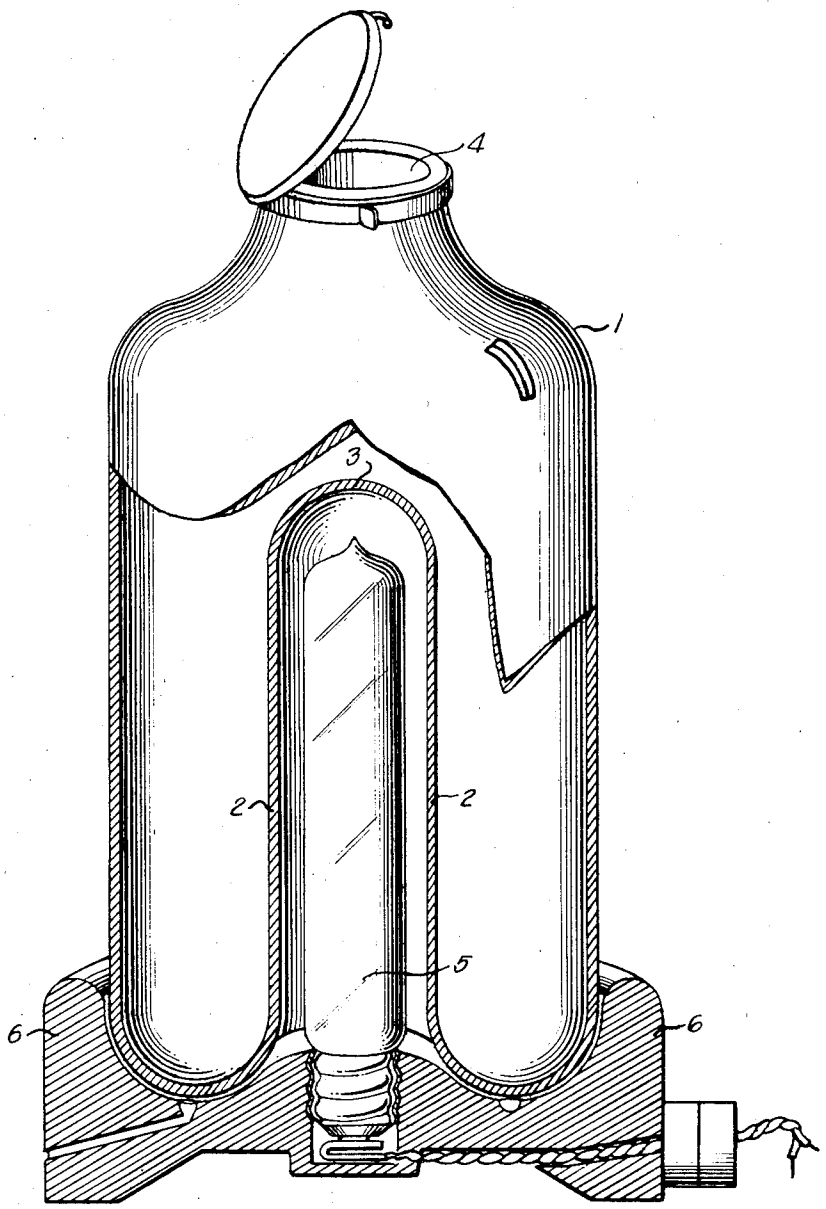
May 24, 1949. R. DEL CUETO 2,470,806

DEVICE FOR HEATING, COOLING, OR RADIATING LIQUIDS

Filed Sept. 19, 1946



INVENTOR.

BY Raúl del Cueto

Robert E. Burns

ATTORNEY

Patented May 24, 1949

2,470,806

UNITED STATES PATENT OFFICE

2,470,806

DEVICE FOR HEATING, COOLING, OR RADIATING LIQUIDS

Raul del Cueto, Papantla, Mexico

Application September 19, 1946, Serial No. 697,966
In Mexico September 25, 1945

2 Claims. (Cl. 219—43)

1

This invention relates to certain useful improvements in devices for heating, radiating or cooling liquids, which comprises a container of novel design and construction, and an insulating base provided with the corresponding heating, cooling or radiating element.

The container is provided with a central hollow space or tunnel, where the heating, cooling or radiating element operates, and which makes possible the maximum utilization of the heat, cold or radiation obtained from said element, which are absorbed in a minimum time, by the liquid placed in the container.

A great number of the containers of known construction, when used to heat the liquid contained therein, require a certain time, as the temperature of the liquid is raised through the absorption of heat at the walls of the container. In this manner, most of the heat energy is dissipated and wasted, greatly increasing the cost of operation.

