

(No Model.)

O. E. MEYER.
FILTER.

No. 563,392.

Patented July 7, 1896.

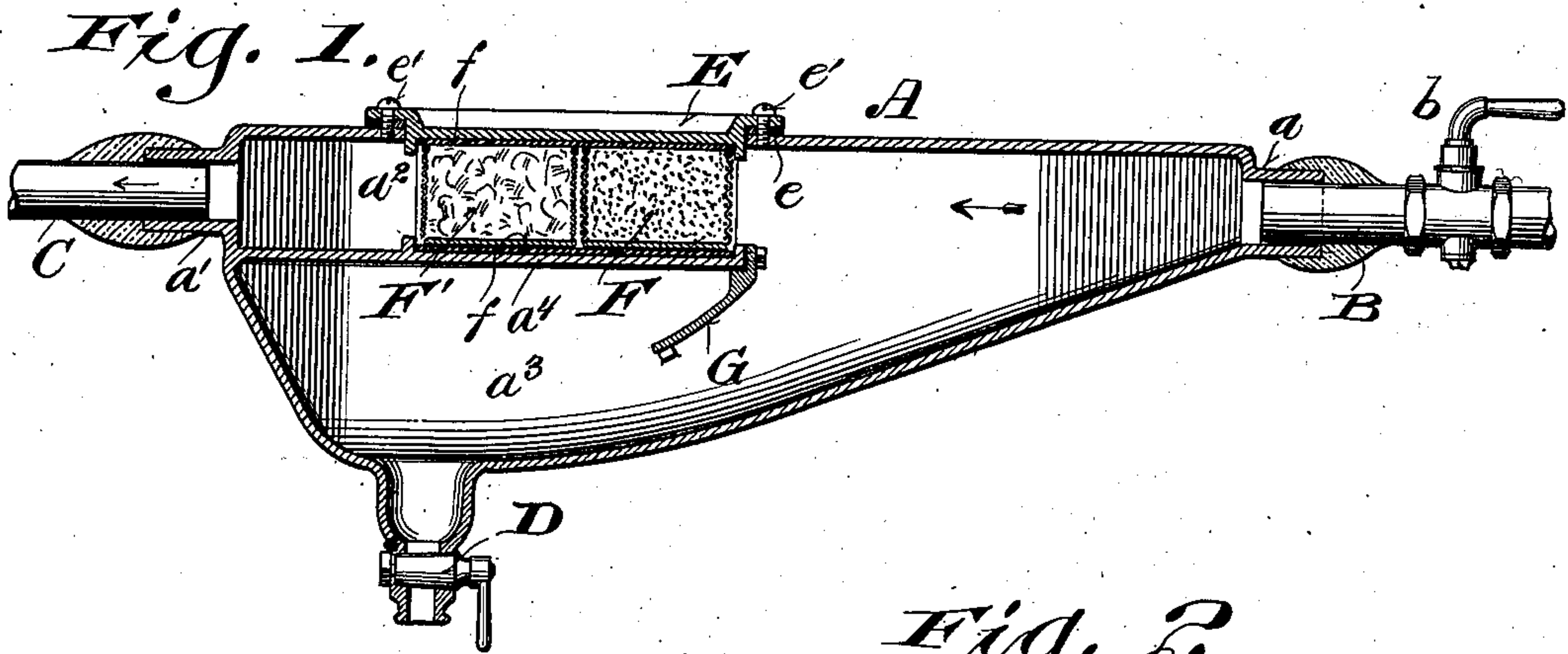


Fig. 2.

