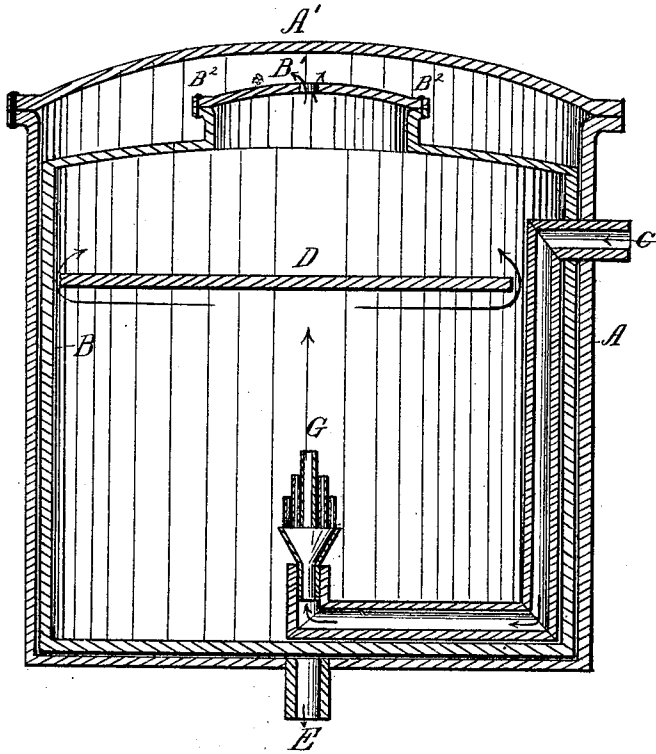


B. SCHIEFFELIN.
FILTER.

No. 175,508.

Patented March 28, 1876.



WITNESSES
E. J. Nottingham.
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By

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UNITED STATES PATENT OFFICE

BRADHURST SCHIEFFELIN, OF ATLANTICVILLE, NEW JERSEY.

IMPROVEMENT IN FILTERS.

Specification forming part of Letters Patent No. **175,508**, dated March 28, 1876; application filed August 26, 1875.

To all whom it may concern:

Be it known that I, BRADHURST SCHIEFFELIN, of Atlanticville, in the county of Monmouth and State of New Jersey, 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to an apparatus for filtering liquids under pressure; and consists in the combinations and parts as herein described and claimed.

In the drawing, the figure is a vertical longitudinal section of my invention.

A represents a primary or outer case, formed of material capable of resisting high pressure. This casing has a removable top, A', which, in use, is firmly attached in any suitable way. Inside of casing A is placed the secondary casing B, which is provided at its top, or at any other suitable point, with the removable cap B'; but there can be placed a third or smaller cover on the larger cover A', to which might be attached an eduction-pipe, but I do not consider this latter as a vital part of my invention.

In the cap B is made one or more perforations. Upon the cap B' are placed the catches B², or their equivalents, for the purpose of filling or cleaning the case B. C is a pipe piercing both cases A and B. After entering the case B it drops to the bottom of said case B, and, on reaching the center, turns at a right angle, over which is placed the distributor G, which is substantially a wire cage covered with cloth, felt, or some such fabric, that it need not necessarily present a perforated surface.

D is a diaphragm or plate, placed across the case B at any suitable height in said case B, but is made small enough so as not to completely fill the diameter of said case B. This latter feature I regard as a strong element in my invention, and any modification of its form or situation would not vary my invention.

E is an exit-pipe, which may be placed at any proper location in the case A. Upon the case A might be placed a safety-valve or registering-gage, to indicate the pressure in any obvious manner. It is also manifest that my

invention, in its mechanical construction, may be varied without materially affecting the operation or process of the same.

The cap B¹ may be covered with wire and felt, or felt alone, or any straining or filtering fabric; also, a perforated diaphragm may be used to support the wire-gauze or other cloth which prevents the escape of the charcoal or filtering material.

The operation of this mechanism is readily seen, and is substantially as follows: The fluid to be purified is forced through the pipe C by any suitable process, and is discharged at the bottom of the case B through the distributor G, and, by the pressure continually exerted upon it, it is forced upward toward the cap or outlet of the case B. The diaphragm or plate D prevents a direct current, so that the fluid is forced to pass upward around the edges between the diaphragm and the walls of the casing B, thus accomplishing a purpose which I am not aware has ever before been obtained, and this latter process I hold as a forcible feature.

It may here be stated that the casings A and B may be filled, either with the same filtering substance, or each casing may contain different filtering substances.

The fluid, after passing the diaphragm D, goes out through the cap B¹, and is then forced downward through the filtering substance in the case A, whence it is discharged through the exit-pipe, which may or may not be provided with a stop-cock.

The arrows show the direction taken by the fluid to be filtered in my device; and it will be obvious that the work of purifying must be complete and thorough.

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

The filter herein described, consisting of an outer casing, A, and an air-tight inner case, B, provided with an entry-pipe, C, and diaphragm D, extending across the interior of said casing B, and of slightly-smaller diameter, all arranged and constructed substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of August, 1875.

BRADHURST SCHIEFFELIN.

Witnesses:

STEPHEN H. LIPPINCOTT,
HENRY C. BENNETT.