

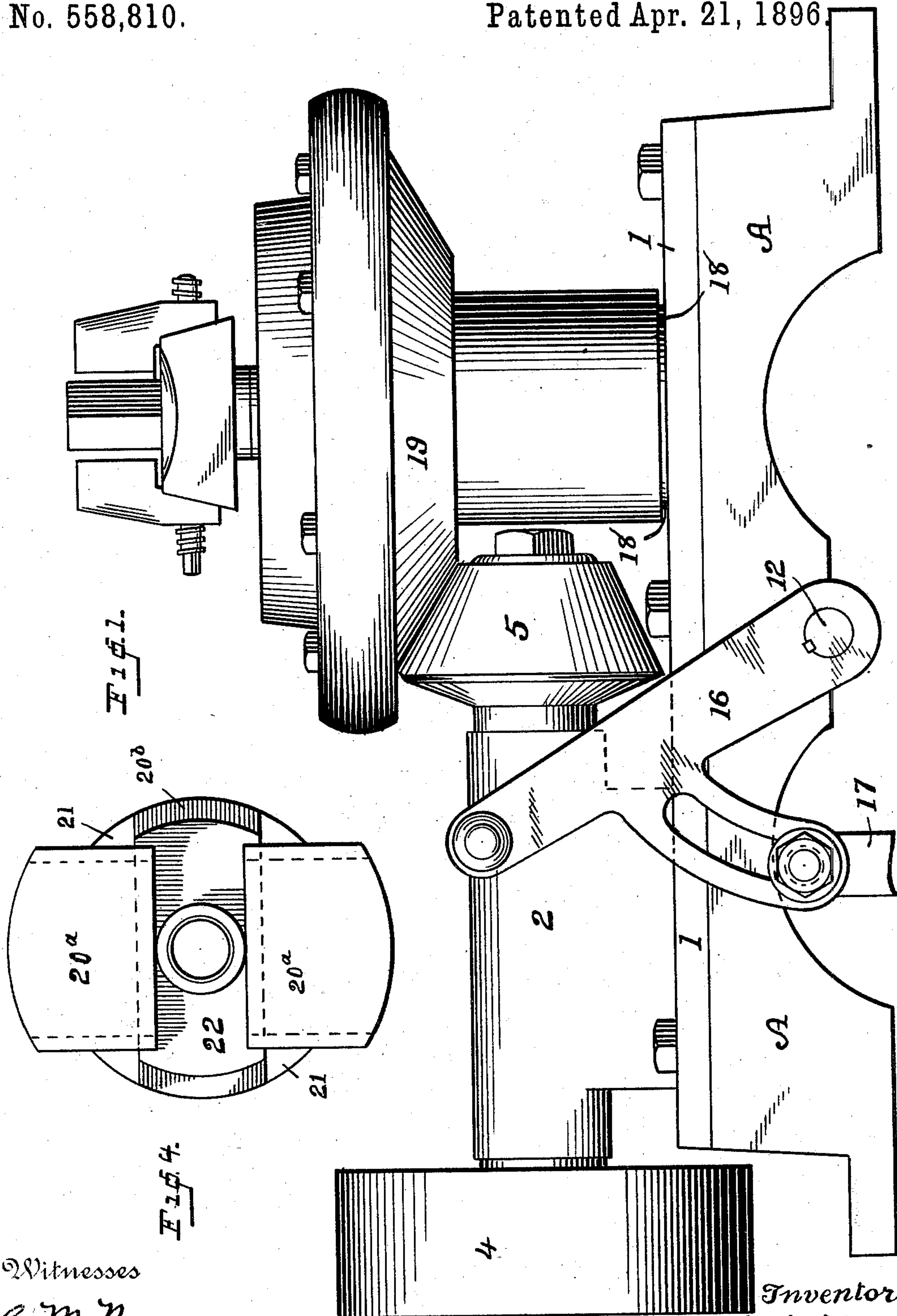
(No Model.)

4 Sheets—Sheet 1.

J. B. HOWE.  
HAT FINISHING LATHE.

No. 558,810.

