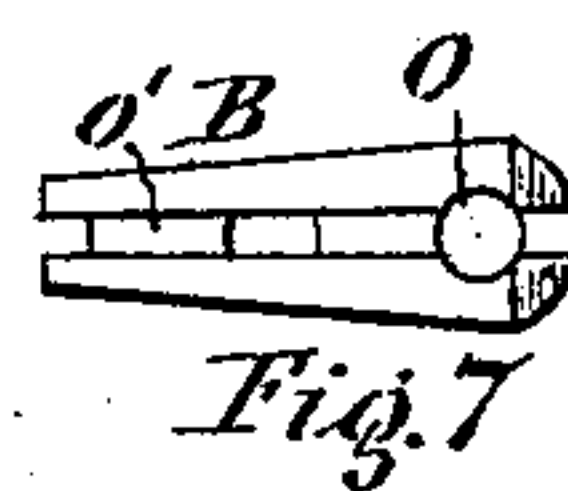
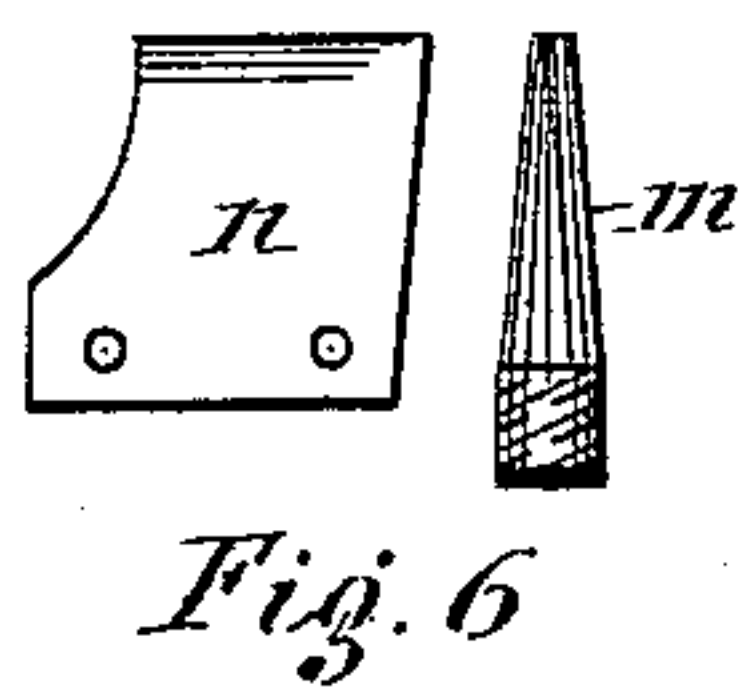
