

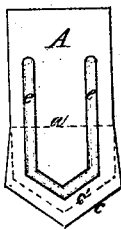
*G. W. Bliss,*

*Metallic Roofing.*

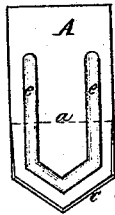
*No. 111,307.*

*Patented Jan. 31, 1871.*

*Fig. 1*



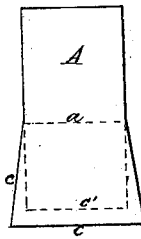
*Fig. 2*



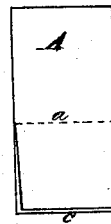
*Fig. 3*



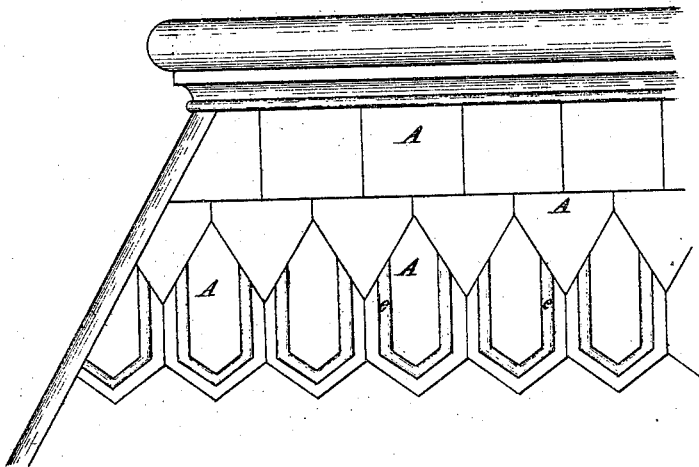
*Fig. 4*



*Fig. 5*



*Fig. 6*



*Witnesses M. L. Brynston.  
J. M. Lohrman*

*George W. Bliss, Inventor.  
By J. A. Huntis his attorney.*

# United States Patent Office.

GEORGE W. BLISS, OF SPRINGFIELD, MASSACHUSETTS.

Letters Patent No. 111,307, dated January 31, 1871.

## IMPROVEMENT IN METALLIC ROOFINGS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, GEORGE W. BLISS, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and improved Covering for Roofs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a plan view of one modification of my invention, showing its form before it is stamped up in the die;

Figure 2 is a reversed plan of the same after being stamped;

Figure 3 is a side view of the same;

Figure 4 is another modification, showing the form before it is stamped up in the die;

Figure 5 is a reversed plan of the same after being stamped; and

Figure 6 is a view of a portion of a roof covered with various modifications of my invention.

My invention relates to a covering for roofs, which is intended to take the place of common slates that are now used for that purpose; and

It consists of plates of metal, which are first cut into proper form, and are afterward placed in a die, by the action of which the edges of said plate, or a portion of the same at one end, are turned or stamped down, so as to give an appearance of sufficient thickness to the end exposed to the weather, and prevent the rain or wet from beating underneath.

The plates being flexible, they may be bent or fitted to any form of roof.

To give greater strength to the plate, if desirable, corrugations or ribs may be formed in the surface thereof, by the same die and at the same time that the edges are stamped up, and may extend longitudinally along the plate, or diagonally across it, or in any other direction; or they may be arranged in figures or patterns, so that when the covering is laid upon the roof, the corrugations may form any desired pattern, or any desired combination of patterns.

To enable others skilled in the art to make and use my invention, I will now proceed to describe the same.

In the drawing—

A represents a flat plate, which may be made of any desirable metal. I prefer iron, or galvanized iron, as being suitably flexible, and easily wrought and cut into the form shown in fig. 1, its lower end being somewhat wider than the upper part of the plate, and extending down at the pointed end, say a quarter of an inch, more or less, than the plate will be when finished.

The dotted lines *c'* in fig. 1 show the form of the

plate when finished, and the continuous line *c* shows its form before being stamped up.

The plate, as shown in fig. 1, is subjected to pressure in a die, and the surplus metal, shown by the space between the dotted line *c'* and the line *c*, is turned out to nearly a perpendicular position to the main part of the plate A.

That part of the plate below the dotted line *a* shows about the proportion of the whole plate that is exposed to the weather.

A concave groove, *e*, may be stamped in the surface of the plate, extending around the edge of that part of the plate which is exposed to the weather, or, instead of extending around the entire edge of the plate, two or more such grooves may extend longitudinally along the plate, or diagonally across it.

Any desirable pattern may be stamped upon the surface of the plate, which may be either sunken or raised upon the outside.

This pattern would serve to give the plate strength in the same manner that straight corrugations or ribs would, and the plates would present a much better appearance when laid.

In figs. 4 and 5 is represented another modification, in which the plate is made rectangular when finished, its form before being stamped up being shown in fig. 4.

The space between the dotted line *c'* and the continuous line *c* shows the surplus metal, which is turned up into a position perpendicular to the main portion of the plate, as shown clearly in fig. 5, *c* showing the turned edge.

The last-mentioned figs. 4 and 5 show the plate as plain, which, for some purposes, may be sufficiently strong without the ribs or corrugations.

Fig. 6 shows different modifications of the invention, laid upon a roof, and they may be differently corrugated or ornamented, so as to present a variety of patterns upon the same roof.

Fig. 3 shows the thickness of the plate as it appears when finished, the edge of the metal, which is turned out, being shown at *e*. This gives an appearance of thickness to the lower end of the plate when laid, and makes it stiffer than it would otherwise be, and prevents the lower end of the plate from becoming loosened, or turned up, so as to admit the rain or wet.

Even with any pattern or corrugations stamped upon the plate, it is sufficiently flexible to allow of its being bent to fit any curve or surface of any roof.

This is cheaply made, as the plate may be stamped out at the same time that the edge is turned, and the pattern or corrugations stamped upon it, the whole being made at one operation of the die; and, if made of iron, the plates may be painted sufficiently

to prevent the iron from rusting by exposure to the weather, and the plates nailed to the roof, holes being made therein for that purpose.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

An improved covering for roofs, consisting of metallic plates A, having the edges turned at c, and

either with or without the corrugations e, or patterns stamped therein, substantially as herein described and set forth.

GEORGE W. BLISS.

Witnesses:

T. A. CURTIS,  
M. L. BOYNTON.