W. B. SMITH.

Making Carriage-Shackle Blanks.

No. 106,225. Patented Aug. 9. 1870.

Fig. 1

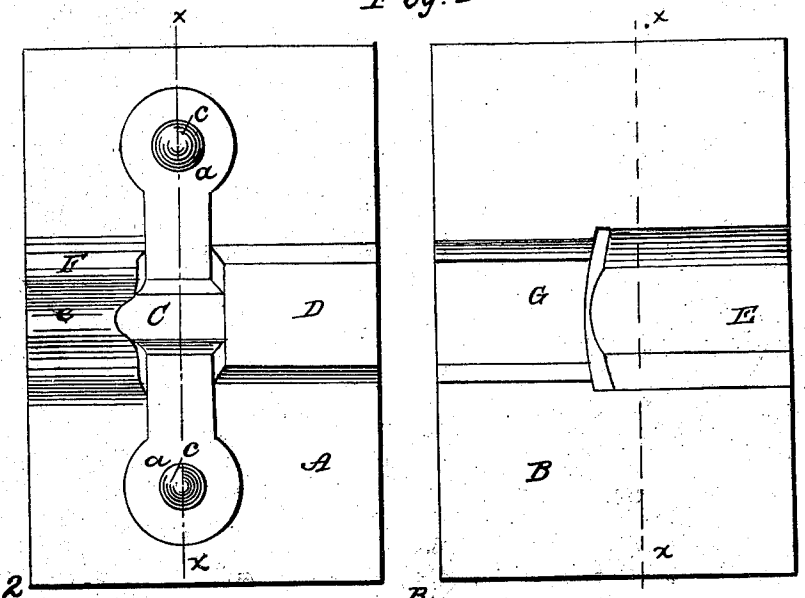

Fig. 2

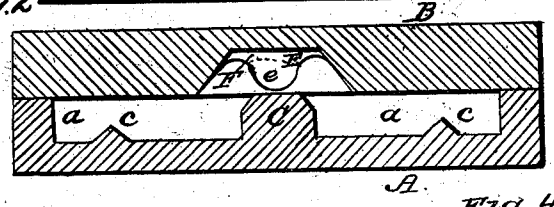

Fig. 5

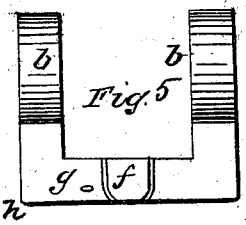

Fig. 3

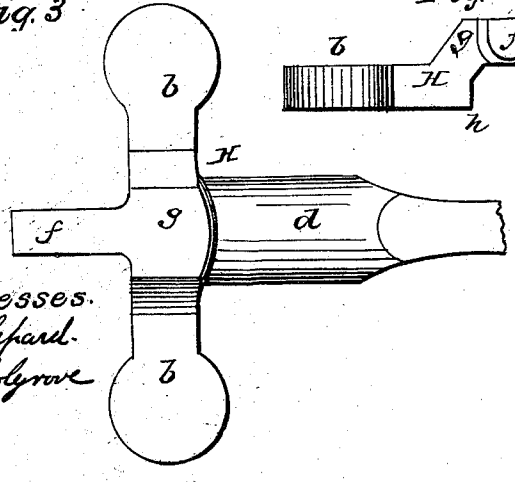

Fig. 4

Witnesses.
C. A. Shepard.
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By James Shepard. Atty.

UNITED STATES PATENT OFFICE.

WILLIS B. SMITH, OF PLANTSVILLE, CONNECTICUT.

IMPROVED DIE FOR FORGING CARRIAGE-SHACKLE BLANKS.

Specification forming part of Letters Patent No. **106,225**, dated August 9, 1870.

I, WILLIS B. SMITH, of Plantsville, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Dies for Forming Carriage-Shackle Blanks, of which the following is a specification:

My invention consists in the peculiar form of the dies, all as hereinafter more fully described.

In the accompanying drawing, Figure 1 is a face view of my invention. Fig. 2 is a section of same on line *x x*. Fig. 3 is a plan view of the shackle-blank forged in said die. Fig. 4 is an end view of the same, and Fig. 5 an end view of a shackle formed from said blank.

A designates the lower die, and B the upper one. *a a* designate recesses in the die A, in which the ears *b b* are formed, and which recesses are on a straight line and parallel to the face of the dies A and B.

If desired, the recess *a a* can be provided with centers *c c*, to mark the ears *b b* for drilling.

Between the recesses *a a* is an elevation or projection, C, the sides of which are at right angles to the recesses *a a*, and the top of said elevation is parallel to said recesses. The corners at the junction of the sides and top of elevation C are removed, as shown in Fig. 2. At one end of elevation C is another elevation, D, the top of which is flat and even with the top of elevation C, and is broad enough to form the flat part of the clip *d*, as in ordinary shackles. At the opposite end of the elevation C is an elevation, F, provided with recess *e*, to form the shaft *f*, which is to be rounded and threaded as in ordinary shackles.

In the die B is a recess, E, the bottom of which is parallel to the face of the dies A and B, and the sides of which are oblique to the same, as shown in Fig. 2, and in the blank H formed in the same. This recess E is immediately opposite or above the elevations C and F in the die A, while opposite the elevation D is a recess, G, to form the rounding side of the clip *d*. These dies are arranged one above the other in a suitable drop or press, and iron properly heated and of suitable form is placed in the dies A B and "struck up," which forms the blank H, as shown in Figs. 3 and 4, but with the usual amount of surplus metal projecting from the edges of the same, and which surplus metal is not shown.

By means of the elevation C the corners *h h* at the junction of the ears *b b* and body *g* are formed at right angles to each other. The outside of the ears *b b* are now on the same line their entire length, and the edges of the whole blank H are in a vertical position. The blank H is now placed in an ordinary trimming-die and the surplus metal removed. It is then heated and the oblique portion of the body *g* bent, so as to throw the ears *b b* upward in the form shown in Fig. 5, and in which operation of bending the corners *h h*, previously formed at right angles, remain unmolested, whereby I am enabled to form the said corners square and full, while, at the same time, the blank is of a form to be readily trimmed.

I am aware that dies for the same purpose have been previously used, as shown in the patents to L. Burns, June 11, 1867, and J. B. Clark, June 25, 1867. In Burns' dies the body of the shackle is formed straight, while the ears are curved, the curve commencing at the plane where the ears are to be bent to form the corners, and, therefore, said corners are not right-angled, neither is it possible for curved ears to be both on one and the same line. In Clark's dies the ears are formed straight, but were arranged on different lines, so that the edge of the blank at the end of each ear was thrown out of a vertical line, which seriously interferes with trimming off the surplus metal.

I make no claim to either of the above or similar dies.

I claim as my invention—

1. The dies A and B, for forging carriage shackle-blanks, constructed as herein shown and described.

2. The carriage-shackle blank H, constructed and formed substantially as shown and described.

WILLIS B. SMITH.

Witnesses:

HEBER S. IVES,

CHARLES H. CLARK.