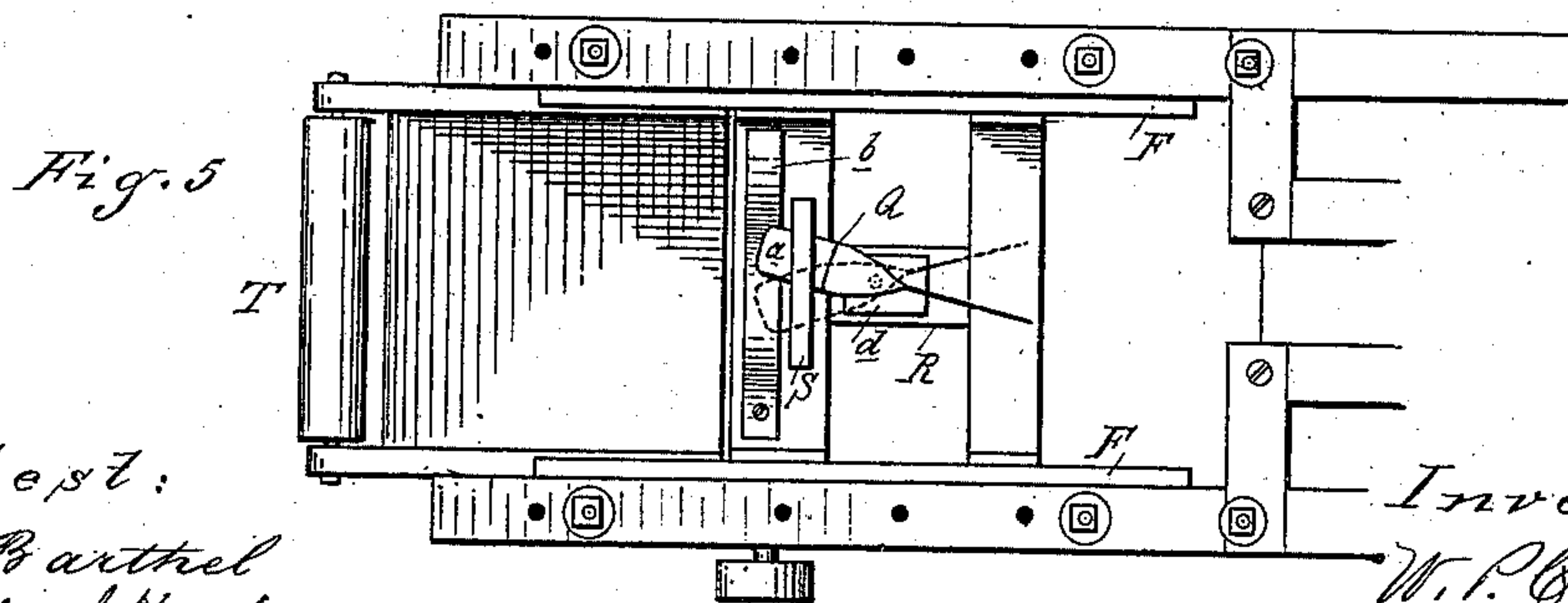
