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Remarks:
This application was filed on 22-09-2010 as a divisional application to the application mentioned under INID code 62.

(54) Eavestrough cover for half round eavestroughs

(57) A cover assembly for an eavestrough (10), the eavestrough (10) having a front wall (12), a rear wall (14), and a bottom wall (16), the cover assembly comprising a cover (26) having a plurality of apertures (29), said cover (26) having first and second longitudinally extending sides (30,42), a flange (56) extending outwardly from said second side (42) of said foraminious cover (26) and a support member (60) secured to said foraminious cover (26), said support member (60) extending downwardly from said cover (26) and being of sufficient depth to contact the bottom wall (16) of an eavestrough (10).

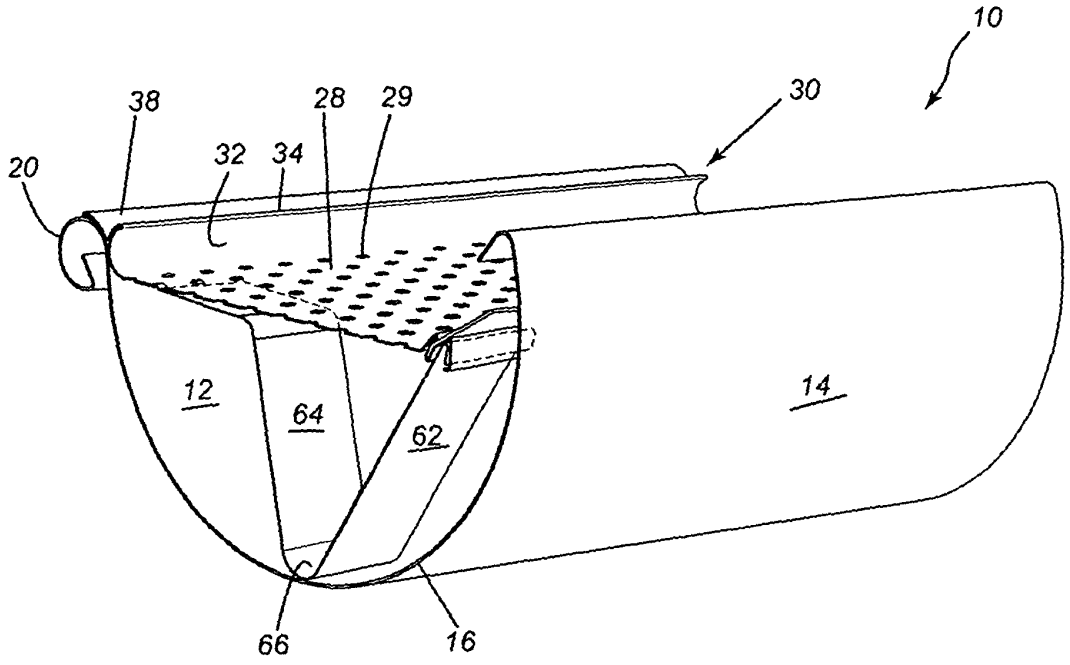

Fig -1

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to an eavestrough or rain gutter and more particularly, it relates to cover assemblies for use with the eavestrough.

BACKGROUND OF THE INVENTION

[0002] Various types of gutters or eavestroughs are known in the art as is the use of a cover member or gutter guard which is designed to protect the gutter eavestrough from the entry of extraneous foreign material such as leaves and the like.

[0003] There have been many attempts in the prior art to design a gutter which prevents the entry of the aforesaid foreign matter. One arrangement which has been commercialized is the provision of an outer edge on the roof and which curls downwardly and inwardly. 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 amount of water flows, surface tension is generally insufficient to direct all the water to enter into the eavestrough.

[0004] In order to overcome the above, the prior art also teaches the use of gutter guards which constitute a physical barrier across the top of the eavestrough with apertures within the gutter guard to permit the passage of rain while simultaneously preventing the passage of the extraneous material. Many different types of gutter guards have been used; however, the use of retrofitted gutter guards for eavestrough or gutters which are already installed has posed a problem in the industry.

[0005] 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. The K type of eavestrough is usually attached to the facia of the building.

[0006] The second type of eavestrough is known as the half round and utilizes an arcuate or substantially semi-spherical configuration wherein there is a front wall, as rear wall and a bottom wall, all of which are arcuate. Frequently, these eavestroughs are installed so that they are partially under the soffit of the building.

SUMMARY OF THE INVENTION

[0007] It is an object of the present invention to provide for an improved eavestrough guard suitable for use with a half round eavestrough.

[0008] It is a further object of the present invention to provide a cover assembly suitable for installation on half round eavestroughs which have already been installed on the building.

