

T. C. PROUTY.
 FOOT POWER MECHANISM.
 APPLICATION FILED DEC. 20, 1907.

953,397.

Patented Mar. 29, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

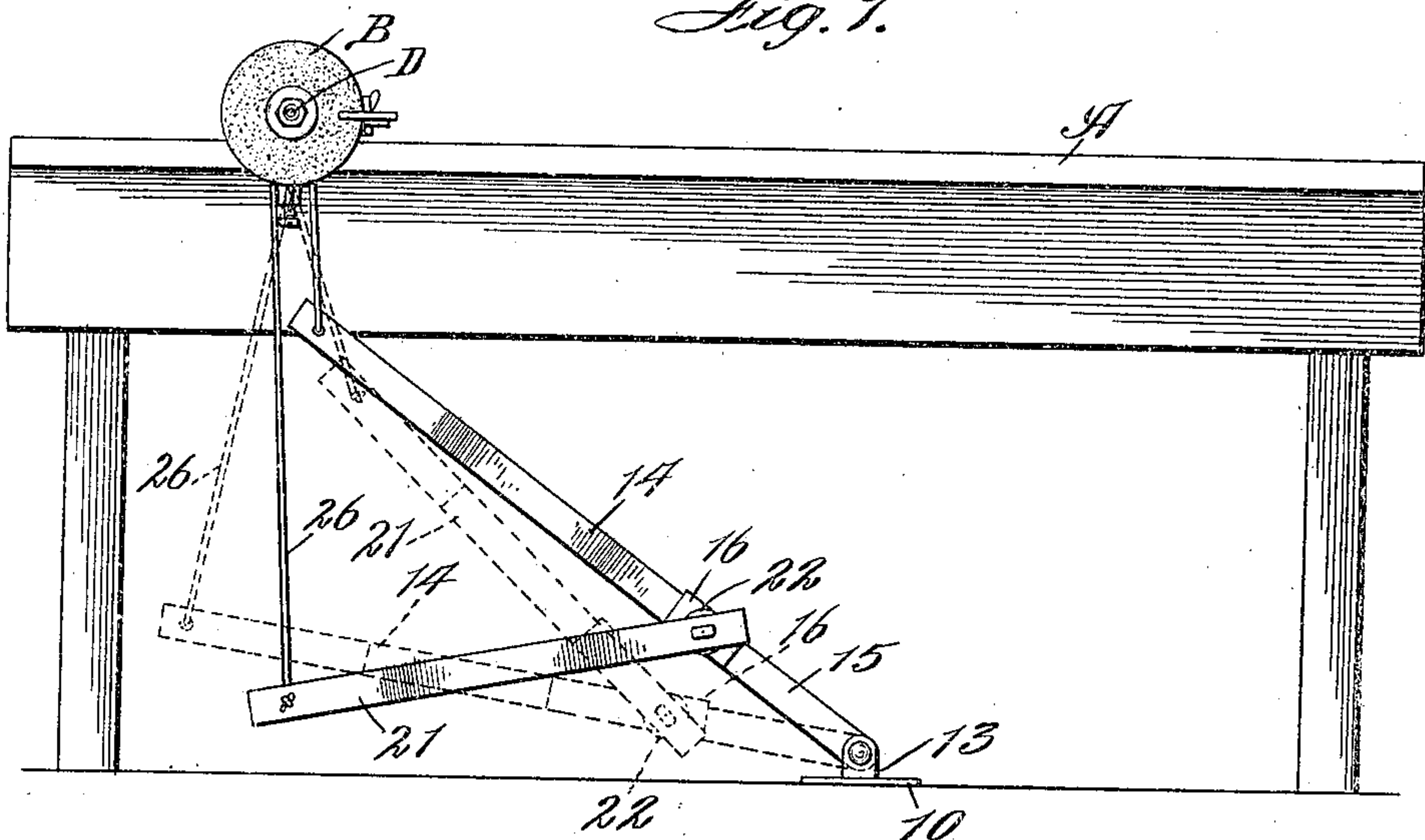


Fig. 2.

