COVERED GUTTER SYSTEM

Abstract

A hanging clip, the hanging dip including a gutter cover receptacle and a mount flange. The gutter cover receptacle may be formed by a top portion that extends from a rear edge to a forward edge; a support portion that extends from a rear edge to a forward edge; and a curved edge that is formed at a meeting of the top portion forward edge and the support portion forward edge.
COVERED GUTTER SYSTEM

CROSS REFERENCE TO RELATED APPLICATION


FIELD OF THE INVENTION

[0002] This invention relates to a gutter system for collecting rain water. More particularly it relates to a rain gutter system for receiving water run-off in preference to leaves and other debris.

BACKGROUND OF THE INVENTION

[0003] Rain gutters for collecting rain runoff from pitched building roofs are generally U-shaped open troughs that are arranged along the roofline of the building, and in are oriented to catch the surface water that runs off from the roof and guide it to a downspout. Such gutters are usually connected to a fascia board on the building and include one or more downspouts to carry away the roof water runoff and direct it in a desired direction away from the building.

[0004] Rain gutters typically are open in an upward direction and will collect leaves and other wind-blown debris, in addition to the rainwater runoff from the roof. The accumulation of leaves and other debris within the gutter ultimately leads to gutter and downspout opening clogging, thereby causing undesired gutter overflow over the front edge of the gutter and along the adjacent building wall. Restoration of the proper water collection and disposal function of such upwardly-open gutters requires that the collected leaves and debris be manually removed, an operation that usually requires climbing a ladder and physically removing the collected matter, which is a tedious, time-consuming process, and one that is potentially dangerous because it involves climbing a ladder to the building roof line and could lead to a fall from the ladder.

[0005] Various gutter arrangements have been proposed and developed over the years in an effort to solve the rain-gutter-cleaning problem by blocking the entry into the gutter of leaves and debris. One approach involves the installation over the gutter top opening of a screen or mesh material. The screen or mesh has a number of small openings that are so sized as to allow water to enter the gutter trough while screening out or blocking leaves and other debris from entering the gutter. However, many such screening arrangements have the screening element positioned horizontally over the gutter top opening, or at a very slight inclination, thereby allowing the collection of leaves and debris on the surface of the screening, leading to external gutter clogging rather than internal gutter clogging. Further, the stems of leaves often extend into the screening openings, thereby serving to retain the leaves on the surface of the screening material, preventing their being blown off by the wind, and leading to partial or complete blockage of the screen surface and preventing the full flow of roof runoff to the downspout openings in the gutter base panel.

[0006] Another approach that has been developed to block the entry into gutters of leaves and debris is a flat cover that overlies the gutter top opening. The cover is intended to serve as a deflector of leaves and other debris so that they either are blown off the cover by the wind, or they fall over the front edge of the gutter, while allowing the rain water to flow over and around the outer edge of the cover and into the gutter for collection and disposal. Although several approaches to configuring and supporting a gutter cover have been disclosed, those approaches are either cumbersome and time consuming from an installation standpoint, are costly in terms of the amount of attachment materials needed, or are not particularly rigid in terms of the rigidity of the overall gutter structure or the rigidity of its attachment to a building surface.

[0007] Accordingly, there is a need for an improved rain gutter system with a cover for deflecting leaves and debris from entering the gutter trough.

SUMMARY OF THE INVENTION

[0008] In at least one embodiment, the present invention provides a gutter system having a gutter body including a cover surface extending from a rear edge to a forward edge, a return surface extending from a rear edge to a forward edge, and a channel portion including a rear wall, a forward wall and a channel portion therebetween whereby the channel portion defines a collection chamber. The cover surface forward edge and the return surface forward edge meet at a curved wicking edge. The return surface rear edge is connected to an upper edge of the rear wall and the forward wall terminates at an upper edge spaced from the wicking edge to define a water receiving gap.

[0009] In at least one embodiment, the cover surface and the return surface define a self-supporting cantilevered structure.

[0010] In at least one embodiment, the gutter system includes a plurality of external hanging clips configured to support the gutter body.

[0011] In at least one embodiment, the gutter system is manufactured as a seamless gutter.

[0012] Yet in another embodiment of the present invention there is provided a hanging clip, the hanging clip including a gutter cover receptacle and a mount flange. The gutter cover receptacle may be formed by a top portion that extends from a rear edge to a forward edge; a support portion that extends from a rear edge to a forward edge; and a curved edge that is formed at a meeting of the top portion forward edge and the support portion forward edge.

