ABSTRACT

A combination roof gutter and an elongated mesh screen overlying the gutter for preventing debris from collecting therein. The sides of the gutter have flanges extending longitudinally therealong adjacent their upper edges, which flanges support opposite longitudinal edges of the screen. The screen includes elongated parallel wires extending longitudinally of the screen and interwoven cross wires extending transversely of the screen. The cross wires are deformed along lines paralleling the longitudinal wires to form a crease in the screen which projects downwardly into the gutter. The crease directs water down and into the gutter. A raised shoulder extends continuously along an outer edge of the flange farthest from the roof to prevent water flowing along the screen from overflowing the edge of the gutter.

3 Claims, 4 Drawing Figures
This invention relates to a roof gutter and protector therefor.

In the past, various types of gutters for collecting water runoff from a roof, and protectors for preventing leaves and other debris from collecting in the gutter have been devised. Such previous gutters and protectors, however, have not been altogether satisfactory, in that for the most part, the protectors include merely a continuous span of screened or perforated material. These generally have been effective to prevent debris from collecting in the gutter, however, in many instances the water draining from the roof merely follows a surface of the protector and is carried over the gutter to fall on the ground. Also, previous gutter and protector combinations often have been difficult to install.

A general object of the present invention is to provide a roof gutter and protector combination which solves, in a simple and effective manner, the above-noted disadvantages of previous designs.

More specifically, an object of the invention is to provide a novel protector for a roof gutter which comprises an elongated mesh screen which may be laid over the top of a roof gutter, with such screen having a downwardly projecting crease formed therein extending along the length of the screen. The downwardly projecting crease in the screen is effective to direct water draining from the roof downwardly and into the gutter. The crease also provides greater rigidity for a length of screen protector whereby such is less susceptible to buckling, twisting and sagging both during and after installation.

Another object of the invention is to provide a novel roof gutter and protector combination wherein the gutter has a raised shoulder extending continuously along its outer edge with the shoulder projecting above the level of the top surface of the protector. The shoulder is effective to prevent water carried along the screen from overflowing the edge of the gutter.

Still another object is to provide a roof gutter and protector combination which includes novel clip means for securing the protector on the gutter.

These and other objects will become more fully apparent as the following description is read in conjunction with the drawings wherein:

FIG. 1 is a perspective view of a roof gutter and screen protector combination constructed in accordance with an embodiment of the invention, with a portion of the screen magnified;

FIG. 2 is a cross-sectional view of a portion of the gutter and screen combination illustrated in FIG. 1;

FIG. 3 is a cross-sectional view of a portion of modified version of the gutter and screen combination of the invention; and

FIG. 4 is a perspective view of a clip used in the combination for securing the protective screen to the roof gutter.

Referring now to the drawings, and first more specifically to FIG. 1, at 10 is indicated generally a portion of an elongated roof gutter which may be attached to the eaves of a roof to catch water draining from the roof. The gutter has opposed, substantially parallel, laterally spaced, sides 12, 14, and a bottom 16 extending longitudinally of the gutter. As is seen in FIGS. 1 and 2, upper marginal portions of the sides are deformed to form horizontal supporting flanges 20, 22 which project inwardly toward the center of the gutter and extend longitudinally of the gutter. A continuous shoulder 26 extends along side 14 adjacent the outer edge of flange 22, with such shoulder projecting upwardly from the flange. Shoulder 26 and flange 22 are formed by a marginal edge portion of the front side of the gutter being deformed in a reverse bend extending upwardly and then downwardly to form the shoulder, with the remainder of the marginal edge portion extending inwardly to provide a substantially horizontal flange extension. As is seen in FIG. 1, a plurality of spaced-apart oblong drain holes 30 are formed in flange 22.

An elongated mesh screen protector 34 overlies the gutter with its opposed marginal edge portions resting on flanges 20, 22. The edge of the protector supported on flange 22 is disposed inwardly on the gutter from shoulder 26. The shoulder projects to, or somewhat above, the level of the top surface of the screen.

As is best seen in the magnified portion of FIG. 1, the screen includes a plurality of substantially parallel, laterally spaced wires 36 extending longitudinally of the screen, and a plurality of laterally spaced cross wires 38 which extend transversely of the screen and are interwoven with wires 36.

