Sept. 17, 1935. F. C. BRADLEY 2,014,925

SKYLIGHT

Filed Sept. 14, 1934 3 Sheets-Sheet 1

Fig. 1.

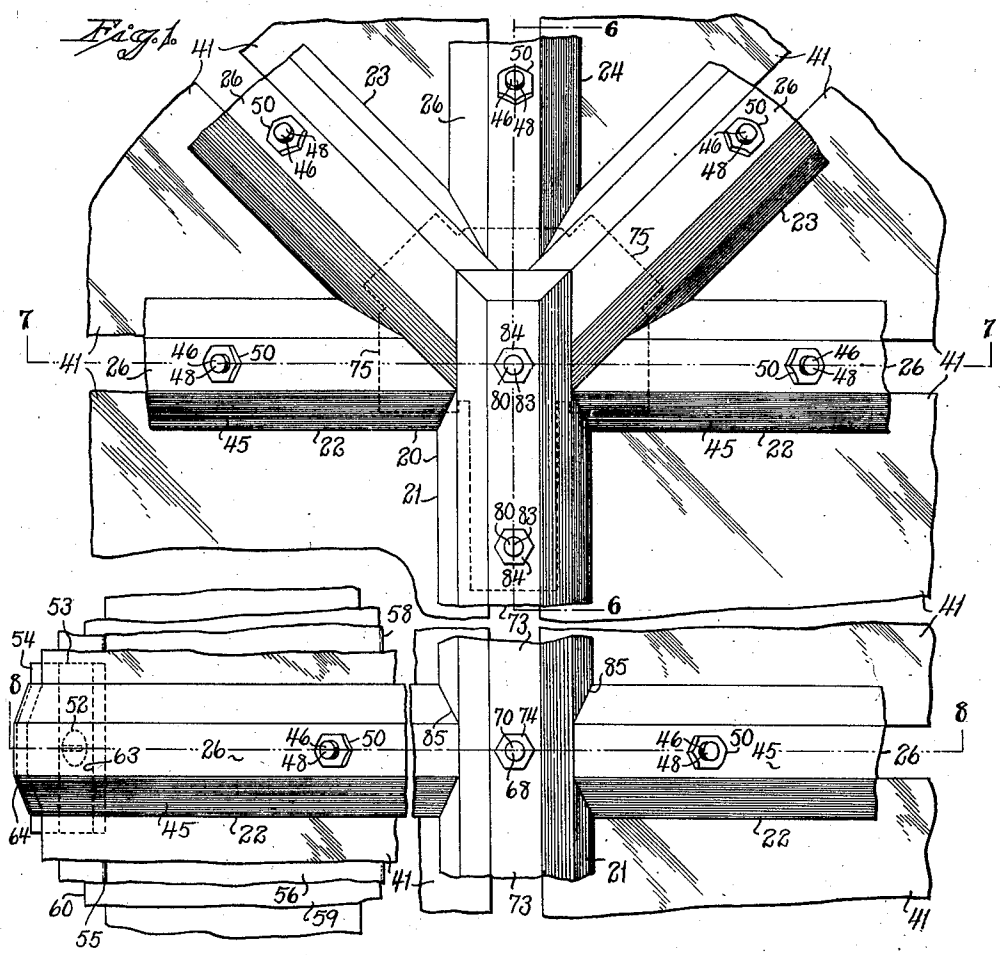
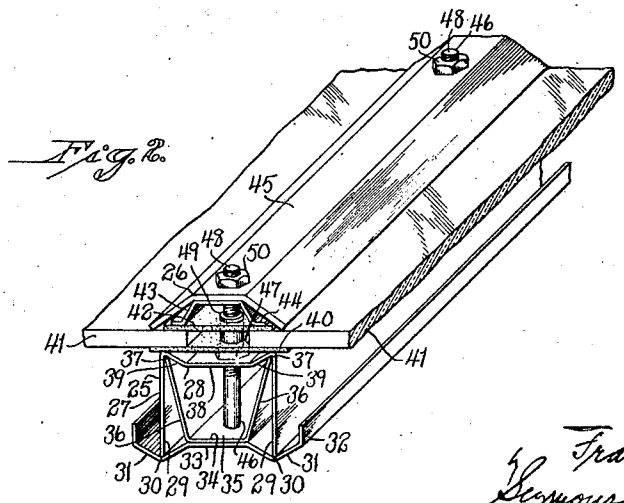


Fig. 2.



