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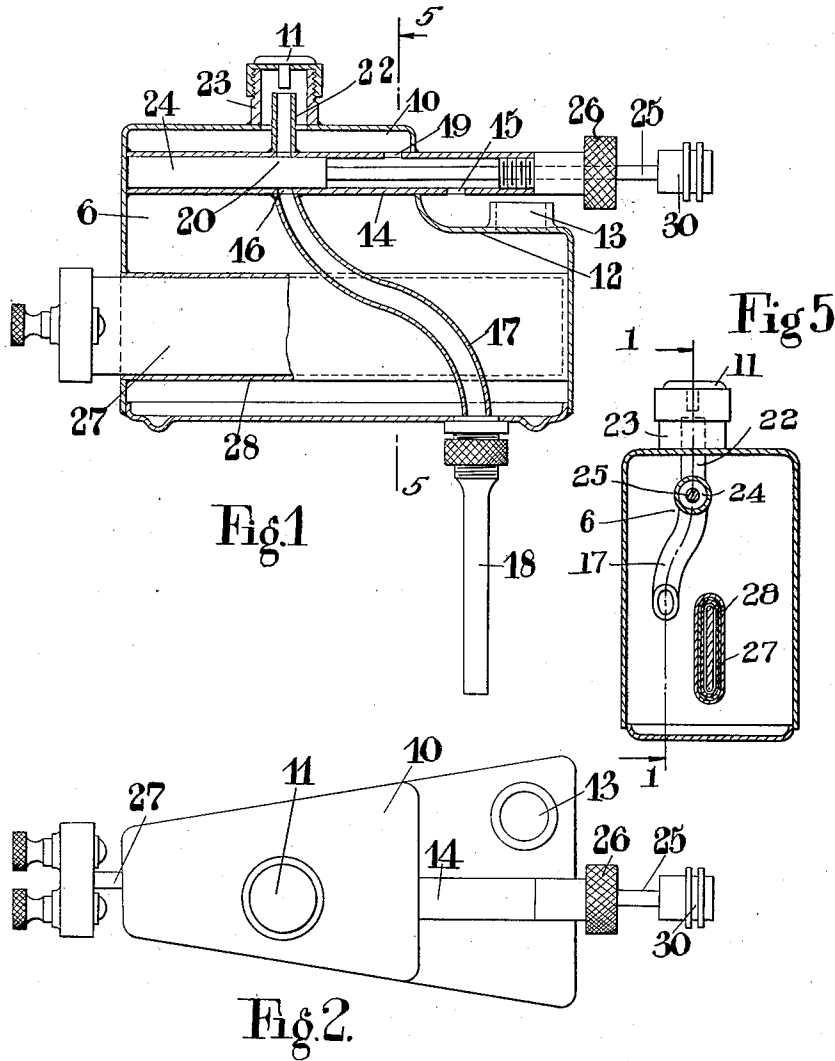
W. MacDONALD ET AL

1,904,064

APPLIANCE FOR USE IN HAIR WAVING

Filed Aug. 25, 1931

2 Sheets-Sheet 1



W. MacDonald
H. MacDonald
INVENTORS

By: Marks & Clerk
Attys.

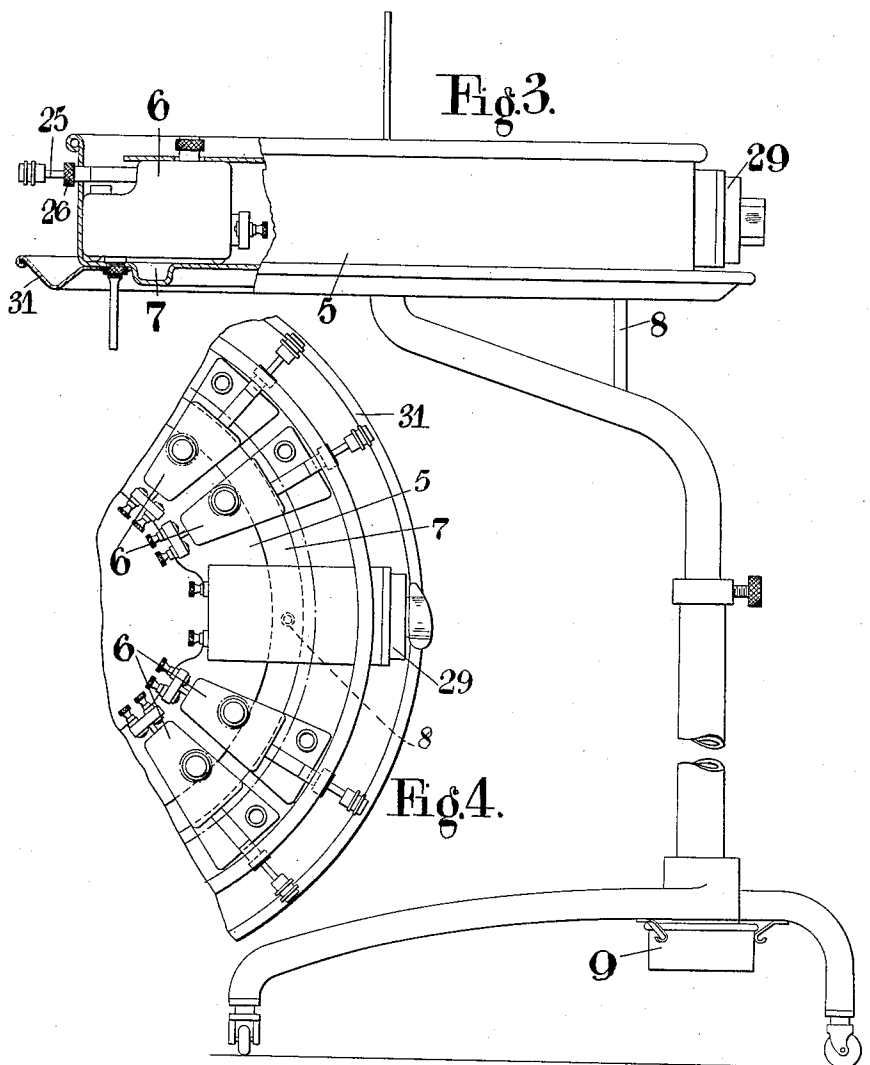
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By: Marks & Clerk
ATTYS.

