

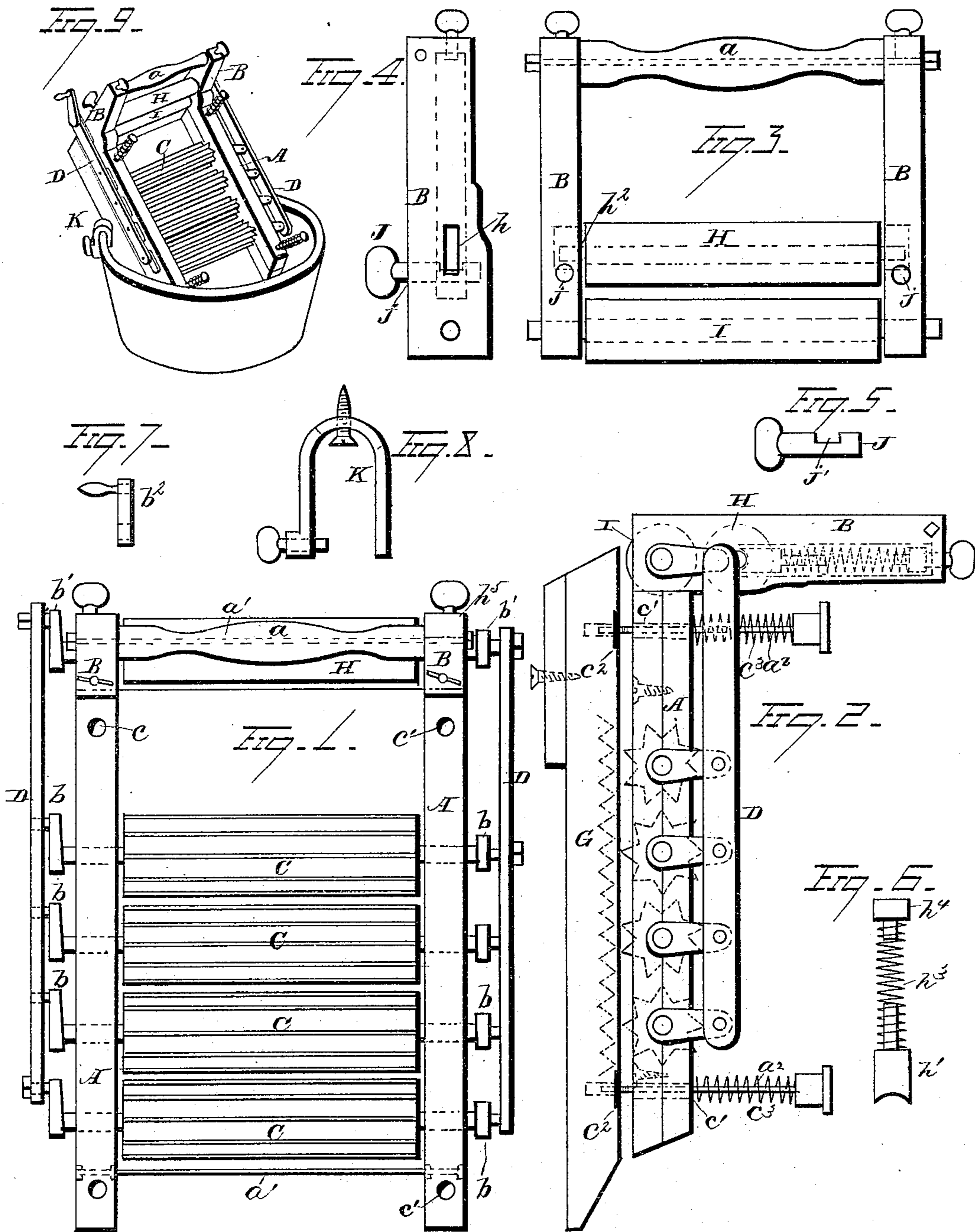
(Model.)

J. STEEN.

COMBINED WASHING AND WRINGING MACHINE.

No. 248,677.

Patented Oct. 25, 1881.



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COMBINED WASHING AND WRINGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 248,677, dated October 25, 1881.

Application filed October 26, 1880. (Model.)

