Jan. 10, 1967 J. L. COTTER 3,296,749

EAVESTROUGH AND HANGER ASSEMBLIES

Filed Dec. 23, 1963 2 Sheets-Sheet 1

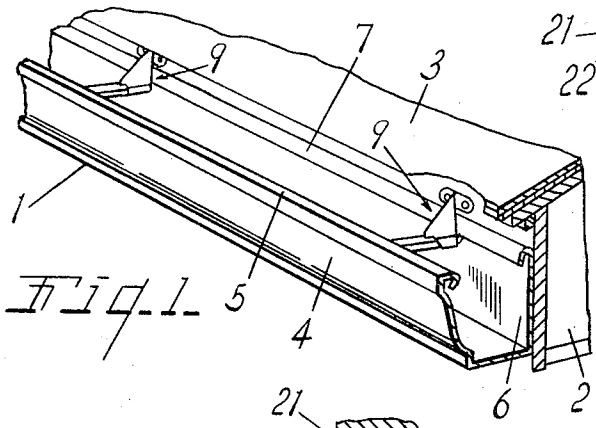


FIG. 1.

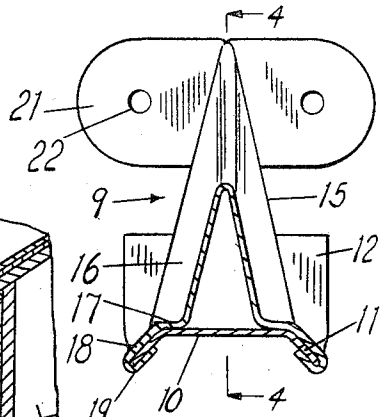


FIG. 5.

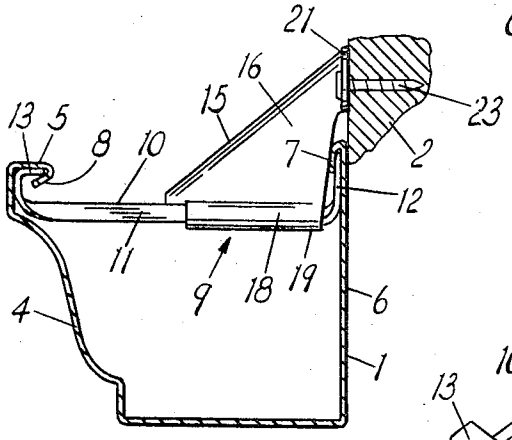


FIG. 2.

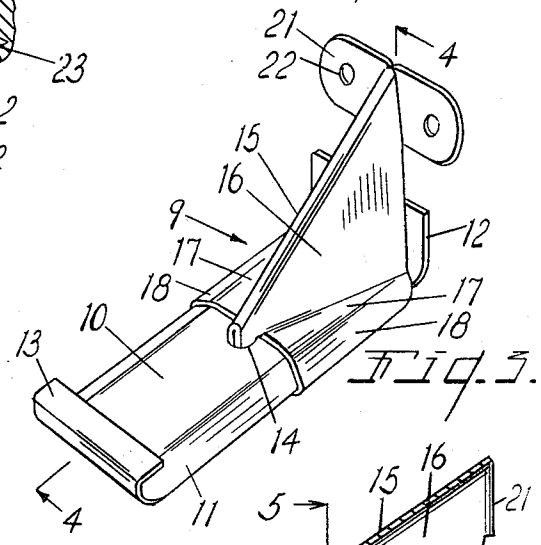


FIG. 3.

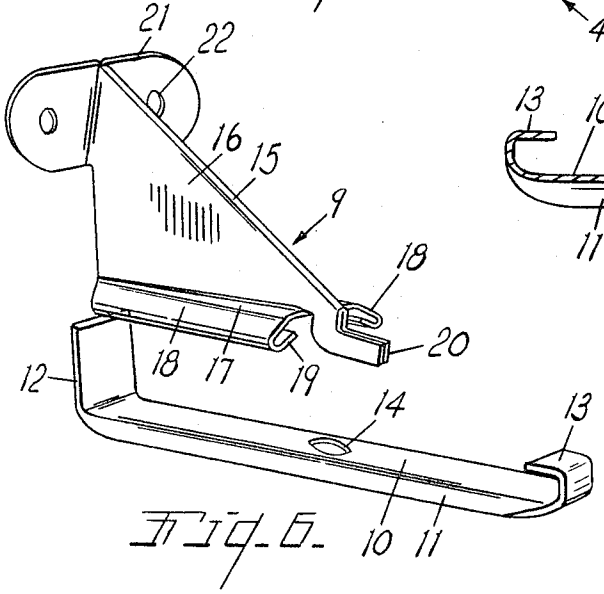


FIG. 6.