[0013] In one embodiment the mount flange includes a forward wall that extends at a slightly obtuse angle from the rear edge of the top portion to a bent portion, and a rear wall that extends away from the bent portion in a direction approximately toward the plane of the top portion.

[0014] In one embodiment the mount flange includes at least one fastener-receiving hole shaped to receive one or more of a screw, a bolt or a nail.

[0015] In one embodiment the hanging clip may include a fastener housing disposed along a length of the gutter cover receptacle. The fastener housing may be formed to receive a fastener at a first opening and at a second opening that abuts the mount flange.

[0016] In one embodiment the gutter cover receptacle and mount flange each have a width that is about ½ inch.

[0017] In one embodiment the gutter cover receptacle and mount flange each have a thickness that is about ½ inch.

[0018] In one embodiment the gutter cover receptacle and the mount flange material is aluminum, steel, or plastic.
In one embodiment the length of the support portion is shorter than the length of the top portion.

In one embodiment the support portion extends at an acute angle relative to the plane of the top portion.

In one embodiment the hanging clip may include a strap that is coupled to the top portion and extends to a terminating edge distal to the top portion, the terminating edge able to be positioned at least past the rear wall of the mount flange.

In one embodiment the strap is coupled to the top portion by a weld, a screw, a bolt and nut, or a rivet.

In one embodiment the strap may be configured to be inserted between a shingle and an underlayment of a roof, and coupled therewith.

In one embodiment the strap includes a receiving hole operable to couple the fastener between the shingle and underlayment by a nail or a screw.

In one embodiment the hanging clip may further include an engagement portion having an upper edge configured to engage a retaining lip.

In yet another embodiment of the present invention there is provided a hanging clip for attaching a monolithic gutter and gutter cover to a structure, the hanging clip that includes a receptacle for the gutter cover, a means for supporting and retaining the gutter cover in the receptacle; and a means for fastening the receptacle to a building such that the gutter hangs from the supporting and retaining means by the gutter cover.

In yet another embodiment of the present invention there is provided a gutter system that includes a monolithic gutter body comprising a channel portion, a gutter cover, and a flange; and at least one hanging clip. The at least one hanging clip may include a gutter cover receptacle that receives the gutter cover of the monolithic gutter body and a flange receiving portion that receives the flange of the gutter body. The gutter cover receptacle may be formed by a top portion that extends from a rear edge to a forward edge; a support portion that extends from a rear edge to a forward edge; and a curved edge that is formed at a meeting of the top portion forward edge and the support portion forward edge.

In one embodiment the flange receiving portion may be formed by a forward wall that extends at a slightly obtuse angle from the rear edge of the top portion to a bent portion, and a rear wall that extends away from the bent portion in a direction approximately toward the plane of the top portion.

In one embodiment the gutter system further comprising a fastener that passes through a fastener housing disposed along the length of the gutter cover receptacle, the fastener operable to fasten the at least one hanging clip to a fascia of a building by the flange.

In one embodiment the fastener is one or more of a screw, a bolt or a nail.

In one embodiment the gutter system further comprising a strap that is coupled to the top portion and further coupled to a roof shingle at an end of the strap that is distal from the top portion of the at least one hanging clip.

In one embodiment the strap is coupled to the top portion by a weld, a screw, a bolt and nut, or a rivet.

In one embodiment the strap is coupled to the roof shingle and underlayment by a nail or a screw.

In yet another embodiment of the present invention there is provided a gutter that includes a monolithic gutter body including a cover surface extending from a rear edge to a forward edge; a return surface extending from a rear edge to a forward edge; and a channel portion. The channel portion may include a rear wall, a forward wall and a channel portion therebetween. The channel portion may define a collection chamber and the forward wall may include a retaining lip that at least partially extends toward the collection chamber. The cover surface forward edge and the return surface forward edge meet at a curved wicking edge and the return surface rear edge is coupled to an upper edge of the rear wall and the forward wall terminates at an upper edge spaced from the wicking edge to define a water receiving gap.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The accompanying drawings, which are incorporated herein and constitute part of this specification, illustrate the presently preferred embodiments of the invention, and, together with the general description given above and the detailed description given below, serve to explain the features of the invention. In the drawings:

