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(54) Hot water Supply appliance

(57) An appliance for providing a supply of hot water, the appliance being portable in form and comprising a vessel (10) fitted with an electric immersion heater (22), an inlet (24) for cold water extending to an interior region at or adjacent the bottom of the vessel, and an outlet (30) for hot water at or adjacent the top of the vessel. The appliance is able to provide a supply of hot water on a temporary or emergency basis.

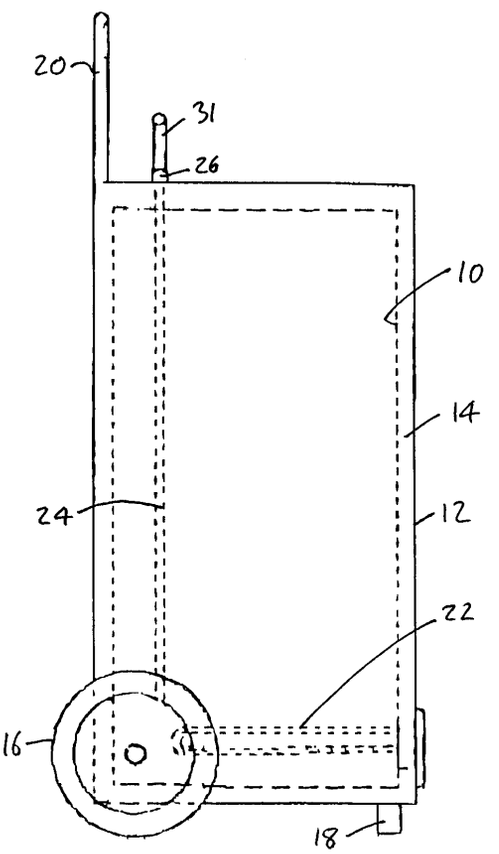

Figure 2

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Description

[0001] The present invention relates to an appliance for providing a supply of hot water or other liquid.

[0002] It is not uncommon for the water heating system of dwellings (usually a combined central heating and water heating system) to break down. In such circumstances, the occupants of the dwelling are left at considerable disadvantage for the duration of the breakdown, particularly from the absence of hot water for baths etc.

[0003] We have now devised an appliance which may be used for providing a supply of hot water on a temporary or emergency basis: the appliance may also be used for heating liquid other than water.

[0004] In accordance with the present invention, there is provided an appliance for providing a supply of hot water or other liquid, the appliance being portable in form and comprising a vessel fitted with an electric immersion heater, an inlet for cold water or liquid extending to a interior region at or adjacent the bottom of the vessel, and an outlet for hot water or liquid at or adjacent the top of the vessel.

[0005] In use, the vessel can be filled with cold water via its inlet: preferably a flexible hose is provided for connection at one end to the inlet of the vessel and at its other end to a cold water tap; after a time, the vessel will be full and water will start to flow from the appliance's outlet, at which point the cold tap is turned off. The outlet may be coupled to an outlet pipe or hose which can be directed into a bath, for example, alongside which the appliance is positioned. Preferably the outlet pipe can be swivelled between a stowed position and a position in which it projects outwardly for overlying the bath. Instead, the outlet for hot water may comprise a spout projecting outwardly from the appliance.

[0006] The electricity supply to the immersion heater is then switched on to heat the water in the appliance's vessel. Once the water is heated sufficiently, the electricity supply is switched off. Then in order to dispense the hot water from the appliance, the cold water tap is turned on again, to introduce cold water into the bottom of the vessel and expel hot water through the outlet at its top.

[0007] After use, the vessel can be emptied by disconnecting the water inlet hose from the cold water tap and laying it on the bottom of the bath: the contents of the vessel are then syphoned off.

[0008] Preferably the vessel of the appliance comprises a metal e.g. copper tank clad on its outer faces with thermally insulating material. The tank and its insulation are preferably enclosed within an outer metal or plastics casing.

[0009] Preferably the appliance is supported on wheels, preferably one pair of wheels offset towards the rear of the appliance. Preferably a handle or pair of handles are provided at or adjacent the top rear of the appliance, to facilitate wheeling the appliance over the floor.

[0010] The appliance may comprise a plastics body, having front, rear and side walls and a bottom wall, into which the hot water vessel is fitted, or alternatively itself forming the hot water vessel (in which case the body is closed at or adjacent its top. The plastics body may be provided with a lid (e.g. pivoted at its rear), a space under the lid being provided to accommodate the flexible hose when out of use. Preferably the body is formed with a compartment at the bottom to accommodate the electrical lead for the immersion heater, when not in use.

[0011] Preferably the vessel has a volume of 40 to 80 litres (more preferably 50 to 70 litres and most preferably substantially 60 litres).

[0012] Preferably the appliance is arranged to heat the water or other liquid to a temperature of 50 to 70°C (preferably 55 to 65°C and most preferably substantially 60°C).

