(No Model.) 2 Sheets—Sheet 1.

W. H. CUSACK.

METALLIC ROOFING SHINGLE.

No. 303,921. Patented Aug. 19, 1884.

Fig. 1.

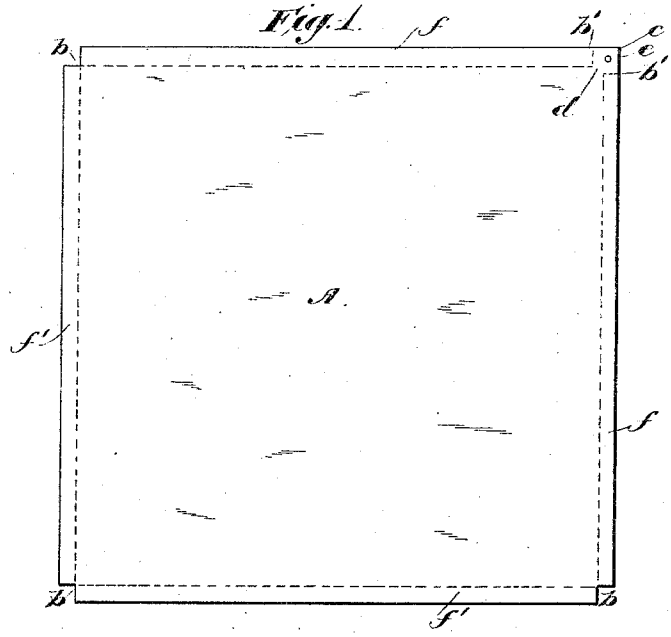
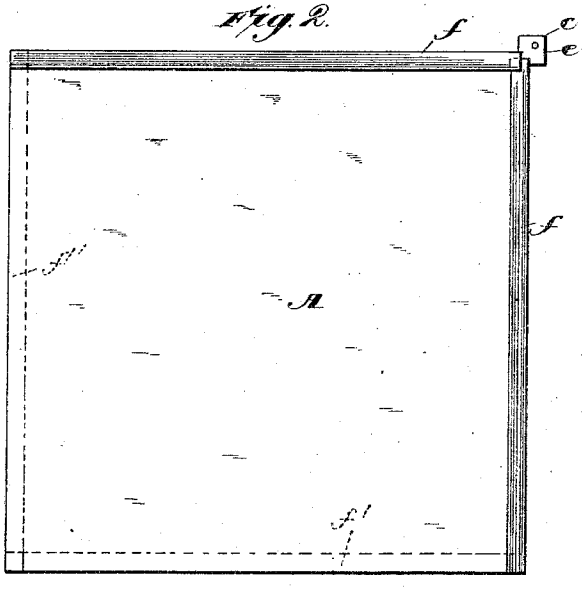


Fig. 2.



WITNESSES:

W. F. Robertson

A. Clay Smith

INVENTOR

William H. Cusack

By Munn & Co

ATTORNEY

(No Model.) 2 Sheets—Sheet 2.

W. H. CUSACK.

METALLIC ROOFING SHINGLE.

No. 303,921. Patented Aug. 19, 1884.

Fig. 3.

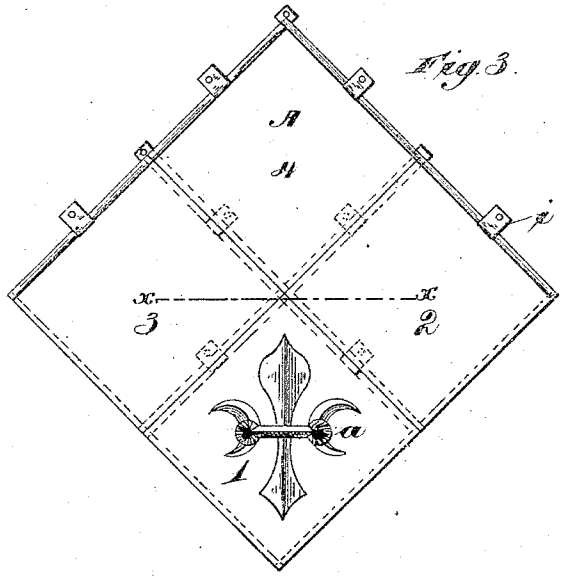


Fig. 4.