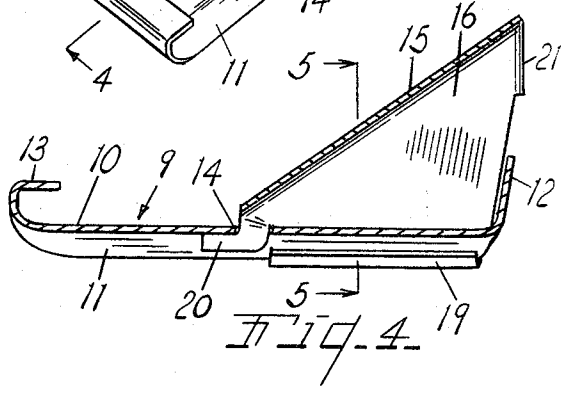


FIG. 4.

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EAVESTROUGH AND HANGER ASSEMBLIES

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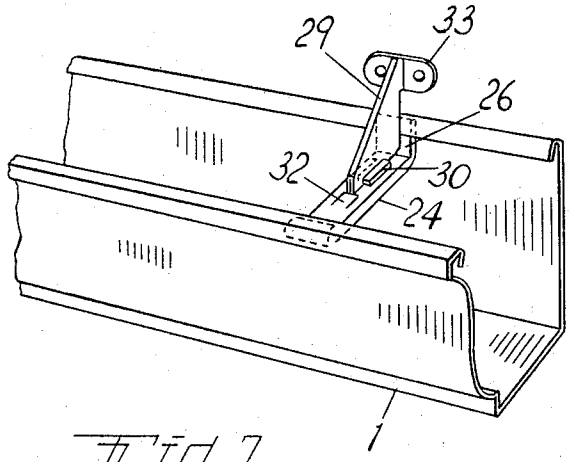


