

## UNITED STATES PATENT OFFICE.

HENRY ELFORD LEA, OF HALFMOON BAY, CALIFORNIA.

## IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. 119,089, dated September 19, 1871.

To all whom it may concern:

Be it known that I, Henry Elford Lea, of Halfmoon Bay, county of San Mateo, State of California, have invented an Improved Washing-Machine; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

My invention relates to an improved machine for cleansing clothes; and it consists of a box, inside of which is a revolving perforated drum or cylinder, into which the clothes or other fabric to be washed are placed. A combined waterboiler and furnace of peculiar construction stands at a short distance from the box, and pipes communicate between it and the boiler, so as to keep up a continual circulation of hot water and steam between the two, which, in connection with an occasional revolution of the perforated drum or cylinder, accomplishes the washing in a short time.

In order to more fully illustrate and explain my invention, reference is had to the accompanying drawing forming a part of this specification, in which—

A represents a tight box of any suitable shape and construction, and having a hinged or removable cover, B. C is a cylinder or drum, which is shown in the present instance as having a polygonal figure, but its shape is immaterial. Its sides D are also represented as being perforated, but simple slats may be used instead. This box or cylinder is supported upon journals which bear in the opposite side of the box A, and is revolved by a crank, E, in the usual manner. F is an annular boiler, having the fireplace gin its center. A pipe, h, emerges from this boiler at a point near its bottom, and, rising up, enters the box A near or at its bottom, while another pipe, k, emerges from the highest part of the boiler and enters the box or drum C through its journal

i, which is made hollow for the purpose, so that water and steam from the boiler will pass up into the drum C at its center and fall upon the clothes, while the water in the box A will be drawn back into the boiler through the pipe h, thus keeping up a continual circulation of hot water and steam between the two vessels.

The operation is as follows: The clothes are first placed in the revolving drum C through a suitable hinged opening in the usual manner. water is then poured into the box A, which immediately fills the annular boiler F, sufficient water being used to rise up in the box A until the lower part of the drum C is submerged. A fire is then kindled in the fireplace g, inside of the annular boiler, which will soon heat the water and cause the circulation of steam to commence. The hot water and steam issuing from the pipe k falls upon the clothes, and is drawn through them by the suction produced by the water in the box A being drawn into the boiler through the pipe h. During this process the drum C is given an occasional turn, so as to present all parts to the action of the hot water and steam. By this means a washing can be thoroughly accomplished in a very short time, without the necessity of rubbing the clothes, as the continued action of the steam and hot water, combined with the friction caused by the revolution of the drum, will thoroughly cleanse them.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is—

A washing-machine having a perforated drum, C, revolving on the hollow journal i, in combination with the boiler F and pipes h k, substantially as shown and for the purpose described.

In witness that the above-described invention is claimed by me I have hereunto set my hand and seal.

HENRY ELFORD LEA. [L. s.] Witnesses:

GEO. H. STRONG, BENJN. C. FABRE.