

No. 860,179.

PATENTED JULY 16, 1907.

E. H. ABBOTT.
ELECTRIC HEATER.

APPLICATION FILED DEC. 19, 1906.

Fig. 1

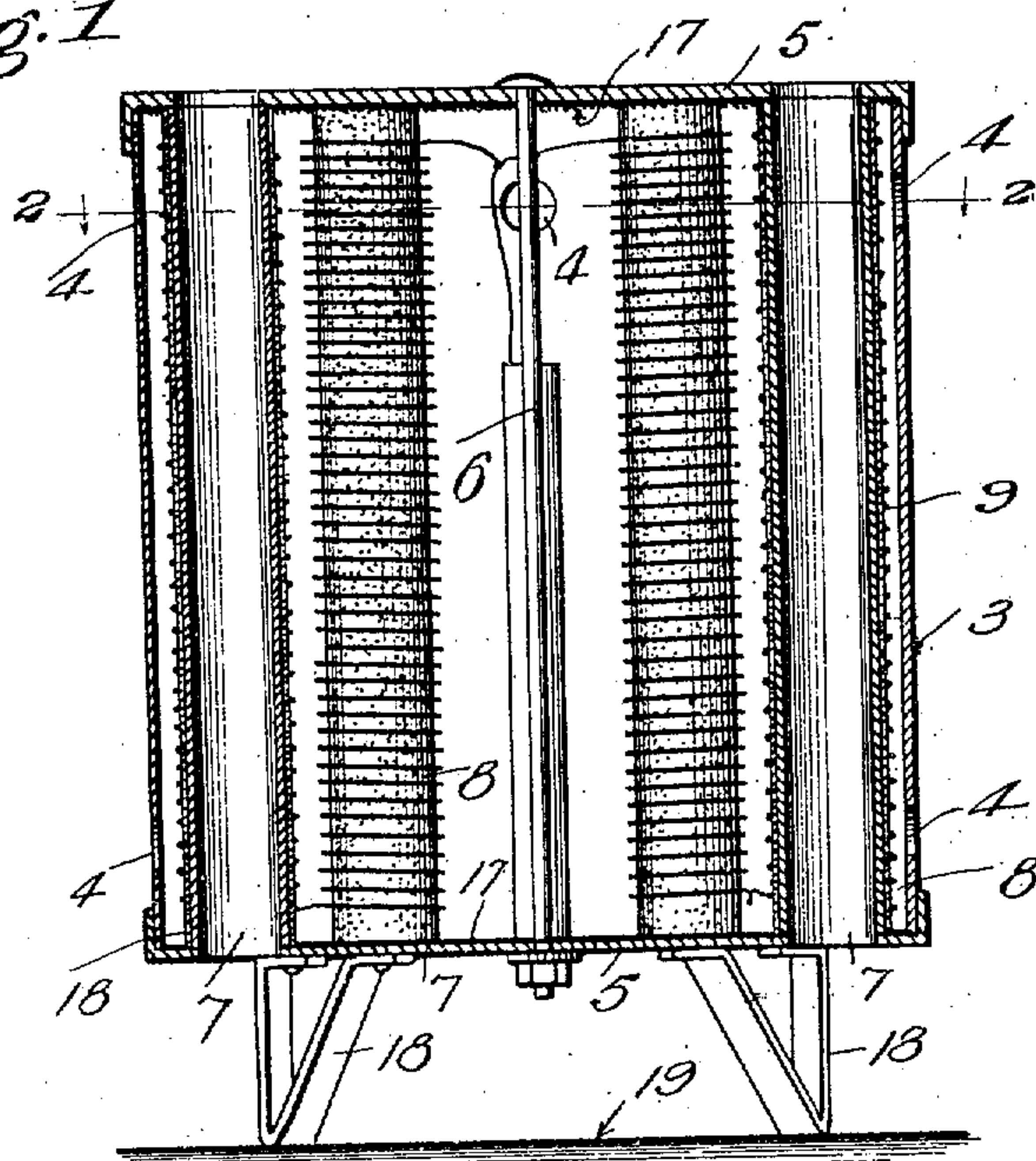
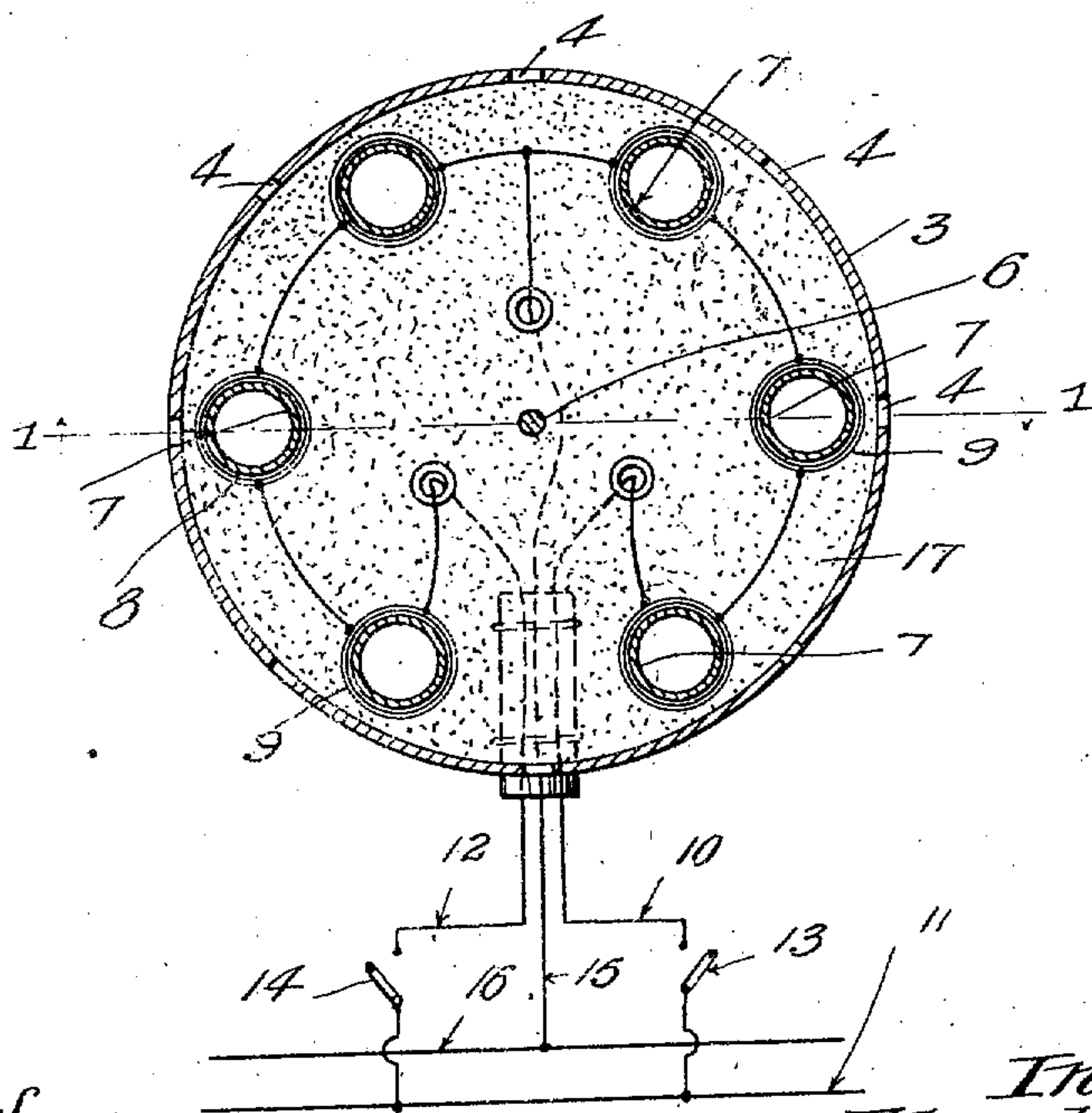


Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD H. ABBOTT, OF LOS ANGELES, CALIFORNIA.

ELECTRIC HEATER.

No. 860,179.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed December 19, 1905. Serial No. 292,472.

To all whom it may concern:

Be it known that I, EDWARD H. ABBOTT, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have
5 invented new and useful Improvements in Electric Heaters, of which the following is a specification.

It is the object of my invention to provide a compact, cheap and efficient heater of simple construction and of great efficiency. I accomplish these ob-
10 jects by the heater described herein and illustrated in the accompanying drawings in which:—

Figure 1—is a longitudinal vertical section on the line 1—1 of Fig. 2. Fig. 2—is a cross section on the line 2—2 of Fig. 1.

15 In the drawings the outer casing 3 is preferably a hollow drum of sheet metal having small apertures or ports 4 near the top and bottom thereof. The heads 5 of the drum are held together by a bolt 6. Extending from one head to the other of the drum are hollow
20 sheet metal tubes 7 of which there may be as many as desired. I have found six to be a practical number for a small sized heater. These tubes register with openings in the head so that the air may pass through them. Surrounding these tubes is a layer of asbestos
25 8 which is used to prevent injury to the tubes and also to insulate wire 9 from the tube. This wire is coiled spirally and may all be connected together in series, or those on each side may be connected in series as
30 shown in Fig. 2, those on the right hand being connected by wire 10 with the feed wire 11 which is connected to a source of electric energy, not shown, and those on the left hand being connected by wire 12
35 with the feed wire. On wire 10 is a switch 13 and on wire 12 is a switch 14 and by opening the switches coils on one side or on both sides may be shut off as desired. Line 15 connects the coils to the return wire 16. The heads of the drum are also interiorly covered with a sheet of asbestos 17. One of the heads of the

drum is provided with supporting legs 18 so as to keep the heater elevated above the floor 19 so that the air
40 may circulate freely through the tubes and around the drum and to prevent any injury to the floor from the heat generated. The size of the drum and of the tubes 7 extending therethrough, the size of the wire and the
45 closeness of the coils thereof are regulated by the capacity of the heater.

By this construction I have provided a compact, cheap and efficient heater. As soon as the tubes 7 are heated a current of air is caused to flow through them
50 very rapidly. Air is also drawn in at the ports at the bottom of the drum and discharged at the ports at the top thereof, whereby great heating capacity is obtained.

Having described my invention what I claim as
55 new and desire to secure by Letters Patent is:—

1. An electric heater composed of a hollow metal drum, the inner faces of the ends of said drum being lined with a heat resisting material, and having a plurality of air inlets
60 at the bottom thereof and a plurality of heat outlets at the top thereof; a plurality of metal tubes covered with a heat resisting and insulating material extending from one end of the drum to the other and opening through the
65 ends, each of said tubes being wound with a resistance coil, said coils being connected together in series; and a switch interposed in the circuit.

2. An electric heater composed of a hollow metal drum, the inner faces of the ends of said drum being lined with a heat resisting material, and having heat outlets in its
70 side; a plurality of metal tubes covered with a heat resisting and insulating material extending from one end of the drum to the other and opening through the ends, each of
75 said tubes being wound with a resistance, and each half of the tubes being connected together in series to a source of electrical energy; and switches interposed in the circuits.

In witness that I claim the foregoing I have hereunto
subscribed my name this 13th day of December, 1905.

EDWARD H. ABBOTT.

Witnesses:

G. E. HARPHAM,
HENRY T. HAZARD.