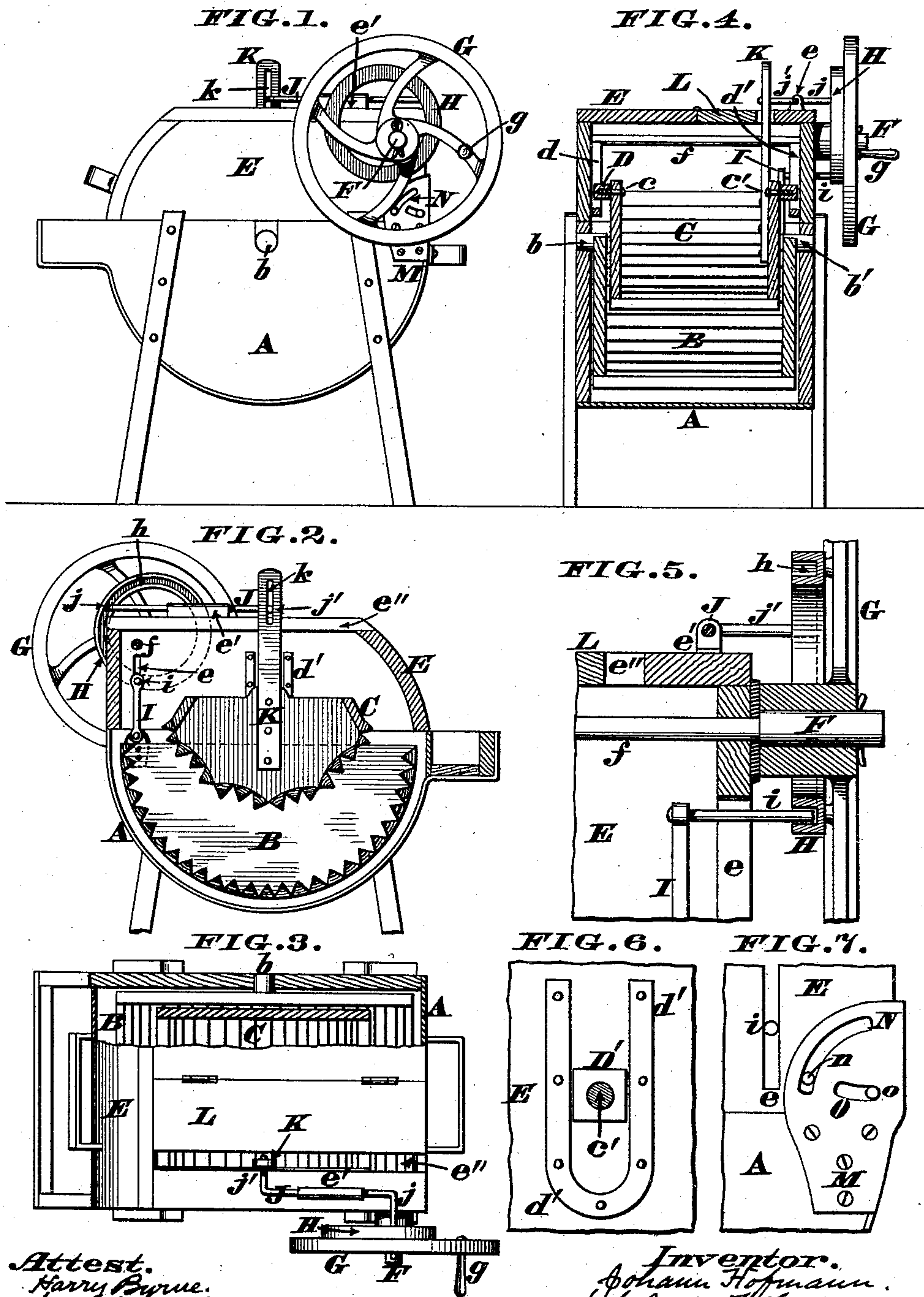


(No Model.)

J. HOFMANN.
WASHING MACHINE.

No. 486,468.

Patented Nov. 22, 1892.



Attest.
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UNITED STATES PATENT OFFICE.

JOHANN HOFMANN, OF CINCINNATI, OHIO, ASSIGNOR TO MOLLENKAMP & BINNE, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 486,468, dated November 22, 1892.

Application filed February 1, 1892. Serial No. 419,903. (No model.)

To all whom it may concern:

Be it known that I, JOHANN HOFMANN, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which form part of this specification.

This invention relates to those washing-machines which comprise a semicylindrical casing, a concave rubber vibrating within said casing, and a convex rubber swinging within said concave rubber; and my improvement includes a novel combination of devices for operating these two oscillating members of the machine, the details of said combination being hereinafter more fully described, and then pointed out in the claim.

