(No Model.)

E. MANSFIELD.

METHOD OF MAKING CANT HOOK FERRULES.

No. 383,135. Patented May 22, 1888.

Fig. 7.

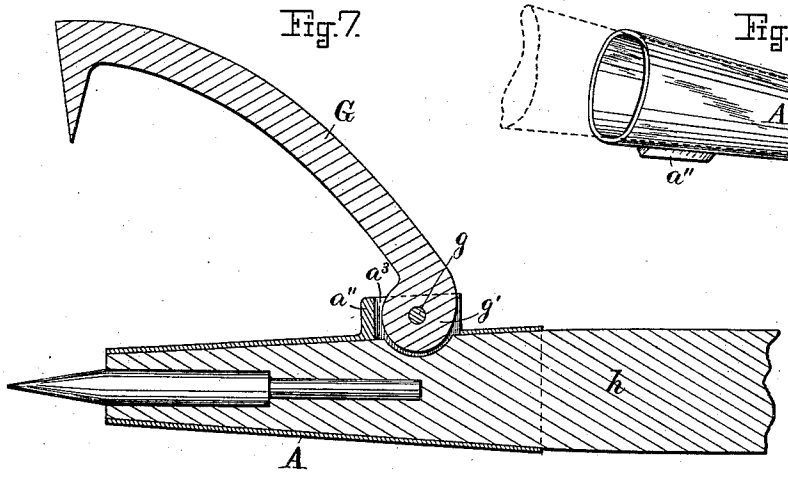


Fig. 6.

Fig. 4.

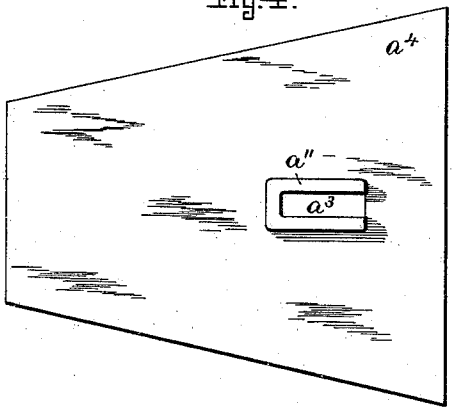


Fig. 5.

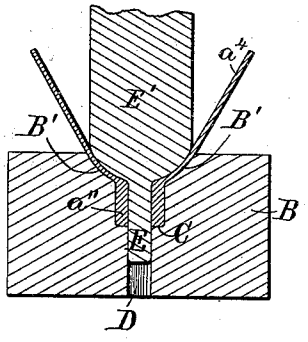


Fig. 3.

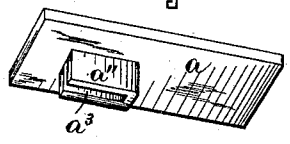


Fig. 2.

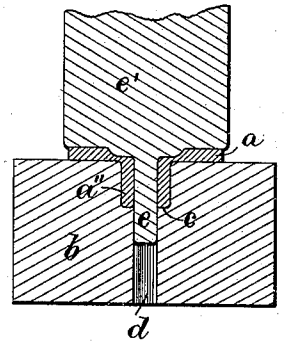
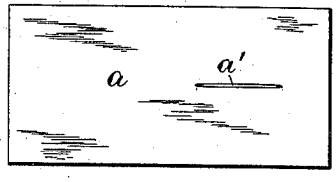


Fig. 1.



Witnesses,
Henry Chadbourne.
Henry S. Drake.

Inventor
Edward Mansfield.
by Albert Andréu his atty.

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UNITED STATES PATENT OFFICE.

EDWARD MANSFIELD, OF ORONO, MAINE.

METHOD OF MAKING CANT-HOOK FERRULES.

SPECIFICATION forming part of Letters Patent No. 383,135, dated May 22, 1888.

Application filed March 8, 1888. Serial No. 266,594. (No model.)