[0009] According to an aspect of the present invention there is provided a cover assembly for an eavestrough, the eavestrough having a front wall, a rear wall, and a bottom wall, the cover assembly comprising a cover having a plurality of apertures, the cover having first and second longitudinally extending sides, a flange extending outwardly from the second side of the foraminious cover, and a support member secured to the foraminious cover, the support member extending downwardly from the cover and being of sufficient depth to contact the bottom wall of an eavestrough.

[0010] According to a further aspect of the present invention there is provided in combination, an eavestrough and a cover assembly, the eavestrough having a front wall, a rear wall and a bottom wall, the cover assembly comprising a cover having a plurality of apertures therein, the cover having first and second longitudinally extending sides, sealing flange extending outwardly from the second side of the cover, and a support member secured to the cover, the support member extending downwardly from the cover and contacting the bottom wall of the eavestrough.

[0011] The description and claims herein utilize directional terms such as horizontal and vertical.

[0012] These terms are not intended to be limitations, but merely to provide a relative orientation of one component as compared to another component. Similarly, when the terms distal end or proximal end are utilized, it is intended that the term "distal end" refers that end remote from the main body structure of the member being referred to.

[0013] The cover assembly of the present invention is primarily intended to be a retrofit for existing eavestroughs which are already mounted on a structure. The problem with providing such retrofits is that often the roof eave extends over the eavestrough thus limiting access thereto. As will be described in greater detail hereinbelow, the cover assembly of the present invention is adaptable so as to be readily insertable into the pre-existing eavestrough and at the same time, adjustability of the structure is provided to allow for different degrees of overlap of the roof.

[0014] The cover assembly of the present invention is primarily intended for use with eavestroughs of the half round variety although it will be understood that it can equally well be adapted for use with other available gutter forms or eavestrough forms.

[0015] The support member utilized in the cover assembly is secured to the cover and is designed to support the cover in a desired position. To this end, the support member will rest on the bottom wall of the eavestrough.

[0016] Preferably, the support member is in the form of a V-shaped portion with an arm extending outwardly from a distal end of one of the legs forming the V-shaped portion. The V-shaped portion preferably has an arcuate section which contacts the bottom wall of the eavestrough and slides along inside the eavestrough when being inserted into the eavestrough. The arcuate area may

have a friction reducing portion to allow for easier sliding. The friction reducing portion may provide a material coated on the support member or alternatively, a mechanical mechanism such as a bearing or roller may be utilized.

[0017] The support member is secured to the cover and this may be done in several different fashions. A preferred arrangement is where a distal end of one of the legs fits within a recess formed in the cover with the other end being secured by means of prongs which fit within the apertures of the cover. This arrangement is particularly advantageous in that the cover can be positioned in a desired location depending on the location where the prongs engage the cover.

[0018] As an alternative to the above, the adjustment of the length of one of the legs may be achieved by providing one or more U-shaped projections in the leg to allow the installer to vary the length of the leg through compression of one or more of the U-shaped projections.

[0019] The support member may be formed of any suitable material including a sheet metallic material such as stainless steel, copper, etc. or alternatively a plastic material.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] 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 a section of an eavestrough incorporating the cover the support member of the present invention;
Figure 2	is a side elevational view thereof;
Figure 3	is a perspective view of a support member forming a portion of the cover assembly of the present invention;
Figure 4	is a top plan view thereof;
Figure 5	is an end elevational view thereof as seen from the left hand side of Figure 4;
Figure 6	is a side elevational view thereof;
Figure 7	is an end elevational view as seen from the right hand side of Figure 4;
Figure 8,	9 and 10 are sectional views illustrating the adjustability of the cover assembly of the present invention;
Figure 11	is a top plan view of a portion of the cover;
Figure 12	is a cross sectional view of the cover and support member of the present invention;
Figure 13	is a perspective view of an alternate embodiment of a support member according to the present invention; and
Figure 14	is a end elevational view thereof.

[0021] Referring to the drawings in greater detail and by reference characters thereto, there is illustrated an eavestrough generally designated by reference numeral 10 and which eavestrough 10 is of the type known as a half round eavestrough. Eavestrough 10 includes a front wall 12, a rear wall 14, and an arcuate bottom wall 16.

[0022] Extending from the top of rear wall 14 is an inwardly directed rear wall flange 18. At the upper portion of front wall 12, there is provided a front wall arcuate segment 20 which terminates in a front wall flange 22 which is directed inwardly towards front wall arcuate segment 20.

[0023] The cover assembly includes a cover which is generally designated by reference numeral 26. Cover 26 has an essential planar portion 28 which has a plurality of apertures 29 formed therein to permit the passage of rainwater through cover 26 while inhibiting any passage of debris into eavestrough 10.

