June 16, 1959 M. RACHLIN 2,890,664

GUTTER AND GUTTER SUPPORT

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Fig. 1.

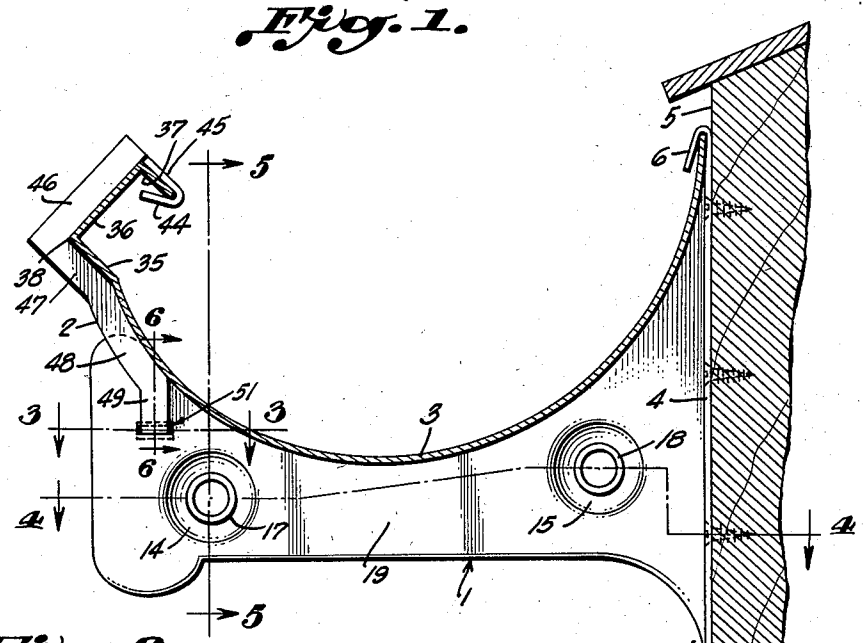


Fig. 2.

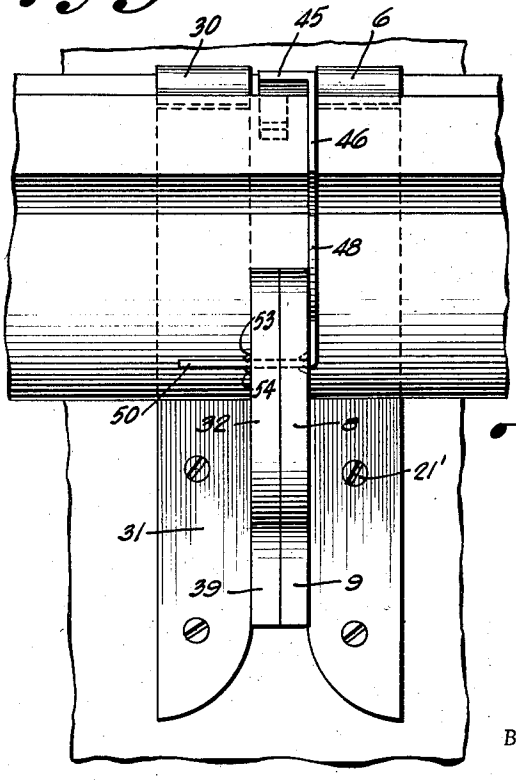


Fig. 3.

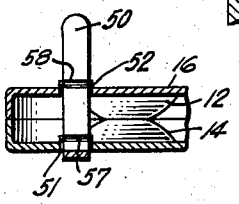
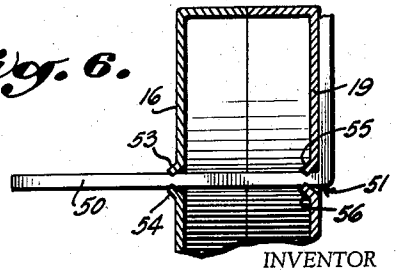


Fig. 6.



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GUTTER AND GUTTER SUPPORT

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Fig. 4.

