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(54) **Half round with hooks**

(57) An eavestrough assembly comprising a half round configured eavestrough having a bottom wall, a front wall and a rear wall, a nose located at the top of the front wall, a gutter guard assembly, the gutter guard as-

sembly being retained in position by a retaining member mounted on the eavestrough, a first side of the gutter guard being supported by the retaining member, and a second side of the gutter guard being attached to a nose of the eavestrough.

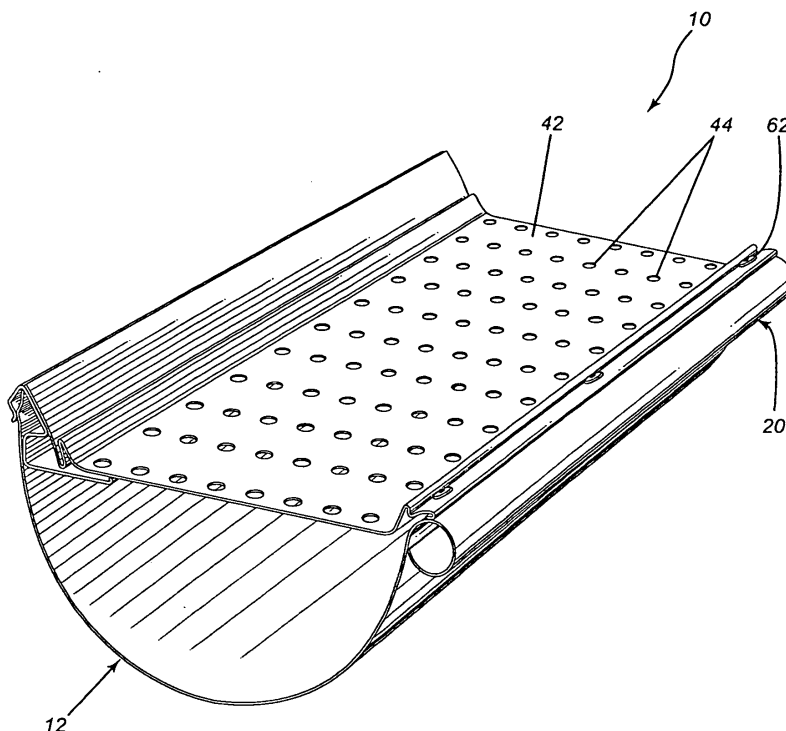


Fig -1

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Description

[0001] The present application is a continuation-in-part of application serial number 04019755.0 filed August 20, 2004.

FIELD OF THE INVENTION

[0002] The present invention relates to an eavestrough or rain gutter, and more particularly, relates to an improvement in such structures.

BACKGROUND OF THE INVENTION

[0003] Various types of gutters or eavestroughs are well known in the art as is the use of a cover member or gutter guard which is designed to protect the gutter or eavestrough from the entry of extraneous foreign matter such as leaves and the like.

[0004] There have been many attempts in the prior art to design a gutter which prevents the entry of the afore-said foreign matter. One approach which has been commercialized is by installing an outer edge on the roof which curls downwardly and inwardly such as shown in U.S. Patent 5,016,404.

[0005] This arrangement causes the water flow to follow the curved edge to enter the eavestrough which is situated below the soffit. Leaves and other extraneous matter are supposed to fall exteriorly of the eavestrough. However, when a large volume of water flows, the surface tension is generally insufficient to direct all the water to flow into the eavestrough.

[0006] A popular approach taken by the prior art has been the use of a gutter guard which constitutes a physical barrier across the top of the eavestrough with apertures within the gutter guard to permit the passage of rainwater while simultaneously preventing the passage of extraneous material. While such gutter guards have been used for many years, they are not widely accepted as they have been disadvantages in the structural integrity of some of the gutter guards and their operability.

[0007] The configuration of eavestroughs generally comes in two different types. A first type is commercially known as a K type of eavestrough and constitutes a flat bottom wall, a substantially vertical rear wall and an arcuately configured front wall. A second type of eavestrough is known as the "half round" and utilizes an arcuate or semispherical bottom wall.

SUMMARY OF THE INVENTION

[0008] It is an object of the present invention to provide for an improved gutter guard suitable for use with half round eavestrough.

