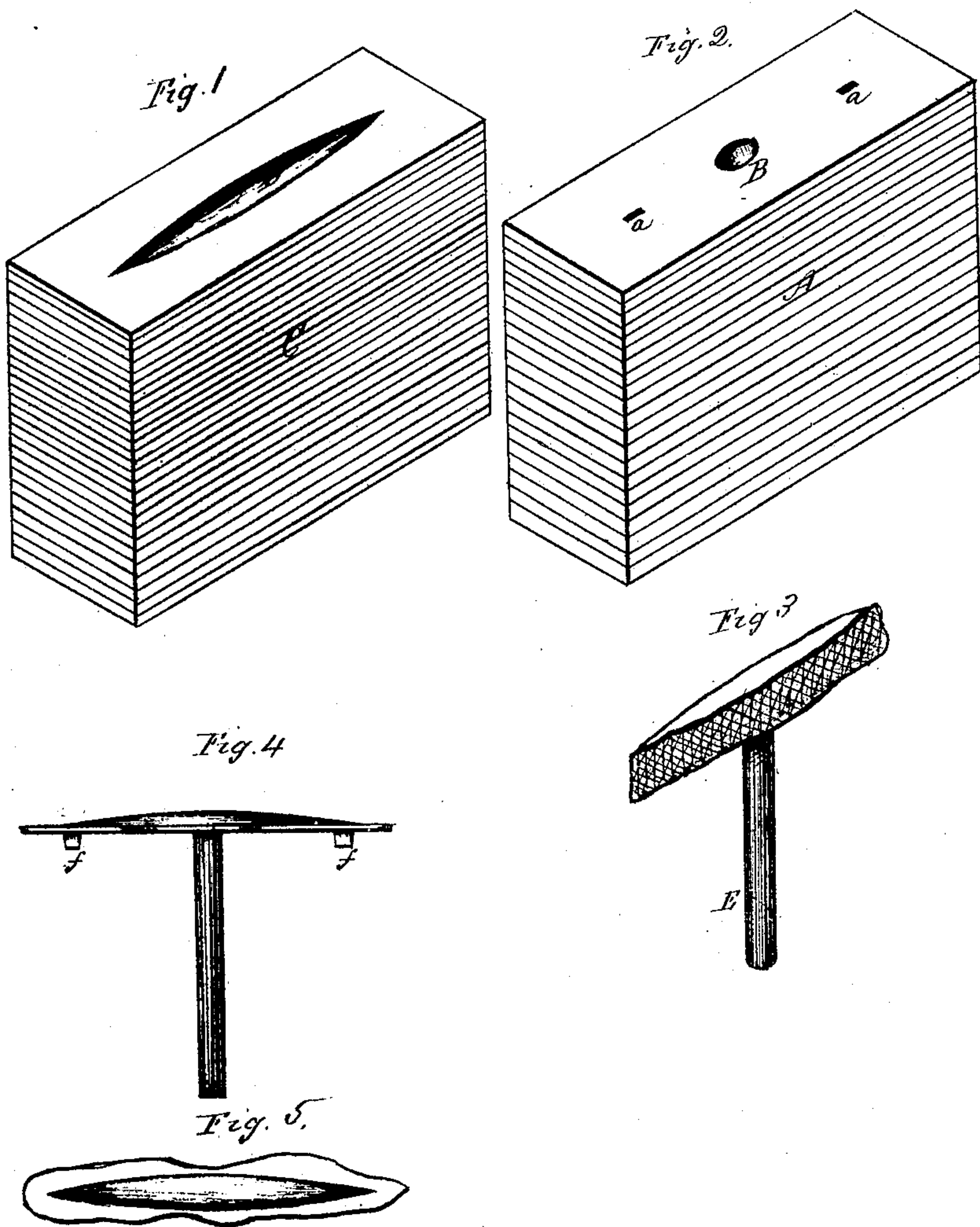


F. B. Morse,

Die for Forming Whiffletree Bolts.

No. 101,149.

Patented Mar. 22. 1870.



*Witness
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a J. Tibbitts*

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

Letters Patent No. 101,149, dated March 22, 1870; antedated February 22, 1870.

IMPROVED DIE FOR FORMING T-BOLTS FOR WHIFFLETREES.

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 Whiffletree-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, the upper die inverted;

Figure 2, the lower die;

Figure 3, the blank preparatory to placing in the die;

Figure 4, a side view; and

Figure 5, a top view of the bolt as it comes from the die.

This invention relates to dies for forging the whiffletree-bolt patented to me, and dated October 26, 1869, the object being to form the points or pins upon the under side of the head, and still retain the perfect form of the outer surface, this class of bolts, before my invention, having been made by bending the pointed ends down, so as to turn into the wood, detracting materially from the graceful appearance and finish of the bolt-head.

The lower die A (see fig. 2) is formed with a flat

upper surface, perforated at B, for the introduction of the bolt, and at *a a* recesses are formed, for the projections upon the under side of the head.

The upper die C (see fig. 1) is formed with a flat surface, in which a cavity, D, is made, corresponding to the exterior of the head of the bolt.

The blank, seen in fig. 3, is prepared by drawing the spindle E of the bolt into the desired form, with the requisite amount of metal, in rough shape, to form the head, as seen in fig. 3. The head is then heated, and set upon the lower die. The spindle E, passing into the perforation B, holds the blank in the required position. Then the upper die C is dropped or forced onto the head, the cavity D forming the upper surface, as seen in figs. 4 and 5, and the metal, entering the recesses *a a* in the lower die, forms projections, *f f*, upon the under side, and throws the surplus metal into a fin around the edge of the head, which is afterward trimmed off in the usual manner for trimming forgings.

I claim as my invention—

The dies, constructed as herein described, for forging whiffletree-bolts.

F. B. MORSE.

Witnesses:

A. J. TIBBITS,

J. H. SHUMWAY.