

(Model.)

2 Sheets—Sheet 1.

D. H. GRANT.

MACHINE FOR CUTTING MITERS.

No. 290,768.

Patented Dec. 25, 1883.

Fig. 1.

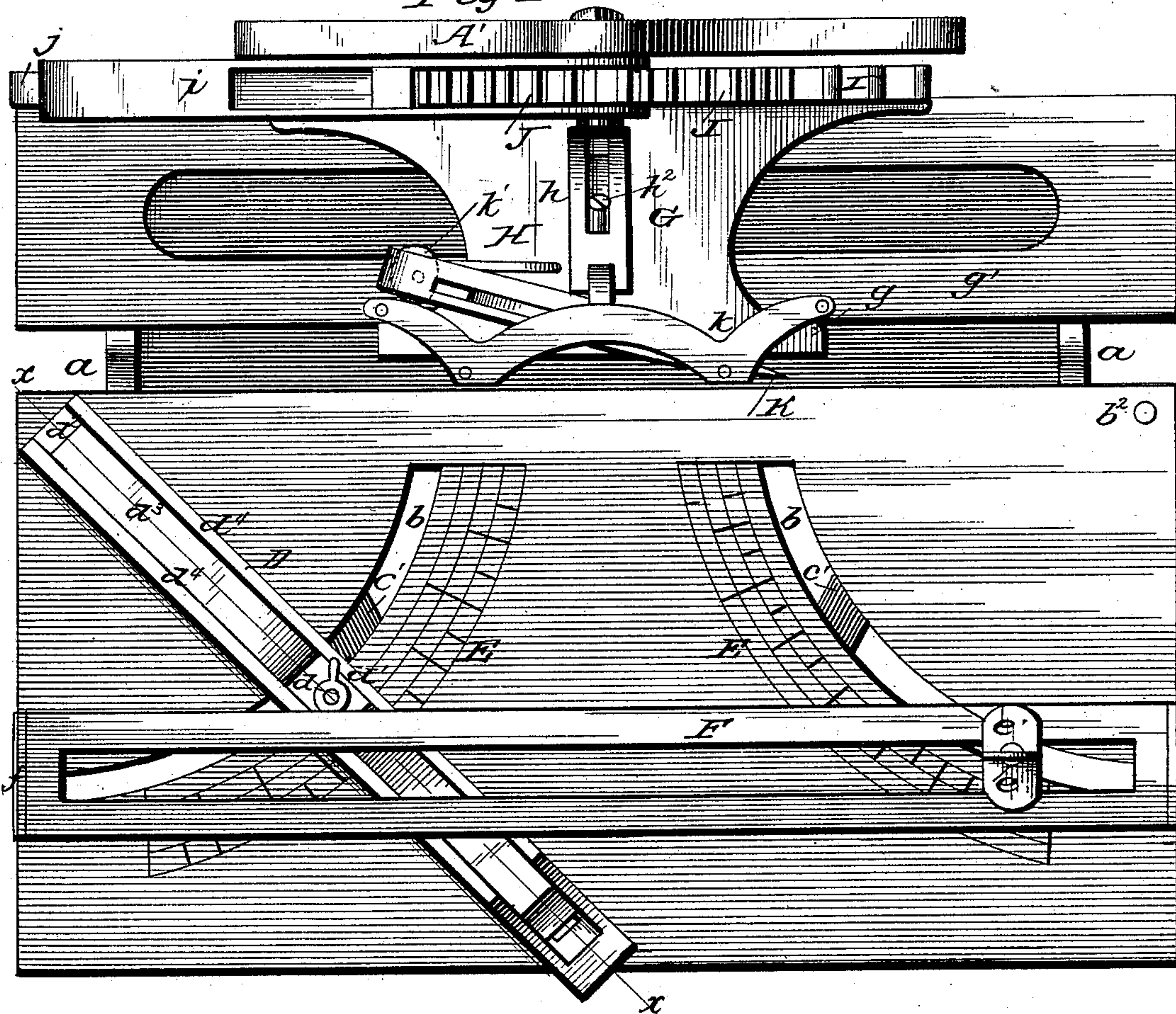


Fig. 5

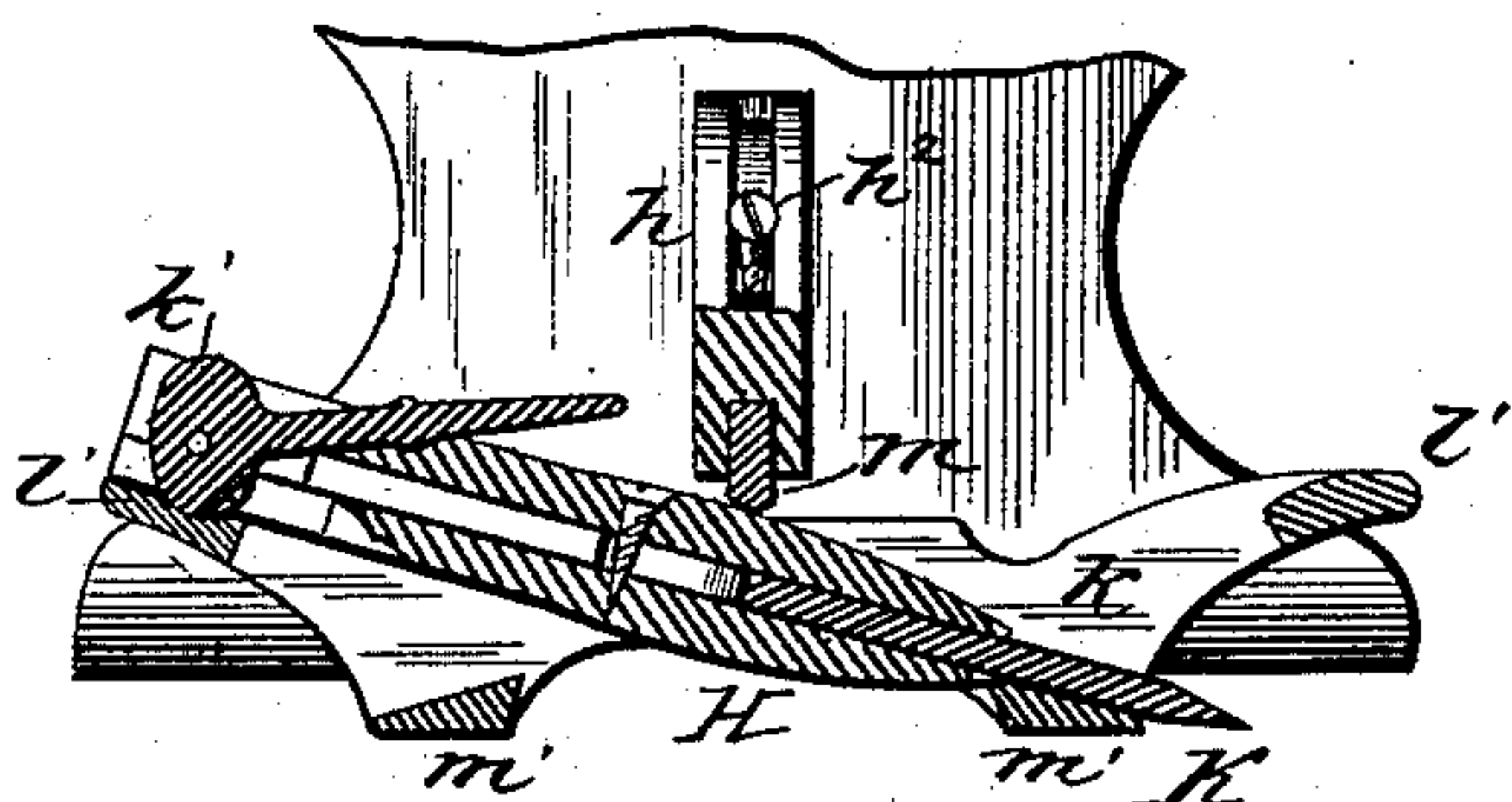