**FIG. 1** is a perspective view of an exemplary gutter system in accordance with an embodiment of the invention.

**FIG. 2** is a perspective cross-sectional view along the line 2-2 in FIG. 1.

**FIG. 3** is an elevation view of an exemplary gutter body in accordance with an embodiment of the invention.

**FIG. 4** is a perspective view of an exemplary hanging clip of the gutter system of FIG. 1.

**FIG. 5** is an elevation view along the line 2-2 in FIG. 1.

**FIGS. 6A and 6B** illustrate an exemplary hanging clip in accordance with an embodiment of the invention.

**FIG. 7** illustrates an exemplary gutter system in accordance with an embodiment of the invention.

**FIGS. 8A and 8B** illustrate an exemplary hanging clip in accordance with an embodiment of the invention.

**FIG. 9** illustrates an exemplary gutter system in accordance with an embodiment of the invention.

**FIG. 10** illustrates a side view of an exemplary hanging clip in accordance with an embodiment of the invention.

**FIG. 11** illustrates a side view of an exemplary gutter body in accordance with an embodiment of the invention.

**FIG. 12** illustrates a side view of an exemplary embodiment of a gutter system that incorporates a hanging clip and a gutter body according to an embodiment of the invention.

**DETAILED DESCRIPTION OF THE INVENTION**

In the drawings, like numerals indicate like elements throughout. Certain terminology is used herein for convenience only and is not to be taken as a limitation on the present invention. The following describes preferred embodiments of the present invention. However, it should be understood, based on this disclosure, that the invention is not limited by the preferred embodiments described herein.

Referring to FIGS. 1-5, an exemplary embodiment of a gutter system 10 in accordance with an exemplary embodiment of the invention will be described. With reference to FIGS. 1-3, the gutter system 10 includes gutter body
defining a channel portion 30 and a cover portion 20 with a water receiving gap 14 therebetween. An end cap 12 extends along each lateral end of the gutter system 10 whereby the end caps 12 close the lateral ends of the channel portion 30. The end caps 12 are preferably crimped or otherwise sealingly interconnected along the cover portion 20. The body 11 of the gutter system 10 is preferably a seamless assembly and can be formed to any desired length. While the illustrated gutter system 10 includes a straight configuration, it is recognized that the gutter system 10 may be formed with internal or external corners or the like. In the preferred embodiment, the gutter system 10 includes external hanging clips 40 which will be described in more detail hereinafter.

[0050] Referring to FIGS. 2 and 3, the gutter body 11 in accordance with an exemplary embodiment of the invention will be described. The gutter body 11 includes a cover surface 22 of the cover portion 20 which extends from a rear edge 21 to a forward edge 23. A connection flange 24 extends upward from the rear edge 21 of the cover surface 22 and extends in a plane P1.

[0051] A wicking edge 25 is defined along the forward edge 23 of the cover surface 22 and connects to a forward edge 27 of a return surface 28. The return surface 28 extends from the forward edge 27 to a rear edge 29 which interconnects with an upper edge 33 of the rear wall 32 of the channel portion 30. The rear wall 32 preferably extends in the plane P1 such that it is coplanar with the flange 24. A bottom channel surface 36 interconnects the rear wall 32 with a forward wall 34 to define a collection chamber 38. While the channel portion 30 is illustrated as having a semi-circular shaped configuration, it is not limited to such and may have other configurations, for example, U-shaped, triangular, trapezoid, square, rectangular or elliptical.

[0052] The forward wall 34 extends to an upper edge 35 which is spaced from the wicking edge 25 to define the water receiving gap 14. The gap 14 is generally narrow, for example, approximately ½ inch in width, which prevents larger objects from entering into the collection chamber 38. The configuration of the gutter body 11 further contributes to collection of rain while preventing passage of leaves or debris into the collection chamber 38.

[0053] Referring to FIG. 3, the cover surface 22 preferably extends in a plane at an obtuse angle relative to the flange 24 such that the cover surface 22 is sloped downwardly from the rear edge 21 to the forward edge 23. The return surface 28 preferably extends at an obtuse angle 13 with respect to the rear wall 32 such that it slopes downwardly from the front edge 27 to the rear edge 29. The wicking edge 25 defines a curved surface between the cover surface 22 and the return surface 28. With this configuration, rain water on the cover surface 22 naturally rolls to the forward edge 23, wicks around the wicking edge 25 and onto the return surface 28 where it is directed to the rear wall 32 and into the collection chamber 38 of the channel portion 30, as indicated by the dashed arrow in FIG. 3. The curvature of the wicking edge 25 causes leaves or other large debris to fall away from the gap 14, as the wicking force will not be sufficient to cause such objects to travel along the return surface 28. To further promote larger objects from falling away from the gap 14, the cover portion 20 may be configured such that the wicking edge 25 extends forwardly of the plane P2 of the front wall 34, as illustrated in FIG. 3. It is contemplated that the wicking edge 25 may be formed even with or even rearwardly of the plane P2, for example, in cases where the gap 14 has a very minimal width.

