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C. H. WHITAKER.

FOOT WARMER.

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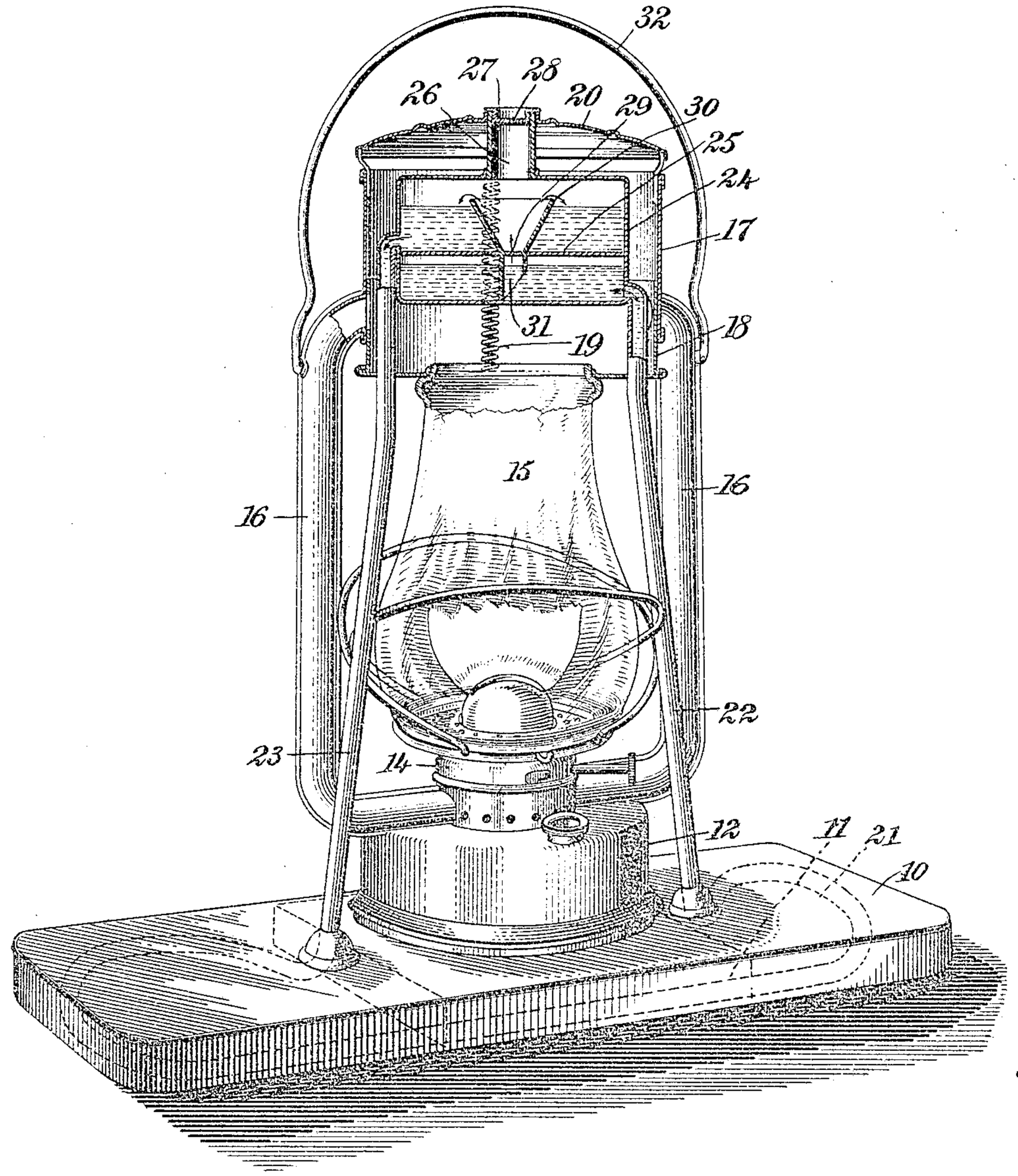

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No. 787,245. Patented April 11, 1905.

UNITED STATES PATENT OFFICE.

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FOOT-WARMER.

SPECIFICATION forming part of Letters Patent No. 787,245, dated April 11, 1905.

Application filed November 17, 1903. Serial No. 181,492.

To all whom it may concern:

Be it known that I, CHARLES HURLBUT WHITAKER, a citizen of the United States, and a resident of Bordentown, in the county of Burlington and State of New Jersey, have invented a new and Improved Foot-Warmer, of which the following is a full, clear, and exact description.

This invention relates to a foot-warmer intended especially for use in carriages and like vehicles, and it is of that class in which a base is provided and heated by an ordinary lantern-burner mounted on the base and having heat-communicating means extending from the top of the burner to or into the base.

This specification is an exact description of one example of my invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawing, forming a part of this specification, which drawing is a perspective view of the invention with parts broken away to show the interior of the water-reservoir.

10 indicates a hollow metallic base in which is fastened in any suitable manner a non-conducting block 11, formed, preferably, of wood. To this block is suitably secured the oil-reservoir 12 of the heater, which is in the form of an ordinary lantern having the burner 14, the chimney 15, and the air-tubes 16. Said tubes 16 support a hood 17, this hood having a bottom 18 arranged to slide therein and said bottom being pressed downward into snug engagement with the upper end of the chimney 15 by a spring or springs 19, as shown.

