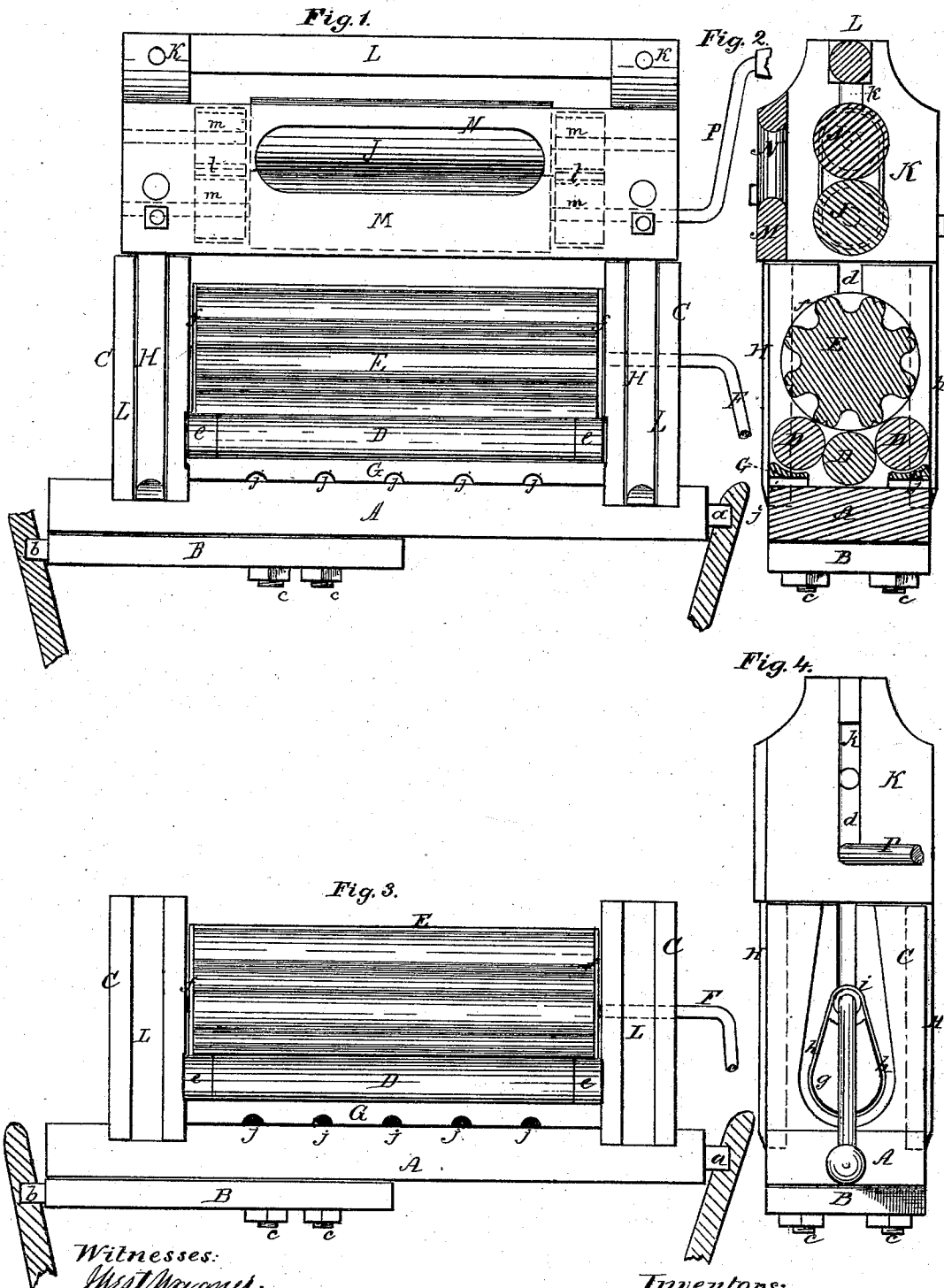


W. P. BROOKS & J. D. HARTZELL.
Washing-Machines.

No. 138,374.

Patented April 29, 1873.



Witnesses:
West Wiggins.
Aug. H. Girard.

Inventors:
Willard P. Brooks
Jno. D. Hartzell,
By Johnson, Hancock & Co.
Their Attorneys

UNITED STATES PATENT OFFICE.

WILLARD P. BROOKS AND JOHN D. HARTZELL, OF OZAWKIE, KANSAS.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **138,374**, dated April 29, 1873; application filed August 30, 1872.

