Nov. 18, 1947. L. J. ALIG 2,431,012

HANGER FOR AN EAVES TROUGH

Filed Nov. 2, 1944 3 Sheets-Sheet 1

Fig. 1

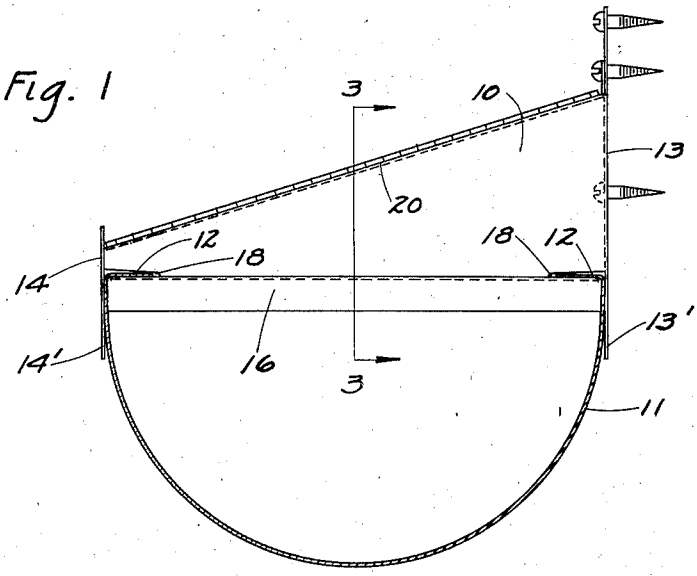


Fig. 3

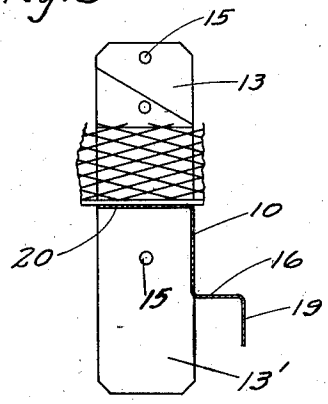


Fig. 2

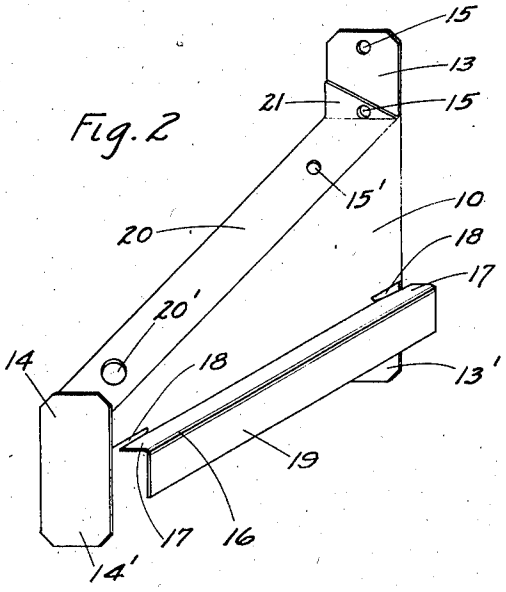
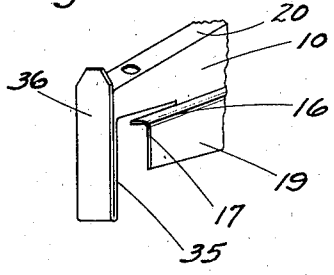


