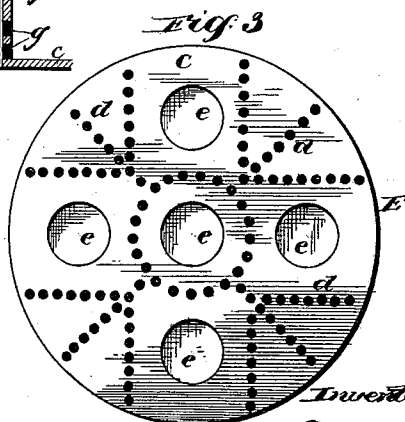
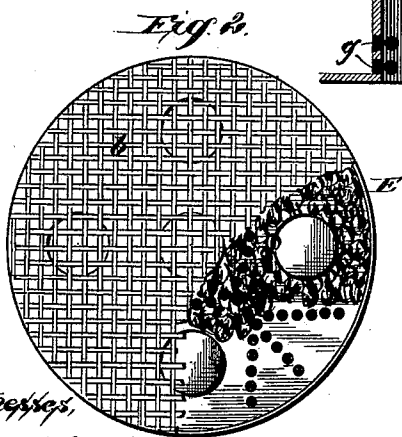
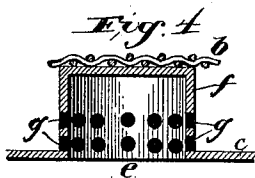
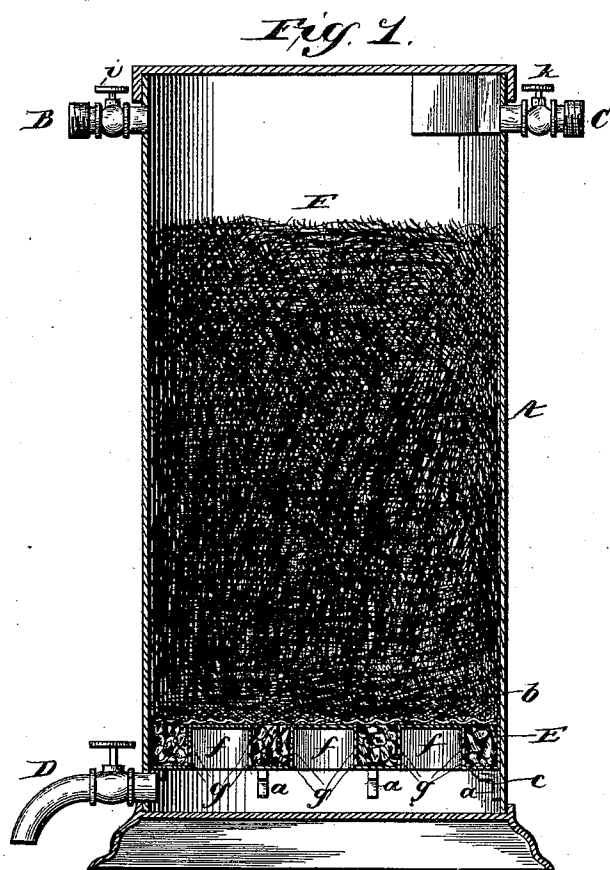


(No Model.)

J. DAVIS.
FILTER.

No. 402,659.

Patented May 7, 1889.



Witnesses,
Wm. H. Coth
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UNITED STATES PATENT OFFICE.

JOHN DAVIS, OF ALLEGHENY, PENNSYLVANIA.

FILTER.

SPECIFICATION forming part of Letters Patent No. 402,659, dated May 7, 1889.

Application filed November 20, 1888. Serial No. 291,376. (No model.)

To all whom it may concern:

Be it known that I, JOHN DAVIS, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Filters; and I do hereby declare the following to be 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.

My invention relates to filters, and has for its object the construction of a bottom for the filter-bed to rest upon.

The invention will be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 represents a vertical section of a filter containing my improved bottom; Fig. 2, a top plan view of the bottom, partly broken away to show the filling; Fig. 3, an inverted plan view of the same, and Fig. 4 a vertical section through one of the supports on an enlarged scale.

Reference being had to the drawings and the letters thereon, A indicates a filter of ordinary construction; B, the supply-pipe; C, the discharge-pipe for muddy water in cleansing the filter-bed, and D the pipe for drawing off filtered water.

E is the filter-bottom, which is supported upon suitable brackets, *a*, and it in turn supports the filter-bed F. The bottom is composed of an upper head or diaphragm, *b*, of wire or perforated sheet metal, and a lower head or diaphragm, *c*, of sheet metal, provided with numerous perforations, *d*, and larger openings, *e*, over which openings are placed hollow supports *f* for the upper head, *b*, to rest upon and prevent the wire from bending or breaking under the weight of the filter-bed. The supports *f* may be cylindrical in form, as shown, or they may be of any other desired form. The vertical walls of the hollow supports are provided with perforations *g*, for a purpose hereinafter to be described.

The space between the heads, the supports, and the outer vertical wall, *h*, of the bottom is filled with coarse material—such as coke or stone—and serves to pack said space, and affords additional filtering-surface and additional support to the wire head *b*, and also to prevent the sand or granulated bed from wasting by passing down through the bottom.

When it is desired to cleanse the filtering material, the cock *i* in the supply-pipe is closed, the cock *k* in the discharge-pipe opened, and water introduced through pipe D (by the attachment of hose or other suitable connection) and forced up through the apertures *d* in vertical streams and through *g* in lateral or horizontal streams, which thoroughly cleanse the material in the filter-bottom, and then passes on up through the filter-bed. The bed should be agitated while the water is passing up through it.

Having thus fully described my invention, what I claim is—

1. An article of manufacture, a filter bottom or support for a filter-bed, consisting of two foraminous heads, a vertical wall to which said heads are permanently secured, and hollow perforated supports interposed between the heads, substantially as described.

2. An article of manufacture, a filter bottom or support for a filter-bed, consisting of two foraminous heads, a vertical imperforate wall to which said heads are permanently secured at their extremities, and hollow supports having their sides perforated and the lower end open, substantially as shown and described.

3. An article of manufacture, a filter bottom or support for a filter-bed, consisting of two foraminous heads permanently secured to a vertical wall, interposed supports for the upper head, and a filling of granulated filtering material surrounding the supports, substantially as described.

4. An article of manufacture, a filter bottom or support for a filter-bed, consisting of an upper head of wire, a lower head of perforated sheet metal, an imperforate metallic wall to which said heads are secured at their extremities, hollow perforated supports for the upper head, having a closed and an open end and perforated sides, interposed between the heads, and a filling of granulated filtering material surrounding the supports, substantially as described.

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

JOHN DAVIS.

Witnesses:

W. H. LOCKHART,
B. A. McCONNELL.