

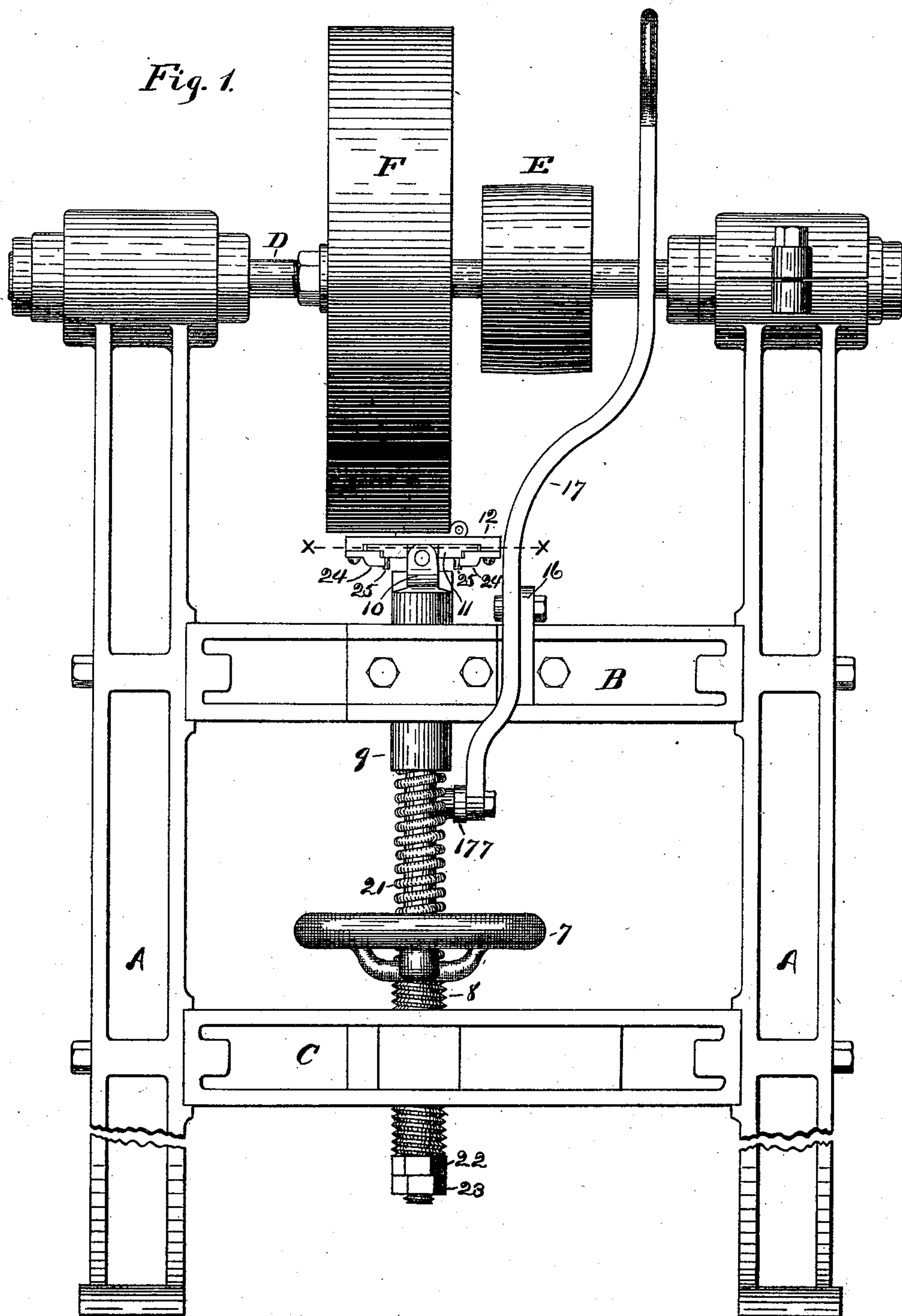
(No Model.)

