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A. J. ASCH

ELECTRIC FURNACE

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Fig. 1.

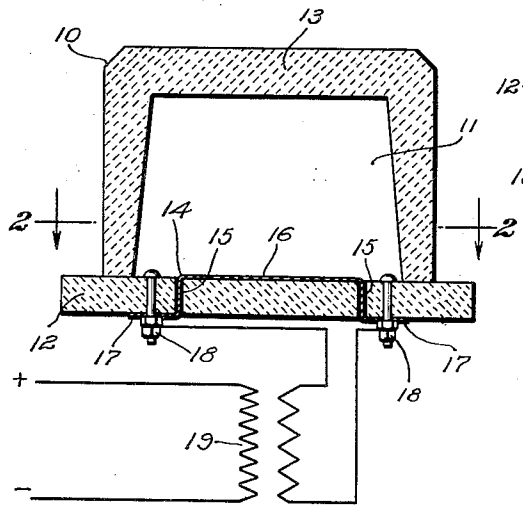


Fig. 2.

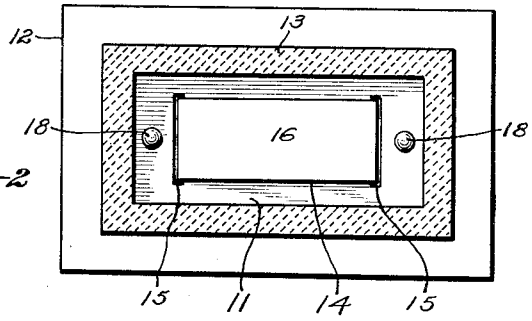
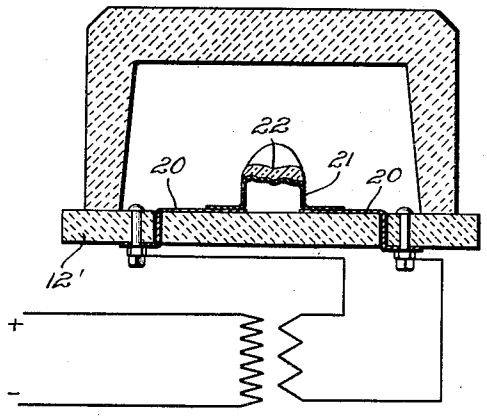


Fig. 3.



WITNESSES

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ELECTRIC FURNACE.

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This invention relates to electric furnaces and has especial reference to electric furnaces such as are used in dentistry.

Some of the objects of the present invention are: an electric furnace including a heating element which may be quickly and easily incorporated, of comparatively long life, and when the occasion arises, may be replaced without requiring scrapping of other parts of the furnace; a heating element for an electric furnace of comparatively low resistance effective on a comparatively low voltage, and capable of being brought almost instantly into a state of incandescence thereby expediting the completion of the work; and a heating element in a furnace of the indicated character for a direct application of heat in carrying out fusing operations.

With the foregoing, other objects of the invention will appear from the embodiments of the invention which, by way of example, are described in the following specification and illustrated in the accompanying drawing, in which—

Figure 1 is a sectional view through an electric furnace embodying one form of the present invention.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view through an electric furnace illustrating a modified form of heating means.

Electric furnaces used in dentistry for carrying out fusing operations among other things, hitherto produced, have been found faulty, due to the fact that the heating means is so incorporated that it is of short life and burns out without giving much service, and requires the scrapping of other parts of the furnace. In accordance with the present invention the heating means is incorporated in such a manner so as to give longer service, and which is comparatively inexpensive, and yet furnishes the necessary thermal efficiency. The heating means of the present invention may be incorporated in divers forms of furnaces.

Referring now more particularly to Figs. 1 and 2, it will be apparent that there is shown a furnace 10 including a heat chamber 11 formed by a base member 12 of insulating material such as a high refractory composition of silica and quartz, and a hollow body member 13 also of a high refractory material. A heating means 14 is associated with the base member 12 in such a manner that when the occasion arises it may be easily replaced. The said heating means 14 is in the form of foil, preferably platinum, and therefore of comparatively low resistance. A piece of platinum foil of proper dimensions is associated with the base member 12 by providing the base member 12 with spaced holes 15 through which the opposite ends respectively of the piece of platinum foil are respectively extended. This provides an intermediate major portion 16 within the heat chamber 11, and two end portions 17. Each of the end portions 17 is secured to the base member 12 by means in the form of a binding post 18 carried by the base member 12, and which is adapted for effecting an electrical connection therewith of an electrical conductor. The heating means 14 being of comparatively low resistance is capable of being brought to a state of incandescence on a low voltage and comparatively great amperage. The proper potential is applied to the heating means 14 from the usual 110 volt supplied by the use of a transformer indicated at 19 in Fig. 1, which is electrically connected by the binding post 18, as shown. Inasmuch as the invention resides in the use of the type of heating means 14 shown, any suitable means may be employed for supplying the necessary electrical energy thereto.

From the foregoing it will be apparent that the heating means is so incorporated as to be readily replaced when the occasion arises, from being burned out or for any other reason, without requiring scrapping of the part of the furnace with which it is associated. It is to be noted that the portion 16 is exposed to the interior and will therefore effectively radiate heat within the chamber 11 for carrying out fusing operations.

In Fig. 3 there is shown a modification in which the heating means is so formed as to make possible the inclusion of a platinum matrix for the direct application of heat to the porcelain to be fused in forming a tooth or portion thereof. The heating means in this form consists of two parts 20 of platinum foil which are associated with the base member 12′ in a manner similar to that in which it is accomplished in the preferred form. A platinum matrix 21 has portions thereof in contact with the parts 20 to form

a complete circuit through the heating means. It will at once be apparent that when the current is on not only the parts 20 will become incandescent but also the matrix 21. It will therefore be possible to apply the heat directly to the porcelain indicated at 22, in the obtainment of the desired formation.

I claim:

1. In an electric furnace, a heating element comprising a piece of platinum foil supported within the furnace and having portions thereof extending outwardly of a wall of the furnace for the attachment thereto of a source of current supply.

2. In an electric furnace, a heating element comprising a strip of platinum foil disposed inwardly of the furnace and supported by a wall thereof, and having its opposite end portions extending outwardly of the wall for the attachment thereto of a source of current supply.

3. In an electric furnace, a heating element comprising a substantially unbroken strip of platinum foil trained over an interior wall of the furnace, and having its ends projecting outwardly through the wall at the opposite ends thereof for attachment thereto of a source of current supply.

4. In an electric furnace, a heating element comprising an independently removable and substantially unbroken length of platinum foil trained over an interior wall of the furnace, and having its ends projecting outwardly through the wall adjacent the opposite ends thereof for the attachment thereto of a source of current supply.

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