

(No Model.)

J. H. KOLTHOFF.
CISTERN FILTER.

No. 581,740.

Patented May 4, 1897.

Fig. 1.

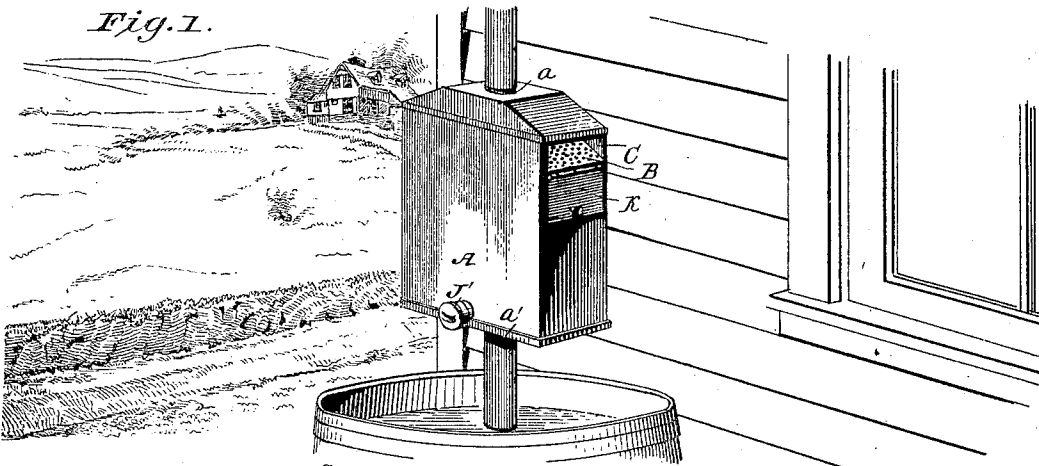


Fig. 2.

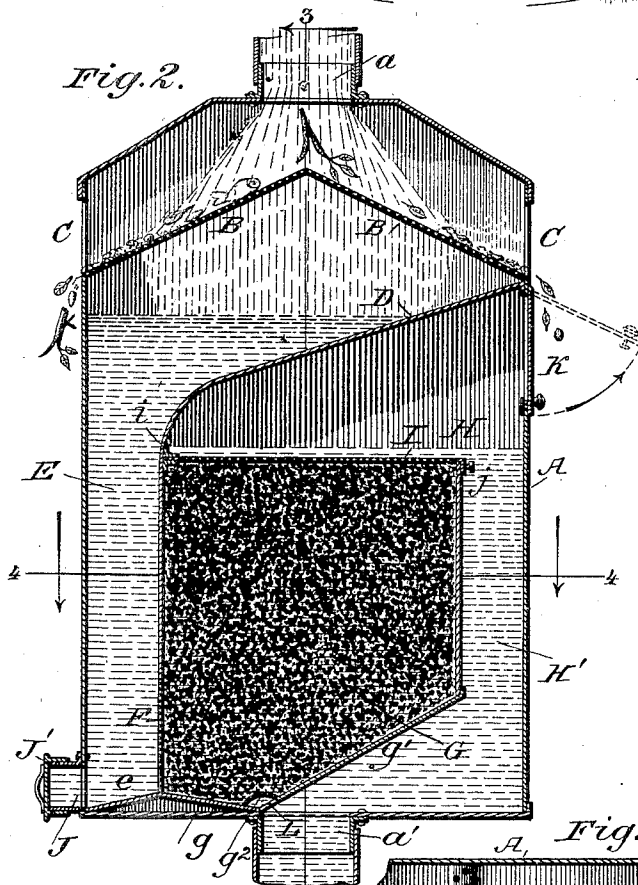


Fig. 3.

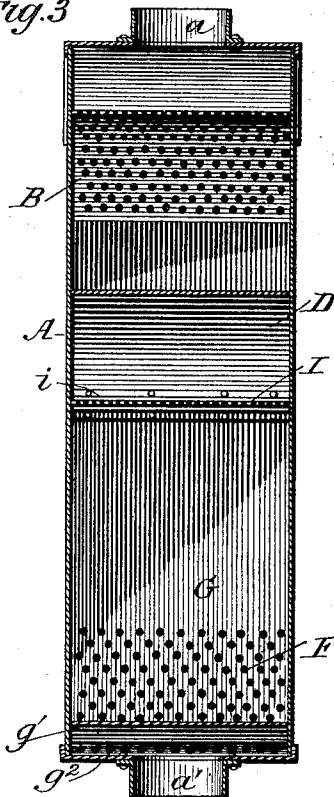
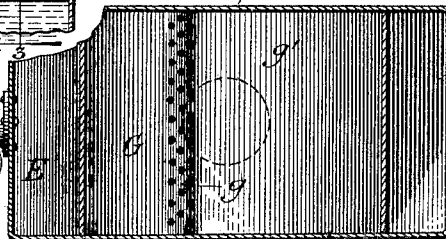


Fig. 4.



WITNESSES:

H. J. Dieterich
J. Edw. Luckett

INVENTOR
J. H. Kolthoff

BY
O'Meara & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN H. KOLTHOFF, OF LAFAYETTE, INDIANA.