[0009] According to one embodiment of the present invention, there is provided, in an eavestrough of a half round configuration having a bottom wall, a front wall and a rear wall, a nose at a top of the front wall and wherein

there is a gutter guard assembly, the improvement wherein the gutter guard assembly comprises at least one retaining member mounted on the rear wall of the eavestrough, a perforated gutter guard extending across the trough, a first side of the gutter guard being supported by the retaining member, and a second side of the gutter guard being attached to a nose of the eavestrough.

[0010] In a further aspect of the present invention, there is provided an eavestrough assembly comprising an eavestrough having a rounded bottom wall, a front wall, and a rear wall, the front wall, the rear wall and the rounded bottom wall defining a trough therebetween, at least a first retaining member, the retaining member having a base portion seated within the trough and being supported by the eavestrough, a retainer first side wall extending upwardly adjacent the eavestrough rear wall, a retainer second side wall extending upwardly adjacent the eavestrough front wall, a gutter guard extending across the trough above the retaining member, the gutter guard having a first side thereof supported by the retainer first side wall and a second side thereof being supported by the retainer second side wall.

[0011] According to both embodiments of the present invention, there is provided a retainer or a retaining member which is arranged to support a gutter guard. The first embodiment of the invention, wherein a relatively small retaining member is employed, it is specifically designed for new installations. The second embodiment is designed for arrangements wherein the gutter has already been installed.

[0012] In the first embodiment wherein the retaining member does not extend across the eavestrough, one may use either a continuously extending retaining member or a number of such members each having a relatively small width. In the embodiment wherein the retaining member extends across the eavestrough, a plurality of such retaining members are utilized.

[0013] The various components of the eavestrough assembly may be formed of any suitable material with a formed aluminum material being common.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] Having thus generally described the invention, reference will be made to the accompanying drawings illustrating an embodiment thereof, in which:

Figure 1 is a perspective view of an embodiment of an eavestrough assembly according to the present invention;

Figure 2 is a cross sectional view thereof;

Figure 3a is a cross sectional view of the gutter guard portion of the eavestrough assembly of Figure 1;

Figure 3b is a cross sectional view of a retainer member used in the eavestrough assembly of Figure 1;

Figure 3c is a cross sectional view of the eavestrough;

Figure 4 is a perspective view of a further embodi-

ment of an eavestrough assembly according to the present invention;

Figure 5 is a cross sectional view of the eavestrough assembly of Figure 4;

Figure 6a is a cross sectional view of the gutter guard member of the eavestrough assembly of Figure 4;

Figure 6b is a cross sectional view of the retainer clip member of the eavestrough assembly of Figure 4;

Figure 6c is a cross sectional view of the eavestrough;

Figure 7 is a perspective view of a modified embodiment of a gutter guard member; and

Figure 8 is an end elevational view thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0015] Referring to the drawings in a greater detail and by reference characters thereto, there is illustrated in Figures 1 and 2 an eavestrough assembly which is generally designated by reference numeral 10.

[0016] Eavestrough assembly 10 includes a gutter or eavestrough 12 which is of the half round design and includes a rounded bottom wall 14, a rear wall 16, and a front wall 18. Eavestrough 12, at the upper portion of front wall 18, terminates in a spherical nose 20. On rear wall 16, there is provided an outwardly extending indentation or ridge 22.

[0017] A retaining member or retainer 24 is secured to rear wall 16. Retainer 24 is shown in Figure 3b and includes a lower horizontal segment 26 which terminates in an upturned lip 28. At the other side, lower horizontal segment 26 merges with a vertical segment 30 which in turn merges with an inwardly extending segment 32. Extending upwardly from inwardly extending segment 32 is an outwardly angled segment 34 followed by a downwardly angled segment 36. Retainer 24 terminates with a hook segment 38. As may be seen in Figure 2, hook segment 38 is designed to engage ridge 22 on rear wall 16 to secure retainer 24 in position.

[0018] Eavestrough assembly 10 also includes a gutter guard generally designated by reference numeral 40 and which is illustrated in greater detail in Figure 3a. As may be seen therein, gutter guard 40 includes a planar central portion 42 having apertures 44 therein to permit the passage of rainwater therethrough. At the outer side 46 of generally planar portion 42, there is provided an upwardly extending wall 48 which functions to maintain water on central planar portion 42 during heavier flows. Wall segment 48 merges with a flange 50 which has an inturned edge 52.

