March 31, 1959 W. A. BERTRAM 2,879,961

TROUGH HANGER

Filed April 5, 1954

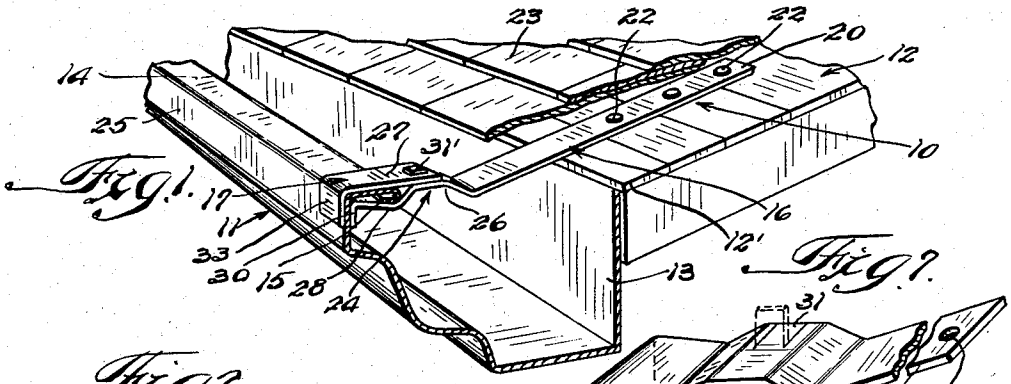


Fig. 1.

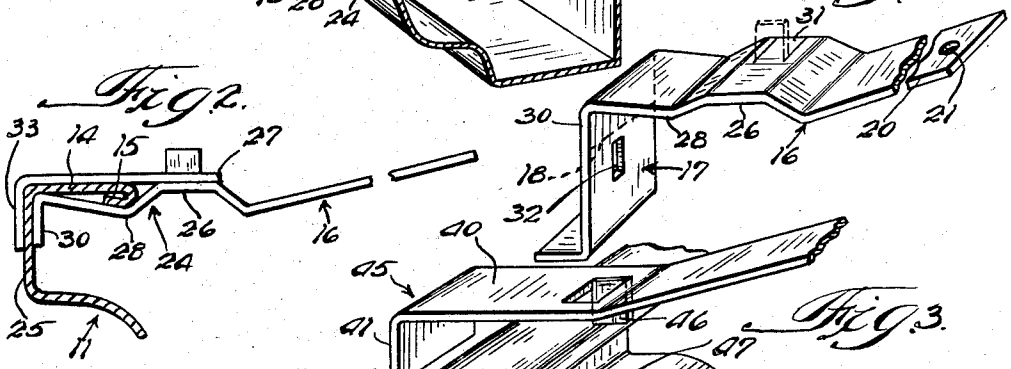


Fig. 7.

Fig. 2.

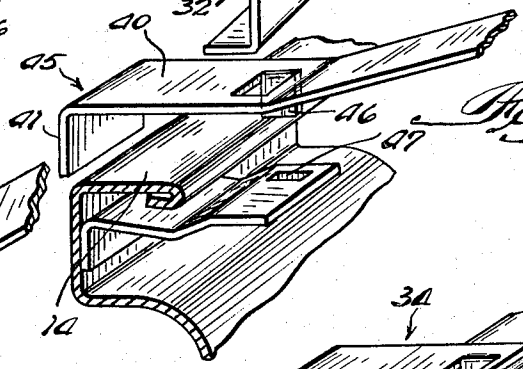


Fig. 3.

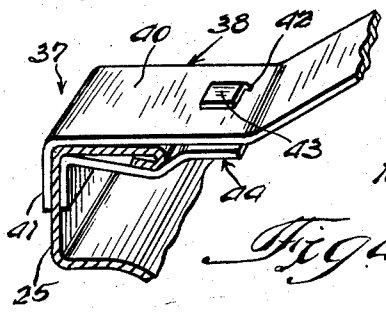


Fig. 4.

