

D. M. WENGER.

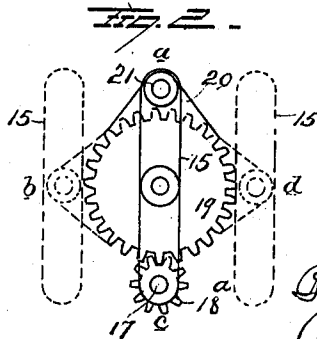
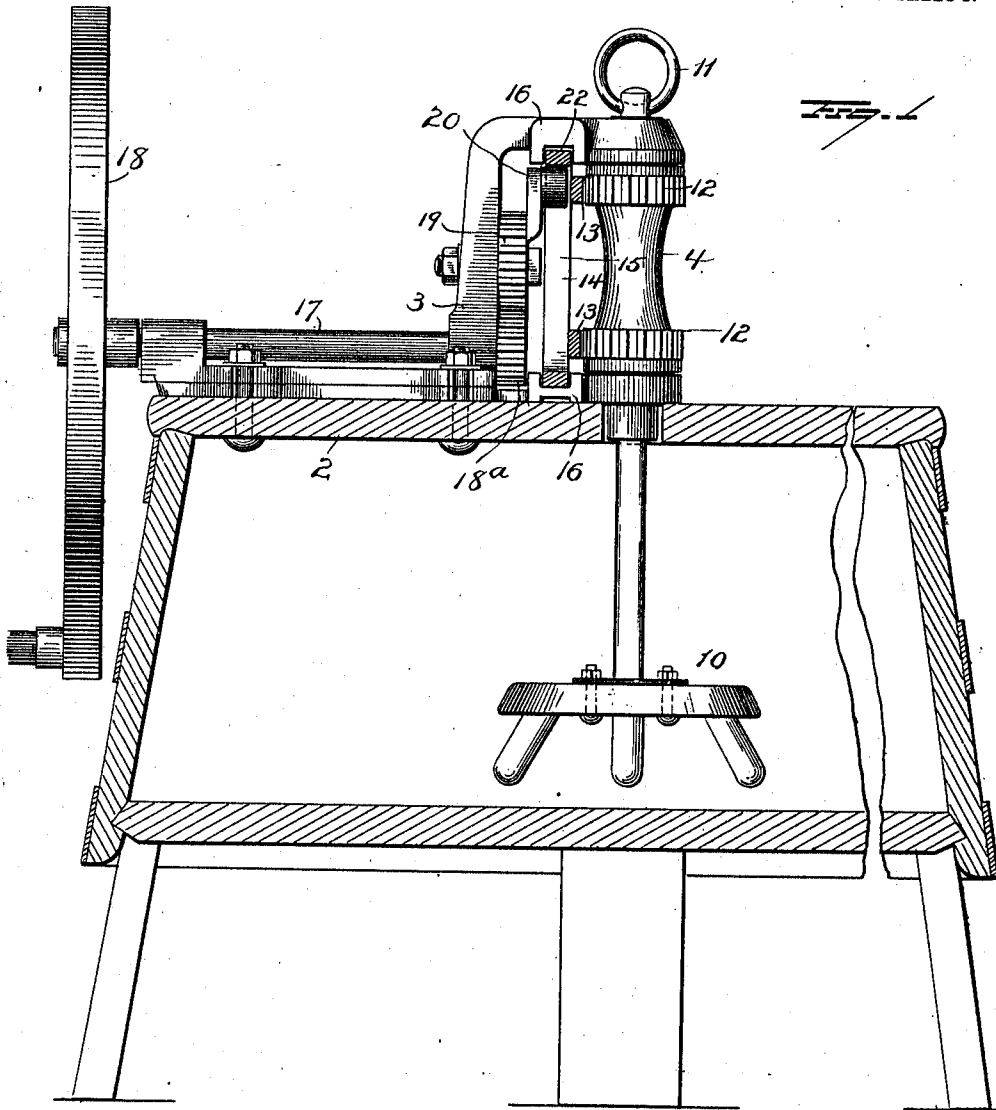
GEARING.

APPLICATION FILED NOV. 18, 1908.

982,327.

Patented Jan. 24, 1911.

