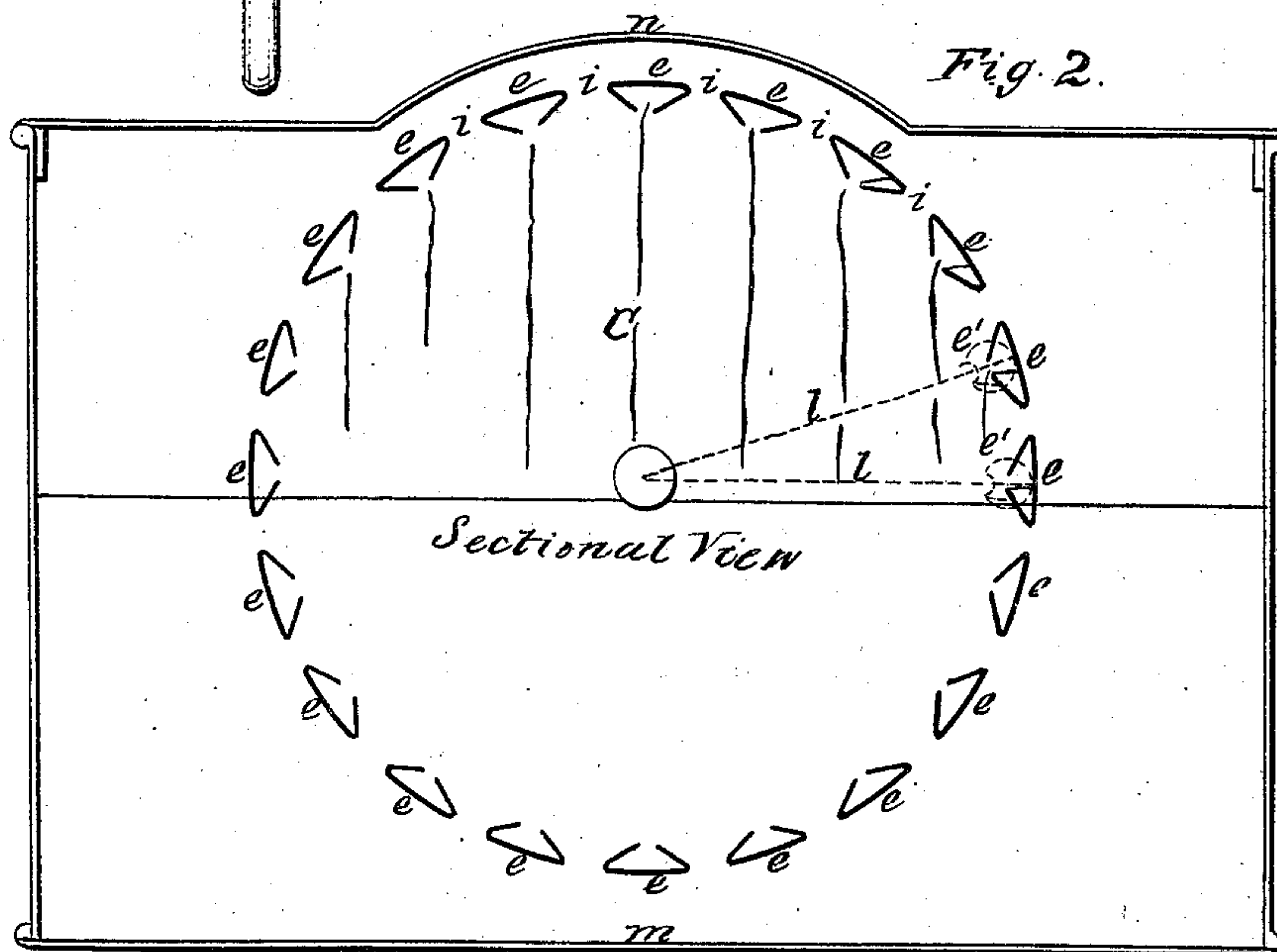
