W. L. CARTER.

VENTILATING DEVICE FOR CISTERNS.

APPLICATION FILED MAY 24, 1912.

1,080,137.

Patented Dec. 2, 1913.

Fig. 1.

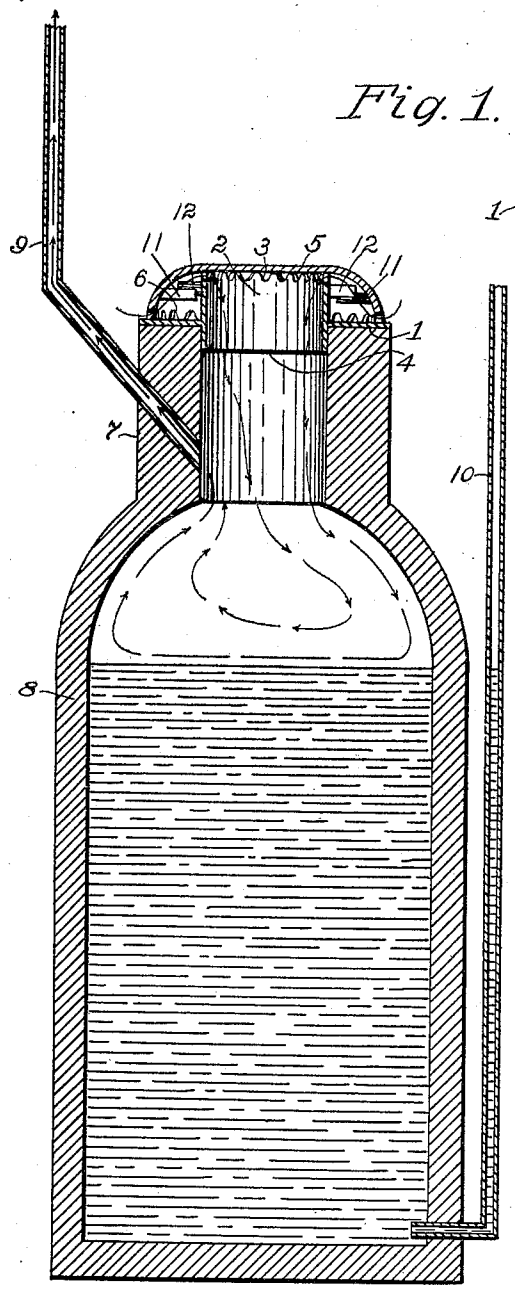


Fig. 3.

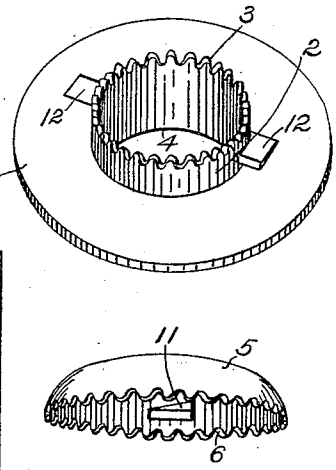


Fig. 2.

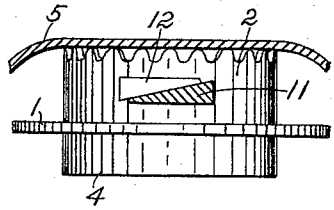


Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

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VENTILATING DEVICE FOR CISTERNS.

1,080,137. Specification of Letters Patent. Patented Dec. 2, 1913.

Application filed May 24, 1912. Serial No. 699,477.

To all whom it may concern:

Be it known that I, WILLIAM L. CARTER, a citizen of the United States of America, and a resident of Waterloo, Blackhawk county, Iowa, have invented certain new and useful Improvements in Ventilating Devices for Cisterns, of which the following is a specification.

