No. 708,558. Patented Sept. 9, 1902.

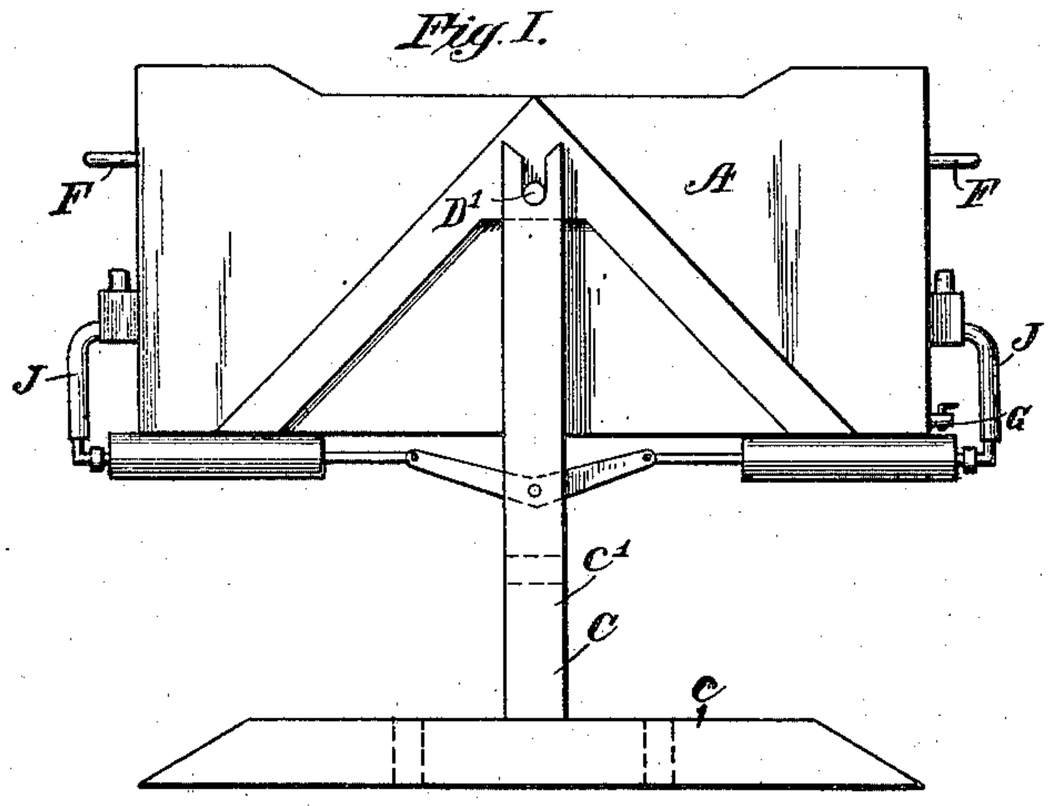
F. G. HYATT.

WASHING MACHINE.

(Application filed Mar. 7, 1902.)

(No Model.)

Fig. 1.



