C. F. JACOBS.

CIRCUIT CONTINUING HEATING RECEPTACLE.

APPLICATION FILED MAR. 20, 1919.

1,373,615.

Patented Apr. 5, 1921.

Fig. 4

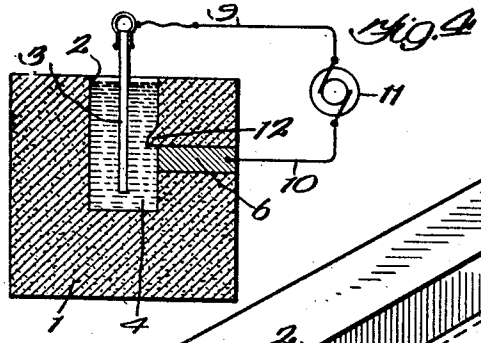
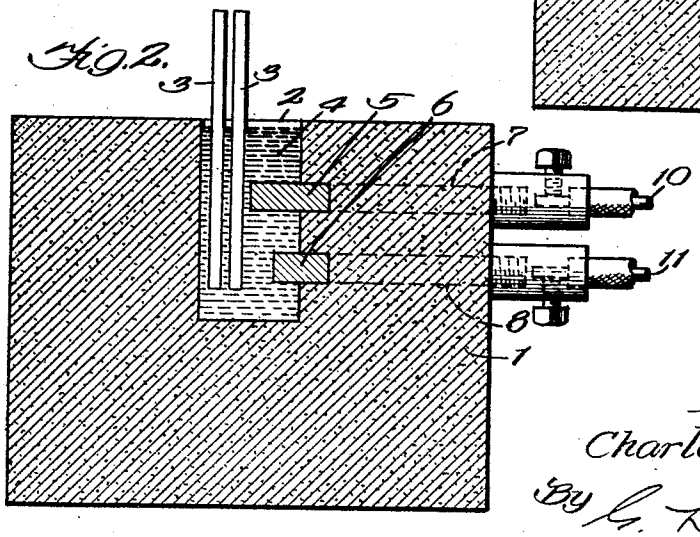


Fig. 1.

Fig. 3.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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CIRCUIT-CONTINUING HEATING-RECEPTACLE.

1,373,615. Specification of Letters Patent. Patented Apr. 5, 1921.

Application filed March 20, 1919. Serial No. 283,716.

To all whom it may concern:

Be it known that I, CHARLES F. JACOBS, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Circuit-Continuing Heating-Receptacles, of which the following is a full, clear, concise, and exact description.

My invention relates to heating receptacles which employ electrodes that are presented to the receptacle interiors. Such receptacles have different uses. They may be employed for holding or inclosing contents or elements which are to be heated by current conveyed by the electrodes. A receptacle made in accordance with my invention has been employed for holding electrically heated material in its receiving space, this electrically heated material, in turn, serving to heat objects introduced into the receiving space. The material which is electrically heated is sufficiently loose or non-rigid to permit of the immersion therein of the objects to be heated thereby. Such loose material may preferably be in the nature of flux that is desirably in a molten condition before it is placed in the receptacle and is maintained in such condition by the current, flux in a non-molten condition being a non-current conductor. When initially molten the flux offers sufficient resistance to the flow of current to enable it further to be heated by the passing current, the heat being transferred from the further heated flux to the object immersed therein.

It is the object of my present invention to establish such a physical relation between the inserted objects and one or both electrodes that the inserted objects will not operate to short circuit the source of current. I accomplish this object by disposing one electrode on one side of the receptacle and providing on this receptacle side a portion which projects within the receptacle beyond this electrode. This portion serves as a guard to prevent an inserted object from contacting with the electrode beneath it. If the inserted object itself also serves as an electrode the guard may be of non-conducting material. If, however, the inserted object does not also serve as an electrode the guard is in the form of another electrode companion to the electrode beneath it that it guards, the relative position of these two electrodes preventing the inserted object from contacting with the lower electrode while engaging the upper electrode.

I will explain my invention more fully by reference to the accompanying drawing showing several embodiments thereof and in which Figure 1 is a perspective view of a circuit continuing receptacle employing two electrodes that are permanently incorporated therewith; Fig. 2 is a view, in cross section, of the structure shown in Fig. 1; Fig. 3 is a sectional view illustrating another form of the invention; and Fig. 4 is a sectional view illustrating another form of the invention, circuit connections being diagrammatically indicated in this figure.

Like parts are indicated by similar characters of reference throughout the different figures.

Each receptacle 1 has an open side 2, which is preferably the top side, which permits entry of the objects 3 that are to be heated by the object heating material 4 that is disposed in the receptacle for this purpose. This object heating material is preferably in the form of flux which is maintained in liquid condition by the passage of heating current. In the form of the invention shown in Figs. 1 and 2, the receptacle is made of refractory material. Electrodes 5 and 6 in the form of horizontal bars preferably of graphite project into the receiving space from one wall of the receptacle. These electrodes have stems 7 and 8 to which the conductors 9 and 10, that extend to and from a suitable source of current, are attached. The outer or upper electrode 5 (the one which is nearer the open side 2 of the receptacle) preferably projects into the receptacle beyond the inner or lower electrode 6 to serve as a guard to obstruct the movement of an inserted object toward the lower electrode to prevent such object from simultaneously engaging both electrodes and thereby short circuiting the source of current if such object be a current conductor. I do not limit myself to the outer electrode ending inwardly beyond the other.

The structure illustrated in Fig. 3 is to all intents and purposes similar to the construction shown in Figs. 1 and 2 excepting that in Fig. 3 the electrodes 5′, 6′ are also component parts of one wall of the receptacle.

In the structure of Fig. 4 there is but one electrode 6 in fixed relation to the receptacle, the companion electrode being also the mov-

able object 3 that is to be heated, and which is separately included in the circuit of the generator 11 in order that it may be completely removed after being heated. In this embodiment of the invention the electrode 6 is guarded by the ledge or portion 12 projecting into the receptacle beyond the electrode 6 to have a mechanical relation therewith similar to the electrodes 5 and 6 of Figs. 1 and 2 and the electrodes 5′ and 6′ in the structure of Fig. 3.

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

1. A heating receptacle having an inner electrode and an outer electrode upon the same side of the receptacle with the inner electrode and projecting within the receptacle beyond the inner electrode to serve as a guard to prevent engagement of an object to be heated with the inner electrode.

2. A heating receptacle having an inner electrode and a guard upon the same side of the receptacle with the inner electrode and projecting beyond said electrode to prevent engagement of an object to be heated with said electrode.

3. A heating receptacle having an inner electrode and a guard upon the same side of the receptacle with the inner electrode and located between the electrode and the entrance opening to the receptacle and projecting within the receptacle beyond said electrode to prevent engagement of an object to be heated with said electrode.

4. A heating receptacle having inner and outer electrodes upon the same side of the receptacle, one projecting into the receptacle beyond the other to serve as a guard to prevent engagement of an object to be heated with the latter electrode.

In witness whereof, I hereunto subscribe my name this 17th day of March, A. D. 1919.

CHARLES F. JACOBS.