[0054] Referring to FIGS. 4 and 5, an exemplary method of hanging the gutter system 10 will be described. The gutter system 10 is supported by a plurality of external hanging clips 40. Each of the exemplary hanging clips 40 includes a mounting portion 42 with a head 43, a channel support portion 46, and a retaining portion 44 with a retaining lip 48. The channel support portion 46 preferably has a configuration which complements the configuration of the channel portion 30. As described below, in a preferred method of mounting, fasteners 50 are secured directly through the head 43 of the mounting portion 42 without any holes. It is contemplated that the head 43 or mounting portion 42 may define one or more holes.

[0055] Referring to FIG. 5, in the illustrated embodiment, a plurality of clips 40 are positioned on the gutter body 11 by positioning the retaining lip 48 of each clip 40 into the gap 14 such that it secures about the upper edge 35 of the front wall 34 and then rotating the clip 40 about the gutter body 11 until the head 43 is positioned adjacent the flange 24. The gutter system 10 is positioned along a roof 60 line or the like and fasteners 50 are secured through the flange 24 and the head 43 of the hanging clip 40 to secure the gutter system 10. While the illustrated embodiment shows the fastener 50 passing through the flange 24 and the hanging clip 40, it is contemplated that additional fasteners may be secured through the flange without passing through a clip 40.

[0056] In an alternative method, the clips 40 may be secured to the building structure first and then the gutter body 11 rotated into a supported position within the clips 40. Once positioned, fasteners 50 would again be secured through the flange 24 and the clip heads 43. The illustrated hanging clips 40 have a J-shape, however, other configurations may be utilized, provided the clip supports the channel portion 30 and prevents forward movement thereof.

[0057] With reference to FIG. 5, the external hanging clips 40 support the channel portion 30 and the fasteners 50 secure the flange 24 of the cover portion 20. With such support, the cover surface 22 and return surface 28 define a self-supporting cantilever structure. Such a self-supporting structure eliminates the need for internal support brackets found in many of the prior-art covered gutter systems. Such internal support brackets add to the expense of those systems, are often difficult to install and/or maintain, and may cause blockage within the collection chamber. The gutter system of the current invention eliminates the need for such internal support structures.

[0058] As illustrated in FIG. 5, leaves 62, acorns 64, shingle sand and the like may pass from the roof 60 onto the cover surface 22, but then will fall off of the front of the gutter system 10 without passing through the water receiving gap 14. Additionally, the gap 14 prevents birds, squirrels and the like from entering the collection channel 38 or nesting within the channel 38. The self-supporting cantilever structure also helps to ensure that ice and snow which slides down the roof 60 will simply pass along the cover surface 22 and away from the gutter system 10 without damage thereto.

[0059] It is noted that the while the illustrated gutter body 11 is formed from a seamless, single sheet of material, such is not required. It is recognized that the cover portion and the channel portion may be formed separately and interconnected. It is further recognized that the cover surface and return surface may be formed separately and interconnected.
An exemplary embodiment of a hanging clip 70 will now be described with reference to FIGS. 6A and 6B. The hanging clip 70 includes a gutter cover receptacle portion 71, a mount flange 75, and a fastener housing 80.

The gutter cover receptacle 70 is a space defined by a top portion 72 and a support portion 74 that meet at a curved edge 73 at the front of the hanging clip 70. The top portion 72 extends from its rear edge at the mount flange 75 toward its forward edge that meets the curved edge 73. The cover surface may be at a downward angle to create a downward slope from the mount flange 75 to the curved edge 73. In one embodiment the angle of the downward slope may be within a range of 1-15 degrees (or 91 to 106 degrees from the mount flange 75) off the horizontal, inclusive. The gutter cover receptacle portion 71 may be shaped to receive at least a part of a gutter cover, for example, the cover portion 20 illustrated in FIG. 3. The length, width and thickness of the support portion 74 may be varied as needed to support the shape, size and weight of a gutter. In one embodiment the width of the hanging clip 70 may vary, for example, the mounting flange 75 and gutter cover 72 may have a width of about ½ inch, and have a thickness of about ½ inch.

In one embodiment the curved edge 73 may be shaped to maintain a wicking force on any water that flows over it, such that the water flows onto the support portion 74 and into a water collection chamber of a gutter. The slope of the top portion 72, as well as the shape of its surface (bumps, ridges, etc.), described above, may also be based, in part, on parameters (e.g., velocity of the water, volumetric flow rate, and the like) to maintain the wicking force on any water that flows over the curved edge 73.

