No. 838,827. PATENTED DEC. 18, 1906.

J. S. WAUGH.

MACHINE FOR MORTISING AND BORING.

APPLICATION FILED NOV. 21, 1905.

2 SHEETS—SHEET 1.

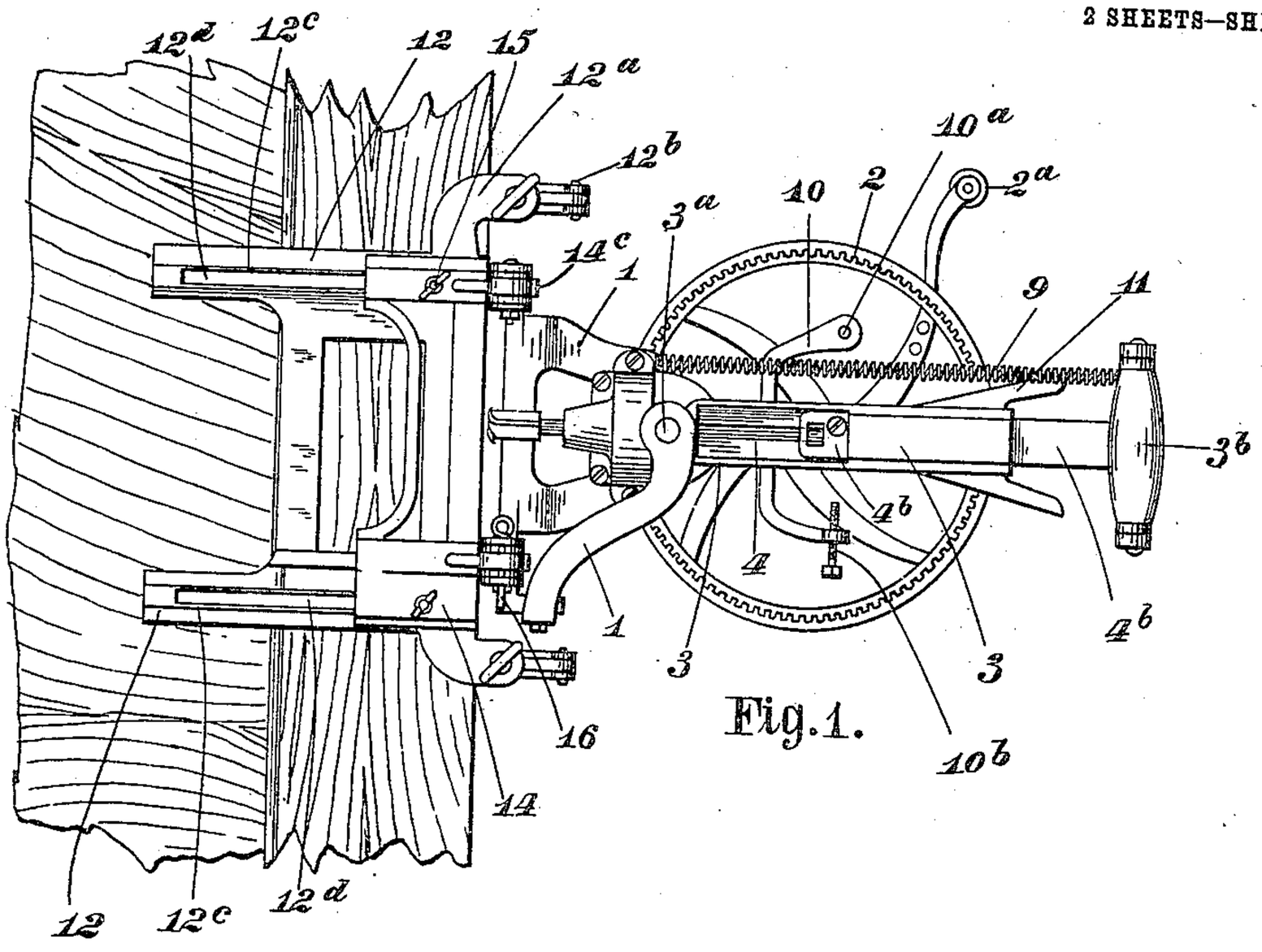

Fig. 1.