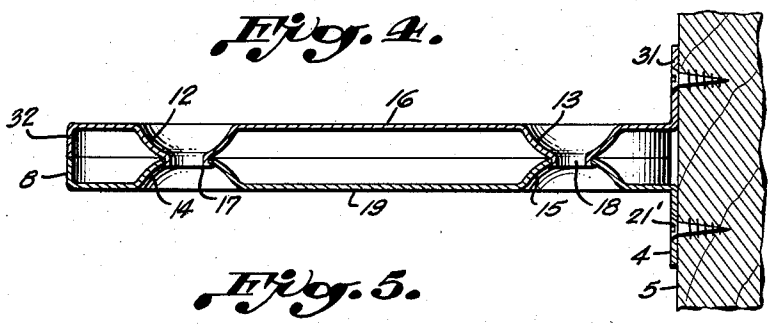


Fig. 5.

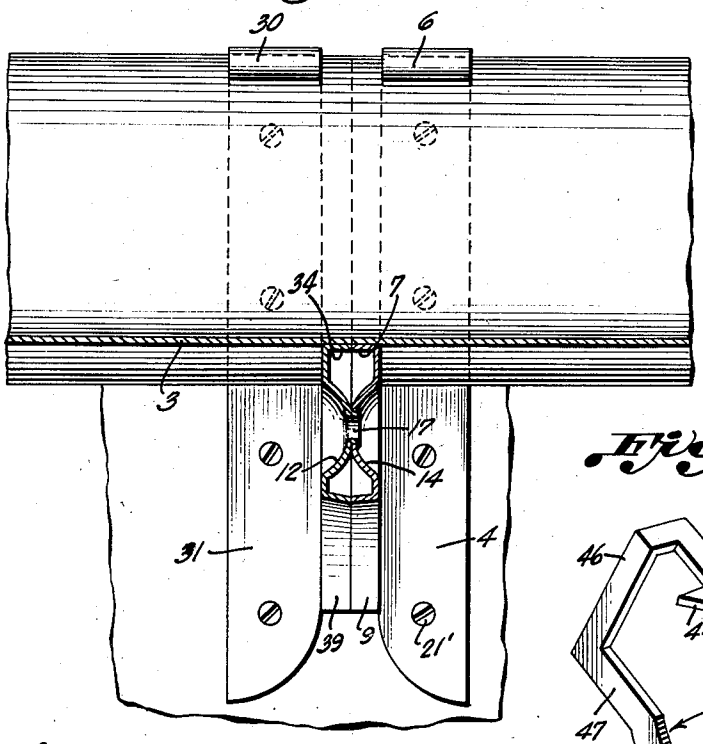
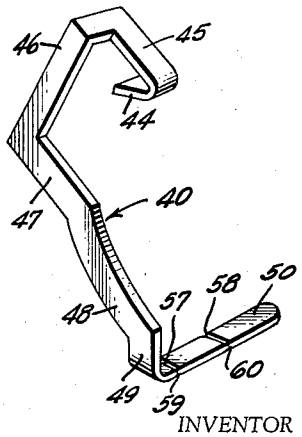


Fig. 7.



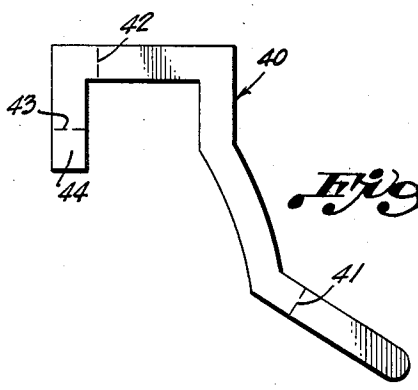


Fig. 8.

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Fig. 9.

