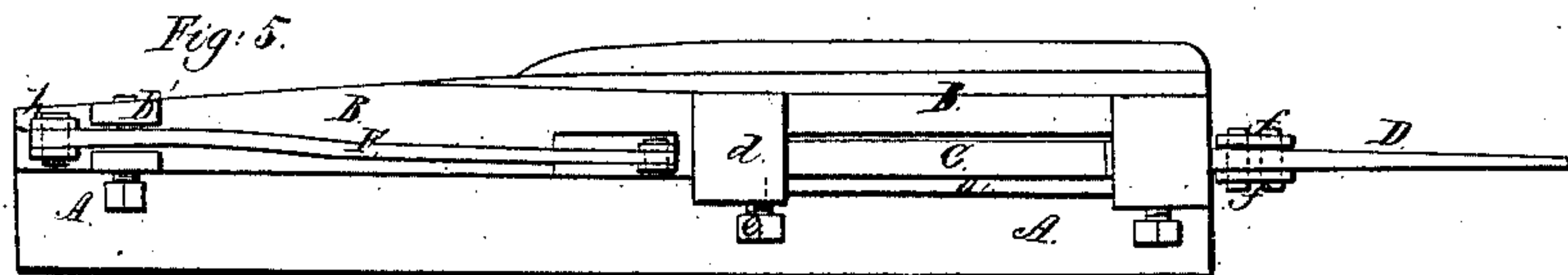
