

(No Model.)

A. M. POWELL.
FEED STOP MECHANISM FOR PLANERS.

No. 562,481.

Patented June 23, 1896.

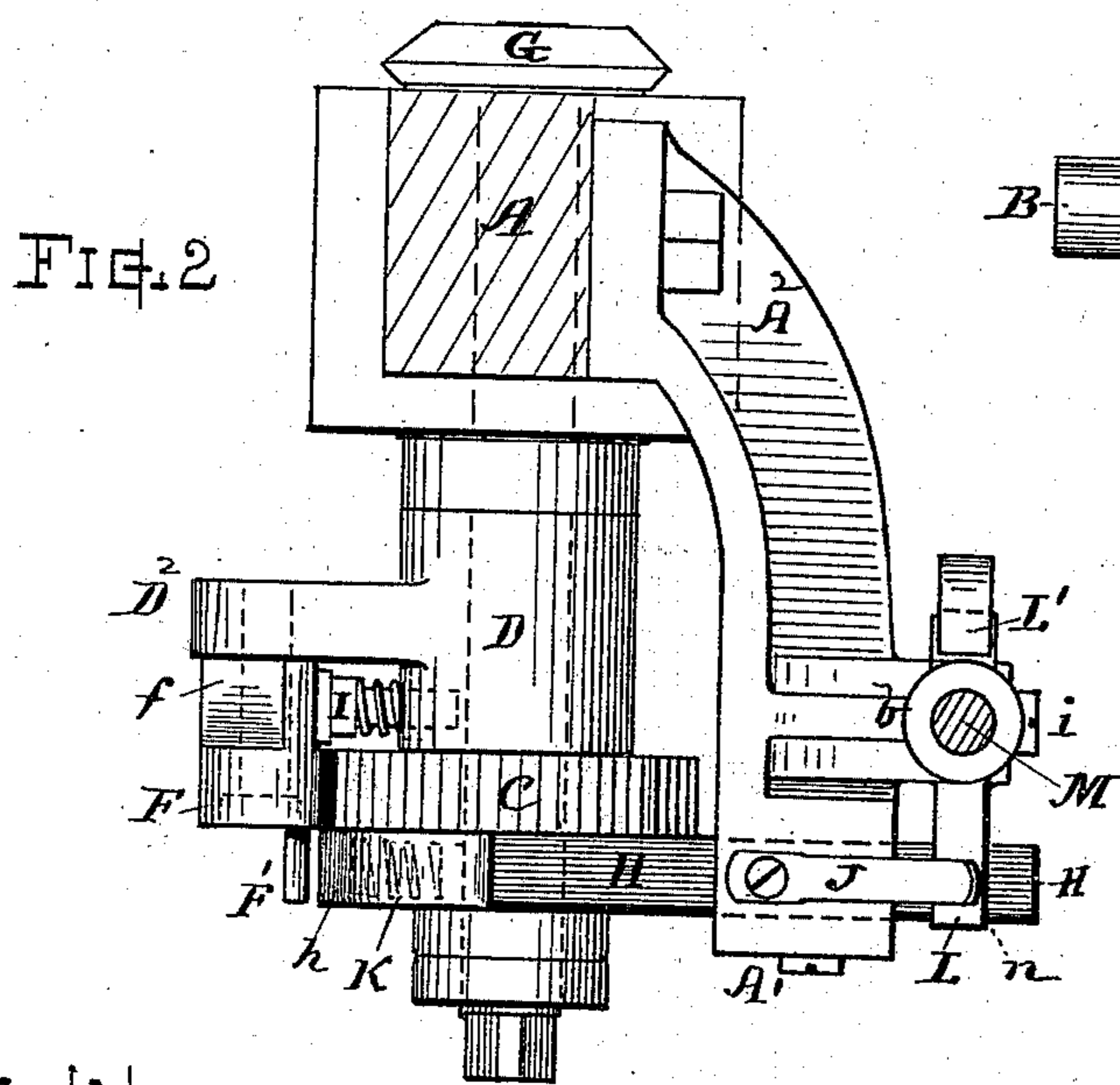
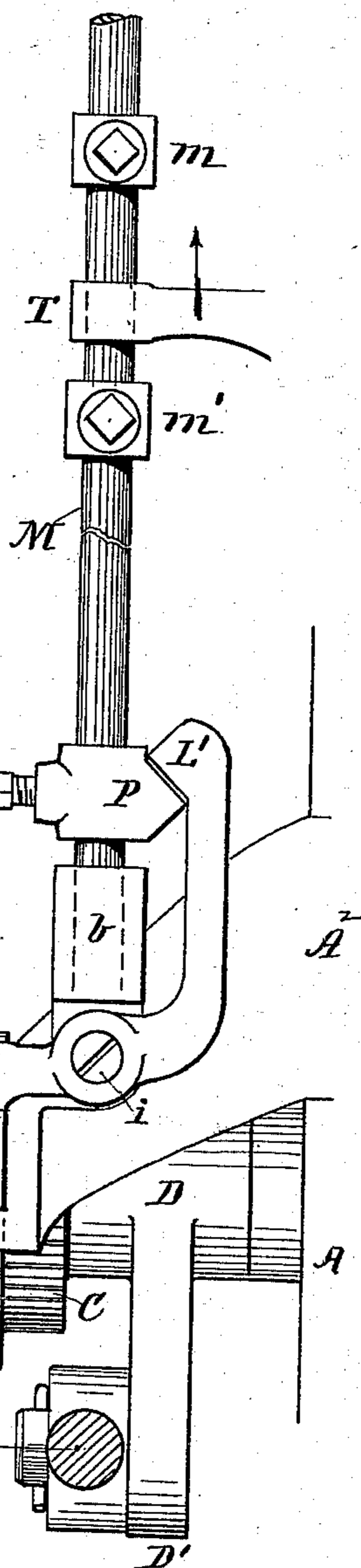
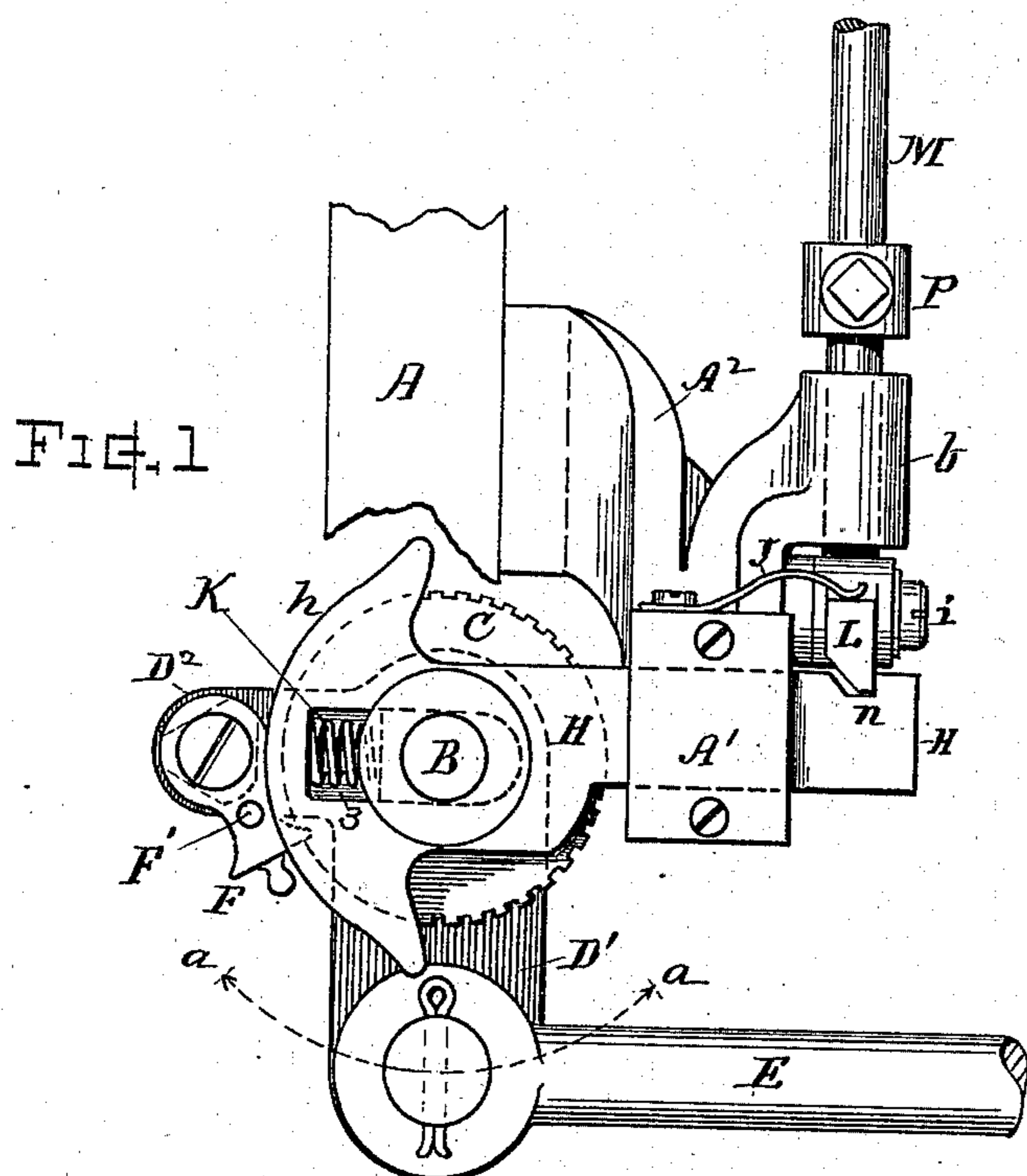


