No. 714,373. Patented Nov. 25, 1902.

A. M. HEWETT & J. C. SMITH.

ELECTRICAL DENTAL FURNACE.

(Application filed Feb. 17, 1902.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

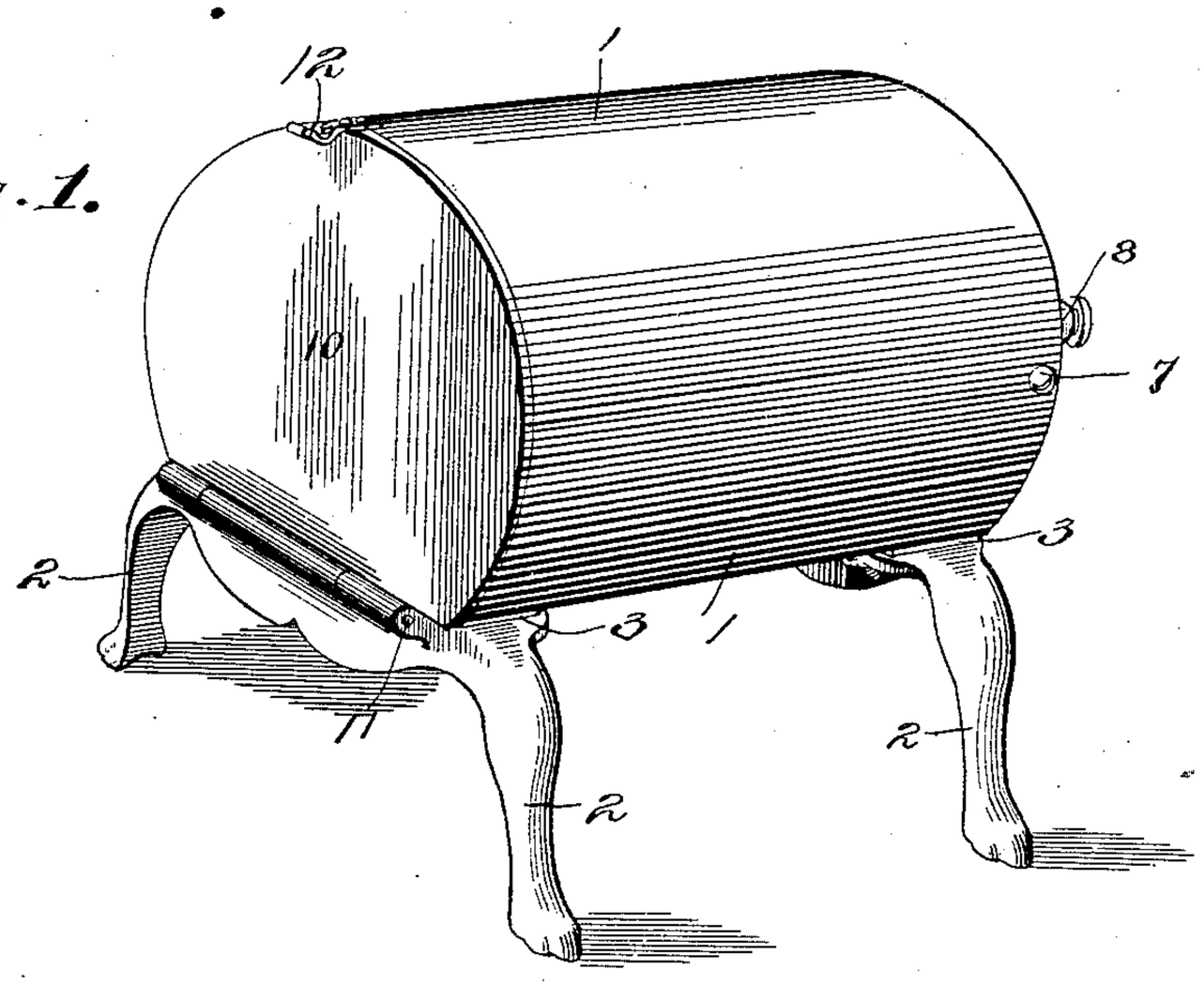


Fig. 2.

