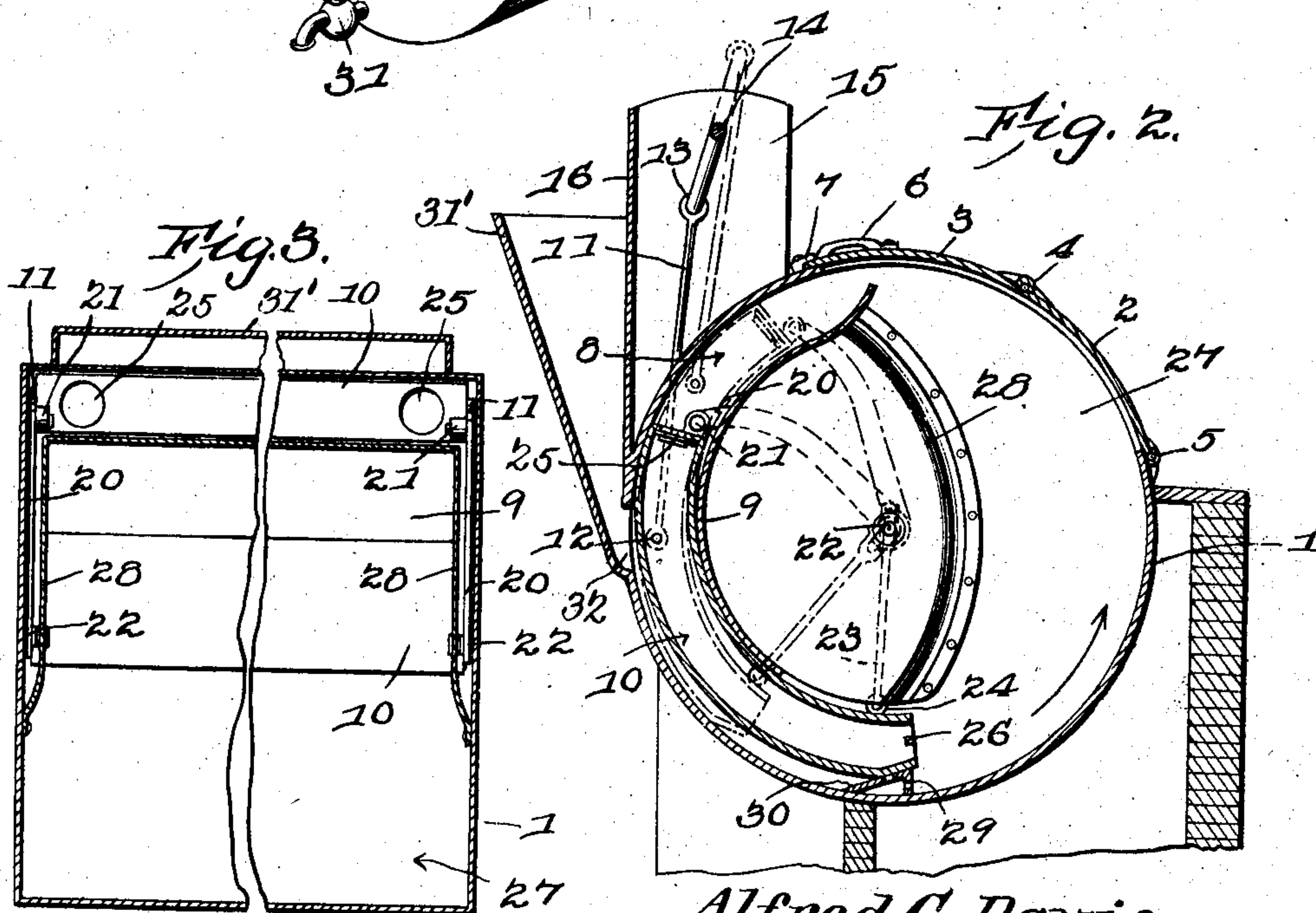