[0013] An embodiment of the present invention will now be described by way of example only and with reference to the accompanying drawings, in which:

FIGURE 1 is a front elevation of a hot water supply appliance in accordance with the present invention; and

FIGURE 2 is a side view of the hot water supply appliance shown in Figure 1.

[0014] Referring to the drawings, there is shown a hot water supply appliance for temporary or emergency use, comprising a rectangular copper tank 10 of 60 litre capacity enclosed within a steel casing 12 which is provided with an enamelled or other finish coating: the casing may instead be formed of plastics material. A foamed plastics thermal insulation 14 fills the spaces between the outer faces of the tank 10 and the inner surfaces of the casing 12: typically, in the example shown, the overall size of the appliance is 800mm high, 400mm deep and 360mm side. The appliance is provided with a pair of floor-engaging wheels 16 mounted to opposite sides adjacent its rear, and a foot 18 projecting from its underside adjacent its front. An inverted U-shape handle 20 projects upwardly from the top of the appliance at its rear. The appliance can accordingly be tilted rearwardly, to be supported on its wheels 16 alone, and wheeled over the floor to its desired position.

[0015] An electric immersion heater 22, for example an 11 inch, 3kw heater, extends into the interior of the water tank 10 from the front of the appliance, adjacent its bottom. The heater 22 includes a temperature controller and a thermostat, arranged so that the water in the vessel is heated to approximately 60°C. As a safeguard against any fault, an electrical cut-out device is provided to interrupt the supply of current to the heater if the water temperature exceeds a threshold value, say 75°C.

[0016] An inlet pipe 24 for cold water extends through the top of the appliance and down to a point adjacent

the bottom of the water tank 10: a connector 26 is fitted to the top end of the inlet pipe 24. An outlet connector 28 for hot water extends through the top of the appliance: an L-shaped outlet pipe 30 is connected to the top of the connector 28, the free end 31 of its horizontal run being angled downwardly; the pipe 30 is arranged to be swivelled about the vertical axis of the outer connector 28.

[0017] In use, the appliance is wheeled into position adjacent a bath and the outlet pipe 30 is swivelled outwardly so that its free end 31 is directed into the bath. A flexible hose, supplied with the appliance, is then coupled at one end to the top of the inlet pipe 24 and at the other end to a cold water tap: this tap is then turned on to fill the water tank 10; after a time, the cold water will fill the tank 10 and start to flow out of the outlet pipe 30 of the appliance, at which point the cold water tap is turned off.

[0018] Next the electricity supply to the appliance is turned on: the appliance includes an electrical lead extending from it, its free end being terminated by a plug which must be inserted into a socket outside the bathroom, without using an extension cable. In the example shown, the water in the tank will be hot enough for a bath in approximately 1 hour, although whilst it is heating up, some water will issue from the outlet pipe 30 owing to the expansion of the water. The electricity supply is now turned off.

[0019] In order to fill the bath with hot water, the cold tap is turned on, so introducing cold water into the water tank 10 at its bottom, via the inlet pipe 24, and consequently expelling hot water from the top of the water tank 10, through the outlet pipe 30.

[0020] After use, the tank 10 is emptied by disconnecting the inlet hose from the cold water tap and laying it instead on the bottom of the bath, causing the contents of the tank 10 to be siphoned off.

[0021] It will be appreciated that the appliance which has been described is portable and can be transported easily, when empty, by car or van to any dwelling where the heating or hot water system has broken down. The appliance then stands on the floor and can be quickly connected to a cold water tap and to the electricity supply. The appliance can then be filled with cold water and heated within a reasonable period of time, providing a supply of hot water sufficient to fill a bath. The appliance accordingly acts as an effective temporary or emergency supply of hot water.

Claims

1. An appliance for providing a supply of hot water or other liquid, the appliance being portable in form and comprising a vessel fitted with an electric immersion heater, an inlet for cold water or liquid extending to an interior region at or adjacent the bottom of the vessel, and an outlet for hot water or liquid at or adjacent the top of the vessel.

2. An appliance as claimed in claim 1, comprising a flexible hose for connection at one end to said inlet of said vessel and at its other end to a cold water tap.

3. An appliance as claimed in claim 1 or 2, comprising an outlet pipe or hose which may be directed into a bath alongside which the appliance is positioned.

4. An appliance and claimed in claim 3, comprising a said outlet pipe arranged to be swivelled between a stowed position and an outwardly projecting position for overlying said bath.

5. An appliance as claimed in claim 1 or 2, in which said outlet comprises a spout projecting outwardly therefrom.

6. An appliance as claimed in any preceding claim, in which said vessel comprises a metal tank clad over its outer faces with thermally insulating material.

7. An appliance as claimed in claim 6, in which said tank and its insulation are enclosed within an outer metal or plastics casing.