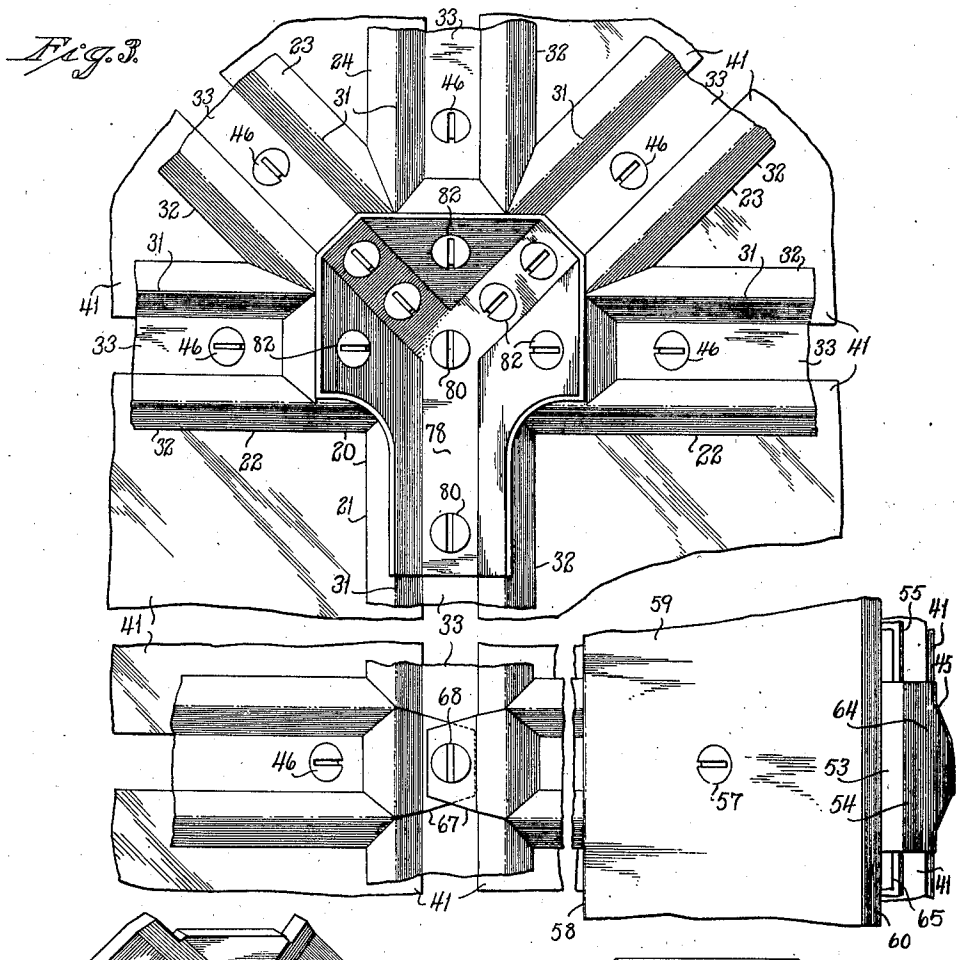
Inventor
Frank C. Bradley
by Seymour Earle & Nichols
Attys

Sept. 17, 1935. F. C. BRADLEY 2,014,925

SKYLIGHT

Filed Sept. 14, 1934 3 Sheets-Sheet 2

Fig. 3.



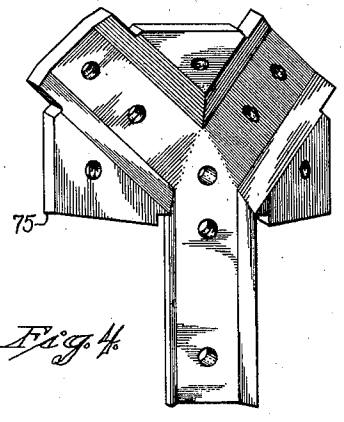


Fig. 4.