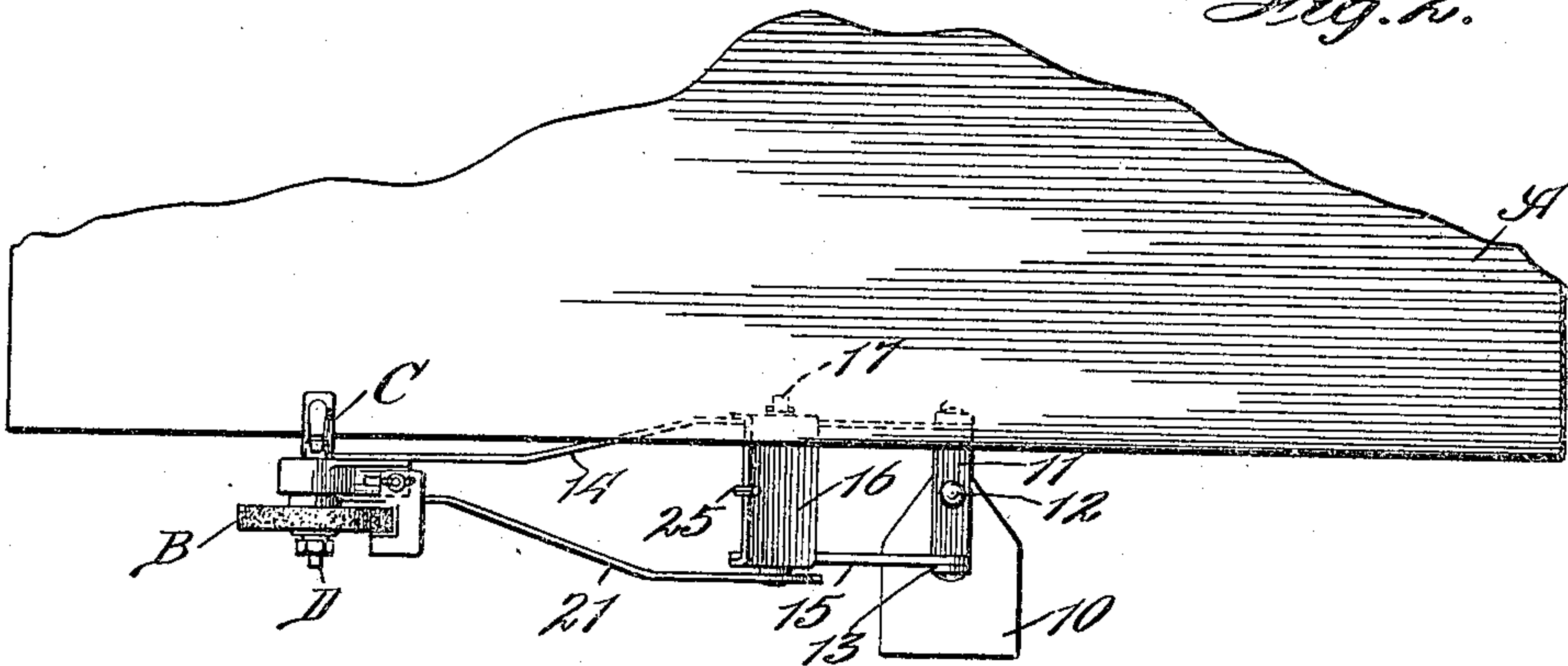
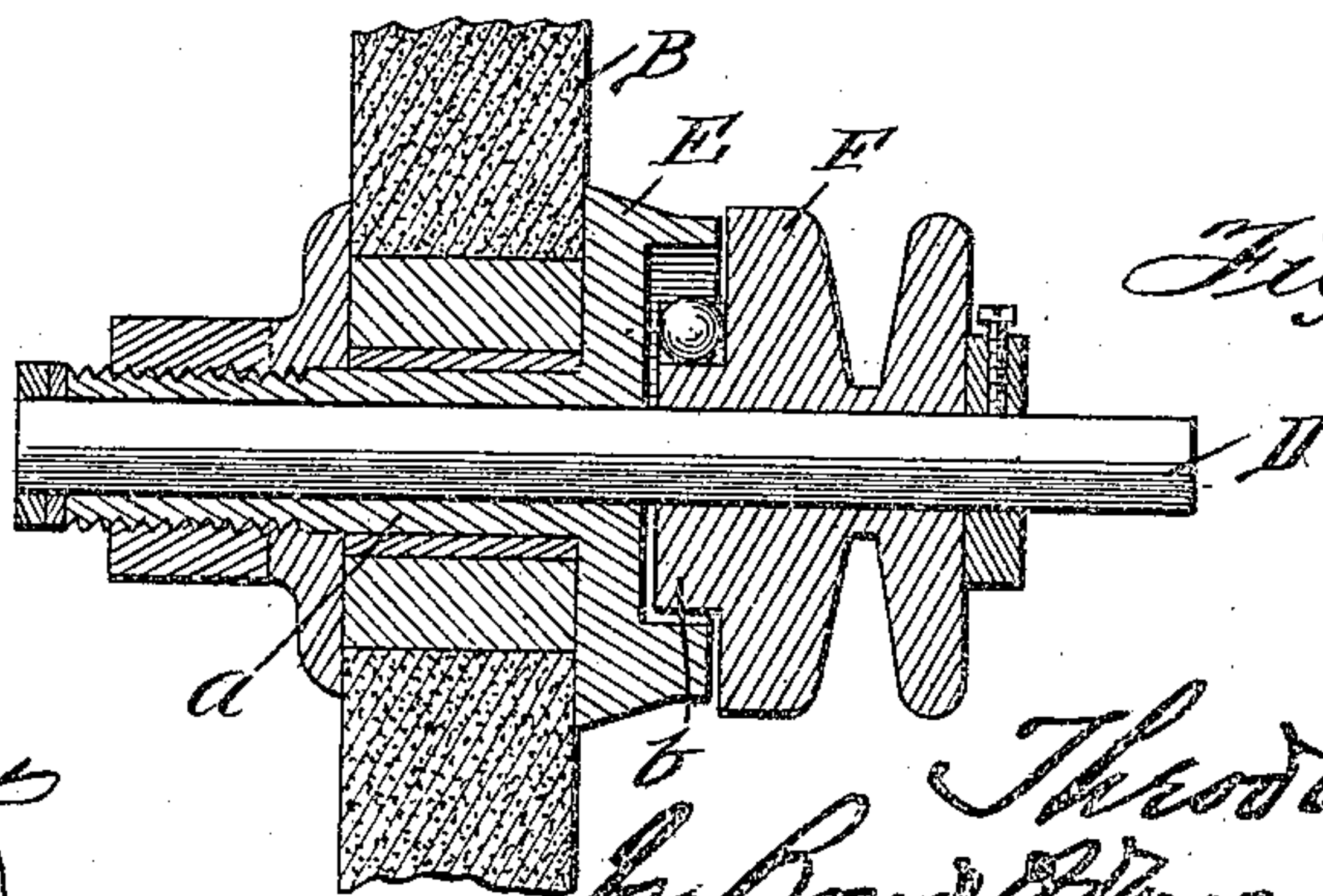