4 Sheets—Sheet 1.

E. A. MOORE.
MACHINE FOR POLISHING HINGES.

No. 504,498.

Patented Sept. 5, 1893.



Witnesses.

Edward W. Bush
Adolph Stipek.

Inventor.

Ethelbert Allen Moore
By James Shepard.
Atty.

(No Model.)

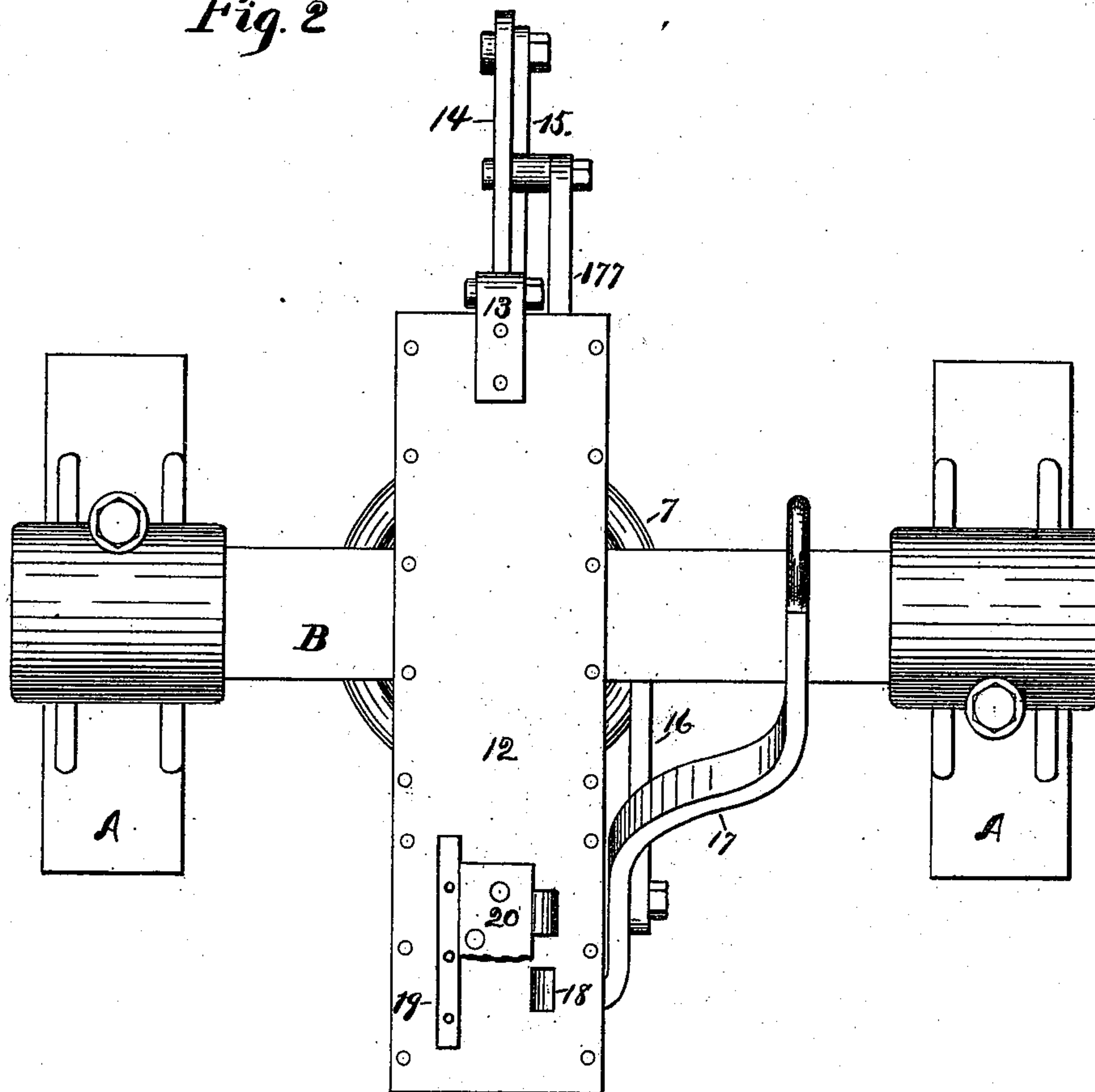
4 Sheets—Sheet 2.

