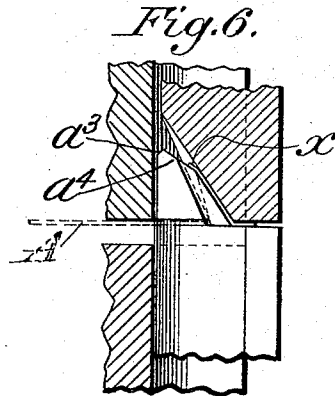
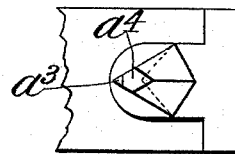
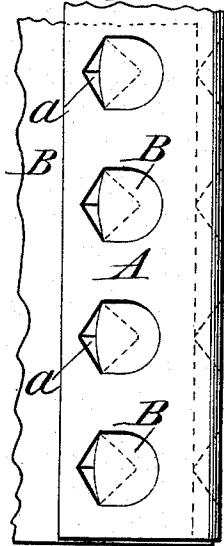
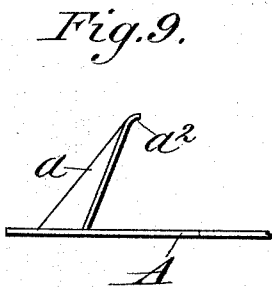
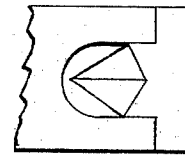
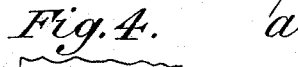
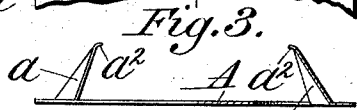
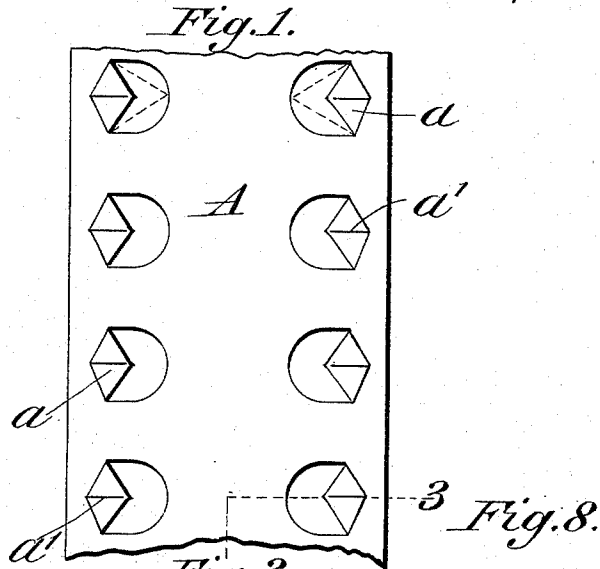
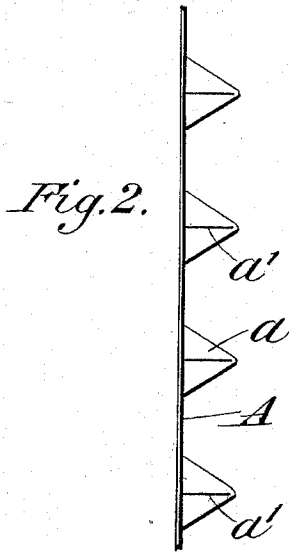


(No Model.)

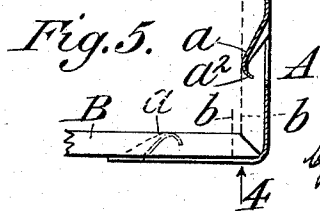
A. A. WOOD.  
BOX CORNER BINDER.

No. 527,308.

Patented Oct. 9, 1894.



Attest:  
H. H. Schott  
Frank Burroughs.



Inventor:  
Albert A. Wood  
by A. A. Wood & Son  
Attorneys

# UNITED STATES PATENT OFFICE.

ALBERT A. WOOD, OF ATLANTA, GEORGIA.

## BOX-CORNER BINDER.

SPECIFICATION forming part of Letters Patent No. 527,308, dated October 9, 1894.

Application filed February 2, 1894. Serial No. 498,905. (No model.)

### *To all whom it may concern:*

Be it known that I, ALBERT A. WOOD, a citizen of the United States, and a resident of Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Box-Corner Binders; and I do hereby declare the following to be a full, clear, and exact description of my 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 letters of reference marked thereon, which form a part of this specification.