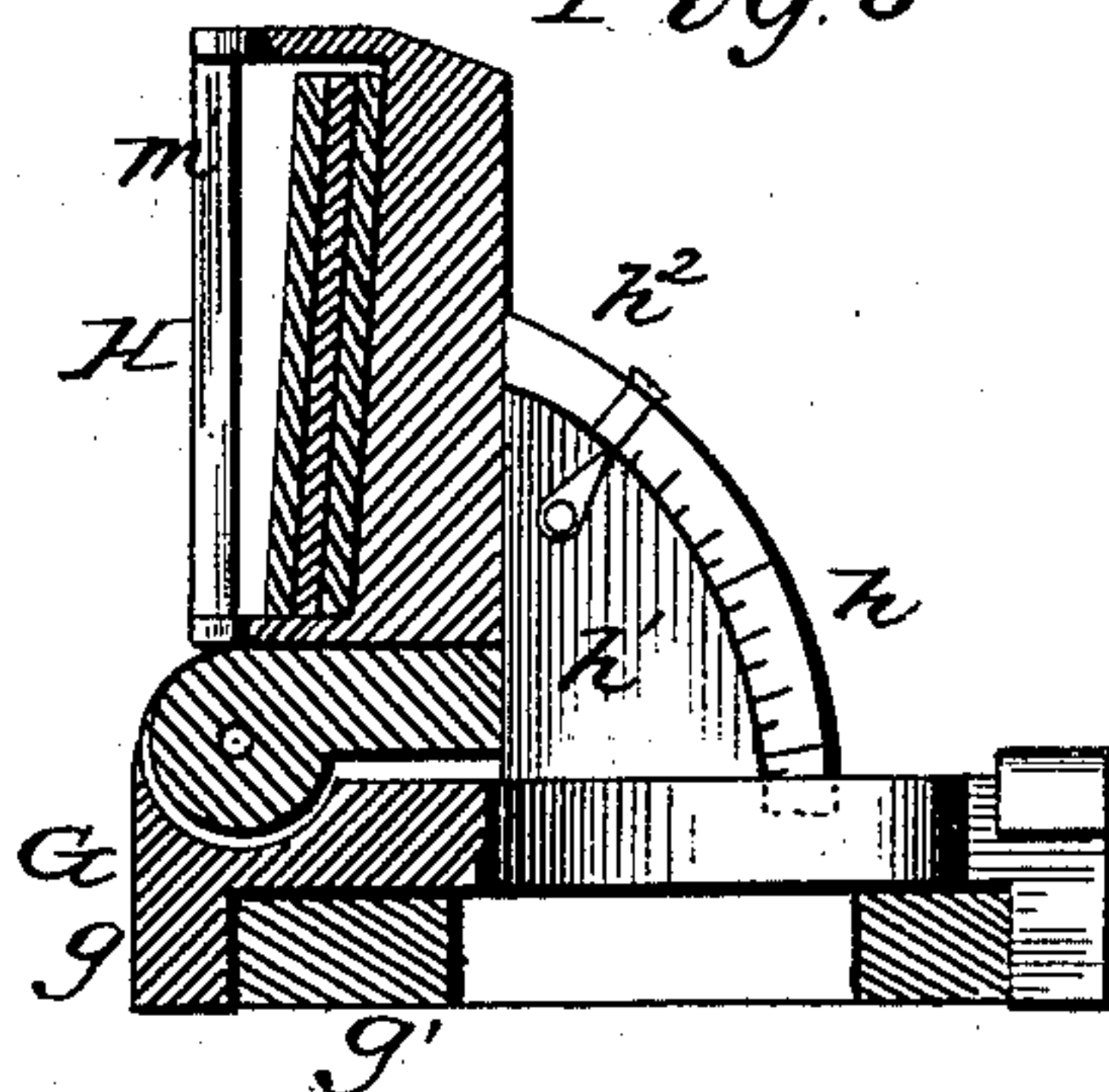


Fig. 6



WITNESSES:

Ad. G. Dietrich
W. J. King.