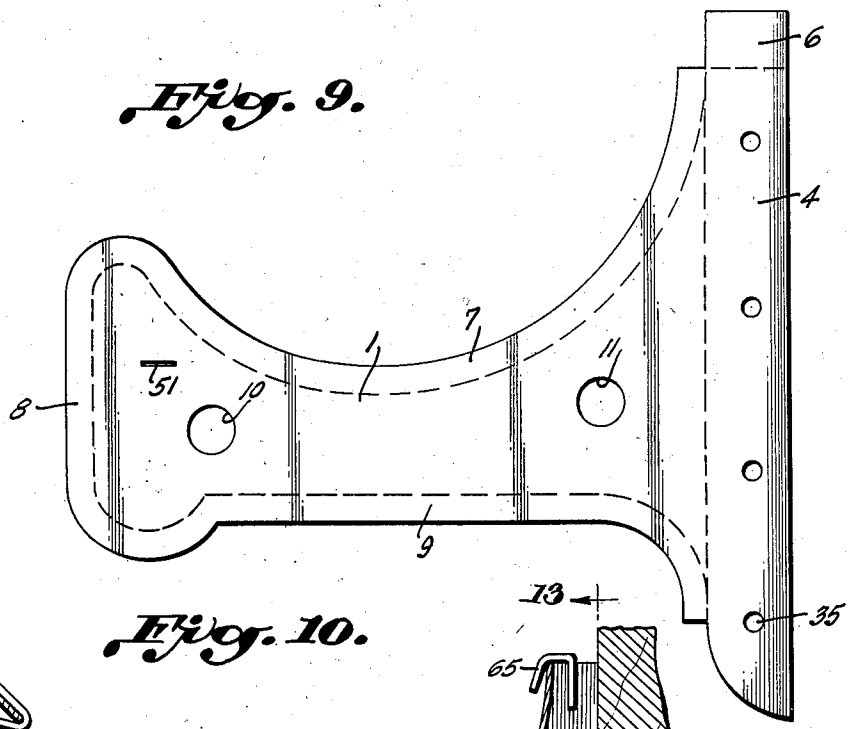


Fig. 10.

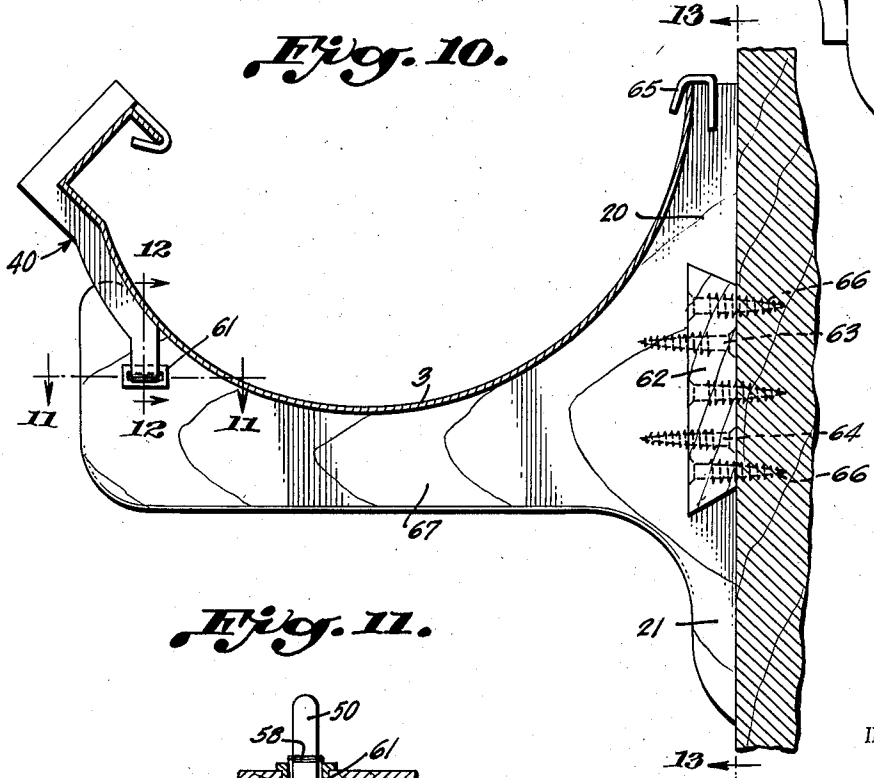
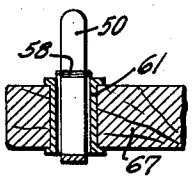


Fig. 11.



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GUTTER AND GUTTER SUPPORT

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Fig. 12.

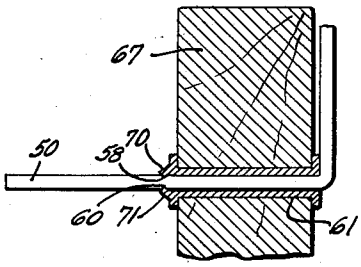


Fig. 13.

