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by

Attorneys
AUTOMATIC WATER-CUT-OFF SPOUT.

SPECIFICATION forming part of Letters Patent No. 769,314, dated September 6, 1904.

Application filed February 25, 1904. Serial No. 195,304. (No model.)

To all whom it may concern:

Be it known that I, Jethro Moore Hill, a citizen of the United States, residing at Marissa, in the county of St. Clair and State of Illinois, have invented an Improved Automatic Water-Cut-Off Spout and Filter, of which the following is a specification.

This invention relates to a combined automatic cut-off spout and filter, and has for its object to provide a simple, inexpensive, and efficient device of this character which will discharge the flow of water from the roof of a building or other structure during a light rainfall and automatically divert the increased volume of water through a filter into a suitable tank or cistern during a heavy fall of rain.

A further object of the invention is to provide a water-chamber in which is mounted a suitable float, said float being adapted to automatically tilt the spout when the water in said chamber has reached a predetermined height and to automatically return the spout to its normal position when the water recedes.

A still further object is to provide the cut-off spout with a drip opening or orifice through which the water is discharged into the float-chamber and, further, to provide a combined slide-valve and deflector by means of which the size of the discharge-opening may be increased or diminished.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportions, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

In the accompanying drawings, forming a part of this specification, Figure 1 is a longitudinal sectional view of a combined cut-off spout and filter constructed in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a detail perspective view of the spout detached.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In carrying out the invention I provide a box or casing 5, to the inner walls of which are secured in any suitable manner strainers 6 and 7, the space between the strainers 6 and 7 being filled with charcoal or other suitable filtering material 8. The box or casing 5 is designed to be supported in any suitable manner at a point adjacent the down-spool of the building, said box being provided with an outlet-pipe 9, through which the filtered water may be discharged into a suitable tank or cistern. (Not shown.)

Arranged within the box or casing 5 is a wall or partition 10, defining a water-chamber 11, in which is mounted for vertical movement a float or buoy 12. The stem 13 of the float or buoy is provided with a terminal crank-arm 14, to which is pivoted the cut-off spout 15, so that as the water rises in the chamber 11 the spout will be tilted to deliver the water from the down-spool into the filter, and when the water in said chamber recedes the float will automatically return the spout to its normal position. The cut-off spout 15 is provided with a drip opening or orifice 16, through which water is admitted to the chamber 11, the size of said opening, and consequently the volume of water flowing therethrough, being regulated at will by a valve 17, slidably mounted in suitable guides 18, secured to the spout, as shown. The rear end of the slide-valve 17 is bent upwardly to form a curved deflector 19, the object of which is to deflect the water to each side of the opening 16 during a light rainfall. By means of the deflector 19 the water from the roof, which is usually contaminated with dust, leaves, and other foreign matter at the beginning of a rain, is discharged at the end of the cut-off spout without affecting the float 12.

Secured to the bottom of the spout 15 are a pair of oppositely-disposed perforated ears or lugs 20, and pivoted in the perforations of said lugs is a supporting-bail 21, the ends of which are bent inwardly, as indicated at 22, and engage suitable openings in the side walls of the chamber 11, as shown. A similar bail 23 is pivoted in perforated ears or lugs 24, secured to the rear end of the spout, the terminal portions of said bail being bent outwardly and...
journaled in the side walls of the box or casing. The distance between the upper pivotal connections of the bails 21 and 23 is less than that of the lower pivotal connection, so as to change the center of the cut-off spout on being reversed and give the downward end thereof a preponderance in weight, said bails being so disposed with respect to each other that when one bail is in a substantially vertical position the opposite bail will be at right angles thereto, as shown.

As a means for permitting the gradual escape of water from the chamber 11 I provide the lower end thereof with a threaded pipe 25, the cap 25' of which is formed with a central opening or perforation through which the water escapes, thereby causing the float to drop and automatically return the cut-off spout to its normal position when the heavy fall of rain ceases.

From the foregoing description the construction of the device will be readily understood, and the operation thereof may be briefly stated as follows: The cut-off spout being in the position shown in Fig. 1 of the drawings, water entering the spout during a light rainfall will be deflected to the right and left of the drip-opening 16 and discharged at the end of said spout. When the volume of water from the roof is increased by reason of a heavy fall of rain, the water will flow over the deflector and part of the same pass through the drip-opening 16 into the chamber 11, thereby causing the float to rise and automatically reverse the position of the spout, in which position the water will flow into the filter and thence to the tank or cistern. When the rain ceases, the water in the chamber 11 will gradually flow out through the orifice in the cap 25', thereby permitting the float to drop and return the cut-off spout to its normal position.

Having thus described the invention, what is claimed is:

1. In a device of the class described, the combination with a box or casing, of a filter, a water-chamber, a float disposed within said chamber, a pivoted cut-off spout having a drip-opening in one end thereof forming a source of communication between the spout and water-chamber, and a valve slidably mounted above said drip-opening and having one end thereof bent upwardly to form a deflector, said spout being actuated by the float to reverse the position of the same.

2. In a device of the class described, the combination with a box or casing, of a filter, a water-chamber forming a part of said box, a float disposed within the chamber, a cut-off spout pivoted to the box or casing and having a drip-opening formed in one end thereof, guides secured to the spout on each side of the drip-opening, and a valve slidably mounted in said guide and having one end thereof bent upwardly to form a deflector, said spout being actuated by the float to reverse the position of the same.

3. In a device of the class described, the combination with a box or casing, of a filter, a cut-off spout pivoted to the box and having a drip-opening formed in one end thereof, guides secured to the spout on each side of said drip-opening, a valve slidably mounted in said guides, a water-chamber, and a float arranged within said chamber for reversing the position of the spout, there being a vent formed in the walls of said chamber to permit the escape of water therefrom.

4. In a device of the class described, the combination with a box or casing, a partition dividing said box into two compartments, a filter arranged within one of said compartments, a float disposed within the second compartment, a cut-off spout pivoted to the box or casing and having a drip-opening formed therein and disposed above the second compartment, and a pivotal connection between the float and spout.

5. In a device of the class described, the combination with a box or casing, of a filter, a water-chamber, a float disposed within said chamber, a cut-off spout provided with a drip-opening, a pair of bails forming a pivotal connection between the box and spout, and a pivotal connection between said spout and float.

6. In a device of the class described, the combination with a box or casing, of a filter, a water-chamber, a float disposed within said chamber, a cut-off spout having a drip-opening in one end thereof, a pair of bails pivoted to the spout and box, respectively, and arranged substantially at right angles to each other, and a pivotal connection between the float and spout.

7. In a device of the class described, the combination with a box or casing, of a filter, a water-chamber, a float disposed within said chamber, a cut-off spout having a drip-opening formed in one end thereof and disposed above the water-chamber, a pivotal connection between the cut-off spout and the box, a pivotal connection between said spout and float, means for controlling the discharge of water through the drip-opening into the water-chamber, and means for permitting the gradual escape of water from said chamber.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JETHRO MOORE HILL.

Witnesses:

A. E. Jones,
Charles Stewart.