

Olendorf, Tripp & Harner,

Bolt Cutter.

N^o 16,991.

Patented Apr. 7, 1857.

Fig. 5.

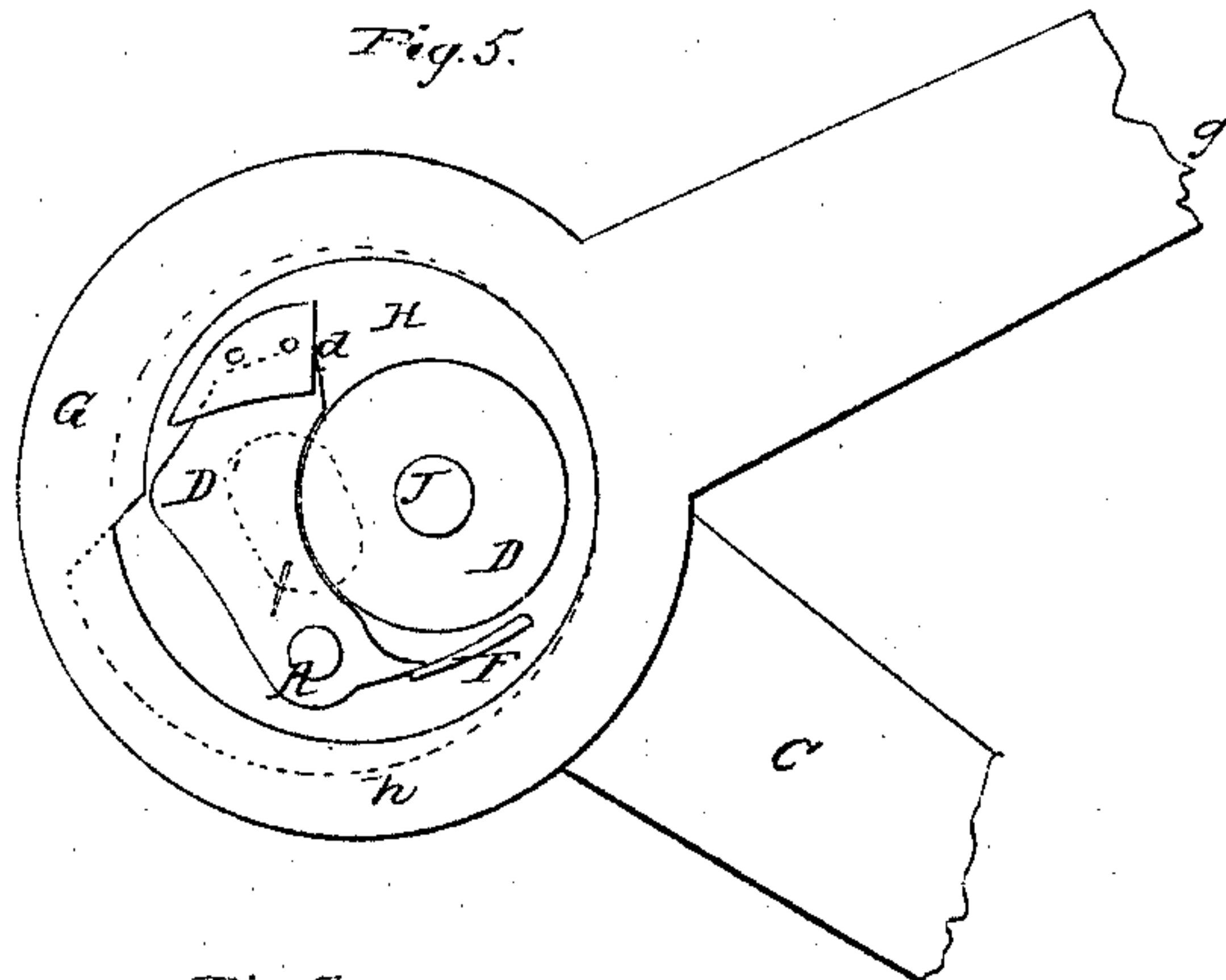


Fig. 3.

