(No Model.)

G. W. HATCH.

WASHING MACHINE.

No. 419,519. Patented Jan. 14, 1890.

FIG. I.

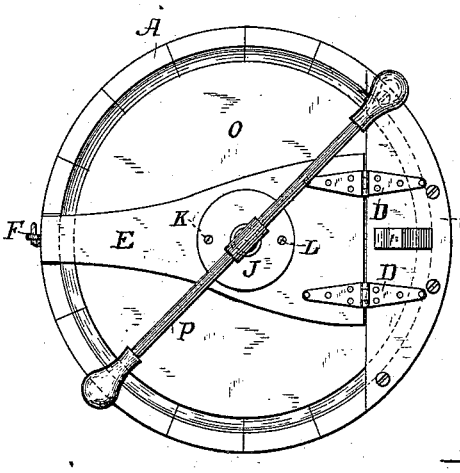


FIG. II.

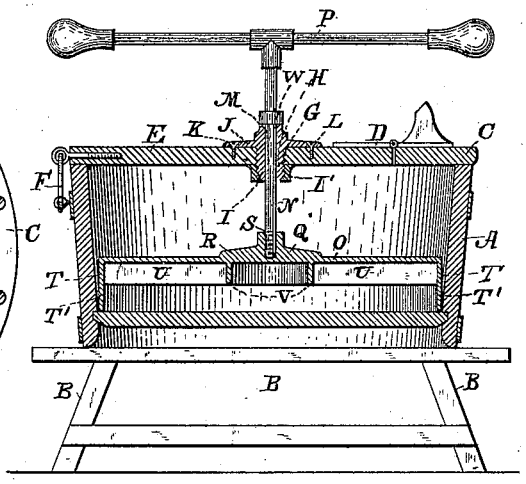


FIG. III.

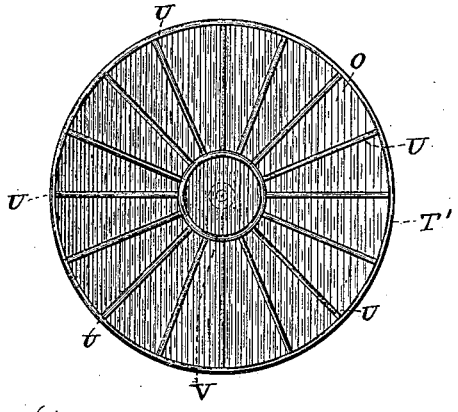
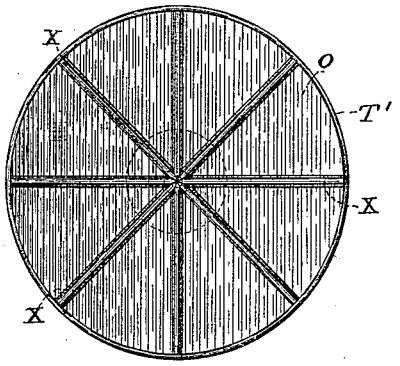


FIG. IV.



Attest:
Geo. T. Smallwood.
Emma Arthur

Inventor
George W. Hatch.
By Knight Bros.
Attys

UNITED STATES PATENT OFFICE.

GEORGE W. HATCH, OF SEATTLE, WASHINGTON.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 419,519, dated January 14, 1890.

Application filed March 17, 1888. Serial No. 267,536. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. HATCH, a citizen of the United States, residing at Seattle, in the county of King and Territory of Washington, have invented certain new and useful Improvements in Washing-Machines, of which the following is a full, clear, and exact description.

This device relates to a washing-machine wherein a rotary disk is employed to cleanse the clothes, in contradistinction to those washing-machines in which the clothes are rubbed.

My invention consists, essentially, of a disk provided with radial ribs on its under side, on which disk is a peripheral flange extending below the ribs.

In order that my invention may be clearly understood, I will now describe the same with reference to the accompanying drawings, in which—

Figure I is a plan view of my washing-machine. Fig. II is a vertical section of a washing-machine embodying my invention. Fig. III is an under side view of the disk; and Fig. IV is an under side view of a modification of the latter.

Referring now to the drawings, in which like reference-letters indicate like parts, A represents a tub supported upon a supporting-frame B. The bottom of the tub is plain on its upper side, being provided with no projections.

C represents a plate in the form of a segment of a circle, secured to the upper edge of one side of the tub. To this plate C is hinged, by means of strap-hinges D, a flap or cross-piece E, the free end of which rests on the opposite side of the tub, and is secured to the tub by a suitable hook or catch F. The cross-piece E is provided with a hole G, in a line with the center of the tub, and within this hole is screwed a hub H, provided with a screw-threaded boss I, said hub also having an annular flange J, provided with perforations K, wherein may be inserted screws L, which are screwed into the top of cross-piece E. The boss I extends below the bottom of the cross-piece E to permit the nut I′ to be screwed thereon. The hub H and its boss I are provided with a central bore M, within which the shaft N of the disk O works. This shaft N is provided with a T-handle P. On top of the disk centrally thereof is a socket-piece Q, provided with a broad flange R.

Within the screw-threaded socket S of the socket-piece Q is screwed the screw-threaded end of the shaft N.

The disk O is provided with a peripheral downturned flange T, having its bottom edge rounded, and this flange extends somewhat below (preferably about an inch) the radial ribs U, extending outwardly from a concentric inner ring or flange V, also provided with a rounded bottom edge, and which does not extend below the ribs, as does the outer flange, but is flush, or nearly so, with the bottoms of the ribs. These ribs are provided with parallel sides, and they extend perpendicularly from the disk O. Onto the shaft N is welded a nut W, which rests on top of the hub H, so as to support the disk above the bottom of the tub when not in use. The form of disk described is preferably cast of metal, with its ribs, flanges, and socket-piece integral therewith; but it is evident that the parts may be of wood, separately and secured together.

In the modification shown in Fig. IV the disk and its flanges are made of sheet metal—such as zinc—and the ribs are also cut out of the same or similar material, being bent from end to end and provided with flanges X, whereby they may be soldered to the under side of the disk. The inner ends of these sheet-metal ribs are so formed that they fit snugly against each other, so that no water can enter within these hollow ribs.

The principle of my invention is as follows: The high circling flange of the disk, which extends around and below the ribs, gathers under the disk a large quantity of air, which is condensed thereunder by reason of the superincumbent weight of the water, which in practice should cover the disk to the depth of at least an inch. When the disk is rotated back and forth, the condensed air thereunder is manipulated so that there is a combined sucking and forcing action,

which thoroughly removes the dirt from the clothes. It should be understood that this disk is to be operated on a horizontal plane, and should not be reciprocated up and down. I also dispense with the rubbing action objectionable to such machines by adopting the air-forcing principle. The rubbing of the clothes is objectionable, in that they are very frequently torn and are always worn out to a greater or less extent by the great friction.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

In a washing-machine, the combination of a tub having a bottom with a plain upper surface, a rotary disk fitting in said tub provided with radial ribs on its under side, and a wide peripheral flange extending considerably below the ribs, substantially as shown and described.

GEO. W. HATCH.

Witnesses:
ALEX. MAITLAND,
W. B. YOUNKIN.