Feb. 6, 1951 L. KOPITO 2,540,893

WASHING MACHINE

Filed Aug. 30, 1947

2 Sheets-Sheet 1

FIG. 1.

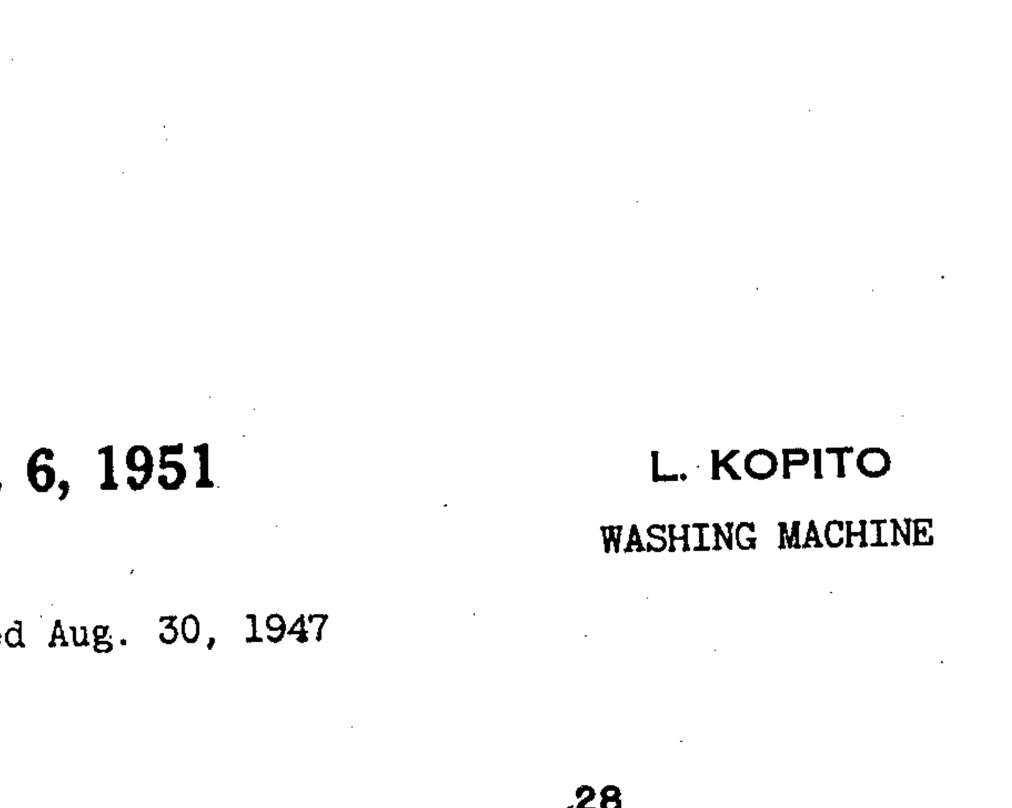
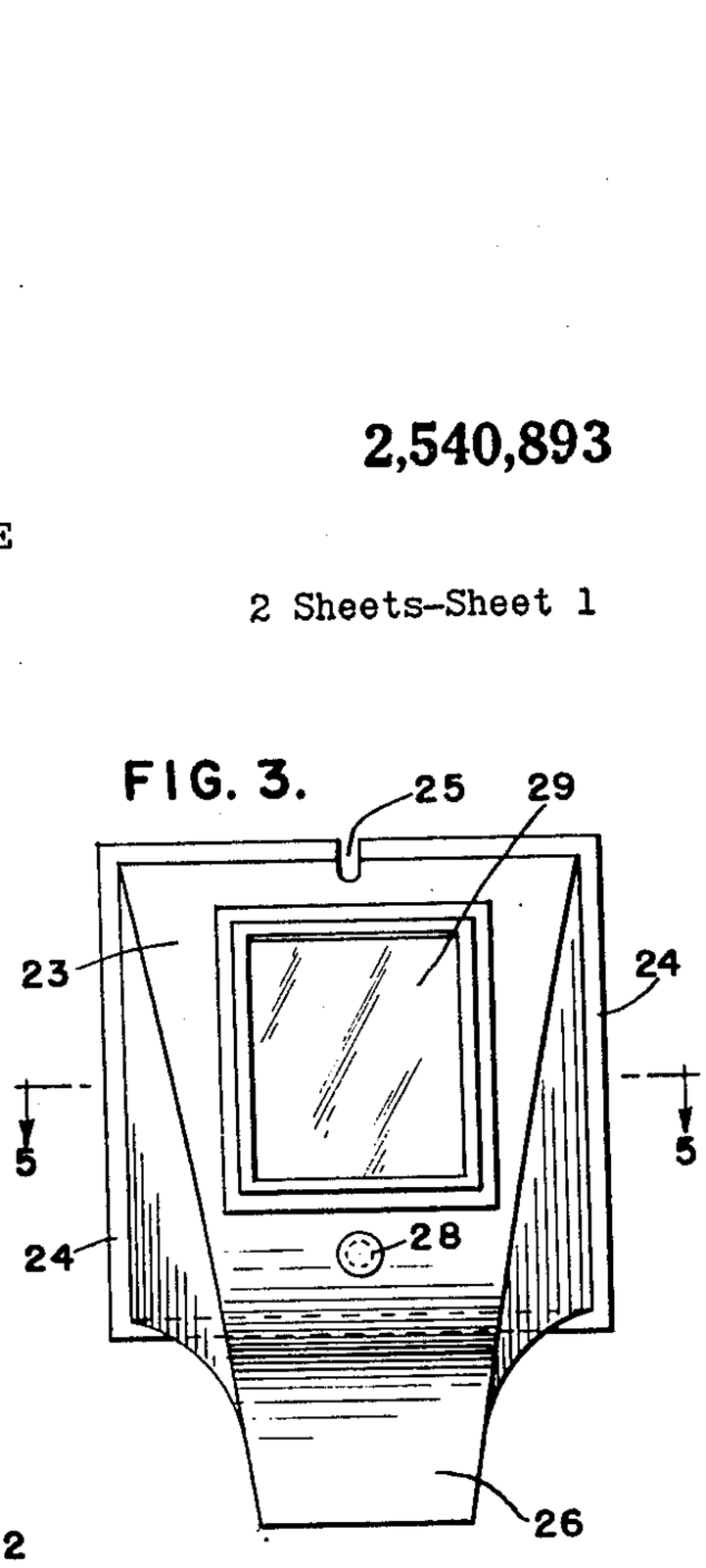


