Nov. 13, 1928. 1,691,478

A. P. HENDERSON

ROOFING BRACKET

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Fig. 1.

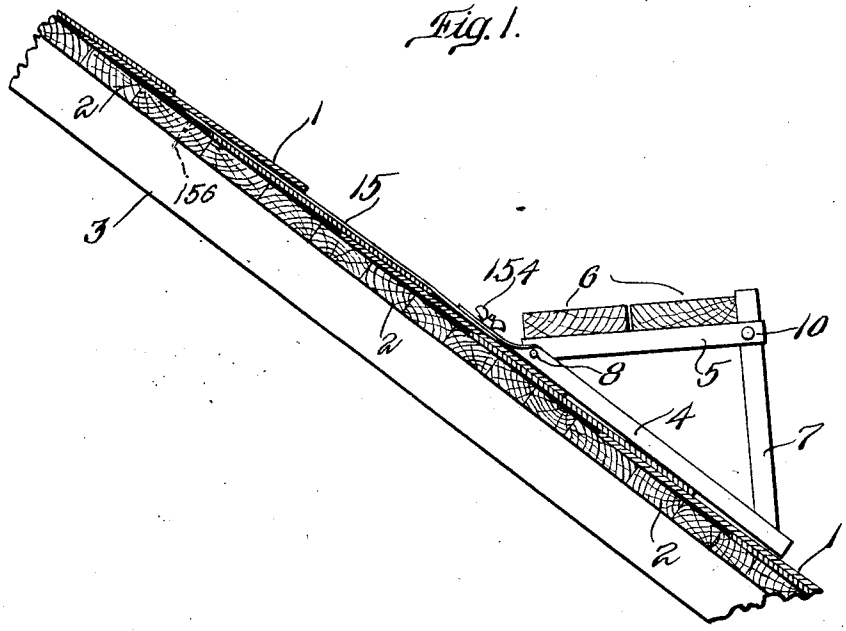
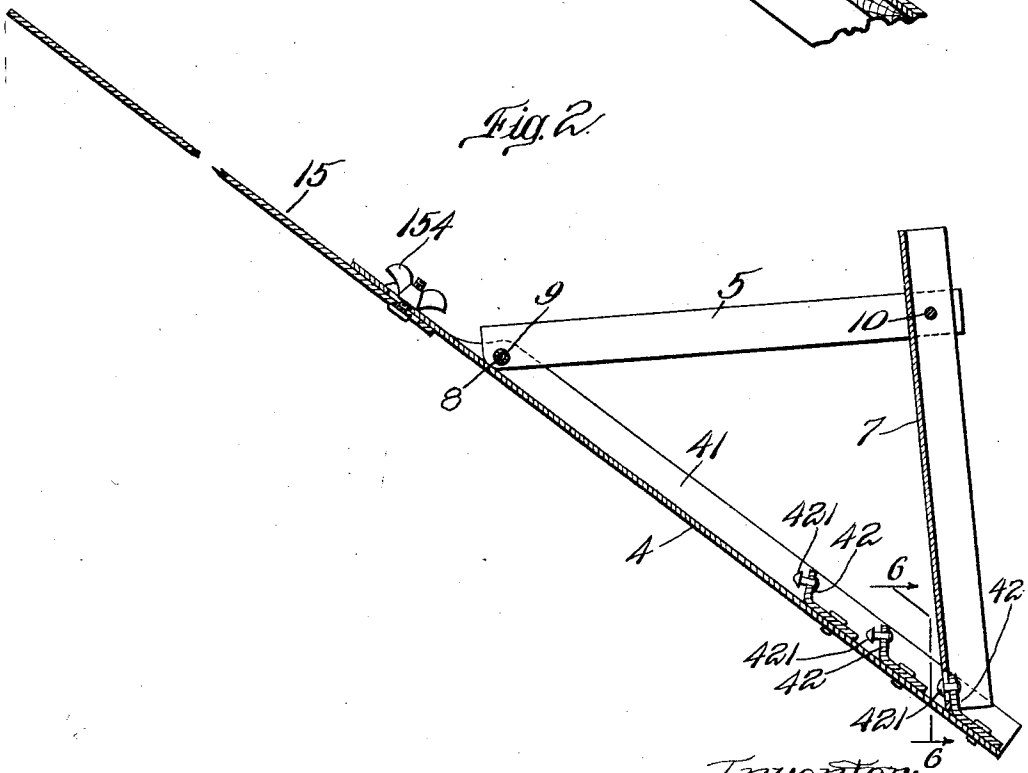


