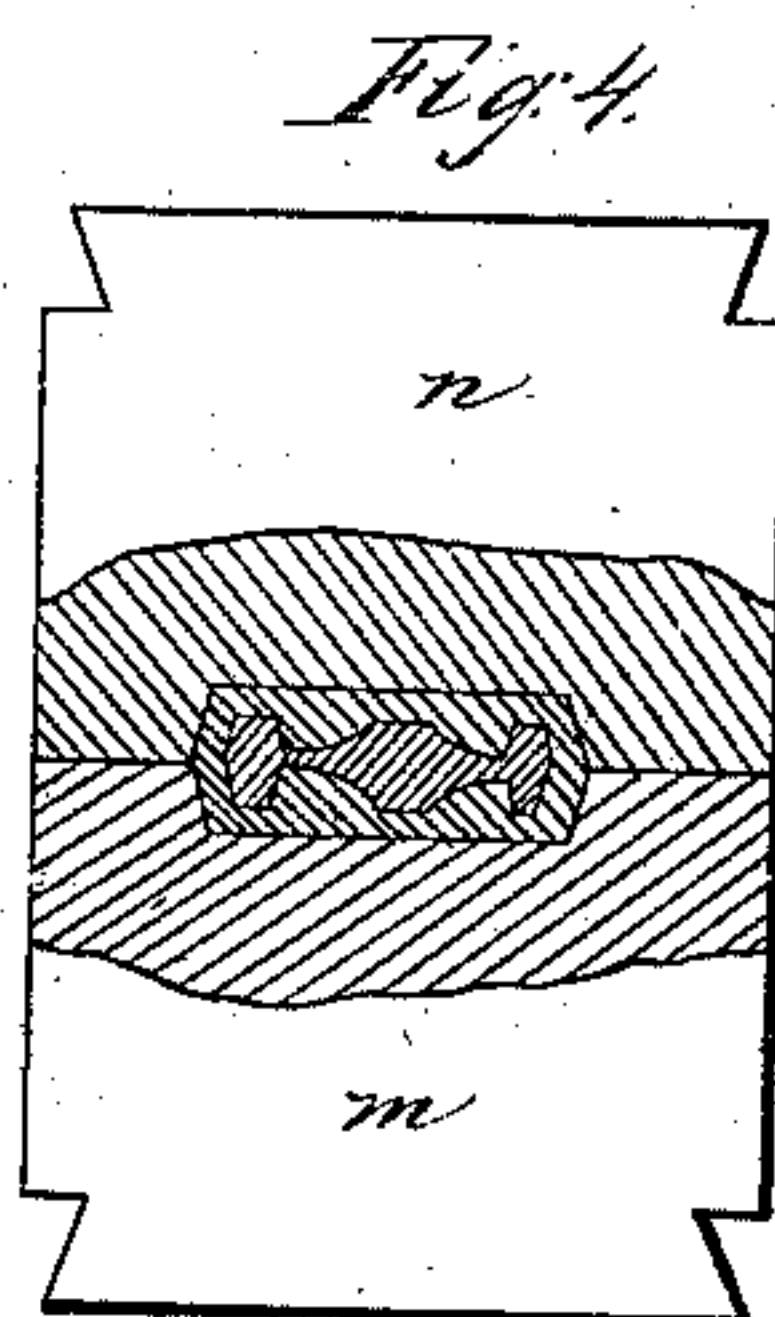
