perforated member G G', made of wire-netting, perforated sheet metal, or the like. The edges of this inner member are preferably reinforced by solid metal rings H H', located within such inner member. Around this inner member I wrap a sheet of filtering material, such as filtering-paper, the width of which should be greater than the length of the inner member, so that the edge portions of the filtering-paper project beyond the edges of the inner member. After this sheet of filtering material has been wrapped

around the inner member the projecting edge portions of the paper are folded inward, as shown in Fig. 1, thus securely holding the paper in position. The inner member with the filtering material I I' thereon is then slipped into an outer member J J', which may be similar to the inner member and may be reinforced upon its outside with solid metal rings K K'. Preferably the outer member is a little longer or higher than the inner member to accommodate the thickness of the filtering material where the same bends over the edges of the inner member. In Fig. 1 I have shown two filtering-bodies of different diameters, one located within the other; but it will be understood that only one of them may be employed, if desired, or in some cases a greater number of filtering-bodies may be nested. The gaskets A' B' engage the top and bottom edges of the filtering-bodies, and thus prevent leakage around said edges.

In the use of my invention after the parts have been put together, as shown in Fig. 1, liquid is forced under pressure into the pipe D and then passes successively through the inner filtering - body and the outer filtering-body to the outlet, which may be provided with a cock or faucet L. The outer member J prevents the filtering material I from being separated from the inner member G. After the filtration has been completed the apparatus may be readily taken apart and the filtering material I removed for cleaning or renewal.

My improved filter is equally effective when operated by suction applied to the outlet as when it is worked by pressure at the inlet. When successive filtration is employed, as in Fig. 1, the filtering materials I I' may differ in character or fineness, so that the second filtration will be more perfect than the first.

What I claim as new, and desire to secure by Letters Patent, is—

1. A filter comprising two end members or heads provided with yielding packings or gaskets on their opposing faces, and a filtering-body located between said heads and engaging said packings, said filtering-body consisting of tubular perforated inner and outer members, one of which is shorter than the other, and filtering material wrapped around the inner member and having its edges folded over the edges of the shorter member and in engagement with said packings.

2. A filter comprising tubular perforated inner and outer members, one of which is

shorter than the other, and filtering material wrapped around the inner member and having its edges folded over the edges of the shorter member.

3. A filter comprising two end members or heads provided with yielding packings or gaskets on their opposing faces, nested perforated tubular members of different lengths located between said heads, the inner member being the shorter, and filtering material wrapped around the inner member and having its edge portions folded inward over the edges of the inner member.

4. A filter comprising a top and bottom provided with flanges projected toward each other and with gaskets on their opposing faces, a

tubular member or side wall fitted into said flanges and engaging said gaskets, means for pressing the top toward the bottom, and a filtering-body consisting of tubular perforated inner and outer members, of which the inner member is shorter than the outer member, and filtering material wrapped around the inner member and having its edges folded inwardly over the edge of said inner member.

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

GEORGE M. KNEUPER.

Witnesses:

JOHN LOTKA,
EUGENE EBLE.