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RAIN WATER OUT-OFF.
APPLICATION FILED NOV. 12, 1909.

983,944.

Patented Feb. 14, 1911.

2 SHEETS-SHEET 2.

Fig. 3.

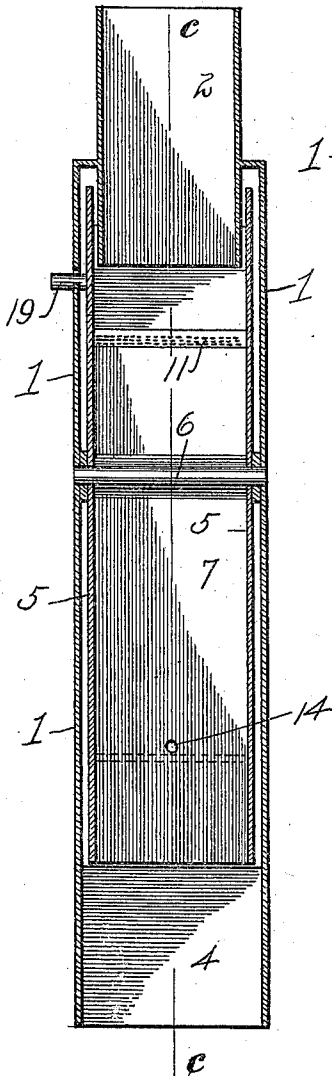


Fig. 4.

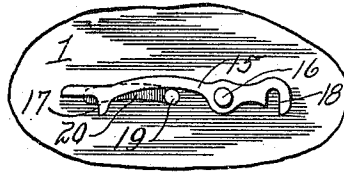
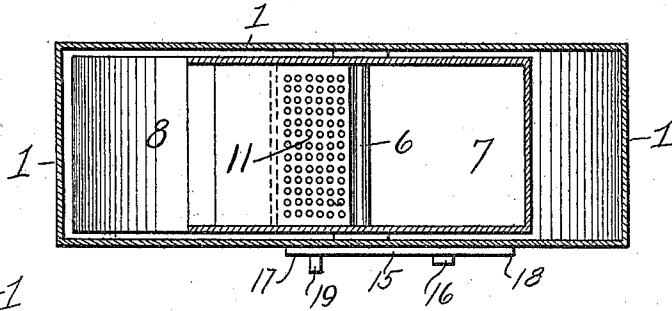


Fig. 5.

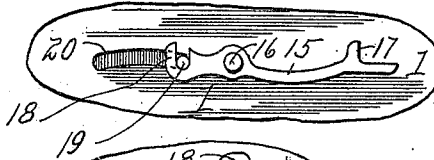


Fig. 6.

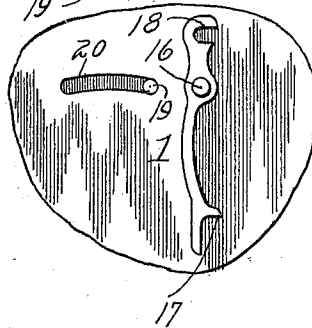


Fig. 7.

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UNITED STATES PATENT OFFICE.

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RAIN-WATER CUT-OFF.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, CHARLES SMYTH and JOHN R. BUCK, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Rain-Water Cut-Offs; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in automatic cut-offs for rain water spouts.

The object of the invention is to provide a rain water cut-off which will automatically change the direction of the flow of water from the waste pipe to the cistern after the roof has been sufficiently cleansed, the said cut-off having the structural characteristics and advantages hereinafter described and claimed.

A further object of the invention is to provide certain locking mechanisms adapted to lock the cut-off device in two positions when it is not desirable to have it work automatically. In one position, the cistern may be full and the water flow to the waste pipe, and in the other position the roof has been sufficiently cleansed and all the water may flow to the cistern. This locking device may be placed out of service when the cut-off works automatically.

In the accompanying drawings which illustrate our improved cut-off, Figure 1 is a front elevation thereof. Fig. 2 is a sectional elevation on the line *c-c* of Fig. 3. Fig. 3 is a sectional elevation on the line *a-a* of Fig. 2. Fig. 4 is a sectional view on the line *b-b* of Fig. 2. Figs. 5, 6 and 7 are detail views showing the various positions of the locking device.

Throughout the specification and drawings similar reference characters indicate corresponding parts.

The cut-off or device consists of a casing 1 provided with an inlet 2 which connects with the spouting (not shown), and two outlets 3 and 4. Outlet 3 leads to the waste

pipe (not shown) and outlet 4 leads to the cistern. Within the casing 1 is a rocking member 5 which is adapted to direct the flow of water from the inlet to either of the outlets. The said rocking member 5 is pivoted at 6 and contains two compartments 7 and 8, one of which, to wit 7, provides a passage way for the water, and the other of which, to wit 8 constitutes a balancing tank. The rocking member 5 is provided with a weight 9, and is shown in its normal position by the dotted lines in Fig. 2. When in this position, the rain water entering the inlet 1 will pass through the compartment 7 to the outlet 3 which, as before stated, leads to the waste pipe. When the water passes through the compartment 7 it strikes a strainer 11 through which a portion thereof passes into a small compartment 12 and from thence into the balancing compartment 8 through an orifice 13. The chamber 12 may be termed a regulating chamber for the balancing compartment 8. By letting the initial water from the roof flow into the chamber 12, the feed of water to the balancing compartment 8 is regulated and insured. The opening or port 13 through which the water is discharged from the regulating chamber 12 to the balancing compartment 8, is protected from clogging because the water entering the chamber 12 is strained through the strainer 11, which lies below the inlet to the casing. The amount of water entering chamber 12 through the strainer is always greater than that passing out through the port 13, even in the event that some of the openings in the strainer 11 should become clogged. The balancing compartment 8 is provided with an outlet orifice 14 which is of smaller area than the combined inlet orifices in the strainer 11, and said outlet orifice 14 is also smaller than the area of the orifice 13 which discharges the water into the balancing compartment 8. The orifice 13, it will be noted, provides an outlet from the small compartment 12 which receives the initial water for the balancing compartment 8 through the strainer 11, and said orifice 13 regulates the flow of the water into the compartment 8. When the water is passing through the compartment 7, some of it will gradually accumulate in the balancing compartment 8 and when the water en-

