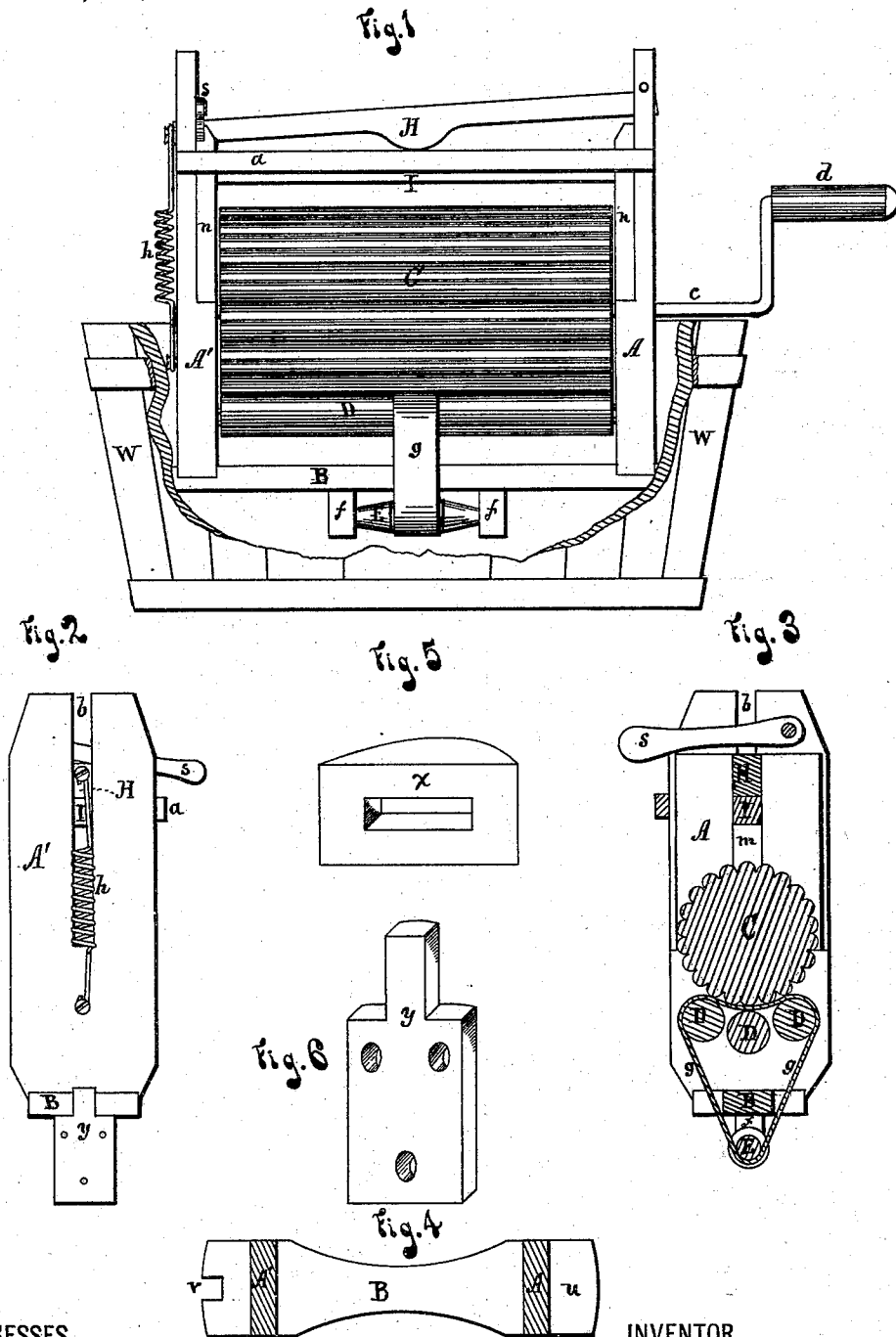


H. K. PIERCE.
 WASHING-MACHINE.

No. 173,997.

Patented Feb. 22, 1876.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY K. PIERCE, OF LEXINGTON, MICHIGAN.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **173,997**, dated February 22, 1876; application filed November 10, 1875.

To all whom it may concern:

Be it known that I, HENRY K. PIERCE, of Lexington, in the county of Sanilac and State of Michigan, have invented a new and valuable Improvement in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a front elevation of my device, with a portion of tub broken out. Fig. 2 is a side view, showing the lever-spring and the attaching-blocks to the tub. Fig. 3 is a diametrical cross-section of my device. Figs. 4, 5, and 6 are each detail views of the same.