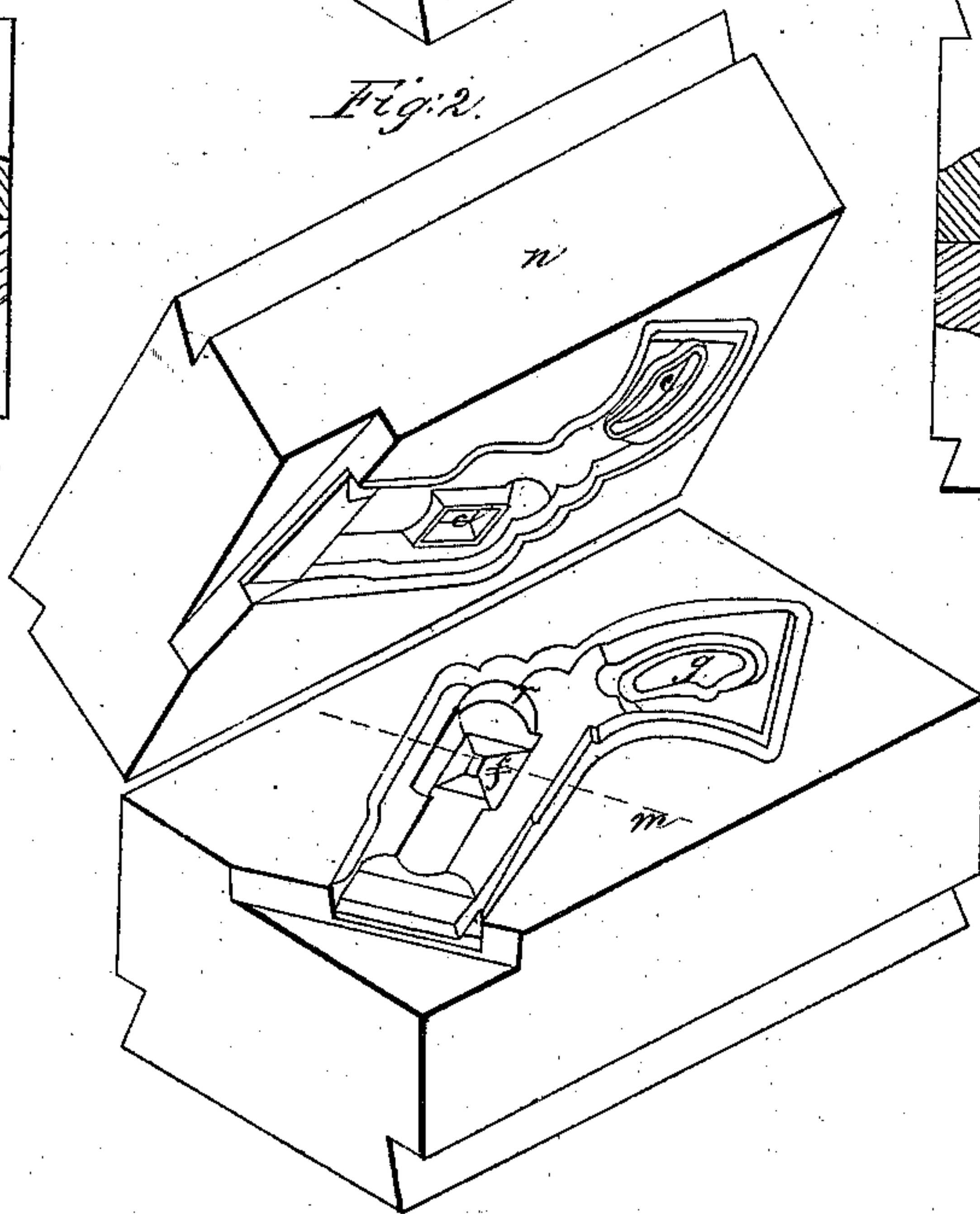
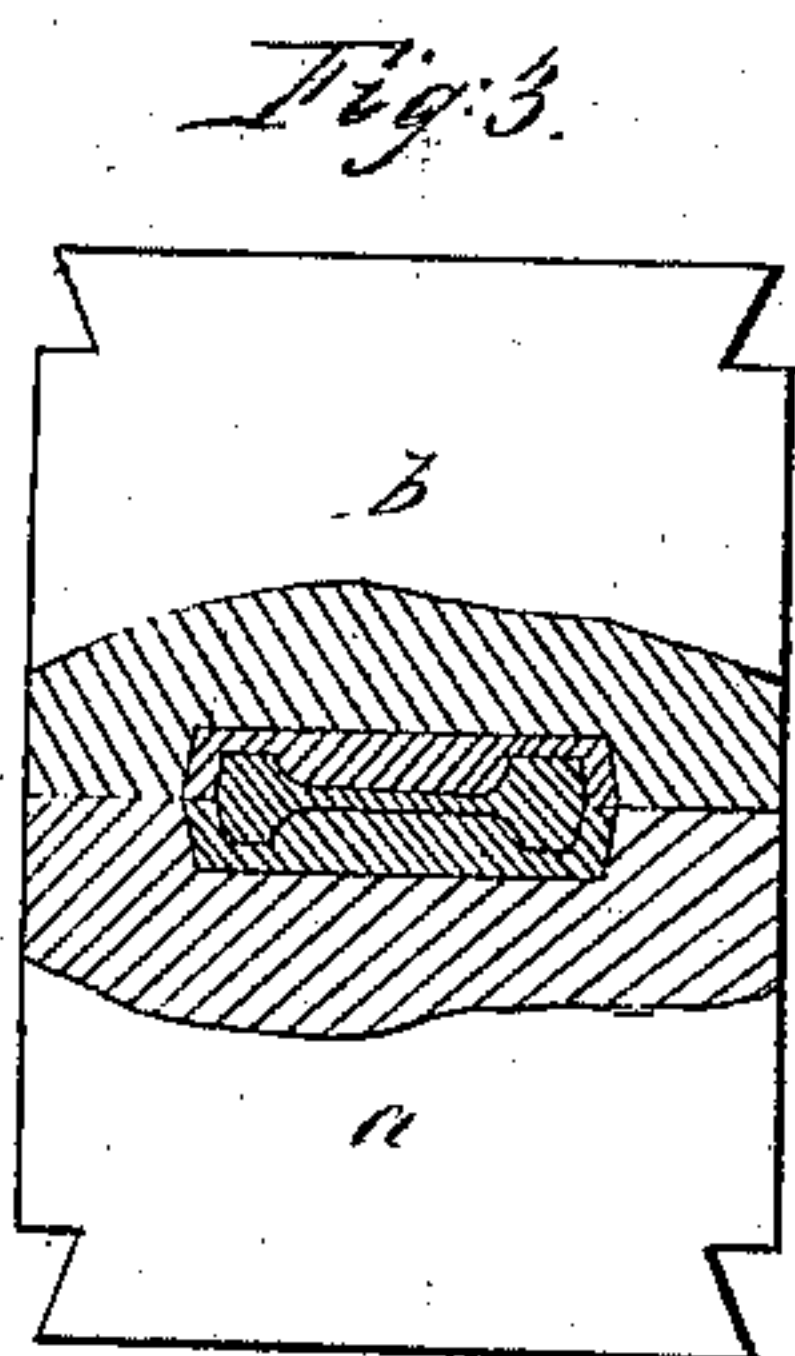