INVENTOR.

David H Grant
By De Witt C Allen
ATTORNEY.

(Model.)

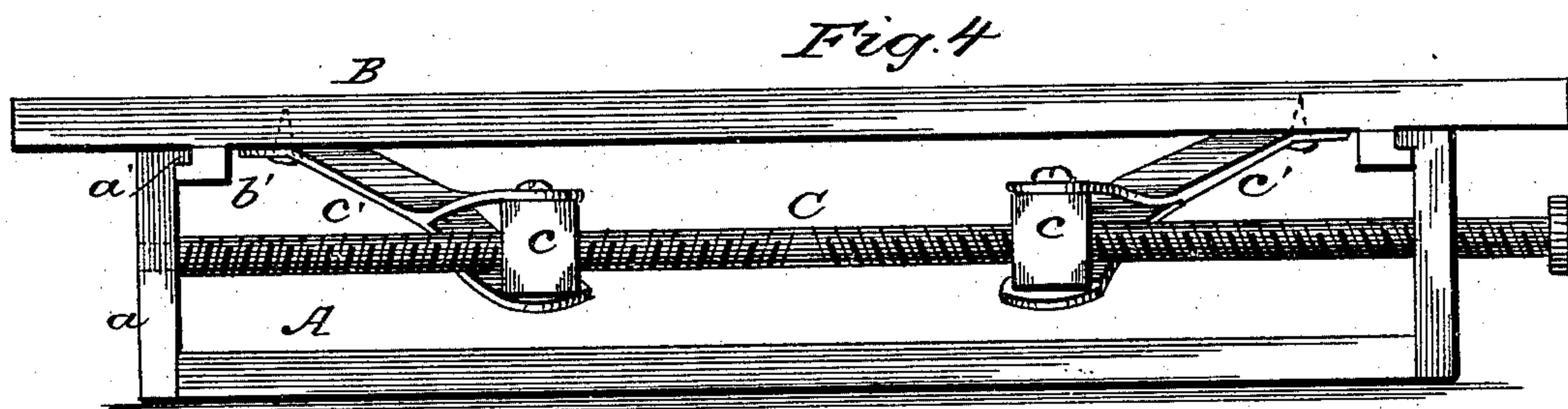