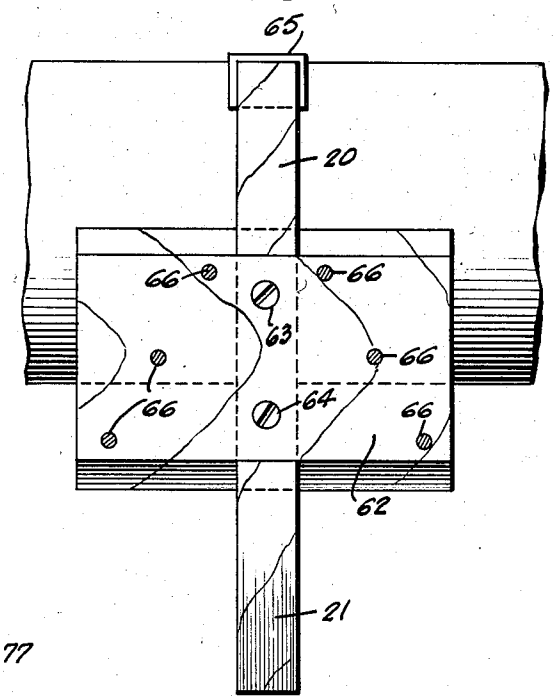


Fig. 14.

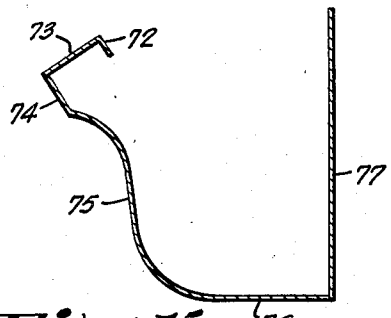


Fig. 15.

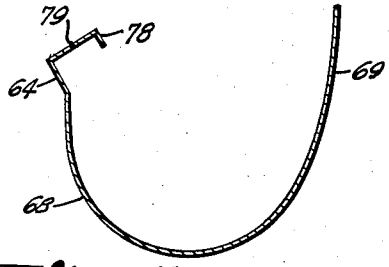


Fig. 16.

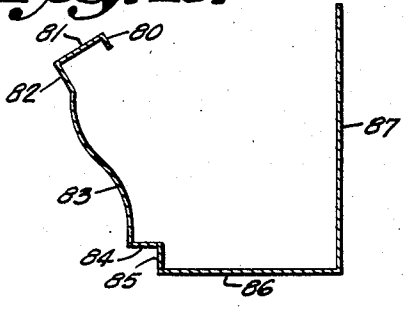
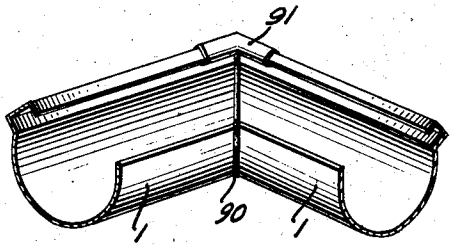


Fig. 17.



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United States Patent Office 2,890,664 Patented June 16, 1959

2,890,664

GUTTER AND GUTTER SUPPORT

Max Rachlin, Flushing, N.Y.; Helen Pollock and Eva Rachlin, executrices of said Max Rachlin, deceased

Application August 2, 1951, Serial No. 239,951

5 Claims. (Cl. 108—28)

This invention, relating as indicated to a gutter and gutter support, is more particularly directed to the provision of a new type of gutter support along with a new type of gutter and a new type of clip for securing the gutter to the support.

It is one of the objects of this invention to provide a gutter which is less expensive to install than conventional gutters and which at the same time is stronger than conventional gutters yet costs less to manufacture than the usual type of gutter.

It is another object of this invention to provide a clip which will secure a gutter to a gutter support in such manner that the gutter is firmly tied to the support and also wherein the clip itself acts as a support, for part of the gutter adjacent the bead, as well as the bead itself.

A specific object of this invention is to provide a clip with a flat locking lug which can be quickly inserted in a rectangular opening in a gutter support so that the clip will not fulcrum about the opening but instead will provide a load bearing member for part of the gutter.

Another object of the invention is to provide a gutter support or hanger, as it is known in the trade, which in its preferred form is composed of two complementary members stamped from sheet metal and joined together so as to present a hollow, strong, rigid, load bearing support capable of withstanding all of the stresses and strains incident to roof gutters.

