

[54] **REMOVABLE EAVE GUTTER
CONSTRUCTION**

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[51] Int. Cl. **E04d 13/06, E02b 9/04**
[58] Field of Search **61/15, 14; 52/11, 12, 24, 293,**
52/543, 546, 60, 61, 62, 15; 248/48.1, 48.2

[56] **References Cited**

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[57] **ABSTRACT**

A gutter construction which is readily detachable and reattachable to an eave without necessitating the use of any implement or tool. A generally U-shaped channel is provided having longitudinally-spaced openings in the walls thereof for the reception of nails (or other similar securing devices) extending transversely therethrough for fastening the channel to an eave. A gutter having a flange portion upwardly and outwardly extending from the rear wall thereof and a plurality of longitudinally-spaced, inverted T-shaped slots along the flange portion is secured to the U-shaped channel by insertion of the flange portion into the channel whereby each of the T-shaped slots engages a different one of the securing devices.

4 Claims, 5 Drawing Figures

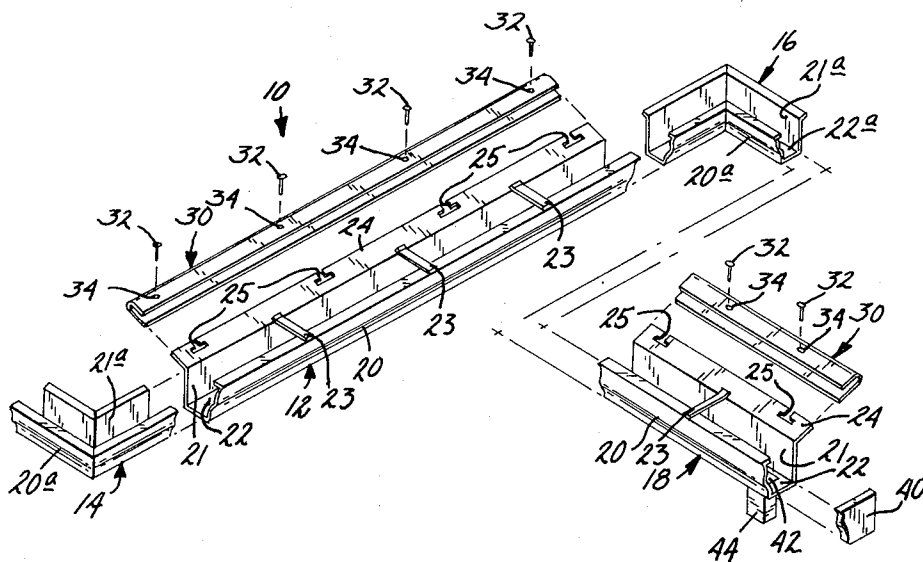


FIG. 1

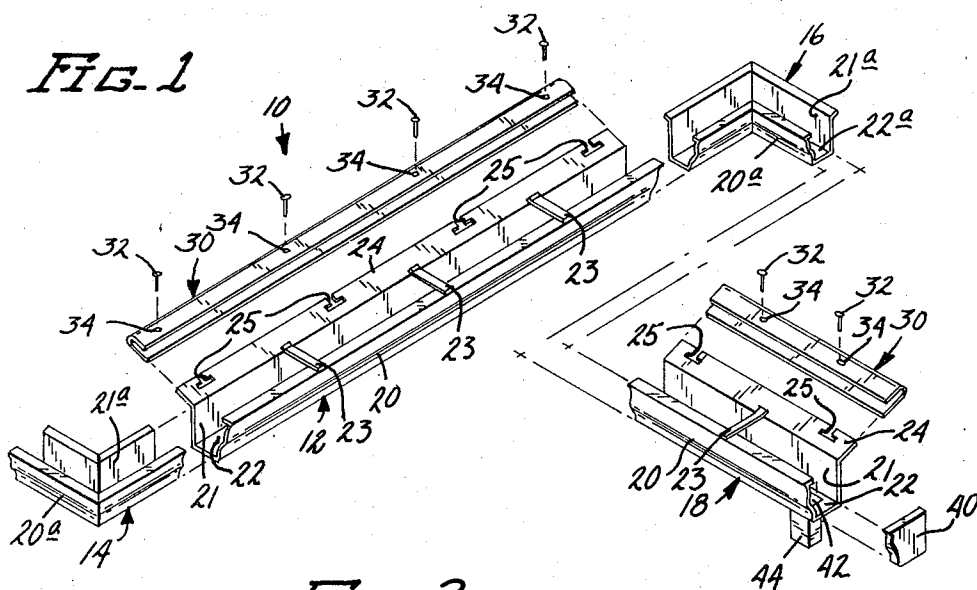


FIG. 2

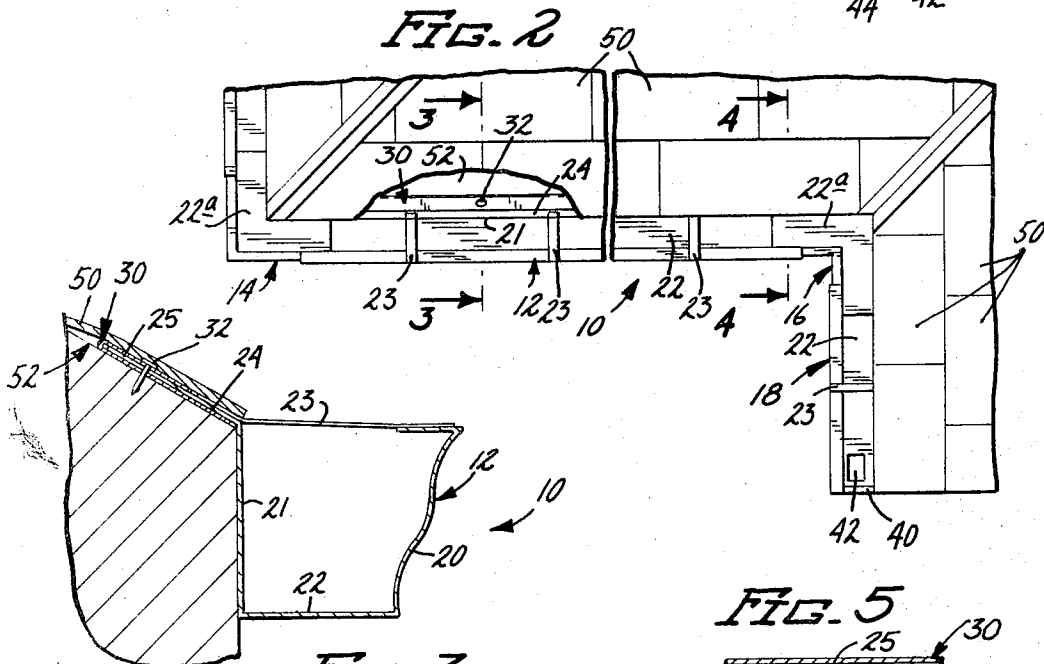


FIG. 3

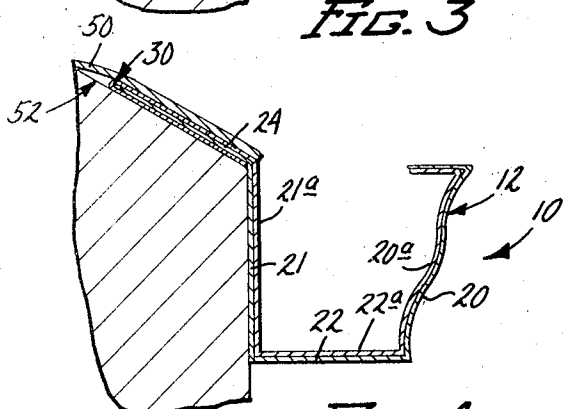
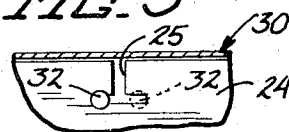


FIG. 4

FIG. 5



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REMOVABLE EAVE GUTTER CONSTRUCTION

BACKGROUND OF THE INVENTION

The present invention is directed to a detachable eave trough construction.

In numerous instances, an eave trough or gutter which can be readily detached and reattached to an eave is desirable. For example, the ability to readily and conveniently remove a gutter from an eave for cleaning and painting purposes is commonly desired. Further, in certain geographical areas an intermittent melting and freezing of snow generally occurs during the winter months. This frequently causes ice to progressively accumulate in the gutters used on a wide variety of buildings including private homes. The accumulated ice will often times back up onto the roof and work its way under the roofing covering the eave. This can result in damage to the eave as well as the interior of the structure in severe cases. Thus, in these geographical areas, it is highly desirable to have a gutter construction which can be easily removed during the winter months and then reattached to the eave the following spring.

Whereas detachable gutters are provided in the prior art (see, e.g., U.S. Pat. No. 1,229,478, A. A. Kramer, June 12, 1917), the gutters have not been nearly as readily or conveniently removable as desired. That is, the prior art gutters have generally been secured directly to the building or eave structure using fastening means such as bolts which must be removed to allow detachment of the gutter. The difficulty encountered in removing such gutters has, for all practical purposes, rendered them a permanent fixture and has left unfulfilled the need for a removable gutter construction.

