No. 636,403. Patented Nov. 7, 1899.

J. W. C. GLOTFELTY & C. P. SNOW.

WASHING MACHINE.

(Application filed Mar. 30, 1899.)

(No Model.)

Fig. 1.

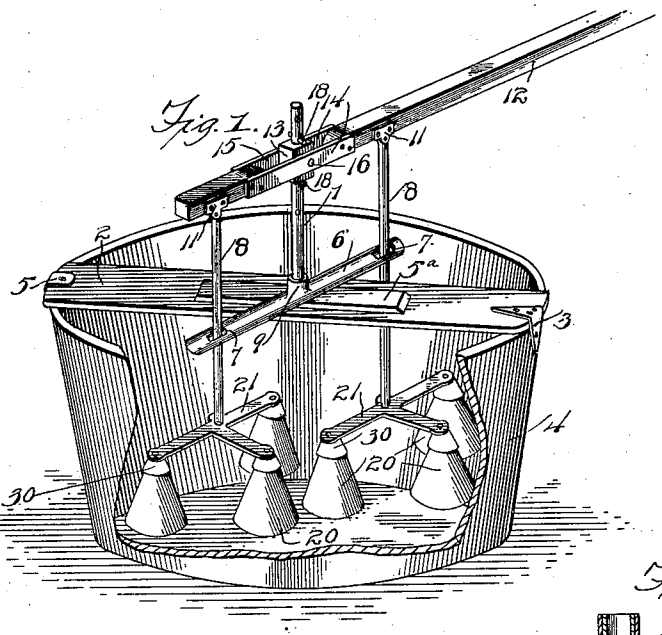

Fig. 3.

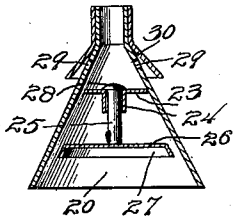

Fig. 2.

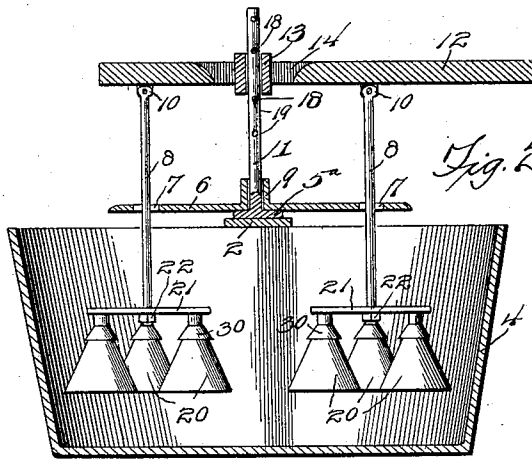

Fig. 6.

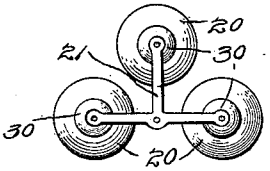

Fig. 7.

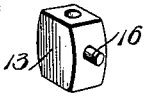

Fig. 4.

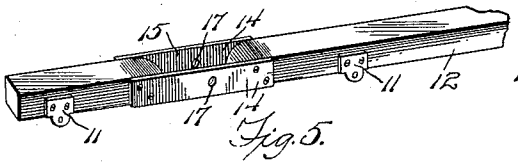

Fig. 5.

Witnesses
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Inventors
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C. P. Snow

By their Attorneys.
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN W. CLAY GLOTFELTY AND CHARLES P. SNOW, OF LANARK, ILLINOIS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 636,403, dated November 7, 1899.

Application filed March 30, 1899. Serial No. 711,086. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. CLAY GLOTFELTY and CHARLES P. SNOW, citizens of the United States, residing at Lanark, in the county of Carroll and State of Illinois, have invented a new and useful Washing-Machine, of which the following is a specification.

The invention relates to improvements in washing-machines.

The object of the present invention is to improve the construction of washing-machines and to provide a simple, inexpensive, and efficient one adapted to be operated at the expenditure of a minimum amount of labor and capable of rapidly and thoroughly washing clothes without injuring the fabrics.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a washing-machine constructed in accordance with this invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is an enlarged detail sectional view illustrating the construction of the pounders. Fig. 4 is a detail perspective view of the guide-bar. Fig. 5 is a detail perspective view of a portion of the operating-lever. Fig. 6 is a detail view of a group of the pounders. Fig. 7 is a detail perspective view of the adjustable fulcrum.

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

1 designates a vertical standard mounted on a horizontal board or support 2, which is hinged at one end at 3 to one side of a tub or receptacle 4, and its other end 5 is detachably secured to the said tub or receptable by any suitable means and is adapted to be released to permit the operating mechanism to be swung out of the tub. The standard is provided at its lower end with a base 5^a, which is suitably secured to the supporting-board 2 and which forms a support for a guide-bar 6, having a central bearing to receive the standard and provided with end openings 7, through which pass plunger-rods 8, and the said guide-bar is enlarged at its center to provide a short sleeve 9 for the central bearing.