2 SHEETS—SHEET 1.



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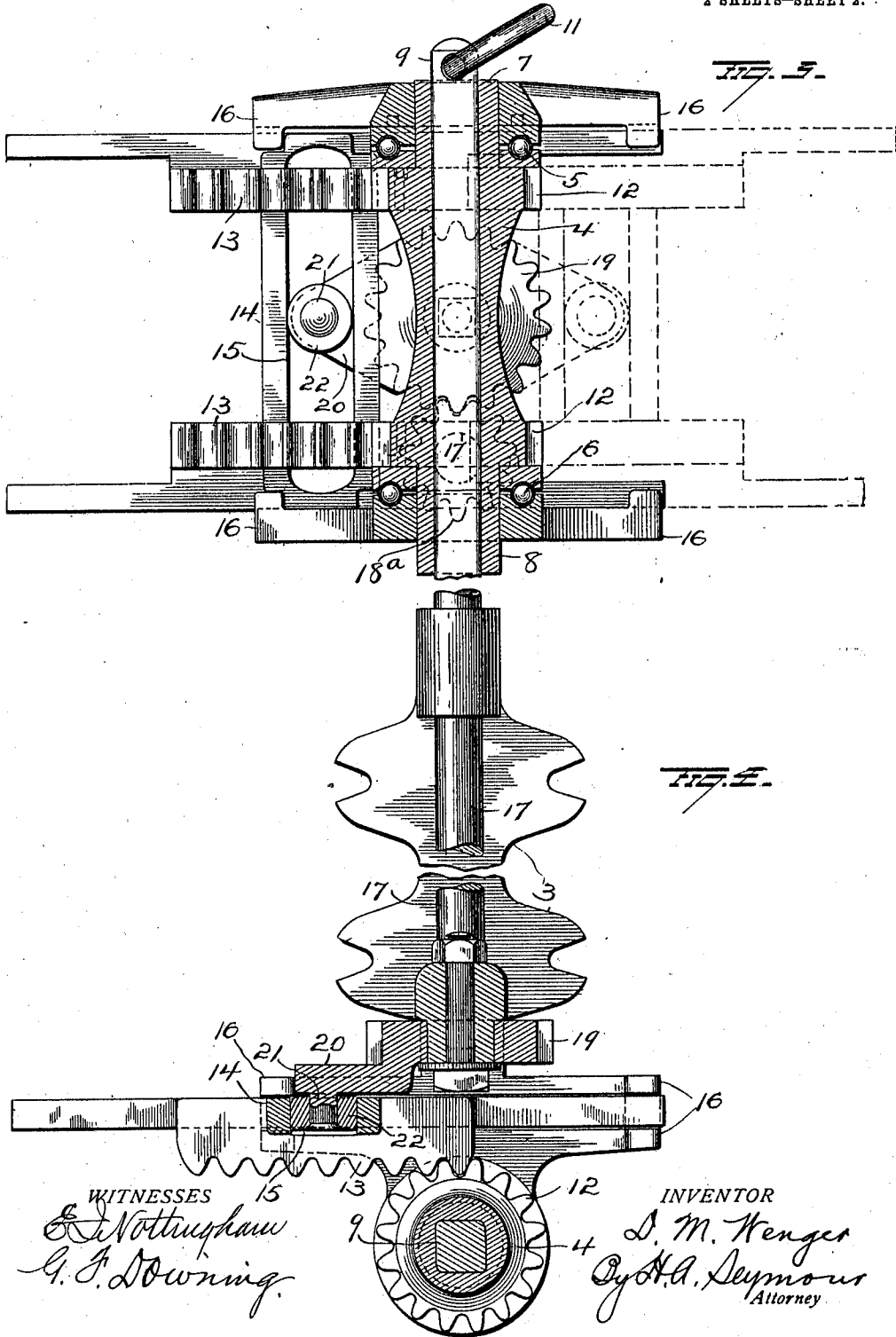
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2 SHEETS-SHEET 2.



UNITED STATES PATENT OFFICE.

DAVID M. WENGER, OF NEW HOLLAND, PENNSYLVANIA.

GEARING.

982,327.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed November 16, 1908. Serial No. 462,874.

To all whom it may concern:

Be it known that I, DAVID M. WENGER, of New Holland, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Gearing; 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.

This invention relates to improvements in washing machines of the reciprocating agitator type,—one object of the invention being to construct the operating mechanism in such manner that the reciprocating motion of the agitator shall be gradual, easy and uniform and without jarring or jerking.

A further object is to provide operating means for a washing machine of the type above specified, which shall be simple in construction, easy to operate and which shall be effectual in the accomplishment of its functions.