UNITED STATES PATENT OFFICE

WILLIAM MACDONALD AND HUGH MACDONALD, OF INVERNESS, SCOTLAND

APPLIANCE FOR USE IN HAIR WAVING

Application filed August 25, 1931, Serial No. 559,304, and in Great Britain August 30, 1930.

This invention relates to apparatus for use in hair-waving of the type wherein steam is injected into tubes or jackets thereby subjecting the hair, which has been previously wound onto curlers and placed inside the jackets, to a moist heat and steam treatment.

The object of the invention is to provide improvements in appliances for the generation of the steam and the conveyance thereof from the generator to the waving device.

The invention is concerned more particularly with apparatus in which a plurality of steam generators is provided one for each waving appliance, as shown in our British Patent No. 207,248, and an aim of the invention is to provide improvements in steam generators whereby the heating arrangements are simplified.

The boilers are heated by electrical means and in order that the coupling of the various heaters may be simplified, according to the invention each boiler is provided with a valve device whereby an alternative path for the steam is available from the boiler so that the flow of steam to the waving appliance may be cut off as desired without the necessity of cutting out the heater concerned. By such arrangement the heaters may be coupled up in series, thereby simplifying the wiring.

A further feature according to the invention consists in forming each boiler with a steam dome comprising a part projecting above a substantially horizontal wall in which a filling aperture is provided thereby facilitating filling of the water space to the desired level.

Further features of the invention will be hereinafter described.

In the accompanying drawings—

Figure 1 is a sectional elevation of the improved boiler according to the invention.

Figure 2 is a plan thereof.

Figure 3 shows a boiler mounted in a supporting tray or container.

Figure 4 is a partial plan showing a number of boilers in position in the tray.

Fig. 5 is a vertical sectional view on the line 5—5 of Fig. 1.

In carrying the invention into effect according to one convenient mode, a series of

boilers is provided adapted to be seated within a supporting tray or container 5, the boilers 6 being arranged around the outer rim or wall so as to form a circular series. The boilers are preferably tapered in plan as seen in Figure 4 so as to make use of the available space, while the tray may be of any suitable construction and is preferably of the form described and claimed in our British patent application No. 18,913 of 1931.

The tray is provided with a gutter 7 formed as an annular depression in the lower wall thereof, such gutter being located below the ring of boilers. A suitable outlet 8 from the gutter is provided to carry away to waste any water collected therein to a waste water vessel 9 which may be detachably mounted beneath the outlet. By means of the gutter any water overflowing from the boilers during filling will be immediately collected and carried away.

Each boiler is formed with a steam dome 10 to which a suitable safety valve 11 is attached. This dome is formed so that a horizontal wall 12 is provided to define the water level in the boiler. A filling aperture 13 is provided in the horizontal wall and is located adjacent the outer wall of the boiler, that is the one which will lie close to the wall of the container when the boilers are in position. A suitable closure such as a cork may be provided for the filling aperture.

It will be understood that when water is supplied to the filling aperture of the boiler and the level in the boiler rises to the horizontal wall, any further supply will overflow. This overflowing water will be collected in the gutter 7 of the tray or container and led away to waste. By this arrangement any spilling of the water will be avoided.

Each boiler is provided with a valve device which conveniently comprises a tubular seating member 14 entering the steam dome from the filling end of the boiler and having a closed inner end. This tubular seating is provided with a pair of apertures 15, 16, on the lower part of the tube, one 15 being arranged outside the boiler, while the other 16 is connected to a tube 17 leading to a depending nipple 18 adapted to receive a flexible tube

by which steam is conveyed to the curler. The tubular seating is provided with a second pair of apertures 19, 20 in the upper part of the tube, the aperture 20 connecting to a tube 22 projecting into a safety valve connection 23.