tering said compartment 8 is sufficient to overbalance the weight 9, the rocking member 5 will be shifted on the pivot 6 to bring the compartment 7 in alinement with the outlet 4 to the cistern and thus the water is directed into the cistern after the roof has been sufficiently cleansed. In either position of the inner rocking member 5 the strainer 11 lies in the path of the incoming water and consequently the balancing compartment 8 will always receive a supply of water during a shower of rain, and the inner rocking member will be held in the position shown in full lines in Fig. 2. It will be observed that the strainer 11 is on an incline. This incline should be sufficient to enable any solid matter to be washed off the surface of the strainer into the compartment 7 and thus the orifices in said strainer are prevented from being clogged up.

It will be understood that, upon the areas of the inlets and outlets of the balancing compartment 8, depends the amount of water which will pass to the waste pipe before the rocking member is shifted. If the areas of the inlets and outlets are of such sizes that it takes a comparatively short time for the balancing compartment to accumulate sufficient water to overbalance the inner rocking member, only a small amount of water will pass to the waste pipe. But, if, the area of the inlet and outlet is such that it takes a comparatively long time for the balancing compartment to accumulate sufficient water to overbalance the inner rocking member, a larger amount of water will then pass to the waste pipe which represents water which has washed the dirt from the roof. It is preferable to have the outlet 14 larger than the individual orifices in the strainer 11 in order that any dirt passing through the orifice in said strainer may pass out of the compartment 8.

When the supply of water to the balancing compartment 8 is stopped at the end of a shower for example, the water in said compartment is discharged through the outlet 14, and the weight 9 will shift the rocking member 5 back to its normal position indicated in dotted lines in Fig. 2. If, however, at times during a rainy season, when the showers are intermittent, it is not thought necessary to wash the roof at the beginning of every shower, a device is shown in Figs. 1, 5, 6 and 7 which is utilized. This device consists of a locking lever 15 pivoted at 16 to the casing 1 and is provided with a shoulder 17 and a recess 18 which are adapted to engage a pin 19 mounted on the inner rocking member 5. The pin 19 projects through an elongated opening 20 in said casing 1. During such rainy season as above indicated, the lever 15 is placed in the position shown in Fig. 5, and after the inner rocking member has been shifted to direct the water

through the outlet 4, it will be held in this position against the weight 9 by the shoulder 17 engaging the pin 19, as shown in Fig. 1, and will be maintained in such position until manually released. The lever 15 is also used at other times, for example when the cistern is full, and it is desired that all the water falling from the roof shall be thereafter directed to the waste pipe. Said lever may be then placed in the position shown in Fig. 6, at which time the recess 18 engages the pin 19 and holds the locking member 5 in its normal position as shown in dotted lines in Fig. 2. When the lever 15 is in the position shown in Fig. 7, free from engagement with the pin 19, the device is subject to automatic operation and the roof will be washed at the beginning of each shower.

Having described our invention we claim—

1. In a rain water cut-off, the combination with a casing provided with inlet and outlet pipes, of a pivotal casing having a central pivot within said outer casing and affording a passage-way on one side of said pivot to either of the outlets in the outer casing, the said pivotal casing having an overbalancing water chamber on the other side of said pivot, a portion of which is partitioned off to provide a regulating chamber within said overbalancing chamber, said regulating chamber receiving the water directly from the inlet pipe and discharging it to the overbalancing chamber, and a weight placed within that portion of said pivotal casing through which the water is conducted from the inlet to either of the outlets, substantially as specified.

2. In a device of the type specified, an outer casing provided with an inlet and two outlets, an inner rocking member providing a passage-way on one side and an overbalancing tank on the other side of its pivot, said overbalancing tank being adapted to shift the passage-way from one outlet to the other when a sufficient amount of water enters said tank, a weight attached to said rocking member adapted to shift said passage way from one outlet to the other when the weight of the water decreases in the overbalancing tank, and a lock to secure said rocking member in either of its positions.

3. In a device of the character specified, an outer casing having an inlet and two outlets, an inner rocking member having a passage-way on one side of its pivot adapted to register with either of the outlets in said casing, and an overbalancing tank on the other side of its pivot adapted to receive a sufficient quantity of water to shift said passage-way from one outlet to the other, a weight on said rocking member adapted to shift said passage-way from one outlet to

the other when the water in said chamber decreases, a pin extending from said rocking member and a pivotal member mounted on the outer casing and adapted to engage
5 said pin to lock the inner locking member in either of the positions to which the weight or the water in said chamber has shifted it.

In testimony whereof we affix our signatures, in presence of two witnesses.

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Witnesses:

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