[0019] At the inner side 54 of generally planar portion 42, there is likewise provided an upwardly extending wall segment 56 which merges with a U-shaped portion 58 which in turn terminates in an upwardly extending wall segment 60.

[0020] As shown in Figures 1 and 2, screws 62 are utilized to secure gutter guard 40 in position by physically

attaching flange 50 to nose 20.

[0021] A further embodiment of the present invention is illustrated in Figure 4 and reference will now be had thereto. In this embodiment, many components are similar and therefore like reference numerals in the one hundreds are used.

[0022] Eavestrough assembly 110 includes an eavestrough 112 of the half round type having an arcuate bottom wall 114, a rear wall 116, and a front wall 118. Front wall 118 terminates in a spherical nose 120.

[0023] A retainer or retaining member 170 has a central planar section 172 with ribs 174 provided for reinforcement. Retainer 170 has an outer wall 176 which terminates in a flange 178. An inner wall 181 is comprised of a lower section 180 and an upper section 182 and which terminates with an upwardly extending flange 184 which defines a recess or pocket 190.

[0024] Gutter guard 140, on its outer edge, has a structure similar to that of the first embodiment and hence will not be described in detail herein. However, at inner side 154 there is provided an upwardly extending wall 156 and a shorter U-shaped section 158. A separate sealing element 186 is secured within U-shaped section 158 by means of screws 188.

[0025] On the outer side 146, screws 160 are utilized to secure flange 150 of gutter guard 140 and flange 178 of retainer 124 to nose 120.

[0026] Referring to Figures 7 and 8, there is illustrated a modified gutter guard member generally designated by reference numeral 210.

[0027] Gutter guard member 210 includes a planar central portion 212 as has been previously described. On one side of planar central portion 212, there is provided an arcuate wall 214 which extends upwardly and outwardly through approximately 90°. There is also provided an inwardly extending flange 218 and bight 216.

[0028] On the other side of planar central portion 212, there is provided a diagonally extending wall segment 220. In turn, diagonally extending wall segment 220 merges with an inwardly extending wall segment 222. A substantially vertically extending wall segment 224 then merges with a second diagonally extending wall segment 226. At the distal end of wall segment 226, there is provided a downwardly extending segment 228 which in turn merges with a vertical wall segment 230. Finally, there is provided an inwardly extending segment 232 which terminates in an inwardly turned flange 234 through bight 236.

[0029] It will be understood that the above described embodiment is for purposes of illustration only and that changes and modifications may be made thereto without departing from spirit and scope of the invention

Claims

1. In an eavestrough of a half round configuration having a bottom wall, a front wall and a rear wall, a nose

at a top of said front wall and wherein there is a gutter guard assembly, the improvement wherein said gutter guard assembly comprises at least one retaining member mounted on said rear wall of said eaves-
trough, a perforated gutter guard extending across
said trough, a first side of said gutter guard being
supported by said retaining member, and a second
side of said gutter guard being attached to a nose of
said eavestrough.

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2. The improvement of Claim 1 wherein said perforated gutter guard has a central planar portion containing apertures, and a sidewall extending upwardly along each side of said central planar portion.

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3. The improvement of Claim 1 wherein said first side of said gutter guard includes an upwardly extending flange.

4. The improvement of Claim 1 wherein said second side of said gutter guard is attached to said nose by screws.

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5. The improvement of Claim 1 wherein said retaining member has a segment thereof fitting over a top marginal edge of said side wall and engaging said embossed bridge.

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6. An eavestrough assembly comprising:

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an eavestrough having a rounded bottom wall, a front wall, and a rear wall, said front wall, said rear wall and said rounded bottom wall defining a trough therebetween;

at least one retaining member, said retaining member having a base portion seated within said trough and being supported by said eaves-
trough, a retainer first side wall extending up-
wardly adjacent said eavestrough rear wall, a
retainer second side wall extending upwardly
adjacent said eavestrough front wall;

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a gutter guard extending across said trough
above said retaining member, said gutter guard
having a first side thereof supported by said re-
tainer first side wall and a second side thereof
being supported by said retainer second side
wall.

