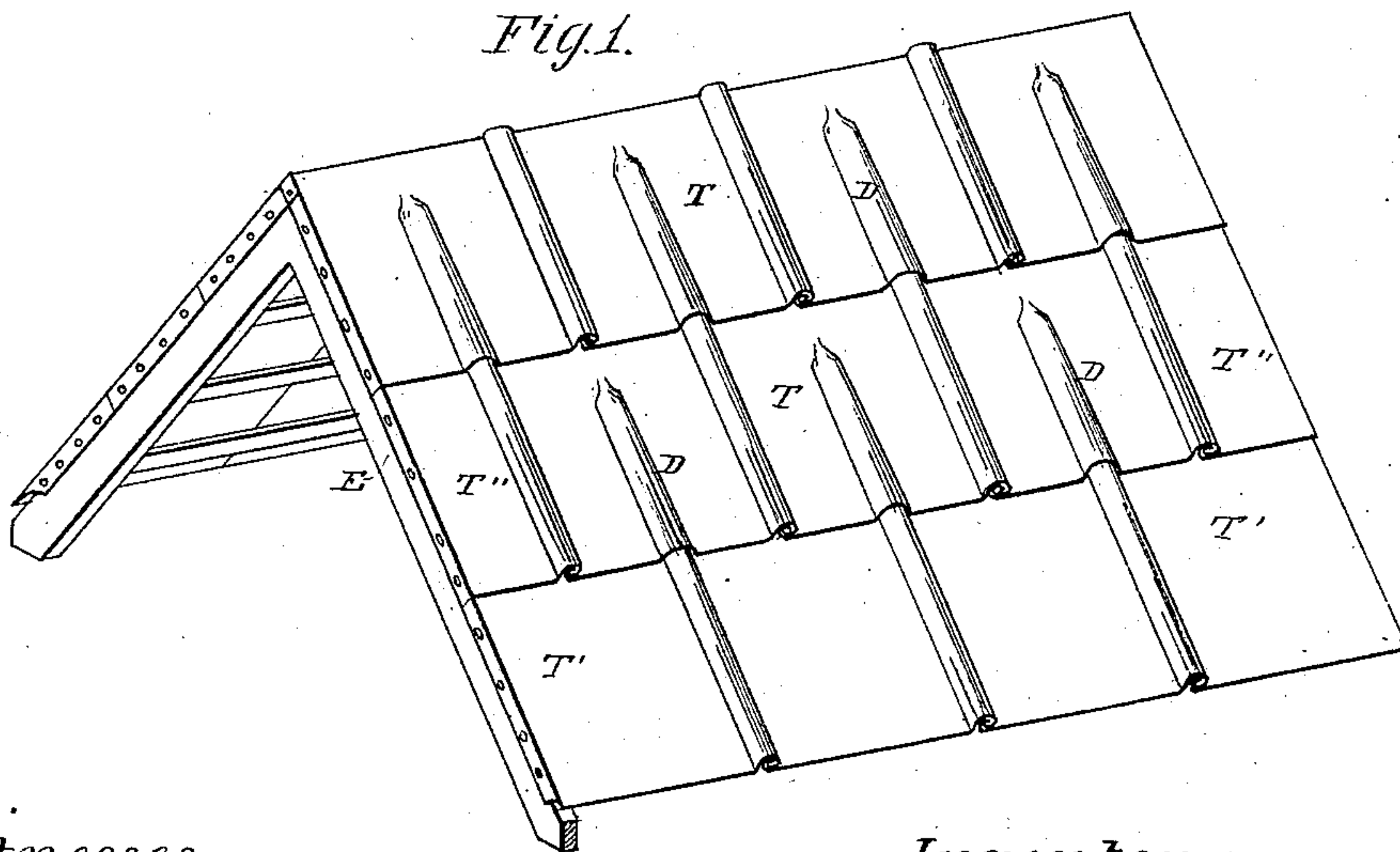
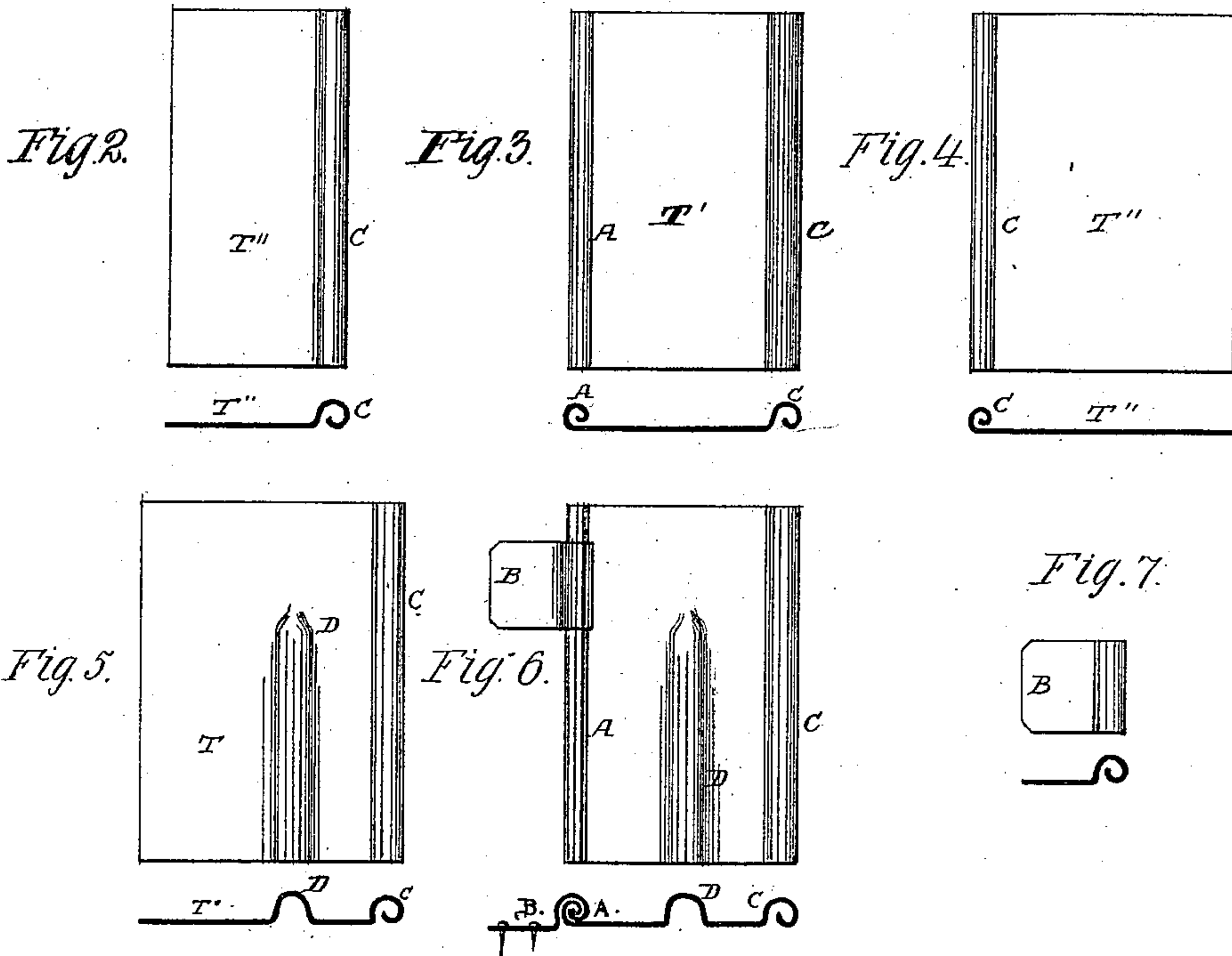


