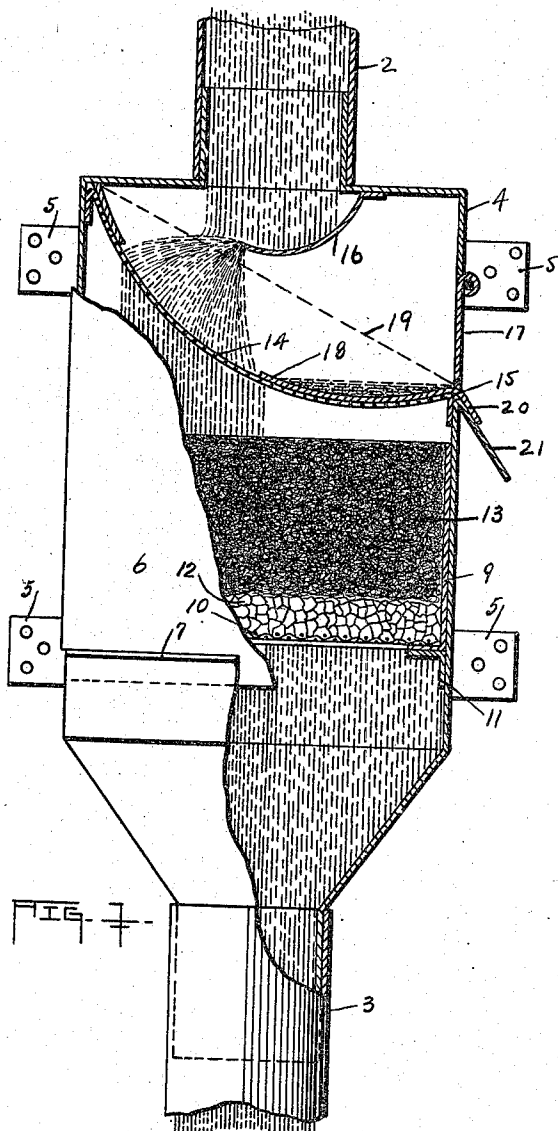
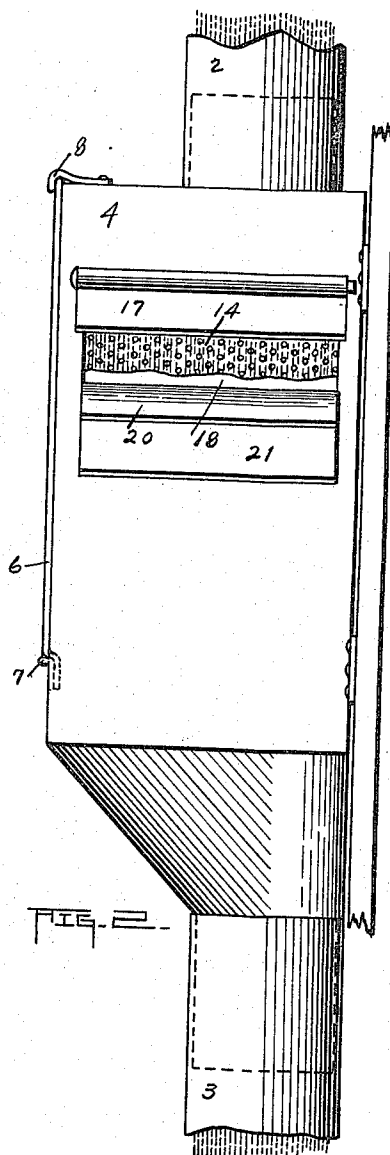


M. H. DOTY,
 FILTER.
 APPLICATION FILED AUG. 18, 1915.

1,177,174.

Patented Mar. 28, 1916.



WITNESSES:-

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UNITED STATES PATENT OFFICE.

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FILTER.

1,177,174.

Specification of Letters Patent.

Patented Mar. 28, 1916.

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To all whom it may concern:

Be it known that I, MARK H. DOTY, a citizen of the United States, residing at Hanna City, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Filters, of which the following is a specification.

My invention relates to certain new and useful improvements in cistern filters and more particularly to devices serviceable for proper deflection and discharge of refuse as leaves and the like, from the filter housing in advance of the discharge of the water to the filter proper.

It also includes a cut-off to intercept the flow of water to the filter under the circumstances of the cistern being full.

The structure to which I apply my improvement comprises a housing member interposed in the pipe connection between the water supply and the cistern containing the filtering materials, as charcoal, sponge and the like, or both, and my improvement comprises a perforated partition interposed in the housing and between the inlet thereinto and the filtering material, also an exit opening in one side of the housing to which the partition member inclines and deflects foreign matter, as leaves and the like, under normal conditions of use. It also includes a hinged closure member for said opening disposed in a manner to permit, and adapted to swing, outwardly to open said outlet under pressure of material or water passing thereto.

