

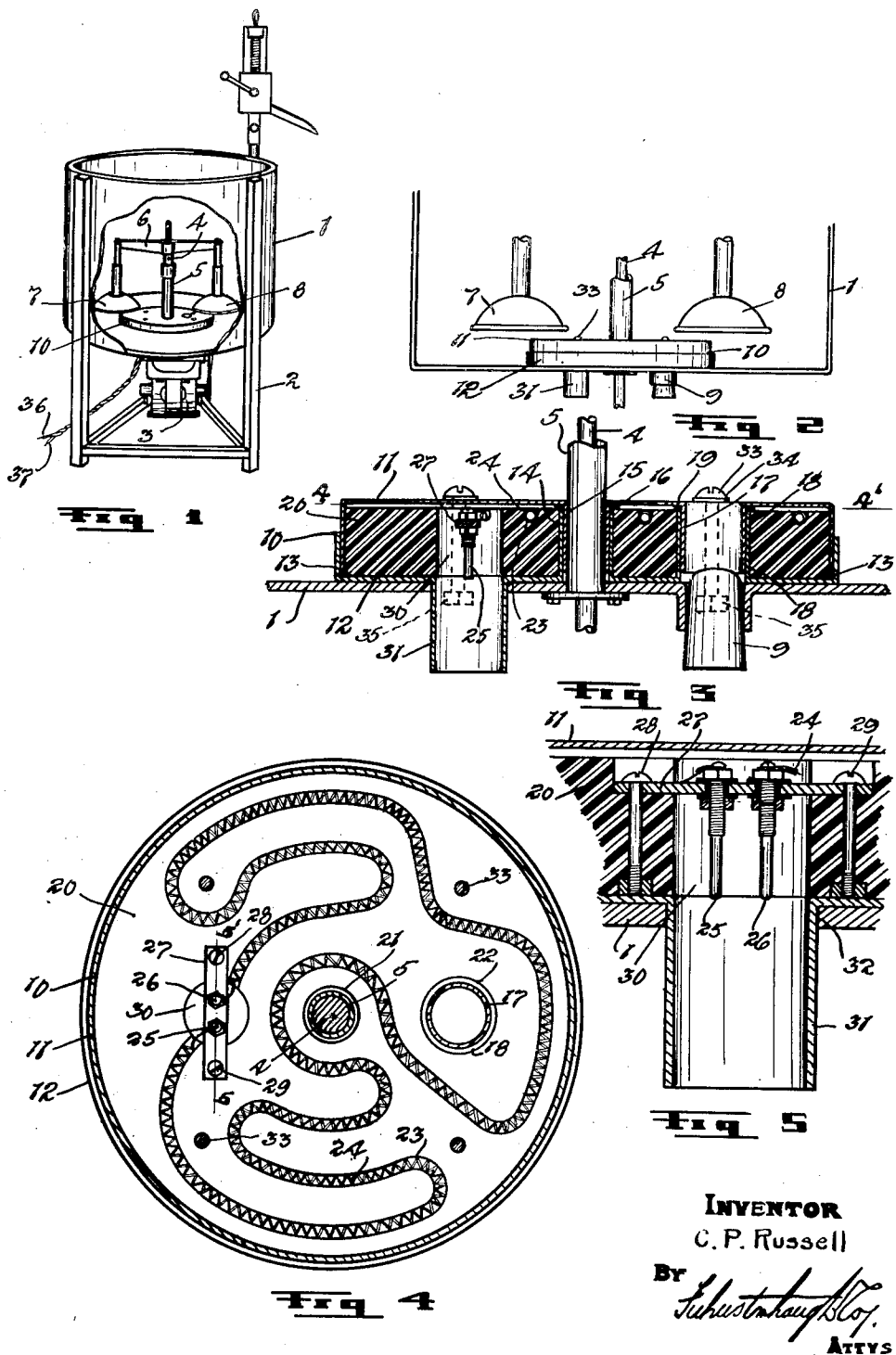
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C. P. RUSSELL

ELECTRIC HEATER FOR WASHING MACHINES

Filed Jan. 7, 1922



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UNITED STATES PATENT OFFICE.

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ELECTRIC HEATER FOR WASHING MACHINES.

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To all whom it may concern:

Be it known that I, CHARLES PATRICK RUSSELL, of the city of Brandon, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Electric Heaters for Washing Machines, of which the following is the specification.

The invention relates to improvements in electric heaters for washing machines and particularly to an electric heater which can be attached to existing washing machines to heat the water in the same, and an object of the invention is to provide a simply constructed efficient heating element which can be readily installed on the washing machine and utilized for heating the water contained therein.

With the above more important object in view the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described and later pointed out in the appended claims, reference being had to the accompanying drawing in which:

Fig. 1 is a perspective view of a washing machine and showing my heater applied thereon, the side of the machine being broken away to expose the heater.

Fig. 2 is an enlarged detailed side view of the heater and adjoining parts.

Fig. 3 is an enlarged detailed vertical sectional view centrally through the heater.

Fig. 4 is a horizontal sectional view through the heater, the section being taken in the plane denoted by the line 4-4' Fig. 3.

Fig. 5 is an enlarged detailed vertical sectional view at 5-5' Fig. 4.

In the drawing like characters of reference indicate corresponding parts in the several figures.

The heater shortly disclosed is particularly constructed for application on the type of electrically driven washing machine as shown in Fig. 1, the machine being now on the market.

