Specification of George Laurie : artificial teeth and gums.

A.D. 1853 . . . . . N° 2386.

SPECIFICATION

OF

GEORGE LAURIE.

ARTIFICIAL TEETH AND GUMS.

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A.D. 1853 . . . . . N° 2386.

Artificial Teeth and Gums.

LETTERS PATENT to George Laurie, of New York, in the United States of America, Dentist, for the Invention of "**Improvements in the Manufacture of Artificial Teeth and Gums.**"—A communication from John Allen, of Cincinnati, in America aforesaid, Dentist.

Sealed the 7th December 1853, and dated the 15th October 1853.

PROVISIONAL SPECIFICATION left by the said George Laurie at the Office of the Commissioners of Patents, with his Petition, on the 15th October 1853.

I, George Laurie, of New York, in the United States of America, Dentist, do hereby declare the nature of the said Invention for "**Improvements in the Manufacture of Artificial Teeth and Gums**" to be as follows:—

I construct my plates and arrange the teeth thereon in the usual manner. I rim my plates on the outer margin, and also within that portion of the plate which covers the alveolar ridge near the base of the teeth to secure more effectually the compound and give strength and finish to the denture. After the teeth are properly arranged upon the

plate and wax I cover them with a mixture of plaster of Paris, two parts; sand, one part; asbestos, one part; well mixed, and water added to make it of the proper consistence for covering the teeth in the usual way. The teeth being thus covered, the wax is removed from the inside, and the linings or fastenings arranged upon them; they are then soldered to the teeth with platina solder or pure gold; after which the plaster and asbestos covering is removed.

I now place the denture in the mouth of the patient, and place wax or any other convenient substance on the outside of the plate and teeth of sufficient thickness and proper form to bring out the muscles of the face to their original degree of rotundity. From the wax or other model thus formed, upon which the muscles of the face rest, a metallic framework is constructed corresponding; this frame or bulb is then soldered to the plate and united to the teeth by covering it with the siliceous compound with which I form my artificial continuous gums.

The compound I prefer is prepared in the following manner:—Silex, four ounces; borax, two ounces; felspar, one ounce; kaolin clay, one ounce; asbestos, two drachms; caustic potash, two drachms; mix these ingredients, reducing them to a fine powder, and fuse in a crucible; pulverize this material, and add the same weight of pulverized Wedgewood, Parian marble, or porcelain tooth body; to every seven ounces of this mixture add one ounce of fine French clock shade (or other) glass; reduce the whole to an impalpable powder, and it will be ready for use.

I mix the compound with sufficient water to bring it to a plastic state, then insert it between and around the bases of the teeth, so as to form a continuous gum, and also upon the bulb or framework before mentioned, intermixing platina shreds, wire, or gauze to combine the toughness of the metal with the mineral; I also solder platina scraps, strips, shreds, or wire to the plate about the base of the teeth to secure a firm adhesion of the compound to the plate when fused, thus forming a metallic union between the teeth, gum, and plate.

The gum colored enamel is made like that usually employed on block work, with the addition of sufficient flux to cause it to flow at a

lower heat, say 3200° Fahrenheit. The compound being applied as above, and fused in the muffle of a furnace, is then withdrawn and cooled slowly. The gum or flesh colored enamel is applied and fused in the same way.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said George Laurie in the Great Seal Patent Office on the 13th April 1854.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, GEORGE LAURIE, of New York, in the United States of America, Dentist, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Fifteenth day of October, in the year of our Lord One thousand eight hundred and fifty-three, in the seventeenth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said George Laurie, Her special licence that I, the said George Laurie, my executors, administrators, and assigns, or such others as I, the said George Laurie, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN THE MANUFACTURE OF ARTIFICIAL TEETH AND GUMS," a communication from John Allen, of Cincinnati, in America aforesaid, Dentist, upon the condition (amongst others) that I, the said George Laurie, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said George Laurie, do hereby declare the nature of the said Invention, and in what manner the same is to

be performed, to be particularly described and ascertained in and by the following statement thereof (that is to say):