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7. The eavestrough assembly of Claim 6 wherein said first side of said retaining member includes a sealing element secured thereto, said sealing element extending outwardly to meet said rear wall of said eavestrough.

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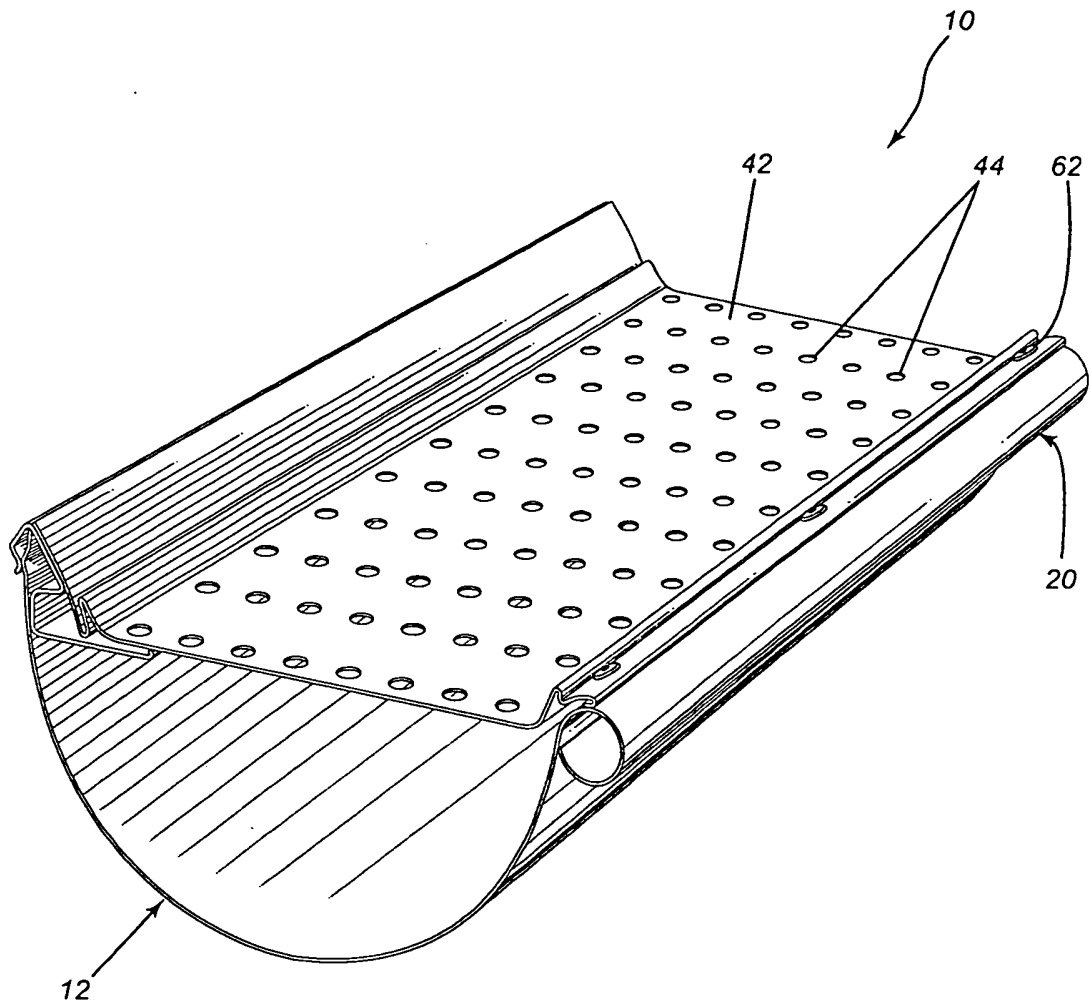


