

D. M. COLE.
Clothes-Wringers.

No. 139,545.

Patented June 3, 1873.

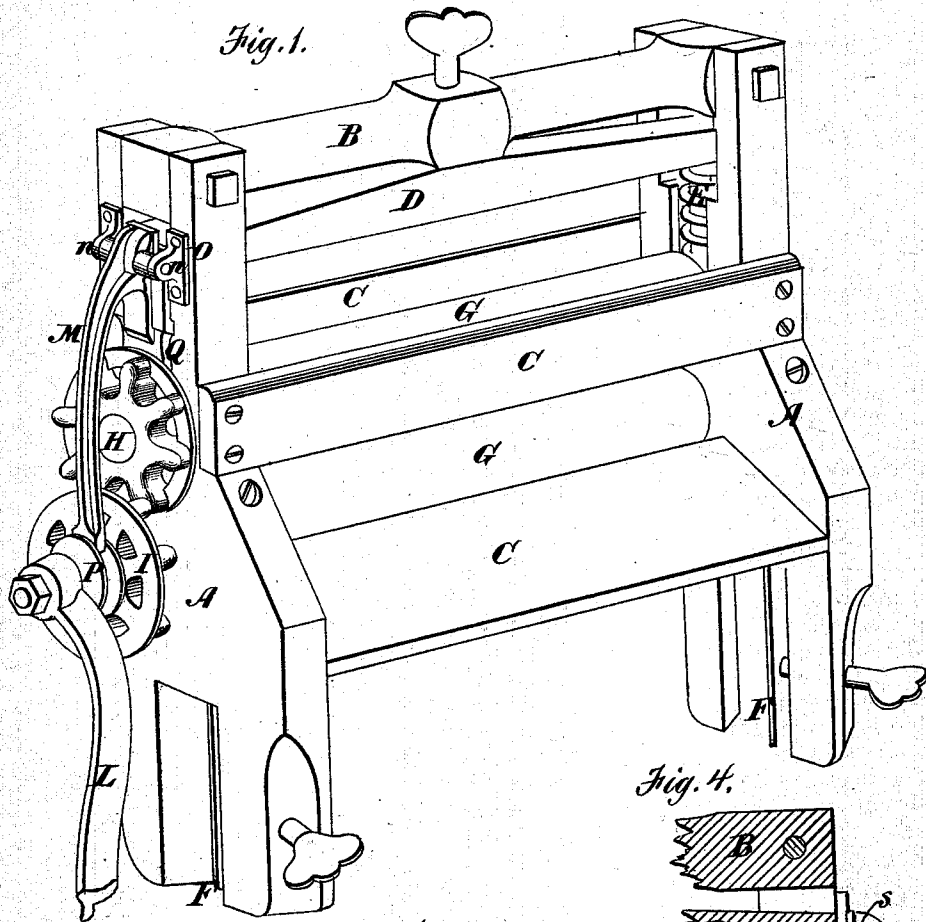


Fig. 3.



Fig. 2.

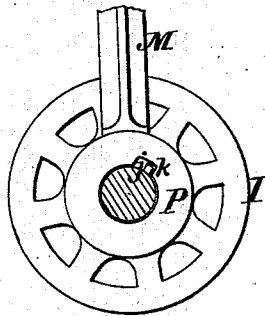
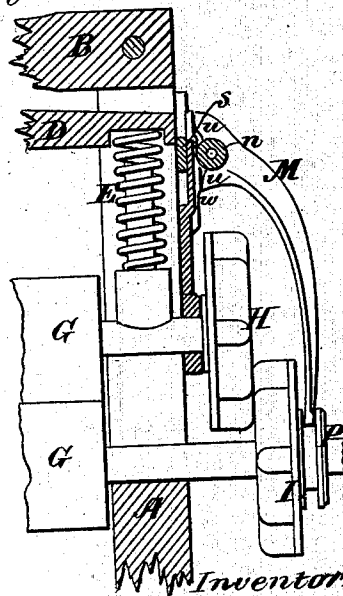


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

DAVID M. COLE, OF ELGIN, ILLINOIS.

IMPROVEMENT IN CLOTHES-WRINGERS.

Specification forming part of Letters Patent No. **139,545**, dated June 3, 1873; application filed May 9, 1873.

To all whom it may concern:

Be it known that I, DAVID M. COLE, of Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Clothes-Wringer; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a perspective view of a wringing-machine, showing the application of my improvements; Fig. 2, a sectional elevation of the lower gear-wheel and shipping-lever; Fig. 3, a perspective view of the cam-plate; and Fig. 4, a vertical section of the shipping-lever, bracket, and cam-plate.

Similar letters of reference in the accompanying drawing denote the same parts.