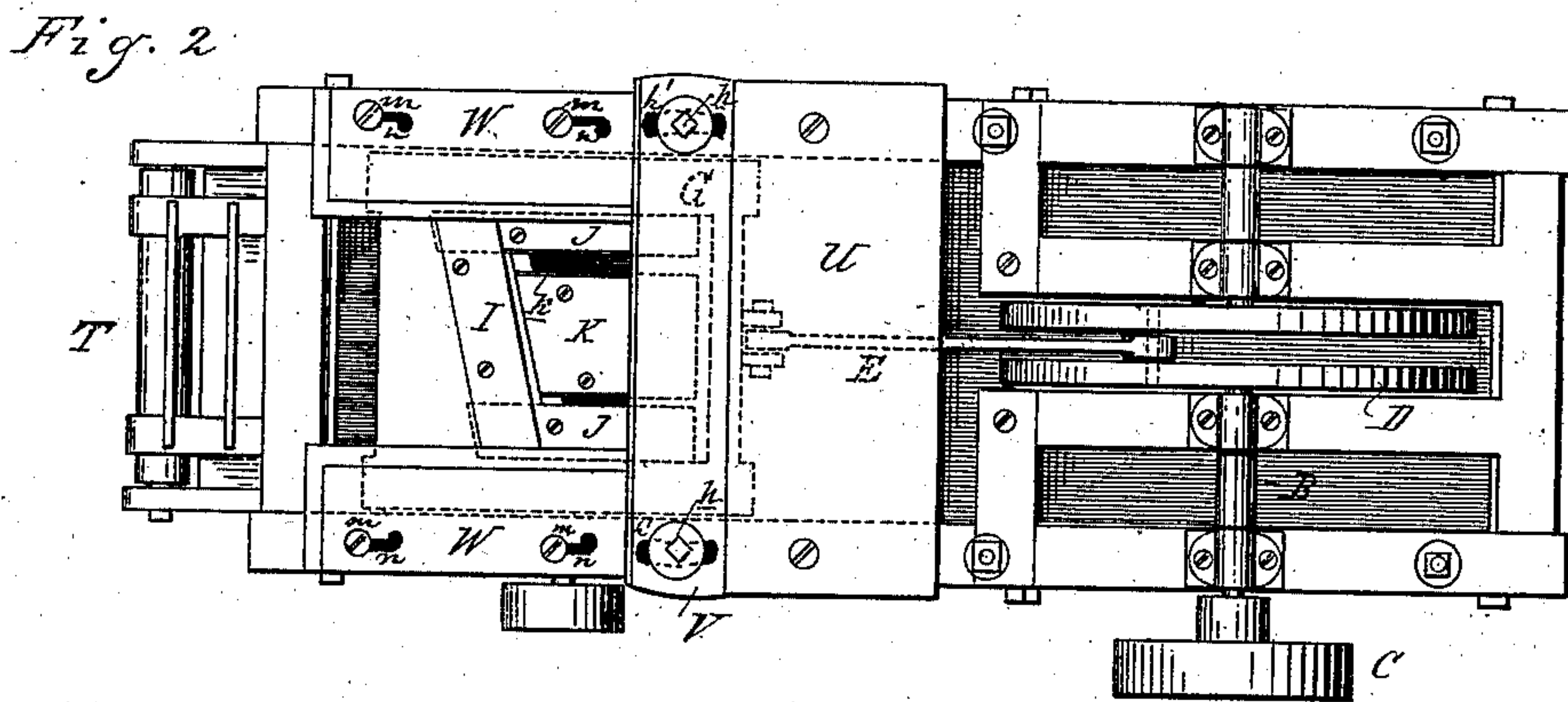
