F. B. Morse,

Die for Forming Carriage Clips.

No. 109,336. Patented Nov. 15. 1870.

fig. 1.

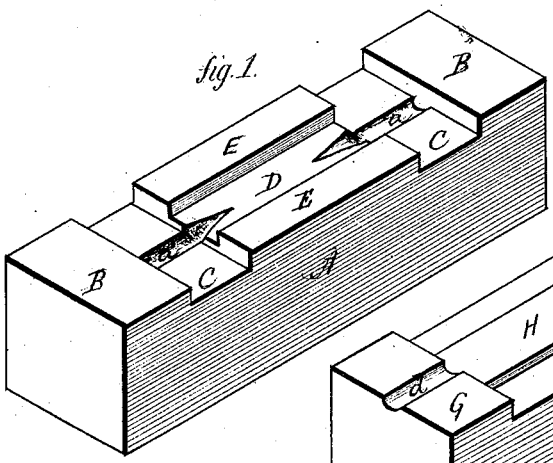


fig. 2.

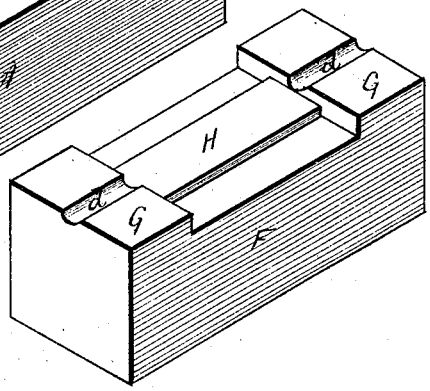
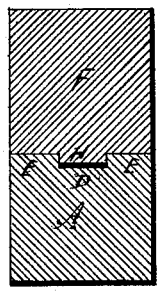


fig 3.



Witnesses
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A. J. Tibbits

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UNITED STATES PATENT OFFICE.

FRANCIS B. MORSE, OF PLANTSVILLE, CONNECTICUT, ASSIGNOR TO HIMSELF AND H. D. SMITH & CO., OF SAME PLACE.

IMPROVEMENT IN DIES FOR FORGING CARRIAGE-CLIPS.

Specification forming part of Letters Patent No. **109,336**, dated November 15, 1870.

To all whom it may concern:

Be it known that I, FRANCIS B. MORSE, of Plantsville, in the county of Hartford and State of Connecticut, have invented a new Improvement in Dies for Forging Carriage-Clips; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of the lower part of the die; Fig. 2, a perspective view of the upper part of the die, and in Fig. 3 a transverse section of the dies together.

This invention relates to an improvement in the dies for forging carriage-clips for which I filed an application for Letters Patent, which said application was allowed September 23, 1870, the object of this invention being to save metal and finish the edges of the clip without the fin, which was unavoidable in the before-mentioned dies.

To this end my invention consists in combining with the transversely-recessed ends, in which the bolt part is formed, a longitudinal recess in the die, into which a portion of the upper die enters to strike and form the body of the clip.

A is the lower die, with buttresses B at each end, to prevent the elongation of the metal, and transverse recesses C, within which the impression *a* for one half the bolt is made, and through the central portion of the die a longitudinal recess, D, is formed by the two sides E E extending up to about the same height as the buttresses B, the bottom of the recess D lying above the recess C one-half the diameter of the bolt portion, in like manner as in my dies before referred to, so that the clip is formed with bolts just flush with the flat or in side.

F is the follower or upper portion of the die, with projections G G corresponding to the recesses C C, and in which the impression *d* for the other half of the bolt is formed, and extending from one projection G to the other a central raised portion, H, is made, corresponding to the recess C in the lower die, and as much less in height than the depth of the recess D as the thickness of the clip to be formed, as seen in Fig. 3. The rod from which the clip is to be formed is heated and placed in the die, and then the follower struck thereon. The central portion is spread the full width of and so as to fill the recess D, as seen in Fig. 3. As the metal cannot spread beyond the edges of the recess, a perfect edge is formed without the formation of a fin, and a rod may be used of less diameter in consequence of this saving of metal. The only portion of the clip in which a fin can be formed is upon the sides of the bolt, and to these points all the surplus metal is driven, condensing the iron upon the bolts, and thus improving that portion of the clip.

I claim as my invention—

As an improvement on the dies patented to me October 11, 1870, No. 108,283, the central raised portion, H, on the one die and the recess D on the other die, of depth sufficient to permit the raised portion H to enter into it, as and for the purpose specified.

F. B. MORSE.

Witnesses:

A. J. TIBBITS,

J. H. SHUMWAY.