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

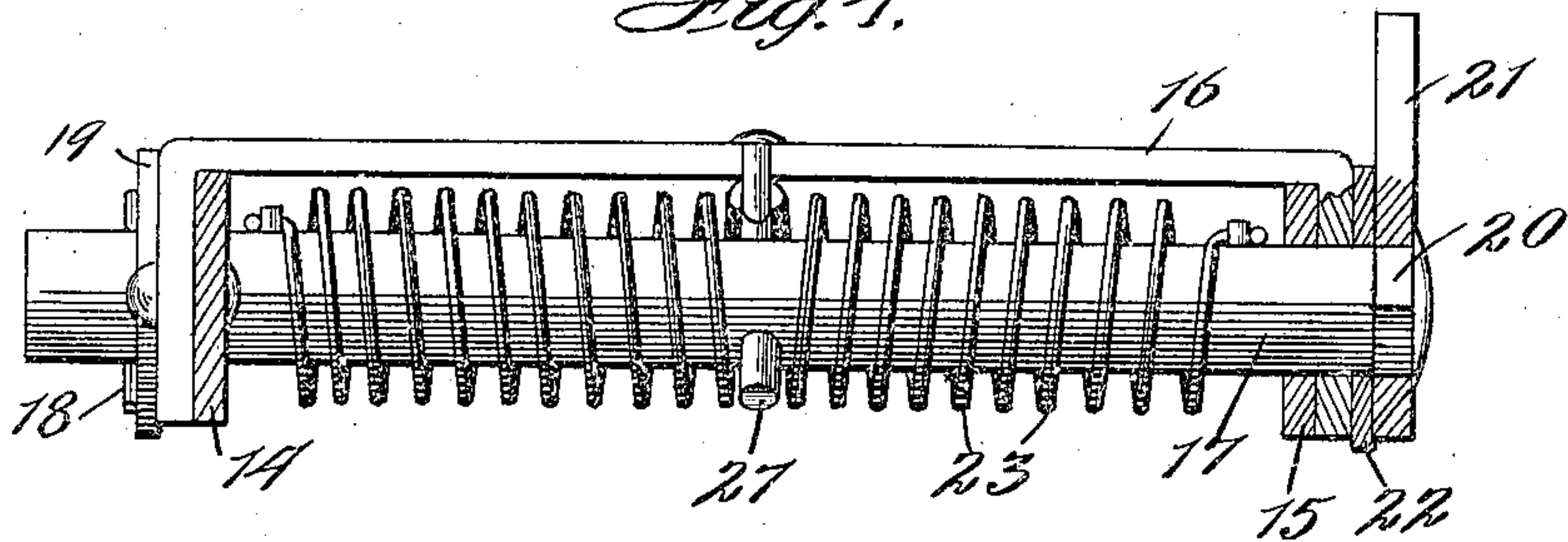


Fig. 6.

