C. YAUCH.

SKYLIGHT.

APPLICATION FILED FEB. 21, 1912.

1,035,509.

Patented Aug. 13, 1912.

4 SHEETS—SHEET 1.

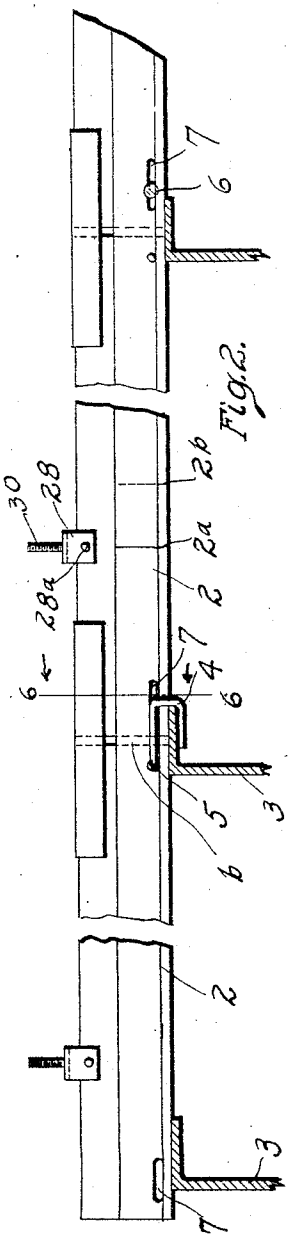

Fig. 2.

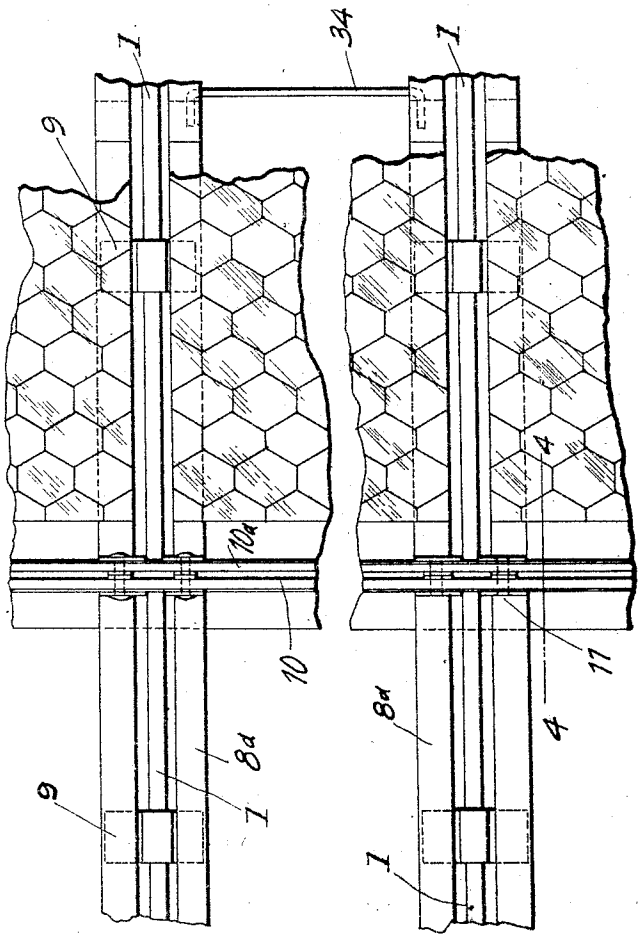

Fig. 1.

WITNESSES.

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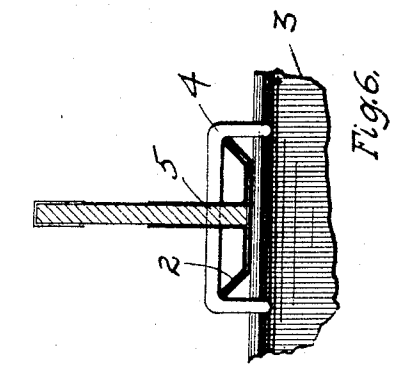

Fig. 6.