The mount flange 75 may include a forward wall 76, a bent portion 79, and a rear wall 77. The forward wall 76 extends from the rear edge of the top portion 72 upward toward the bent portion 79, the upper edge of the forward wall 76 meeting the bent portion 79. The rear wall 77 extends from the other end of the bent portion 79 at a downward direction toward the plane of the top portion 72. The forward wall 76, rear wall 77, and bent portion 79 form a space, identified in FIG. 6A as the flange receiving space 78, that may receive at least a part of a flange/mounting head, such as the connection flange 24 illustrated in FIG. 3. The forward wall 76 may extend at a slightly obtuse angle from the top portion 72. In one embodiment the angle is within a range of 91 to 106 degrees, inclusive. In one embodiment the rear wall 77 of the mount flange 75 defines the rear most part of the hanging clip 70, and it abuts or nearly abuts a structure to which the hanging clip 70 may be affixed.

The fastener housing 80 is a chamber formed at the top by an arch-like piece that is extruded along part of the top portion 72, and formed at the bottom by the top portion 72. The fastener housing 80 includes a first opening 81 and a second opening 82, the second opening 82 at the distal end of the fastener housing 80 from the first opening 81. The second opening 82 may abut (or nearly abut) the forward wall 76 of the mount flange 75. The chamber of the fastener housing 80 may be shaped to receive a fastener such as a screw, nail, or bolt. In one embodiment, the fastener is positioned from the first opening 81 through the fastener housing 80, through the forward wall 76 and rear wall 77 of the mount flange 75 such that it may couple the hanging clip 70 to a wall or fascia of a structure. The forward wall 76 and rear wall 77 may be manufactured to include holes for receiving fasteners, the holes may be punched, or a fastener may be driven through the walls during installation.

FIG. 6B is a perspective view of the hanging clip 70 illustrated in FIG. 6A. The length and position of the fastener housing 80 may be varied as needed to provide rigidity to the hanging clip 70.

The width and depth of the hanging clip 70 may be varied to accommodate size and installation constraints. For example, if particular constraints call for fewer hanging clips 70 to be used, a wider and/or thicker hanging clip 70 may be used. In one embodiment the width and thickness vary at different portions of the hanging clip 70, e.g., the width of the support portion 74 is less than the width of the top portion 72, or vice versa. In one embodiment the width and/or thickness of the mount flange 75 is greater than the width of the top portion 72, or vice versa.

An exemplary embodiment of a gutter system 3 that incorporates a hanging clip 70 for hanging a gutter will now be described with reference to FIG. 7. The gutter system 3 includes a gutter body 11 and one or more hanging clips 70, like those described with reference to FIG. 3 and FIGS. 6A and 6B, respectively. As illustrated in FIG. 7, the gutter cover receptacle 71 receives at least part of the cover portion 20 of the gutter body 11. The gutter cover receptacle 71 preferably will have a shape and configuration that complements the shape and confirmation of the cover portion 20. While generally curved (or “U” shaped) shapes are illustrated in the figures, other shapes may be used consistently with the present invention, including triangular, trapezoidal, square, rectangular, elliptical, and irregular. The top portion 72, support portion 74, and curved edge 73, together and individually, support the gutter body 11 such that the gutter body 11 does not fall out of the hanging clip 70 under weight of the gutter body 11 (especially if carrying water) or in poor environmental conditions. The length of the support portion 74 may vary depending on the force needed to firmly hold the cover portion 20 and resist the gutter body 11 “twisting” out of the hanging clip 70. The gutter body 11 and hanging clip 70 may be preferably arranged to permit the water receiving gap between the curved edge 73 and the upper edge 35 of the front wall 34 of the gutter body 11 to receive the water that wicks over it into the collection chamber 38. In one embodiment that gap is about ½ inch to permit water to flow through but block some debris. Maintaining a water receiving gap with the hanging clip 70, however, is not necessary for the system to function.