Another object of the invention is to provide a gutter support which is formed of wood, plastic, or like solid material.

A further object of the invention is to provide a new method of making a gutter support.

A still further object of the invention is to provide a clip which, although easily installed by sliding a locking lug thereon into engagement with an aperture in the gutter hanger, is firmly locked in place by means of snap fingers engaging grooves in the clip.

Since it is well known that gutters are frequently damaged by ladders of workmen performing various operations on a building, it is a particular object of this invention to provide a gutter with a bead which presents a substantially horizontal line of bend, this line lying outermost with respect to all other portions of the gutter, so that the ladder will strike the line of bend which will present the maximum resistance, thus preventing damage and weakening of the gutter.

Another object of the invention is to provide a gutter of the half round or the ogee type with a longitudinal outer bead that is formed by at least two flat surfaces meeting at right angles, the flat surface adjacent the gutter proper being inclined sharply so as to insure proper drainage of water and debris as well as ice and snow.

It is also an object of the invention to provide several new forms of gutters, any one of which can be used in lieu of the conventional half round gutter or which can be used in place of any of the various types of ogee gutters.

Another object of the invention is to provide various

gutter accessories such as mitres and other parts which go to make up the complete gutter assembly out of parts having a new configuration corresponding with the particular configuration of the gutter.

A specific object of the invention is to provide a gutter support or hanger which presents a wide load bearing gutter contacting surface when compared with the conventional channels and circles as known in the art today.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings in which an example of the invention is shown and wherein:

Fig. 1 is a vertical section showing a half round type of gutter as well as the gutter support and clip.

Fig. 2 is a front elevation of Fig. 1.

Fig. 3 is a horizontal section on line 3—3 of Fig. 1.

Fig. 4 is a horizontal section taken on line 4—4 of Fig. 1.

Fig. 5 is a vertical section taken on line 5—5 of Fig. 1.

Fig. 6 is a vertical section taken on line 6—6 of Fig. 1.

Fig. 7 is a perspective view of the clip ready for use.

Fig. 8 is a plan view of a blank from which the clip of Fig. 7 is made.

Fig. 9 is a plan view of one of the complementary blanks which with another similar blank forms a gutter support.

Fig. 10 is a vertical section of a modification showing the gutter support formed of wood.

Fig. 11 is a horizontal section taken on line 10—10 of Fig. 10.

Fig. 12 is a vertical section on line 12—12 of Fig. 10.

Fig. 13 is a rear elevation of Fig. 10.

Fig. 14 is a vertical section of one type of ogee gutter.

Fig. 15 is a vertical section of another type of ogee gutter.

Fig. 16 is a vertical section of a still further type of ogee gutter.

Fig. 17 is a perspective view of a mitre formed of gutter sections corresponding to the gutter shown in Fig. 1.

Referring now to the drawings, and more particularly to Fig. 1, it will be seen that the gutter hanger generally indicated by the reference numeral 1 has a clip 2 secured thereto and also embracing the gutter 3.

The gutter support is formed of two complementary sections which are preferably riveted together as shown in Figs. 4 and 5.

The blank, from which one of the complementary half sections is formed, is illustrated in Fig. 9 and comprises a flange 4 which is adapted to be secured to a facia board 5 although it may, of course, be secured to the vertical outer surface of a roof rafter, or other surface. The upper end of the flange constitutes a lip 6 which is bent downwardly as shown in Fig. 1 so as to retain the inner horizontal edge of the gutter. The portion 1 of the blank extending outwardly or to the left, as viewed in Fig. 9, from the flange 4 is surmounted by an upper portion 7 adapted to be bent along the dotted line and to form a half of a gutter seat. The outer flange 8 is also bent so as to abut a similar flange 32 on the complementary half 16 of the gutter support. In the same manner the flange 9 is provided for the lower surface of the half 19 and it abuts flange 39 on the half 16. The blank is initially provided with apertures 10 and 11 which have their adjacent areas depressed into a cup shape so as to form the cups 12 and 13 as shown in Fig. 4, the complementary half 16 also being provided with cups 14 and 15. The inner circular edges 17 and 18 of the left-hand blank 16 are bent over or riveted to the cups 14 and 15, thus securing the two halves 16 and

19 in a firmly locked relationship. It is to be understood, of course, that the parts may be welded or bolted or otherwise secured together. The half 16 is provided with identical parts as those described with respect to the half 19. These parts may be conveniently listed as follows: an upper lip 30, an inner vertical attaching flange 31, an outer vertical flange 32, a lower flange 39, and an upper gutter seating flange 34. Both halves are provided with apertures 35 in their vertical flanges for the reception of screws, nails or other securing means.