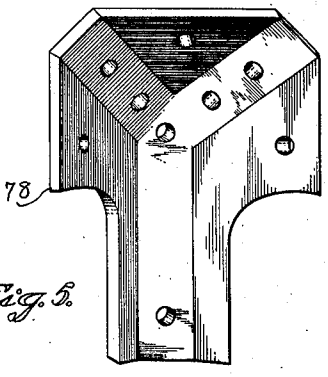


Fig. 5.

Inventor
Frank C. Bradley
by Seymour Earle & Nichols
Attys

Sept. 17, 1935. F. C. BRADLEY 2,014,925

SKYLIGHT

Filed Sept. 14, 1934 3 Sheets-Sheet 3

Fig. 10.

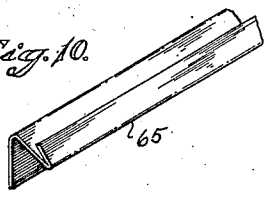


Fig. 6.

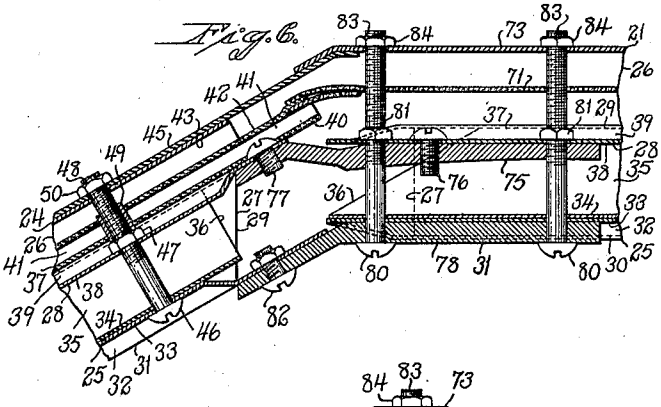


Fig. 9.

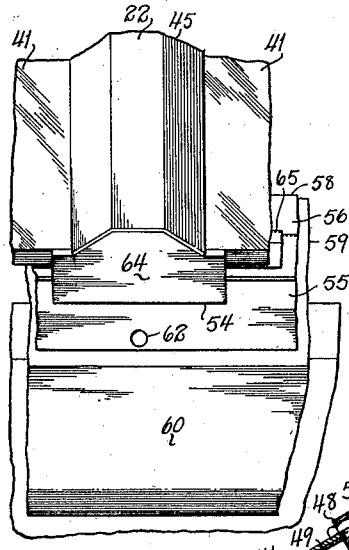


Fig. 7.

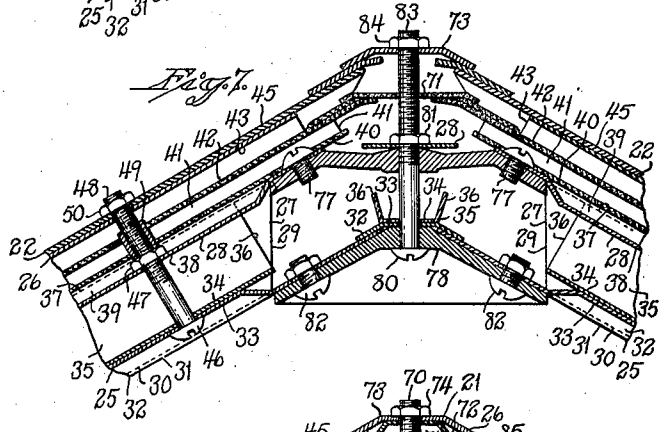


Fig. 8.

Fig. 11.

Inventor
Frank C. Bradley
by Seymour Earle & Nichols
Attys

Patented Sept. 17, 1935 2,014,925

UNITED STATES PATENT OFFICE

2,014,925

SKYLIGHT

Frank C. Bradley, New Haven, Conn.

Application September 14, 1934, Serial No. 743,987

14 Claims. (Cl. 108—16)

This invention relates to improvements in skylights, and more particularly to the support-bar and cover-bar structures of skylights.

One object of this invention is to provide an improved skylight construction in which a packing and a packing-bar are covered by a cover-clamp bar.

Another object of this invention is to provide an improved skylight construction in which a support-bar structure is made of a plurality of simple bars or elements to provide a rigid structure at low cost.

Another object of this invention is to provide an improved skylight construction in which various support-bar structures are rigidly and economically joined together.

