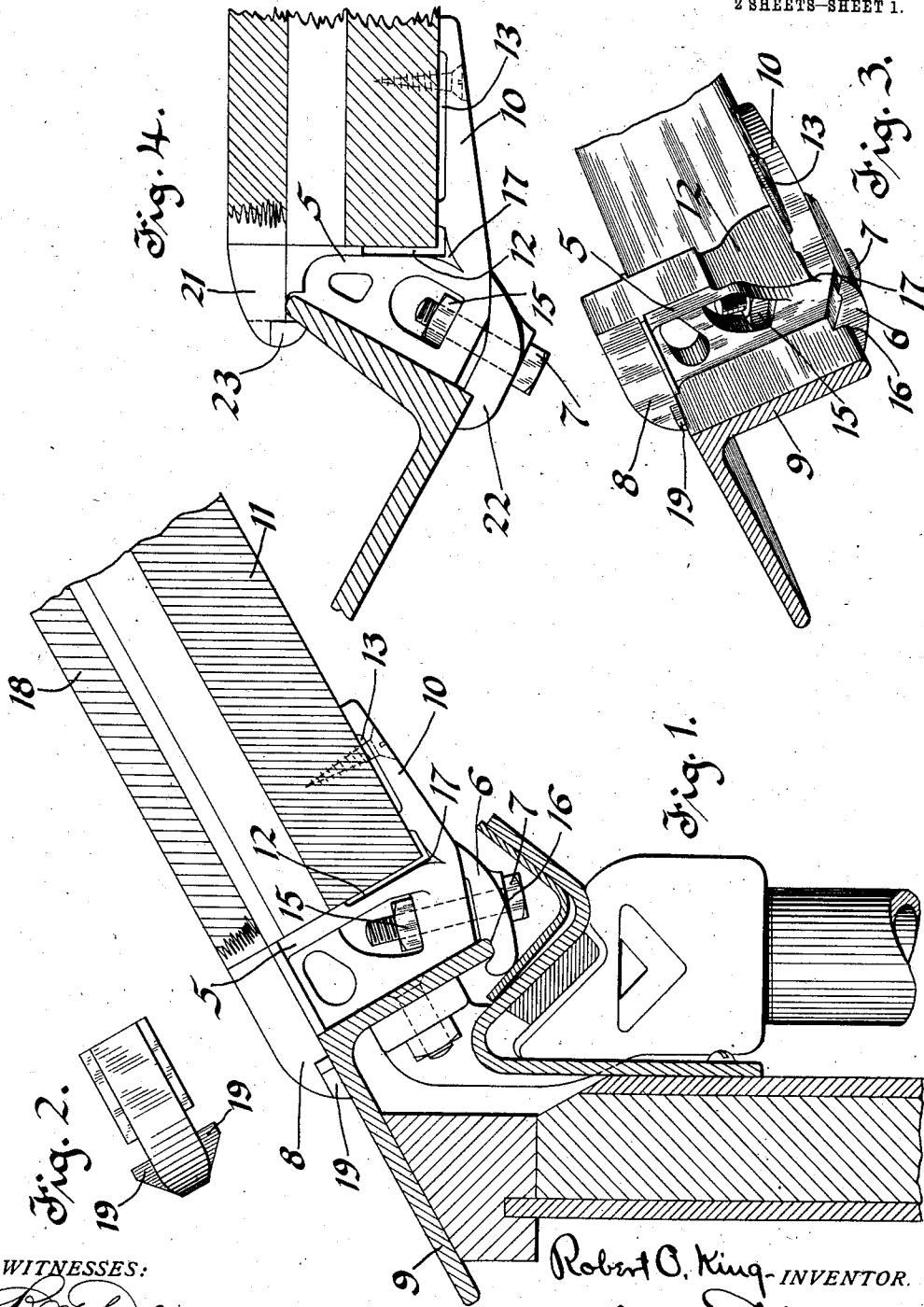


R. O. KING.
 RAFTER BRACKET.
 APPLICATION FILED MAY 3, 1909.

1,010,771.

Patented Dec. 5, 1911.