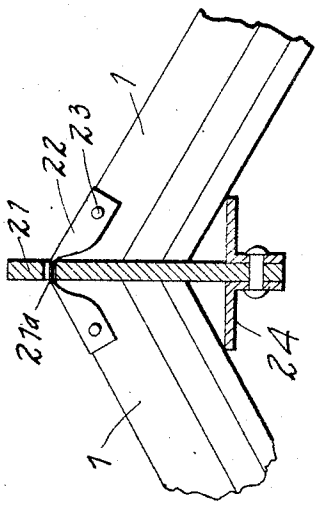

Fig. 5.

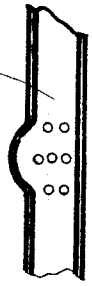

Fig. 12.

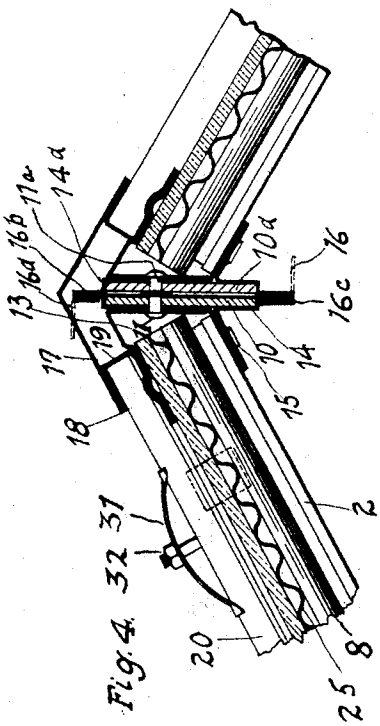

Fig. 4.

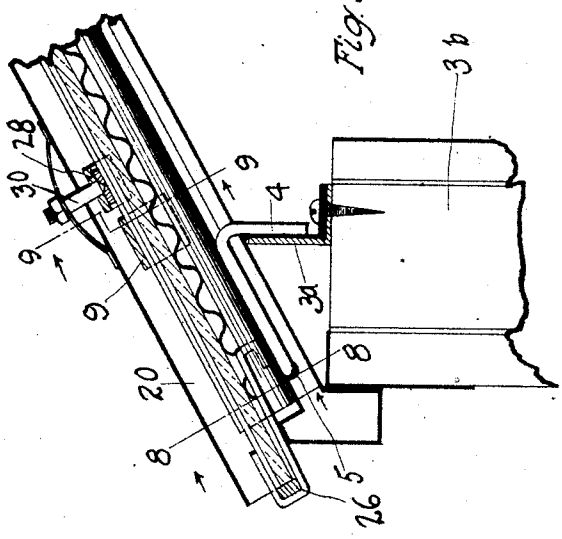

Fig. 3.

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4 SHEETS—SHEET 3.

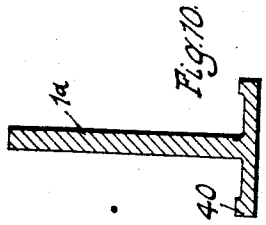

Fig. 10.

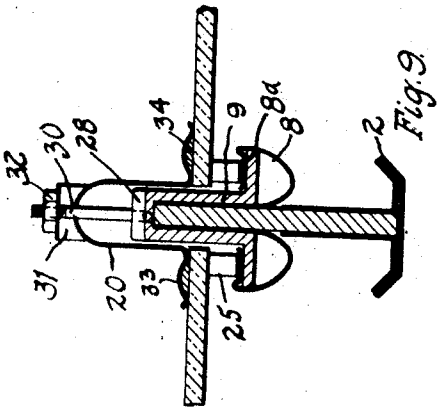

Fig. 9.

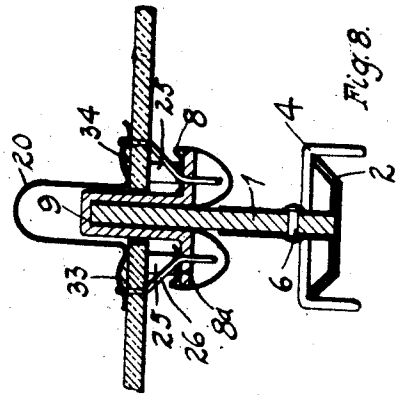

Fig. 8.