Fig. 1

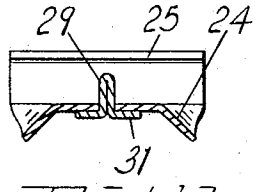


Fig. 1C

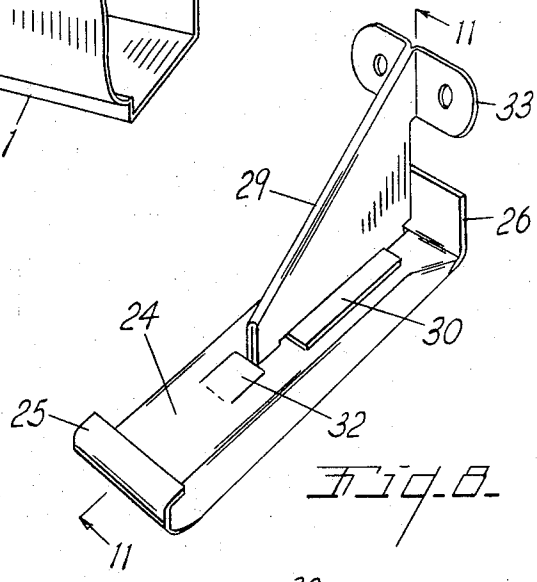


Fig. 8

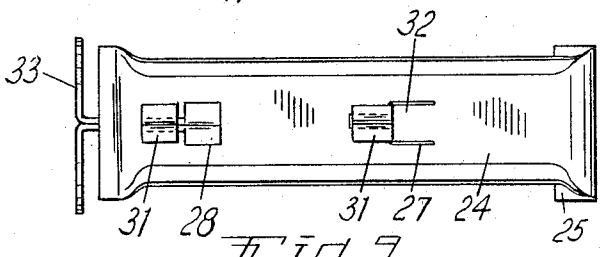


Fig. 9

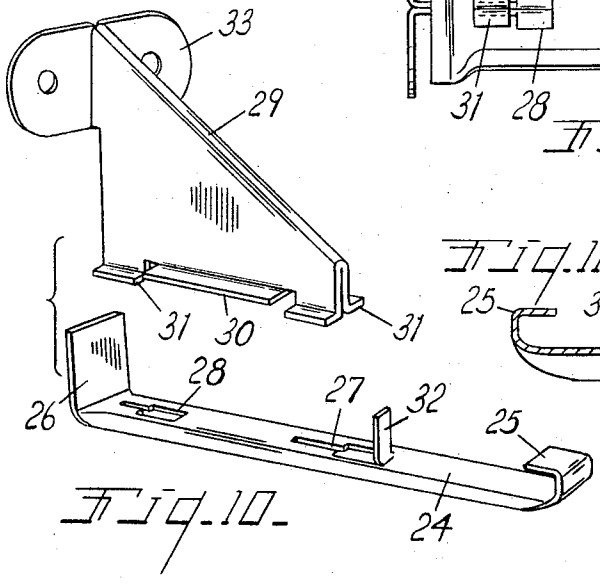


Fig. 10

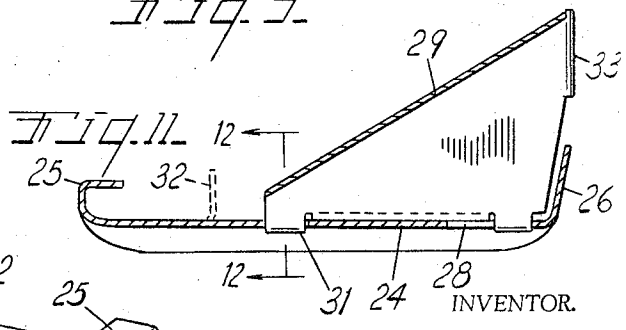


Fig. 11

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3,296,749

EAVESTROUGH AND HANGER ASSEMBLIES

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9 Claims. (Cl. 52—11)

This invention relates to eavestrough and hanger assemblies. The main objects of this invention are:

First, to provide an eavestrough and hangar assembly in which the parts may be assembled as a unit and readily installed as a unit.

Second, to provide an eavestrough hanger assembly, parts of which may be formed of sheet stock and retainingly assembled without the use of rivets or the necessity of welding.

Third, to provide a structure having these advantages which is capable of carrying heavy loads.

Fourth, to provide a structure having these advantages which may be economically produced and is strong and durable in use.

Objects relating to details and economics of the invention will appear from the description to follow. The in vention is defined and pointed out in the claims. A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

FIG. 1 is a fragmentary perspective view of an eavestrough assembly embodying my invention in assembled relation to a building, portions of which are conventionally illustrated.

FIG. 2 is an enlarged cross sectional view, a portion of the wall of a building being shown in section to illustrate mounting details.

FIG. 3 is a perspective view of one of the hanger units.

FIG. 4 is a vertical longitudinal section of the hanger on a line corresponding to line 4—4 of FIGS. 3 and 5.

FIG. 5 is a cross sectional view on a line corresponding to line 5—5 of FIG. 4.

FIG. 6 is a perspective view of the hanger members in dissasembled relation.

FIG. 7 is a perspective view of a modified form or embodiment of my invention.

FIG. 8 is a perspective view; the modified form of the hanger unit.

FIG. 9 is an inverted view of the hanger unit of FIG. 8.

FIG. 10 is a perspective view of the hanger members of this second embodiment of my invention, FIGS. 7, 8 and 9.

FIG. 11 is a longitudinal section on a line corresponding to line 11—11 of FIG. 8, one portion being shown in dotted lines in its initial position and is shown in full lines in FIG. 10.

FIG. 12 is a cross sectional view on a line corresponding to line 12—12 of FIG. 11.

It will be understood that I use the term "eavestrough" although eavestrough are sometimes commercially called "gutters."

In the accompanying drawing, I have illustrated an eavestrough 1 in mounted position upon a building 2 having a roof 3, the building and the roof being conventionally illustrated.

The eavestrough 1 is of channel cross section, its front wall 4 being provided at its upper edge with an inwardly projecting downwardly facing angular flange 5, desirably extending from end to end thereof and the rear wall 6 with a downwardly projecting flange 7 on its upper edge extending from end to end thereof. The downturned portion 8 of the front flange is desirably angulary disposed as is indicated in FIG. 2. The hanger units designated generally by the numeral 9 are duplicates and are

disposed in spaced relation as is generally indicated in FIG. 1.

In the embodiment of my invention shown in FIGS. 1–6 inclusive, these hanger units comprise the first hanger member 10 formed of sheet stock of uniform thickness and of substantial width and having downwardly and laterally projecting flanges 11 desirably extending from end to end thereof as is illustrated. This hanger member 10 is provided with an upturned flange-like lug 12 on its inner end and an upwardly projecting inwardly facing angular lug 13 on its outer end which is supportingly and desirably fittingly engaged in the inturned portion 5 of the eavestrough and with its edge within the downturned edge portion 8 thereof; see FIG. 2. This hanger member 10 has a centrally disposed hole 14 therein.