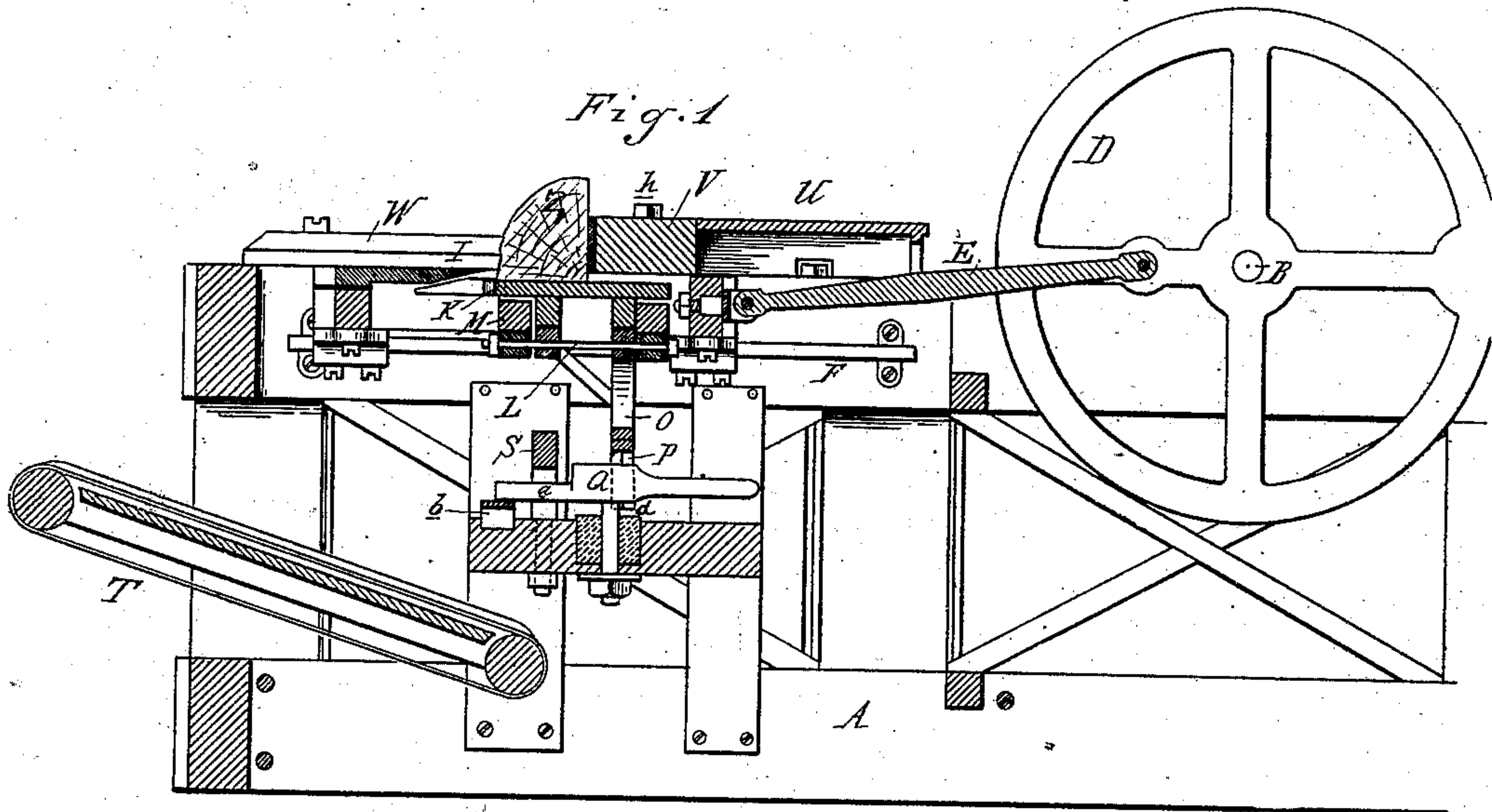