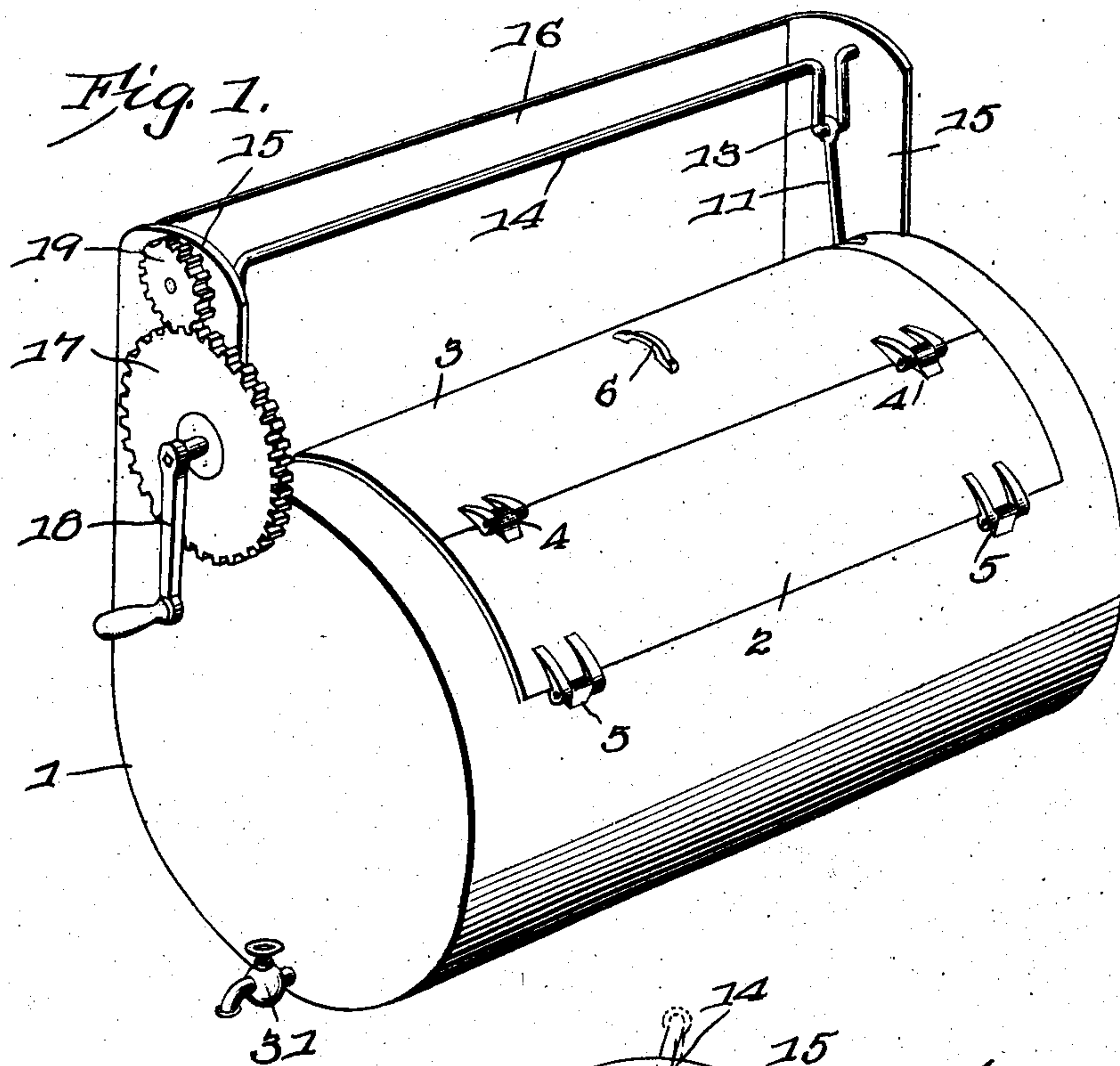


