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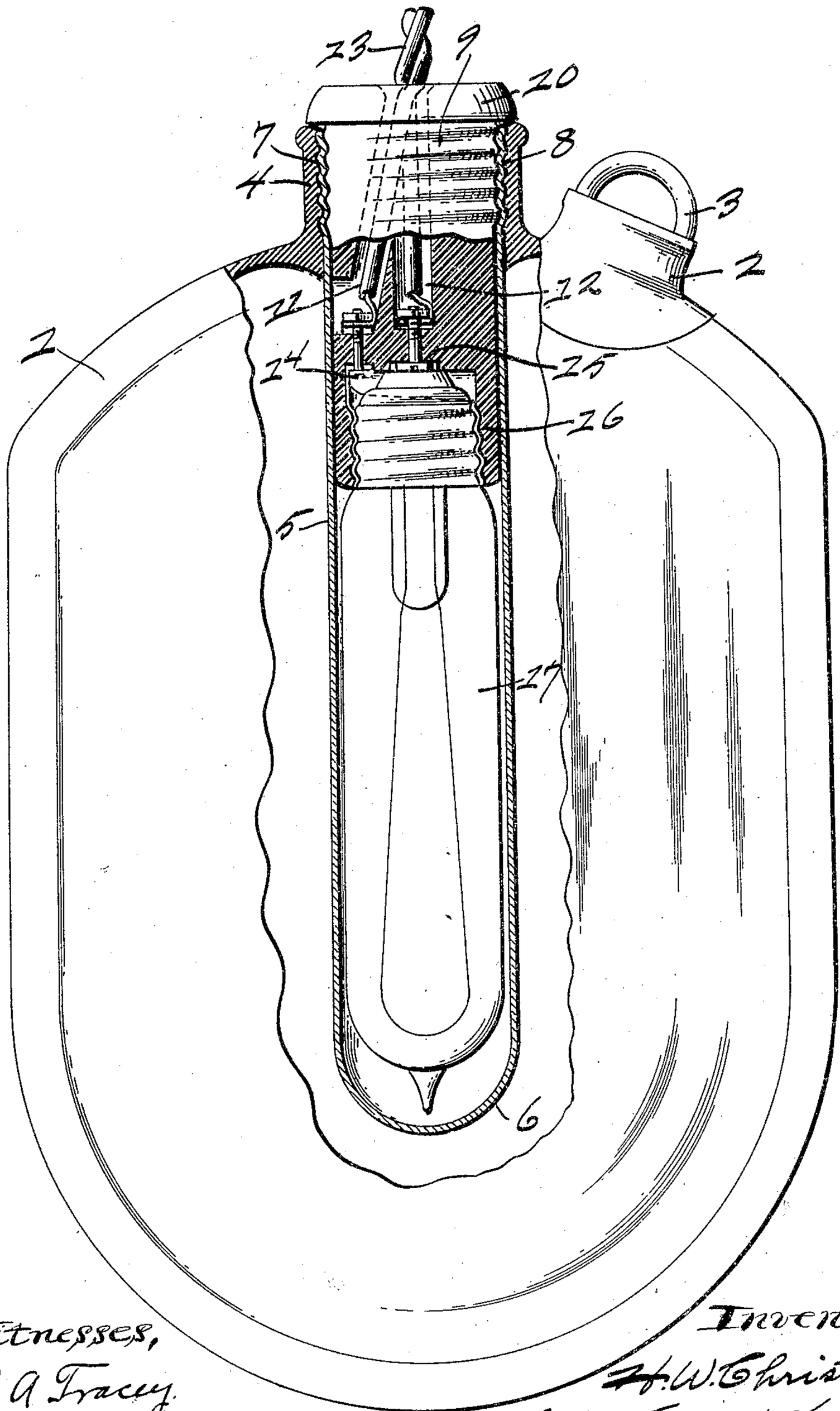
H. W. CHRISTIAN.

ELECTRICALLY HEATED HOT WATER BOTTLE.

APPLICATION FILED JAN. 8, 1907.



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UNITED STATES PATENT OFFICE.

HERBERT W. CHRISTIAN, OF TOLEDO, OHIO.

ELECTRICALLY-HEATED HOT-WATER BOTTLE.

No. 849,368. Specification of Letters Patent. Patented April 9, 1907.

Application filed January 8, 1907. Serial No. 351,325.