The gutter 3 has its inner longitudinal edge secured under the lips 6 and 30 and has its arcuate portion 35 seated firmly against the upper flanges 34 and 7.

The outer longitudinal edge of the gutter comprises what is generally termed a "square bead," this being formed by the outwardly extending flat portion 35, and the upwardly extending flat portion 36 which lies at right angles to the portion 35. The portion 36 is joined by an inwardly extending, substantially flat portion 37 which extends at right angles to the portion 36. From this it will be seen that the line of bend 38 comprises the outermost portion of the gutter, which renders the composite gutter bead highly resistant to strains and stresses such as the placing of ladders thereagainst, since the ladder will contact the line of bend which is the strongest part of the bead.

It will be obvious that the flat portion 35 extends at a sharp angle to the horizontal which insures proper drainage at all times. For instance, if snow and ice should form adjacent the bead, upon thawing it would immediately drop into the gutter proper.

The free edge 37 which is the weakest portion of the gutter is located in such a position that it is impossible for this free edge to be contacted by ladders or other construction devices. This is due to the fact that the free edge is located inwardly to a considerable extent beyond the outermost line of bend 38.

The clip generally indicated by the reference numeral 40 is formed from the blank shown in Fig. 8 by bending the parts at right angles along the lines 41 and 42 and by a further bending operation along the line 43 to provide the lip 44. The lip 44, as shown in Fig. 1, extends downwardly and outwardly so as to engage under the free edge 37 of the gutter bead. This lip 44 is integrally connected to the outwardly extending portion 45 and this last named portion is connected to a downwardly extending part 46 which is in turn connected to an inwardly and downwardly extending portion 47. The portion 47 extends at right angles to the portion 46 so as to snugly embrace the flat portions 35 and 36 of the gutter bead as well as the line of bend 38. An arcuate portion 48 extends downwardly with one edge thereof contacting a part of the lower surface of the arcuate portion of the gutter 3. From the portion 48 a relatively small vertical piece 49 is provided which merges into the locking lug 50 extending at right angles thereto. The locking lug is adapted to be slidably received in the openings 51 and 52 in the complementary halves 19 and 16.

In Figs. 3 and 6 the engagement between the locking lug 50 and the gutter support is shown. The lug 50 is provided with upper grooves 57 and 58 and corresponding lower grooves 59 and 60. The grooves 58 and 60 are engaged by the snap fingers 53 and 54 whereas the grooves 57 and 59 are engaged by the snap fingers 55 and 56. It is merely necessary to push the clip to the left, as shown in Fig. 6, as far as it will go whereupon the clip is firmly secured to the gutter support which in turn secures the gutter to the gutter support.

In order to prevent any fulcruming or pivoting of the clip with respect to the gutter support, the clip is flat and rectangular in cross-section throughout the extent of the lug 50 and it is received in the rectangular openings 51 and 52. The clip can be formed from heavy or light gauge metal depending on the requirements of the gutter assembly.

To attach the clip to the gutter and gutter support it is merely necessary to place the clip over the gutter bead somewhat to the right of the gutter support as viewed in Fig. 2. The clip is then moved to the left by sliding the same along the gutter bead so that the lug 50 enters the openings 51 and 52 after which the fingers 53 and 54 snap into the grooves 57 and 59 respectively and at the same time the fingers 55 and 56 snap into the other set of grooves 58 and 60, thus locking the clip in place.

Referring now to Fig. 10, the construction is the same as far as the gutter and clip is concerned, but instead of a hollow metallic support I have provided a solid wooden support. This support has the same general configuration as the metallic support described previously, except that it is solid as distinguished from being hollow, and the locking lug receiving aperture is provided with a rectangular metallic sleeve 61.