8. An appliance as claimed in any one of claims 1 to 5, comprising a plastics body into which said vessel is fitted.

9. An appliance as claimed in any one of claims 1 to 5, comprising a plastics body forming said vessel.

10. An appliance as claimed in claim 8 or 9, in which said plastics body is provided with a lid, a space being provided under said lid to accommodate a flexible inlet hose.

11. An appliance as claims in any one of claims 8 to 10, in which said body is formed with a compartment at its bottom to accommodate an electrical lead for said electrical immersion heater.

12. An appliance as claimed in any preceding claim, supported on floor-engaging wheels.

13. An appliance as claimed in claim 12, provided with at least one handle at or adjacent the top of the appliance, to facilitate wheeling the appliance over the floor.

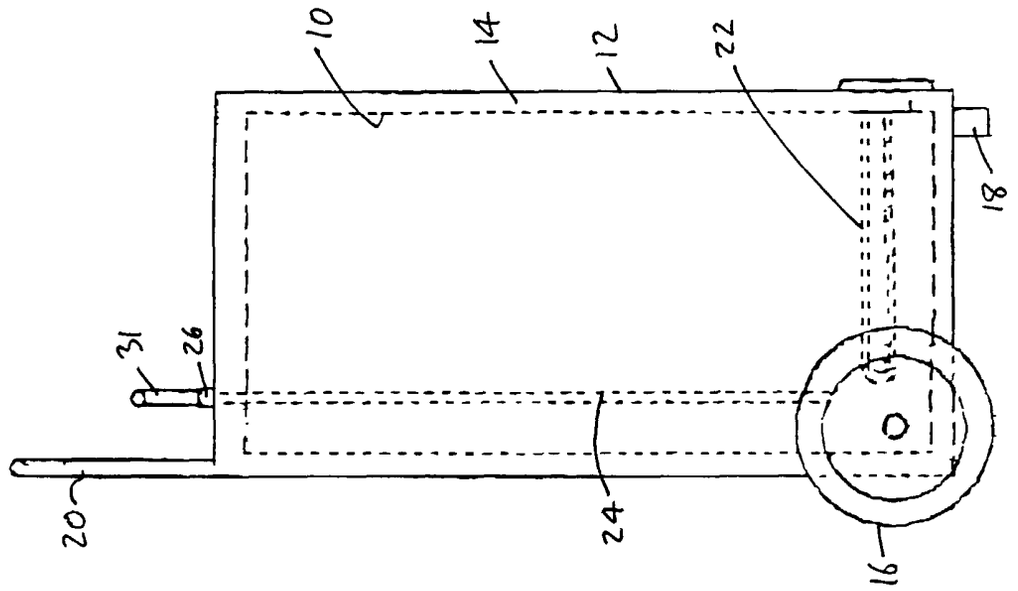

Figure 2

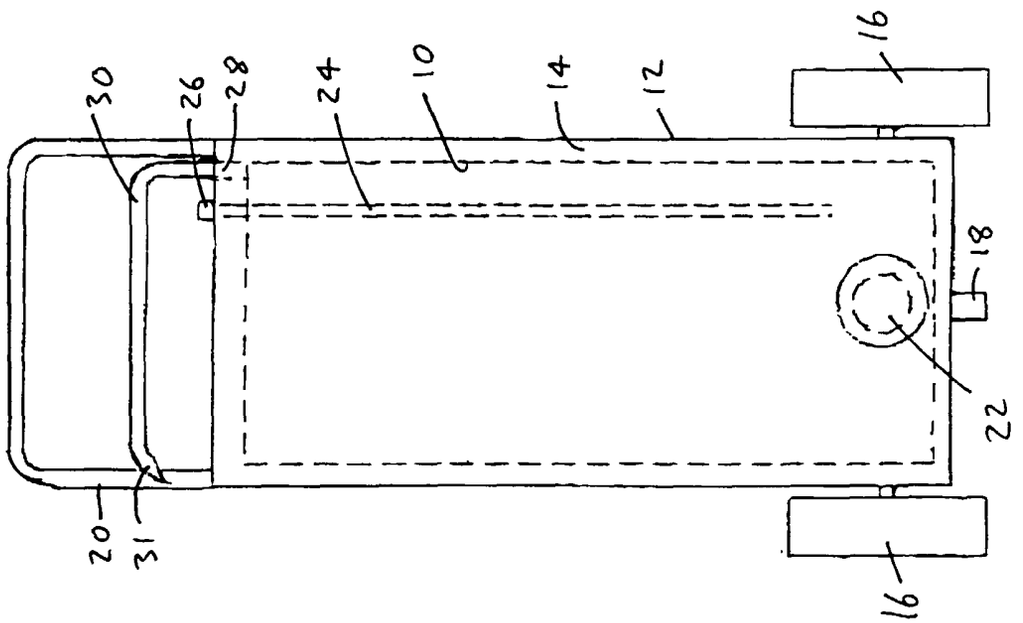

Figure 1