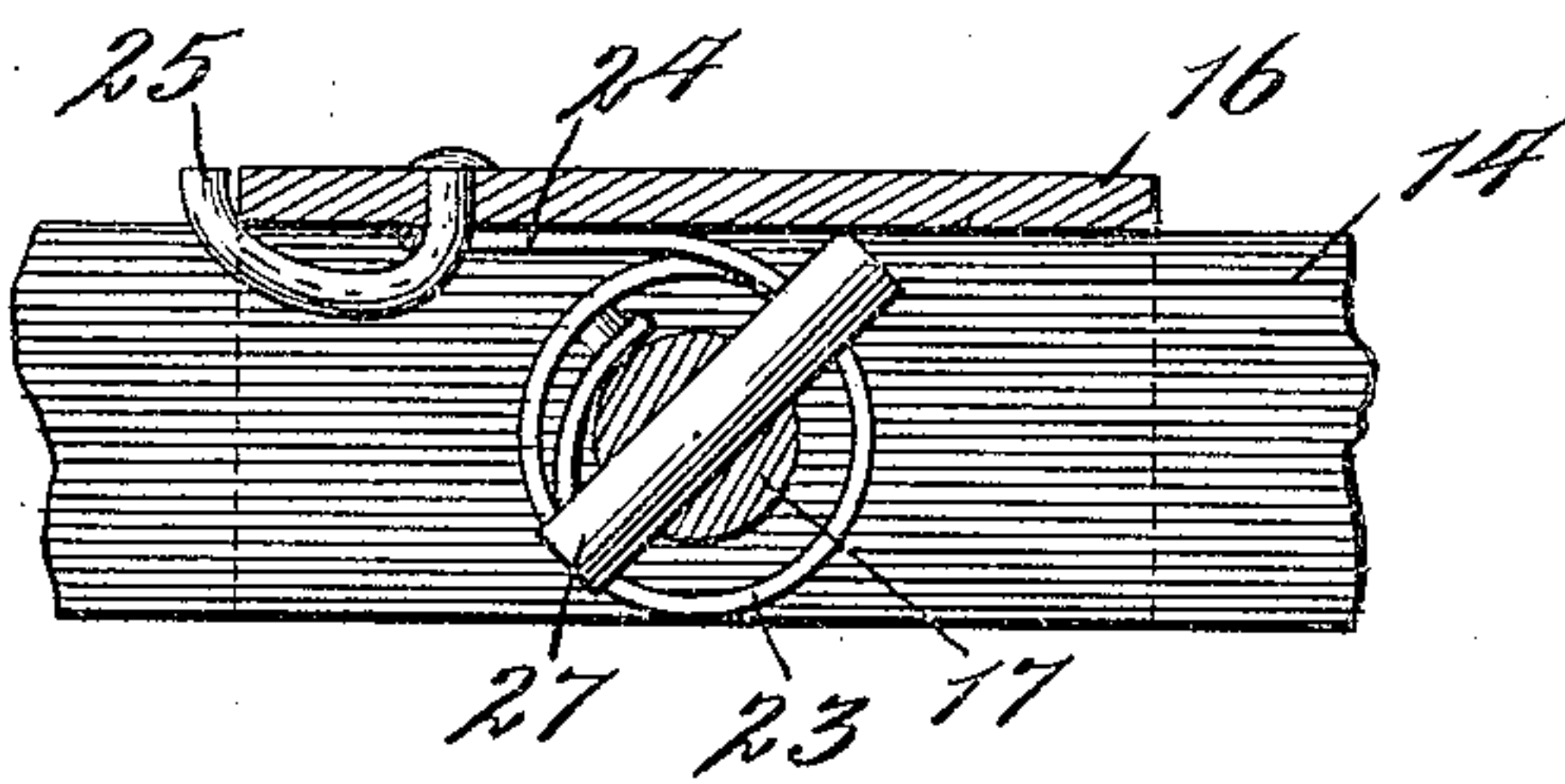


Fig. 5.

