

R. E. ESTES.  
 AUTOMATIC CUT-OFF FOR CISTERNS.  
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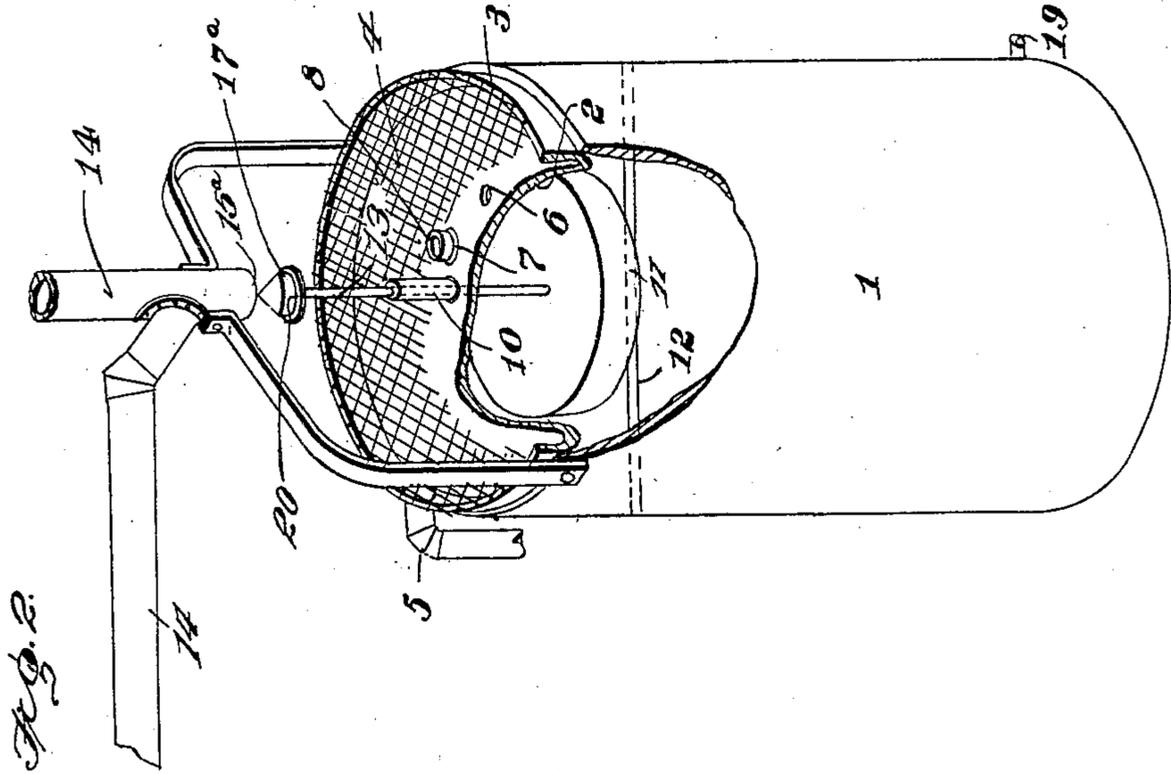


FIG. 2.

