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E. K. CLARKE

HEATER

Filed Oct. 24, 1925

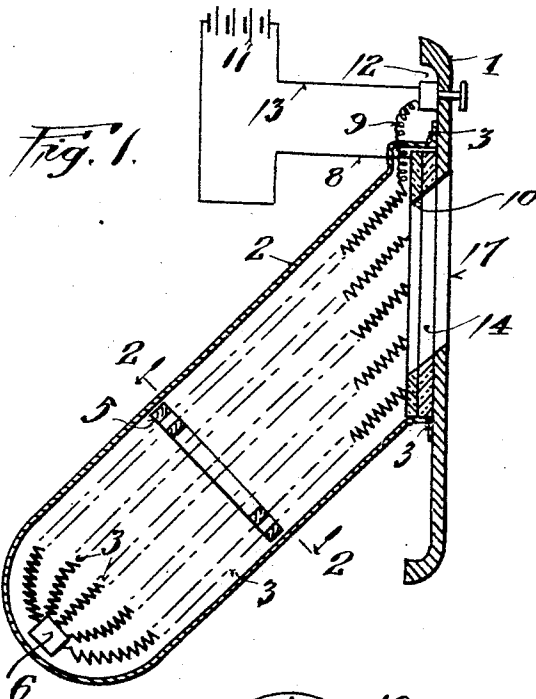


Fig. 1.

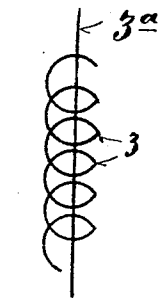


Fig. 6.

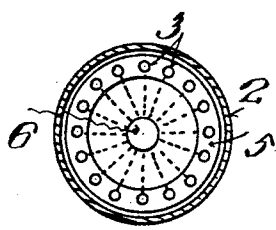


Fig. 2.

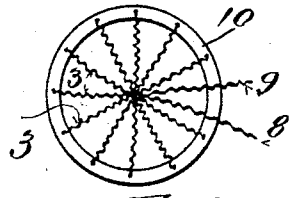


Fig. 7.

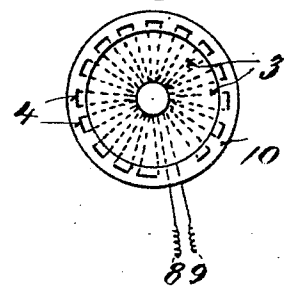


Fig. 3.

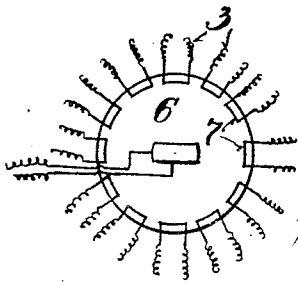


Fig. 4.

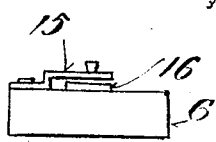


Fig. 5.

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UNITED STATES PATENT OFFICE.

ESTELLE K. CLARKE, OF WEST ORANGE, NEW JERSEY.

HEATER.

Application filed October 24, 1925. Serial No. 64,581.

This invention relates to heaters, and more particularly to devices of this character which may be employed on vehicles, particularly automobiles, for the purpose of heating bottles or the like.

The object of the invention is to provide a heater of this type and character which is simple in structure, efficient in operation and economical of manufacture, installation and maintenance.

A further object of the invention is to provide a heater of this type which is electrically operated, and which becomes operative when the bottle or other receptacle is placed therein.

A further object of the invention is the provision of a resilient support for the bottle to maintain the same safe against breakage due to vibration or the like.

Further objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown by the accompanying drawings and finally pointed out in the appended claims.

Referring to the drawings, in which the same numerals are used throughout the several views to indicate the same parts,

Fig. 1 is a longitudinal cross-sectional view of the heater mounted on its support.

Fig. 2 is a transverse cross-sectional view taken on the line 2-2, Fig. 1, and looking in the direction of the arrows.

Fig. 3 is a transverse cross-sectional view taken on the line 3-3, Fig. 1, and looking in the direction of the arrows.

Fig. 4 is an enlarged view of the lower end piece.

Fig. 5 is a view in side elevation of the end piece, showing the switch mounted thereon.

Fig. 6 is a fragmentary view showing a slightly modified construction.

Fig. 7 is a detailed plan view of a still further modified construction.

A great majority of the people who own and operate automobiles also number among the members of their families at least one infant which is still in its mother's arms. It is quite usual to provide such infants with food in the form of warm milk from a bottle having a rubber nipple attached thereto.

As is well known, infants become hungry

at such unusual times that it is not always convenient to provide warm milk with which to appease their voracity. Especially is this true when the motorist takes his family for a trip or outing of any considerable duration.

I have, therefore, in response to this crying need, conceived of a convenient device for attachment to motor propelled vehicles, whereby a baby's bottle may be safely carried either before heating or during its heating on the dashboard or other convenient place in a vehicle without danger of destruction or loss.

With these objects in view, I will now describe my invention:

For purposes of illustration only, I have shown an embodiment of my invention mounted on a dashboard 1 of a vehicle, although I conceive that it may be mounted in any convenient place in the vehicle. The casing 2 may be made of any suitable insulating material, as glass, bakelite, fibre steel or other material, and serves to protect the heating and supporting coils 3 from short circuit and destruction.

