



No. 830,865.

PATENTED SEPT. 11, 1906.

C. W. VAN VLIET.

## GEARING.

APPLICATION FILED FEB. 9, 1904.

2 SHEETS—SHEET 2.

Fig. 3.

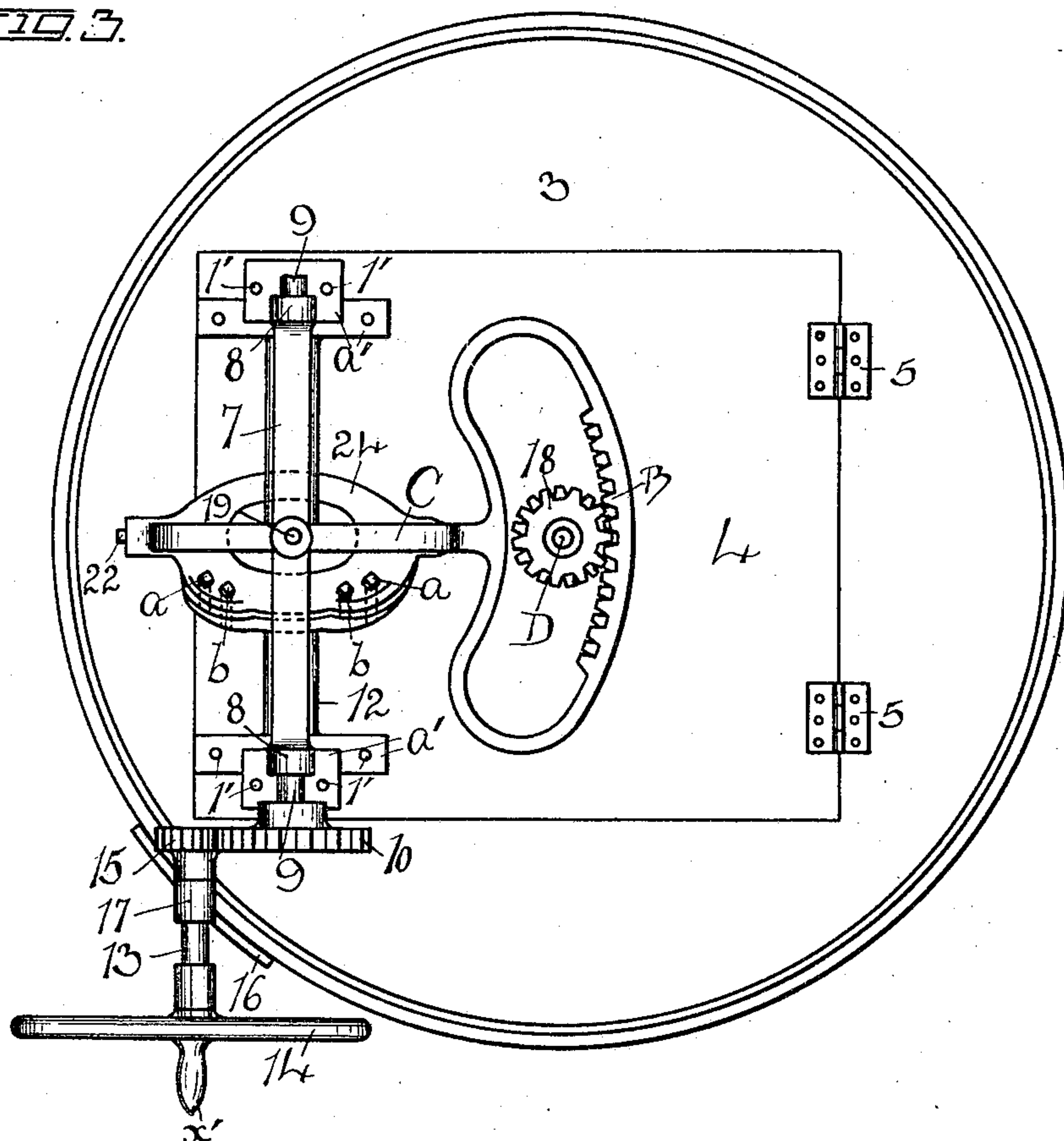
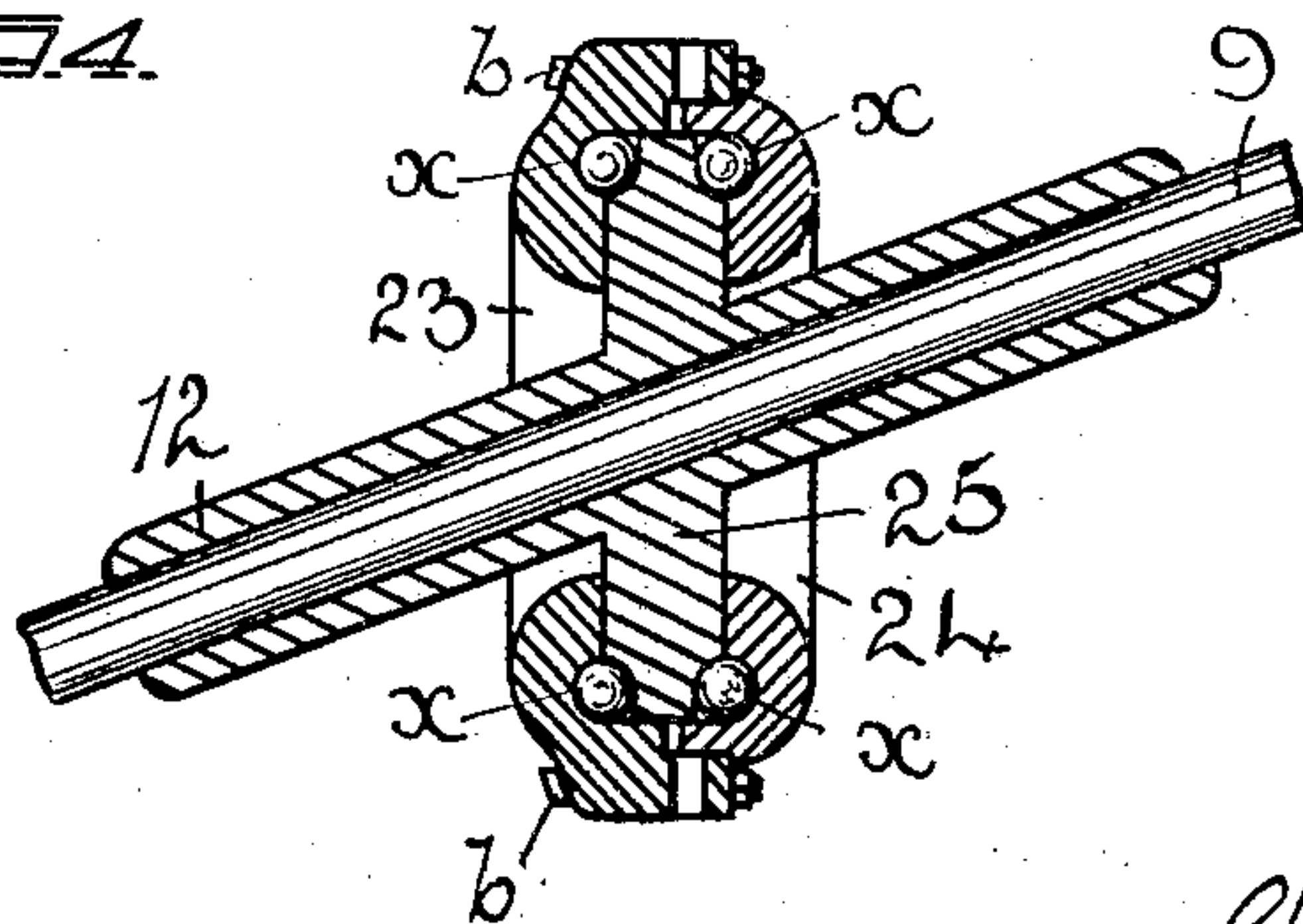


