D. & M. PALMER & C. E. BRIGGS.

Washing-Machine.

No. 166,888. Patented Aug. 17, 1875.

Fig 1

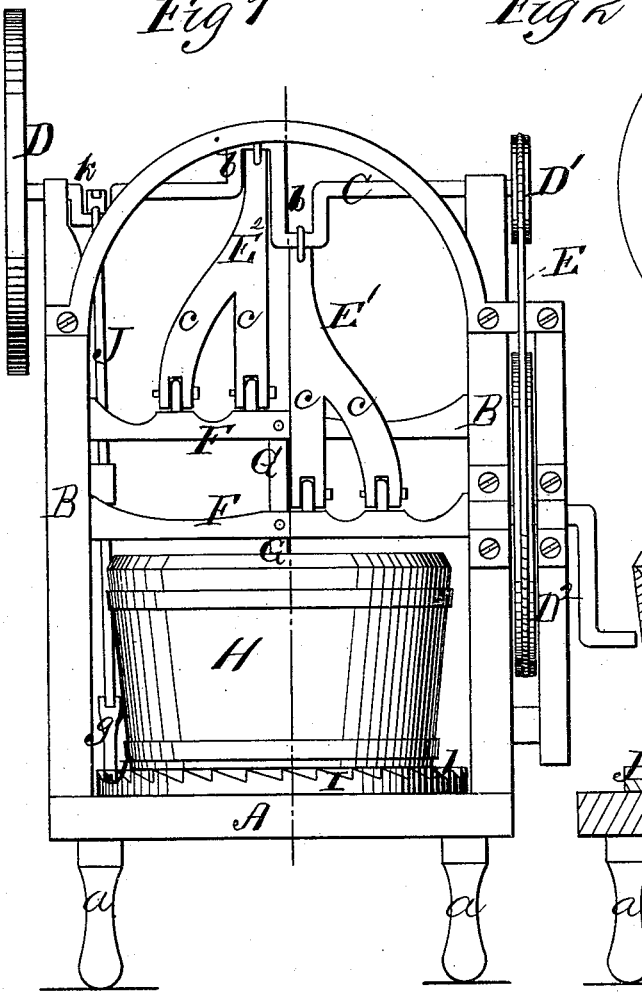


Fig 2

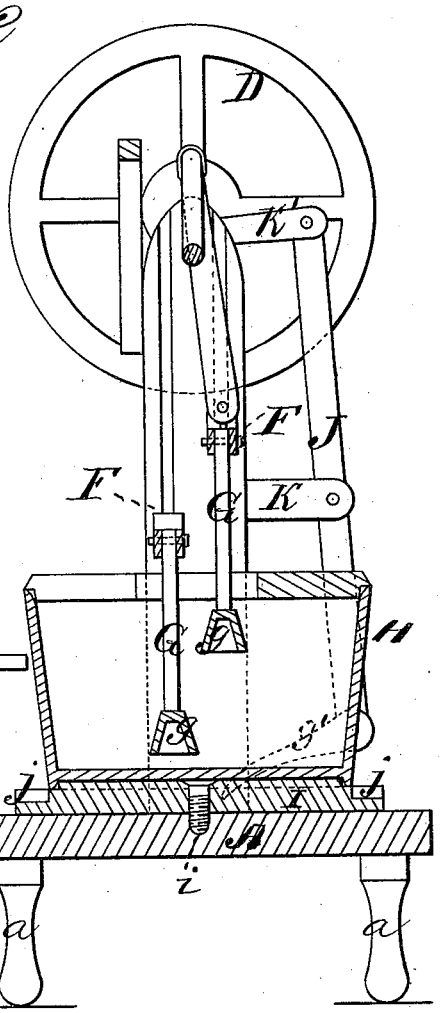
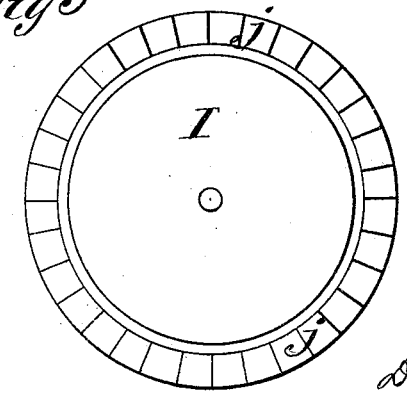


Fig 3



WITNESSES

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UNITED STATES PATENT OFFICE.

