(No Model.)

C. O. GARRISON.

WASHING MACHINE.

No. 452,129. Patented May 12, 1891.

Fig. 1.

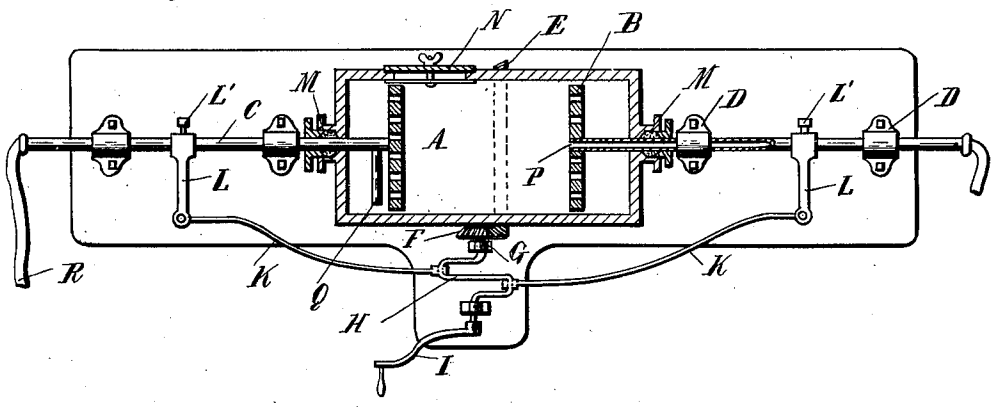
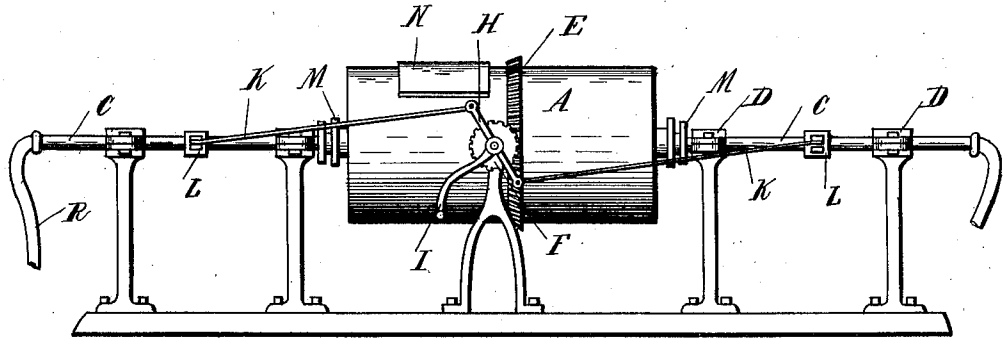


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES O. GARRISON, OF DETROIT, MICHIGAN.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 452,129, dated May 12, 1891.

Application filed November 6, 1890. Serial No. 370,551. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. GARRISON, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in washing-machines; and the invention consists in the peculiar construction of a casing adapted to be rotated and containing reciprocating perforated plungers and means for reciprocating the plungers and for rotating the casing.

The invention further consists in the peculiar arrangement, construction, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a horizontal section of my improved device. Fig. 2 is a side elevation thereof.

A is the cylinder.

B are the perforated plungers, secured upon the ends of the plunger-rods C, which are slidingly secured in suitable bearings D.

E is the circumferential gear on the cylinder A, with which meshes the beveled gear F on the shaft G. The shaft G is provided with a double crank H.

I is a crank-handle on the shaft H, by means of which the same is rotated.

K are pitman-rods connected with the cranks H of the shaft G, and with the arms L, which are adjustably secured on the plunger-rods C by means of suitable set-screws L'.

The ends of the cylinder are provided with suitable stuffing-boxes M, through which the plunger-rods C pass.

N is an aperture through which the clothes to be washed are inserted.

The parts being thus constructed, the clothes being inserted in the cylinder with a suitable amount of water, the operation of the device is as follows: The operator, turning the crank I, rotates the shaft G, with its double cranks H, by means of which motion in opposite directions is imparted to the piston-rods C, which carry the perforated plungers B, causing those plungers to approach each other and separate rapidly. The water is allowed to escape through the perforations in the plungers. In this manner as the plungers approach each other the clothes will be compacted, while as they are separated the water will be thrown through the apertures upon the clothes in a number of small streams. The rotation of the cylinder A prevents the possibility of the clothes lodging in the top and being insufficiently washed on account of not being immersed in the water. Other means of reciprocating the plungers may be devised, and of rotating the casing.

While I have shown the device and described it to be used as a washing-machine, it is evident that it may be applied to churns, &c., with equally good results. It will be seen that the piston-rods form the shafts upon which the cylinder is journaled.

The plunger-rods C are hollow, and one of these extends through its plunger-head B, having the exit at P, through which the water may be introduced upon the clothes between the plungers in the operation of the machine.

The water is emptied from the cylinder in the following manner: Q is a vertical arm or tube secured to the other piston-rod within the cylinder and extending to near the bottom thereof. R is a tube, preferably a flexible tube, connected to the outer end of this plunger-rod, and of greater length than the tube Q, all so arranged that the tube Q, with the plunger-rod C and the tube R, forms a siphon which will drain the water from the cylinder. The tube Q, it will be observed, is arranged outside of the plunger-head, so that there is no danger of the clothes clogging up its entrance. In this manner I am enabled to furnish fresh water to the cylinder at all times and rinse as well as wash the clothes in a continuous operation.

What I claim is—

1. In a washing-machine, the combination, with the frame, of two hollow reciprocating pistons carrying plungers on their ends, a cylinder in which the plungers are located, journaled on the pistons, a double-crank shaft carrying a gear on its inner end, a circumferential gear on the cylinder meshing with the gear on the shaft, and connecting-rods extending from the cranks to the pistons, substantially as described.

2. In a washing-machine, a horizontal rotary cylinder, pistons working therein, plungers on the pistons, a double-crank shaft, a beveled gear on the shaft, a circumferential gear on the cylinder meshing with the beveled gear, and connecting-rods extending from the cranks to the pistons, substantially as described.

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

CHARLES O. GARRISON.

Witnesses:
M. B. O'DOGHERTY,
P. M. HULBERT.