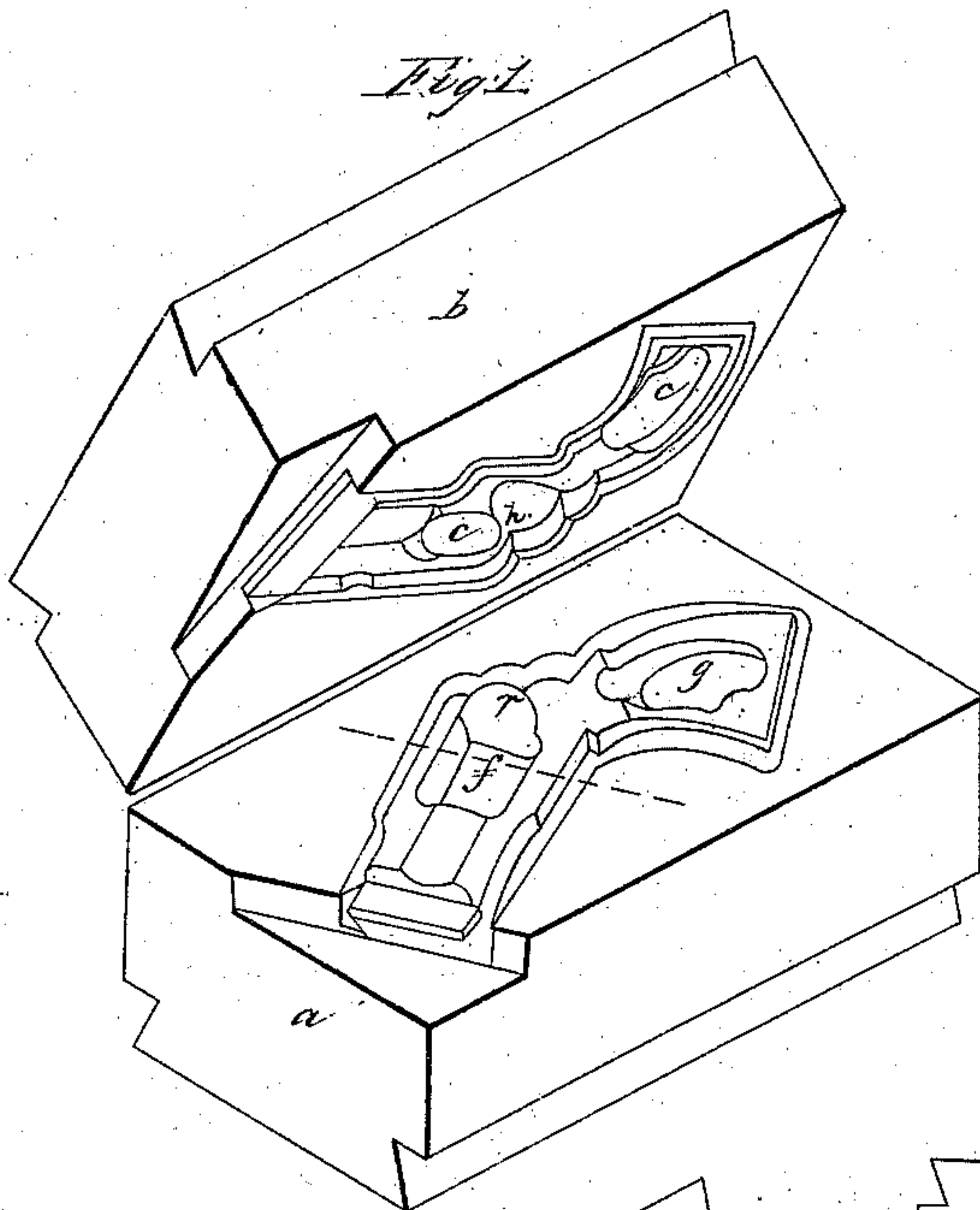


