United States Patent [19]

Lasscock

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[54] **GUTTER SUSPENSION MEANS**

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[30] **Foreign Application Priority Data**

Sept. 27, 1972 Australia 607/72

[52] **U.S. Cl.** **52/11,** 52/90, 248/48.1

[51] **Int. Cl.** **E04d 13/00,** E04b 7/02

[58] **Field of Search** 52/11-16, 90-95; 248/48.1, 48.2

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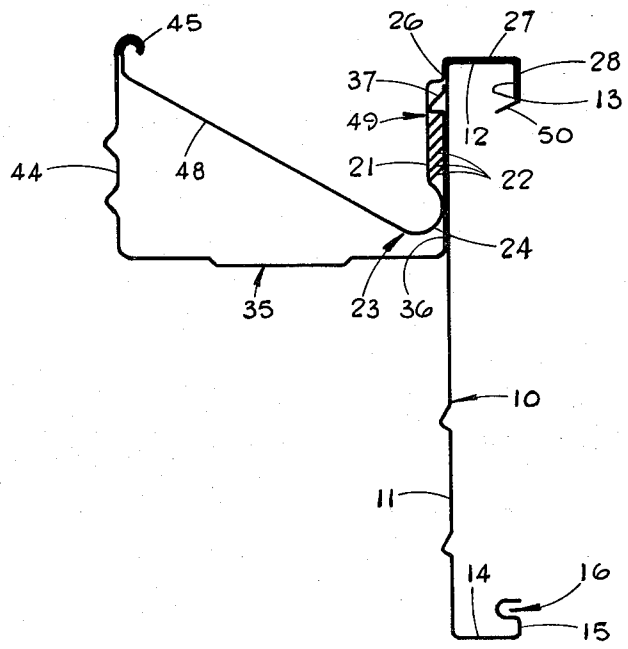
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Attorney, Agent, or Firm—Jay L. Chaskin, Esq.

[57] **ABSTRACT**

Gutter suspension means for suspending a gutter having a longitudinal extension retention rib in its rear wall near the upper edge, the retention rib projecting into the gutter, the suspension means comprising a plurality of resilient clips each having a front portion with tongues thereon which extend into the gutter, the tongues being selectively engageable with the longitudinally extending retention rib so as to support the gutter, each clip also having a rear portion arranged to bear against means to which the gutter is to be suspended, for example a fascia.

