

(No Model.)

W. H. GILSTRAP.
WASHING MACHINE.

No. 432,133.

Patented July 15, 1890.

Fig. 1.

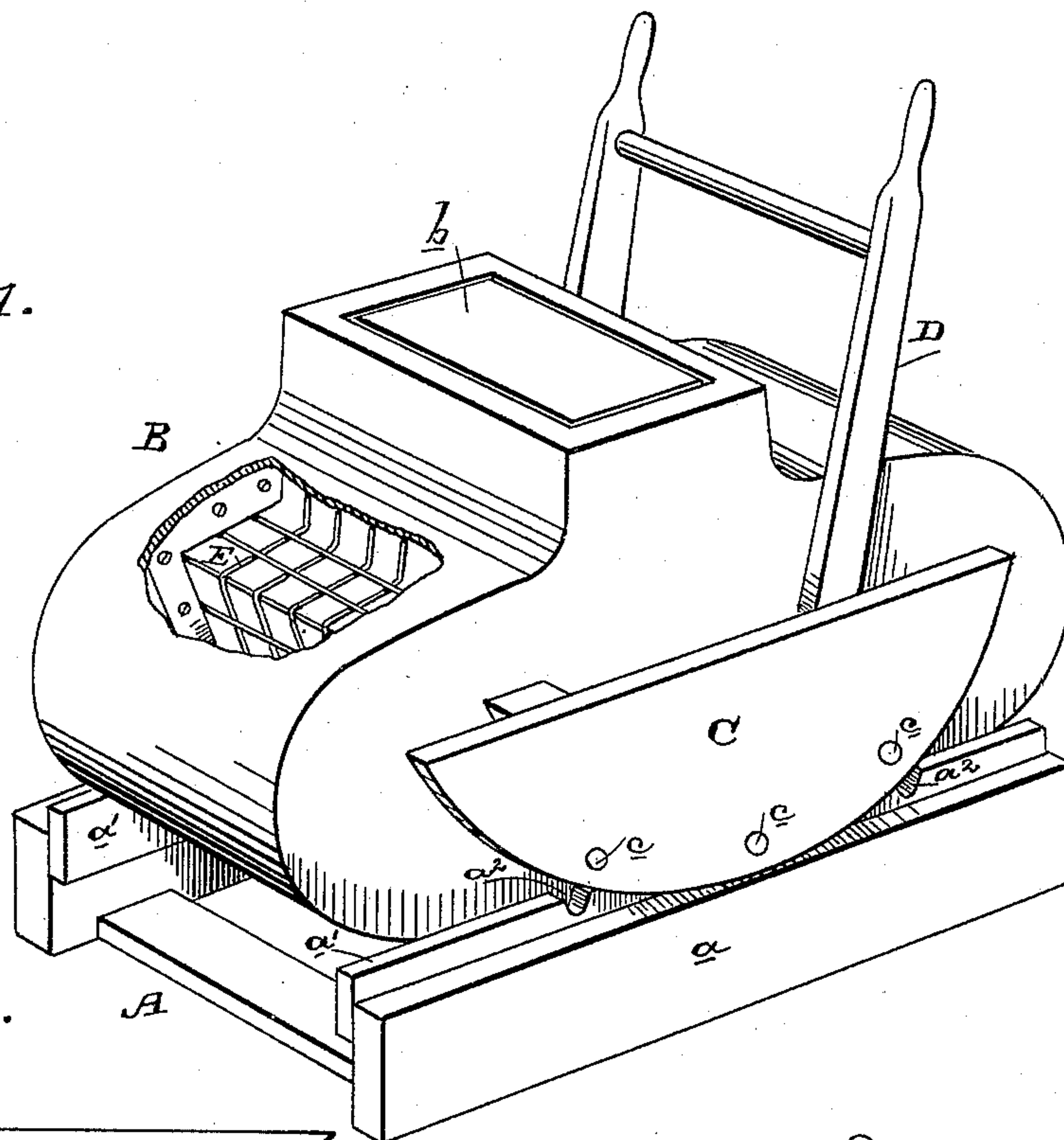


Fig. 3.