FIG. 2

Witnesses.

Ella P. Plenus
Simmons King

Inventor-

Albert M. Powell
By Chas. H. Burleigh
Attorney.

UNITED STATES PATENT OFFICE.

ALBERT M. POWELL, OF WORCESTER, MASSACHUSETTS.

FEED STOP MECHANISM FOR PLANERS.

SPECIFICATION forming part of Letters Patent No. 562,481, dated June 23, 1896.

Application filed April 25, 1896. Serial No. 589,014. (No model.)

To all whom it may concern:

Be it known that I, ALBERT M. POWELL, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Feed Stop Mechanism for Planers, &c., of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of this invention is to provide an efficient automatic stop or throw-off appliance for an oscillating pawl-and-ratchet feed mechanism, more especially adapted and designed for use for controlling the feed of the side head or tool-carrier in metal-planers, and for similar purposes, for stopping the feed action of the planing-tool when the latter has advanced to a given position on the work.

To this end my invention consists in the mechanism organized for operation as illustrated in the drawings, wherein—

Figure 1 is a side view of my improved stop mechanism. Fig. 2 is a plan view of the same, and Fig. 3 is a rear view.

Referring to parts, A indicates the frame of the machine; B, the rotating shaft that operates the feed devices by the bevel gear-wheel or other suitable means.

C indicates the ratchet-wheel rigidly keyed upon the shaft. D is an angle-lever, its hub mounted to swing loose upon said shaft and having its lower arm D' connected by the rod E with a suitable feed-box or other moving part (not shown) whereby reciprocative motion is imparted for rocking said lever, as per dotted line *a a* on Fig. 1.

F indicates the pawl pivotally connected with the shorter arm D² of said angle-lever and adapted for engaging with the ratchet-wheel C in either upward or downward direction to impart right or left rotation to said wheel and parts operated thereby, as desired. The hub of the pawl is best made triangular or with flat facets *f*, and a spring-presser I is provided that acts against the flat facets thereon and retains the pawl at position of adjustment, while permitting its working action and ready adjustment for upward or down-

ward engagement, or to a position of non-engagement.

H indicates an endwise-movable bar or slide mounted in the bearing A' on a bracket A², fixed to the frame, and also having a slot 3 embracing the shaft B. The slide has a segmental head or guard *h* adjacent to the path of the pawl F, and said pawl is provided with a projection or pin F', that extends across the face of the guard *h*, as indicated.

