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(54) **EXTREME FLOW MITER**

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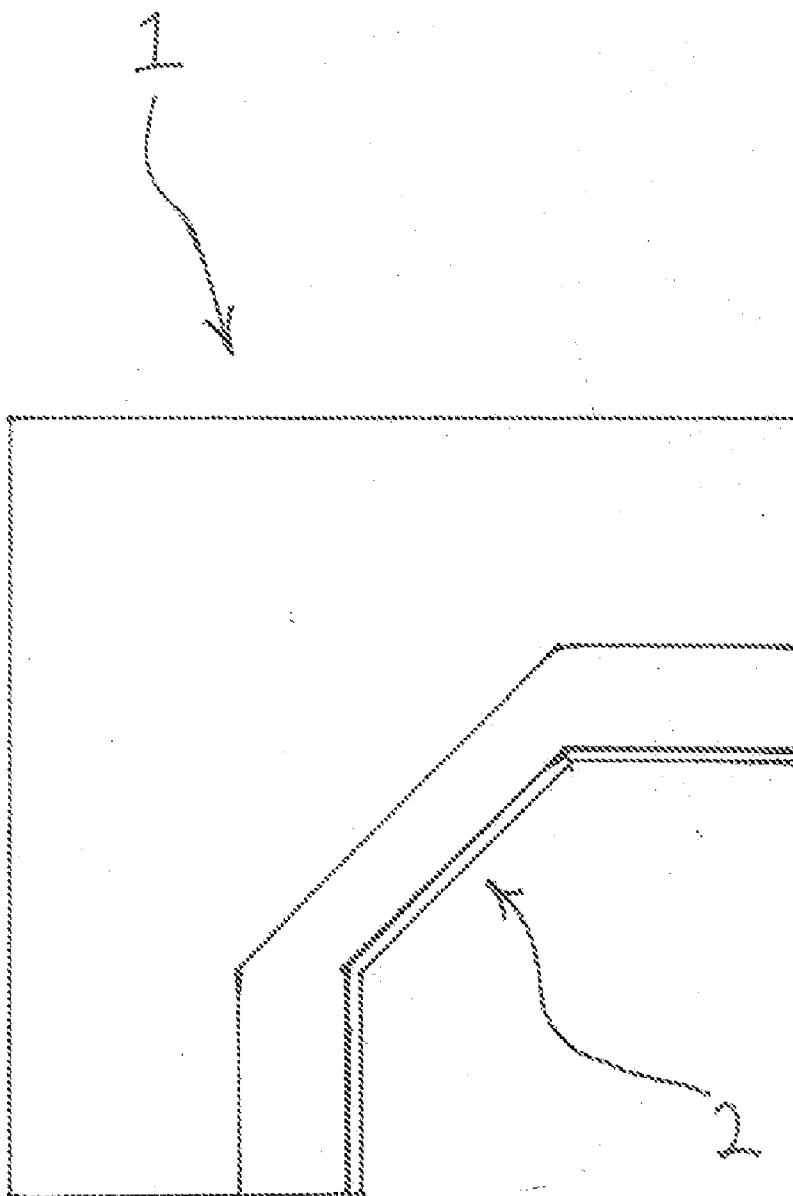
(57) **ABSTRACT**

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A Extreme Flow Gutter Miter includes a miter with an extended front end to handle water flow from a roof valley under all conditions. The gutter valley handler accommodates the extreme water flow under all conditions of the roof valley and yet also provides a superior solution for water overflow in all instances of water flow from a roof valley.