This machine presents the stationary tub or water tank 1, carried by suitable legs 2, and is provided underneath the tank with an electric motor 3 which operates to reciprocate upwardly and downwardly a vertically disposed rod or shaft 4, the shaft passing slidably through a tubular sleeve 5 attached to the bottom of the tub. The shaft carries a cross arm 6 which supports a pair of vacuum cups 7 and 8, these cups in the up and down motion of the shaft serving to

wash the clothes placed in the tub. The tub is also fitted with a drain plug 9.

All the above parts are of ordinary construction and as previously intimated the heater, shortly described, is constructed for insertion in this particular type of machine.

The casing 10 of the heater is formed from a metallic top 11 and a metallic bottom 12, the top and bottom both being provided with marginal flanges telescoping one within the other. A rubber or such like washer or gasket 13 is inserted between the bottom 12 and the flange of the top, this insuring of a water tight joint when the two parts are fitted together and fastened to the bottom of the tub as later explained.

The top and bottom of the casing are both fitted with a central opening which receives the tubular sleeve 5 and both the top and bottom parts are supplied at the openings with telescoping tubes 14 and 15, the tubes sliding one into the other when the casing is closed. A rubber gasket or washer 16 is inserted between the upper end of the tube 14 and the top of the casing, this insuring of a water tight joint.

At the point where the drain plug 9 occurs the top and bottom of the casing are fitted with further telescoping tubes 17 and 18 which allow the water in the tub to drain from the tub through the inner tube 17 which tube is carried by the top part of the casing.

A rubber or such like gasket 19 is inserted between the upper end of the outer tube 18 and the top of the casing. Within the casing I locate a block 20 of insulating material, such as asbestos, fibre or similar material, the block being provided with holes 21 and 22 which receive the tubes 14 and 18. An irregularly shaped circuitous channel 23 is cut in the upper face of the block and the channel receives a wire coil 24 forming the electrical heating element. The ends of the coil are electrically connected to contact tips 25 and 26, the contact tips being suitably insulated from and carried by a cross plate 27, counter sunk in the upper face of the block and fastened to the same by fastening screws 28 and 29. The block is recessed as indicated at 30 to receive the contacts and access is had to the contacts from the underside of the casing through an extending tube 31 formed as part of the bottom of the casing. The tube extends through a suitable opening 32 cut in the bottom of the tub.

When the heater has been placed in the tub in the manner shown it is securely fastened by a number of bolts 33, the bolts being fitted with gaskets or washers 34 at their upper ends to effect a water tight joint. The lower ends of the bolts protrude through the bottom of the tub and are fitted with fastening nuts 35.

An electric connection is made at the contact tips 25 and 26, the feed wires 36 and 37, leading from the tips, being in direct electrical connection with a suitable source of electromotive force.

Obviously the water utilized for washing purposes in the tub can be initially heated by the heater before the washing is to be done, and can be kept hot by turning on the heater from time to time as occasion requires.

This arrangement saves a great deal of labor and is a very effective one.

Whilst I have entered into a detailed description of the parts it will be understood I do not wish to be limited to the precise details of construction shown as they could be readily modified to suit the structural details of the washing machine on which the heater is to be installed.

What I claim as my invention is:

1. The combination with a washing machine tub, of an electric heater comprising a box like casing contained within the tub and fastened to the bottom of the same and having an outlet passing from the bottom of the casing downwardly through the bottom of the tub, a suitably insulated electric heating coil contained within the casing and suitably insulated contact tips connected electrically to the ends of the coil, said contact tips being directly opposite the outlet aforesaid.

2. The combination with a washing machine tub and a stationary tube extending upwardly from the centre of the tub, of an electric heater for the tub comprising a casing apertured to receive the tube and permanently bolted to the bottom of the tub and within the same and provided with an outlet opening passing downwardly through the bottom of the tub, an insulating block contained within the casing and provided

with an aperture registering with the outlet, an electric heating coil counter sunk in the upper face of the block and suitably insulated and supported contact tips located in the aperture of the block and electrically connected with the ends of the coil.

3. The combination with a washing machine tub, a centrally disposed tube extending upwardly from the bottom of the tub and a drain plug located in the bottom of the tub, of an electric heater mounted in the bottom of the tub and provided with apertures, one to receive the tube and the other to register with the drain plug and having exposed contact tips approached from the underside of the tub.

4. The combination with a washing machine tub, provided with a centrally disposed vertical tube or shaft of a casing adapted to be secured to the bottom of the tub and provided with a central opening adapted to receive the tube or shaft there-through, and a heating element contained within said casing.

5. The combination with a washing machine tub provided with a central vertically disposed shaft, of a water-tight casing adapted to be secured to the bottom of the tub and provided with a central aperture adapted to receive the said shaft there-through, and an electric heating element contained within said casing.

6. The combination with a washing machine tub provided with a drain opening in the bottom wall thereof, of a casing adapted to be secured to the bottom wall of said tub and provided with an opening adapted to register with the opening in the tub so as not to interfere with the draining of the tub, a heating element contained within said casing, and means for preventing the water draining through the opening in the casing from coming into contact with the heating element.

Signed at Brandon, Manitoba, this 9th day of November 1921.

CHARLES PATRICK RUSSELL.

In the presence of—

R. G. MACDONALD,
ALICE E. PUGSLEY.