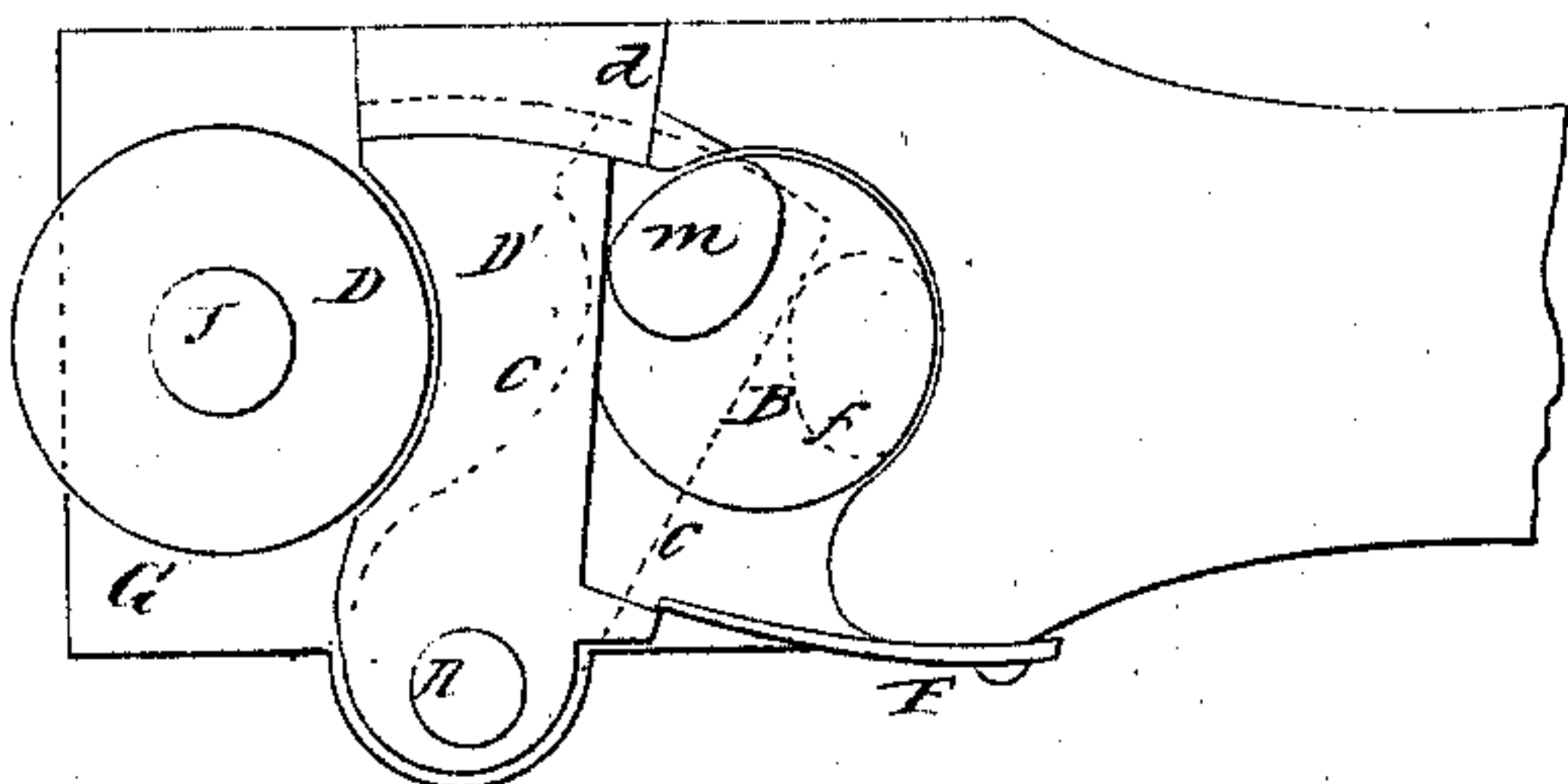


Fig. 4.

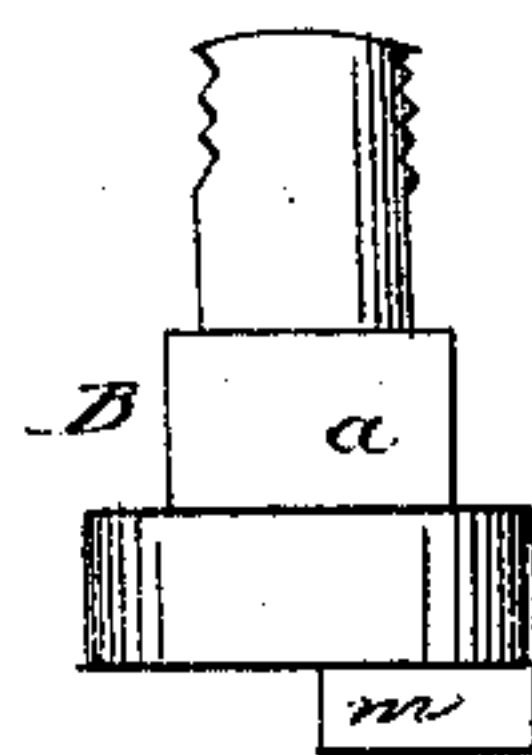


Fig. 2.