SUMMARY OF THE INVENTION

The present invention provides an eave trough construction which allows detachment and replacement of the trough without utilization of a tool therefor. To provide this feature, a trough having an upwardly and outwardly directed flange portion carried by a rear wall thereof has longitudinally spaced hook-like openings or slots along the flange portion. A plurality of securing devices (e.g., pins, nails, etc.) are affixed to an eave in a longitudinally-spaced manner so as to engage each of the hook-like slots and secure the trough in a locked position. In a preferred embodiment, the securing devices extend transversely through a channel which is adapted to receive the flange portion of the trough. Further, the hook-like slots are T-shaped so as to allow the trough to be moved longitudinally in either direction for affixing the trough to the securing devices extending transversely through the channel.

The trough or gutter construction provided by the present invention is inexpensive and readily manufactured. Further, whereas the prior art gutters have required utilization of a tool to detach and reattach the gutters to the eave, the present invention can be readily removed and replaced without necessitating the use of a tool. This, of course, makes the removal of gutters extremely more convenient and renders practical their removal for such purposes as cleaning, painting, or storage during the winter months.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view showing a preferred embodiment of the removable gutter construction provided by the present invention including corner sections therefor;

FIG. 2 is a top view of the assembled gutter construction shown in FIG. 1, portions thereof being broken away;

FIG. 3 is a cross-sectional view along the section line 3—3 of FIG. 2;

FIG. 4 is a cross-sectional view along the section line 4—4 of FIG. 2; and

FIG. 5 is an enlarged fragmentary view illustrating a preferred construction design for securing the gutter to an eave.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings wherein like numerals represent like parts of the invention throughout the figures, the removable eave trough or gutter construction provided by the present invention is generally designated by the numeral 10. The preferred gutter construction illustrated in the figures includes a longitudinally extending trough or gutter section 12 having connected thereto corner gutter sections 14 and 16 and a longitudinally extending gutter end section 18 connected to corner section 16. As will become apparent from the description hereinbelow, the illustrated embodiment can be readily modified to provide a removable construction for numerous gutter configurations and designs.

The removable feature of the present invention is provided primarily by the similarly constructed longitudinally extending U-shaped gutter sections 12 and 18. As illustrated, gutter sections 12 and 18 include a generally vertical front or outer wall 20, a vertical back or inner wall 21 and a horizontal base 22 extending between the inner and outer walls. A plurality of transverse members 23 extend between the inner and outer walls of the gutter to provide strengthening therefor. Inner wall 21 includes as an integral part thereof an upwardly and outwardly directed flange portion 24. The outward projection angle of flange portion 24 is generally chosen so as to be equivalent to the pitch of the eave to which the gutter construction is to be attached. Preferably, the entire gutter construction is formed from sheet metal thereby readily allowing any desired modification of the gutter design such as the outward projection angle of flange portion 24. As illustrated, the longitudinally extending gutter section 18 has an end cap 40 and further includes an opening 42 for receiving a vertically extending conduit 44 for draining water from the gutter construction.

A plurality of hook-like openings shown as inverted T-shaped slots 25 are positioned along the outer edge of flange portion 24. Each T-shaped slot is defined by a first slot portion extending transversely from the rearward edge of the flange toward inner wall 21 and a longitudinally extending second slot portion at the inward end of the transversely extending first slot portion.

As a part of the removable gutter construction, the longitudinally extending sections 12 and 18 each have associated therewith means for securing the gutter to an eave. Such means are shown as a U-shaped channel 30 and a plurality of securing devices 32. As illustrated, channel 30 has a plurality of longitudinally-spaced openings 34 in the top and bottom walls thereof. The longitudinal spacing of openings 34 correspond to the longitudinal separation of slots 25 in gutter flange portion 24. As will be subsequently described, openings 34 are suitable for receiving securing devices such as nails 32 which extend transversely through the U-shaped channel. Other types of securing devices such as screws, pins or the like can also be utilized.

Right angular corner sections 14 and 16 are of a shape generally similar to the longitudinally extending sections 12 and 18; corner sections 14 and 16 having an outer wall 20a, an inner wall 21a and a horizontal base 22a therebetween. However, the corner sections have slightly smaller width and height dimensions so as to be insertable within the longitudinally extending sections for engagement therewith as shown in FIG. 4. Further, the flange portion 24a of the corner gutter sections is considerably smaller than the flange portion 24 of longitudinal sections 12 and 18 so that it does not overlap the T-shaped slots 25 when the corner sections are inserted within the respective longitudinal sections.

The gutter construction provided by the present invention is preferably assembled in the following manner. Starting with an end gutter section such as section 18, the roofing, illustrated as shingles 50 along an eave 52, is either removed or turned back to allow U-shaped channel 30 to be secured (e.g.

nailed) to the eave. In nailing or otherwise securing channel 30 to eave 52, the nail is inserted into each of the openings 34 so as to extend transversely through channel 30 and engage eave 52. However, the nail is not driven into eave 52 to the extent that the U-shaped channel 30 is compressed; rather, the nail is driven only so far as is compatible with channel 30 retaining its U-shape.

