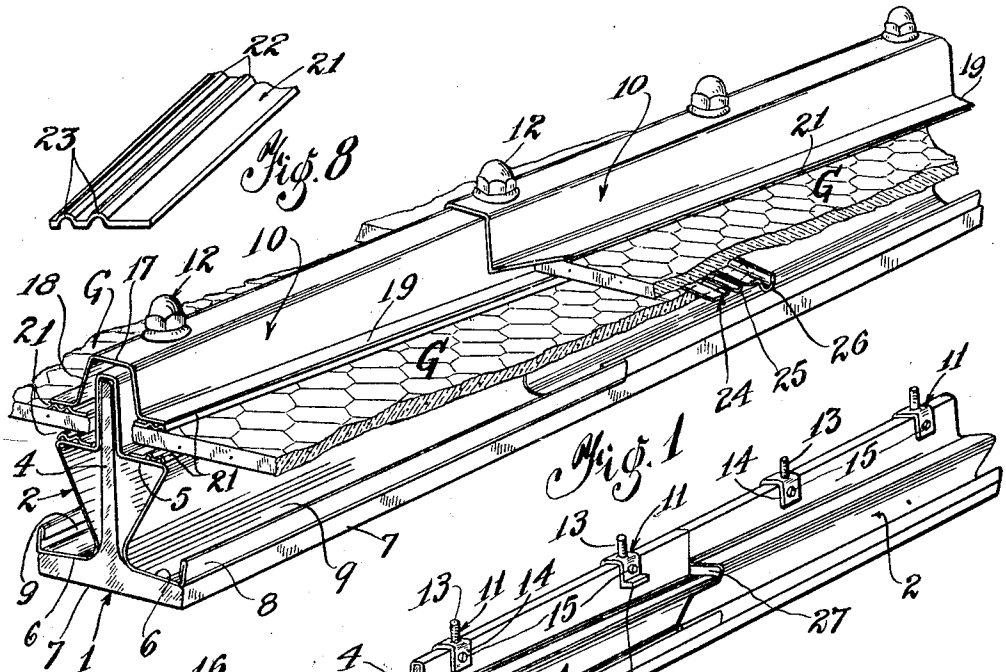
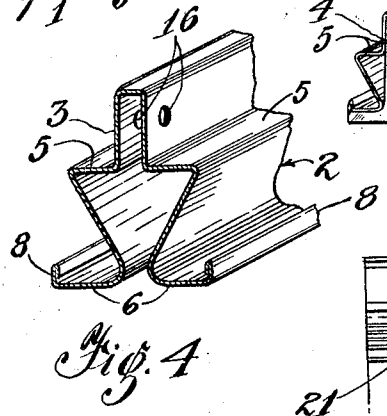
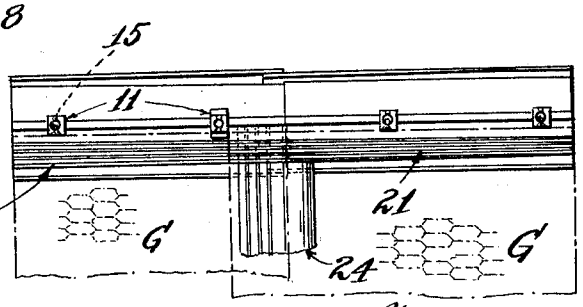
April 2, 1929. S. M. DICKSON 1,707,798

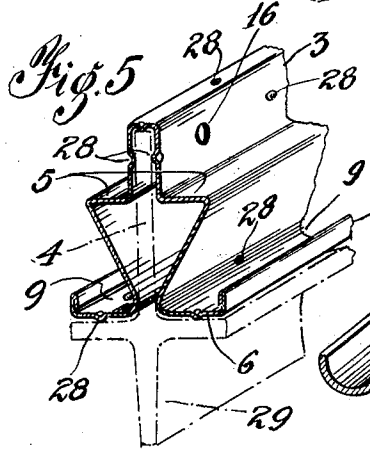
SKYLIGHT

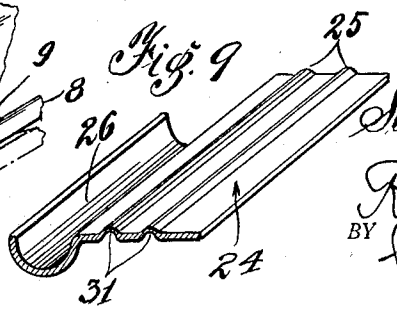
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SKYLIGHT

