

A. DODDS.  
MITERING KNIFE.

Patented Feb. 14, 1893.

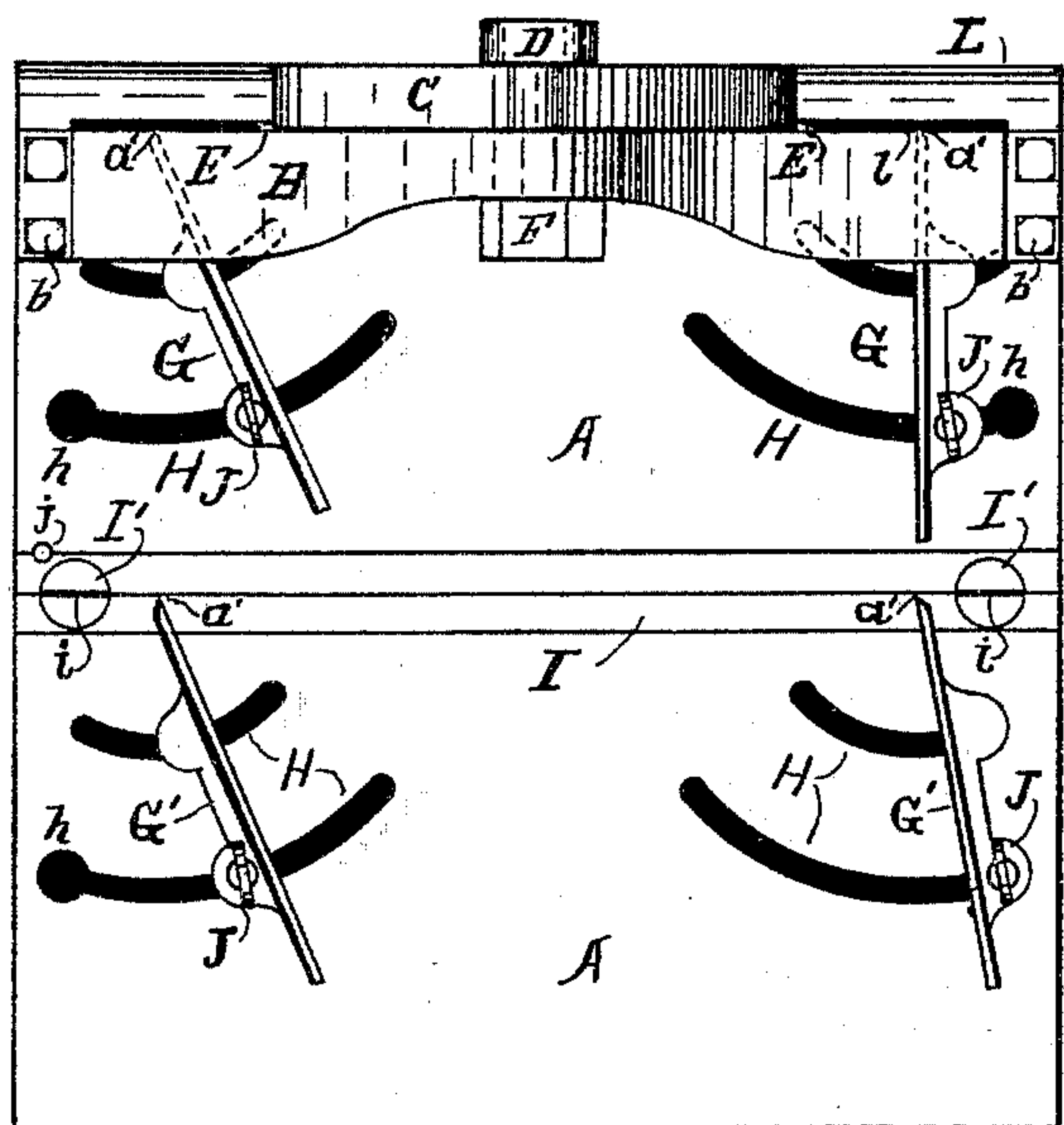


Fig. 7.

