June 23, 1925. 1,543,330

J. N. GRENIER

SKYLIGHT CONSTRUCTION

Filed March 30, 1922 2 Sheets-Sheet 1

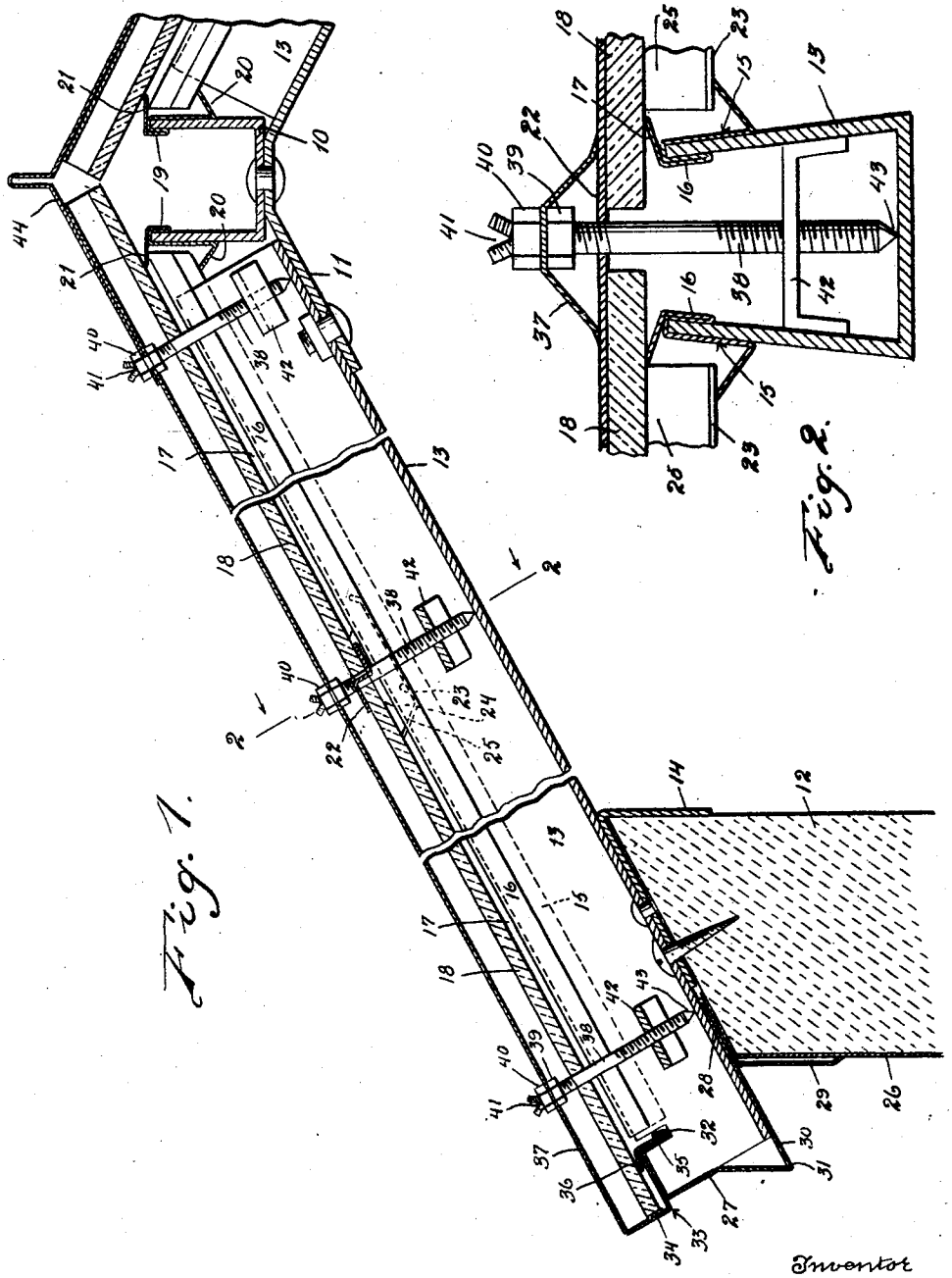


Fig. 1.



