

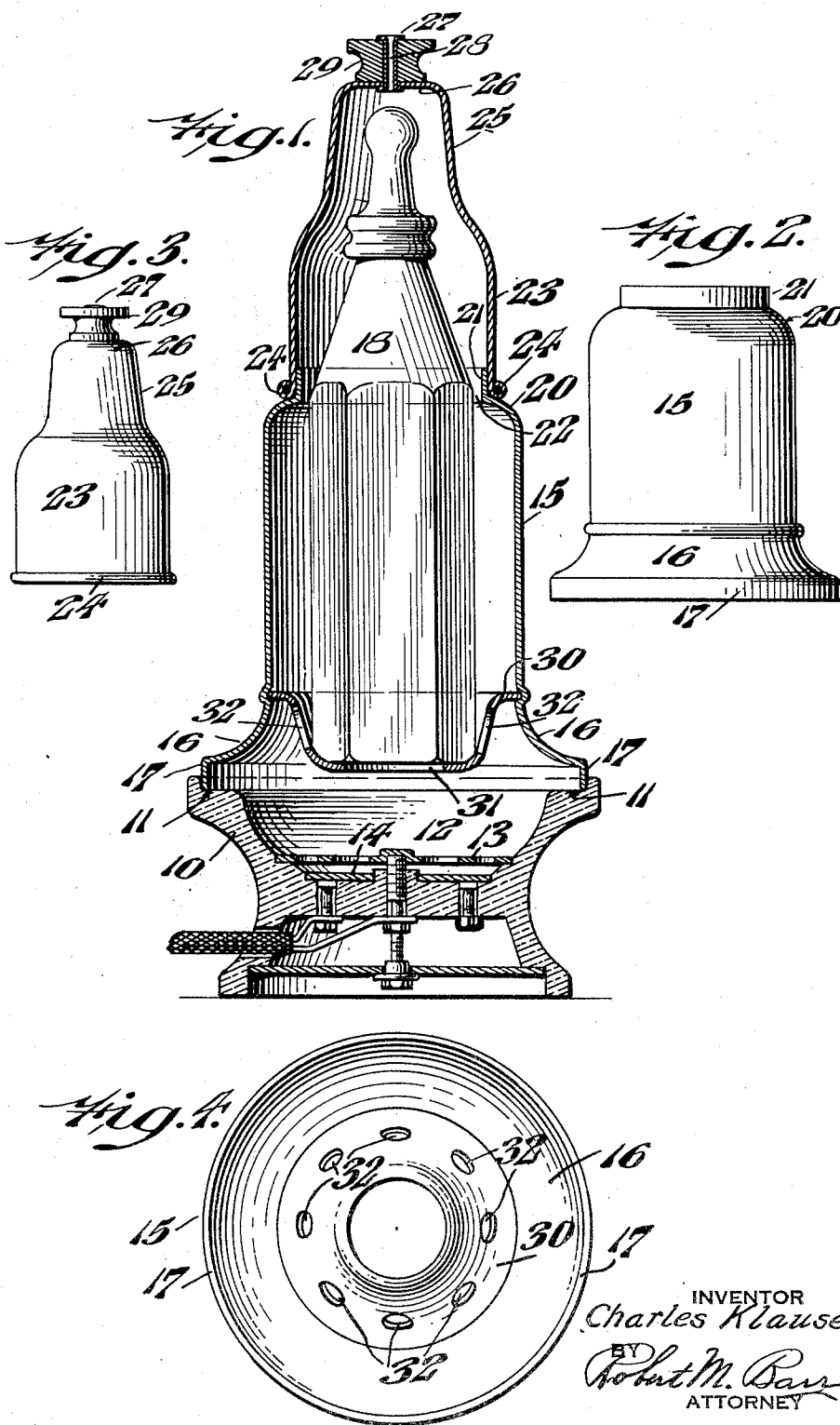
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1,977,482

CLOSURE FOR HEATERS

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UNITED STATES PATENT OFFICE

1,977,482

CLOSURE FOR HEATERS

Charles Klause, Philadelphia, Pa.

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2 Claims. (Cl. 219-40)

The present invention relates to heating devices and more particularly to a closure unit for use with a base type of electric heater.

Some of the objects of the present invention are to provide an improved heating apparatus wherein the liquid contents of various types of containers can be quickly and easily heated; to provide more specifically a closure for removably mounting a bottle or like container for heating purposes; to provide a closure unit for use with a heater base wherein the closure part or parts can be removed and replaced at will on the base; to provide a closure unit which is interchangeable with other different closures upon a standard heater base; to provide a novel container supporting element for closures wherein provision is made for effectively distributing the heat units to the container whereby practically all of the available units of heat are used; to provide a closure for heating devices wherein the heating medium is retarded in its flow so that it leaves the heating zone with a minimum low temperature; to provide a closure unit for heaters wherein the container to be heated is accessible under heating conditions without material loss of heat units; and to provide other improvements as will hereinafter appear.