FIG. 7 also illustrates a fastener housing 80 and a screw 84 in gutter system 3. The fastener housing 80 is preferably disposed such that it extends from the mount flange 75 toward the curved edge 73 of the hanging clip 70. The chamber of the fastener housing 80 is shaped to accommodate the screw 84. In one embodiment the chamber is threaded to accept the screw 84. When screwed in to the fastener housing 80, the screw 84 will pass through the mount flange 75, the flange 24, and into the fascia 85 of a structure. The screw 84 will pass deep enough into the fascia 85 to securely attach the hanging clip 70 and hold the gutter body 11, as described above. In one embodiment, depending on the material and thickness of the hanging clip 70 and the number of hanging clips used, generally, to support a gutter, the top portion 72 may deform under the weight of the gutter body 11 and so the fastener housing 80 and screw 84 will provide additional rigidity to the hanging clip 70 and the top portion 72. The length of the screw 84 may vary based on the
size of the gutter body 11 and hanging clip 70 and the number of hanging clips used to support the gutter on a structure.

[0068] Another embodiment of a hanging clip according to an exemplary embodiment of the present invention will now be described with reference to FIGS. 8A and 8B. FIGS. 8A and 8B illustrate a hanging clip 90 that includes a strap 97 for fastening the hanging clip to a roof. The hanging clip 90, like the hanging clip 70, includes a gutter cover receptacle 91, and a mount flange 95, and the gutter cover receptacle 91 is defined by a top portion 92, support portion 94, and curved edge 93. The hanging clip 90 optionally does not have a fastener housing 80 on hanging clip 70. The hanging clip 90 includes a strap 97 that is coupled to a screw 98 to the top portion 92. In other embodiments the strap 97 may be coupled to the top portion 92 by a weld, bolt and nut, nail, or rivet. The location of the screw 98 along the top portion 92 may be based on the weight, size and length of the hanging clip 90 and the gutter it supports and the force needed to be exerted by the strap 97 and screw 98 on the top portion 92 to resist deformation of the hanging clip 90.

[0069] The strap 97 may preferably be constructed from aluminum, and may also be constructed from plastic or rubber. The strap 97 is formed such that the distal end from the screw 98 may be inserted between a shingle and an underlayment of a roof, and coupled therewith. The thickness of the strap 97 may be varied to accommodate different roof types, including shingle types.

[0070] FIG. 8B is a perspective view of the hanging clip 90. In FIG. 8B, holes 94 in the forward wall 96 are visible. Holes 94 are in both the forward wall and rear wall (not shown) may be used to attach the mount flange 95 to a wall of a structure. In one exemplary embodiment the holes 94 are to be accommodated screws. In other embodiments the holes 94 may be formed to accommodate bolts and nails. Also illustrated in FIG. 8B are holes 93 in the strap 97. These holes may be used to couple the strap between shingle and underlayment, and are formed to receive a nail or a screw.

[0071] An exemplary embodiment of a gutter system 4 that incorporates a hanging clip 90 with a strap 97 for hanging a gutter will now be described with reference to FIG. 9. The gutter system 4 includes a gutter body 11 and a hanging clip 90, like those described with reference to FIG. 3 and FIGS. 8A and 8B, respectively. The gutter cover receptacle 91 receives at least part of the cover portion 20 of the gutter body 11. The gutter cover receptacle 91 preferably will have a shape and configuration that complements the shape and configuration of the cover portion 20. While generally curved shapes are illustrated in FIGS. 8A, 8B and 9, other shapes may be used consistently with the present invention, including triangular, trapezoidal, square, rectangular, and elliptical. The support portion 94 and curved edge 93 support the gutter body 11 such that the gutter body 11 does not fall out of the hanging clip 90 under the force of gravity (especially if the gutter body 11 is holding water) or in poor environmental conditions. The length of the support portion 94 may vary depending on the force needed to firmly hold the cover portion 20 and resist the gutter body 11 "twisting" out of the hanging clip 90. The gutter body 11 and hanging clip 90 may be preferably arranged to permit the water receiving gap between the curved edge 93 and the upper edge 35 of the front wall 34 of the gutter body 11 to receive the water that wicks over it into the collection chamber 38. In one embodiment that gap is about ½ inch to permit water to flow through but block some debris. Maintaining a water receiving gap with the hanging clip 90, however, is not necessary for the system to function.

[0072] The mount flange 95 is configured to receive a connection flange, such as flange 24, in the space between the forward and rear walls and the bent portion of the mount flange 95.

[0073] FIG. 9 also illustrates a strap 97 in gutter system 4. The strap 97 is preferably disposed and is of such a length that it extends from the cover portion 20 over the mount flange 95 to the roof 99. The end of the strap 97 may be configured to be inserted beneath the shingle of the roof 99 and coupled to the roof, as described above. In one embodiment the chamber is threaded to accept the screw 84. In one embodiment, depending on the material and thickness of the hanging clip 90 and the number of hanging clips used, generally, to support a gutter, the top portion 92 may deform under the weight of the gutter body 11 and so the strap 97 provides additional rigidity to the hanging clip 90 and the top portion 92. The position where the strap 97 is coupled to the cover portion 20 may vary based on the size of the gutter body 11 and hanging clip 70 and the number of hanging clips used to support the gutter on a structure.