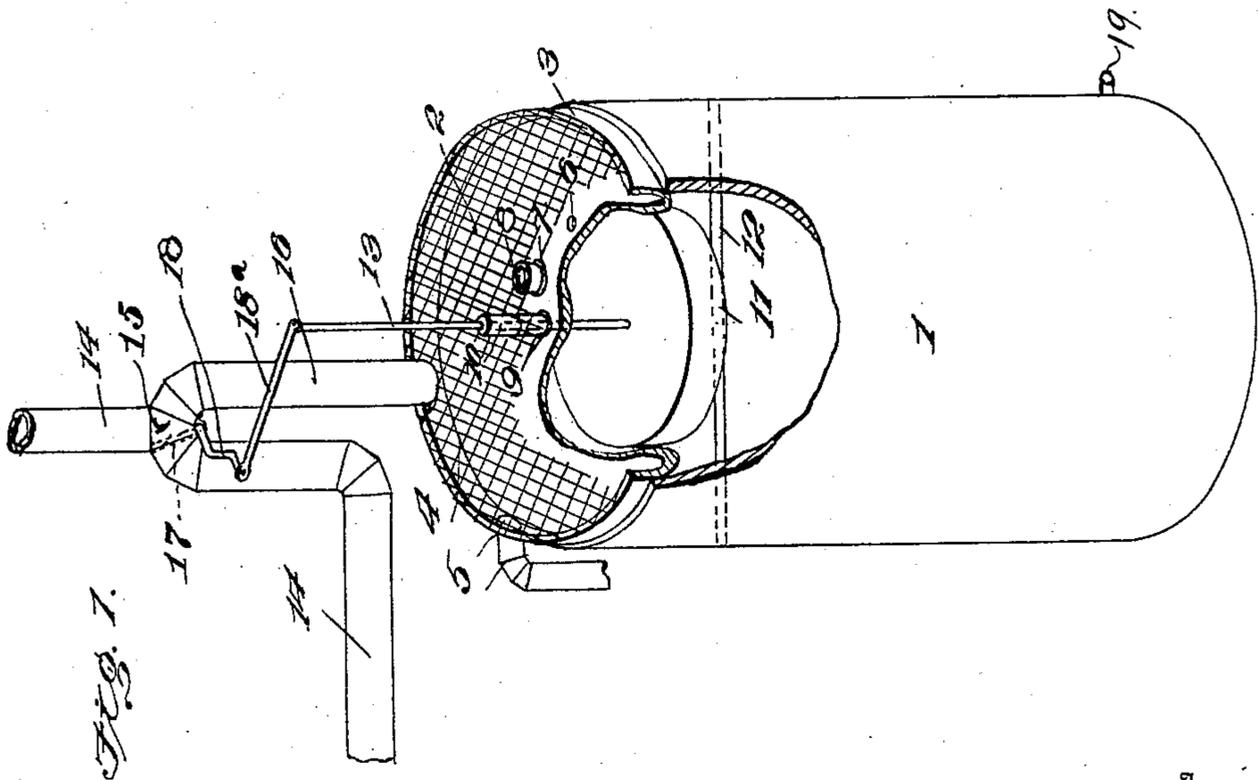


FIG. 1.

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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC CUT-OFF FOR CISTERNS.

No. 914,936.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed October 28, 1907. Serial No. 399,522.

*To all whom it may concern:*

Be it known that I, ROBERT EPHRIAM ESTES, citizen of the United States, residing at Midland, in the county of Midland and State of Texas, have invented certain new and useful Improvements in Automatic Cut-Offs for Cisterns, of which the following is a specification.

The object of this invention is an improved apparatus for use in connection with rain spouts and cisterns and is designed to automatically prevent the rain-water which first flows down a spout during a rain and which is obviously contaminated by the dirt and trash collected upon the roof, from being discharged into the cistern.

With this and other objects in view as will more fully appear as the description proceeds the invention consists in certain constructions and arrangements of parts that I shall hereinafter fully describe and then point out the novel features in the appended claims.

For a full understanding of the invention and the merits thereof and to acquire a knowledge of the details of construction reference is to be had to the following description and accompanying drawings in which:—

Figure 1 is a perspective view of my improved apparatus, partly broken away to show the float within the reservoir. Fig. 2 is a similar view showing my improved cut-off applied thereto.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

My invention comprises a reservoir 1 of any desired size or shape in the top of which is fitted a pan or tray 2, with its sides 3 projecting upwardly as shown, said tray being covered with wire gauze 4. A waste pipe 5 is secured to the side of the tray and leads therefrom as shown. The bottom of the tray 2 is formed with a small opening 6 protected by wire gauze, a larger opening 7 having an upwardly projecting rim 8 somewhat shorter than the sides of the tray, and an aperture 9 in which is secured a tube 10 extending upwardly above such sides.

Within the reservoir 1 is a float 11 which normally rests on a supporting cross bar 12 secured in the reservoir as shown. Secured to this float 11 is a rod 13 extending upwardly therefrom through the aperture 9 in the bottom of the tray and through the tube 10.

A rain spout 14 is adapted to lead to a cistern (not shown), said spout being provided in its length with a shunt opening 15 and a shunt pipe 16 therefrom and terminating above the reservoir 1. In the shunt opening 15 is provided a cut-off 17 which is operatively connected to the rod 13 of the float by means of a crank 18 and a link 18<sup>a</sup>. The lever 18 of the cut-off is so held by the rod 13 when the float is in its normal position that the cut-off will open the shunt opening 15 thereby compelling the water flowing down the spout 14 to pass out of said opening, through the shunt pipe 16 and be discharged therefrom into the tray 2 to fill the reservoir. A small outlet 19 is formed near the bottom of the reservoir 1 so that it may be emptied after it has been filled, this outlet being preferably protected by wire gauze.

In the practical operation of my improved automatic cut-off for cisterns, the rain water first flowing down the spout 14 during a rain and which obviously contains dirt and rubbish from the roof, passes into the shunt pipe 16 and is discharged therefrom into the tray 2, such dirt and trash in the water being caught by the wire gauze 4. From the tray 2 some of the water runs into the reservoir 1 through the small opening 6 in the bottom of such tray and the rest flows through the waste pipe 5 in the side of the tray. In the case of a heavy rain these means are not sufficient to carry off all the water discharged from the pipe 16 and said tray gradually fills. When the water in the tray is deep enough, it flows over the rim 8 and through the opening 7 of the tray into the receptacle 1, the waste pipe 5 and the openings 6 and 7 being sufficient to carry off all the water discharged from the shunt pipe 16. The receptacle 1 is subsequently filled, thereby raising the float and its attached rod, which in turn operates the cut-off 17 so as to close the shunt opening 15 and allow the rain-water which is manifestly free from rubbish by this time, to flow into the cistern. The water receptacle 1 is emptied by means of the outlet 19 formed for that purpose, such emptying resulting in the gradual dropping of the float upon its support 12 which action operates the lever 18 by means of the rod 13 to return the cut-off to its original position.

