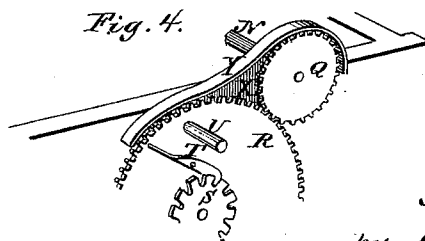
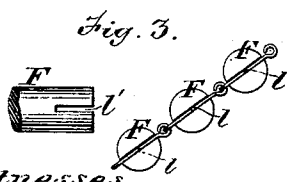
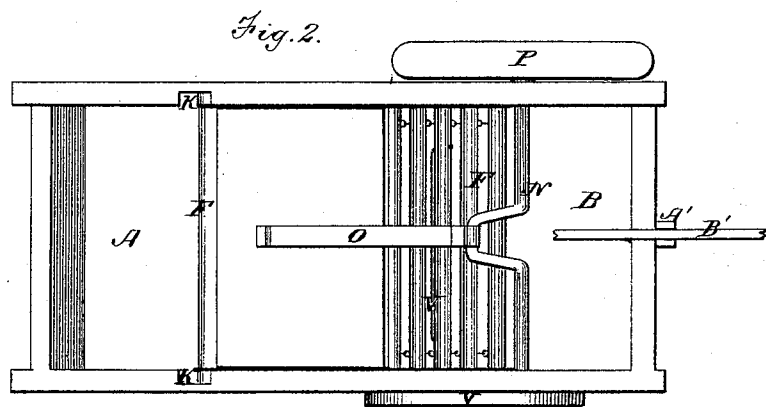
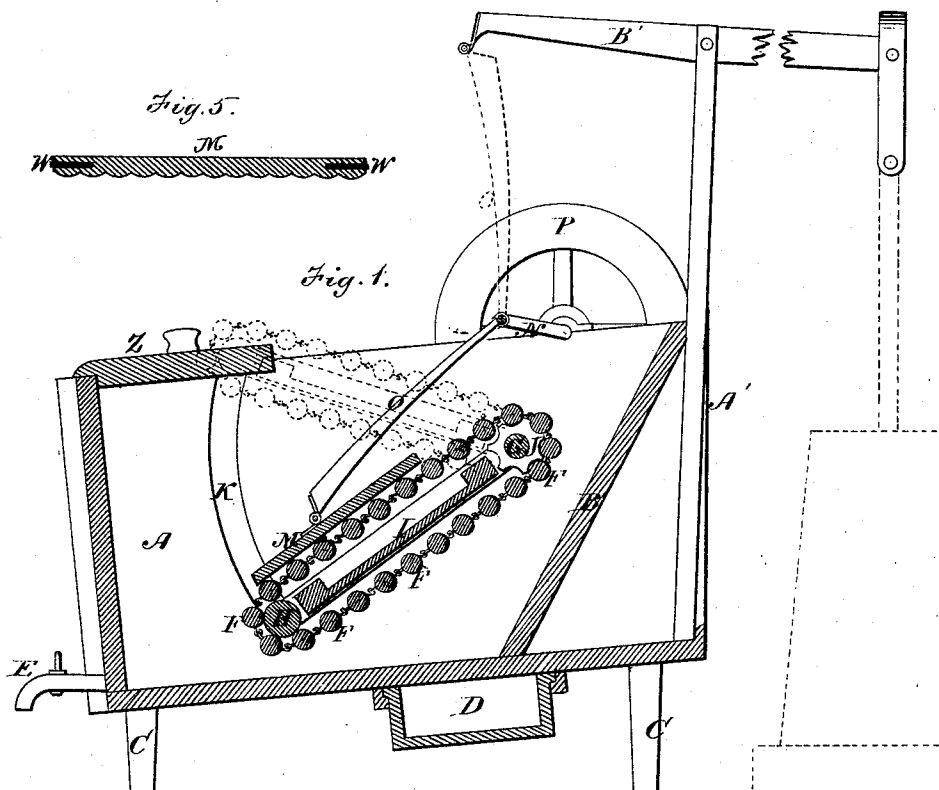


A. DONEY.
 Improvement in Washing-Machines.
 No. 130,905. Patented Aug. 27, 1872.



Witnesses.
 C. F. Brown
 Nathan J. Ellsworth

Inventor:
 Asa Doney,
 by H. E. Ellsworth
 His Atty.

UNITED STATES PATENT OFFICE.

ASA DONEY, OF SARATOGA SPRINGS, NEW YORK.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **130,905**, dated August 27, 1872.

To all whom it may concern:

Be it known that I, ASA DONEY, of Saratoga Springs, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a longitudinal section of a washing-machine containing my improvements. Fig. 2 is a top-plan view of the same. Fig. 3 is a detached view, showing the construction of the endless rubbing-apron. Fig. 4 is a perspective view of the guard for the gear-wheels, and Fig. 5 is a transverse section of the rubbing-board.