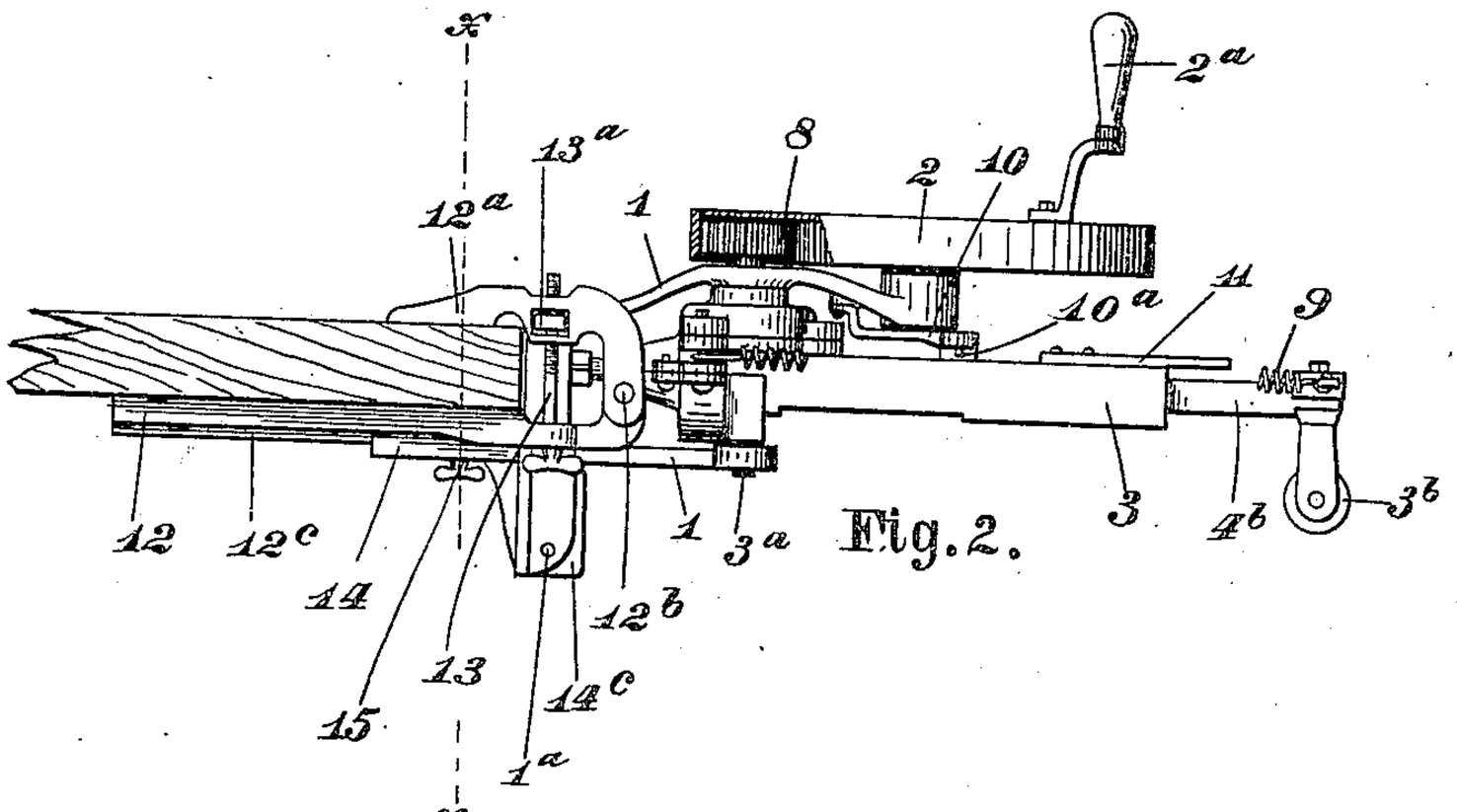

Fig. 2.

