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COMBINATION GUTTER SUPPORT FOR GREENHOUSES

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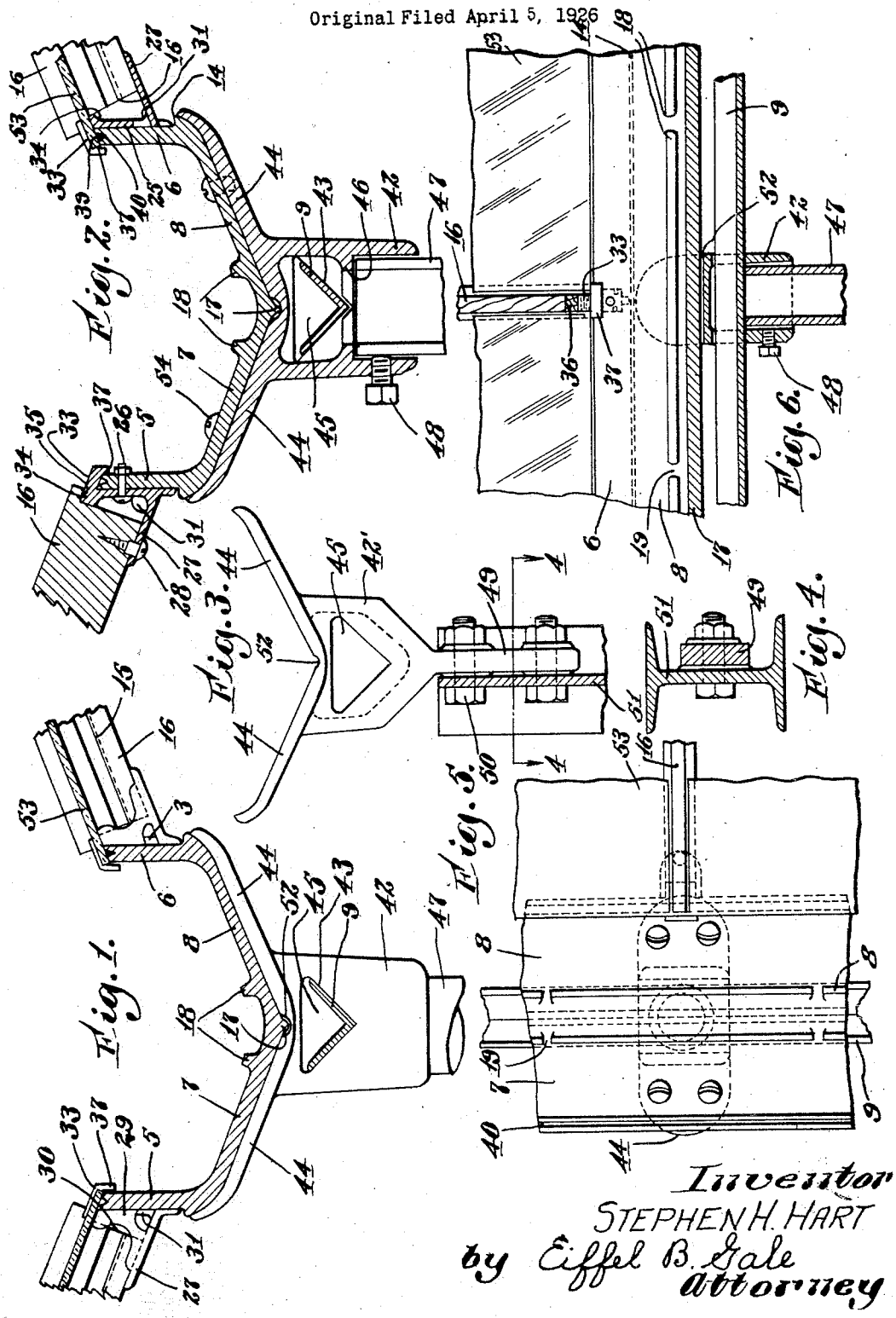


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

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COMBINATION GUTTER SUPPORT FOR GREENHOUSES.

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This invention relates generally to greenhouses and more particularly it relates to improved features of construction which will enable the rain water from the main gutter and the water of condensation, within the house, to be disposed of.

This is a divisional case divided out from the parent co-pending application filed by applicant on April 5, 1926, Serial No. 99,688.

One of the objects of this invention is to provide a new and improved bracket for supporting the main gutter and a supplemental, or drip gutter. The main gutter is the one which carries away the rain water, exterior of the house, and the supplemental, or drip gutter, carries away the water of condensation collected within the greenhouse.