A further object is to so construct a washing machine having a reciprocating agitator, that said agitator can be moved vertically and thus permitted to adjust itself to the bulk of clothes in the machine and also permit the agitator to be raised against the cover, out of the way when clothes are to be removed from or placed into the machine.

With these objects in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claim.

In the accompanying drawings, Figure 1 is a view of a washing machine showing the application of my improvements thereto. Fig. 2 is a view illustrating, diagrammatically the operation of the driving means for the agitator, and Figs. 3 and 4 are views illustrating details.

1 represents the body of a washing machine, upon the cover 2 of which a frame or bracket 3 is located and serves to support the operating mechanism. Between horizontal portions or members of the bracket 3 a drum or barrel 4 is located and to permit the easy running of this drum or barrel, ball bearings 5—6 are provided. Tubular extensions 7—8 project from the respective ends of the drum or barrel 4 and through these extensions and the drum or barrel, a vertical shaft 9 passes. The shaft 9 carries at its lower end an agitator 10 and is mov-

able vertically through the drum or barrel 4 but adapted to rotate with the latter. A ring or loop 11 is attached to the upper end of the shaft 9 and serves as a hand hold to permit the operator to raise the agitator up against the under face of the cover 2 of the machine, where it will be out of the way when clothes are to be removed from the machine or placed therein. By providing for the vertical movement of the agitator and its operating shaft, said agitator can accommodate itself to the bulk of clothes within the machine and will be allowed to bear directly upon the center of the clothes instead of catching them on one side and dragging them to the center as would be the case if no provision were made for vertical movement of the agitator.

The drum or barrel 4 is provided at its respective ends with gears 12, to which motion is imparted by reciprocating rack-bars 13. These rack-bars are connected by a bar 14 fixed at its ends thereto and provided with a straight slot or groove 15. In order to insure the proper meshing of the rack-bars 13 with the gears 12, suitable guides 16 are provided.

An operating shaft 17 is mounted in suitable bearings provided in the frame or bracket 3 and to one end of this shaft an operating wheel 18 is secured. The other end of the operating shaft 17 is provided with a pinion 18^a meshing with and adapted to transmit motion to a gear wheel 19. The gear wheel 19 is provided with an extension 20 from which a lug or pin 21 projects and on this lug or pin a wheel or roller 22 is located and adapted to operate in the slot 15 of the bar 14. It is apparent that when gear wheel 19 is rotated the roller 22, traveling through the slot 15 of bar 14 will cause the latter and the rack-bars 13 carried thereby, to move laterally and transmit motion to the gear wheels 12 and consequently to the agitator.

In Fig. 2 of the drawing the pin 21 is shown (in full lines) at the upper end of the slot 15 of shaft 14. In moving from this position (designated as *a* Fig. 2) the bar 14 and the rack bars carried thereby will first move at a speed the same as that of the wheel 19 but as the pin 14 reaches the position *b*, the speed of the rack-bars will gradually decrease and momentarily come to rest when the point *b* shall have been reached. As the pin travels from this point down-

wardly through the slot 15, the rack-bars will be moved in the reverse direction thus reversing the rotation of the agitators and as the pin 21 approaches the position *c*, the speed of the rack-bars will gradually increase and attain their maximum speed at point *c*. Leaving the point or position *c* the speed of the rack-bars will gradually decrease to the point *d* where the motion will be again reversed and the speed of the rack-bars will gradually increase until the starting point *a* is reached. With such operation, it will be observed that the reciprocating motion of the agitator will be very gradual, easy and uniform without causing any jarring or jerking and as the roller 22 on the pin 21 always bears against the sides of the slot 15 in the direction in which the bar 14 is moving, there will be practically no loss of power.

Various slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope and hence I do not wish to restrict myself to the precise details herein set forth.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is,—

The combination with a frame provided with upper and lower bearings and with horizontal guideways adjacent to said bearings, of a drum mounted between said bearings and provided near its respective ends with pinions, horizontal rack bars meshing with said pinions and having guides movable in the guideways in the frame, a slotted or grooved member connecting said rack bars, a wheel mounted in the frame and provided with a part movable in said slotted or grooved member, to reciprocate the rack bars, manually operated means for driving said wheel, and a shaft freely movable in a vertical direction through the drum and rotatable therewith.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

DAVID M. WENGER.

Witnesses:

P. B. HESS,
MILTON WENGER.