Fig. 2.



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Fig. 4.

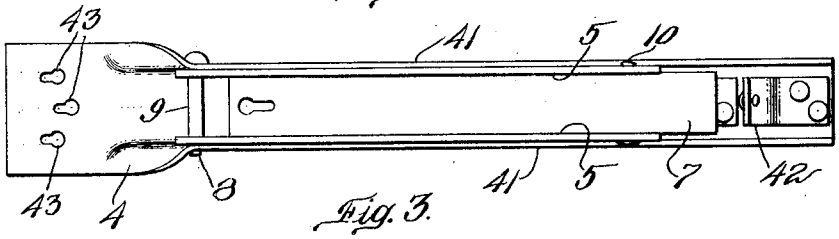


Fig. 3.

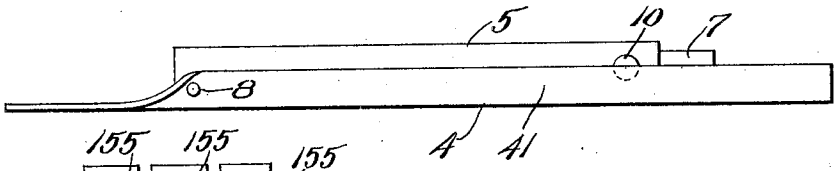


Fig. 5.

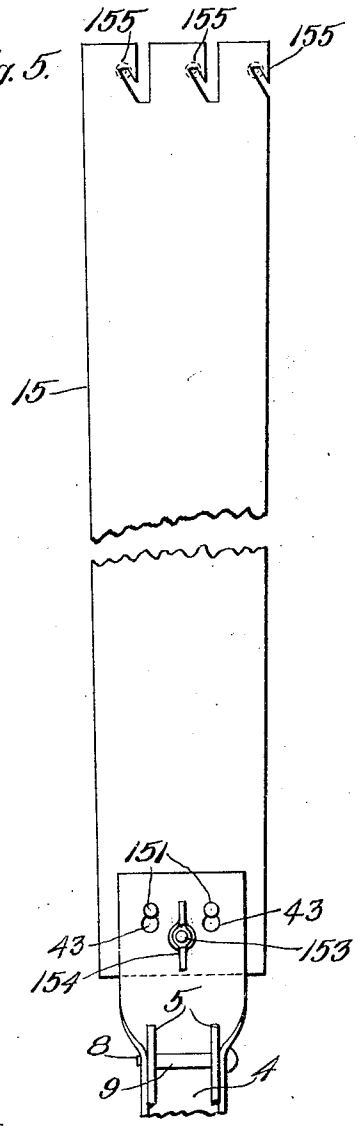
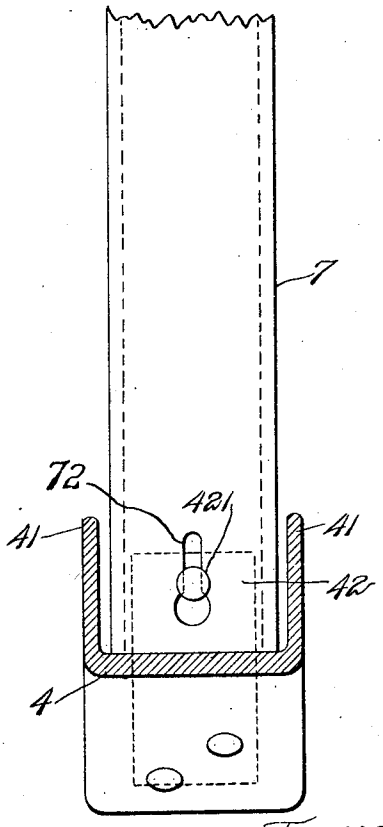


Fig. 6.