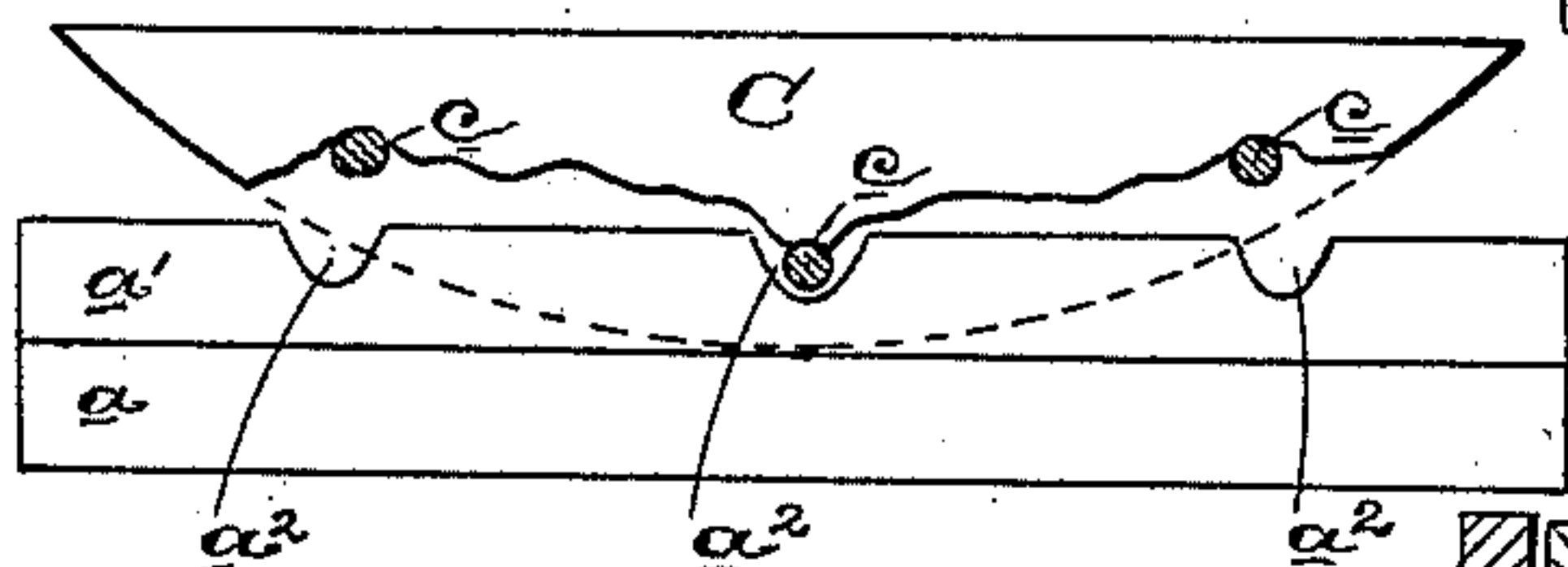
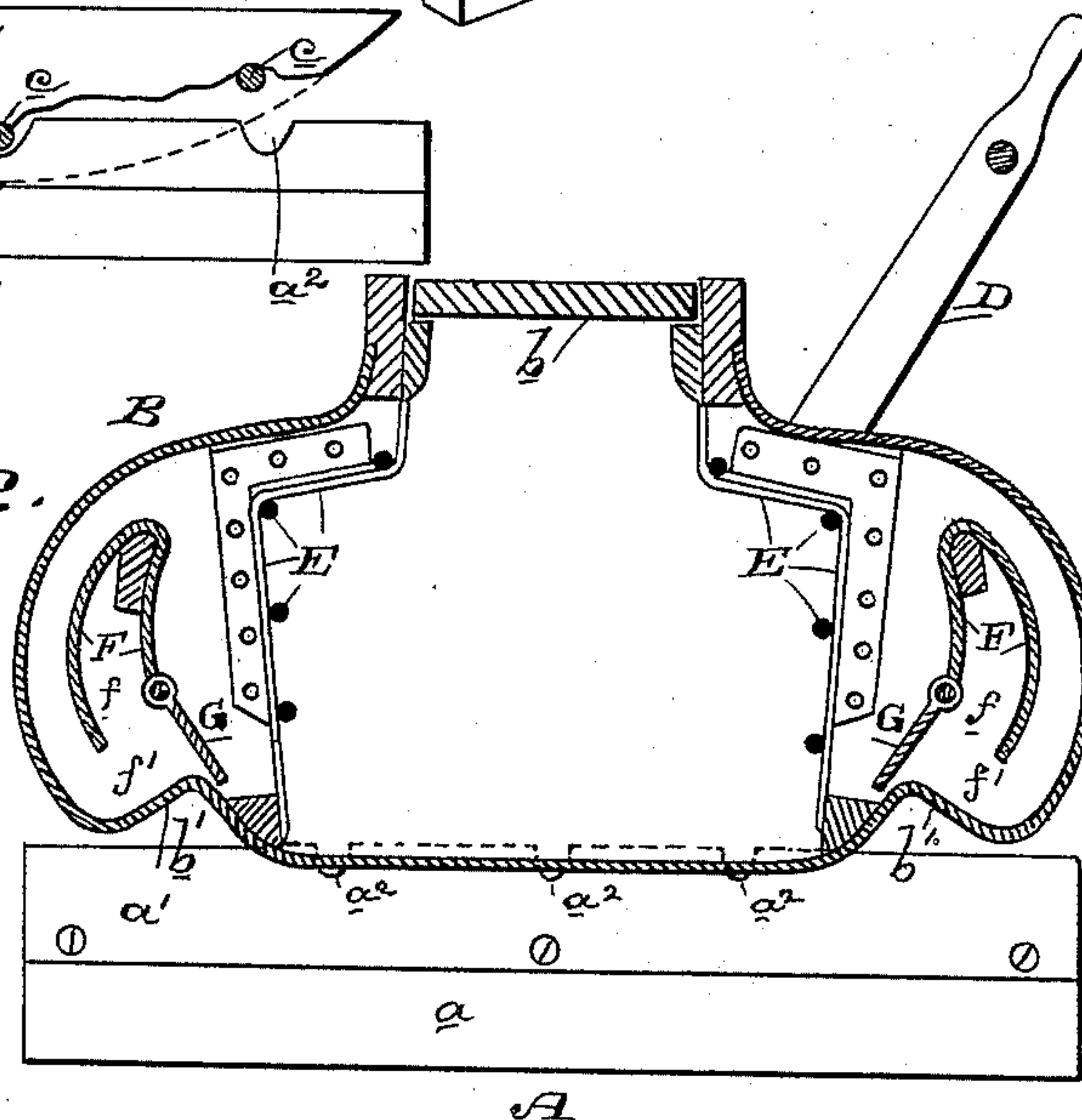