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 Wood-Cutting Machine.  
 No. 227,955. Patented May 25, 1880.

2 Sheets—Sheet 1.

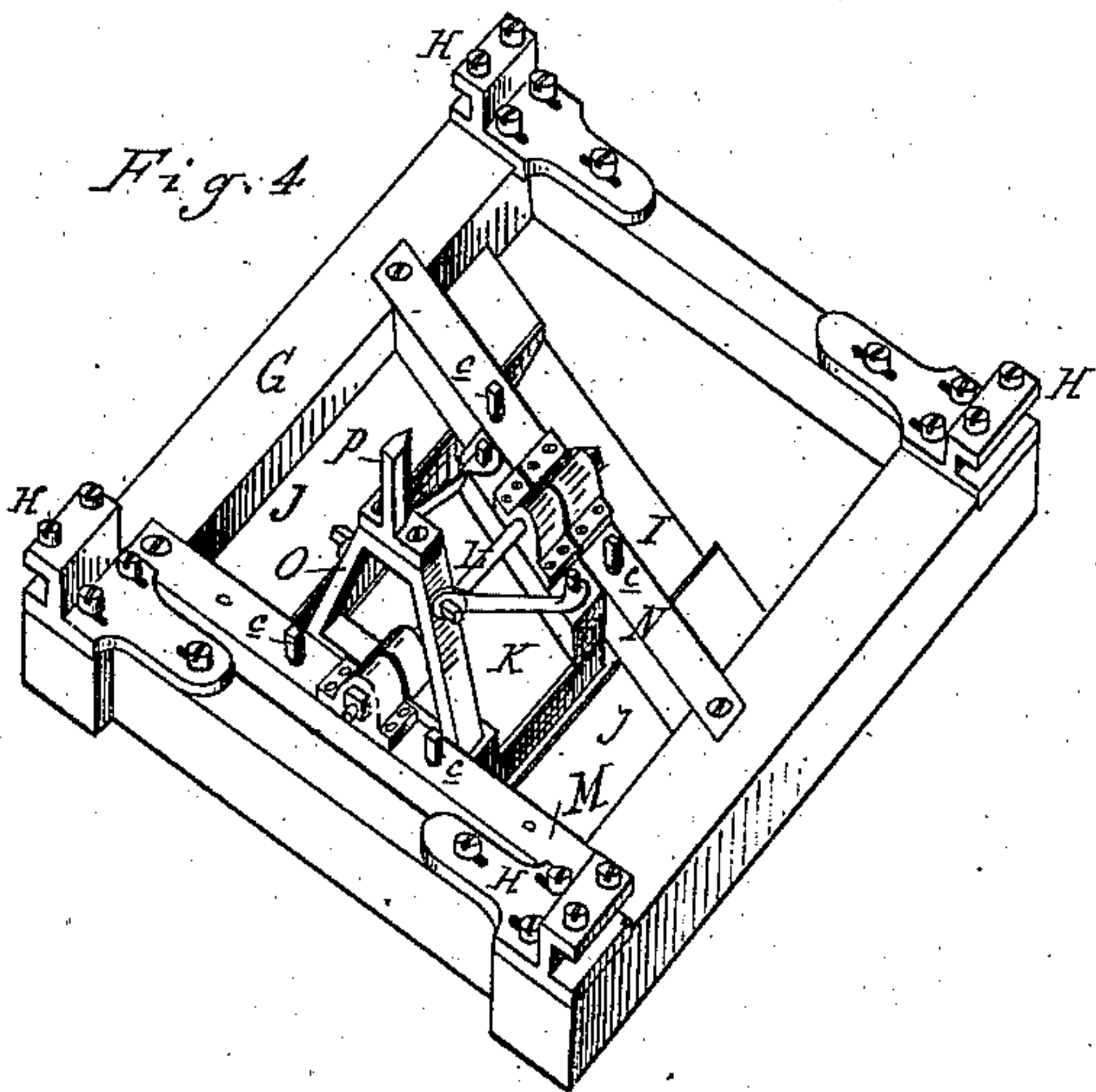