E. A. MOORE.
MACHINE FOR POLISHING HINGES.

No. 504,498.

Patented Sept. 5, 1893.

Fig. 2



Witnesses.

Edward W. Bush,
Gedolph R. R. R.

Inventor.

Ethelbert Allen Moore
By James Shepard
Atty.

(No Model.)

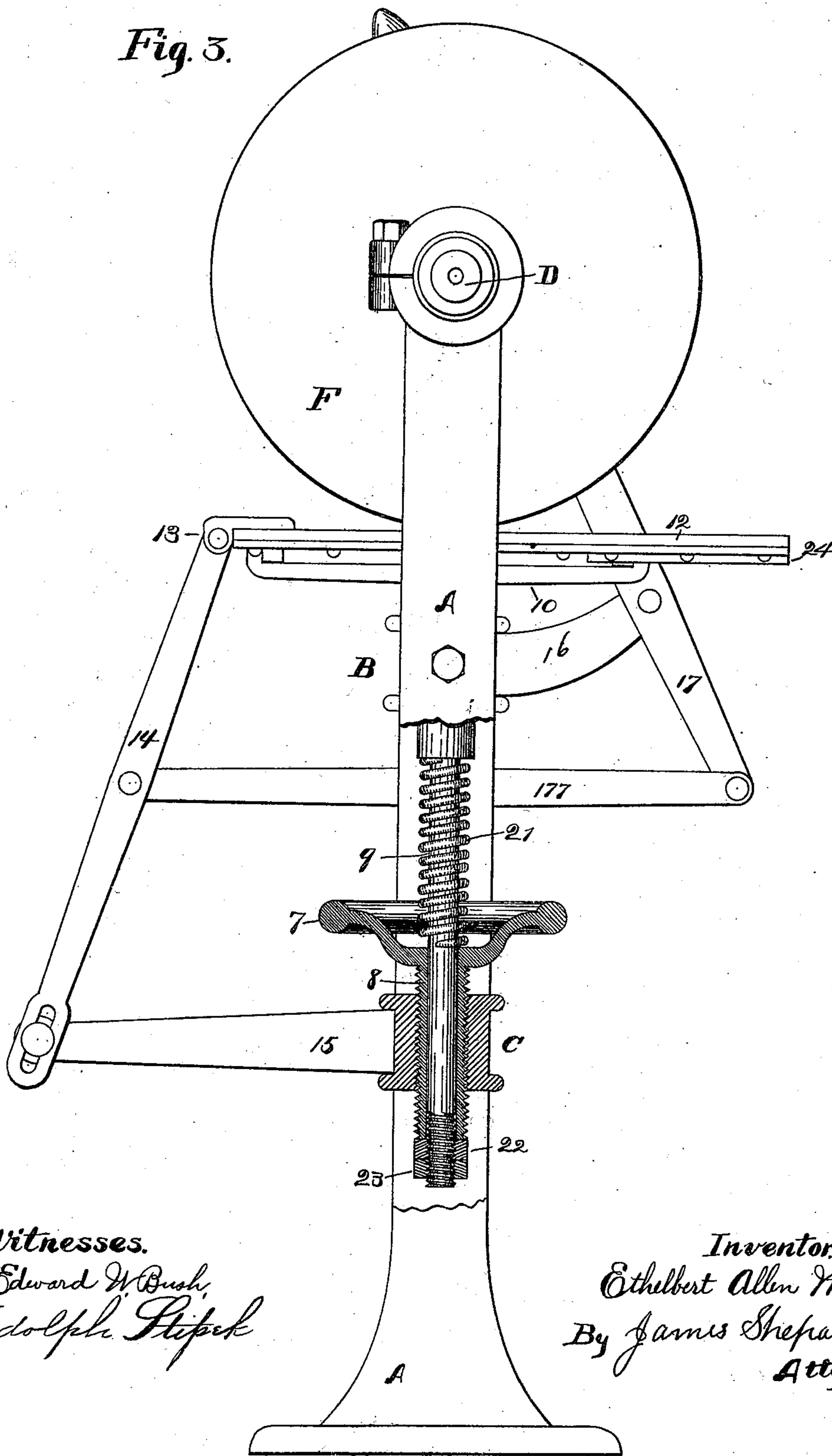
4 Sheets—Sheet 3.