One modification of my invention, as shown in Fig. 2 embodies the preferred form of cut-off to be used in connection with the device. In this case the rod 13 of the float

11 is provided with a tapering plug 17<sup>a</sup> which is formed with an outwardly extending flange 20 and a washer supported thereon. This plug 17<sup>a</sup> is designed to be closed  
 5 against the shunt opening 15<sup>a</sup> of the spout 14 upon the raising of the float 11 and to be withdrawn from said opening upon the lowering of such float. The tapered portion of the plug serves to spread the water discharged from the shunt opening 15<sup>a</sup> and also  
 10 prevents the accumulation of rubbish on such plug 17<sup>a</sup>.

From the above description in connection with the accompanying drawings it will readily be seen that I have provided an automatic cut-off for cisterns which is of simple and durable construction and which is most efficient in operation.

Having thus described the invention, what I claim is:—

1. The combination with a rain spout adapted to lead to a cistern and formed with a shunt opening, of a reservoir mounted below said opening, a tray mounted in the top  
 25 of said reservoir and adapted to receive the water discharged through the shunt opening, said tray being formed with an opening for leading the water into the reservoir, and means for closing the shunt opening upon the  
 30 filling of the reservoir.

2. The combination with a rain spout formed with a shunt opening, of a reservoir, a tray mounted in the top of said reservoir and adapted to receive the water discharged  
 35 through the shunt opening, said tray being formed with upwardly projecting sides and in its bottom with two openings, one of said openings being larger than the other and being provided with an upwardly projecting  
 40 rim shorter than the sides of the tray, and means for automatically closing the shunt opening upon the filling of the reservoir.

3. The combination with a rain spout provided with a shunt opening, of a reservoir, a tray mounted in the top of said reservoir and into which the spout is designed to discharge  
 45 rain-water through the shunt opening, said tray being formed with an opening for leading the water into the reservoir, a waste pipe leading from the tray and means for automatically closing the shunt opening to cut off  
 50 the flow of water into the tray upon the filling of the reservoir.

4. The combination with a rain spout provided with a shunt opening, of a reservoir adapted to receive water from the spout through the shunt opening, a tray mounted  
 55 in the top of said reservoir and formed in its bottom with an aperture and with an opening for leading the water into the reservoir, a support secured in the reservoir, a float normally resting on the support, a rod secured to the float and extending upwardly therefrom through the aperture in the tray, and  
 60

means controlled by the rod and float for closing the shunt opening to cut off the flow of water into the reservoir upon the filling of the latter.

5. The combination with a rain spout provided with a shunt opening, of a reservoir, a tray mounted in the top of said reservoir and formed in its bottom with an aperture and with an opening for leading the water into the reservoir, a support secured within the reservoir, a float designed to be lowered to rest on the support upon the emptying of the reservoir, a rod secured to the float and extending upwardly therefrom through the aperture in the tray and means controlled by the rod and float for opening the shunt opening upon the emptying of the reservoir.

6. The combination with a rain spout provided with a shunt opening, of a reservoir adapted to receive water from the spout through the shunt opening thereof, a tray  
 80 mounted in the top of the reservoir and formed in its bottom with an aperture and with an opening for leading the water into the reservoir, a support secured within the reservoir, a float normally resting on the support, a rod secured at one end to the float and extending upwardly therefrom through the aperture in the tray and a plug secured to the protruding end of said rod and designed upon the raising of the rod and float to be closed  
 90 against the shunt opening in the spout as and for the purpose set forth.

7. The combination with a rain spout provided with a shunt opening, of a reservoir adapted to receive water from the spout through the shunt opening thereof, a tray  
 100 mounted in the top of the reservoir and formed in its bottom with an aperture and with an opening for leading the water into the reservoir, a support secured within the reservoir, a float normally resting on the support, a rod secured at one end to the float and extending upwardly therefrom through the aperture in the tray and a tapering plug formed on the protruding end of the rod and designed upon the raising of the rod and float to be closed against the shunt opening in the spout as and for the purpose set forth.

8. The combination with a rain spout formed with a shunt opening, of a reservoir, a tray mounted therein and adapted to receive water discharged through the shunt opening, means for slowly conducting the water from the tray into the reservoir, and means for automatically closing the shunt opening by and upon the filling of the reservoir.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT EPHRIAM ESTES. [L. s.]

Witnesses:

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