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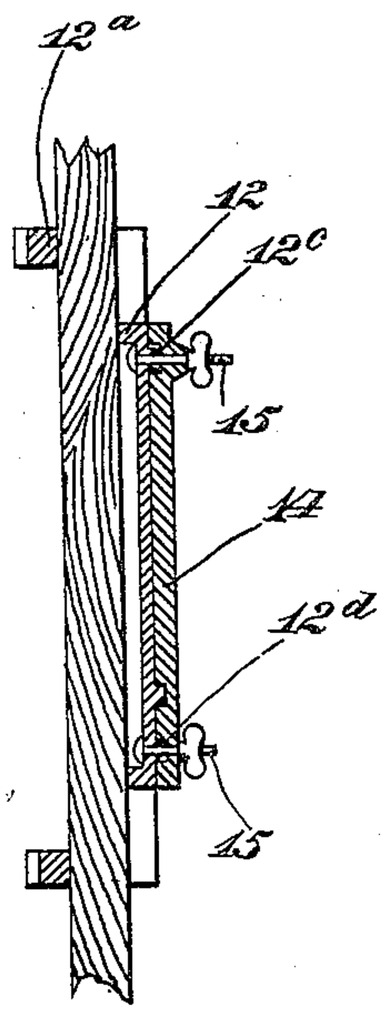
2 SHEETS—SHEET 2.

Fig.5.