[0074] Two screws 98 are inserted through the holes 94 illustrated in FIG. 8B, and passes through the flange 24 and the mount flange 95 into the wall of the structure to which the gutter system 4 is attached. The screws 98 provide some additional support to the hanging clip 90 and in turn to the gutter body 11.

[0075] In one embodiment material or surface features (e.g., ridges, dimples, bumps, roughening) may be disposed introduced to the surface of the gutter cover receptacle 71 and gutter cover receptacle 91 to increase the friction between the cover portion 20 and the hanging clip 70 and hanging clip 90 of the gutter system 3 and gutter system 4.

[0076] Another embodiment of a hanging clip according to an exemplary embodiment of the present invention will now be described with reference to FIG. 10. FIG. 10 illustrates a hanging clip 100 that may be generally consistent with the type illustrated in FIGS. 6A, 6B, 8A, and 8B, utilizing, for example, the fastener housing 80 of hanging clip 70 (see FIG. 6A) or the strap 97 of the hanging clip 90 (see FIG. 8A). The hanging clip 100 includes an engagement portion 101 that extends from the support portion 103, extends downward, extends in a returning direction toward the front of the hanging clip 100, and extends upward to an upper edge 102. Though not shown in FIG. 10, the position of the upper edge 102 may be in front of the hanging clip 100. The engagement portion 101 is illustrated as curved or con cave, but in other embodiments it may be triangular, square, or straight. In one embodiment, the surface of the engagement portion 101 may include holes or slots to receive water. In another embodiment the engagement portion 101 may have a different width and thickness than the other portions of the hanging clip 100.

[0077] Another embodiment of a gutter body according to an exemplary embodiment of the present invention will now be described with reference to FIG. 11. FIG. 11 illustrates a gutter body 104 that may be generally consistent with the type illustrated in FIG. 3. The gutter body 104 includes a retaining lip 105 at the upper edge of the forward wall. The retaining lip 105 here is formed to accept and secure the
upper edge 102 of the engagement portion 101 illustrated in FIG. 10. In one embodiment the retaining lip is bendable around the upper edge of the forward wall of the gutter body 104 and may be adjusted to assist with installation.

[0078] An exemplary embodiment of a gutter system 5 that incorporates a hanging clip 100 and a gutter body 104 will now be described with reference to FIG. 12. When installed along a roof, one or more hanging clips 100 are positioned such that the gutter buddy 104 may hang therefrom with the upper edge 102 securely engaged with the retaining lip 105. As noted above, the retaining lip may be adjusted to permit the engagement portion 101 to be positioned near the water collection chamber of the gutter body 104 and near the water receiving gap. Once the upper edge 102 is securely engaged with the retaining lip 105 the gutter system 5 will resist the weight of the gutter body 104 (especially if filled with water) or poor environmental conditions that would urge the gutter body 104 to pull or twist out of the hanging clip 100.

[0079] In one embodiment of the present invention, the gutter body 104 is pre-installed in the hanging clip 100 prior to securing the gutter system 5 to a structure. In another embodiment of the present invention, the hanging clip 100 and gutter body 104 may be installed separately, e.g., one at a time.

[0080] The engagement portion 101 may be manufactured or formed such that when it is engaged with the retaining lip 105, there is some tension in the engagement portion 101 causing the upper edge 102 to push or press against retaining lip 105 and/or the forward wall of the gutter body 104. In one embodiment the upper edge 102 of the hanging clip 100 may, prior to installation, be positioned in front of the rest of the hanging clip 100 such that it has to be compressed in a spring like fashion to engage the retaining lip 105.

[0081] Although FIGS. 7, 9 and 12 illustrate only the hanging clips fastened to the structure, as contemplated herein, additional fasteners may be utilized in exemplary embodiments of the present invention, including fasteners to attach the gutter body to the structure.

[0082] These and other advantages of the present invention will be apparent to those skilled in the art from the foregoing specification. Accordingly, it will be recognized by those skilled in the art that changes or modifications may be made to the above-described embodiments without departing from the broad inventive concepts of the invention. It should therefore be understood that this invention is not limited to the particular embodiments described herein, but is intended to include all changes and modifications that are within the scope and spirit of the invention as defined in the claims.