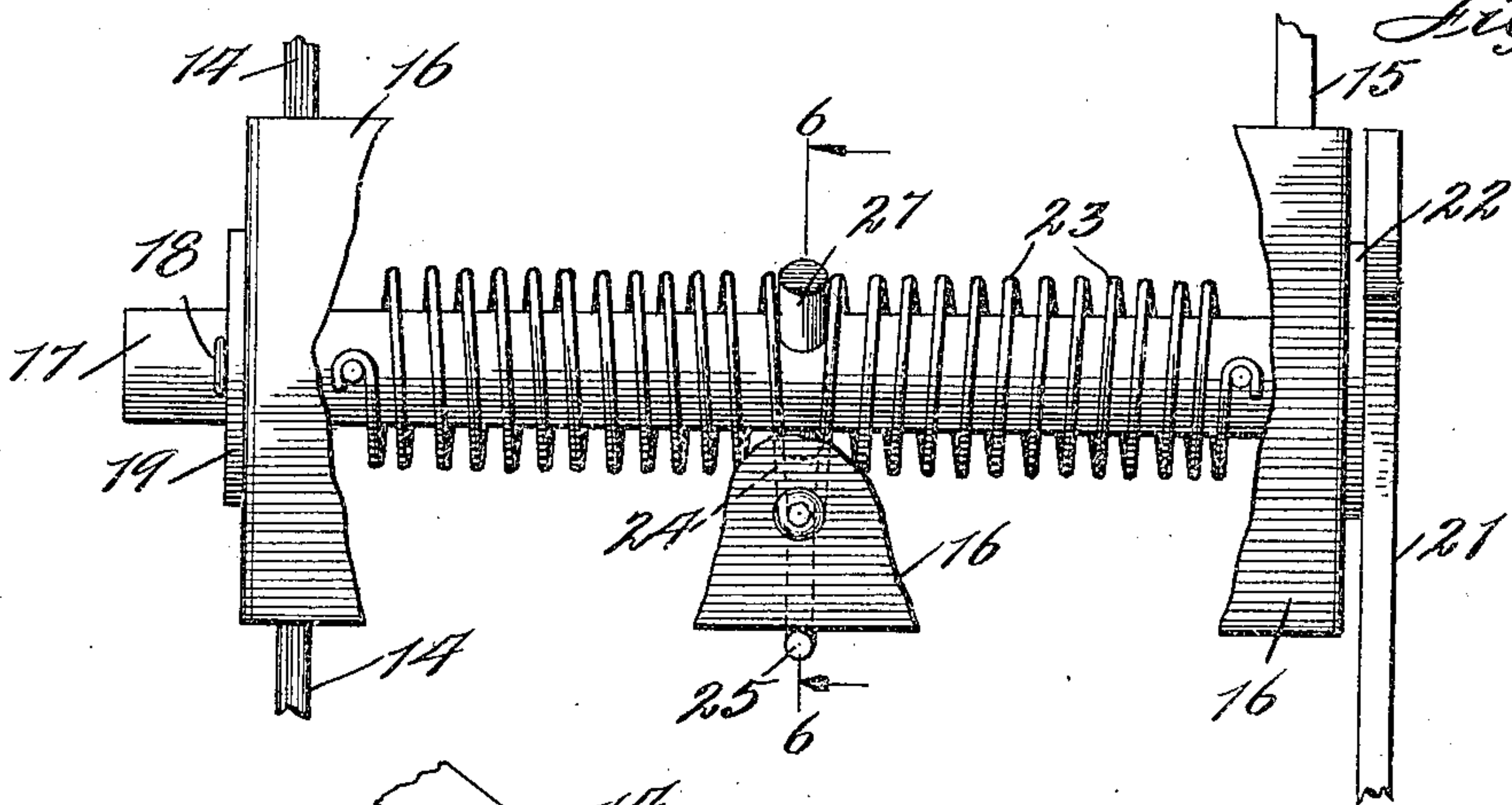
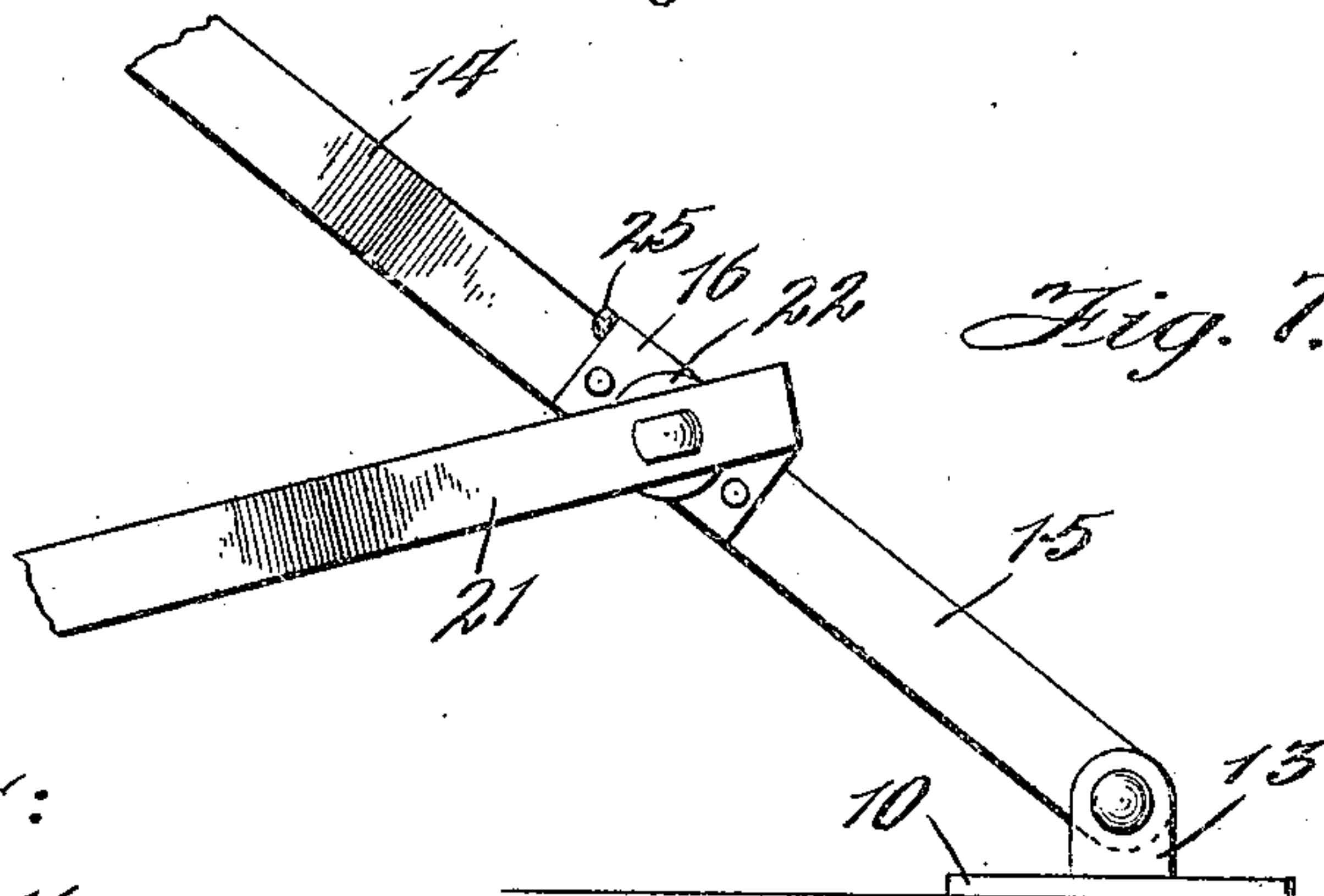


