March 12, 1957 T. J. R. BRIGHT 2,784,814

GLASS, TILE OR PANEL SECURING MEANS

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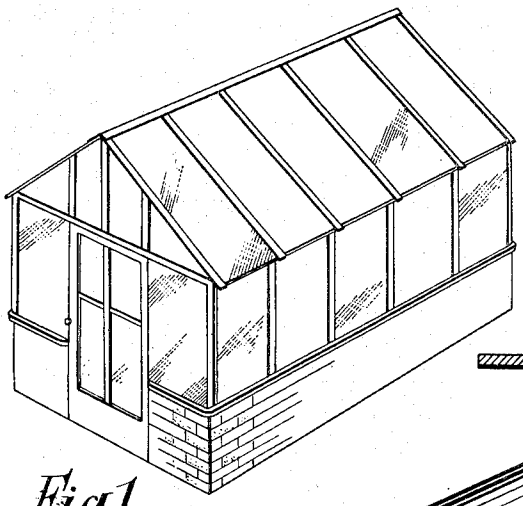


Fig.1.

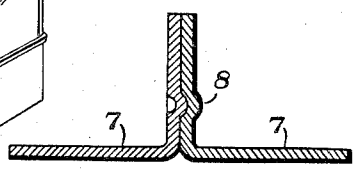



Fig.4.

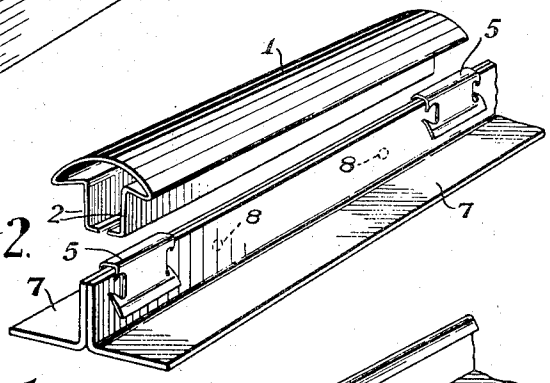
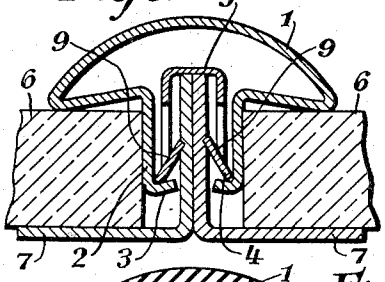



Fig.2.

Fig.3.



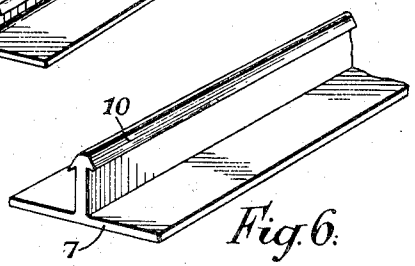




Fig.6.

Fig.5.

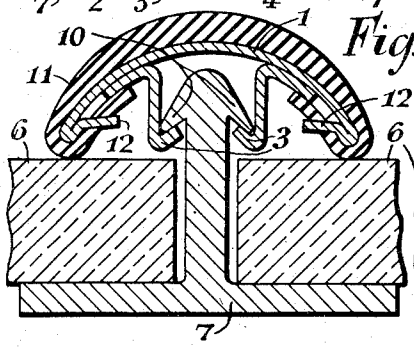
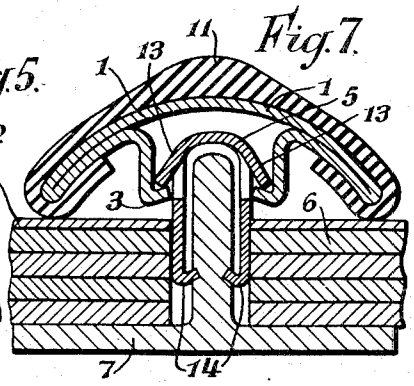



Fig.7.




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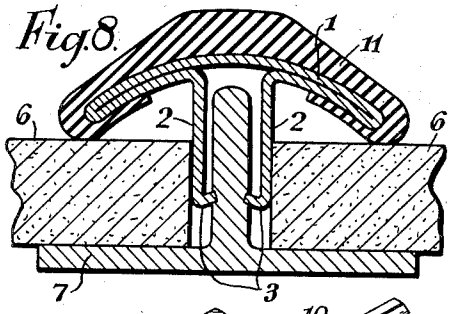
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GLASS, TILE OR PANEL SECURING MEANS

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Fig.8.