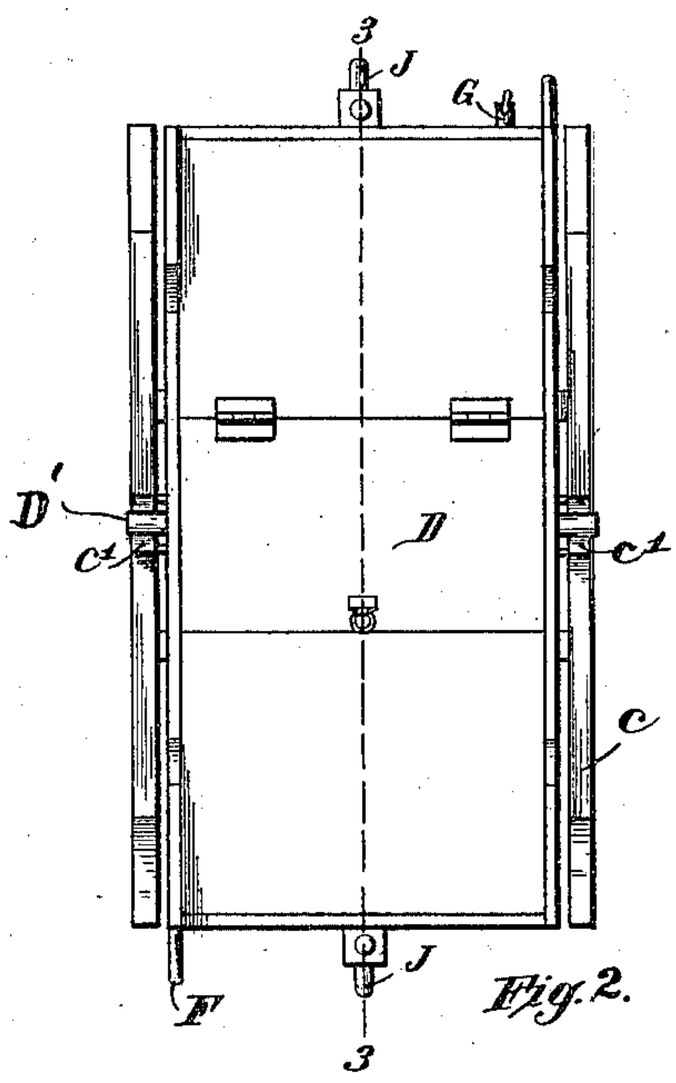


Fig. 2.

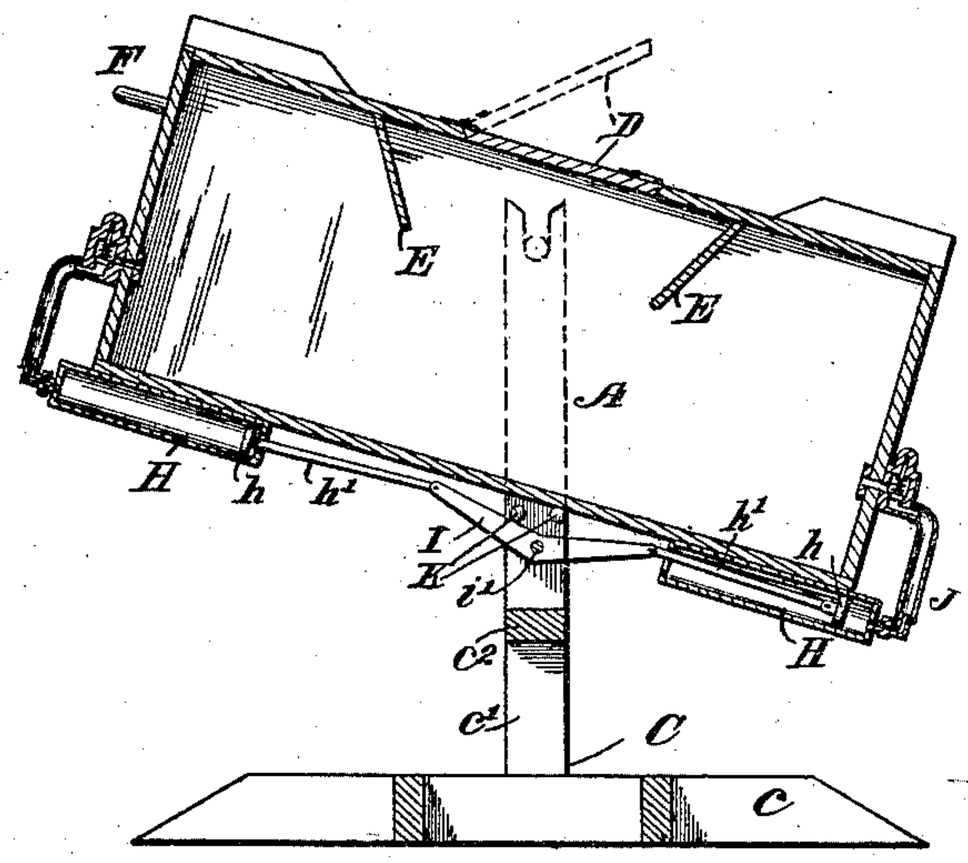


Fig. 3.