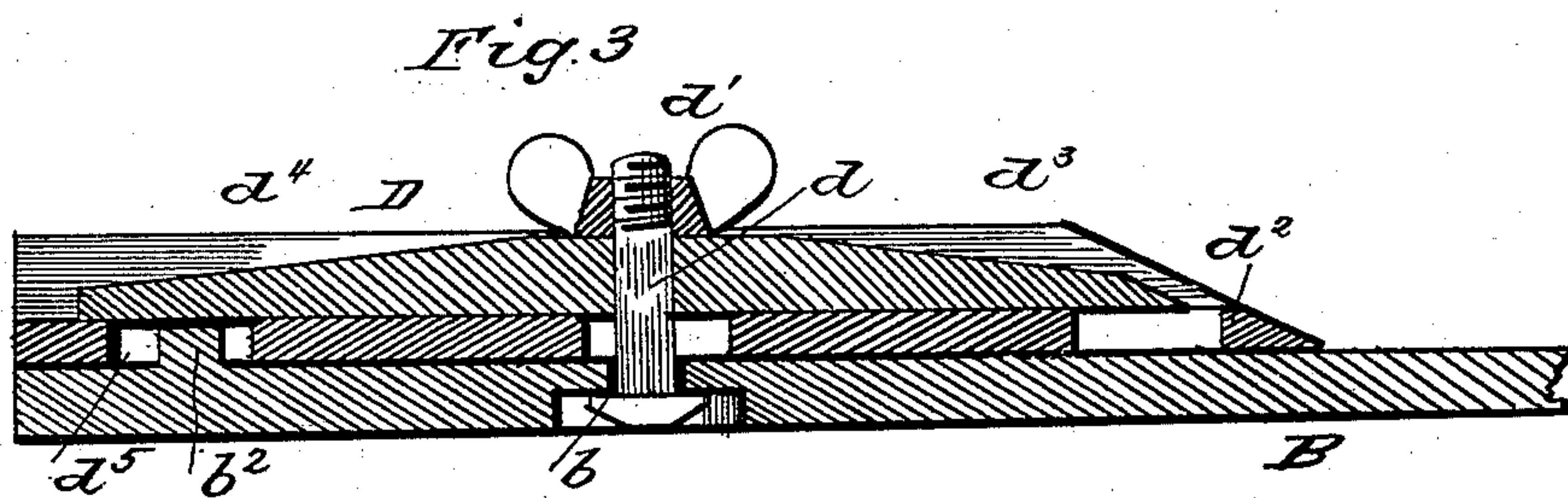
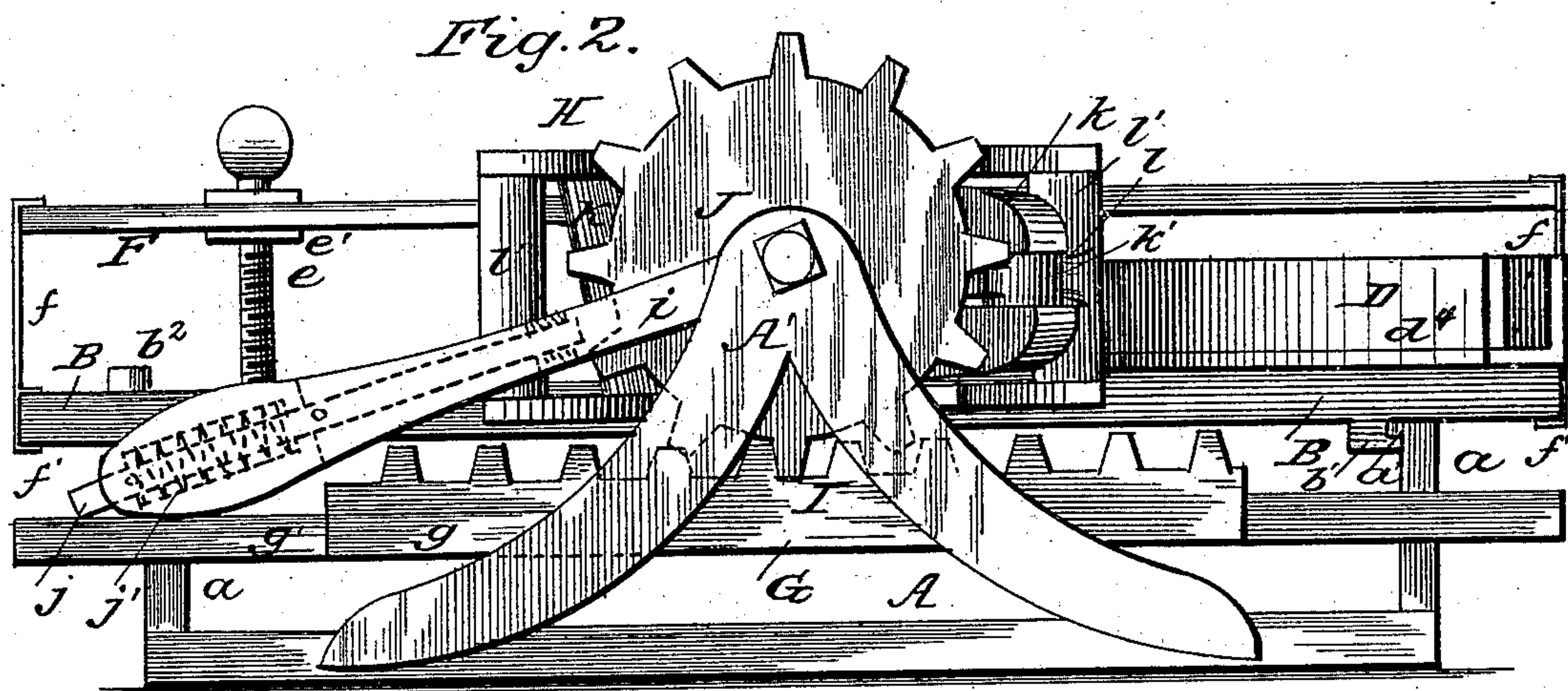
2 Sheets—Sheet 2.

