(No Model.)

E. L. CLARK.

MANUFACTURE OF BALE TIE HOOKS.

No. 363,804. Patented May 31, 1887.

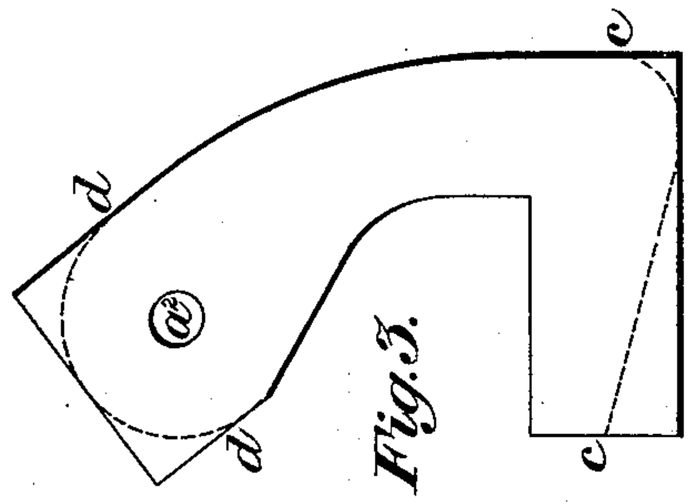

Fig. 3.

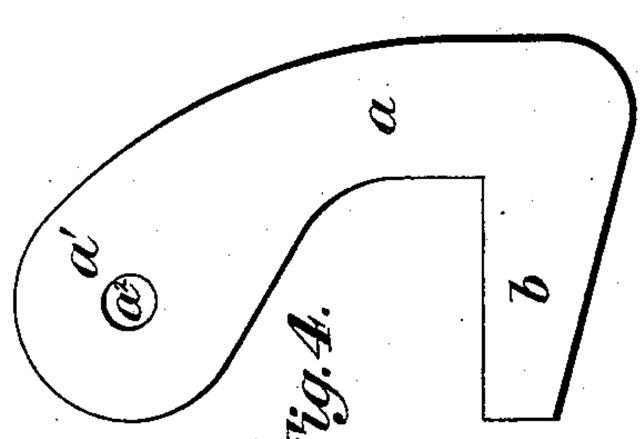

Fig. 4.