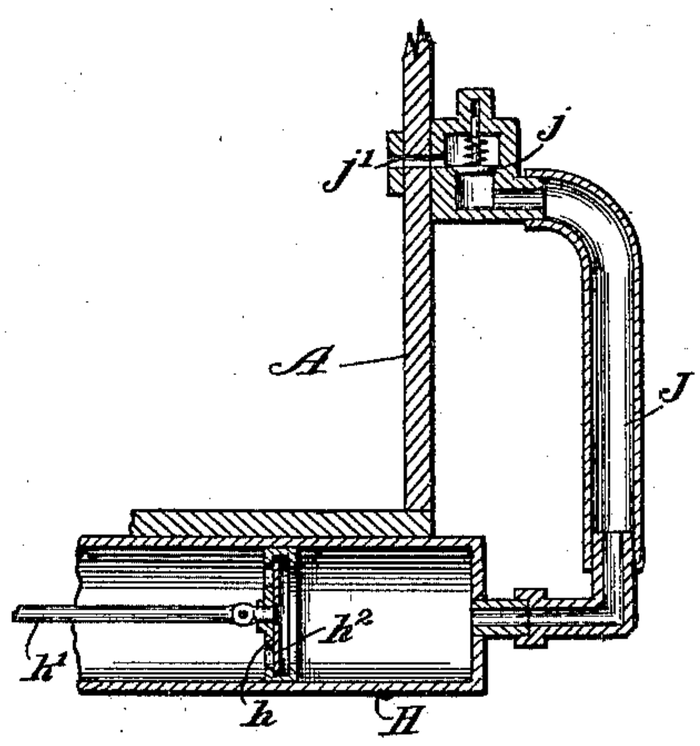


Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

FREDERICK G. HYATT, OF ST. JAMES, MINNESOTA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 708,558, dated September 9, 1902.

Application filed March 7, 1902. Serial No. 97,169. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK G. HYATT, a citizen of the United States, residing at St. James, in the county of Watonwan and State of Minnesota, have invented certain new and useful Improvements in Washing-Machines, of which the following in a specification.

My invention relates to that class of washing-machines in which the water or suds in which the clothes or other articles are immersed is kept agitated by means of jets or currents of air forced into the receptacle by means of air-pumps; and the object of my invention is to so organize a washing-machine of this class that the pumps may be operated to inject air into the receptacle containing the water or suds and among the clothes or other articles while the receptacle is being rocked or vibrated.

In carrying out my invention in the way now best known to me I mount a receptacle of suitable size on suitably-supported pivots, so that the receptacle may be rocked or vibrated in order to move the contents thereof back and forth and cause the articles of clothing to shift from point to point, rub against each other, and come in contact with different parts of the suds or water, which latter is agitated forcibly by means of jets or currents of air that are forced into the receptacle by pumps that are so connected with the rocking receptacle that the latter, in the act of rocking, operates the pumps.

In the accompanying drawings, Figure 1 shows a side elevation of a washing-machine embodying my improvements. Fig. 2 shows a top or plan view thereof. Fig. 3 shows a longitudinal central section on the line 3 3 of Fig. 2. Fig. 4 is a detail view, on an enlarged scale, of a portion of the air-injecting apparatus.