The case 2, especially when it is of heat insulating material, such as asbestos, or the like, also serves to confine the heat to the enclosed area thus accelerating the warming of the bottle inserted in the space thereof. The upper ends of the coils 3 project through the insulating ring 10 and are joined together in series by short connections 4. These coils 3 pass through holes in an insulating ring 5 and terminate in an insulating block 6 to which they may be attached in any suitable manner. The short jumper wires 7 serve to connect the coils 3 in series at their lower ends. By this means all the coils 3 are connected in series with the exception of two free ends 8 and 9 which are connected to a suitable power source 11 and switch 12 respectively, which switch is also connected to the power source 11 by lead 13. The ring 10 is detachably secured to the ring 14 which is mounted on the dashboard or other support 1.

It will be understood that the bottle or device which is to be warmed will be inserted through the opening 17 and will be resiliently supported by the coil springs 3. I of course wish it to be understood that I do not desire to be limited as to shape or size of the device, and it will therefore be apparent

that within comparatively wide limits, any shaped bottle will be resiliently supported in contact with the conducting springs 3, which due to their resilience, will adapt themselves as to relative position in accordance with the contour of the bottle or container inserted therein. Furthermore, I do not desire to be limited or restricted as to the particular construction or circuit arrangement employed, as many modifications will readily suggest themselves to those skilled in the art without departing from the spirit and scope of my invention as defined in the claims. For example, as shown in Fig. 6, instead of having the resilient supporting wires 3 in the form of a conductor, their sole function may be to resiliently support the bottle or other container and the resistance element 3^a may pass there-through, in or out of contact therewith, as desired. It is preferable in this instance to have a supporting coil of sufficient diameter to afford relatively large movement without subjecting the conducting element 3^a to excessive strain.

Likewise, instead of having the resistance element connected in series, as in the arrangement shown in Fig. 1, it may be connected in series parallel where the ring 10, to which is secured one end of the coils 3 is formed of conducting material to which one lead 8 is attached; and the other ends of the coils 3 are connected together and the other lead 9 is attached thereto.

Instead of a switch 12 mounted on the dashboard 1, I also contemplate mounting a switch comprising a spring finger 15 and a contact piece 16, on the block 6 so that when the bottle is slipped into place through the opening 17 its weight will automatically close the circuit between finger 15 and contact 16. This switch will, of course, be connected in circuit in a manner similar to switch 12 but in place thereof.

It will be seen from the foregoing that I have provided a simple, inexpensive but nevertheless efficient device which may be utilized either as a part of the permanent equipment, or employed to attach thereto, at small expense and with very little effort as an accessory thereto; and wherein a simple and safe device is provided for heating bottles or other containers. Of course, when heating glass bottles ordinarily employed for feeding small children, the glass being a non-conductor, would not cause a short circuit in the series connection wherein suspension coils are used as the heating element. If however, insulation is desired, enamelled wire could be used. It is also apparent that the current source for heating the heat resistance elements may be drawn from the storage battery or motor generator of the vehicle.

Having now set forth the objects and na-

ture of my invention, and having shown and described various structures incorporating the principles thereof, what I claim as new and useful, of my own invention and desire to secure by Letters Patent is:

1. A receptacle heater for vehicles comprising a support having an opening therein to receive the article to be heated, means for gripping and elastically supporting the article to be heated inserted in said opening, and means for applying heat to the article to be heated.

2. A receptacle heater for vehicles comprising a support having an opening there-through to permit passage of a substantial portion of the body of the article to be heated, a resilient spring support for the portion of the article to be heated to pass through said opening, and means for supplying heat to the article to be heated at the point of contact between said support and the article to be heated.

3. A heater of the type described comprising a plurality of coil springs forming an elastic support for the article to be heated, and means for passing a current through said springs to impart heat to the article to be heated and supported thereby.

4. The combination of a support having an opening to permit the passage of a bottle or the like therethrough, means for elastically encompassing and resiliently supporting the portion of the bottle projected through said opening, and means for directly applying heat to the portion of the bottle encompassed by said supporting means.

5. The combination of a support having an opening to permit the passage of a bottle or the like therethrough, means for elastically encompassing and resiliently supporting the portion of the bottle projected through said opening, and electrical means for directly applying heat to the portion of the bottle encompassed by said supporting means.

6. The combination of a support having an opening to permit the passage of a bottle or the like therethrough, means for elastically encompassing and resiliently supporting the portion of the bottle projected through said opening, and means for directly applying heat to the portion of the bottle encompassed by said supporting means, and a casing surrounding said supporting and heating means to form a receptacle in which the article to be heated reposes.

7. The combination of a support having an opening to permit the passage of a bottle or the like therethrough, means for elastically encompassing and resiliently supporting the portion of the bottle projected through said opening, and electrical means for directly applying heat to the portion of the bottle encompassed by said supporting means, and a casing surrounding said sup-

porting and heating means to form a receptacle in which the article to be heated reposes.

5 8. A heater of the type described comprising a plurality of coil springs forming an elastic support for the article to be heated, a normally open circuit means for passing a current through said springs to impart heat to the article supported thereby, and means

actuated by the insertion of the bottle into supported relation with respect to said springs for automatically closing said circuit. 10

In testimony whereof I have hereunto set my hand on this 22nd day of October, A. D. 15 1925.

ESTELLE K. CLARKE.