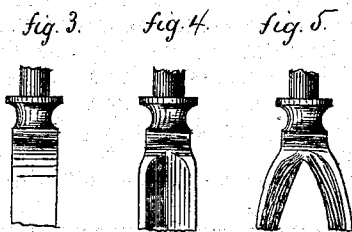
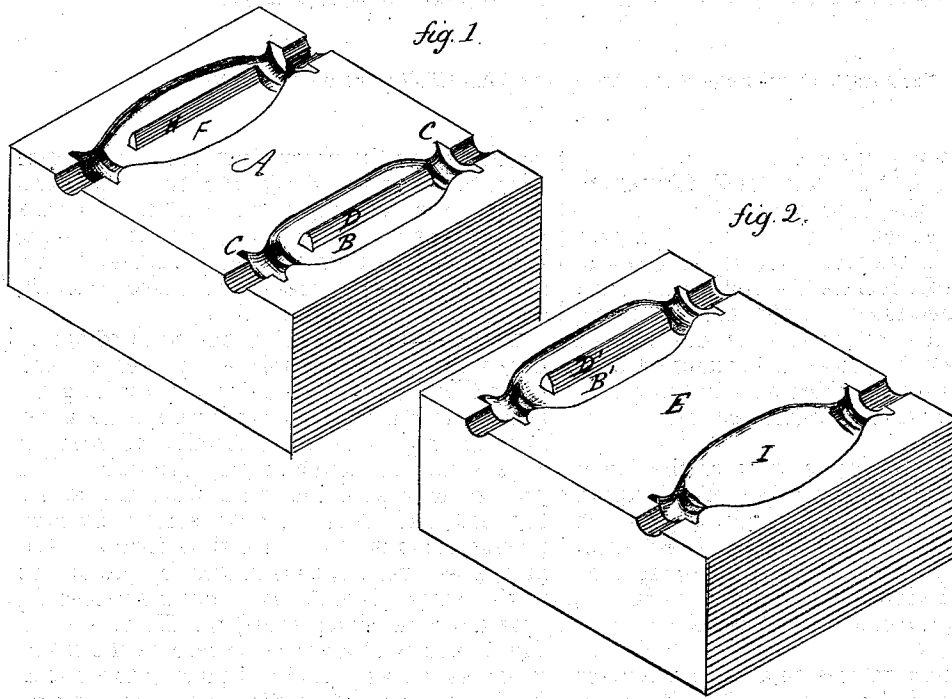


F. B. MORSE.

Improvement in Dies for Forging Ring-Bolts.

No. 115,976.

Patented June 13, 1871.



Witnesses
J. H. Humway
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UNITED STATES PATENT OFFICE.

FRANCIS B. MORSE, OF PLANTSVILLE, CONNECTICUT, ASSIGNOR TO H. D. SMITH & CO., OF SAME PLACE.

IMPROVEMENT IN DIES FOR FORGING KING-BOLTS.

Specification forming part of Letters Patent No. 115,976, dated June 13, 1871.

To all whom it may concern:

Be it known that I, FRANCIS 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 drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents, in—

Figure 1, a perspective view of the lower die; Fig. 2, a perspective view of the upper die; Fig. 3, the king-bolt blank; Fig. 4, the same after the first operation of these dies; Fig. 5, the same after the second operation; Fig. 6, an end view after the first operation; and in Fig. 7, an end view after the second operation.

This invention relates to an improvement in dies designed for splitting the heads of king-bolts preparatory to forming the clips, but is alike applicable to the forging of other articles in which the bar being forged is to be divided.

The ordinary way of splitting a piece of heated metal—that is to say, by means of the chisel—necessarily forces the metal largely to one side, as seen in Fig. 7, which renders it difficult to form good forgings by means of dies, as the metal cannot be drawn back or wrought into a central position when struck in dies as when forged by hand, a difficulty which by my invention is entirely overcome, and consists in the construction of dies, the first of which is provided with a V-shaped tongue in both parts, which, when struck upon the metal, press alike into opposite sides, the second die provided with a V-shaped cutter, which strikes into the grooves formed by the first and separates the two parts.

A is the lower die, in which is formed a depression, B, running into a form or recess, C, corresponding to the neck of the bolt which has been previously formed. I represent these dies as double—that is to say, the same at both ends—so that when one is worn it may

be turned to the other; but the double dies constitute no part of my invention. Centrally and longitudinally in the said die I form a projecting rib, D, of an inverted U or V shape, and in the upper die E I form a recess, B', corresponding to the recess B, and also a rib, D', corresponding to the rib D.

The blank for the bolt, the neck of which has been previously formed, is heated and placed between the dies, which, striking together, form a depression upon opposite sides, leaving the blank substantially as seen in Figs. 4 and 6, cutting nearly through. This process has forced the metal from the center outward, and alike on both sides. To completely separate the parts thus formed I employ a second die, constructed by preference in the same plate A, by forming a recess, F, with a central sharp-edged rib, H, as seen in Fig. 1, and with a recess to receive the neck, which serves as a guide for placing the blank. In the upper die E I form a corresponding recess, I, but without the rib; then so soon as the blank is formed by the first die it is ready for the second, into which it is placed, and the dies coming together separate the two parts, throwing out the two legs, as seen in Figs. 5 and 7, the recess of the die governing the position into which they are thrown; then the blank is ready for the shaping-dies, which form the clip, with an insurance to the workman that the metal is distributed to the proper position.

While I prefer to cut the two parts by the last-described die, and believe that better work can be produced, other means may be employed to finally separate the two sides.

It will be readily observed by those skilled in the art that these dies may be employed for the manufacture of various articles requiring a like split in their construction, it being only necessary to make the recesses, to govern the position of the blank, so as to properly present such articles to the dies. I therefore do not wish to be understood as limiting my invention to the manufacture of king-bolts, or as requiring the particular form here shown to receive the neck of the blank.

I claim as my invention—

Jointly with a die, in the two parts of which are arranged a dividing-rib, D D', and recess to serve as a guide to govern the position of the metal, the die, in one part of which are arranged a dividing-rib, H, and a recess or seat to govern the position of the

metal to be wrought, substantially as set forth.

F. B. MORSE.

Witnesses:

E. E. PADDOCK,

ASA L. FOWLER.