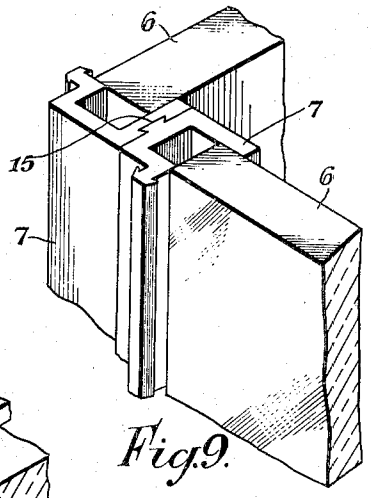




Fig.9.

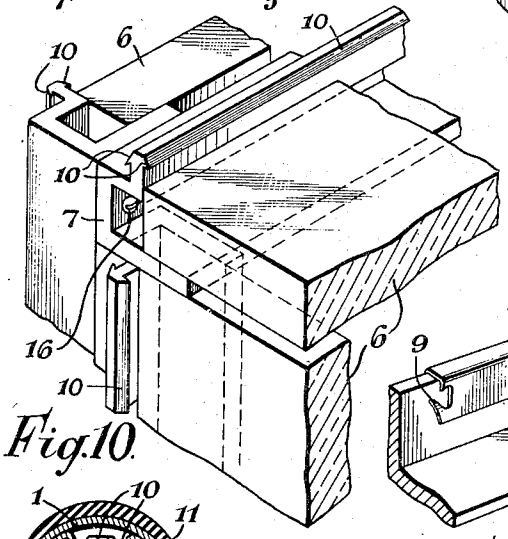



Fig.10.

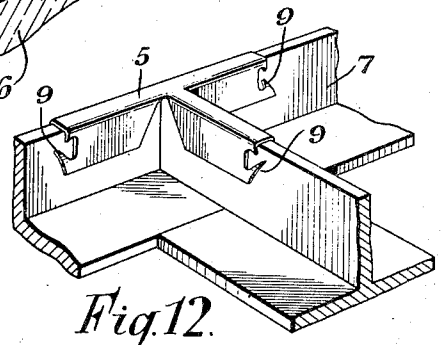



Fig.12.

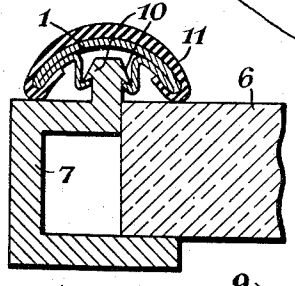



Fig.11.

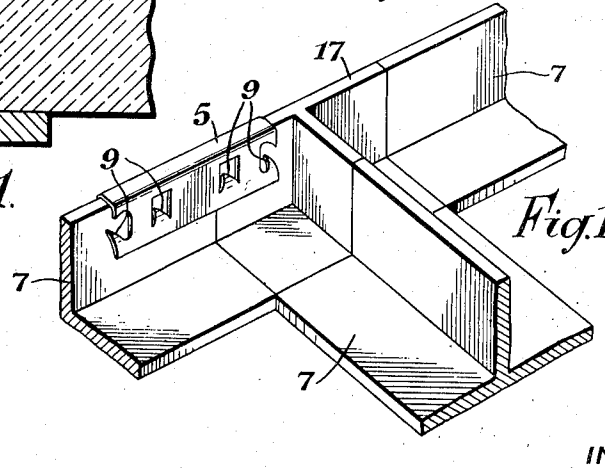



Fig.13.

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# GLASS, TILE, OR PANEL SECURING MEANS

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Application October 5, 1950, Serial No. 188,606

Claims priority, application Great Britain October 11, 1949

2 Claims. (Cl. 189—88)

The securing means forming the subject of the present application has been designed primarily for holding glass panes in position on a supporting structure such as a greenhouse or garden frame, but is applicable for many other uses, for example, in the construction of small buildings, show cases, cupboards or the like, articles of furniture employing wood or other panels or for holding tiles or the like in position on a wall or other supporting structure.

The invention is also concerned with the construction of the structures themselves which are to carry the glass panes, tiles or other panels, hereinafter referred to as panels, the invention enabling such a structure to be built up to a convenient size from a set of parts without difficulty.

The securing means according to the present invention includes a metal or other clip adapted to be clipped directly or indirectly onto the support for the panel which clip when in position overlies the edge of the panel and makes direct or indirect engagement with its upper surface to hold the panel in position on its support.

It is preferred that in addition to holding the panel in position such means shall ensure a good seal between the panel and its supporting structure, a very desirable feature in the case of a greenhouse or garden frame where it is desired to exclude draughts and to maintain the structure at an even temperature with a minimum of heat losses. It is preferred therefore that the securing means shall be so constructed as to urge the panel into direct or indirect engagement with its support.