8 Claims, 4 Drawing Figures



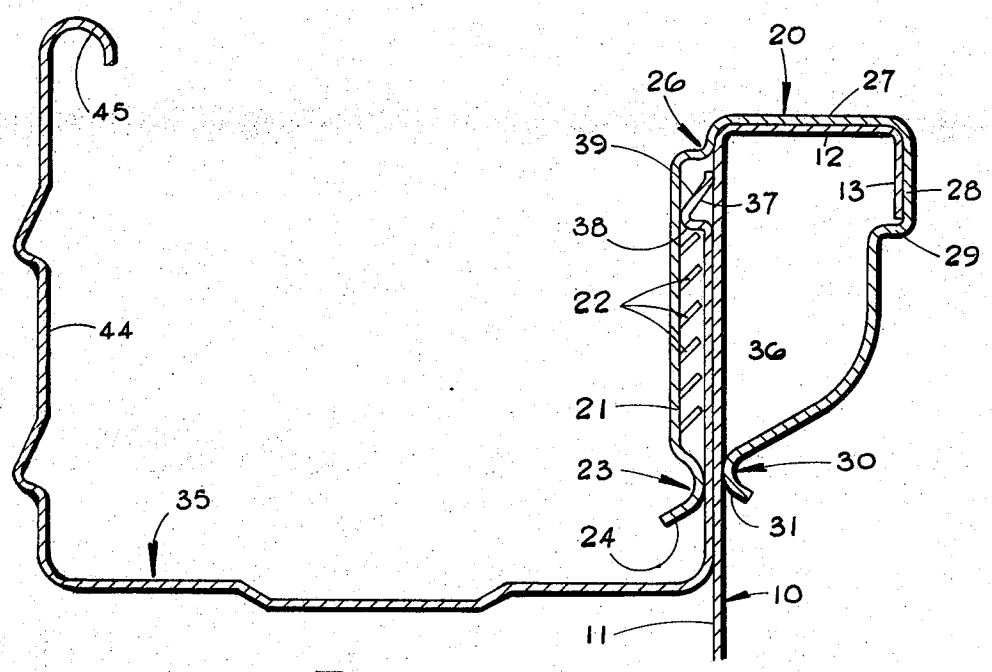

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FIG 1

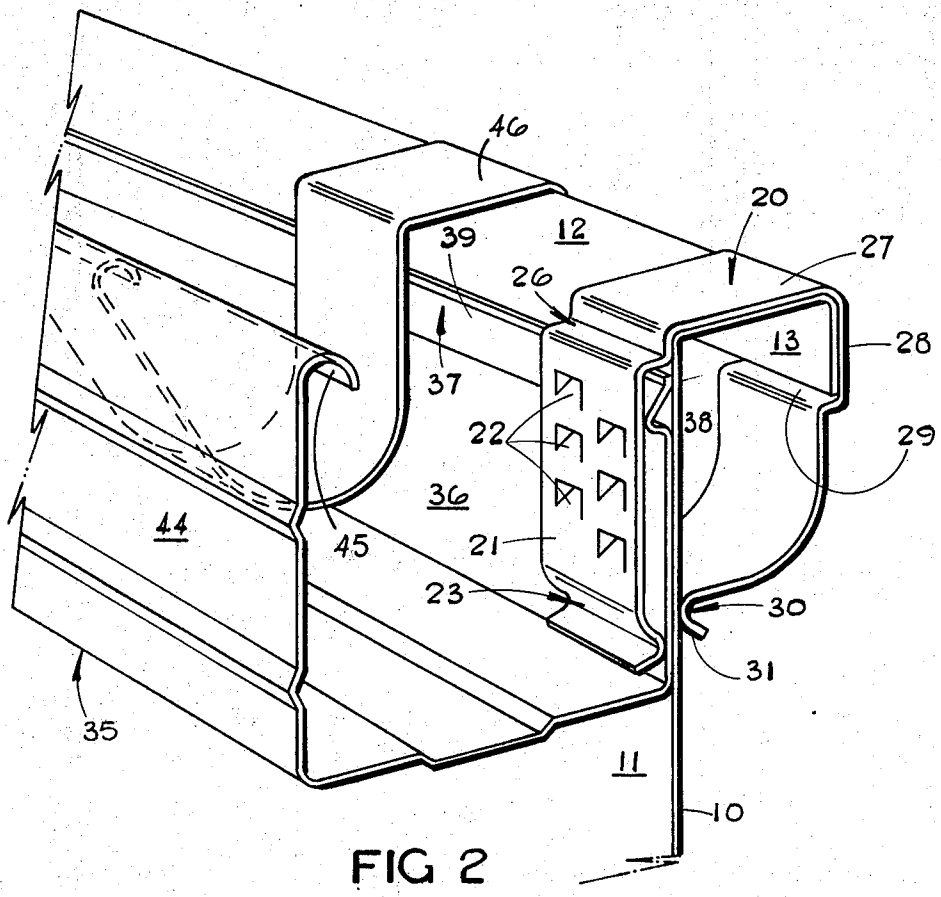

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FIG 2

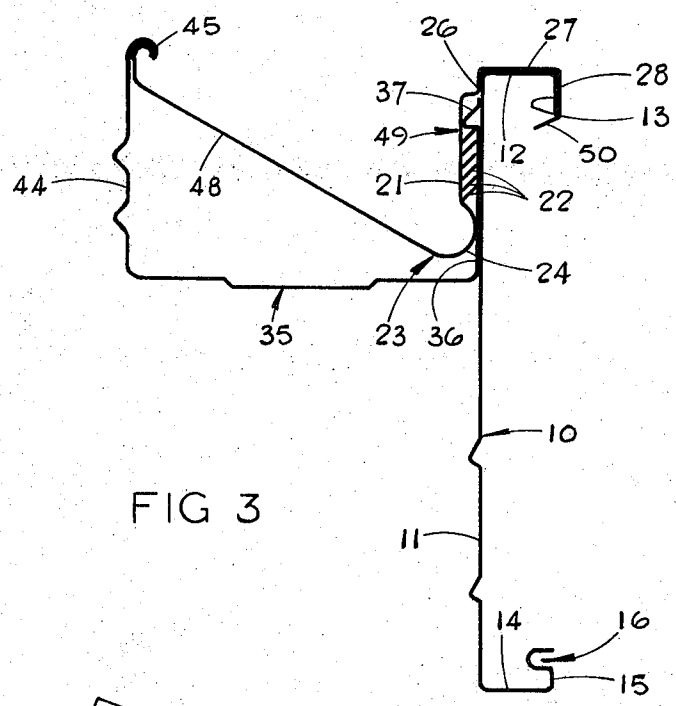

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FIG 3

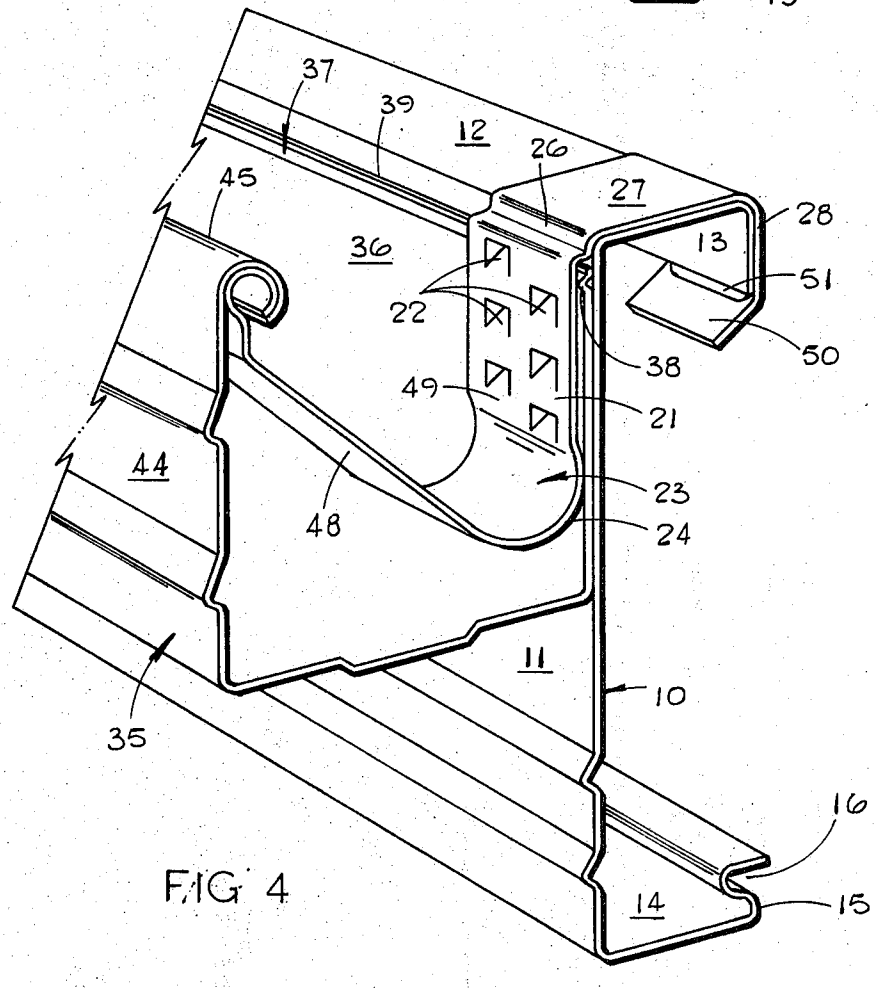

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FIG 4

GUTTER SUSPENSION MEANS

This invention relates to means for the suspension of a gutter, for example from a metal fascia of a building, although it will become evident from the description contained herein that the invention is not limited to suspension from a fascia nor from a fascia of metal.

BACKGROUND OF THE INVENTION

One construction which is widely used is a fascia of metal secured to the ends of purlins or beams of a building. One fascia construction which is commonly used and which is preferred includes a front face of metal, there being an upper rearwardly extending flange which terminates in a downwardly extending flange and a lower rearwardly extending flange which terminates in an upwardly extending flange, the upwardly extending flange itself being formed with a groove to retain the edge of an eaves panel.

In many instances it is required that the fascia should extend in a substantially horizontal direction, but that a gutter should be attached to it and should slope slightly towards the discharge end. Various proposals have been put forward for securing the gutter to the fascia, and these include the riveting or screwing of the rear wall of the gutter and the stiffening of the front wall of the gutter by means of a support strap, the use of brackets which engage the upper rearwardly and downwardly extending flanges and which extend between the gutter and the fascia, being bent forwardly at their lower ends to support the rear wall, and other alternatives. All the proposed alternatives are subject to certain disabilities, and for example the riveting of the gutter to the fascia makes it difficult to ensure that the gutter follows the exact straight line with its side slope, and does not provide any means for initial temporary positioning of the gutter to the fascia for alignment purposes. The use of clips which extend beneath the gutter displace the rear face of the gutter away from the fascia thereby leaving a gap, and furthermore they are installed by means of bending the clips, this being a hand operation requiring great skill on the part of an operator. If great skill is not exercised then it is found that the clips do not bend sharply at the correct point and the gutter does not lie in a straight line. In most methods which have been proposed heretofore two operators are required to fix the gutter. The gutter is also difficult to remove for maintenance or replacement.

