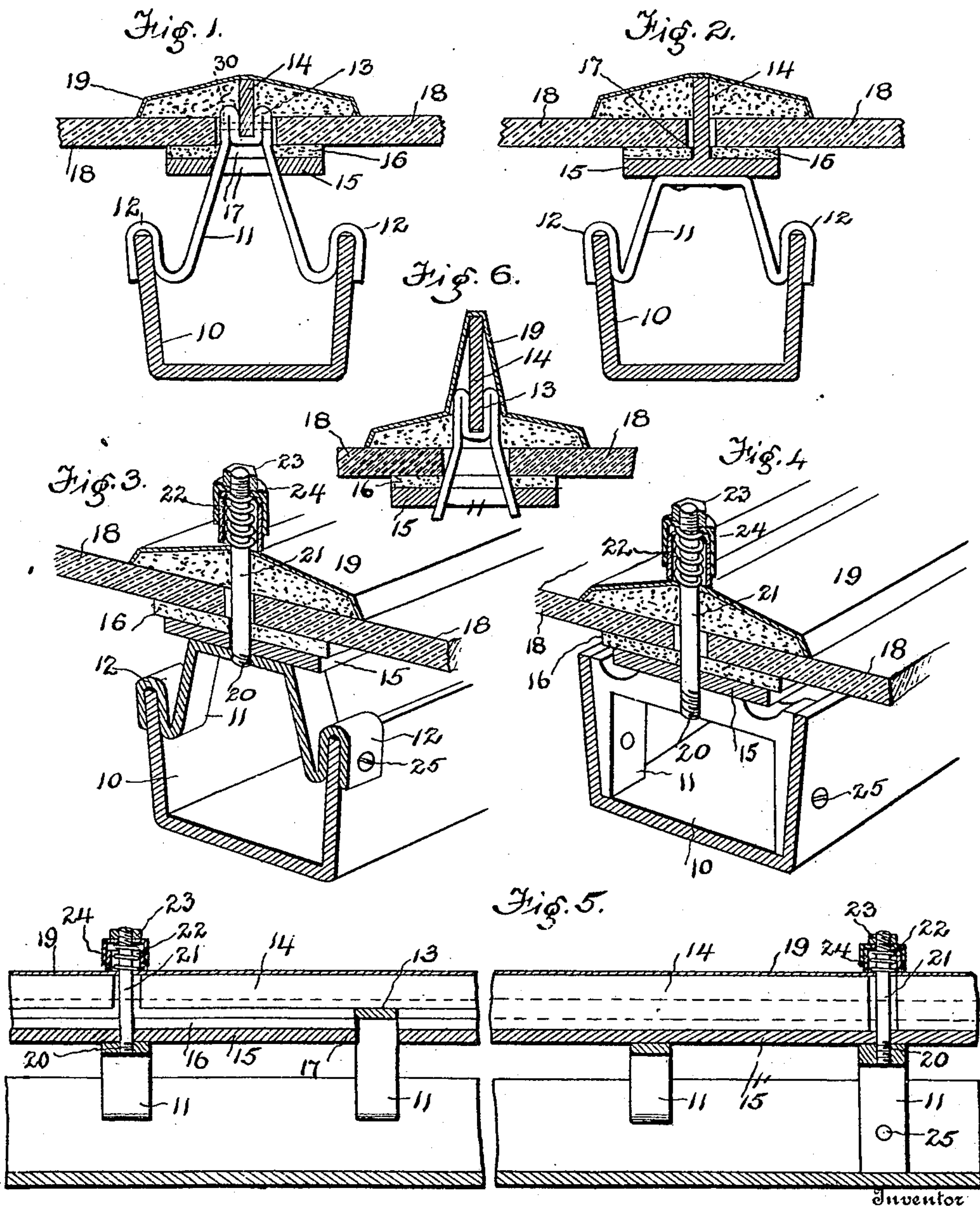


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W. F. PLASS.
SKYLIGHT STRUCTURE.
APPLICATION FILED MAR. 15, 1906.



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UNITED STATES PATENT OFFICE.

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SKYLIGHT STRUCTURE.

No. 850,487.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed March 15, 1906. Serial No. 306,205.

To all whom it may concern:

Be it known that I, WILLIAM F. PLASS, a citizen of the United States of America, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Skylight Structures, of which the following is a specification.

My invention relates to improvements in skylight structures.