E. A. MOORE.
MACHINE FOR POLISHING HINGES.

No. 504,498.

Patented Sept. 5, 1893.

Fig. 3.



Witnesses.

Edward W. Bush,
Gedolph Stipek

Inventor.

Ethelbert Allen Moore.
By James Shepard.
Atty.

(No Model.)

4 Sheets—Sheet 4.

E. A. MOORE.
MACHINE FOR POLISHING HINGES.

No. 504,498.

Patented Sept. 5, 1893.

Fig. 4.

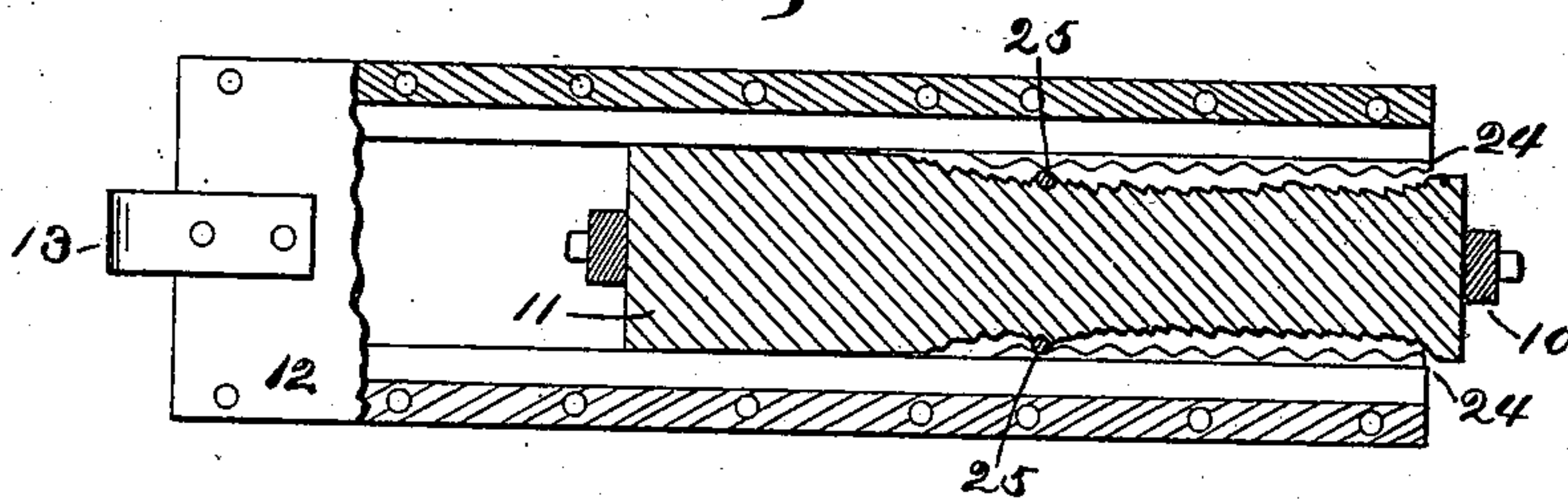


Fig. 5.

