June 23, 1953 F. A. McFERRAN 2,642,851

WATER HEATER JACKET

Filed June 13, 1950

FIG. 1.

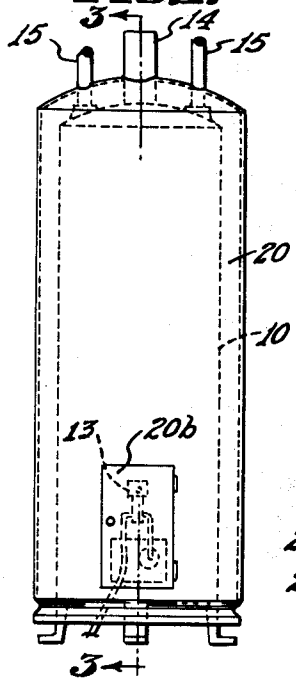


FIG. 2.

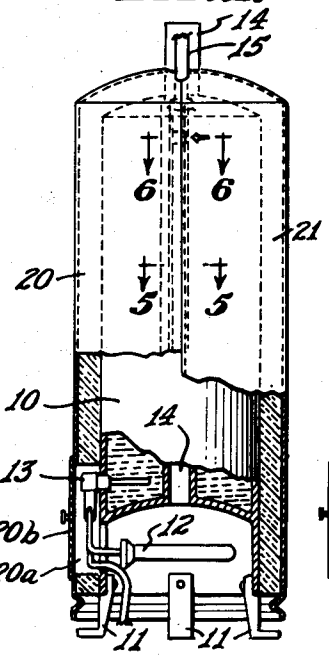
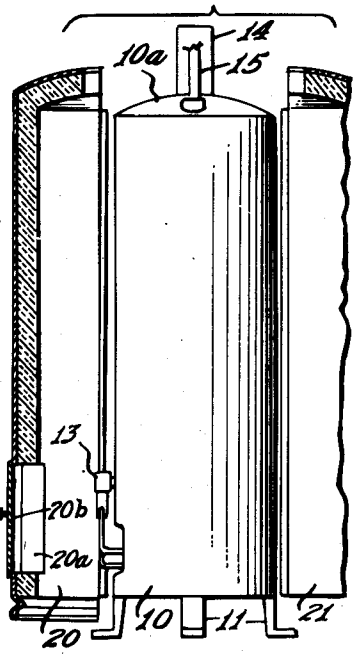


FIG. 3.



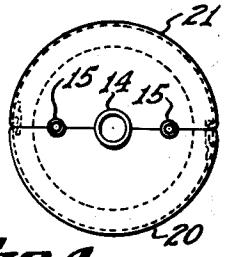


FIG. 4.

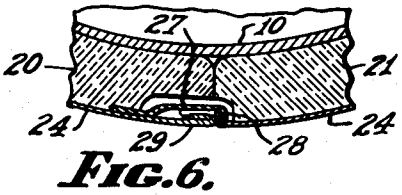


FIG. 6.

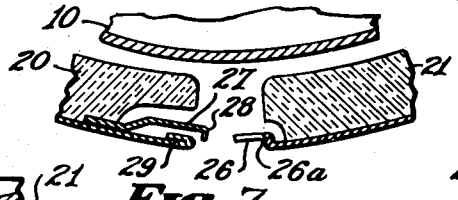


FIG. 7.

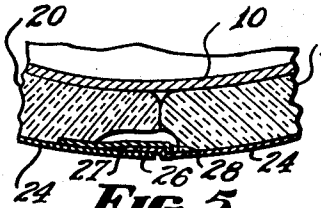


FIG. 5.

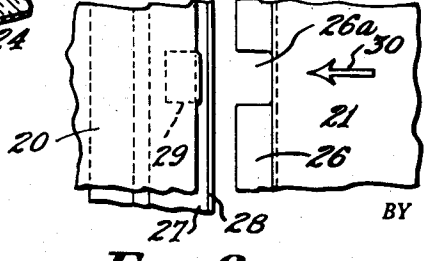


FIG. 8.

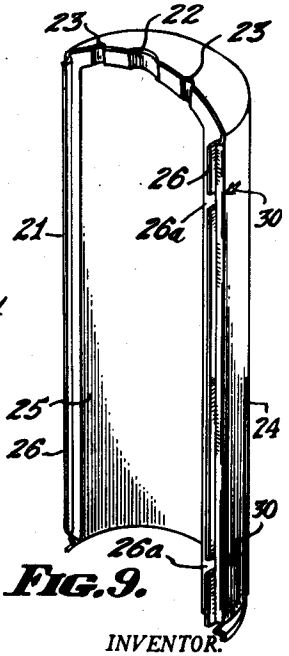


FIG. 9.

