

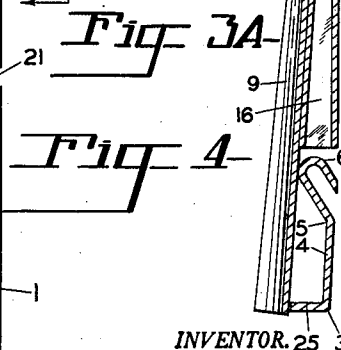
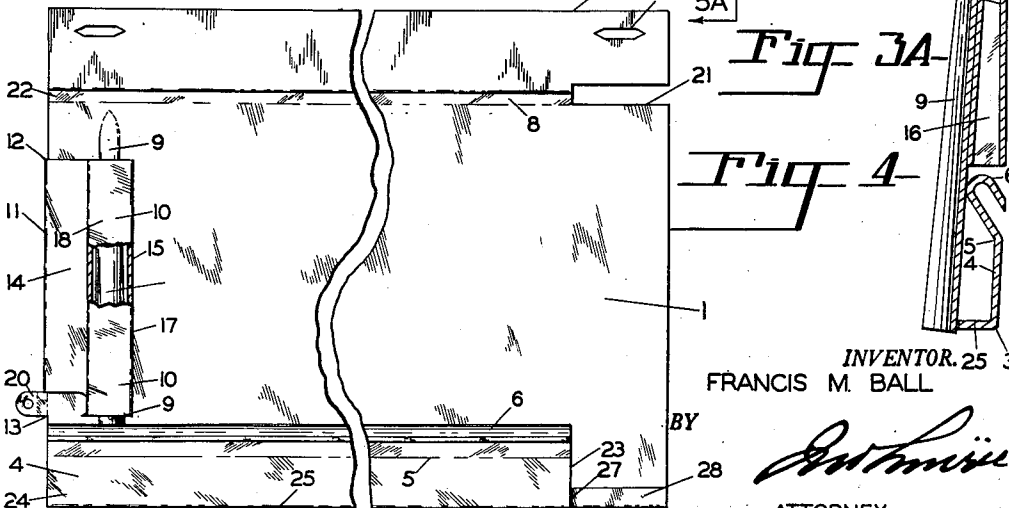
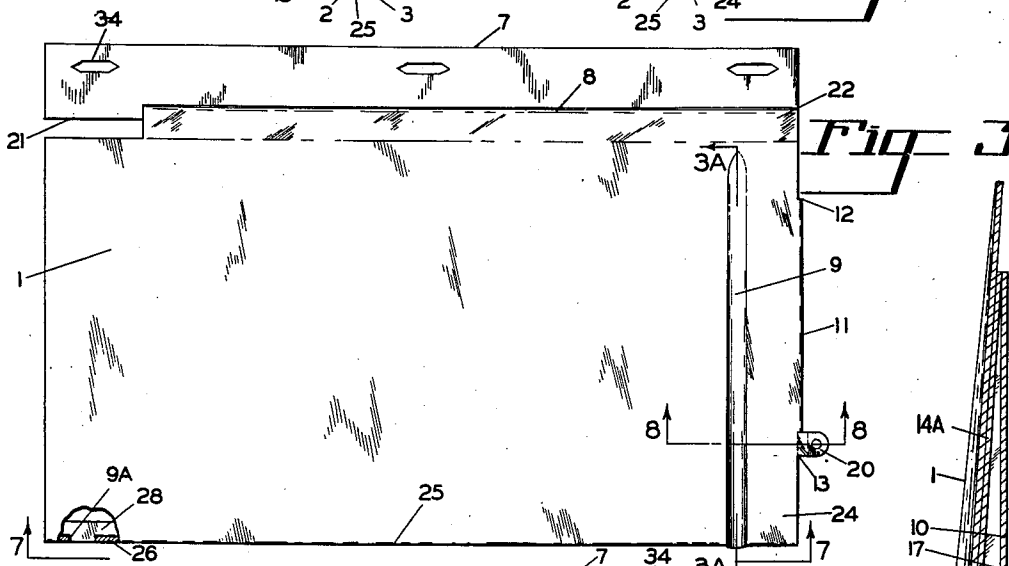
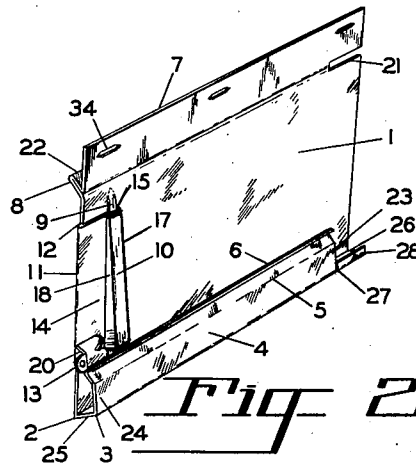
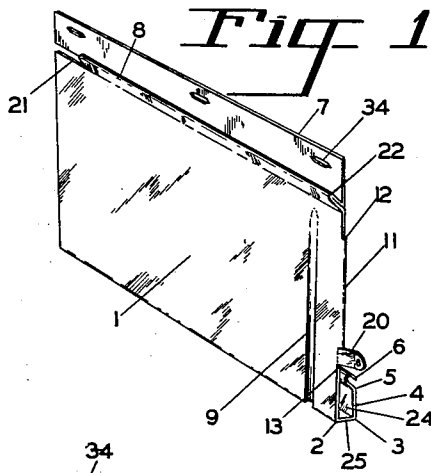
Oct. 29, 1957