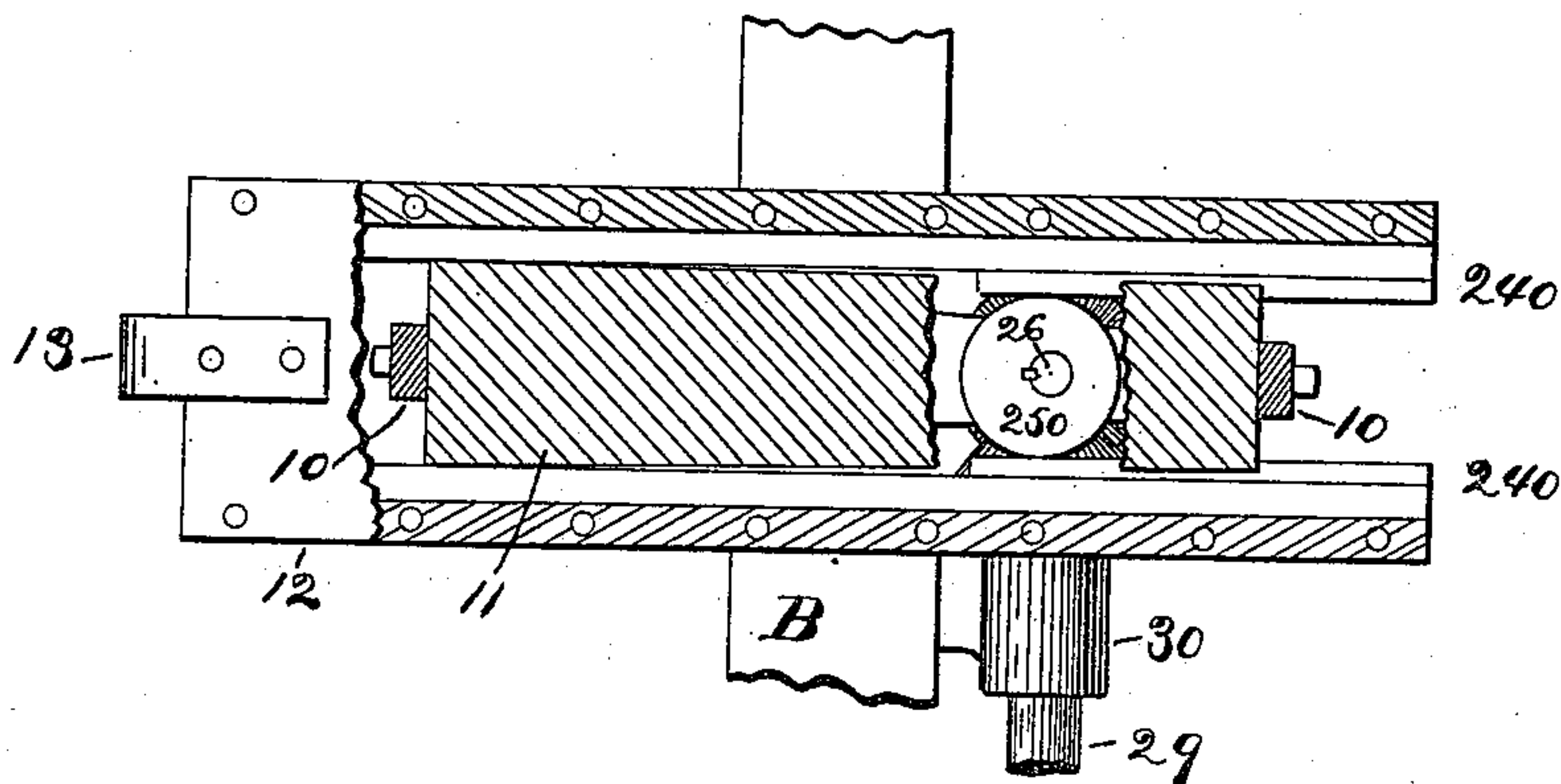
