

910,582.

J. H. REID.
ELECTRIC FURNACE.
APPLICATION FILED NOV. 9, 1908.

Patented Jan. 26, 1909.

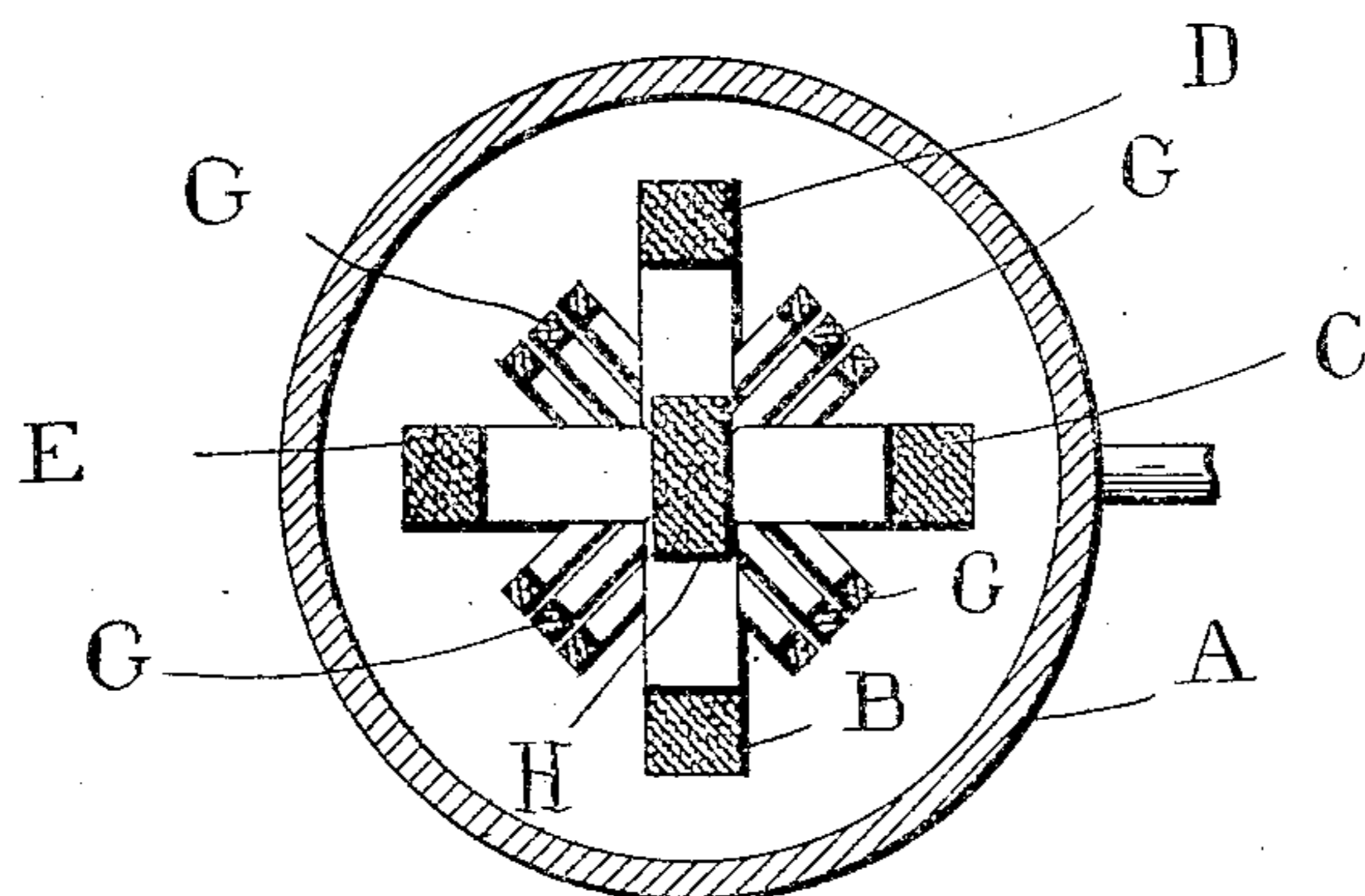
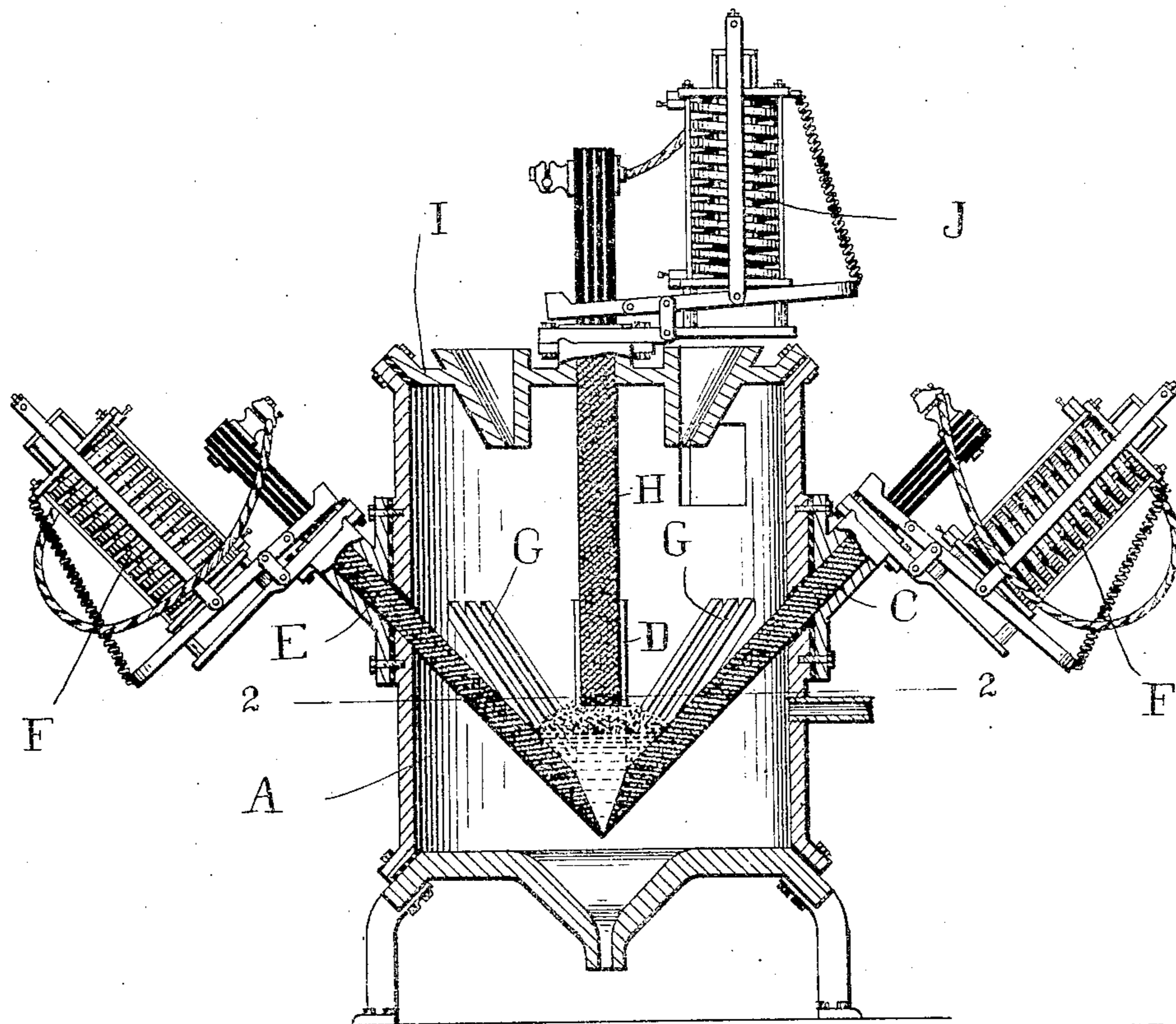


FIG. 2.