15 The device is illustrated in the accompanying drawings, in which—

Figure 1 is a view of the side that becomes the inside of the metal strip when applied to the box. Fig. 2 is a view of the left-hand edge of the strip as shown in Fig. 1. Fig. 3 is a view of the bottom end of the strip as shown in Fig. 1, one half the figure being in section on the line 3, Fig. 1. Fig. 4 is a view of a portion of the side, at one corner, of a box, showing the strip applied, and showing the spurs by dotted lines. Fig. 5 is a top view of Fig. 4, one side of the metal strip being in section through one of the spurs, and the paper being shown by broken lines on one side. Fig. 6 is a view, partly in section, of a punch and die that will form spurs and cut away the stock around the hole. The thin metal strip is shown by broken lines, and the location of the point of the spur is indicated by  $x$ . Fig. 7 is a view of the face of the punch. Fig. 8, is a view of the face of the die. Fig. 9, is an enlarged view of one spur.

40 The last four figures are for the purpose of explaining a peculiarity of the points of the spurs.

All of the figures are very much exaggerated in size.

In practice, the width of the strip shown is about nine-sixteenths of an inch. These box corner binders are applied to boxes by being bent, as shown in Figs. 4 and 5, over the corners of paper boxes, the spurs being clinched by an anvil on the inside of the box.

50 Referring to Figs. 1 to 5, A is a strip of thin metal from which points or spurs  $a$  are

punched, taking metal therefrom as shown by broken lines at the top of Fig. 1, said spurs being bent up and inclined inwardly, as shown in Fig. 3, and bent in cross-section, as best shown in Fig. 1. The point should be somewhat weaker, in proportion to width, than the other portions of the spur, as will be hereinafter explained. It is believed that the cross-sectional bend may be of almost any form that will strengthen the spurs sufficiently to be driven through the sides of a paper box; it being essential, however, that the vicinity of the point be weaker, to resist bending strain, applied at the point, than the rest of the spur. In the preferred form shown, this weakness at the point is produced by dies that contact with the spur only about as far as indicated by the ending of the lines  $a'$ , Figs. 1 and 2. The points of said spurs are made weaker than the other portions so that the first impact on the anvil, in affixing, will cause a quick, sharp, inward bend of the spur after it passes through the paper, which, by subsequent progression or roll, is caused to re-enter the paper on the inside of the box. The small hooks or bends  $a^2$  are made on the points of the spurs, as shown in Figs. 3 and 9, so as to cause the initial bend or roll to be easily started by contact with the anvil, and to obviate all danger of backward roll of the spur. The hooks  $a^2$  are produced by beveling the point of the punch as shown at  $a^3$ , in Figs. 6 and 7, and the face  $a^4$  on the punch, that prevents pressing of the spur near the points, prevents the straightening back of these small hooks.

Besides the stock required to make the spur, as shown by broken lines in Fig. 1, the border metal is cut away, enlarging the hole, as shown in that figure, because, if no stock is cut from the hole except the spur, said spur will shear the paper in being bent back down. It is for the purpose of obviating this that the stock is cut away, and the paper may then be pressed into the hole in bending down the spur, without being sheared, and then serves to assist the point of the spur in preventing the disruption of the engagement by any force that would tend to slip the paper off the spur,—as might, otherwise, occur in case the paper B ended at the broken lines

6, Fig. 5. The necessity for this is more especially obvious when it is considered that sometimes the edges of the paper at the corners of the box are not caused to contact by the operative before the strip is affixed by the machine. As spurred strips have heretofore been employed, it has been absolutely necessary that the operative place and hold the edges of the paper at the corner of the box in contact, which obviously consumes time of both operative and machinery, and so lessens the output of boxes and increases the cost.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A binder strip consisting of a strip of thin metal, having spurs punched and bent up therefrom, the hole wherefrom said spurs

are punched being enlarged, substantially as and for the purpose specified.

2. A binder strip consisting of a strip of thin metal having spurs punched and bent up therefrom, and small hooks on the points of said spurs, substantially as specified.

3. A binder strip consisting of a thin metallic strip, having spurs punched and bent up along its edges, said spurs being strengthened by lateral bending, extending from the base nearly to the point and being left approximately flat on the point, substantially as and for the purpose specified.

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

ALBERT A. WOOD.

Witnesses:

ALBERT P. WOOD,  
EDWARD P. WOOD.