A further object of this invention is to provide in the combination of the main gutter having a raised concentrating ridge, for preventing over run of the water, and a supplemental gutter for receiving the water of condensation, an improved bracket for supporting the main gutter and the supplemental gutter in proper relation and in such manner as to assure the water of condensation dropping directly into the drip gutter below.

A further object is to provide in the combination of a main gutter having a concentrating ridge on the bottom thereof and a supplemental gutter therebelow, a bracket having means adapted to serve as a position centering means for the main gutter.

In the accompanying drawings and the following description a preferred form of the invention, together with certain modified forms, are shown and described for purposes of illustration.

In the drawings:

Figure 1 is a view showing a bracket in elevation, and the main gutter and the drip gutter in transverse section.

Figure 2 is a vertical transverse section taken through the center of the bracket.

Figure 3 is an elevation showing a modified form of the supporting bracket showing a form of bracket adapted for mounting on a flat surface instead of a circular column.

Figure 4 is a horizontal section taken on the line 4—4 of Figure 3.

Figure 5 is a broken fragmentary top plan of Figure 1.

Figure 6 is a longitudinal vertical section taken through the center of the gutters and brackets.

The gutter as shown comprises upstanding sides 5 and 6, and a bottom generally V shape, comprising downwardly and inwardly sloping portions 7 and 8 which meet at the center of the gutter as shown.

A supplemental, or drip gutter 9, is supported below the main gutter in seat 43 of the hollow body of a bracket casing 42′. The drip gutter is formed of a V-shaped angle bar.

Gutter.

The gutter is provided with a projecting ridge, or bead 14 extending longitudinally along the outer side of the gutter near the lower portion of the sides 5 and 6. These ridges are very desirable because they serve to spread, or disperse the streams of the water of condensation that are delivered against the outer surface of the vertical side portions of the gutter from the drip groove 15 formed in the side of the roof bars 16. The water of condensation is at times delivered from the drip groove of the roof bars in considerable volume so that unless a means is provided for spreading the volume of water over a considerable surface there is a possibility that the water will continue in stream-like fashion and instead of following the under surface of the gutter, it will leave the gutter before finding its way down to the lower portion of the gutter.

Preferably a dependent bead or rib 17 is provided at the bottom of the gutter; such a rib serves to concentrate drip resulting from the condensation brought to and forming on the surface of the main gutter; assuring the dropping of the water in drip gutter below.

It frequently becomes necessary for workmen to walk in the main gutter to clean the same and to remove leaves, twigs, or other obstructions, or to repaint the structure or replace broken glass. It is desirable to pro-

vide in a gutter with sloping sides, such as a V-shaped gutter, means to prevent the feet of the workmen from slipping. For this purpose non-slipping or non-skidding ridges 18 are provided which extend longitudinally of the gutter on each of the inclined portions of the bottom of the gutter. Preferably, these ridges are not continuous, but are interrupted at intervals so as to form spaces 19 in order to permit the water from the upper portion of the gutter bottom to drain through to the lowest central portion of the gutter bottom.

Bar clasp.

It is important to provide a suitable means of supporting the roof bar 16 in proper position relative to the side of the main gutter. The means provided should be so constructed as to permit the water of condensation from the drip groove of the roof bar to be disposed of in suitable manner, and in providing such a construction it is very desirable to leave a free space at the end of the roof bar to afford circulation of air. If the end of the roof bar is abutted against another surface, the end of the roof bar, at the point at which the water is discharged from the drip groove, is kept in a damp, or moist condition, and is likely to rot so that the roof bar is weakened at the point of support where strength is essential.

As shown in Figures 1 and 2, a bar clasp is provided which comprises a vertical body web portion 25 which is secured to the side of the gutter by suitable means, such for example as a nut and bolt connection 26. A base support 27 projects upwardly and outwardly from a point adjacent to the lower portion of the vertical body portion 25. The base portion serves as a support for the end of the roof bar. The roof bar may be held in position upon the support 27 by means of a screw 28, or other means passing through the base 27 and into the roof bar 16. The side portions 29 extend between the upstanding web portion 25 and the base support 27. Preferably, the side portions 29 are cut away as at 30 (Figure 1) so as to permit circulation of air around the end of the roof bar. In order to permit the water of condensation to pass from the drip groove 15, onto the vertical sides 5 and 6 of the main gutter, a drain aperture 31 is formed in the clasp. The water passes through the drain aperture onto the vertical side of the gutter and if the water is in any considerable volume, it is spread, or dispersed over a larger surface as the water passes over the bead 14, after which the water follows the under side of the gutter down to the central concentrating bead 17, from which the water drops onto the drip gutter 9 below.

