

No. 715,509.

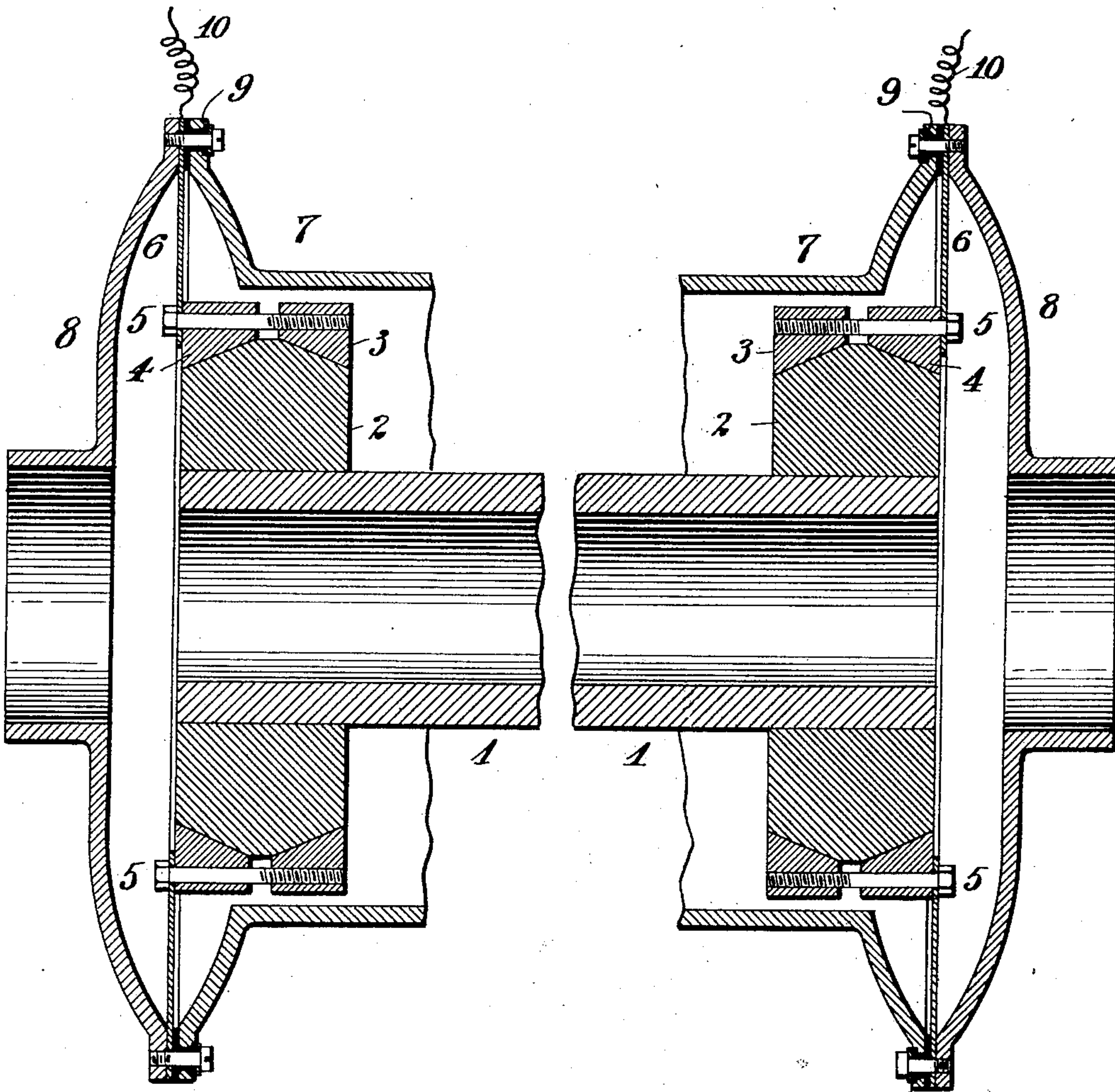
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H. N. POTTER.