The second hanger member designated generally by the numeral 15 is also desirably formed of sheet stock and in this embodiment illustrated is of triangular shape and has downwardly diverging side portions 16 with laterally and downwardly projecting portions 17 at their lower ends resting upon the first hanger unit and provided with downwardly projecting flange-like portions 18 embracing, and inturned edge portions 19 clampingly engaging the lower edges of the first hanger member; see FIGS. 3, 4 and 5.

The side portions 16 of the second hanger member have downwardly and outwardly projecting lug portions 20 disposed through the hole 14 in engagement with front and rear edges thereof and in supporting engagement with the inner side of the first hanger member; see FIG. 4. With this arrangement, the hanger members are securely retained in assembled relation without the necessity of welding or providing other coupling members.

The side members 16 of the second hanger member are provided with laterally projecting attaching ears or members 21 integral therewith and provided with holes 22 adapted to receive attaching means such as the screws 23 conventionally illustrated in FIG. 2.

The hanger members are assembled as a unit and may be easily engaged with the trough in properly spaced relation and attached to a building as is illustrated. They form effective struts and couplings for the front and rear walls of the trough.

In the modification of my invention shown in FIGS. 7–12 inclusive, the trough is of the same design or structure as shown in FIGS. 1 and 2. The first hanger member 24 has an upwardly projecting front portion 25 and rear portion 26; the same as the portions 12 and 13 of the embodiment illustrated in FIGS. 1–6 inclusive.

In this embodiment of my invention the first hanger member 24 is provided with longitudinally spaced keyhole-shaped slots 27 and 28; see FIG. 10. The second hanger member 29 is formed of sheet stock, the side portions of which are in side-by-side supporting relation and have laterally projecting flanges 30 disposed upon the first hanger member. At the ends of the flanges, the second hanger member has downwardly projecting angular lugs 31 insertable through the large portion of the keyhole slots 27 and 28 and engaged within the reduced portion of the keyhole slots by sliding adjustment; see FIG. 12. In the embodiment illustrated these parts are held in assembled relation by the bendable tongue-like portion 32 which is shown in its initial position in FIG. 10 and also by dotted lines in FIG. 11 but is illustrated in its final clamping position in FIGS. 8, 9 and 11, in which position the hanger members are securely locked together; again, without the use of rivets or the like.

In this embodiment, the second hanger member is provided with laterally projecting attaching ears 33 corre-

sponding to the attaching ears **21** of the embodiment of FIGS. 1–6 inclusive.

In both of these embodiments illustrated, strong and rigid hanger means are provided.

The embodiment shown in FIGS. 7–12 inclusive is somewhat more economical to produce than that of the embodiment of FIGS. 1–6 inclusive, and less stock is required. However, the embodiment of FIGS. 1–6 inclusive has the advantage of exceeding considerably the strength and load carrying capacity of that shown in FIGS. 7–12 inclusive.

I have illustrated and described my invention in highly practical embodiments thereof. I have not attempted to illustrate or describe other adaptations or embodiments which I contemplate as I believe this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent is:

1. The combination with a trough having an outer wall provided with an inwardly projecting downwardly facing angular flange on its upper edge and an inner wall having an outwardly projecting downwardly facing flange on its upper edge, a hanger unit for said trough comprising a first hanger member disposed transversely of said trough and having downwardly and laterally projecting flanges on its longitudinal edges and an upwardly and inwardly projecting lug on its outer end supportingly engaged within said flange on said trough outer wall and having an upwardly projecting flange-like portion on its inner end supportingly engaged with said flange on said trough inner wall, said first hanger member having a centrally disposed opening therethrough, and a second hanger member of triangular shape and having downwardly diverging side portions with laterally projecting flanges on their outer edges provided with inturned portions supportingly engaged with said downwardly projecting flanges on said first hanger member and also having a downwardly offset outwardly projecting lug disposed through said opening in said first hanger member in thrust supporting engagement with the edges thereof and in supporting engagement with the underside of said first hanger member, said second hanger member having attaching ears projecting laterally from the inner ends of the side portions thereof and having openings therein to receive attaching means.

