

(No Model.)

2 Sheets—Sheet 1.

W. S. HADAWAY, Jr. & W. E. DAVIS.
HEATER.

No. 553,308.

Patented Jan. 21, 1896.

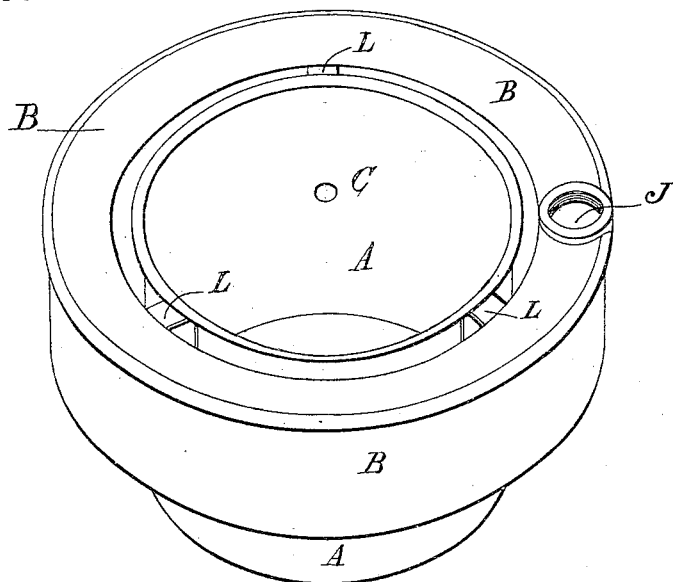


Fig 1

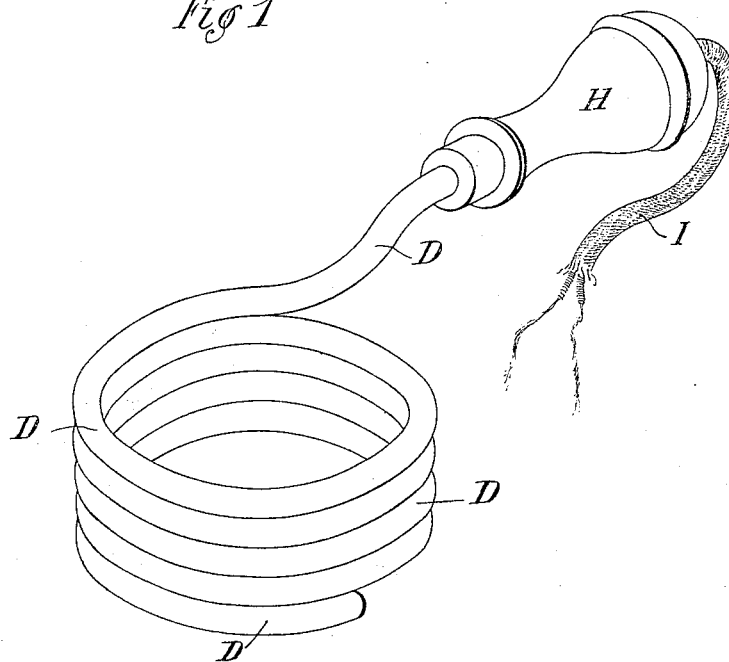


Fig 2

WITNESSES:

Wm. S. Hadaway Jr.
W. E. Davis

William S. Hadaway Jr.
William E. Davis
INVENTORS

BY *Robert H. Hayes*

ATTORNEYS

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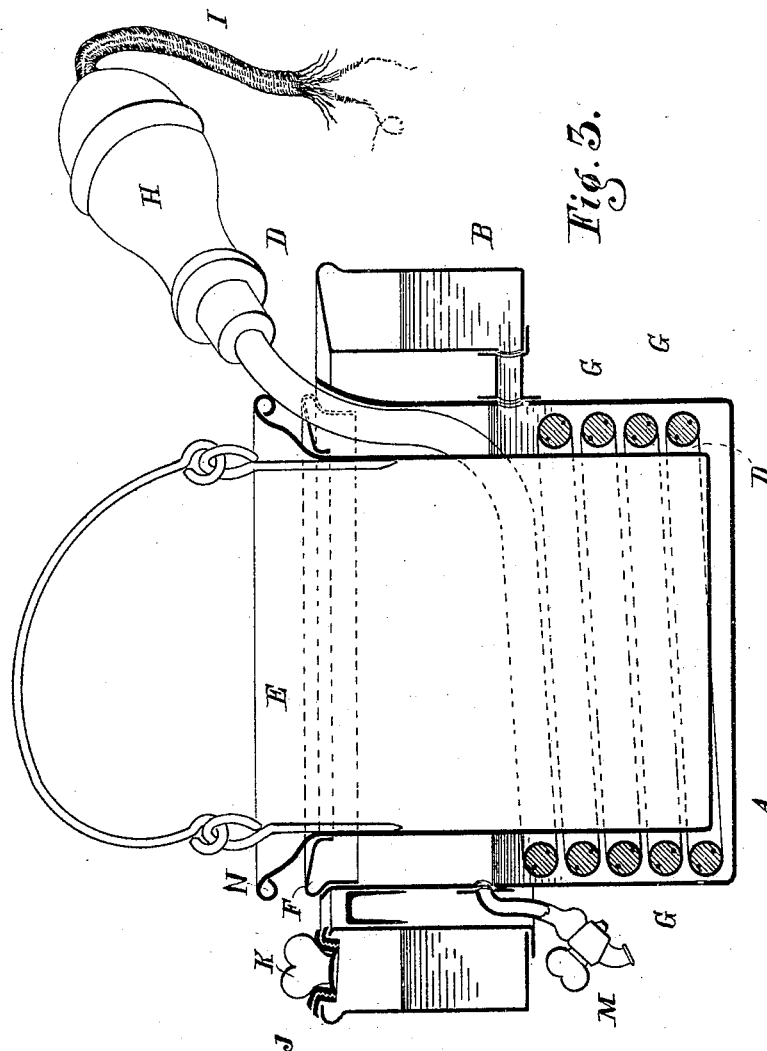


Fig. 3.