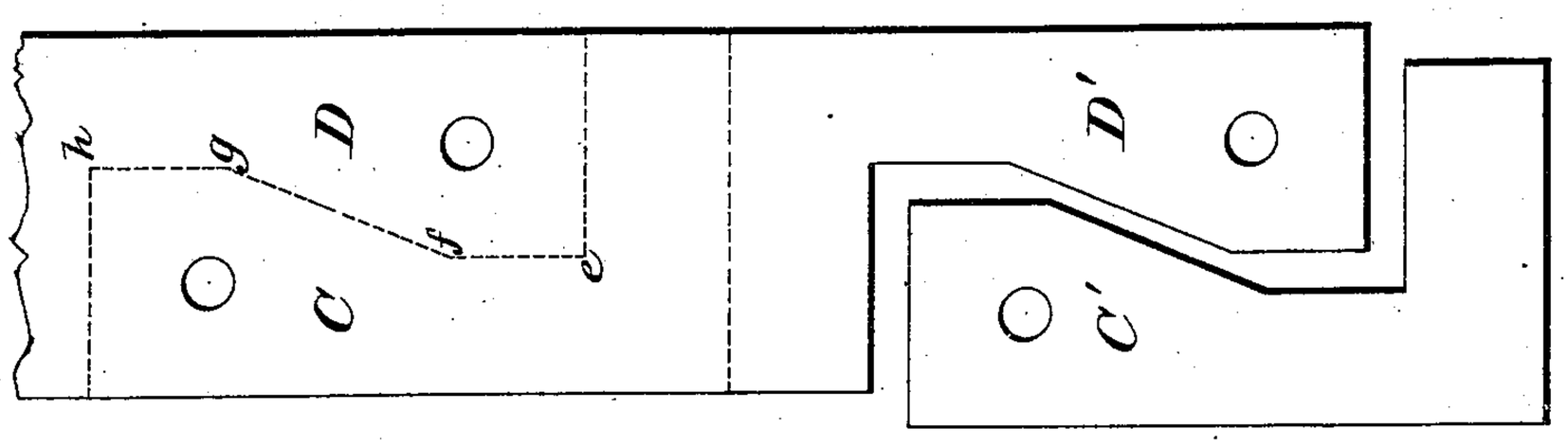

Fig. 2.

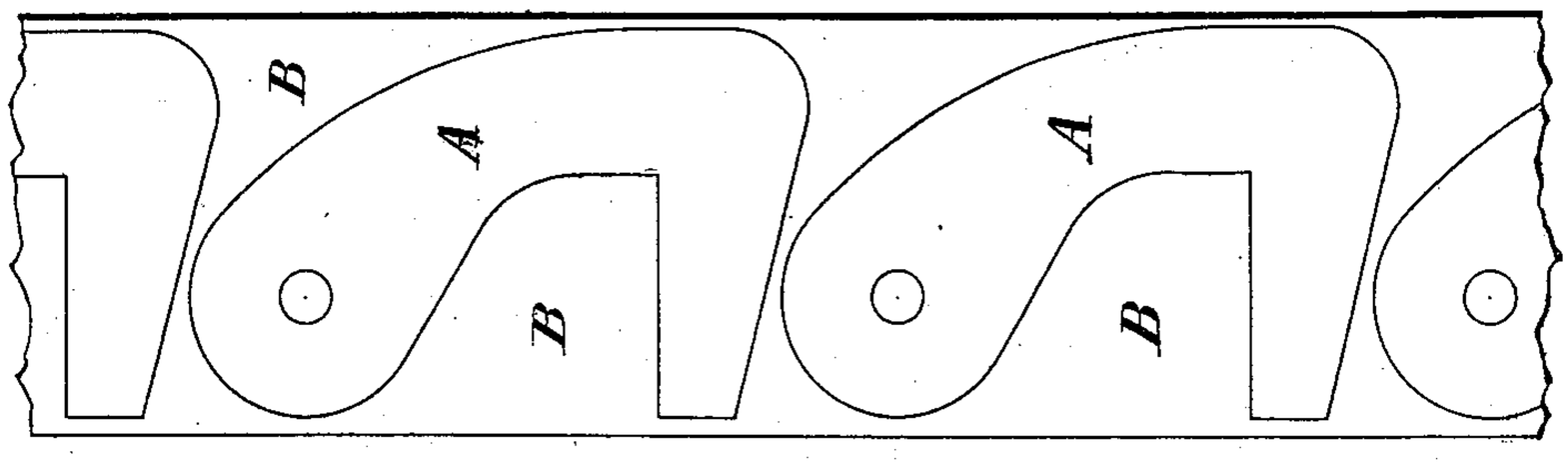

Fig. 1

Witnesses
H. L. Gill.
W. B. Corwin

Inventor.
Edward L. Clark
by Bakewell & Kerr
his Attorneys

UNITED STATES PATENT OFFICE.

EDWARD L. CLARK, OF PITTSBURG, PENNSYLVANIA.

MANUFACTURE OF BALE-TIE HOOKS.

SPECIFICATION forming part of Letters Patent No. 363,804, dated May 31, 1887.

Application filed January 8, 1887. Serial No. 223,733. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. CLARK, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Bale-Tie Hooks; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a strip of metal used in the manufacture of bale-tie hooks, indicating the method heretofore practiced of cutting out the hooks. Fig. 2 is a similar view illustrating the first step of my improved mode of manufacture. Fig. 3 is a plan view of the blank, illustrating the second step. Fig. 4 is a plan view of the finished hook.