To all whom it may concern:

Be it known that I, HERBERT W. CHRISTIAN, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Electrically-Heated Hot-Water Bottles; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the figures of reference marked thereon, which forms part of this specification.

This invention has reference to means for electrically heating hot-water bottles.

Where the application of heat to the body is required, as in hospitals and the sick-room, the patient is almost constantly disturbed by the repeated refilling of the hot-water receptacle. Hot-wire resistances and heating-coils have been employed as a means for heating asbestos pads and also bags containing water, but owing to the liability of such heating means becoming short-circuited there is constant danger of burning the patient and even of communicating fire to the bedclothes. Owing to the nature of their construction the cost of such devices is necessarily considerable. Furthermore, the current consumption being necessarily great, the cost of operating a device employing a wire resistance is excessive, and where constantly used, as in hospitals, so great as to be almost prohibitive.

It is the object of my invention to provide a simple, inexpensive, and effective means for maintaining the initially-heated water contained in a hot-water bag in a constantly-heated condition, the heating means being positively free from danger of burning the patient.

In carrying out my invention I employ the novel combination, arrangement, and details of construction hereinafter shown, described, and claimed.

The single figure of the drawing illustrates a preferred embodiment of my invention, the same being shown in part section.

Referring to the details, 1 is a bag or receptacle for hot water, the same being constructed of rubber in the usual form of hot-water bags, the water being introduced at 2, a plug 3 serving to close the opening into the bag after the water has been introduced. Extending into the bag through an enlarged opening in the neck 4 is a metal sheath 5, the lower end 6 of which is closed and the upper open end 7 being permanently affixed to the bag, preferably by vulcanizing the rubber of the neck 4 around the same. In this manner the neck-opening is sealed against the passage of water from the interior of the bag, and the annoyance of leakage is eliminated. The sheath 5 at its upper end is provided with rolled screw-threads 8, adapted to be engaged by threads 9, provided upon an insertible plug 10 of porcelain or other insulating material, the terminals 11 and 12 of a flexible connection 13 entering through a central passage in the plug and connecting with contacts 14 and 15 of a socket 16, provided at the lower end of the plug and adapted to receive the base of a standard incandescent lamp 17 of elongated form and known to the trade as a "bung-hole lamp." The sheath containing the lamp has an inside diameter sufficiently large to permit the lamp to freely slide into the same, the insulated plug being also of a diameter to freely enter the sheath and being firmly held in position therein after insertion by the engagement of the threads 9 with the threads 8 of the sheath.

In operation the water-bag is filled through the filling-opening with hot water, the opening being then plugged. The incandescent lamp is then screwed into the socket, provided at the lower end of the plug, after which the plug and the lamp attached thereto are slid into the sheath and secured in position by screwing the plug to cause the same to engage the threads of the sheath. It is thus seen that the lamp is confined closely within the metal sheath and that the heat radiated therefrom readily passes through the metal walls of the sheath and serves to maintain the water in the bag in heated condition. I find by experiment that a sixteen candle-power lamp consuming fifty-five watts of electric energy will maintain the water in a water-bag of two quarts capacity at a temperature very near the boiling-point.

It is obvious that the temperature may be varied to suit the requirements of the case by inserting into the bag a lamp of greater or lesser candle-power and consuming consequently more or less energy. The temperature of the bag may also, if desired, be varied and regulated at pleasure by means of a suitable rheostat placed at a convenient position in circuit with the lamp to enable the patient to operate the same, and thereby control the heat.

The advantages of the invention are its simplicity, inexpensiveness of construction and maintenance, and freedom from liability to get out of order. Since a standard incandescent lamp is employed as the heating means, the same may be replaced when burned out without serious delay or inconvenience.

It is obvious that since the lamp is confined in a metal sheath the same will be effectively protected from possible breakage should the weight of the body be directed upon the bag—a condition which would be liable to fracture the lamp if no means were provided to protect the same from breakage. Furthermore, the sheath serves to exclude any water from the connections leading to the lamp, and thereby prevents any possibility of a short circuit from moisture.

From the foregoing the utility and advantages of the invention are apparent.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

In an electrically-heated hot-water bottle, a receptacle for water having a filling-opening and a second enlarged opening through its walls, an open metal sheath inserted through the enlarged opening and having the margin of the opening sealed around the same, a plug, carrying the terminals of an electric circuit, detachably engaging the sheath, and an incandescent lamp adapted to be inserted into the sheath and connected with the terminals of the plug, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HERBERT W. CHRISTIAN.

Witnesses:
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