Fig. 9



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HANGER FOR AN EAVES TROUGH

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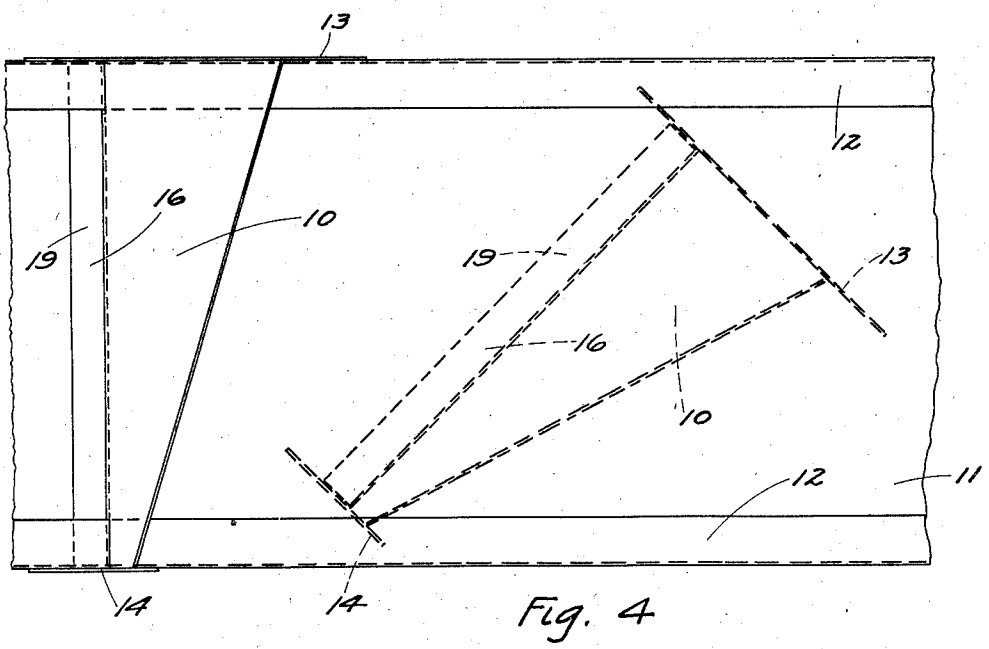


Fig. 4

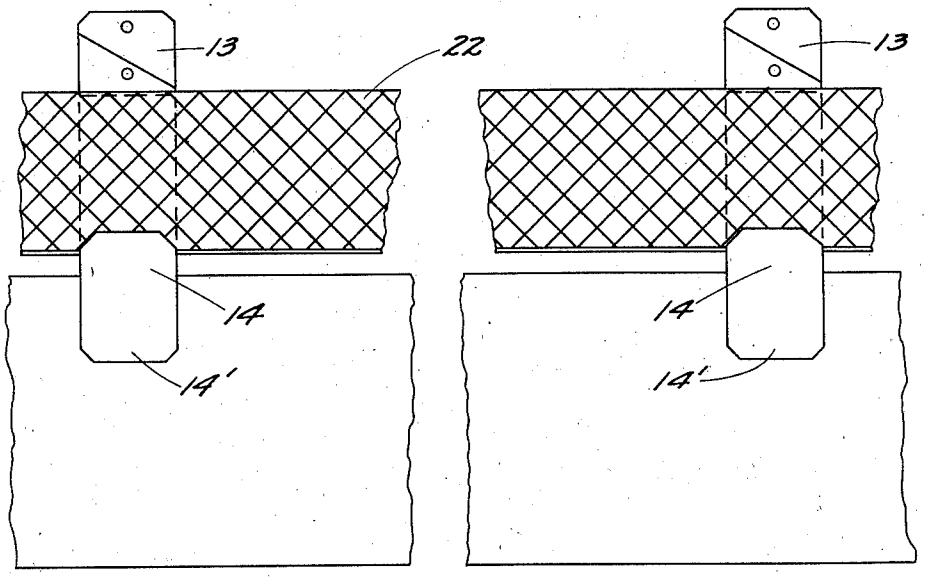


Fig. 5

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HANGER FOR AN EAVES TROUGH

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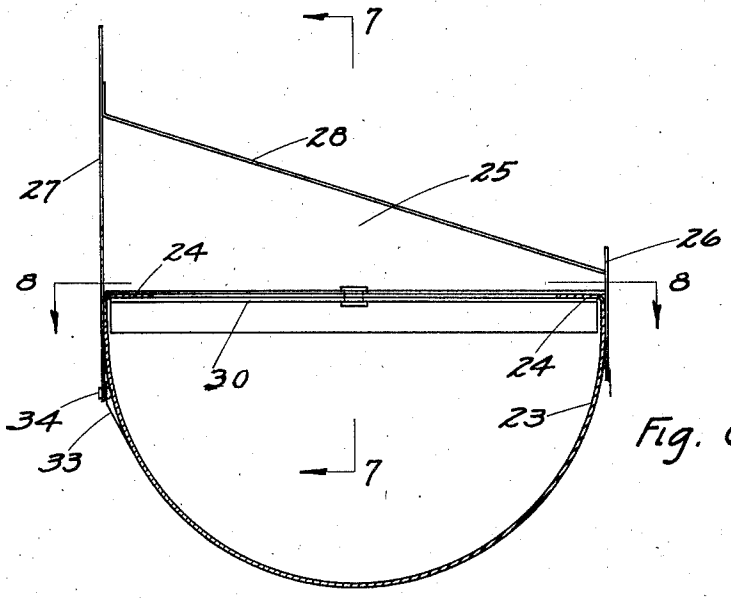