In the accompanying drawing Fig. 1 represents a sectional elevation of a novel closure unit in operative association with a base type heater; Fig. 2 represents a side elevation of the body of the aforesaid closure; Fig. 3 represents a side elevation of the closure cap; and Fig. 4 represents a bottom plan of the closure unit.

Referring to the drawing one form of the present invention is shown in its operative assembled position upon a heater base 10 of the type having an annular seat 11 at the top and forming a chamber 12 above the terminals 13 and 14 of an electrical circuit. The bridging of these terminals 13 and 14 by water introduced into the chamber 12 closes the circuit to convert the water into steam. This type of heater is fully explained in detail in United States Letters Patent No. 1,913,442, and is used here as illustrative only of one kind of heater to which the closure of the present invention is applicable.

The closure unit as here shown consists of a bell shaped body 15, having the major portion of its length of uniform diameter. The lower end of this portion terminates in an outwardly flared inlet section 16 which joins a flange 17 so shaped and dimensioned as to fit snugly within the seat 11 of the base 10 to thereby seal the inlet end of the body 15 while allowing it to be removed

and replaced at will. The uniform diameter of the body 15 is such as to form with the container 18, such as a nursing bottle, a restricted passage for the ascending heating medium. The upper end or outlet portion of the body 15 is formed as an inwardly curved shoulder 20 which joins an upstanding flange 21 to thereby form a restricted throat 22 with the wall of the container 18. The inner wall of this shoulder 20 serves to retard and choke the flow of steam in such a manner that practically all of its heat units have been extracted by the container before passing through the throat 22. The loss of heat units by this efficient construction becomes negligible. The outer wall of this shoulder 20 serves as a seat for the closure cap 23 which is preferably provided with a beaded lower edge 24 of a size and shape to snugly fit about the flange 21 and rest upon the shoulder 20. This cap 23 as here shown is merging from a length of uniform diameter into a tapered part 25 having a closed end 26 provided with an aperture to receive a tubular rivet 27, the passage 28 of which becomes a vent for the interior of the closure unit. Preferably the rivet 27 secures a knob 29 of bakelite or other non-heat conducting material whereby the cap 23 can be removed and replaced at will whether the heater is in use or not.

For the purpose of supporting the container 18 in position for effective heating, a supporting socket member 30, preferably formed of metal spun to such shape and size as will firmly seat the bottom of the container 18, is provided. As here shown this member 30 is suspended rigidly from the wall of the body 15 in such position as to be in close proximity to and above the water in the chamber 12. The central portion of the member 30 is cut away to provide a through opening 31 which directly exposes the bottom of the container 18 to the main heat zone of the chamber 12. Also the downwardly tapering wall of the member 30 is provided with suitably spaced ports 32 which provide a plurality of outlets so located in the chamber 12 as to change the course of the vertically rising steam into a lateral or substantially horizontal direction so that it impinges directly against the sides of the lower portion of the container 18. This directional change is important because thereafter the steam rises in direct contact relation with the outer wall of the container and many heat units heretofore lost now become available.

While only a single form is shown in which this invention may be embodied, it is to be understood that the invention is not limited to any

specific construction, but might be applied to various forms without departing from the spirit of the invention or the scope of the appended claims.

8 Having thus described my invention, I claim:

1. A heating device comprising a closure open at its bottom and arranged to seat upon the base of a heater, said closure consisting of an open ended body having at its upper end an inwardly turned wall arranged to terminate in close proximity to a container therein to form a restricted throat for passage of a heating medium, a socket member secured adjacent the lower end of said body having downwardly diverging side walls joining a bottom substantially parallel to the top of said base for seating a container to be heated, said member having perforations in its side walls to divert the course of the heating me-

dium against said container, and also having an opening in its bottom for exposing the bottom of said container directly to said heating medium, and a cap seating on said body having a vent therethrough.

2. A heating device comprising a closure open at its bottom and arranged to seat upon the base of a heater, said closure consisting of an open ended body, a socket member suspended in the body having downwardly and inwardly converging side walls joining a flat bottom for seating a container on said bottom, said member having perforations in its side walls to divert the course of the heating medium against the container, and also having an opening in its bottom, and a cap seated on said body having a vent therethrough.

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