No. 855,808. PATENTED JUNE 4, 1907.

H. PRICE.

AUTOMATIC CUT-OFF.

APPLICATION FILED DEC. 15, 1906.

Fig. 1.

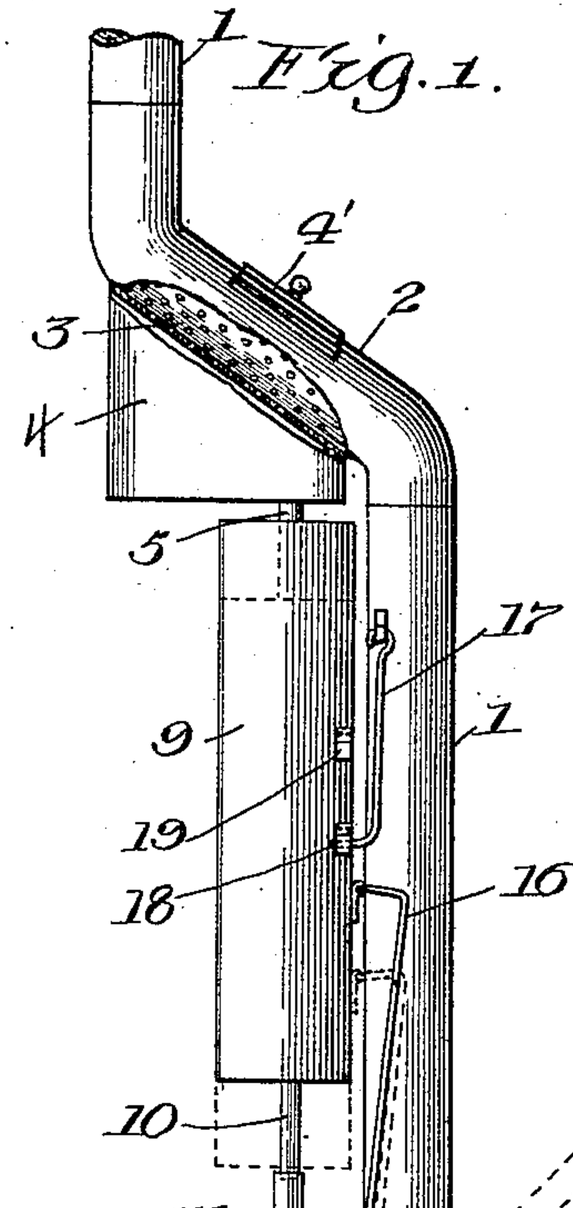


Fig. 2.

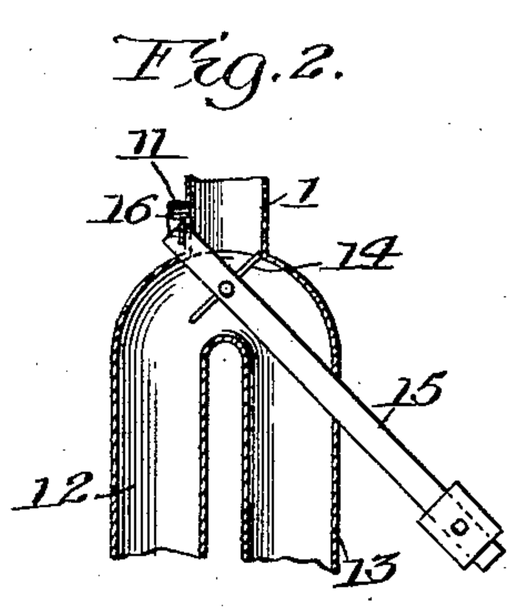
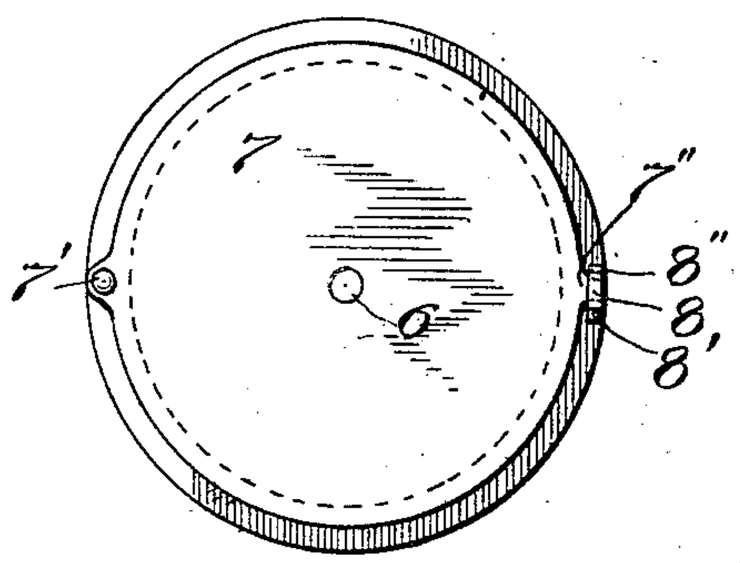


Fig. 3.



