J. M. OAKLEY.
Washing-Machine.

No. 166,217. Patented Aug. 3, 1875.

Fig. 1.

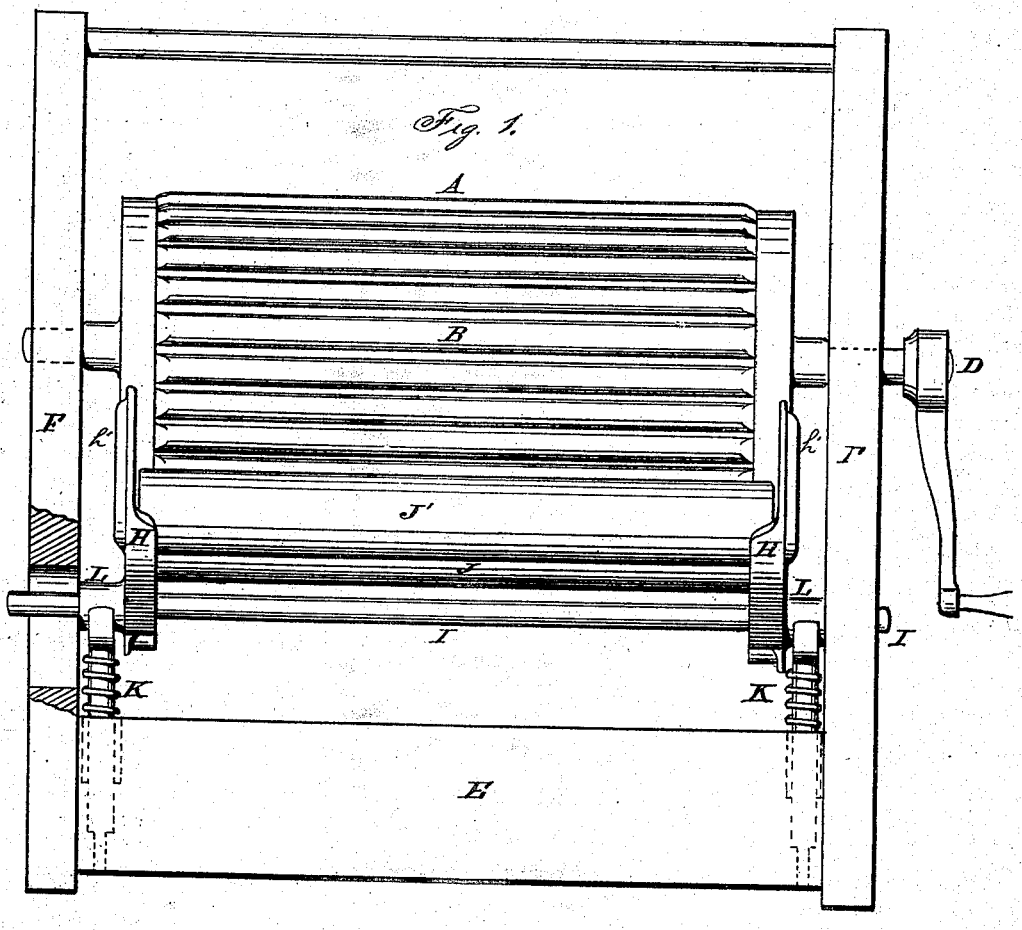
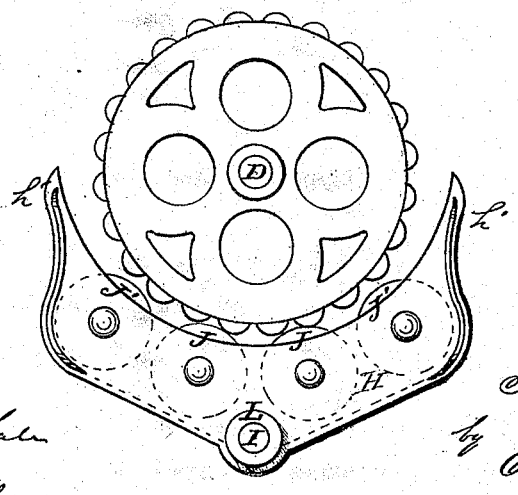


Fig. 2.



Witnesses.
C. O. Yale
W. Hemeh.

John M. Oakley
by Earle H. Smith
Atty.

UNITED STATES PATENT OFFICE

JOHN M. OAKLEY, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN KEATING, OF SAME PLACE.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. 166,217, dated August 3, 1875; application filed June 10, 1875.