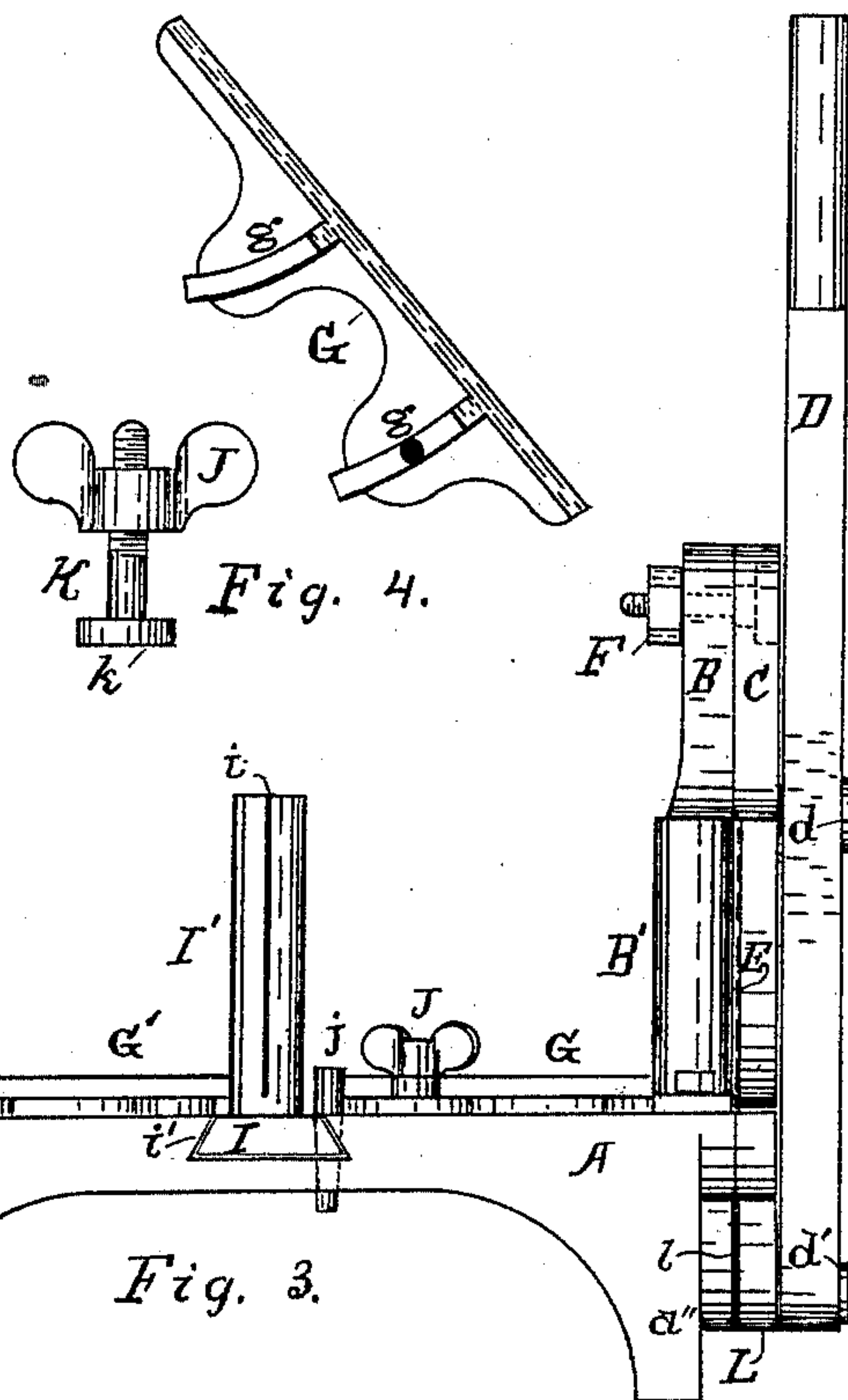