Fig. 6

Fig. 7

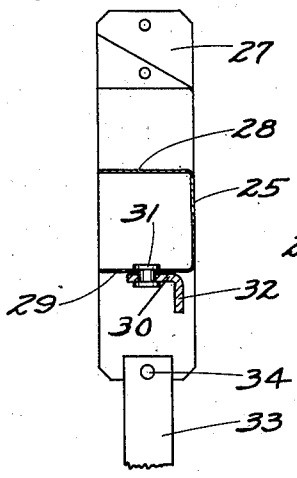
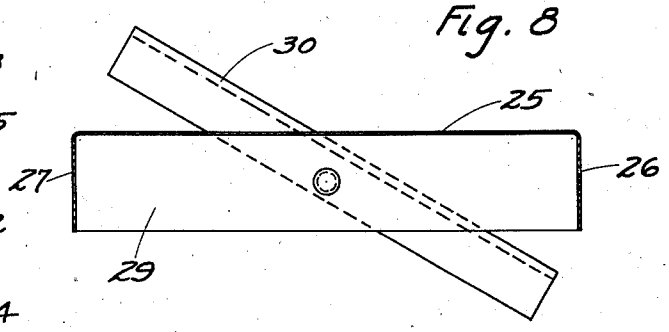


Fig. 8



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Patented Nov. 18, 1947

2,431,012

UNITED STATES PATENT OFFICE

2,431,012

HANGER FOR AN EAVES TROUGH

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Application November 2, 1944, Serial No. 561,557

15 Claims. (Cl. 248—48.1)

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This invention relates to a hanger for an eaves-trough or a like structure.

One of the objects of the invention is to provide such a hanger which is of a strong durable construction and which may be quickly and easily connected with the trough.

A further object of the invention is to provide such a hanger which may be attached to and supported by the vertical edge portion of the roof.

A further object of the invention is to provide such a hanger the several parts of which are permanently connected one with the other and which may be connected with the trough by a simple manipulation of the hanger, without the use of tools.

A further object of the invention is to provide such a hanger in which the trough supporting member is permanently connected with the other parts of the hanger and is movable with relation thereto into supporting engagement with the trough.

A further object of the invention is to provide such a hanger which may be formed of sheet metal at a low cost.

A further object of the invention is to provide such a hanger having means whereby a screen may be supported thereby above the trough.

Other objects of the invention may appear as the device is described in detail.

In the accompanying drawings Fig. 1 is a side elevation of a hanger embodying my invention, showing the trough in section; Fig. 2 is a perspective view of the hanger; Fig. 3 is a transverse section of the hanger taken on the line 3—3 of Fig. 1; Fig. 4 is a plan view of the trough, showing the manner of attaching the hanger thereto; Fig. 5 is a front elevation of portions of the trough showing a screen supported thereby; Fig. 6 is a side elevation of another form of the hanger, showing the trough in section; Fig. 7 is a transverse section taken through the hanger on the line 7—7 of Fig. 6; Fig. 8 is a horizontal section taken on the line 8—8 of Fig. 6, showing the supporting member in its inoperative position; and Fig. 9 is a detail view showing a modified form of end member.

In these drawings I have shown two embodiments of the invention but it is to be understood that these embodiments have been chosen for the purpose of illustration and that the hanger may take various forms without departing from the spirit of the invention.

In both embodiments I have shown the hanger as applied to an eaves-trough having at its upper edges inwardly extending flanges. The hanger

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comprises a rigid arm which extends across both flanges of the trough and is provided with parts which extend beneath and have supporting engagement with the flanges of the trough. Preferably these parts consist of the end portions of an elongate supporting member which is secured to the arm and is movable, either with the arm or with relation thereto, to a position oblique to the trough to permit the same to be inserted in the trough, between the flanges, and then moved to a position at substantially a right angle to the trough to bring said parts of the supporting member into supporting engagement with the flanges. Preferably the arm is also provided with downwardly extending members to embrace the upper portion of the trough and position the arm with relation thereto. The arm may be secured to a supporting structure in any suitable manner and preferably it is provided at one end with a member adapted to be secured to a vertical surface, such as the strip of wood adjacent the edge of the roof.