Another object of this invention is to provide an improved skylight construction in which an improved end-plate or glass-stop is provided for preventing the glass from sliding endwise from under a cover-clamp bar.

With the above and other objects in view, this invention includes all improvements over the prior art which are disclosed in this application.

In the accompanying drawings in which one way of carrying out the invention is shown for illustrative purposes:

Fig. 1 is a top plan view of a portion of a skylight illustrating one embodiment of the invention;

Fig. 2 is a perspective view of a portion of the construction shown in Fig. 1;

Fig. 3 is an under-side plan view of Fig. 1;

Fig. 4 is a top perspective view of the upper coupling-plate;

Fig. 5 is an under-side perspective view of the lower coupling-plate;

Fig. 6 is a sectional view on line 6—6 of Fig. 1;

Fig. 7 is a sectional view on line 7—7 of Fig. 1;

Fig. 8 is a sectional view on line 8—8 of Fig. 1;

Fig. 9 is a left-end elevation of the lower end of Fig. 8;

Fig. 10 is a perspective view of a weather strip; and

Fig. 11 is a perspective view of an end-plate or glass-stop.

In the description and claims, the various parts are identified by specific names for convenience, but they are intended to be as generic in their application as the prior art will permit.

Referring to the drawings, the skylight construction, generally indicated by the numeral 20, includes a ridge-bar 21, side-bars 22, hip-bars 23 and a center-end-bar 24. In their main essentials, these various bars are substantially identical in cross-section, and therefore a description of one of them will serve for all.

One of side-bars 22 (Figs. 1 and 2), for example, consists of two main parts, a support-bar structure 25 and a cover-clamp-bar structure 26. The support-bar structure 25 consists of a main support-bar 27 having a body-portion 28 and two downwardly-extending legs 29, the lower edges 30 of which legs rest in the bottoms of the V-shaped channels or portions 31 of a support-clamp bar 32. The V-shaped channels or portions 31 are formed on opposite sides of the body-portion 33 of the support-clamp bar. Supported on the body-portion 33 of the support-clamp bar 32, is a body-portion 34 of a brace-bar 35. Connected to the body-portion 34 of the brace-bar, are substantially-straight upwardly-diverging legs 36, the top edges 37 of which engage the main support-bar 27 at the juncture of the legs 29 and body 28. The body 28 consists of the central depressed portion 38 and the sloping portions 39, which latter, with the upper portions of the legs 29, form inverted V-shaped channels within which the top edges 37 of the legs 36 are engaged.

Extending across and supported upon the main support-bar 27, is a strip of packing 40 which may be of any suitable soft material such, for example, as asphaltum-impregnated felt roofing, rubber, or any other suitable yielding material. Resting upon the packing 40, are the glass plates 41 of the skylight. The glass plates 41 will ordinarily be spaced apart somewhat as shown. Supported on top of the glass plates 41 is a strip of waterproof packing 42 of rubber, asphaltum-impregnated felt roofing, or other suitable yielding, waterproof material. On top of the packing-strip 42 is a packing-bar 43 of relatively-thin sheet-metal having oppositely-bent feet 44 resting on the packing-strip 42. The feet 44 have greater bearing width than the thickness of the sheet-metal of the packing-bar 43, thus avoiding any tendency to cut through the packing-strip 42. On top of the packing-bar 43 is a cover-clamp bar 45 of relatively-thick sheet-metal, which may be several times as thick as the packing-bar 43.

Extending up through holes through the various parts and between the spaced glass plates, are bolts 46. The head of each bolt 46 engages against the under side of the support-clamp bar 32 and a nut 47 is threadedly engaged on the bolt tightly against the center depressed portion 38 of the main support-bar 27, thus locking the main support-bar 27, the support-clamp bar 32 and the brace-bar 35 rigidly together to form

a light, strong main-support-bar structure for the skylight.

Each bolt 46 has a threaded extension 48 above the nut 47. Mounted loosely on the extension 48 is a sleeve 49 of yielding material such, for example, as lead, to avoid risk of chipping or cracking the glass plates 41 by contact of the latter with the bolts. Threaded on the upper end of the extension 48 is a nut 50 which presses the cover-clamp bar 45 down and brings the lower edges of the legs of the latter into firm engagement with the glass plates 41, and clamps the latter against the packing-strip 40 on the top of main support-bar 27, at the same time causing the feet 44 of the packing-bar 43 to yieldably clamp the packing-strip 42 against the glass plates so as to prevent entrance of water either between the packing-strip and glass plates or between the feet 44 and packing-strip.