Fig. 7.



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UNITED STATES PATENT OFFICE.

THEODORE C. PROUTY, OF AURORA, ILLINOIS, ASSIGNOR TO WILCOX MANUFACTURING COMPANY, OF AURORA, ILLINOIS, A CORPORATION OF ILLINOIS.

FOOT-POWER MECHANISM.

953,397.

Specification of Letters Patent. Patented Mar. 29, 1910.

Application filed December 20, 1907. Serial No. 407,396.

To all whom it may concern:

Be it known that I, THEODORE C. PROUTY, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Foot-Power Mechanism, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to improvements in foot-power devices and is designed to be used for driving any device which may be mounted on a shaft, as, for example, a grinding wheel, as in the accompanying drawings.

15 It has for its objects to provide a cheap, simple and durable construction that can be readily moved to and from the place where it is to be used; to provide means for keeping the driving cord taut at all times; to provide an improved base or support for the device as a whole, which can be adjusted to suit different situations and different operators, and to improve generally the construction and operation of devices of this general character. I attain these objects by the devices and combinations of devices shown in the drawings and hereinafter specifically described.

30 That which I believe to be new will be pointed out in the claims.

In the accompanying drawings,—Figure 1 is a side elevation of my improved mechanism in connection with a rotatable grinding wheel that is mounted on a horizontal shaft secured in a frame-work clamped to an ordinary work-bench; Fig. 2 is a top or plan view of the devices shown in Fig. 1; Fig. 3 is an enlarged detail, being a vertical section through the rotating devices of Figs. 1 and 2 that are mounted on the driven shaft; Fig. 4 is an enlarged detail, partly in section, illustrating the construction and arrangement of the spring through which a constant tension of the driving cord is maintained; Fig. 5 is a similar view of the same parts that are shown in Fig. 4, the view being taken from another position and the cross-piece upon which the operator's foot bears in operating the machine being partly broken away; Fig. 6 is a detail, being a vertical cross-section taken at line 6—6 of Fig. 5; and Fig. 7 is a detail of a portion of the pivoted operat-

ing frame and the spring-actuated arm that is carried thereby.