FIG. 3.



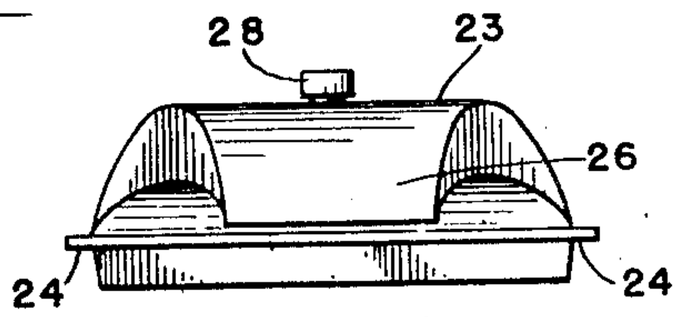
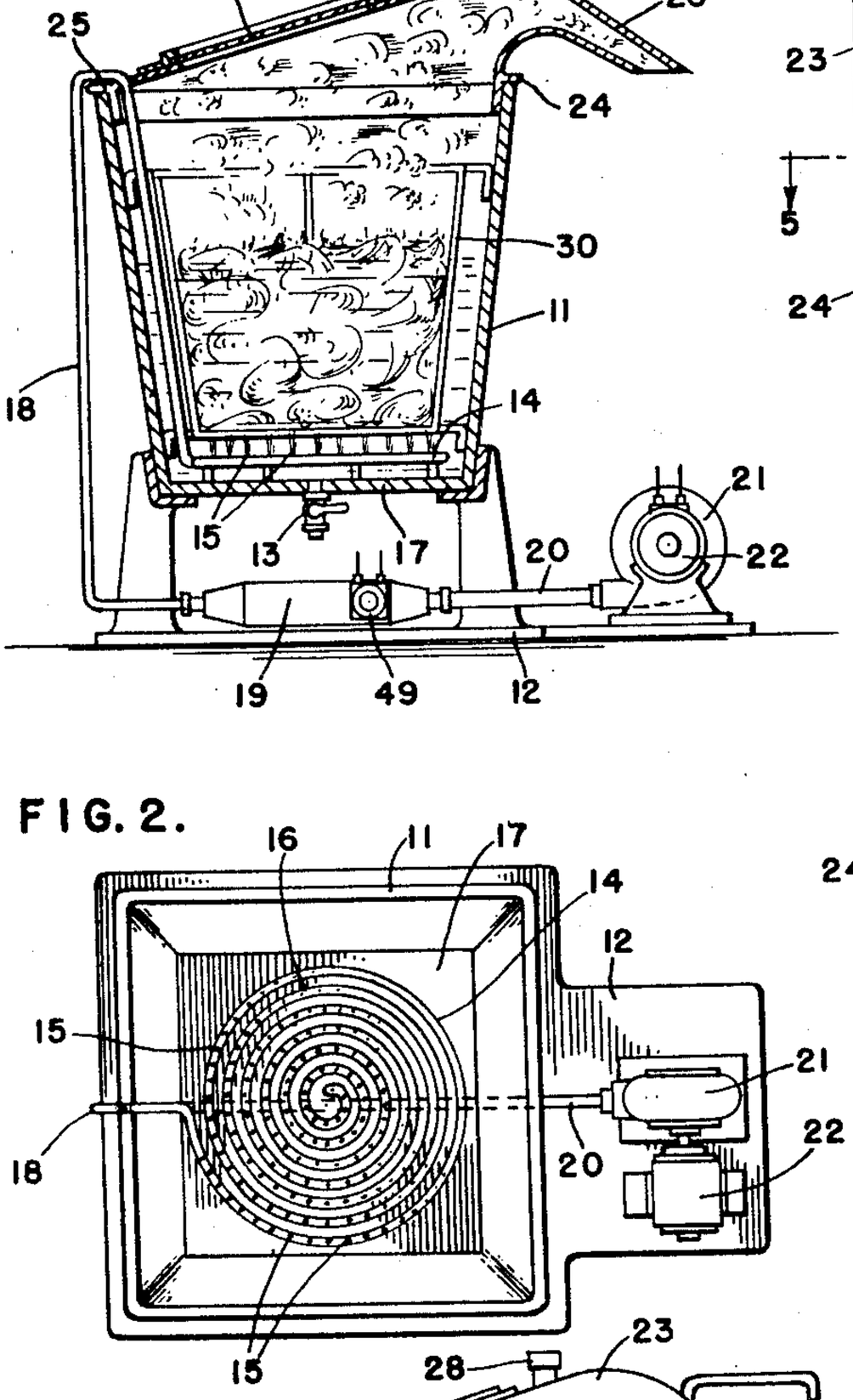


FIG. 4.

FIG. 2.