To all whom it may concern:

Be it known that I, JOHN M. OAKLEY, of Brooklyn, Kings county, State of New York, have invented certain new and useful Improvements in Washing-Machines, whereof the following is a specification:

My said invention relates to those machines in which a revolving ribbed cylinder is combined in operation with a concave bed of rollers; and it consists in the combination, with a revolving ribbed cylinder and oscillating roller-frame and rollers, of certain guiding-guards to prevent the clothes from working out at the ends of the rollers, such guards being arranged inside the main frame, or in front of the cylinder; also, in curved journal-carriers having their ends extended outward and upward to form the guiding-guards; also, in metallic journal-carriers, having guiding-guards, and provided with trunnions, such journal-carriers being arranged to oscillate on or with a rod playing in slots in the main frame.

In the annexed drawing, Figure 1 shows, in front elevation, a machine embodying my invention. Fig. 2 is an end view of the same, as with the end portion or side of the main frame removed, showing the end of the cylinder and one of the journal-carriers.

The ribbed cylinder A is preferably made of bars B, inserted in suitable metallic disks forming the heads of the cylinder, which bars are arranged with a space between them, allowing the water to pass through. The cylinder has a shaft, D, mounted in suitable bearings in the side pieces or uprights F of a main frame, E F F. Beneath the cylinder A is the roller-frame consisting of journal-carriers H arranged upon a bar, I, so as to allow either to oscillate freely thereon. In this frame are placed a number of rollers, J J′, having the bearings of their journals arranged in the arc of a circle, whose radius is greater than that of the circumference of the cylinder, the effect of which is to remove the outermost rollers a greater distance from the cylinder than the inner ones, and thus an enlarged space is secured between the outer roller or rollers, that facilitates the entrance of the clothes not only while passing through, but in first inserting the same.

To guide the clothes, and prevent them from working out at the end of the cylinder as they pass into the machine, I provide guiding-guards, arranged inside of the main frame, or in front of the cylinder A. These guards for simplicity are formed by extending the ends of the journal-carriers H outward and upward, as shown at *h′*. The clothes are also prevented from getting in between the ends of the rollers and the roller-frame by a rim or flange on the inside of each journal-carrier. The journal-carriers and rollers are forced toward the cylinder by springs K placed in sockets of the cross-bar E of the main frame, said springs acting against shoulders of guiding-stems, which they surround, and the upper ends of which stems terminate in a yoke and form the supports on which trunnions L of the roller-frame rest, thereby sustaining the said frame on yielding supports, and holding the central rollers to the cylinder with the greater pressure. The ends of the bar or rod I (or it may be the trunnions) are arranged to play in slots in side pieces of the main frame.

The space between the outer rollers and the cylinder is susceptible of rapidly widening to allow the sudden entrance of thick portions of the clothes without sensibly affecting the elasticity of the springs K, and a feature of the action of the rollers and frame is that the opening of the space on one side of the cylinder contracts the space on the opposite side and compresses the clothes as they emerge and escape. The rollers are adapted for adjusting themselves at either end independently of the other to the body of clothes, whether thick or thin, the journal-carriers at opposite ends of the roller-frame rocking not only on their trunnions, but on the connection-bar I, making an automatic or self-adapting and self-adjusting pressure on the clothes from the time they are inserted until they leave the machine. The rollers present a larger curve and more surface to the clothes, as to each, than that presented by any one of the ribs of the cylinder, and the relative ar-

rangement of the ribs and rollers is such that the motion of the machine in operation produces a quick succession of light blows on the clothes, caused by the oscillation of the roller-frame, whereby the rollers are forced against the opposite sides of the cylinder alternately, which, in connection with the self-adjusting action of the rollers, renders the washing operation far superior to that where there is no such alternating action. The machine is susceptible of variation, however, within the scope of the invention.

I claim as my invention—

1. In combination with the revolving ribbed cylinder and oscillating roller-frame, the guiding-guards *h'* arranged inside of the main frame or in front of the cylinder, for the purposes and substantially as described.

2. The curved journal-carriers having their ends extended outward and upward, to form the guiding-guards, as described.

3. The metallic journal-carriers with guiding-guards, and provided with trunnions L, and adapted to oscillate on a rod, I, arranged to play in slots in the main frame, as set forth.

JNO. M. OAKLEY.

Witnesses:

HENRY J. LEWIS,

HORATIO W. OAKLEY.