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UNITED STATES PATENT OFFICE.

ALONZO P. HENDERSON, OF HANOVER, MASSACHUSETTS.

ROOFING BRACKET.

Application filed July 31, 1926. Serial No. 126,123.

An embodiment of the invention is shown in the accompanying drawings, in which latter,—

Fig. 1 shows a portion of a shingled roof in vertical section, and a roofing bracket including the said embodiment of the invention.

Fig. 2 is a view showing in vertical section on a scale larger than that of Fig. 1 certain of the parts of Fig. 1, namely the roofing bracket and the retaining strip therefor, without the scaffold boards which in Fig. 1 are shown resting on the horizontal member of the said bracket.

Fig. 3 is a view in side elevation of the folded-up bracket, and Fig. 4 is a view thereof in plan, both on a still larger scale.

Fig. 5 is a view showing on a larger scale than Fig. 4 the retaining strip and the upper end of the bracket, and illustrating the connection between said strip and the base-member of the bracket.

Fig. 6 is a view showing on a still larger scale, in cross-section on line 6, 6, of Fig. 2, the lower portions of the base-member of the bracket and of the strut-member, and illustrating the connection between the said two members.

Fig. 1 presents a conventional showing of slates, or conceivably shingles 1, 1, overlying roofing boards 2, 2, supported by inclined timbers 3, 3, of a roof. The bracket which is shown applied to the roof in Fig. 1 and shown separately in Fig. 2 comprises (1) the base-member 4, which in the use of the bracket lies upon the inclined exposed surfaces of the slates or shingles which already have been applied and attached to the roof, (2) the member 5 which in the use of the device occupies a horizontal or substantially horizontal position as in Fig. 1, suitable for supporting the boards 6 of a platform or staging, and (3) the strut-member 7, which in the use of the device occupies an upright or substantially upright position, supporting the board-supporting member 5 in the said horizontal or substantially horizontal position.

The bracket shown in the drawings is of folding construction, in order that when not in use it may be folded up into small compass for convenience in carrying it about from place to place, and in storing it. The capacity for folding and unfolding is provided for by means of a hinge-connection, as at 8, Figs. 1 to 4, of one end of the board-supporting member 5 with that end-portion of the base-member 4 which, while the bracket is in place upon a roof, is the upper or more elevated end of said base-member; further, by means of a hinge-connection, as at 10, between the opposite end of the board-supporting member 5 and one end of strut-member 7; and further by making the engagement of the other end of the strut-member 7 with the base-member, for holding the parts in working relation with respect to one another as in Figs. 1 and 2, a detachable one.

One portion of the invention resides in a special construction and interrelationship of the elements 4, 5, 7 composing the folding bracket.

In accordance with the invention I employ as a base-member 4 a strip of sheet-metal having the opposite longitudinal marginal portions thereof bent at right angles to the intermediate portion so that they constitute parallel side-flanges 41, 41, which extend from that end of the base-member which in the use of the bracket is relatively depressed to a short distance from the opposite end, giving the base-member for the greater portion of its length the shape of a channel-iron and thereby securing stiffness and strength while enabling the said member to be made quite light. The end-portion extending beyond the upturned side-flanges is flat, as shown, to permit it to be overlaid by slates or shingles of a course applied to the roof above the main portions of the bracket. The board-supporting member 5 is composed of two flat strips, parallel with each other as indicated in Figs. 4 and 5, and which are located at the inner sides of the side-flanges of the base-member. The hinge-connection between one end of the board-supporting member 5 and the base-member is constituted in this instance by a rivet or bolt 8 occupying holes in the side-flanges 41, 41, and in the corresponding ends of the said flat strips. A spacing sleeve 9, Figs. 2 and 4, is applied to the stem of the said rivet or bolt between the two strips to hold them apart and also hold them close to the said side-flanges. At the opposite end of board-supporting member 5 the corresponding end-portions of the two strips receive between them that end-portion of the strut-member 7 which is in hinge-connection with said member 5, such hinge-connection being established by means of a

