(No Model.)

T. J. BUSH.

DIE FOR MAKING BOLTS.

No. 446,768. Patented Feb. 17, 1891.

Fig. 1.

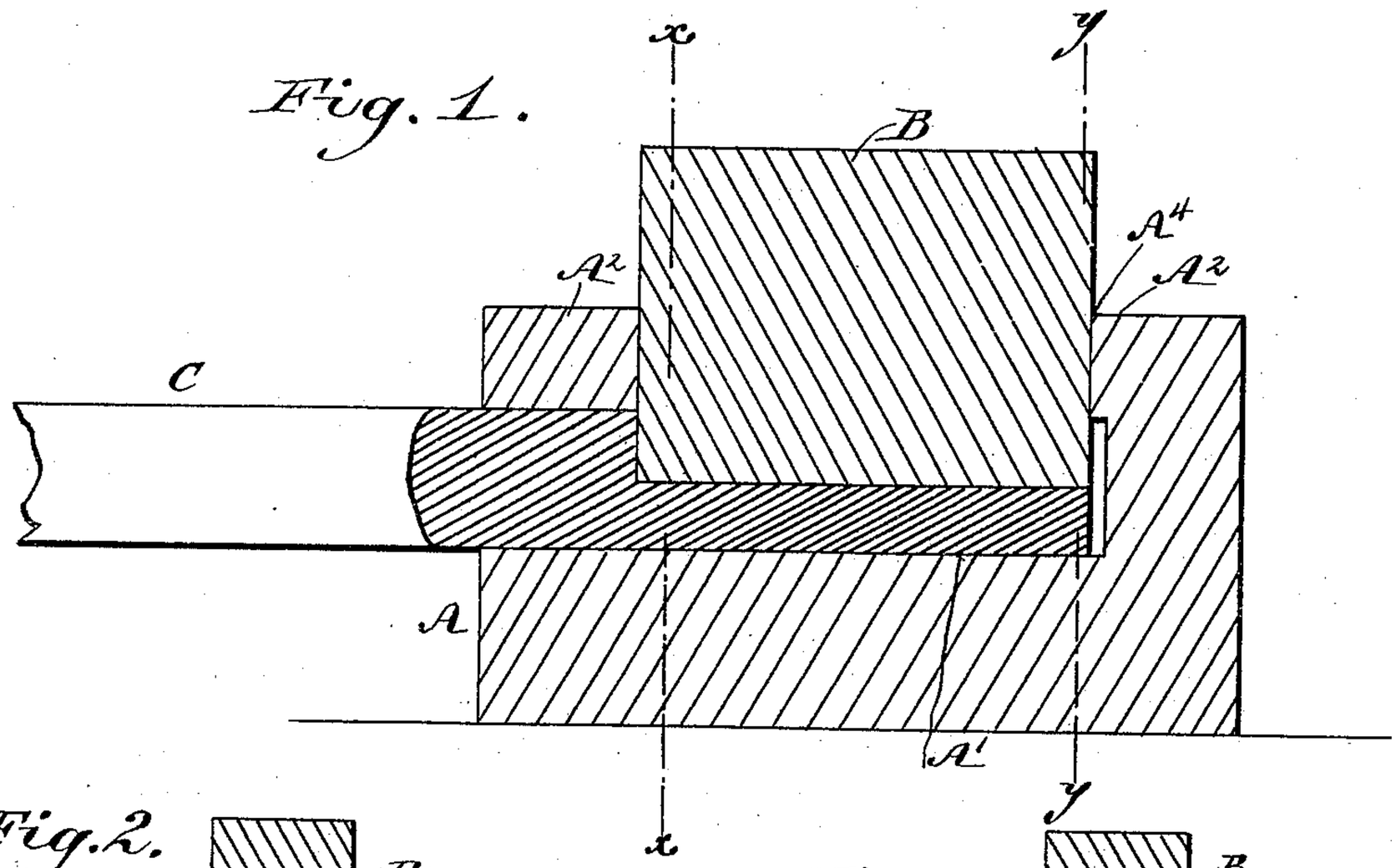


Fig. 2.