Fig -1

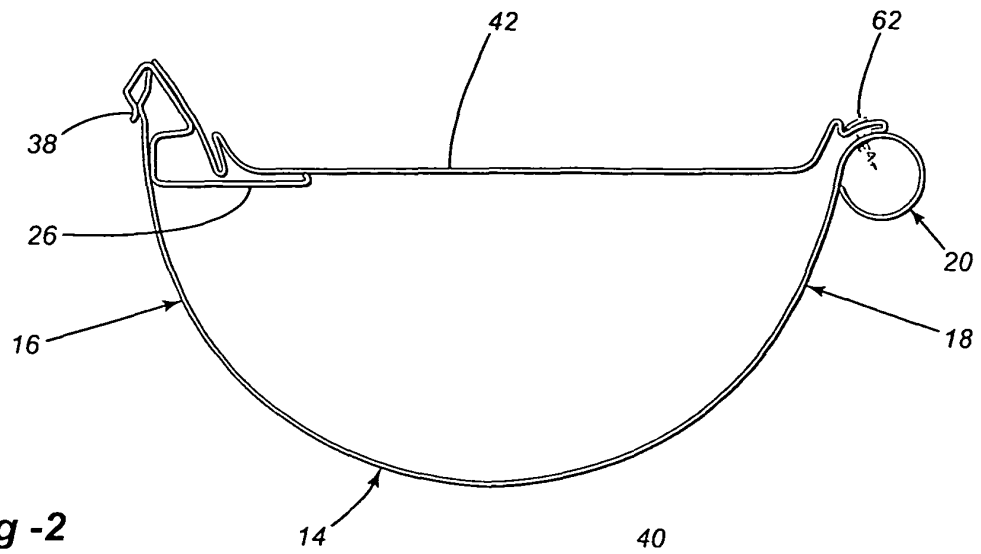


Fig -2

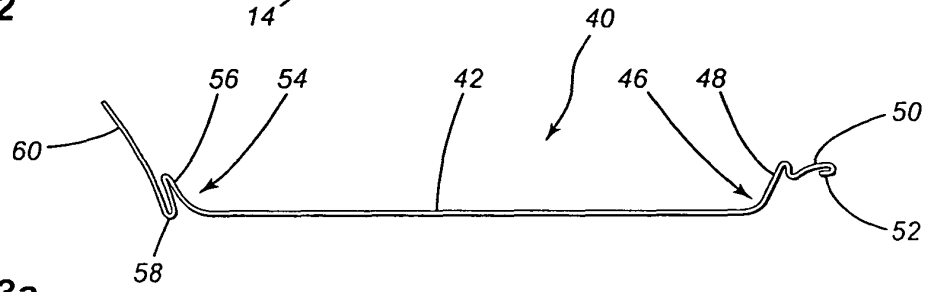


Fig -3a

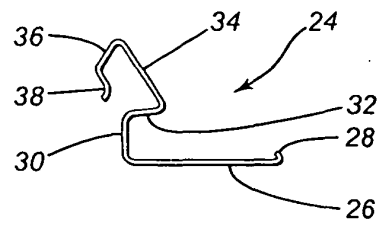