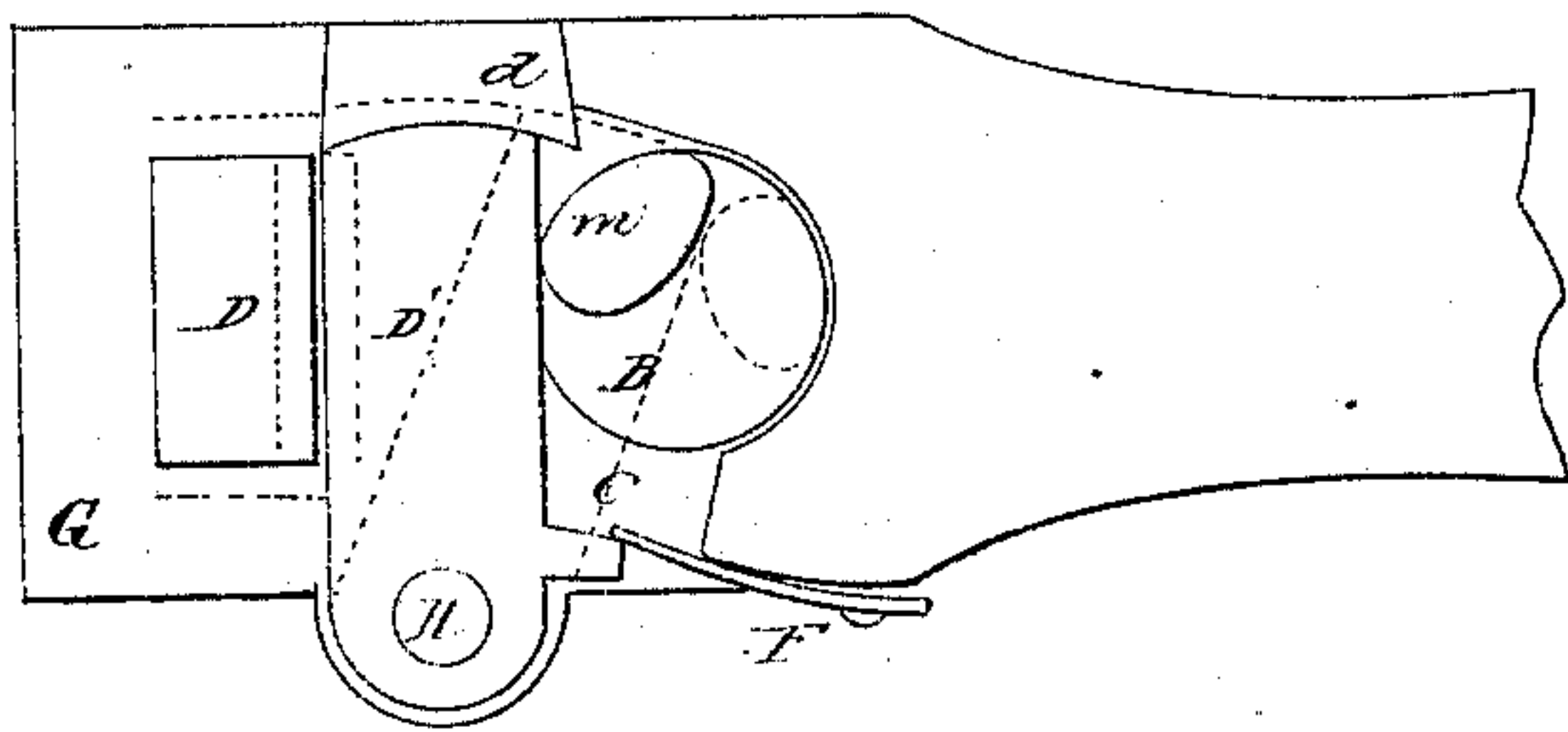
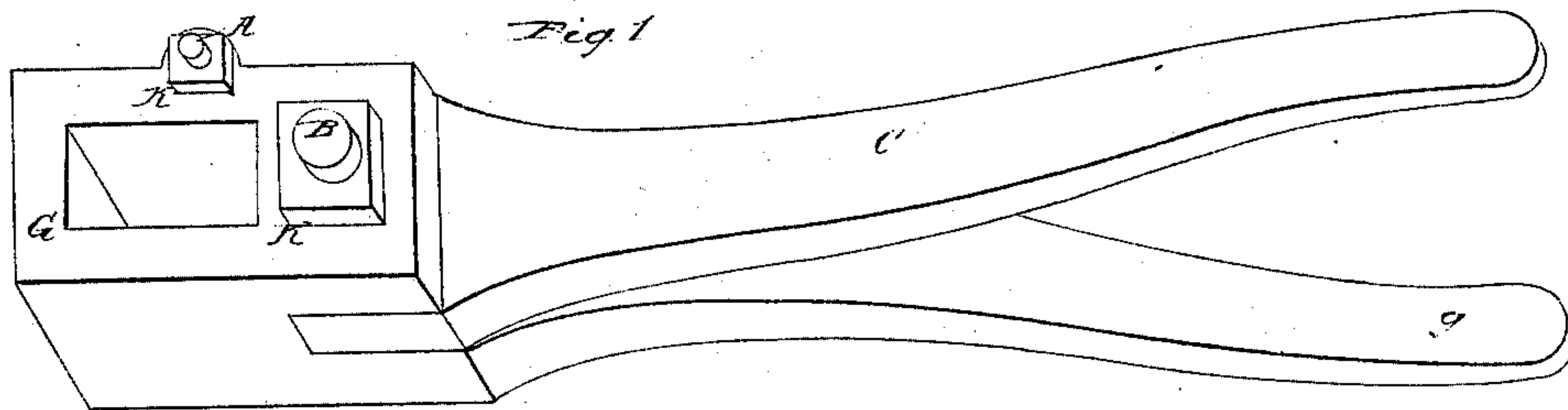