In the annexed drawings, Figure 1 is a side elevation of my improved washing-machine. Fig. 2 is a vertical section of the same, taken in the plane of the lid-slot e'' , the convex rubber being shown in the elevated position it would assume when the tub is filled. Fig. 3 is a sectionized plan of the machine. Fig. 4 is a vertical section taken in the plane of the rubber-pivots. Fig. 5 is an enlarged vertical section of a portion of the machine, taken in the plane of the fly-wheel shaft. Fig. 6 is an enlarged elevation of one of the guides for the convex rubber, the pivot thereof being sectioned. Fig. 7 is an enlarged elevation of one of the hinges of the machine.

A represents the semicylindrical casing or tub of my washing-machine, and $b b'$ are journals in the sides thereof to support the concave rubber B, within which latter is adapted to play the convex rubber C, whose pivot-bearings $c c'$ are applied to non-circular slides $D D'$, adapted to traverse guides $d d'$, attached to the inner sides of lid E. This lid has a stud-shaft F projecting from it and near the hinged end of said lid, which shaft may have a prolongation f extending completely across the machine. Journaled upon this shaft is a fly-wheel G operated by a handle g and carrying a ring H, whose inner surface is grooved, as seen at h in Fig. 5. This ring must be so arranged with reference to the fly-

wheel as to form an eccentric, the groove of which is engaged by a pin i , projecting laterally from the upper end of a link I, the lower end of said link being jointed to the concave rubber B for the purpose of rocking it on the bearings $b b'$. Pin i plays up and down within a vertical slot e of the lid, a guide e' being secured upon said lid to receive a rod J, having at one end a lateral bend j , that engages with the eccentric groove h , and at its other end an oppositely-bent portion j' , that traverses the longitudinal slot k of lever K. The lower end of this lever is attached to the convex rubber C, while its upper or slotted portion vibrates within the slot e'' of the lid or cover, a hinged flap L being located at one side of said slot, as more clearly seen in Fig. 3. This flap permits access to the tub without opening the main lid of the machine, which lid is hinged to the tub A in the manner seen in Fig. 7. Here M represents a plate, the lower portion of which is fastened to the side of the tub, its upper part being slotted at N O to receive pins $n o$, projecting from the lid E. Of these slots the longer one N is concentric with the pin o when the lid is closed, but the shorter slot O is concentric with the other pin n when said lid is opened.

From the above description it is evident that by turning the fly-wheel G the pin i will be caused to play up and down within the slot e , thereby rocking the concave rubber B through the medium of link I. It is also evident that simultaneously with this rocking of rubber B the fly-wheel eccentric H is causing the rod J to reciprocate within the guide e' , the result being to vibrate rubber C by means of the bend j' of said rod operating within the slot k of lever K. Consequently these two rubbers are so vibrated as to produce the most thorough action on all the articles placed in the tub, and as this operation is accomplished by a turning motion the machine can be worked with the least possible exertion. Furthermore, as the slides $D D'$ play freely within the guides $d d'$, and as the pivots $c c'$ of rubber C are applied to said guides, it is apparent this rubber will readily and automatically adjust itself to the exact quantity of clothes or other articles in the tub and yet be constantly in gear with the driving devices

H *h* on account of the connecting-rod J having its bend *j'* inserted in the slot *k* of lever K.

When lid E is opened, the pin *n* traverses the slot N and as soon as it comes in contact
5 with the upper end thereof the other pin *o* advances and strikes against the front end of slot O, the result of these combined movements being to permit the lid or cover E to be thrown
10 so far back of a perpendicular as to prevent its accidental closure. This opening of the lid carries all its attachments therewith and affords unobstructed access to the clothes, &c., placed in the machine.

I claim as my invention—

15 The combination, in a washing-machine, of a tub A, the concave rubber B, journaled therein at *b b'*, the lid E, hinged to said tub and having guides *d d'*, the convex rubber

C, having pivots *c c'* applied to slides D D', traversing said guides, a lever K, provided 20 with a slot *k* and projecting from this rubber C, a rod J, having one bend *j'* inserted in the slot *k* and another bend *j* engaged with the groove *h* of an eccentric H, a shaft E, upon which said eccentric is mounted, and 25 a link I, having a pin *i*, that engages with said groove *h*, the lower end of said link being coupled to the concave rubber B, all as herein described, and for the purpose stated.

In testimony whereof I affix my signature in 30 presence of two witnesses.

JOHANN HOFMANN.

Witnesses:

JAMES H. LAYMAN,

ALFRED N. DAVIES.