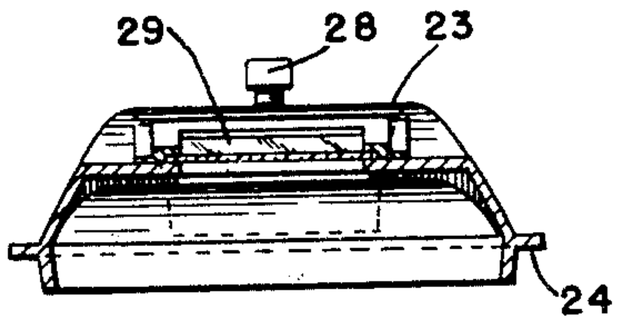
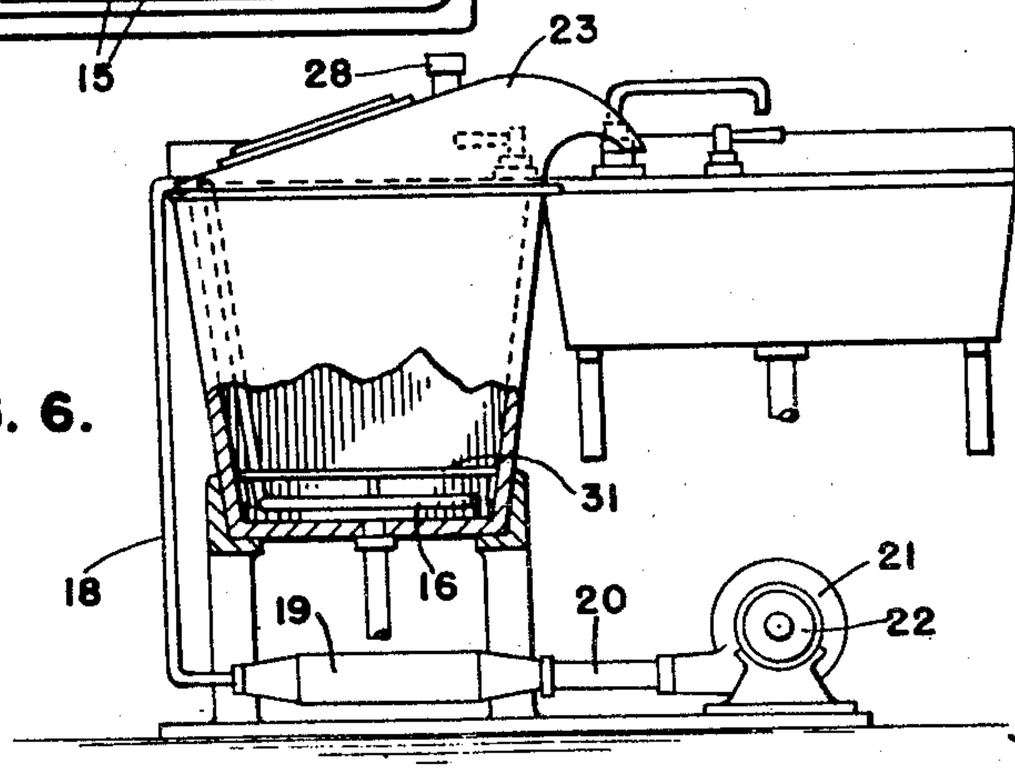


FIG. 5.

FIG. 6.



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Filed Aug. 30, 1947 2 Sheets-Sheet 2

FIG. 7.