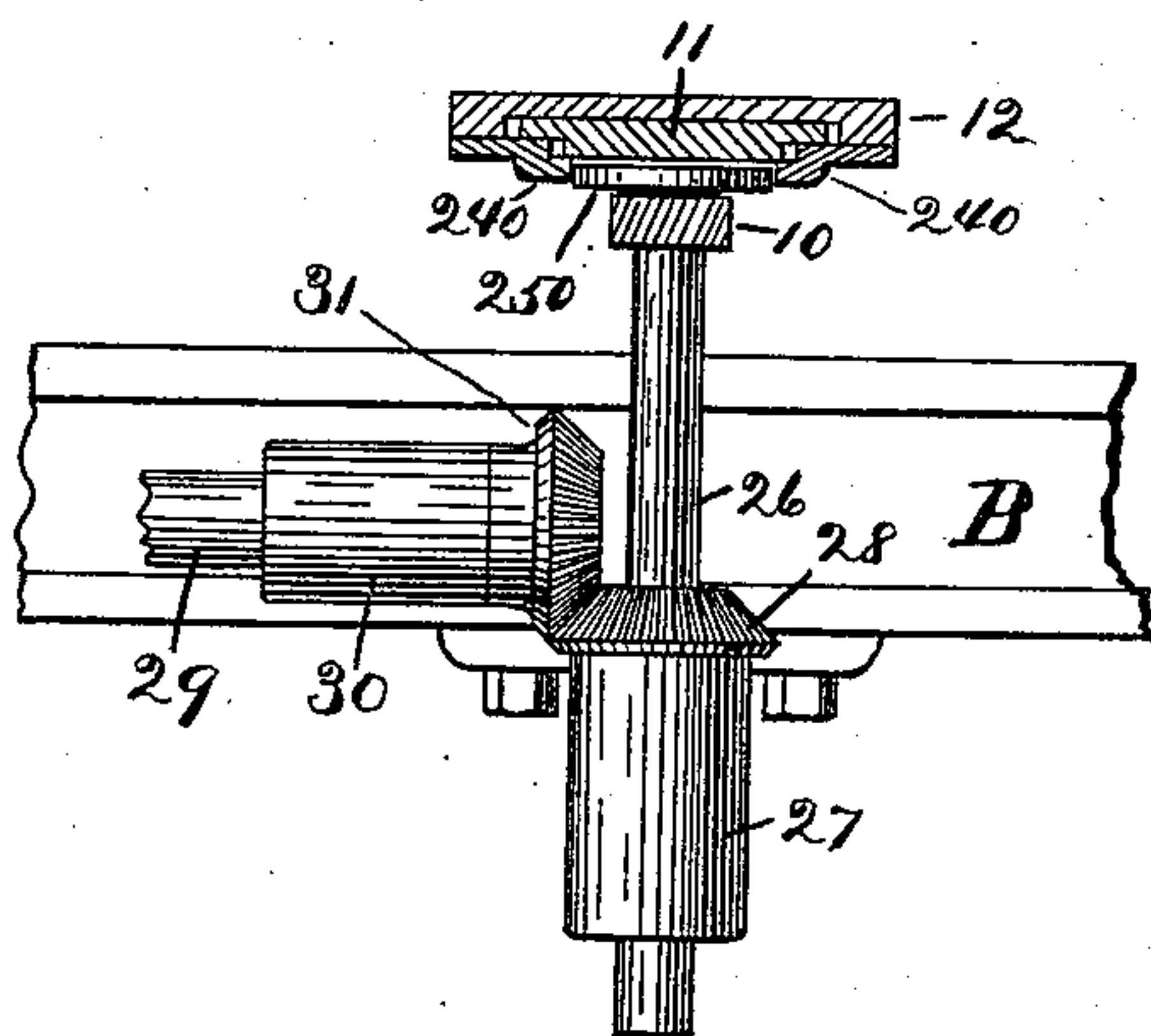


