

C. H. De Knight,

Washing Machine.

No. 106,137.

Patented Aug. 9. 1870.

fig: 1.

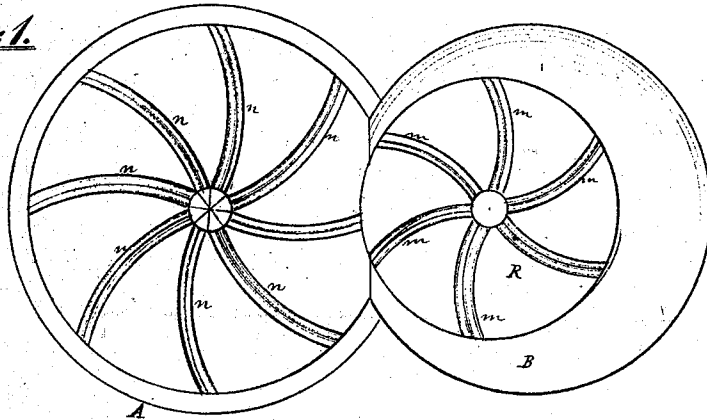
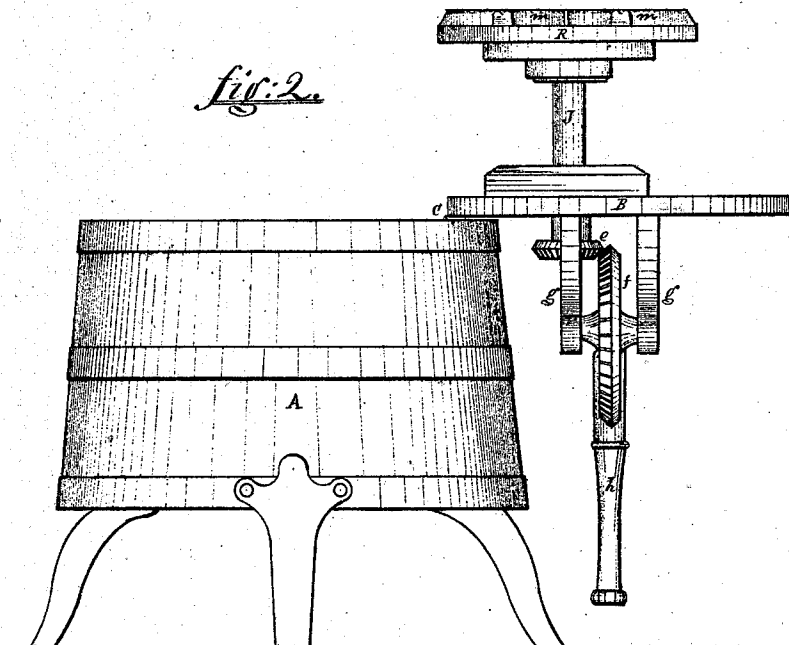


fig: 2.



Witnesses:

A. C. Johnston
J. Johnston Jr

Inventor

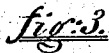
Charles H. De Knight
By his attorney J. Johnston

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United States Patent Office.

CHARLES H. DE KNIGHT, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 106,137, dated August 9, 1870.

IMPROVED WASHING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, CHARLES H. DE KNIGHT, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in an arrangement of a rubbing-disk within a wash-tub, the lower surface of said disk, and the upper surface of the bottom of the tub, being provided with a series of curved rubbing-strips, said disk being pivoted to a hollow vertical shaft, in which is placed an adjustable spiral spring, which imparts a downward pressure to the rubbing-disk, which has a rotating reciprocating motion given to it through the medium of said hollow vertical shaft, driven by suitable driving-gear.

To enable others skilled in the art to make and use my invention, I will proceed to describe more fully its construction and operation.

In the accompanying drawing, which forms part of my specification—

Figure 1 is a top view of my improvement in washing-machines, representing the lid and rubbing-disk turned back.

Figure 2 is a side view of the same.

Figure 3 is a vertical section of the machine, when cut through at line *y* of fig. 4.

Figure 4 is a side view of the washing-machine, representing the arrangement of the driving-gear when the lid is closed down on the tub and the rubbing-disk within it.

In the accompanying drawing—

A represents the tub of the washing-machine, and B its lid, which is hinged at O to the tub.

On the upper side of the lid B are attached two supports or bearings, *g*, for the axis of the driving-wheel *f*, which gears into a small pinion, *e*, secured on the upper end of a hollow shaft, J, provided with two slots, *i*, in which moves a pin, X, which is used for holding the rubbing-disk R on the hollow shaft J, in the bore of which is placed a spiral spring, S, the pressure of which is regulated by means of a set-screw, P, placed in the center of the pinion *e*.

In the lid D is secured a bearing, D, for the shaft J, and, in the center of the rubbing-disk R is secured a bearing or guide, K, for holding the disk R in position with relation to the shaft J.

Through this bearing or guide K, and through the slots *i*, passes the pin X, which holds the rubber R on the shaft J.

The lower end of the spiral spring S rests on the upper side of the pin X, and forces down the rubber R.

The lower side of the rubbing-disk R, and the upper surface of the bottom of the tub A, are provided with curved and corrugated strips, *m* and *n*, clearly shown in fig. 1.

The bearings D and K, the hollow shaft J, the spring S, and pin X, should be coated with tin, zinc, or other suitable material, for preventing them from oxidizing, and imparting rust to the clothes during the washing process.

The parts D, K, J, S, and X, may be made of brass, or other suitable alloy or metal, which will resist the action of the alkaline matter used in connection with the water for washing the clothes.

The curved and corrugated strips or ribs, *m* and *n*, are arranged so that the line of curvature of the strips *n*, on the bottom of the tub, run in a contrary direction to the strips *m* on the face of the rubbing-disk R.

By this arrangement of the strips *m* and *n*, the rubbing and washing process is greatly facilitated, and the clothes are kept evenly spread over the bottom of the tub, and all the parts of the clothes brought in frequent contact with the cleaning action of the rubbing-disk R.

By the arrangement of the hollow shaft J, and spiral spring S in it, and the use of slots *i*, pin X, guide or bearings D, and set-screw P, the spring S is perfectly protected, and held in its line of action, and can be so adjusted and regulated by the set-screw P as to give any desired pressure on and to rubbing force to the disk R, and the bearing or guide K will prevent it from waddling when being rotated during the washing process.

The operation of the machine is as follows:

The lid B and disk R are turned back, as shown in fig. 1, and a suitable quantity of water poured into the tub. The desired quantity and kind of clothes are selected, "soaped," and placed in the water in the tub. The lid B and disk R are then turned back into the position indicated in figs. 2, 3, and 4. The lid B is then secured down by a hook, button, or other device.

The operator then takes hold of the lever *h*, and imparts to it a reciprocating motion, which imparts, through the medium of the wheel *f* and pinion *e*, a rotating reciprocating motion to the rubbing-disk R, which will, by its even downward pressure, and action on the clothes, wash them with ease and facility, without undue wear of the fabric.

The clothes are then removed from the machine, manipulated in the ordinary manner, for boiling, rinsing or wringing.

Having thus described the nature, construction, and operation of my improvement,

What I claim as of my invention is—

The combination and arrangement of the hollow vertical shaft J, provided with slots *i*, spiral spring S, guide or bearing K, pin X, and set-screw P, with the rubbing-disk R, operated through medium of lever *h*,

wheel *f* and pinion *e*, the whole being constructed substantially as herein described, and for the purpose set forth.

CHARLES H. DE KNIGHT.

Witnesses:

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JNO. MILLER.