

H. L. RUSSELL.
Automatic Cut-Off for Cistern-Leaders.

No. 223,391.

Patented Jan. 6, 1880.

Fig. 1.

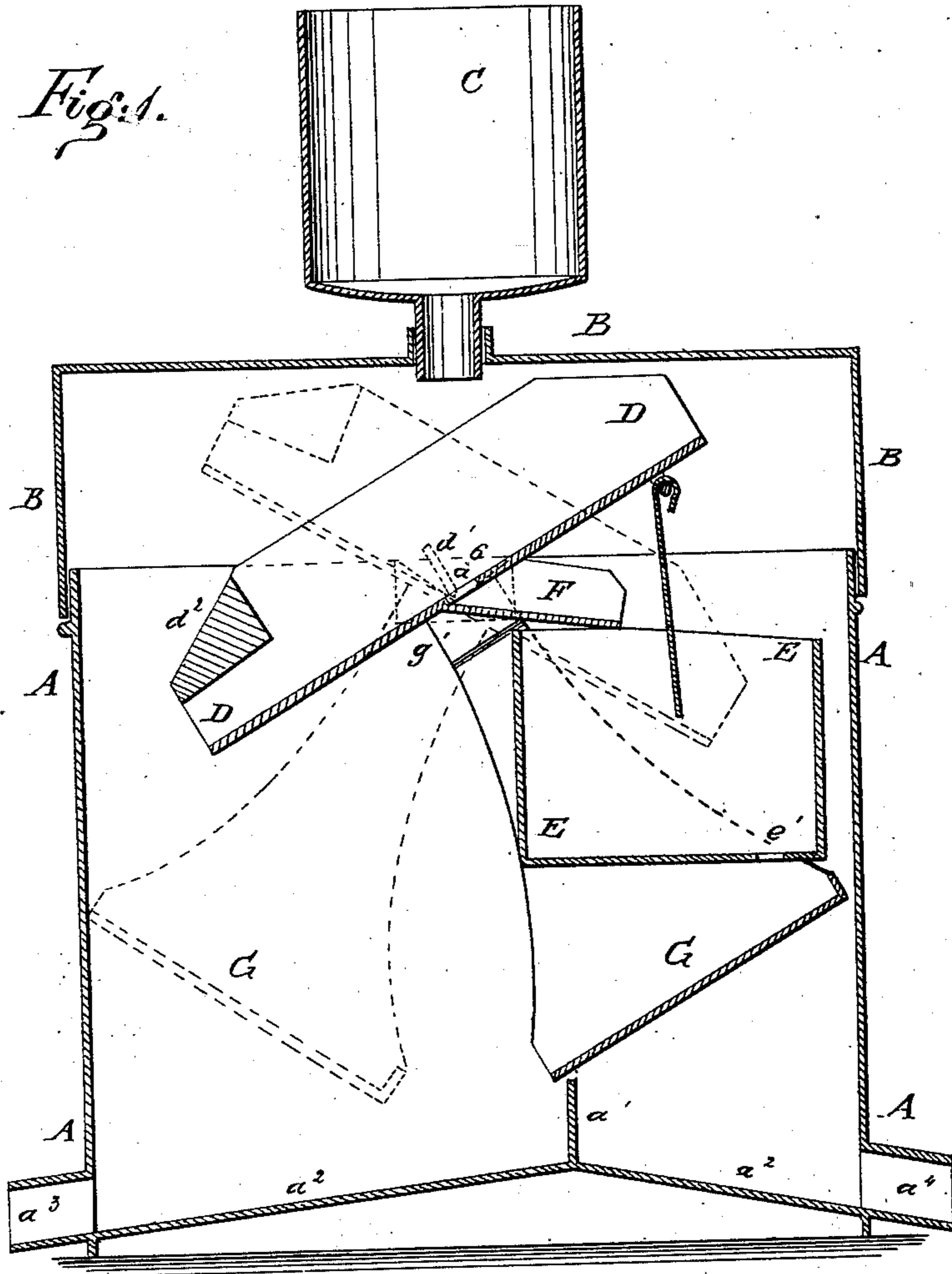
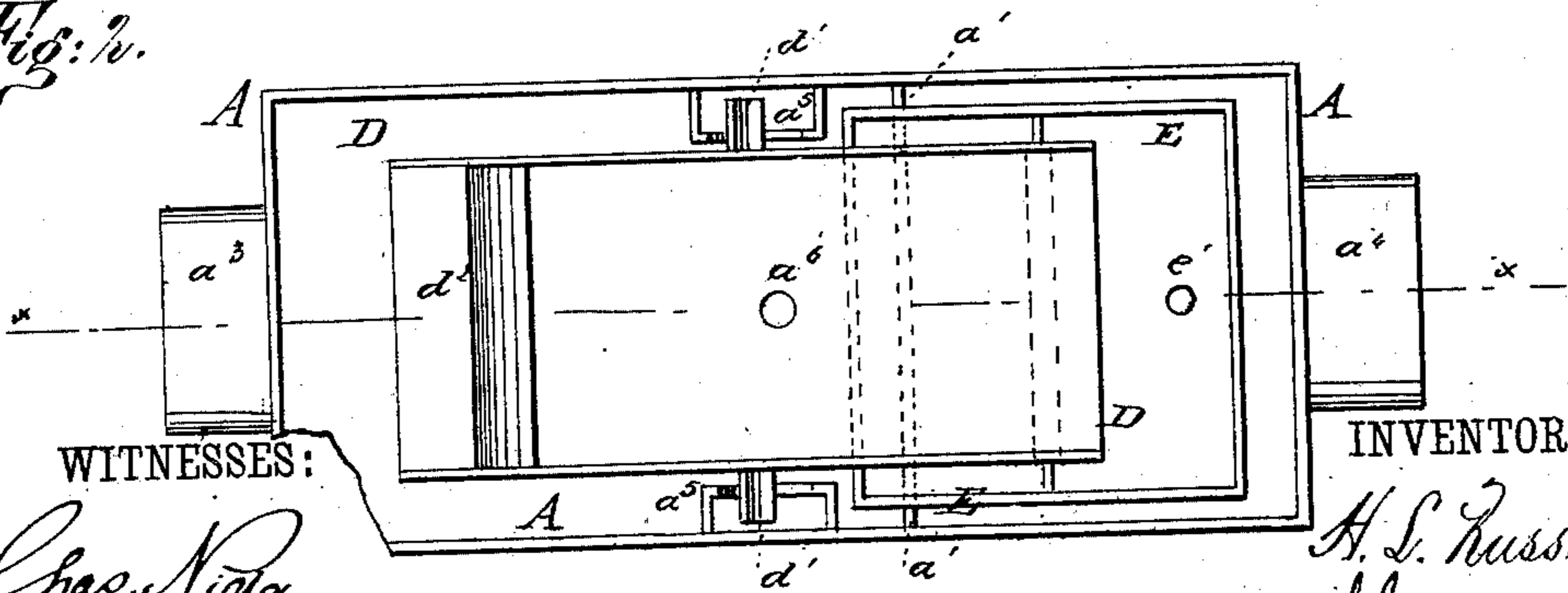