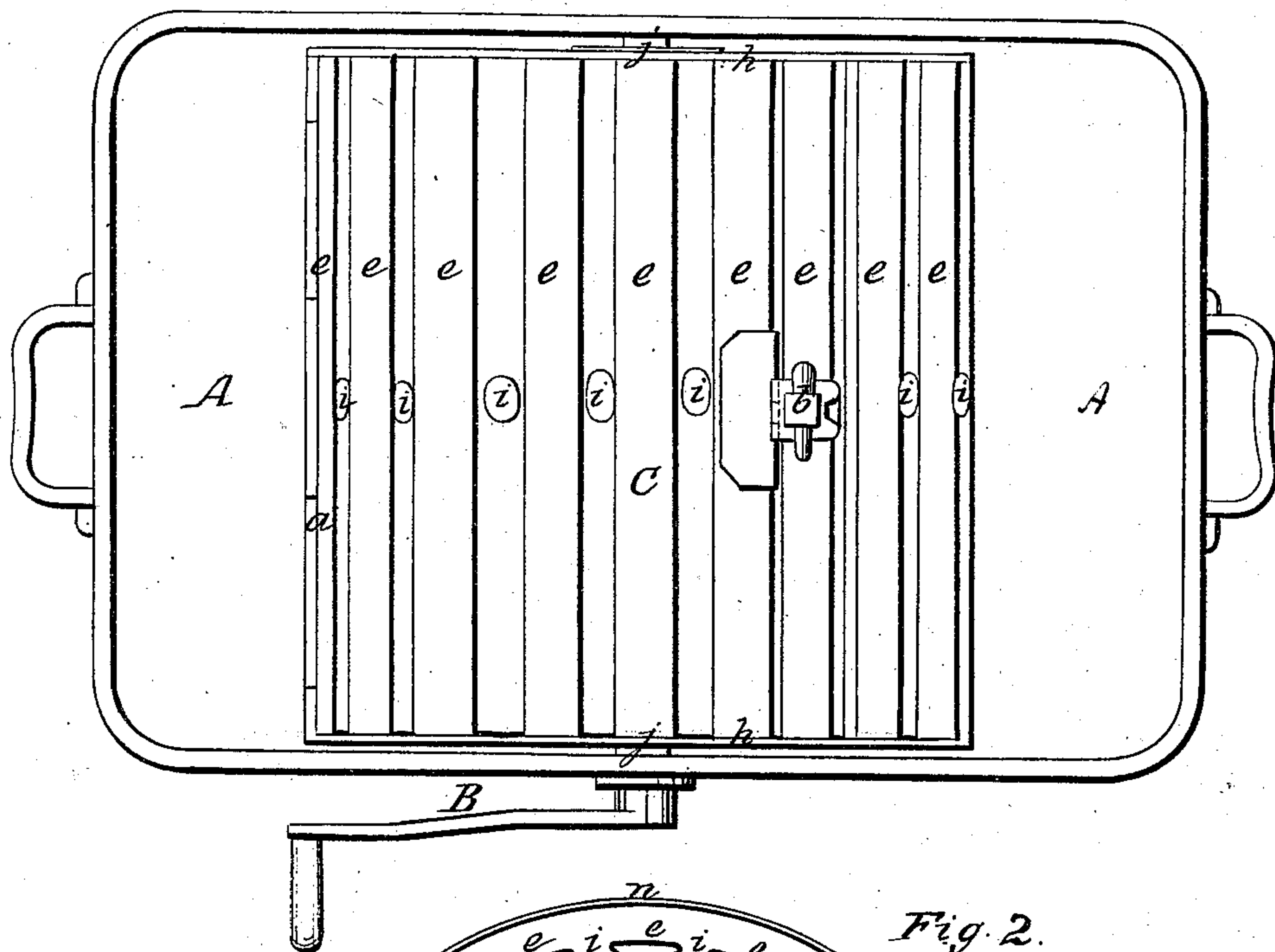


