Nov. 29, 1932. W. L. PORTER 1,889,452

BRACKET

Filed Oct. 30, 1931

Fig. 6.

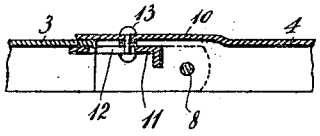



Fig. 1.




Fig. 4.

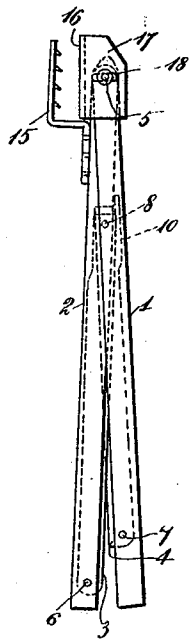



Fig. 2.

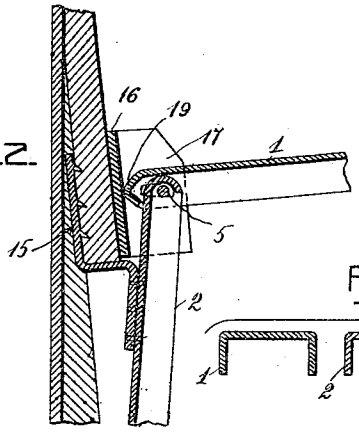



Fig. 3.

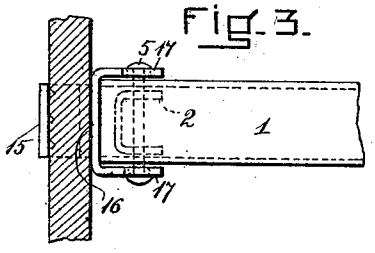
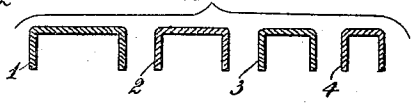



Fig. 5.




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Patented Nov. 29, 1932

1,889,452

# UNITED STATES PATENT OFFICE

WILFRED L. PORTER, OF READING, MASSACHUSETTS

## BRACKET

Application filed October 30, 1931. Serial No. 572,065.

The invention relates to a bracket that may be attached to the shingles on a roof and used as a shingler's bracket, or be attached to the clapboarded side of a building for supporting a shelf on which objects may be placed, for example plants.

The attachment of the bracket to the shingle or clapboard is made by means of a clamp, and the special object of the invention is to provide means whereby a very powerful clamping action may be obtained; also, to provide means whereby the pressure applied to the shingle or clapboard by the closing jaws of the clamp will be distributed evenly over a relatively large area and in a manner not to split the shingle or clapboard or mar its exterior surface.

A further object of the invention is to provide a bracket which can be easily and quickly applied; to provide a collapsible bracket and one that cannot be accidentally collapsed when in its extended form, and one that may be collapsed into a relatively small package.

The invention can best be seen and understood by reference to the drawing, in which—

Figure 1 shows a side elevation of the bracket attached to a shingled roof or clapboarded side of a building which is shown in cross section.

Fig. 2 is a sectional view of the bracket showing especially its clamping jaws and the means operating to close the jaws.

Fig. 3 is a plan of the clamping jaws and adjacent portion of the bracket, and

Fig. 4 is a side elevation of the bracket when in partially collapsed form.

Fig. 5 shows cross sections of the various bars which form the frame of the bracket, and

Fig. 6 is a section of the frame showing a detail of construction to which reference will later be made.

Referring to the drawing:—

The bracket comprises a collapsible frame generally triangular in form when extended and consisting of channel bars 1, 2, 3 and 4. The bars 1 and 2 are pivotally connected at their meeting ends by a pin 5. The bar 3 is pivotally connected at its outer end to the outer extremity of the bar 2 by a pin 6, while the bar 4 is pivotally connected at its outer end to the outer extremity of the bar 1 by a pin 7. The bars 3 and 4 are pivotally connected at their inner ends by a pin 8 and when the bars 3 and 4 are straightened they together form a brace between the outer extremities of the bars 1 and 2, thereby maintaining the frame extended to form the bracket.

All the pins connecting the respective bars pass through the flanged sides of the bars. This is made possible by reason of the fact that the several bars vary in width. The bar 1 is the widest of the bars; the bar 2 is of less width enabling it to fit between the flanged sides of the bar 1; the bar 3 is of less width than the bar 2 enabling it to fit between the flanged sides of the bar 2; likewise the bar 4 is of less width than the bar 3 enabling it to fit between the flanged sides of the bar 3. Having such graduation in size enables all the bars to be pivotally connected by pins passing through the flanged sides of the bars.

Apart from facilitating their pivotal connection, the gradation in the relative widths of the bars permits of the collapsing of the frame into a small package. When the frame is collapsed the joint between the bars 3 and 4 bends inwardly. The relative length of the bars 3 and 4 with relation to one another and to the bars 1 and 2 is such that when the joint between the bars 3 and 4 bends inwardly on the collapsing of the frame the pivotal connection between these bars will extend toward the pivotal connection between the bars 1 and 2 whereupon the bars will fold into one another, the bar 2 folding into the bar 1; the bar 4 into the bar 3, and both bars 3 and 4 folding into the bars 1 and 2 which form a housing therefor.