WITNESSES

Wm. A. Longman
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FIG. 1.

BY

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ATT'Y.

UNITED STATES PATENT OFFICE.

JAMES HENRY REID, OF NEWARK, NEW JERSEY.

ELECTRIC FURNACE.

No. 910,582.

Specification of Letters Patent.

Patented Jan. 23, 1909.

Application filed November 9, 1908. Serial No. 461,733.

To all whom it may concern:

Be it known that I, JAMES HENRY REID, of Newark, in the State of New Jersey, United States of America, have invented certain new and useful Improvements in Electric Furnaces, of which the following is a specification.

My invention relates to improvements in electric furnaces.

The objects of my invention are to provide improved means for regulating and rendering more uniform the action of the current, in heating the material to be treated.

In an earlier application Serial #449877 I have described a form of electric furnace in which the ore is supported on a crucible within the furnace constituted by electrodes and resistance elements.

The present invention involves an improvement on this earlier invention whereby it may be better adapted to use a polyphase current to secure better regulation and distribution of the heat.

In its construction the invention includes a plurality of converging electrodes adapted to constitute a crucible to support the charge and being connected to different phases of a polyphase current producing system in combination with a vertical extending electrode adapted to extend into the top of the charge and being connected to the neutral point of the polyphase system as hereinafter described.

In the drawings, Figure 1 is a vertical section through the furnace. Fig. 2 is a transverse section along the line, 2—2, Fig. 1.

In the drawings, like figures of reference indicate corresponding parts in each figure.

Referring to the drawings, A represents the body portion or casing of the furnace having a plurality of converging and downwardly inclined electrodes, B, C, D, and E therein, which are electrically connected to the different phases of a source of supply of polyphase current such as a dynamo. Each of these electrodes are provided with suitable automatic regulators F of any suitable type such as that described in my earlier application #449877, the said regulators being adapted to maintain the amount of current flowing through each of the electrodes constant.

These converging electrodes are adapted

to constitute the outlines of a crucible on which the charge may be supported during treatment and to complete the formation of this crucible a plurality of resistance elements G, are provided, extending through the walls of the casing K and meeting the other electrodes at the converging point, the construction being such as described in my said earlier application #449877.

According to the present invention a vertical electrode H is provided which extends through the top I of the furnace and has an automatic constant current regulator J connected thereto, the said electrode being adapted to have its end extend into the top of the charge as indicated, the electrode itself being electrically connected to the neutral point of the polyphase system.

It will thus be seen that in operation the amount of current flowing through each of the different phases may be regulated and the neutral point being in the center of the charge always insures that uniform heat is maintained throughout the same.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the spirit or scope thereof, it is intended that all matter contained in these specifications and drawings shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language of the following claims is intended to cover such generic and specific features of the invention herein described, which, as a matter of language, might be said to be included thereby.

What I claim as my invention is:

1. The combination with a source of polyphase current of an electric furnace having a crucible formed therein by a plurality of converging electrodes having different phases of the polyphase current flowing through each and an electrode adapted to extend into the top of the charge supported on said electrodes and being connected to the neutral point of the polyphase system.

2. The combination with a source of polyphase current of an electric furnace having a crucible formed therein by a plurality of converging electrodes having different phases of

the polyphase current flowing through each
and an electrode adapted to extend into the
top of the charge supported on said elec-
trode and being connected to the neutral
5 point of the polyphase system, and auto-
matic constant current regulating means for
each of the electrodes.

In witness whereof I have hereunto set my
hand in the presence of two witnesses.

JAMES HENRY REID.

Witnesses:

RUSSEL S. SMART,
M. GILBERTSON.