Fig. 6.



Witnesses.

Edward W. Bush,

Adolph Stieck,

Inventor.

Ethelbert Allen Moore,

By James Shepard
Atty.

UNITED STATES PATENT OFFICE.

ETHELBERT ALLEN MOORE, OF NEW BRITAIN, CONNECTICUT.

MACHINE FOR POLISHING HINGES.

SPECIFICATION forming part of Letters Patent No. 504,498, dated September 5, 1893.

Application filed April 10, 1893. Serial No. 469,640. (No model.)

To all whom it may concern:

Be it known that I, ETHELBERT ALLEN MOORE, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Polishing Hinges, of which the following is a specification.

My invention relates to improvements in machines for polishing hinges or other articles, and the objects of my improvements are simplicity of construction, and efficiency and convenience in operation.

In the accompanying drawings, Figure 1 is a front elevation of my machine. Fig. 2 is a plan view of the same with the polishing wheel and its shaft removed. Fig. 3 is a side elevation of the same with a part of the frame broken away and a portion of the machine shown in vertical section. Fig. 4 is a horizontal section of the work support on the line $x x$ of Fig. 1, some of the parts being broken away. Fig. 5 is a corresponding view of a modification of the same, and Fig. 6 is a transverse section thereof partly in elevation.

A designates the upright portions of the frame and B, C, the cross bar. At the upper ends of the uprights is a shaft D upon which is mounted the driving pulley E and polishing, grinding or abrading wheel F, the same being of any ordinary construction. In the lower cross bar C a hand wheel is mounted, its threaded hub 8 being screwed into a threaded hole in said cross bar. The hub of this hand wheel is bored axially to receive and support the lower end of the vertically sliding shaft 9. The upper end of this shaft 9 is supported in suitable bearings in the upper cross bar B. Upon the extreme upper end of the shaft 9 is a bracket 10, to the upturned ends of which I pivot the rocking bed or table support 11. Upon this rocking bed or table support is the sliding table 12, the same being guided longitudinally by means of suitable ways. The rear end of this table is provided with a lug 13 to which I pivot the lever 14, the opposite end of said lever being pivoted to a stationary bracket 15 projecting from a part of the frame. A forwardly projecting bracket 16 on the frame has pivoted to its front end the hand lever 17, and the lower end of this hand lever is connected by

means of a link 177 to the middle portion of the lever 14, whereby the operator may move the lever 17 to slide the table 12 forward and backward under the polishing wheel F.

The table may be supplied with any suitable work holder. When arranged for hinges, I form recesses in one portion of the table, as at 18, Fig. 2, to receive one side of the hinge knuckles, and if desired the gage 19 may be arranged for the opposite edge of the hinge 20 to rest against. In Fig. 2 I have shown a portion of the hinge 20 as properly seated on the bed, while the rest of the hinge is broken away so as to show the knuckle receiving recess 18.

Upon the shaft 9 between the shoulder formed near its upper end and the end of the hand wheel 7 is a spring 21 which exerts a constant tendency to lift said shaft and the table up to the work. I provide an adjusting stop nut 22 at the lower end of the shaft 9 to limit the upward movement of said shaft and the table, said nut being stopped by contact with the lower end of the wheel hub 8. A check nut 23 may if desired be used in connection with the nut 22 to prevent its accidental displacement. The sliding table 12 is so mounted in its ways upon the rocking bed that it may move laterally for a short distance at one end while the other end substantially fills the lateral space between its ways or guides as best shown in Fig. 4. Upon the under side of the slide near each end, I form cams 24, the same being arranged so that the points upon one side are directly opposite the greatest depression on the opposite side, whereby said two cams form practically a zig zag cam groove. In the rocking bed 11, I arrange two pins 25, the same projecting downwardly into the path of the cams 24. A portion of the rocking bed is broken away upon each side in Fig. 4 in order to better show the relation of these pins to the cams.