In the construction shown in Figs. 1 to 5 the arm comprises a relatively narrow elongate member 10, preferably of sheet metal, of a length approximately equal to the width of the trough 11 and adapted to be supported in an upright position above and preferably in contact with flanges 12 extending inwardly from the upper edges of the trough. Secured to the respective ends of the upright member 10 are end members 13 and 14 which extend laterally therefrom. The lower ends of these end members extend downwardly below the arm, as shown at 13' and 14', and are adapted to engage the exterior surfaces of the respective side walls of the trough adjacent the flange. The end member 13 extends to and preferably above the upper edge of the upright member 10 and is adapted to be secured to the supporting structure. The vertical position of the member 13 enables the same to be placed flat against the outer surface of a vertical portion of the roof structure, such as the narrow strip of wood which usually extends along the lower portion of the roof. For this purpose it is provided with holes 15 to receive screws or nails. Connected with the lower portion of the upright member and extending lengthwise thereof is a supporting member 16 of a length greater than the distance between the inner edges of the trough flanges 12 and adapted to be moved to a position in which the ends thereof will have supporting engagement with the lower surfaces of the flanges. Preferably the supporting member is rigidly connected with the upright member 10

and projects laterally therefrom and it is here shown as an integral part of the upright member. The end portions 17 of the connecting member are spaced from the adjacent portions of the upright member so as to provide slots or recesses 18 to receive the respective flanges 12. A flange 19 extending downwardly from the outer end of the supporting member stiffens the same and prevents distortion under the weight of the trough. It is also desirable that the upright member 10 be reinforced as by a longitudinal member 20 which extends laterally from the upper edge of the upright member in a direction opposite the supporting member 16. If desired, the end of the laterally extending member 20 may be turned upwardly, as shown at 21, and secured to the end member in any suitable manner, as by providing it with a nail hole, as shown. The upright member may be of any desired shape and proportions and, in the present instance, is substantially triangular in form, that end thereof adjacent the end member 13 being substantially wider than that end adjacent the end member 14, the upper edge of the upright member and the laterally extending reinforcing member 20 sloping from the upper portion of the end member 13 downwardly to the end member 14.

When the hanger is to be connected with the trough it is placed in a horizontal position on the flanges 12 with the supporting member 16 extending into the trough between the flanges, as shown in dotted lines in Fig. 4. The hanger, while remaining in a horizontal position, is turned about a vertical axis to the position shown in full lines in Fig. 4, thus causing the flanges to enter the slots 18 and permitting the ends of the supporting member 16 to extend beneath the respective flanges. In this position the hanger extends at substantially right angles to the trough and it is then rocked about a horizontal axis to an upright position, as shown in Fig. 1, the lower edge portions of the upright member fulcruming on the flanges and drawing the end portions of the supporting member into contact with the lower surfaces of the flanges. When in its normal or upright position the hanger is well adapted to support a screen above the trough, to prevent leaves and other foreign matter from entering the same. As shown in Fig. 5 a continuous screen 22 extends across the inclined upper edges of the hangers and is retained in position thereon by the end members 13 and 14 which extend above the laterally extending member 20. If desired, the upper flange 20 may be provided near its outer end with an opening 20' through which water flowing over the flange will pass to the trough instead of being discharged outside of the trough.

In the device as here shown the end members are bent laterally from the respective ends of the upright portion of the arm. This is usually a satisfactory arrangement but when, as is sometimes desirable, the outer end of the arm is quite narrow such a connection between said end of the arm and the end member is relatively weak, and to secure a more firm support for the end member it may be formed from an extension of the outer end of the flange 20. As shown in Fig. 9 this upper flange is extended beyond the outer end of the arm and bent downwardly to form the downwardly extending portion 35 of the end member and then folded upon itself to form the part 36 of the end member which extends above the flange 20. The upright portion 10 of the arm is connected with the end member by the flange 20 only.