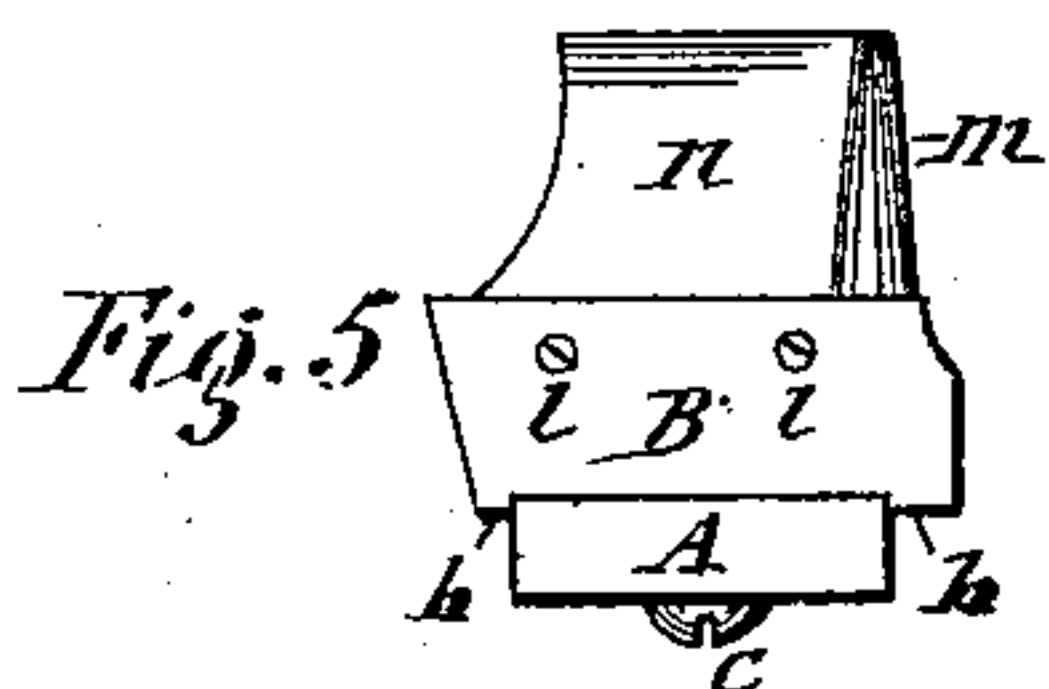
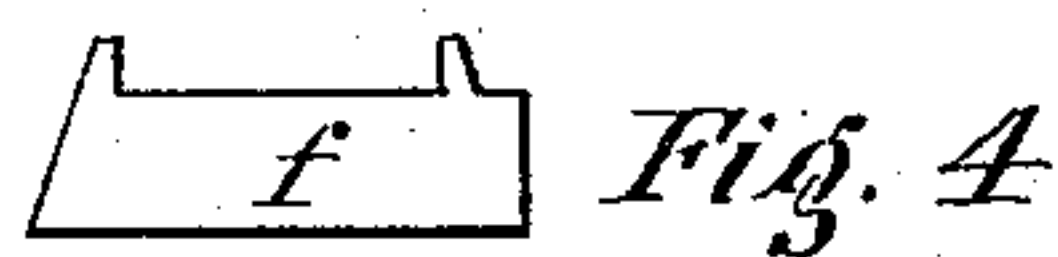
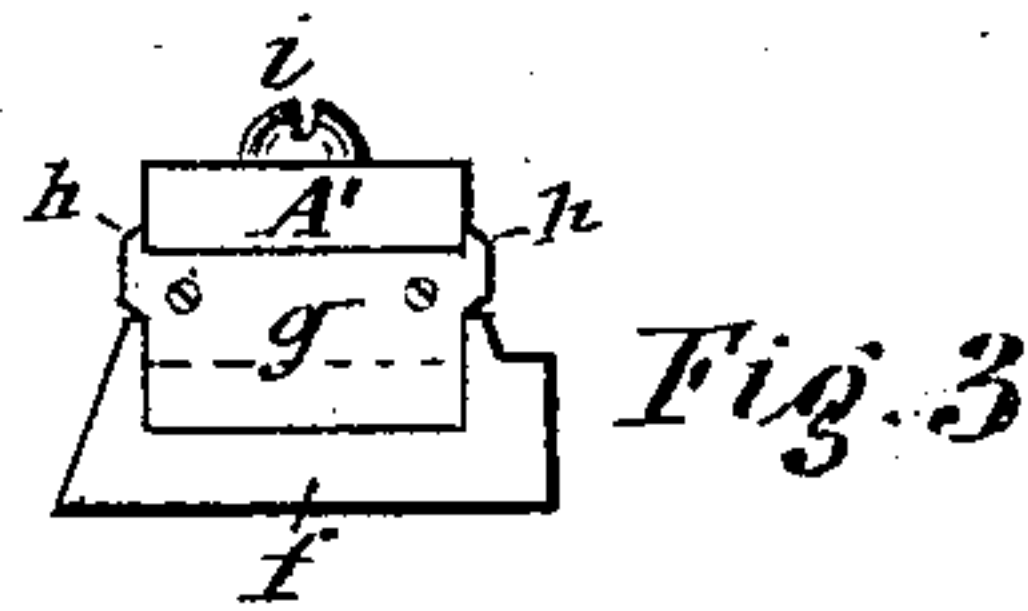