*C. E. Billings,*  
*Making Fire-Arms,*

*N<sup>o</sup> 56,885.*

*Patented Aug. 7, 1866.*



*Witnesses.*

*W. C. Brown*  
*Geo. Fisher*

*Inventor.*  
*C. E. Billings*  
*By [Signature]*  
*attys*



# UNITED STATES PATENT OFFICE.

CHARLES E. BILLINGS, OF WINDSOR, VERMONT.

## IMPROVEMENT IN DIES FOR SWAGING PISTOL-FRAMES.

Specification forming part of Letters Patent No. 56,885, dated August 7, 1866.

*To all whom it may concern:*

Be it known that I, CHARLES E. BILLINGS, of Windsor, in the county of Windsor and State of Vermont, have invented new and useful Improvements in Forging Pistol and Rifle Frames; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to the manner of imparting to the ordinary blank forms from which pistol-frames are produced the necessary shape to receive the handle and breech cylinder or piece of the pistol; and it consists in constructing the forming-dies with cavities and cutting-faces, formed as hereinafter described, so that the metal displaced by the cutting-edges will be forced into the scrap-pieces, which are removed, and smoother edges and a better finish will be imparted to the frame.

Figure 1 is a perspective view of one set of dies, which I denominate the "formers," opened from each other, showing the blank placed and struck up or stamped therein; and Fig. 2, a similar view of the other set of finishing-dies, also showing the blank still further struck up or stamped; and Figs. 3 and 4, transverse sections of Figs. 1 and 2, with the die-blocks closed or shut upon each other.

The metal plate of which the pistol or rifle frame is to be made or struck up is first formed of the proper shape upon and around its whole periphery or extent, and of the requisite thickness as now ordinarily practiced, and which does not constitute any portion of the present invention; after which it is placed in the lower or fixed die, *a*, of the two formers *a* and *b*, as plainly represented in Fig. 1, both of which formers are made of the same shape, and have suitable projecting pieces *c*, with rounding edges, to form or strike up the recesses *f* and *g* in both surfaces of the blank, the former of which, *f*, is at the point of the frame or blank where the breech-cylinder is to be inserted, while the latter, *g*, prepares the blank to be cut out at the proper point for inserting the operating devices of the pistol.

Within each surface of the two forming-dies before referred to, and at corresponding

positions thereof, are similar-shaped semicircular depressions *h h*, into which, in consequence of the rounded edges of the projection *c* of each former, the surplus metal in the forming of the recesses *f* is forced, as one die is dropped with sufficient pressure upon the other, thereby imparting to the blank the requisite bulging shape at the point *r*, which comes against or back of the rear end of the cylinder-breech to protect it from injury, as is apparent without further explanation.

The blank thus stamped is then placed in the finishing-dies *m* and *n*, corresponding in shape to the formers, with the exception that in lieu of rounded edges upon the projecting pieces thereof, they are made sufficiently sharp that as one die is dropped upon the other with the requisite force it shall cause the recesses to be so cut as to be trimmed and made ready to receive the devices constituting the pistol intended to be placed therein, as is well known to all conversant with the manufacture of firearms.

The finishing-dies, in and between their cutting-edges, are made hollow or concave, as plainly shown in Fig. 4, at *t*, so that when the two dies come together the metal contained in the pistol-frame block, between such cutting-edges, will be worked thereby into the concavities of the dies, thus permitting them to come more closely together, and correspondingly cut deeper into the metal than would be possible were the dies formed in any other manner. In this way the metal can be punched or cut out to such a thinness by the dies that when the frame has been removed from the dies a slight blow from a hammer will sever the center portions from the frame, as is obvious, the importance of which is manifest.

I claim as new and desire to secure by Letters Patent—

The cutting-dies herein described for forming pistol and rifle frames, formed with cavities *c c*, and otherwise constructed as specified.

The above specification of my invention signed by me this 7th day of June, 1865.

CHARLES E. BILLINGS.

Witnesses:

ALBERT W. BROWN,  
WM. DEAN OVERELL.