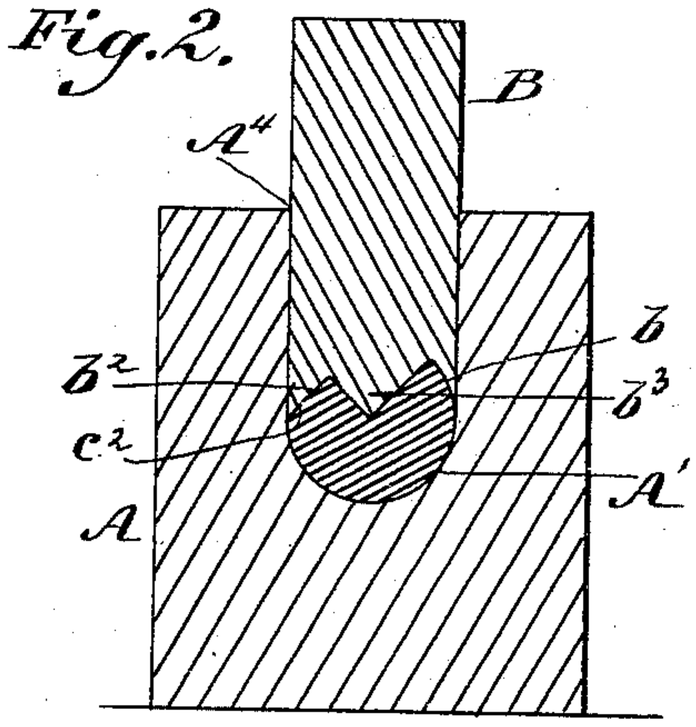


Fig. 3.

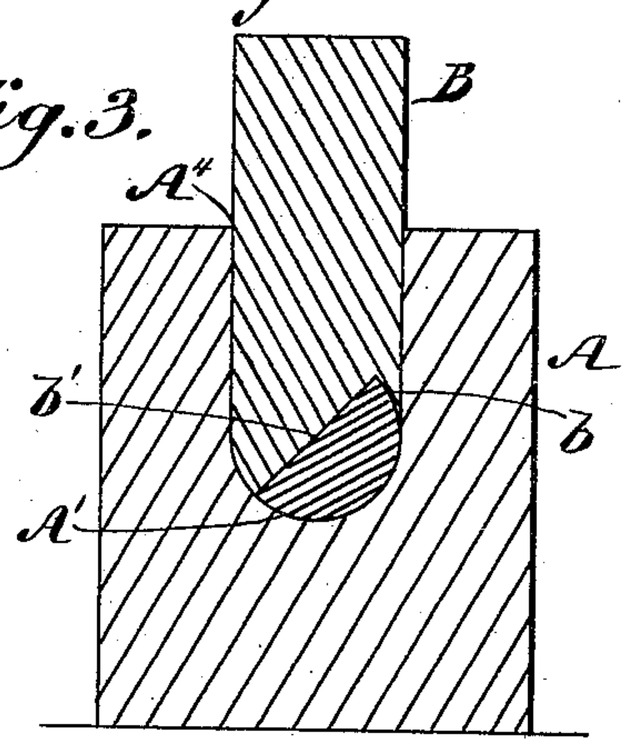


Fig. 4.

