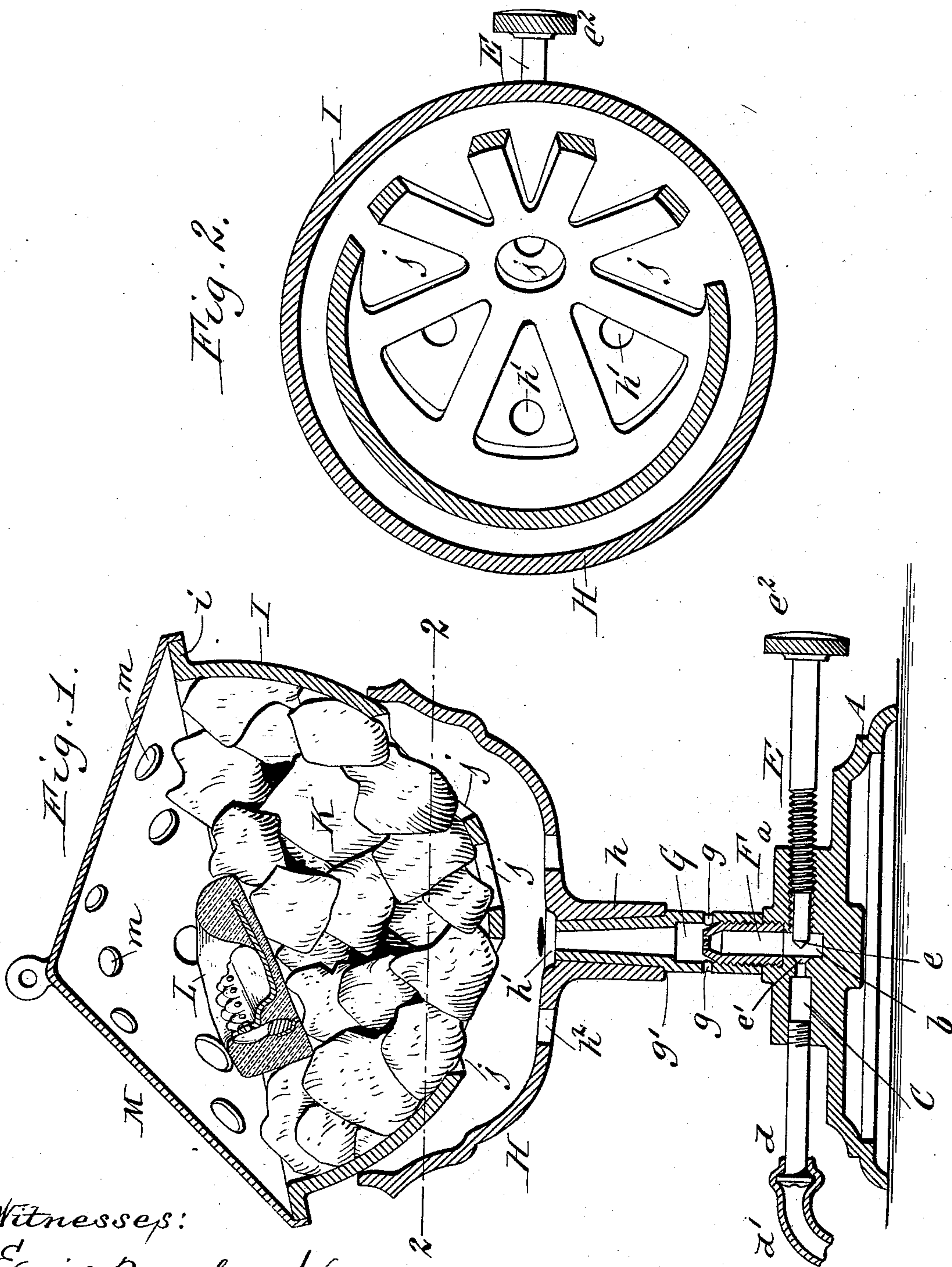


(No Model.)

T. G. LEWIS.  
DENTAL HEATER.

No. 509,176.

Patented Nov. 21, 1893.



Witnesses:

Emil Neuhart.  
Thos. L. Popp.

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# UNITED STATES PATENT OFFICE.

THEODORE G. LEWIS, OF BUFFALO, NEW YORK, ASSIGNOR TO THE BUFFALO DENTAL MANUFACTURING COMPANY, OF SAME PLACE.

## DENTAL HEATER.

SPECIFICATION forming part of Letters Patent No. 509,176, dated November 21, 1893.

Application filed August 14, 1893. Serial No. 483,045. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE G. LEWIS, a citizen of the United States, residing at the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Heaters, of which the following is a specification.