In Figs. 6, 7 and 8, I have shown another embodiment of the invention in which the trough 23 is provided with flanges 24, as above described. The upright member 25 of the arm is provided with end members 26 and 27 which project below the arm and embrace the upper portion of the trough, as above described, and with a laterally extending reinforcing flange 28 at its upper inclined edge. A second member 29 extends laterally from the lower portion of the upright member 25 in the same direction as the upper laterally extending member 28 and between the end members 26 and 27. An elongate supporting member 30 is pivotally mounted between its ends on the lower side of the laterally extending member 29, as by a rivet 31. This member is of a length slightly less than the distance between the end members 26 and 27 and is adapted to be moved to an oblique position, as shown in Fig. 8, to enable it to be inserted in the trough between the flanges 24 and then moved into parallelism with the laterally extending member 29 and into supporting engagement with the trough flanges. A flange 32 extending downwardly from one edge of the supporting member reinforces the same and also provides convenient means for moving the same about its pivotal axis. Should it be desired to provide additional support for the trough this can be done by attaching a flexible metal band 33 to one of the end members, as shown at 34, passing the other end portion of the band through an opening in the other end member, drawing the band into tight engagement with the lower surface of the trough and bending the last mentioned end portion of the band downwardly to retain the band in its taut position.

The hanger may be produced in any suitable manner but preferably it is formed from a single piece of sheet metal which is bent to form the several parts thereof and in that form shown in Figs. 1 to 5 the complete hanger is thus formed from a blank by simple bending operations. In the form shown in Figs. 6, 7 and 8, all parts of the hanger, with the exception of the supporting arm 30, are formed by a simple bending operation. Thus the hanger can be produced at a low cost and, as will be obvious from the above explanation, either form of hanger may be quickly and easily attached to the trough and will form a strong durable support therefor.

While I have shown and described certain embodiments of my invention I wish it to be understood that I do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A hanger for an eaves-trough which has at its upper edges inwardly extending flanges, said hanger comprising an arm to extend across the flanged upper edges of said trough and having means whereby it may be secured to a supporting structure, and a supporting member carried by said arm of a length greater than the distance between the inner edges of said flanges and adapted to be positioned obliquely to said trough for insertion into the latter and to be moved about a substantially vertical axis to position the end portions thereof in supporting engagement with the respective flanges.

2. A hanger for an eaves-trough which has at its upper edges inwardly extending flanges, said hanger comprising a thin relatively narrow elongate member to extend across the flanged upper edges of said trough in an upright position and having at one end means whereby it may be se-

cured to an upright supporting structure, and a supporting member of a length greater than the distance between the inner edges of said flanges, rigidly connected with said elongate member and having its end portions spaced from the lower edge of the latter and so arranged with relation thereto that said hanger may be connected with the trough by positioning the same obliquely to said trough, inserting said supporting member in said trough and moving the hanger about a substantially vertical axis to cause the flanges thereof to enter the spaces between said arm and the respective end portions of said supporting member.

3. In a hanger for an eaves-trough which has at its upper edges inwardly extending flanges, said hanger comprising an arm having a substantially flat upright portion to extend across the upper edges of the trough with its lower edge above said flanges, said arm having adjacent its ends parts extending laterally therefrom, projecting below the same to receive the upper portion of said trough between them, one of said parts having means whereby it may be secured to a supporting structure, and a supporting member rigidly connected with said arm, extending laterally from the lower edge of said upright portion of said arm, said member being of a length greater than the distance between said flanges and having its end portions spaced laterally from the lower edges of said upright portion, whereby said hanger may be connected with said trough by placing the upright portion of said arm on said trough in substantially horizontal position oblique to said trough with said supporting member extending into said trough, moving said hanger about a vertical axis to cause said flanges to enter the spaces between the respective end portions of said supporting member and said arm and then moving said hanger to its normally upright position.

4. A hanger for an eaves-trough which has at its upper edges inwardly extending flanges, said hanger comprising an arm to extend across the flanged upper edges of said trough, said arm having at one end thereof means whereby it may be secured to a supporting structure and also having at the respective ends thereof downwardly extending parts to engage the exterior surfaces of said trough adjacent the upper edges thereof, and means rigid with the lower portion of said arm to engage the lower surfaces of the flanges of said trough and support the latter on said arm.

5. A hanger for an eaves-trough which has at its upper edges inwardly extending flanges, said hanger comprising a relatively narrow elongate member of sheet metal adapted to extend across said trough in an upright position and having at one end thereof an integral laterally extending part for attaching the same to a supporting structure, and means carried by said elongate member to engage said flanges and support said trough.

