# Pease & Lewis,

## Wringer,

No. 56,676. Patented July 24, 1866.

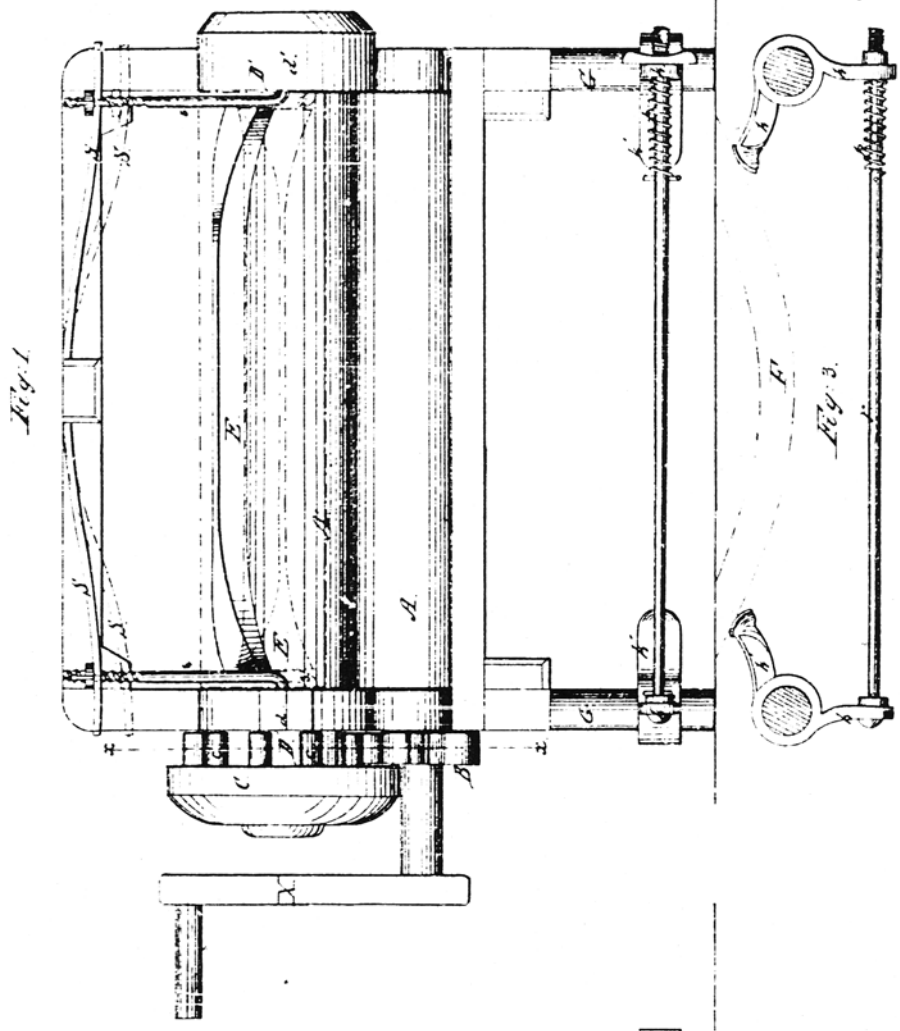

Fig. 1.

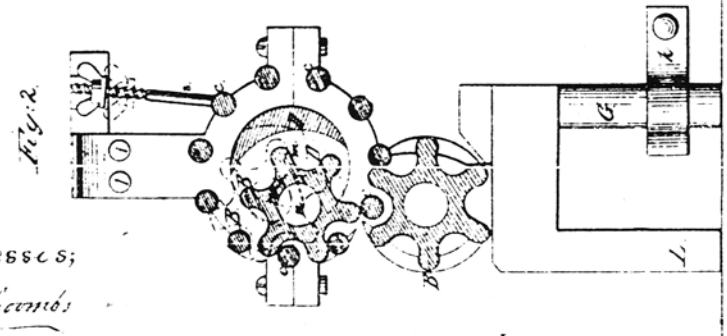

Fig. 2.



Fig. 3.

Witnesses;
Jos. L. Coombs
Dan'l Davis

Inventors;
Pease & Lewis, by
J. P. Block
their atty.

# UNITED STATES PATENT OFFICE.

J. N. PEASE AND G. LEWIS, OF PANAMA, NEW YORK, ASSIGNOR TO THE METROPOLITAN WASHING MACHINE COMPANY.

## IMPROVED CLOTHES-WRINGER.

Specification forming part of Letters Patent No. **56,676**, dated July 24, 1866

*To all whom it may concern:*

Be it known that we, JAMES N. PEASE and GEORGE LEWIS, both of Panama, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Clothes-Wringers; and we hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a machine constructed in accordance with our invention. Fig. 2 is an end view of the same, showing, in section, on the line *x x*, Fig. 1, the gearing mounted on the shafts of the wringer-rolls; and Fig. 3 is a plan view of the device shown in elevation in Fig. 1 for holding the wringer to the side of the wash tub or boiler.