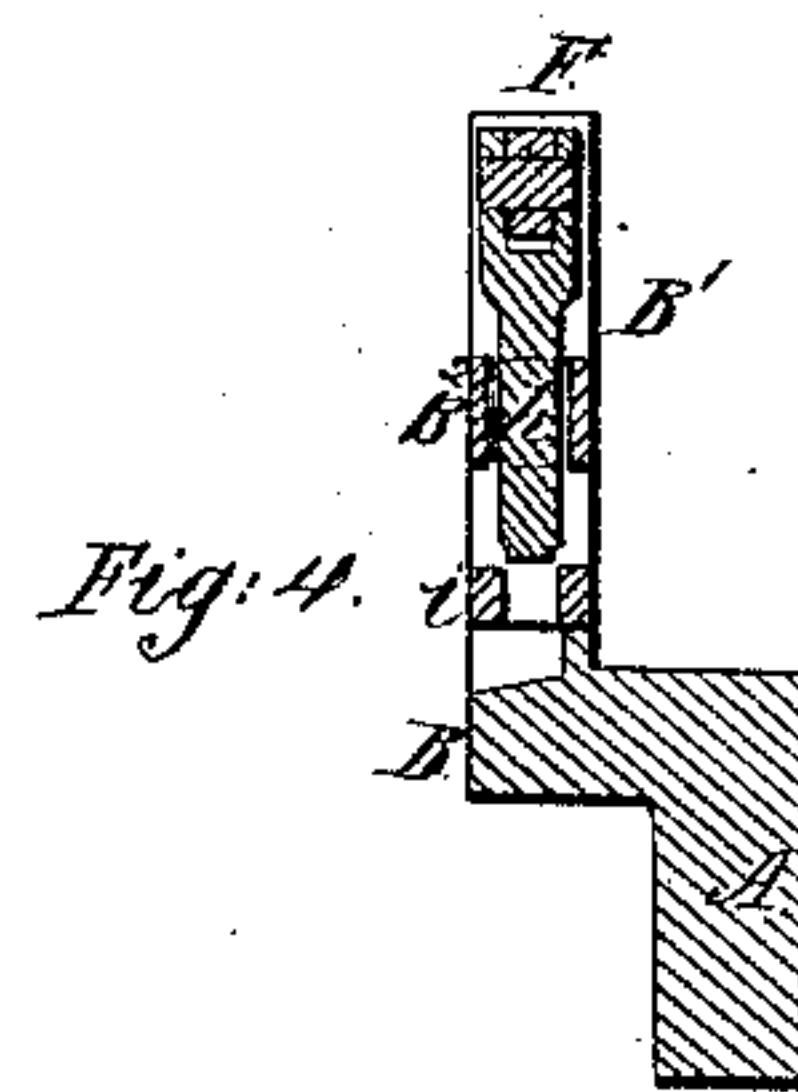
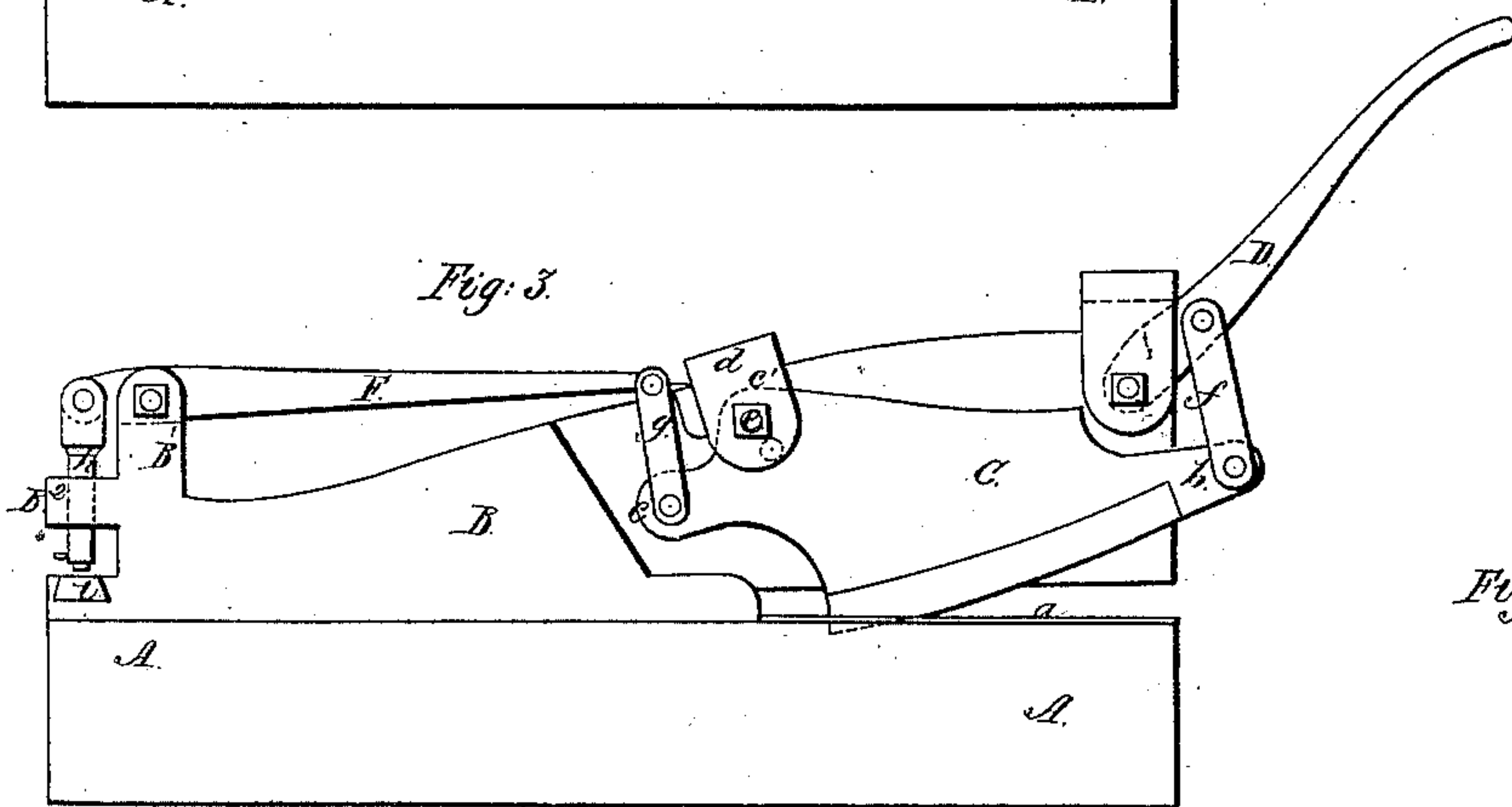
