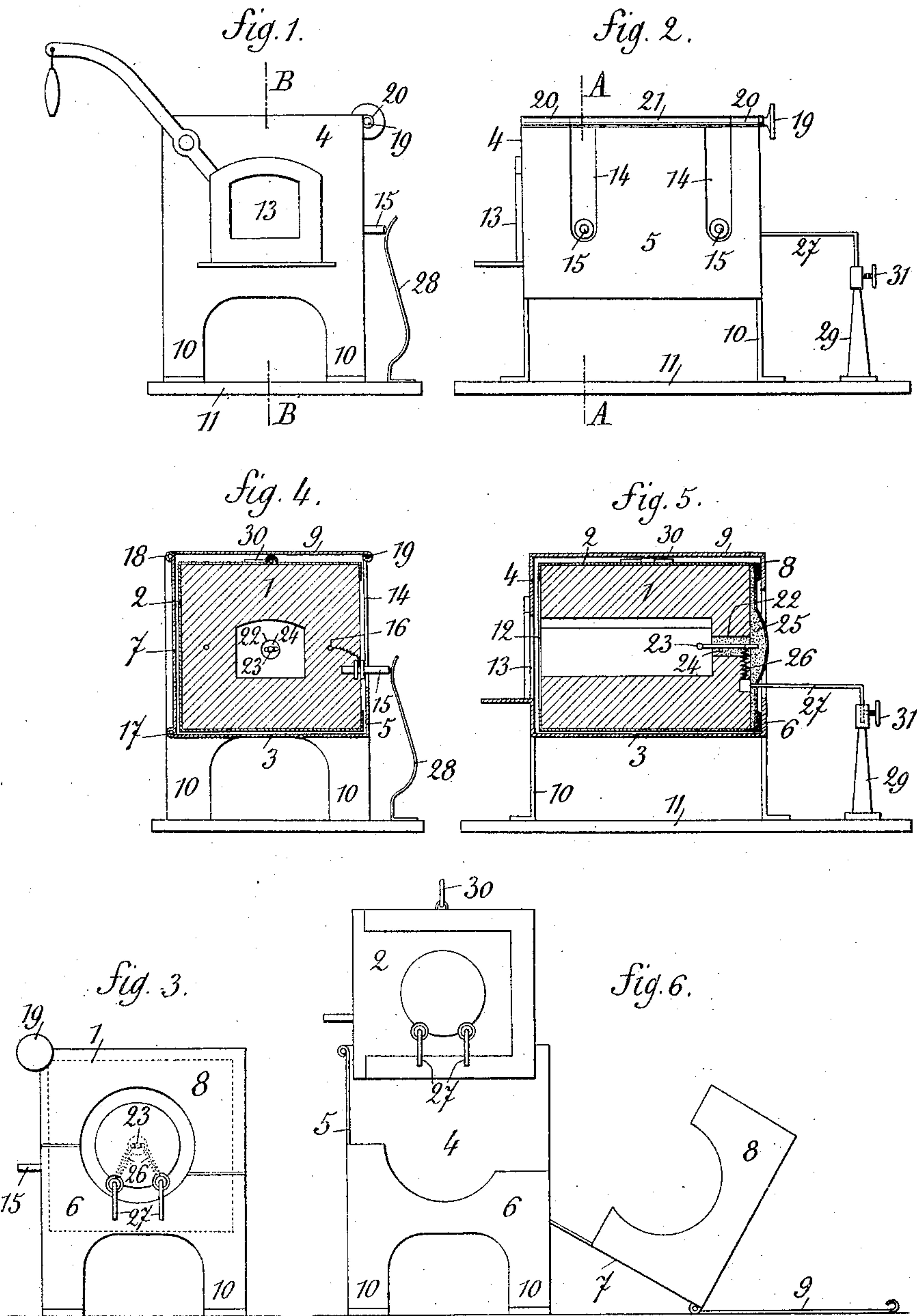


No. 826,962.

PATENTED JULY 24, 1906.

B. PLATSCHICK.
ELECTRIC FURNACE.

APPLICATION FILED NOV. 27, 1905.



Witnesses,
[Signature]
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Inventor
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by *[Signature]*
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UNITED STATES PATENT OFFICE.

BENVENUTO PLATSCHICK, OF PARIS, FRANCE.

ELECTRIC FURNACE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BENVENUTO PLATSCHICK, purveyor to the dentist trade, a subject of the King of Italy, residing at 3 and 8 Rue Ventadour, Paris, in the Republic of France, have invented certain new and useful Improvements in Electric Furnaces, of which the following is a specification.

This invention relates to electric furnaces of the kind now in use in dentistry and other similar applications, in enameling, in chemistry, in bacteriology, &c.

Heretofore in apparatuses of this kind the muffle, its casing, and the electric devices form a whole, which in practice is difficult to take to pieces on the spot when, for instance, a muffle is to be replaced or repaired. When the furnace comprises an electric pyrometer, it is more particularly impossible to make repairs on the spot by reason of the difficulties attending the regulation of the indications of the said instrument, whereby the furnace can no longer be used for the time being whenever the muffle has to be either replaced or repaired and the whole apparatus has to be sent back to the manufacturer.

The invention has for its object to do away with this inconvenience and to realize a great saving of time and money when electric furnaces of the specified kind have to be repaired.