E. Gillis.
Washing Mach.
Nº 93,702. Patented Aug. 17, 1869.
Fig. 1.



Witnesses
George J. Luepfs
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EDWIN GILLIS, OF BATTLE CREEK, MICHIGAN.

Letters Patent No. 93,702, dated August 17, 1869.

IMPROVEMENT IN WASHING-MACHINES.

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, EDWIN GILLIS, of the city of Battle Creek, in the county of Calhoun, and State of Michigan, have invented a new and useful Improvement in Clothes-Boiler Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 exhibits a top view, the cover removed, to show the interior.

Figure 2 is a longitudinal vertical section.

Similar letters of reference indicate corresponding parts in both figures.

My invention applies to that class of washing-machines known by the title of "cataract," that operate within a wash-boiler, by elevating the boiling suds-water at the periphery of an open, slotted cylinder, and permitting it to fall on the clothes inside; and

It relates to the employment of trough-slats, of peculiar construction, for elevating the suds-water and discharging it in thin sheets, whereby important advantages are secured, not only to the clothes, but in the additional ease with which the machine may be operated, as will be hereinafter described.

Inside of a wash-boiler, A, made of sheet-iron, or copper, in any of the ordinary ways, I hang a revolving cylinder, C, composed of two sheet-metal heads, h, which are provided with centre gudgeons or journals, j, and outside crank, B.

These two heads are connected, and the periphery-face of the cylinder formed by any desired number of shallow sheet-metal troughs, e, the ends of which are soldered, or otherwise firmly attached to the inner faces of the heads.

I construct the troughs e by bending the two sides on a former, at an acute angle with the bottom, so that in the inside of the cylinder the edges of the troughs will converge nearly together in the centre line, sufficient space being left between to fill readily when submerged in the boiling suds-water, and to empty in unbroken sheets, when sufficiently inverted by the act of revolving.

Sufficient open spaces, or intervals, as at i, should be left for the free circulation of the suds-water through the cylinder, which is constructed, as usual, in two longitudinal sections, secured together by a hinge, at a, and hasp, at b, to permit the insertion and removal of the clothes; and said cylinder is hung, by its end journals, to proper bearings formed in or attached to the sides of the boiler, so that it will revolve within

said boiler with a proper clearance between its bottom, m, and cover, n.

The manner in which these machines operate, inside of a wash-boiler, is well understood; as also, that the speedy and thorough removal of the dirt is mainly due to the impact of the falling hot suds-water upon the clothes, when the cylinder containing them is made to turn, first in one direction and then the other.

It would follow, therefore, that the degree of efficient result depends on the amount of solid water lifted, and on the distance which it falls.

In all these machines, hitherto known to me, the suds-water is carried in round tubes, as shown by the dotted lines at e', and discharged through perforations in the inner sides. As it is essential for the clothes-cylinder to be revolved alternately in opposite directions during the washing, these apertures must lie in radial lines, l, through the centre of the tubes, and if sufficiently large to yield streams of sufficient gravity to act with proper impact, the tubes will be emptied before they have attained their highest elevation.

A reference to fig. 2 will show that my triangular troughs, owing to the arrangement of their containing and discharge-areas, (the effect of centrifugal force being considered equal,) will carry up more suds-water to the highest point than can possibly be elevated by perforated tubes having a sufficiently ample capacity of discharge. The effect of the suds-water, when falling thus in unbroken sheets upon the clothes as they shift position, is much more effective in removing the dirt than is the same quantity when dispersed in numerous small streams falling from lower elevations.

A washing-cylinder furnished with the troughs e will also turn much easier than one having tubes, on account of its displacing the water with less abruptness.

I disclaim combining with a wash-boiler an open rotating cylinder, placed inside, and containing the clothes; neither do I claim receptacles at the periphery of such cylinder, for elevating and discharging the suds-water; but

Having described my invention,

What I do claim, and desire to secure by Letters Patent, is as follows:

I claim, as an improvement on tubes, or other receptacles, to be secured at and from the periphery of an open washing-machine cylinder, the triangular troughs e, constructed substantially as herein described, and arranged and operated as and for the purpose set forth.

EDWIN GILLIS.

Witnesses:

CHAS. P. BROWN,
GEORGE F. PHELPS.