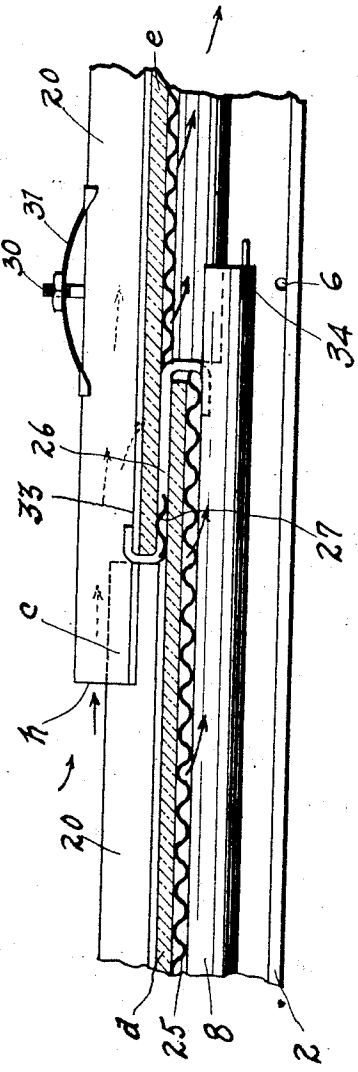

Fig. 7.

WITNESSES.

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4 SHEETS—SHEET 4.