Fig. 1.



UNITED STATES PATENT OFFICE.

G. J. OLENDORF AND E. R. TRIPP, OF MIDDLEFIELD, AND S. HARPER, OF COOPERSTOWN,
NEW YORK.

TRIMMING-JACK.

Specification of Letters Patent No. 16,991, dated April 7, 1857.

To all whom it may concern:

Be it known that we, GARRET J. OLENDORF and EDWIN R. TRIPP, of the town of Middlefield, and SAMUEL HARPER, of Cooperstown, 5 county of Otsego, and State of New York, have invented a new and useful Machine for Trimming Bolts or Rivets, which we call a "Trimming-Jack;" and we do hereby declare that the following is a full, clear, and 10 exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of our machine. Fig. 2 is a section of the underside 15 of the bedpiece showing the arrangement of the several parts. Fig. 3 is same as Fig. 2, showing the arrangement of the several parts when the revolving die is used in connection with the swinging die. Fig. 4 is a 20 view of the cam, or crank shaft. Fig. 5 is a section of the underside, showing the arrangement of the several parts, when arranged to be operated with an inclined plane. 25

G, is the frame, or bed piece; and *g* is the handle, or lever of the same; C, is a horizontal lever; B, is the cam, or crank shaft; *m* is the cam, and *a*, is the part of shaft B, 30 which is constructed square, and on which the lever C, is secured; *b*, red line, is the position of the cam when the dies are open; D, D', are the cutting dies; *c*, *c*, are lines showing the position of the swinging die 35 when open; F, is a spring which opens the dies.

H, Fig. 5, is the revolving cylinder; *h*, red line is the inclined plane; *d*, is a piece which is riveted, or in any way firmly secured on 40 frame G, or on the revolving cylinder H, and forms a groove to support the end of the swinging die; A, is a bolt which connects the swinging die to the frame; J, is a bolt which connects the revolving die with 45 the frame G; *f*, dotted lines shows the opening in the cylinder to receive the bolts, or other article to be cut; K, K, are nuts on the bolts.

The nature of our invention consists in 50 the construction of a suitable frame, or bed-piece in which, near the lower surface the cutting dies are arranged, operating with a cam, eccentric, or an inclined plane, suitably connected and arranged with the design of 55 obtaining the greatest effect from the power employed, and with size of machine used,

for the purpose of trimming bolts or rivets; and we believe that we have accomplished our design in the machine herein described.