20 indicates a cowl which is mounted on the hood 17, as shown.

A tube 21 is run through the base 10, as indicated by the broken lines in the drawing, and this tube has branches 22 and 23, which are brazed or provided with other metallic connection with the base 10 and which pass upward to the water-reservoir 24. By means of the brazing or soldering of the tubes 22 and 23 to the base 10 not only do I securely connect these parts, but I effect a metallic or heat-transmitting connection between them, causing the base to be readily heated from the tubes, as will be fully set forth hereinafter. The water-reservoir 24 is provided with a horizontal partition 25, forming two compartments, and with these compartments the branches 22 and 23 respectively communicate. The reservoir 24 has an upwardly-projecting tube 26, leading from its upper compartment through the cowl 20, and 27 indicates the closure fitted in the upper end of the tube 26 and provided with a vent 28, which places the upper compartment of the reservoir in communication with the atmosphere. The partition 25 is provided with an orifice 29, and a funnel 30 projects upward from the partition and surrounds the orifice, as shown. From the lower side of the partition 25 a tube 31 projects downward, this tube having a diagonally-disposed lower edge, as shown, and surrounding the orifice 29. A bail or handle 32 is provided, which enables the device to be readily moved from one position to another.

In the operation of the apparatus upon lighting the burner of the heater and supplying the water to the reservoir 24 above and below the partition 25 the water is heated in the reservoir and steam is generated below the partition 25. This steam will force the water from below the partition 25 upward through the tubes 31 and 30 and the orifice 29 into the space at the top of the partition 25. From this space the water runs down through the branch 23 of the circulating-tube and then flows back by the branch 22 into the space below the partition 25, whereupon the operation is repeated. The relatively cool water passing into the lower compartment by way of the branch 22 cools the said compartment and tends to reduce the steam-pressure therein, thus facilitating the entry of water into said compartment. The operation of the device is to a large extent periodic—that is to say, when the water flows from the branch 22 into the lower compartment a short period of inactivity is necessary to allow sufficient steam to generate whereby to lift the water again into the upper compartment, and after this occurs the water again circulates as described. The small orifice 29 is provided to

prevent the water from running back into the lower compartment faster than it flows out through the pipe 23. Further, it will be observed that when the device is at rest there is as great a volume of water in the lower compartment as in the upper compartment.

Various changes in the form, proportions, and minor details of my invention may be resorted to at will without departing from the spirit and scope thereof. Hence I consider myself entitled to all such variations as may lie within the intent of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a base, a heater, a water-reservoir, and a water-circulating tube passing from the reservoir to the base to heat the latter, the said reservoir having two superposed compartments with an orifice forming a communication between them, a flaring tube in the upper compartment surrounding the orifice and a tube in the lower compartment also surrounding the orifice, the said tubes being open respectively at their upper and lower ends and the water-circulating tube communicating at one end with one compartment and at the other end with the other compartment.

2. The combination of a reservoir having two superimposed compartments with an orifice forming a communication between them, a flaring tube in the upper compartment surrounding the orifice, a tube in the lower compartment also surrounding the orifice, said tubes being open respectively at their upper and lower ends, and water-circulating tubes communicating respectively with said compartments, one tube being adapted to discharge into the lower compartment and the other tube leading from the upper compartment.

3. The combination of a hollow metallic base, a non-conducting block located within the same intermediate its ends and in flat internal engagement with the top and bottom of said base, leaving the internal end portions of the base hollow, an ordinary lantern mounted on top of the base above said block, a water-reservoir mounted over the heater, water-circulating tubes extending from the water-reservoir into the hollow portions of the base at each side of the non-conducting block, and a tube in the base extending longitudinally along one side of the non-conducting block into the hollow end portions of the base and connected at its ends to the lower ends of said water-circulating tubes.

4. A foot-warmer, comprising a base, a heater mounted thereon, a water-reservoir mounted over the heater, a cowl mounted above and extending over the top of the water-reservoir, and a filling-tube extending through the cowl downward into the reservoir.

5. A foot-warmer, comprising a base, a heater mounted thereon, a water-reservoir mounted over the heater, a hood encircling the water-reservoir, a cowl mounted on the hood and covering the reservoir, and a filling-tube extending through the cowl downward into the reservoir.

6. A foot-warmer, comprising a base, an ordinary lantern mounted thereon, and having at its upper end a hood with a cowl above the top of the hood, a water-reservoir within said hood, water-circulating tubes passing from the reservoir to the base, said tubes supporting and communicating with the water-reservoir at their upper ends and being in communication with each other at their lower ends, and a filling-tube leading from the top of the reservoir upwardly through the cowl.

7. A foot-warmer, comprising a base, an ordinary lantern mounted thereon, a hood at the top of the lantern, a cowl above the upper end of the hood, a telescoping section at the lower end of the hood, a spring for pressing said telescoping section into engagement with the top of the lantern-chimney, a water-reservoir within said hood, water-circulating tubes passing from the reservoir to the base, said tubes supporting the water-reservoir at their upper ends and communicating with the interior thereof, and being in communication with each other at their lower ends, a filling-tube leading from the top of the reservoir outwardly through the cowl, and a closure for said tube.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES HURLBUT WHITAKER.

Witnesses:

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