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WATER HEATER JACKET

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7 Claims. (Cl. 122—494)

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This invention relates to a water heater jacket. The great majority of gas water heaters for household use are today of the tank type. Generally they consist of a metal tank with an inset bottom so that a burner may be located beneath the inset bottom of the tank while housed in the lower end of the outer tank walls. They are generally provided with a central flue rising through the tank which serves as an exhaust for the products of combustion and which will normally be connected with a chimney in the house. Water inlet and outlet fittings are provided in the top of the tank and a thermostatic device is let into the tank to control the extent of gas burning.

The tank proper is generally sheathed in a suitable insulation which may be of glass fibers confined against the tank by means of an outer decorative or painted metal sheath. The insulation is very tightly packed in the space between the tank proper and the outer sheath so that if for any reason it is necessary to remove the outer sheath it becomes practically impossible to replace the insulation properly.

Where it is necessary to gain access to the tank proper the plumber must first remove the insulating material and sheath and after he has repaired the tank as may be required it is extremely difficult for him to reassemble the insulation and the sheath.

The failure of such water heaters usually results from corrosion or leaking in the tank. Many of the parts of such heaters should theoretically be salvagable by reason of the fact that, as pointed out above, a tank cannot be replaced on the job.

With the foregoing considerations in mind, it is an object of the present invention to provide a removable sheath or jacket for a gas or electric water heater such that if service on the tank is required, the plumber may remove the jacket and gain full access to all parts of the water heater without disconnecting any of the fittings, and having completed his repair, the plumber can replace the insulating jacket without difficulty. Since most leaks are fitting leaks which require water pressure for their detection, it is highly desirable to be able to remove the jacket without disconnecting any fittings.

It is another object of the invention to provide a water heater jacket as above outlined which will be simple to assemble to the water heater tank and which will be equally simple to disassemble from the tank. It is yet another object to provide a jacket constituted of a minimum number of separable parts for ease in handling.

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Another object of the invention resides in the provision of a two-piece removable jacket, so as to permit shipment of a complete automatic water heater in knock-down condition for assembly on the job. In this way shipping costs are lowered because of savings in crating and resultant lower freight rates, and of course, the danger of damage during shipment is reduced.

These and other objects which will be pointed out in more detail hereinafter or which will be apparent to one skilled in the art upon reading these specifications I accomplish by that certain construction and arrangement of parts of which I shall now describe an exemplary embodiment.

Reference is made to the drawings forming a part hereof and in which:

Figure 1 is a front elevational view of a water heater with a jacket according to my invention.

Figure 2 is a side elevational view of the same with parts in section to show the construction.

Figure 3 is a view similar to Figure 2 but showing the two parts of the jacket removed from the tank.

Figure 4 is a plan view of the water heater tank and jacket.

Figure 5 is a fragmentary cross-sectional view taken on the line 5—5 of Figure 2 on an enlarged scale.

Figure 6 is a view similar to Figure 5 taken on the line 6—6 of Figure 2.

Figure 7 is a view similar to Figure 6 showing the separation of the joint.

Figure 8 is a fragmentary front elevational view of the joint as seen from below in Figure 7.

Figure 9 is a perspective view of one of the jacket members.

Briefly, in the practice of my invention I provide a water heater jacket which, when in assembled condition, will jacket the cylindrical wall and the top of the water heater tank and which comprises two half sections, each thus being semi-cylindrical in form with one end closed; and the end portion of each half section is provided with half openings for the vent pipe and water fittings. One of the elements is provided with an aperture for a control window. Each of the half sections is provided with an annular joint-forming element so that the two half sections may simply be snapped together. Means are also provided to facilitate separation of the two half sections.

Referring now in more detail to the drawings, the water heater tank is indicated at 10,

and it is mounted on feet 11 and is provided with a burner apparatus as at 12 and thermostat as at 13. A central flue is provided at 14 to carry off the products of combustion. Water fittings are indicated at 15, one being of course the cold water inlet and the other being the hot water outlet. The tank 10 is cylindrical as shown and may have a domed top as at 10a.

According to my invention I provide two half sections 20 and 21 which together constitute the entire water heater jacket. One of the members, say the member 20, is provided with an aperture 20a which may be closed by means of a hinged door member 20b. This provides a control window through which the operation of the burner may be observed and through which access may be had to the thermostat. The member 21 is substantially the same as the member 20 except that it does not have the aperture 20a. Each of the members 20 and 21 have a half opening at 22 which half openings together constitute an opening for passage of the vent pipe 14. Each half section also has the half openings 23 which together with the corresponding half openings in the other half section constitute apertures for the passage of the water fittings 15.