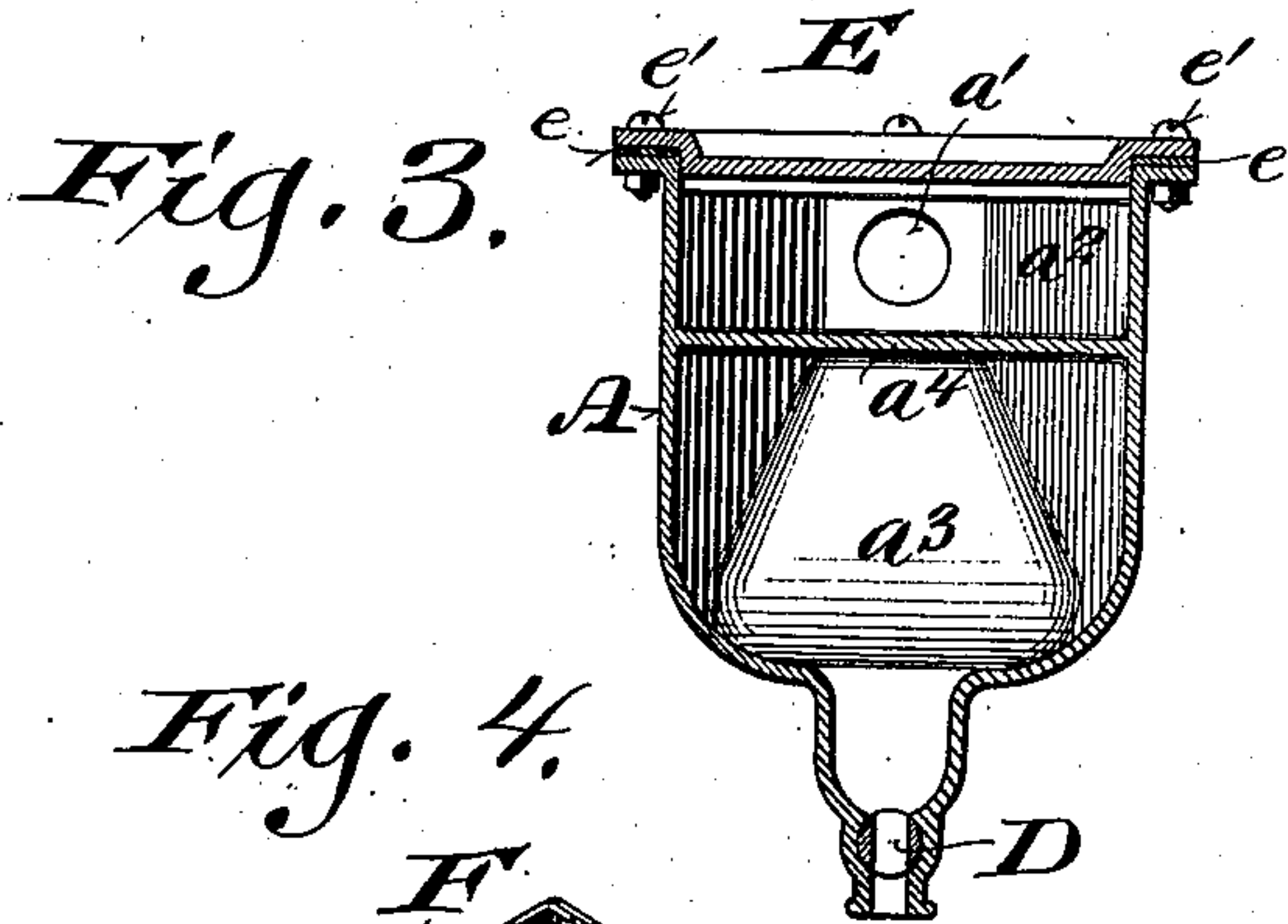
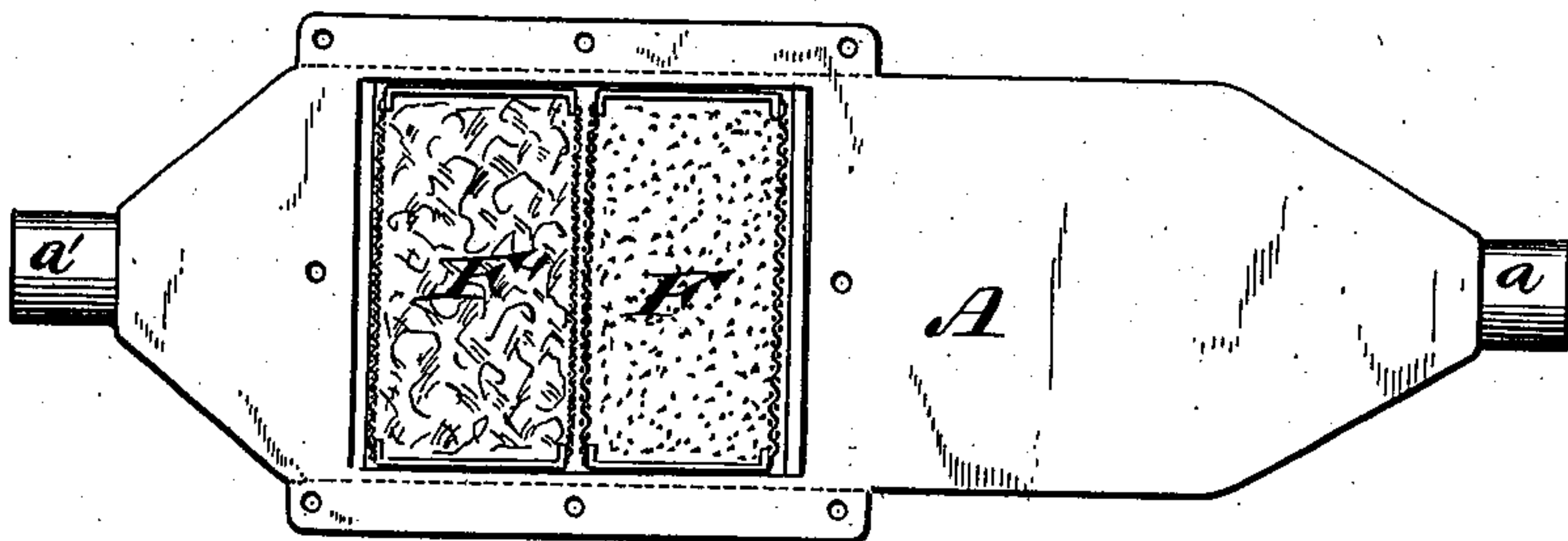