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WITNESSES:

Fred. H. Dieterich.
W. I. King.

INVENTOR.

David H. Grant

By De Witt C. Allen
ATTORNEY..

UNITED STATES PATENT OFFICE.

DAVID H. GRANT, OF WALTON, NEW YORK.

MACHINE FOR CUTTING MITERS.

SPECIFICATION forming part of Letters Patent No. 290,768, dated December 25, 1883.

Application filed August 21, 1883. (Model.)

To all whom it may concern:

Be it known that I, DAVID H. GRANT, a citizen of the United States, residing at Walton, in the county of Delaware and State of New York, have invented certain new and useful Improvements in Machines for Cutting Miters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in the class of wood-working machines more especially designed for cutting miters at any desired angle; and the invention consists in a novel means for moving the table which carries the work secured to it to the chisel or cutter, and keeping the work at all times in true relation with the surface of the table and in proper position as the gage is connected to and moves with the table; also, in a novel construction of the chisel or cutter and its head, by which the chisel or cutter can be adjusted or changed so as to cut in either direction; and, finally, in novel means for operating the cutter-head, all as will be hereinafter fully described, and set forth in the claims hereto annexed.

Referring to the accompanying drawings, Figure 1 is a plan view; Fig. 2, an end view. Fig. 3 is a detail sectional view on line *x*, Fig. 1. Fig. 4 is a detail view of shaft C, and Figs. 5 and 6 are detail views of the cutter-head.

In the drawings, A represents the frame of the machine, which may be of any suitable construction, and provided with side ways, *a a*, upon which slides the table B, said ways and table being respectively provided with interlocking flanges *a'* and *b'*, by which they are secured in proper relation to each other.

C represents a transverse shaft journaled in and through the side ways, *a a*, and provided with right and left hand screw-threads, and upon which is mounted blocks *c c*, having corresponding interior screw-threads, and which blocks are pivotally connected to the table by bars *c' c'*, so that by turning shaft C in one direction or the other (through the medium of a crank or handle connected thereto) the table carrying the work will be moved toward or from the cutter-head.

To define the angle at which the material is

to be cut, and for cutting in either direction, the table is provided with segmental slots *b b*, and up through one of said slots passes the screw-threaded end of a headed bolt, *d*, and which also passes up through the sectional and adjustable guide-bar D, and secured in position by a thumb-screw, *d'*. This guide-bar D is composed of two longitudinal sections, *d²* and *d³*, the section *d²* having side flanges, *d⁴*, and a longitudinal slot, *d⁵*, through its bottom, and which section fits over a lug, *b²*, at either of the inner corners of the table, and said lug forming the pivotal point upon which the guide-bar may turn. The section *d³* fits in the section *d²*, and by loosening up the thumb-screw *d'* the sectional guide-bar may be lengthened or shortened, and also turned at any desired angle, which may found by either one of the scale-plates E E, adjacent to the segmental slots *b b* on the upper surface of the table. The material to be cut is placed alongside of the guide-bar and secured in position by the screw-bolt *e*, passing through the flanged block *e'*, which is adapted to be moved across the table in the transverse slotted guide-bar F, supported above the table on standards *f f*, having flanges *f'* at their lower ends projecting inwardly and above and below the side edges of the table, and said guide-bar F may be adjusted or moved longitudinally of the table, as may be found or deemed expedient, the screw-bolt *e*, when engaging the work placed on the table, securing the several parts in position.