F. M. BALL
SHINGLES

2,811,118

Filed July 13, 1953

3 Sheets-Sheet 1



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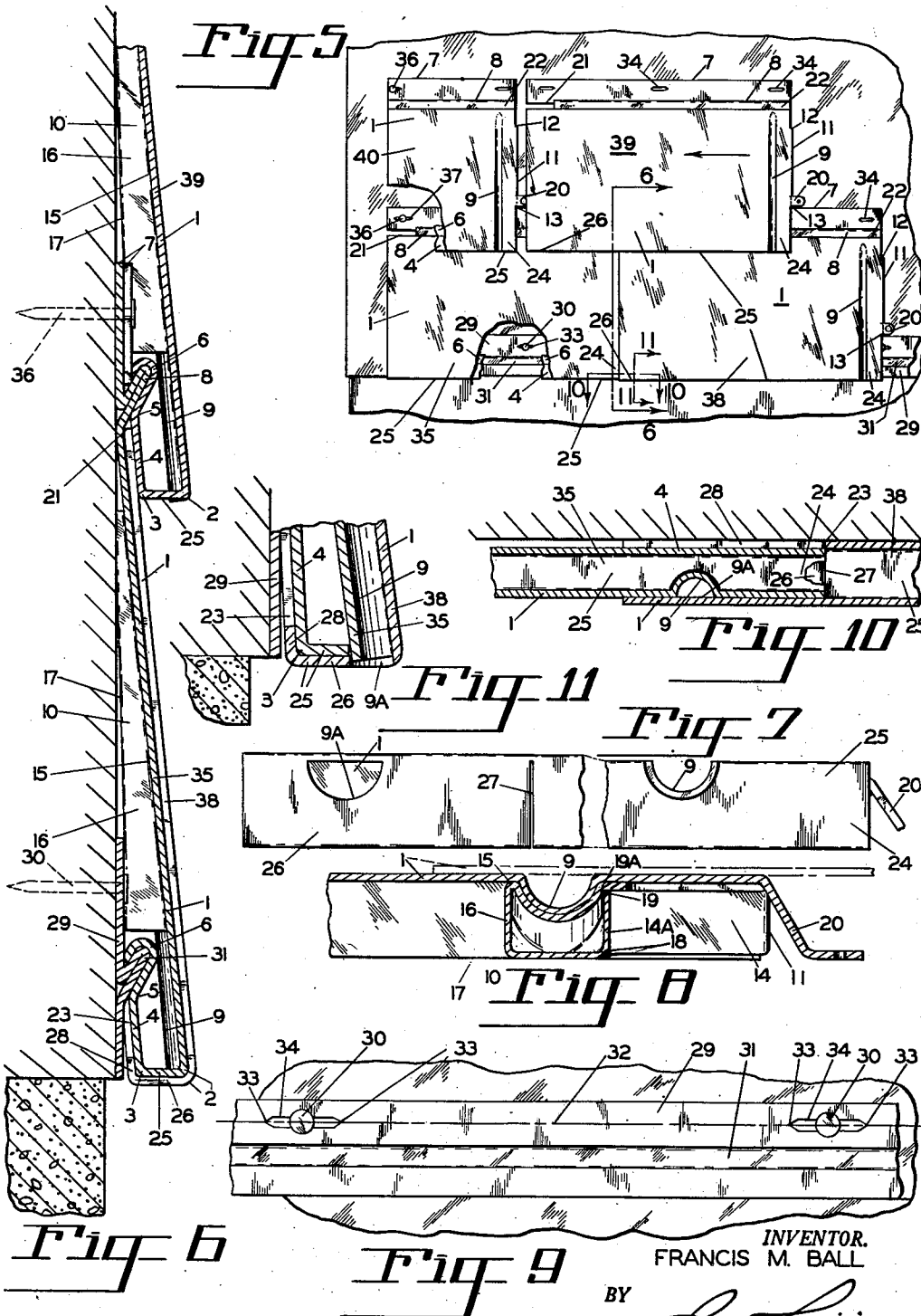
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Fig 12

