

(No Model.)

G. D. BURTON & E. E. ANGELL.  
ELECTRIC HEATER.

No. 475,189.

Patented May 17, 1892.

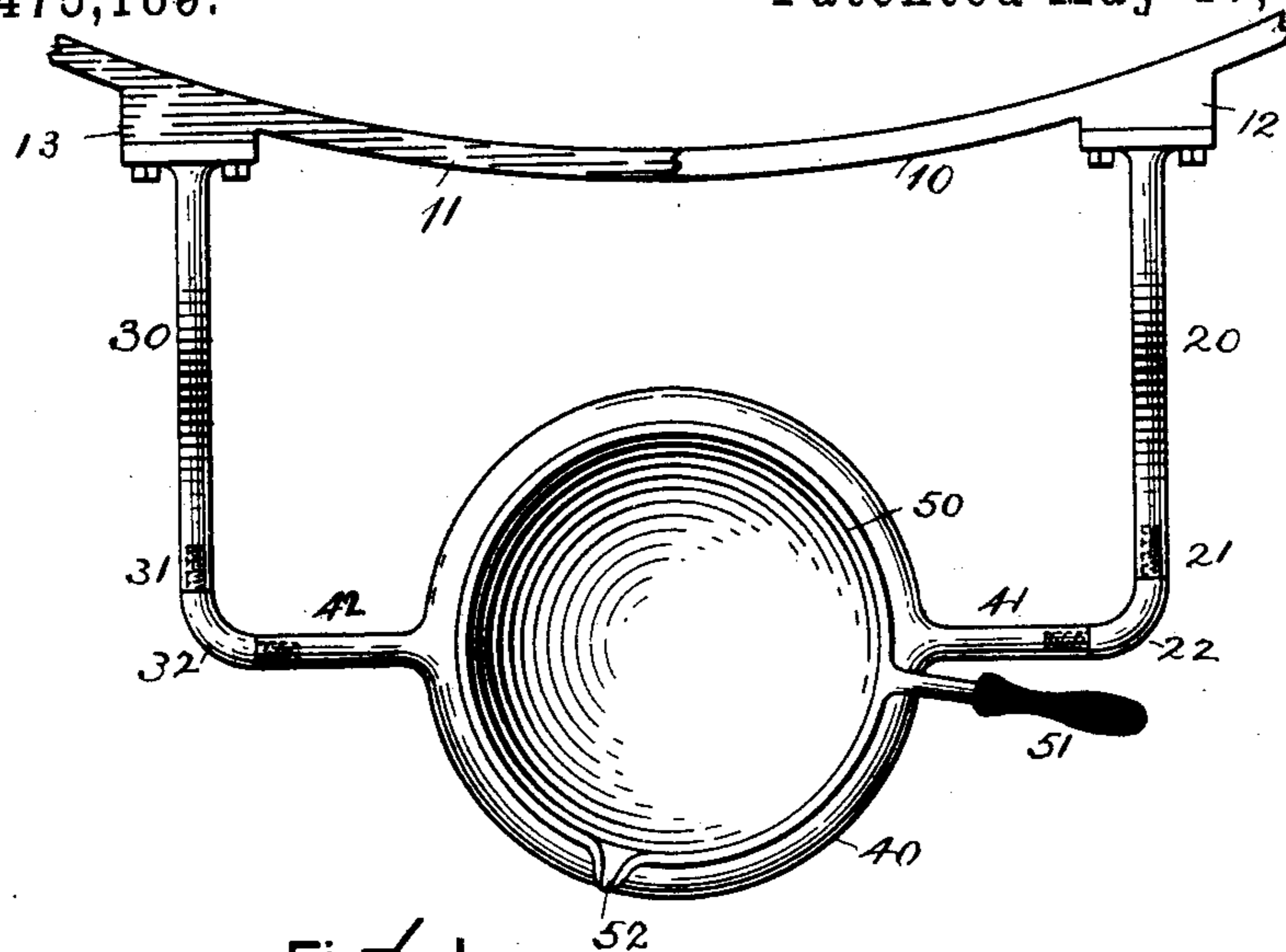


Fig. 1.