The general type of built-up skylight structures is that in which a support which may be used as a drip trough or gutter or receptacle is provided and which carries a superstructure comprising panes or plates of glass having their adjacent edges spaced apart, with a cap extending over the adjacent edges to prevent as far as possible the entrance of snow, &c., the panes being cushioned above and below by the presence of packing, generally placed between the cap and panes on the upper side and between the support and the panes on the under side of the panes, and to permit of the expansion and contraction due to atmospheric changes and changes in temperatures the cap has been yieldingly mounted.

It is to this particular type of structures that my invention relates, and in view of the disadvantages which have arisen by the use of many of the different forms for mounting the superstructure on the support, among which may be noted the excessive cost, rapid deterioration, difficulty in installation and in making of repairs, &c., I have designed the structure herein described and which is intended to overcome many, if not all, of these disadvantages.

One of the objects of my invention is to provide a superstructure and its support which can be readily taken apart for repairs, the support being removably mounted on the drip-trough.

Another object is the provision of a support in the form of a bar which extends lengthwise of and beneath the cap and which will permit of the laying of boards, &c., on the structure to support a workman in making repairs, cleaning, &c.

To these and other ends, the nature of which will be readily perceived, as the invention is hereinafter described, said invention consists in the improved construction and combination of parts hereinafter fully de-

scribed, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the accompanying drawings, in which similar reference characters indicate similar parts in all of the views, Figure 1 is a cross-sectional view showing one form of a skylight structure built up in accordance with my invention. Fig. 2 is a similar view showing a modified form. Fig. 3 is a sectional perspective view showing one form of end support. Fig. 4 is a similar view of a modified form of end support. Fig. 5 is a longitudinal sectional view. Fig. 6 is a fragmentary sectional view showing a cap of different form with a corresponding change in the supporting-bar.

10 represents a U-shaped channel intended for use as a support and drip trough or gutter and is mounted and supported in any preferred manner. It is used in connection with each of the different methods of mounting the panes of glass hereinafter described.

In Fig. 1, 11 designates a bent steel band or stirrup, which is provided at its ends with a return-bend 12 to form hook-shaped portions adapted to rest on the edges of the drip-trough 10, these hook-shaped portions being removably mounted on said edges. As shown, the intermediate portion of the stirrup extends upwardly to a point above the edges of the trough 10 and is provided with a recess 13, formed by bending, in which is seated a bar 14, the latter being placed in position with one of its edges resting on the stirrup at the bottom of the recess 13, thereby providing the full width of the bar for the purpose of withstanding downward pressure placed on the superstructure.

If desired, the bar 14 may be removably secured in the recess 13 by means of pins, screws, or bolts, as shown in dotted lines at 30 in Fig. 1. This bar is of suitable width and thickness, controlled by the particular use to which the structure is to be put. For instance, in the form shown in Fig. 6 the bar is of greater width, (the cap being modified in shape accordingly,) thereby providing additional strength and at the same time increasing the distance between the upper surface of the panes of glass and the boards, &c., for supporting the workmen, as hereinafter described.

15 designates a flat plate, preferably of

iron, on which is mounted a strip of felt 16. The flat plate and felt strip are each provided with an opening 17 for the passage of the upwardly-extending portion of the stirrup, the latter serving to hold the plate against lateral movement. The panes of glass are indicated at 18 and are spaced relatively to each other to form a space between the opposing edges of the panes, into which space the bar 14 or its support extends.

19 designates the cap, which is formed as shown, having its central portion arranged over the bar 14, the outer edges of the cap being bent down to permit a substantially close contact of the edges thereof with the upper surface of the panes of glass.

The cap shown in Fig. 6 differs only from that shown in the remaining figures in that the central portion is raised to a considerable degree to accommodate the bar 14.

The structure shown in Fig. 2 differs from that shown in Fig. 1 in that the bar 14 and flat plate 15 are formed integral, (forming a bar of inverted-T shape,) the stirrup in this embodiment dispensing with the portion which extends into the space between the panes of glass, as well as the recess 13, the central portion of the stirrup being formed to bear against the under side of the flat surface of the combined bar and flat plate, which serving the purposes of the bar 14 is to be considered as the equivalent of said bar.

It is to be understood that in the making of skylight structures it is necessary that the superstructure be held firmly against the action of the wind, and hence provision must be made for practically binding all of the parts together. This is accomplished in the embodiments of my invention herein shown by the constructions shown in Figs. 3 and 4, in which different means for accomplishing this end, as well as providing for the expansion and contraction of the material forming the structure, are shown.