WITNESSES:

Wm. S. Hadaway Jr.

W. E. Davis

William S. Hadaway Jr.
and William E. Davis
INVENTORS

BY *Boyle Hynes Boyle*
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM S. HADAWAY, JR., OF BOSTON, AND WILLIAM E. DAVIS, OF
MALDEN, MASSACHUSETTS, ASSIGNORS TO THE CENTRAL ELECTRIC
HEATING COMPANY, OF NEW YORK, N. Y.

HEATER.

SPECIFICATION forming part of Letters Patent No. 553,308, dated January 21, 1896.

Application filed November 22, 1894. Serial No. 529,563. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM S. HADAWAY, Jr., a resident of Boston, in the county of Suffolk, and WILLIAM E. DAVIS, a resident of Malden, in the county of Middlesex, State of Massachusetts, citizens of the United States, have invented certain new and useful Improvements in Heaters, of which the following is a full, true, and accurate description, reference being had to the accompanying drawings, wherein similar letters refer to like parts in the several views.

Our invention relates to that class of heaters wherein a vessel containing the material to be melted or otherwise treated is placed in a chamber adapted to contain a fluid to be heated, so as to be partly immersed therein, the method of treating the material being to apply heat to the fluid or the chamber containing it, instead of subjecting the vessel containing the material to be treated directly to the heat.

Referring to the accompanying drawings, Figure 1 is a perspective view of one form of our heater arranged for use with a glue-pot and with the glue-pot removed therefrom. Fig. 2 is a view of a preferred form of heating device, by the employment of which electricity is utilized for generating heat; and Fig. 3 is a sectional view of our heater and of the electric heating-coil and glue-pot.

A is a chamber adapted to contain the fluid to be heated. B is an annular reservoir surrounding the same, and C C C are short metallic pipes connecting chamber A and reservoir B.

D is an electric heating-coil (particularly shown in Fig. 2) removable from the chamber A.

E is the pot containing glue.

F is an annular ring resting on the inner edge of chamber A and supporting pot E.

G G are the resistance-wires of the electric heating-coil. H is the insulated handle of such coil.

I is a flexible braided jacket for the terminals of the wires G.

J is the supply-opening of the reservoir. K is a cap for closing such opening.

L L are metallic pieces to assist the pipes C in supporting the reservoir.

M is a petcock for lowering the level of the fluid in chamber A.

N is the flange of the containing-chamber.

To use the illustrated heater to melt or otherwise treat material—such as glue, for example—the heating-coil is first placed in the chamber. The pot E containing the material to be treated is then seated in the chamber. Fluid is then poured into the reservoir through the supply-opening J until both the reservoir and chamber are nearly filled, and the screw-cap K is replaced. The level of the fluid in the chamber A is then preferably drawn down by opening the petcock M or otherwise until it is about the level of the connecting-pipes C. The opening J having been closed by cap K this lowering of fluid-level in chamber A does not affect the level of fluid in reservoir B. The fluid in the chamber is then heated in the device illustrated upon the passage of an electric current through the resistance-wires of the coil D. As the fluid in chamber A evaporates, it is replaced by fluid flowing in from the annular reservoir through the connecting-pipes, and when the fluid-level in the chamber A is at a point where it covers the outlets of these connecting-pipes the flow from the reservoir ceases. Thus the practical effect is to keep a substantially constant level of fluid in the chamber A at about the level of the connecting-pipes C.

The pot E may be lifted from the water-holder and the heating of the water be continued; or, if desired, the pot may be removed to another place by means of the heater, using it as a heating-handle, the flange N resting upon the coils of the heater. The material in the pot will thus be kept in a liquefied condition while it is removed from the water-holder.

In the heating-coil shown the resistance-wires G G are embedded in or surrounded by insulating material, and these wires may be coiled or reflexed or inserted in the tubes in any suitable way. Other forms of electric heaters may, if desired, be advantageously employed.

One advantage of the employment of a submerged heater within the chamber resides in the fact that only the liquid in the holder is

heated, and the pot is protected from the direct action of the heat. The heater being readily removable it may be used with another pot, or for another purpose, if desired, 5 and if the resistance-wires are broken or burned out another heater may be put in the pot in the place of the useless one. We desire, also, to call attention to another advantageous feature of our invention. The pot is 10 surrounded by the heater, and the combination of the parts is such that, when desired, the heater and pot E can be removed together, and this will be found useful when desiring to use the glue at another part of the room and to 15 keep it liquefied while using. For this purpose the use of an electric heater is especially advantageous, permitting the carrying of the heater to different parts of the room, and an electric heater may be controlled by simple 20 means, whereby the degree of heat may be regulated.

While we have shown and described the ar-

rangement of parts which we consider best adapted to secure the desired result, yet we do not desire to be understood as confining 25 ourselves to that exact arrangement, as modifications thereof which embody our invention may suggest themselves.

What we claim is—

The combination of a liquid-holder, and a 30 vessel removably suspended in said holder, with a heater within said holder and removable therefrom, said heater surrounding said vessel, and adapted, when removed, to serve 35 as a heating handle for the vessel, substantially as and for the purpose described.

In witness whereof we have hereunto signed our names this 13th day of November, 1894.

WILLIAM S. HADAWAY, JR.
WILLIAM E. DAVIS.

In presence of—

WILLIAM A. HAYES, 2d,
WILLIAM E. HUTCHINS.