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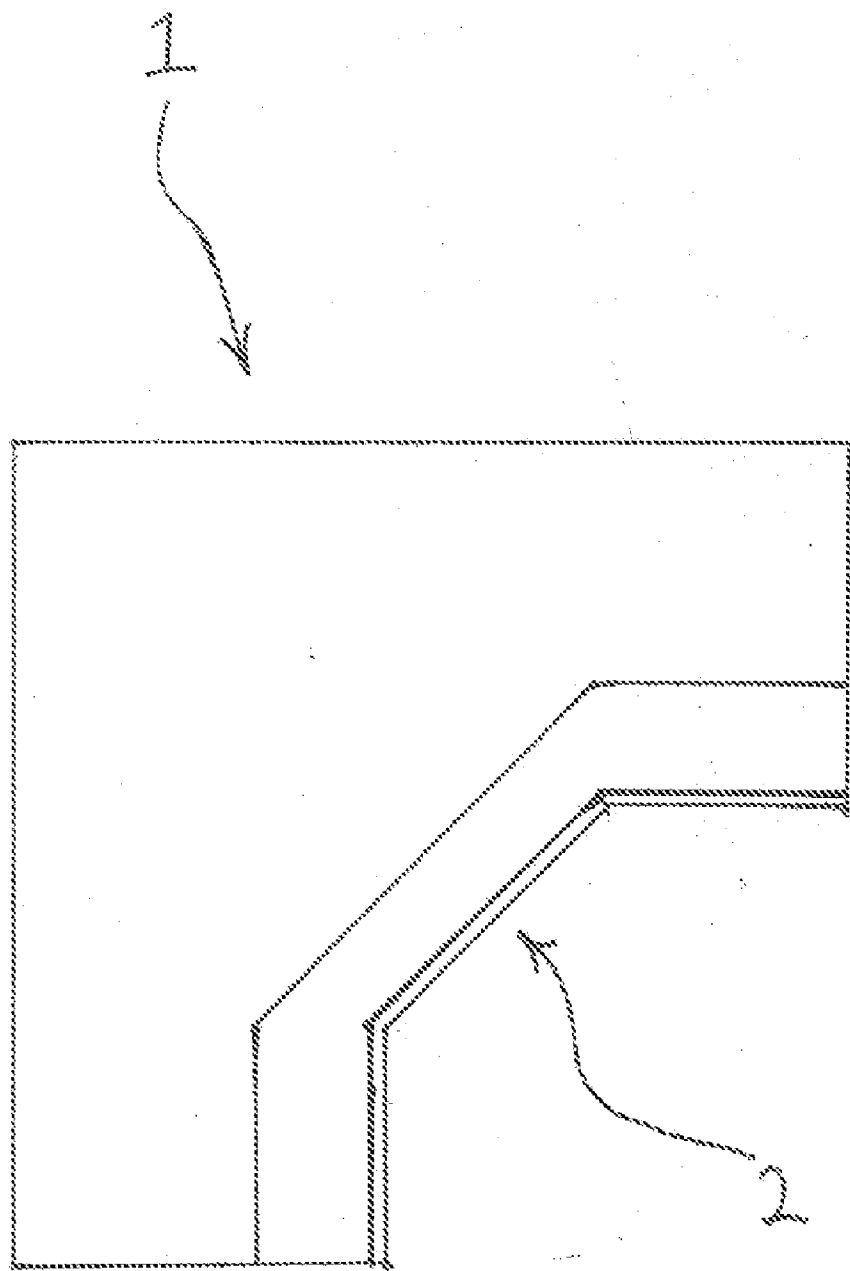


Fig. 1

EXTREME FLOW MITER

BACKGROUND OF THE INVENTION

[0001] The present invention relates generally to rain gutters, and more particularly to connecting and supporting devices for rain gutters installed on residential and other small buildings.

[0002] Rain gutters for residential buildings and the like are typically made of roll-formed aluminum gutter troughs installed along the eaves of the roof. Various accessory devices are used to install the rain gutter troughs and their associated downspouts to the eaves. For example, devices known as gutter hangers are used to attach the gutter troughs to fascia boards running along the eaves. Various other devices, generally known in the trade as corner miters, are used to connect the ends of gutter troughs where they intersect at a corner of a roof. It is an improved device of the latter type to which the present invention is addressed.

[0003] Two types of corner miters have been widely used in the past to join roll-formed aluminum gutters. The first type is referred to as a miter strip and consists simply of an aluminum strip which extends diagonally outward from a corner of an eave and conformably underlies and connects the ends of the two gutter troughs intersecting at the corner. The gutter troughs are each cut at a 45° angle and positioned such that their end edges are aligned parallel to and spaced slightly from one another and overlies the miter strip. After the gutter troughs have been placed in position along the fascia boards, holes are drilled through both the miter strip and the overlying end portions of the troughs, and rivets are installed in the holes to secure the miter strip to the trough ends. The miter strip may itself be additionally attached to the corner of the eave to thereby provide some support to the gutter trough ends. A silicone caulking compound is usually applied between the upper surface of the miter strip and the lower surfaces of the trough ends just prior to riveting to provide a waterproof seal at the gutter corner.

[0004] The second type of corner miter commonly available heretofore is commonly referred to as a box miter and consists of a prefabricated corner gutter trough having a cross-sectional configuration substantially the same as that of the straight gutter troughs. The box miter is attachable to the corner of the eave and extends several inches in each direction from the corner along the fascia boards of the eaves. The ends of the box miter may thus abut or overlap the ends of the straight gutter troughs attached to the fascia boards. The box miter is typically joined to the ends of the gutter troughs by simply overlapping and riveting the gutter troughs to the box miter. Silicone caulking is also typically used in this type of joint.

[0005] Where a pair of straight aluminum gutter troughs are to be joined at an intermediate point along an eave where they abut end-on, they are generally connected by simply overlapping their adjacent ends, drilling holes through the overlapping end portions, applying a caulking compound, and riveting the ends together.

