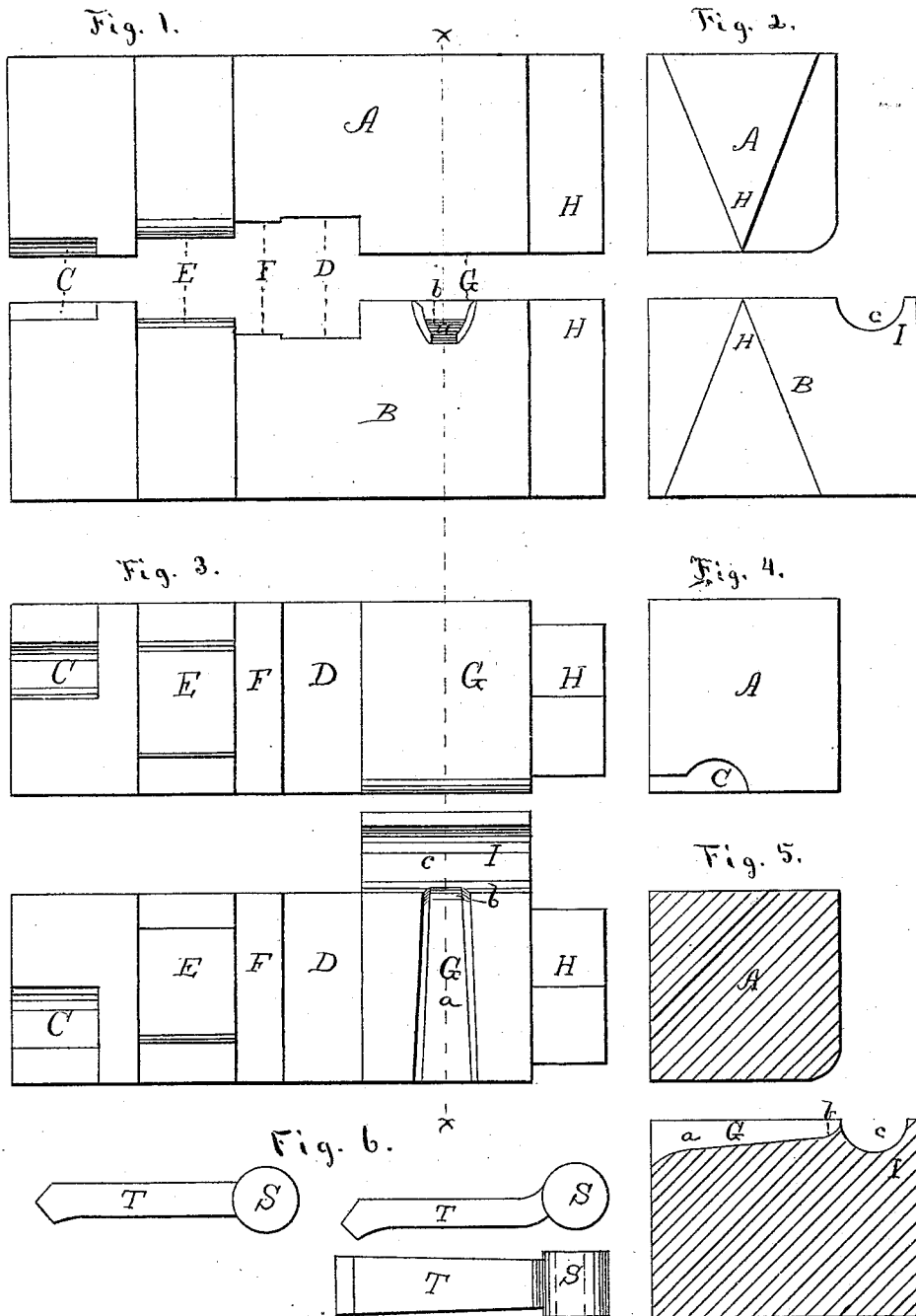


# HENRY M. BEECHER.

Improvement in Dies for Forging Carriage Shackle Eyes.  
No. 126,252. Patented April 30, 1872.



Witnesses.  
Jm W. Carter  
Miles S. Beck

Inventor  
Henry M. Beecher  
By James Shepard Atty.

# UNITED STATES PATENT OFFICE.

HENRY M. BEECHER, OF PLANTSVILLE, CONNECTICUT.

## IMPROVEMENT IN DIES FOR FORGING CARRIAGE SHACKLE-EYES.

Specification forming part of Letters Patent No. 126,252, dated April 30, 1872.

*To all whom it may concern:*

Be it known that I, HENRY M. BEECHER, of Plantsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Dies for Forging Carriage Shackle-Eyes, of which the following is a specification:

My invention consists of the die-blocks as provided with the several dies shown and hereafter described.

In the accompanying drawing, Figure 1 is a front elevation of die-blocks and dies which embody my invention. Figs. 2 and 4 are end views. Fig. 3 is a face view; Fig. 5, a transverse section of the same on line *xx*; and Fig. 6 shows various views of the shackle-eye produced by means of said dies.

The die-blocks are secured in any of the ordinary machines by which their faces may be forced quickly and squarely together. In Fig. 1 the die-blocks A B are shown one above the other, slightly open, in proper position for use. A bar of iron, after being brought to a proper heat, is placed between die C and operated upon. The die C in both die-blocks consists of a circular and plain depression, as clearly shown by the end view, Fig. 4. The bar is then given a quarter turn and operated upon by the die D, which brings the eye S to the proper length while the die C forms its sides. By changing the bar alternately from dies C to D the eye S is formed. The dies D E F are simply plain-faced or flat dies, with the front corners of dies E and F slightly rounded. The faces of the dies are, however, sunk below the face of the die-blocks A B, so that, when said die-blocks meet each other, the die D is open a distance equal to the desired length of the shackle-eye, the die F a distance equal to the desired width of the shank T, and the die E a distance equal to the desired thickness of said shank. The shank T is then drawn out by the dies E and F, which, respectively, operate upon the sides and edges of said shank. The eye S and its shank, as produced by the

dies thus far described, is shown by an edge view at the left in Fig. 6. G designates the finishing-die. In the lower die-block B this consists of a groove, *a*, having an upward curved face, *b*, near one end, and beveled sides, and immediately back of curve *b* is an elevation, I, having an open-end circular depression, *c*, as clearly shown in the sectional view, Fig. 5. The bottom of the circular depression *c* is fully as high as the bottom of the groove *a*. The upper half of the die G is a simple plain surface with its rear corner rounded, as shown in Fig. 5. If desired, a wing with a circular depression to match the depression *c* might be added to upper part of die G, but it is believed to be unnecessary.

By placing the eye and shank, shown at the left in Fig. 6, with the eye resting in the circular depression *c* and its shank over the groove *a*, and forcing the die-blocks together, the edges of the shank are beveled, and at the same time it is bent or curved into the form shown at the right in Fig. 6, which gives the article a very desirable form. In case the die G spreads the corners of the eye S, the ends thereof may be struck by the die D when the shackle-eye is finished, and may be cut from the bar by placing it between the cutting-die H.

It will be observed that the operation of these dies is not merely to swage the metal, but they actually forge it by compression, first in one direction and then in a transverse direction, and thereby produce an article of superior quality; and by the improved dies the article is wrought into a desirable form and finished at a single heat.

I claim as my invention—

The die-blocks A B, when provided with the respective dies C, E, F, D, G, and H, for use successively, all substantially as shown and described.

HENRY M. BEECHER.

Witnesses:

JAMES SHEPARD,  
NETTIE SHEPARD.