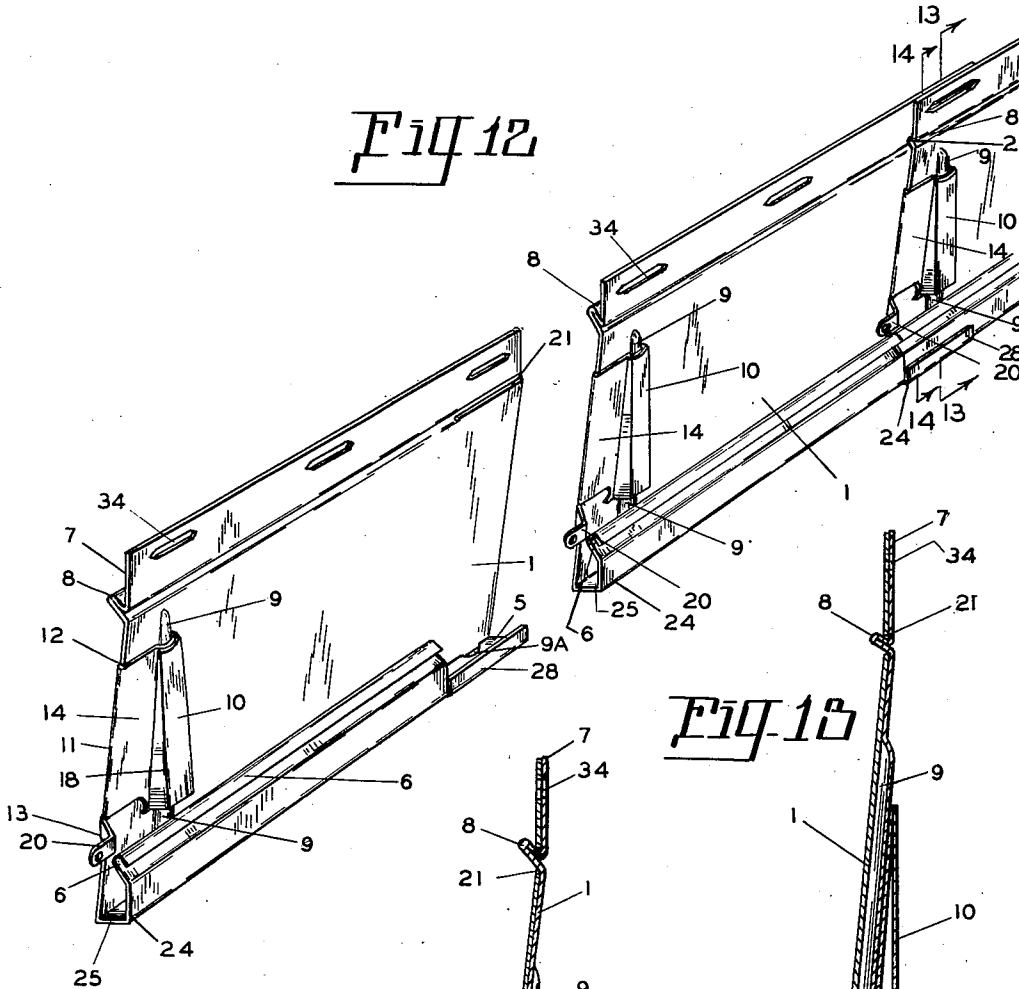


Fig 13

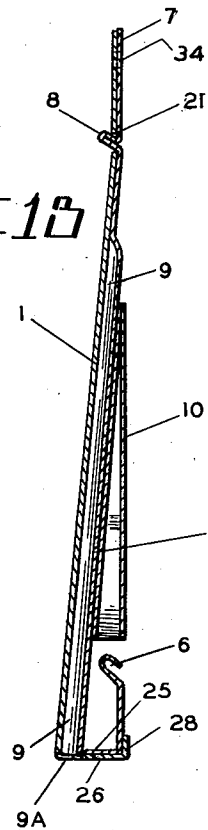
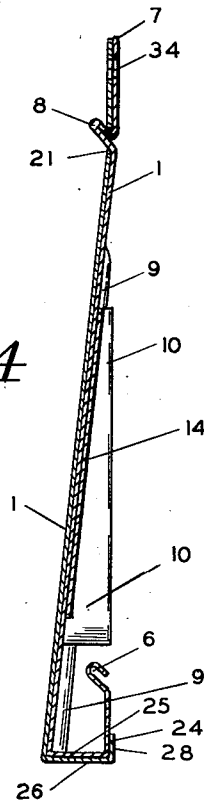


Fig 14



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2,811,118

SHINGLES

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3 Claims. (Cl. 108—17)

My invention relates to improvements in one piece metal shingles.

The primary object of my invention is to so design a shingle which can be interlocked and interchangeable.

Another object of my invention is to provide a shingle having a pleasing appearance, due to the shadow lines made possible by the detail of construction.

A further object of my invention is to design shingles which will interlock one with the other, adding greatly to the ability to secure the same to the building.

A still further object of the invention is to design a shingle of such dimensions that it will conform to uneven surfaces without distorting the shingle.

A further object of my invention is to design a shingle that will adjust itself to expansion and contraction caused by temperature variations.

Another object of my invention is to construct a shingle with a reinforcement to resist outside forces from distorting the shape of the shingle.

And a still further object of my invention is the design of a shingle that inexperienced workmen can install.

These and other incidental objects will be apparent in the drawings, specification and claims.

Referring to the drawings:

Figure 1 is a front perspective view of my new and improved shingle.

Figure 2 is a rear or back perspective view of my new and improved shingle.

Figure 3 is a front view of my shingle, parts broken away for convenience of illustration.

Figure 3A is an end sectional view, taken on line 3A—3A of Figure 3, looking in the direction indicated.

Figure 4 is a rear view of my shingle, partially broken away for convenience of illustration.

Figure 5 is a front view showing several shingles installed on a wall or roof surface, and how the shingles are assembled.

Figure 6 is a fragmentary enlarged end sectional view, taken on line 6—6 of Figure 5, looking in the direction of the arrow.

Figure 7 is an underside view, taken on line 7—7 of Figure 3 of the lower edge of the shingle, partially cut away for convenience of illustration.

Figure 8 is an enlarged fragmentary sectional view, taken on line 8—8 of Figure 3, broken lines indicating position of overlapping shingles.

Figure 9 illustrates a fragmentary portion of a starting strip for starting the first shingle.

Figure 10 is a plan sectional view taken of the end lap of the shingles, on line 10—10 of Figure 5.

Figure 11 is a section on the line 11—11 of Figure 5, illustrating the joining of the weep grooves with the bottom of the shingles.

Figure 12 is a rear partially exploded view of the shingles in their relation to one another.

Figure 13 is an end sectional view, taken on line 13—13 of Figure 12.