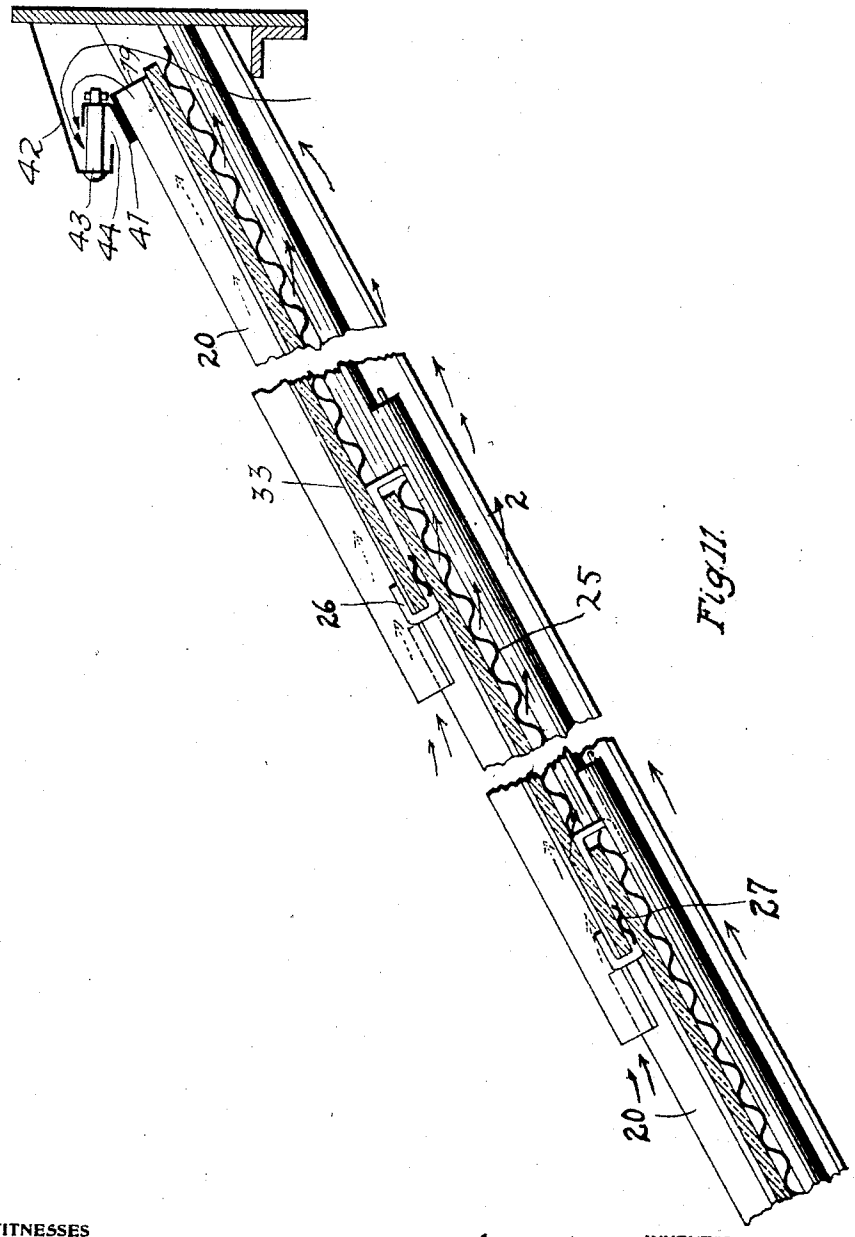

Fig. 11.

WITNESSES

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UNITED STATES PATENT OFFICE.

CHRISTIAN YAUCH, OF DETROIT, MICHIGAN.

SKYLIGHT.

1,035,509. Specification of Letters Patent. Patented Aug. 13, 1912.

Application filed February 21, 1912. Serial No. 679,119.

To all whom it may concern:

Be it know . that I, CHRISTIAN YAUCH, a subject of the King of Great Britain, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Skylights, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to a skylight and has for its object a skylight frame that is adapted to allow expansion, to afford ventilation, to take care of any leaking about the glass, and to care for condensation.

This skylight has also features looking to its assembly in a quick and convenient manner.

In the drawings:—Figure 1, is a top view of the skylight frame showing one side glazed. Fig. 2, is a side elevation of one of the frame members, with the supporting girders in section. Fig. 3, is a longitudinal sectional elevation of the lower end portions of one of the frame members. Fig. 4, is a sectional view of the ridge bar showing in elevation the frame members connected therewith, taken on the line 4—4 of Fig. 1. Fig. 5, is an alternative form of ridge construction. Fig. 6, is a cross section of the core bar and auxiliary gutter taken along the line 6—6 of Fig. 2. Fig. 7, is a longitudinal section through overlapping panes of glass, showing the overlapping cap plates in elevation and the core bar and gutters in elevation. Fig. 8, is a cross section through one of the frame members taken on the line 8—8 of Fig. 3. Fig. 9, is a cross section through one of the frame members taken on the line 9—9 of Fig. 3. Fig. 10, is a cross section of an alternative form of core bar. Fig. 11, is a section of the skylight, showing a frame member in elevation, and a section of the ridge cap, showing the system for ventilation. Fig. 12, is a detail of a part of the ridge cover.

Referring to the cross sections, as shown in Figs. 8 and 9, the core bar 1 has attached to it, by rivets 6, a gutter 2, that may expand lengthwise with reference to the core bar because of the rivets 6 engaging in slots 7 of the core bar. This gutter 2 is an auxiliary gutter to catch the water of condensation and consists of a piece of sheet metal doubled upon itself to form a containing trough and passing to the opposite side of the core bar 1 and doubled upon itself to form a second trough.

Reference to Fig. 2 shows that the gutters 2 of the core bars 1, at one end are extended beyond the core bar, while at the other end they do not extend quite to the end of the core bar. The gutter of the left hand core bar ends at 2^b, while the gutter of the right hand core bar ends at 2^a. This assures an overlapping of the gutters sufficient to allow expansion of the gutters and the core bars, the latter of which will be seen spaced at adjacent ends as at *b*, shown by the dotted lines in Fig. 2. The individual core bars 1 are fastened to the supporting girders 3, which are in the form of angle irons, by a hook 4 that hooks over the edge of the girders at each side of the core bar and passes through a perforation of the core bar at 5.