My invention also includes a supplemental non-perforated partition adapted to be inserted and to overlie the perforated partition under circumstances of a desire to interrupt the flow of water to the filter material, and serves as a cut-off to discharge the water through the opening in the side of the housing.

My invention also includes a deflector member interposed between the inlet to the housing and the partition to cause the water to be discharged at or near one side of the container.

Referring to the drawings—Figure 1 is a front elevation of my invention with parts broken away to show the interior arrangement and construction of parts; Fig. 2 is a side elevation of my invention, showing a hinged closure member raised from its closed position, and also showing an interior cut-

off member broken away to disclose a perforate member.

Referring to the drawings, 2 and 3 indicate ordinary pipe connection leading to a cistern.

4 is a housing which is made of sheet metal and which I have shown in rectangular form somewhat larger than the size of the piping. However, this container may be made in any form or shape desired. I have provided attachment members 5 to aid in attachment for support of the housing, also I have provided an openable door member 6 which is seated on shouldered member 7 and attachable or is secured at its upper end by means of yieldable clip member 8 which clip may be raised to allow the door 6 to be opened. While I have shown this door secured by clip member, yet it may be made to slide in ways at the sides for the opening, if desired.

A box 9 is adapted to be disposed or placed within the container 4, the same being provided with a screened or perforated bottom member 10. This box 9 is supported upon bracket members 11, fixed to each side wall of container 4. This box in practice is designed to be filled or partially filled with filtering material. In this instance I have shown the box to contain charcoal as 12 and sponge material 13. Above the box member 9 I have provided a perforated partition member 14 preferably formed in arc shape as shown, said partition being inclined toward one side of the container and is designed to be fixed at its upper end in substantially the position shown, that is, one end at or near the top of container 4, and at the lower end at its juncture with the lower edge of an opening as 15 at one side of said container, such inclined disposition being made to facilitate the deflection of materials toward said opening 15 and the downward curvature of the partition and the slight elevation at the discharge end above the lowest point of curvature to prevent too precipitate a flow of water discharged upon the partition toward the opening 15. I have also provided the deflector member 16 fixed at one side of the inlet into housing or container 4, preferably being curved in general form and extending partially across the inlet opening and toward the upper end of partition member 14. This deflector member is provided to direct and concentrate de-

livery of water within the container 4 and to deflect it and in a sense spray it toward and upon the upper end of perforated partition 14 so that water so caught will be deflected downwardly and its flow distributed throughout practically the entire surface of said filtering material, thus aiding, generally, filtration. Also the deflection of the water toward the upper end of partition 14 will also aid the proper deflection of foreign matter, as leaves, as such foreign matter being thrown to partition member at the upper portion of the inclination will, through the action of the water passing down the incline of said partition, be given considerable momentum, sufficient generally to cause the leaves to be discharged through opening 15.

In connection with the discharge opening 15 I have provided the hinged flap or door 17 which will open under pressure and close when such pressure is removed.

I have provided a partition 18 which I have hereinbefore spoken of as a cut-off. This partition has a similar curvature to that of perforated partition 14 and is of the same form as said partition 14 and is adapted to overlie the latter when used. In Fig. 1 a portion of the partition 14 has been broken away, similar to the showing in Fig. 2, but in practice this partition will be continuous from end to end. This partition 18 is provided with an end wall member 19 shown in dotted lines in Fig. 1 which serves to give it a trough-like form at its side next to the door member 6. In practice such a side wall member may be provided if desired, at each side of said partition. The partition is also provided with a downwardly extending member 20 which is designed when the partition is inserted within compartment 4, to extend through opening 15 and overlie the downwardly inclined apron member 21 that extends from the side wall of housing 4. This partition 18 is designed to be used only as a cut-off to cause

the water flowing through the connection to be discharged from opening 15, to prevent its entrance into the cistern. Under normal conditions of use of the filter, this partition is removed.

I have shown herein one form of my invention for the purpose of illustrating the principle of operation. I do not, however, wish to be confined to detail form of parts herein shown but claim generally all forms and combinations of parts that come within the principle herein disclosed.

What I claim is:

In a device of the class described, in combination, a housing member provided with a removable side wall, an inlet opening at its top, a main discharge opening in its bottom, and an auxiliary discharge opening in one of its fixed sides, a filter material container fitting snugly within the housing below the auxiliary outlet and adapted to be inserted and withdrawn through the removable side wall, a curved perforated partition extending across the housing from the auxiliary outlet and inclined downwardly toward the same, the end of said partition adjacent said outlet having an upward curvature to retard the flow of water through the outlet, a fixed deflector in the housing below the inlet opening to direct incoming unfiltered water toward the higher end of the perforated partition that it may pass downwardly over the same, a hinged door normally closing the auxiliary discharge but capable of swinging open under internal pressure, and removable means for insertion in the housing over the perforated partition to direct all the water outwardly through the auxiliary discharge.

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

MARK H. DOTY.

Witnesses:

I. N. WATSON,
O. J. KELLY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."