A wooden plate 62 is attached to the rear vertical face of the member 67 by means of screws 63 and 64.

In this case a separate lip 65 is inserted in the uppermost portion and extends completely across the body 67 as one integral piece and the wooden plate 62 is secured to an appropriate surface by means of screws 66. This wooden plate 62 is dovetailed into the body 67 and attached thereto by means of screws 63. The complete assembly of body 67 and plate 62 is finally attached to a supporting surface, such as facia board or the like, by means of screws 66.

In view of the fact that there might be a slight tendency for the clip 40 to fulcrum about an opening in which the locking lug 50 is received, I prefer to employ a metal sleeve 61. This sleeve is shown in detail in Fig. 12, wherein the sleeve 61 is provided at one end with a flange and at the other end is provided with snap fingers 70 and 71 adapted to engage the grooves 58 and 60 on the locking lug 50. Here again it is merely necessary to insert the lug 50 in the sleeve 61 and then push the clip to the left, as viewed in Fig. 12, whereupon the clip becomes locked in place due to the action of the snap fingers in cooperation with the grooves on the lug 50.

In both the hollow metal form of the device and the solid wooden or plastic type, the hanger or gutter support comprises a vertically extending attaching portion from which a horizontal body portion projects. In the metal hanger the attaching portion comprises the flanges 4 and 31, whereas in the solid hanger the vertically extending attaching portion comprises the part 20 above the plate 62 and the part 21 below such plate. It is, of course, obvious that nails or screws may be installed through the portions 20 and 21 to further insure a tight connection between the hanger and the facia board.

It will also be noticed that in both types of hangers the gutter contacting surface, that is, the upper arcuate surface, extends through an arc which is greater than 90° but less than 180°, thus saving considerable metal.

In Figs. 14, 15 and 16 ogee types of gutters are shown which may be supported by the gutter supports as described. These supports may be formed similar to the two types of supports previously described, it being understood that the seating portion of the support will follow the contours of the ogee curve 83 and the bead 84.

Referring now to Fig. 14, it will be seen that this particular form of gutter is provided with a vertical inner surface 77, a hollow horizontal surface 76, an ogee curved portion 75, and a square bead formed by the flat portions 74, 73 and 72. In the event that this type of gutter is employed, then the hanger is shaped so as to present a seat that will embrace the portions 75 and 76 whereas the clip will engage part of the ogee surface 75 and completely engage the square bead as described previously.

In the modification shown in Fig. 15, a substantially vertical surface 69 is provided which engages the facia board or other support, and this portion is connected to

the square bead by the curved part **68**. Here again the square bead is formed by the flat portions **64**, **79** and **78**. Obviously the gutter hanger or gutter support will be tailored to fit the exact curvature as shown in Fig. 15.

In the modification shown in Fig. 16, the square bead is formed by the free edge **80**, angular flat portion **81**, and downwardly extending flat portion **82**. The square bead is joined to the ogee curve **83** and the latter portion is joined to the horizontal section **86** by means of the flat parts **84** and **85** which extend at right angles to each other. The inner vertical portion **87** is adapted to lie flat against the facia board or roof rafter.

In Fig. 17 I have shown one accessory although it will be understood that all of the various parts which go to make a complete gutter assembly may be provided with cross-sectional shapes corresponding with those previously described. This particular mitre is formed by means of gutter sections **1**, as shown in Fig. 1, soldered or otherwise secured along the joint **90** and provided with a reinforcing member **91**.

From the foregoing description it will be seen that I have provided an extremely strong, durable, rigid gutter construction in which the parts may be assembled with a minimum of labor. It is merely necessary to place the flanges **4** and **31** against a facia board or other support and install the screws **21'**, after which the gutter is placed in position so that the inner longitudinal edge slides up under the lips **6** and **30** and then the clip is attached as described previously, whereupon the gutter is ready for use. It will be noted that the gutter cannot move in any direction due to the combined support of the clip and the hanger itself.

It will also be observed that the clip is easily formed of a very small amount of metal and that while (as shown) it is light, it nevertheless performs its function due to its particular construction and its combination of a flat locking lug with a rectangular opening in the gutter support. Furthermore, the lug is easily mounted and once in place the clip is locked to the hanger.