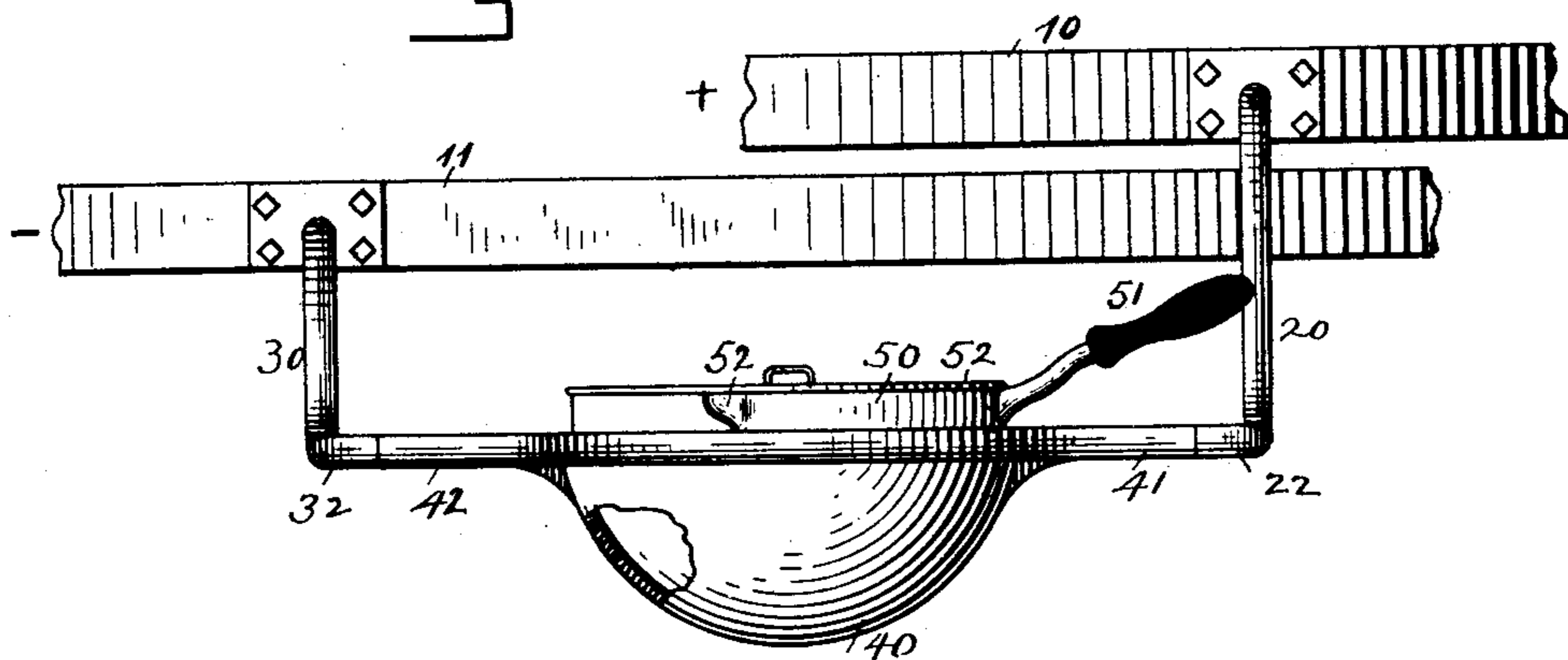


Fig. 2.