No. 835,099.

PATENTED NOV. 6, 1906.

A. C. & C. C. DAVIS.
WASHING MACHINE.
APPLICATION FILED NOV. 17, 1905.



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UNITED STATES PATENT OFFICE.

ALFRED C. DAVIS AND CHARLES C. DAVIS, OF ABINGDON, SOUTH CAROLINA.

WASHING-MACHINE.

No. 835,099.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed November 17, 1905. Serial No. 287,851.

To all whom it may concern:

Be it known that we, ALFRED C. DAVIS and CHARLES C. DAVIS, citizens of the United States, residing at Abingdon, in the county of Cherokee and State of South Carolina, have invented a new and useful Washing-Machine, of which the following is a specification.

This invention relates to washing-machines, and is primarily designed to provide for cleansing the clothes by forcing air, steam, and water through the clothes without subjecting the same to a pounding action and at the same time to effect turning over of the various articles so as to subject all of them to the action of the water, steam, and air.

Further objects of the invention are to effect convenient operation of the machine, to enable the convenient introduction and removal of the articles to be cleansed, to provide for drawing off the wash-water without removing the clothes and without stopping the operation of the machine, and, in general, to facilitate the handling of the device.

With these and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a washing-machine of the present invention. Fig. 2 is a cross-sectional view thereof. Fig. 3 is a longitudinal sectional view of the machine having an intermediate portion broken away.

Like characters of reference designate corresponding parts in all of the figures of the drawings.

The machine of the present invention includes a case or body 1, which is preferably cylindrical in form and formed of sheet metal. In the upper front portion of the body there is an opening of suitable proportions through which the clothes are placed in and removed from the machine. Normally this opening is closed by a door or cover, preferably including sections 2 and 3, which are connected

by suitable hinges 4, the lower section 2 being hinged to the body at 5. The advantage of having the closure formed in hinged sections is that the interior of the body may be viewed and small articles may be placed in the machine by opening the section 3 instead of opening the entire closure and permitting a considerable quantity of steam to escape. A suitable handle 6 is provided upon the section 3 for convenience in opening the closure.

Any suitable fastening means 7 may be employed to hold the closure closed against the pressure of the steam.

Within what will be termed the "back" of the body there is a peripheral compartment 8 formed by a longitudinal partition 9, with its upper and lower edges spaced from the top and bottom of the body.

Working within the compartment 8 is a hollow bowed or arcuate plunger 10, which extends for substantially the entire length of the compartment 8 and is supported at each end by an upright connecting-rod 11, working through a slot in the top of the body and pivotally connected to the adjacent end of the plunger, as at 12. This connecting-rod is loosely hung from a crank 13, provided upon the shaft 14, which is disposed in a horizontal position above the top of the body and is journaled at each end in an upstanding support 15, preferably a continuation of the adjacent end of the case or body. A plate 16 connects the rear edges of the supports 15, so as to brace the same.

For rotating the shaft 14 there is a gear 17, journaled externally upon one of the supports 15 and provided with a crank-handle 18, there being a pinion 19 journaled upon the adjacent end of the shaft 14 and in mesh with the gear 17.

To guide the plunger 10, each end thereof has an arm 20, pivoted to the top thereof at 21, with its other end pivotally supported upon the center of the adjacent end of the body, as shown at 22. While the arm 20 may be upon the exterior of the body or case, it is preferred to locate the same within the body. In addition to the arm 20 there is a link 23 loosely hung from the pivot-support 22 and pivotally connected to the lower end of the plunger at 24, whereby the plunger is guided in an arc of a circle when reciprocated by manipulation of the shaft 14. The top of the plunger is provided with one or

more downwardly or inwardly opening valves 25, while the lower end of the plunger is open and provided with a longitudinal bar 26, forming a grating to prevent the clothes from entering the plunger.

It will here be explained that the partition 9 divides the interior of the case or body into the relatively small plunger-compartment 8 and the relatively large clothes or washing compartment 27, which is adapted to contain the clothes to be washed. To protect the clothes from the action of each arm 20 and link 23, a metallic plate 28 is secured to each end of the body and offset inwardly therefrom, so as to produce a space or compartment between the plate and the end of the body for the reception of the arm and the link. These plates 28 are preferably the ends of the partition 9, and they serve to support the partition on the ends of the casing.

Extending longitudinally within the bottom portion of the case or body there is a stationary abutment having a straight upright face or wall 29 and a rear upwardly and forwardly inclined face or wall 30, thereby producing a hollow abutment. The walls of the abutment are of course perforate, so as to admit the wash-water, and there is a draw-off valve 31, piercing one end of the body or case and communicating with the hollow abutment to draw off the wash-water without requiring that the machine be stopped and the clothes removed.