It will also be observed that the outermost portion of the gutter bead comprises a line of bend between two parts extending at right angles, thus presenting the strongest possible resistance to impacts of ladders or other strains and stresses.

It will be further noted that the gutter may be either in the half round type or ogee form.

A most important feature of this invention is that the gutter can be made from less material and yet instead of sacrificing strength, the strength is enhanced. At the same time a pleasing design is obtained which is quite important because the gutters of this type are used upon the exterior of houses and other buildings where they are plainly visible.

A very important feature of this invention is that it provides for the support of an ogee type of gutter in a manner heretofore unknown in this art. Ordinarily ogee gutters are supported by means of a long nail or spike extending through the outer square bead and the inner vertical portion. This spike is provided with a sleeve extending immediately over the gutter and it will hold for a period of a year or two but obviously there is no provision to resist outward stress. For example, if ice is formed it pushes the outer bead and in turn pulls the spike. In the present invention it is impossible for the outer bead to move either inwardly or outwardly.

I claim:

1. A preformed clip having a substantially rigid, fixed configuration for securing a gutter to a gutter support, said clip comprising a bent lip adapted to engage the outer edge of a gutter, a portion extending outwardly from said lip, another portion extending at right angles from such outwardly extending portion, a downwardly extending portion lying in a plane at right angles to such other portion, an inwardly extending portion lying in said plane but extending at right angles to said downwardly extending portion, an arcuate portion joined to said inwardly extending portion and a locking lug extending from said arcuate portion, having grooves therein.

2. A clip for securing a gutter to a gutter support, said clip comprising a bent lip adapted to engage the outer edge of a gutter, a portion extending outwardly from said lip, another portion extending at right angles from such outwardly extending portion, a downwardly extending portion lying in a plane at right angles to such other portion, an inwardly extending portion lying in said plane but extending at right angles to said downwardly extending portion, an arcuate portion joined to said inwardly extending portion and a locking lug extending from said arcuate portion, said lug lying in a plane extending at right angles to said first named plane.

3. A clip for securing a gutter to a gutter support, said clip comprising a bent lip adapted to engage the outer edge of a gutter, a portion extending outwardly from said lip, another portion extending at right angles from such outwardly extending portion, a downwardly extending portion lying in a plane at right angles to such other portion, an inwardly extending portion lying in said plane but extending at right angles to said downwardly extending portion, an arcuate portion joined to said inwardly extending portion, a second downwardly extending portion joined to said arcuate portion, said second downwardly extending portion and said arcuate portion lying in said plane and a locking lug extending at right angles from said second downwardly extending portion.

4. A clip for securing a gutter to a gutter support, said clip comprising a bent lip adapted to engage the outer edge of a gutter, a portion extending outwardly from said lip, another portion extending at right angles from such outwardly extending portion, a downwardly extending portion lying in a plane at right angles to such other portion, an inwardly extending portion lying in said plane but extending at right angles to said downwardly extending portion, an arcuate portion joined to said inwardly extending portion and a locking lug extending from said arcuate portion, said lug lying in a plane extending at right angles to said first named plane, said lug having a pair of grooves on its upper surface and having a pair of grooves on its lower surface.

5. A gutter system comprising the combination of a gutter support having an attaching flange and an arcuate gutter seating portion that projects outwardly from said flange, with a gutter seated on said seating portion, said gutter having a part thereof extending upwardly beyond said support and terminating in a square bead that is spaced from said gutter seating portion and a clip extending through said support and thence outwardly beyond said support and around and over said square bead, said clip having groove engaged by a locking snap finger on said support.

References Cited in the file of this patent

UNITED STATES PATENTS

67,155	Ball	July 30, 1867
524,186	Silberstein	Aug. 7, 1894
664,637	Heib	Dec. 25, 1900
1,105,390	Whedon	July 28, 1914
1,639,916	Wilson	Aug. 23, 1927
1,793,982	Weyand	Feb. 24, 1931
1,936,079	Belding	Nov. 21, 1933
2,137,911	Innocenti	Nov. 22, 1938
2,187,869	Tobin	Jan. 23, 1940
2,233,049	Gray	Feb. 25, 1941
2,485,090	Finch	Oct. 18, 1949
2,536,704	Shea et al.	Jan. 2, 1951