Fig. 2.

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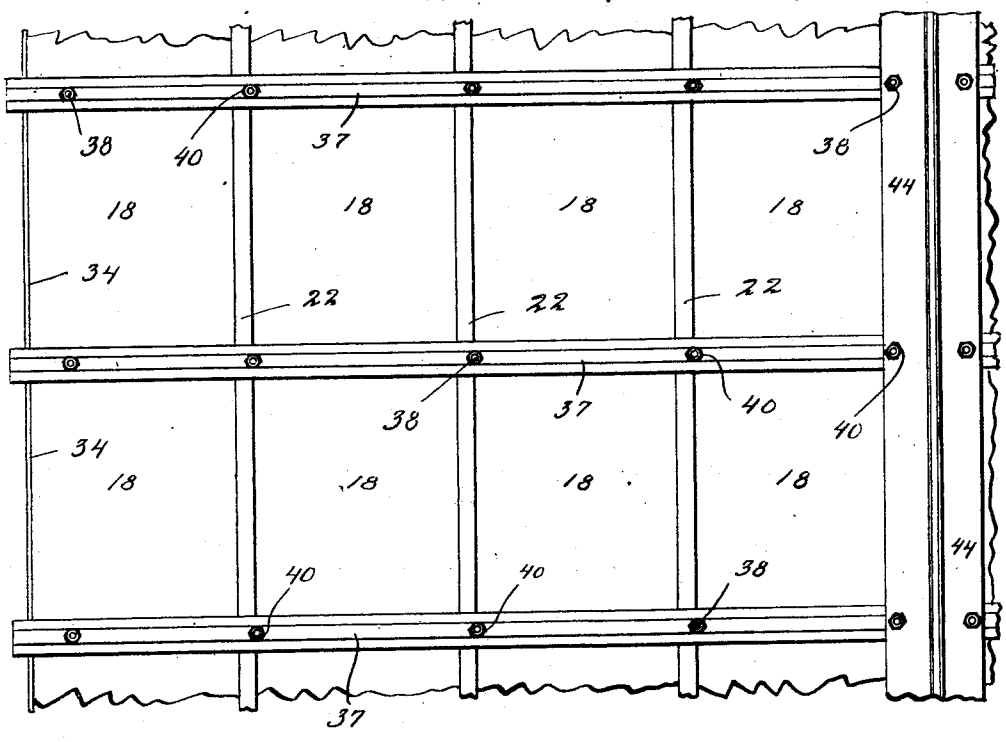



Fig. 3.

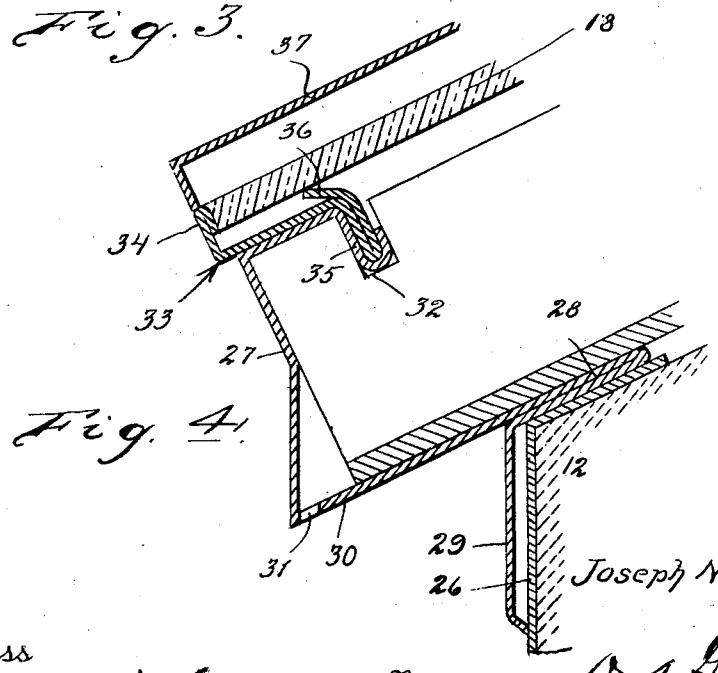



Fig. 4.