In order that the invention may be clearly understood and readily carried into effect the invention is hereinafter described with reference to the accompanying drawings in which:

Figure 1 is a perspective view of a greenhouse structure constructed in accordance with the invention:

Figure 2 is a perspective view showing one of the structural components and its associated capping strip:

Figure 3 is a cross section drawn to an enlarged scale illustrating the manner in which the capping strip is proposed to be used:

Figure 4 illustrates a detail of construction:

Figure 5 is a cross section illustrating the alternative form of capping strip and structural component:

Figure 6 is a fragmentary perspective view of the structural component:

Figure 7 is a cross section illustrating a further form of capping strip and an alternative construction of structural component:

Figure 8 is a similar cross sectional view illustrating still further a modified form of capping strip:

Figures 9 and 10 illustrate a suggested method of building up a building structure from suitably shaped structural components and panels:

Figure 11 is a cross section showing a capping strip in position:

Figure 12 is a fragmentary perspective view illustrating a special form of spring tag for holding two structural components together at right angles:

Figure 13 is a similar view illustrating a modified construction.



As will be seen from Figure 1 of the accompanying drawings the invention is particularly applicable to the construction of greenhouses or other building structures where it is desired to secure in position on a skeleton framework a series of glass or other panels and to maintain a good seal between the panels and framework to retain heat within the structure and exclude rain or other moisture. Such a structure may be built up from a light metal skeleton framework, the structural components of which may be of angle T or other suitable cross sectional shape, an essential feature of each component being that it shall include a flange on to which the capping strip, hereinafter described, can be secured to hold the panel or panels in position on the framework.

Referring to Figures 2 and 3 which illustrate one embodiment of the invention, the capping strip is produced from a strip of sheet metal which is bent to form an arcuate shaped part **1**, the lateral edges being turned inwardly and downwardly to provide depending arms **2** which finally are bent inwardly to form oppositely inwardly directed edges **3** which in the construction shown by Figures 2 and 3 are adapted to override the outer ends of tangs 4 pressed out from sheet metal spring tags **5** which are forced into position on the upstanding flange of the structural component which tags serve to hold the capping strip in position with its under surface at its outer edges in contact with the upper surface of two panels **6** arranged on opposite sides of the upstanding flange.

In the construction shown the structural component is built up of two angle shaped members **7** arranged back-to-back the tags 5 serving to hold the two parts **7** firmly together in addition to providing abutments over which the capping strip is sprung when mounting the latter in position. To maintain the components in correct alignment the upstanding flanges of the components may be formed with inter-engaging projections and recesses **8** as in Figure 4. It will be apparent from Figure 3 that the tangs **9** on the tags not only bite into the metal of the components 7, but also provide a lead which facilitates the capping strip being sprung into position, the inwardly directed edges 4 overriding the tangs **9** and thus making a positive interlocking connection therewith which will firmly resist any attempt to remove the capping strip when in its operative position. The capping strips are preferably of a length at least equal to the panels with which they are associated and by producing the capping strips from sheet metal they may be so resiliently formed as to exert the resilient pressure on the upper surfaces of the two panels which they are intended to secure in position, thus providing a fairly good seal between the edges of the capping strip and the panels themselves. Furthermore, it will be appreciated from Figures 2 and 3 that the panels themselves rest on horizontally arranged flanges forming part of the structural component.

Figure 5 illustrates an alternative construction and in this case the capping strip again includes an arcuate shaped part **1**, but in this case although it is formed with inwardly turned edges **3** as in the previously described construction these edges, instead of overriding tangs on the tags **5**, override outwardly directed projections **10** on the structural component again indicated by reference numeral **7**, the structural component in this case being of T section which may be conveniently extruded from an aluminium or other light metal alloy. The component is shown in perspective in Figure 6 and it will be seen from Figure 5 that in this case the capping strip is provided with a surmounting rubber or like resilient covering mem-

ber **11** which is secured on the metal part of the capping strip by forming the latter with tangs **12** which as seen clearly in Figure 5 pass through the inwardly turned edges of the rubber component and secure the latter in position, the rubber component making resilient contact at its edges with the upper surface of the two panels **6** which it is desired to secure in position.

In the case of Figure 7 the capping strip is of similar shape to that shown in Figure 5, but does not make direct engagement with the structural component but engages outwardly directed tangs **13** on a series of tags **5** which are sprung into position on the upstanding flange of the structural component **7**, the tangs **13** providing a lead over which the inwardly directed edges **3** of the capping strip are sprung so that the capping strip is effectively locked in engagement therewith and holds the two panels in position on the supporting structure. In this arrangement each tag is formed at its lower end with inwardly directed tangs **14** which bite into the metal of the upstanding flange, the tags consequently being frictionally held in position on the flange.

It is proposed in the case of Figure 7 to extrude the rubber or other resilient covering **11** to the desired cross sectional shape so that it will maintain its position on the metal part of the capping strip, the outer edges of the rubber covering making sealing engagement with the two panels.