[0024] Central planar portion 28 has a first longitudinally extending side generally designated by reference numeral 30. A first arcuate segment 32 has a generally C-shaped configuration. Subsequently, after forming bight 34 there is a second arcuate segment 36 which lies adjacent first arcuate segment 32. A third arcuate segment 38 is configured to have the same outline as front wall arcuate segment 20 of eavestrough 10. Third arcuate segment 38 terminates in an end segment 40.

[0025] A second longitudinally extending side 42 has a diagonally upwardly extending segment 44 which then passes through bight 46 to continue with a downwardly and inwardly extending segment 48. Subsequently, there is provided an upwardly and diagonally extending segment 50 which is spaced from downwardly extending segment 48 for reasons which will become apparent hereinbelow. A downwardly extending segment 52 terminates in an end segment 54. A sealing flange 56 is provided and is held between the U-shaped portion formed by segments 48 and 50.

[0026] Cover 26 is supported by a plurality of supports 60. Each support 60 has a V-shaped portion which is defined by legs 62 and 64. An arcuate bottom section 66 seats on bottom wall 16 of eavestrough 10. Arcuate section 66 may be provided with friction reducing means such as a coating thereon.

[0027] Leg 62, as may be seen in Figure 2, is provided with a hooked section 58 which is designed to fit within a recess formed by segment 50, 52 and 54.

[0028] Leg 64 merges with an arm 70 which has, at the end thereof, a plurality of offset prongs 72. Prongs 72 are designed to fit within apertures 29 of cover 26 to secure the same.

[0029] Reference will now be had to Figures 8, 9 and 10 which illustrate the different placements of the support member 60 with respect to cover 26. Initially referring to Figure 8, it will be seen that hooked section 68 fits within a recess defined by upwardly extending segment 50, downwardly extending segment 52 and end segment 54. Prongs 72 are inserted in a first row of apertures 29. This then results in an angle a being formed between legs 62 and 64. There is then provided a height aa between the cover 26 and the height of the rear wall 14.

[0030] As shown in Figure 9, prongs 72 engage in apertures 29 in a position to the right of that shown in Figure

8. As a result, angle b between legs 62 and 64 is diminished and a lesser height bb is provided between the top of the eavestrough and the cover.

[0031] Similarly, in Figure 10, the prongs 72 engage apertures 29 in a position even further to the right and thus, an angle c is formed between legs 62 and 64 which is less than the previous corresponding angle and distance cc is also less than the embodiment of Figures 8 and 9. Thus, one is able to control the distance which will depend upon the particular application - i.e. how much the eaves extend into the eavestrough. It will be noted that arcuate section 66 contacts bottom wall 16 at a point closer to front wall 12 than rear wall 14.

[0032] An alternative embodiment for the support is shown in Figures 13 and 14 wherein U-shaped protrusions 74 are provided in leg 62. These may be compressed as shown in Figure 14 to shorten the length of leg 62.

[0033] It will be understood that the above described embodiments are for purposes of illustration only and that changes and modifications may be made thereto without departing from the spirit and scope of the invention.

Claims

1. A cover assembly for an eavestrough (10), the eavestrough (10) having a front wall (12), a rear wall (14), and a bottom wall (16), the cover assembly comprising:

a cover (26) having a plurality of apertures (29), said cover (26) having first and second longitudinally extending sides (30, 42);
a flange (56) extending outwardly from said second side (42) of said foraminious cover (26); and
a support member (60) secured to said foraminious cover (26), said support member (60) extending downwardly from said cover (26) and being of sufficient depth to contact the bottom wall (16) of an eavestrough (10).

2. The cover assembly of Claim 1 wherein said support member (60) has first and second legs (64, 62) forming a generally V-shaped configuration, said first and second legs (64, 62) extending downwardly to contact said bottom wall (16) at a single point.

3. The cover assembly of Claim 2 wherein said support member (60) has an arcuate portion (66) intermediate said first and second legs (64, 62), said arcuate portion (66) having a reduced friction area.

4. The cover assembly of Claim 2 wherein said first leg (64) has a generally horizontal arm (70) extending outwardly from a distal end thereof, said generally horizontal arm (70) having at least one prong (72) extending upwardly and outwardly from a distal end thereof, said at least one prong (72) fitting within one of said apertures (29) in said cover (26).