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1,543,330

# UNITED STATES PATENT OFFICE.

JOSEPH N. GRENIER, OF BROOKLYN, NEW YORK.

## SKYLIGHT CONSTRUCTION.

Application filed March 30, 1922. Serial No. 548,079.

*To all whom it may concern:*

Be it known that I, JOSEPH N. GRENIER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Skylight Constructions, of which the following is a specification.

This invention relates to skylight construction and has for its object the provision of a skylight which entirely avoids the use of felt or putty, clamping means being provided for holding the glass firmly in position in every way, a portion of the clamping means being resilient whereby to provide a supporting cushion which will permit yielding and prevent breaking of the glass even under the strain of considerable vibration.

An important object is the provision of novel clamping means for securing the glass, there being a wedging action between certain of the elements.

Another object is the provision of a skylight construction in which ample provision is made for carrying off water of condensation which forms, gutter members being provided for this purpose.

An additional object is the provision of a skylight construction which will be dust-proof, water-tight, highly efficient and durable in every way, and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which

Figure 1 is a cross sectional view through a skylight constructed in accordance with my invention.

Figure 2 is a detail sectional view on the line 2—2 of Figure 1.

Figure 3 is a plan view of the structure.

Figure 4 is an enlarged detail sectional view.

Referring more particularly to the drawings, I have shown my skylight construction as comprising a ridge-bar 10 of channel-shape which extends longitudinally of the roof to be skylighted. Secured upon the bight portion of this channel bar are strap plates 11 of any desired number, only one being shown in the drawings. This strap is secured by means of bolts or by rivets, as shown. The numeral 12 designates the roof curb which may be constructed of wood, cement, or other material and which forms no part of the present invention. The numeral 13 designates the inclined bars which extend from the ridge-bar over and beyond the curb 12 and these bars 13 are bolted or otherwise secured at one end to the projecting ends of the strap plates 11. Suitably secured upon the undersides of the bars 13 are angle brackets 14 which rest upon the top of the curb and which engage against the inner face thereof whereby to prevent downward longitudinal displacement of the bars 13. Each bar 13 is of channel-shape and has its sides converging upwardly, as clearly disclosed in Figure 2, for a purpose to be described. The parts above described constitute the main supporting frame for the glass and other elements to be described.

Engaged upon each upper edge of the bar 13 is a trough-like device formed of sheet-metal, preferably cold rolled copper, bent into angular shape, as clearly disclosed in Figure 2, and including a gutter portion 15 adapted to collect and carry off water of condensation, further including a reflexly bent retaining portion 16, and also including an upwardly inclined portion 17 which extends considerably beyond the top of the bar 13 whereby to define a cushion strip. The glass, designated by the numeral 18, is preferably, though not necessarily, of the wired type, and is of course supplied in sheets of convenient size arranged in edge to edge relation to cover the area. The cushion strips 17 resiliently support the glass so as to provide for yielding in case of vibration and so as to take care of any roughness near the edge of the glass sheets without there being any danger of breakage. I also provide a similarly constructed angularly shaped trough-like member 19 associated with the upper edge of each side of the ridge-bar 10 which is for the same purpose as the previously described gutter member and which includes a gutter portion 20 for collecting and carrying off water of condensation and which further includes a cushion strip 21 upon which the glass rests.

At the joints between adjacent sheets of glass, I provide zig-zag shaped lead pack-

ing strips 22 which are bedded in white lead or oil cement. Located at the sides of the channel bar 13 beneath said joints are angularly shaped sheet-metal trough-like members 23 which include a gutter portion 24 for carrying off water of condensation and which further include inclined edges 25 engaging the glass and serving as cushion strips in exactly the same manner as the elements 17 and 21.