My invention has for its object to increase the capacity of clothes-wringers, whereby they are adapted for wringing very large as well as very small articles, preserving at the same time the free action of the springs, by which the wringing-rollers are held to their work with a yielding pressure. To this end the invention consists, first, in the employment of gear-wheels, in connection with the wringing-rolls, which shall be automatically thrown into and out of gear, as large and small articles, respectively, are operated upon. When small articles are passed between the rolls the latter are close together, and the gears thrown out of operation, so that the friction incident to the continued use of the gears is avoided, and the machine operated with but little expenditure of power. When, however, the rolls are spread apart for the passage of larger articles, the act of separation throws the gears into operation, and produces a leverage sufficient to carry the articles through the machine with ease. The invention consists, secondly, in the construction of the gear-wheels, and the method of connecting them with the shafts of the rolls, for the purpose of facilitating their automatic operation. It consists, thirdly, in the combination of parts, as I will now proceed to describe.

In the accompanying drawings, the frame of the machine is shown composed of the slotted end pieces A, secured together by the top-bar B and bottom and side pieces C, and

provided with the adjustable presser-bar, D, springs E, clamping device F, and the covered wringing-rolls G, substantially as described in the patent granted to me June 18, 1872, No. 128,119. H is the upper gear-wheel, firmly secured to the shaft of the upper roll, outside the end of the frame, and I is the lower or crown gear, mounted upon the extended shaft of the lower roller, so as to slide freely thereon. It is arranged outside of the gear-wheel H, and is permitted a slight rotatory play upon its shaft by means of the recess *j* and pin *k*, as shown in Fig. 2. M is a shipping-lever, provided with trunnions *n* upon each side of the head, which are journaled in the ears of a bracket, O, secured to the outside of one of the slotted end pieces of the frame near the top. The opposite end of the lever is forked or enlarged somewhat to enter a groove formed around the hub P of the lower gear-wheel. Q is a cam-plate, hung upon the shaft of the upper roller, so as to rest against one of the end pieces of the frame. Its upper end is formed with two side wings, *r r*, which serve to guide the plate between the ears of the bracket O to prevent lateral displacement. The inner or rear face of the plate is made flat, so as to move freely over the bar *s*, which forms the back of the bracket, while its face is formed with an irregular raised surface, *t*, to bear against the arms *u u*, which form the head of the shipping-lever.

When the gear-wheels occupy the position shown in the drawings the wringing rolls bear upon each other, and, if operated by the crank L, serve to wring small articles by frictional contact and the pressure of the springs E. In this position the upper arm *u* of the shipping-lever bears against the face of the cam-plate above the raised surface *t*, while its lower arm bears against the raised surface just above the lower bevel or shoulder *w*. This arrangement locks the lever in place, so that it shall hold the gear-wheel I disengaged from the teeth of the gear-wheel H.

When large and thick articles are passed between the wringing-rolls the latter are separated to a considerable extent by the movement of the upper one against the tension of the springs E. This movement also carries up the cam-plate, so that the lower arm *u* of the

shipping-lever shall ride down the lower bevel *w* of the cam-plate, while the upper arm *u* rides up the upper bevel *w*, and rests against the surface *t*. This positive movement throws the lower end of the shipping-lever inward, carrying with it the gear-wheel I to engage the gear-wheel H for operating the wringer. After the large article has passed through the machine the springs again force the rollers together and disengage the gears. By this means the gears are automatically engaged and disengaged, according to the size or thickness of the clothes to be operated upon.

To facilitate the engagement of the gears the proximate faces and corners of the teeth, as well as their ends, are beveled or rounded off on both sides of the radial line of each tooth. Their ends are also made somewhat the widest, as shown.

Owing to this construction, and to the slight rotatory movement of the outer gear, as previously described, the teeth of the two wheels readily move together to engage each other, without cramping or binding, and without stopping the operation of the wringing-rolls. This formation also prevents the gears from being caught or bound when thrown out of gear, and the proximate faces of the teeth are working against each other. By this arrangement the free movement of the pressing springs

is preserved under all conditions, whether the gears are engaged or disengaged.

Having thus described my invention, what I claim as new is—

1. A clothes-wringing machine provided with gear-wheels adapted to be automatically thrown into and out of operation, substantially as described, for the purpose specified.

2. The gear-wheel I, constructed as described, and attached to the shaft of the lower wringing-roll by means of the recess and pin *j k*, so as to have a slight rotatory movement upon said shaft, substantially as described, for the purpose specified.

3. In combination with the wringing-rolls and gear-wheels, the shipping-lever and sliding cam-plate, substantially as described, for the purpose specified.

4. The guide-bracket O, in combination with the sliding cam-plate and the shipping-lever, substantially as described, for the purpose specified.

5. The shipping-lever, constructed with the arms *u u*, in combination with the irregular raised surface *w w*, substantially as described, for the purpose specified.

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Witnesses:

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