My invention relates to improvements in ventilating devices for cisterns, and the object of my invention is to supply covering-means for cistern-heads which will permit of a circulation of fresh air therethrough and into the cistern, to properly ventilate same and purify the water therein, to prevent its fouling, said means comprehending trapping means for dust or other contamination, with detachable securing means for the removable dome or cover of the device. This object I have accomplished by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of the flanged rim of the cistern with its engaging-means for the cover. Fig. 2 is a perspective view of the domed cover of the cistern. Fig. 3 is a vertical transverse central section of a cistern supplied with my improved ventilating device. Fig. 4 is a detail side elevation of the flanged rim of the said device, with a broken part of the domed cover resting thereon in position, showing the frictionally engaging interior lugs of said flanged rim and said cover in engagement, with the hitherward lug of the cover in vertical section, and parts of said flanged rim broken away.

Similar numerals of reference denote corresponding parts throughout the several views.

My improved ventilating device for cisterns comprises a rim-plate 1 of circular or annular form resting upon the cylindrical head 7 of the cistern 8. Said plate has oppositely-directed vertical annular flanges 2 and 4 forming a cylindrical body, of which the lowermost part 4 engages the inner wall of the cistern-head, while the upper part 2 projects upwardly terminating with a scalloped edge 3. A domed cover 5 encompasses and rests upon the scallops of said flange 2, with its lower edge which is scalloped at 6 resting upon the plate 1 and spaced apart from the flange 2 at its sides.

The numeral 12 denotes lateral projections on opposite outer walls of the flange 2, and which have their lower faces beveled or obliquely inclined helically, while upon the inner face of the domed cover 5 are counterpart projections 11, with similarly inclined upper faces. When the cover 5 is superposed upon the flange 2 and rotated in one direction, the inclined faces of the projections 11 on said cover will pass under and frictionally engage the under similarly inclined faces of the projections 12 on the flange 2, and thus form a detachable securing engagement between said lugs which will prevent displacement of the cover from the flange by any other means than an opposite rotation of the cover, and thus prevent children or others removing the cover easily.

The cistern is provided with the usual water inlet-pipe 9, and also with a pump-tube 10.

The spaces between the scallops 6 of the cover 5 and the abutting plate 1, as also the like spaces between the scallops 3 of the flange 2 and the said cover, permit air to pass therethrough from the outside into the cistern to circulate above the water surface therein as is indicated by the arrows in Fig. 3. As will be observed by referring to said Fig. 3, the water inlet-pipe at all times, except when a stream of water is passing down through it, serves as an elevated ventilating pipe for the interior space of said cistern, since the air in summer especially in the upper part of said pipe being warmer tends to rise, which causes an upward draft from the cistern through the pipe, and some consequent indraft of air into the cistern by way of the ports between the cover 5 and the rim-flange 2. In colder seasons, when the cistern contents of water and air are warmer than the atmosphere above, a current will also tend to flow upward through said pipe from the warmer air in the cistern, which keeps the air freely and freshly entering from above to aerate the cistern contents. When water enters the cistern by way of the pipe 9, or when water is withdrawn therefrom through the pump-tube 10, air is displaced above the water-level which creates either an expulsion or indraft of air from the cistern, and aids the air circulation. The fresh air thus supplied helps the oxidation of organic substances in the water, with clearing effect, and the circulation and

outlets provided therefor cause a carrying off of vitiated air or effluvia arising from the water till it is purified.

The flange 2 acts as a trap for dust or other substances entering the ports under the cover scallops 6, so that air may pass quite free from dust into the cistern.

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

The combination with a cistern, of a rim therefor having a laterally directed flange and an upwardly-directed annular flange about its central opening with dentated upper edge, and a cover of domed shape having a dentated depending edge, the cover resting upon the detents of said upwardly-directed rim and having the detents of its depending edge resting upon the said lateral flange and spaced apart from the outer wall of said upwardly-directed flange to provide continuous channels therebetween from the exterior atmosphere to the interior space of the cistern.

Signed at Waterloo, Iowa, this 7th day of May, 1912.

WILLIAM L. CARTER.

Witnesses:
W. H. BRUNN,
GEO. C. KENNEDY.

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