By having the packing-strip 40 entirely covered by the cover-clamp bar 45, it is protected against deterioration by light.

The V-shaped channels 31 not only serve to firmly hold the legs 29 of the main support-bar 27, but also serve as drain-channels to conduct away water of condensation that forms on the under side of the skylight.

The bars 27, 32, 35, 43 and 45 are preferably made of sheet-metal, so formed and assembled as to make an economical, strong construction.

The lower end of main support-bar 27 has portions of the legs cut away to leave an extension 51 (Fig. 8) of the body 28 (Fig. 2). The extension 51 has a hole through which is passed a screw 52 which threads into the body 53 of a glass-stop or end-plate 54, which is preferably made as a rigid, preformed member, such, for example, as a casting. Clamped between the head of screw 52 and body 53, is one end of a curb-flashing 55 which is preferably of sheet-metal of general Z-shape as shown, with its lower reach 56 provided with a hole through which passes the bolt 57 to hold the curb-flashing 55 firmly in place. The curb-flashing reach 56 is bent to U-shape at its upper end 58 around the end of a curb 59 which is also held by bolt 57, which curb 59 has its lower end 60 along the front of the wood or masonry of the building. The curb-flashing 55 is provided with a drainage-hole 62 at the end of each bar 22 to carry away the condensation water carried along the channels 31 (Fig. 2). The curb-flashing 55 and curb 59 extend along from one extension 51 to another and serve to prevent rain from driving up under the skylight.

The lower reach 63 of the end-plate or glass-stop 54 engages against the vertical portion of the curb-flashing 55, and the upper reach 64 extends past the ends of glass-plates 41 to hold them from possibility of sliding endwise out from under the cover-clamp bar 45, which latter bar extends over the top of the reach 64 (Figs. 8 and 9).

A weather strip 65 (Figs. 8 and 10), preferably formed of sheet-metal, occupies the position shown in Fig. 8 between each two extensions 51 of successive main support-bars 27, so as to prevent rain from driving up under the lower edges of the glass-plates 41.

The manner of connecting the ridge-bar 21 with two oppositely-extending side-bars 22 is shown in Figs. 1, 2 and 8. The main support-bars 27 of the two side-bars 22 have oppositely-extending overlapping body-extensions 66 supported on the body 28 of the ridge main support-bar 27. The support-clamp bars 32 of the two side-bars 22 have oppositely-extending, overlapping body-extensions 67 engaged against the under side of the support-clamp bar 32 of the ridge-bar 21. A bolt 68 extends through holes in the parts 67, 32, 28 and 66 and clamps the parts firmly together by aid of a nut 69 threaded on the bolt 68.

Bolt 68 has a top-extension 70 which extends up through packing-strip 71 which latter rests on the ends of packing-strips 42 of the side-bars and is clamped in position by the feet of a packing-bar 72 similar to packing-bar 43, except that the feet are at an angle as shown. On top of the packing-bar 72 is a cover-clamp bar 73, generally similar to cover-clamp bar 45. A nut 74 threads on bolt-extension 70 and serves to clamp the parts 71, 72 and 73 down in position as shown. Where jack-bars (not shown) are employed, the mode of connection of two jack-bars to a hip-bar will be similar to the described way of connecting two side-bars to a ridge-bar.

The manner of connecting the end of ridge-bar 21 with two side-bars 22, two hip-bars 23 and a center-end-bar 24, is illustrated in Figs. 1, 2, 4, 5, 6 and 7. A rigid, preformed, upper coupling-plate 75 which may be a casting, has a portion which extends beneath the body 28 of the main support-bar 27 of ridge-bar 21, to which body 28 the plate 75 is secured by the screw 76 which threads into the plate 75. The upper coupling-plate 75 has different parts suitably shaped and sloped as shown to extend beneath body-portions 28 of the side-, hip- and center-end-bars, to which body-portions 28 the coupling-plate 75 is connected by screws 77 threaded into the coupling-plate 75.

