ABSTRACT

An open-mesh guard for roof gutters which fits over the downspout in the leader and prevents the clogging of the downspout by leaves and other debris. The guard is hinged at two locations in order to permit the device to clear the usual roof shingle overhang of the gutters when it is desired to empty the same on the ground. A pole is provided for manually emptying the guard and additionally serves the function of scraping the leaves and other debris from the gutters.

8 Claims, 12 Drawing Figures
SCREEN GUARD FOR GUTTERS HAVING A DUAL PURPOSE MANUAL OPERATOR

The present invention relates to mesh screen guards for downspouts of roof gutters, and a manual operator-scraper device.

It is an object of the present invention to provide a means of cleaning roof gutters and leaders from the ground level without requiring climbing on ladders or roofs.

It is a further object of the present invention to provide a screen guard for a downspout which can be removed, cleaned, and replaced from ground level whenever it becomes clogged.

It is another object of the present invention to provide a means of Keeping roof gutters and leaders clean and free of debris without requiring a screen or other covering over the entire length of the gutter or leader system.

It is an object of the present invention to provide a screen guard for roof gutters which is inexpensive to manufacture and simple to install.

Another object of the present invention is to provide a screen guard for a downspout which is adaptable for use on various gutter configurations.

A further object of the present invention is to provide a portable screen guard with relatively mesh-like openings whereby water is permitted free passage there-through while leaves and other debris are prevented from clogging the downspout.

It is an object of the present invention to provide a means of pulling or pushing collected debris inside the gutter to a central location in the gutter where it can be emptied to the ground without being required to climb to the gutter by either ladder or via the roof. This means takes the form of a pole-like manual operator for hooking the handle of the screen guard and thereby permitting the pivotal movement of the screen guard from its position in the gutter to a position outside of the gutter. The manual operator is so constructed as to have a gutter scraper.

The invention will now be more fully described with reference to the accompanying drawings wherein:

FIG. 1 is a perspective view of the screen guard for a roof gutter with one section in a flattened condition.

FIG. 2 is a perspective view of the screen guard similar to that shown in FIG. 1 but in condition for insertion in a gutter.

FIG. 3 is a perspective view of the screen guard in the condition shown in FIG. 2 but in position in a gutter, and directly over the downspout.

FIGS. 4, 5, 6, and 7 are side elevational views of the screen guard in various stages of being emptied of debris by means of the manual operator-scraper device.

FIGS. 8 and 9 are side elevational views of two stages of the screen guard being re-inserted back into position in the gutter.

FIG. 10 is a perspective view showing the pole scraper device being used in the cleaning of a roof gutter.

FIG. 11 is a side elevational view of the pole scraper device, and

FIG. 12 is a top plan view thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

It is well-known that roof gutters and leaders connected thereto become clogged with leaves and other debris and must be cleaned often in order to provide an unobstructed channel or path for water accumulating therein, especially the runoff from the roof. Many devices have been devised in order to attempt to solve this problem. However, the present construct overcomes the drawbacks and disadvantages of the prior art solutions. In this connection, FIGS. 1 and 2 disclose a screen guard referred to generally by the numeral 10 which may be fabricated of plastic, aluminum or any other suitable material and has a lip 12 provided with a hinge 14 connecting the relatively flat part 16 of the screen guard 10 to the lip 12. As seen in FIG. 3, the lip 12 is adapted to rest on the top outer edge 18 of the gutter 20, and is removably fastened thereon by a pair of spaced clips 22. The latter are provided with machine screws or thumb screws 24 for securing the clips 22 to both edge 18 of the gutter 20 and the lip 12 of the screen guard.

A wide mesh screen element 26 is pivotally connected to flat part 16 by means of another hinge 28. Extending upward from screen element 26 in a curvilinear manner is the curved member 30 and secured to the upper end thereof is a ring 32, or other suitable element, which can be hooked by a device hereinafter described.