To all whom it may concern:

Be it known that I, EDWARD MANSFIELD, a citizen of the United States, and a resident of Orono, in the county of Penobscot and State of Maine, have invented new and useful Improvements in the Method of Making Ferrules for Cant-Hooks, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements on the patent granted to me January 31, 1888, No. 377,038, for the method of making ferrules for cant-hooks, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a plan view of the blank from which the ferrule is made. Fig. 2 represents a sectional view of the punch and die for forming the staple on the ferrule. Fig. 3 represents a perspective view of the blank after the staple has been formed on it. Fig. 4 represents a plan view of the ferrule-blank after being reduced to the desired thickness and shaped. Fig. 5 represents a sectional view of the punch and die for partially curving the ferrule-blank. Fig. 6 represents a perspective view of the ferrule after being bent on the mandrel and welded together; and Fig. 7 represents a central longitudinal section of the complete ferrule, with its wooden handle and the cant-hook pivoted to the staple of said ferrule.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In my previous invention, as described and shown in my patent of January 31, 1888, I made the ferrule-blank and the staple that receives the eye of the cant-hook in two separate parts, which I afterward welded together.

My present invention is an improvement on my aforesaid patent, and consists in a method of making the ferrule and its staple from one single piece of metal, as will hereinafter be more fully shown and described.

In carrying out my invention I proceed as follows: I first cut or forge a sheet-metal blank, *a*, as shown in Fig. 1. This is preferably made of sheet-steel or other suitable sheet, forged, or wrought metal. The said blank is preferably made of rectangular or slightly-tapering form, and somewhat thicker than the thickness of the finished ferrule; thus, for instance, if the ferrule is to be from one-sixteenth to an eighth of an inch in thickness, I prefer to make the blank *a* about three-eighths of an inch in thickness. The blank so made is then heated, and by means of a suitable tool I make a slit, *a'*, through it at the place where the staple for receiving the eye of the cant-hook is to be formed or struck up. The now-slitted blank *a* is then again heated and placed on top of the die *b*, having a recess, *c*, made in its top, as shown in Fig. 2, said recess being of the size and shape required for forming the outside of the finished staple *a''*. (Shown in Figs. 2, 3, 4, 5, 6, and 7.) Said die is provided with a perforation, *d*, for receiving the punch *e* of the plunger *e'*, as shown in Fig. 2. Said perforation *d* and the punch *e* are each of a size and shape equal to the staple perforation a^3. (Shown in Figs. 3, 4, and 7.) In shaping or forging the staple *a''* the heated blank *a* is placed on the die *b* in such a position that the slit *a'* comes directly above the recess *c*. As the plunger *e'* and punch *e* descend, a portion of the metal surrounding the slit *a'* is pressed into and made to fill the recess *c* in the die *b*, while the punch *e* forms the perforation a^3 in the staple. The blank is then again heated and thinned out to the desired dimension required for forming the ferrule, and such reduction in thickness may be accomplished by any well-known means—such as rolling, hammering, or plating, &c.—and, after being reduced in thickness, as above mentioned, the blank is trimmed and cut to the requisite size and shape for forming the ferrule, as shown at a^4 in Fig. 4. The now-prepared blank is ready for being made in the form of a tapering ferrule, and I prefer to partially bend it, as shown in Fig. 5, by heating it, and to place it, as shown in said figure, on a die, B, having upper concave recesses, B' B', a recess, C, for receiving the staple *a''*, and a perforation, D, for receiving the punch E, that forms a part of the convex plunger E'. These devices are to be used in a suitable drop or forging machine, and as the plunger E' reaches the lower end of its stroke it causes the blank a^4 to be partially curved, as shown in Fig. 5. The now partially-curved ferrule-blank is again heated and bent

around a conical mandrel, F, (shown in Fig. 6,) and its overlapping edges a^5 closed and welded together. The ferrule A is now finished, and I punch or drill a hole through the staple a'' for the reception of the bolt or rivet g, by means of which the eye g' of the cant-hook G is pivoted to the ferrule, as usual. H is the wooden handle, the tapering end of which is driven into the ferrule A, as usual.

What I wish to secure by Letters Patent, and claim, is—

The herein-described method of making cant-hook ferrules, consisting in first making a slitted blank, $a\ a'$, of a thickness greater than the ferrule to be made, afterward expanding the edges of the slitted portion and forming the staple a'' in one piece with said blank, then reducing it to the thickness of the desired ferrule, and, finally, bending it and welding its overlapping edges together, substantially in the manner and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 29th day of February, A. D. 1888.

EDWARD MANSFIELD.

Witnesses:
HENRY CHADBOURN,
HERBERT L. CHAPIN.