A. P. LADD.

WASHING-MACHINE.

No. 191,865. Patented June 12, 1877.

Fig. 1

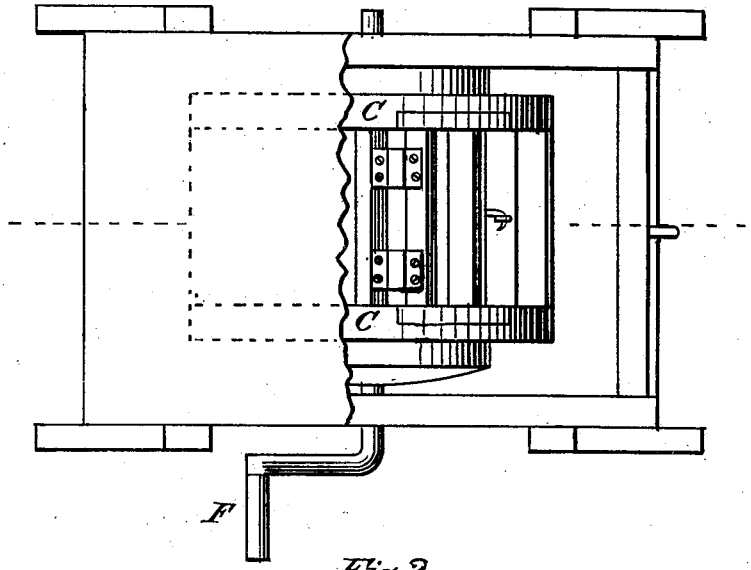
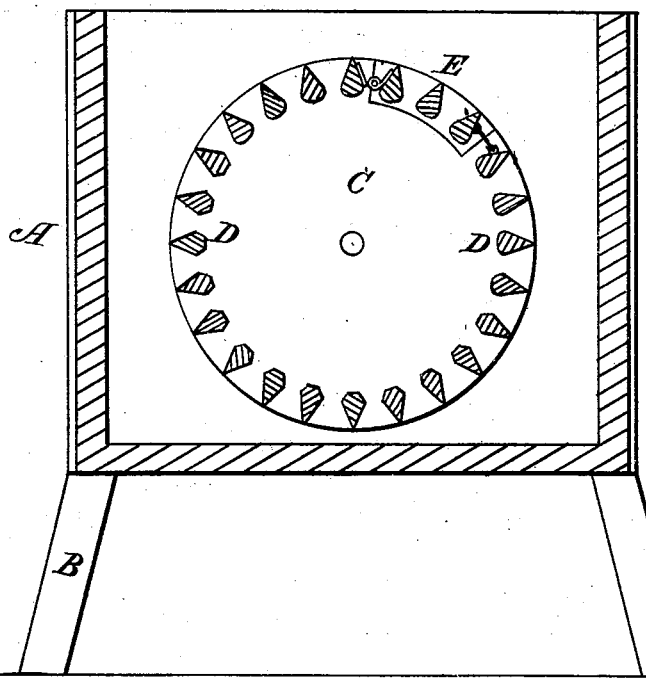


Fig. 2



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ALEXANDER P. LADD, OF ST. LAWRENCE, NEW YORK.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **191,865**, dated June 12, 1877; application filed May 17, 1877.

To all whom it may concern:

Be it known that I, ALEXANDER P. LADD, of St. Lawrence, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of washing-machines in which the clothes are inclosed in an inner hollow and ribbed or perforated cylinder, which is revolved with the clothes, the whole being contained and operated in an outer box or outer case or tub; and my invention consists in a novel form and arrangement of floats or ribs in a hollow cylinder or case for containing the clothes and rubbing the same, and also directing the currents of water upon and through the clothes, as will be fully understood by the following description.

In the accompanying drawings, Figure 1 is a top view of my washing-machine, the cover being partly cut away to show the hollow cylinder or clothes-carrier. Fig. 2 is a vertical section of my machine.

The outer box A may be of any suitable form, supported on legs B, Fig. 2.

The hollow cylinder or clothes-carrier is made with two solid heads C, to the circumference of which are attached a circle of ribs or beaters, D, in a manner similar to the floats of an undershot water-wheel. These ribs are very thick at their inner edges, which may be rounded for finer clothes, and have corners for coarser washing, as desired, both forms being shown in Fig. 2. These ribs are made sharp at their outer edges, for the purpose of so striking the water as to direct the currents against and through the clothing when the cylinder and clothes are revolved or worked back and forth by means of the crank F, upon which the cylinder is supported and operated.

The clothes are put into the hollow cylinder or carrier through the door E in the usual manner.

The box A is to be filled with water, say to the line *x x*, Fig. 2, about one-fourth the diameter of the cylinder of beaters, the sharp outer edges of which direct the water-current against and through the clothes resting on the inside of the beaters D.

I find that the machine works better by frequently reversing the motion of the cylinder or clothes-carrier, and changing the action of the machine upon the clothes.

I do not broadly claim a hollow cylinder or clothes-carrier, but limit my improvement to the arrangement and construction of the same, and especially to the beaters D, having their inner surfaces arranged like a continuous set of rubbers, and their outer edges setting radially outward, as shown in Fig. 2; and I am aware that slats have been used similar in shape to my beaters D, but set obliquely, instead of radially, in the cylinder or clothes-carrier, and working in one direction only, as shown in the patent of S. G. Rice, dated May 25, 1869, and also that slats have been used with one end beveled on one side, and the other end beveled in the opposite direction, as shown in the patent of B. Bisbee, dated August 14, 1866, in which machine the motion of the cylinder or clothes-carrier may be reversed, one end of the same working in one direction, and the other end in the opposite direction, and neither end of the slats being set radially, but both being set obliquely in opposite directions; but, in my machine, the beaters or slats are set radially, or with their sharp edges directly outward, so as to take the water and direct currents into the cylinder, thus allowing a reverse of motion, with a complete and equal reverse action on the clothes. This reverse action or motion brings a different surface of the clothes to the rubbing action of the beaters, and unrolls or opens the clothes, which would remain rolled together if the machine were to be turned continually in one direction.

Having thus described my invention, what I claim is—

The above-described clothes-carrier or hollow cylinder, provided with ribs or beaters D,

rounded or blunt on their inner surfaces, for rubbing the clothes, and having sharp edges set radially outward, so as to direct the currents of water inward upon and through the clothes, and acting equally well when the stroke or motion of the machine is reversed, substantially as set forth.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

ALEX. P. LADD.

Witnesses:

DANIEL BREED,

THOMAS C. CONNOLLY.