The same may be said about cooling or radiating liquids placed in a container, where the cold or radiation is utilized only at the bottom and lateral portions of the container.

It is an object of this invention to provide a device comprising a container for heating, cooling and radiating liquids, which makes possible the maximum utilization of the heat, cold or radiation used.

Another object of this invention is to provide a device to lower or raise the temperature of liquids placed within the container, provided with a center hollow space or tunnel, where the heating or cooling element is located, avoiding loss of energy and obtaining the desired change of temperature in the liquid, in a minimum of time.

Another object of this invention is to provide a device for the radiation of liquids placed in the container, which makes possible the maximum utilization of radiant energy such as ultraviolet rays, by placing the radiating element in the central hollow space or tunnel of the container.

Another object of this invention is to provide a device of the kind hereinafter described, comprising an insulating, liquid-proof base, which supports the container, and provides the means for the connection and support of the various heating, cooling or radiating elements used.

To the foregoing objects, and others which may hereinafter more fully appear, the invention consists of the novel construction, combination and arrangement of parts, as will be more specifically referred to and illustrated in the accompanying drawings, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

2

In the drawings:

The single figure is a side elevation, partly broken away and partly in section, of the heating, cooling and radiating device, constructed according to an embodiment of my invention.

The heating, cooling or radiating device according to my invention, comprises a container 1, of glass, quartz or any other suitable material, with any convenient exterior shape, provided with a central hollow space or tunnel, longitudinally located, parallel to the vertical axis of the container. This hollow space 2, may be closed at its upper end 3, at any convenient distance from the bottom of the container, or it may be opened at both ends, being understood that in the latter embodiment of the invention, the container will have a laterally located lidded opening 4.

This hollow space 2, provides the means for placing an element 5 in the center of the container. Since the purpose of the element 5 is to radiate, lower or raise the temperature of the liquids placed inside the container 1, said element 5 may be any heating unit, such as an electric resistance, an infrared lamp, direct flame, or any other known heating element; if the liquid is to be cooled, the element may be any refrigerating unit or cracked ice, and if said liquid is to be radiated, any suitable ultraviolet unit may be used. All said elements are placed within the hollow space or tunnel 2.

The container is supported by a base 6, made of a suitable insulating and liquid-proof material. This base, as shown in the drawing, is provided with the means for connecting and securing the heating, cooling or radiating unit, used in combination with the container. These means comprise the electrical or mechanical connections necessary to the operation of said units.

In the use and operation of this device the base is provided with the corresponding heating, cooling or radiating unit, conveniently supported therein and connected to the electrical or mechanical sources. The container is filled with liquid, through the lidded aperture and placed on the insulating base, so that the cooling, heating or radiating unit is located at the center of the hollow space or tunnel. The construction of the container provides a maximum utilization of the hot, cold or radiation used, as there is no waste or loss, at the sides or bottom of the container,

Having thus described my invention, what I claim is:

1. In combination with a circular base member formed of insulating material and having in its upper surface a recess of semi-toroidal form concentric with the base, a central upwardly projecting dome-shaped portion inside the recess and an upwardly projecting rim portion encircling the recess and higher than the dome, a drainage channel extending from the bottom of the recess to the exterior of the base, a container having a closed top provided with an opening therein, a closed bottom of semi-toroidal shape adapted to be received by and fit in the semi-toroidal recess of the base member, a central upwardly extending cavity of elongated tubular shape with a semi-spherical upper end, a closure for the opening in the top of the container and a heat-transferring element projecting upwardly from the dome of the base and having substantially the same configuration as the tubular cavity in the bottom of the container so as to be received in the cavity with substantially uniform small space between the heat transferring element and the wall of the cavity.

2. In combination with a circular base member formed of insulating material and having in its upper surface a recess of semi-toroidal form concentric with the base, a central upwardly projecting dome-shaped portion inside the recess and an upwardly projecting rim portion encircling the recess and higher than the dome, a drainage channel extending from the bottom of the recess to the exterior of the base, a container having a closed top provided with an opening therein, a closed bottom of semi-toroidal shape adapted to be received by and fit in the semi-toroidal recess of the base member, a central upwardly extending cavity of elongated tubular shape with a semi-spherical upper end, a closure for the opening in the top of the container and a source of radiant energy projecting upwardly from the dome of the base and having substantially the same configuration as the tubular cavity in the bottom of the container so as to be received in the cavity with substantially uniform small space between the radiant energy source and the wall of the cavity.

RAUL DEL CUETO.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,144,503	Taylor	June 29, 1915
1,383,949	Howard	July 5, 1921
1,787,703	Rau	Jan. 6, 1931
2,118,116	Schweitzer	May 24, 1938