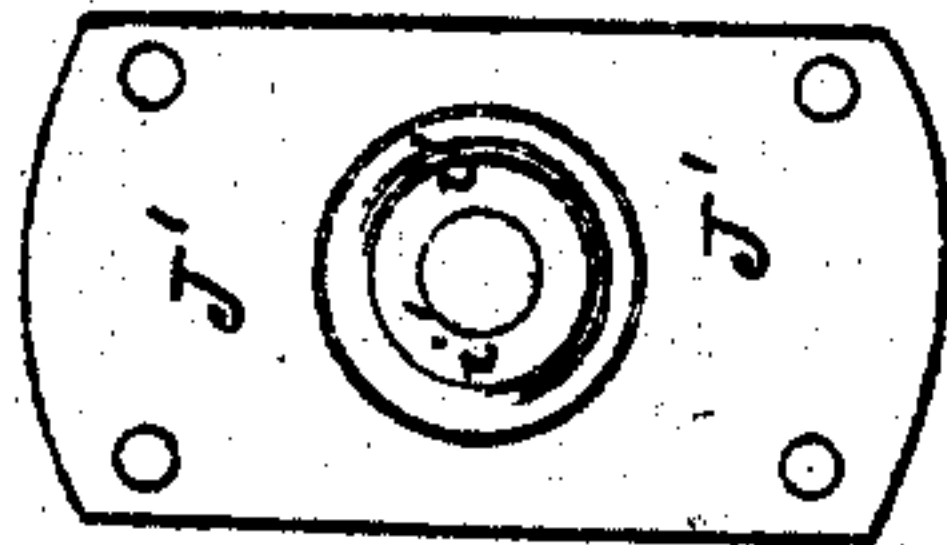


*C. A. Meinhard*  
*Planing & Slotting.*

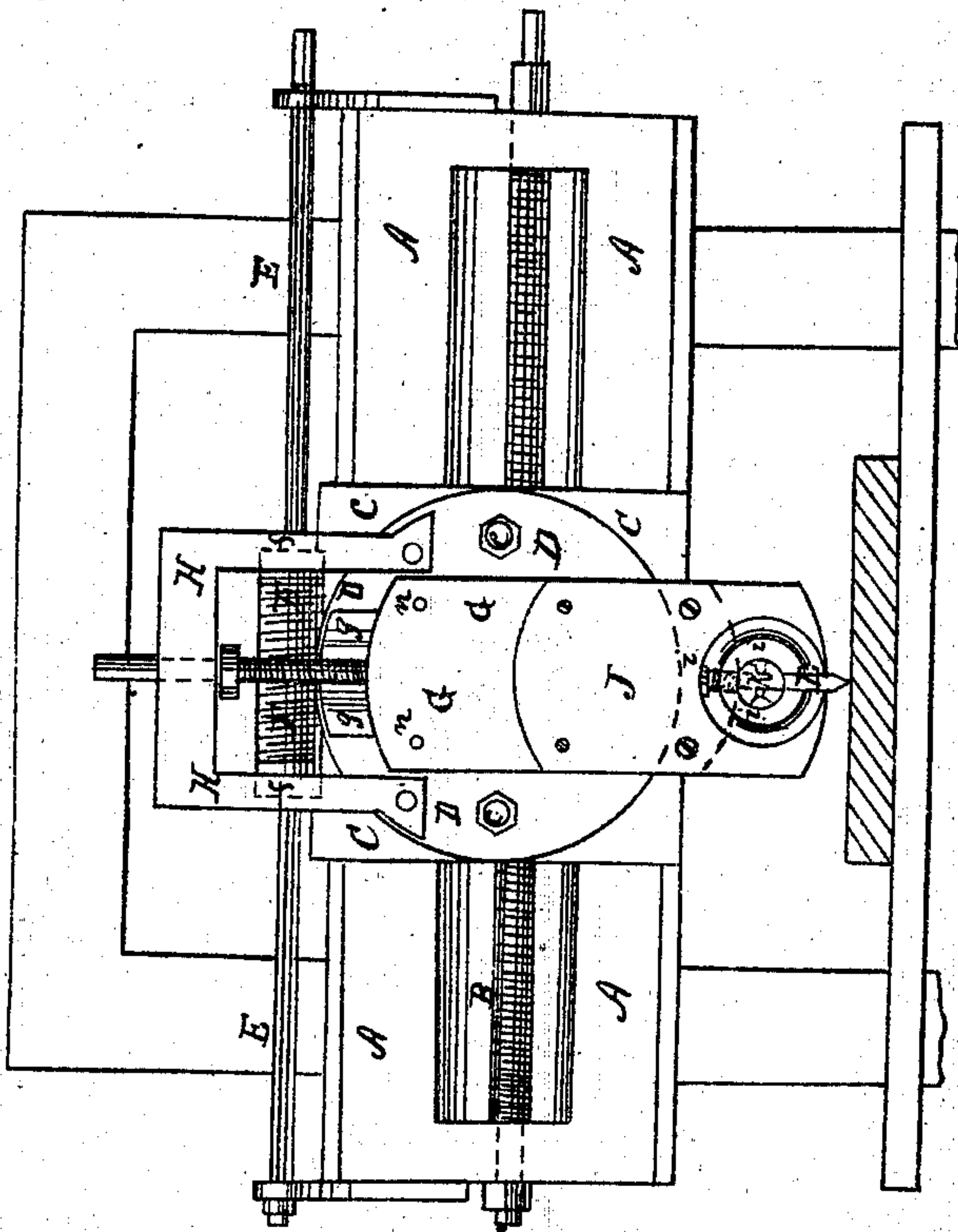
*Nº 71401*

*Patented Nov. 26, 1867*

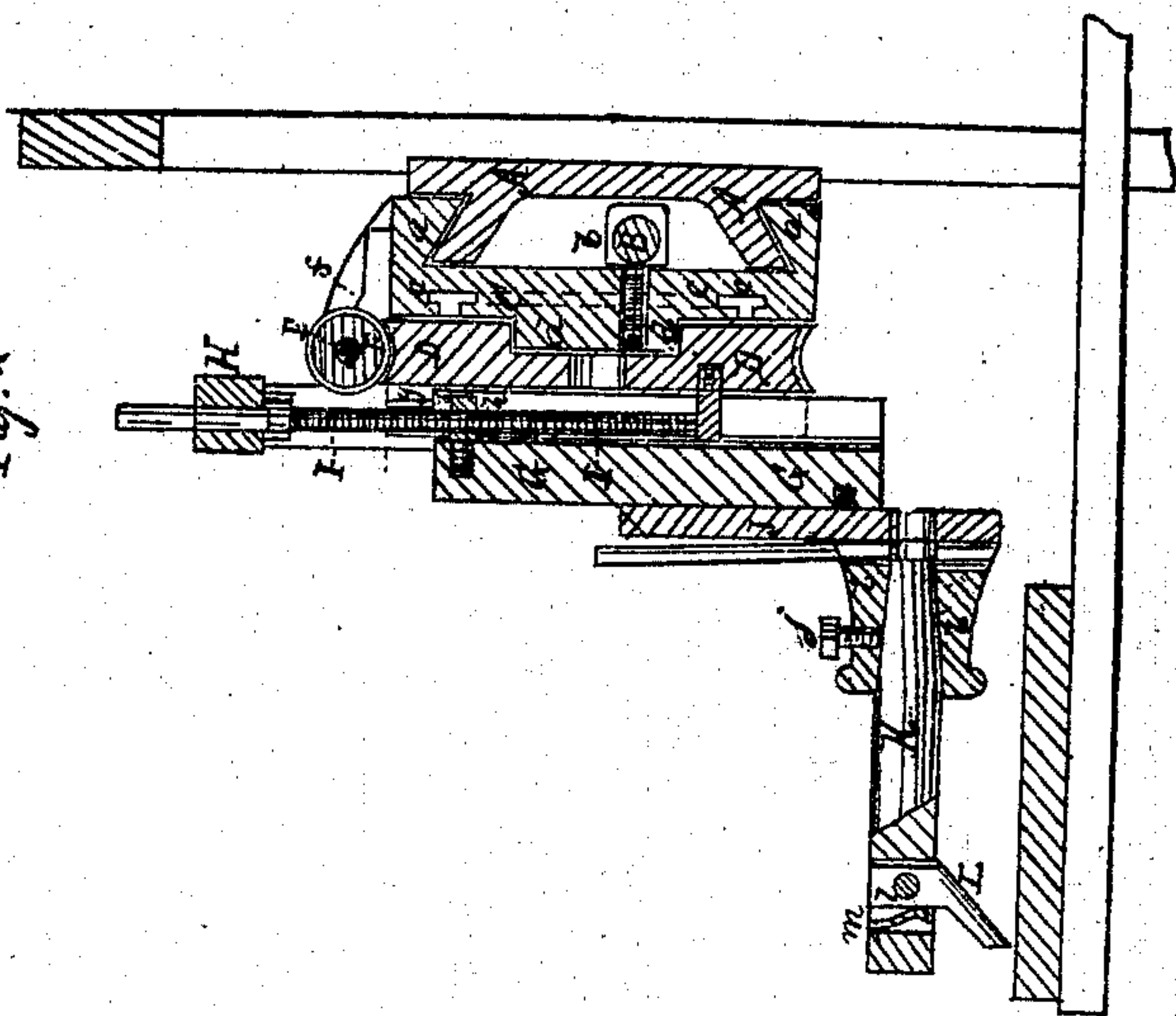
*Fig. 3.*



*Fig. 1.*



*Fig. 2.*



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# United States Patent Office.

CHARLES A. MEINHARD, OF FORT WAYNE, INDIANA.

Letters Patent No. 71,401, dated November 26, 1867.