It should be noted from FIG. 3 that the screen guard 10 is adapted to be placed in the gutter 20 over the opening thereof into the downspout 34, with at least part of the ring 32 projecting over the edge 18 of the gutter 20. The clips 22 hold the screen guard 10 in place and permit the same to be pivoted in a manner as follows: Referring to FIGS. 4-7, a pole-like manual operator 36 permits the user to stand on ground level and empty the contents of leaves and other debris accumulated in the screen guard 10. The pole 36 is provided at one end with a hook 38 and a scraping device 40. As seen in FIG. 4, the hook 38 of the pole 36 engages the ring 32 which is connected to the top edge 30 of the inner curved member 30 of the screen guard 10. As the pole 36 is moved downwardly in the direction of the arrows shown in FIGS. 4-6, the screen guard 10 is pivoted on the hinges 28 and 14 respectively. It should be observed in FIG. 5 that the leaves and debris are compacted and held tightly so that there is no spillage of the same in the gutter, when the screen guard 10 is emptied. Consequently, the leaves and debris are dumped on to the ground, as seen in both FIGS. 6 and 7. In FIG. 7, a stop or abutment 22a is illustrated as located on the clip 22. The stop 22a functions to prevent the screen guard 10 from pivoting too far in a counter-clock-wise direction and thereby making it difficult to re-install the screen guard 10 in the gutter 20 from a ground level position. In the present construction, the flat part 16 of the screen guard 10 is held in a substantially horizontal location relative to the ground.

Referring to FIGS. 8 and 9, the screen guard 10 is shown being re-installed in the gutter 20 after the leaves and debris have been emptied therefrom. In this regard, it should be noted that the upper surface of the scraping device 40 may be utilized to engage the flat part 16 of the screen guard (FIG. 8) and to push the latter in the direction of the arrow, whereby the screen guard 10 pivots on both hinges 28 and 14 to fall into the proper position in the gutter 20 over the downspout 34. The screen guard 10 then has been emptied and re-installed in the gutter without necessitating the climbing of a ladder or approaching the gutters from the roof.
FIGS. 10–12 show the construction and operation of the scraping device 40 on the pole 36. As seen in FIGS. 10 and 12, the scraping device 40 has a blade which is offset from the longitudinal axis of the pole 36 and the end thereof fits conveniently in the gutter thereby permitting the scraping of the gutters from ground level. In addition, the pole 36 may be constituted of a number of interfitting sections in order to make the pole a selected length.

It should be apparent that the present screen guard construction with pivotal sections permits the same screen guard device to be used in gutters having different configurations and additionally permits the screen guard to be lifted out of the gutter without interference by the overhanging roof shingles.

What I claim is:

1. The combination of a screen guard for a gutter which is adapted to normally fit over the downspout connected to said gutter and an elongated manual operator comprising: a lip, a first rigid element, a first hinge means connecting said lip to one edge of said first rigid element, a screen mesh member, a second hinge means connecting another edge of said first rigid element to said screen mesh member, said second hinge means being positioned in a bottom forward location in said gutter adjacent to the bottom front edge of the gutter, a second rigid element fixed to said screen mesh member, and a ring-like member connected to an upper surface of said second rigid element, means for removably fastening said lip to the top front edge of said gutter, said manual operator being adapted to grasp said ring-like member whereby said screen guard pivots forwardly on said hinges to compact the collected debris and thereafter to swing over said top front edge of the gutter and empty the contents thereof.

2. The combination as claimed in claim 1 wherein said removable fastening means for said lip are clips which tightly engage both said lip and the forward edge of said gutter.

3. The combination as claimed in Claim 1 wherein said first rigid element is a relatively flat part and said second rigid element is a curved member and said screen mesh member fits in the bottom of said gutter over said downspout, and said relatively flat part is located adjacent to the front of said gutter while said curved member is positioned adjacent to the rear of said gutter.

4. The combination as claimed in claim 1 wherein said manual operator has an elongated pole which is provided with a hook at one end for engaging said ring-like member and is further provided with a curved blade scraping device for cleaning said gutter, said blade being offset from the longitudinal axis of said pole.

5. The combination as claimed in claim 1 wherein said screen guard is constituted of plastic.

6. The combination as claimed in claim 1 wherein the plane of said second rigid element is generally transverse to the plane of said screen mesh member.

7. The combination as claimed in claim 1, wherein said second rigid element is integral with said screen mesh member.

8. The combination as claimed in claim 1 wherein said ring-like member is pivotally connected to the upper surface of the second rigid element at a location adjacent to the upper back edge of the gutter.

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