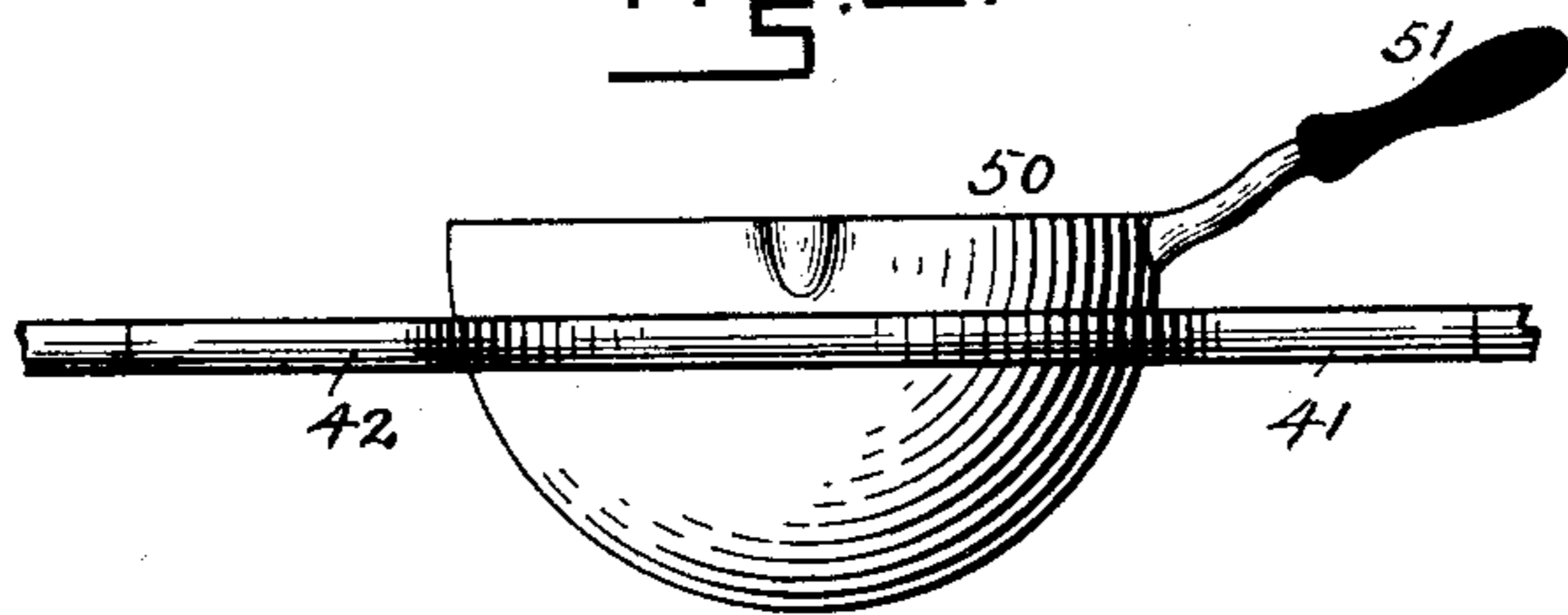


Fig. 3.

WITNESSES

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# UNITED STATES PATENT OFFICE.

GEORGE D. BURTON, OF BOSTON, AND EDWIN E. ANGELL, OF SOMERVILLE,  
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OF MAINE.

## ELECTRIC HEATER.

SPECIFICATION forming part of Letters Patent No. 475,189, dated May 17, 1892.

Application filed May 29, 1891. Serial No. 394,521. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE DEXTER BURTON, residing at Boston, in the county of Suffolk, and EDWIN ELLIOTT ANGELL, residing at Somerville, in the county of Middlesex, State of Massachusetts, citizens of the United States of America, have invented a new and useful Improvement in Electric Heaters, of which the following is a specification.

The object of this invention is to provide an electric heater adapted for use as a metallurgical furnace for tinsmiths, plumbers, and silversmiths for melting metals in a melting-pot; and the invention may also be used as a cooking apparatus for boiling or steaming.

Figure 1 of the accompanying drawings represents a plan of this improved electric heater connected with the opposite electric poles of a current-converter. Fig. 2 represents a front elevation thereof. Fig. 3 represents a side elevation of another species of this improved electric heater.

Similar numerals of reference indicate corresponding parts in the different figures.