Patented Apr. 21, 1896.



Witnesses

E. M. Newman  
A. J. Tanner

Inventor

John B. Howe  
by J. H. Hubbard Attorney

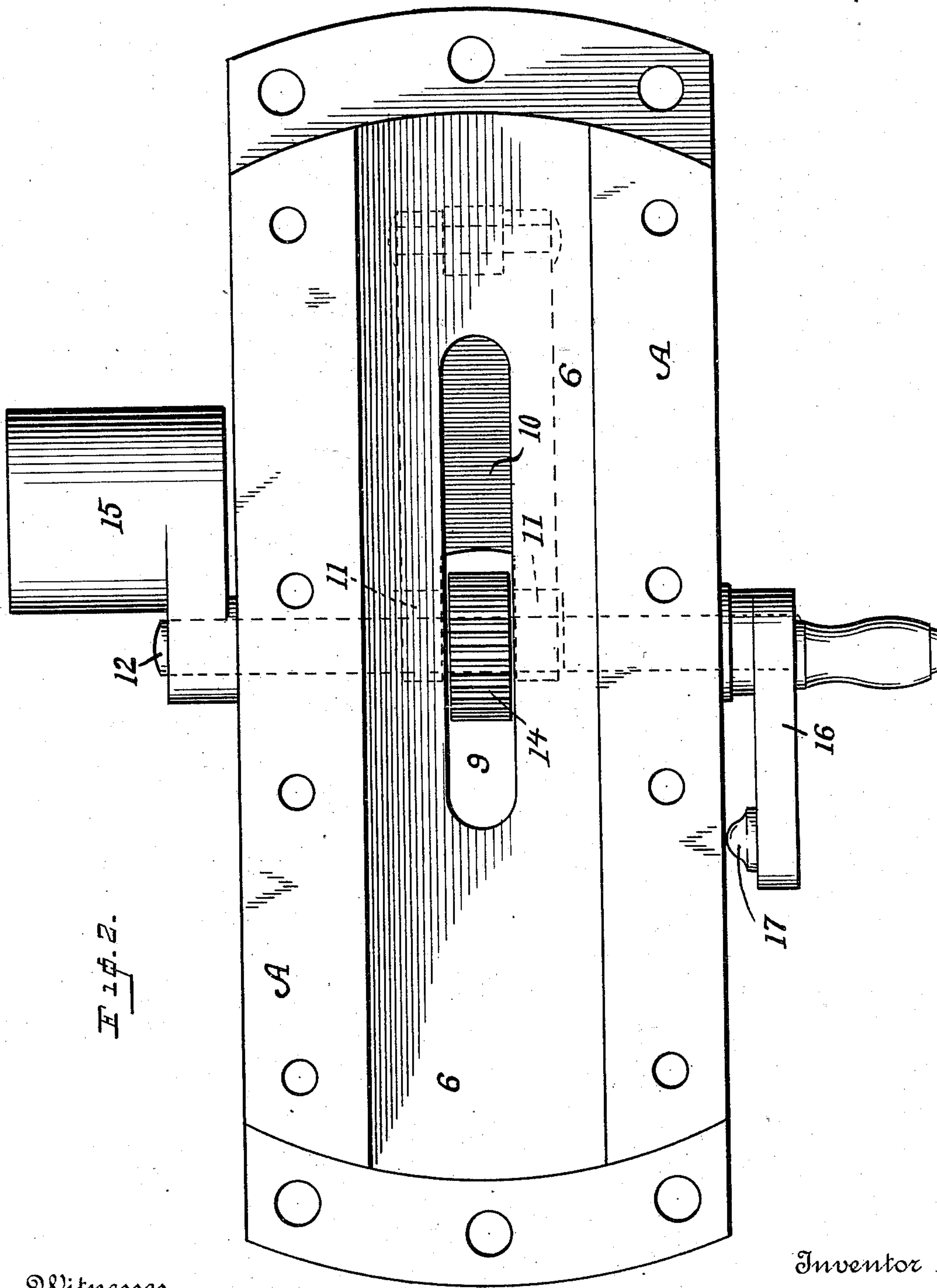
(No Model.)