Fig -3b

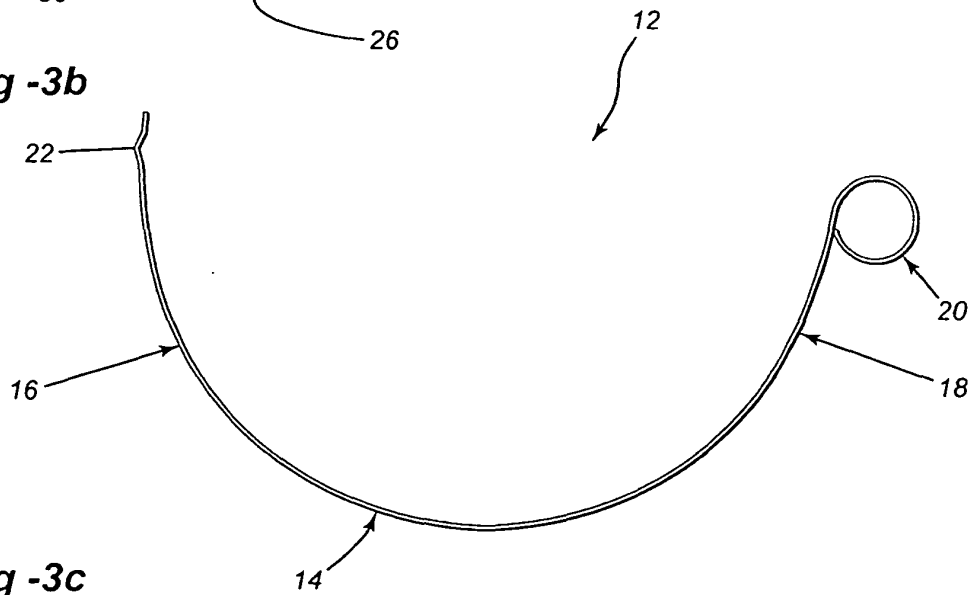


Fig -3c

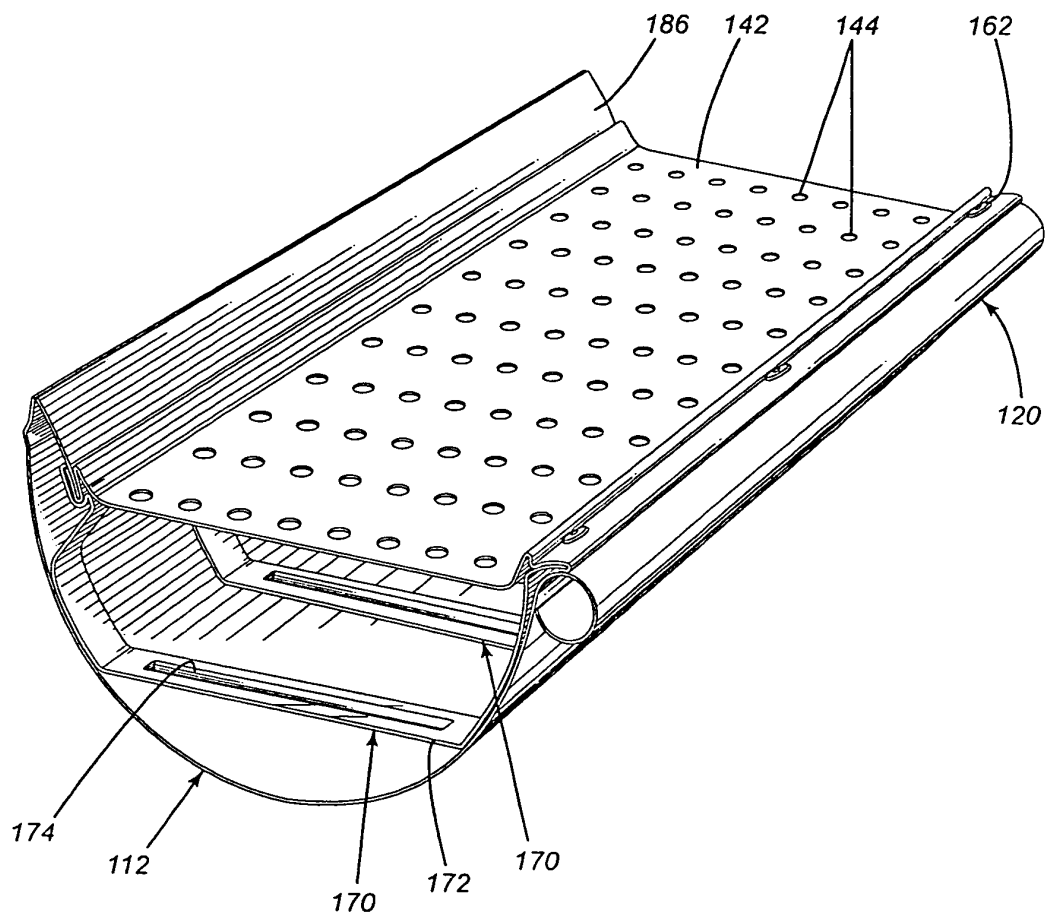
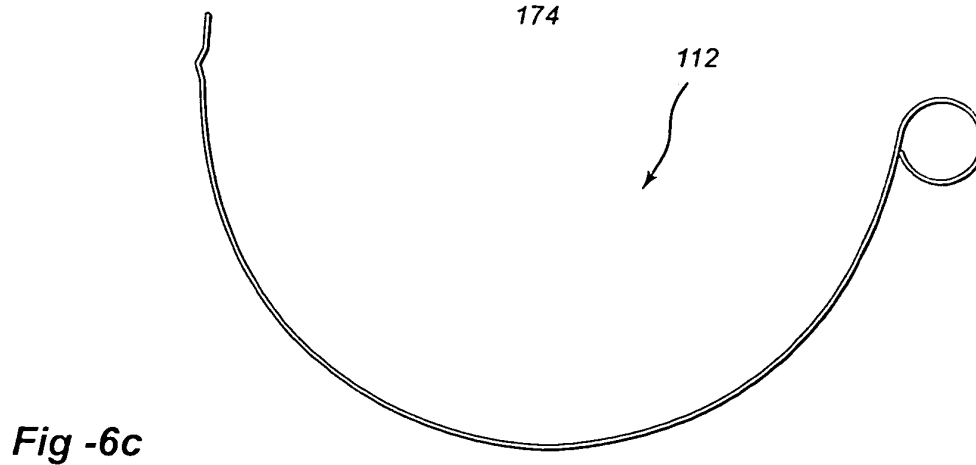