Further difficulties are encountered when the gutter is formed of plastics material, which, although able to withstand weathering, tends to fracture at the location of its fasteners.

In U.S. Pat. No. 3,150,851 issued to D. A. Ritchie et al. there is described a gutter wherein a clip for supporting the gutter front wall is itself carried by a strap, by means of a serrated flange which is accommodated in a correspondingly serrated groove in a clip, the serrations serving to retain the flange in the groove. The strap is arranged to be nailed to a fascia board, and has its flat rear wall between the fascia board and the rear wall of the gutter, thus displacing the gutter rear wall from the fascia board and leaving a gap. Fall of the gutter is effected by correct positioning of the straps to the fascia board before the gutter is positioned.

The main objects of this invention are:

a. to provide suspension means which will allow the rear wall of the gutter to lie against the front face of the fascia.

b. to provide suspension means which will enable a single operator to quickly and easily affix a gutter to a fascia, and

c. to enable the fall of the gutter to be adjusted after the gutter has been positioned on a fascia.

BRIEF SUMMARY OF THE INVENTION

Briefly the invention provides a gutter having a longitudinally extending rib in its rear wall near the upper edge, and a plurality of resilient clips each supported by mounting means and each having a plurality of upwardly and rearwardly sloping tongues selectively engageable against the gutter rib to thereby support the gutter.

More specifically, gutter suspension means according to this invention comprise in combination: a gutter having a rear wall with a longitudinally extending retention rib near its upper edge, the rention rib projecting into the gutter and having a forwardly extending lower surface and a rearwardly extending upper surface, a plurality of resilient clips each having a front portion extending into the gutter and having a gutter engaging surface near its lower end bearing against the front surface of said gutter rear wall, the front portion also having a plurality of vertically spaced tongues sloping upwardly and rearwardly, the tongues being selectively engageable with, and one of the tongues engaging, said forwardly extending lower surface of the retention rib whereby the tongues of respective clips support the gutter, and mounting means engaged by and supporting the clips.

Since the tongues of each clip slope upwardly and rearwardly and the clips are resilient, the clips can be positioned over the upper flange of a fascia and the gutter simply pushed into the space between the front wall of the walls of the clips and the fascia so that the retention rib on the gutter engages the lowermost of the ratchet teeth on each of the clips, the resilience of the clips retaining the rear surface of the rear wall of the gutter contiguous with the front surface of the fascia, and thereby avoiding the presence of a gap.

The engagement of the gutter is so simply and easily affected that a single operator can quickly "hang" a gutter from the lowermost of the tongues, and then move along the gutter pushing it upwardly to engage the tongues of other clips as determined by the slope requirements of the gutter. Since each clip has a number of tongues, the slope and straightness requirements can also be quickly and easily satisfied.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings,

FIG. 1 is a section through a gutter showing the suspension means therefor,

FIG. 2 is a perspective view which illustrates the suspension means and includes a support strap for supporting the front wall of the gutter,

FIG. 3 is a view showing an alternative embodiment wherein the support strap and resilient clip which constitute the suspension means are constituted by a single member, and

FIG. 4 is a perspective view illustrating the suspension means of FIG. 3.

In a first embodiment illustrated in FIGS. 1 and 2, a fascia 10 (which is also illustrated in FIGS. 3 and 4) is formed with a front face panel 11 which has an upper rearwardly extending flange 12 terminating in a downwardly extending flange 13, and a lower rearwardly extending flange 14 terminating in an upwardly extending flange 15, the upwardly extending flange 15 having a groove formation 16 for the retention of an eaves panel.

A series of clips 20 are formed each of identical shape, each clip 20 having a vertical front portion 21 itself having a plurality of upwardly and rearwardly sloping tongues 22. In this embodiment there are two rows each of three tongues 22, the tongues of one row being staggered relative to those of the other so that there are six elevations afforded by the tongues. The lower end 23 of the front portion 21 is formed rearwardly and then forwardly to provide a front ramp face 24. The upper end of the front portion 21 is provided with a front shelf 26 in the form of a short rearwardly extending web which extends into an upwardly extending web, the upwardly extending web bearing against the face panel of the fascia, and then a rearwardly extending portion 27 which extends into a downwardly extending rear portion 28 which terminates in a rear shelf 29 of such shape and size that it clips beneath the lower edge of the downwardly extending fascia flange 13, and below the rear shelf 29, the rear portion 28 slopes forwardly and then rearwardly at its lower end 30 to provide a rear ramp face 31 which is substantially opposite the front ramp face. The clip 20 is formed from spring steel sheeting or strip, and in the formation it is so deformed as to firmly grip the front face of the rear wall of the gutter and the rear face of the fascia.

