

I. H. ARNOLD.
WASHING MACHINE.
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1,154,832.

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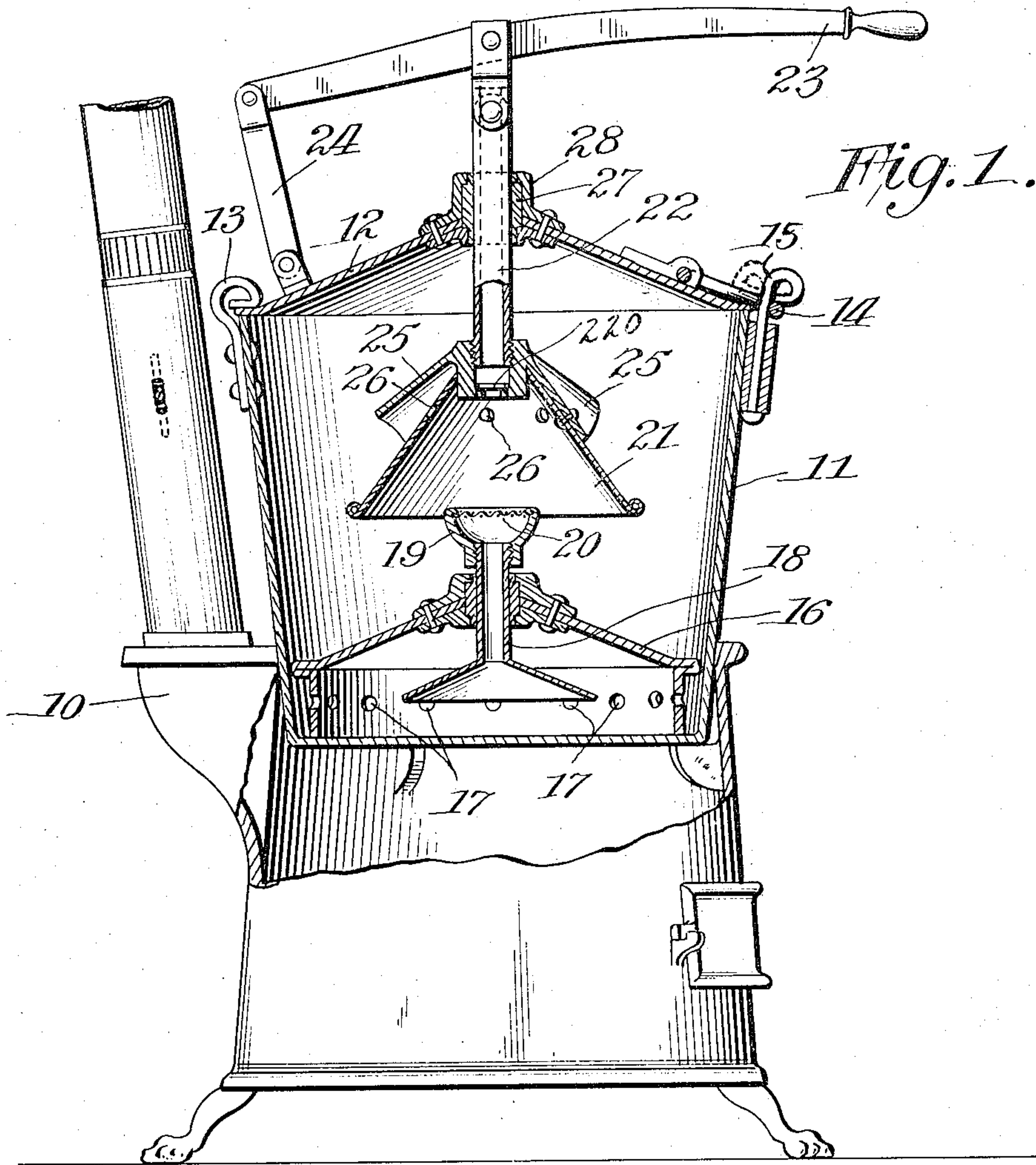


Fig. 2.