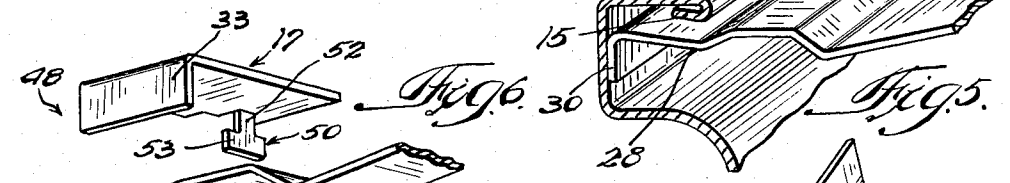


Fig. 5.

Fig. 6.

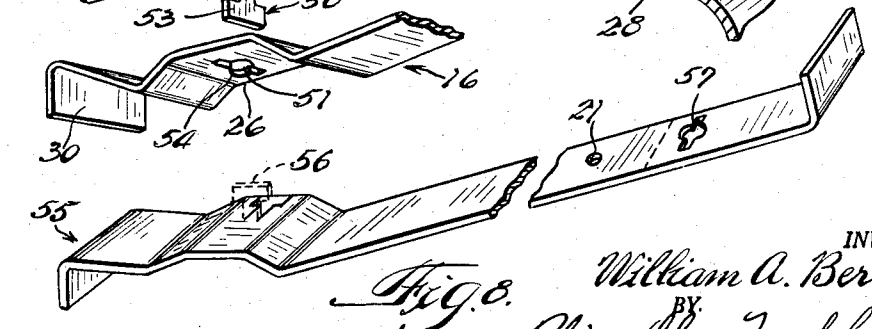


Fig. 8.

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TROUGH HANGER

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1 Claim. (Cl. 248—48.1)

This invention relates to a hanger for use in securing to a supporting surface, a trough or the like having the outer edge thereof offset to form an inwardly extending ledge.

In applying a hanger to this type of trough, it is customary that the hanger merely grip the inwardly protruding ledge and not embrace completely the periphery of the trough.

Various hangers adapted for this particular type of trough have heretofore been proposed which are either of costly and complex construction, difficult to apply to the trough and supporting surface as well, awkward to pack for shipping or storing, or are ineffective in gripping the trough.

Thus, it is an object of this invention to provide an improved hanger wherein the various sections or parts thereof are integral with one another until readily severed by the applicator at the time the hanger is to be installed; thereby facilitating compact packaging of numerous hangers for shipping or storing.

It is a further object of this invention to provide an improved hanger which is simple, yet sturdy, in construction and may be inexpensively and expeditiously fabricated.

It is a still further object of this invention to provide an improved hanger which effectively grips the protruding edge portion of the trough without the use of screws, bolts, rivets, or the like.

It is a still further object of this invention to provide an improved hanger which is adapted to effectively accommodate troughs varying widely in size and shape.

It is a still further object of this invention to provide an improved hanger which is easy to handle and apply even by one not skilled in the art.

Further and additional objects will appear from the description, accompanying drawings, and appended claim.

In accordance with one embodiment of this invention, a hanger for securing a trough to a supporting surface is provided comprising a primary section having a first portion for attachment to the supporting surface and a second portion for contacting the protruding edge portion of the trough. Integrally connected to the primary section is a secondary section. The juncture between the sections is weakened to permit ready severance of the sections prior to applying the hanger in position. The secondary section, when severed from the primary section, is disposed in substantially coextensive relation with the second portion of the primary section and is adapted to engage the protruding trough edge portion. Subsequent to the secondary section being brought into engagement with the trough, the second portion of the primary section and the secondary section are detachably affixed to one another to effect clamping of the protruding trough edge portion therebetween.

For a more complete understanding of the invention, reference should be made to the drawing wherein:

Figure 1 is a fragmentary perspective view of one

form of the improved hanger shown securing a trough to an eave;

Fig. 2 is a fragmentary side elevational view of the hanger shown in Fig. 1;

Fig. 3 is a fragmentary perspective exploded view of a second form of improved hanger shown in combination with a portion of the trough;

Fig. 4 is a fragmentary perspective view of a third form of improved hanger shown in gripping relation with the trough;

Fig. 5 is similar to Fig. 3 but shows a fourth form of the improved hanger;

Fig. 6 is a fragmentary perspective view of a fifth form of improved hanger showing the sections thereof disengaged and in askewed relation;

Fig. 7 is a fragmentary perspective view of the improved hanger shown in Figs. 1 and 2 prior to severing of the sections thereof; and

Fig. 8 is a fragmentary perspective view of a sixth form of improved hanger prior to the sections thereof being severed.