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Figure 14 is the same as Figure 13, only taken on line 14—14 of Figure 12.

Referring more specifically to the drawings:

My new and improved shingle consists of a metal body portion 1, bent rearwardly at 2 from the face of the shingle, slightly beyond a 90° bend, then bent upwardly at 3 slightly less than 90° so that the material 4 will be on a plan approximately parallel to the plane of the wall surface. The portion 4 is bent towards the rear of the shingle at 5 and its terminal is reversely bent to form a horizontal hook 6. This formation forms an open channel to provide an interlock when assembling the shingles.

Spaced slightly from the upper edge 7 of the body portion is a horizontal rib 8. This rib 8 is formed by reverse bend of the metal and extends upwardly at approximately a 60° angle. The reverse bend 6 of the shingle is adapted to receive the hook 8 when the shingles are applied to the building, as will be more fully described later on.

Starting at below the rib 8 is a groove 9, which provides a drain or weeper for preventing water from entering under the shingle adjacent the end lap, when the shingles are assembled.

A reinforcing or brace member 10, referring to Figures 2 and 8 particularly, is formed adjacent one edge of the shingle. When the shingle is stamped out, a part of the metal is left on one edge of the body portion which is bent back on the body along the line 11, between the points 12 and 13, as indicated by the material 14.

Referring to Figures 2, 3A and 8, the material 14 is formed around the wall of the recess or trough 9 at 14A, then given a bend at 15, continuing at a right angle to the shingle at 16, bent parallel to the face of the body portion at 17, then bent again at 18, and terminating at 19 against the rear edge of the wall of the groove 9 as at 19A. This then forms a reinforcing member or brace for the body portion intermediate the rib 8 and the channel at the bottom. This reinforcing member holds the shingles in a definite spaced relation to the wall or roof of the building, and at the same time it reinforces the drain or weep trough 9, as shown in Figure 3.

A perforated lug or tongue 20 is cut out of the lower end of the lap 14 for holding the corner of the shingle to the wall or roof as indicated, particularly in Figures 5 and 8. An open end slot 21 is formed in the opposite edge of the body portion and is adapted to receive the end 22 of the rib next adjoining the shingle previously laid.

In vertical alignment with the open slot 21, the end of the channel wall is cut back, as indicated at 23, referring to Figure 2, which forms a seat to receive the end 24 of the previously laid shingle. The bottom 25 of a previously laid shingle is received in the seat 26 of the bottom 25, the latter being severed as shown at 27, to allow for the interfit. This portion or bottom is bent up at 28 and is adapted to embrace the bent portion 4 of the next adjacent shingle, as best illustrated in Figure 6, tending to bind the shingles together.

The object of cutting the material 4 back as indicated at 23 is to permit the shingles to lap, allowing the end 24 of the previously laid shingle to abut against the material 4 at 23. An opening 9A is formed in the bottom 25 of the seat to register with the bottom of the recess or weeping groove 9, of the previously laid shingle, so that water will drain out below the shingle.

A starting strip 29 is first applied to the lower edge of the wall or roof by way of the nails 30. This strip also has a tongue 31 forming part thereof and is adapted to receive the hook or bend 6 formed on the upper edge of the channel. The starting strip 29 is leveled or centered

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by using a chalk line 32, indicated by broken lines, along the edge of the roof or wall of the building. The chalk line lining up with the points 33 formed in the openings 34 through which the nails 30 pass in applying the same to the roof or wall.

The elongated holes 34 allow for expansion and contraction of the shingles. The elongated holes are also formed on the upper edge of the shingles themselves. When the nails are driven, they are not set tight, thus permitting a limited movement.

I will now describe how the shingles are applied to the wall or roof of a building. The starting strip 29 is first applied to the lower edge of the roof or wall and aligned by the chalk line 32, after which the nails 30 are driven in, holding the same in place. The shingles are laid from left to right as shown in Figure 5.

