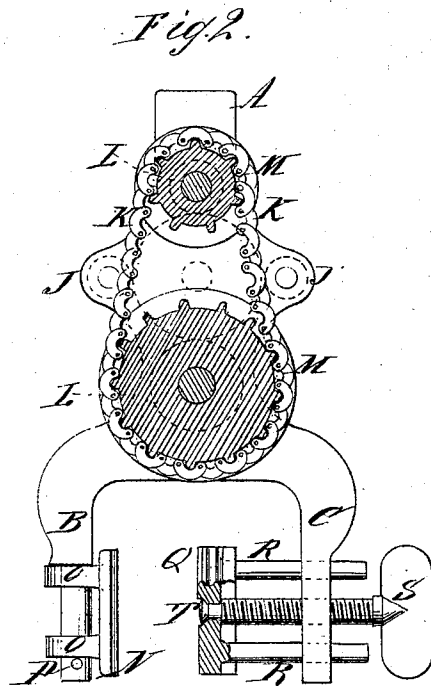
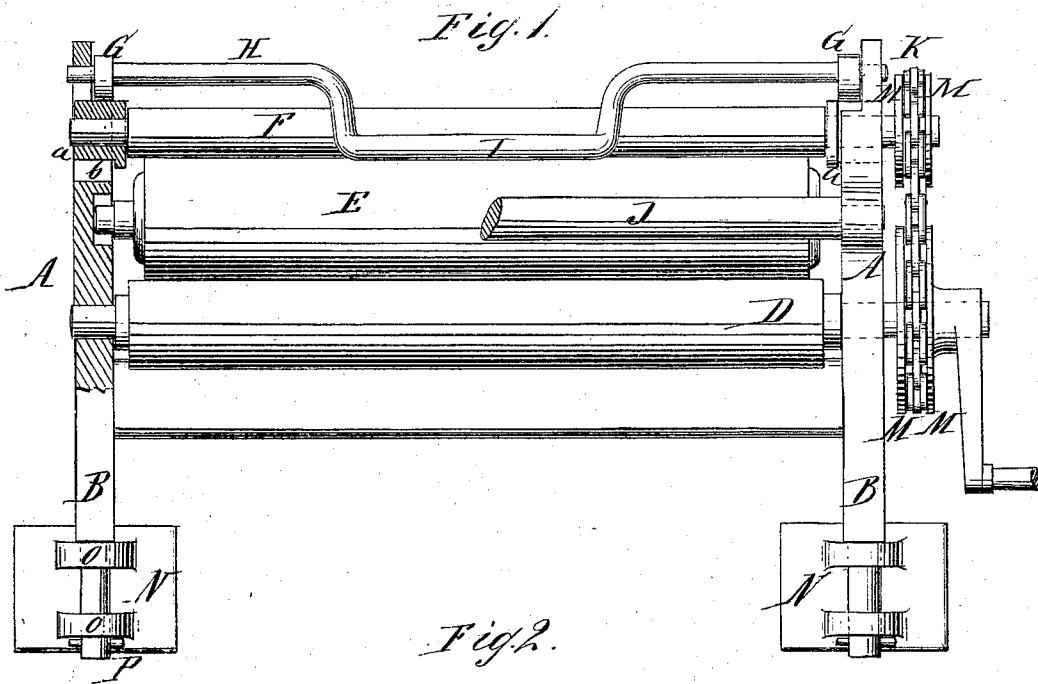


H. E. SMITH.
Clothes-Wringers.

No. 147,990.

Patented Feb. 24, 1874.



Witnesses.
Ernst Bilhuber
Henry Gentner

Inventor.
Hamilton E. Smith
By J. Santovini & Co. Attorneys

UNITED STATES PATENT OFFICE.

HAMILTON E. SMITH, OF WEST FITCHBURG, MASSACHUSETTS.

IMPROVEMENT IN CLOTHES-WRINGERS.

Specification forming part of Letters Patent No. **147,990**, dated February 21, 1874; application filed October 2, 1873.

To all whom it may concern:

Be it known that I, HAMILTON E. SMITH, of West Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Clothes-Wringers; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 is a rear elevation of a wringer containing my invention, the rear guide-roller being partly broken away to show the elastic roller. Fig. 2 is an end view, partly in section.

Similar letters indicate corresponding parts.