## IMPROVED MACHINE FOR PLANING AND SLOTTING.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES A. MEINHARD, of Fort Wayne, in the county of Allen, and State of Indiana, have invented a new and improved Combined Planing and Slotting-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 represents a front view of my improved planing-machine.

Figure 2 is a vertical cross-section of the same.

Figure 3 is a detail front view of the plate for holding the cutter of the slotting-machine.

Similar letters of reference indicate like parts.

This invention relates to a new device, by which a planing-machine can be quickly converted into a slotting-machine, and *vice versa*, the said planing-machine being so arranged that it can work on level, tapering, or round convex or concave surfaces. The invention also relates to such a manner of arranging the cutter that the same cannot be injured during the return stroke.

A represents a stationary rectangular frame, which is arranged above the carriage of a planing-machine, so as to be firmly sustained in position. It is made of any suitable metal. B is a shaft, which has its bearings in the ends of the frame A, and which passes longitudinally through the same, as is clearly shown in fig. 1. That portion of the shaft B which is between the ends of the frame A is provided with a screw-thread, as shown. C is a frame, which slides on the face of the frame A, and which has dove-tailed lips, *a*, which fit around the corresponding sides of the frame A. A nut, *b*, is formed on the inner face of the frame or plate C, and fits around the screw B, so that by turning the screw the said plate C will be moved on the frame A in the desired direction. On the outer face of the plate C is formed a circular T-shaped groove, *c*, and concentric with the same a circular projection, *d*. D is a solid worm-wheel, which has a recess on its inner face, fitting over the projection *d*. Two bolts, *e e*, having T-shaped heads, are held in the wheel D, and fit into the groove *c* to give proper support and guidance to the said wheel. E is a shaft, hung in bearings in the frame A, and passing through two ears, *f f*, which project from the plate C. This shaft is, as shown, parallel with the shaft B. Between the ears *f f* is hung, on the shaft E, a sliding sleeve, F, which has a tongue or feather fitting a groove provided in the shaft, (as shown in fig. 2,) so that by turning the latter the sleeve will also be turned, and by turning the shaft B the plate C will be moved, and will carry the sleeve F along on the shaft E. A screw-thread is formed on the sleeve F, which meshes into the teeth on the wheel D, as shown, so that by turning the shaft E the wheel D will be turned in either direction. On the face of the wheel D is a dove-tail tenon, *g*, upon which a grooved-plate, G, slides. A yoke, H, is fixed to the disk D, and holds a screw, I, which works in a nut, *h*, that is arranged on the inner side of the plate G, as is clearly shown in fig. 2. Thus, by turning the screw I, the plate G can be moved on the disk D, *i. e.*, the disk D may be so turned that the plate G stands either in a vertical position, at right angles with the screw B, or in a horizontal position, parallel with the latter, or in an inclined position, and the screw I serves to draw the plate G more or less towards the yoke H. J is a plate, which is screwed upon the plate G, and from the face of which a tubular shank, *i*, projects, in which the stem or tool-holder K is held by means of a set-screw, *j*. L is the cutter, which is pivoted in a slot, arranged near the outer end of the stem K by means of a pin, *l*, and which is made in the shape shown in fig. 2. A spring, *m*, is fitted in the slot, so as to press upon the cutter in such a manner that it will hold the same to its work, when the same is moving against the plate in the direction indicated by the arrow in fig. 2, while during the return move the spring will allow the cutter to be lifted over any obstructions and inequalities of the plate operated on. It will be seen that for the planing-machine, the screw I serves to adjust the cutter to thicker or thinner plates, up and down. The disk D serves to throw the cutter into an inclined position, and to adapt it to work on rounded surfaces. The screw B serves to feed the cutter laterally to other parts of the work. The feed-screw B can be turned at the end of each stroke, also the shaft E when rounded work is to be planed. For adapting the machine to slotting-shafts, pulleys, &c., the plate J is removed, and a plate, J', (fig. 3,) arranged in its place, which plate J' has a tubular shank, *i'*, projecting from its centre, as shown. The plate G is provided with a number of holes, *n n*, for the screws by which the plates J or J' are secured. These holes are so arranged that the said plates can be attached higher or lower, so that, especially in the slotting-machines, the position of the cutter can be



adjusted to the height of the article to be slotted by the position of the plate J' and by the screw I. When only common planing is to be done, the shaft E is thrown out of gear altogether, so as not to turn the disk D.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of worm-wheel D with the sliding adjustable plate C, and up-and-down adjustable plate G, all made, arranged, and operating substantially as and for the purpose herein shown and described.
2. The cutter L, when hinged in the slotted stem K, and connected with the spring *m*, substantially as and for the purpose herein shown and described.
3. The adjustable plates J or J', when provided with shanks *i i*, respectively, for holding the tool, and when combined with the up-and-down adjustable plate G of a planing-machine, substantially as set forth.
4. The shafts B and E, worm F, plate C, disk D, and plate G, in combination with the plate J, (or J'), stem K, and cutter L, all made and operating as and for the purpose herein shown and described.

CHARLES A. MEINHARD.

Witnesses:

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BERNARD WAGNER.