5. The cover assembly of Claim 2 wherein said second leg (62) has a greater length than said first leg (64).

6. In combination, an eavestrough (10) and a cover assembly, said eavestrough (10) having a front wall (12), a rear wall (14) and a bottom wall (16), said cover assembly comprising:

a cover (26) having a plurality of apertures (29) therein, said cover (26) having first and second longitudinally extending sides (30, 42);
a sealing flange (56) extending outwardly from said second side (42) of said cover (26); and
a support member (60) secured to said cover (26), said support member (60) extending downwardly from said cover (26) and contacting said bottom wall (16) of said eavestrough (10).

7. The combination of Claim 6 wherein said support member (60) contacts said bottom wall (16) of said eavestrough (10) at a point closer to said front wall (12) of said eavestrough (10) compared to said rear wall (14) of said eavestrough (10).

8. The combination of Claim 7 wherein said support member (60) comprises a generally V-shaped portion having first and second legs (64, 62), said first leg (64) having a generally horizontal arm (70) extending outwardly from a distal end thereof, at least one prong (72) extending outwardly and upwardly from a distal end of said arm (70), said at least one prong (72) engaging with one of said plurality of apertures (29) formed in said cover (26).

9. The combination of Claim 7 wherein said support member (60) has an arcuate portion (66) intermediate said first and second legs (64, 62).

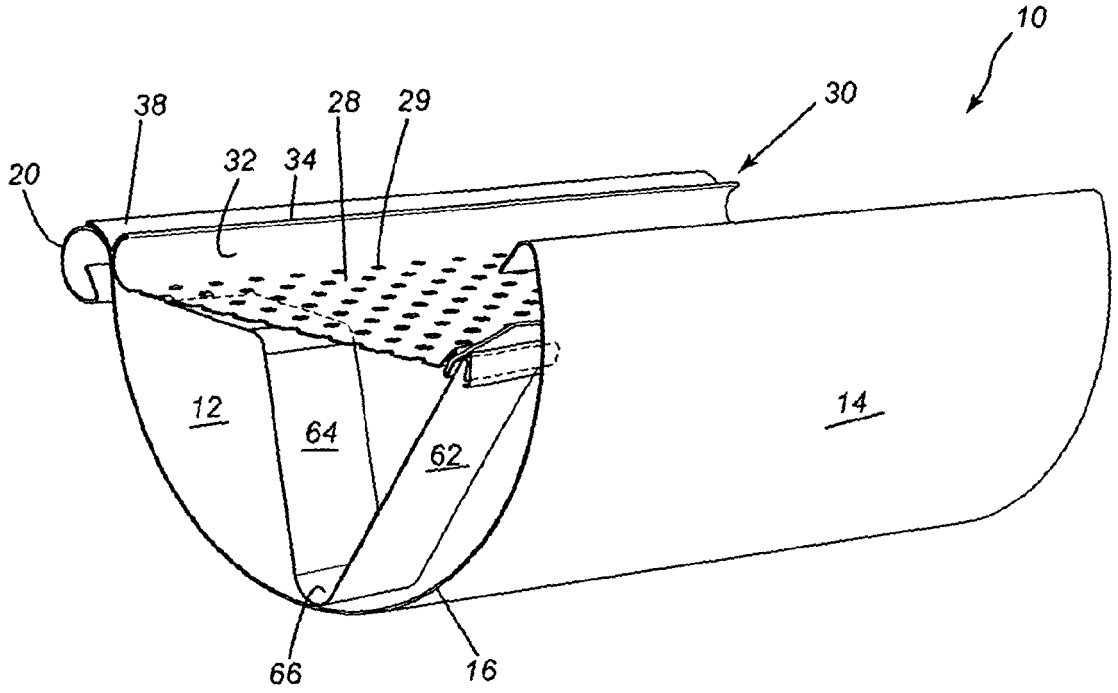
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Fig -1

