

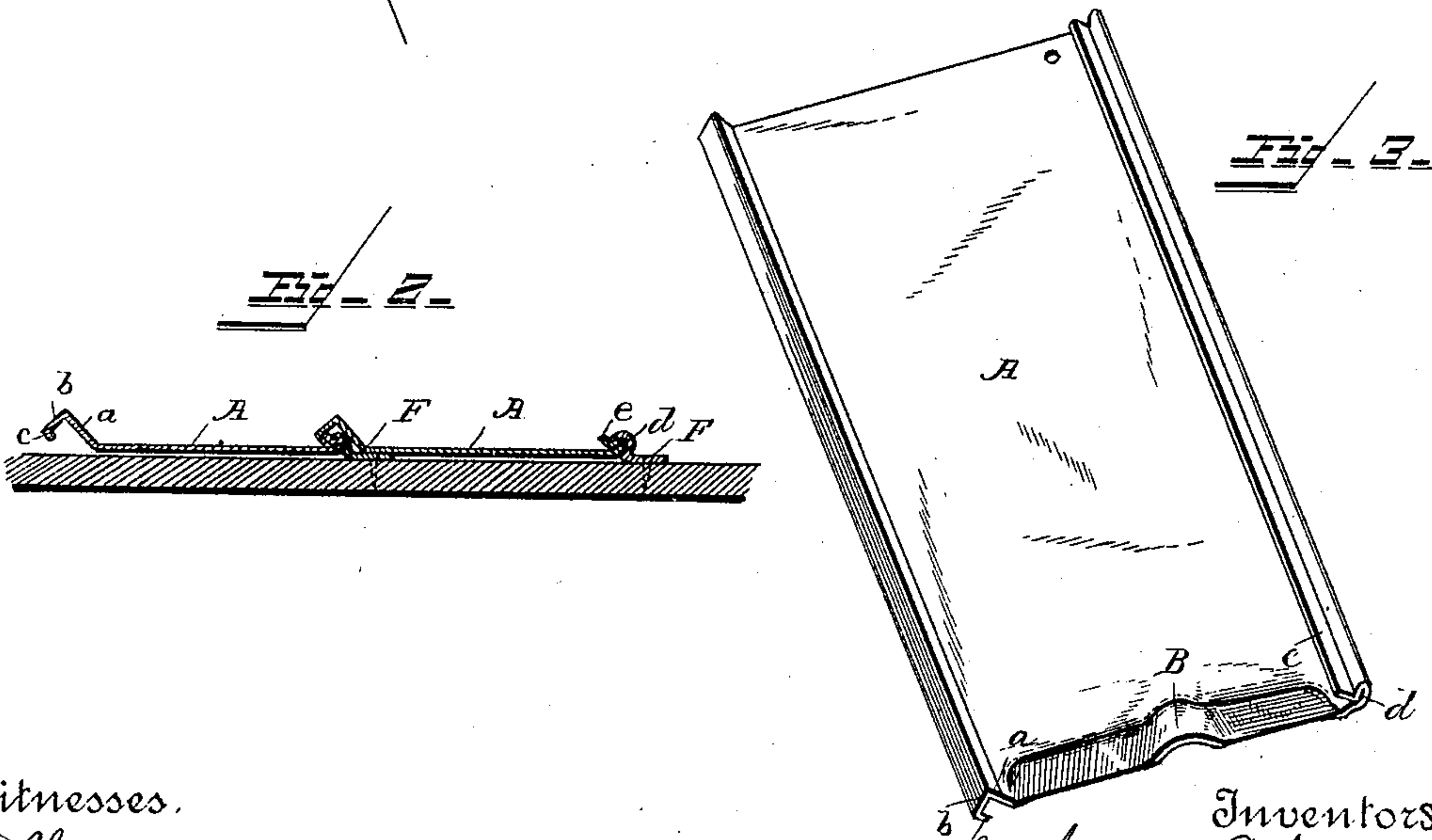
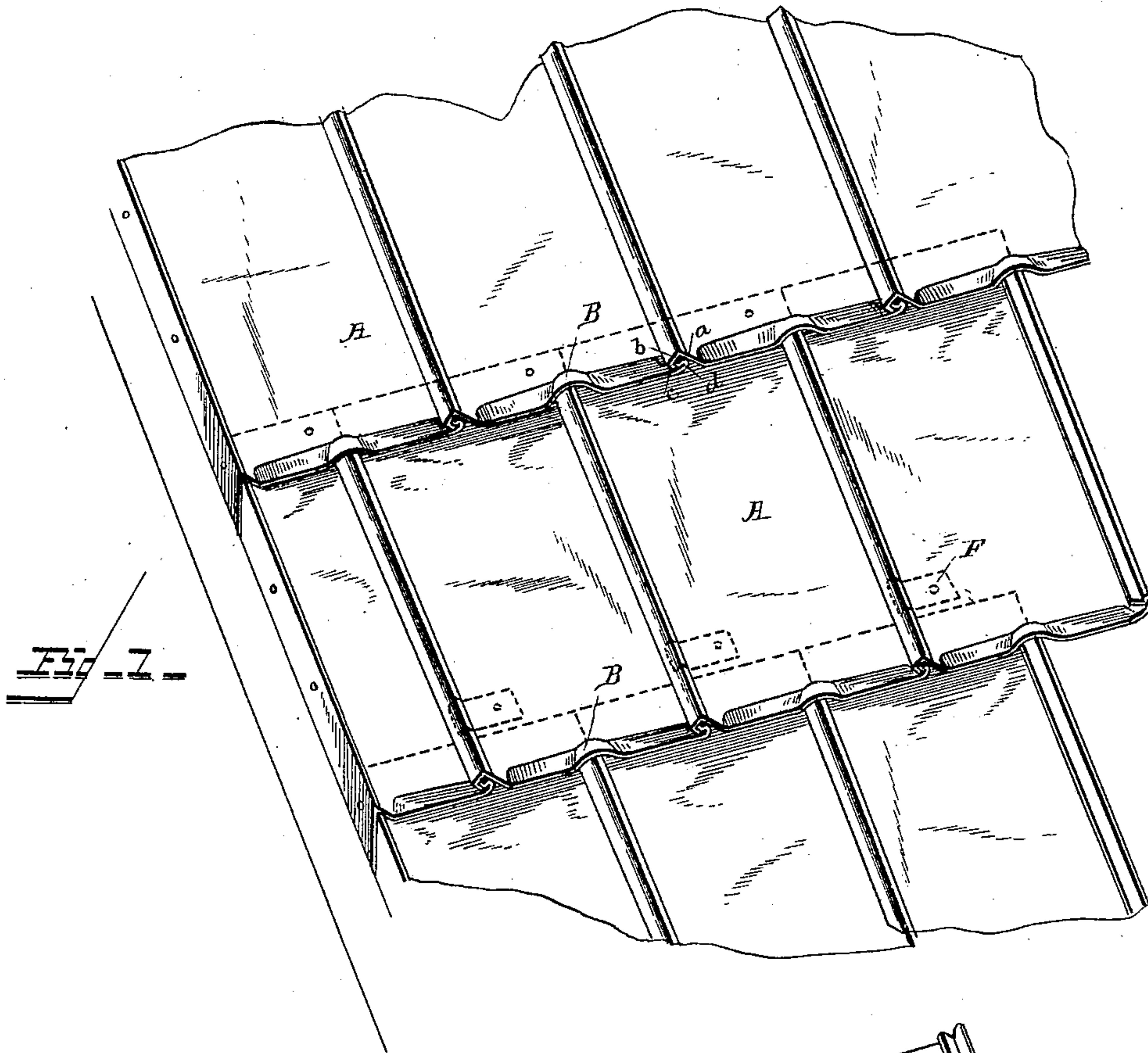
(No Model.)