The rings 10 and 11, whereof segments only are represented in the drawings, constitute parts of an electric-current converter, which need not be fully illustrated in this case. The ring 10 is provided with a boss 12 and the ring 11 with a boss 13, which bosses constitute the terminals or opposite poles of the converter. A bracket 20, composed of copper or other suitable conductive material, is attached to the ring 10 and depends therefrom, and a bracket 30, also composed of copper or other suitable conductive material, is attached to and depends from the ring 11. The outer ends of these brackets terminate in short horizontal arms 21 and 31, which are disposed in the same horizontal plane. The horizontal arms are provided with elbow-joints 22 and 32, also composed of conductive material and screwed to the arms 21 and 31.

A heating-pot 40 is supported between the brackets or conductors 21 and 31, or connected therewith in any suitable manner. In the manner shown in the drawings the pot is provided at opposite sides with lateral arms 41, the outer ends of which are reduced and provided with screw-threads of opposite pitch,

which engage screw-threaded sockets of the elbows 22 and 32, the pot being rotated to connect it with or detach it from the elbows.

The heating-pot 40 is composed of wrought-iron, cast-iron, artificial carbon, or other material or composition of greater resistance than the current-conductor in connection therewith.

A melting pot or ladle 50, composed of iron or other suitable material, is adapted to fit within the heating-pot 40 and is preferably provided with a handle 51 and a nozzle 52.

In the use of this electric heater as a melting-furnace the melting-pot 50 is placed within the heating-pot 40 and the lead, solder, silver, gold, or other metal having a low fusing-point is placed in said melting-pot. The current passes through the brackets 20 and 30, arms 21 and 31 and elbows 22 and 32 and arms 41 and 42, or other suitable conductors, and through the heating-pot 40. The latter, having a greater current resistance than the conductor, is heated by the passage of the current to a red or incandescent heat, and the heat so developed is imparted by conduction and radiation to the melting-pot 50 and its contents.

In the use of this improved electric heater for cooking purposes the articles to be boiled or cooked may be placed in the pot 50, which is preferably provided in such case with a cover 52.

In Fig. 3 the heating-pot is shown in the form of a ring, which surrounds the central or upper portion of the melting-pot or cooking utensil 50, the bowl of the heating-pot being omitted.

We claim as our invention—

1. In an electric heater, the combination of a heating-pot composed of material having a comparatively high current resistance and provided with laterally-projecting arms, and conductors for a heating-current connected with said arms and with opposite electric poles.

2. A heating-pot for an electric heater, composed of a carbon composition and provided with copper arms adapted for connection with an electric circuit.

3. In an electric heater, the combination of

conductive brackets connected with opposite electric poles and provided with horizontal arms having screw-threaded sockets of opposite pitch, and a heating-pot composed of material of a greater resistance than the conductive arms and provided with arms having screw-threaded ends adapted to fit said sockets, substantially as set forth.

4. In an electric heater, the combination of two conductors connected with opposite electric poles and adapted to convey a heating-current and a concave heating-pot connected with the conductors and serving to close the circuit between them, said heating-pot being composed of a carbon composition, which becomes incandescent under the influence of the current, and a pot for containing the article to be heated, adapted to fit within said heating-pot.

5. The combination of two converter-rings, the brackets 30 and 20, connected therewith and provided with arms 31 and 21, the elbows 32 and 22, and the heating-pot 40, provided with the arms 42 and 41, connected with said elbows, substantially as described.

6. The combination of two converter-rings, conductive brackets mounted thereon, and a concave heating-pot connected with said

brackets and composed of material of comparatively high resistance, which becomes incandescent on the passage of the electric current.

7. In an electric heater, the combination of a heating-pot composed of material having a comparatively high current resistance and provided with laterally-projecting arms of high-current conductivity, and conductors for a heating-current connected with said arms and with opposite electric poles.

8. In an electric heater, the combination of a heating-pot composed of material having comparatively high current resistance and provided with laterally-projecting arms of high current conductivity, conductors for a heating-current connected with said arms and with opposite electric poles, and a melting-pot for containing the articles to be heated, adapted to fit within said heating-pot.

In testimony that we claim the invention above set forth we affix our signatures in presence of two witnesses.

GEO. D. BURTON.  
EDWIN E. ANGELL.

Witnesses:

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W. H. KIMBALL.