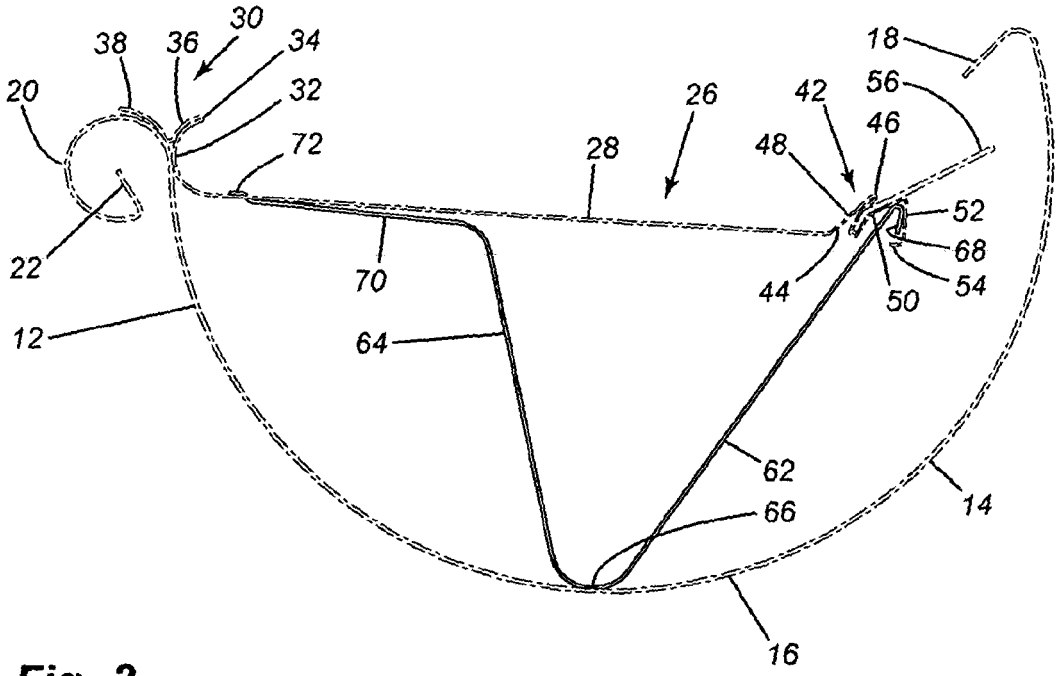
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Fig -2