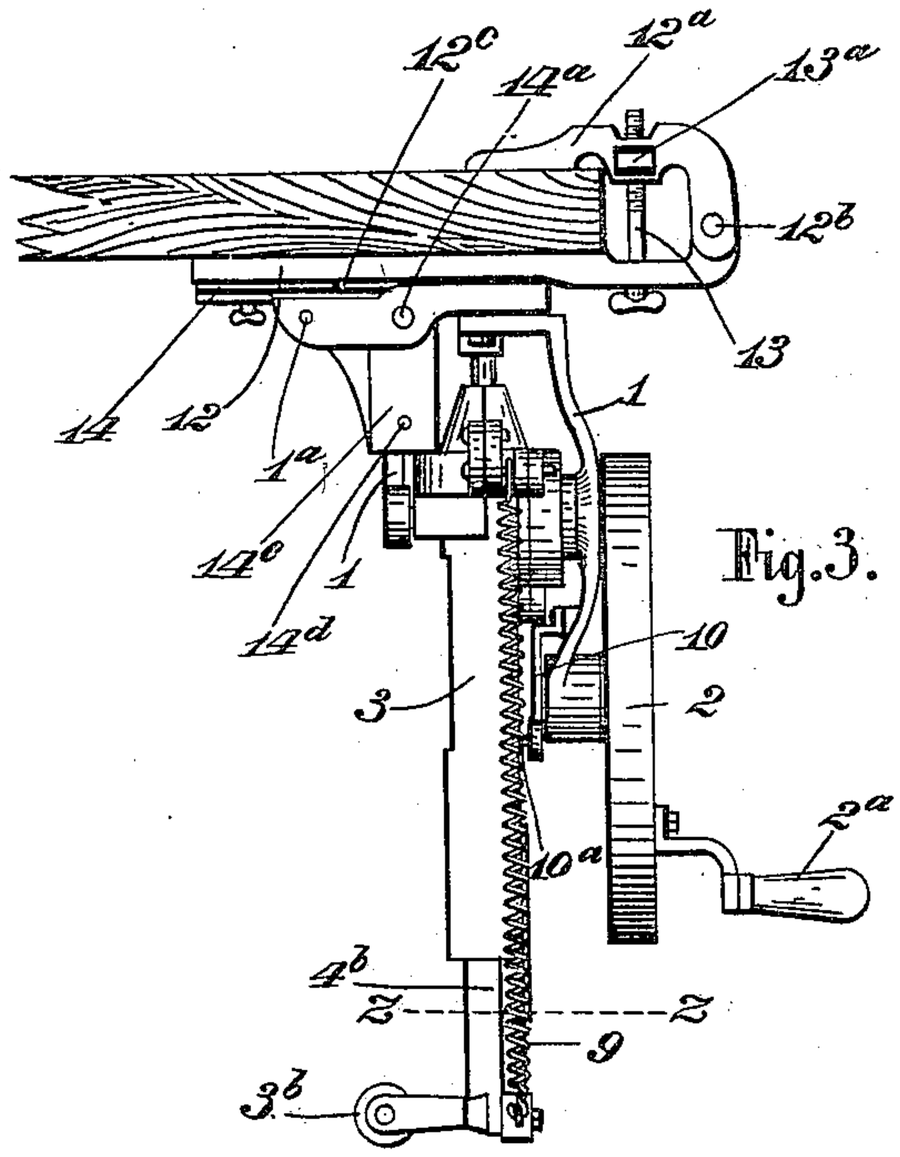


Fig.3.

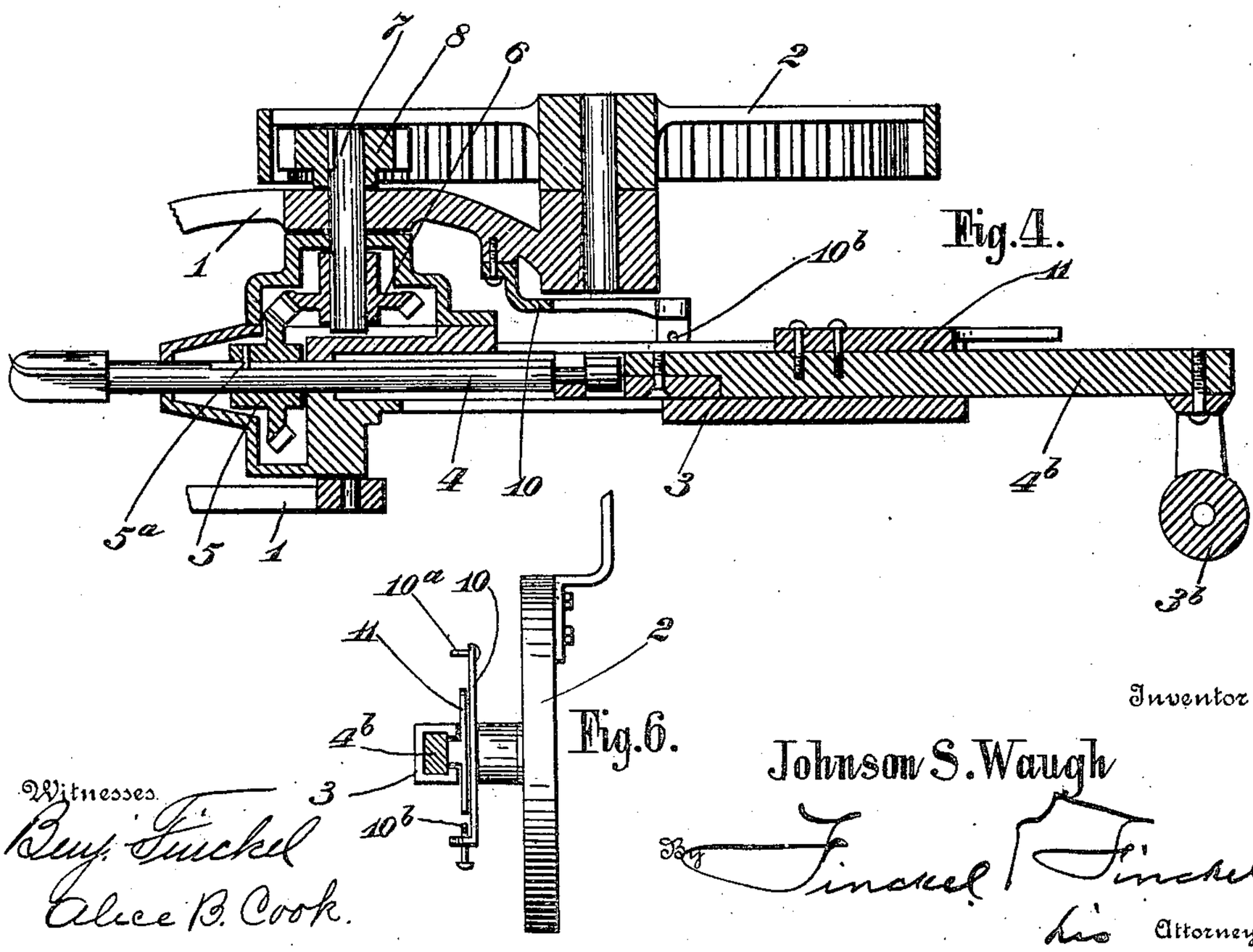


Fig.4.