The gutter 35 for use with the clip 20 has its rear wall 36 provided with a longitudinally extending retention rib 37 of triangular shape, having a forwardly extending lower surface 38 and a rearwardly extending and upwardly sloping upper surface 39 arranged so that the rear wall of the gutter can be urged between the tongues 22 in the front portion 21 of a clip 20 and the front face panel 11 of the fascia 10. With this arrangement also the clips can be "rolled" over the rearwardly extending flanges 12 and 13 at the top of the fascia and quickly snapped into position.

The front wall 44 of the gutter is provided with a rearwardly extending "roll" in accordance with usual procedure and this is engaged by a support strap 46 which extends forwardly from the fascia 10 to which its rear end is secured.

The second embodiment of FIGS. 3 and 4 illustrate an arrangement wherein the support strap is a forwardly extending portion 48 of the front portion 21 of a clip designated 49. In this case the rear end 50 of the clip 49 is provided with a slot 51 so that it can be bent beneath the downturned rear flange 13 of the fascia 10. The clip can otherwise be secured to other fixtures of a building. In other respects the clip 49 is similar to the clip 20 and bears the same number for similar portions.

It will be seen that the invention provides the following advantages over conventional methods of suspension guttering to steel fascias:

a. Ease of initial temporary positioning gutter to fascia by use of a minimum number of clips,

b. simple adjustment by means of the ratchet effect of the tongues provided in the clip to vary the height of the gutter in relation to the steel fascia to give selected fall required,

c. savings in installation labour costs by the installer,

d. no rivets and bolts extend through the rear wall of the gutter,

e. the rear wall of the gutter is retained in contact with the fascia,

f. one only operator is able to install a gutter,

g. no further fixing or bending of clips or other components is required after the clips are installed in their final positions,

h. the gutter can be removed easily for possible alternation or maintenance if required, and

i. unsightly external brackets are avoided, the internal clips being concealed.

While the tongue retention means have been defined herein as a longitudinally extending retention rib, it will be clear to those skilled in the art that the retention means can be circular apertures or slots, a wall of each of which is engaged by a tongue in a respective clip which passes into or through the aperture or slot.

What I claim is:

1. Gutter suspension means comprising in combination:

a gutter having a rear wall, tongue retention means comprising a longitudinally extending retention rib in the rear wall of the gutter near its upper edge, the retention rib projecting into the gutter,

a plurality of resilient clips each having a front portion depending into the gutter and at least portion of each said clip bearing against the front surface of said gutter rear wall,

there being a plurality of vertically-spaced gutter suspension points at which the gutter may be suspended by each said resilient clip, each gutter suspension point comprising a tongue on said front portion engageable with said tongue retention means, each said tongue sloping upwardly and rearwardly, said gutter suspension points being selectable so that the gutter fall is adjustable.

2. Gutter suspension means according to claim 1 wherein each said resilient clip is provided with a fascia engaging portion arranged to engage a fascia for suspension of the clip therefrom.

3. Gutter suspension means according to claim 1, wherein the gutter has a front wall terminating along its upper edge in a curved formation which constitutes a rearwardly extending roll, and further comprising a support strip having a forwardly extending portion which engages the roll and a rear end of such size and shape as to engage a fascia.

4. Gutter suspension means according to claim 3, wherein the support strip and reslient clip are integral.

5. Gutter suspension means according to claim 1, wherein each said clip has a downwardly extending rear portion which slopes downwardly and forwardly and then downwardly and rearwardly providing a rear ramp face, each clip being arranged to bear against the rear surface of a fascia.

6. Gutter suspension means according to claim 5, wherein the upper end of the front portion of each clip has a short rearwardly extending web which extends into an upwardly extending web to form a front shelf, so arranged that when the gutter is supported by a fascia the upwardly extending web bears against the face of the fascia.

7. Gutter suspension means according to claim 5, wherein the downwardly extending rear portion of each clip has a forwardly extending web which forms a rear shelf so positioned that when the clip engages a fascia the upper end of which terminates in a downwardly extending flange, said rear shelf engages beneath said rear flange.

8. A gutter assembly comprising gutter suspension means according to claim 5, wherein the fascia has a front face panel and an upper return flange engaged by said resilient clips, said clips being suspended therefrom, the resilience of the clips retaining the rear surface of said gutter rear wall contiguous with said front face panel.

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