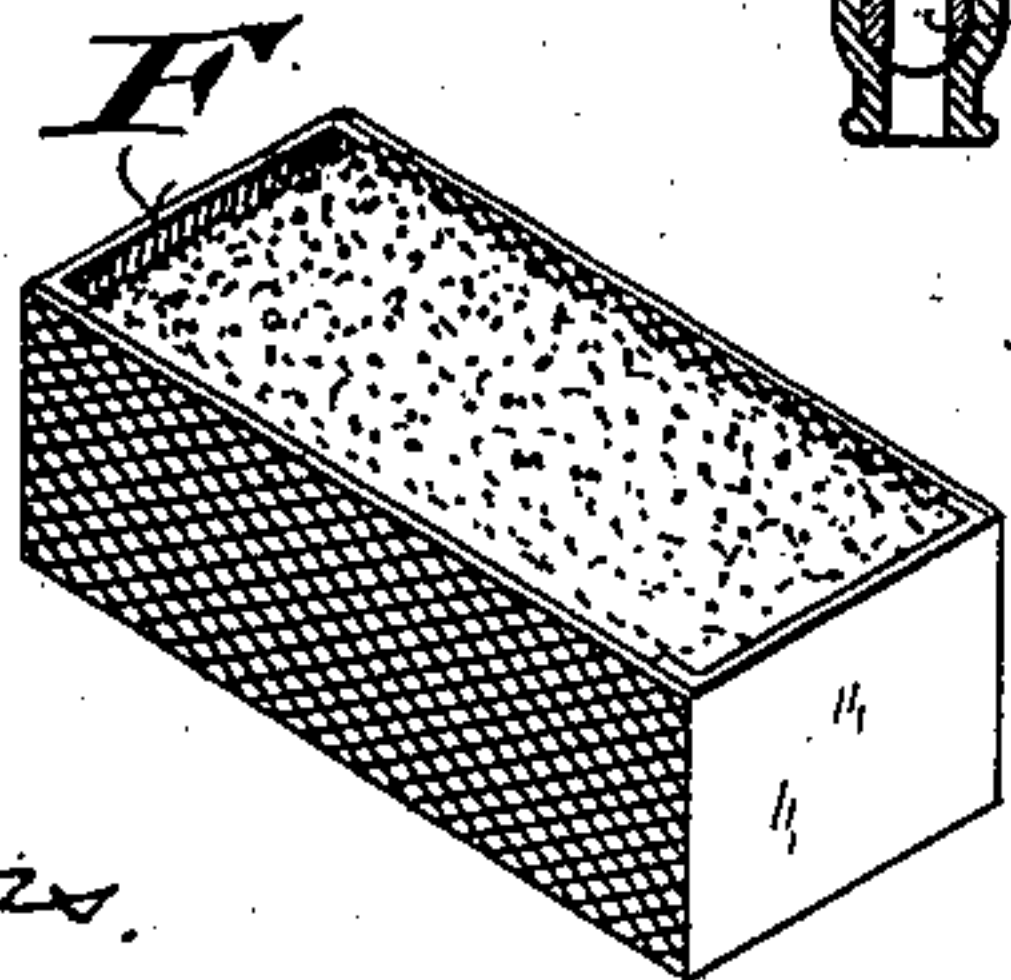