G represents a transverse movable bed carrying the cutter-head, which bed has side flanges, *g g*, engaging a transverse slotted guide-bar, *g'*, secured to the frame A. The bed G is provided with a rack-bar, I, with which a pinion, J, engages for moving said bed. This pinion J is journaled in a standard, A', and is operated by a bifurcated handle, *i*, loosely mounted on the shaft of the pinion, and having a sliding pawl, *j*, which can be forced into engagement with the teeth of the pinion by the hand of the operator in taking hold of the handle, and through the medium of which the pinion may be turned, and when said pawl is released from the hand of the operator it will be thrown out of engagement with said pinion by a retracting-spring, *j'*. The cutter-head H is adjustably connected to the curved standard

h' of the bed by a slotted curved bar, h , and a set-screw, h^2 , by which the cutter-head can be adjusted, so that the chisel or knife may be presented at any inclination desired with relation to the bevel desired to be cut out of the work. The cutter-head is composed of a double cap, so that the cutter or chisel K may be reversed, and thereby adapted to cut in either direction, the reverse segmental slots through the table B permitting the guide-bar D to be changed to correspond with the direction the cutter-head may be moved. The cutter or chisel holder k is provided with a pivoted cam, k' , which, engaging a lug, l , on either one of the vertical bars $l' l'$ at the ends of the cutter-head, will secure said cutter or chisel block or holder k in position, said cutter-holder and cutter passing between the vertical bar m and either one of the vertical bars $m' m'$, with the forward end of the cutter or chisel block k abutting against one of said bars m' .

The operation of my improved machine is obvious from the foregoing description.

I do not wish to be understood as claiming, broadly, a table with guides thereon to locate the work, and a sliding cutter to cut the work upon the angle indicated by said guides, nor a table arranged on a bed and carrying one or more cutters, with a stationary rack on bed, and a corresponding rack on the table, and a pinion between the two said racks, through which longitudinal movement is imparted to said table, and with guides on said bed to locate the material to be cut, as such, I am aware, are not new; but,

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

1. In a miter-machine, the combination, with the frame A, of the sliding table B, right-and-left-hand screw-threaded shaft C, having the blocks $c c$ mounted thereon, and the pivoted bars $c' c'$, for connecting the blocks with said table, substantially as and for the purpose herein shown and described.

2. In a miter-machine, the combination, with the slotted sliding table B, of the longitudinally-adjustable sectional guide-bar D, adapted to be adjustable in relation to said table by means substantially as and for the purpose herein shown and described.

3. In a miter-machine, the combination, with the slotted table B, provided with the lug or lugs b^2 , of the longitudinally-adjustable

guide-bar D, composed of the slotted and flanged section d^2 and section d^3 , the headed screw-bolt d , passing through said bar and table, and thumb-screw d' , adapted to clamp the bar to the table, substantially as and for the purpose herein shown and described.

4. In a miter-machine, the combination, with the table B, of the slotted guide-bar F, supported above said table by means substantially as described, and provided with the movable flanged block e' , carrying the screw-bolt e , for engaging the work placed on the table, and the several parts in position, substantially as and for the purpose herein shown and described.

5. The combination, with the frame A, having the longitudinally-movable table B and transverse guide-bar g' , of the transverse movable bed G, provided with the rack-bar I, the pinion J, for engaging said rack-bar, and the handle i , provided with a retracting spring-pawl, j , substantially as and for the purpose herein shown and described.

6. In a miter-machine, the combination, with the slotted table having an adjustable and reversible guide-bar, D, and means for securing it to the table, of the transverse movable cutter-head H, having the reversible cutter or chisel K, means for moving said cutter-head, substantially as and for the purpose herein shown and described.

7. In a miter-machine, the combination, with the table B, of the transverse movable bed G, provided with the curved standard h' , and the adjustable cutter-head provided with the slotted curved bar h , and a securing or set screw, h^2 , passing through said bar h , for securing it in position, substantially as and for the purpose herein shown and described.

8. In a miter-machine, the combination, with the table B, of the transverse movable double-capped cutter-head H, provided with the vertical bars $l' l'$, having bearing-lugs $l l$, vertical bars $m m'$, the reversible cutter or chisel holder, and a pivoted cam for securing said holder in position, substantially as and for the purpose herein shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID H. GRANT.

Witnesses:

ALBERT H. SEWELL,
 E. P. HOYT.