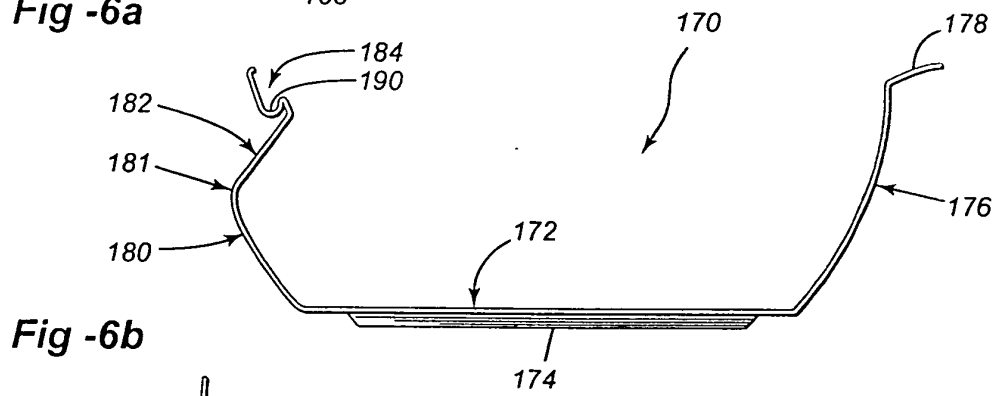
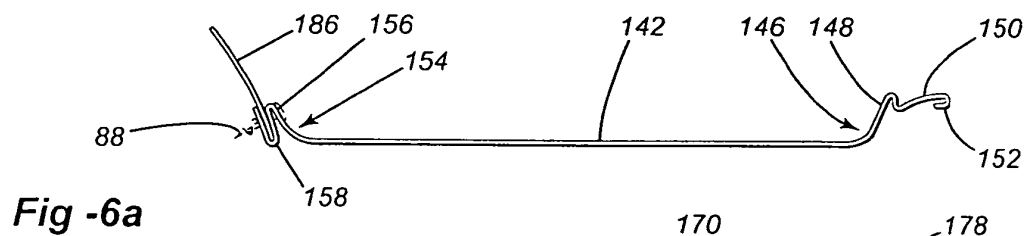
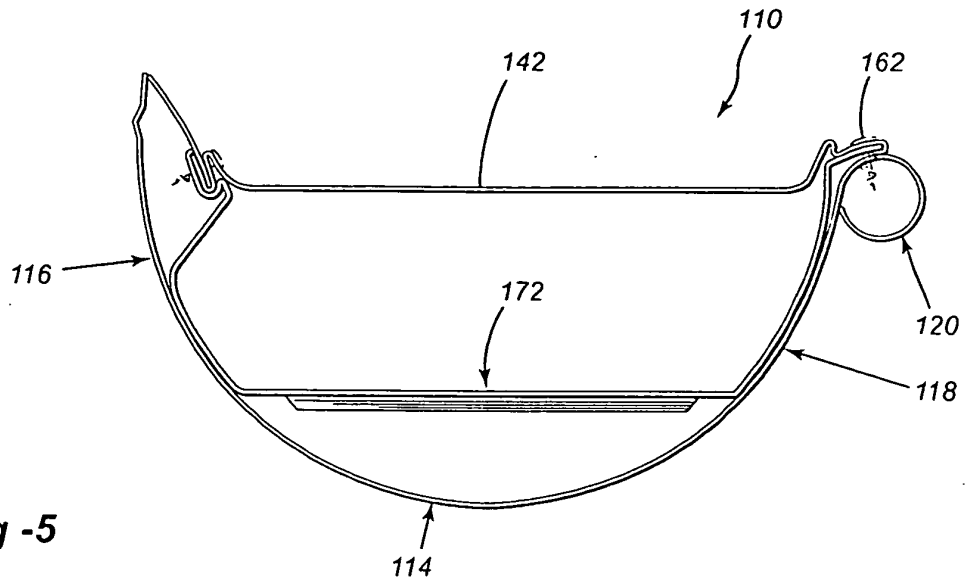