W. E. WARREN & R. S. DUDLEY.

METALLIC SHINGLE.

No. 390,826.

Patented Oct. 9, 1888.



Witnesses.

*Albert Spidew.*

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By their Attorney

*Franklin H. Honger.*



# UNITED STATES PATENT OFFICE.

WILLIAM E. WARREN AND ROBERT S. DUDLEY, OF WEST POINT, VIRGINIA.

## METALLIC SHINGLE.

SPECIFICATION forming part of Letters Patent No. 390,826, dated October 9, 1888.

Application filed June 15, 1888. Serial No. 277,174. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM E. WARREN and ROBERT S. DUDLEY, citizens of the United States, residing at West Point, in the county of King William and State of Virginia, have invented certain new and useful Improvements in Metallic Shingles; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in metallic shingles of that class in which the metal of which the shingle is formed is provided with hooks or grooves along two parallel sides; and it has for its object to provide a shingle of that character that shall be simple and cheap, easily laid, and very efficient and durable in use.

To these ends and to such others as the invention may pertain the same consists in the peculiarities of construction of the shingle, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of a number of our improved shingles as applied to a roof. Fig. 2 is a sectional end view of two of our shingles interlocked and secured to the roof-boarding. Fig. 3 is a detached view, on a larger scale, of one of the shingles as it appears before it is placed upon the roof.

Reference now being had to the details of the drawings by letter, A designates our improved shingles, each of which is formed of a rectangular sheet of metal, the opposite longitudinal edges of which are bent, as shown, to form the interlocking portions. One of the said edges is formed by bending the metal outward from the body of the sheet, as shown at *a*, thence outward and at substantially right angles to the bend *a*, as seen at *b*, and then bending it again at right angles to *b* and parallel with *a*, as shown at *c*. The opposite edge has its groove or fold upon the reverse side of the body of the shingle, and it is formed by bending or creasing the metal at substantially

right angles to the body of the sheet, then back upon itself, as shown at *d*, with the free edge extended at substantially right angles to *d* and at an acute angle to the body of the sheet, as shown at *e*.

One end of the shingle is bent at substantially right angles to the body of the sheet, as shown, and is provided at this end with a projection, B, forming a groove in the bottom of the shingle to accommodate the elevated seam of the adjacent lower shingles and to allow the upper sheets or plates to rest closely upon the lower ones.

In laying shingles constructed as shown in the drawings, the left-hand shingle is first secured to the roof by means of nails in the bend along its left hand edge as shown. Then a cleat or cleats, F, are engaged with the portion *d* of the shingle at the right hand and secured to the boarding of the roof. The upper edge also of the shingle is secured to the boarding of the roof by means of nails. The flange upon the left-hand side of the next shingle is then engaged with the flange on the right-hand side of the shingle thus laid, the portion *c* thereof fitting under the portion *e* of the middle shingle, as shown, and then the right-hand edge of this shingle is secured in a similar manner to the first one. This is continued until the roof is covered, the projections B on the lower edges of the shingles fitting over the elevated seams of the shingles of the course below, as shown.

Having thus described our invention, what we claim to be new, and desire to secure by Letters Patent, is—

The improved metallic shingle described, formed at one edge with a fold formed by bending the metal at right angles to the body of the sheet, then at right angles to the first bend, then at right angles to the second bend and parallel with the first, and provided at its outer edge with a ridge, *d*, and a portion, *e*, extended at an acute angle to the body of the sheet and upon the side opposite to that upon the opposite edge, substantially as shown and described.

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

WILLIAM E. WARREN.  
ROBT. S. DUDLEY.

Witnesses:

CHARLES H. HART,  
J. E. BLUND, Jr.