E. LOCHER & C. KNISPEL.  
METAL SHINGLES.

No. 189,115.

Patented April 3, 1877.



Witnesses:

Inventors:

Dean Tack  
Julius Bonney

Edw. Locher  
Christian Knispel

# UNITED STATES PATENT OFFICE.

EDWARD LOCHER AND CHRISTIAN KNISPEL, OF NEWARK, NEW JERSEY.

## IMPROVEMENT IN METAL SHINGLES.

Specification forming part of Letters Patent No. 189,115, dated April 3, 1877; application filed September 1, 1876.

*To all whom it may concern:*

Be it known that we, EDWARD LOCHER and CHRISTIAN KNISPEL, of the city of Newark, in the county of Essex and State of New Jersey, have invented a Metal Shingle for constructing a water and fire-proof roof without using any solder, of which the following is a specification:

The object of our invention is a metallic shingle which is durable, comparatively light, and can be cheaply and easily manufactured and applied, as hereafter shown, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view, showing a roof constructed from our improved shingles. Figs. 2, 3, 4, 5, 6, and 7, plan and edge views of the shingle, showing different forms.

The shingle consists of a metal plate, T, having at one or both edges ribs A C. B represents a small tag with a rib which fits over a corresponding rib of the plate T, as hereafter described. D is a raised rib, midway between the ribs A C of the plate T. The ribs A are formed by bending the edges of the plates to curl upward, and the ribs C by bending the edges downward, and these ribs C are made slightly larger than the ribs A, so that the latter may slide easily and fit snugly into the larger ribs C. The rib of the tag B slides over the smaller rib A, and the flat part is nailed down to the roof or rafters and prevents the slipping of the plates. The shingle T', Fig. 3, intended for the bottom of

the roof or lower course, need have no central rib D, and the side shingles T'', Figs. 2 and 4, need have but one rib, the opposite side being plain so as to facilitate bending it down and nailing to the edge of the roof, as shown in Fig. 1.

The shingles T' are placed on the lower course, the smaller hollow rib A of each shingle being slipped into the larger rib C of the next shingle. In applying the next course the side half-shingle T'' is first secured and then the shingles T successively in the same manner as the first row, the hollow ribs D receiving the ribs of the course below, so that the joints of the shingles in each row are midway between those of the other rows, permitting the desirable alternate arrangement common with ordinary shingles.

This shingle is easily made, simple in construction, only three different forms are required in making a roof, and the roof-covering is water tight, ornamental, and easily applied and removed.

We claim—

The within-described shingle, consisting of a metallic plate bent upward at one edge and downward at the other, to form plain hollow ribs A C, and having a central hollow rib, D, as set forth.

EDW. LOCHER.  
CHRISTIAN KNISPEL.

Witnesses:

JEAN TACK,  
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