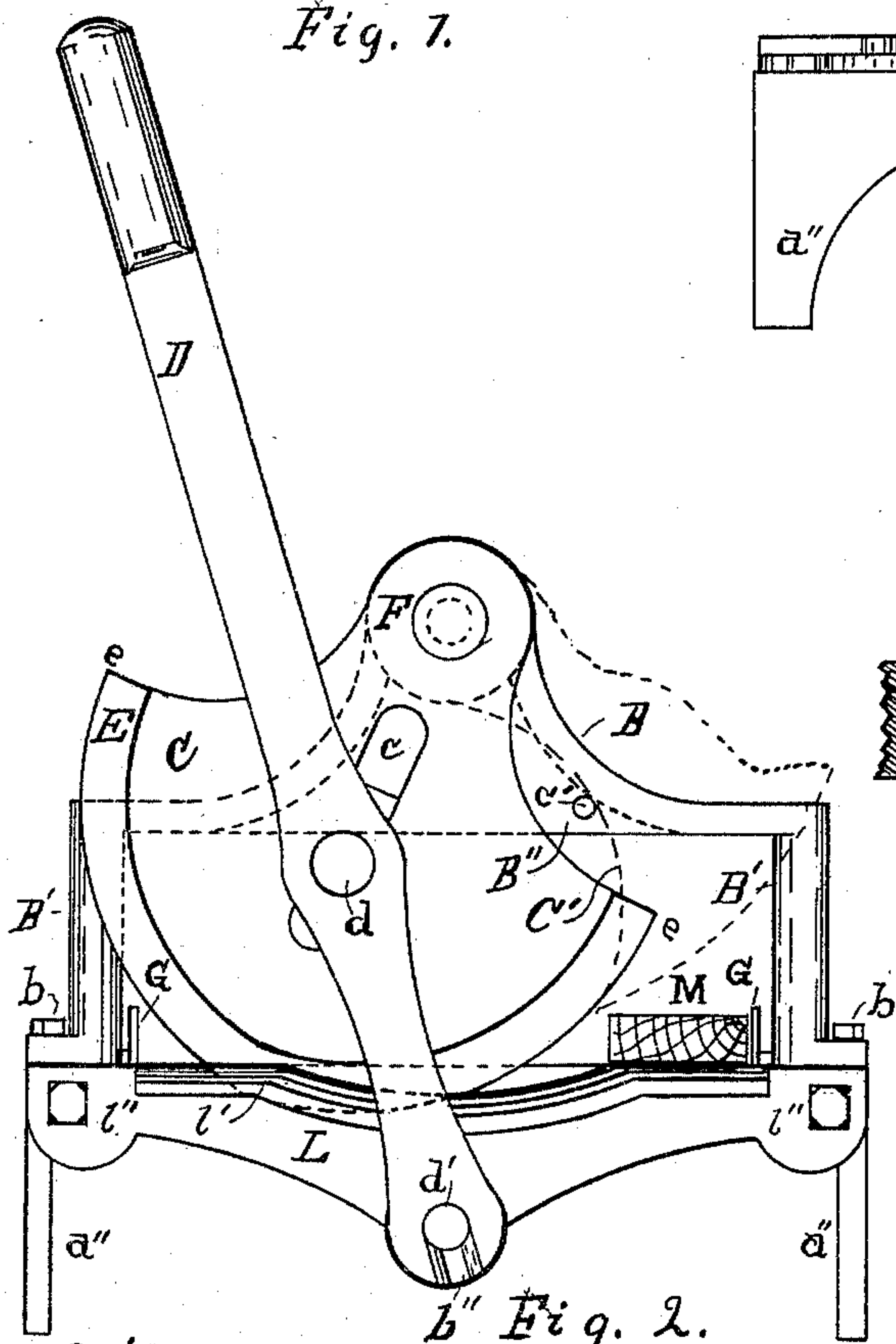


