

W. S. WARD.

DIES FOR FORGING SADDLE-CLIPS.

No. 169,869.

Patented Nov. 9, 1875.

fig. 1

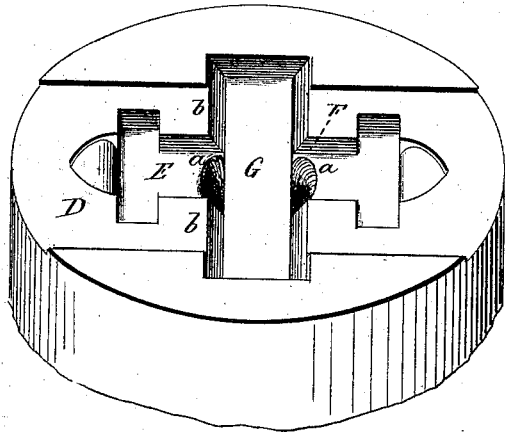


fig. 3

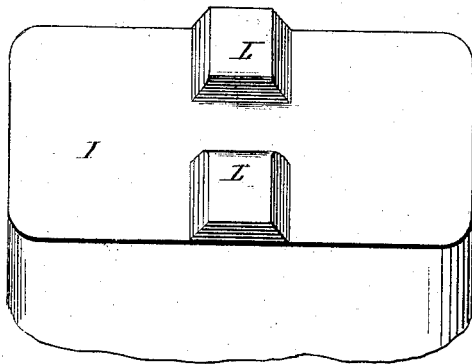


fig. 2

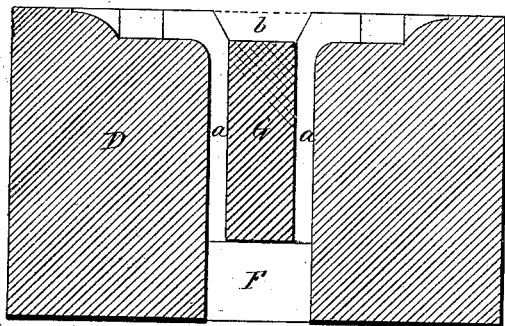


fig. 4

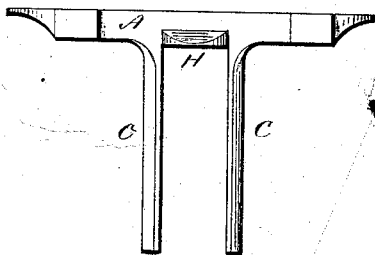


fig. 6

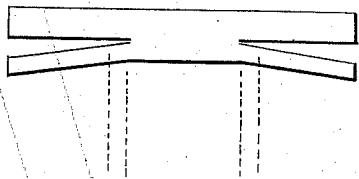
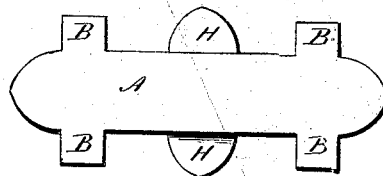


fig. 5



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN DIES FOR FORGING SADDLE-CLIPS.

Specification forming part of Letters Patent No. 169,869, dated November 9, 1875; application filed  
October 26, 1875.

*To all whom it may concern:*

Be it known that I, WILLIAM S. WARD, of Plantsville, in the county of Hartford and State of Connecticut, have invented a new Improvement in Dies for Forging Saddle-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, perspective view of the lower die; Fig. 2, longitudinal section of the same; Fig. 3, perspective view of the follower; Fig. 4, side view of the clip; Fig. 5, top view of the clip; Fig. 6, blank preparatory to forging.

This invention relates to dies for forging what are known to the trade as "Axle Saddle-Clips for Carriages," and particularly to that class for securing springs at right angles to the axle, such as seen in Figs. 4 and 5, and in which—

A is the body or base of the clip, substantially the width of the spring, to be secured and provided at each end with an ear, B, upon each side, through which the spring-clip ends are passed to secure the spring upon the saddle. From the under side two parallel arms, C, extend downward, distant from each other the thickness of the axle, and formed with bolt-ends, so as to pass the clip-bar onto the ends below the axle, and secure the whole by nuts.

The object of the invention is to shape this clip; and it consists in the die, constructed as hereinafter described.

D is the lower or principal die, in the surface of which a cavity, E, is formed, corresponding to the outline and under surface of the saddle, and with an opening, F, downward through the center. Into this opening a center-plate, G, is placed; supported by grooves on each side of the opening, this plate being the width of the axle for which the clip is designed, and arranged so as to leave a vertical space, *a*, each side of the plate, corresponding in form to the clip-arms C C. This plate G is easily removed from the die when required, as hereinafter described.

The die is shown as with a cavity, *b*, at the

center, each side. This is for the purpose of forming ears H on the saddle, for the purpose of giving it a transverse support on the axle. When these are to be made the upper die I is formed with projections L, corresponding to the recesses *b*, and to the shape of the projections H on the clip; but as in some cases these projections are not required, then the recesses *b* would be dispensed with, and, consequently, the projections L on the upper die or follower, and in that case the surface of the follower would be flat, because of the flat surface of the saddle.

The blank, preparatory to forging, is prepared as seen in Fig. 6. It is cut from a bar of the size and length to give the requisite amount of metal, and this is split transversely at each end toward the center, and these ends bent toward each other, as indicated in broken lines, and drawn into shape transversely by hammer or otherwise, and so as to correspond substantially to the spaces *a* in the die. In this condition the blank is heated, placed in the die, and the follower struck down thereon to force the metal of the blank into, and so as to fill, the cavities, and complete the saddle part of the clip, except as to trimming.

The die for this class of forging is cast; but if the die should be cast with the plate G as a solid part of the casting, the angles of the plate, where the arms intersect the saddle, would soon wear off, and thus destroy the die.

To avoid this difficulty the plate G is made removable, and is formed from wrought or suitable metal, and then when it wears away, as before described, it is easily repaired or replaced, and this removable plate also allows for the forming of the saddle for axles of different width, by introducing into the die a plate of corresponding width. This constitutes the chief feature in the die.

I claim—

1. The die for forging carriage saddle-clips, constructed substantially as described.
2. In a die for forging saddle-clips, the removable plate G, substantially as described.

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Witnesses:

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