rivet or bolt 10. The said end-portion of strut-member 7 extends sufficiently beyond the point of hinge-connection to enable such end-portion, when the parts are relatively positioned as in Figs. 1 and 2, to project above the board-supporting member 5 like a short post, far enough to constitute a stop to prevent boards 6 resting on member 5 as in Fig. 1, from falling or being knocked off from the said member. The strut-member 7 is composed of sheet-metal, bent into the shape of a channel-iron, with the strips 5, 5, applied to the outer surfaces of its parallel side-flanges, and with the hinging-rivet or bolt 10 occupying holes in the said flanges and in the strips.

In setting-up the bracket for use on a roof the board-supporting member 5 is adjusted in the required position relative to the base-member 4 and held in such relative position through engagement of the lower end of the strut-member 7 with one of a plurality of stops 42, 42, with which the base-member is provided between the side-flanges 41, 41, of the base-member. There is a series of these stops, the individual stops being respectively located at different points in the length of the base-member, in order that the strut-member may be engaged with one or another of them, as may be required in order to give the board-supporting member 5 the angular relationship with respect to the base-member which is required for supporting the said member and the boards 6 thereon in horizontal position. This adjustment will vary according to the pitch of the roof on which work is to be done. The stops in this instance are constituted by substantially L-shaped pieces which are bolted to the bottom of base-member 4, with one portion of each standing up from the said bottom. Engagement of the strut with the predetermined stop is effected by placing the lower end of the strut at the inner or upper side of the upstanding portion of such stop. To provide against accidental disconnection of the strut-member from the stop with which it is associated for the time being, headed studs 421, 421, are provided on the inner sides of the stops, and the lower end of the strut-member is formed with a keyhole-shaped slot, 72, Fig. 6, to receive the stud of the stop to which the said end is applied in the use of the bracket. See Fig. 6. The upstanding portions of the respective stops are inclined at different angles with respect to the bottom of the base-member, to suit the variations in the inclination of the strut-member in its different positions of adjustment.

The described construction of the bracket, and mode of combining the members thereof with one another, renders it possible, in folding up the bracket when the latter is not in use, to swing the strut-member 7 around hinge 10 into place between the strips composing board-supporting member 5, and then to swing the combined members 5, 7, around hinge 8 into place between side-flanges 41, 41, of base-member 4, all as shown in Figs. 3 and 4, thereby securing the compactness that is illustrated in said views.

To provide for enabling the bracket to be secured against slipping down the incline of a roof after having been applied thereto, the flat end-portion of the base-member 4 is formed with three holes 43, 43, 43, Fig. 4, which are adapted to receive the head ends of nails driven into the roof boards. The holes 43, 43, 43, are keyhole-shaped, the large portions of the said holes being adapted to permit the heads of the nails to pass therethrough, and the narrow portions or necks being adapted to engage with the stems of the nails beneath the heads thereof. This means of holding the bracket in place will be utilized when the bracket is employed in connection with the work of shingling. When it is desired to remove the bracket after the performance of the shingling operations, the bracket may be disengaged from the holding nails by sliding it upward so as to bring the enlarged portion of the holes 43, 43, 43, into position to accommodate the nail-heads, and then lifting the bracket off the nail-heads. The shingles overlying the flat end-portion of the bracket will spring sufficiently to enable the bracket to be lifted to an extent sufficient to effect the disengagement. The bracket may then be pulled down from the nail-heads and out from under the overlying shingle-ends.