2 SHEETS-SHEET 1.



WITNESSES:

W. H. Lacey
E. M. W. Callahan

Robert O. King-INVENTOR.

BY

Geo. D. Gunn
 his ATTORNEY IN FACT.

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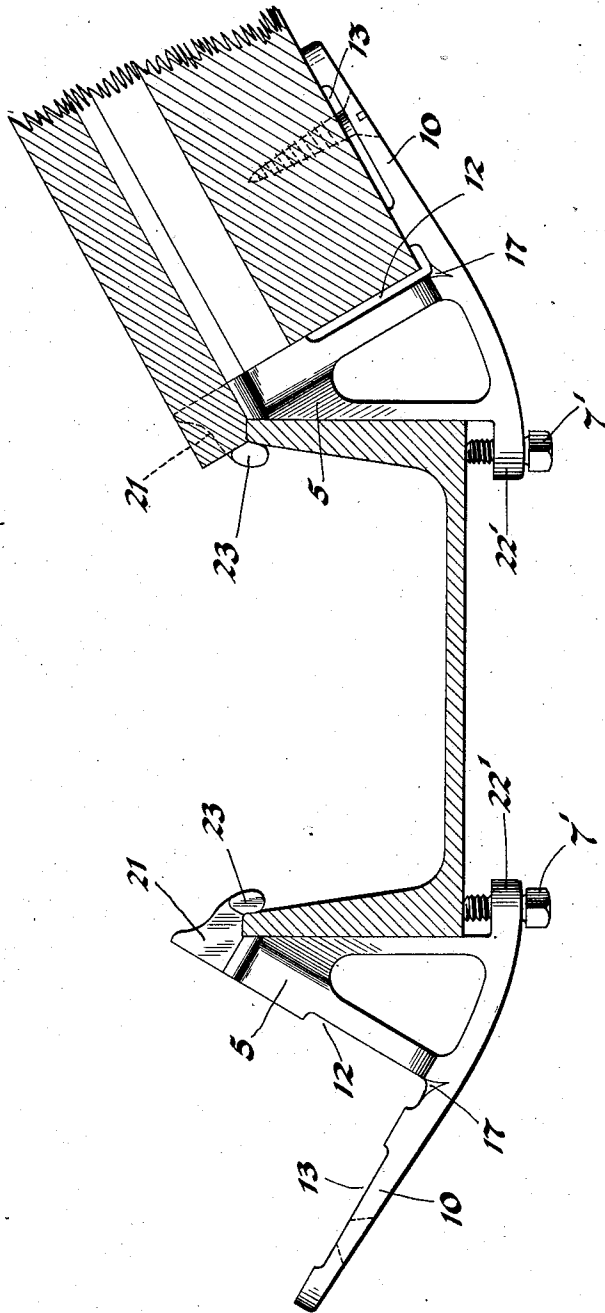


Fig. 5.

WITNESSES:

R. O. King
J. S. Brown

INVENTOR.

BY

Robert O. King
J. S. Brown
 HIS ATTORNEY IN FACT.

UNITED STATES PATENT OFFICE.

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

RAFTER-BRACKET.

1,010,771.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed May 3, 1909. Serial No. 493,688.

To all whom it may concern:

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 Rafter-Brackets, of which the following is a specification.

This invention relates to rafter brackets and has for an object the production of an improved bracket adapted to be clamped in place on structural iron shapes or other supporting elements.

A further object of my invention is the production of a rafter bracket particularly adapted for supporting wooden rafters and so arranged that the greater portion of the supported end of the rafter is exposed to the air so that the deleterious effects resulting from confined moisture are avoided.

A further object is the production of a rafter bracket which may be clamped to the eave plates or gutters of buildings without the necessity of drilling the supporting members for the reception thereof.

These and other objects, which will be apparent to those skilled in the art, I attain in the rafter bracket illustrated in the drawings accompanying this application and forming a part thereof.