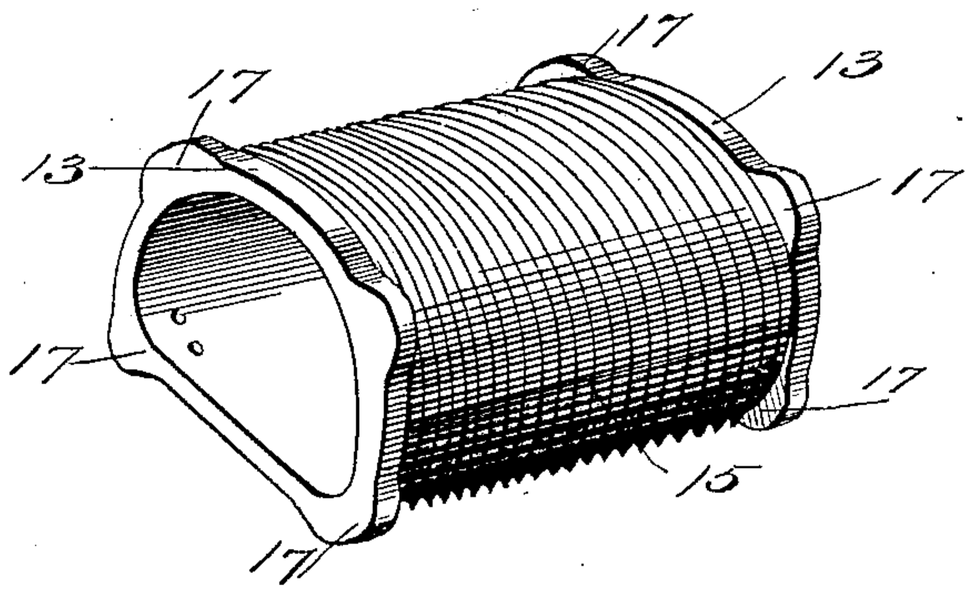
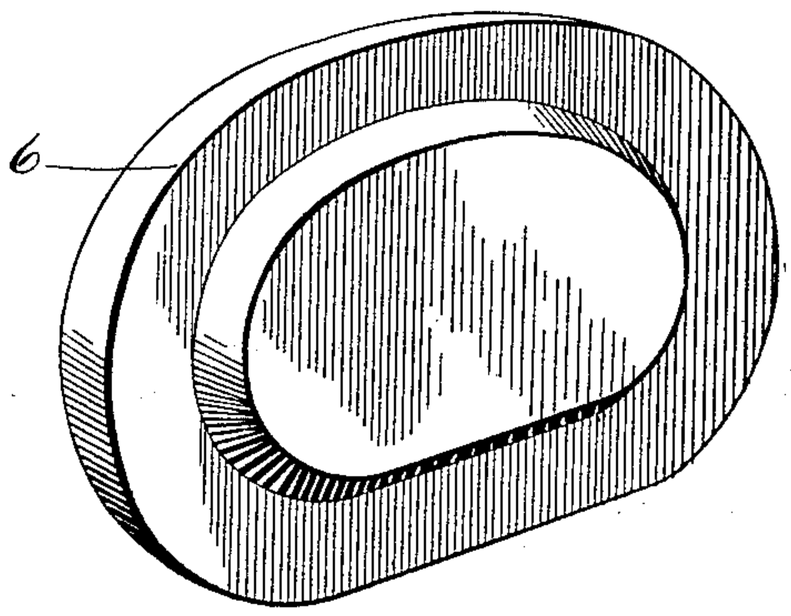


Fig. 6.



Witnesses:
Ira D. Perry
Robert H. Stein.

Inventors:
Ashley M. Hewett
John C. Smith
By John A. Fidé Atty.

No. 714,373. Patented Nov. 25, 1902.

A. M. HEWETT & J. C. SMITH.

ELECTRICAL DENTAL FURNACE.

(Application filed Feb. 17, 1902.)

(No Model.) 3 Sheets—Sheet 2.

Fig. 3.