[0006] The above-described corner miters of either the miter strip or box miter types, these miters have proven somewhat unsatisfactory for one main reason during heavy water flow this would cause water overflow at the inside corner of the miter. The Extreme Flow Miter has an extended front end to handle the heavy water flow intern corrects the disadvantages of the older miters. Also in this case, once leaking has begun it accelerates corrosion of the aluminum parts as well

as deterioration of the caulking compound, and thereby further reduces the useful life of the rain gutter.

[0007] This is a particularly severe problem in the case of professionally installed roll-formed aluminum gutters wherein long, one-piece aluminum gutters are custom made for the particular application at hand. Such gutters are roll-formed at the site of installation from rolls of continuous aluminum stripping and are typically made as long as necessary to cover the entire length of the fascia board at hand, that is, from one corner of the eave to the next.

[0008] Accordingly, it is a general object of the present invention to provide a joint device for rain gutters which provides a fix to an overflow problem during heavy water flow from a roof valley witch is under most rain falls. It is yet another object of the present invention to achieve the foregoing objects and yet also provide a means for applying a lesser amount of caulking compound on both top and bottom surfaces of the rain gutter troughs that connect to the extreme flow miter, and also protect such caulking compound from exposure to air and water so as to lengthen the effective life of the caulking compound and gutter system. Finally, it is also an object to facilitate and simplify the installation of rain gutter troughs.

SUMMARY OF THE INVENTION

[0009] In view of the foregoing disadvantages inherent in the known types of miters now present, the present invention provides an improved miter by extending the front end. As such, the general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new and improved miter which has all the advantages of the prior miters and none of the disadvantages. In accordance with the present invention, a connecting and supporting apparatus for joining a pair of rain gutter troughs consists of installing a extreme flow miter witch has the extended front end to handle heavy water flow that occurs at roof valleys. “The current fix for this problem is to add a two inch piece of aluminum to the front end of the miter to try and prevent the overflow” witch have proven over time to be ineffective. The Extreme Flow Miter eliminates that need and fixes the problem. The joints are made watertight by application of caulking compound to both top and bottom surfaces of the gutter trough ends that connect to the extreme flow miter.

[0010] Although the present invention is primarily of application as a corner joint apparatus where gutter troughs intersect orthogonally, Moreover, the device may be used on inside corners along the perimeter of a roofline. The advantages of the present invention will become more apparent by reference to the accompanying FIGURE and the following detailed description of the preferred embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

[0012] FIG. 1 is a top view of the preferred embodiment of the present invention as it is adapted to inside corners of a

roofline mounted against the fascia FIG. 1 number 1 with the extended front end referencing FIG. 1 number 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0013] Thus, the present invention provides an improved miter. With reference now to the drawings, and in particular to FIG. 1 number 2 thereof, a new and improved inside miter embodying the principles and concepts of the present invention in addition to extending the front end and generally designated by the reference numeral FIG. 1 numbers 1 and 2 will be described.

[0014] The preferred embodiment of the extreme flow miter of the present invention is described herein by reference to the embodiments illustrated in the accompanying FIG. 1. The main embodiment of the joint apparatus are illustrated in FIG. 1 as it is employed to connect adjacent sections of rain gutter troughs to one another and also attach the troughs to the outer surfaces of fascia boards along the eave of the roof. The joint may be employed at an inside corner, as indicated. Accordingly, the invention may be adequately understood by reference to the following more detailed drawing of the extreme flow miter shown in FIG. 1.

[0015] Although the present invention has been described and illustrated by reference to a preferred embodiment, it will be understood that various alterations, modifications and substitutions which may be apparent to one skilled in the art may

be made without departing from the essential spirit of the invention. Accordingly, the scope of the invention is defined in the above claims.

1. The Extreme Flow Miter is a inside corner miter with an extended front end FIG. 1 number 2 and consists of a prefabricated corner gutter trough having the end-section configuration substantially the same as that of the straight gutter troughs with the middle front of the configuration extended outward FIG. 1 number 2. The Extreme Flow Miter is attachable to the corner of the eave and extends several inches in each direction from the corner along the fascia boards of the eaves FIG. 1 number 1. The ends of the Extreme Flow Miter may thus abut or overlap the ends of the straight gutter troughs attached to the fascia boards.

2. FIG. 1 is a top view of the preferred embodiment of the present invention as it is adapted to inside corners of a roofline mounted against the fascia FIG. 1 number 1 with the extended front end referencing FIG. 1 number 2.

3. Thus, the present invention provides an improved miter. With reference now to the drawings, and in particular to FIG. 1 number 2 thereof, a new and improved inside miter embodying the principles and concepts of the present invention in addition to extending the front end and generally designated by the reference numeral FIG. 1 numbers 1 and 2 will be described.

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