My invention is a washing-machine, and consists in the novel construction and arrangement of the same, embracing the following elemental features: a wooden frame, consisting of two slotted uprights suitably supported and braced apart by cross-bars; a fluted cylinder revolving upon an axial shaft, to which motion is imparted by a handled winch or crank, and which also slides up and down within the slots of said uprights; three smooth rollers, so adjusted underneath said cylinder that they are all revolved at the same time by the pressure of the cylinder upon their upper revolving surface; a revolving spool, supported between hangers projecting below the basal cross-bar of aforesaid frame, over which spool and said rollers runs a continuous apron or belt; a pressing contrivance upon said axial shaft, embracing a lever-bar, one end pivoted into one of said uprights, and the other end extending across said frame, held down by a spiral spring attached to the outside of the other upright, which lever-bar presses down another bar, the ends of which press blocks, one sliding vertically in each upright, down upon said shaft; a hand-lever, pivoted just over the spring end of said lever-bar; all of which, and their purposes, are hereinafter more fully described, and illustrated by the accompanying drawings, in which the same letters designate identical parts of my device in the different figures respectively.

The letters A A' represent the aforesaid uprights. The letter *a* represents the upper cross-bar, and the letter B the said basal cross-bar, of the aforesaid wooden frame. Said uprights are of suitable height, width, and thickness, suitably jointed into said basal bar B, and braced by the cross-bar *a*, near the top of said frame, as shown. They have each a slot, *b*, cut through its thickness, and about half-way down its height, in which the aforesaid lever-bar is moved, and the pressing-bar, box, and axial shaft slide up and down. The letter C represents the said fluted cylinder, of wood or other suitable material, fluted upon its surface, as shown, or it may be smooth, and revolved upon an axial shaft, *c*, which is included and slides up and down within said slots *b*, and to which motion is imparted by a crank or handled winch, *d*. The letter D represents the three said rollers, of wood or other suitable material, with smooth surfaces, and so adjusted within said frame immediately beneath the cylinder C, by means of suitable axial pins turning within their bearings in said uprights A A', that their upper revolving surfaces are always equally and simultaneously pressed against by the lower revolving surface of said cylinder, as shown. The letter E represents said spool, of wood or other suitable material, of suitable size and length, and revolving upon axial pins between the projecting hangers *f*, as shown. Over said spool and over said rollers, between the latter and the fluted cylinder C, runs an apron, *g*, which is a ribbon or belt made of any suitable material, width, or thickness, and so fittingly stretched and spliced that it will run continuously, as aforesaid, whenever said cylinder C is set in motion. By this contrivance clothing or such material is raised from the wash-tub and passed between said cylinder and rollers, in the process of washing. The letter H represents a lever-bar, one end of which is pivoted within the slot *b* of the upright A, the other end extended through the corresponding slot of the upright A', where it is held down by the spiral spring *h*, one end of which is attached to the end of said lever-bar and the other to the outside of the upright, as shown. Said lever-bar is formed into a projection at its middle lower surface, so as to press upon the middle of the

bar I, each end of which slides up and down within its slot *b*, and presses in turn a block, *m*, on either side, also sliding, as aforesaid, either in grooves in the said slots, or within the guide-bars *n*, as shown, down upon said shaft of the cylinder C. Through this contrivance the pressure of the spring *h* is brought finally to bear upon said axial shaft, to press said cylinder upon said rollers, or any article passing between them. A suitable hand-lever, *s*, is pivoted to the inside of the upright A', just over and across the spring end of the lever-bar H, to add pressure at will to that of said spring *h* upon the shaft *c*, as aforesaid. The basal cross-bar B has both ends extended beyond the uprights of said frame, one end provided with a tongue *u*, and the other with a slot or groove, *v*, as shown, said tongue and groove to fit each respectively into and over a corresponding mortise, *x*, and a tongue, *y*, made each in a separate block, (shown by Figs. 5 and 6,) which is fastened, one opposite to the other, to either side within any wash-tub of suitable size and capacity. Said contrivance is to firmly secure said frame and its contents within said tub when my machine is in use; besides, to allow said frame and tub to be detachable from each other when not in use, as aforesaid.

The operation of my machine, thus constructed and arranged, is as follows: The clothing or other articles to be cleansed are

placed within said tub with the suds, and the said handled winch *d* turned. This causes the said articles to be raised on one side upon the said apron *g*, passed between the cylinder C and the rubbing-rollers D, and down on the other side into the tub again; to be again taken up and passed on the said circuit, as before, so long as may be desired; thereby cleansing said articles thoroughly and quickly, without any unnecessary wearing or tearing of the material. The said articles may also be wrung or pressed dry, by putting on additional pressure to the cylinder C, by means of the hand-lever *s*, as aforesaid, and by passing the articles after the said pressure immediately out of the tub; therefore—

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

In a washing-machine, the combination of the cylinder C, the spring-lever H, the hand-lever *s*, the triple rollers D, the hangers *f*, the spool E, and the apron *g*, arranged in the frame A A' B, substantially as and for the purposes specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HENRY K. PIERCE.

Witnesses:

A. G. MACKAY,
W. H. LONDON.