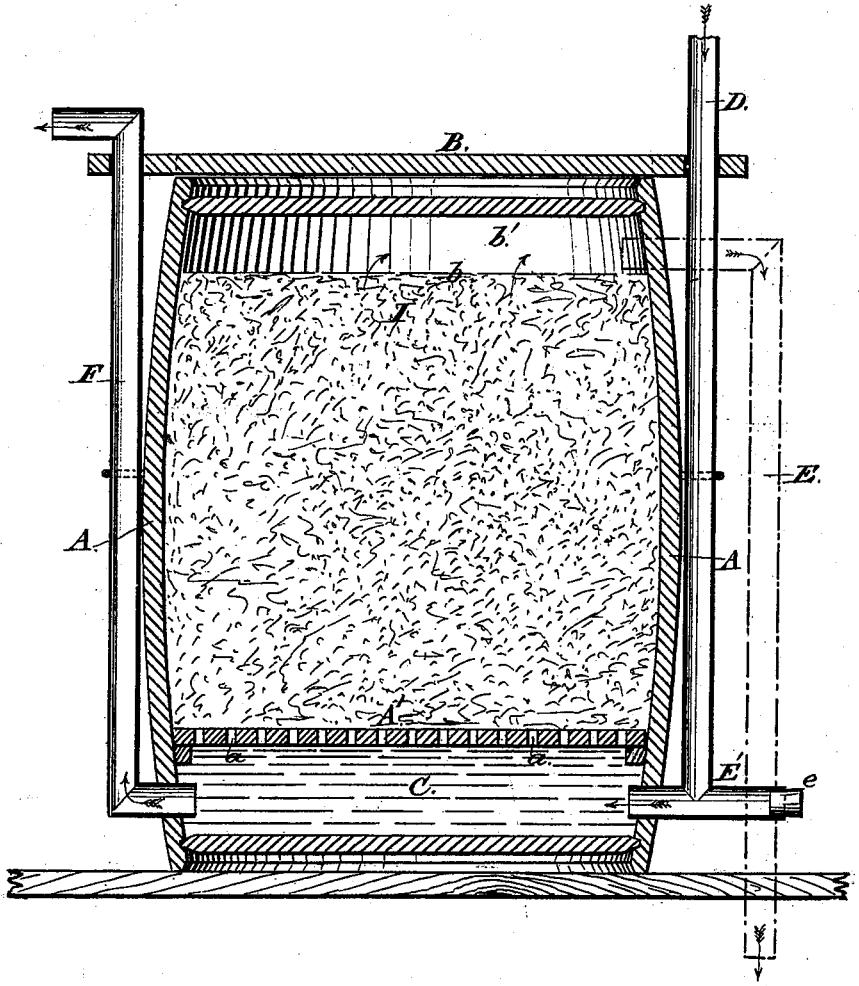
V. A. GATES.
Cistern-Filter.

No. 210,113. Patented Nov. 19, 1878.



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UNITED STATES PATENT OFFICE.

VIRGIL A. GATES, OF CHARLESTON, WEST VIRGINIA.

IMPROVEMENT IN CISTERN-FILTERS.

Specification forming part of Letters Patent No. **210,113**, dated November 19, 1878; application filed October 29, 1878.

To all whom it may concern:

Be it known that I, VIRGIL A. GATES, of Charleston, in the county of Kanawha and State of West Virginia, have invented a new and useful Improvement in Cistern-Filters, which improvement is fully set forth in the following specification and accompanying drawing.

The object of my invention is to filter rain-water descending from a roof to a cistern, so as to remove therefrom, before it enters the cistern, all soot, dust, and other impurities, by means of a self-cleansing filter.

In the accompanying drawing, A is a vertical section of a filtering-cask, having a perforated false bottom, A′, placed a little above its bottom proper, so as to leave a water-space, C, between the two, which false bottom is provided with numerous perforations, *a a*. The cask is to be filled with any suitable filtering material to near its top, as shown by dotted line *b*, leaving a water-space, *b′*, between it and the cover B. The cover should fit the top of the cask tightly, and be secured thereon by any suitable means.

D is an induction-pipe, which conducts the water descending from the roof into the water-space C under the perforated false bottom, and E is an eduction-pipe, for conveying the water to the cistern after it has passed up through the false bottom and the filtering material.

F is an overflow-pipe, for conveying off surplus water during a copious fall of rain. When more water descends from the roof than can rise up through the filtering material the head water in the pipe D will cause a strong current to flow through the chamber C and up the overflow-pipe F, carrying off all sediment that may have collected in said chamber C.

For more thoroughly washing out impurities which may have collected in the filtering material, the pipe D may be provided with a swivel-joint or other equivalent means for conducting the water from the roof directly into the top of the cask, through an orifice to be opened in the cover thereof for that purpose, and an additional eduction-pipe, E′, to be closed by a plug, *e*, may be provided, to discharge the water directly from the chamber C. When the pipe D is turned so as to conduct the water from the roof into the top of the cask, the current through the filtering material will be reversed, and will carry down any impurities that may have lodged in the filtering material and out through the overflow-pipe F, or through the eduction-pipe E′, if such a pipe is used. It is manifest that said eduction-pipe E′, with its plug *e*, may be placed at the lower end of the pipe F, or be inserted anywhere in the lower part of the cask, so as to connect with the chamber C.

I have shown in the drawing and described above a filtering-cask set above the ground. It is manifest, however, that it may be set down in the ground with the same effect, except that the eduction-pipe E′, with its plug *e*, could not then be used; but I do not regard this as very important, inasmuch as the overflow-pipe F will perform the same function nearly as well.

It is also manifest that the pipes D, E, and F may all or any of them be placed inside of the cask instead of outside, and when the cask is set into the ground that will be preferable.

It is also manifest that the filtering-chamber, especially when set down in the ground, need not be a wooden cask, as any kind of a water-tight chamber may be used.

I can utilize the old-fashioned underground filter by providing a support for the false bottom, which may be done by laying a course of brick around its bottom, or by other suitable means.

What I claim as my invention is—

The receptable A, for containing the filtering material, the perforated false bottom A′, with the chamber C below it, the induction-pipe D, for conducting water from the roof into the chamber C, the eduction-pipe E, for conducting water from above the filtering material to the cistern, and the overflow-pipe F, all constructed, combined, and arranged to operate substantially as described.

VIRGIL A. GATES.

Witnesses:

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