Referring to the several figures of the drawings, in which corresponding parts are indicated by like reference characters—10 indicates a base-plate, of a convenient size and shape for one of the feet of the operator to rest upon in order to hold the plate and the parts connected therewith in the desired location on a floor. 11 indicates a short bar pivoted at its center near one edge of said base-plate 10 (see Fig. 2). The pivot that connects the bar to the plate is indicated by 12. The ends of this bar are turned up to form short vertical posts 13.

14 indicates a long arm pivotally attached at its lower end to one of the posts 13, and 15 indicates a second and shorter arm pivotally attached to the other post 13.

16 indicates a connection between the two arms 14 and 15, said connection in the form of construction shown being a flat plate having its ends turned to lie against the outer faces of the arms 14 and 15, said turned ends being riveted to the said arms. This connecting plate is located so that it extends across to the arm 14 from the upper end of the shorter arm 15. The arms 14—15 and the plate 16 form in effect a pivoted frame. 17 indicates a shaft carried by this frame, said shaft being rotatably supported in openings formed in the bars 14 and 15 and the turned ends of the connecting plate 16. It is secured in place at one end by a cotter-pin 18, a washer 19 being preferably interposed between said cotter-pin and the turned end of the connecting plate. At the opposite end of the shaft is formed a squared portion 20 (see Fig. 4) upon which is fitted the lower end of an arm 21 and beyond such arm 21 the end of the shaft is upset. Any suitable means, other than those shown, may, of course, be employed to retain the shaft against endwise movement.

22 indicates a washer interposed between the arm 21 and the adjacent turned end of the connecting plate 16.

23 indicates a strong coiled spring around the shaft 17, each end of the spring being made fast in any suitable manner to the shaft and the central portion formed into a bow or loop 24 which is made fast to the connecting plate 16. As shown, it is made fast to the plate by a small rivet 25 passing

through said plate and bent around the edge of the plate. From this bow or loop portion 24 the spring is coiled in opposite directions.

5 The arm 21 that is made fast to the shaft, as before explained, normally stands at an angle to the long arm 14, as shown in full lines in Fig. 1. It is held against being turned too far down by a stop carried by the shaft, which stop abuts against the face of the connecting plate 16. In the construction shown this stop is formed of a heavy pin 27 passing through and secured in the shaft (see Fig. 6).

15 26 indicates a cord having its ends made fast respectively to the outer ends of the arms 14 and 21. As is best shown in Fig. 2 the arms 14 and 21 are bent so as to bring their forward or free ends close together, thus keeping the cord extended down in nearly vertical planes.

D indicates the shaft to be driven, which, in the construction illustrated, is one that will have a long bearing in a suitable frame C that may be clamped to a work-bench, as A in Figs. 1 and 2.

B indicates a grinding-wheel mounted upon a sleeve *a* adapted to revolve freely on a shaft D. The sleeve *a* is formed integral with one of the face-plates that are ordinarily clamped or otherwise fixedly secured to opposite sides of such a wheel, the face-plate referred to being indicated by E. This face-plate is made of sufficient thickness to permit the formation in its outer face of an annular recess into which projects a hub portion *b* of a grooved pulley F loose on the shaft D. In the recessed portion of the face-plate E are formed cam-shaped grooves in which are placed gripping-devices, as balls or rollers, which bear upon the hub portion *b* of the pulley F. A clutch of ordinary character is thus formed, as will be well understood, the plate E forming the driven member and the pulley F the driving member, and as the member E is fast to the grinding-wheel B such wheel will turn with the said member E.

In operation, the shaft D with the members carried thereby is to be set up in proper position at the edge of a work-bench, as in the drawings, or otherwise, and with the cord 26 passing around the pulley F. The base-plate 10 will preferably be set at such place on the floor as to bring the projecting ends of the arms 14 and 21 below or nearly below the shaft B, as shown, and such base-plate, together with the attached parts, will be held in place by the operator placing one of his feet thereon. The base-plate being pivotally connected to the bar 11 can be turned so as to bring it in various positions with relation to the arms 14—15, thus adapting it to the needs or desires of the operator.