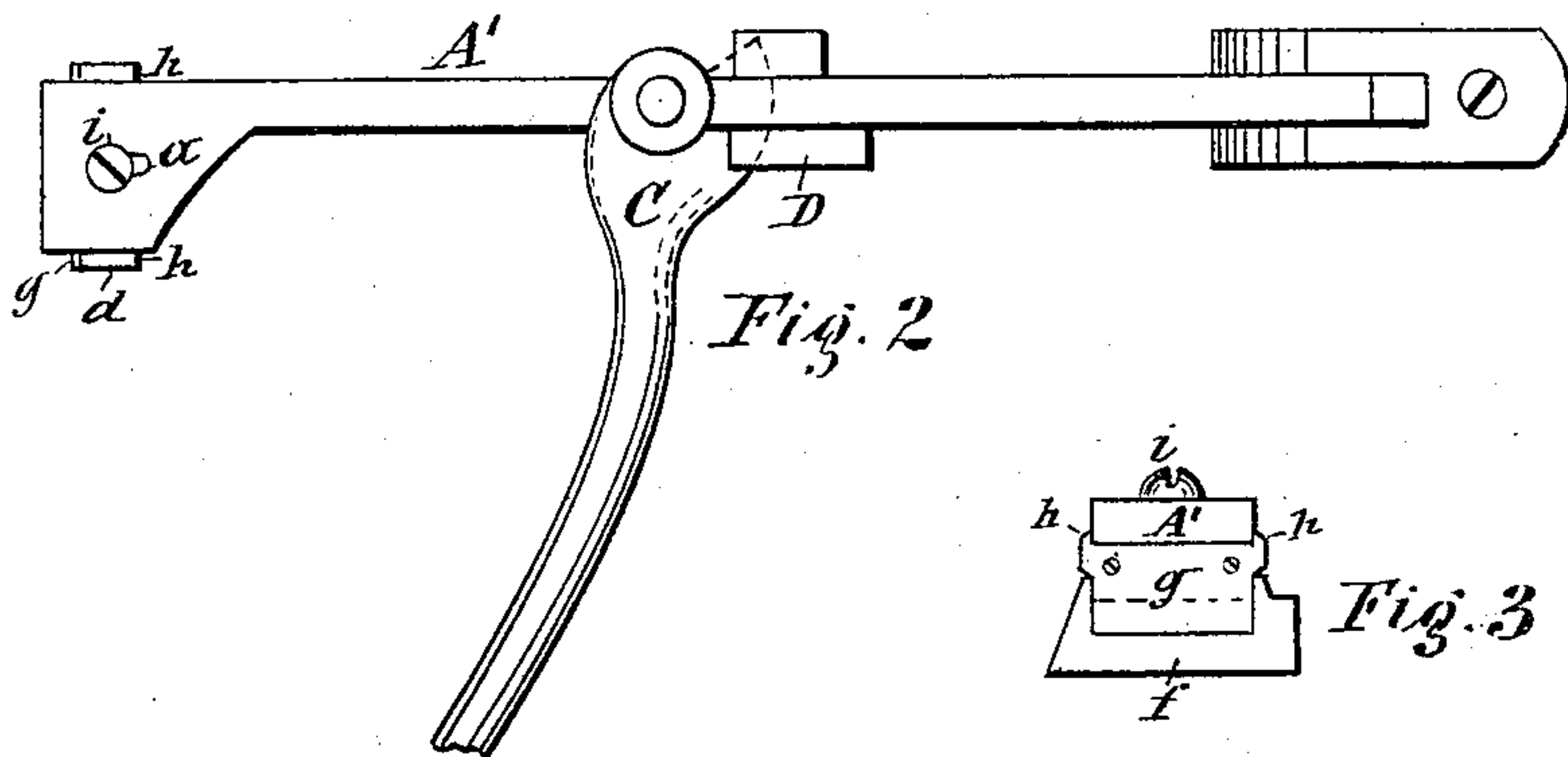
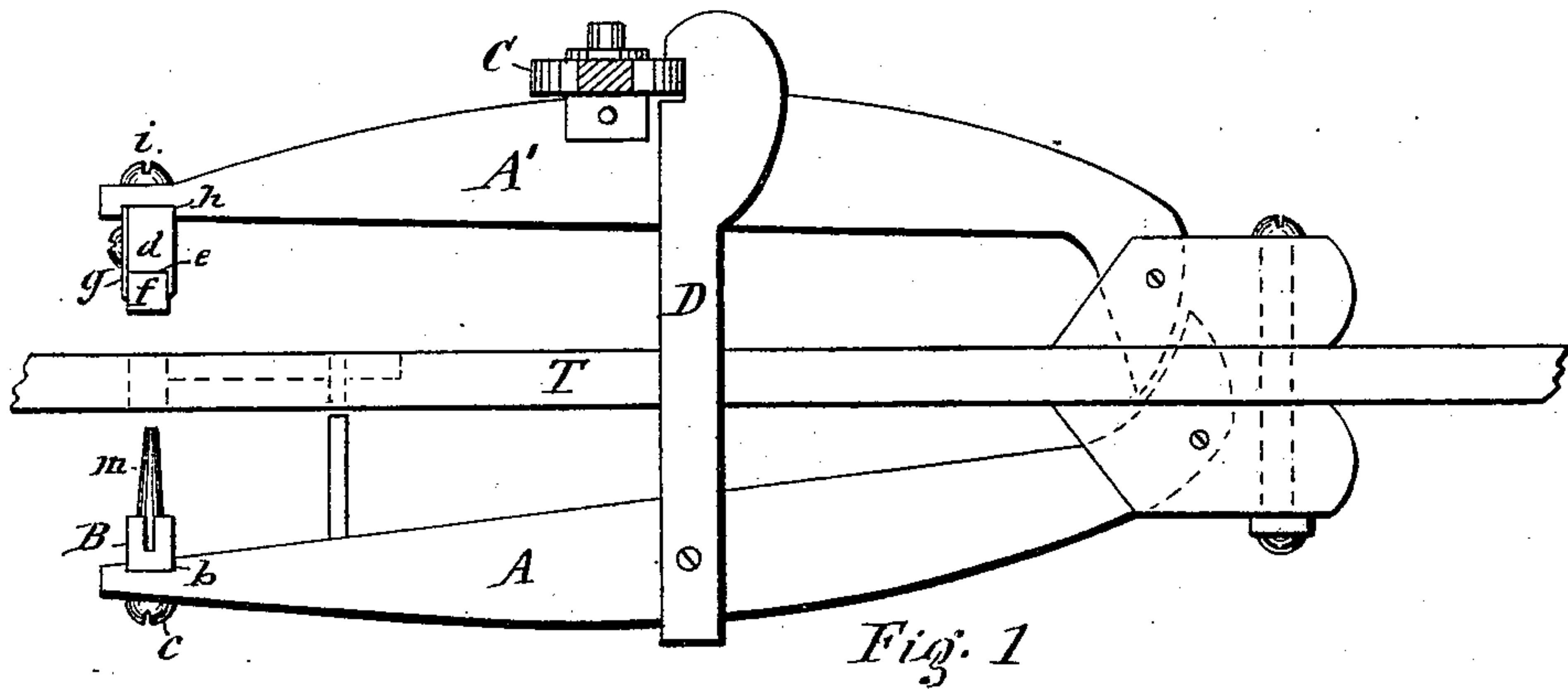