Each half section consists of a shell member 24 which may be of sheet metal suitably painted or decorated and a lining 25 of insulating material. The insulating lining 25 may be composed of a suitable insulating material like glass fibers together with a binder which will make the lining self-sustaining so that it will not require an inner sheath member to hold the lining in position. It will be understood that the radius of curvature of the shell members 24 and the configuration of the top portion thereof is such (having in mind the dimensions of the tank itself) that the insulating material 25 will fit snugly between the tank 10 and the sheath 24. The insulating lining is glued or otherwise suitably secured to the metal shell member.

Coming now to a description of the joint structure, one of the half sections will be provided with a joint forming element as shown on the right hand side of Figure 5 where the shell 24 is provided at its edge with an offset portion 26. The portion 26 is offset from the surface 24 by the thickness of the material of which the shell 24 is made. This offset flange 24 is formed along the meeting edges of the member 21. The flange 26 is interrupted in preferably two or more places as indicated at 26a in Figures 8 and 9 for a purpose to be described hereinafter.

The other half section 20 will be provided with a joint forming element comprising a flange member 27 which may be spot welded or otherwise suitably secured to the shell 24 of the member 20. The flange 27 is offset so as to be spaced from the shell 24 by an amount corresponding to the thickness of the material of the shell, and it extends beyond the edge of its shell member and terminates in an outwardly directed bead or flange 28. The distance peripherally between the end of the shell member 24 of the half section 20 and the outwardly directed bead 28 is such that the offset portion of the flange 26 may pass therebetween. The edge of the shell 24 of the member 20 is provided with inturned portions 29 in the regions corresponding to the notches 26a.

In assembly the two half shell elements 20 and 21 are placed about the tank 10 and the flange 26 of one member is introduced behind the shell member 24 of the member 20 against the spring of the flange 27. When the joint is pushed home to the position of Figure 5 it will be observed that the bead 28 snaps back behind the offset portion of the flange 26.

A joint of this sort would be very difficult to separate without damaging the shell members were not some special provision made for the separation. To this end there are provided the notches 26a and the portions 29. As seen in Figure 6, a screw driver may be inserted into the notch 26a and twisted to cause an initial separation of the two half sections. The screw driver will bear on the right hand side against the offset portion of the flange 26 and on the other side it will bear against the doubled portion 29. In this way severe damage to a raw edge of a light gauge shell member is avoided. The location of the screw driver slots may be marked as by arrows 30.

It will be seen that I have provided a joint structure which makes possible a symmetrical two-piece jacket in which the joint itself is most inconspicuous.

It will of course be understood that the portion 29 could be a separate piece of appropriate thickness spot welded in place, rather than being an inturned flange. It will also be clear that the specific features illustrated are by way of example only and do not constitute limitations upon the invention except as specifically set forth in the claims hereafter.

Numerous other modifications will of course suggest themselves to one skilled in the art.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A water heater jacket, in assembly constituting a complete jacket for the walls and top of a water heater, and comprising two members of semi-cylindrical form each having a half-top member, each of said half-top members having half-openings for a vent pipe and for water fittings, one of said semi-cylindrical members having an aperture for a control window, each said member comprising an outer shell member and a lining of insulating material, said members along substantially, the entire length of their meeting side and top edges having cooperating joint forming elements, the joint forming element on one of said semi-cylindrical members comprising an inwardly offset flange, and the joint forming element on the other semi-cylindrical member comprising a flange along the inside of said shell member, spaced therefrom, extending beyond the edge thereof, and terminating in an outwardly extending bead.

2. A water heater jacket according to claim 1, in which the first mentioned joint forming element has an offset substantially equal to the thickness of the material of said shell member, and in which the flange of the second mentioned joint forming element is spaced from its shell member by substantially the thickness of said shell member.

3. A water heater jacket according to claim 2, in which the distance between said bead and the edge of the shell member beyond which is extends is substantially equal to the thickness of said shell member.

4. A water heater jacket according to claim 3, in which the flange on the first mentioned joint forming element is interrupted to permit the insertion of a screwdriver or the like to initiate separation of said semi-cylindrical members.

5. A water heater jacket according to claim 4, in which the edge of the shell member is rein-

forced opposite the interruption of the flange on the first mentioned joint forming element.

6. A water heater jacket according to claim 1, in which the flange on the first mentioned joint forming element is interrupted to permit the insertion of a screwdriver or the like to initiate separation of said semi-cylindrical members.

7. A water heater jacket according to claim 6, in which the edge of the shell member is reinforced opposite the interruption of the flange on the first mentioned joint forming element.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
740,031	McGaughey et al.	Sept. 29, 1903
1,525,503	Hauser	Feb. 10, 1925
1,609,858	Bohon	Dec. 7, 1926
1,635,003	Lewis	July 5, 1927
1,710,665	Mertzanoff	Apr. 23, 1929
1,887,760	Hauser	Nov. 15, 1932
2,371,347	Morrow	Mar. 13, 1945