To all whom it may concern:

Be it known that I, JAMES STEEN, a citizen of the United States, residing at Fairbury, in the county of Livingston and State of Illinois, have invented a new and useful Improvement in Combined Washing and Wringing Machines, of which the following is a specification.

My invention relates to an improvement in combined washing and wringing machines; and it consists in certain features of construction and combination of parts, as will hereinafter be described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view of the frame containing the rubbing and wringing rollers detached from the wash-board. Fig. 2 is a side view, showing the frame supporting the rubbing and wringing mechanism attached to a wash-board. Fig. 3 is an end view, showing the wringing-rolls. Figs. 4, 5, and 6 are detail and detached views of different parts of the machine, as will hereinafter be described. Fig. 7 shows the operating-crank. Fig. 8 is a detached view of the clamp for securing the combined wringer and washer to a tub or other receptacle, and Fig. 9 is a perspective view of the combined mechanism attached to a tub.

A represents the sides of a rectangular frame, having the upright standards B secured at one end thereof, the said parts being held in position by the cross-bar or handle a at the top of upright standards B, and by the metallic braces a' , situated at each end of the rectangular frame A.

C are longitudinally - corrugated rollers, placed parallel to each other and suitably journaled in the frame A, with the shafts of said rollers projecting through the frame A, on which are rigidly secured the crank-arms b . The rollers C are coupled and rotated together by the pitmen D, one on each side of the rectangular frame, the said pitmen having openings for the insertion of the cranks b . The pitmen D are continued forward and connected to the crank-arms b' at each end of the lower wringer-roll. To either side of the lower wringer-rollers a removable handle, b^2 , is secured, which operates the wringing and rubbing rolls simultaneously. The pitmen D are retained in place by nuts or pins secured in the projecting ends of the crank-arms. The crank b^2 (shown in Fig. 7) is adapted to engage with the crank-arms on either side of the lower wringer-roll, so as to accommodate the

machine to either right or left handed people. The cranks b' b , situated, respectively, on the lower wringer-roll and rubbing-rolls, are preferably attached to the shafts in such position that each crank projects from its respective shaft in the direction at right angles to the crank on the opposite end of the same shaft, and are so attached to the pitmen that even rotary motion is simultaneously imparted to said wringer and rubbing rollers.

Instead of placing the crank on the opposite ends of the shafts, as above described, they may be projected in the same direction, which will give them the same rotary movement; but I prefer to attach them as before described, as all dead-centers are overcome and the stopping and clogging of the same prevented.

G is a wash-board of the usual form, to which the parts shown in Fig. 1 are attached by yielding and adjustable connections, with the rollers C in contact with roughened rubbing-surface of the wash-board. The connections between the wash-board and machine consist of four screw-threaded rods, a^2 , passing loosely through holes c' in frame-pieces A and entering recesses in the sides of the wash-board through screw-threaded plates c^2 . Spiral springs c^3 surround the rods throughout a part of their length, and are held in position thereon by the enlarged heads of the screw-threaded rods and the top of the frame A, whereby the rollers C are constantly forced toward the rubbing-surface of the wash-board. The screws on the ends of the rods admit of adjustment of the same, whereby the pressure of the rolls on the clothes is regulated to suit.

The standards B, before described, support in suitable bearings the wringer-rolls H and I, the roller I having the crank b^2 attached to the shaft, which operates the rubber-rolls simultaneously with the wringer-rolls. The upper roll, H, has adjustable bearings in standards B, and co-operates with the lower roll in producing a wringing device, and for this purpose the two rolls may be provided with an elastic surface to increase their efficiency. The standards B are excavated in their interior, to form longitudinal chambers cylindrical in form and extending from the upper end of standards to the bearings of the upper roller, H.

Fig. 4 represents the vertical surface adjacent to the rolls of one of the standards.

h represents an elongated slot in the side of the standards, through which the ends of the

shaft carrying the upper wringer-roll, H, enter, the vertical sides of the slot forming lateral bearings for said ends, while the elongated slot permits the shaft carrying the roller H to be elevated or depressed in the bearings, thus varying the distance between the rolls H I.