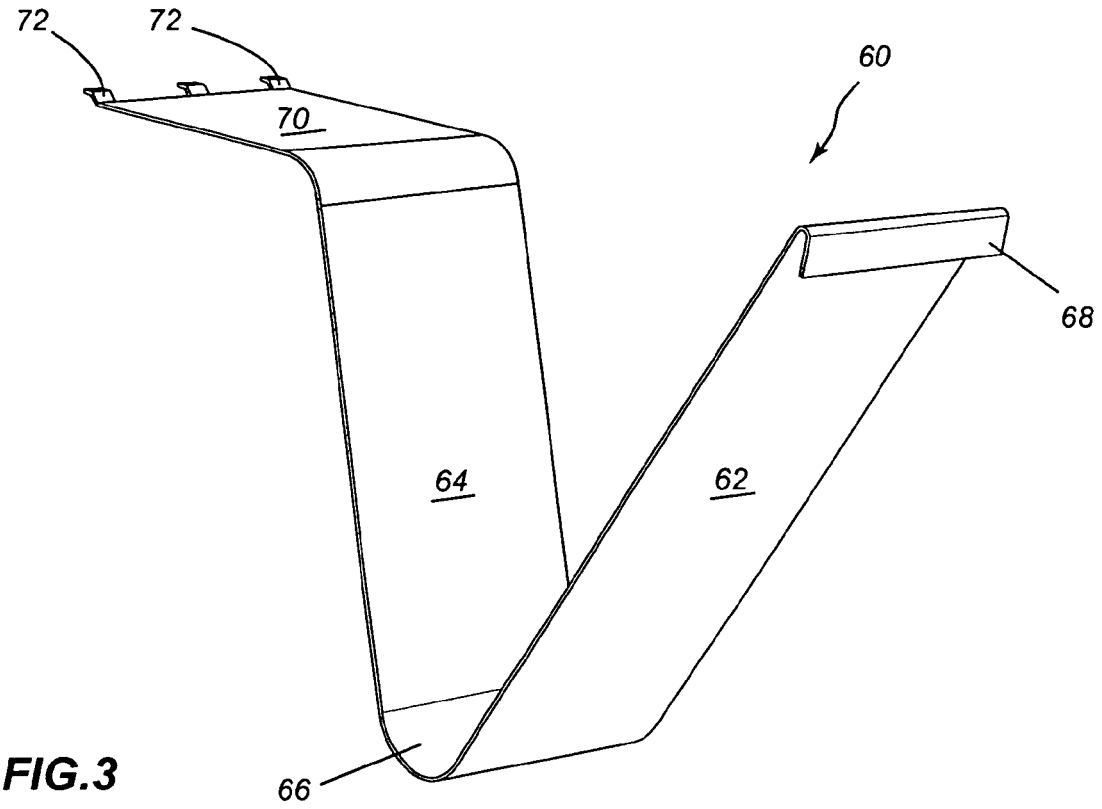

FIG.3

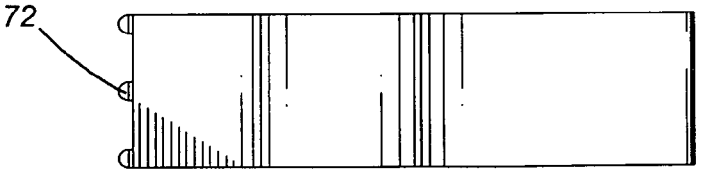

FIG.4

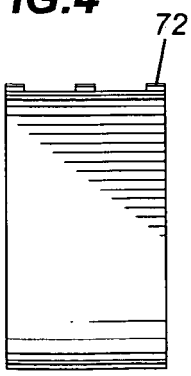

FIG.5

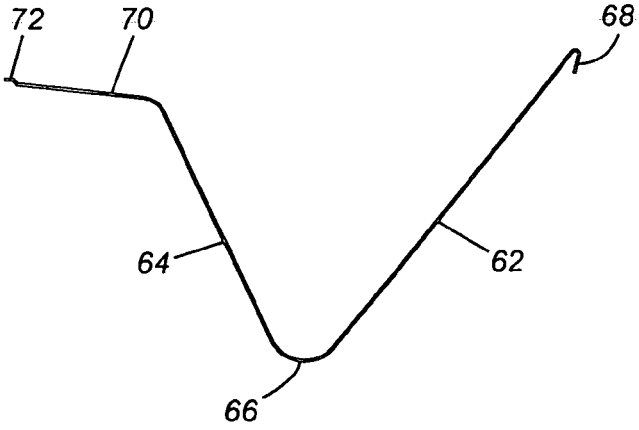

FIG.6

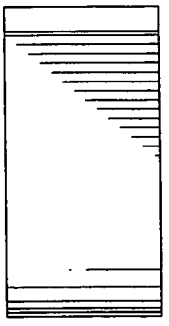

FIG.7

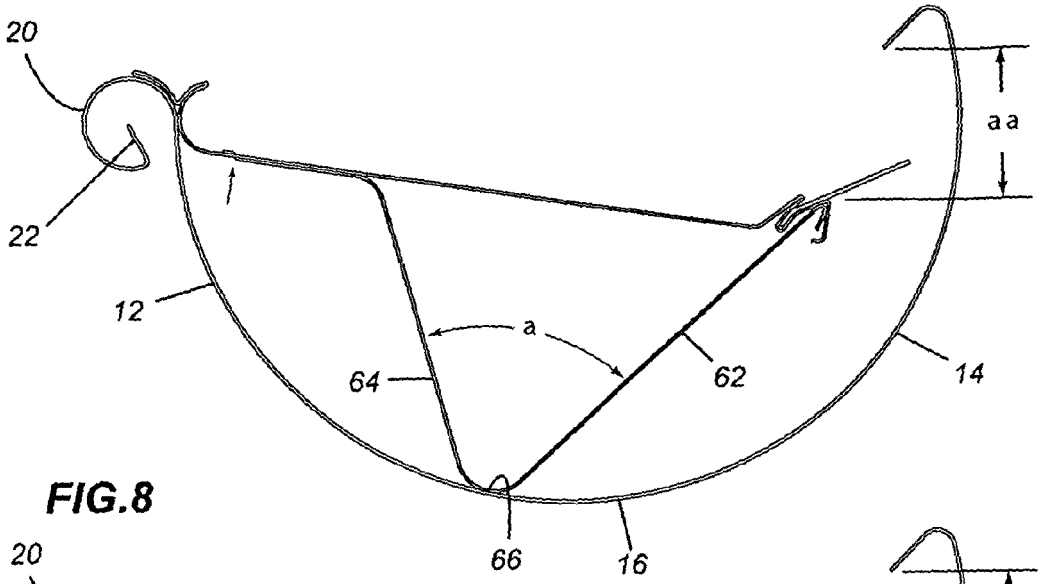

FIG.8

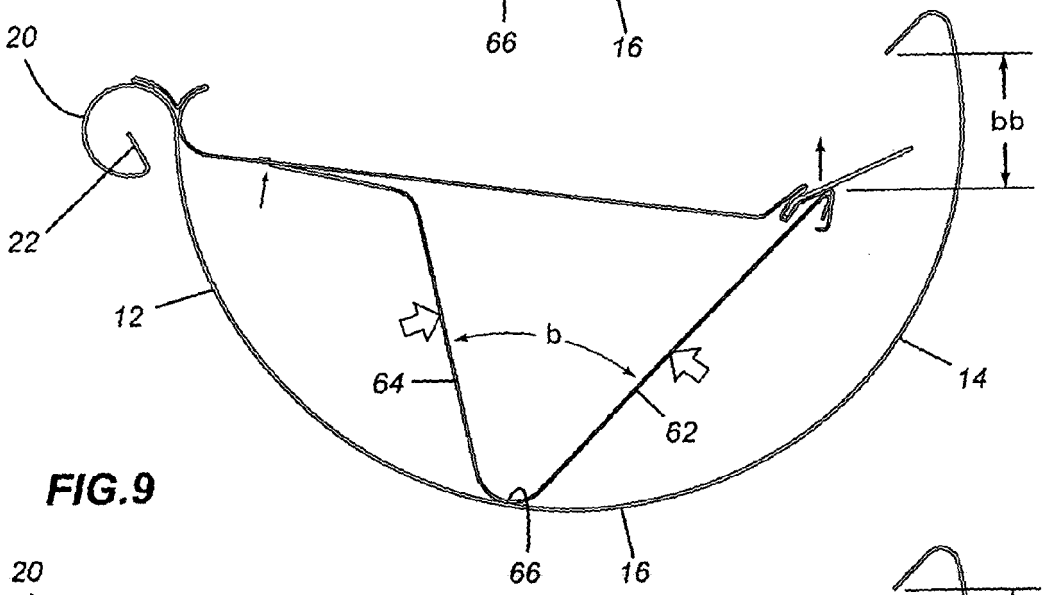

FIG.9

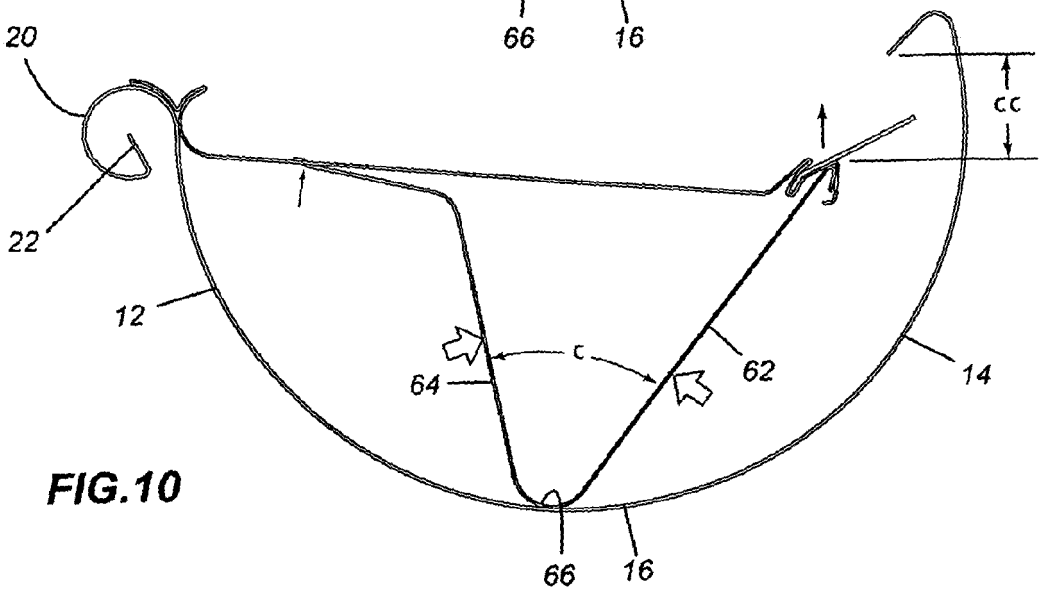

FIG.10

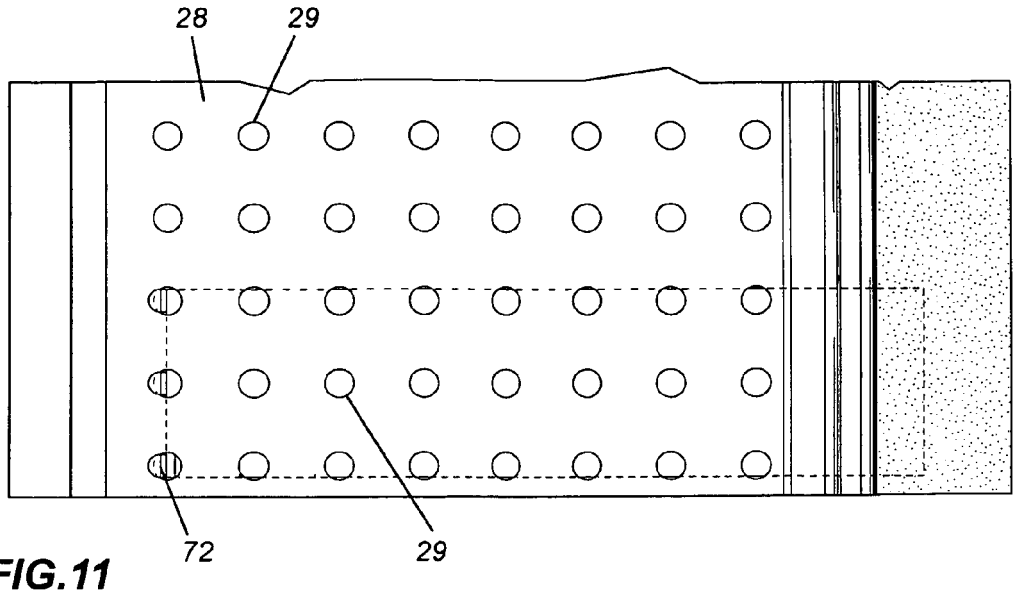