4 Sheets—Sheet 2.

J. B. HOWE.  
HAT FINISHING LATHE.

No. 558,810.

Patented Apr. 21, 1896.



Witnesses

C. M. Newman  
A. J. Tanner

Inventor

John B. Howe  
by J. H. Hubbard  
Attorney



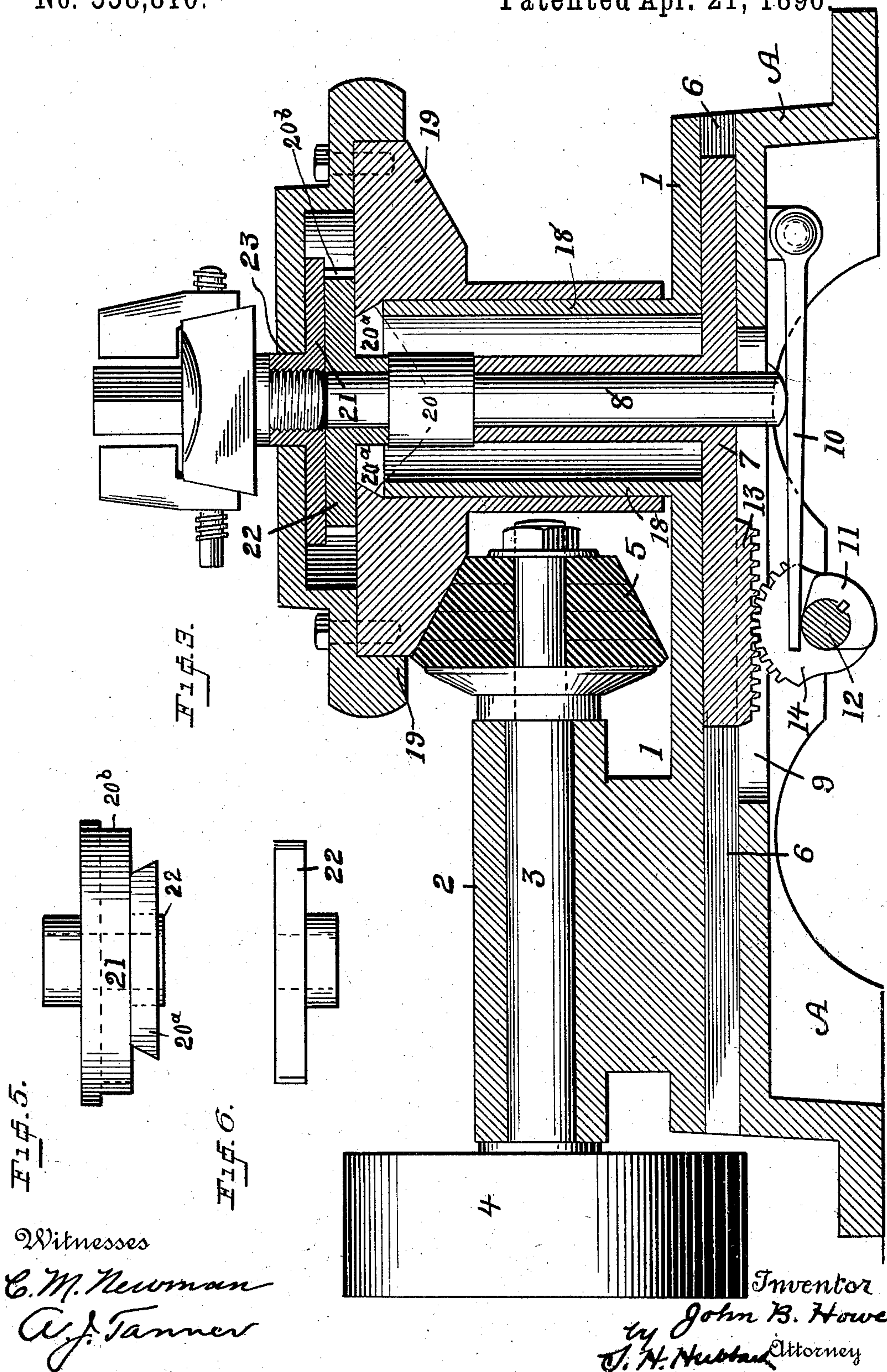
(No Model.)