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY L. RUSSELL, OF BLOOMINGTON, ILLINOIS.

AUTOMATIC CUT-OFF FOR CISTERN-LEADERS.

SPECIFICATION forming part of Letters Patent No. 223,391, dated January 6, 1880.

Application filed August 26, 1879.

To all whom it may concern :

Be it known that I, HENRY L. RUSSELL, of Bloomington, in the county of McLean and State of Illinois, have invented a new and useful Improvement in Automatic Cut-Offs for Cistern-Leaders, of which the following is a specification.

Figure 1 is a vertical section of my improved cut-off, taken through the line $x x$, Fig. 2. Fig. 2 is a top view of the same, the cap being removed.

The object of this invention is to furnish an improved device for attachment to the leaders that conduct the rain-water from the eaves-troughs to the cistern, which shall be so constructed as to adjust itself automatically to conduct the first water from the roof into the waste-pipe and the succeeding water into the cistern, to prevent the coal-dust and other dust that may settle upon the roof from being washed into the cistern, and which shall be simple in construction, inexpensive in manufacture, and reliable in use.

The invention consists in the combination of the pivoted trough provided with a weight at one end and a hole in the middle part of its bottom, the suspended bucket having a hole in its bottom, and the two spouts rigidly connected with the pivoted trough, or equivalents, with each other and with the case, having its lower part divided into two compartments by a low partition, as hereinafter fully described.

Similar letters of reference indicate corresponding parts.

A represents the case of the cut-off, which is provided with a cap, B. The lower part of the case A is divided into two compartments by a low partition, a' , from which the bottom a^2 inclines downward toward the opposite sides, so that the water that may enter the said case A may flow out through one or the other of the discharge-spouts $a^3 a^4$, the spout a^3 from the larger compartment leading to the waste-pipe, and the other spout, a^4 , leading to the cistern.

C represents the leader, which is connected with an opening in the middle part of the cap B.

D is a trough, of such a length and breadth as to vibrate freely in the upper part of the case A, and which has pivots d' attached to

the middle part of its opposite sides, which rest and work in bearings a^5 , attached to the opposite sides of the upper part of the case A.

I prefer to make the pivots d' with knife-edges to make the device more sensitive.

To the end of the spout D next the waste-pipe is attached a weight, d^2 , sufficient to hold the said end of the said spout D inclined downward, as shown in Fig. 1. From the other end of the spout D is suspended the bucket E, of such a capacity that when partly filled with water—say about two-thirds filled—it will overbalance the weight d^2 and incline the spout D in the other direction.

To the middle part of the under side of the trough D is attached a small spout, F, directly beneath the small hole a^6 in the middle part of the bottom of the said trough, and in such a position that its outer end may be slightly inclined downward when the weighted end of the trough D is inclined downward, and which projects into such a position that the water falling from its outer end will always fall into the suspended bucket E. In the bottom of the bucket E is formed a hole, e' , which is made smaller than the hole a^6 , so that the said bucket E will gradually fill with water.

To the middle side parts of the bottom of the trough D are rigidly attached the upper ends of the arms g' , which are spread apart, so that the bucket E may swing between them. To the lower ends of the arms g' are attached, or upon them are formed, the sides of a spout, G, which is made of such a length that the weighted end of the trough D is down the upper end of the spout G may be beneath the hole in the bottom of the bucket E, and its lower end may cross the partition a' , so that the said spout G may receive the water from the hole e' and discharge it into the compartment of the case A connected with the waste-pipe.

With this construction, when no water is passing through the cut-off the various parts remain in the positions shown in Fig. 1.

When it begins to rain, the first water, containing the wash from the roof, passes through the trough D into the larger compartment of the case A, and thence into the wash-pipe. At the same time a part of the water that is passing through the trough D passes through

the hole a^6 into the spout F, and thence into the bucket E. A part of the water that enters the bucket E through the hole a^6 escapes through the hole e' into the spout G, through which it flows into the larger compartment of the case A, and thence into the waste-pipe. The hole e' is made smaller than the hole a^6 , so that the bucket E will gradually fill until it becomes sufficiently heavy to overbalance the weight d^2 and tilt the trough D in the other direction. As the trough D inclines in the other direction the water flows from its lower end and from the hole a^6 into the bucket E, the spout G swinging back out of the way, as shown in dotted lines in Fig. 1. The water now flows over the top of the bucket E and through the hole e' into the smaller compartment of the case A, and flows thence into the cistern. When the rain, and consequently the inflow of water, stops, the water gradually escapes from the bucket E until the weighted

end of the trough D overbalances the said bucket and descends, bringing the various parts into the position first described, ready to receive the water from the roof at the next rain-fall.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the pivoted trough D, provided with a weight, d^2 , at one end, and a hole, a^6 , in the middle part of its bottom, the suspended bucket E, having a hole, e' , in its bottom, and the spouts F G, rigidly connected with the trough D, or equivalents, with the case A, having its lower part divided into two compartments by a partition, a' , substantially as herein shown and described.

HENRY LEWIS RUSSELL.

Witnesses:

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J. F. PANCAKE.