2 Sheets--Sheet 1.

D. B. POND.

Washing-Machine.

No. 168,285. Patented Sept. 28, 1875.

Fig 1

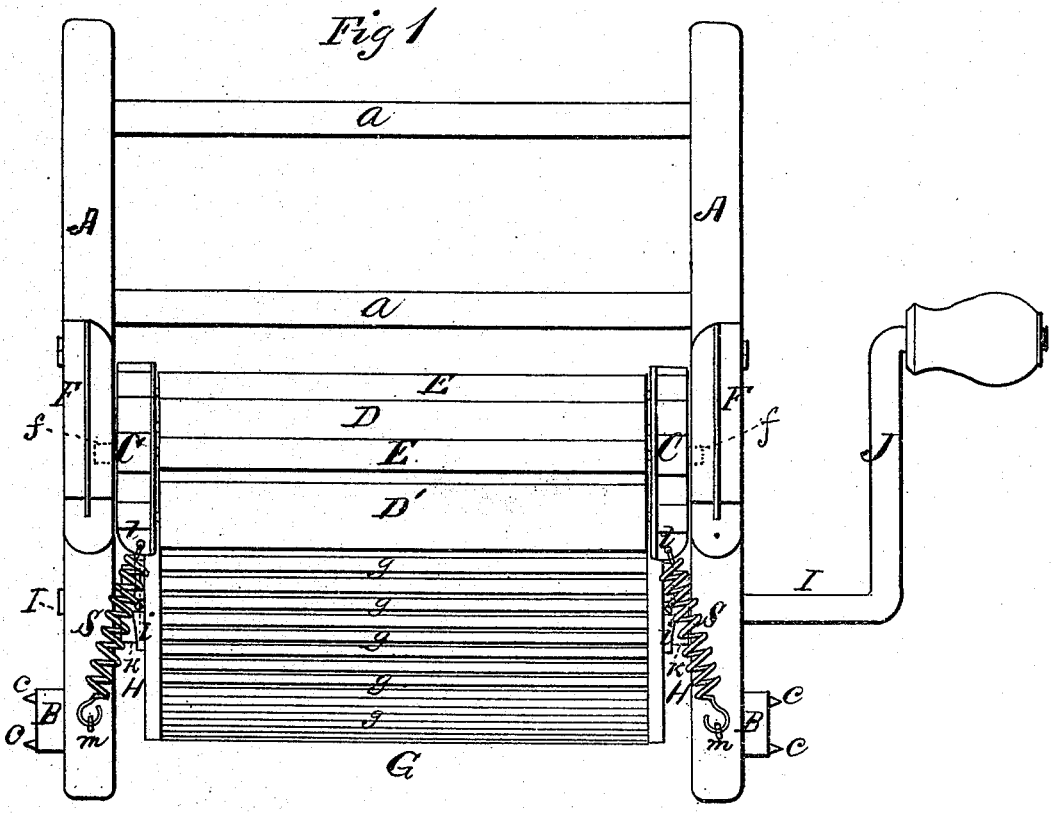
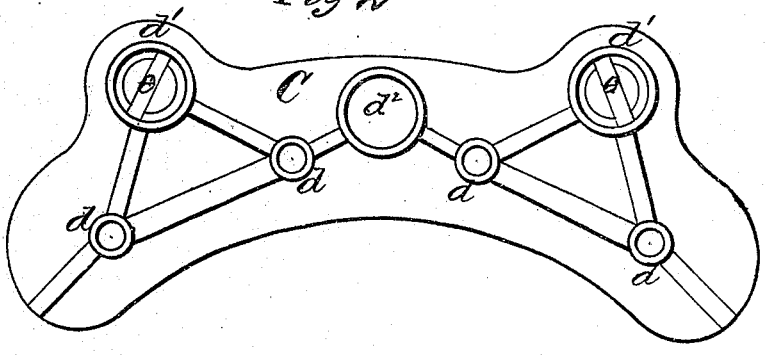


Fig 2



WITNESSES

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2 Sheets--Sheet 2.

D. B. POND.

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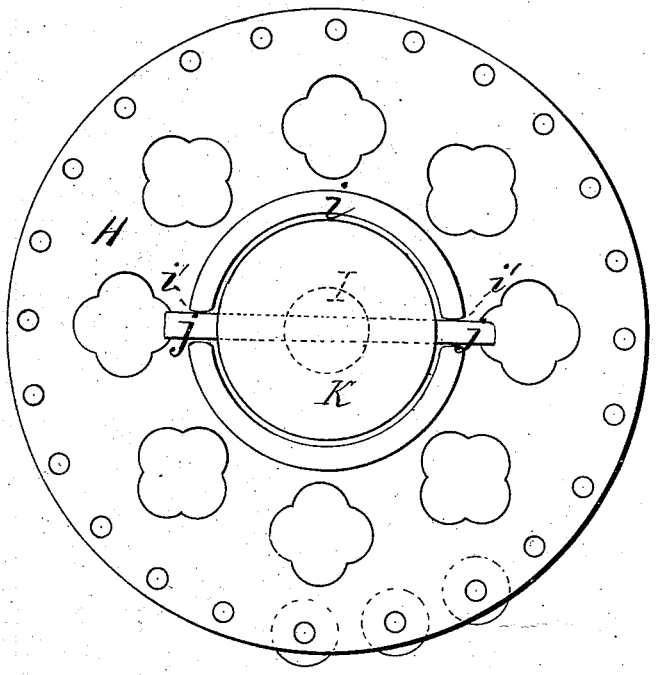
Fig 3



WITNESSES

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UNITED STATES PATENT OFFICE.