4 Sheets—Sheet 3.

J. B. HOWE.  
HAT FINISHING LATHE.

No. 558,810.

Patented Apr. 21, 1896



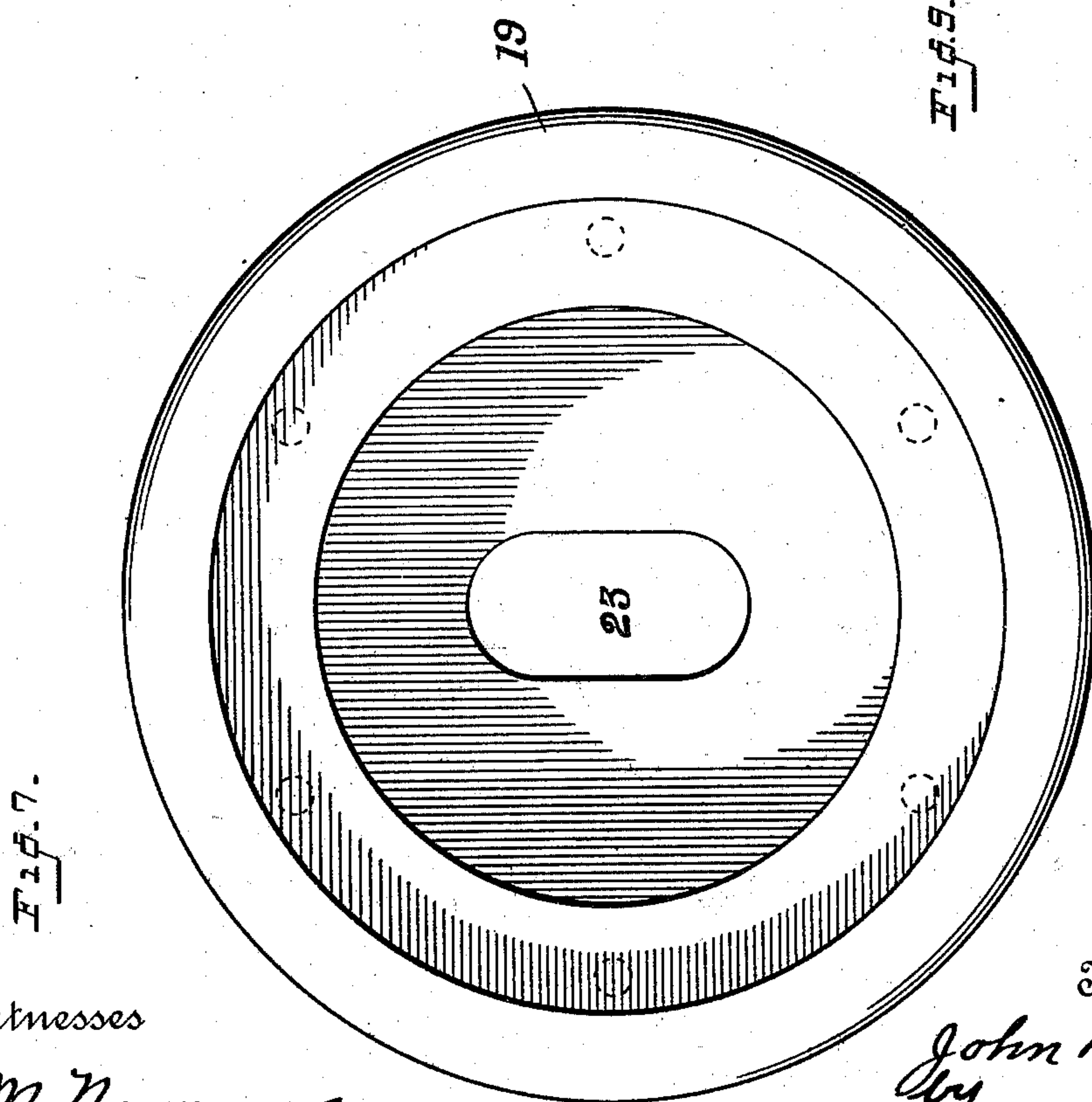
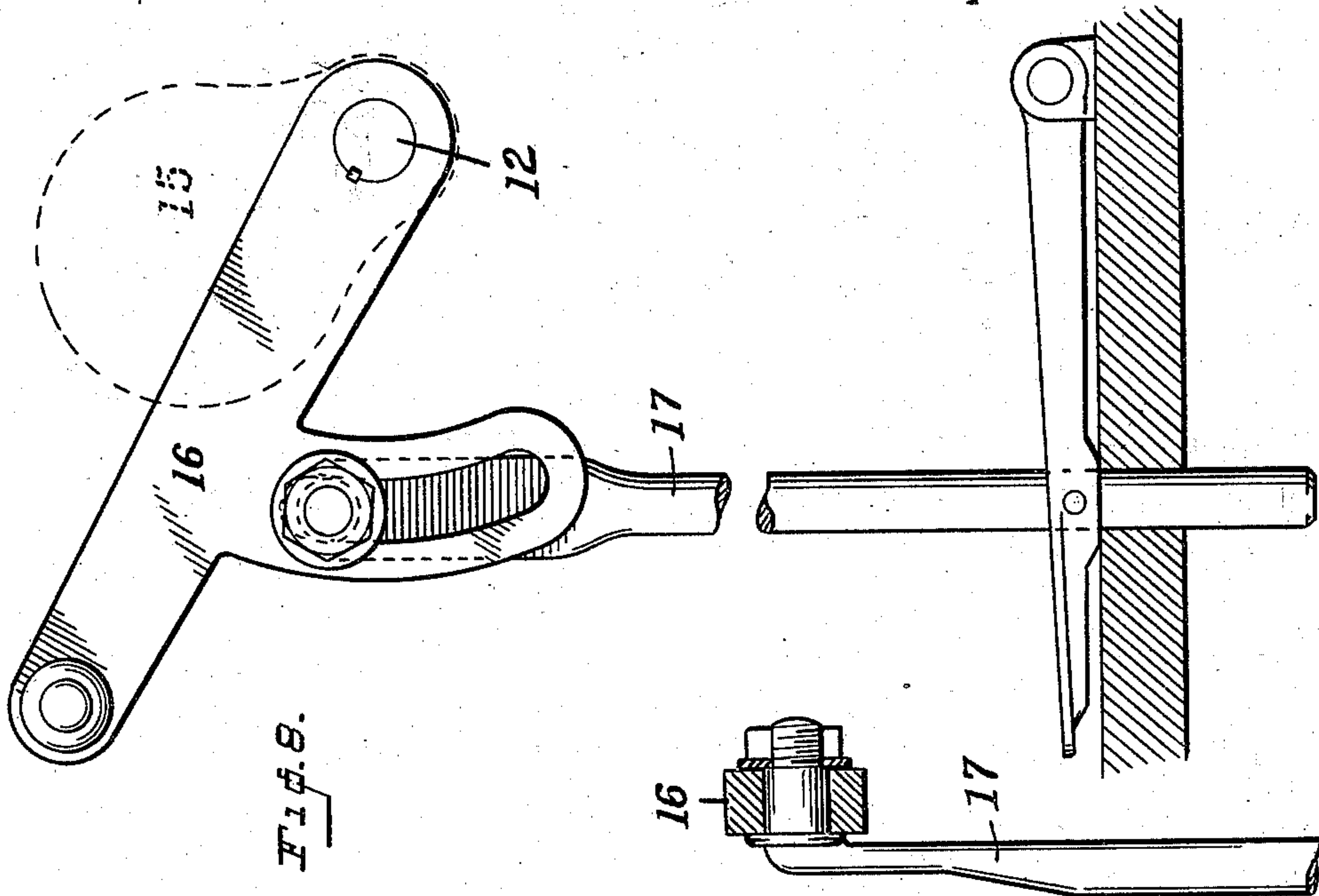
(No Model.)