The rods or plungers are provided at their upper ends with eyes 10, which are pivoted by suitable fastening devices to corresponding eyes 11 of an operating-lever 12, which is fulcrumed between its ends on the standard by means of an adjustable fulcrum 13. The operating-lever is composed of two sections connected by plates 14 and spaced apart to provide an opening 15 for the reception of the fulcrum-block 13, the latter of which is provided at opposite sides with trunnions or pivots 16, which are arranged in suitable perforations 17 of the plates 14. The fulcrum-block, which is capable of vertical adjustment on the standard, is securnd to the same by means of pins 18 passing through perforations 19 above and below the fulcrum, which is adapted to be rotated on the standard to carry pounders 20 over the entire surface of the bottom of the tub, whereby the clothes may be thoroughly and uniformly operated on. By locating the perforations 19 in the standard the same distance apart as the length of the block 13 the block can be adjustably secured to the standard and kept from moving up or down the standard and yet have the necessary rotary movement to permit of the lever and guide-bar being swung around upon the standard. The guide-bar, which is arranged at the bottom of the standard, is adapted to rotate on the same with the fulcrum, which is provided with a round bore or opening to fit the standard, which is round.

The pounders, which are conical, are connected to the outer ends of the arms of a T-shaped spider or frame 21, which is secured centrally to the lower end of each of the plungers, which are provided with nuts 22 and which are threaded for the reception of the same. The spiders or frames are arranged horizontally and the pounders are grouped together, as clearly shown in Fig. 6 of the drawings. Each pounder, which is conical, is provided with a stationary horizontal diaphragm or partition 23, located above the center of the pounder and provided with a centrally-arranged short depending tube 24, which forms an opening for the passage of a stem 25 of a valve 26, located beneath the diaphragm and having an inclined peripheral flange 27, adapted to bear against the inner face of the conical shell of the pounder when the plunger moves downward,

whereby the air will be confined within the lower portion of the pounder and will be forced through the clothes. The inclined peripheral flange 27 forms a wedge-shaped valve and provides a tight joint when the valve is closed. The stem of the valve is provided at its upper end with a head 28, which is adapted to rest upon the upper face of the diaphragm to limit the downward movement of the valve. The shell of the pounder is provided above the diaphragm with apertures 29 for the admission of air, and it has a shield 30, arranged over the openings and adapted to prevent water from being thrown upward by the device.

The pounders are vertically reciprocated by the oscillation of the operating-lever, and the latter is adapted to be swung horizontally through substantially one-half of a revolution, which will be amply sufficient to cause the pounders to operate on all the clothes.

By providing the ends of the guide-bar with longitudinal slots the lower ends of the plunger-rods can swing back and forth from the edge of the tub toward its center, thus causing the pounders of the two plungers to engage with the clothes entirely across the tub, and by providing the lower end of the plunger-rod with a spider and securing a set of plungers to each spider the pounders will extend under each end of the standard-board when the lever has been swung around upon the standard as far as it can go. In this manner the pounders can be made to reach every portion of the clothes within the tub, and by being reciprocated will thoroughly cleanse them.

The washing-machine is simple and comparatively inexpensive in construction. It is easily operated, and it is adapted to operate uniformly and thoroughly on the clothes being washed and is capable of washing the same without injuring them. The operating mechanism is capable of adjustment on the vertical standard to adapt it to the quantity of the clothes being washed and to the depth of the receptacle in which the clothes are placed, and the operating-lever and the guide-bar are adapted to swing horizontally. The valve is simple, strong, and durable, and the peripheral flange, which is disposed at an inclination to fit the walls of the conical pounder, forms an inverted cup and is adapted to be operated on quickly by the air on the downstroke of the plunger.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. In a washing-machine, the combination of a conical shell having an upper aperture, a diaphragm mounted within the shell and having an opening, a valve-stem passing through the opening and adapted to engage the upper face of the diaphragm, and a valve secured to the stem and having an inclined peripheral flange arranged to engage the inner face of the shell, substantially as described.

2. In a washing-machine, the combination, with a receptacle, of a support hinged at one end to the top thereof, a base secured to the support and provided with a perforated cylindrical standard rigidly secured thereto, a guide-bar upon the standard, the central portion of which is perforated and provided with a sleeve for encircling the standard each end of the bar being slotted longitudinally, two pins through adjacent perforations of the standard, a perforated fulcrum-block pivotally secured upon the standard between said pins, the opposite sides of the block being provided with trunnions, a lever pivotally secured upon said trunnion each end of which is provided with fastening devices, a plunger pivotally secured to each fastener, the free end of which passes through the slot in the guide and is provided with a set of pounders.

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

J. W. CLAY GLOTFELTY.
CHARLES P. SNOW.

Witnesses:
C. C. PIERCE,
ARTHUR MEYERS.