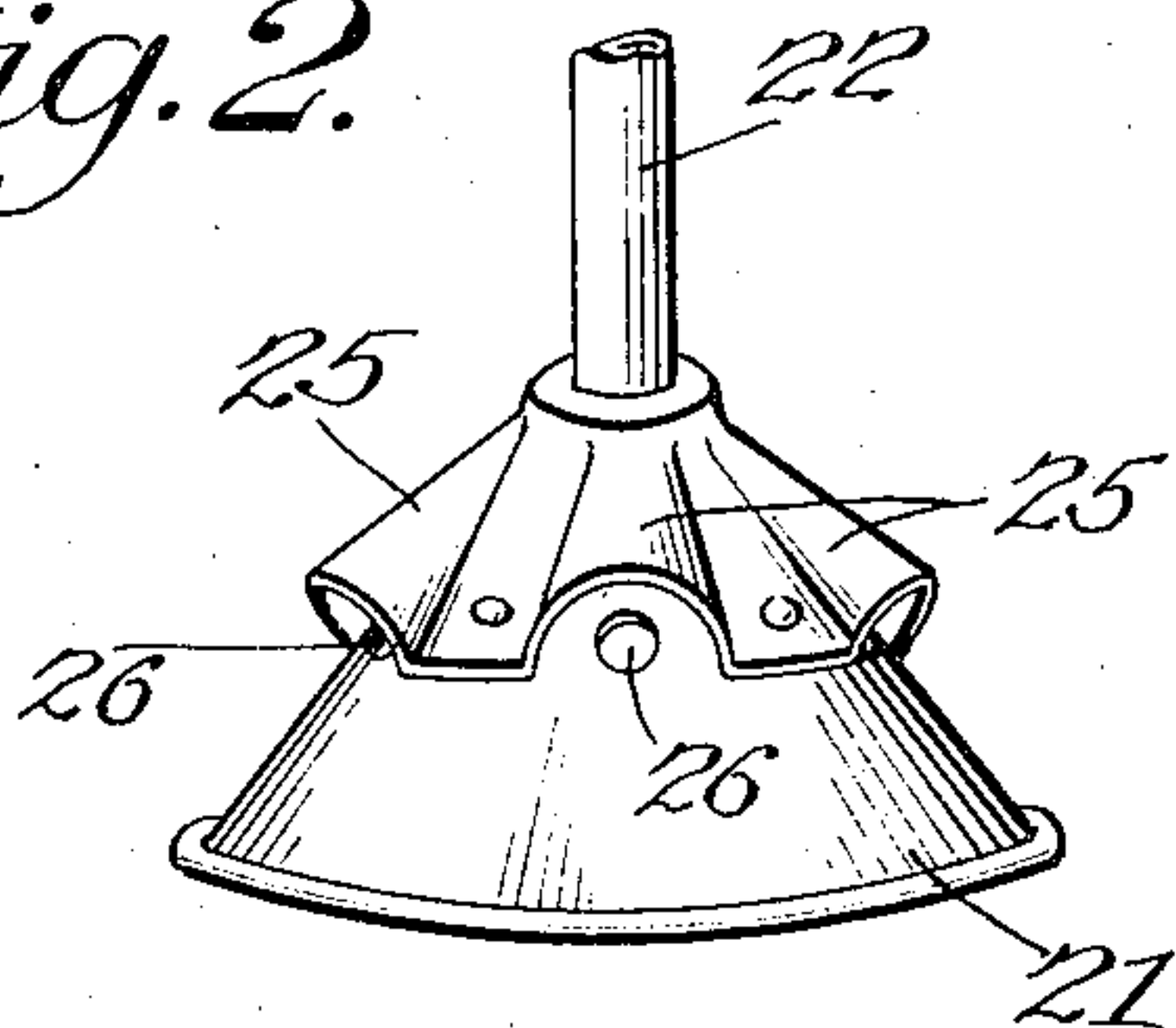
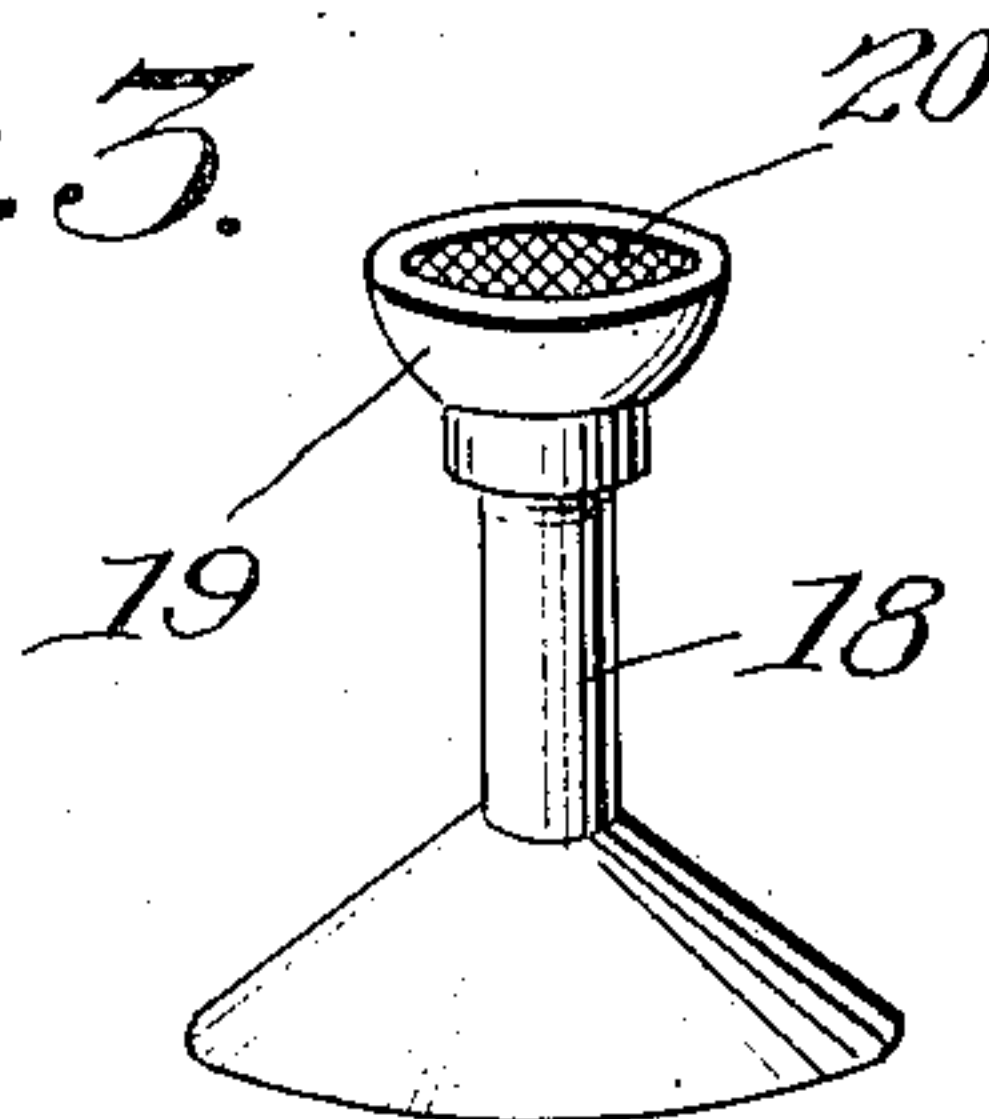


