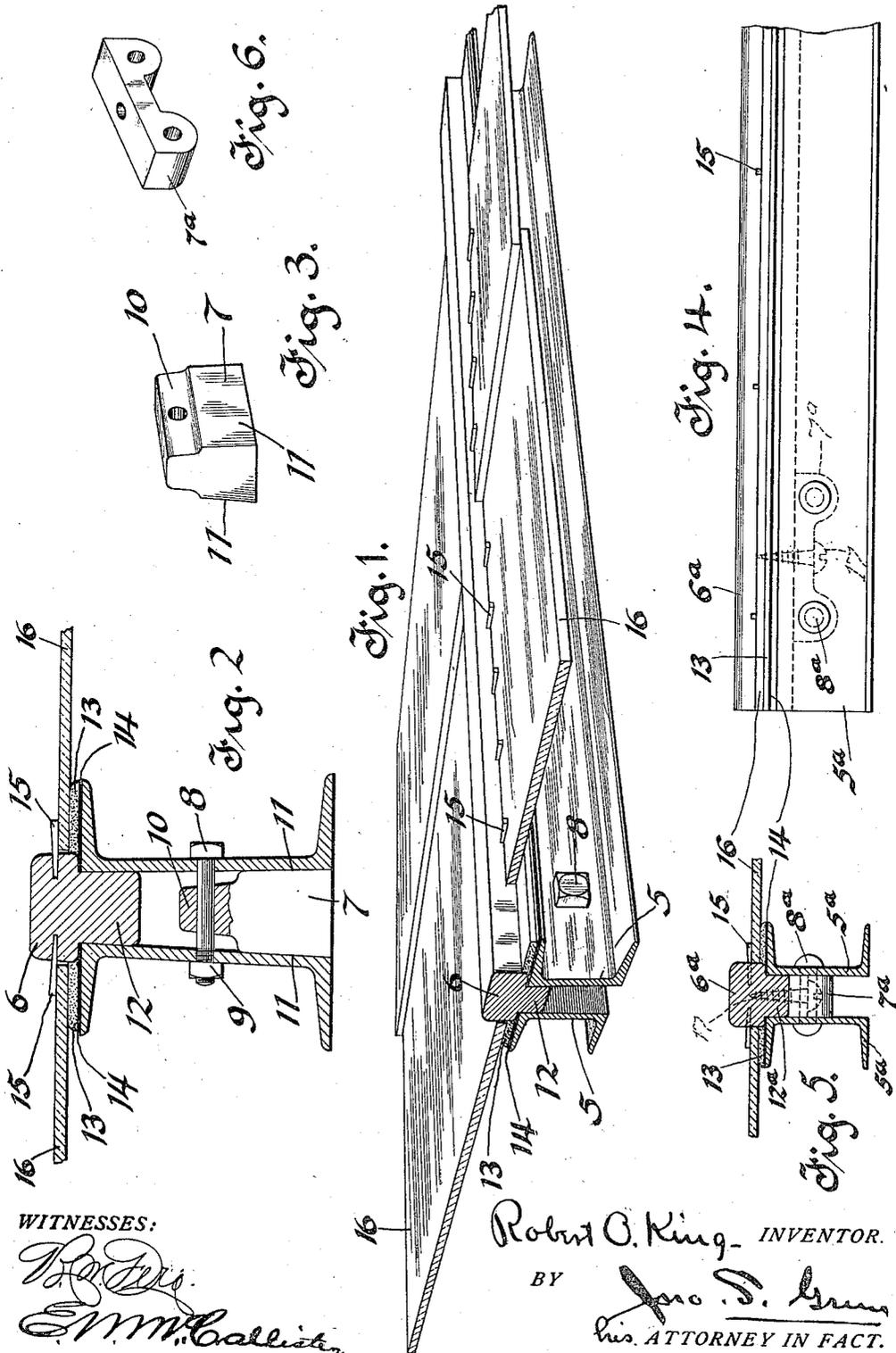


R. O. KING.  
 SASH BAR OR RAFTER.  
 APPLICATION FILED MAR. 9, 1909.

1,008,343.

Patented Nov. 14, 1911.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ROBERT O. KING, OF NORTH TONAWANDA, NEW YORK.

SASH-BAR OR RAFTER.

1,008,343.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed March 9, 1909. Serial No. 432,334.

To all whom it may concern:

5 Be it known that I, ROBERT O. KING, a subject of the King of Great Britain, and a resident of North Tonawanda, in the county of Niagara and State of New York, have made a new and useful Invention in Sash-Bars or Rafters, of which the following is a specification.

10 This invention relates to metal rafters or sash bars and has for an object the production of a built-up rafter or bar which is easily assembled and which is adapted to support glass skylight or other roofing material.

15 A further object is the production of a composite rafter comprising metal support pieces adapted to support roofing material and which are located wholly below the roofing material and which secure in place a nailing strip for said roofing material.

20 A further object is the production of such a bar in which the nailing strip is detachable and may be removed without disturbing the roofing material.

25 These and other objects I attain in a rafter or sash bar embodying the features herein described and illustrated.

30 In the single-sheet drawing accompanying this application and forming a part thereof, I have illustrated my invention.