We will proceed to describe the construction and operation of our machine. They 60 may be constructed entirely of metal, or the handles may be constructed of wood, and suitably connected to the metallic part. We construct the frame G, with a suitable opening 65 in it, and with suitable grooves, or ribs in the opening to receive and support the cutting die D. This manner of arranging this die, supports said die on the cutting line, and also as the dies become shorter by 70 wear, the cutting edges may be kept close by the use of a wedge, or any other suitable device behind the aforesaid die. We secure the die D', to the frame G, by a bolt, not 75 firmly, but it swings on said bolt. The opposite end from said bolt is supported in a groove. The edges of these dies are suitably beveled to perform the work for which they are intended, and they may be constructed with the cutting edges either curved 80 or straight; the swinging die D' may be constructed of a hollow curve on its cutting edge, and the die D, of a round circle, with the whole circumference beveled to a suitable cutting edge, and be connected to the 85 frame G, by a bolt through the center of said die, on, or with which said die will be free to revolve while cutting; or the said dies may be made square, and be both of them supported by grooves without using 90 any bolt.

We construct the cam shaft B, with two bearings, fitted to revolve in the frame G; the lower bearing is sufficiently large, to 95 construct a cam far enough one side of the center to give the required motion to the swinging die, or an eccentric wheel might be constructed on the end of the shaft B, and be used either separate or in connection 100 with a ratchet wheel and pawl, and the aforesaid eccentric may be constructed to commence on the center of the axis on which it turns, which will have less friction, and consequently give more effect from the power employed than any other mode of 105 constructing and arranging an eccentric, but whether the cam or eccentric is used it is arranged to operate directly against the dies. The lever C, is secured on the shaft B, between the bearings; said lever and 110 shaft may be connected by having a square aperture in the lever to fit on the square

portion of the shaft, or they may be connected by key, or pin when the shaft is round.

The spring F, may be dispensed with by having a slot in the die, and having the cam work in said slot, which will cause the dies to open when the lever is pushed back.

Frame G, may be constructed of a circular form, as shown in Fig. 5, with an inclined plane in its lower surface, with a cylinder to revolve inside of said frame; the cutting dies are secured on said cylinder, and the back of the swinging die operates against the inclined plane; said inclined plane may be constructed to close the dies in any part, or in a full revolution. A horizontal lever may be firmly attached in any suitable way to the cylinder, or a gear, or any other suitable device may be used to revolve said cylinder.

To operate our machine, push back lever C, which will permit the swinging die to open sufficient to receive the bolt, or other article to be cut between the said dies; then place the machine upon the bolt and pull levers C, and g, together, which turns the cam, forces together the dies, and performs the operation of cutting. Lever C, is arranged in the frame in such a manner that it cannot be drawn past the point at which the dies close, therefore there is no danger of pulling too strong, or no need of having square shoulders on the dies to prevent their edges striking together.

If dies with edges curved, as shown in Figs. 3 and 5, are used, by moving the dies around the bolt, or rivet, at the same time pressing the levers together will cause the object that is cut to be left round, smooth and finished.

The swinging is superior to the sliding die in several respects: First, there is less friction; 2nd, it requires less power to operate it because it has a leverage; thus if a bolt is placed in the machine to be cut, half way between the axis on which the die swings and the end against which the cam operates, it only takes half the power that it

would with the sliding die to cut said bolt; but if the bolt is as large as the dies will admit at the widest point, so that it is in a line with the cam, and you gain nothing by leverage, cut the bolt half off, then open your dies again and slide said bolt into the center which will give you the advantage again; and in cutting a round substance it takes double the power to cut the last half that it takes to cut the first half, therefore you can have the advantage at the time it is most needed. Or suppose you wish to cut off a piece of band iron $\frac{1}{8}$ inch thick and $\frac{3}{4}$ inch wide, the sliding die will come square against the surface, and it has to cut this bar in moving $\frac{1}{8}$ of an inch, and with the power lever moving but a short distance; therefore it takes a great amount of power to do the work; but with the swinging die to cut this same bar, open your machine to its full extent put in the bar as far down toward the throat as it will go, then instead of the dies coming square across the whole surface, they begin to cut at one edge of the bar, and instead of having to cut off the bar by moving the power lever a few inches, you move it the whole distance which it is arranged to move for to cut any article, besides the advantage you gain in leverage which comes upon the bolt upon which the die swings. By this arrangement we can construct a better, lighter, and more efficient machine than by any other mode of construction.

Having described our machine, what we claim as our invention, and desire to secure by Letters Patent is—

We claim the construction of shaft B, in connection with frame G, and lever C, operating the dies as described and set forth, for the purpose specified.

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Witnesses:

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