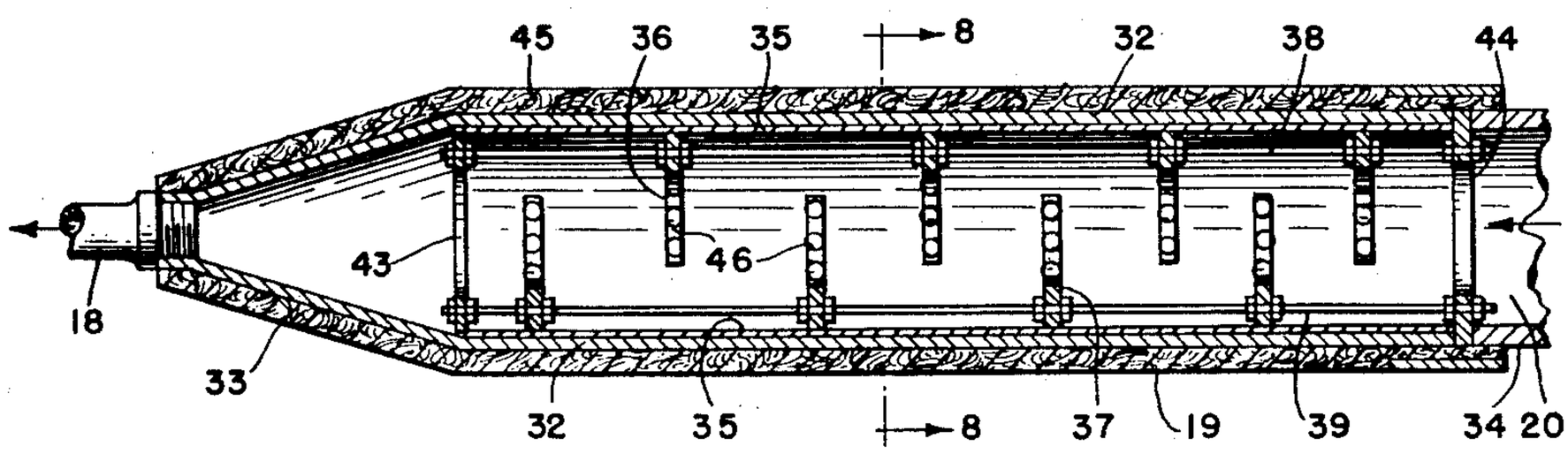


FIG. 8.

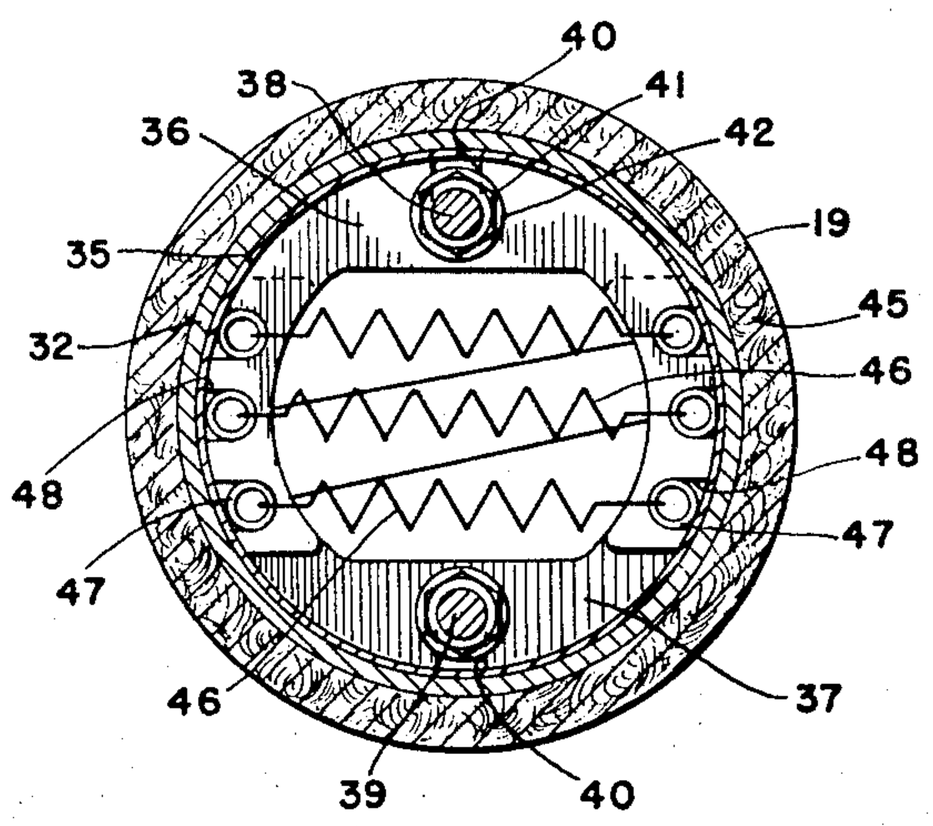
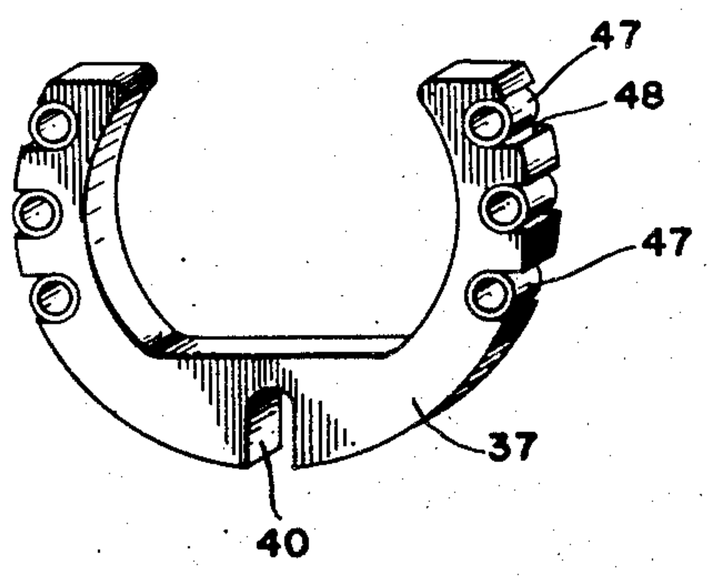