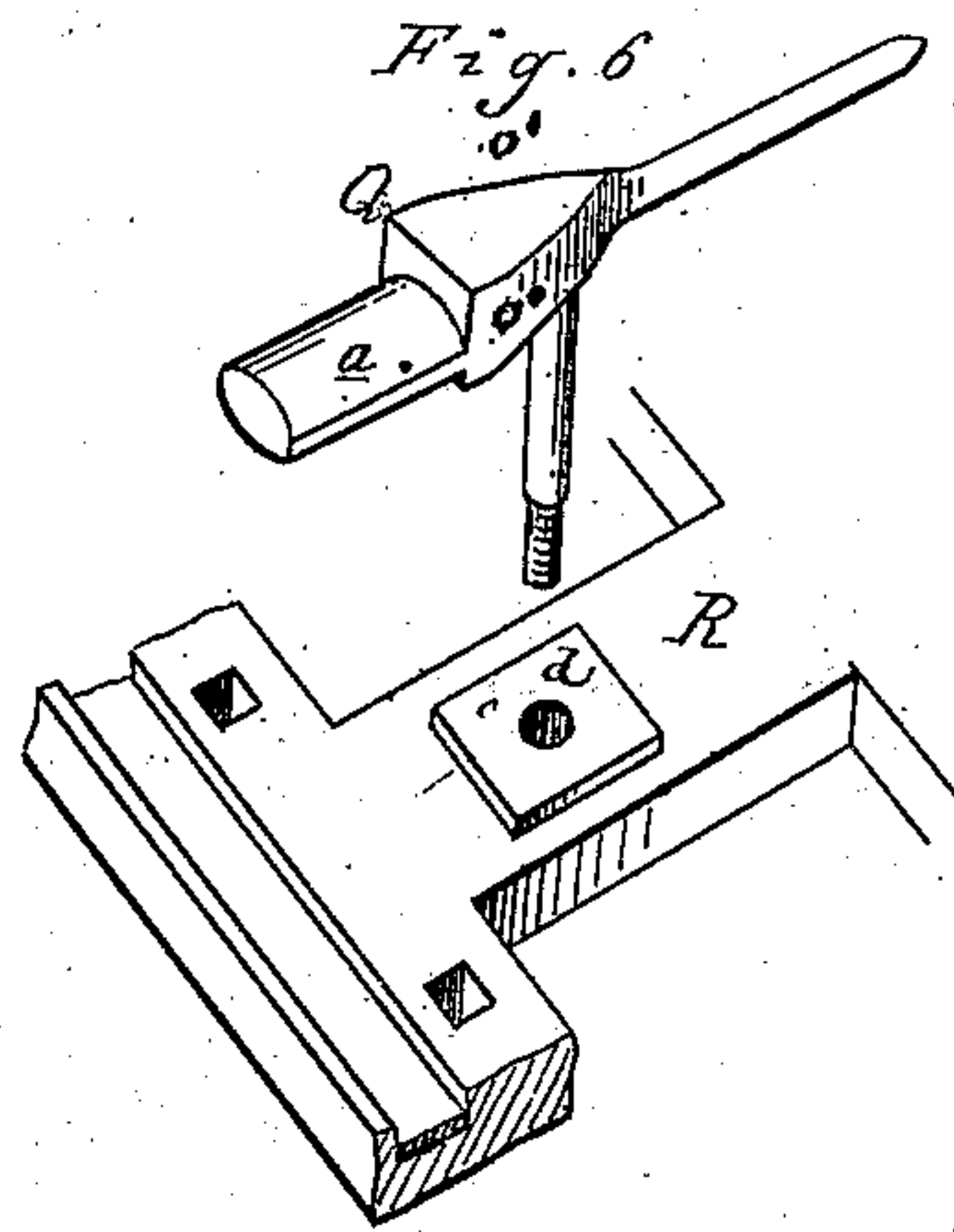
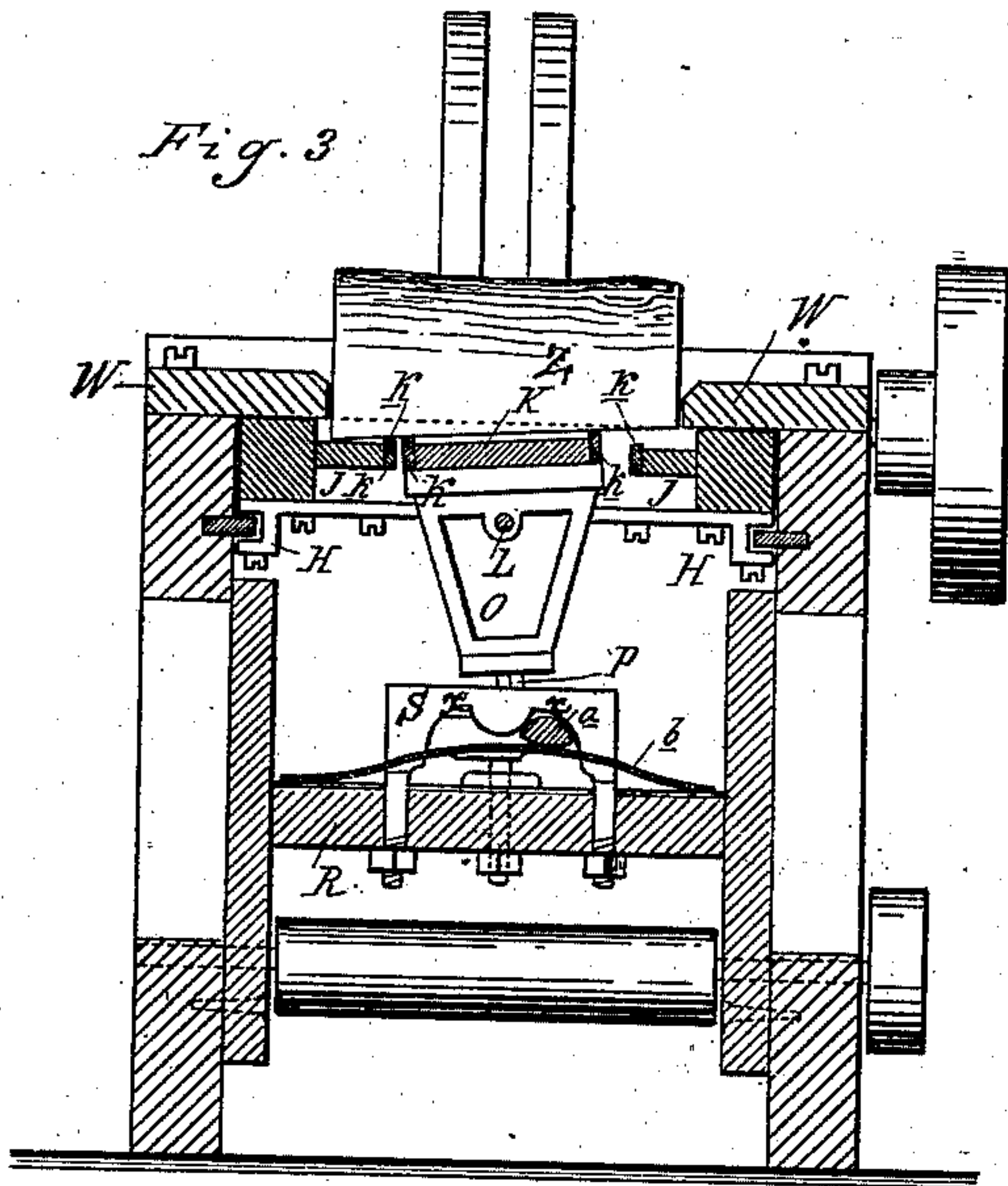