Fig.6.

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UNITED STATES PATENT OFFICE.

JOHNSON S. WAUGH, OF SHEPHARD, OHIO, ASSIGNOR OF ONE-HALF TO CHARLES M. SCHAUB, OF GAHANNA, OHIO.

MACHINE FOR MORTISING AND BORING.

No. 838,827. Specification of Letters Patent. Patented Dec. 18, 1906.

Application filed November 21, 1905. Serial No. 288,476.

To all whom it may concern:

Be it known that I, JOHNSON S. WAUGH, a citizen of the United States, residing at Shephard, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Machines for Mortising and Boring; 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.

The object of the invention is to provide an improved machine especially adapted for mortising doors for the reception of locks and for boring keyholes and holes for the spindles of latch-knobs. The invention, however, can be used for other purposes—as, for example, routing, gouging, or housing.

The invention consists in the construction hereinafter described and claimed.

In the accompanying drawings, illustrating one embodiment of the invention, Figure 1 is a view in side elevation showing the machine applied to the edge of a door in position for cutting the mortise. Fig. 2 is a top view of the same in the same position, but with some parts broken out. Fig. 3 is a view similar to Fig. 2, but showing the machine turned around to stand at right angles to the position in which it appears in Fig. 2 and moved laterally to bore, for example, a hole for the knob-spindle. Fig. 4 is a section on the line *y y*, Fig. 1, but on a magnified scale. Fig. 5 is a detail sectional view on the line *x x*, Fig. 2. Fig. 6 is a sectional view on the line *z z*, Fig. 3, looking up, but with remote parts omitted.

In the several views, 1 designates a frame, which in the operative position is fixed. This frame supports the master-wheel 2, which is a large internal spur-gear. The frame or slideway, which is designated 3, for carrying the tool-holder is pivoted to rock at 3^a in the frame 1. The tool or bit (designated 4) is swiveled in a slide-piece or tool-holder 4^b, working in the frame 3. The shank of the tool is made with a longitudinal groove 4^a, into which projects a pin 5^a in the hub of a bevel-gear 5. The bevel-gear 5 is engaged by a bevel-gear 6, secured on a short shaft 7, upon which shaft is also secured a spur-pinion 8, that is engaged and driven by the master-gear 2. It will thus be observed that the tool can be rotated and rocked or oscillated and at the same time be moved longitudinally with respect to its carrying-frame. The tool-holding slide is provided with a handle 3^b, by means of which the workman can rock or move the tool inward or outward; but I prefer to use a spring 9, connecting the tool-slide and the frame 3 to draw the tool into the material to be cut, so that it is only necessary in this respect for the workman to guide the tool. The master-wheel 2 is provided with a handle 2^a, by means of which it can be turned to rotate the tool.

10 designates a two-armed bracket secured on the frame 1 and extending to opposite sides of the tool-carrying frame 3. One arm of this bracket is furnished with a laterally-projecting pin 10^a and the other with an adjustable screw 10^b. On the rear side of the slide (as seen in Fig. 1) are divergent cams 11, one of which contacts with the pin 10^a, and the other contacts with the end of the set-screw 10^b. These cams only contact of course with the pin 10^a and screw 10^b, while the tool is cutting the upper and lower boundaries of the mortise, and they are usually so formed or are at such an angle with respect to the tool-slide that the said boundaries are cut substantially at right angles to the edge of the door. In other words, the function of the cam edge is to guide the tool by contact with the pin or the set-screw to make the tool cut in a particular direction, and this direction can be varied if the character of the work should make it advisable by varying the inclination or form of the edge of the cam. By adjusting the set-screw 10^b the size of the mortise—that is, the distance between its upper and lower boundaries—can be predetermined.