There is provided at the upper end of the vertical web portion of the clasp an angularly disposed cap portion 33. The angularly disposed cap portion extends beyond both sides of the vertical web portion 25 so that on one side 34, it serves as a stop for the end of the roof bar. Preferably, the roof bar is arranged so that the bar is undercut, as at 35, so that the upper portion of the bar 36 overlies the top of the angularly disposed cap portion of the clasp.

This is a very desirable feature because the water from the top of the roof bar is conduced down to a point so that it is readily carried off to the main gutter and a tight leak-proof joint is made at this point of connection.

A portion of the angular cap extends outwardly and downwardly on the other side of the vertical web portion, and, when in assembled position, overlies the top edge of the gutter. A bead, or lip 37 extends downwardly from the end of the cap portion, and also outwardly beyond each side of the cap portion so as to form stop 38 for the lower end of the first run of glass 53. This is a very desirable feature. By this feature of construction, the lower run of glass is held securely in position without the necessity for the use of the Z-shaped strip heretofore used. A water tight joint is formed between the glass and the upper edge of the sides of the gutter by providing putty 39 in the putty retaining groove 40 formed in the upper edge of the gutter sides.

A bracket is provided for supporting the main gutter and the supplemental, or drip gutter on column, or posts located at points intermediate the ends of the greenhouse. For this purpose a suitable bracket is provided which may be mounted on the top of the supporting column. One preferred form of bracket is illustrated in Figures 1, 2, and 6. In these views, the bracket is shown mounted on a cylindrical post 47. The lower body portion of the bracket comprises a cylindrical, or tubular portion 42 having a projecting annular rib 46 within the casing which serves as a stop against which the top of the post abuts to support the bracket. A suitable means may be provided for holding the bracket in position, such for example as a set screw 48. The upper portion of the bracket is provided with arm portions 44 adapted to form a support for the main gutter bottom 7, 8.

A suitable means may be provided for holding the gutter in proper position relative to the bracket; for this purpose screws 54, or other suitable means may be provided. The drip, or supplemental gutter may be supported below the concentrating drip rib 17 of the main gutter, and for this purpose a seat 43 preferably corresponding in shape to the angle iron gutter 9 is formed in the

bracket casing 42, 42' forming the hollow body. As shown in Figure 2, a V portion is cut away in the inwardly extending rib 46 to accommodate the lower portion of the drip gutter. A central recess 52 is formed in the seat of the bracket to receive the concentrating rib 17 on the bottom of the main gutter. The recess 52 is of such a size that the rib 17 is preferably spaced from the recess when the gutter is mounted in the bracket. This is a very desirable feature because it prevents the water of condensation which may run along the bottom of the concentrating ridge 17 from flowing onto the sides of the bracket and possibly flowing down the post instead of flowing into the drip gutter below. The projecting, concentrating ridge 17 cooperating with the recess 52 also serves to position or center the gutter relative to the bracket. The water concentrated on the concentrating rib 17 is, therefore, forced to drop into the drip gutter below. By providing a bracket having a body portion which is tubular, having a casing which is hollow or tubular in form, a bracket of maximum strength and minimum weight is obtained. The drip gutter is provided with a support at two points spaced from each other, the space corresponding to the distance between the walls of the casing forming the body portion of the bracket.

A modified form of bracket is shown in Figures 3 and 4. The bracket as shown in these figures is adaptetd to be mounted on a flat surface 51 of a structural supporting column. The upper portion of the bracket is substantially the same as that above described but the lower portion is modified to provide a flat supporting base 49; the bracket may be held in position on the flat web 51 of the column in any suitable manner, such for example as by a bolt and nut connection 50.

While certain preferred and modified forms have been shown in this application, it is to be understood that various changes and modifications may be made by the mechanics skilled in the art without departing from the spirit and scope of this invention as covered by the claims.

What I claim is:

1. A bracket adapted to support a main gutter having a concentrating bead on the under side thereof and a drip gutter, said bracket comprising a casing forming a hollow body portion, and a seat for the gutter above the hollow body said seat having a recess therein spaced from the concentrating bead when the gutter is supported in the seat of the bracket whereby a passage is formed through the bracket for water concentrated on the bead on the gutter bottom, and a seat formed on opposite sides of the hollow casing for supporting the drip gutter below the main gutter.

2. A bracket adapted to support a main gutter having a concentrating bead on the under side thereof and a drip gutter below said main gutter, said bracket comprising a casing forming a hollow body portion and a seat for the gutter above the hollow body, said seat having a recess therein to receive and center the concentrating bead and be spaced therefrom, when the gutter is supported in the seat of the bracket, and a seat formed on opposite sides of the hollow casing for supporting the drip gutter below the main gutter.

In testimony whereof I affix my signature.

STEPHEN H. HART.