65 With the base-plate thus held firmly to the

floor by one of the operator's feet resting thereon, the other foot will be placed on the connecting-plate 16 and downward pressure applied thereon. This will turn the arms 14 and 15 on their pivots and will, of course, pull down that end of the cord 26 attached to the arm 14. This movement necessarily draws up the other arm 21 against the force of the coiled spring 23, and upon the release of the downward pressure of the operator's foot on the connecting-plate 16 the spring acts to turn the shaft, and, through it, to again turn down the arm 21, which, of course, reverses the direction of movement of the cord 26. This alternate upward and downward movement of the two arms 14 and 21 can be caused with such speed as the operator may choose, accordingly as he works faster or slower with that foot that presses on the connecting-plate 16, and he may make such arms move to their full extent or may cause them to move but slightly, but in either event the cord passing over the pulley F will cause such pulley, when rotated in one direction, to carry with it the stone B, by reason of the clutch engagement between the pulley and the member E that is fast to said stone, while, when the pulley is reversely rotated owing to the reverse movement of the cord, the pulley will be out of clutching engagement with said member E, as will be well understood. By my invention I provide a strong and simple construction of foot-power mechanism, and one which at all times will keep the driving cord under a constant and uniform tension.

That which I claim as my invention, and desire to secure by Letters Patent, is,—

1. In a machine of the class described, the combination with a pivoted frame and a rock-shaft carried thereby, of an arm secured to said rock-shaft, a cord attached at its ends to said arm and frame and adapted to be run over a pulley, and a spring acting on said shaft to cause said arm to keep the cord under constant tension when the machine is in use.

2. In a machine of the class described, the combination with a pivoted frame comprising two arms of unequal length and means for connecting said arms together, of a rock-shaft extending across said frame, a third arm secured to one end of said shaft, and a spring for moving said third arm.

3. In a machine of the class described, the combination with a pivoted frame comprising two arms of unequal length and means for connecting said arms together, of a rock-shaft extending across said frame, a third arm secured to one end of said shaft, and a coiled spring on said shaft adapted to turn the shaft and said third arm.

4. In a machine of the class described, the combination with a frame comprising two arms of unequal length and a device extend-

ing between said arms to connect them rigidly together, of a bar at the lower ends of said arms, means for pivotally connecting said arms with said bar, a rock-shaft journaled in said frame near the upper end of said shorter arm, a third arm fixed to that end of the shaft adjacent to the shorter arm of the frame, and a spring for turning said shaft and third arm.

5. In a machine of the class described, the combination with a frame comprising two arms of unequal length and a device extending between said arms to connect them rigidly together, of a base-plate, a bar pivoted to said base-plate, means for pivotally connecting said arms with said bar, a rock-shaft journaled in said frame near the upper end of said shorter arm, a third arm fixed to that end of the shaft adjacent to the shorter arm of the frame, and a spring for turning said shaft and third arm.

6. In a machine of the class described, the combination with a pivoted operating frame, of a substantially flat base-plate adapted to rest upon a supporting surface and upon which one foot of the operator may rest, an arm of less length than the frame pivoted to the latter at a point intermediate the ends thereof, a spring exerting a constant tension on said arm, and means connecting the frame and base-plate, such means permitting angular adjustment of the frame relatively to the base-plate.

7. In a machine of the class described, the combination with an operating frame and a cross-bar at the lower end thereof to which said frame is pivotally attached, an arm of less length than the frame pivoted to the latter at a point intermediate the ends of the frame, a spring exerting a constant tension on said arm, of a base-plate upon which one foot of the operator is adapted to rest, and a pivotal connection between said cross-bar and base-plate.

8. In combination with a part to be rotated, and a flexible member in coöperative

relation with said part, of a pivoted frame to one end of which said flexible member is connected, a cross-piece intermediate the ends of said frame, a rock-shaft journaled in the frame, an arm secured to one end of said rock-shaft and to which arm the other end of the flexible member is connected, and a spring acting upon said shaft and normally tending to keep the arm and frame separated.

9. In a machine of the class described, the combination with a base-plate upon which a foot of an operator is adapted to rest, of a cross-bar pivoted to said base-plate, a frame pivoted at one end to the cross-bar and having a foot-piece intermediate its ends, an arm pivotally connected with the frame at a point removed from the pivotal end thereof, a flexible member connected at its ends to the free ends of said frame and arm, and means carried by the frame for causing said arm to exert a constant tension on the flexible member as said frame is rocked on its pivot.

10. In a machine of the class described, the combination with a base plate, of a frame comprising two arms of unequal length pivotally connected at one end to said base plate, a cross piece connecting said arms, a rock shaft journaled in said frame at a point removed from the pivotal connection of the frame with the base plate, a third arm secured at one end to said shaft, a spring acting on said shaft and normally tending to rotate the same in a direction to hold the third arm out of the plane of the frame, and a flexible member connected at its ends to the free end of the frame and third arm respectively, said flexible member being adapted to coöperate with a part to be rotated.

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