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIS H. GILSTRAP, OF PIXLEY, CALIFORNIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 432,133, dated July 15, 1890.

Application filed April 1, 1890. Serial No. 346,199. (No model.)

To all whom it may concern:

Be it known that I, WILLIS H. GILSTRAP, a citizen of the United States, residing at Pixley, Tulare county, State of California, have
5 invented an Improvement in Washing and Churning Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of washing and churning machines; and it consists in the novel construction of the air-chamber at each end of the rocking vessel, the guards or screens in said ends, and the rocking connection between said vessel and its bed, all of
15 which, together with details of construction, I shall hereinafter fully describe, and specifically point out in the claims.

The objects of my invention are to provide a washing-machine in which the clothes will
20 be limited in their movement within the vessel containing them before reaching the ends of said vessel, while the water will pass through and beyond them; to provide for a chamber in each end, in which the air is compressed
25 and out of which it is driven into and through the clothes in order to better agitate and expand them; to provide a simple and effective means for guiding and holding the rocking vessel upon its bed, and, generally, to provide
30 a washing and churning machine in which, by reason of the peculiar construction of the ends, a perfect agitation of the contents is had.

Referring to the accompanying drawings
35 for a more complete explanation of my invention, Figure 1 is a perspective view of my machine, a portion of the vessel B being broken away to show the guard-screen. Fig. 2 is a vertical longitudinal section of the
40 same. Fig. 3 is a detail elevation of rocker and bed-frame.

A is the bed of the machine, the side rails a of which form tracks to receive the rockers, said sides being provided on their inner top
45 surfaces with flanges a' , which bear against the inner sides of the rockers and have formed in them at any suitable intervals a series of notches a^2 .

B is the clothes-containing vessel, having
50 secured to each side and separated therefrom the rockers C, which bear upon the tops of the side rails a and are held well in place by the inner flanges a' . Between the rockers

and the sides of the vessel B extend cross-bolts c , which are so located as to play down into
55 and up from the notches a^2 in the flanges a' . These bolts serve to hold the rockers well in place, as one or more of them is in constant engagement with the notches a^2 , and the vessel B is thereby prevented from moving forward or back bodily, while the flanges a' prevent it from moving sidewise. A handle D is
60 attached to the vessel, by which it is rocked.

Access is had to the vessel B through an opening in its top center controlled by a suitable door b . Within the vessel and near each
65 end thereof is a guard E, consisting of a screen of suitable character, open wire-work, perforated material, or other forms. These guards or screens are so located as to leave a space
70 between them and the ends of the vessel. Their object is to limit the movement of the clothes in either direction, while permitting the water to pass through and beyond them into the space in the ends of the vessel. This
75 feature is of peculiar advantage in any rocking washing-machine, as it better agitates the contents of the vessel, and by constantly arresting the clothes allows the water to be carried on through and beyond them, thus more
80 thoroughly cleansing them.

In the present case I have shown the screens or guards E as commencing at about the opening b of the vessel, and thence extending
85 downwardly and toward each and below the top and separated from it, and thence downwardly to the bottom, being secured to suitable flanges on the interior of the vessel. This arrangement provides for a space above
90 the guard-screen, through which the water can pass above the clothes, and also serves to prevent the clothes from clogging and packing above. The ends of the vessel are preferably, though not necessarily, made rounding,
95 as shown.

