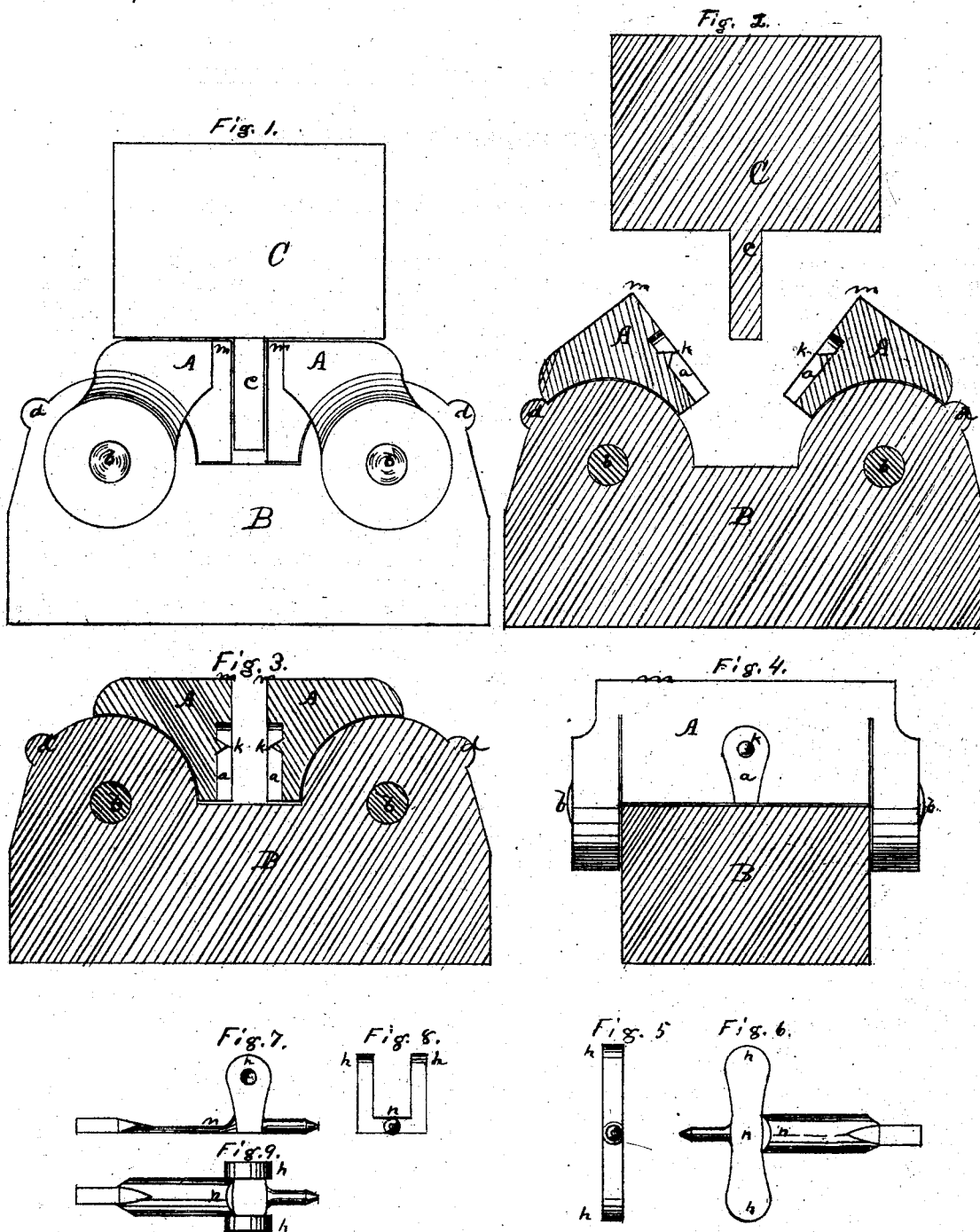


H. M. BEECHER.

Dies for Forming Carriage Shackles.