A rigid, preformed, lower coupling-plate 78, which may be a casting, has a portion which extends beneath the body-portion 33 of the support-clamp bar 32 of ridge-bar 21, to which body-portion 33 it is secured by bolts 80 which extend upward through and clamp parts 78, 33, 34, 75 and 28 together by means of nuts 81 screw-threaded on the bolts 80. Lower coupling-plate 78 has different parts suitably shaped and sloped as shown to extend beneath body-portions 33 of the support-clamp bars of the side-, hip- and center-end-bars, to which body-portions 33 the coupling-plate 78 is connected by bolts and nuts 82.

Bolts 80 have upper threaded extensions 83 which extend up through packing-strip 71, packing-bar 72 and the cover-clamp bar 73 and have nuts 84 threaded on the extensions 83 to clamp the parts together. The cover-clamp bar 73 of the ridge-bar is of somewhat different cross-sectional form from the clamp-bars 45 as necessitated by the angle at the crown or apex of the skylight. The cover-clamp bar also has side-cutout portions 85 to permit the passage thereunder of the cover-clamp bars 45 of the side-bars 22. The side-, hip- and center-end cover-clamp bars where they come to a junction, are suitably cut to fit into overlapping relation as shown.

The invention may be carried out in other specific ways than that herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiment is therefore to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. A skylight construction including: a support-bar structure; glass on said support-bar structure; packing on said glass; a packing-bar on said packing; a cover-clamp bar covering said packing-bar; and clamping-means clamping said parts together.

2. A skylight construction including: a support-bar structure; glass on said support-bar structure; packing on said glass; a packing-bar of sheet-metal having spaced-apart downwardly-extending legs, the lower ends of which legs are bent to provide feet of greater bearing width than the thickness of the sheet-metal, said feet resting on said packing; a cover-clamp bar covering said packing-bar; and clamping-means clamping said parts together.

3. A skylight construction including: a support-bar structure; glass on said support-bar structure; packing on said glass; a packing-bar of relatively-thin sheet-metal having spaced-apart legs on said packing; a cover-clamp bar of relatively-thick sheet-metal and covering said packing-bar, said cover-clamp bar having spaced-apart downwardly-extending legs, the lower ends of which legs are adjacent said glass; and clamping-means clamping said parts together.

4. A skylight construction including: a main support-bar having a body-portion and spaced-apart downwardly-extending legs; a support-clamp bar beneath the lower edges of the legs of said main support-bar; a brace-bar between said main support-bar and said support-clamp bar; glass on said main support-bar; a cover-clamp bar structure on said glass; and clamping-bolts extending from below said glass, through said support-clamp bar, through said brace-bar, through said main support-bar, transversely of the general plane of said glass up past said glass, and through said cover-clamp bar structure, and clamping said parts together.

5. A skylight construction including: a main support-bar having a body-portion and spaced-apart downwardly-extending legs; a support-clamp bar beneath the lower edges of the legs of said main support-bar and having spaced-apart portions each of general V-shaped form engaging the lower edges of the legs of said main support-bar; a brace-bar between said main support-bar and said support-clamp bar; glass on said main support-bar; a cover-clamp bar structure on said glass; and clamping-bolts extending from below said glass, through said support-clamp bar, through said brace-bar, through said main support-bar, transversely of the general plane of said glass up past said glass, and through said cover-clamp bar structure, and clamping said parts together.

6. A skylight construction including: a main support-bar having a body-portion and spaced-apart downwardly-extending legs; a support-clamp bar beneath the lower edges of the legs of said main support-bar; a brace-bar between said main support-bar and said support-clamp bar, said brace-bar having a body-portion engaging said support-clamp bar and spaced-apart upwardly-extending legs engaging said main support-bar at the junctures of the legs and body of the main support-bar; glass on said main support-bar; a cover-clamp bar structure on said glass; and clamping-bolts extending from below said glass, through said support-clamp bar, through said brace-bar, through said main support-bar, transversely of the general plane of said glass up past said glass, and through said cover-clamp bar structure, and clamping said parts together.

7. A skylight construction including: a main support-bar having a body-portion and spaced-apart downwardly-extending legs; a support-clamp bar beneath the lower edges of the legs of said main support-bar; a brace-bar between said main support-bar and said support-clamp bar, said brace-bar having a body-portion engaging said support-clamp bar and spaced-apart upwardly-diverging legs engaging said main support-bar at the junctures of the legs and body of the main support-bar; glass on said main support-bar; a cover-clamp bar structure on said glass; and clamping-means clamping said parts together.