Figure 1 is a side elevation of an embodiment of my invention shown in connection with a section of a supporting angle iron and fragmentary sections of a rafter, roofing material and supporting structure; Fig. 2 is a plan of the top of the bracket shown in Fig. 1; Fig. 3 is a perspective view of a bracket disclosed in Fig. 1 shown in connection with a supporting angle iron; Fig. 4 is a side elevation of a modified form of a bracket embodying my invention and shown in connection with a fragmental section of a channel iron; and, Fig. 5 is a view in side elevation of a further modification of my bracket; the view shows two brackets in place on a channel iron forming a gutter.

My invention is peculiarly adapted for use in greenhouse construction where the humidity is high and where wooden rafters are consequently exposed to more or less moisture.

My invention in one form contemplates the production of a bracket made in two pieces adapted to be secured together and clamped in place on a supporting element by means of one bolt.

Referring to the drawings: the bracket as shown in Fig. 1 comprises a body portion 5 and a removable jaw 6 secured to the body portion by means of a bolt 7. The body portion is provided with an integrally-formed jaw 8 which coöperates with the removable jaw in clamping the bracket in place on the angle iron 9. A bracket or projecting shelf 10 is formed integrally with the body portion 5 and, extending from the opposite side of the body portion from that on the fixed jaw 8, is adapted to support a rafter 11 of any material. The bracket illustrated is, however, peculiarly adapted to support a wooden rafter in that it is arranged to permit a free circulation of air around the major portion of the abutting end of the rafter. Grooves 12 and 13 cut across the body portion 5 and across the supporting face of the shelf 10 are arranged to give free access of air around the end of the rafter. Only enough supporting surface is provided on the portion 5 to safely bear the thrust of the rafter and to adequately distribute the pressure on its bearing portion so as to reduce the pressure per square inch below the crushing load per square inch to which the rafter can be exposed. A groove 13 is cut across the supporting face of the shelf 10 for the same purpose; that is, for admitting air to as much of the supported end of the rafter as possible. Sufficient supporting surface, but no more, is left on the shelf to adequately distribute the weight of the rafter and material carried thereby and to reduce the forces to a safe load per square inch of bearing surface. The shelf is provided with a hole through which a screw may be inserted to secure the rafter in place. The removable jaw 6 is provided with a bolt hole through which the bolt 7 extends and the body portion is provided with a hole so arranged that while the bolt 7 is secured to the body portion it does not extend clear through it. A nut seat is formed within the body portion and is so arranged that the nut 15, which is adapted to receive the bolt 7, is prevented from turning, the removable jaw being secured in place by screwing the bolt 7 into the nut. The fixed jaw is provided on its under side with a flat gripping surface which is adapted to be forced or drawn by the bolt 7 and the coöperating removable jaw 6 into gripping contact with the top surface of the supporting angle iron 9 or other supporting element. The remov-

able jaw 6 is provided with a slot 16 which extends across the gripping face of the jaw and is adapted to receive and hold in place the lower edge of the angle iron. Drip passages 17 formed in either side of the body portion connect with the lowest portion of the groove 12 and are adapted to drain the moisture from the groove and direct it down the side faces of the body portion. The head of the bolt extends below the rest of the bracket and this forms a dripping point from which the moisture collected by condensation on the bracket is discharged into a trough provided to receive it. The roofing material 18 supported by the rafter 11 overlaps the edge of the supporting angle 9 and is secured in place and prevented from sliding downwardly by means of laterally projecting lugs 19 located on each side of the fixed jaw and formed integrally therewith. This bracket may be clamped to either a channel or angle iron and secured in place without the necessity of drilling holes in the supporting element.

In Fig. 4 I have shown a modification of my invention and in this form the body portion 5 of the bracket is provided with a fixed jaw 21 which is adapted to hook over the edge or flange of a supporting element. The lower or removable jaw 22 is provided with a flat gripping surface which is drawn by means of clamping bolt 7 and the cooperating jaw 21 into gripping contact with the lower face of the supporting element. In other respects the modified form of bracket is similar to the bracket shown in Figs. 1, 2 and 3. The fixed jaw 21 is provided at either side with lugs 23 for preventing the roofing material from sliding downwardly off the rafter.