FIG.11

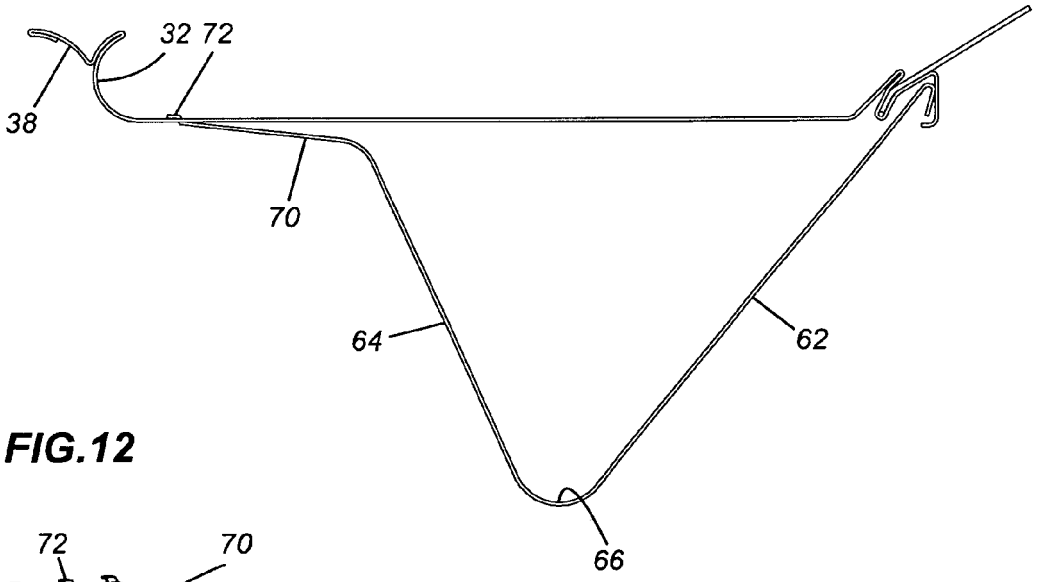

FIG.12

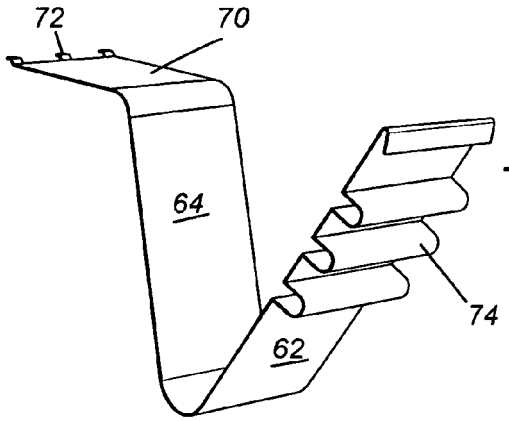

FIG.13

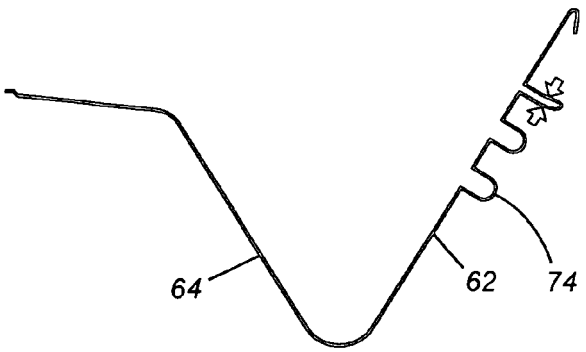

FIG.14

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EUROPEAN SEARCH REPORT

Application Number
EP 10 01 0123

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	EP 1 627 973 A (BROCHU GUY [CA]) 22 February 2006 (2006-02-22) * paragraphs [0017], [0021] - [0024]; figures 4,5,6a,6b * -----	1,6 2-5,7-9	INV. E04D13/076 E04D13/064

TECHNICAL FIELDS SEARCHED (IPC)

E04D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	24 November 2010	Valenta, Ivar

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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24-11-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1627973 A	22-02-2006	NONE	

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