Fig. 6, shows the hook as viewed in the direction of the arrows along the sectional line 6—6 of Fig. 2. The main gutters 8 are hung by stirrups 9 (Figs. 3, 8, and 9,) which are in the form of a clip bent over the top of the core bar in double L-shape, the stem of the L's being in back to back relation. These stirrups 9 slide under the overturned edges or bearing faces 8^a of the gutter 8, so that they hold the gutters in place. All this assembling may be done before the frame members, (a term which I shall hereafter use to designate the core bar, gutters, cushioning strip, cap plate and interconnecting devices) are placed upon the ridge bars. The latter operation is accomplished by two methods; one of which I have shown in Fig. 4 and the other of which I have shown in Fig. 5.

Fig. 4, shows the method by which the skylight frame is built in two sections that are later joined together at the ridge. The ridge bar 10 is riveted to an extension 13 of the main gutter 8 and a sheet metal sheathing 14 is riveted to the auxiliary gutter 2 at 15. This sheet metal sheathing 14 extends along the side of the ridge bar 10 and is folded upon itself at the point where it is riveted to the gutter 2 and is riveted to the ridge bar 10 by the same rivet 11 that rivets the extension 13 of the main gutter 8. The sheathing extends above the ridge bar 10 and has an upright extension 16^b; it also extends below the ridge bar 10 and

extends downward vertically, but has an extension 16 that before the assembling is opened out at an angle to the vertical downward extension, (see dotted lines Fig. 4). A similar ridge bar 10^a and a similar sheathing 14^a is, by a like means, fastened to the frame members on the opposite side and when the ridge bars are set, as shown in Fig. 4, opposite each other, they may be tied together by bending the extensions 16 and 16^a over the extensions 16^c and 16^b, respectively, of the companion sheathing. The ridge cover 17, is made of a piece of sheet metal that is bent from the apex of the ridge on both sides down to a point 18 and then doubled upon itself to form a pocket 19 for the reception of the cap plates 20 of the frame members, as will be hereinafter described.

In the form shown in Fig. 5, which is adapted for heavier skylight frames, there is employed a single ridge bar 21, having slots 21^a thereon through which are passed hangers 22, to which are bolted the core bars 1 by the bolts 23. A pair of angle iron bars 24 are riveted to the bottom of the core bar and furnish additional support for the core bars 1. When the core bars have been fastened to the ridge bars by either of the means described and the hooks 4 have been fastened over the girders 3, including the girders 3^a that is fastened to the curb 3^b, (Fig. 2) the skylight frame is now ready for the glazing which is effected in a simple manner by laying the sinuous metal strips 25 (heretofore referred to as part of the frame members under the term cushioning strip) upon the bearing faces 8^a of the gutters 8. These bearing faces 8^a of the gutters 8 have already been perforated at intervals for the reception of glass retaining hooks 26 that are adapted to hold the glass from sliding downward, (Fig. 8). The panes of glass are then laid upon the sinuous strips and held in place, the upper overlapping the next adjacent lower pane, by the hooks 26. These sinuous metal strips 25 perform two important functions, namely, they form a cushion for the glass and, as will hereinafter be described, afford a passage through which the air may freely pass from within to without, or from without to within. Overlapping panes of glass are cushioned by the metal cushion strips 27, (Fig. 7) or oakum may be used, if desired.