(No Model.)

H. H. BARNARD.
BUTTON HOLE CUTTER.

No. 346,977.

Patented Aug. 10, 1886.



WITNESSES:

A. F. Walz,
C. Bendixon.

INVENTOR:

Henry H. Barnard
per Smith, Lacey & Hay
his Atty.

UNITED STATES PATENT OFFICE.

HENRY H. BARNARD, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE BARNARD ATTACHMENT COMPANY, OF SAME PLACE.

BUTTON-HOLE CUTTER.

SPECIFICATION forming part of Letters Patent No. 346,977, dated August 10, 1886.

Application filed February 10, 1886. Serial No. 191,394. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. BARNARD, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Button-Hole Cutters, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to that class of button-hole cutters which punch an eye at the end of a slit.

Heretofore in button-hole-cutting machines the aforesaid cutters have been attached to their usual operating-levers at fixed points, and in such a manner as to preclude adjustment of the position of the cutters in relation to their co-operating devices when necessary.

It is the object of this invention to obviate the aforesaid defects; and to that end my invention consists in the improved construction and combination of parts hereinafter described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a front elevation of a button-hole-cutting machine embodying my improvements. Fig. 2 is a top plan view of the same. Fig. 3 is an end view of the upper lever of said machine. Fig. 4 is a detached view of the supplemental block, which is carried on the aforesaid lever. Fig. 5 is an end view of the lower lever, which carries the cutter. Fig. 6 is a detached view of the cutter, and Fig. 7 is a top plan view of the supporting-block of the cutter.

Similar letters of reference indicate corresponding parts.