Wires 38 are deformed along lines paralleling wires 36 to produce a crease 40 which projects downwardly and into the gutter. This crease, or fold, is easily prepared due to the characteristics of such a screen. The fold acts to direct water flowing across the screen downwardly and into the gutter and also lends rigidity to the screen.

The screen is secured to flange 22 by a plurality of spaced-apart clips 42. Referring to FIGS. 2 and 4 specifically, a clip includes an elongated malleable member having one end portion 42a bent back and over one face of a central portion 42b of the clip for gripping flange 22 therebetween, as seen in FIG. 2. The other end portion 42c of the member is bent back and over the opposite face of the central portion for gripping the edge of the screen therebetween, also as seen in FIG. 2. Prior to installation, clips 42 have the shape illustrated in solid outline in FIG. 4, with portion 42a bent back and over one face of portion 42b and portion 42c extending upwardly from central portion 42b. Portions 42a, 42b are clipped onto flange 22, a marginal edge portion of screen 34 is laid on top of central portion 42b, and portion 42c is bent down and over the screen, thus to secure the edge of the screen to the gutter.

A modified form of the invention is illustrated in FIG. 3. This modified version of the invention differs from that illustrated in FIGS. 1 and 2, in that it includes two vertically spaced flanges or projections, 52, 54 extending along one side of the gutter in place of the single flange 20 illustrated in FIGS. 1 and 2. In the version illustrated in FIG. 3, flange 52 also referred to as rest means is disposed at substantially the same elevation as flange 56 at the opposite side of the gutter, while flange 54 also referred to as rest means is spaced at a higher elevation, overlying flange 52.

With such a gutter and screen combination, the user has the option of placing the screen protector substantially horizontally over the top of the gutter with its opposite edges supported on flanges 52, 56 as illustrated in FIG. 3, or disposing the screen on an incline with one edge margin of this screen resting on flange 54 and the opposite edge margin resting on flange 56. With the left margin of the screen supported on flange 52 below
flange 54 it is effectively secured against being lifted by winds and blown from the gutter. Explaining further, in areas where high winds may occur a gutter protector, unless securely held in place on the gutter, may act somewhat like an airfoil and tend to lift from the gutter when high winds occur. Flange 54 disposed above the left margin of the screen and clips 42 on its right margin would hold the screen against such lifting. With the left margin of the screen supported on flange 54, and thus on an incline, there is a greater likelihood that such will be self-cleaning, in that debris coming onto the protector may more easily be washed therefrom down the incline.

Water flowing from a roof and onto the protector will have a tendency to follow the screen and flow along the underside of the screen. Crease 40 acts to direct such water downwardly and into the gutter. Water which may reach the outer edge of the screen is prevented by shoulder 26 from overflowing the edge of the gutter.

While alternate embodiments of the invention have been disclosed herein, it should be obvious to those skilled in the art that further variations and modifications are possible without departing from the spirit of the invention.

It is claimed and desired to secure by letters patent:

1. The combination of an elongated roof gutter including front and rear walls and a bottom joining said front and rear walls, said rear wall having an upstanding top margin and a fold formed therein spaced downwardly from said top margin and extending along the length of the gutter which fold projects toward the gutter's front wall, said fold having a flat expanse along the top thereof providing a shelf in a gutter,
said front wall adjacent the top of the gutter extending upwardly and then downwardly in a reverse bend which forms a shoulder along the front of the gutter and continuing further in a substantially horizontal flange expanse which is disposed at a level below the level of said shoulder, and
an elongated protective screen extending along the gutter adjacent its top, said screen having front and rear elongated outer margins resting on said flange expanse of said front wall and said flat expanse of said fold, respectively, and confined on front and rear sides of the gutter by said shoulder and said upstanding top margin, respectively,
said flange expanse of said front wall being constructed and arranged to provide for drainage of water away from said shoulder and into the interior of the gutter, said elongated protective screen being folded to provide a crease extending longitudinally of the screen directly adjacent said flange expanse, said crease including abutting folds of screen whereby the crease is closed.

2. The combination of claim 1, which further comprises means mechanically securing the outer margin of the screen to said flange inwardly of the shoulder.

3. The combination of claim 1, wherein said flange is perforate to act as a drain means in a region inwardly of said shoulder.

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