FIG. 9.



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Patented Feb. 6, 1951

2,540,893

UNITED STATES PATENT OFFICE

2,540,893

WASHING MACHINE

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Application August 30, 1947, Serial No. 771,437

1 Claim. (Cl. 68—183)

1

This invention relates to washing and drying machines and more particularly to machines of the type in which warm or hot air is forced through saponified water to create suds which percolate through the clothes within the machine and flush and clean them.

One object of this invention is the provision therein, of means for discharging the suds from the machine as they become soiled during the process of cleaning the clothes.

Another object of this invention is the provision therein of a machine of the type specified wherein there are no moving mechanisms within the tub or container for soiled clothes.

A further object of this invention is the provision therein of means whereby air under pressure, is heated to various temperatures and is forced through the water in the machine and wherein means is provided to control the degree of temperature of the air.

A further object of this invention is the provision therein of a machine comprising simple parts within the tub which are readily removable to permit easy cleaning of the tub and parts therein.

Another object of this invention is the inclusion therein of a heating unit within an air chamber, which is in turn connected to a perforated distributor grill or coil in the tub and a blower unit also connected to the air chamber to force heated air through the saponified water in the tub.

A further object of this invention is the provision therein for utilizing the machine for washing and drying dishes and the like.

A further object of this invention is its adaptability for including a standard remote control with a standard sink and tub unit to draw off the water from the tub without displacing the clothes therein.

A further object of this invention is the provision therein of a blower unit and air heater which is adaptable to various household utilities.

A still further object of this invention is the provision of a device in which the constituent elements are so arranged structurally and functionally as to assure improved results with materials and members which may be manufactured at reasonable cost, may be easily assembled and which will be efficient in operation with minimum wear to the parts.

The invention possesses other objects and features of advantage, some of which, with the foregoing will be set forth in the following description and in the claims wherein parts will be identified by specific names for convenience, but they are intended to be as generic in their application to similar parts as the art will permit. In the accompanying drawings there has been illustrated the best embodiment of the invention known to me, but such embodiment is to be regarded as typical only of many possible embodiments, and the invention is not to be limited thereto.

2

The novel features considered characteristic of my invention are set forth with particularity in the appended claim. The invention itself, however, both as to its organization and its method of operation, together with additional objects and advantages thereof, will best be understood from the following description of a specific embodiment when read in connection with the accompanying drawings, in which:

Figure 1 is a sectional elevation of the device set up for use.

Figure 2 is a plan view of the device with the cover removed.

Figure 3 is a top view of the cover of the device which is provided with a soap suds discharging spout as will be hereinafter described.

Figure 4 is an end elevational view of the cover.

Figure 5 is a sectional view of same taken along line 5—5 of Figure 3, looking in the direction indicated by the arrows.

Figure 6 is an elevational view, partly in section, of the device applied to a combination kitchen sink and washtub.

Figure 7 is an enlarged longitudinal section of a heating unit used in the device.

Figure 8 is an enlarged sectional view of same taken along the line 8—8 of Figure 7.

Figure 9 is an isometric view of a part of the heater unit.

Referring in detail to the parts, 11 designates a vessel suitably mounted upon a base plate 12 and provided with a draw off valve 13. A tube or pipe 14 having perforations 15, is formed in a coil 16 (Figure 2), and rests upon the bottom 17 of the vessel 11. A tube 18, which may be flexible, connects this said coil 16 with an air chamber and heating unit 19 which is in turn, connected by means of a pipe 20, with a blower 21 actuated by means of a motor 22.