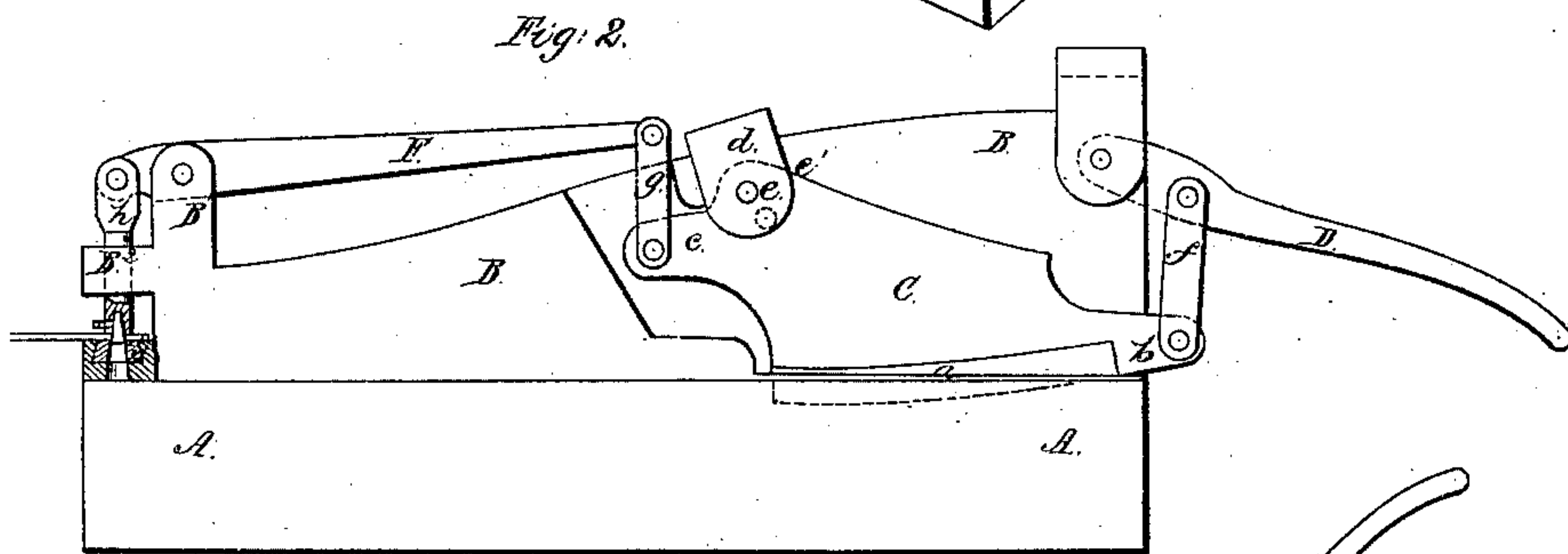
