No. 742,754. PATENTED OCT. 27, 1903.

J. S. TRIMBLE.

WASHING MACHINE.

APPLICATION FILED MAR. 2, 1903.

NO MODEL.

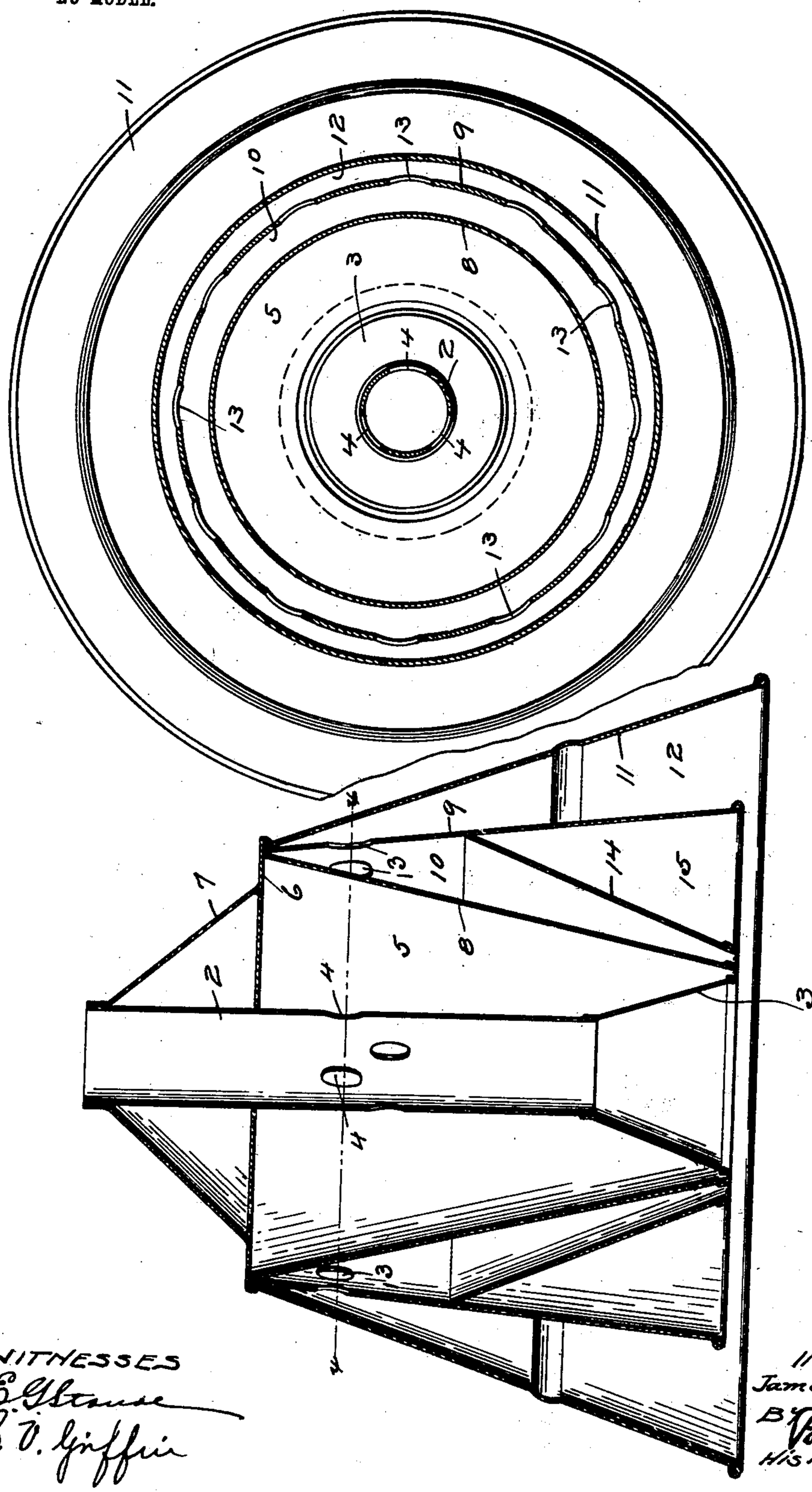

Fig. 1

Fig. 2

WITNESSES
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No. 742,754. Patented October 27, 1903.