In Fig. 5 I have shown a still further modification of my invention and in this form the bracket is especially adapted, as is the form of Fig. 4, for use with channel iron gutters. The body portion of the bracket is provided with a fixed jaw 21 adapted to hook over the edge or flange of the channel iron. The removable jaw of the other forms is omitted and a lug 22' formed integrally with the body portion is drilled and tapped to receive a set screw 7' which when screwed to place holds the bracket securely in position on the channel. If desired, wedges may be driven into place between the top of lug 22' and the bottom of the channel for securing the bracket in place. These wedges will preferably be driven longitudinally of the channel section and may be formed of any material desired.

In accordance with the provisions of the patent statutes, I have described the principle of operation of my invention, together with the device which I now consider to represent the best embodiment thereof, but I desire to have it understood that the device

shown is only illustrative and that the invention can be carried out in other ways.

It will be seen that the body portion 5 affords a solid abutment between the end of the rafter and the adjacent face of the supporting member, the body fitting against the supporting member the entire length of the body and squarely against the end of the rafter, whereby the thrust of the rafter will be transmitted directly to the supporting member and whereby, also, I am enabled to employ an integral shelf projection 10 supporting the rafter on the bracket and an integral jaw-like projection 8 at the upper end of the body, which projection extends over upon the supporting member and forms the upper jaw of the clamp. It will be seen also that by thus extending the upper portion of the body over upon the supporting member, I may provide the same with lateral lugs 19, which lie upon the supporting member and form abutments for the lower edges of the roofing plates or glass, thus firmly and accurately holding the plates in position clamped upon the supporting member. This construction is further advantageous for the reason that I am enabled to locate the movable member of the clamp at the lower end of the body portion or body, this being specially advantageous in that the bracket is thus adapted for use on supporting members of various widths without disturbing the relation of the rafter and the roofing plates with respect to their abutment on the surface of the supporting member. This construction is further advantageous in that I am enabled to extend the clamping portion of the movable jaw directly up into the body of the abutment where it will not interfere with the proper position of the rafter and roofing plates and where also it will have a firm and rigid anchorage.

What I claim is:

1. In a rafter bracket, a body adapted to receive the thrust of the rafter and transmit it to the supporting member, said body being provided at its upper end with an integral jaw adapted to clamp upon the supporting member and provided with lateral lugs adapted to receive the thrust of the lower edges of the roofing plates, said body being also provided at its lower end with an integral shelf extending in a direction opposite to said jaw and adapted to support the rafter, and relatively movable clamping means at the lower end of the body in cooperation with the upper jaw to clamp the bracket and supporting member.

2. In a rafter bracket, a body adapted to receive the thrust of the rafter and transmit it to the supporting member, said body being provided at its upper end with a stationary jaw clamping it on to the upper surface of the supporting member, this jaw-like projection being provided with means against

which the roofing plates abut, the said body being provided at its lower end with an oppositely projecting member adapted to serve as a shelf for the supporting rafter, and
5 clamping means at the lower end of the body adapted to coöperate with the jaw at the upper end to secure the bracket to the supporting member.

3. In a rafter bracket, a body block adapted
10 to be interposed between the end of the rafter and the adjacent face of the supporting member to form an abutment therebetween, the upper end of said body block being provided with a jaw-like projection adapted to
15 extend over upon the upper surface of the supporting member and the lower end of the body block being provided with a support for the adjacent end of the rafter, and movable clamping means at the lower end of the
20 body block for the purpose set forth.

4. In a rafter bracket, a body block adapted to be interposed between the end of the rafter and the adjacent face of the support-

ing member to form an abutment therebetween, the upper end of said body block being provided with a jaw-like projection
25 adapted to extend over upon the upper surface of the supporting member and the lower end of the body block being provided with a support for the adjacent end of the rafter,
30 a movable clamping means at the lower end of the body block, said clamping means consisting of a clamping plate and a bolt extending upwardly therethrough into the
body block, the upper end of said bolt being
35 provided with a nut held against turning in the body block between the end of the rafter and the supporting member.

In testimony whereof, I have hereunto subscribed my name this 29th day of April, 40
1909.

ROBERT O. KING.

Witnesses:

FRED'K ROBERTSON,
EDW. W. MESSING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."