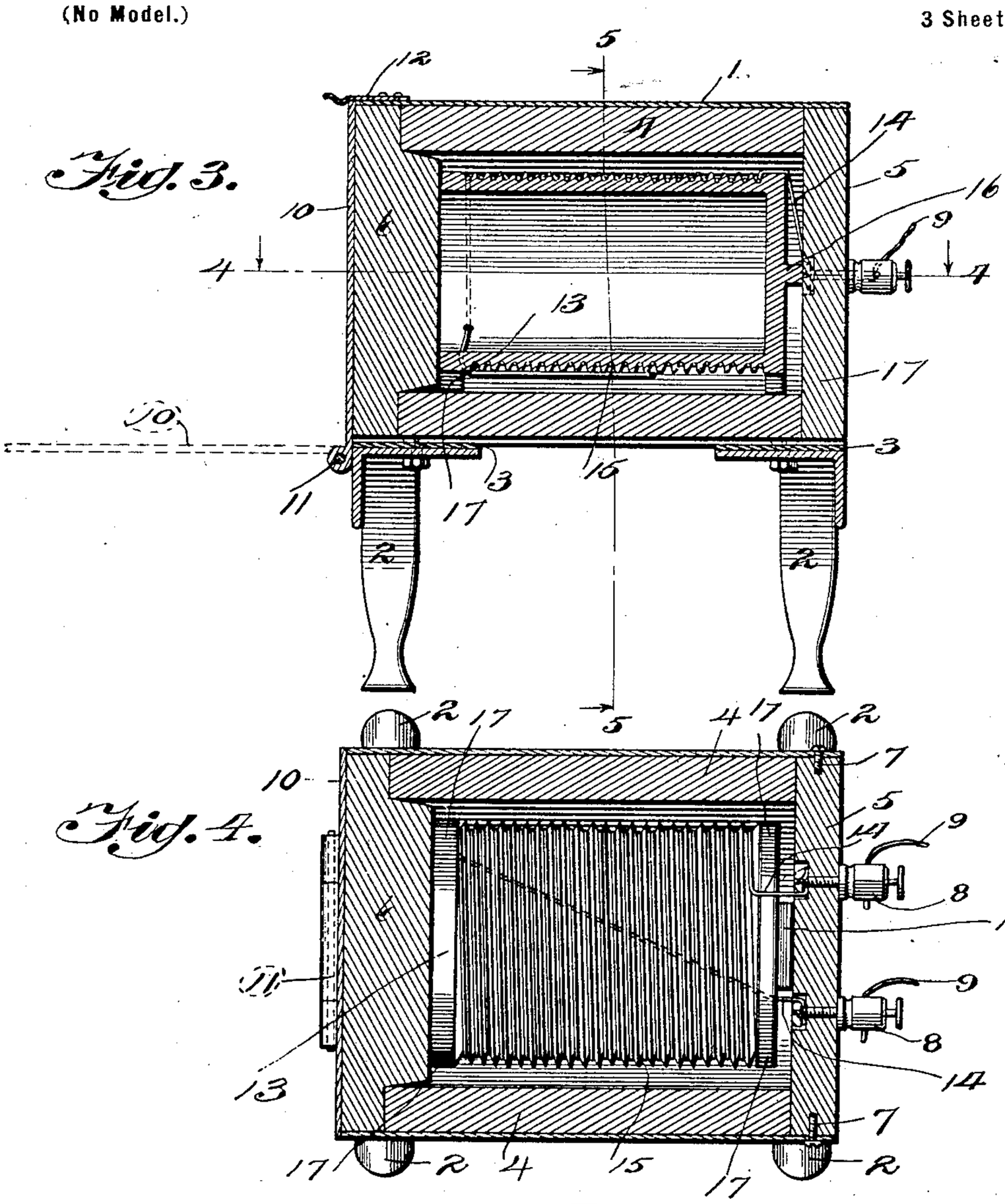