CISTERN-FILTER.

SPECIFICATION forming part of Letters Patent No. 581,740, dated May 4, 1897.

Application filed December 2, 1895. Serial No. 570,822. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. KOLTHOFF, residing at Lafayette, in the county of Tippecanoe and State of Indiana, have invented a new and Improved Cistern-Filter, of which the following is a specification.

My invention primarily has for its object to provide a cistern-filter of a simple and inexpensive construction which can be easily placed in position and which will effectively serve for its intended purposes.

My invention also has for its object to provide a filter of the kind stated which can be easily cleaned without disconnecting it from the spouting.

With other minor objects in view the invention consists in the peculiar combination and novel arrangement of parts, such as will be first described in detail, and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved filter, showing the same in position for use. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a transverse section of the same, taken on the line 3 3 of Fig. 2, looking in the direction indicated by the arrow. Fig. 4 is a horizontal section of the same, taken on the line 4 4 of Fig. 2, looking in the direction indicated by the arrow.

In its practical construction my improved filter comprises a casing A, formed, preferably, of No. 27 galvanized iron and of rectangular shape, as shown most clearly in Fig. 4, the upper end having an inlet *a* and the lower end an outlet *a'*, which connects with the rain-spout, as most clearly shown in Fig. 1.

B indicates a strainer-plate, which may be perforated or in the nature of a wire screen, which extends longitudinally across the casing and is formed of inclined sections which serve to discharge all leaves, trash, dead birds, insects, &c., out through the openings C in the ends of the casing, as shown.

D indicates an inclined bottom member disposed under the strainer B, which deflects and causes the water as it passes through the said strainer to flow into a vertical water-space E, which extends to the bottom of the casing and communicates at the bottom with

the filtering-chamber G through a screened opening F.

The filtering-chamber, which contains a suitable filtering material, such as charcoal, extends up to a point near the inclined bottom, its open top being covered by a screen-plate I, which is detachably secured in position by any suitable fastening means, such as, for instance, the plates *i* and the thumb-nut *j*, as shown, whereby the said plate can be readily removed when it is desired to clean the filtering-chamber, the end of the casing adjacent the upper end of the filtering-chamber having a swinging door K to admit of access to the said chamber.

By reference to Fig. 2 it will be seen that the chamber G has a long inclined bottom portion *g'* and a short inclined bottom portion *g''*, the meeting ends of which terminate at a longitudinal opening L, covered by a screen-plate *g''*, the purpose of which will presently appear.

It will be noticed by reference to the aforesaid Fig. 2 that the short wall of the filtering-chamber does not extend the full width of the casing A, such construction providing an overflow-channel H', through which the filtered water passes to the outlet *a'*.

J indicates an outlet at the lower end of the water-space E, which is normally held covered by a cap-plate J', such opening being provided to clean out or drain the space E of any sediment which may collect at the bottom of the space E, and to facilitate such draining operation the said bottom is dished, as shown at *e*.

The manner in which my improved filter operates is best explained as follows: The rain-water as it enters the inlet at the top passes through the screen B onto the inclined bottom D, the trash, dead birds, &c., passing out at each end of the casing through the openings C. The water as it passes down the space E enters the filtering-chamber at the bottom through the screened opening F and percolates through the charcoal and passes up through the screen I out into the water-channel H' and then out through the outlet at the bottom of the casing.

It is manifest that by providing the small screened outlet L at the bottom, which dis-

charges direct into the outlet-pipe, the filtering-chamber will drain off through such outlet after each rain, the dished or inclined portions *g* and *g'* of the bottom of the said chamber 5 serving to effect a positive draining operation.

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

1. A cistern-filter comprising a casing having an inlet and outlet pipe, discharge-openings in the sides of casing near the upper end, a separating-screen directly beneath the inlet-pipe, adapted to deflect the trash, &c., through the said openings, a foul-water space 10 below the separating-screen at one side, a clean-water space at the other side, and a filtering-chamber centrally located therein, having screen inlet and outlet portions communicating respectively with the foul and the 20 clean water spaces, substantially as shown and described.

2. In a cistern-filter of the kind described the combination with the casing A, having an inlet-opening *a* at the top and an outlet- 25 opening *a'* at the bottom and openings C in the upper end thereof, of the deflector and

separating-plate B arranged within the casing just below the inlet-pipe, the filtering-chamber G, having screen portions F L and I, and the water-spaces E and H' all arranged 30 substantially as shown and described.

3. The combination with the casing A, and the separating-screen B within the casing, of the filter-chamber G, the water-spaces E and H' said space E having an inclined bottom D 35 extended over the clean-water space and the filtering-chamber substantially as shown and described.

4. In a filter as described the combination with the foul-water space E and the clean- 40 water space H', the outlet *a'* and the screen-opening F, of a filtering-chamber G having a screen outlet L at the top through which the bulk of the water discharges and a small screen outlet at the bottom opening direct 45 into the outlet *a'*, for draining off the filtering-chamber as set forth.

JOHN H. KOLTHOFF.

Witnesses:

J. B. SHAW,

HIRAM RUSSELL.