Associated with the curb 12 is the usual roof flashing 26 which extends along the outer face of the curb and partly along the upper edge thereof. Extending across the outer ends of the successive bars 13 is an angularly shaped sheet-metal apron 27 which includes two angular portions 28 and 29 engaging against the top and outer surface of the flashing 26. This apron forms a closure for the outer ends of the bars 13 and has its lowermost point formed with a gutter portion 30 for water of condensation, this gutter being provided at the end of each bar 13 with a suitable hole 31 for permitting the outlet of water which might collect within the gutter 30 or which runs thereinto from the bars 13. The uppermost portion of this apron 27 is formed angular, as shown in Figure 1 and is disposed within notches 32 formed in the sides of the bars 13. Associated with the upper portion of this apron 27 is a retaining member 33 which is formed of sheet metal and which is bent into angular form. The member 33 includes an upwardly extending flange 34 which engages against the lowermost edge of the glass and which consequently serves as an abutment for preventing downward displacement of the glass. At its opposite edge the member 33 is bent with a portion of the apron 27 and fits within the notches 32. This member 33 is likewise provided with a cushion strip 36 upon which the glass rests.

Extending over the joints between the pieces of glass are cap plates 37 which extend above the bars 13 and which naturally exclude water from the joints. In order to hold the various parts in clamping relation, I provide a series of bolts 38 associated with each bar 13, these bolts passing through the cap plates 37 and having their upper ends threaded and provided with nuts 39 located within the cap plates 37, the bolts further being provided with lock nuts 40 engaging upon the tops of the cap plate. The upper extremities of these bolts are split and spread, as shown at 41, whereby to prevent any possible displacement of the locking nut. Associated with each bolt 38 is a channel-shaped stirrup 42 which is slidable up and down between the sides of the channel bar 13 and which is formed with a central threaded hole for the reception of the threaded lower end of a bolt 38. The lower extremities of the bolts 38 are pointed, as shown at 43, whereby to pivot upon the lower or bight portion of the bar 13. When the bolts 38 and stirrup members 42 are in place, by turning the bolt the stirrup will draw up tightly between the converging sides of the channel bar 13.

Located above and extending along the ridge-bar 10 is a cap plate 44 which covers the joints at the ridge-bar and which is secured in place by means of the highermost bolts 38, as clearly shown in Figure 1.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a simple skylight construction which will be dust-proof and watertight, which is amply provided with gutter means for taking care of water of condensation, and which also provides resilient cushion strips for supporting the glass to prevent breakage thereof. It will also be noted that I have provided novel and peculiarly constructed means for clamping the parts in place, this means consisting principally of the stirrup members having inclined ends and cooperating with the inclined sides of the bars of the main support. In fact, it will be quite apparent that all joints are well protected either above or below whereby to exclude water. Another advantageous feature is that this construction will withstand quite severe vibration so that this skylight construction is particularly well adapted for use on machine shops, factories of various kinds, and in fact anywhere where there is machinery in operation which produces such vibration as would shortly shake to pieces the ordinary skylight construction.

While I have shown and described the preferred embodiment of my invention, it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:

A skylight construction comprising a ridge-bar, a plurality of downwardly inclined bars secured to and extending in opposite directions from said ridge-bar, angular trough-like members engaging over the edges of each second named bar and formed to provide a hook-shaped retaining portion, a gutter portion extending outwardly of the second named bar and an upwardly and outwardly inclined portion constituting a cushion strip, sheets of glass resting upon said cushion strips with the joint over the second named bar, a cap plate extending over the joint, clamping means engaging through the cap plate and engaging the second named bar whereby to hold the glass

securely, an angular trough-member associated with each edge of the ridge-bar and formed to provide a gutter portion and an upwardly and outwardly extending portion constituting a cushion strip engaging against the underside of the glass, and a cap plate extending longitudinally above the ridge-bar and engaging said first named cap plates, said last named cap plate being formed with holes engaging upon the uppermost ones of said bolts.

In testimony whereof I hereto affix my signature.

JOSEPH N. GRENIER.