The tubular seating 14 is adapted to accommodate a valve member 24 which comprises a rod adapted to be moved longitudinally within the seating member. According to the position of the valve steam may pass into the tube 22, seating member 14 and down-take 17 or alternately through port 19, seating member 14 and port 15 to the atmosphere.

When the path to the downflow 17 is open, the valve 24 will close the apertures 15, 19, while when the by-pass to the atmosphere is open, the valve will close the apertures 16, 20.

The valve is adapted to be operated by a spindle 25 which projects through a closing cap 26 and is provided with a suitable handle or knob 30.

The cap 26 is screwed or otherwise removably secured in the end of the seating member 14 and forms a shoulder to locate the valve when in position to close the by-pass.

It may happen that a slight escape of moisture may occur between the spindle 25 and the closing cap 26 and such will be collected by the drip tray 31 which extends beyond the wall of the container.

It is preferred that the apertures 16 and 20 should be in alignment whereby stoppages of the pipe 17 and nipple 18 may be cleared by inserting a wire through the pipe 22.

In inserting the boiler into the container the valve rod may be removed together with the closing cap 26 and inserted through a suitable hole in the container and the cap screwed home in the end of the seating member 14. Alternatively the wall may be slotted for the purpose.

The heating device may be of any suitable construction and preferably comprises an electric heater 27 of known form which is inserted into a cavity formed in the boiler by means of a flat tube 28 which extends from the inner end of the boiler. By means of the valve device which permits the alternative path for the steam, the wiring for the heaters may be simplified as they can be connected up in series as indicated in Figure 4 as it is found unnecessary to cut out the heater when any desired boiler is not required, while by means of the independent cavity for the heater removal of the heater unit is facilitated when it is desired, for example, to change or renew an element.

A switch 29 is provided having a number of resistances whereby the heating may be adjusted as desired.

The bottom wall of the boiler may be provided with pressed up feet or projections so that the wall will be spaced from the floor of the container or tray.

The safety valve 11 may be of any suitable

form and as shown comprises a flat disc having a stem entering an aperture in the screwed cap.

What is claimed is:

1. Means for supplying steam to a hair-waving appliance, comprising a steam boiler, a tubular seating member projecting through a wall of the boiler, a pair of apertures in the tubular seating permitting steam to enter the tubular member and pass out to atmosphere, a second pair of apertures permitting steam to pass into the tubular member and thence to the hair-waving appliance, and a valve device located in the tubular seating and adapted to cover and uncover the pairs of apertures alternatively.

2. Means for supplying steam to a hair-waving appliance comprising a steam boiler having a steam dome provided by a horizontal wall having a filling aperture, a tubular seating projecting into the dome, a down-take tube communicating with said tubular seating, apertures in said tubular seating affording alternative paths for the steam to said down-take tube or to atmosphere, a valve located within said seating and controlling the flow of steam through said apertures, a closure cap for the outer end of the tubular seating and an operating rod for the valve extending through said cap.

3. A steam boiler for supplying steam to a hair-waving appliance as claimed in claim 2, wherein a safety valve fitting is provided into which a pipe projects by which steam enters the tubular seating and passes to the down-take tube.

4. A steam boiler for supplying steam to a hair-waving appliance as claimed in claim 2, wherein the valve is mounted in the tubular seating in a readily removable manner to facilitate mounting the boiler in a supporting tray.

5. Means for applying steam to a hair waving appliance, comprising a steam boiler, a conduit opening to the steam space of the boiler for conveying steam to the waving appliance, an outlet from the steam space to atmosphere, and a valve device for controlling the passage of steam to atmosphere and through the conduit whereby the outlet to atmosphere is closed while steam flows through the conduit to the waving appliance or alternatively the conduit to the waving appliance is closed while the outlet to atmosphere is open.

6. Means for supplying steam to a hair waving appliance comprising a steam boiler, having a steam space, a water space extending laterally of the steam space and comprising an upper horizontal wall having a filling aperture, a downwardly extending conduit projecting into the steam space above the filling aperture in said horizontal wall, said conduit being adapted to connect to a hair waving appliance.

7. Means for supplying steam independently to a plurality of hair waving appliances, comprising a plurality of steam boilers, one for each waving appliance, continuous heating means for the boilers, a conduit
5 for each boiler for conveying steam to the respective waving appliances, an outlet from the steam space of each boiler to atmosphere and valve means for each boiler controlling
10 the flow of steam alternately to the waving appliance and to atmosphere.

8. Means for supplying steam independently to a plurality of hair waving appliances, comprising a plurality of steam boilers, one for each waving appliance electric
15 heating elements for each boiler, said elements being connected in series, a conduit for each boiler for conveying steam to the respective waving appliance, an outlet from
20 the steam space of each boiler to atmosphere and valve means for each boiler controlling the flow of steam alternately to the waving appliance and to atmosphere.

9. A steam boiler for supplying steam to a
25 hair waving appliance as claimed in claim 8 wherein a flat tubular housing extends from one wall of the boiler into the water space, said housing accommodating a flat electric heater.

30 In testimony whereof we have signed our names to this specification.

WILLIAM MACDONALD.
HUGH MACDONALD.

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