Fig. 3.



b" Fig. 2.

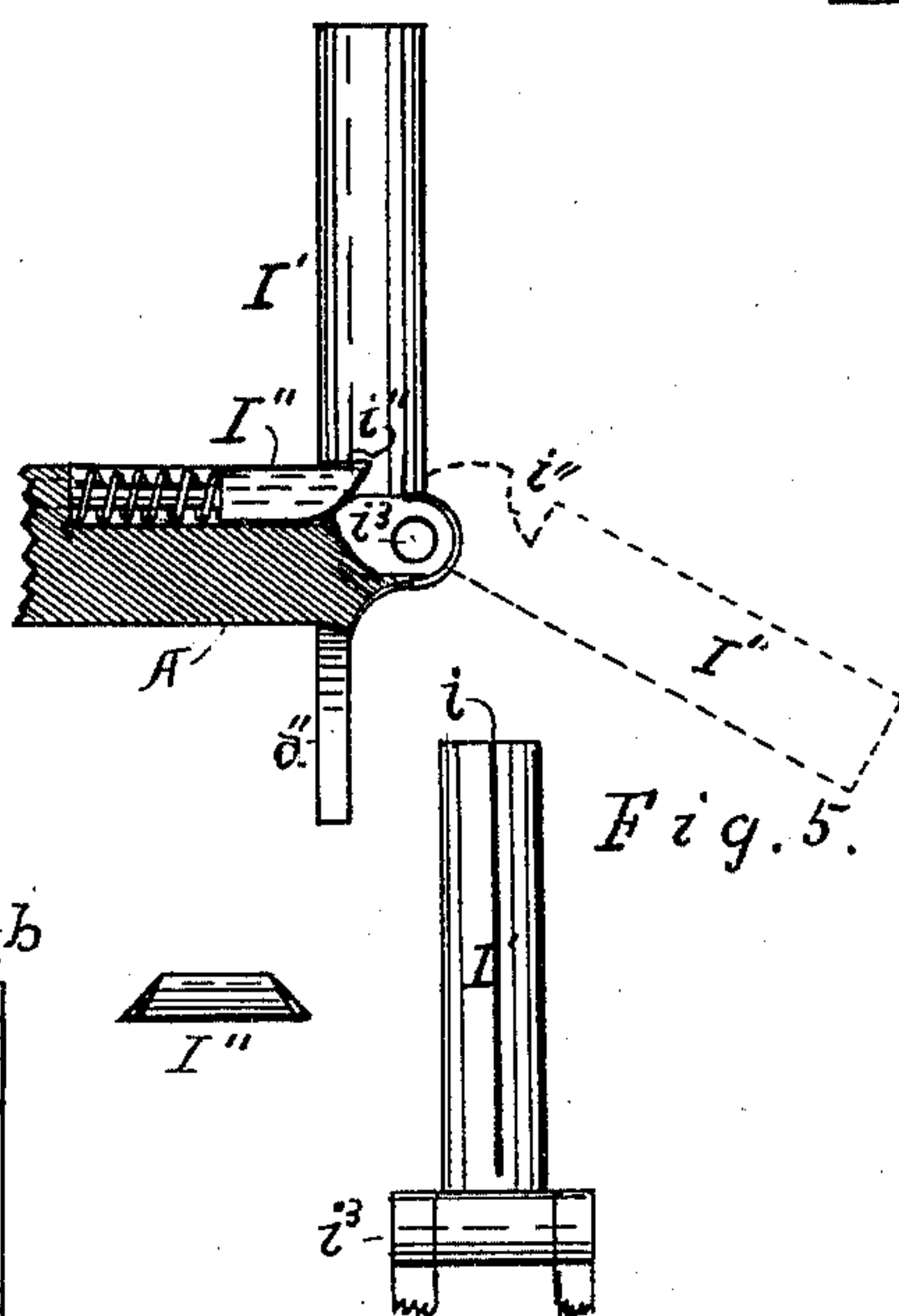


Fig. 5.

Witnesses:  
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# UNITED STATES PATENT OFFICE.

ALEXANDER DODDS, OF GRAND RAPIDS, MICHIGAN.

## MITERING-KNIFE.

SPECIFICATION forming part of Letters Patent No. 491,773, dated February 14, 1893.

Application filed February 27, 1892. Serial No. 423,085. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER DODDS, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Mitering-Knives or Trimmers, of which the following is a specification.

My invention relates to improvements in mitering knives for use in trimming the ends of wood after the same have been sawed to the desired size and shape; and its objects are: first, to unite a miter saw and a miter knife upon the same table; second, to produce a perfect draw cut of the knife upon the wood; third, to dispense with the use of a pin to support the pivot point of the guides upon mitering machines; and, fourth, to provide a saw support for mitering machines that can be readily removed or replaced. I attain these results by the mechanism illustrated in the accompanying drawings in which

Figure 1. is a plan of my invention. Fig. 2. is an end elevation, and Fig. 3. a side elevation of the same; Fig. 4. shows the guide and bolt, and Fig. 5. shows the saw post with catch.

Similar letters refer to similar parts throughout the several views.

To support the working portion of my device I construct a bed A, of cast iron or other suitable material, which is supported upon legs  $d''$ , and the upper surface of which is planed to form a perfect surface for the reception of the material M. to be operated upon.

For the purpose of supporting the knife I attach a yoke B B' to one end of the bed A, which is strengthened by a thin web B''. I then construct a metallic base C. (preferably of cast iron) the upper end of which I pivot to the yoke B by means of a bolt F, the head of which bolt is set in. flush with the surface of the base so that it will not interfere with the free action of the lever D. This base is provided with a slot c, which stands in a direct radial line from the bolt F. to the center of the segment e e, which slot is of sufficient depth to receive the projecting end of the pin d, which is securely held in the lever D. and arranged to slide freely in the slot c. for

the purpose of transmitting the power and motion of the lever D to the knife E. for the purpose of carrying the knife from side to side and through the material (M) being trimmed. The knife being secured to the side of the base opposite from the lever.