DANIEL B. POND, OF WOONSOCKET, RHODE ISLAND.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **168,285**, dated September 28, 1875; application filed February 27, 1875.

To all whom it may concern:

Be it known that I, DANIEL B. POND, of Woonsocket, in the county of Providence and State of Rhode Island, 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 view of my washing-machine. Figs. 2 and 3 are detail views of the same.

This invention has relation to improvements in that class of washing-machines for which Letters Patent of the United States were granted to me, bearing date on May 13, 1873, and numbered 138,928, wherein was claimed a washing-machine having spring-rollers, and a cylinder, consisting of shouldered ends, and a suitable reticulated material connecting the same; and the nature of the invention consists, mainly, in combining with the said spring-rollers a cylinder, consisting of spaced cylindrical rods, socketed into circular ends, to prevent rotation, whereby a more durable, as well as easily-replaced, material is substituted for the corrugated reticulated covering, as will be hereinafter more fully explained.

In the annexed drawings, A designates the uprights or handles of my improved washer, which are suitably connected and strengthened by brace-rods *a*. These uprights are each provided with cylindrical journals, which are adapted to be received into and rotate in bearing-plates B, which are adapted to be rigidly secured to the inside of a wash-tub, and are held against rotation by means of projections or lugs *c*, which are driven into the staves of the tub. C designates the end plates of the upper vertically-yielding series of rollers, consisting of two interior wooden rollers, D, and two exterior rollers, D′, the latter being of rubber, or of wood covered with rubber, or other elastic yielding material. These rollers are journaled into sockets *d* in the end plates, arranged in a segment of a circle, the said plates being held together by means of wooden tie-rods E, having cylindrical tenons in their ends, which are adapted to be received into sockets d^1, above sockets *d*. Tie-rods E are rigidly secured to end plates C by means of wedges *e*, which are driven into the grooved outer ends of the said rods, spreading the same, and effectually preventing their casual withdrawal or escape therefrom. End plates C are also provided with centrally arranged—preferably wooden—bars or journals *f*, which are adapted to be received into sockets d^2 in the said plates, and to be secured therein, as above described, or in any other suitable manner. These journals are inserted from above into guide-plates F, rigidly secured upon the edges of uprights A, as shown in Fig. 1. G designates a cylindrical roller, having its bearings in uprights A, and arranged below, and in close proximity to, the upper rollers D D′, fitting snugly into the concavity of the same, as shown in Fig. 1. This cylinder consists of a number of flexible cylindrical wooden rods, *g*, and two circular metal disks, H, the former being socketed into the latter in the following manner, to wit: Disks H are each provided with a number, of peripherally-arranged cells *h*, each cell being in the shape of a segment of a cylinder. Disks H are held against outward displacement with relation to each other, which would allow rods *g* to fall out of their cells, in the following manner, to wit: A continuous shaft, I, is passed through registering central perforations in the said disks, a circular flange, *i*, being formed upon the outer surfaces of the latter, concentric with the said perforations, notches *i′*, diametrically opposite each other, being then cut in the said flange, as shown in Fig. 3. A pin, *j*, is then passed through notches *i′* into shaft I, at each end of the said cylinder, rigidly keying it upon its shaft against rotation, independent thereof, and effectually holding the end disks against outward displacement, thus locking the rods *g* rigidly into their cells. Roller G is caused to rotate by means of a crank-arm, J, and in order to prevent flange *i* of disks H from cutting into uprights A during such rotation, a—preferably wooden—roller, K, is keyed upon shaft I, between disks H and the said uprights, as shown in Fig. 3.

In using my improved washing-machine, the articles to be washed are held between

roller G and rollers D D′. The former is then actuated and the garment drawn in between them, when the water in the same will be expressed, carrying with it the dirt, and will fall down through the spaces between rollers *g* into the tub, thus preventing the soil which has been expressed from being subsequently ground into the garment. The pressure of rollers D D′ upon roller G is obtained by means of helical springs S, detachably hooked into lugs *l* of end plates C, and into eyes *m*, rigidly secured to bars A, as shown in figure. By this means a yielding, though adequate, pressure for the clothing is obtained, and, owing to this yielding, the frequent breaking or crushing of buttons is effectually obviated.

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

1. The cylinder G, composed of detachable spaced cylindrical rods *g*, socketed into metallic end disks H, in combination with rubber or rubber-covered rollers D′ and intermediate wooden rollers D, detachably secured to segmental end plates C, substantially as specified.

2. The locking-pin *j*, in combination with continuous shaft I, end disks H, having a diametrically-notched flange, *i*, and detachable cylindrical rods *g*, substantially as specified.

3. The open-ended vertically-arranged guide-plates F, in combination with the journals *f* of end plates C of the yielding and detachable pressure-rollers D D′, substantially as specified.

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

DANIEL B. POND.

Witnesses:

WILLIAM H. BENTON,

GEORGE A. WILBUR.