In practice the machine is supplied with water and the clothes to be washed and placed upon a suitable stove or furnace, as indicated in Fig. 2 of the drawings, after which the crank 18 is manipulated so as to work the plunger 10 back and forth within the compartment 8. It will now be understood that the articles being washed are not subjected to a pounding action by the plunger; but said plunger forces the wash-water, air, and steam through the clothes, so as to effectually cleanse the same without subjecting them to any material wear. When the plunger is moving downwardly and forwardly, the valves 25 will be closed by the pressure of the water and steam, and when the plunger is being elevated the valves 25 will open inwardly, and thereby permit the entrance of water and steam through the top of the plunger, such water and steam having passed over the top of the partition 9 when displaced from the clothes-compartment 27 by the action of the plunger. At this point it will be explained that the inclined wall 30 of the abutment in the bottom of the case or body operates as a deflector to elevate the free lower end of the plunger when moving forwardly, which supplemental movement of the plunger tends to lift and overturn the bundle of clothes from the front to the rear of the body, which produces a thorough separation and agitation of the clothes, so as to subject all of the latter to

the action of the wash-water, steam, and air without subjecting them to wear. When the plunger is withdrawn into the compartment 8, there is a suction tending to withdraw the clothes therewith which would choke the compartment. However, this difficulty is obviated by the provision of the abutment 29, which prevents the clothing from being drawn into the compartment 8, and thus prevents damage to the clothing and interference with the operation of the machine.

For the purpose of rinsing the clothes a hopper-shaped receptacle 31' is provided upon the back 16 of the machine, with its upper end open and its lower end in communication with the compartment 8, as shown at 32 in Fig. 2. When it is desired to rinse the clothes, clean rinse-water is poured into the hopper 31' through its open top, and such water runs down through the outlet 32 into the compartment 8 and rises through the clothes, after which it passes off through the drain 31.

Having thus described the invention, what is claimed is—

1. A washing-machine having a body for containing the clothes and a plunger having a swinging movement to force wash-water through the clothes and housed from exerting a pounding action thereon, the forward end of the plunger working in the bottom of the body and operating to lift and turn over the clothes.

2. A washing-machine having a body provided with a partition dividing the same into a clothes-compartment and a plunger-compartment, and a hollow plunger working in the plunger-compartment to force wash-water through the clothes, the lower end of the plunger also working within the bottom of the clothes-compartment to lift and turn over the clothes.

3. In a washing-machine, the combination of a body having a clothes-compartment and a plunger-compartment, a plunger working in a curvilinear direction in the plunger-compartment with its lower end working in the bottom of the clothes-compartment to lift and turn over the clothes, pivotal arms supported upon the body and connected with the plunger, and plunger-operating means.

4. In a washing-machine, the combination of a body having a clothes-compartment and a plunger-compartment, a plunger working in a curvilinear direction in the plunger-compartment with its lower end working in the bottom of the clothes-compartment, a deflector carried on the bottom of the body and in the path of the lower end of the plunger to deflect the latter upwardly.

5. In a washing-machine, the combination of a body having an entrance opening, a bowed longitudinally-disposed partition dividing the body into a clothes-compartment and a bowed plunger-compartment, the two

compartments being in communication at the top and bottom of the body, a hollow bowed plunger working within the plunger-compartment and provided with an open lower end working in the bottom of the clothes-compartment, an inwardly-opening valve for the top of the plunger, arms pivotally supported upon the ends of the body and connected to the plunger, a deflector carried within the bottom of the body and in the path of the lower end of the plunger, and means located outside of the body for actuating the plunger.

6. A washing-machine comprising a body provided with a partition dividing it into a clothes-compartment and a plunger-compartment, the latter being in communication

with the clothes-compartment at its bottom, a plunger working in the plunger-compartment and adapted to project into the bottom of the clothes-compartment, and a rinse-tank carried by the body and in communication with the clothes-compartment through the plunger-compartment to discharge water into the former.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ALFRED C. DAVIS.
CHARLES C. DAVIS.

Witnesses:

J. B. JONES,
E. C. BYARS.