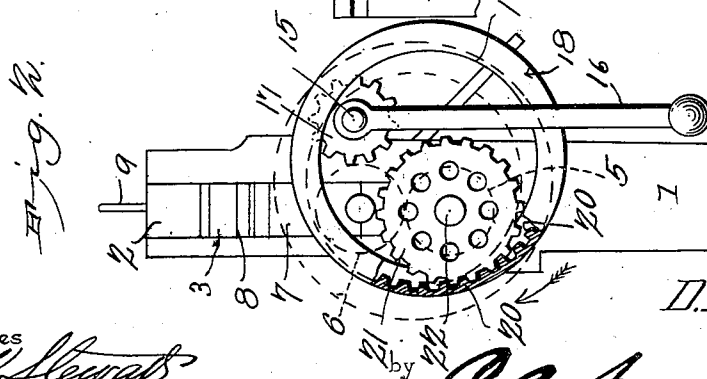
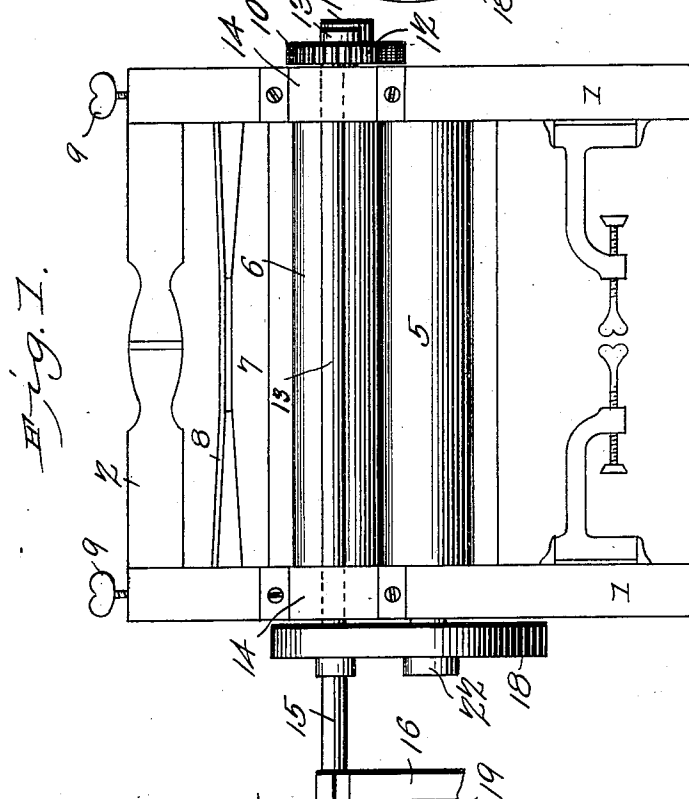
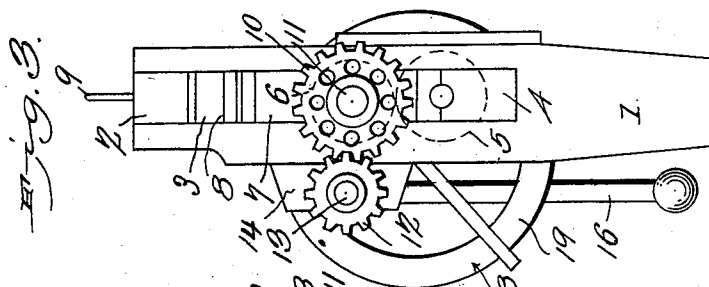


No. 731,049.

PATENTED JUNE 16, 1903.

D. HALL.
CLOTHES WRINGER.
APPLICATION FILED MAY 8, 1902.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

DICKSON HALL, OF MEADVILLE, PENNSYLVANIA.

CLOTHES-WRINGER.

SPECIFICATION forming part of Letters Patent No. 731,049, dated June 16, 1903.

Application filed May 8, 1902. Serial No. 106,482. (No model.)

To all whom it may concern:

Be it known that I, DICKSON HALL, a citizen of the United States, residing at Meadville, in the county of Crawford and State of Pennsylvania, have invented a new and useful Clothes - Wringer, of which the following is a specification.

This invention relates to certain improvements in clothes-wringers, and has for its principal object to improve the construction of a wringer and more especially the construction and arrangement of the gearing for connecting and operating the wringer-rolls.

A further object of the invention is to provide a simple and comparatively inexpensive clothes-wringer in which the rolls will not be directly geared together and in which the handle or other means for operating the machine will not be applied to either roll.

A further object of the invention is to provide a wringer of this character in which the gearing is so arranged as to transmit rotative movement to two rolls at opposite ends, respectively, of the wringer-frame.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a rear elevation of a wringer constructed in accordance with the invention. Fig. 2 is an end elevation of the same, partly in section. Fig. 3 is a similar view looking from the opposite end of the wringer-frame.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

11 designate end standards or bars of a wringer-frame connected at the top by a cross-bar 2 and provided with slots 3, extending downward from the upper ends of the bars or standards and receiving the terminals of the top bar 2. The slots or openings 3 of the standards of the wringer-frame receive bearing-blocks 4 for the reception of the journals

of the lower wringer-roll 5; but any other suitable bearings may be provided.

The journals of the upper wringer-roll 6 are arranged in bearings which are slidably mounted in the slots or openings 3 and which are engaged by a spring-pressed bar 7, whereby the upper and lower rolls are normally held together. The bar 7, which extends across the upper portion of the wringer-frame, has its ends arranged in the slots or openings 3 and its central portion connected with a spring 8. The spring 8 extends into the slots or openings, and its ends are engaged by adjusting-screws 9 for regulating the tension of the spring, or any other means may be employed for yieldably engaging the upper vertically-movable wringer-roll.