8. A skylight construction including: a main support-bar having a body-portion and spaced-apart downwardly-extending legs; a support-clamp bar beneath the lower edges of the legs of said main support-bar; a brace-bar between said main support-bar and said support-clamp bar, said brace-bar having a body-portion engaging said support-clamp bar and spaced-apart substantially-straight upwardly-diverging legs engaging said main support-bar at the junctures of the legs and body of the main support-bar; glass on said main support-bar; a cover-clamp bar structure on said glass; and clamping-means clamping said parts together.

9. A skylight construction including: a main support-bar structure; a plurality of auxiliary support-bar structures extending from adjacent an end of said main support-bar structure and diverging from one another; a preformed substantially-rigid upper coupling-plate interconnecting the tops of said main and auxiliary support-bar structures; a preformed substantially-rigid lower coupling-plate interconnecting the bottoms of said main and auxiliary support-bar structures; glass on said main and auxiliary support-bar structures; cover-clamp bars on said glass; and clamping-means clamping said cover-clamp bars, glass and main and auxiliary support-bar structures together.

10. A skylight construction including: a main support-bar structure; a plurality of auxiliary support-bar structures extending from adjacent an end of said main support-bar structure and diverging from one another; a preformed substantially-rigid upper coupling-plate interconnecting the tops of said main and auxiliary support-bar structures; a preformed substantially-rigid lower coupling-plate interconnecting the bottoms of said main and auxiliary support-bar structures; glass on said main and auxiliary support-bar structures; cover-clamp bars on said glass; clamping-means clamping said cover-clamp bars, glass and main and auxiliary support-bar structures together; and clamping-means clamping said upper and lower coupling-plates and said main support-bar structure together.

11. A skylight construction including: a main support-bar structure; a plurality of auxiliary support-bar structures extending from adjacent an end of said main support-bar structure and diverging from one another; a preformed substantially-rigid upper coupling-plate interconnecting the tops of said main and auxiliary support-bar structures; a preformed substantially-rigid lower coupling-plate interconnecting the bottoms of said main and auxiliary support-bar structures; glass on said main and auxiliary support-bar structures; cover-clamp bars on said

glass; clamping-means clamping said cover-clamp bars, glass and main and auxiliary support-bar structures together; clamping-means clamping said upper and lower coupling-plates and said main support-bar structure together; and clamping-means clamping a cover-clamp bar, glass, and said upper coupling-plate together.

12. A skylight construction including: a main support-bar structure; a plurality of auxiliary support-bar structures extending from adjacent an end of said main support-bar structure and diverging from one another; a preformed substantially-rigid upper coupling-plate interconnecting the tops of said main and auxiliary support-bar structures; a preformed substantially-rigid lower coupling-plate interconnecting the bottoms of said main and auxiliary support-bar structures; glass on said main and auxiliary support-bar structures; cover-clamp bars on said glass; clamping-means clamping said cover-clamp bars, glass and main and auxiliary support-bar structures together; a bolt extending through said upper and lower coupling-plates and said main support-bar structure and clamping them together, said bolt having an extension extending up past adjoining ends of said cover-clamp bars; and means on said extension clamping said adjoining ends of said cover-clamp bars, glass, and said upper coupling-plate together.

13. A skylight construction including: an intermediate support-bar structure; oppositely transversely-extending support-bar structures having upper extensions overlapping each other at the top of said intermediate support-bar structure and having lower extensions overlapping each other at the bottom of said intermediate support-bar structure; a bolt extending through and clamping said intermediate support-bar structure and said upper and lower extensions together; glass on said transversely-extending support-bar structures; said bolt having an extension extending up beyond said glass; a cover-clamp bar on said bolt-extension above said glass; and means on said bolt clamping said cover-clamp bar, said glass and said intermediate and transversely-extending support-bar structures together.

14. A skylight construction including: a support-bar structure; glass on said support-bar structure; clamping-means clamping said glass and said support-bar structure together; a preformed, substantially-rigid Z-shaped end-plate having its body or center-reach secured to the end of said support-bar structure beneath said glass and having a flange extending up past and adjacent an end of said glass.

FRANK C. BRADLEY.