I bolt a guide L to the end of the bed A, between which and the bed is an open guide way l of a proper width to receive the knife and hold it steady in its course when cutting across the end of a piece of wood. The center of this guide, and also of the end of the frame, projects downward and so provided with a bolt  $d'$  which passes through both, and is securely attached thereto, and so arranged that the slot  $b''$  in the end of the lever D may be easily and readily slipped over it to form a fulcrum or pivot upon which the lever turns in manipulating the knife. By this arrangement, taken in connection with the slot c, in the base C, and the projecting pin d, the lever D can be readily removed from, or applied to the machine.

To secure a perfect action with my guides G without pivoting them to the bed at the points  $a'$  I form for each guide, two curved slots H, forming segments of circles upon radii converging to the points  $a'$  so that this end of the guides will always stand upon the same point regardless of the position of the opposite end; and I secure the guides to place by means of a thumb screw J, and bolt K passing through the guide and the outer circle as shown in Fig. 1; though I do not restrict myself to the use of this particular device, as others will answer the purpose equally well.

To apply the saw attachment I form a dove-tailed groove  $i'$  entirely across the upper surface of the bed and fit a slide I, to work freely therein. At each end of this slide I place a post I' having a longitudinal slot  $i$  for the reception of the saw; the whole being held to place by means of a pin j which passes through the edge of the slide, and the bed; or with any other suitable device. When the saw attachment is in use a second pair of guides G' is required, outside of the posts.

The guides used upon my device are all provided with projecting ribs g made upon the same radius as, and to work in the slots H in the bed.



The posts I' may, if desired, be hinged to the side of the bed as shown in Fig. 5, so that it may be thrown back out of the way as indicated by the dotted lines, when desired, in which case the slide I and the long groove i are dispensed with and a short groove and springcatch I'' inserted to hold the posts firmly to place.

I desire it to be particularly noticed that my knife frame is pivoted above the work to swing upon a radius considerably longer than the radii of the knife, and that the lever is pivoted below the work in such a manner that drawing the upper end of the lever toward the work, will cause the knife to enter, and pass through, the work with a sliding or shearing motion and insure a perfect draw cut. If it is desired to throw the knife up out of the way and use a saw or other tool outside of the end of the machine, I remove the lever D by throwing the upper end out from the frame and raising the lever off of the bolt d' and throw the knife up to the position indicated by the dotted lines C' and insert a pin c' in the frame below it, which leaves the entire end of the machine open and free for use.

To remove the saw posts I' it is simply necessary to draw the pin j and remove the slide I from the slot i'; or, if the hinged posts, shown in Fig. 5, are used, they may be swung back out of the way as therein indicated by dotted lines.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States is:

1. The combination with a miter frame, of a semi-circular knife pivoted to said frame above the work, a guide for the lower portion of the knife, a slot in the knife support, and a lever pivoted to the frame below the work

and provided with a pin to act in the slot c to carry the knife as desired, substantially as specified.

2. The combination with a miter frame of a yoke attached above the frame, a semi-circular knife pivoted to said yoke and suspended therefrom, a slot in the base of said knife, a guide way, a lever pivoted to the lower portion of the guide and connected with the base of the knife and miter guides, substantially as, and for the purpose set forth.

3. The combination with a miter frame, knife, lever, and guides; of a slot across the surface of the frame; a slide to work in said slot, posts attached to said slide and provided with slots i, and a pin j and hole for holding said slide in position, substantially as, and for the purpose set forth.

4. The combination in a mitering machine, of a frame, and yoke; with a knife pivoted above the work, a guide for the knife, a lever pivoted below the work, adjustable guides, and a detachable miter saw attachment, substantially as, and for the purpose set forth.

5. The combination with a miter frame having the knife pivoted above the work, and a detachable miter saw attachment; with guides provided with two curved ribs upon each guide made upon circles whose radii converge to the end a' of the guide, and curved slots in the bed of the machine for the reception of said ribs, and a bolt for securing the guides to the frame, substantially as specified.

Signed at Grand Rapids, Michigan, this 24th day of February, 1891.

ALEXANDER DODDS.

In presence of—

RAYMOND PEARL,  
ITHIEL J. CILLEY.