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

My invention has for its object to improve the construction of that class of washing-machines in which an endless rubbing-apron is combined with a reciprocating rubbing-board to operate upon the clothes; and to this end it consists in the improved construction and combination of various parts, as I will now proceed to describe.

In the drawing, A is the tub, of suitable form, provided with an inclined end, B, and mounted upon legs C. D is a soap-drawer, arranged beneath the tub in any convenient position; and E is a cock, by which the water may be discharged from the tub when desired. F is an endless belt or apron of rubbing-rollers, arranged within the tub so as to pass around two rollers, G H, and a guide-board, I, by which such rollers are separated. The upper roller G has its bearings in the sides of the tub, and is provided with two fluted wheels, J, for the purpose of moving the endless rubbing-apron when the upper roller is operated. The roller H acts as a guide for the endless apron, and has its bearings in the lower end of the guide-board I. The ends of the roller H project beyond the sides of the guide-board so as to enter curved grooves K in the sides of the tub, while the side pieces of such guide-board at their upper ends turn freely upon the upper roller between the fluted wheels and the sides of the tub. This construction adapts the whole attachment to turn freely upon the upper roller, so that it can be swung upward,

as shown by dotted lines, Fig. 1, to afford room within the tub for rinsing the clothes, thereby avoiding the necessity of employing a second tub for this purpose. The several parts are guided in their movements by the ends of the lower roller and the grooves K in the sides of the tub, as shown. The articulation of the apron and guide-board upon the upper roller also allows these parts to rise and fall freely for the passage beneath them of different quantities of clothes, thereby constituting a floating apron. The sides of the guide-board I extend above the bottom portion so as to form a sort of trough, by which the water expressed from the clothes in the process of washing is guided back into the tub without again coming in contact with the clothes. The endless apron is composed of a series of rollers and a series of short metallic rods, L, linked together at their ends. Each rod carries a roller, and is let into the ends of the latter by a transverse recess or slot, V, all of the eyes of the rods being located between such rollers, as shown in the drawing. By this construction the apron preserves its position with respect to the operating rollers and guide-board under all circumstances, and neither shrinks nor stretches as would be the case if cloth or webbing were employed instead of the eye-rods. While these latter materials are liable to rot, and, therefore, destroy the apron in a short time, the eye-rods, being preferably of galvanized iron, are unaffected by moisture, and consequently preserve the apron against its influence. M is the rubbing-board, corrugated upon its under side in any suitable manner, and resting upon the endless rubbing-apron. N is a crank-shaft, having its bearings upon the sides of the tub near the inclined end B, and connected by a pitman, O, to the upper surface of the rubbing-board, at or near the center of the latter, where it is hinged or pivoted. The crank-shaft carries a balance-wheel, P, upon one end, and a pinion, Q, upon its opposite end, which engages with a large gear-wheel, R, mounted loosely upon the end of the roller G. S is a small toothed wheel secured firmly to the roller G outside the large gear-wheel, and adapted to engage a pawl, T, pivoted to the face of said wheel. When the gear-wheel is connected by the pawl to the small toothed wheel, and the former operated by the

handle U, or other suitable means, a reciprocating motion is imparted to the rubbing-board, and a continuous motion to the endless apron, the clothes to be washed are carried upward between the two, and held to the apron by elastic cords V, as shown. By disconnecting the pawl from the small wheel the apron remains stationary, while the rubbing-board only is operated. W are packing-strips, of leather or other suitable material, let into the opposite edges of the rubbing-board, to prevent the latter from scraping or binding against the sides of the tub. X is a plate, preferably of metal, inserted between the sides of the tub and the gear-wheels Q R, with its upper edge bent outward, so as to form a flange, Y, projecting over such wheels, for the purpose of preventing the clothes from being caught and injured by the latter. Z is a cover, which, when applied to the tub at the end opposite the crank-shaft, extends over the grooves K, and protects the latter against the introduction of dirt, &c., which would bind the ends of the roller H and restrict its freedom of motion.

Having thus described my invention, what I claim is—

1. The endless rubbing-apron, adapted to articulate upon its operating shaft, substantially as described, for the purpose specified.

2. In combination with the operating roller G and fluted wheels J, I claim the floating guide-board I, endless apron F, and guide-roller H, substantially as described, for the purpose specified.

3. The endless rubbing-apron, constructed as described, of the slotted or recessed rollers mounted upon the linked eye-rods I, as herein shown and described, for the purpose specified.

4. The reciprocating rubbing-board M, constructed with the packing-strips W in its edges, substantially as described, for the purpose specified.

5. In combination with the gear-wheels Q R, I claim the guard X Y, substantially as described, for the purpose specified.

ASA DONEY.

Witnesses:

JOHN FOLEY,
E. H. PETERS.