No. 731,264. PATENTED JUNE 16, 1903.

G. W. ARMSTRONG & H. G. MORTON.

METALLIC ROOFING.

APPLICATION FILED FEB. 6, 1903.

NO MODEL.

Fig. 1.

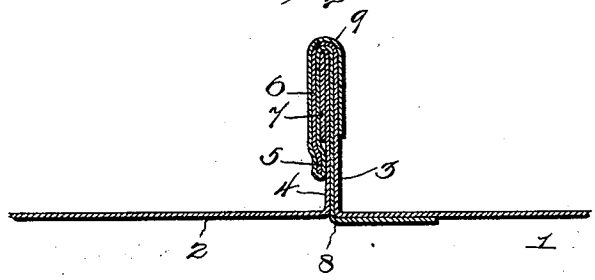


Fig. 2.

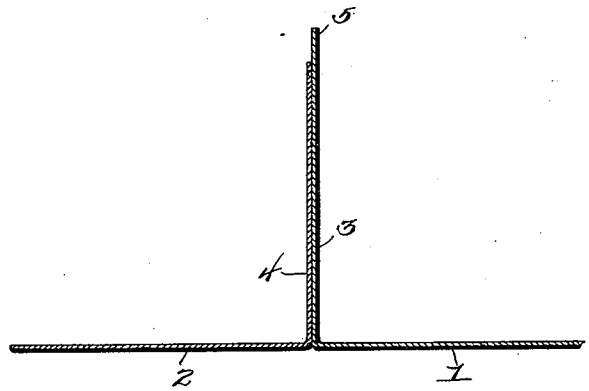


Fig. 3.

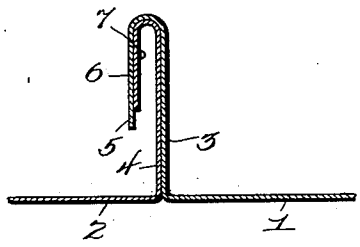
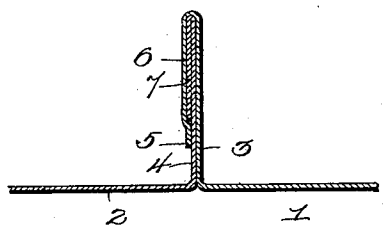


Fig. 4.



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No. 731,264. Patented June 16, 1903.

UNITED STATES PATENT OFFICE.

GEORGE W. ARMSTRONG AND HENRY G. MORTON, OF SHELBY, OHIO.

METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 731,264, dated June 16, 1903.

Application filed February 6, 1903. Serial No. 142,180. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. ARMSTRONG and HENRY G. MORTON, citizens of the United States, residing at Shelby, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Metallic Roofing, of which the following is a specification.

This invention relates to metal roofing, and has special reference to an improvement in a standing joint particularly designed for galvanized-iron and steel-plate work for roofing and analogous purposes.

To this end the invention primarily contemplates a simple, practical, and effectual type of standing joint which provides an exceptionally strong seam without the use of solder, besides reducing the possibility of leakage to a minimum.

In practice standing joints for the ordinary metal roofing are generally formed by merely folding the edge portions of adjoining sheets or plates that are turned up in the usual way. Frequently under certain conditions, especially when accumulations of snow, rain, and ice occur, these common types of folded joints leak by reason of the water creeping through the folds of the standing joint. Another point of importance in joints of this character is the expensive use of solder, which is an item of considerable expense. The present invention obviates these objections to the ordinary standing joints for metal roofing-plates, while at the same time providing a construction of exceptional strength particularly adapted for galvanized-iron and steel-plate work, as stated.

With these and many other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, as will be hereinafter more fully described, illustrated, and claimed.

The essential feature of the invention involved in the relation of the joint-flanges of the upstanding members of the plates may be susceptible to slight structural modification; but a preferred embodiment of the invention is shown in the accompanying drawings, in which—

Figure 1 is a sectional view of a standing joint for roofing-plates, the line of section including one of the usual holddown-straps. Fig. 2 is a detail sectional view showing the first stage in the formation of one of the improved standing joints contemplated by the present invention. Fig. 3 is a view illustrating the second stage in the folding of the joint-flanges of the seam members. Fig. 4 is a sectional view showing a completed clenched joint, the line of section being at a point where one of the holddown-straps is not located.

Like reference-numerals designate corresponding parts throughout the several figures of the drawings.

In carrying out the invention there is no change involved in the method of fastening the roof-plates in position upon a roof or other part of a building nor in the general form and extent of the plates Hence for illustrative purposes there is shown in the drawings a portion of two adjoining roof-plates 1 and 2, preferably of galvanized iron or steel. The adjoining roof-plates 1 and 2 are provided at their adjacent and meeting edges with the bent-up or upstanding seam members 3 and 4, respectively, which closely and flatly abut to provide a standing seam or joint disposed at substantially right angles to the plane of the body portions of the plates 1 and 2.

In the carrying out of this invention the essential and distinguishing feature thereof resides in providing the upstanding seam member of one of the roof-plates—as, for instance, the member designated by the numeral 3 in the drawings—of a greater width than the adjacent abutting member 4 to produce beyond the edge of the latter an extension 5, which constitutes a sealing and guard lip for the joint. With the seam members disposed in the relation indicated in Fig. 2, which constitutes the first stage in the formation of the joint, the roofer folds or bends both seam members together in the same direction, so as to bring them down at the same side of the standing seam or joint. This is plainly shown in Fig. 3 of the drawings, and the bent-over or folded portions of the seam members constitute what may be properly termed "folded" joint-flanges 6 and 7, respectively, and even with the parts in this position the lip 5 of the seam member 3 projects beyond the adjacent edge of the seam member 4, so that when the

entire joint is tightly clamped or clenched, through the medium of a heavy pair of iron roofing-clamps, not only the joint-flanges 6 and 7 are brought tightly against the adjacent side of the standing seam, but the lip 5 is also bent against the standing seam beneath the adjacent edge of the joint-flange 7, thus effectually closing the joint and holding the same perfectly tight without the use of solder, while also effectually preventing leaking.

At such points as may be desired the ordinary holddown-straps 8 are employed. Each holddown-strap 8 is nailed to the roof or other part supporting the roof-plates and is folded with and between the coöperating element 3 4 and 6 7 of the joint, and the upper end portion of the holddown-strap (designated by the numeral 9) is rebent entirely over and upon both sides of the completed joint, as shown in Fig. 1, necessarily contributing materially to the strength and tightness thereof.

From the foregoing it is thought that the construction, use, and many advantages of the herein-described roofing will be readily apparent, and it will also be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a standing joint for metal roofing, the adjoining roof-plates having upstanding abutting seam members provided with folded joint-flanges bent at the same side of the standing seam, and one of which members is of greater width than the other to produce a sealing and guard lip bearing against the standing seam below the edge of the adjacent flange.

2. In a standing joint for metal roofing, the adjoining roof-plates having upstanding abutting seam members provided with folded joint-flanges bent at the same side of the standing seam, and one of which members is of greater width than the other to produce a sealing and guard lip bearing against the standing seam below the edge of the adjacent flange, and a holddown-strap arranged between and folded with the seam members and their folded joint-flanges, said holddown-strap having an upper portion bent entirely over and upon both sides of the joint.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE W. ARMSTRONG.
HENRY G. MORTON.

Witnesses:
KITTIE SONNANSTINE,
T. J. GREEN.