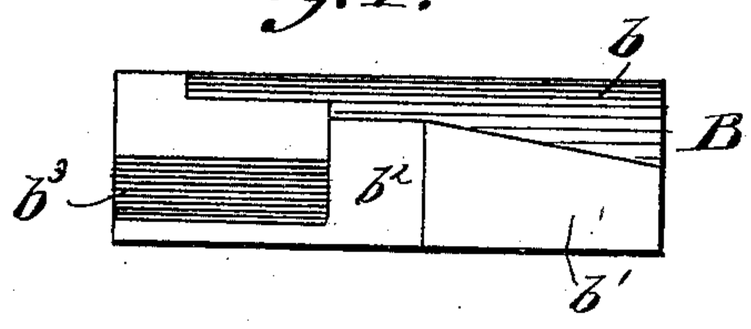
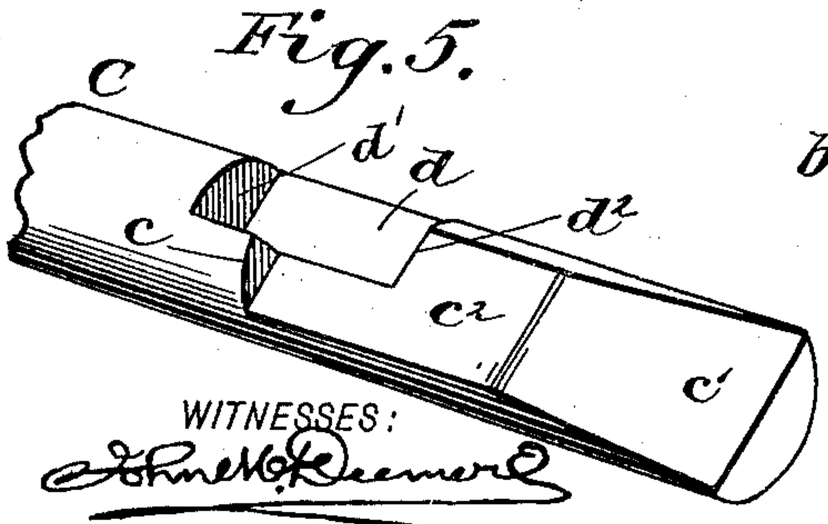


Fig. 5.



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THOMAS J. BUSH, OF LEXINGTON, KENTUCKY.

DIE FOR MAKING BOLTS.

SPECIFICATION forming part of Letters Patent No. 446,768, dated February 17, 1891.

Application filed May 3, 1890. Serial No. 350,497. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. BUSH, of Lexington, in the county of Fayette and State of Kentucky, have invented a new and Improved Machine for Making Bolts, of which the following is a full, clear, and exact description.

My invention relates to making interlocking bolts such or substantially such as are covered by my patent of September 19, 1882, No. 264,622; and the invention consists of a die or drop forging machine of peculiar construction to shape the locking end of the bolt, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal sectional elevation of my invention. Figs. 2 and 3 are transverse sectional views on lines $x\ x$ and $y\ y$, respectively, of Fig. 1. Fig. 4 is a plan view of the face of the die or mandrel; and Fig. 5 is a perspective view of the end of the completed bolt.

A represents a die formed with a seat A′, which may or may not have a covering A^2. When provided with said cover, the same will be apertured at A^4 to receive the punch or mandrel B, which fits the die and is to receive a stroke or heavy pressure to shape the end of the bolt C. The lower end or face of the mandrel B is cut away at b to form a full clearance for the circular surface of the bolt. The surface b' is projected and beveled to form the bevel c' of the bolt, while the surface b^2 is less projected and is flat to form the flat surface c^2 and the notch or shoulder c of the bolt. At b^3 the mandrel is again, but more prominently, projected to form the recess d in the bolt, resulting in the formation of the locking-shoulders d' d^2. The projection b^3 forms a sharp angle, the apex of which is central to the thrust of any power applied to the mandrel to compress and shape the bolt.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The mandrel formed with the projected flat surfaces b' b^2 and cut away to form the clearance b, and formed with the central angular projection b^3 at one end of the mandrel, the same to be used jointly with the die A, formed with a seat A′ for the blank and an aperture A^4 for the mandrel, substantially as described.

THOMAS J. BUSH.

Witnesses:
F. W. HANAFORD,
C. SEDGWICK.