No. 116,012.

Patented June 20, 1871.



WITNESSES

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HENRY M. BEECHER, OF PLANTSVILLE, CONNECTICUT.

## IMPROVEMENT IN DIES FOR FORMING CARRIAGE-SHACKLES.

Specification forming part of Letters Patent No. 116,012, dated June 20, 1871.

### *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 Machine for Forming Carriage-Shackles, of which the following is a specification:

My invention consists in the employment of swinging dies and a drop, the said dies being provided with points, and operating as herein-after described, whereby the conical cavities in the ears of the shackles are formed while in the bending-dies.

In the accompanying drawing, Figure 1 is a side elevation of dies and drop embodying my improvement; Fig. 2, a transverse vertical section of the same in position to receive the blank; Fig. 3, a similar section of the dies and their bed; Fig. 4, a central, vertical, and longitudinal section of the same. Figs. 5 and 6 are end and top views of the shackle-blank before bending; and Figs. 7, 8, and 9 are side, end, and top views of said blank after being bent.

A A designate swinging die-blocks, having dies *a a* on their faces of the form desired to finish the ears of the shackle. The die-blocks A A are hung or pivoted to the bed B at *b*, and may be thrown open, as shown in Fig. 2. C is a drop or hammer, which may be arranged in any suitable machine or frame, so as to be dropped or forced upon the die-blocks A A. The hammer C has a projection, *c*, extending downward from its center, the width of which projection is equal to the space designed to leave between the ears of the shackle, and the length of said projection is equal to the depth of the die-blocks A A, minus the thickness of the back of the shackle, as shown in Fig. 1. The blanks are first forged or struck up in dies into the form substantially as shown in Figs. 5 and 6. The dies *a a* in the die-blocks A A are provided with points *k k*, to form conical recesses in the ears of the shackle, as hereinafter described.

The operation is as follows: The die-blocks A A are thrown open until stopped by contact with the stops *d d*, as shown in Fig. 1, when a blank, Figs. 5 and 6, is laid with its ends *h h* resting in dies *a a* of the die-blocks A A. The hammer C is then dropped or forced upon the blank, when the projection *c* strikes the same and forces the block *n* of the shackle down-

ward; meanwhile the die-blocks swing on their pivots *b b*, follow the blank, drawing toward each other, and thus throw the ears of the shackle toward the projection *c* of the hammer C, said hammer striking the corners *m m* of the die-blocks A A, and forcing the same together, as shown in Fig. 1, in so powerful a manner as to cause the points *k k* to leave their imprints in the ears, thus forming a conical recess by which to drill the said ears—and at the same time forming the blank, Figs. 5 and 6—into the shackle, Figs. 7, 8, and 9. The hammer C is then lifted, the dies opened, and the shackle removed, when another blank can be formed, as before described.

Ordinarily the conical recesses in the ears of the shackle have been formed in the dies which forge the blank before bending the same, as shown in the patent to W. B. Smith dated August 9, 1870, and others.

The shackle-blanks necessarily vary a little in being bent, or they are not bent exactly at equal distances from the center of their length; consequently the recesses which are formed therein previous to bending are not, when the blank is bent, directly opposite each other, or square with the shackle.

By placing the points *k k* in the swinging die-blocks, and dies *a a* and A A, these imprints are formed in the process of bending, as described, instead of in the dies with which the blanks are forged, and therefore said imprints are always uniform and square with the shackle, thus making a better article and often saving much labor in fitting.

I do not claim the points *k k*, in combination with dies for forging the shackle-blank; but

I claim as my invention—

1. Jointly, the swinging or hinged die-blocks A A, together with their dies, the bed B, and hammer C with its projection *c*, for use in the formation of carriage-shackles, substantially as described.

2. As an improvement in machines for forming carriage-shackle blanks into shackles, substantially as set forth, the points *k k* projecting from the bottom of dies *a a*, as and for the purpose set forth.

HENRY M. BEECHER.

Witnesses:

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