This invention consists in placing over the upper driving-roller a cross-bar whose ends are provided with cams or eccentrics, in such a manner that, when the cross-bar is turned in the proper direction, its cams bear upon the ends of the driving-roller and produce pressure upon the elastic roller below it. The cross-bar is bent at its center to form a handle, by means of which the operator turns it one way or the other to regulate the pressure while the machine is in operation. By this means the pressure of the rubber roller is always under the control of the operative, who can vary it at any moment, one hand being occupied in driving the machine and the other in regulating the pressure. The invention consists, further, in the arrangement of a chain running over flanged sprocket-wheels upon the ends of the driving-rollers, combined with an intermediate independent rubber roller, which receives motion from them by frictional contact, the links of the chain being of such form and length as to allow all necessary changes in the relative positions of the driving and rubber rollers, and, during every such change, retain their engagement with the sprockets or teeth of the wheels. The flanges of the wheels prevent the chain from dropping off the wheels, whether its hooks are in gear or out of gear. The chain can be arranged to drive also the front and back guide-rollers so as to give to them a positive motion, and, in that case, their ends will be extended and provided with suitable flanged wheels, like the upper and lower driving-rollers, so as to be engaged by the chain. This arrangement

is desirable in large machines, as, for example, such as are run by power; but in ordinary family machines the modification here shown furnishes sufficient power to turn the rubber roller. It consists, further, in arranging upon the back or inside posts of the machine swiveled bearing-plates, whose faces may be curved to suit the shape of the inside of the tub, and in providing upon the front posts clamp-bars supported on horizontal guide-pins, which move loosely through holes in the posts, and are operated by thumb-screws working through the posts, the ends of the screws being so secured to the bars that the screws are allowed to turn freely in the bars.

The letter A designates the frame of the machine, terminating below in posts B C, to which the clamping apparatus is attached. The journals of the lower driving-roller D revolve in stationary bearings in the ends of the frame, and above it, and resting upon it, is the rubber roller E, whose journals revolve in bearings that are elongated vertically, as shown in Fig. 1, so that it can move up or down, according to the pressure made upon it. Above the rubber roller, and resting upon it, is the upper driving-roller F, whose journals turn in sliding journal-boxes *a a*, arranged in vertical slots *b* in the ends of the frame. Pressure is made upon the roller F, and through it upon the rubber roller, by means of cams or eccentrics G upon the oscillating cross-bar H, the ends of which are placed in the upper part of the slots *b*, the cams G resting upon the sliding journal-boxes of the roller F, so that when the cross-bar is turned in the proper direction the cams produce an increasing pressure thereon. The cross-bar is operated by means of a handle, I, formed upon it, in this example by bending its middle part to a bail-like shape. The rubber roller is guided and supported, also, in front and rear, by rollers J J, which in this example turn loosely in bearings in the frame, being revolved by frictional contact with the rubber roller. The machine is operated by a crank on the lower roller D, and motion is communicated from it to the upper driving-roller, (and also to the rollers J J, when they are to be driven with a positive motion,) and from the driving-rollers to the independent rubber roller placed between them, by a chain whose hooks K en-

gage the teeth of the sprocket-wheels L, formed on the rollers. The wheels L are provided with flanges M M, which inclose the sprocket-teeth, and which serve to keep the chain from running off the wheels. The hooks of the chain are made long enough to allow all the required expansion without being displaced or dropping out of gear. Upon the rear posts B B I arrange swiveled bearing-plates N N, whose faces may be curved or otherwise formed to correspond to the inner surface of a wash tub or box. The plates are secured to the posts by means of perforated lugs o o, formed on their backs, and the lugs slipped over the posts and held thereon by pins P. The plates N readily adjust themselves to the curve of any tub or box. Upon the front posts C are the clamping devices, which are intended to bear against the other or outer side of the tub, and consist of a clamping-bar, Q, corrugated on its face and provided with horizontal guide-pins R R, which extend back from it into holes in the posts, and with a thumb-screw, S, working through a tapped hole in the post, and having its end held by a collar, T, to the clamping-bar. The thumb-screw is arranged between the guide-pins, so that the bars are kept upright or parallel with the posts in their movements. The rubber

roller is revolved in the proper direction by frictional contact with the driving-rollers, between which it is placed, the several rollers being so arranged that the driving-rollers shall bear against the rubber roller with sufficient pressure for that purpose.

What I claim as new, and desire to secure by Letters Patent, is—

1. The oscillating cross-bar H, having upon its ends the cams G G, which operate directly upon the top of the journal-boxes *a* of the driving-roller F, combined substantially as described, whereby pressure is exerted upon the roller E, as set forth.

2. The combination of the chain K, and the driving-rollers engaged by it, with the independent rubber roller E, placed intermediate the driving-rollers, and turned by frictional contact therewith, substantially as described.

3. The bearing-plates N, swiveled upon the posts B, in combination with the clamping-bars Q, guide-pins R, and compressing carrying-screw S, substantially as described, for connecting the machine with a tub or box, as set forth.

Witnesses: HAMILTON E. SMITH.
GEO. A. TORREY,
CHAS. TINON, Jr.