Referring particularly to Figure 5, the shingle 35 was first secured in place, its hook 6 on the back of the shingle engaged the tongue 31 of the starting strip 29, after which the nail 36 was driven through the opening 37. The edge of shingle 38 was forced over the right hand edge of shingle 35, hence the channel of said shingle 35 rests in the seat or channel of shingle 38, and the horizontal rib 8 of the shingle 38 engaged the open slot 21 of shingle 35.

Figure 5 also shows how the next upper layer of shingles are assembled. For instance the hook 6 of the channel of shingle 40 engages over the horizontal rib 8 of shingle 35. The shingle 39 is slid over the edge of shingle 40, as previously described with reference to shingle 38.

Thus it will be seen when all the shingles are assembled, they slant outwardly from the wall or roof surface, the braces 3 serving to form a substantial support between the surface and the body portions, as clearly shown in Figure 6. It will be seen that the condensation under the shingles will flow in the recesses 9 and out at the bottom of the channel, thus maintaining a dry ventilated condition under the shingle.

In Figures 6 and 10, the end of the cut back 23 will engage the end 24 of the previously laid shingle, spacing the shingles with regard to one another. The last laid shingle will lap the previously laid shingle sufficient to cover the drain or weeping groove 9, the groove 9 preventing water from passing through the lap, the water being drained out through the opening 9A formed in the channels.

As the shingles are brought into place, the tongue 20 will be nailed down. When the last row of shingle is placed, nails 36 will be driven into the balance of the openings of the previously laid shingles.

In the drawings, the thickness of the shingles is considerably out of proportion. The metal used in these shingles is relatively thin therefore the placing of the channel of the shingle one within the other is a relatively easy matter and by the slitting of the channel of the shingle at 27 and cutting back of the channel to the bend 23, the operator can spring this portion of the shingle sufficiently to insert the said portion over the end of the previously laid shingle.

What I claim is:

1. A one-piece metal shingle comprising a generally rectangular body portion having a rib on the front and spaced from the upper edge thereof and an open slot in

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one side edge thereof in horizontal alignment with said rib, the lower edge portion of said body being bent rearwardly then upwardly to form a channel and then toward the front and thence rearwardly to provide a hook along the lower edge and forming a slot for receiving the rib of an adjoining shingle, said body portion having a substantially vertical groove formation in the front adjacent the other side edge thereof, the side edge portion adjacent the groove being bent rearwardly against the back and over the rear of the groove formation and then bent back toward said side edge to form a brace, the bottom of the brace terminating above the channel, the rear wall of the channel at one end being cut away and the rearwardly extending portion defining a seat, and a drain opening in the seat.

2. A one-piece metal shingle, comprising a generally rectangular flat body portion, an upwardly inclined horizontal rib formed on the upper front body portion, and an open slot at one side edge of the body portion in horizontal alignment with the rib, a vertical groove formed in the body portion near the opposite side edge, the groove being open at the bottom, a channel formed at the bottom and across the rear of the body portion, the longitudinal edge portion of the channel spaced from the body portion terminating in a hook opening rearwardly and defining a slot for receiving the rib of an adjoining shingle, one portion of the channel wall spaced from said body portion and below and in line with the open slot being cut away with the web portion of said channel adjacent said recess forming a seat for an overlapping end portion of an adjoining shingle, a drain opening formed in the seat, and a brace on the rear of the body portion in alignment with the groove, said brace being located between the rib and the channel.

3. The combination of two or more like one-piece metal shingles, each said shingle comprising a body portion formed on its front face with an upwardly inclined rib, a substantially vertical groove formed in the front of the body portion, a channel across the rear of the bottom of the body portion, the longitudinal edge portion of the channel spaced from the body portion forming a hook defining a downwardly inclined slot for receiving the rib of the adjoining shingle, a seat formed at one end of the channel, a drain opening in the seat, an open slot in the side edge of the body portion in vertical alignment with the seat, a brace on the rear of the body portion intermediate the rib and the channel and tapering toward its lower end to space the lower portion of the shingle from its support, and a perforated lug extending from the edge of the body portion, laterally adjacent shingles being overlapped with the end portion of one shingle inserted in the open slot and nested in the seat of the adjoining shingle and vertically adjacent shingles interlocked by their respective rib and hook, and means extending through the perforated lugs for securing the shingles to their support.

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