It consists, broadly, in rendering the muffle easily detachable from its casing and from the electric wires which connect it with the source of heating-current and also from the apparatus for measuring the temperatures should there be one.

More particularly, the invention also consists in combining in the muffle itself with the thermo-electric couple, which is usually constituted by different alloys based on platina, suitable resistances so adjusted as to compensate for the differences which may exist between the electric and thermic constants of divers couples of the same make by reason of the irregularity of the alloys. This arrangement allows of delivering over to the trade muffles which are interchangeable—that is, all the couples present between their terminals the same thermo-electric constants, and which consequently all give in connection with one and the same galvanometer the same pyrometric indications when they are subjected to equal temperatures. The necessity

of a fresh standarding or of a particular adjustment when a muffle has to be replaced is thus avoided, the result being a great saving of time and money.

The accompanying drawings show, by way of example, one embodiment of this invention.

Figures 1, 2, and 3 are respectively a front, a side, and a rear elevation of an electric furnace comprising an electric pyrometer. Figs. 4 and 5 are vertical sections on the lines A A and B B, respectively, of Figs. 1 and 2. Fig. 6 shows how the muffle is inserted in the furnace.

The muffle 1, of suitable fireproof material, is provided with a metal jacket 2 and lies freely in a sheet-metal casing which may be opened at will. The said casing comprises a fixed portion, composed of a bottom 3, of a front wall 4, of a lateral wall 5, and of a rear wall 6, as well as a movable portion, composed of a lateral wall 7, with a rear extension 8 and an upper wall or lid 9.

The furnace is supported on legs 10 above a bed-plate 11, under which a rheostat may be arranged in the usual manner.

On the wall 4, provided with an opening 12, is pivoted the door 13, which serves to close the muffle. In the wall 5 are cut two vertical slideways 14 for the two contact-pieces 15, which are fitted in the muffle and to which lead the ends of the platina wire 16, which serves to heat the said muffle.

The wall 7 is hinged at 17 to the bottom 3, and the lid 9 is hinged at 18 to the wall 7, so that these parts may be moved down on one side of the apparatus, thus providing for the easy insertion or removal of the muffle, as shown in Fig. 6. When the lid 9 is placed above the muffle, it may be secured to the wall 5 by means of a rod 19, slidable through the rolled portions 20 and 21 of the walls 5 and 9. In the rear wall of the muffle is provided a housing 22 for the thermo-electric couple 23 and which is filled with asbestos 24. The inner end of the couple projects into the chamber of the muffle, and the outer ends of its branches are flush with or in a heat-repelling mass 25, located between the rear wall of the muffle and the jacket of the latter. From the said branches constituted by rods of different alloys of platina lead resistance-wires 26, which extend to rods or pins 27, secured by sealing or otherwise on the muffle and carried backward. The por-

tions 6 and 8 of the casing are so cut as to allow the said rods to pass freely. On the bed-plate 11 are secured two flat springs 28, so arranged as to bear against the contact-pieces 15, and two small columns 29, designed to receive the rods 27.

To use the furnace thus fitted up, the springs 28 are connected to the poles of a source of current so as to cause a suitable current to pass into the contacts 15 and the heating-wire 16. The small columns 29 are connected to a suitable galvanometer, showing the temperature to which is subjected the inner end of the thermo-electric couple 23.

In case the muffle requires to be replaced its casing is opened and the muffle is lifted out by means of the ring 30 after having simply loosened the screws 31, which hold the rods 27 on the small columns 29. Then a new muffle is put in place, the screws 31 are tightened, the casing is closed, and the furnace is again ready for operation. Furthermore, in order that a muffle may be substituted for another one without the accuracy of the indications of the galvanometer or other measuring apparatus being influenced in any way all that is required when the muffles are being made is that the resistances 26 shall be carefully regulated with respect to the thermo-electric value of the couples 23 with which they are combined. The muffles can therefore be henceforth easily, readily, and cheaply replaced on the spot.

It is to be understood that the invention is not limited to the embodiment shown and described, as the arrangements may be varied at will without departing from the spirit of the invention, the essential feature being that the casing shall be so fitted as to allow of

the electric connections of the muffle being easily connected and disconnected.

I claim—

1. An electric muffle comprising a recipient of fireproof material, a heating-conductor secured in the wall of the recipient, two contact-pieces projecting from the lateral face of the recipient and connected to the said conductor, a bed-plate, a casing on the bed-plate to receive the said recipient, the said casing having apertures in one wall for the passage of the contact-pieces, and spring-contacts on the bed-plate to engage the said contact-pieces.

2. In an electric muffle, the combination of a recipient of fireproof material, a casing for the said recipient, the said casing having a bottom and fixed vertical walls and a movable vertical wall pivoted at its lower edge to the bottom, and a top or lid pivoted to the upper edge of the said movable wall.

3. In an electric muffle, the combination of a recipient of fireproof material, an opening in one wall of the recipient, a thermo-electric couple in the said opening, resistance-wires attached to the couple and housed in the wall of the recipient, a heat-repelling pad arranged to protect the couple and the resistance-wires against the influence of the temperature at the outside of the apparatus and rods connected to the resistance-wires and projecting outside the recipient.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

BENVENUTO PLATSCHICK.

Witnesses:

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