Figs. 1, 2 and 5 show combined with the bracket a plate 15 such as heretofore has been employed in practice with roofing brackets in performing the work of attaching slates to a roof. For use, this plate is engaged at its lower end with the flat upper end-portion of the base-member 4 by means of two headed studs 151, 151, and a bolt 153 and thumb-nut 154 which are shown best in Fig. 5. In effecting the engagement the said headed studs are caused to occupy the two laterally-located keyhole-shaped holes 43, 43, with the necks of the studs in the narrow portions of said holes. In this relation of the parts a hole in the plate 15 registers with the intermediately located hole 43, and the bolt 153 is inserted into the registering holes, after which the nut 154 is applied and tightened. The upper end of the plate 15 is formed with hooks 155, 155, for engagement with nails 156, Fig. 1, driven into the roof boards and left with their heads slightly projecting, these nails being located at convenient points above the upper ends of the slates of a course already laid. In actual practice the plate will be laid in position over slates of one or more

courses and the nails 156 will be driven within the upper ends of the oblique slots forming the hooks. The subsequent removal of the bracket from under courses of slate which have been applied over the same is effected by imparting to the bracket and plate a sufficient movement lengthwise of the plate (upward along the roof) to disengage the hooks from the nails. In this upward movement the lower inclined walls of the slots forming the hooks slide against the nail stems and thereby deflect the upper end of the plate sidewise sufficiently to bring the straight slots at the side of the hooks, constituting the openings of the latter, into position to receive the nail stems, which will permit the plate to be drawn downward along the roof clear of the nail stems. The use of the plate 15 in laying slate is made necessary by the fact that the slates would break if it should be attempted to spring or bend them upward for the disengagement of the bracket as in the case of shingles. Consequently, a plate which will extend above the upper ends of the last course of slates sufficiently far for engagement with nails driven into the roof boards is necessitated.

Accidental disengagement of the lower end of the plate 15 from the upper end of the base-member 4 of the bracket is provided against by so locating the holes for the bolt 153 in the lower end of the plate and in the flat portion of the base-member 4 that such holes do not register until the stems of the headed studs 151, 151, on the plate have been drawn up into the small portions of the keyhole slots 43, 43, in the flat portion of the base-member. After the bolt 153 has been passed through the registering holes, and the nut 154 has been applied and tightened up, movement of the plate endwise with reference to the base-member is impossible and accidental disengagement is guarded against.

What is claimed as the invention is:—

1. A roofing bracket composed of a trough-shaped base-member having the side-flanges thereof upturned and provided with upstanding stops in a series located intermediate said side-flanges, a board-supporting member comprising a pair of strips located at the inner sides of the said side-flanges and having pivotal connection at one end with the said side-flanges, and a trough-shaped strut-member between the said strips, pivotally engaged with the other ends of the latter, said parts adapted to fold into nested condition with the strut-member between the said strips, the strips and strut-member beween the flanges of the base-member, and the flanges of the strut-member downturned and enclosing the series of stops between them.

2. A roofing bracket composed of a trough-shaped base-member having the side-flanges thereof upturned, the said member provided with upstanding stops in a series intermediate said side-flanges, a board-supporting member comprising a pair of strips located at the inner sides of the said side-flanges, a pivotal bolt connecting the said strips with the said side-flanges at one end of the said strips, a spacing sleeve on the said bolt, between the strips, and a trough-shaped strut-member between the said strips, pivotally engaged with the other ends of the latter, said parts adapted to fold into nested condition with the strut-member between the said strips, the strips and strut-member between the flanges of the base-member, and the flanges of the strut-member downturned and enclosing the series of stops between them.

3. A roofing bracket composed of a base-member having strut-engaging stops provided with headed studs, a board-supporting member pivotally combined with said base-member, and a strut-member having pivotal connection at one end thereof with said board-supporting member, with its other end formed with keyhole slots and adapted to be engaged by the latter end with said strut-engaging headed studs, respectively, by a swinging movement about its pivotal connection, followed by a longitudinal movement toward the said base-member.

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