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J. J. HARRIS & J. ADAMS.

SELF CLEANING STRAINER FOR DOWN SPOUTS.

APPLICATION FILED DEC. 16, 1903.

NO MODEL.

Fig. 2.

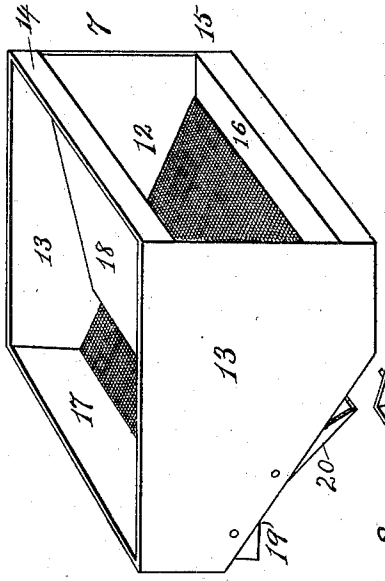


Fig. 4.

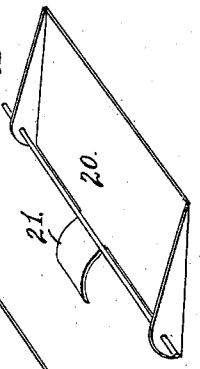


Fig. 3.

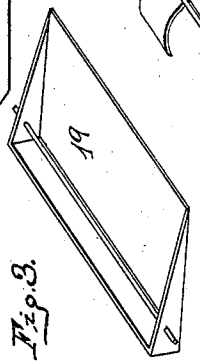
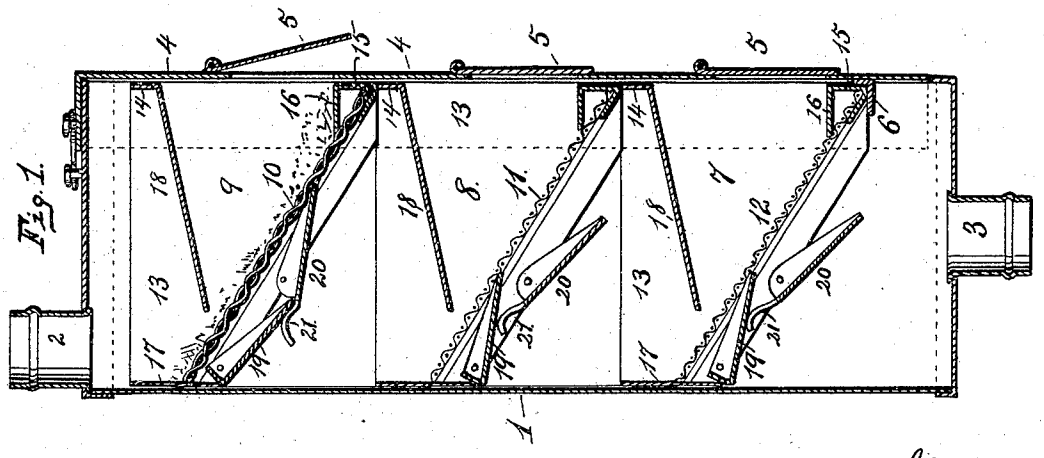


Fig. 1.



Witnesses

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No. 752,547. Patented February 16, 1904.

UNITED STATES PATENT OFFICE.

JACOB J. HARRIS AND JAMES ADAMS, OF HIGHLAND, OHIO.

SELF-CLEANING STRAINER FOR DOWN-SPOUTS.

SPECIFICATION forming part of Letters Patent No. 752,547, dated February 16, 1904.

Application filed December 16, 1903. Serial No. 185,388. (No model.)

To all whom it may concern:

Be it known that we, JACOB J. HARRIS and JAMES ADAMS, citizens of the United States, residing at Highland, in the county of Highland and State of Ohio, have invented new and useful Improvements in Self-Cleaning Strainers for Down-Spouts, of which the following is a specification.

Our invention relates to a new and improved filter or strainer for such down-spouts as convey rain-water from gutters to a cistern or other receptacle.

The object of the invention is to provide a filter or strainer which will be self-cleaning and automatic as to positioning deflectors or pivoted trays which are maintained beneath inclined strainers, so that should the strainers become clogged by debris the deflectors will be moved from their normal position to direct water through the strainer to cleanse the same and eject the debris from the casing.

The invention consists in the construction and combination of the parts, as will be hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical section of a strainer or filter for down-spouts made in accord with our invention. Fig. 2 is a perspective view of one of the frames which carry a strainer and the deflectors, and Figs. 3 and 4 are detail perspective views of the deflectors.