END SUPPORT AND CIRCUIT TERMINAL FOR CARBON TUBE FURNACES.

Application filed Mar. 28, 1902. Renewed Oct. 28, 1902.

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

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END SUPPORT AND CIRCUIT-TERMINAL FOR CARBON-TUBE FURNACES.

SPECIFICATION forming part of Letters Patent No. 715,509, dated December 9, 1902.

Application filed March 28, 1902. Renewed October 28, 1902. Serial No. 129,177. (No model.)

To all whom it may concern:

Be it known that I, HENRY NOEL POTTER, a citizen of the United States, and a resident of New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in End Supports and Circuit-Terminals for Carbon-Tube Furnaces, of which the following is a specification.

The present invention relates to improved means for making electrical terminal connections with carbon-tube furnaces and for mounting such furnaces in such a manner as to permit expansion and at the same time provide good mechanical support. The means which I employ for this purpose are metallic diaphragms at each end of the carbon tube, these diaphragms serving also as parts of the electrical connections at the ends of the furnace-tube.

My invention will be understood by reference to the accompanying drawing, which represents a longitudinal section of a portion of a carbon-tube furnace, showing the mechanical and electrical connections at both ends thereof.

In the drawing, 1 is a carbon tube constituting the main portion of the furnace, and 2 is a ring terminal carbon surrounding the end of the tube 1. The outer surface of the carbon terminal 2 slopes in opposite directions, and the sloping surfaces are surrounded by metallic ring terminals 3 4, which are clamped against it by bolts 5 5, passing through a metallic diaphragm 6. In this way a firm electrical and mechanical connection can be made between the carbon terminal 2 and the ring-terminals 3 3. The diaphragm 6 is clamped between an outer casing 7 and a front plate 8, insulation 9 being interposed between the casing and the diaphragm. The same construction is provided at the opposite end of the furnace, whereby an elastic support is supplied for the furnace as a whole, while the electrical connections of the tube with the diaphragm are very close and perfect. Connection is made with the external circuit by means of a wire 10, clamped between the diaphragm and the front plate 8.

A central opening is provided in the diaphragm 6, so that the furnace end is easily accessible, the plate 8 being also provided with a central opening for the same purpose.

The diaphragm 6 extends at right angles to

the axis of the carbon tube to such a distance as to allow the tube to move, say, a quarter of an inch. The two diaphragms serve not only as excellent means for providing electrical connections, but they also support the tube in case the entire furnace is tipped up into a vertical position. The lower diaphragm then carries the weight of the furnace and the upper permits expansion.

I claim as my invention—

1. The combination with a tube constituting a furnace-body, of suitable terminals at each end supported upon diaphragms, as set forth.

2. As a means of support for a tube constituting the body of an electric furnace, a pair of metallic diaphragms, and means for clamping the said diaphragms to the furnace-tube.

3. In an electric furnace, a tubular body having carbon terminals at each end, metallic ring terminals clamped to the said carbon terminals, and an insulated diaphragm at each end rigidly connected with the metallic terminals.

4. The combination with a carbon-tube furnace, of elastic supports applied to the ends thereof.

5. The combination with an electric-tube furnace, of elastic supports applied to its ends, said supports forming part of the terminal connection to the external circuit.

6. The combination with a carbon-tube furnace and a casing surrounding the same, of a diaphragm attached to said casing at each end, and intermediate connections between the diaphragm and the carbon tube.

7. The combination with a carbon-tube furnace, a casing surrounding the same, and a perforated end plate, of a metallic diaphragm clamped between the end plate and the casing and forming a support for one end of the carbon tube.

8. The combination with a carbon-tube furnace, of an elastic support at each end thereof, and shields or end plates for protecting the elastic supports.

Signed at New York, in the county of New York and State of New York, this 25th day of March, A. D. 1902.

HENRY NOEL POTTER.

Witnesses:

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