Referring now to the drawings and more particularly to Fig. 1, one form 10 of the improved hanger is shown for use in anchoring or securing a trough 11 to a roof 12. The trough 11, in this instance, is shown to be a style common referred to in the trade as a crown type. The trough has the back or inward side 13 thereof resting against the eave 12' of the roof. The outward edge portion of the trough is bent inwardly to form a ledge 14. The inward edge of the ledge is turned back under upon itself to form a hem 15 which provides greater stiffness for the ledge.

The hanger 10 is formed of two sections 16 and 17, which, during fabrication of the hanger, are formed integral with one another as seen in Fig. 7. The juncture 18 of the two sections is weakened by a score line so that the two sections may be readily severed before the hanger is applied to the roof and trough. If desired, the two sections may be integral with one another at the opposite end of section 16, as seen more clearly in Fig. 8.

Section 16, which is the primary section, is formed of strap material and has one end portion 20 thereof adapted to be affixed to the roof 12. Portion 20 is provided with a plurality of apertures 21 which are adapted to accommodate nails or screws 22. The nails 22 are driven into the planks forming a part of the roof. When section 16 is secured in place, the roof shingles 23 overlie end portion 20 and conceal it from view. Approximately a half, or more, of section 16 projects outwardly from the eave 12'. The end portion 24 of the protruding portion of section 16 is deformed, in this instance, so as to conform substantially to the underside of trough ledge 14 and also the inward side of a portion 25 of the trough adjacent the outer side of the ledge. End portion 24 includes a plateau portion 26, which is adapted to contact a portion 27 of secondary section 17, a glen portion 28 adjacent said plateau portion and adapted to subtend the hem 15, and a depending flange portion 30, which contacts the inward side of trough portion 25. The plateau portion 26, as shown in this form 10 of the hanger, is provided with a struck out finger 31, the function of which will be described more fully hereinafter.

The secondary section 17, in hanger form 10, is substantially L-shaped in cross-section and is adapted to overlie the exposed side of ledge 14 and a part of adjoining portion 25 of the trough 11. The longer portion 27 of section 17 contacts the upper side of ledge 14 and is provided with an aperture 32 through which the struck out finger 31, when it is offset upwardly as shown in dotted lines in Fig. 7, is threaded. Once the

finger 31 has been extended through aperture 32 to the fullest extent, the free end 31' of the finger is bent over the section portion 27, thereby locking section 17 and portion 24 of section 16 together.

The shorter portion 33 of section 17 is offset at substantially a right angle from longer portion 27 and is adapted to rest against trough portion 25. When section 17 is locked into position with portion 24 of section 16, the edge 14 and portion 25 of trough 11 are rigidly clamped by the hanger.

In a second form 34 of the improved hanger, shown in Fig. 5, the end portion 24 of section 16 is provided with an aperture 35 formed in the plateau portion 26 in place of the struck out finger 31. In turn, the longer portion 27 of section 17 is provided with a struck out finger 36 in place of aperture 32. Other than these minor changes, forms 10 and 34 of the hanger are the same. In assembling hanger form 34, finger 36 is offset downwardly and extends through aperture 35 and then is bent over the underside of plateau portion 26 and locks the sections in place.

A third form 37 of the improved hanger is shown in Fig. 4 wherein the protruding portion 38 of section 16 overlies the ledge 14 and portion 25 of trough 11. The segment 40 of portion 38 is substantially flat and contacts the exposed side of ledge 14. The outer edge of segment 40 is offset downwardly to form a flange 41 which is adapted to engage the exposed surface of trough portion 25. Segment 40 is provided with an aperture 42, which is adapted to accommodate a struck out finger 43 formed on secondary section 44. The shape of secondary section 44 is substantially the same as the end portion 24 of section 16 of the hanger form 10, shown in Figs. 1 and 2.