On the drawings, 1 refers to a casing, preferably rectangular in cross-section and open on one side. The upper and lower ends of the casing have inlet and outlet spouts 2 and 3, to which the down-spouts from the gutters are attached. The open side of the casing is usually covered by a plate 4, the same having openings which are covered by swinging doors or gates 5, the same being attached to the plate to swing outward.

The casing 1 near its lower end has a cross-bar 6, upon which rests the front lower end of the lower frame 7, the rear end of the frame when in place bearing against the rear wall of the casing. When the lower frame 7 is in place, the frame 8 rests upon its front upper edge and against the rear of the casing, and the top frame is supported in a similar manner.

The frames 9, 8, and 7 are similar in construction, with the exception of the strainers 10, 11, and 12, the upper strainer 10 being of comparative coarse mesh, the strainer 11 being much finer, while the lower strainer 12 is very fine.

The frames, which are placed within the casing, comprise side pieces 13, the front edges being connected by cross-pieces 14 and 15, the lower cross-piece having a horizontal portion 16, which in use is positioned opposite the lower edge of the opening, which is normally covered by the gates 5. The rear ends of the sides are connected by a cross-piece 17, and from the cross-piece 17 to points below the horizontal cross-piece 16 there are screens or strainers, which are also attached to the sides 13. Inclined plates 18 are maintained above the screens, and said plates terminate slightly above the screens, adjacent to the upper ends thereof. To the side pieces of the frames beneath the screens are pivoted deflectors 19 and 20, the deflector 19 being pivoted adjacent to the upper end of the screen. This deflector 19 is of a length sufficient to extend considerably beyond the lower edge of the inclined plate 18, and this deflector has upturned sides and a raised rear portion, the sides being apertured to receive a bar which is attached to the side pieces of the frame to provide a support upon which the deflector may swing. The deflector 20, which is pivoted to the frame below the deflector 19, has upturned sides to provide bearings for its supporting-rod, and it is also provided with a rearward-projecting portion 21, which is adapted to engage the under side of the deflector 19 and hold the same in its normal position, which is with its lower end against the under side of the screen.

In practice we prefer to use three frames one above the other in a casing, as shown, each frame having a screen of a different mesh or gage from the other, the frame having the coarser screen being at the top.

The front plate of the casing is attached to the same, so that the openings, which are normally closed by the swinging doors 5, will be opposite or in line with the cross-bars 16, the screen extending from said cross-bar upward and rearward.

When leaves or other debris pass through the down-spout into the casing, it will be collected on the screen, and when gathered at the lower portion of the screen the down flow of water passing through the upper portion of the screen will cause the deflector 19 to swing downward, and in its downward movement it by engagement with the projecting part 21 of the deflector 20 will raise its lower end, so that it will contact with the under side of the screen, and the water will then be directed through the screen and will wash the debris therefrom and force the same through the opening. When the screen has been cleared of debris, the water falling on the deflector 20 will swing the same downward, and such movement will raise the upper deflector to its normal position.

By means of the construction shown and set forth the strainers are self-cleansing. Though we have shown three frames in a casing, it is obvious that the number may be increased or diminished, as desired; nor do we limit ourselves to the particular construction or arrangement of the parts except as specified in the claims.

We claim—

1. In a device of the character set forth, the combination with a casing open on one side and provided with an inlet-opening, of an inclined screen or strainer and coacting deflectors pivotally maintained below the screen, for the purpose set forth.

2. The combination with an inclined strainer of coacting deflectors pivoted below the strainer on different horizontal planes.

3. In combination with a casing which is open on one side and is provided with inlet and exit openings, of a frame having near its upper portion an inclined plate, a screen maintained to be inclined toward the open side of the casing, and pivoted deflectors supported below the screen, for the purpose set forth.

4. In a strainer for down-spouts, a casing, a frame adapted to be maintained therein, an inclined screen carried by the frame, deflectors pivoted below the screen on different horizontal planes the lower edges of the deflectors being adapted to engage the under side of the screen, substantially as shown.

5. In a self-cleaning strainer for down-spouts, a casing with inlet and exit openings, a removable front plate with openings therethrough, and swinging doors for the openings, an inclined screen, deflectors pivotally maintained below the screen and adapted to engage the under side thereof when the lower ends are swung upward, and an extension on the lower deflector for engagement with the under side of the upper deflector, for the purpose set forth.

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

JACOB J. HARRIS.
JAMES ADAMS.

Witnesses:
E. W. STACY,
PETER ADAMS.