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# UNITED STATES PATENT OFFICE.

WILLIAM P. CAMPBELL, OF HASTINGS, MICHIGAN.

## WOOD-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 227,955, dated May 25, 1880.

Application filed February 16, 1880.

*To all whom it may concern :*

Be it known that I, WILLIAM P. CAMPBELL, of Hastings, in the county of Barry and State of Michigan, have invented an Improvement in Wood-Cutting Machines, of which the following is a specification.

The nature of my invention relates to certain new and useful improvements in the construction of machines designed for cutting bolts of wood into veneers or shingles, as may be desired; and the invention consists in the peculiar construction of a horizontally-reciprocating gate carrying a cutter-knife, in the construction of a device for automatically tilting the table, and in the peculiar construction and arrangement of the various parts, all as more fully hereinafter set forth.

In the drawings, Figure 1 is a longitudinal central vertical section. Fig. 2 is a top plan. Fig. 3 is a transverse section. Fig. 4 is a bottom perspective of the reciprocating gate. Fig. 5 is a plan view with the tables and gate removed. Fig. 6 is a detached perspective of the spring tilting-lever.

In the accompanying drawings, which form a part of this specification, A represents a suitable frame, preferably secured together by means of bolts, as shown. Journaled in proper bearings across one end of this frame A is the shaft B, driven by means of a belt upon the pulley C. Upon this shaft is keyed a fly-wheel, D, to which one end of the pitman E is connected for imparting a reciprocating motion to the knife-gate, as hereinafter described.

F are guide-rails, rigidly secured horizontally to the inner faces of the sides of the frame.

G represents a gate, connected at its rear end with the pitman E. This gate is provided with two or more adjustable slides, H, upon each side, which slide upon the rails F and guide the gate in its reciprocating movement. These slides are made adjustable by any suitable means, so that they can readily be adjusted to take up and compensate for the lost motion caused by the wear of the parts. At the front end of this gate is removably secured the cutting-knife I, and upon each side of the gate, projecting inwardly below the knife, are secured the stationary tables J.

K is a tilting table, properly secured upon a rock-shaft, L, which is journaled in proper

bearings or boxes secured to the transverse girts M N of the gate-frame. To one end of this tilting table is secured the downwardly-projecting hanger O, provided with an arm, P.

A spring-lever, Q, is pivoted to a frame, R, below the gate, the forward end of such spring-lever terminating in an oval-shaped arm, a, which projects through a yoke, S, with which it is kept in contact by a spring, b.

As the gate G reciprocates, the arm P comes in contact with the spring-lever Q, and in its forward movement over one of the cam side faces, o', of the enlarged part of said lever forces the arm a to slide to one side of the yoke S, where it is retained by the spring b, the pointed outer end of the lever Q swinging to the opposite side. In the return motion of the gate the arm P springs by the pointed end of the spring-lever, so that in the return motion the arm P passes upon the opposite side of the spring-lever, causing a directly opposite movement of the parts, and tilting the table at each stroke in alternate directions, so that in cutting shingles alternate tips and butts will be cut.

The spring-lever Q rests upon a rubber cushion, d, recessed in the frame R, and through which the pivotal bolt of the lever passes. This rubber cushion is for the purpose of allowing the spring-lever to move or give laterally under the action of the arm P. The spring end of the lever, bearing against such arm during the cutting stroke, retains the table K in its tilted position.

To regulate the degree of tilt or inclination of the table, or to adjust the same to a perfectly horizontal position in a plane with the stationary tables J, I tap through the girts M N proper adjusting-bolts c, the upper ends of which come in contact with the lower face of the table, and by means of which such table is adjusted as may be desired.

An endless carrier, T, is arranged at one end of the frame below the reciprocating knife-gate, upon which will fall the material cut from the bolt, and which will deliver it at the end of the machine.

Upon the top of the frame I secure a table, U, upon which to place bolts to be cut up into shingles or veneers. In advance of this table is secured a resistance block or bar, V,



adjustable by means of bolts *h* and curved or enlarged slots *h'*, which pass through the bar into the frame below at each end, so as to enable the block to be adjusted so as to present the block at a greater or lesser angle to the cutting-knife.

Upon each side of the frame, above the gate, are cheek-pieces *W*, provided with slots *n*, for the reception of set-screws *m*, passing through said slots into the frame, whereby the cheek-pieces are adjustable laterally and longitudinally to correspond to the position of the resistance-bar.

The tilting table *K* and the stationary or fixed tables *J* are provided with longitudinal metal strips *k*, upon which the bolt *Z* rests while being operated upon by the knife.