In the case of Figure 8 the capping strip is of similar construction to Figures 5 and 7, but in this case it is preferably produced from thin steel, the inwardly turned edges **3** of the capping strip biting into the metal of the upstanding flange of the structural component **7** so that the capping strip is secured frictionally in position on the structural component. It is proposed in this particular case to produce the capping strip substantially from rubber or a suitable plastic, this part which corresponds in general shape to that illustrated in Figure 7 being indicated by reference numeral **11**. Instead of producing the metal part of the capping strip of a length at least equal to the panels which it is intended to secure in position, it is proposed in this case to form a capping strip of a number of component parts each in the form of a spring tag and suitably spaced apart, the component **11** being, for example, extruded or otherwise secured on to the spring tags so that it is securely held in position thereon. With such an arrangement the capping strip will make resilient engagement with the upper surfaces of the panels as hitherto, but will be of flexible construction throughout its length and consequently can, if necessary, be bent to suit any curvature or change in direction of the surface of the panelled covering.

Figures 9 and 10 illustrate one manner in which an enclosing structure such as a building can be built up from a series of structural components of suitable cross sectional shape, Figure 9 showing the manner in which two vertical panels can be connected together at the corners, whilst Figure 10 shows how a surmounting horizontal panel may also be maintained in position. The structural components may be positively interlocked by undercut projections and recesses such as is indicated by reference numeral **15** in Figure 9 or, for example, by means of securing screws, rivets, bolts or the like, **16** as in Figure 10. It will be appreciated that from the point of view of clarity the capping strips have been omitted from Figures 9 and 10, the structural components being in this case extruded or otherwise formed to the desired cross sectional shape which in this case takes the form of a channel shape having an outwardly directed flange which serves to receive the capping strip which secures one or more panels in position and provides an effective seal. In Figures 9 and 10 the flange is, as is shown in Figures 5 and 6, formed with integral outwardly directed flanged parts so that the capping strip can be sprung into position, a suggested form of capping strip being illustrated in Figure 11.

Figure 12 shows one way in which two structural components can be joined together at right angles by means of a T-shaped spring tag, the latter being forced into position upon the adjacent upstanding flanges of the two structural components, the base of the T-shaped structural component being shown cut away so that its central flange or web can abut against the upstanding flange of the angle section component.



Figure 13 illustrates an alternative method suitable additional components **17** being introduced at the points of intersection of the structural components, the components 17 and 7 being joined together by spring tags such as **5** one only of which is shown in position. The members **17** may be of T, L or cross-shaped formation.

It will be appreciated from the foregoing description that structures, for example, buildings, can easily be erected from a kit of parts including a number of light alloy structural components and a suitable number of capping strips and glass or other panels, and if necessary, a series of spring tags for maintaining the capping strips in position, a good seal being obtained between the panels and their supporting structure by the overlying edges of the capping strips which make direct or indirect engagement with the glass or other panels when the latter are in position. In the case of a panelled structure as, for example, if it is desired to secure a number of tiles in position on a wall a framework consisting of a number of structural components is first erected on the wall, the panels being then placed in position and finally surmounted by the capping strips which may be of an ornamental appearance, the tiles or other panels being thus secured in position by cement or other adhesive, the tiling of a wall being thus easily carried out by the average householder.

What I claim is:

1. In an assembly supporting sheets of transparent material and the like, comprising a longitudinally extending support member having a substantially flat element engaging the under surfaces of adjacent transparent sheets and a portion extending from said flat element for the full thickness of said transparent sheets and protruding above the upper faces thereof, said portion having resilient projections thereon extending outwardly from the opposite faces of said portion along its length, said projections being located between the upper faces of the transparent sheets and said flat element; and a one-piece longitudinally extending capping strip having a concavo-convex cross-sectional body portion with opposite side edges each to retaining a transparent sheet in engagement with said flat element, said edges having extensions thereon extending inwardly and upwardly relative to each other beneath the concave side of said body portion with substantially parallel arms extending laterally from the inner ends of said extensions and spaced apart retaining therebetween said upwardly extending portion with resilient projections thereon, said arms extending away from the concave side of said body portion and terminating at their free ends in inwardly directed hooks disposed in confronting relation and locking engagement with said projections, each said parallel arm providing a resilient abutting surface for engaging an edge of a transparent sheet.

2. The assembly as claimed in claim 1 in which the resilient projections are provided by channel-shaped tags fitted over the longitudinal edge of said portion at longitudinally spaced intervals in locking engagement therewith, having legs projecting downwardly below the upper face of said transparent sheets, said tags having resilient projections extending outwardly from said opposite legs, said projections being located between said upper face of said transparent sheets and said flat element.

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