I construct my plates and arrange the teeth thereon in the usual manner. I rim my plates on the outer margin, and also within that portion of the plate which covers the alveolar ridge near the base of the teeth to secure more effectually the compound and give strength and finish to the denture. After the teeth are properly arranged upon the plate and wax I cover them with a mixture of plaster of Paris, two parts; sand, one part; asbestos, one part; well mixed, and water added to make it of the proper consistence for covering the teeth in the usual way. The teeth being thus covered, the wax is removed from the inside and the linings or fastenings arranged upon them; they are then soldered to the teeth with solder or pure gold; after which the plaster and asbestos covering is removed. I now place the denture in the mouth of the patient, and place wax or any other convenient substance on the outside of the plate and teeth of sufficient thickness and proper form to bring out the muscles of the face to their original degree of rotundity. From the wax or other model thus formed, upon which the muscles of the face rest, a metallic frame work is constructed corresponding; this frame or bulb is then soldered to the plate and united to the teeth by covering it with the silicious compound with which I form my artificial continuous gums. The compound I prefer is prepared in the following manner:—Silex, four ounces; borax, two ounces; felspar, one ounce; kaolin clay, one ounce; asbestos, two drachms; caustic potash, two drachms; mix these ingredients, reducing them to a fine powder, and fuse in a crucible; pulverize this material, and add the same weight of pulverized Wedgewood, Parian marble, or porcelain tooth body; to every seven ounces of this mixture add one ounce of fine French clock shade or other glass; reduce the whole to an impalpable powder, and it will be ready for use. I mix the compound with sufficient water to bring it to a plastic state, then insert it between and round the bases of the teeth, so as to form a continuous gum, and also upon the bulb or framework before mentioned, intermixing platina shreds, wire, or gauze to combine the toughness of the metal with the mineral. I also solder platina scraps, strips, shreds, or wire to the plate about the base

of the teeth to secure a firm adhesion of the compound (to the plate) when fused, thus forming a metallic union between the teeth, gum, and plate. The gum colored enamel is made like that usually employed on block work, with the addition of sufficient flux to cause it to flow at a lower heat, say 3.200 Fahrenheit. The compound being applied as above, and fused in the muffle of a furnace, is then withdrawn and cooled slowly. The gum or flesh colored enamel is applied and fused in the same way.

Having thus stated the nature of the said Invention, I will proceed to describe the manner of performing the same.

The first part of the Invention consists of using asbestos in combination with sand and plaster of Paris, in place of plaster of Paris and sand alone, when covering the teeth, after they have been set in wax on a metal plate. The addition of asbestos materially improves the compound, and when subjected to heat with a view to melt the solder to fix the teeth to the metal plate, will retain its form and tend to prevent the plate getting out of its correct figure. The manner of use of the composition containing asbestos is the same as that heretofore practised when using plaster of Paris and sand without the asbestos, and will not therefore require further description.

The second part of the Invention consists of obtaining or forming the gums or parts of gums in combination with the use of a metal plate with teeth affixed thereto; such gums according to the Invention being composed of a vitreous compound above described, to which compound I make no claim separately. In carrying out this part of my Invention a metal plate is to be formed as heretofore, and the artificial teeth are to be fixed thereto, as has heretofore been practised, whether by the mode above described, or by soldering pins to the plate and fixing tube teeth thereon; to neither of which modes of fixing artificial teeth to a metal plate, nor to the making of the plate itself, do I make any claim. The artificial teeth I use are what are called mineral teeth, but whatever teeth be used for the purposes of this Invention, they require to be such as will bear a heat sufficiently above that at which the composition for making the gums will flux and run at to insure their not being injured by the heat applied in producing the gums on

the plate and teeth. A plate and teeth having been made and combined as above explained, this part of my Invention consists of forming gums on the plate, and at and around the roots or lower parts of the teeth, where they are fixed to the plate by using by preference the vitreous compound above described; this forming of the gums is readily performed by the hands with modelling tools; and having formed the gums with the plastic matter it is allowed to dry and to set, and then is subjected to heat, so that the vitreous enamel will adhere to the metal plate and to the lower parts of the teeth, and will form artificial gums thereto of a very cleanly description. In applying heat care is to be taken that the raising and also the lowering the temperature be done gradually. The vitreous compound above mentioned may be varied, but I believe that which is above given to be the best for the purpose; and the same will have coloring matters mixed therewith as similar vitreous compounds heretofore have had when used in making mineral blocks sometimes called gum teeth, wherein metal plates and artificial teeth are not combined.

Having thus described the nature of the said Invention, and the manner of performing the same, I would have it understood that what I claim is, first, the use of asbestos, as herein described; and, secondly, I claim the forming of artificial gums to artificial teeth fixed to a metal plate.

In witness whereof, I, the said George Laurie, have hereunto set my hand and seal, this Thirteenth day of April, in the year of our Lord One thousand eight hundred and fifty-four.

GEORGE LAURIE. (L.S.)

Witness,

JNO. ALCOCK.

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
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