After securing channel 30 to eave 52, the gutter section 18 including the corner section 16 carried thereby is attached to the eave by inserting the flange portion 24 between the lips of channel 30 so that the T-shaped slots 25 each receive one of the nails 32. The gutter section 18 is then moved slightly longitudinally in either direction hooking the section onto the nails (as shown in FIG. 5) thereby securing the section to channel 30 and the adjoining eave. Next, corner gutter section 16 is adjusted by sliding the section within section 18 so that it fits snugly about the corner of the eave structure. The channel 30 associated with gutter section 12 is then secured to eave 52 in a position so as to allow engagement of section 12 and corner section 16. Gutter section 12 is secured to channel 30 in the same manner as previously described in conjunction with longitudinal gutter section 18. Corner section 14 is then positioned within gutter section 12 and adjusted by sliding it therein so as to fit snugly about the corner of eave 52. This assembling process is continued in a similar manner for the eave structure about the entire building or any desired portion thereof. As illustrated in FIGS. 2-5, the roofing 50 is returned to its original position (i.e., flat) overlapping the U-shaped channel after the channel is secured to eave 52 or on completion of the entire assembling process.

After the initial assemblage in the above-described manner, the gutter construction can be readily detached and reattached without any further use of a tool therefor. That is, gutter section 18 can be removed by sliding it slightly longitudinally to align each of the nails 32 with the transversely extending slot portion (see FIG. 5 for detail) and the gutter is then simply pulled outward from the eave for removal. A reverse procedure is followed to reattach the gutter to the eave. Thus, after the initial installment of the gutter construction, the gutters can be conveniently removed for cleaning, painting or for storage during the winter months.

Whereas the invention has been described in conjunction with a preferred embodiment, numerous modifications thereto will be readily apparent to one of ordinary skill in the art. For example, the slot in the flange portion for securing the gutter to the channel member have been described as T-shaped. However, numerous other hook-like slots can also be utilized such as a simple inverted L-shaped slot. Further, while the utilization of a U-shaped channel is preferred, it is unnecessary to the provision of a detachable gutter. Rather, the securing devices can simply be affixed to the eave in a longitudinally-spaced manner so as to engage the hook-like slot and secure the gutter in a locked position. It should be understood, also, that the longitudinally extending members can be manufactured in any convenient or desirable length and the adjoining assembled members attached to one another by an appropriately designed flange carried by one of the members or by any other type of attachment devices which does not render impractical the removal and reattachment of the

present gutter construction.

What is claimed is:

1. An eave trough construction, comprising:

a. a generally U-shaped longitudinally extending eave trough having front and rear walls and a base extending therebetween, an outwardly directed flange portion carried by said rear wall, and longitudinally spaced hook-like slots extending inwardly from an outer edge of said flange portion;

b. channel means suitable for receiving therein said flange portion of said eave trough; and

c. a plurality of securing devices suitable for extending transversely through said channel for affixment to an eave in a longitudinally spaced relationship corresponding to the longitudinal spacing of said hook-like slots so that each of said hook-like slots longitudinally spaced along said flange portion removeably receives a different one of said securing devices extending through said channel means for removeably securing said trough to the eave.

2. An eave trough construction, comprising:

a. a generally U-shaped longitudinally extending eave trough having front and rear walls and a base extending therebetween, an outwardly directed flange portion carried by said rear wall, and longitudinally spaced hook-like slots having a generally inverted T-shape and extending inwardly from the outer edge of said flange portion;

b. channel means suitable for receiving therein said flange portion of said eave trough; and

c. securing devices suitable for extending transversely through said channel means in a longitudinally spaced manner for affixment to an eave so that each of said securing devices receives a different one of said T-shaped hook-like slots longitudinally spaced along said flange portion to removeably secure said trough to the eave.

3. The eave trough construction of claim 2 including at least one corner trough section wherein said corner section is of a generally similar transverse shape as said longitudinally extending trough and is slideably insertable therein so as to be removeably held thereby.

4. A detachable eave trough construction, comprising:

a. a longitudinally extending trough having generally vertically extending front and rear walls and a generally horizontal base therebetween, a flange portion integrally carried by said rear wall and extending angularly upward and outward therefrom, and a plurality of longitudinally spaced hook-like slots along said flange portion having a first slot portion extending transversely inward from the outer edge of said flange portion and a second longitudinally extending slot portion communicating with the inner end of said first slot portion; and

b. a generally U-shaped channel suitable for receiving longitudinally spaced securing devices extending transversely therethrough, said securing devices affixing said U-shaped channel to an eave and receiving firstly said transversely extending slot portion for transverse movement of said trough and secondly said longitudinally extending slot portion for longitudinal movement of said trough into a locked position.

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