A A' represent, respectively, the lower and upper levers of an ordinary button-hole-cutting machine, said levers being arranged parallel, one directly over the other, and hinged at one end, and made to approach and recede from each other at their free ends by a cam-lever, C, pivoted on the upper lever, and engaging with a notch in the upper end of an arm, D, projecting from the lower lever, as represented in Fig. 1 of the drawings.

On top of the free end of the lower lever, A, is mounted the cutter-supporting block B, having guide-ribs *b b*, bearing against opposite sides of the lever, and thus sustaining said block laterally in its position. By means of

a screw, *c*, passing through a longitudinal slot in the lever, and inserted from the under side thereof and engaging a screw-threaded socket in the block B, the latter is secured to the lever adjustably longitudinally thereon, so as to allow said block to be shifted to properly center the cutter to the cutter-passage through the table T under the co-operating block *f* on the upper lever.

The button-hole cutter I form of two separate and distinct parts, one of which consists of a round tubular punch, *m*, which has its base screw-threaded, and is screwed thereby into a corresponding screw-threaded vertical socket, *o*, near one end of the block B, and can be unscrewed therefrom when required for repairs or renewal. The other part of the cutter consists of a straight knife, *n*, which is seated in a groove, *o'*, in the top of the block B, and abuts at one end against the side of the punch *m*, as represented in Fig. 5 of the drawings. The knife *n* is detachably secured in its seat by set-screws *ll*, inserted through the side of the block B and pressing against the side of the knife.

By forming the button-hole cutter of the punch *m* separate from the knife *n*, and connecting said parts to one and the same supporting-block B, and making them detachable therefrom independently of each other, in the manner hereinbefore described, said cutter has a firm support when in its operative position, and if either part of the cutter becomes impaired it can be readily removed from its support for repairs or renewal without disturbing the other part, and when either of said parts is detached it can be ground or sharpened accurately, conveniently, and expeditiously.

If desired, the straight knife *n* can be formed with cutting-edges along two or more of its sides, so that by turning the knife within its plane said cutting-edges can be successively brought into use as the previously-used edges become worn.

d represents a block which is adjustably secured to the under side of the upper lever, A', in a manner similar to the attachment of the cutter-supporting block B, hereinbefore described—i. e., the said block *d* reaches across the lever A', and is provided at opposite ends

with upward-projecting flanges *h h*, which abut against opposite sides of the lever, and thus prevent said block from shifting laterally on said lever. The lever is provided with a longitudinal slot, *a*, as shown in Fig. 2 of the drawings, and through this slot passes the screw *i*, which is inserted from the top of the lever and enters a screw-threaded socket in the block *d*, the screw being provided on its upper end with a head, by which it bears on the top of the lever, and is thus enabled to draw the block *d* tightly against the lever. The slot *a* allows the block *d* to be shifted, so as to bring it into proper position in relation to the cutter carried on the lower lever, *A*.

The under side of the block *d* is formed with a rabbet, *e*, in which is seated the supplemental block *f*, which applies the requisite pressure to that portion of the cloth which is to be cut by the button-hole cutter *n m*, said block being therefore usually made either of copper or brass, so as to obviate injury to the cutting-edge of the cutter after it has penetrated the cloth. The supplemental block *f* is detachably secured in the rabbet *e* by a plate, *g*, which is clamped on the side of the block *d* and presses against the side of the supplemental block *f*. Said plate is also provided with upward projections *h h*, which abut against opposite sides of the lever *A'*, so as to sustain the plate laterally on the lever.

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

1. In combination with the cutter and the lever *A'*, the block *d*, provided with the rabbet *e*, the supplemental block *f*, seated in said rabbet, and the clamping-plate *g*, applied removably to the side of the block *d* and engaging the block *f*, substantially as described and shown.

2. In combination with the lever *A* and the cutter adjustably secured on said lever, the lever *A'*, provided with the longitudinal slot *a*, the block *d*, provided with guide-flanges *h h*, and adjustably connected to the lever *A'* by the attaching-screw *i*, passing through the slot *a*, and the supplemental block *f*, attached to the block *d*, all constructed and combined substantially in the manner specified and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 5th day of February, 1886.

HENRY H. BARNARD. [L. S.]

Witnesses:

C. H. DUELL,
FREDERICK H. GIBBS.