UNITED STATES PATENT OFFICE.

JAMES S. TRIMBLE, OF PHILADELPHIA, PENNSYLVANIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 742,754, dated October 27, 1903.

Application filed March 2, 1903. Serial No. 145,847. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. TRIMBLE, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

My invention relates to hand washing-machines of the suction type.

The object of the invention is to provide an efficient machine and avoid the internal churning and mixing of the air and water by causing the suds and air to flow continuously up through the machine and down through the clothes to be washed.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claim.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical section of a washing-machine embodying my invention. Fig. 2 is a horizontal section on the line $x\,x$ of Fig. 1.

In the drawings, 2 represents a funnel having an open upper end to receive the operating handle or stick (not shown) and provided at its lower end with the flared section 3. Openings 4 are provided in the wall of said funnel, leading to an annular chamber 5, the top of which is closed by a plate 6. Braces 7 are preferably provided between the plate 6 and the upper portion of the funnel 2. Depending from the plate 6, near the periphery thereof, are frustum-shaped shells 8 and 9, the former being inverted and having its lower edge near the edge of the flared lower end of the funnel, but spaced therefrom sufficiently to allow the air and suds to flow through, and the shell 9 diverges from the shell 8 toward the bottom to form an intermediate chamber 10. The lower edges of the shells 8 and 9 are substantially flush with the lower edge of the funnel-section 3. Outside the shells 8 and 9 is an outer frustum-shaped shell 11, inclosing the others and spaced therefrom sufficiently to form a chamber 12, that grows narrower toward the top of the machine and communicates with the chamber 3 through holes 13 in the shell 9. Chamber 10 is preferably subdivided by a frustum-shaped partition 14 to form a chamber 15, said partition being secured at its upper edge to the shell 9 below the perforations therein and having its lower edge near the lower edge of the shell 9. The shell 11, as shown in Fig. 1, extends below the lower edges of the inner shells, so that when the device is placed upon the clothes within a tub or pail a chamber will be formed that is sealed against the entrance of air by the lower edge of the said outer shell. The shell 14 is inclined, as shown, its lower edge being near the corresponding edge of the wall 8, causing the lower portion of the chamber 10 to be contracted.

In use the apparatus is placed in a tub, pail, or other receptacle containing the clothes, and the lower edges of the shell 11 being a little lower than the corresponding edges of the inner shells will first come in contact with the suds or clothes and the confined air and suds will pass up into the chamber 12 and the open lower end of the funnel 2. The suds and air entering the chamber 12 and rising therein will flow through the holes 13 into the chamber 10 between the inner and middle shells, and the suds flowing up into the funnel 2 will pass through the holes 4 into the chamber 5. After entering and filling these chambers the air and suds driven by the inflowing current will be discharged with considerable velocity through the contracted openings between the flaring lower end of the funnel and the inner shell and the inner shell and the partition-wall 14 and passing through the clothes will effectually cleanse the same. I thus provide two independent continuous passages for the entrance of the suds and air into and the discharge of the same from the shells, and as the liquid enters at one point and is discharged at another there will be no churning or mixing of the water or air in the apparatus and its efficiency will be greatly increased.

I claim as my invention—

A washing-machine, comprising a centrally-arranged funnel having a handle-socket at its upper end and an open flaring lower end and a series of holes in its upper walls, an imperforate plate provided on said funnel above and near the holes therein and extending

horizontally therefrom, a series of three frustum-shaped shells arranged concentrically and inclosing said funnel and having their upper ends secured at a common point to said plate near its outer edge, the inner frustum shell being imperforate and inverted and having its smaller lower end near the flaring open lower end of said funnel and forming therewith a contracted exit from the space inclosed by said shell, the middle and outer frustum shells diverging toward the bottom from the inner one and from each other, the outer shell being imperforate and the middle one having a series of holes in its upper walls leading to the space between said middle and inner shells, and a diagonally-arranged imperforate partition-wall supported on said middle shell below the holes therein and having its lower end near the corresponding end of said inner shell and forming therewith a contracted exit-opening from the space between said partition-wall and said middle and inner shells, substantially as described.

In witness whereof I have hereunto set my hand this 28th day of February, 1903.

JAMES S. TRIMBLE.

In presence of—
JOHN SCHENCK,
H. C. YOUNG.