What is claimed is:

1. An hanging clip, the hanging clip comprising:
   a gutter cover receptacle formed by:
   a top portion that extends from a rear edge to a forward edge;
   a support portion that extends from a rear edge to a forward edge; and
   a curved edge that is formed at a meeting of the top portion forward edge and the support portion forward edge; and
   a mount flange.
   2. The hanging clip of claim 1, wherein the mouth flange comprises a forward wall that extends at a slightly obtuse angle from the rear edge of the top portion to a bent portion, and a rear wall that extends away from the bent portion in a direction approximately toward the plane of the top portion.
   3. The hanging clip of claim 1, wherein the mount flange includes at least one fastener-receiving hole shaped to receive one or more of a screw, a bolt or a nail.
   4. The hanging clip of claim 2, further comprising a fastener housing disposed along a length of the gutter cover receptacle, the fastener housing formed to receive a fastener at a first opening and at a second opening that abuts the mount flange.
   5. The hanging clip of claim 1, wherein gutter cover receptacle and mount flange each have a width that is about ½ inch.
   6. The hanging clip of claim 1, wherein gutter cover receptacle and mount flange each have a thickness that is about ¼ inch.
   7. The hanging clip of claim 1, wherein the gutter cover receptacle and the mount flange material is aluminum, steel, or plastic.
   8. The hanging clip of claim 1, wherein the length of the support portion is shorter than the length of the top portion.
   9. The hanging clip of claim 1, wherein the support portion extends at an acute angle relative to the plane of the top portion.
   10. The hanging clip of claim 1, further comprising a strap that is coupled to the top portion and extends to terminating edge distal to the top portion, the terminating edge able to be positioned at least past the rear wall of the mount flange.
   11. The hanging clip of claim 10, wherein the strap is coupled to the top portion by a weld, a screw, a bolt and nut, or a rivet.
   12. The hanging clip of claim 10, wherein the strap is configured to be inserted between a shingle and an underlayment of a roof, and coupled therewith.
   13. The hanging clip of claim 12, wherein the strap includes a receiving hole operable to couple the fastener between the shingle and underlayment by a nail or a screw.
   14. The hanging clip of claim 1, further comprising an engagement portion having an upper edge configured to engage a retaining lip.
   15. A hanging clip for attaching a monolithic gutter and gutter cover to a structure, the hanging clip comprising:
      a receptacle for the gutter cover,
      a means for supporting and retaining the gutter cover in the receptacle; and
      a means for fastening the receptacle to a building such that the gutter hangs from the supporting and retaining means by the gutter cover.

16. A gutter system, the gutter system comprising:
   a monolithic gutter body comprising a channel portion, a gutter cover, and a flange; and
   at least one hanging clip that comprises:
   a gutter cover receptacle that receives the gutter cover of the monolithic gutter body, and is formed by:
   a top portion that extends from a rear edge to a forward edge;
   a support portion that extends from a rear edge to a forward edge; and
   a curved edge that is formed at a meeting of the top portion forward edge and the support portion forward edge; and
a flange receiving portion that receives the flange of the gutter body.

17. The gutter system of claim 16, wherein the flange receiving portion is formed by:
   a forward wall that extends at a slightly obtuse angle from the rear edge of the top portion to a bent portion, and a rear wall that extends away from the bent portion in a direction approximately toward the plane of the top portion.

18. The gutter system of claim 16, the gutter system further comprising a fastener that passes through a fastener housing disposed along the length of the gutter cover receptacle, the fastener operable to fasten the at least one hanging clip to a fascia of a building by the flange.

19. The gutter system of claim 18, the gutter system further comprising a strap that is coupled to the top portion and further coupled to a roof shingle at an end of the strap that is distal from the top portion of the at least one hanging clip.

20. The gutter system of claim 16, wherein the strap is coupled to the roof shingle and underlayment by a nail or a screw.

21. A gutter comprising:
   a monolithic gutter body including:
   a cover surface extending from a rear edge to a forward edge;
   a return surface extending from a rear edge to a forward edge; and
   a channel portion including a rear wall, a forward wall and a channel portion therebetween whereby the channel portion defines a collection chamber and the forward wall includes a retaining lip that at least partially extends toward the collection chamber, wherein the cover surface forward edge and the return surface forward edge meet at a curved wicking edge and the return surface rear edge is connected to an upper edge of the rear wall and the forward wall terminates at an upper edge spaced from the wicking edge to define a water receiving gap.

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