Reference to Figs. 3, 7, and 9, shows the means by which the cap plate is fastened to the core bar and consists of a clip 28, that is bolted to the core bar at 28^a, (Fig. 2) through a perforation left in that member for that purpose and which holds an inverted T-bolt 30, that is threaded at its upper end. This T-bolt passes through a perforation in the cover plate 20 and also through a perforation in the binding clip 31 and a nut 32 is run on the threaded end and tightened with a wrench so that the clip 31 bears down upon the cover plate 20 and holds the cover-plate over the core bar. The cover plate 20 is a longitudinal inverted U-shaped member, with sides that extend parallel until in position to contact the glass when they flare at right angles and form a shallow inverted dip as at 33, in which an oakum packing 34 may be inserted. These cap plates are made in lengths substantially the same as the panes of glass intended to be used and overlap each other, as shown at *c* in Fig. 7, and, inasmuch as the panes of glass *d* and *e* overlap each other at this point, the cap plate on the right, which is the one nearer the ridge, is somewhat above the cap plate on the left, which is the plate farther removed from the ridge. This overlapping leaves an open space at *h* in which the air is free to circulate into the cap plate 20 (in this case, the cap plate on the right) and will pass down between the panes of glass and the core bar and be liberated through the spaces afforded by the sinuous metal strip 25. This affords ventilation and in cold weather allows enough heat to escape from the room to prevent water freezing on the skylights. If oakum packing be used for cushioning the panes of glass instead of the sinuous strips 25, the air would still be free to circulate through the cap plate 20 that is adjacent the ridge bar, as shown in Fig. 4, and the ridge cap can be bored or perforated at 19. A connecting bar 34 (Fig. 1) can be laid in the main troughs 8 of adjoining core bars, so as to join the troughs together, but allow a limited amount of lateral expansion.

The form of core bar 1^a, shown in Fig. 10, is formed with flanges 40 at the bottom and at each side and these flanges have troughs sunk in their upper surfaces for the conveyance of the water of condensation. Any water which may seep through under the cap plate 20 and through the oakum packing drops into the openings of the main gutters 8 and is conveyed away. But should it over-flow or fail to reach the gutters 8, it would then flow down into the auxiliary gutters 2. These gutters 2 also take care of any condensation or sweating that would not ordinarily be directed into the upper gutters.

In Fig. 11, I employ a ridge cap made of two pieces, 41 and 42, connected by a spacing bolt 43, so that an opening 44 parallel with the ridge bar is formed. The air passes out the opening in the end of the cap plate 20 and the air that is liberated through the other cap plates and the sinuous metal strip 25, travels along the under side of the skylight and flows out the opening 44. This causes suction of the air contained in the room and causes a circulation that draws

out the foul gases and furnishes improved ventilation.

What I claim is:—

1. A skylight frame, having in combination, a plurality of core bars, and gutters attached thereto, the gutters of adjoining core bars being adapted to overlap and the core bars spaced at their ends for expansion.

2. A skylight frame, having in combination, a plurality of core bars in spaced end to end relation, girders for supporting the same, and gutters slidably attached to the core bars and adapted to overlap.

3. A skylight frame, having in combination, a plurality of overlapping cap plates, the cap plates being open ended to allow the passage of air and supporting frame members having gutters and a sinuous metal strip forming spaces through which the air may pass through said open ended cap plate out into the room, substantially as described.

4. A skylight frame, having in combination, two assembled sections, including a separate ridge bar attached to each section and a pair of sheathings attached one to each section and adapted to be bent over each other to hold the ridge bars and the separate sections together, substantially as described.

5. A skylight, having in combination, frame members having gutters thereon, overlapping panes of glass supported by said gutters, glass retaining hooks adapted to hook over the lower ends of the panes of glass and engage through perforations in the gutters, substantially as described.

6. A skylight frame, having in combination, a plurality of slotted core bars, girders upon which the core bars are spaced in end to end relation to allow for expansion and gutter portions insheathing the core bars and overlapping each other and having bolts or rivets slidably engaging in slots of the core bars and thereby securing the gutters to the core bars, substantially as described.

7. A skylight frame, having in combination, a ridge cap comprising an upper and lower strip, bolts spacing the upper strip which over-hangs the lower strip therefrom, thereby, forming a ventilating outlet and means for introducing air through the skylight frame at points below the ridge cap, whereby circulation is created which draws out of the room foul gases, substantially as described.

8. A skylight frame, having in combination, a ridge cap comprising an upper and lower strip, the upper strip overhanging the lower strip and bolts passed through the strips and adapted to space them, forming a ventilating outlet and frame members provided with cap strips having open ends through which air is introduced into the room, causing a circulation from such points of introduction to and out of the ventilating opening in the ridge cap, substantially as described.

In testimony whereof, I, sign this specification in the presence of two witnesses.

CHRISTIAN YAUCH.

Witnesses:
STUART C. BARNES,
VIRGINIA C. SPRATT.