In using the machine, the operator can turn the nut 22 to pull the shaft 9 down or let it up through the hub 8 of the hand wheel so as to adjust the spring 9 to the desired tension for pressing the work against the polishing wheel. The nut 22 striking the lower end of the hub 8 of the hand wheel will stop the upward motion of the shaft 9 and the table carried thereby at a certain point whenever said

shaft is depressed and released. If that point does not stop the table at the proper distance from the polishing wheel, the hand wheel 7 may be turned in either direction to have the spring pressure stopped when the work is at the proper distance from the wheel, thereby bringing the work uniformly to a given thickness. The operator draws the sliding table forward, places the hinge thereon and then operates the lever 17 to carry the hinge under the wheel as shown in Fig. 1. The rocking bed permits the work to rock laterally so as to adjust the surface being polished to the face of the wheel. About the time the hinge is brought into working contact with the wheel, the cams 24 engage the pins 25 and give the table and work a slight motion from side to side so as to more evenly polish the work and prevent continuous longitudinal streaks or scratches. As the work strikes the wheel, the spring will permit the table to yield a little, but as the surface is cut away, the spring will hold the table to the wheel until its upward movement is checked by the stop nut 22. I thus hold the work against the wheel under spring pressure, which pressure is limited by an adjustable stop. I am also enabled to adjust the pressure of the spring if desired. The arrangement shown is the preferred form for effecting these adjustments, but after having shown them as made by means of screw threads, a mechanic skilled in the art can readily devise other well known or equivalent mechanisms for effecting these adjustments.

While I have shown the zig zag cams 24 and pins 25 for imparting the slight lateral movement to the table and the work carried thereby, it is evident that other mechanism might be employed for accomplishing the same purpose, one of which I have illustrated in Figs. 5 and 6. Instead of the wavy cams 24, I provide straight cams 240, which when acted upon by the revolving cam or eccentric 250 produce the same result. This cam or eccentric is supported upon a vertical shaft 26 in a suitable bearing or bracket 27 attached to the cross bar B of the frame and provided with a beveled gear 28. Another shaft 29 is also supported in a suitable bracket 30 on the frame and may be driven by a pulley and belt from any desired source. This shaft is provided with a beveled gear 31 for engaging the beveled gear 28 and imparting a revolving motion to the shaft 26. The hand lever herein shown is considered the best means for

imparting a reciprocating movement to the sliding table or work support, but the particular means for carrying the work under the wheel is not essential to my invention. 6c

Various parts may be changed by the exercise of ordinary mechanical skill without departing from my invention, and I wish it distinctly understood that the parts or combinations pointed out in any one of the several claims are not necessarily dependent upon the specific construction of those parts which are not particularly pointed out in the same claim. 65

I claim as my invention— 7c

1. In a polishing or grinding machine, the combination of an abrading wheel, a rocking bed mounted upon said frame to rock laterally with reference to the traveling movement of the work by said wheel, and a moving work support mounted upon and guided along said rocking bed, substantially as described and for the purpose specified. 75

2. In a polishing machine the combination of a laterally rocking bed, a work support mounted to slide longitudinally thereon, and devices for moving said work support laterally as it passes along said rocking bed, substantially as described and for the purpose specified. 80

3. In a polishing machine the combination of a work support, the sliding shaft upon the end of which said work support is mounted, a spring for pressing said shaft and work support to their work and an adjustable stop mechanism for limiting the movement of said shaft under the influence of said spring, substantially as described and for the purpose specified. 85

4. In a polishing machine, the combination of the sliding shaft, a spring for pressing it to its work, a bracket 10 at the upper end of said sliding shaft and a work support pivoted upon said bracket, substantially as described and for the purpose specified. 90

5. The combination of the bed 11 having pins 25, the sliding table arranged to slide longitudinally thereon and provided with cams 24 for acting in connection with said pins for imparting lateral motion to the sliding table, substantially as described and for the purpose specified. 100

ETHELBERT ALLEN MOORE.

Witnesses:

G. L. REYNOLDS,
C. F. BENNETT.