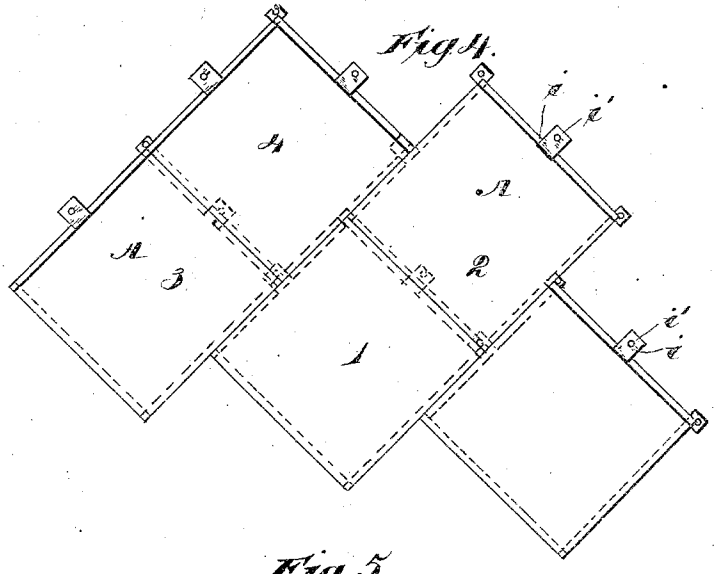
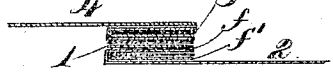


Fig. 5.



WITNESSES:

W. T. Robertson

A. Clay Goodloe

INVENTOR

William H. Cusack.

By. Munn & Co

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM H. CUSACK, OF NASHVILLE, TENNESSEE.

METALLIC ROOFING-SHINGLE.

SPECIFICATION forming part of Letters Patent No. 303,921, dated August 19, 1884.

Application filed May 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CUSACK, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Metallic Roofing-Shingles, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a roof composed of sheet-metal shingles; and the novelty consists in the construction, arrangement, and adaptation of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The essential object of the invention is to produce a roof which shall be water-tight and externally fire-proof, the said roof being formed of sheet-metal shingles, which can be conveniently packed for transportation, and which are adapted to be readily applied to a roof, the series of shingles interlocking with each other in the process of applying them in place. This general object has been before attempted and in a measure attained in square or rectangular sheet-metal shingles which have been cut from blanks to give a nailing-lug upon one side, and otherwise cut to adapt one shingle to the next one in the order of laying them; but in all such instances known to me either the blank has been cut to greatly waste the material or the interlocking parts have been so formed as to render the completed roof liable to leak.

This invention contemplates a great saving of the material and an element of safety from leakage at the joints by reason of the simplicity in which the cuts in the blank are made, and contemplates also an element of convenience in providing a securing-lug at the top corner of the shingle, so that the weight or gravity of the shingle will not tend to sag it out of place.

I have illustrated and will describe the invention as embodied in a square shingle or series of them; but it will be obvious that any rectangular form may be used.

The invention is illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view of a blank for a single shingle, showing at three of the corners a small piece cut out or cut-away, and at the right upper corner two cuts made farther from the corner point, the dotted lines showing the folding or bending points. Fig. 2 is a plan view of the same blank folded, the right and upper edges being folded in one direction to leave the securing lug or ear extended, and the other edges being folded back in the opposite direction. Fig. 3 is a section of a roof embodying my invention, one of the shingles having a struck-up ornamentation or "fleur-de-lis," which gives strength and rigidity to the shingle. Fig. 4 is a similar view, with the shingles arranged to break joints; and Fig. 5 is an enlarged edge section taken on the line *x x* of Fig. 3.

In devices of this class—that is to say, where hundreds of shingles of exactly similar construction go to make a complete whole and the articles are made in bulk for the market—a slight saving in the material or a simple cut which improves the adaptation of the shingle with its fellows is important in the art.

To bring my invention out clearly, I will describe the construction and advantages of my shingles in the order of the steps taken in their manufacture and application to form a complete roof.