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HENRY PRICE, OF ELIZABETH, ILLINOIS.

AUTOMATIC CUT-OFF.

No. 855,808. Specification of Letters Patent. Patented June 4, 1907.

Application filed December 15, 1906. Serial No. 347,916.

To all whom it may concern:

Be it known that I, HENRY PRICE, a citizen of the United States, residing at Elizabeth, in the county of Jo Daviess and State of Illinois, have invented a new and useful Improvement in Automatic Cut-Offs, of which the following is a specification.

My invention relates to devices for taking rain water from the roofs of buildings and conducting it to a cistern or reservoir freed from dust and roof impurities.

Devices for this purpose which have been operated and set by hand have been in common use. Filters also have been used through which to pass the water and remove the impurities therefrom, but such collected impurities remain in the filter causing it in time to become a more dangerous source of pollution than if no cleansing device were used.

It is the object of my invention to provide a simple, cheap, and durable device by which the desired results may be attained.

My device takes the water from the down-spout until a considerable flow has taken place, and turns it into the waste pipe. It then automatically shifts the valve to discharge the water into the cistern or other receptacle, directing the entire flow during the continuance of a rain, and then automatically shifts the valve again to the waste discharge position.

The principles of my invention are illustrated in the drawings, in which—

Figure 1 shows a side elevation of my device partly in section; Fig. 2 is a sectional view representing the valve arrangement. Fig. 3 represents an enlarged plan view of the cover of the weighted or balancing cylinder.

Referring further to the drawings, 1 represents a down pipe adapted to be connected to the eaves of the collecting roof. 2 is a diagonally disposed portion of the down pipe having a screen 3 in the lower part, 4 is a chamber adapted to receive the water which may pass through said screen, and 4′ is a covered hand hole in the portion 2 by which any foreign substances may be removed from the screen. A tube 5 is attached to the lower part of said chamber 4, and passes through the opening 6 in the cover 7 of a balanced tank or reservoir 9. The pipe 5 thus acts as a guide to the vertical movement of the tank 9. The said tank is further provided with a discharge tube 10, in the bottom thereof, somewhat smaller in diameter than the tube 5 by which the water enters. The relation of the sizes of the inlet and outlet pipes 5 and 10 to each other should be such that the inflow will exceed the outflow to a sufficient extent to cause the tank to fill, but not to overflow during the time required to permit the foreign matter to be washed from the roof, the pressure of the amount of water retained in the tank being enough to force any surplus through the lower and small opening.

Attached to the vertical portion of the down-spout so as to discharge therein, is an elbow 11, into the vertical portion of which the discharge pipe 10 is slidably inserted, thus forming a guide at the lower end for the vertical movements of the tank. The down-spout is bifurcated below the said elbow, one of the arms 12 adapted to be connected with a sewer, while the arm 13 is adapted to be connected with a cistern or storage tank. Pivoted in the portion of the down-spout between its union with the discharge pipes and the dividing line between them, is a damper or valve 14 whose shaft may be attached to a weighted lever 15 substantially at right angles thereto. The normal position of these parts when adapted to receive and discharge the polluted water into the waste pipe is shown by full lines in Figs. 1 and 2. A connecting rod 16 is pivoted at one end of the lever 15 and at its other end is attached to the balancing cylinder or reservoir. A hook 17 may be attached to the down-spout and adapted to engage the loops 18 or 19 on the said reservoir when it may be desired to lock the same in either its upper or lower position. Ordinarily, however, this hook will be left disconnected. A convenient form of reservoir cover may be provided as shown in Fig. 3, in which the cover shown is pivoted at 7′ to the body of the tank while a lug 7″ projecting from the opposite side of the cover is adapted to be engaged by a spring clip 8 secured to the top of the reservoir 9 the latter having a free end 8″.