Within the vessel, near each end, but separated therefrom, is a vertical diaphragm or plate F, which terminates short of the top of
100 the vessel, leaving thereby an opening above it and partially cutting off the ends from the body of the vessel. The lower portion of the plates is provided with a hinged door or valve G, which is adapted to swing inwardly, but
105 not outwardly, said door or valve reaching to the bottom of the vessel. Now in rocking said vessel the clothes stop short of the ends,

but the water rushes over the top of plate F and down behind it and forwardly through the valve G, forcing the air before it, and around through the end and forward through the door or valve up through the clothes.

For a washing-machine I would construct separate air-chambers within each end by making the plates F to partially inclose said chambers designated by *f*. This is done as follows: Within each end of the vessel is formed the air-chamber *f*, made by means of the curved plate F, which extends upwardly, terminating short of the top of vessel B, and, bending backwardly upon itself, passes downwardly again nearly, but not quite, to the bottom, leaving an opening at *f'* in its back. Its front is provided with the hinged door or valve G, which swings inwardly toward the center of the vessel and extends down to the bottom of the vessel and lies upon it, thereby cutting off any access to the air-chamber from in front, as said gate or valve will not swing backwardly, but allowing a discharge of air through it and inwardly into the vessel. The plate F, at its back, is separated from the end of the vessel B, thereby leaving a space behind it, which communicates directly with the interior of the vessel over the top of the plate.

This construction operates as follows: The vessel being rocked, the clothes are alternately thrown from one end to the other. The water passes up and over the top of the curved plate F, which forms the walls of the air-chamber *f*, and down in the space behind said plate and between it and the end of the vessel, thereby forcing the air up and compressing it in said chamber, and said air finds an outlet through the inwardly-swinging valve or door G, and is thereby forced through the clothes, which are then lying in that end. This serves to open them up and the more thoroughly to cleanse them, besides effecting a more complete agitation of the water.

The combination in the vessel of the guard-screens E and the air-chambers renders my machine a complete and effective one, the clothes being stopped by the screen and not allowed to interfere with the perfect operation of the air-chamber at the end.

In order to properly direct the air upwardly through the clothes as it is discharged through the door or valve G, I make the bottom of the vessel with an upward trend or curve, as shown at *b'*, so that the air in passing from the chamber is directed upwardly to and through the door or valve and thence through the clothes.

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

1. In a washing and churning machine, a rocking vessel having closed ends, in combination with plates or diaphragms within said vessel near, but separated from, its ends, said plates terminating short of the top of the vessel, and the inwardly-swinging valves or doors

at the lower portion of the plates, substantially as herein described.

2. In a washing and churning machine, the rocking vessel having closed ends, in combination with a separate air-chamber formed within each end, having an opening at its back and a valve-controlled opening at its front, substantially as herein described.

3. In a washing and churning machine, the rocking vessel having closed ends, in combination with the plates F within said vessel and separated from the ends and top thereof, the backs of said plates being open at their bottoms, and the inwardly-swinging valves or doors at the bottom of the fronts of said plates, whereby an air-chamber *f* is formed in each end of the vessel, having an inlet at the back and a valve-controlled outlet at the front, substantially as herein described.

4. In a washing and churning machine, and in combination with the rocking vessel, the plates near each end, the inwardly-swinging valves or doors at the bottoms of the plates, and the upward inclines *b'* in the bottom of the vessel just beyond said valves or doors, substantially as herein described.

5. In a washing and churning machine, the rocking vessel having closed ends, in combination with the plates F, forming separate air-chambers in said ends with openings in their backs, the hinged doors or valves at the bottoms of the fronts of the plates, and the upward inclines in the bottom of the vessel beyond the doors or valves, substantially as herein described.

6. In a washing-machine, the combination of the rocking vessel having the plates or diaphragms near each end open at their tops, the swinging doors or valves at their bottoms, and the guard-screens in front of said plates, substantially as herein described.

7. In a washing-machine, the rocking vessel having closed ends, in combination with separate air-chambers formed within said ends and having an opening at their backs and valve-controlled outlets at their fronts, and the guard-screens within the vessel in front of the valve-controlled outlets of the air-chambers, substantially as herein described.

8. In a washing-machine, the rocking vessel B, having closed ends, in combination with the plates *f* in each end, forming within them separate air-chambers, said plates being separated from the ends and top of the vessel and having an opening in their backs at their lower ends, the inwardly-swinging valves or doors on the front of the plates by which the air-chambers have outlets, and the guard-screens in front of said plates, substantially as herein described.

In witness whereof I have hereunto set my hand.

WILLIS H. GILSTRAP.

Witnesses:

S. H. NOURSE,
H. C. LEE.