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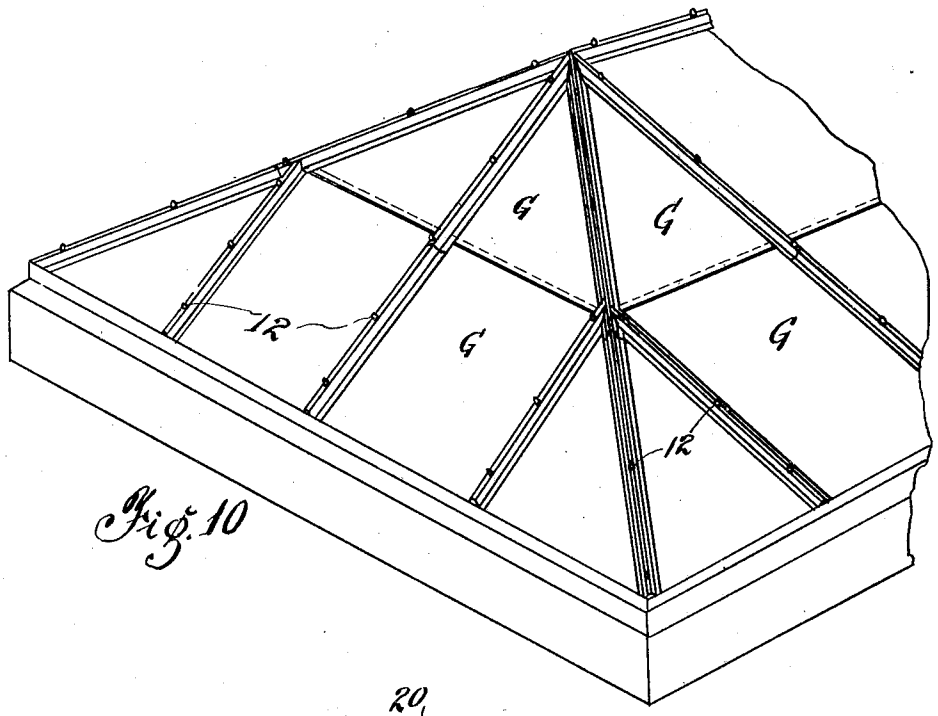


Fig. 10

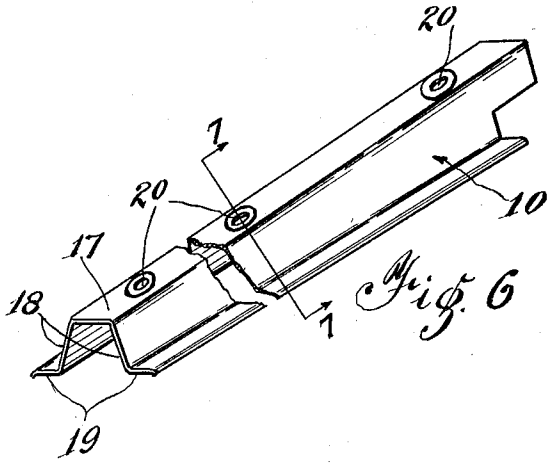


Fig. 6

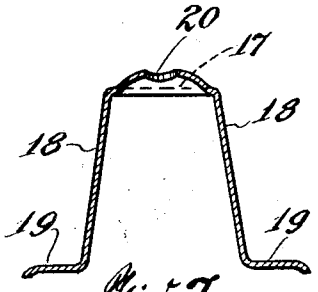


Fig. 7

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UNITED STATES PATENT OFFICE.

SIDNEY M. DICKSON, OF PITTSBURGH, PENNSYLVANIA.

SKYLIGHT.

Application filed May 2, 1928. Serial No. 274,398.