4 Sheets—Sheet 4.

J. B. HOWE.  
HAT FINISHING LATHE.

No. 558,810.

Patented Apr. 21, 1896.



Witnesses  
C. M. Newman,  
A. J. Tanner

Inventor  
John B. Howe  
By  
J. H. Hubbard  
Attorney



# UNITED STATES PATENT OFFICE.

JOHN B. HOWE, OF DANBURY, CONNECTICUT.

## HAT-FINISHING LATHE.

SPECIFICATION forming part of Letters Patent No. 558,810, dated April 21, 1896.

Application filed September 12, 1892. Serial No. 445,632. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. HOWE, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Hat-Finishing Lathes; 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.

My invention relates to certain new and useful improvements in hat-finishing lathes, and has for its object to produce a vertical rotating hat-lathe which will produce both a concentric and eccentric rotative movement, and which shall be simple in its construction and mode of operation.

With these ends in view my invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claims.

In order that those skilled in the art to which my invention appertains may fully understand how to make and use the same, I will proceed to describe the same in detail, referring by numerals and letters to the accompanying drawings, forming a part of this specification.

Figure 1 is a side elevation of my machine ready to receive a hat-block. Fig. 2 is a plan view of the bed with the lathe mechanism removed. Fig. 3 is a central vertical section. Fig. 4 is an inverted plan of the lathe-slides. Fig. 5 is a side elevation showing the two slides 21 and 22 combined. Fig. 6 is a side elevation showing the slide 22. Fig. 7 is an inverted plan view of the upper part of the beveled fly-wheel. Fig. 8 is a detail side elevation of the handle and treadle connections. Fig. 9 is a section of the same.

A is a bed; 1, a plate upon the bed.

2 is a standard upon the plate to accommodate a driving-shaft 3, having a driving-pulley 4, also beveled friction-wheel 5, which drives the main portion of my lathe.

In the top of the bed A, I provide ways 6 for a slide 7, carrying a spindle 8, which extends through a slot 9 in the main bed and is adapted to be engaged by a lever 10, one end of which is pivoted to a stud upon the under side of the main bed. The other, which is bifurcated, rests upon a double cam 11 on a

rock-shaft 12. Upon the under side of the slide 7 is a rack 13, which receives movement from a part gear 14 upon the rock-shaft. Upon one end of this rock-shaft I provide a weight 15 and upon the near end a handle 16, to which I loosely attach a treadle connection 17, the purpose of which will presently be more fully described.

I form upon the plate 1, as seen at the right of Fig. 3, a cylindrical vertical projection 18, which forms a bearing for a beveled fly-wheel 19, which is formed of two parts. This fly-wheel, together with its several slides, &c., will be best understood with reference to Figs. 3, 4, 5, and 6.

In order to produce the concentric and eccentric rotative movement of my lathe, I provide in the lower section of the fly-wheel a way 20 to receive a dovetail 21<sup>a</sup> of a slide 21, which clearly appears in Figs. 4 and 5. This slide has within it ways 20<sup>b</sup> to receive another slide 22. (Shown in Figs. 3, 4, and 6.) These slides within the fly-wheel are arranged at right angles to each other, thereby permitting movement in either direction. In the upper section of my fly-wheel I provide a slot 23, as clearly appears in Fig. 7. This slot is in a position corresponding with that of ways 20 in the lower section of said fly-wheel, and said slot and way are designed to work in unison with each other. This fly-wheel and its internal parts rotate together and at the same rate of speed.

The starting or stopping of my machine is made through the making or breaking of connection of the beveled friction-wheel 5 and the fly-wheel, said connection being broken by the raising of the fly-wheel through means of spindle 8, lever 10, and cam 11 upon the rock-shaft.