6. A hanger for an eaves-trough which has at its upper edges inwardly extending flanges, said hanger comprising a sheet metal structure including a relatively narrow elongate member to extend across said trough in an upright position, end members extending downwardly from the respective ends of said elongate member to receive the upper portion of said trough between them, one of said end members also extending upwardly along the adjacent end of said upright member for attachment to a supporting structure, and a supporting member connected with said elongate member and movable into engagement with the lower surfaces of the flanges of said trough by inserting the same in said trough in a position oblique to the latter and then moving the same to a position substantially at right angles to said trough.

7. A hanger for an eaves-trough which has at its upper edges inwardly extending flanges, said hanger comprising a sheet metal structure including a relatively narrow elongate member to extend across said trough in an upright position, end members extending downwardly from the respective ends of said elongate member to receive the upper portion of said trough between them, one of said end members also extending upwardly along the adjacent end of said upright member for attachment to a supporting structure, and a supporting member of a length greater than the distance between the inner edges of said flanges, rigidly connected with said elongate member and having its end portions spaced from the lower edge of said elongate member.

8. A hanger for an eaves-trough comprising a sheet metal structure including a relatively narrow elongate member to extend across the upper edges of said trough in an upright position, end members extending laterally from the respective ends of said upright member, having parts extending below the lower edge of said upright member to receive between them the upper portion of said trough, an upper longitudinal member extending laterally from the upper edge of said upright member between said end members, and a longitudinal member extending laterally from the lower edge of said upright member and having means whereby it may be supportingly connected with said trough.

9. A hanger for an eaves-trough comprising a sheet metal structure including a relatively narrow elongate member to extend across the upper edges of said trough in an upright position, end members extending laterally from the respective ends of said upright member, having parts extending below the lower edge of said upright member to receive between them the upper portion of said trough, an upper longitudinal member extending laterally from the upper edge of said upright member between said end members, and a longitudinal member extending laterally from the lower edge of said upright member in a direction opposite said upper longitudinal member and having end portions adapted to have supporting engagement with said trough.

10. A hanger for an eaves-trough comprising a sheet metal structure including a relatively narrow elongate member to extend across the upper edges of said trough in an upright position, end members extending laterally from the respective ends of said upright member and having parts extending below the lower edge of said upright member to receive between them the upper portion of said trough, a longitudinal member extending laterally from the lower edge of said upright member between said end members, and a member movably supported on said longitudinal member and adapted to have supporting engagement with said trough.

11. A hanger for an eaves trough which has at its upper edges inwardly extending flanges, said hanger comprising a sheet metal structure including a relatively narrow elongate member to extend across said trough in an upright position, upper and lower longitudinal members rigid with and extending laterally from said upright member, the lower longitudinal member having means whereby it may be supportingly connected with

the flanges of said trough, and an attaching member integral with and extending upwardly along one end of said upright member and extending laterally beyond said upright member.

12. A hanger for an eaves-trough comprising a sheet metal structure including a relatively narrow elongate member to extend across the upper edges of said trough in an upright position, a vertical member connected with and extending laterally from one end of said upright member for attaching to a supporting structure, and upper and lower longitudinal members connected with and extending laterally from said upright member, said lower longitudinal member having means whereby it may be connected with the upper edge portions of said trough to support the latter.

13. A structure of the character described comprising a trough having at its upper edges inwardly extending flanges, an arm extending across the top of said trough, having means whereby it may be attached to said supporting structure, and a member rigidly secured to said arm and arranged to be inserted in said trough and moved into supporting engagement with said flanges, by the movement of said arm to different positions with relation to said trough.

14. A hanger for an eaves-trough comprising a relatively narrow elongate member to extend across the top of said trough in an upright position and having at one end means for attaching the same to a supporting structure, the upper

edge of said upright member sloping from said end thereof to the other end thereof, means carried by said member for connecting the same with said trough, parts extending above said sloping edge at the respective ends thereof to form a screen supporting and retaining device.

15. A hanger for an eaves-trough comprising a sheet metal structure including a relatively narrow elongate member to extend across the upper edges of said trough in an upright position, having at its ends parts extending below the lower edge thereof to engage the upper portion of said trough and having at one end thereof an upright part whereby it may be attached to a supporting structure, and a longitudinal member extending laterally from said upright member and having means whereby it may be supportingly connected with said trough.

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