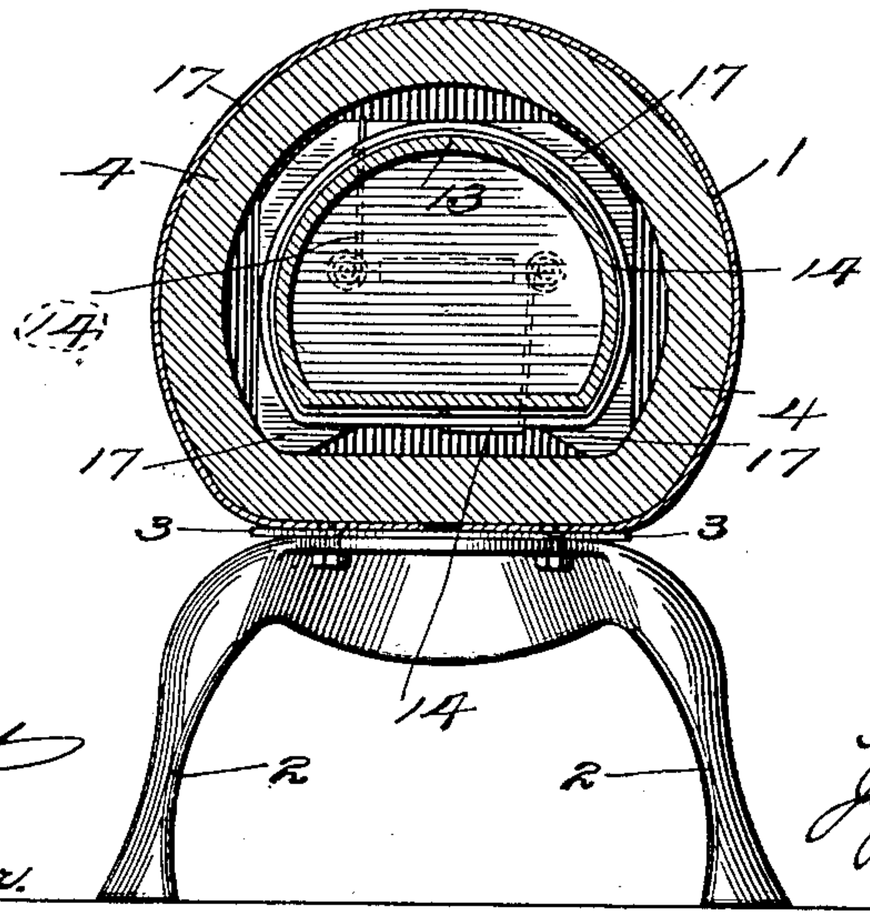


