T. B. HARRISON.

Cistern Cut-Off.

No. 167,526. Patented Sept. 7, 1875.

Fig. 2.

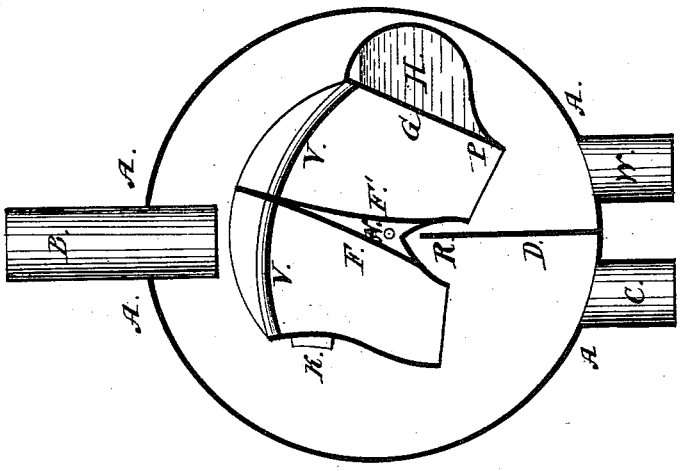
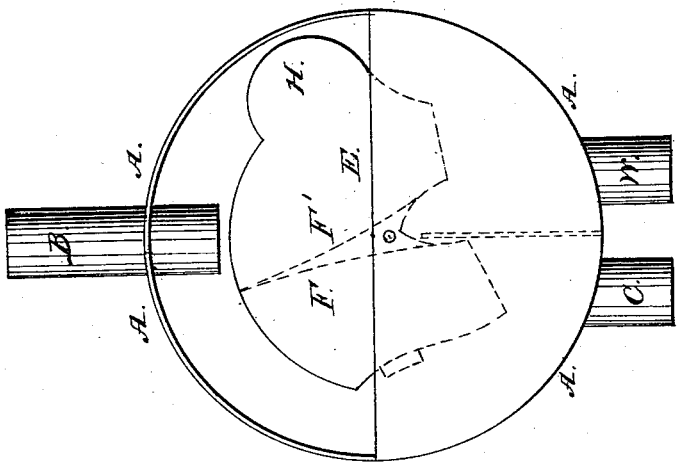


Fig. 1.



Witnesses:

W. H. Keath

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UNITED STATES PATENT OFFICE.

THOMAS B. HARRISON, OF QUINCY, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO SYLVESTER P. BARTLETT, OF SAME PLACE.

IMPROVEMENT IN CISTERN CUT-OFFS.

Specification forming part of Letters Patent No. **167,526**, dated September 7, 1875; application filed July 16, 1875.

To all whom it may concern:

Be it known that I, THOMAS B. HARRISON, of Quincy, in the county of Adams and State of Illinois, have invented a new and useful Improvement in Cistern Cut-Offs; and I declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation, and Fig. 2 a vertical section.

The object of my invention is to provide an automatic cut-off for rain-water cisterns, which will allow the water that first falls upon the roof of the building to pass off into a waste-pipe, and after a sufficient quantity has passed through to thoroughly cleanse the roof it will change the direction of the stream of water from the waste-pipe into the cistern; also, to provide a cut-off of extreme simplicity, the working parts being reduced to a single pivot or bearing.

A represents the outside cylindrical case, which is attached, at B, to the conductor through which the rain-water passes from the roof to the cistern. The back of the case, on its inner surface, and at or near its center, has secured a pin at right angles to it. This serves as a pivot for the working part of the cut-off to turn upon. The case is also provided with a partition reaching from the bottom to within a short distance of the central pivot, shown at D, Fig. 2. This partition divides the lower half of the case into two separate water-tight compartments, one of which communicates with the cistern by means of the conductor-pipe C, and the other with the waste-pipe W. The working part of the cut-off is constructed as follows: The front and back plates are alike in form and size, and are substantially of the shape shown at E, Fig. 1. The front and back plates are joined by side pieces bent to the shape of, and soldered or otherwise secured to, the front and back plates in such a way as to form a species of box open at the top and bottom. It is divided into two separate water ways or spouts, one of which directs the stream of water from the conductor B into the waste-pipe W when the cut-off is in the position shown in Fig. 1, and the other conveys the water from the conductor B into the cistern when the cut-off is in the position indicated in Fig. 2. This division is made by the two plates F and F′. These plates are joined together at their upper ends, but are spread apart at their lower ends, and are curved into cycloid form. In the space between these plates, at a distance of about one-third of the height from the bottom of the cut-off, is the hole to receive the pivot N. The curvature of the plates F and F′ is much greater below the pivot than above, the object being to counteract the force with which the water from the conductor B strikes the surface of the plates F. The cut-off is also provided with a water-tight chamber, H, formed by the partition G. This chamber has a small orifice or outlet at P, and at the top has a larger opening for the purpose of receiving the end of the groove or channel V, which is secured to the back-plate of the cut-off, and extends throughout its entire length, and is bent to conform to the curvature of the top edge of the back-plates. Its use is to convey water into the chamber H. A notch is cut out of the front and back plates, from the bottom upward, in the space formed by the curves of the plates F and F′. (Shown at R, Fig. 2.) This is to allow the partition-plate D to extend upward nearly to the central pivot, upon which the cut-off turns. This perfectly separates the water passing through either of the water-ways, and when the cut-off is rotated on its pivot, the lower part of the notch coming in contact with the plate D, it forms a stop to limit the motion of the cut-off.

The operation of the machine is as follows: When rain begins to descend from the roof of the building through the pipe B, the chamber H being empty, the counter-weight K will bring the cut-off into the position indicated in Fig. 1. The water will pass through the right-hand water-way and be discharged by the waste-pipe W. In the meantime the chamber H is being gradually filled by means of the channel V. As soon as a sufficient weight of water has accumulated in the chamber H to overcome the weight of the counter-weight K and the force of the descending stream of water from B, then the cut-off will rotate through a small arc on the pivot N, and the

other water way or spout will receive the water from the conductor B and deliver it into the cistern through the pipe C. When the rain ceases the chamber H is emptied by means of the small orifice P, and the counter-weight K will bring back the cut-off to its original position.

What I claim as my invention, and desire to secure by Letters Patent, is—

A cut-off, consisting of two water-ways, divided by the plates F and F′, the chamber H, and pivot N, with the pipes C and W, and partition-plate D, the whole combined, arranged, and operating substantially as described.

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Witnesses:
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