It will appear that when the several parts of my apparatus are in their normally disposed positions, there will be a direct passage from the roof through the down-spout to the bifurcated portion, at which point the flow will be directed into the waste arm 12. As the water begins to flow it passes over the screen 3, at which point any gross impurities will be diverted and washed over the screen directly into the waste pipe 12, while the principal portion of the water will drain

through the screen into the chamber 4, from which it passes into the balanced bucket or tank 9 through the tube 5. The flow is continued through the tank and out at the tube 10, from which, through the elbow 11, it is discharged into the lower part of the down-spout 1 and thence into the waste arm 13 leading therefrom. But as the outlet pipe 10 is of less capacity than the inlet pipe 5 the reservoir 9 will gradually fill with water, thus overcoming the weighted lever 15, and causing the same, together with the valve 14 and attachments, to assume the positions shown in the dotted lines with the valve 14 set to direct the flow into the branch 13. The flow of water through the reservoir will continue while the apparatus is in this position, and the surplus will flow through the lower part of the down-spout, but both currents will be discharged above the valve, and saved, by being turned into the cistern.

It will be noted that there is a constant flow through the balanced bucket, but that prior to the operation of the valve, all the washings of the roof are turned into the wastage, while as soon as the flow has continued sufficiently long to cleanse the water shed the entire flow from the roof is directed into the cistern.

I claim and desire to secure by Letters Patent the following:—

1. In a device of the class described, a down-spout having an inclined offset and branched at the lower end, a screen in said offset, a valve operating to alternately divert the water into said branches, a weighted lever connected to said valve to hold the same normally in one position, a receiver connected to said down-spout in position to receive the flow through said screen, a relatively large discharge pipe leading from said receiver, an elbow pipe connected into said down-spout above said valve and with one branch vertical, a tank slidably engaging the discharge pipe of said receptacle, a relatively small discharge pipe leading from said tank and slidably engaging the vertical branch of said elbow pipe, and a connecting rod between said tank and weighted lever.

2. In combination with a down spout having an inclined off-set, and branched at its lower end, a screen located in the off-set, a tank disposed to receive water from said screen, a valve arranged to normally direct the flow of water through the down pipe into one of said branches, a yieldingly mounted tank, an outlet tube carried by the first mentioned tank and extending into said yieldingly mounted tank, a discharge pipe carried by the lower end of said yieldingly mounted tank, an elbow with which said discharge tube slidably engages, and means connecting the yieldingly mounted tank with said valve whereby when the said yieldingly mounted tank is depressed it will overcome the normal inclination of the valve.

3. In combination with a down pipe having an inclined off-set, and branched at its lower end to form a waste discharge and cistern discharge, of a valve carried by the down pipe, means connected to said valve for normally positioning the same to direct the water from the down pipe into the waste discharge, a screen located in said inclined off-set of the down pipe, a tank positioned to receive water from said screen, an outlet tube carried thereby, an elbow pipe connected to and communicating with the down pipe near the valve in the latter, a tank slidable on said outlet tube of the first mentioned tank, a discharge pipe extending from said tank, the said discharge pipe being of less diameter than the outlet tube from the first mentioned tank, and means connecting said tank with said valve whereby when the tank is depressed the position of the valve is changed to permit the flow of water into the cistern.

4. In combination with a down spout branched at its lower end to form a waste discharge and a cistern discharge, and having intermediate its ends an inclined off-set, a screen arranged in said off-set, a tank disposed to receive water from said screen, an outlet tube for said tank, a yieldingly mounted tank slidable on said outlet tube, a discharge tube carried by the lower end of said yielding mounted tank and being of less diameter than the outlet tube of said first mentioned tank, an elbow connected to the down pipe adjacent the branch end thereof and receiving said discharge tube of the yielding mounted tank in slidable engagement, a valve disposed in the down pipe to normally direct the flow of water from said down pipe to the waste discharge branch, a weighted lever normally holding said valve so disposed, and a rod pivotally connected to said lever at one end and at its other end connected to the yieldingly mounted tank whereby when the latter is depressed the weighted arm will be actuated and the position of the valve altered to direct the flow of water from the down pipe into the cistern discharge branch.

In witness whereof, I have hereunto set my hand, this 11th day of December, A. D. 1906, in the presence of two subscribing witnesses.

HENRY PRICE.

Witnesses:
HENRY WILEY,
DAVID HAIG.