UNITED STATES PATENT OFFICE.

FRIEDRICH AUGUST WIENAND, OF PFORZHEIM, GERMANY.

MANUFACTURE OF ARTIFICIAL TEETH.

SPECIFICATION forming part of Letters Patent No. 649,624, dated May 15, 1900.

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To all whom it may concern:

Be it known that I, FRIEDRICH AUGUST WIENAND, manufacturer, a subject of the Emperor of Germany, residing at 18 Gartenstrasse, Pforzheim, Grand Duchy of Baden, in the Empire of Germany, have invented certain new and useful Improvements Relating to the Manufacture of Artificial Teeth, of which the following is a specification.

My invention relates to the manufacture of artificial teeth.

For years it has been customary to fasten artificial mineral teeth by means of platinum pins, which are embedded in the mineral material during the molding and project from the back of such teeth. These pins serve to establish the connection between the teeth and the rubber or metallic tooth-plate. As platinum is very expensive, but has been absolutely necessary by reason of the high melting temperature of the material of the mineral teeth, such as no other metal but platinum withstands, attempts have been made to employ pins of various alloys of platinum and platinum tubes, which are baked in the teeth and into which the pins made of alloys are then soldered or cemented, with a view to reducing the amount of platinum, and consequently the cost of the teeth. All these methods are of a very primitive nature, and many of them are altogether impracticable because the pin fastening device consists, not of one whole, but of parts, thus greatly diminishing the strength, while the expense is still very great, as platinum is indispensable with these methods. After numerous experiments I have succeeded, by the use of an improved process of manufacture of artificial teeth, to render nickel pins or nickel pins plated with platinum available for fastening such teeth. According to my invention the artificial teeth furnished with nickel pins embedded during the molding in the mineral material of the tooth are conveyed in air-tight nickel vessels wherein a vacuum has been produced, into the furnace and fired. By this process I preclude the burning or oxidation of the nickel pins and render them pliable in the air-tight exhausted vessels, heated to a temperature of 1,250° to 1,400°, while the mineral material also fuses.

Mineral teeth have heretofore been fired openly upon a chamotte plate after they have been molded and cleaned. After the firing the plate is removed from the furnace and left to cool. In this operation it often happens that teeth become cracked; but the defect is not noticed with the naked eye until the teeth are manipulated by the dentist, when the cracked teeth break. With my invention this defect is obviated, because, as before stated, the artificial teeth are fired in air-tight exhausted vessels to which no air can obtain access on the removal from the furnace. Furthermore, the vessel is placed for cooling in a hermetically-closed apparatus which is heated, the air being withdrawn from the same by means of a jet-pump, so that the cooling will take place very gradually. By this invention the quality of the artificial mineral teeth is not only greatly improved, but the cost of manufacture of such teeth provided with nickel pins or with nickel pins plated with platinum as compared with that of artificial mineral teeth as hitherto made is enormously reduced. It is therefore possible to keep a large stock of teeth, such as is absolutely needful in the case of a dentist, who under these circumstances does not require much capital, although these teeth fulfil all requirements like those having platinum pins.

What I claim is—

A process for manufacturing artificial mineral teeth provided with nickel pins, or nickel pins plated with platinum, which consists in firing and cooling such teeth in vessels wherein a vacuum is produced, in order to prevent the oxidation of the pins and to obtain a denser fusing of the teeth.

In testimony whereof I have hereunto set my hand, in presence of two subscribing witnesses, this 28th day of November, 1899.

FRIEDRICH AUGUST WIENAND.

Witnesses:
JACOB ADRIAN,
UJY SIEBERT.