Fig. 4.

Fig. 5.



Witnesses:
Ira D. Perry
Robert H. Weir.

Inventors
Ashley M. Hewett
John C. Smith
By John A. Hill
Atty.

No. 714,373. Patented Nov. 25, 1902.

A. M. HEWETT & J. C. SMITH.

ELECTRICAL DENTAL FURNACE.

(Application filed Feb. 17, 1902.)

(No Model.) 3 Sheets—Sheet 3.

Fig. 7.

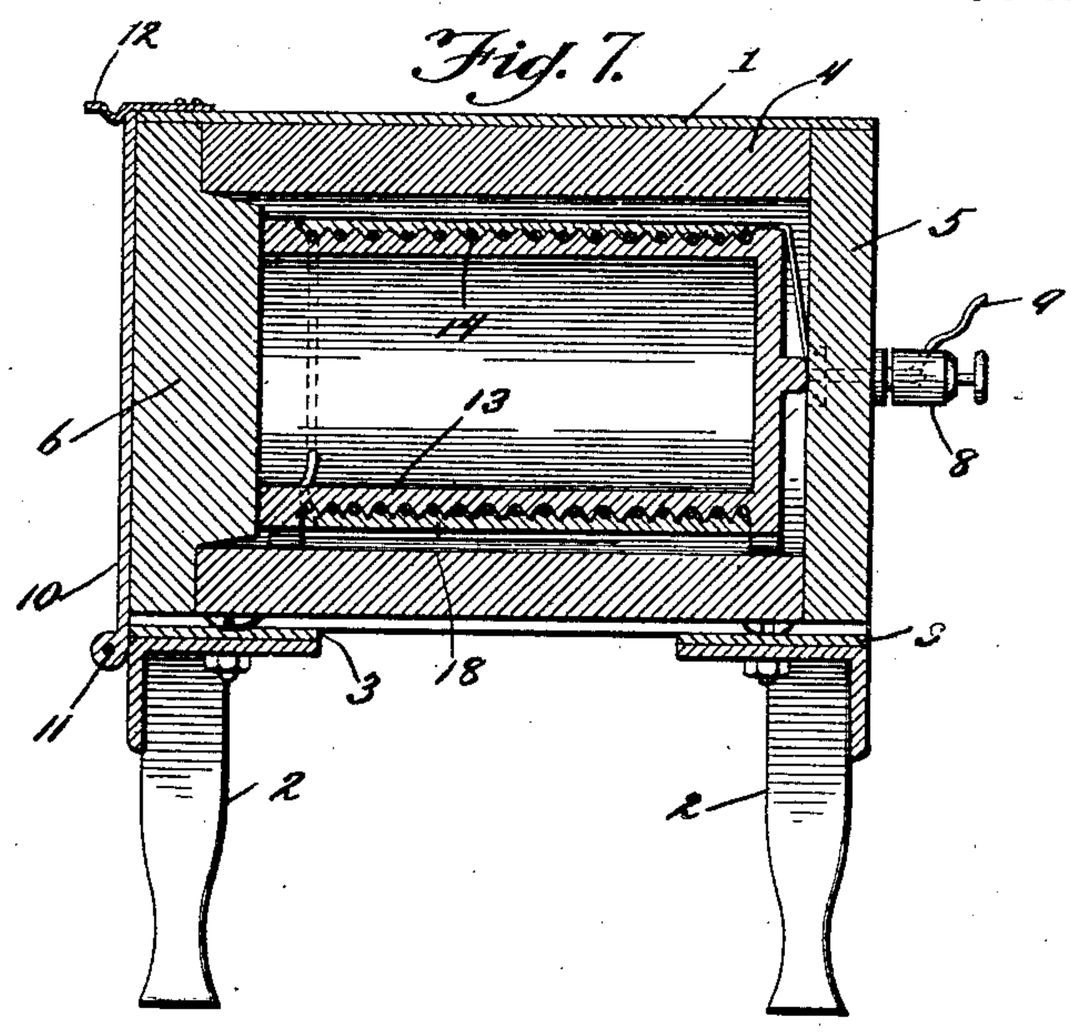


Fig. 8.

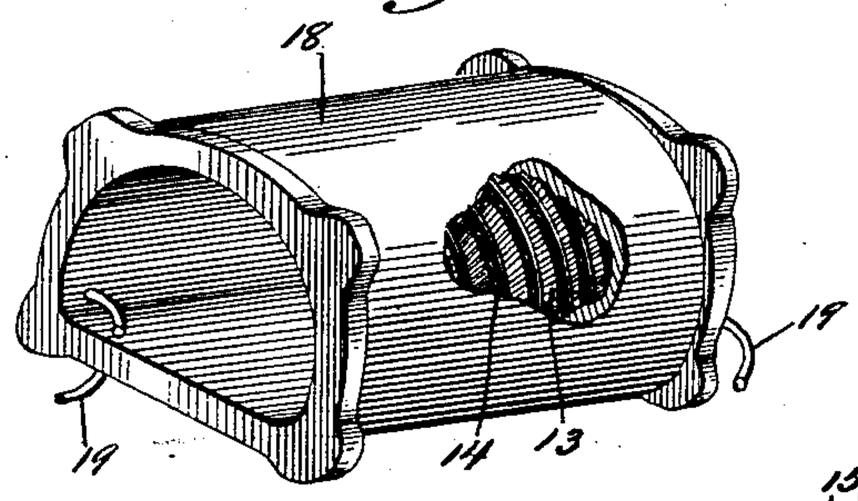


Fig. 10.