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

OLUF E. MEYER, OF MILWAUKEE, WISCONSIN.

FILTER.

SPECIFICATION forming part of Letters Patent No. 563,392, dated July 7, 1896.

Application filed January 12, 1894. Serial No. 496,620. (No model.)

To all whom it may concern:

Be it known that I, OLUF E. MEYER, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Filters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The main object of my invention is to adapt a filter for use in water-service pipes of dwellings, hotels, &c.

It consists, essentially, of a chamber having inlet and outlet connections for attachment to water service or supply pipes, and divided into two compartments or passages, one above the other, the upper passage being provided with one or more baskets or cages for holding filtering material, and the lower compartment or passage, which serves as a settling-chamber, being provided with a waste cock or connection for removing the sediment, and of certain novel features in the construction and arrangement of the filter, hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a vertical longitudinal section of a filter embodying my invention. Fig. 2 is a plan view of the same with the cover removed. Fig. 3 is a vertical cross-section, and Fig. 4 a perspective view of one of the filter baskets or cages.

A designates an oblong casing, which may be made of cast-iron or any other suitable material, preferably metal. It is formed or provided at the ends with inlet and outlet connections a and a' for the attachment of water-service pipes B and C, as shown in Fig. 1, B being the inlet-pipe, provided with a cock b , and C the outlet-pipe. The chamber inclosed by the casing A is separated into two compartments or passages a^2 and a^3 by a horizontal shelf or partition a^4 , extending from the outlet end of the filter to a point midway between the ends. The outlet-pipe connection communicates with the upper compartment or passage a^2 , while the inlet connection at the opposite end of the filter, which is preferably

contracted vertically, as shown, communicates with both compartments or passages. The lower passage or compartment a^3 , which serves as a settling-chamber for receiving and retaining the impurities contained in the water entering through the supply-pipe B, is provided, preferably, at the lowest point therein, at or near the outlet end of the filter, with a waste-cock D, by means of which the sediment may be drawn off from time to time. The filter-case is formed in the top directly over the shelf or partition a^4 with an opening, as shown in Fig. 2, which is ordinarily closed by a removable cover E, between the rim of which and the edge of the casing around said opening a gasket e , of rubber or other suitable packing material, is interposed to insure a tight joint. The cover may be secured to the casing by screws e' e' , as shown, or by other suitable means.