Our invention relates to the method of gearing wringer-rolls; and its object is to effect such an arrangement that the rolls may adjust themselves to the varying thickness of the clothes passing between them, and at the same time may preserve a steady, equable, and uniform motion. In order to attain this object it is necessary that the cogs or pinions on the shafts of the rolls should be constantly in gear, and thus cause the rolls to move in unison whatever may be the distance which separates them.

Our invention consists in the employment, in connection with the pinions of the upper and lower wringer-rolls, of an auxiliary gear or crown wheel, the whole being so arranged that while the relative positions of the two pinions in respect to each other may vary, the relations of each to the auxiliary wheel may be fixed and unchangeable, so that, whether the distance between the rolls be increased or lessened, both pinions will mesh with the auxiliary gear, which will thus constitute the medium through which motion is transmitted to the roller not immediately rotated by the motor power.

In order to enable others to fully and clearly understand the nature and operation of our invention, we will now proceed to describe one method in which the same may be carried into effect by reference to the accompanying drawings.

The lower wringer-roll, A, is mounted on a shaft which has its bearings in the sides of the frame, as in any ordinary machine. Upon the shaft outside, on the left-hand side of the frame, as represented in the drawings, is mounted a pinion, B, and upon the end of the same shaft is secured the crank X, by means of which the rolls are put in motion. Thus far the mechanism does not differ from that of any ordinary clothes-wringer.

The upper wringer-roller, A′, is mounted on a shaft whose journals are set in upright disks D D′, one of which disks, D, constitutes the journal of the crown-wheel C, as will be presently explained. These disks are supported in boxes *d d′*, formed in the sides of the frame, and are connected firmly together by the cross piece or bar E, of any suitable material, which is attached to the interior and opposite faces of the disks near their circumferences.

By this arrangement the disks are made to move together, as whatever motion is imparted to one is, by the connecting-bar E, transmitted to the other. The disks are also capable of a rotary motion in their boxes *d d′*; but this motion is restrained within certain limits by means of the spring S, as hereinafter explained.

As has been said, the shaft of the roller A′ has its bearings in the disks D D′. It is so set in the disks as to be eccentric thereto, as shown in Fig. 2, where *m* is the axis of the disk D, and *n* the axis of the roller A′.

The shaft of the upper roller on the left-hand side of the frame extends through the upright disk D and forms the journal of the pinion B′. The disk D extends out beyond the pinion B′, being recessed, so as to permit the pinion to revolve freely, as shown in Fig. 2, and its end forms a journal for the crown-wheel C. This wheel is solid, and recessed in its center, so as to fit over the end of the disk D, which forms the journal on which it revolves. Its inner face, or the face contiguous to the frame, is provided with cylinder-like teeth *c* at right angles to the face of the wheel and equidistant from its center and from each other, and so arranged as to mesh with the pinions B and B′.

When the wheel C thus constructed is mounted on its journal its teeth *c* will accordingly mesh with the teeth of both pinions, and it will thus be seen that although the pinions are never in contact with each other, yet

whenever one of the wringer-rolls revolves a like motion will be instantly communicated to the other by means of the cogs or teeth of the crown-wheel.

As the disks D D′ are capable of a rotary motion, as above explained, and as the upper roll is held in said disks, it follows that when clothes of any thickness are introduced between the wringer-rolls the roll A′ will be lifted to a sufficient height to allow them to pass. The roll, however, will not be raised perpendicularly; but, on account of its eccentricity in relation to the disks in which it has its bearings, its axis will, when moved, describe an arc of a circle on the center of the disk D whose radius is equal to the line *m n*, or the distance between the two axes.

It is evident that as the relations of the axis *m* of the crown-wheel C and the axis *n* of the pinion B′ are fixed and invariable, the pinion B′ will mesh with the wheel C, no matter to what height the wringer-roll A′ may be raised; and it is equally clear that as the distance between the centers of the wheel C and the pinion B remains unchanged, they will also remain in gear, and, therefore, as the two pinions are thus connected, any motion given to the lower roll, or the one driven by the crank, will be communicated to the upper roll, and the two rolls may revolve at an equal rate of speed notwithstanding the distance between them constantly varies.

In order to limit and restrain the rotary motion of the disks D D′, and to cause the wringer-rolls to bring a certain pressure to bear upon the clothes passing between them, I make use of a spring, S, in connection with the disks D D′. This spring in the drawings consists of a stiff bar or strip of steel or other suitable material, which is secured by its middle to the side of the top piece of the frame of the machine, and extends across from one side to the other of the frame. A hole is formed in each of its ends, through which are inserted rods *s s*, which extend downward in front of the bar E, which connects the two disks D D′. The lower part of each rod is bent so as to be at right angles with the length of the rod, and these bent parts are inserted in corresponding holes formed for their reception in the disks D D′, respectively, the hole in each disk being made in that part of the disk diametrically opposite the bearing of the roller A′. A screw is cut on the upper end of each rod, and on that part of each which extends above the spring S a thumb-nut is fitted for regulating the pressure of the spring.