The construction shown in Fig. 3 embodies the use of the stirrup shown in Fig. 2, but provided with a screw-threaded opening 20, into which a bolt 21 is screwed, the latter continuing through the flat plate, the space between the panes of glass, the packing for the panes, and the cap. Above the cap the bolt is provided with a coil-spring 22, which is held under tension by a nut 23, a suitable telescoping sleeve 24 being mounted on the bolt and extending over the spring for purposes of protection, the sleeve being telescopic to permit of the adjustment of the tension of the spring, &c.

It will be understood that while I have shown the use of a coil-spring I do not limit myself to such structure, but may use other tension devices which will perform the desired functions.

The construction shown in Fig. 4 differs from that shown in Fig. 3 only in the use

of a different form of stirrup, the latter being of inverted-U shape and fitting within the drip-trough, as shown.

In practice I preferably make use of end supports of the forms shown in either Figs. 3 or 4, placing them at intervals of about eighteen inches and interposing between them one or more of the structures shown in either Figs. 1 or 2, depending on whether the bar 14 used is formed integral with or separate from the flat plate 15, and where so used the bar 14 may be of slightly less length than the distance between the bolts, as indicated in Fig. 5, thereby forming spaces between the opposing ends of the bars to permit of the passage of the bolts. Where the combined bar and plate is used in this manner, the bar portion may be cut away for the same purpose. I do not limit myself to this particular arrangement of parts with respect to the length of the bar 14, &c., as it may be found advantageous to make use of a bar or combined bar and flat plate that is of a length equal to the length of the trough or gutter, thereby strengthening the structure. In such case the bolts 21 would be of a shorter length and are screwed into the upper edge of the bar 14 instead of into the stirrup.

The stirrup may be removably secured to the trough or gutter 10 in any suitable manner—such, for instance, as by the use of screws 25, and, if desired, only the end supports need be secured to the trough, the intermediate supports simply resting on the edges of the trough.

It will be understood that the bar 14 is firmly supported by the stirrup, so that the placing of pressure on the upper edge thereof, as by the movements of a workman on boards, &c., extending over adjoining bars and caps, will in no manner place a pressure on the panes of glass or the glass portion of the structure, thereby obviating one of the tendencies to breakage. The presence of the intermediate supports aids in supporting the board under the weight of the workman. Furthermore, it will be readily understood that by the removal of the nuts, sleeve, and spring the cap can be removed, (the workman moving his boards or other support for the purpose,) thereby leaving the parts exposed, the bar 14 remaining in position and permitting the replacing of the boards to permit the workman to make repairs. In addition, the stirrups each being removable a workman is able to replace any of the parts of the structure which may become damaged, in an obvious manner, the adjacent supports serving to permit the workman to continue his operations.

Having thus described my invention, what I claim as new is—

1. In a skylight structure, a drip-trough, a stirrup removably carried thereby, a bar extending in parallelism with the trough and

supported by the stirrup, and a cap located above said bar and adapted to bear upon the glass surfaces, said stirrup extending into the space between said glass surfaces.

5 2. In a skylight structure, a drip-trough, a stirrup removably carried thereby, a bar extending in parallelism with the trough and supported by the stirrup, a cap located above said bar and adapted to bear upon the glass
10 surfaces, said stirrup extending into the space between said glass surfaces and means for yieldingly binding the stirrup and cap together.

3. In a skylight structure, a drip-trough, a
15 stirrup removably carried thereby, said stirrup extending into the space formed between adjacent panes of glass and being bent to form a central recess, a cap extending in parallelism with the trough, and a bar extending in parallelism with the cap and in
20 juxtaposition thereto, said bar extending into the recess of the stirrup and being supported in position thereby, whereby a firm support against downward pressure on the
25 cap is provided.

4. In a skylight structure, a drip-trough, a

stirrup removably carried thereby, a cap extending in parallelism with the trough, a flat plate for supporting the panes of glass, and a bar carried by said stirrup for supporting
30 said cap, said bar extending above the plane of the panes of glass and in parallelism with the trough and cap, the stirrup extending into the space between said panes of glass and having a recess to receive the bar, where-
35 by a firm support against downward pressure on the cap is provided.

5. In a skylight structure, a drip-trough, a cap extending in parallelism with the trough, a bar located below and supporting said cap,
40 a series of spaced stirrups for supporting said bar, and means carried by some of the stirrups for yieldingly binding the cap and stirrups together at spaced intervals, the bar being of a length less than the distance from
45 one of said binding means to the next one.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM F. PLASS.

Witnesses:

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