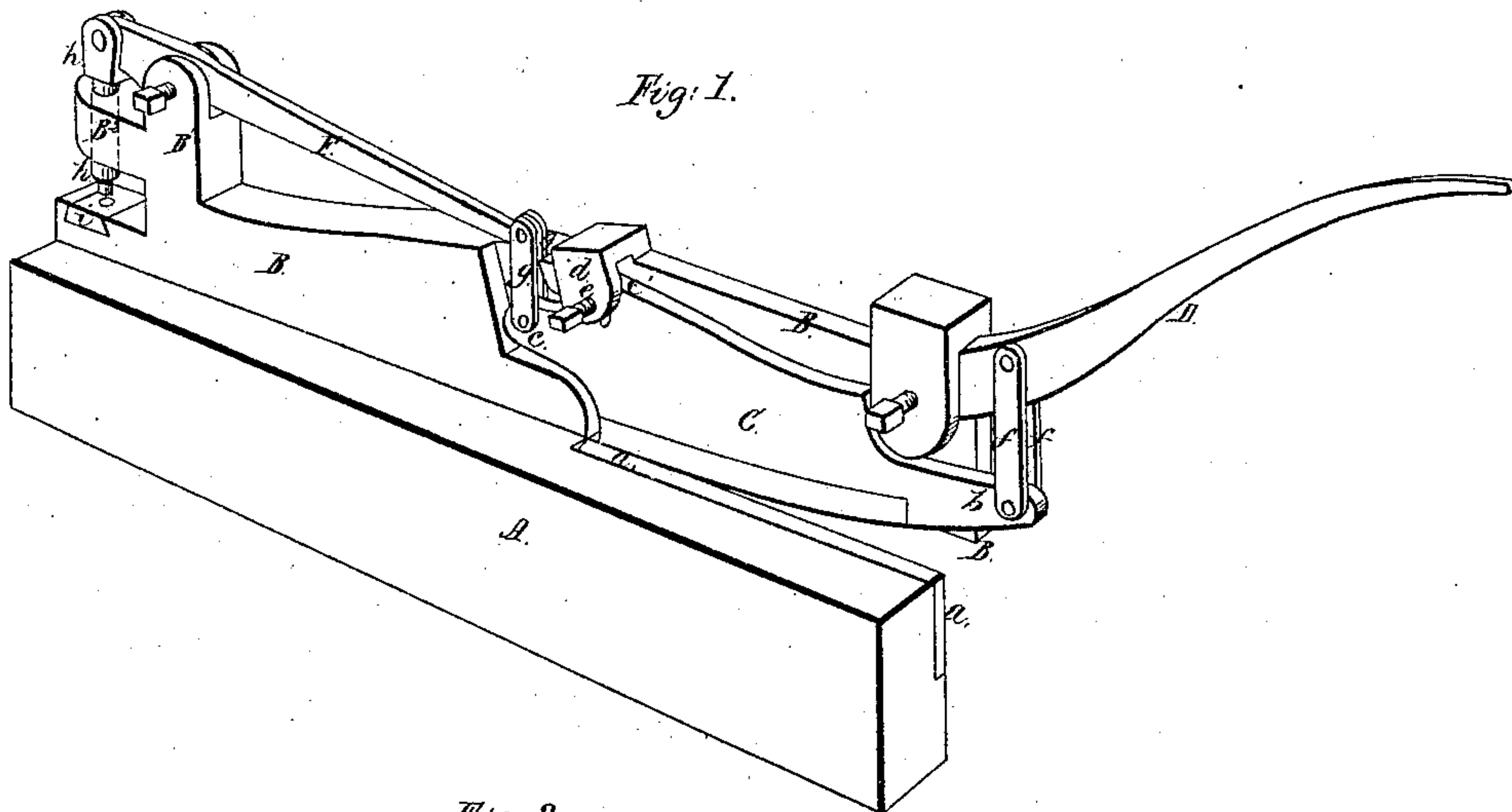


