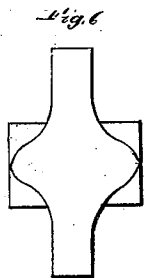
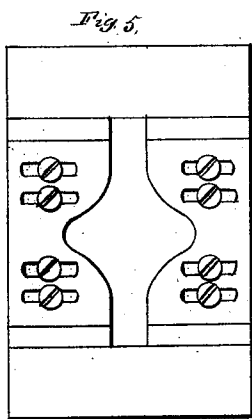
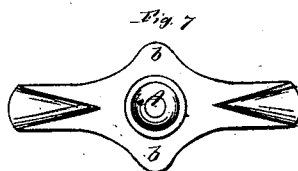
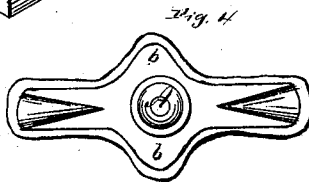
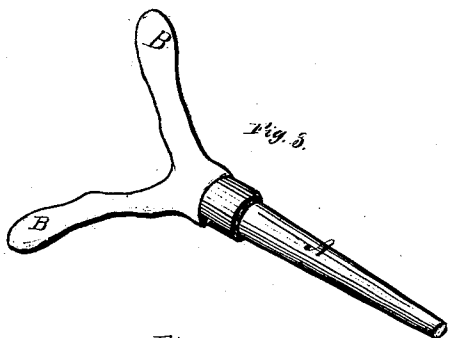
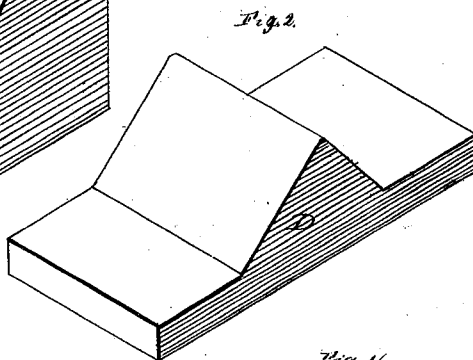
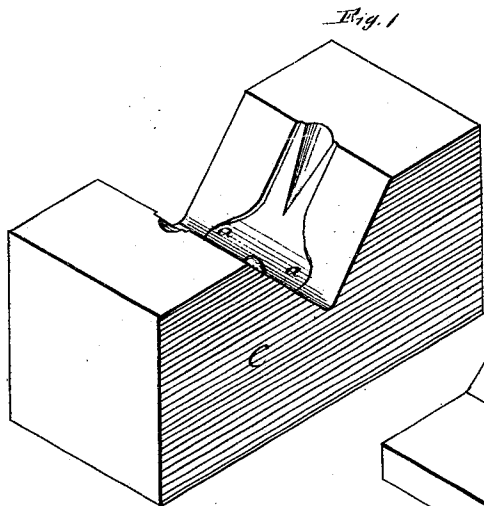


F. B. Morse,

Manf. Carriage Irons.

No. 100,178.

Patented Feb. 22, 1870.



F. B. Morse

Inventor

By his Attorney

John E. Egan

Witnesses
J. H. Shumway
A. J. Tibbitts

United States Patent Office.

F. B. MORSE, OF PLANTSVILLE, CONNECTICUT.

Letters Patent No. 100,178, dated February 22, 1870.

IMPROVED DIE FOR FORMING THE HEADS OF KING-BOLTS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, F. B. MORSE, of Plantsville, in the county of Hartford, and State of Connecticut, have invented a new Improvement in Dies for Forging King-Bolts; 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 first die;

Figure 2, a perspective view of the upper part, inverted;

Figure 3, the blank before the operation of the dies;

Figure 4, an under-side view of the bolt after the operation of the dies;

Figures 5 and 6, the trimming dies; and in

Figure 7, an under-side view, with the bolt complete and trimmed.

This invention relates to an improvement in dies for forging king-bolts for carriages, the object being to produce such bolts in the desired shape without welding, and at a single heat; and

The invention consists in the construction of a die so as to strike into the divided head of the blank and form the clip, and spread the base of the clip so as to afford a larger bearing to strengthen the bolt laterally.

The blank, as seen in fig. 3, is drawn to form the bolt A in the usual manner, and the head divided into two parts, B B. The blank, then heated, is placed into the die, seen in fig. 1, formed to receive the bolt in the center, and its two sides, forming a V-shape, are each cut into the desired form for the two parts of the clip, and at the center, as at *a a*, spread laterally, so as to give a longitudinal transverse bearing to the head of the bolt.

The bolt, placed in the lower die C, the upper part D corresponding to the V-shape of the lower part, is struck down into the divided part of the head, spreading and forcing the two parts into each side of the die, and the head extending out into the parts *a a*, the upper side of the head will be flat and of V-shape, corresponding to the part fig. 2 of the die. The bolt thus formed is then placed into the die, fig. 5, and adjusted so as, by means of the part, fig. 6, dropping thereinto, will trim the edges of the clip and the head, cutting away the fin formed by the first operation, leaving the bolt complete as an article of manufacture, and as shown in fig. 7.

By this construction the head is spread, as at *b*, giving a lateral bearing to support and strengthen the bolt. The bolt is then ready for market, and is adapted to further use by consumers in the usual manner for this class of bolts.

I prefer to form the clip part or ends of the clip as I have shown and described, but it will be observed that the principal object of my invention, that is, the spreading of the head of the bolt, would be accomplished by the central portion of the dies only; that is, the object would be accomplished were the upper part of the dies moved down to the broken line, fig. 1.

Thus, it will be observed, by a single heat, and practically by one operation, the head of the bolt and the clip are formed in the most perfect manner.

I claim as my invention—

1. The V-shaped die C D, constructed as described, so as to form the head of king-bolts at one operation.

2. The trimming dies, constructed as described, to trim the surplus metal from the head of king-bolts.

F. B. MORSE.

Witnesses:

A. J. TIBBITS,

J. H. SHUMWAY.