The frame for clamping the machine to the edge of the door or other structure to be treated is composed of two parts 12 and 12^a, hinged together at 12^b. A thumb-bolt 13, engaging a nut 13^a, serves to draw the parts of the clamping-frame tightly against the door to be treated.

The part 12 of the clamping-frame is made with slideways or tracks 12^c, having slots 12^d upon which tracks fits a frame 14. The frame 14 is adapted to be securely bolted to the clamping part 12 by means of bolts 15, passed through said frame and the slots 12^d and engaged with nuts at the rear side of the part 12. The frame 1 is provided with a right-angled portion by means of which it is hinged at 14^a to the frame 14. The frame 14 also has a right-angled portion designated 14^c, and it and the right-angled portion of the

frame 1 are provided with holes 1^a and 14^d, that aline with one another when the frame 1 is secured in position to mortise the edge of the door. A pin 16, passed through the holes 1^a and 14^d, secures the frame 1 in position to permit mortising the edge of the door.

When a knob or keyhole is to be bored, the pin 16 is removed, the bolts 15 loosened, and the frame 1 turned around on the hinge 14^a to stand at right angles to the plane of the door. The frame 1 and boring apparatus are then slid laterally on the clamping member 12 until the boring-tool is in position to bore the hole at the proper point, after which the bolts 15 are tightened. When the frame 1 is thus slid onto the clamp member 12, the right-angled portion of the frame 1—that is, the portion containing the hole 1^a—maintains the frame 1 and the boring-tool in right-angled relation to the door, as seen in Fig. 3.

In cutting a mortise the tool-carrying frame and with it the tool are rocked to cut out the material between the upper and lower boundaries of the mortise.

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

1. In a mortising-machine, the combination with a supporting-frame and means for fixing the same in operative position, a tool-holder slideway pivoted to rock on said frame, a tool-holder non-rotative axially but slidable in said slideway and provided with a handle, a tool swiveled in said tool-holder, a pinion in which the tool slides and by which the tool is rotated, a shaft journaled in said frame concentrically with the pivot upon which the tool-holder slideway rocks, a gear on said shaft adapted to drive said pinion, and means for driving said shaft.

2. In a mortising-machine, the combination with a supporting-frame and means for fixing the same in operative position, a tool-holder slideway pivoted to rock on said frame, a guiding-cam on the tool-holder slideway and a point of contact for said cam on the frame, a tool-holder non-rotative axially but slidable in said slideway and provided with a handle, a tool swiveled in said tool-holder, a pinion in which the tool slides and by which the tool is rotated, a shaft journaled in said frame concentrically with the pivot upon which the tool-holder slideway rocks, a gear on said shaft adapted to drive said pinion, and means for driving said shaft.

3. In a mortising-machine, the combination of a frame, a master driving-wheel supported therein, a rocking tool-carrying frame, a tool-holding slide in the rocking frame, a tool swiveled to said slide, gearing operated by the master-wheel to rotate said tool, divergent cams on the tool-holding slide and points of contact on the frame carrying the master-wheel for said guiding-cams one of which points is adjustable.

4. In a mortising and boring machine, the combination of a frame carrying the mortising and boring mechanism, a clamping-frame for attaching the machine to the article to be mortised and bored one member of which clamping-frame is provided with a slideway, a frame adjustably secured to slide on said slideway, means for hinging the mortising and boring mechanism to said last-named frame whereby the mortising and boring mechanism can be placed to mortise the edge of the door or to bore a hole in the door at right angles to such mortise.

5. In a mortising and boring machine, the combination of a frame carrying the mortising and boring mechanism, a clamping-frame for attaching the machine to the article to be mortised and bored one member of which clamping-frame is provided with a slideway, a frame adjustably secured to slide on said way, means for hinging the mortising and boring mechanism to said last-named frame whereby the mortising and boring mechanism can be placed to mortise the edge of the door or to bore a hole in the door at right angles to such mortise, and means for locking the mortising and boring mechanism in the said positions.

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

JOHNSON S. WAUGH.

Witnesses:
U. R. PETERS,
BENJ. FINCKEL.