This invention relates to skylights and more in particular to puttyless skylights.

One of the main objects of this invention is to provide a skylight that can be made watertight on all sides of the glass-panels without the use of putty. Another object is to provide a skylight having provisions for collecting and draining off the water of condensation at the overlapping ends of the glass-panels without requiring expensive and light obstructing cross members, as now usually employed in skylights having such water collecting means. A further object is to provide a skylight having relatively small units of glass which may be individually replaced without disturbing in any way the adjacent glass-panels. Yet another object is to provide in skylights metallic sealing gaskets, preferably made of lead, of special design which enables them to adjust themselves very easily and with little pressure to the irregularities of the sheets of glass, thus insuring a watertight construction. Still another object is the provision in a skylight of fastening means to hold inclined panels of glass against slipping out of place and which at the same time allow said panels to expand or contract freely under varying temperatures.

Additional features and advantages of this invention will appear in the following description considered in connection with the accompanying drawings, in which:

Fig. 1 is a perspective fragmentary view showing the principal features of a skylight built according to this invention.

Fig. 2 is a perspective view showing the main carrying bar and the glass supporting bars, or saddle-bars, mounted thereon.

Fig. 3 is a fragmentary top plan view of the skylight structure, but with the caps removed.

Fig. 4 is a perspective view showing a section through the saddle-bar.

Fig. 5 is a similar view showing a slightly modified saddle-bar.

Fig. 6 is a perspective view of a so-called "cap" with an intermediate portion broken off.

Fig. 7 is a section taken on line 7—7 in Fig. 6.

Fig. 8 is a perspective view showing a portion of the lead gasket used longitudinally on both sides of a glass-panel to produce a waterproof seal between the saddle-bars, caps and the glass panel.

Fig. 9 is a fragmentary perspective view of a lead gasket for sealing the overlapping ends of the glass-panels and provided with a cross gutter for collecting the water of condensation forming on the underside of the glass-panels.

Fig. 10 is a perspective view of a portion of a hipped skylight built according to this invention.

Referring to the drawings, a skylight built according to this invention comprises glass-panels "G" the upper and lower ends of which overlap, as shown in Fig. 1. These glass-panels are carried laterally by supporting elements or rafters each of which consists of a main carrying bar 1, made usually of rolled steel of T-shaped cross-section, upon which is mounted the saddle-bar 2 made of bent sheet metal and the cross-sectional shape of which is especially shown in Figs. 4 and 5. As shown therein, the top portion 3 of the saddle bar has substantially the shape of an inverted U adapted to fit rather freely about the web portion 4 of the main bar 1.

The intermediate portion of the saddle-bar is first flared out horizontally at both sides to form the saddles or seats 5 for the support of the glass-panels, and then bent inwardly toward the base of the web portion. The lower portion 6 of the saddle is again bent outwardly to follow the top of the head 7 of the main bar and finally given an upward bend 8 which provides on each side of the main bar a drain-gutter 9. These gutters extend preferably beyond the edges of the seats 5 to collect the water dripping therefrom.

The glass-panels are securely held in place by means of the inverted, channel-shaped, caps 10 preferably made of nonrusting material and which are fastened to the main bar 1 by the bolts 11 and the nuts 12, both of which are also preferably rust-proof and usually made of brass. The bolts are of special design and comprise each a threaded stud 13 and a clevis-shaped head 14 the bight of

which is wide enough to be engaged by the top portion of the saddle-bar. The clevis-bolts are secured to the web portion of the main carrying bar by means of screws 15 which engage suitably spaced and registering apertures 16 provided laterally in the web of the main bar and in the top portion of the saddle-bar.

As shown in Figs. 6 and 7 in particular, each cap 10 has a flat bridge 17 connecting down and outwardly flaring legs 18 which terminate with horizontal outwardly directed flanges 19 which bear upon the glass-panels. The bridge portion 17 of the cap is spaced a suitable distance above the top of the saddle-bar and, owing to the resiliency afforded by the flaring legs 18, a yielding pressure may be exerted on the glass-panels, said resiliency acting also as a satisfactory locking means for the bolt-nuts. Suitable apertures 20 are provided in the cap at proper intervals to receive the studs of the clevis-bolts 11.