When the bars 3 and 4 are straightened for maintaining the frame in its extended form, accidental collapsing of the frame is prevented by clips 10 and 11 on the bar 4. Of these the clip 10 is a fixed clip on the inner end of the bar 4 on the outer side of its web and has extension to overlap the inner end of the bar 3 with bearing against the outer side of its web when the bars 3 and 4 are straightened, thus preventing outward bending of the

joint between the bars 3 and 4. The clip 11 is a movable clip on the inner end of the bar 4 on the inner side of its web. The clip has a slot 12 in it and is fastened to the bar 4 by a pin 13 extending through the slot. Lateral displacement of the clip is prevented by its bearing against the flanges on the bar 4 between which the clip fits. When the bars 3 and 4 are straightened on moving the clip 11 outwardly on the pin 13 it will overlap the inner end of the bar 3 with bearing against the inner side of its web, thus preventing inward bending of the joint between the bars 3 and 4.

When the frame bars of the bracket are in their extended form for application to a roof or side of a building the bar 2 forms a base bar resting against the roof or building and the bar 1 forms an outwardly extending supporting bar.

Attachment of the bracket is secured as follows: Fixed to the end of the bar 2 so as to lie forward of the inner end of the bar 1 is a clamp member 15. Arranged in complementary relation to the clamp member 15 is a movable clamp member 16 having flanged sides 17 which overlap the joint between the bars 1 and 2 and is secured to the pin 5 pivotally connecting these bars. Relative movement of the clamp member 16 is afforded by slots 18 cut in its flanged sides through which slots the pin 5 extends. Thus arranged the movable clamp member 16 lies forward of the inner end of the bar 1. The pivotal connection between the bars 1 and 2 is at a point removed from the inner end of the bar 1 so that a portion of the bar 1 will extend beyond its pivotal connection, which allows the bar to operate as a lever for moving the clamp member 16 in the direction of the clamp member 15 when the frame of the bracket is moved from its collapsed form into its extended form. In other words, the end 19 of the bar 1 will be brought to bear against the clamp member 16 exerting great force to move it in the direction of the other clamp member when the bar 1 is extended.

In the application of the bracket to the roof or side of a building the clamp member 15 on the bar 2 is first tucked beneath the end of a shingle or clapboard. Thereupon as the frame of the bracket is brought from a collapsed into its extended form the bar 1 of the frame operating as a lever as aforesaid will move the clamp member 16 hard against the outer side of the shingle or clapboard, thereby securing the bracket fixedly thereto.

It will be observed that both of the clamp members present relatively large bearing surfaces, and the movement of the movable clamp member 16 against the outer face of the shingle or clapboard is a simple movement of translation so that there is very little danger of splitting the shingle or clapboard even though the pressure exerted by the bar 1 for making the clamp connection is very great. In consequence a very powerful clamping action will be obtained for securing the bracket to the object.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States:—

1. A bracket comprising a frame having a base bar, a supporting bar, means pivotally connecting the base bar and supporting bar at a point removed from the inner end of the supporting bar whereby the supporting bar may function as a lever when turned, brace-forming bars pivoted to one another and to said base bar and supporting bar respectively, a clamp member fixed to the base bar, a movable complementary clamp member, and means for securing said movable clamp member to the frame whereby it may be moved in the direction of said fixed clamp member by said supporting bar on moving the frame from its collapsed form into its extended form.

2. A bracket comprising a frame having a base bar, a supporting bar, means pivotally connecting the base bar and supporting bar at a point removed from the inner end of the supporting bar whereby the supporting bar may function as a lever when turned, brace-forming bars pivoted to one another and to said base bar and supporting bar respectively, a clamp member fixed to the base bar, and a movable complementary clamp member mounted on said pivotal connection between said base bar and said supporting bar and arranged whereby it may be moved in the direction of said fixed clamp member by said supporting bar on moving the frame from its collapsing form into its extended form.

3. A bracket comprising a frame having a base bar, a supporting bar, means pivotally connecting the base bar and supporting bar, at a point removed from the inner end of the supporting bar whereby the supporting bar may function as a lever when turned, brace-forming bars pivoted to one another and to said base bar and supporting bar respectively, a clamp member fixed to the base bar, and a movable complementary clamp member having flanged sides with slots therein overlapping the joint between said base bar and said supporting bar and secured to the pivotal connection between said bars by said pivotal connection extending through said slots in the flanged sides of said member.

4. A bracket of the type specified comprising a collapsible frame including a base bar, a supporting bar and a brace bar, means pivotally connecting the base bar and the supporting bar at a point inwardly removed from the inner end of the supporting bar whereby the supporting bar may function as a lever when turned, a clamp member fixed to the base bar, a movable complementary

clamp member, and means for securing the movable clamp member to the frame whereby it will be moved in the direction of the fixed clamp member by the turning of the supporting bar when functioning as a lever on moving the frame from its collapsed form into its extended form.

5. A bracket of the type specified comprising a collapsible frame including a base bar, a supporting bar and a brace bar, means pivotally connecting the base bar and the supporting bar at a point inwardly removed from the inner end of the supporting bar whereby the supporting bar may function as a lever when turned, a clamp member fixed to the base bar, a movable complementary clamp member having flanged sides with slots therein overlapping the pivotal joint between the base bar and the supporting bar and secured to the pivotal connection between said bars by said pivotal connection extending through the slots of the flanged sides of the movable flange member whereby the movable clamp member will be moved in the direction of the fixed clamp member by the turning of the supporting bar when functioning as a lever on moving the frame from its collapsed form into its extended form.

WILFRED L. PORTER.