Fig. 3.



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WASHING-MACHINE.

1,154,832.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ISAAC H. ARNOLD, a citizen of the United States, residing at Animas, in the county of Grant and State of New Mexico, having invented certain new and useful Improvements in Washing-Machines; and do hereby declare that the following is 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 and figures of reference marked thereon.

My invention relates to washing machines of the type shown in the patent to myself and others No. 566,885, September 1, 1896, wherein a boiler is employed that is detachably applied to a stove, the association of the boiler and the stove in this type being for the purpose of enabling the use of the stove either indoors, or outdoors, for ironing, cooking or for other purposes when clothes are not to be washed, and the object of my invention is to improve the washing machine in particulars that will render it more efficient and rapid in its work, more durable and more convenient and easier to manipulate, and to these ends my invention consists in the washing machine constructed substantially as hereinafter specified and claimed.

In the accompanying drawings Figure 1 is a vertical section of the washing machine embodying my invention, the upper portion only of the stove being shown in section; Fig. 2 is a detail view in perspective of a portion of the plunger or pounder; Fig. 3 is a detail view in perspective of the device through which a circulation of the suds and steam between the interior and exterior of the false bottom is secured.

In the drawings 10 designates the upper portion of the stove having a removable top so that, as shown in Fig. 1, the lower end of the boiler 11 will be inserted therein and the boiler supported. No description of the special construction of the stove is needed beyond explaining that it has such form and construction as enables it to be used in conjunction with the boiler and also used for any of the uses to which a stove is ordinarily put when the boiler is removed. When the boiler is removed a cover or top suitable for heating irons may be placed thereon.

