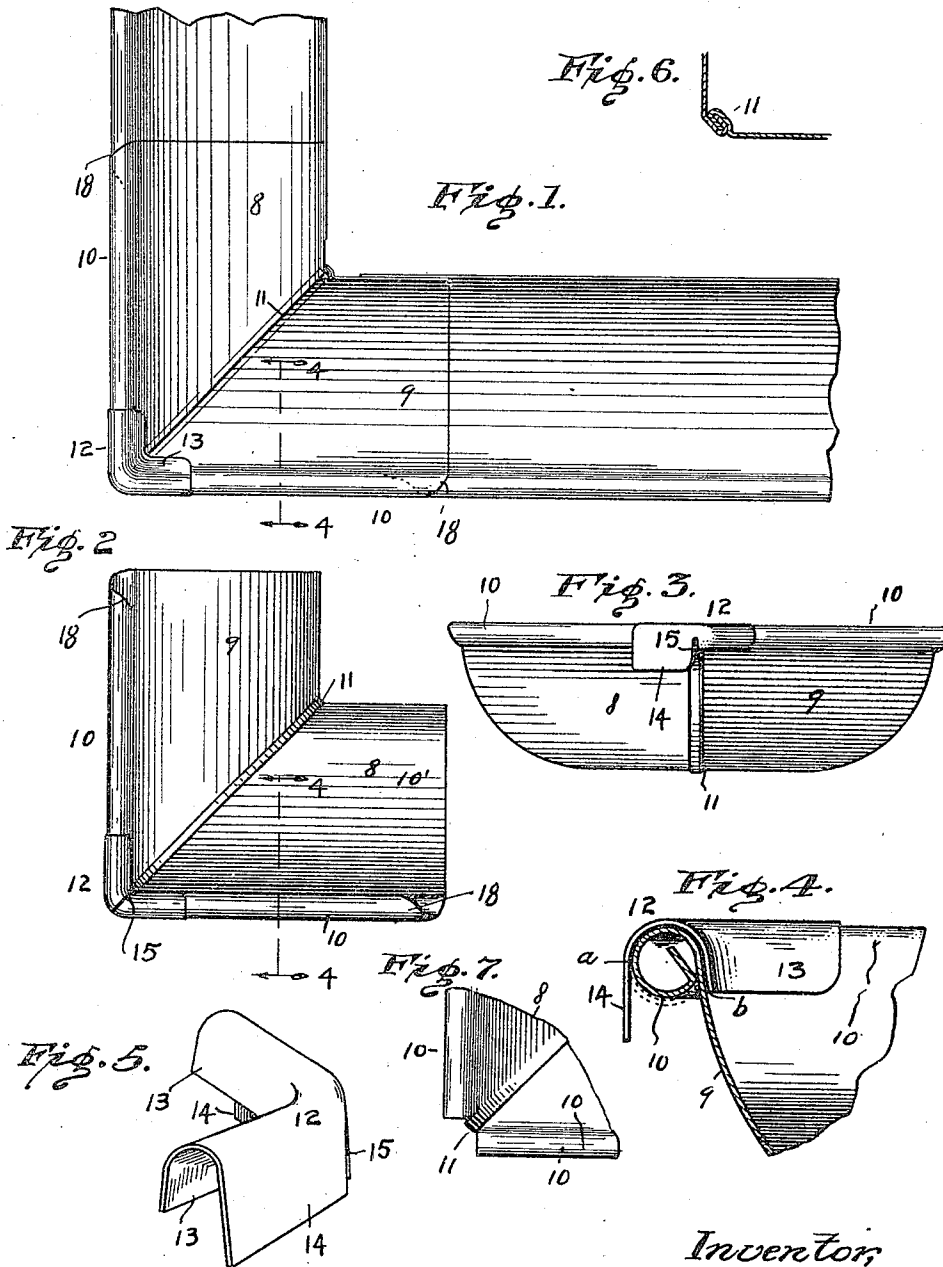


M. R. WILLIAMS.
MITER JOINT FOR GUTTERS.
APPLICATION FILED MAY 22, 1916.

1,205,302.

Patented Nov. 21, 1916.



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UNITED STATES PATENT OFFICE.

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MITER-JOINT FOR GUTTERS.

1,205,302.

Specification of Letters Patent.

Patented Nov. 21, 1916.

Application filed May 22, 1916. Serial No. 99,227.

To all whom it may concern:

Be it known that I, MARSHALL R. WILLIAMS, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Miter-Joints for Gutters, of which the following is a specification.

This invention relates to improvements in miter-joints for half round gutters for the roofs of buildings, and the object is to provide a lock-joint where the mitered edges meet, and a stiffening roll at the outer edges of the gutter.

A further object is to provide an angle-cap which will continue the two rolls around the corner, and which will be made out of one piece of sheet metal and will be seamless on top and within the gutter to strengthen the joint and to insure against leakage.