2. The combination with a trough having an outer wall provided with an inwardly projecting downwardly facing angular flange on its upper edge and an inner wall having an outwardly projecting downwardly facing flange on its upper edge, a hanger unit for said trough comprising a first hanger member disposed transversely of said trough and having downwardly projecting flanges on its longitudinal edges and an upwardly and inwardly projecting lug on its outer end supportingly engaged within said flange on said trough outer wall and having an upwardly projecting flange-like portion on its inner end supportingly engaged with said flange on said trough inner wall, said first hanger member having an opening therethrough, and a second hanger member having side portions with flanges on their outer edges provided with inturned portions supportingly engaged with said downwardly projecting flanges on said first hanger member and also having a downwardly offset outwardly projecting lug disposed through said opening in said first hanger member in thrust supporting engagement with the edges thereof and in supporting engagement with the underside of said first hanger member, said second hanger member having attaching ears projecting laterally from the inner ends of the side portions thereof.

3. A hanger for eavestrough and the like comprising a first hanger member having downwardly and laterally projecting flanges on its longitudinal edges and having trough engaging means at its outer and inner ends and having an opening therein spaced from its inner end, and a second hanger member of triangular shape and having downwardly diverging side portions having laterally projecting flanges on their lower edges provided with inturned portions supportingly engaged with said flanges on said first hanger member and also having a downwardly offset outwardly projecting lug on the outer end disposed through said opening in said first hanger member in supporting engagement with the inner and outer edges of the opening and with the underside of said first hanger member, said second hanger member having attaching ears projecting laterally from the inner ends of the side portions thereof and adapted to receive attaching means.

4. A hanger for eavestrough and the like comprising a first hanger member having trough engaging means at its outer and inner ends and having longitudinally spaced keyhole slots therein, and a second hanger member formed of folded sheet stock, the side portions of which have laterally projecting portions at their lower edges, said side portions having downwardly projecting angular lugs at each end of said laterally projecting portions, said lugs being disposable through the larger portions of said keyhole slots and slidably and interlockingly engaged with the reduced portions thereof, said first hanger member having a bendable portion retainingly engaged with the outer of said lugs of said second member, said second member having attaching ears projecting laterally from the inner ends of the side portions thereof.

5. A hanger for eavestrough and the like comprising a first hanger member having trough engaging means at its outer and inner ends and having longitudinally spaced keyhole slots therein, and a second hanger member formed of folded sheet stock, the side portions of which have laterally projecting portions at their lower edges, said side portions having downwardly projecting angular lugs at each end of said laterally projecting portions, said lugs being disposable through the larger portions of said keyhole slots and slidably and interlockingly engaged with the reduced portions thereof, said second member having attaching ears at the inner ends of the side portions thereof.

6. The combination with an eavestrough of a first hanger member having end portions engageable with the front and rear walls of said trough and constituting a strut for the walls of the trough, said first hanger member having an opening therein spaced from its rear end, and a second hanger member disposed upon said first hanger member in supporting engagement therewith, said second hanger member being made of sheet stock which is shaped to form a central portion having two integral opposed wall portions projecting lengthwise of the first hanger member, said wall portions having lower and rearward edges, attaching ears integral with and projecting laterally in opposite directions from said rearward edges, mounting flanges projecting laterally from said lower edges for attaching said second hanger member to said first hanger member, said first and second hanger members having interlocking parts preventing relative sliding movement thereof when the members are in fully assembled relation, said second hanger member being adapted to receive means for attaching the assembled hanger member to a support.

7. The combination of claim **6**, in which said mounting flanges overlie the upper surface of said first hanger member and are bent around and underneath the lateral edges of said first hanger member in snug contact therewith, means defining a central opening in said first hanger member, said wall portions having longitudinal projecting lug portions extending downwardly from said lower edges and projecting through said central opening and disposed in supporting engagement with the lower side of said first hanger member.

8. The combination of claim **6**, in which said mounting flanges overlie the upper surface of said first hanger member, a plurality of central openings spaced apart

along the first hanger member, a plurality of supporting flanges projecting laterally from the lower edges of said wall portions offset downwardly from and spaced longitudinally from said mounting flanges, said supporting flanges extending through said openings and underlying said first hanger member.

9. The combination with an eavestrough of a first hanger member having end portions engageable with the front and rear walls of said trough and constituting a strut for the walls of said trough, said first hanger member having an opening therein spaced from its rear end, and a second hanger member disposed upon said first hanger member in supporting engagement therewith, said second hanger member comprising a second portion which is of generally triangular shape in side elevational view and which has attaching ears projecting from its rearward edge and mounting means along its lower edge engaging said first hanger member, said first and second hanger members having interlocking parts preventing relative sliding movement thereof when the members are in fully assembled relation, said second hanger member being adapted to receive means for attaching the assembled hanger to a support.

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