A cover and sud discharging member 23, formed with a supporting flange 24, is adapted to engage over the open top end of the vessel 11, and is provided with a slot 25 to permit the passage of said pipe 18. The said cover is further provided with a discharge spout 26 extending from one end

thereof and adapted to direct the flow of suds, while the machine is in operation, from the machine. An inlet 27 and cap 28 is provided in said cover 23 and an observation glass 29 is held thereon to provide a means of observing the action in the vessel while the clothes therein are being cleansed.

A basket of wire mesh 30 may be provided to hold the clothes, though the use of this basket is not essential to the proper operation of the washer. When the basket 30 is not used a wire mesh tray 31 (Figure 6) may be employed. It will be optional with the user to employ either the basket 30 or tray 31 or omit either when using the device.

The air chamber 19 (see Figures 7, 8 and 9) comprises a cylindrical casing 32 of metal, preferably copper, having a tapered or conical shaped end 33 and connecting with the aforesaid tube 18 which leads to and connects with the coil 16 in the vessel 11. The opposite end 34 of the air chamber 19 connects with the aforesaid blower unit 21. The said air chamber also comprises a heating unit, is lined by a coating of mica 35 and carries, spaced at intervals therein, baffle elements 36 and 37. The said baffles 36 and 37 are alternately spaced, at intervals, on opposite sides, inside the said cylindrical casing (Fig. 7) and are held in place by tie rods 38 and 39 which engage in slots 40 formed upon the said baffles 36 and 37. Nuts 41 and washers 42 are employed to tighten upon the said baffles to hold same in place. The tie rods 38 and 39 are secured, at their ends to ring members 43 and 44 at opposite ends of the said cylinder 32. An insulating jacket 45 of asbestos or other suitable material is provided to encircle the cylinder 32. Electrical heating elements 46 are carried in baffles 36 and 37 and are mounted upon porcelain tubes or knobs 47 which engage in slots 48 upon the periphery of said baffles.

A control switch and rheostat 49 (Figure 1) is provided upon the heating unit and air chamber and affords a means for controlling the electrical energy to the heating elements 46. The electrical connections throughout are standard and are not shown.

To prepare the device for use, the coil 16 is placed upon the bottom 17, in the vessel 11, is connected by the pipe 18 to the air chamber and heating unit 19 and by the pipe 20 to the blower 21. Clothes to be washed are immersed in saponified water within the vessel 11 and the cover and suds discharging unit set in place. The electric current to the motor and heating unit is turned on to heat and drive the air through the perforations in the coil and up through the soap

water. The pressure of the air as it is forced through the outlets in the coil will agitate the clothes and cause a uniform distribution of heated air and soap water through the clothes fabric and insure thorough cleaning thereof.

By using any suitable rack or basket for holding same within the vessel, dishes of all types may be cleansed and dried. Further, the air heater and blower units may be utilized in connection with the various utility units in the household.

When the clothes in the vessel have been thoroughly cleansed and the water in the vessel drawn off through the tap or valve 13, the heated air, under pressure, may be blown through the clothes to dry them.

A standard remote control valve (not shown) may be disposed in the draw off or drain pipe between the said draw off 13 and the house drain connection so that the water in the tub may be drained and the tub refilled with fresh water without removing the clothes or dishes therefrom.

I claim:

The combination in a washing and drying machine comprising a clothes and saponified water containing vessel, an air distributing coil in the said vessel and an air compresser having tubular connection with the said air distributing coil, of a heating unit disposed in said tubular connection and comprising a cylindrical metal casing having tapered conically shaped ends, a lining of mica within the cylindrical casing, baffle elements being alternately spaced on opposite sides within the cylindrical casing, tie rods extending longitudinally through the said baffles to hold same in place, electrical heating elements mounted in said baffles upon insulating knobs, an insulating jacket around the outside of the cylindrical cylinder, conductor means to supply electrical current to the said electrical resistance elements and a controlling switch to regulate the flow of current through the said electrical heating elements.

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