By this arrangement the spring causes the rods *s s* to turn the disks D D′, so as to press the upper roller, A′, against the under roller with a pressure proportionate to the force of the spring.

When the roll A′ is raised and the disk D turned in the position shown in red lines in Fig. 2 the spring S will be depressed and forced downward by the partial rotation of the disks, as shown in red lines in Fig. 1, until the connecting-bar E, which moves with the disks, comes in contact with the rods *s s*, when the further rotation of the disks is stopped. The spring still causes the upper rod to press strongly and even with intensified force upon the clothes passing through the machine, and when they shall have passed through the roll is again brought back to its original position in contact with the lower roll by the spring, which assumes again the position shown in black lines in Fig. 1.

On the lower part of the machine is shown a device by means of which the wringer may be secured to the tub or boiler in connection with which it is used. It consists of two bell-cranks, K K, secured on the legs G G of the machine. The outer arms, *k*, of the cranks are connected together by means of a rod, *r*, which is firmly secured to one arm, *k*, and thence extends to the corresponding arm of the other crank, through which it is inserted. Upon that part of the rod which extends through the crank is cut a screw, to which a thumb-nut is fitted. A spiral spring, *p*, is placed upon that portion of the rod between the two arms. One end of the spring abuts against the arm *k* and the other is held by a pin inserted in the rod.

When the wringer is to be used it is placed so that the side of the tub shall be placed between the two front legs and two hind legs of the machine, as shown in Fig. 3, where the side of the tub T is represented in red lines. When in this position the nut is screwed down upon the rod *r*, thus forcing the two arms *k k* together, and causing the other arms, *k′ k′*, of the cranks to press strongly against the side of the tub. The machine is thus held firmly upon the tub by the legs L L and arms *k′ k′*, which grasp tightly the side of the tub. When the nut is unscrewed the spring *p* forces apart the arms *k k*, and consequently the pressure of the arms *k′ k′* upon the side of the tub is removed, and the wringer may then be easily taken off.

We have described what we consider to be the best mode of applying our invention; but we do not wish to be understood as limiting ourselves to the precise arrangement shown in the drawings, for, instead of a spring in connection with the disks D D′, weights or other mechanical equivalents may be used; and in regard to the method of gearing many modifications will readily suggest themselves without departing from the principle of our invention. The wheel C may be formed with teeth on its periphery meshing with the teeth of the lower pinion, and with cogs on its inner face at right angles to the face of the wheel to gear with the upper pinion; or the wheel need not be solid, and in such case it may be formed with teeth on its external and internal periphery to mesh with the lower and upper pinions, respectively. The upper roller, also, need not be supported in the disks, but the crown-wheel and the upper roller may have bearings en-

tirely distinct and disconnected from one another.

It is evident that instead of the disks other equivalent devices may be used for producing the same effects. For instance, bell-cranks may be employed, or straight bars pivoted to the sides of the frame, the upper roll having its bearing in one arm and the spring attached to the other.

What we claim, therefore, and desire to secure by Letters Patent, is—

1. The method of gearing wringer-rolls as herein shown and described—that is to say, by the employment, in connection with the pinions or cog-wheels of the upper and lower rolls, of a third or auxiliary gear-wheel, the whole being so arranged that while the relative positions of the said pinions to each other may constantly vary they shall bear permanent or fixed relations to the auxiliary gear.

2. Supporting one of the wringer-rolls in upright disks, the said roll having its bearings placed eccentrically to the said disks, in combination with the auxiliary gear, when arranged to revolve upon the axes of said disks, the whole being arranged for operation as herein shown and set forth.

3. In combination with the herein-described arrangement of gearing-rolls, the cross-bar, or the mechanical equivalent thereof, for connecting the disks which support the movable roll, so that the said disks may be moved upon their axes in unison and maintain the parallelism of the rolls in the movement of the one to and from the other, substantially as herein shown and described.

4. The combination and arrangement of the spring and disks supporting the movable roll, substantially as herein shown and set forth, so that the rolls are kept together with a yielding pressure, which may be regulated as described.

5. The herein-described device for holding the wringer to the side of the tub, the same consisting of bell-crank levers pivoted on the machine, in combination with an adjusting-rod, the whole being arranged for operation substantially as herein shown and set forth.

JAMES N. PEASE.
GEORGE LEWIS.

Witnesses:
JOHN D. STEVENS,
EUGENE STARKWEATHER.