The watertight sealing along the supporting members is obtained by means of soft lead gaskets 21 cut in strips. These gaskets are placed above and below the longitudinal edges of the glass-panels, as shown in Fig. 1 and, in order to obtain a water tight seal without exerting undue pressure on the glass and gaskets, the latter are provided with two or more longitudinal beads or corrugations 22 which afford a more yielding contact surface with the glass. To further improve this contact and enable the gaskets to conform more readily to the irregularities of both glass surfaces, these corrugations are preferably rolled thinner at the crown than the body portion of the gasket, as shown at 23 in Fig. 8.

The glass-panels are preferably made short, relatively to the length or span of the main bars 1, in order to facilitate their handling and erection and to minimize the losses due to breakage. Moreover, the caps and saddle-bars are also made of substantially the same length as the panels so that a broken light may be replaced on the site without removing the caps of the panels placed above or below it. The ends of the caps and saddle-bars overlap also in order to keep rainwater out at the joints, as is fully shown in Fig. 1.

The overlapping, transverse, ends of the glass-panels are made tight against water which might be blown up along the skylight by means of the transverse lead gaskets 24 inserted between the overlapping ends of the panels. These gaskets are also provided with beads or corrugations 25 running longitudinally and the crown portions 31 of which are reduced in thickness, for the reasons stated in connection with the longitudinal gaskets 21.

The transverse gaskets are further provided along their outer edges with gutters 26 to collect whatever water might condense on the glass-panels or pass the sealed joints. These gutters incline toward one or both longitudinal supports spanned by the glass-panels to enable the water collected to run into the main gutters 9. Although the cross-gaskets are made of relatively soft material, they will not sag, or their gutters lose their shape, on account of being supported on their whole length by the underlying glass-panels.

In order to provide for the overlapping of the glass-panels, it is necessary that the depth of the saddle 5 and of the caps be varied gradually, as shown in Figs. 1 and 2, to furnish space for the double thickness of glass at the overlapping joint. Thus at the junction of two saddle-bars, the juxtaposed seats will be stepped off, as at 27, Fig. 2, an amount equal to the thickness of one panel, plus the thickness of the cross-gasket.

Experience has shown that the life of main bars 1 made of rolled steel is greatly reduced on account of corrosion due to the condensation of water or acid vapors thereon and also to electro-chemical actions, when the saddle-bars, usually made of copper, are shaped tightly about a portion of the main bars. To overcome this condensation, I prefer to mount the saddle-bar rather freely on the main supporting bar, in order to permit of a free circulation of air about the latter.

If desired, the all around clearance between the saddle-bar and the main supporting bar may be increased and positively maintained by providing on the saddle-bar inwardly directed indentations or bosses 28 adapted to bear on the main bar 1 at suitable intervals. This is indicated in Fig. 5 in which is also shown a main supporting bar having an additional downward web 29 to increase its rigidity, for greater spans, without modifying the dimensions of the saddle-bar and cap, as would be the case were the added strength of the main-bar obtained by increasing the dimensions, especially the depth, of the web porftion 4 of a T-shaped carrying bar 1.

In addition to the frictional engagement between the supporting elements and the glass-panels, the latter are held against downward sliding movement by stop lugs 30 provided on the head portions of the clevis bolts 11 which hold the overlapping ends of two consecutive caps 10. The lower edge of each glass-panel abuts against two stop lugs and is therefore positively held in proper position, but free to expand or contract under varying temperatures.

While I have illustrated and described herein the present embodiment of my invention, and one which I have found in actual use to be very practical, it may be found desirable after continued experience to make slight changes in the construction and arrangement of the details of my invention, and I intend to include in this application all such

variations as fall within the scope of the appended claim.

I claim:

In a skylight support comprising a main carrying bar and a saddle-bar carried thereby and adapted to support a glass-panel, said saddle-bar having inwardly directed spaced indentations adapted to engage the main carrying bar to afford clearance space for the circulation of air between said saddle-bar and carrying bar.

In testimony whereof I affix my signature.

SIDNEY M. DICKSON.