F. J. DELKER.

Improvement in Filters.

No. 127,681. Patented June 11, 1872.

Fig. 1.

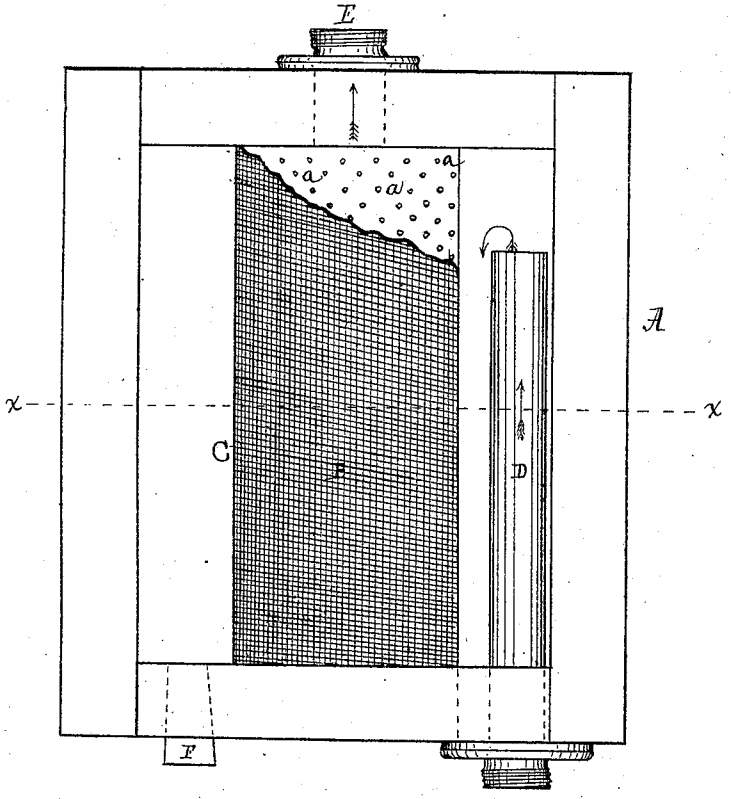


Fig. 2.

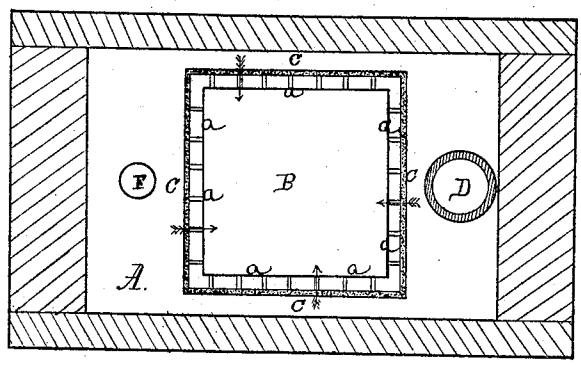
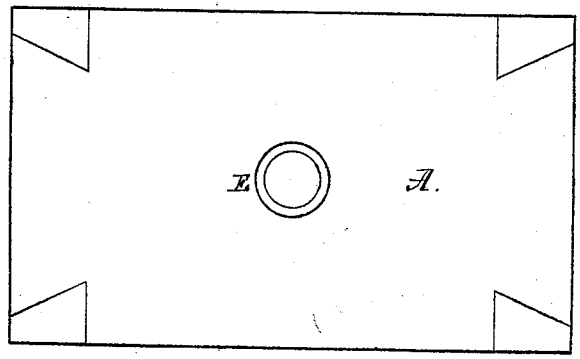


Fig. 3.



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A.M. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

FREDERICK J. DELKER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN FILTERS.

Specification forming part of Letters Patent No. 127,681, dated June 11, 1872.

To all whom it may concern:

Be it known that I, FREDERICK J. DELKER, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Filters; and I do hereby declare the following to be a clear and exact description of the nature thereof sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a side elevation of the interior of the device illustrating my invention. Fig. 2 is a horizontal section in line *x x*, Fig. 1. Fig. 3 is a top or plan view thereof.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists of a filter constructed of a receiver, filtering-chamber, and induction and eduction pipes, whereby a large quantity of fluid may be filtered, the filter placed in any position, and dirt and sediment readily withdrawn or discharged.

Referring to the drawing, A represents a hollow casing or receiver, which may be of angular or circular form, constructed of any desired material, and is closed on all sides except at points occupied by induction and eduction pipes. Within the receiver is placed a filtering-chamber, B, which occupies only a portion of the space in the receiver, and has an area smaller than the space surrounding it. Its walls consist of perforated pieces of wood, metal, stone, or other material, and its ends are secured to the top and bottom or side pieces of the frame, one end being closed, and the other end opened to communicate with either the induction or eduction pipe. The chamber may be of angular or circular form, and, by means of its perforations *a a*, communicate with the receiver A. Completely surrounding the walls of the chamber is a filtering-jacket, C, which may consist of felt, gauze, or other material, packed with charcoal or other substance, if desired, or constructed in any manner to possess the property of filtering. This jacket embraces the sides or surface of the walls of the chamber, and, while it covers the perforations therein, it does not prevent the passage of fluid to and from said chamber. The walls of the chamber support the jacket, and impart strength thereto, whereby the latter is able to withstand the pressure against it. D represents the induction-pipe, and E the eduction-pipe. The induction-pipe is secured to a proper portion of the receiver A, opens into the same, and is connected with the place of supply of the water or other fluid to be filtered. The eduction-pipe is secured to the side or end piece of the receiver at the end of the chamber where the said pipe opens into the chamber. The induction-pipe projects into the receiver so that the outlet of fluid from said pipe is near the upper end of the receiver or above the part of the receiver to which it is secured. An opening is formed in the receiver A, in the present case, in the bottom thereof, for the discharge of dirt, sediment, &c., and when the filter is in use, said opening is closed by a suitable plug or fastening, F.

The operation is as follows: If water is to be filtered, the apparatus may be attached to a hydrant or other place of supply under pressure. The fluid is first admitted into the receiver A, and fills the space surrounding the filtering-chamber. It then filters through the jacket C, and passes through the perforations *a a* into the chamber B, which will be found to contain clear or pure fluid, which is discharged through the pipe E, to which may be applied a nozzle or faucet for conveniently drawing off the filtered fluid. The impure or unfiltered fluid circulates freely around the chamber B, and the pressure is such that the water must be forced into the chamber B through the jacket C, the dirt and other impurities remaining on the outer surface of the jacket or in the receiver A, and readily removable by withdrawing the plug F, then turning water into receiver, which will wash the jacket and receiver, and cause the dirt, &c., to flow out of the receiver through the opening from which the plug was removed. By means of the induction-pipe projecting into the receiver, the weight of fluid in the latter does not press on the fluid as it rises in the induction-tube, so that the pressure or power of the fluid is retained. Dirt and sediment cannot return through the induction-pipe nor clog the same.

If desired, the fluid may be admitted into the filtering-chamber B, which then becomes

the receiver, and filter into the casing A, but the operation will be the same as that heretofore explained, only in reverse order. The filtering apparatus may be placed in a horizontal, vertical, or oblique position, but in either case the result will be as stated.

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

A filter consisting of the closed receiver A, perforated casing B, filtering-jacket C, and the induction and eduction pipes, combined and operating together, substantially in the manner and for the purpose set forth.

The above signed by me this 15th day of April, 1872.

F. J. DELKER.

Witnesses:

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