A spring K is provided for normally moving the slide toward the pawl and forcing it from engagement with the ratchets of the wheel C. Said spring is preferably disposed within the slot 3, acting expansibly between the end of the slot and a bearing-block fitted against the shaft, as indicated by dotted lines on Fig. 1.

L indicates a dog or latch pivoted to the support at *i* and adapted for engaging with a lug or notch *n* on the slide H for retaining said slide when drawn back from the pawl and in opposition to the spring K. The rear arm of the latch has an engaging lug L' or double incline thereon, and a suitable spring J is provided for pressing the latch into engagement.

M indicates a rod supported in suitable bearings, one of which is shown at *b*, and extending in the direction of the feed movement of the pawl to be controlled. Said rod carries a ball or collar P, having a detent or surfaces fitted for engaging with the lug L' and moving the latch.

m m' indicate adjustable collars arranged on the rod at any convenient position, and T an engaging arm or tappet connected and moving with the planer-head, or any moving part actuated by the ratchet-wheel and shaft B, and the feed of which is to be controlled, which imparts movement to the rod M by contact with one of the collars *m* or *m'*, according to the direction of the feed movement.

A planer-feed being well-known mechanism is not herein illustrated, but it will be understood that the feed screw or rod may be rotated by the shaft B by any suitable connecting-gear, as G.

The operation is as follows: The slide H is moved back to the position shown and there held in position by the latch L, which drops

into the notch *n*. This allows the pawl to engage. Then the reciprocative action of the rod E and angle-lever D as transmitted by the pawl F causes rotation of the ratchet-wheel C and shaft B, operating the feed devices and advancing the tool over the work until the arm T strikes the collars *m* and moves the rod M, causing the latch to be lifted by the inclined lugs P and L'. The
 5 lifting of the latch releases the slide II, which is immediately shot forward by the spring K, thereby carrying the segment or guard *h* against the pin F' and forcing the pawl F
 10 away from the face of the ratchet-wheel C, so that it cannot engage the teeth thereof until the slide is again adjusted, although the swinging action of the pawl-carrying lever D is continued.

This stop mechanism is simple and efficient, and is a very desirable mechanism for controlling the feed of the side head in metal-planers.

If it is desired to operate the feed in opposite direction, then the pawl F is adjusted to
 25 upward instead of downward position, and the inclined detent P is adjusted above the inclined lug L', so that downward pressure on collar *m'* will effect retraction of the latch, the operation in all other respects being substantially the same as above described.

I claim as of my invention herein, to be secured by Letters Patent—

1. The combination of the shaft, the ratchet-wheel, the swinging pawl-carrying arm, means
 35 for operating said arm, the pawl pivotally attached to said arm and having the stud or pin projecting therefrom, the slide provided with the segmental guard or head adjacent to said pawl, and an engaging notch or lug upon its
 40 bar, a latch or dog for temporarily retaining

said slide at backward position, a spring for advancing said slide, and means for releasing said latch at the given time, for the purpose set forth.

2. The combination with the feed-operating shaft, its ratchet-wheel and the swinging lever arranged on the shaft, of the pawl pivoted upon the arm of said lever and adapted for engaging said ratchet-wheel in either upward or downward direction, the pin or engaging device projecting from said pawl, the slide having the segment head or guard, the pressure-spring exerting forward action on said slide, the pivoted latch engaging said slide and having the beveled lug thereon, the latch-depressing spring, the rod carrying the latch-actuating bevels, the adjustable collars on said rod, and the tappet connected with the feed-controlled mechanism, substantially as set forth.

3. In a ratchet feed mechanism, the combination with the ratchet-wheel, and the oscillating pawl whereby motion is imparted to said wheel; of a spring-pressed slide-bar movable in a direction transverse to the axis of the ratchet-wheel, and having a segmental surface adjacent to the circle of the ratchet-face, said surface adapted for controlling the engagement of said pawl with the ratchet-teeth, a latch or catch devices adapted to temporarily retain and release said slide when at its backward position, and means for automatically disengaging said latch, substantially as set forth.

Witness my hand this 11th day of February, 1895.

ALBERT M. POWELL.

Witnesses:

CHAS. H. BURLEIGH,
 ELLA P. BLENUS.