Like symbols of reference indicate like parts in each.

My invention relates to an improvement in the manufacture of that class of bale-tie buckles shown in the patent to Field, No. 140,024, and in the patent to William Clark, No. 197,602. These buckles consist of two hook-shaped pieces of metal which are hinged together at their butts, and thus constitute a delta-shaped fastening device, which engages and holds a loop at the end of the bale-band. One of these hooks is shown in Fig. 4, in which *a* represents the shank of the hook, having a tongue, *b*, bent at right angles to it. The end *a'* of the shank *a* is preferably widened to afford greater strength, and is provided with a hole, a^2, in which is set the rivet which holds the two hooks pivotally together. To insure a proper distribution of the strain of the bale-band on the hooks, the part *a'* is curved edgewise, so that the hole a^2 shall be in substantially the same perpendicular with the center of the tongue *b*.

These hooks have commonly been made by punching them out of a strip of metal, and in practice it has been found that to punch them out in their completed state the least waste of material is had by punching them in the manner shown in Fig. 1, in which A represents the hooks, and B the metal strip from which they are punched. The amount of metal which is wasted in the form of scrap in this method is very large. In practice the waste amounts to about fifty per centum of the whole strip, and it is therefore the cause of a very considerable loss to the manufacturer.

The object of my invention is to prevent this waste. It is illustrated in Figs. 2, 3, and 4, which indicate the successive steps of the process. Instead of punching the hooks out in their final shape, I punch out blanks C D in L form, as shown in Fig. 2. The punching may easily be done by dies whose cutting-edges are in the form of the blank, and, as the lines of cleavage constitute the outlines of two adjacent blanks, there need be no scrap. Each descent of the dies, after the first blank is cut, will sever two blanks. Thus, if C' be the first blank cut, the next stroke of the dies will punch out the blank C, and will also sever the blank D', and so on at each successive cut. I then, by means of a suitable mandrel and levers, or otherwise, bend the shank of the L-shaped blank edgewise into the position shown in Fig. 3. Finally, I trim the blank, cutting it on the lines *c c* and *d d* of Fig. 3, so reducing it to the finished condition shown in Fig. 4. The final step of the manufacture is not indispensable, since the blank may be used as a bale-tie hook when it is in the shape indicated by the full lines in Fig. 3; but trimming it gives it symmetry and a more finished appearance.

In order that the ends of the shanks of the hooks may be broader than the shanks themselves, I cut the strip on the lines *e f g h*, Fig. 2, the line *e f* diverging from the line *g h*, so as to produce the desired breadth. In this way both the adjacent blanks C D are made of the same shape. I do not desire to limit myself strictly to the form of the blank, since I desire to cover, broadly, the manufacture of bale-tie hooks by first cutting out the blanks in L form from a strip of metal, so that the line of cleavage shall form the outline of two blanks, then bending the shank of the blank to the desired position, and finally, if desired, trimming the edges.

The manufacture of the ties in this way is made very easy and cheap. From the old method there is a waste of fifty per centum; but when the ties are made by my improved method and trimmed into the shape shown in

Fig. 4 the waste is only about ten per centum, and if the trimming be omitted the waste is practically nothing.

I claim—

1. An improvement in the manufacture of bale-tie hooks, consisting in cutting out blanks of an L form from a strip of metal and then bending the shank of the hook edgewise, substantially as and for the purposes described.

2. An improvement in the manufacture of bale-tie hooks, consisting in cutting out blanks of an L form from a strip of metal, then bending the shank of the hook edgewise, and finally trimming the edges of the blank, substantially as and for the purposes described.

3. An improvement in the manufacture of bale-tie hooks, consisting in first cutting out form a strip of metal blanks of L form, with the shanks thereof widened at the ends, and then bending the shanks edgewise, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 6th day of January, A. D. 1887.

EDWARD L. CLARK.

Witnesses:
W. B. CORWIN,
THOMAS W. BAKEWELL.