This invention relates to a heater for drying out and soldering an investment of metal plate crown or bridge work in dentistry and has the object to provide a simple heater for this purpose which will enable the case to be dried quickly and the soldering of the teeth to the plate crown or bridge to be effected conveniently and expeditiously.

In the accompanying drawings:—Figure 1 is a sectional elevation of my dental heater. Fig. 2 is a horizontal section thereof in line 2—2, Fig. 1.

Like letters of reference refer to like parts in both figures.

A represents a base provided on its upper side with a boss *a* in which is formed a gas chamber *b*.

C is a gas inlet passage formed horizontally in the boss of the base and opening at its inner end into the gas chamber. To the outer end of this gas passage is connected a nozzle or pipe *d* to which a flexible gas supply pipe or hose *d'* may be attached.

E represents a screw threaded valve stem which is arranged in a screw threaded opening formed in the boss of the base, diametrically opposite the gas inlet passage and axially in line therewith. The inner end of this valve stem is provided with a conical or needle valve *e* which is adapted to bear against a valve seat *e'* formed at the inner end of the gas inlet passage. The outer end of the valve stem is provided with a knob or button *e<sup>2</sup>* for turning the same whereby the valve can be moved toward or from its seat for shutting off or regulating the supply of gas. By arranging the gas chamber, gas inlet passage and valve in the base a very simple and inexpensive construction is obtained.

F represents a gas outlet nozzle secured to the upper portion of the gas chamber and provided with an external screw thread.

G represents a combining tube in which

the gas issuing from the gas nozzle is mixed with air. This tube is secured to the gas nozzle by a screw threaded joint and provided in its side with a number of air inlet openings *g*. The upper portion of the combining tube is contracted, forming an annular shoulder *g'*.

H represents a circular supporting cup provided on its under side with a cylindrical socket or sleeve *h* which rotates on the upper end of the combining tube and rests upon the shoulder *g'*. The mixture of gas and air passes from the combining tube into the supporting cup through an opening *h'* formed centrally in the bottom of the cup, and additional air is admitted to the supporting cup, through openings *h<sup>2</sup>* formed in the bottom thereof around the socket.

I represents a hemi-spherical heating cup which is adapted to support the investment while drying and soldering the same and which rests loosely upon the circular edge of the supporting cup. The diameter of the supporting cup at its edge is considerably smaller than that of the heating cup so as to give the cup a universal movement and permit it to be tilted in any direction, the tilting movement being limited by an annular flange *i* formed around the edge of the heating cup. That portion of the bottom of the heating cup which is arranged in the supporting cup is provided with a number of openings *j* which permit the mixture of air and gas in the supporting cup to pass into the heating cup. The latter cup is filled with a bed *k* of broken pumice stone, asbestos, or other non-combustible material and the investment L is laid upon the same. The mixture of gas and air is divided as it passes upwardly between the pieces of pumice stone and is ignited above the same, so that the flame entirely surrounds the dental investment and dries the moist plaster of paris case thereof.

M represents a cover which is placed over the heating cup for confining the heat around the investment while the same is being dried. This cover is provided with a number of openings *m* which permit the air to circulate through the heating cup thereby preventing the flame from being smothered. When the



case of the investment has been dried the cover is removed and the metal plate is soldered to the pins of the teeth while the gas is still burning. During the operation of soldering, the supporting cup can be rotated and the heating cup can be tilted so as to bring the investment into any desired position to facilitate the flow of the solder and to bring all parts under the action of the blow pipe.

10 I claim as my invention—

1. In a heater, the combination with a supporting cup provided with an inlet passage, of a heating cup resting upon the supporting cup and capable of being tilted therein, substantially as set forth.

2. In a heater, the combination with a supporting cup provided with a circular edge and in its bottom with inlet openings, of a hemi-spherical heating cup resting on the edge of said supporting cup and provided in its bottom with inlet openings, substantially as set forth.

3. In a heater, the combination with a supporting cup provided with a circular edge, of a hemi-spherical heating cup resting on the edge of said supporting cup and provided in its bottom with inlet openings and around its edge with an annular stop flange, substantially as set forth.

4. In a dental heater, the combination with a base and a burner-tube rising therefrom, of a rotary supporting cup provided on its under side with a sleeve or hub turning on said burner tube and a gas inlet coinciding with said sleeve, and a perforated heating cup resting in said supporting cup and capable of tilting therein, substantially as set forth.

Witness my hand this 10th day of August, 1893.

THEODORE G. LEWIS.

Witnesses:

CARL F. GEYER,  
JNO. J. BONNER.