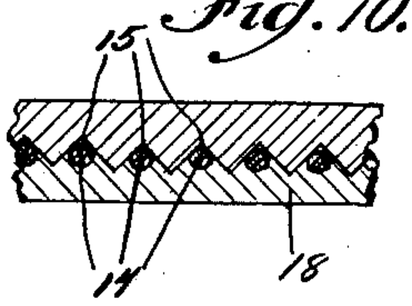
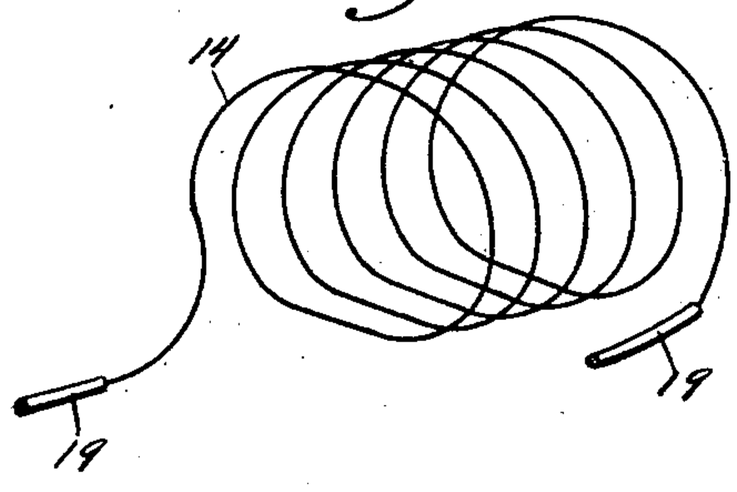


Fig. 9.



Witnesses:
Ira D. Bray
J. B. Weir

Inventors:
Ashley M. Hewett
John C. Smith
By John M. Field Atty.

UNITED STATES PATENT OFFICE.

ASHLEY M. HEWETT AND JOHN C. SMITH, OF CHICAGO, ILLINOIS.

ELECTRICAL DENTAL FURNACE.

SPECIFICATION forming part of Letters Patent No. 714,373, dated November 25, 1902.

Application filed February 17, 1902. Serial No. 94,452. (No model.)

To all whom it may concern:

Be it known that we, ASHLEY M. HEWETT and JOHN C. SMITH, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have jointly invented certain new and useful Improvements in Electrical Dental Furnaces, of which the following is a description.

Our invention belong to that class of furnaces employed by dentists, and has for its object the production of a more simple, economical, and efficient device for the purpose stated than is now available.

To this end it consists in the novel construction, arrangement, and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts, Figure 1 is a perspective view of our invention. Fig. 2 is a similar view of the inner muffle or removable chamber of the same. Fig. 3 is a vertical longitudinal section in line 3 3 of Fig. 1. Fig. 4 is a horizontal section in line 4 4 of Fig. 3. Fig. 5 is a transverse vertical section in line 5 5 of Fig. 3, and Fig. 6 is a view of the closing or door end of the device. Fig. 7 is a section similar to Fig. 3, with the inner muffle jacketed or covered. Fig. 8 is a perspective view of said jacketed muffle, partly broken away. Fig. 9 is a view showing a coil provided with enlarged connections, and Fig. 10 is a sectional fragment of the lower or bottom wall of the inner muffle to more clearly show the arrangement and construction.

As shown in the drawings, 1 is an outer shell or casing provided with legs 2 2 2 2 and composed of metal or other suitable non-combustible material. In the preferred form the shell 1 is insulated from the legs 2 by interposed sheets 3 of asbestos or other suitable non-conductor of heat. The shell 1 is of any preferred form and size. As shown, the casing 1 comprises a substantially cylindrical shell open at both ends. A muffle 4, composed of fire-clay or equivalent material, fits snugly within the shell, but is preferably enough shorter to permit the insertion of the ends 5 and 6, composed of similar material, within the end planes of the shell 1.