To all whom it may concern:

Be it known that we, WILLARD P. BROOKS and JOHN D. HARTZELL, of Ozawkie, in the county of Jefferson and State of Kansas, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification:

Our invention relates to that class of roller washing-machines used in connection with the ordinary wash-tub, and made attachable and removable therefrom; and our said improvement consists in constructing the fluted roller with bearing end plates, in connection with metal bands, on the ends of the lower rollers, to preserve the ribs of the roller from wear or rubbing upon the series of lower rollers; also, in the arrangement of rubber spring-bands, over fixed blocks, at each end of the supporting-frame, and spools fitted upon each end of the ribbed roller axis, so that the bearings of the latter turn within the fixed band-spoofs; also, in the arrangement of grooved bars, beneath the bed-rollers, to prevent the clothes from passing around the rollers, to brace the end blocks, and direct the water from the washer upon the clothes as they pass into and out from between the rollers.

In the accompanying drawing, Figure 1 represents a side elevation of the washing-machine and wringer as applied for use. Fig. 2 represents a cross-section thereof. Fig. 3 represents the washing-machine in elevation, and Fig. 4 an end view thereof.

The washing-machine consists of a bed-piece, A, of a length sufficient to span the top of the tub, and is provided at one end with projecting-pins *a*, and at the other with an extensible slide, B, on its under side, also, provided with projecting-pins *b*, the slide having slots to allow it to be extended or drawn in and secured by screw-bolts *c* to the bed-piece A, when the pins *a* and *b* are inserted in the holes in the sides of the tub near its top, and thus support the washer and wringer directly within the tub. Near each end of this bed-piece A rise end blocks C C, secured in any suitable manner, and between which a bed of rollers, D, is arranged having their bearings within said blocks. A large fluted roller, E, is arranged to bear upon the bed of rollers D, and its journals are fitted within

vertical openings *d* in the blocks C C, to allow it to rise and fall as the clothes are fed between the upper and lower rollers. The ribs of the roller are each provided with a groove of less depth than those between the ribs, to form a better squeezing-surface upon the clothes. The ends of the bed-rollers D (there being three in the example shown) are each provided with a zinc band, *e*, and the ribbed roller E has a zinc plate, *f*, on each end equal to the diameter of the roller, and arranged to bear upon the bands *e* of the bed-rollers, the ribbed roller being a little shorter than the bed-rollers for that purpose, and thus protect the ribs from wear by supporting the roller by its plates *f*, directly upon the ends of the bed-rollers. The bands *e* also serve to prevent the rollers from splitting. The outer side of each end block C is recessed, so as to leave a solid projection, *g*, below the axis of the roller to receive a rubber band, *h*, which also embraces a spool, *i*, on the projecting ends of the roller axis, the spools *i* and the projections *g* being slightly concave to hold the bands *h* in place, as they give to the rising and falling of the roller. The spools *i* are free upon the axis, and do not turn with the roller, so that the rubber bands have no motion, and are therefore rendered more durable, and the spools can be turned as the axis opening wears to adjust them upon said axis. A crank, F, extends from the right end of the axis by which to operate the washing-machine. Between the outside bed-rollers D and the bed-piece A are arranged strips or bars G, having grooves *j* on their under sides to let out the water at the sides of the bed-piece A from the clothes, and cause it to fall directly on them again as they are drawn in at one side and forced out at the other, thereby gaining the benefit of the action of the water from the machine upon the clothes during the operation.

The wringer when used is applied to and forms a part of the washing-machine, being fitted by legs H into grooves L in the sides of the end blocks C C, so as to be securely locked thereto with the wringing-rollers J directly above the washing-roller.

Having described my invention, I claim—

1. The ribbed and bed rollers D E, provided with end plates *f* and bands *e* to support

the said ribbed rollers, as described, whereby the ribs of the roller E are protected from wear, as set forth.

2. The fixed projections *g* of the head-blocks C, and the spools *i* on the roller axis to receive and hold the rubber bands *h* without rolling motion, and thereby save them from wear, as described.

3. The longitudinal bars G, grooved on their under sides, and arranged beneath the bed-rollers D, to let out the water from said roll-

ers, prevent the clothes from being drawn under them, and to brace the end pieces O C, as described.

In testimony whereof we hereunto set our hands this 22d day of August, A. D. 1872.

WILLARD P. BROOKS.

JOHN D. HARTZELL.

Witnesses:

S. W. HUMPHREYS,

THEO. G. PARHAM.