The upper bearings for the shaft h^2 of roller H consist of cylindrical blocks inclosed in the chambers in standards B and resting on the extremities of the roller-shaft. The form of the blocks is shown in Fig. 6, where h' represents one of the blocks, the lower concave end of which adapts it for contact with the shafts h^2 of the roller.

h^3 is a spiral spring, the lower end of which rests on bearing-block h' , while the upper of same bears on and is compressed by a cylindrical block, h^4 . The blocks h' and h^4 may each be provided with a projection to enter between the coils of the spring to prevent the displacement of the different parts. Blocks h' h^4 and springs h^3 are severally adapted to move longitudinally in the interior of standards B, and each chamber is provided with the parts shown in Fig. 6. The standards are each provided at their upper end with a suitable cap, which completely cover the opening to the chamber, and are each provided with a screw-threaded orifice, through which the end of the thumb-screw enters and bears on the upper end of block h^4 and regulates the tension of the spring.

J are cam-pegs inserted in opening j in the standards below the shaft-bearing of roller H, in a direction at right angles thereto, and are adapted to lift the upper roller, H, in its bearings when it is desired to prevent contact between the rollers H I. In Fig. 3 the cam-peg is removed to show the orifice in which it is placed, and in Fig. 5 the construction of the peg is shown. The peg J consists of a flattened thumb-piece and a cylindrical body, cut away, as shown at j' , the said cut-away portion being cylindrical in form, but of reduced diameter, and is eccentric with the long axis of the peg. This cut-away portion of the cam-peg J rests immediately under the shaft of the roller, and is in proper position in Fig. 4 for allowing the rolls to come together, and by turning the cam-peg the eccentric portion is brought on top, which elevates the shaft, and consequently separates the rolls H I.

The clamp K on the under side of the wash-board is loosely attached thereto in any desired manner, and is adapted to be attached to a wash-tub or receptacle and hold the parts firmly fixed in position. One or more of these clamps may be used, as the form and size of the vessel to which the combined wringer and washer is attached may require.

a is a handle attached to the standards B near their upper end, and forms a convenient hand-rest for the operator, as well as a handle for the machine.

The side pieces of the rectangular frame are composed of two parts united along the line of bearing for the shafts of rollers C, and are fast-

ened together by screws. This construction allows the rubbing-rolls to be quickly removed, and also permits the pieces to be refitted when the shaft-bearings become worn.

The operation of the device is as follows: The wash-board, with the combined washer and wringer attached, as described, is placed in the usual inclined position in a wash-tub or other receptacle containing water, and securely fastened thereto by the clamp shown in Fig. 8, the tension of the springs is properly adjusted, and the roller H is lifted out of contact with the roller I by the peg J. The crank shown in Fig. 7 is fixed on either crank-pin b' or b . The articles to be washed are immersed in the water and then brought near to the lower roller, and by rotating the rollers in the proper direction the clothes will be drawn upward between rollers C and the rubbing-surface of the wash-board. Then by turning the rollers C alternately in one direction and then the other the clothes will be reciprocated over the surface of the wash-board, and at all times pressed against the board by the force of the springs, thereby subjecting the clothes to an action similar to that of rubbing the clothes upon a wash-board by hand, whereby they are cleansed. The clothes are also subjected to variations in pressure while passing from under one roller to an adjacent roller, which assists in cleansing them, and when thoroughly cleansed they may be discharged either above or below the rollers, as desired. The pegs J are then adjusted to allow the roller H to descend and rest upon roller I, and the tension of the springs adjusted by the screws b on the top of standards B. The clothes are then passed between the rollers the same as with other wringers; or, instead of deferring the wringing operation until all the clothes are washed, they may be made to pass directly between the wringer-rolls after leaving the rubbing-rollers, which will save considerable unnecessary labor and facilitate the operations.

Power may be applied to roller I by other means than the hand-crank.

It is also evident that the rubbing-rollers may be provided with plain, elastic, or any variety of roughened surfaces in place of the longitudinally-corrugated surfaces described.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a combined washing and wringing machine, the combination, with a wash-board and frame attached thereto in a yielding manner, of a series of rubbing-rolls provided with cranks at opposite ends, and wringing-rolls, one of which is provided with cranks at opposite ends, said rubbing and wringing rolls mounted in said frame, and pitmen connecting the cranks of all the rubbing-rolls with the cranks of the wringing-roll, substantially as set forth.

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