FIG. 4.



WITNESSES:

F. J. Larson.  
Meta Sands.

 $By,$ 

*INVENTOR:*

Charles W. Van Kleet  
Cros. W. S. res. Attorney.



# UNITED STATES PATENT OFFICE.

CHARLES W. VAN VLIET, OF DENNISON, IOWA.

## GEARING.

No. 830,865.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed February 9, 1904. Serial No. 192,770.

*To all whom it may concern:*

Be it known that I, CHARLES W. VAN VLIET, residing at Dennison, in the county of Crawford and State of Iowa, have invented certain useful Improvements in Gearing; and I do hereby declare that the following is 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, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to a new and useful improvement in gearing.

The object of my invention is to provide a washing-machine gearing so constructed that the same may be readily operated, and in which the instrumentalities are readily accessible and adjustable, and in which the friction will be reduced to a minimum; and my invention embodies certain novel combinations and arrangements, as will be described more fully hereinafter and finally pointed out in the claim.

In the accompanying drawings I have shown in Figure 1 an elevation of a washing-machine gearing, with parts broken away, embodying my invention. Fig. 2 shows an end view of the operating mechanism. Fig. 3 shows a top view of my washing-machine, while Fig. 4 shows a broken sectional detail of the sleeve-shaft.

In carrying out the aim of my invention I provide an ordinary tub 1, of any suitable size and shape, with the supporting-legs 2. This tub 1 is provided with the top 3, closed by the lid 4, hinged by means of the hinges 5, as is shown in Fig. 3. Secured to this lid 4 is a base-plate 6, from which base-plate 6 extends upward a curved supporting-frame 7, provided with the registering bearings 8 8, adapted to receive the horizontally-disposed shaft 9, as is clearly indicated in Fig. 1. Centrally and above I provide a bearing adapted to receive the pivot-pin 19, as disclosed.

Secured to the shaft 9 is a gear 10, meshing with the pinion 15, mounted upon the driving-shaft 13, provided with the fly-wheel 14 and the operating-handle  $x'$ , as indicated in Figs. 1 and 3. This driving-shaft 13 is supported within the bearings 17 of the suitable bracket 16, secured at a convenient point to the tub 1, so that when the lid 6, to which this frame 7 is secured, is closed the gear and pinion 10 and 15 will mesh, as shown.

Working upon the shaft 9 is a sleeve 12, (dis-

closed in detail in Fig. 4,) this sleeve being suitably held by means of the frame 7, as shown in Fig. 1. Secured to this sleeve 12 at an angle to the axis of the sleeve 12 is a disk 25, which disk, as disclosed in Fig. 6, near the peripheral and opposite edges is provided with the ball-races  $c$ . Secured to the disk 25, which forms an eccentric driving-disk, are the bearing-plates 23 and 24, which, in effect, form a boxing within which rotates the driving-disk 25, these boxings being provided with ball-provided races  $x$ , as shown in Fig. 4.

In order to adjustably unite the bearing-plates 23 and 24 to properly secure the driving-disk 25, I provide the set-screw  $a$ , as shown in Fig. 4, which works against the disk 23, while the disks 23 and 25 are united by means of suitable bolts  $b$ . As the parts wear the screws  $a$  are withdrawn and the screw  $b$  tightened up to bring the parts closer together.

Pivotally held by means of the pivot-pin 19, disclosed in Fig. 1, passing through the frame 7, and a like pivot-pin passing through the base-plate 6, is the rocking annulus C, from which annulus extends a rack B in the form of a loop, this loop being provided with the rack B, as is disclosed in Fig. 3.

Extending upward from the base-plate 6 is a bearing-spindle A, through which extends a rock-shaft D, provided above with a pinion 18, a detail of which is disclosed in Fig. 3, which pinion is adapted to mesh with the rack B. If desired, the pinion 18, as well as the rack B, may be what is termed as "double-toothed," as is shown in the drawings. This, however, is not absolutely necessary. The rock-shaft D, which is secured to the pinion 18, extends downward through the lid a suitable distance and below is provided with the pin-head or dolly.

The disks 23 and 24 are secured to the annulus C by means of the pins 21 and 22, as shown in Fig. 2.

From this it will be noticed that my washing-machine relates to that class in which a pin-head is alternately rocked from side to side in agitating the clothing within the washing machine or tub 1.

In my invention the operation is as follows: The operator in turning the fly-wheel 14 actuates the pinion 15 to rotate the sleeve-shaft 9. This rotation of the sleeve-shaft 9 also rotates the sleeve 12, to which is secured the eccentrically-positioned disk 25, so that this disk 25 is revolved. In its revolution, how-



ever, this disk 25 imparts to the connected bearing-plates 23 and 24, both an oscillating and rocking movement requiring but little power to oscillate these bearing-plates, which, 5 being pivotally secured to the ring or annulus C, in turn imparts a rocking movement to this annulus which is imparted to the rack B. The pinion 18, being in mesh with this reciprocating rocking rack, has imparted to it a 10 rotary movement in opposite directions, which rotary movement is imparted to the pin-head 25.

Owing to the peculiar construction of the instrumentalities there is no shock or jar in 15 the pinion changing its rotary movement in an opposite direction, while the mechanical instrumentalities, by virtue of the peculiar construction, are readily operated, so that, in effect, the greatest amount of working force 20 may be developed at the working end with

the least amount of power exerted at the initial driving end of the machine.

Having thus described my said invention, what I claim as new, and desire to secure by United States Letters Patent, is— 25

The combination with a suitable supporting-frame, of a shaft revolubly supported by said frame, a disk secured to said shaft, said disk being set at an angle to the axis of said shaft, a housing adapted to receive said disk, 30 a pivotally-held annulus, said housing being pivotally secured to said pivotally-held annulus, a rack secured to said pivotally-held annulus and a pinion actuated by said rack.

In testimony whereof I affix my signature 35 in presence of two witnesses.

CHARLES W. VAN VLIET.

Witnesses:

FREDERICK J. LARSON,  
GEORGE W. SUES.