DANIEL PALMER, MAHLON PALMER, AND CHARLES E. BRIGGS, OF IOLA, KANSAS.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **166,888**, dated August 17, 1875; application filed June 5, 1875.

To all whom it may concern:

Be it known that we, DANIEL PALMER, MAHLON PALMER, and CHAS. E. BRIGGS, all of Iola, in the county of Allen and State of Kansas, have invented a new and valuable Improvement in Washing-Machines; and we 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 our washing-machine, and Fig. 2 is a vertical sectional view of the same. Fig. 3 is a plan view of the rotary support for the tub.

This invention has relation to improvements in clothes-washing machines wherein a number of cup-shaped reciprocating pounders are the direct agents employed; and the nature of the invention consists in combining with transverse cross-heads, to which the pounder-shafts are attached, which cross-heads are vertically movable in guides on a suitable frame, bifurcated pitmen pivoted to the said cross-heads, and operated by double cranks upon a rotating shaft, and a vibrating lever, provided with a pawl, which engages with the rack-teeth of a rotary tub-support, as will be hereinafter more fully set forth.

In the annexed drawings, A designates a platform, supported by legs *a*, and having uprights B erected upon its opposite edges. These uprights afford bearings in their upper ends for a two-throw shaft, C, having upon one end a suitable fly-wheel, D, and upon its other end a grooved pulley-wheel, D^1. This shaft is caused to rotate rapidly by means of an endless belt, E, passing over pulley-wheel D^1 and a main actuating pulley-wheel, D^2, which has its bearings in the side of the upright B. E^1 E^2 represent pitmen, which are connected in any suitable manner to double cranks *b* of shaft C, and are pivoted to vertically-movable cross-heads F, to which the beater-shafts G of my improved machine are rigidly but detachably secured. Pitmen E^1 E^2 are bifurcated, and each of their arms *c* are pivoted independently of the other to the cross-heads F, which are thus held in a fixed horizontal position; and the said cross-heads being guided in uprights B during their vertical movements, and being held to the horizontal position, as above described, they will be effectually protected from being jammed during the operation of washing the clothes. The lower ends of shafts G are provided with beaters *g*, which are hollowed out upon their under sides, as shown. H represents a wash-tub of the usual well-known construction, the lower edge of which is adapted to be received into a groove in a rotating disk, I, so that its bottom will rest upon the same, and be prevented from movement independent of the said disk. Disk I is adapted to rotate horizontally on platform A by means of a central journal, *i*, which is adapted to be received into and find its bearings in the said platform, and it is provided with a circular ratchet, *j*, with the teeth of which a gravitating-pawl, *g'*, pivoted to the end of a vertically-vibrating lever, J, engages. This lever finds its fulcrum in an arm, K, projecting from upright B, and its upper end is connected pivotally to a double crank, *k*, on shaft C, by means of a connecting-rod, K'.

During the operation of the beaters, which preserve their position in relation to uprights B B, the tub, resting upon disk I, will be intermittently rotated through the medium of pawl *g'*, lever J, and crank K, so that the clothing arranged in the wash-tub will have fresh surfaces constantly exposed to the action of the beaters, and, owing to their under surfaces being hollowed out or concaved, the saponaceous compound dissolved in the water in the tub will be forced through the fabric, carrying along with it all impurities, and quickly removing the same.

In practice we may, if we so elect, provide the wash-tub with a stop-cock or faucet, by means of which the water may be drawn off from the said tub and be replaced with fresh water. This arrangement will be peculiarly appropriate when the clothing to be cleansed

is unusually dirty, so that several washings will be necessary to effect a thorough cleansing.

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

The alternately-reciprocating pounder-shafts G and their cross-heads F, moving vertically in guides, in combination with the crank-shaft C, pitmen E^1 E^2, vibrating lever J, provided with pawl *g*, and the rotary tub and its support I, provided with a rack, all operating substantially as described.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

DANIEL PALMER.
MAHLON PALMER.
CHARLES EDWARD BRIGGS.

Witnesses:
JAMES C. MURRAY,
G. W. APPLE.