The receptacle A for containing the clothing or other articles to be washed may be of any suitable size or shape. As shown, it is substantially rectangular, being closed on its sides and at the bottom and closed for the most part at the top, but near its central portion it is provided with an opening closed by a door D. The articles to be washed, as well as the water or suds, may be received through the opening and the door may be locked by any suitable devices. The receptacle is supported on a frame C, consisting of a base c and uprights c', which are braced by a cross-piece c^2, and at their upper ends are bifurcated and provided with bearings for stud-journals D', secured to the opposite sides of the receptacle A near its upper portion and about midway between its opposite ends, so that the receptacle nearly balances. Guide-boards E are provided within the receptacle to direct the articles to be washed toward the bottom thereof. The receptacle may be rocked by means of one or more handles F, and the water or suds may be drawn out when desired through an outlet G at the bottom of the receptacle. I provide two pumps for injecting air into the receptacle at its opposite ends, and these are so arranged that they are operated in the act of rocking the receptacle. The pumps may be of any suitable construction. I have shown in the drawings pumps of simple formation which can be conveniently used. As they are shown, each pump consists of a cylinder H, secured to the under side of the receptacle A, and it is provided with a piston h and a piston-rod h'. The rods are jointed at their ends to a bell-crank rocking lever I, pivoted to the uprights c' by means of a horizontal rod i. As shown in Fig. 3, the piston is provided with a valve h^2, so arranged that when the piston moves outward air is allowed to enter the cylinder, but when the piston is moved inwardly the valve is closed and air is forced out of the cylinder into the pipe J, communicating with the interior of the receptacle A. The pipe J is provided with a check-valve j, which permits air to pass from the air-pump into the receptacle, but prevents air or water from passing in the opposite direction from the receptacle into the pump. The opening j', through which the air passes from the pipe J into the receptacle, is reduced in size, so that a small forcible jet is produced, which will have the effect of agitating the water or suds and promoting the operation of the machine. The air-pumps and connections at opposite ends of the machine are of the same construction and operation. The organization is such, as will be clear from an inspection of the drawings, that when the receptacle is

rocked the air-pumps will be operated in such manner as to inject air into the opposite ends of the receptacle alternately.

Referring to Fig. 3, for instance, it will be observed that the left-hand end of the machine is elevated and is about ready to be depressed. When that end is depressed, the air-pump on the left-hand end of the machine will inject air into the receptacle, while the air-pump on the opposite end of the machine will not inject air at this time, but air will be received into the cylinder H. When the rocking movement is reversed, air will be injected by the pump on the right-hand end of the machine, while the pump on the left-hand end of the machine will be receiving air. In order to limit the rocking movement of the machine, I employ stops K, preferably placed on the upright c' beneath the receptacle A.

While I have shown two air-pumps in connection with the rocking receptacle, so far as I am aware my invention is broad enough to cover the use of one air-pump in connection with a receptacle rocked in the manner before described.

I claim as my invention—

1. In a washing-machine, the combination of a supporting-frame, a receptacle mounted to rock therein, air-pump, a pipe connecting the pump with the lower portion of one end of the receptacle through a restricted opening, and connections between the rocking receptacle, the pump and the supporting-frame whereby the pump is operated as the receptacle is rocked.

2. In a washing-machine, the combination of a supporting-frame, a receptacle mounted to rock therein, an air-pump, the cylinder of which is attached to the rocking receptacle and which communicates with the lower portion of one end of the receptacle, and connections between the piston of the pump and the supporting-frame whereby the pump is operated as the receptacle is rocked.

3. A washing-machine comprising a supporting-frame, a receptacle mounted to rock therein, an air-pump, the cylinder of which is secured to the receptacle, a pipe connecting the cylinder of the pump with the receptacle, a check-valve in said pipe, a valve in the piston of the pump and connections between the piston and the supporting-frame whereby the pump is operated as the receptacle is rocked.

4. A washing-machine comprising a supporting-frame, a receptacle mounted to rock therein, air-pumps carried by and rocking with the receptacle and communicating with opposite ends thereof, and connections between the piston of the pumps and the supporting-frame whereby the pumps are operated as the receptacle is rocked.

5. A washing-machine, comprising a supporting-frame, a receptacle mounted to rock therein, air-pumps, the cylinders of which are secured to the opposite ends of the receptacle, communications between the interior of the receptacle and the cylinders of the air-pumps, and connections between the piston-rods of the air-pumps and the supporting-frame, the organization being such that the air-pumps are alternately operated to inject air into the receptacle, as the latter is rocked.

In testimony whereof I have hereunto subscribed my name.

FREDERICK G. HYATT.

Witnesses:
ED. H. CULP,
E. H. BITHER.