F F' represent baskets or cages made of woven wire or other suitable material for holding the filtering material in place in the filter and facilitating its removal and renewal from time to time. They are fitted endwise between the sides of the filter-case and vertically between the shelf a^4 , upon which they are supported, and the cover E, and to prevent the passage of unfiltered water between them and their inclosing walls, sheets or strips $f f$ of rubber or other suitable packing material may be placed between them and the shelf a^4 and cover E, as shown in Fig. 1, and leakage past the ends of said cages may be prevented in a similar manner by strips of rubber attached either to the side walls of the filter-case or to the ends of the cages. The shelf a^4 and the cover E, or either of them, may be formed with transverse ribs or flanges, as shown in Fig. 1, for retaining the filter-cages in their proper place.

The filter may be provided with one or more cages, which may be filled with various filtering materials according to the capacity required and the condition of the water to be filtered. For ordinary use two cages or baskets will suffice to accomplish the desired result, and the first cage or basket F toward the inlet connection may be filled with iron manganese in lumps about the size of small peas, and the other cage or basket F' may be filled with asbestos or sponge. I do not wish,

however, to be understood as limiting myself to the employment of any particular filtering materials or to any special number and arrangement of the filter baskets or cages, except that the cage or cages containing the filtering material are to be placed in the upper passage or compartment, so as to compel the water in its passage through the filter to flow through such material.

10 The size and shape of the filter-case and the construction and arrangement of its connections may be variously modified in detail within the scope of my invention.

The filter may be used to advantage not only for the purification of water for ordinary household use, but for running elevators and other industrial purposes where sand and other impurities injuriously affect mechanism or apparatus in which water is employed as an actuating medium or otherwise.

To renew the filtering material and cleanse the interior of the filter, the cock *b* in the supply-pipe is closed and the cover *E* and the baskets or cages are removed. The sediment collecting and retained in the settling-chamber *a*³ may be removed by simply opening the cock *D* without interfering with the other connections of the filter. It is better, however, to close the cock *b* and shut off the water supply to the filter, because when the waste-cock *D* is open an inflowing current tends to agitate the sediment and mix it with the water contained in the filter. To prevent a return current from carrying the sediment out of the settling-chamber *a*³ into the upper filtering-passage *a*², a transverse depending baffle or deflecting plate *G* may be formed on or attached to the inner edge of the shelf or partition *a*⁴.

40 I claim—

1. A filter consisting of a case comprising two compartments, one above the other, the upper one adapted to hold filtering material and having an outlet connection through the

case on one side and communicating on the opposite side with the lower compartment, which serves as a settling-chamber and has a valve-controlled waste connection leading out of the bottom and an inlet connection through the case above it, and a removable cover adapted to close an opening in the case into the upper compartment, substantially as and for the purposes set forth.

2. A filter composed of a casing having inlet and outlet connections for the attachment of water-service pipes and inclosing a chamber divided at the outlet end into two compartments or passages, one above the other, the upper compartment being provided with one or more removable filter baskets or cages, and the casing being formed with an opening adjacent to said cage or cages and provided with a removable cover, substantially as and for the purposes set forth.

3. A filter composed of a casing having at opposite ends inlet and outlet connections for the attachment of water-service pipes and inclosing a chamber divided at its outlet end by a horizontal shelf or partition into upper and lower compartments or passages which unite with each other toward the inlet end, the upper compartment being provided with one or more removable baskets or cages for holding filtering material, and the lower compartment, which serves as a settling-chamber, having at the bottom a valve-controlled waste opening or connection, said casing being formed with an opening in the top over said filter cage or cages and provided with a removable cover, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

OLUF E. MEYER.

Witnesses:

M. L. EMERY,
CHAS. L. GOSS.