35 Figure 1 is a perspective view of a portion of a sash bar or rafter shown in connection with a fragmental view of roofing material in place on the bar; Fig. 2 is a vertical section of the bar shown in Fig. 1; Fig. 3 is a perspective view of a detail embodied in my invention; Fig. 4 is a view in side elevation of a modified form of my invention; Fig. 5 is a view in cross section of said modified form; and, Fig. 6 is a view in perspective of a detail of the structure.

40 The constructions shown are more particularly adapted for use in greenhouse construction and for that reason in describing the bar I will assume that it is designed to support glass roofing material. I, however, wish it to be understood that I do not thereby limit the scope of this invention, as I contemplate utilizing it in structures other than greenhouses and for supporting various roofing materials.

45 In carrying out my invention I employ a built-up or composite bar; that is, a bar which is formed of metal shapes and a material suitable for use as a nailing strip.

Referring to the drawings, and particularly to the details designated by reference numerals, the rafter or bar of Figs. 1, 2 and 3 comprises two channel irons 5, a nailing strip 6 and means for securing the channel irons and the nailing strip together. The two channel irons are located back to back and, extending parallel to each other, are spaced apart by spacing hangers 7 which are secured in place between the channels by means of bolts 8. The bolts 8 are suitably spaced at intervals along the length of the bar or rafter and extend through the webs of the channel irons and are each provided at one end with a nut 9. Each spacing hanger is suspended, by means of a projection 10 of reduced width, on one of the bolts 8 and is secured in place between the channels by the clamping action of the bolt. The lateral faces 11 of the hangers 7, which contact with the channel irons are disposed at a slight angle to each other so that the channels are spaced farther apart at their bottom edges than at their top edges. This arrangement is provided so that the top edges of the channels will effectively clamp in place the nailing strip 6.

50 The nailing strip 6 is preferably made of wood and is provided with a longitudinally-extending portion 12 which is of decreased width and which projects downwardly between the channels and is secured in place by them. The lateral faces of the portion 12, which contact with the backs of the channel irons, are inclined to correspond to the inclination of the channels when they are secured in place by the cooperating bolts 8 and spacers 7. The wider or body portion of the nailing strip 6 is located wholly above the channels and the shoulders formed by the reduction of width rests upon the upper flanges of the channels.

55 When the roofing material utilized is glass, the edges of the panes may be laid directly on the flanges of the channels 5 or a layer of putty 13 may be interposed between the glass 16 and the channels. I preferably employ an asbestos strip 14 or a waterproof coating, which is impervious to heat and not liable to rot, on the upper surfaces of the upper flanges of the channels and between the channels and the roofing material. When the layer of putty is utilized, it may be disposed upon the waterproof coating or asbestos strip 14. The glass is held down

by ordinary glazing nails 15 which are driven into the nailing strip 6.

In the modified form shown in Figs. 4, 5 and 6, the inner faces of the channel iron are held parallel by means of spacing members 7<sup>a</sup>. In this case the depending portion 12<sup>a</sup> of the nailing strip 6<sup>a</sup> is formed with parallel sides to snugly fit between the upper ends of the channel irons and the nailing strips are held in place by means of screws 17 which extend through the spacing members 7<sup>a</sup>. The spacing members will be located at suitable intervals along the channel irons and may be made of wood or, if desired, of cast metal.

An advantage of my construction over similar constructions with which I am familiar is that the metal portions of the bar are wholly disposed under the roofing material and for this reason when employed in greenhouse construction cannot conduct the heat to the outside of the building.

A second advantage is that, with my construction, the metal portions utilized are exposed on all sides but one to the temperature of the building. This arrangement prevents the temperature of the metal portion of the bar from being greatly influenced by the temperatures outside the building and also enables it to follow closely the changes of temperature which take place within the building. For these reasons the construction prevents moisture, within the building, from condensing on the metal parts and rusting them and also from dropping from the rafter bars and doing damage within the building.

Another important advantage is that the nailing strip 6 can be removed, in case it rots or deteriorates, without disturbing the glass or the roofing material utilized. This is accomplished by loosening the clamping nuts 9, of the construction shown in Figs. 1 to 3, so as to free the longitudinally-extending portion 12 from the clamping action of the channels, and by removing the screws 17 of the construction shown in Figs. 4 to 6. The old strip can then be removed and the

new one inserted without in any way disturbing the roofing material.

Still another advantage which I attain by my construction over previous constructions is that the metal and the glass, two materials of different coefficients of expansion, are separated by a heat impervious material and the detrimental effects which might result from bringing two such materials in contact are consequently overcome.

It will be apparent to those skilled in the art that various means may be employed for securing the roofing material to the rafter.

In accordance with the provisions of the patent statutes, I have described the apparatus which I now consider to represent the best embodiment of my invention, but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means.

What I claim is:

1. In combination, two support pieces, a nailing strip partially located between said pieces, tapered spacing pieces, and bolts passing through said support pieces and said spacing pieces for clamping said strip in place.

2. In combination, two metal support strips, a detachable nailing strip held in gripping contact between said support strips and means exterior to said nailing strip for spacing and securing said support strips in place.

3. In combination, two support pieces provided at their bottoms with tapered spacing pieces, a nailing strip located above and between said support pieces, and means passing through said support pieces and said tapering spacing pieces for securing said support pieces together.

In testimony whereof, I have hereunto subscribed my name this 5th day of March, 1909.

ROBERT O. KING.

Witnesses:

FRANK ROBERTSON,  
EDWARD W. MESSING.