It will clearly be seen that when the lever of the rock-shaft is moved from the position shown in Figs. 1 and 3 to that shown in Fig. 8 the lathe will be stopped from rotation. The handle, as shown in Fig. 1, represents the machine in an operative position, and which would be maintained by the operator holding his foot upon the treadle, and aside from this position it may be placed in two other positions—to wit, one a vertical position, (shown in Fig. 2,) and which would be had by the weight dropping from directly above the shaft to the



right, as seen in the drawings. This position would be had for the purpose of throwing the lathe off of the center and producing an eccentric rotative movement of the lathe. In  
 5 this instance spindle 8 and slide 7, as seen in Fig. 3, would be moved to the right with its inclosures. Another position of the handle would correspond with that shown in Fig. 8. The treadle connection in this figure is shown  
 10 as slipped up through a slot provided for that purpose. In this position the cam 11 has acted upon lever 10 and thereby permitted the machine to stop. It is therefore clearly seen that the rock-shaft, together with the  
 15 handle, has a double function.

The part gear 14 and cam 11 are secured upon the rock-shaft 12 in such relative position (clearly shown in Fig. 3) that when the rock-shaft is turned forward, so that the part  
 20 gear will act upon the rack 13 to move the spindle 8 forward to give an eccentric movement to the hat-block, the cam 11 will be inoperative—that is to say, it will not act upon the lever 10 to lift the spindle, which would  
 25 throw wheels 5 and 19 out of engagement, and when said shaft is turned to the left the rack brings the spindle to a concentric position and the cam 11 into engagement with the spindle end to lift the same and stop the ma-  
 30 chine.

It will be seen by reference to Figs. 3, 4, and 7 that the spindle 8 terminates at or near the upper face of slide 22 within wheel 19, and that the connection between it and the  
 35 hat-block is made between the slide 21, having ways in which slide 22 moves, the hat-block shank or spindle being secured to said slide 21, as shown. As before stated, the upper portion of the wheel 19 has an elongated  
 40 slot 23 therethrough at right angles to the slide 21, and in consequence of such slides 21, 22, and slot 23 being at right angles, assuming the spindle to be in rotation and axially alined with the wheel 19, all that is necessary  
 45 when it is desired to change this position to secure an eccentric movement of said spindle is to throw the lever 10 to the right, which will cause the spindle to move to the right, the slides and ways accommodating themselves  
 50 to each other in consequence of the rotation

which will throw it out of axial center with the wheel 19 and impart an eccentric movement to the hat-block.

Having thus described my invention, I claim—

1. In a hat-lathe, the bed A having the bracket 2 supporting the horizontal driving-shaft 3, with the beveled friction-wheel 5 at its end, in combination with the hollow beveled fly-wheel 19 mounted as described, and  
 60 containing the slides 21 and 22, mounted upon the vertical spindle which is adapted to be shifted from right to left to impart an eccentric or concentric movement to the hat-block secured to slide 21 as described, and means  
 65 as shown for shifting said spindle, substantially as and for the purpose set forth.

2. The combination in a hat-lathe, of the bed A having the vertical cylindrical projection 18 and the bracket 2 as shown, the vertical  
 70 spindle 8 depending and movable within said cylinder 18, the rack-slide 7 secured to the lower end of said spindle, the part gear and rock-shaft to shift said rack, a pivoted lever 10 to operate against the lower end of the  
 75 spindle, and a cam to act upon the lever to lift the spindle, the hollow wheel 19 with the slides 21, 22 therein, the hat-block secured as shown, and mechanism as set forth to actuate the parts, all of which are combined and con-  
 80 nected in the manner substantially as shown and described.

3. In a hat-lathe, the hollow fly-wheel 19, and the spindle 8 loosely mounted upon and with the cylindrical projection 18 as shown,  
 85 whereby said wheel and spindle are capable of vertical movement, in combination with slides 21, 22, rack 13, part gear 14, cam 11, rock-shaft 12, and lever 10, and mechanism as described to operate the same, whereby a  
 90 concentric or eccentric movement may be imparted to the hat-block at will, substantially as described.

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

JOHN B. HOWE.

Witnesses:

JOHN GRAY,

ALBERT MOREHOUSE, Jr.