The boiler 11 has a removable top 12. Said top is secured in place so as to be easily removed by having its rim at one point in-

serted beneath a curved finger or clip 13 riveted to the boiler side and at a diametrically opposite point having a loop or hasp 14 pivoted at one end to it so as to swing into and out of engagement with a hooked-shaped end of a pin or bolt 15 that is rotatably mounted on the side of the boiler so that by turning it through a half circle the loop may either readily swing clear of the hooked-shaped end or interlock therewith. The clip 13 is made of spring steel and the free end of the curve is slightly flattened to form a good bearing for the curve.

The boiler has a removable false bottom 16 that has a cylindrical rim that is provided with numerous holes or perforations 17 and a conical top, and passing through the apex of the flared top is a tube or pipe section 18 which at its lower end, within the false bottom, flares outward and downward, and its upper end outside the false bottom has an enlarged hollow head 19 across the top of which is a piece of wire cloth 20 so that it will be seen that there may be a circulation of suds and steam from within the false bottom to the outside thereof, or vice versa.

Reciprocable vertically above the false bottom within the boiler, is a conical pounder 21, it being secured at the upper end to the lower end of the stem 22 which passes through a central opening in the top, or cover, and outside the latter is connected to an operating handle 23, which by a link 24 is pivotally connected to the top, or cover, so that by moving the handle up and down the pounder is reciprocated vertically in the boiler. The stem 22 is tubular so that air may pass down through it, and at its lower end is a valve 220 that opens on the upstroke, and air enters the boiler, and closes on the downstroke of the pounder. On the outside of the pounder there is a series of hollow projections or flutes 25, beneath each of which the wall of the pounder is provided with a hole or perforation 26 so that steam and soap suds may pass freely into and out of the pounder, the flutes forming hoods or housings to prevent the closing up of the holes. It will be seen that the vertical reciprocation of the pounder, in conjunction with the boiling, will cause suds and steam from within the false bottom to be forced up through the pipe, or tube 18, and drawn or sucked through the clothes upon the ascent of the pounder and then upon its descent the clothes will be pressed down

ward and the suds and steam forced outward through the twill and mesh of the same, they being free to pass downward to, and through the perforations in the false bottom, these operations being facilitated by the air valve in the pounder. On the ascent of the pounder the clothes are loosened, and the suds and steam pass freely therethrough. Thus a thorough agitation of the clothes and their permeation by the suds and steam are accomplished due to the alternate compression and suction. The closing of the top of said tube or pipe 18 by the wire cloth, or other perforated wall, prevents the forcing of the clothes into the upper part of the tube, and tends to prevent sediment resulting from the washing coming through to the clothes.

In order to provide a bearing for the plunger stem which will not rust or corrode, I employ a bushing 27 of wood which is held between plates 28 on the upper and under sides of the top or cover and which are riveted thereto, and a similar expedient is employed to provide the bearings for the tube or pipe 18 in the false bottom. As the metal parts within the boiler are plated to prevent rusting, and as the bushings are of wood, it will be seen that soiling of the clothes from rust is avoided, and the wooden bushing forms a good long bearing that guides the plunger stem or the tube 18, as the case may be, so that each freely moves up and down without lateral motion that would bind and increase the friction. Moreover, the plates 28 materially strengthen the structure where the strain is great.

The pressure generated in the boiler 11 acting upon the flared lower end of the tube 18 presses the tube upward so that its upper end is in intimate contact with the clothes at the center of the bundle of clothes, the tube thus following up the clothes, when by

the lifting of the pounder 21 the clothes tend to rise and thus at all times steam and hot suds are applied to the center of the bunch of clothes and penetrate into the same and pass radially, or laterally, outward. If the tube did not follow along with the clothes, obviously upon the lifting of the pounder with the tendency therefrom to lift the clothes, the latter would separate from the top of the tube, and hence, steam and hot suds issuing from the top of the tube could not have the intimate action upon the clothes which comes from the constant contact of the top of the tube with the bunch of clothes. The steam and suds will be concentrated by the tube and issue therefrom against the clothes with considerable force, due to the concentrating effect of the tube.

Having thus described by invention what I claim is—

1. In a washing machine, the combination with a boiler, a false bottom for the boiler, a vertically movable tube passing through the false bottom and having enlargements, respectively above and below the same, a plunger within the boiler above the false bottom.

2. In a washing machine, the combination of a boiler, a false bottom for the boiler, a vertically movable tube passing through the false bottom and having enlargements, respectively above and below the same, a wooden bushing through which said tube passes, a plunger within the boiler above the false bottom, and means for reciprocating the plunger.

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC HILL ARNOLD.

Witnesses:

RUFUS WAMEL,
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