It will be perceived that by means of the curved or enlarged slots *h'* near the ends of the resistance-bar *V*, in conjunction with the bolts *h*, said bar may be adjusted back and forth in parallel lines, or the angle of the resistance-bar to the knife may be varied as desired for different kinds of wood, by the longitudinal adjustments of one of the cheek-pieces *W* and the radial adjustment of one end of the resistance-bar by means of the bolt *h* and curved slot *h'* in said end. This adjustment will change the angle of the resistance-bar to the knife *I*, and may often be employed advantageously for different kinds of wood and in reducing the shock on the parts of the machine when the knife-edge enters the bolt more gradually, and the resistance-bar may also be so adjusted that the line of direction of the cut may be more nearly in the direction of the line of the fibers of the bolt than when the bolt to be cut is transversely arranged on the table. As the cheek-pieces *W* prevent lateral movement of the bolt and abut against the resistance-bar, they must necessarily be adjusted before the resistance-bar is adjusted.

It will also be observed that after the table has been tilted its inclination during the cut is retained by the bolt resting on said table holding the latter in an inclined position by the knife engaged in the bolt, the resistance-block and the cheek-pieces *W* confining it laterally. The mechanism for tilting the table also is so arranged that after the table has been tilted the spring-lever *Q* is positively held in its tilted position by the spring *b* holding the arm *a* of the spring-lever *Q* in a recess in the yoke *S* until the cut is made, and the arm *a* is retained in such position with the table tilted until the next forward reciprocation of the gate, when the table is tilted in the opposite direction. The outer end of the lever *Q* is elastic or a spring, and in the forward movement of the gate the arm *P* forces the spring-lever *Q* aside and its arm *a* into one of the recesses of the yoke, when said arm rides over the cam *o'* of the spring-lever *Q*, and the arm *a* is held in the recess in the yoke *S* by

the spring *b*, and the table held in its tilted position until the next forward reciprocation of the gate, the arm *P* in the backward reciprocation of the gate forcing back the elastic end of the spring-lever *Q* without swinging said spring-lever.

Heretofore a tilting table has been arranged upon the frame of a wood-cutting machine; but in such construction some means have to be provided for removing the shingle or piece of wood after it has been cut; but in my construction, in which the tilting table is arranged on a reciprocating gate, the shingle or veneer, after having been cut from the block, falls from the machine through the space under the knife on the conveyer *T*.

I am aware that a horizontal reciprocating gate carrying a cutter and a table on which the bolt to be cut rests, which table is automatically tilted in the reciprocations of the gate by means of an arm attached to the under side of the table operating against a lever, has heretofore been employed, and I therefore lay no claim to such invention, broadly.

What I claim as my invention is—

1. In a wood-cutting machine, the combination, with the frame *A*, of the adjustable resistance-bar *V*, having end slots, *h'*, and set-screws *h*, and the adjustable cheek-pieces *W*, provided with slots *n* and set-screws *m*, whereby the angle formed by the cutter and resistance-bar may be varied as desired, substantially as described.

2. The reciprocating knife-gate *G*, carrying the tilting table *K*, having the hanger *O*, with arm *P* attached thereto, in combination with spring-lever *Q*, having side cam-faces, *o'*, and arm *a*, yoke *S*, having recesses *x x*, and spring *b*, the whole constructed and arranged to operate in the manner and for the purpose set forth.

3. The combination, with the reciprocating knife-gate *G*, carrying the cutter *I*, and tilting table *K*, having the hanger *O*, with arm *P* secured thereto, of the spring-lever *Q*, pivotally secured in rubber *d* and having side cam-faces, *o'*, and arm *a*, recessed yoke *S*, and spring *b*, all constructed and arranged to operate in the manner and for the purpose set forth.

4. The combination, with the adjustable resistance-block *V*, of the reciprocating gate *G*, carrying the automatic tilting table *K* and cutter *I*, substantially as described, and for the purpose set forth.

5. In a wood-cutting machine, the stationary resistance-block *V*, secured to the frame of the machine and adapted to be angularly adjusted thereon, in combination with the gate *G*, carrying the cutter *I*, and reciprocating under said block, substantially as described.

WILLIAM P. CAMPBELL.

Witnesses:

JOHN R. EASTMAN,  
DANIEL HASKIN.