The end 5 fits snugly within the shell 1 and is temporarily secured therein in any preferred manner. As shown, screws 7 7, extending through the shell and into the periphery of the end 5, accomplish this purpose. The end 5 is provided with screw-posts 8 8 for attachment of wires 9 9, conveying electrical energy to the device in the usual manner. The removable end 6 is constructed to fit within the end of the shell and is preferably provided with an extension projecting slightly within the muffle 4 to close the end of the inner muffle, as shown in Fig. 3. A door 10, preferably hinged at the bottom of the shell, as at 11, and constructed with a suitable latch or catch 12, engaging the top of the shell, serves to retain the end 6 in position. An inner muffle 13, constructed to loosely fit within the muffle 4, is formed of fire-clay or other suitable material to secure suitable resistance to serve as the furnace proper and is wound with a wire 14, having its ends extended for attachment to the posts 8 8, as shown in Fig. 4. In the preferred form shown the exterior of the muffle is formed with a regularly-progressive screw forming a depressed seat 15 for the wire 14 and separating the coils of wire. The end of the wire after reaching the front of the muffle may be passed back to the proper post 8, as stated. This end of the wire is, however, preferably carried through the interior of the muffle, as shown, to overcome the tendency of the wire to unwind owing to the rather abrupt bending of the same incident to the returning of the end to the rear of the muffle. In the preferred form the muffle 13 is also provided with spacing extensions 16 17 17 17 17 or equivalent parts to center the muffle 13 within the muffle 4, leaving an air-space between the same. By this means the heat is not so readily transmitted to the exterior of the device, the fusing of the two muffles together is avoided, and the parts are more readily disconnected when desired.

The mode of operation is obvious. In assembling the parts the end is disconnected from the shell by removing the screws 7 7. The proper connection of the ends of the wire 14 may be made with the posts 8, and by inserting the muffle 13 into its place the end 5 may be secured to the shell, as before. The door 10 being opened, the end 6 is readily re-

moved. The material may then be inserted in the muffle 13, the end 6 replaced, substantially closing the end of the muffle 13, and the door closed. The removal of the material is as readily accomplished. To secure the most perfect results, the muffle 13 after being wound by the wire 14 is covered with a jacket or cover 18, composed of suitable material to properly resist the high temperature and to be readily removed from the muffle when the muffle is broken or it is desired to recover the platinum or other wire for further use. The ends 19 19 of the coil 14 are also preferably much larger than the wire composing the coil to increase the resistance in the usual manner.

It is obvious that after describing our improvement various immaterial modifications may be made without departing from the spirit of our invention. Hence we do not wish to be understood as limiting ourselves to the exact form and construction shown.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device of the character described, an inclosing shell, a muffle 4 therein of a length shorter than the inclosing shell whereby a space is left at each end of the shell, end closures 5 and 6 fitting said spaces, devices for removably securing the end closure 5 in place, and a door adjacent to the end closure 6 adapted when in closed position to retain said end closure 6 in place, substantially as described.

2. In an electric furnace, an inclosing shell 1, a muffle within said shell, end closures 5 and 6 for said muffle, devices for removably securing the end closure 5 in place, a hinged door 10 adjacent to the end closure 6 adapted when in closed position to retain said end closure 6 in place, an interior muffle supported in the space on the interior of the exterior muffle and spaced from the walls thereof and a resistance-coil surrounding said interior muffle, the terminals of said coil being both carried rearwardly and through the end closure, 5, substantially as described.

3. In an electric furnace, an exterior muffle open at both ends, an interior muffle adapted to be inserted into said exterior muffle from either end thereof, means for spacing the inner muffle from the inner wall of the exterior muffle, a removable closure for each end of the exterior muffle, means for temporarily securing the end closures in place, and a resistance-coil surrounding the inner member adapted to be connected in an electric circuit, substantially as described.

4. In an electric furnace, an exterior muffle open at both ends, an interior muffle adapted to be inserted into said exterior muffle, said interior muffle being closed at one end, means for spacing the interior muffle from the inner wall of the exterior muffle, an end closure 5 for one end of the exterior muffle, devices for removably securing said end closure in place, an end closure 6 for the opposite end of the exterior muffle, and means for removably securing the end closure 6 in place, said end closure 6 when in proper position also constituting a closure for the open end of the interior muffle, substantially as described.

5. In an electric furnace, a muffle closed at both ends, a resistance-coil wound about said muffle, the terminals of said coil being at one end of the muffle, the return end of the coil being carried through the muffle to overcome the tendency of the wire to unwind owing to the rather abrupt bending of the same at the end of the muffle opposite the terminals, and means for conducting a current of electricity to the resistance-coil, substantially as described.

ASHLEY M. HEWETT.
JOHN C. SMITH.

Witnesses:
JOHN W. HILL,
CHARLES I. COBB.