A modified form 45 of third hanger form 37 is shown in Fig. 3, wherein a struck out finger 46 is formed in segment 40 in place of aperture 42, and an aperture 47 is formed in section 44 in place of the struck out finger 43. Aside from the reversal of the struck out finger and aperture, hanger forms 37 and 45 are the same.

In Fig. 6 an additional form 48 of the improved hanger is shown which is substantially the same as hanger form 10 except for the shape of the struck out finger 50 formed on secondary section 17 and the aperture 51 formed in the plateau portion 26 of section 16. Finger 50 is substantially T-shape and has the stem or neck portion 52 thereof integral with section 17. The cross portion 53 of the finger 50 is spaced from section 17 when the finger is bent as shown and is adapted to be threaded through aperture 51. Finger 50 has cross portion 53 disposed at substantially a right angle to flange 33.

Aperture 51 is elongated and is in spaced substantially parallel relation with respect to flange 30 and with flange 33 of section 17 when the two sections are in clamping relation with the trough 11. The center portion 54 of aperture 51 is enlarged and is of such dimension as to accommodate neck portion 52 of finger 50 and permit the latter to twist relative to the aperture 51, once the cross portion 53 of the finger has been threaded therethrough. The center portion 54 of aperture 51 is not of such size as to permit the cross portion 53 to pass therethrough unless the cross portion and aperture are in aligned relation. Thus, when assembling hanger 48, secondary section 17 is first placed in overlying position on the trough ledge 14 and trough portion 25, and then primary section 16 is positioned beneath section 17 and in askewed relation therewith so that the cross portion 53 of finger 50 may be threaded down through aperture 51. Once neck portion 52 is accommodated within the center portion 53 of aperture 51, the applicator twists section 16 about neck portion 52 as an axis through a sector of approximately 90° until the ledge 14 and portion 25 of the trough are clamped in place. Flange 30 of section 16 will yield downwardly a slight amount so that it can readily pass over hem 15 when the section 16 is being twisted relative to section 17. The length of neck portion 52 is slightly greater than the thickness of the plateau portion 26 of section 16. Subsequent to the sections 16 and 17 being disposed in aligned relation, finger 50 may be bent back upon the underside of plateau portion 26 whereupon the sections are securely locked in clamping relation. When the sections are in locked relation, the free end of section 16 may be affixed to the roof 12 in a manner as heretofore described.

A slightly modified form 55 of the hanger 48 is shown in Fig. 8 wherein a struck out finger 56, similar to finger 50, is formed in plateau portion 26 of section 16 in place of aperture 51. Likewise, in section 17 an aperture 57, similar to aperture 51, is formed in section 17 in place of finger 50. Other than these slight modifications, hanger forms 48 and 55 are the same. The assembling of hanger forms 48 and 55 is the same with the exception that finger 56, subsequent to being threaded through aperture 57, is bent over the exposed side of section 17. It is to be noted in both hanger forms 48 and 55 that the primary section 16 subtends the ledge 14.

In instances where no hem 15 is formed on the trough, the plateau and glen portions 26 and 28 may be coplanar.

Thus, it will be seen that an improved hanger has been provided which is of simple sturdy construction, inexpensive and expeditiously fabricated, and may be readily packed for shipping or storage. Furthermore, the hanger effectively clamps the trough without the use of screws, bolts, or rivets.

While several embodiments of this invention are shown above, it will be understood, of course, that the invention is not to be limited thereto, since many modifications may be made, and it is contemplated, therefore, by the appended claim, to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

A trough hanger adapted to overlie and engage an outer inturned edge of a trough for attaching it to a supporting roof surface, said hanger comprising a continuous bar having at one end a relatively vertical flange and an adjoining relatively horizontal portion, an offset portion adjacent said relatively horizontal portion provided with an upturned lug, an extended flat portion continuing from said offset portion, and a relatively horizontal slotted flat portion and an upturned vertical flange connected to said extended flat portion by a weakened juncture and forming the opposite end of said continuous bar as formed, said relatively horizontal flat portion and said upturned vertical flange serving as a separate piece when severed at said weakened juncture for cooperating with said first vertical flange and said horizontal portion by clampingly engaging the outer inturned edge of the trough with said lug entering the slot of said horizontal flat portion, and said extended flat portion overlying the open face of the trough and engaging the supporting roof surface.

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