Another object of the invention is to so shape the ends of the rolls of the corner member of the gutter that the rolls of the sections next thereto may be easily telescoped in them in the assembly of the gutter on the building.

I accomplish the above, and other objects which will hereinafter appear, by the means illustrated in the accompanying drawing, in which—

Figure 1 is a top plan view of a gutter miter-joint embodying my invention and showing same assembled with adjacent sections of a roof gutter. Fig. 2 is an under side view of the corner section illustrated in Fig. 1. Fig. 3 is an elevation of the same corner section showing the angle-cap only partially bent into place. Fig. 4 is a section on the line 4—4 of Figs. 1 and 2, on a larger scale, showing the manner of applying the angle-cap. Fig. 5 is a perspective view of the angle-cap. Fig. 6 is a section illustrating the construction of the lock seam which unites the mitered edges of the gutter, and Fig. 7 is a top plan view of the corner of the corner-section of the gutter with the angle-cap removed.

Like characters of reference indicate like parts throughout the several views of the drawing.

For convenience in handling I prefer to make the trough members 8 and 9 next to the miter-joint comparatively short. These members are made out of sheet metal,

generally half-round in cross-section, with their outer longitudinal edges bent into cylindrical rolls 10, to stiffen and strengthen the gutter as well as to give it a finished appearance. The edges of the two sections where they come together are mitered and are bent to form hooks which engage with each other to form a lock joint 11 in the manner shown in Fig. 6. The rolls are separated by a gap at the outer corner, as shown in Fig. 7, which weakens the whole structure and particularly exposes the adjacent ends of the rolls to mutilation and distortion. To remedy this I fill the broken angle between the ends of the rolls with a cap 12 which is stamped out of a single piece of sheet metal, half round in cross section to fit close upon and against the rolls 10. This cap is bent in a curve midway of its ends to form an angular piece which is long enough over all to lap well over the adjacent ends of the two rolls 10. The sides of the cap which enter the trough are extended to form an apron 13, and this apron as well as the half round portion of the cap are jointless by reason of the sheet metal being expanded over the larger arcs of the bend and compressed in the shorter ones in the operation of stamping the cap.

The extensions forming the sides 14 of the cap, being those which go outside of the gutter, remain straight until after the cap is placed on the gutter, as shown in Fig. 4, after which they are bent against the roll in the continuation of a cylinder as shown in dotted lines in Fig. 4. The outside member 14 is split opposite the longitudinal bend of the cap from the edge of the member in to the half round portion, as shown at 15, forming two aprons which are adapted thereby to be more readily bent into contact with their respective rolls. Before the aprons or sides 14 are bent into contact with their rolls, the cap is soldered to the gutter around the edges of the inner apron 13 and continuously of the ends of the cap for the extent of its half round portion as shown from *a* to *b*, in Fig. 4 in order to hold the cap in place. Then the outside aprons 14 are bent and wrapped around their respective rolls where they will remain without soldering, and the miter joint is reinforced and strengthened and the ends of the rolls are protected and a water tight cap is provided.

To enable the next sections to be assembled readily and properly, with the rolls of the adjacent sections telescoping with those of the corner member, I prefer to finish the 5 outer ends of the rolls in spiral shape 18 which materially aids in guiding the other rolls into them. This is of consequence because the assembly is done on the building where the workman is working at an elevation 10 above the ground and frequently at a disadvantage.

I have shown my device as applied to a gutter at an outer corner of a building, but it is equally applicable to gutters at an inner 15 corner, as where a valley discharges into a gutter, the rolls and cap then being on the opposite side from that here shown.

Having thus fully described my invention what I claim as new and wish to secure by 20 Letters Patent, is—

1. In a miter joint for gutters, the combination with a half-round gutter having a lock-seam uniting the mitered edges, and having cylindrical rolls at the outer edges 25 of the gutter, of a one-piece cap bent half round in cross section to fit the top of the gutter rolls and also bent to form a con-

tinuation of the two rolls, said cap having an apron continuous with said half round portion extending into the gutter and soldered thereto, said cap also having a pair 30 of outside aprons which are clenched to respective rolls on each side of the miter by being bent under said rolls.

2. A pair of short half round gutter members having adjacent mitered ends united 35 by a lock-joint, each member having an outside edge-roll terminating with a gap between them at the joint and having spiral outer ends, in combination with a one piece 40 cap overlapping both rolls and bent to form a continuation thereof, said cap being formed half-round in cross section with extended sides forming aprons of which an inner one is soldered to the inner wall of 45 the gutter and outer ones of which are bent to conform to the contour of their respective rolls.

In witness whereof I have hereunto set my hand and seal at Terre Haute, Indiana, 50 this 12th day of May, A. D. one thousand nine hundred and sixteen.

MARSHALL WILLIAMS. [L. S.]

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