*I. Lamplugh.*  
*Metal Shears and Punch.*

*N<sup>o</sup> 63,398.*

*Patented Apr. 2, 1867.*



*Witnesses:*  
*R. J. Campbell*  
*Edw. Schaefer*

*Inventor:*  
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*Master Smith & Hammer*

# United States Patent Office.

ISAAC LAMPLUGH, OF PEORIA, ILLINOIS.

*Letters Patent No. 63,398, dated April 2, 1867.*

## IMPROVED SHEARING AND PUNCHING MACHINE.

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, ISAAC LAMPLUGH, of Peoria, in the county of Peoria, and State of Illinois, have invented a Combined Shearing and Punching Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the machine.

Figures 2 and 3 are side elevations of the machine, showing the shear and punch in different positions.

Figure 4 is a cross-section, taken in the vertical plane indicated by red line  $xx$  in fig. 3.

Figure 5 is a top view of the machine.

Similar letters of reference indicate corresponding parts in the several figures.

This invention has for its object the combination of a device for punching metal, with a shear for cutting metal, in such manner that a compound lever is obtained through the medium of the shear-blade for operating the punch simultaneously with the movement of said shear, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

The frame to which the punching and shearing devices are applied, is cast in one piece, and so constructed that it can be firmly secured to a bench, in a position for using such devices, by means of a clamp or vise. This frame consists of a base-piece, A, extending the entire length of the machine, which is made sufficiently narrow to be received and held by a common bench-vise. At one end, and on the back side of the base-plate, A, a recess is formed in it for receiving the stationary shear-blade  $a$ , the upper cutting edge of which projects slightly above the upper horizontal surface of plate A, as shown in figs. 1, 2, and 3. Shear-plate  $a$  may be applied so that it can be removed and sharpened at pleasure, and also so that it can be adjusted and set higher as its cutting edge is worn down by grinding. B represents the elevated portion of the frame, which is adapted for receiving the movable shear-blade C, the front surface of which blade is in the vertical plane of the back surface of the stationary shear-blade  $a$ , which is below it, as shown in figs. 1 and 5. The movable shear-blade C may be constructed of the form shown in the drawings, with offsets  $b$   $c$  and  $c'$ , and also with a steel cutting plate inserted into its front face, as represented in the drawings. The blade C has one or more holes through it, at  $c'$ , through one of which a pin,  $e$ , passes, that forms a pivot connection of the blade to its frame B, and between this frame and an overhanging offset,  $d$ , thereof. The projection  $b$ , of blade C, is connected to a vibrating lever-arm, D, by means of links,  $ff$ ; and lever D is pivoted directly above the blade C to the portion B of the frame, so that this blade can be forcibly vibrated by vibrating said lever. To the offset  $c$ , links  $gg$  are pivoted, the upper ends of which are connected to the longest arm of a lever, F, which has its fulcrum upon a vertical standard,  $B^1$ , of the frame, as clearly shown in the drawings. The short of the lever F is pivoted to the upper end of a punch-stock,  $h$ , which is guided by the offset  $B^2$  of standard  $B^1$ , and which is raised and depressed by the movements of lever-arm D, as indicated by figs. 2 and 3. The lower end of the stock  $h$  has a socket formed in it for receiving a punch, which latter may be secured in place by a set-screw, or any other suitable fastening. Directly below the punch is the perforated punch-bed  $i$ , which may be made movable for adapting the machine for punching holes of different sizes. The opening below the punch-bed for the escape of the bits of metal is shown in the sectional view, fig. 4.

The machine which I have thus described is constructed so as to be portable and compact, so that workmen can take it from place to place as circumstances may require, and avoid the necessity of having two separate machines, with lever attachments for operating each one. It will be seen that the movable shear-blade serves as one of three levers for moving the punch-stock, and that punching and shearing can be performed by the movement of the lever D. This lever D may be curved so that its handle will be convenient to a person standing at the punching end of the frame A B, thus enabling such person to operate the shear and punch at the same time, and giving the person standing at the shearing end of the machine freedom of both hands to hold the plate which is being sheared. If desirable, lever F may be connected to the upper ends of links  $f$ , so that the punch will descend simultaneously with the descent of the shear-blade.

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

The improved combined punching and shearing machine, constructed and operating substantially in the manner and for the purposes described.

ISAAC LAMPLUGH.

Witnesses:

J. S. STEVENS,

J. A. VAN DRELZEN.