Referring to the drawings, in which similar letters of reference indicate like parts in all the figures, A designates one of a series of square or rectangular metal sheets of any preferred dimensions. This sheet A, by proper machinery, is ornamented and strengthened by a struck-up figure, as *a*, in any desirable manner, the figures, of course, all being alike so that the several sheets may pack closely together. Either at the same time or subsequently, by proper machinery, a small square section is cut out of three of the corners, as seen at *b*, and two cuts, *b'*, are made in the remaining corner at such distance from the point *c* as to leave a neck, *d*, and a perforated securing-lug, *e*, intact with the blank. These cuts, which may extend inward one-half inch, (more or less,) form interlocking or engaging lips, those marked *f f* being bent forward and over and back to lie close against the face of the shingle, and those marked *f' f'* being bent in the opposite direction, the lips *f'* of one shingle being adapted to engage the lips *f* of the adjacent shingle when the roof is being

laid. This part of the invention is fully illustrated in Figs. 1 and 2, and it will be observed that each locking-lip comprises the outer edge of the blank, so that only the small portions of the three corners of each blank are cut away, and that one of the lips *f* overlaps the other lip *f* at the point adjacent to the lug *e*. These features are important, as will be shown, not only in the fact that but a very small portion of the blank is cut to waste, but that very little labor is necessary to produce the shingle in the form shown in Fig. 2. The feature of the one lip *f* overlapping the other adjacent to the lug *e* is also important for the reason that this constitutes the upper corner, the securing-corner of the shingle in the process of laying them, and is the point where leakage is most liable to occur. It will also be observed that at the three corners designated by *b* each lip folds squarely upon the other adjacent lip, and to set forth clearly the functions of these lips I will refer to Figs. 3, 4, and 5, in which four adjacent shingles are given numerals 1, 2, 3, and 4, as designating-symbols. Shingle 1 having been secured to the roof-boards, shingle 2 is brought into position, and as its lip *f'* is brought into engagement with the lip *f* of the shingle 1, its upper left-hand lip, *f*, passes under the other or overlapping lip of shingle 1 to form a considerable lap at that point. Then when shingle 3 is brought into position this lap-joint formed by the lip *f* of shingle 2 and the lip *f'* of shingle 1 is completely covered by the lip *f'* of shingle 3, thus forming three complete imperforate surfaces at each corner, with every adjacent part overlapping and breaking joints. When shingle 4 is brought into position, it gives an imperforate cover over the joints, as shown in Fig. 3. The completeness of this joint is due to the overlapping lips and to their arrangement relatively to each other.

I deem the fastening lug or ear located at the upper corner and having the relation shown to the locking-lips important. It is formed by the cut which makes the lip *f f*, and is thus brought into the position shown, wherein, as soon as the nail is driven, after the interlocking lips have been properly engaged, the gravity of the shingle tends to hold it against displacement, while if located at the right or left corner the gravity would tend to disengage the lock. I also deem this construction of the shingle important for the reason that each nail or screw used to lock a shingle in place, by reason of the arrangement of interlocking lips, is equivalent to a fastening at eight points, as will be obvious to those skilled in the art.

At *i*, I illustrate folded pieces of sheet metal, with perforations *i'*, which are used at each upper side of each shingle to secure the same to the sheathing-boards. These pieces *i* on the lip nearest the roof-boards serve efficiently to hold the shingle in place.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A roofing-shingle formed of a single sheet of metal by eight straight cuts, with interlocking lips and a securing-lug, *e*, as and for the purpose set forth.

2. The roofing-shingle described, having the overlapping and interlocking lips *f f* and *f' f'* and securing-lug *e*, the said lug and lips *f f* being formed by the straight cuts *b'*, as set forth.

3. A roofing-shingle formed of sheet metal, and having straight cuts made in each side to cut away parts, as at *b*, and having cuts, as *b'*, at a greater distance from the corner *c* to form neck *d* and lug *e*, as set forth.

4. A series of roofing-shingles, each formed of a single sheet of metal, and having strengthening struck-up figures *a*, each formed by straight cuts and bending into overlapping and interlocking lips *f f* and *f' f'* and lug *e*, and the whole adapted to serve together, as and for the purposes set forth.

5. In combination with the shingles A, having lips *f* and *f'*, and having lug *e*, the locking-pieces *i*, perforated and folded, as shown, and the whole adapted to be used as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. CUSACK.

Witnesses:
A. C. WEBB,
BEN MATTHEWS.