Fig -4



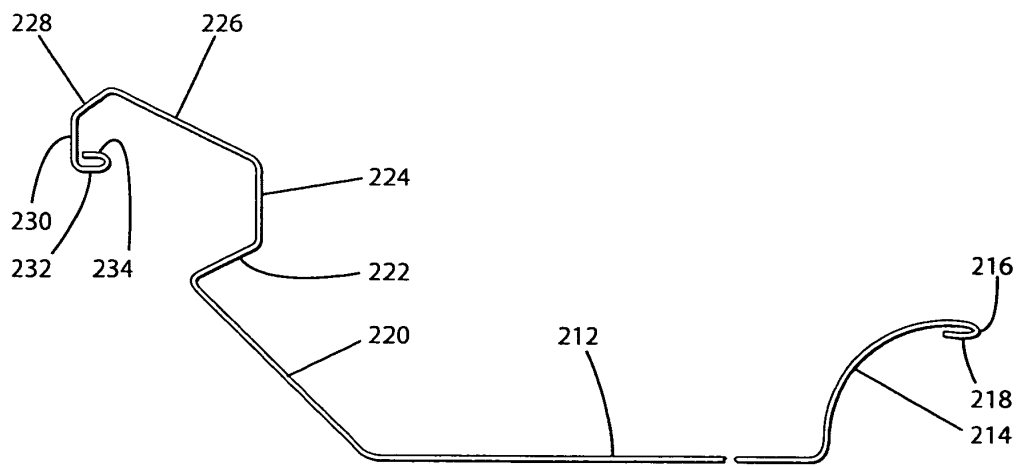
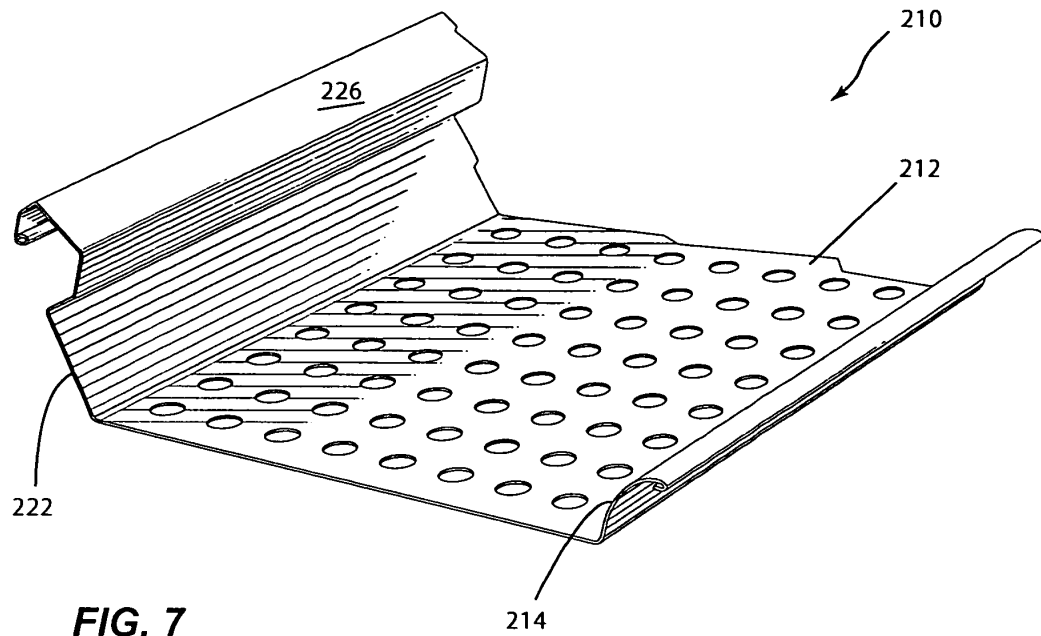


FIG. 8