The upper wringer-roll is provided at one end with a gear-wheel 10, keyed or otherwise secured to one of the journals 11 and intermeshing with the teeth of a pinion 12 and adapted to move upward and downward with the upper wringer-roll without getting out of mesh with said pinion, which is arranged at one side of the gear-wheel 10, with its center slightly above the center of said gear-wheel. The pinion 12 is carried by a shaft 13, which extends completely across the rear portion of the wringer and is journaled in suitable bearings 14, the shaft serving to a considerable extent to strengthen and brace the wringer-frame. The end 15 of the shaft is extended outward beyond the wringer-frame and is provided with a crank-handle 16, located at the end of the frame opposite that at which the gear-wheel 10 and pinion 12 are arranged.

The extended end of the shaft 13 also has keyed or otherwise secured to it a pinion 17, which meshes with a floating gear in the form of an annular rack 18. The floating gear is provided with an annular flange 19 at each edge, the flanges extending over the intermeshing teeth of the pinion and serving to prevent any lateral displacement of the gear-wheel. The inner face of the floating gear is in contact with the side of the wringer-frame and is held against displacement by said frame. The floating gear also receives a pinion 21, of greater diameter than the pinion 17, mounted on the journal 22 of the lower roll and located at a point beneath and to one side

of the pinion 17, the center of said pinion being normally to one side of a diametral line extending through the axes of the pinion 17 and the floating gear, thus forming the gear into a short upper flight and a long lower flight of teeth. The annular flanges 19 of the floating gear also embrace a portion of the gear 21 to prevent independent lateral movement of the floating gear, and the diameters and position of the several gears are such that it becomes impossible for the floating gear to be accidentally displaced while the journals 15 and 22 maintain their normal positions. To remove the floating gear, it is merely necessary to slightly loosen the clamping-screws 9 and raise the rolls of the wringer until the teeth of the pinion 21 are nearly or quite in mesh with the teeth of the pinion 17, thus reducing the distance between the two journals 15 and 22 to an extent sufficient to permit the ready removal of the gear 21 should it become necessary to replace or repair any broken parts. This also permits of the ready assembling of the several members of the gearing at the factory.

In operation the floating gear is rotated by the crank-handle and pinion 17 in the direction indicated by the arrow in Fig. 2, so that the short upper flight pulls upon and actuates the pinion 21 when the crank-handle is rotated, and a positive movement is imparted through the shaft 13 and gears 12 and 10 to the upper wringer-roll at one end of the machine, while the lower wringer-roll receives positive driving movement through the floating gear at the opposite end of the machine. The floating-gear connection is to some extent less positive in its nature than the connection between the gears 10 and 12, so that in the event of the passage of any excessive quantity of clothing there will be a corresponding increase in the pressure between the two rolls, with a resultant increase in the tendency of one to drive the other, and the more positively-driven upper roll may tend to impart a slightly-excess movement to the lower roll, and this will be permitted by the floating gear, owing to the position of the journal of the lower roll, which, as previously described, is normally located at a point slightly to one side of a diametral line extending through the axes of the pinion 17 and the floating gear. This movement will have a slight tendency to raise the floating gear toward the dotted-line position shown in Fig. 2, and when the excess pressure is relieved the floating gear will tend to reassume its initial position by gravity.

Should it be desired to reverse the movement of the crank and wringer-rolls, the first movement of the crank will turn the floating gear through the medium of the pinion 17 until the position of said floating gear with respect to the journal 22 is reversed—that is to say, the axis of said journal will then be in a position on the opposite side of the diam-

etral line extending through the pinion 17 and the floating gear and the lower flight will be the shortest and the upper flight of the floating gear the longest.

Having thus described the invention, what is claimed is—

1. The combination in a wringer, of the frame, the fixed and movable rolls, a crank-shaft, gearing connecting the crank-shaft and the journal of the movable roll, a gear secured to the journal of the fixed roll, a pinion secured to the crank-shaft, and a floating gear connecting the gear and pinion and provided with oppositely-disposed flanges to prevent lateral displacement.

2. The combination in a wringer, of the frame, upper and lower rollers adapted to vertical guides in the frame, a crank-shaft, gearing connecting the crank-shaft and the upper roll at one end of the frame, a gear secured to the journal of the lower roll, a pinion on the crank-shaft, and a floating gear connecting the gear and pinion, the diameter of the pitch-line of the floating gear being greater than the distance between the outer portions of the pitch-lines of the said gear and pinion.

3. The combination in a wringer, of the frame, upper and lower rollers adapted to guideways in the frame, a crank-shaft, gearing connecting the crank-shaft and the journal of the upper roller, a gear secured to the journal of the lower roll, a pinion secured to the crank-shaft, and a floating gear connecting the gear and pinion and provided with oppositely-disposed flanges to prevent lateral displacement, the diameter of the open space bounded by each flange being sufficiently large to permit disengagement of the floating gear when the gear of the lower roll is raised.

4. A wringer comprising a frame, upper and lower rolls, the upper roll being vertically movable, a crank-shaft journaled at one side of the frame and provided at its ends with pinions 12 and 17, a gear-wheel connected with the upper roll and meshing with the pinion 12 and adapted to move vertically without getting out of mesh, a gear 21 connected with the lower roll and arranged adjacent to the pinion 17, and a floating gear comprising a toothed ring having annular flanges of which the inner is in contact with the end of the wringer-frame, said floating gear serving to connect the pinion 17 and gear-wheel 21, and the center of the gear-wheel 21 normally occupying a position to one side of a diametral line including the axes of the pinion 17 and the floating gear.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DICKSON HALL.

Witnesses:

CHARLES KNOW,
E. T. MASON.