Specification of George Fellows Harrington : artificial teeth.

A.D. 1849 . . . . . N° 12,717.

SPECIFICATION

OF

GEORGE FELLOWS HARRINGTON.

ARTIFICIAL TEETH, &c.

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Artificial Teeth, &c.

HARRINGTON'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, George Fellows Harrington, of Portsmouth, Dentist, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her Royal Letters Patent under the Great Seal of the United Kingdom of Great Britain and Ireland, bearing date at Westminster, the First day of August, One thousand eight hundred and forty-nine, in the thirteenth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said George Fellows Harrington, my ẽxors, admr̃ors, and assigns, Her especial licence, full power, sole privilege and authority, that I, the said George Fellows Harrington, my ẽxors, admr̃ors, and assigns, and such others as I, the said George Fellows Harrington, my ẽxors, admr̃ors, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "Improvements in the Manufacture of Artificial Teeth and the Beds and Palates for Teeth;" in which said Letters Patent is contained a proviso that I, the said George Fellows Harrington, should cause a particular description of the nature of my said Invention, and in what manner the same is to be performed, by an instrument in writing under my hand and seal, to be inrolled in Her said Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said in part recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said George Fellows Harrington, do hereby declare that the nature of my said Invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following statement thereof, reference being to the Drawings hereunto annexed, and to the figures and letters marked thereon, that is to say:—

My Invention consists:—

First, of improvements in the manufacture of artificial teeth when what are called mineral teeth are used.

Secondly, my Invention consists of improvements in the manufacture of the beds and palates for teeth and artificial palates where no teeth may be required by the application of tortoiseshell. And,

Thirdly, my Invention consists of improvements in the machinery or apparatus employed in the making of beds or palates for teeth. And in order that my Invention may be most fully understood and readily carried into effect, I will proceed to describe the means pursued by me.

Heretofore in manufacturing mineral teeth in sets or large pieces it has been usual to take a cast of the mouth or part thereof of a patient, and to obtain therefrom a model of the mouth or parts thereof, whether for the upper or lower gums, and this model is handed to the maker of mineral teeth, in order that he may make the teeth in accordance therewith, and the workman makes the teeth with the surfaces which come next the gums as nearly as may be to fit the gums, and formerly such teeth were made without the interposition of beds or palates of gold or other material, but in modern practice it has been usual for the makers of artificial teeth to employ gold (and in some instances other materials) as beds and palates for such teeth, and thus are sets or parts of sets of artificial teeth made. Mineral teeth, heretofore, when to be combined with beds or palates, have been made in like manner from the model of the mouth and the parts or surfaces thereof which were to come next the gums have been made in accordance with the model of the interior of the mouth, and suitable to fit the gums of the patient, and the gold to form the bed or palate has been stamped into form, according to a model of the mouth obtained as before explained from the particular patient for whom the set of teeth are intended. The mineral teeth and the gold, having been made both to correspond with the mouth, they have had to be combined together, and this has been done by cutting away the surface of the mineral teeth which is to come next the bed or palate of gold, such cutting away requiring careful and accurate workmanship, and which is more or less difficult, depending on the varied undulations in the gums or

parts of the mouth which have to be covered by the beds or palates for mineral teeth, being composed of a substance which is first moulded and then vitrified, and it being a property of such substance to decrease in size to a considerable degree in the process of firing, and as the form and undulations of each mouth differs from all others, it has hitherto been found impossible to mould it so that it shall exactly fit the intended bed or palate after the piece of mineral has been vitrified; all which render the accurate fitting of artificial teeth a very difficult art, and the same is comparatively seldom well done. Mineral teeth have also been made in single teeth, and in small pieces of three or four teeth, without reference to any particular mouth, but a sufficient substance of mineral has been left at the base of each tooth or teeth to allow of its being cut away to fit a particular mouth, or part thereof, so that the same description of difficult workmanship is required in fitting as in cases where pieces of mineral are made for a particular mouth. Now, according to the first part of my Invention, I manufacture mineral teeth with the surfaces which come next the palates or beds without reference to the nature of the particular mouth to which they may afterwards be fitted, and cause the palates or beds to be made on the one surface to correspond with the particular mouth to which artificial teeth are to be fitted, and the other surface thereof to correspond with the surface of the mineral teeth, so as accurately to fit the same, thus rendering the making of such surfaces of the mineral teeth first to correspond with the mouth, and then to cut away the same to allow for and adjust them to the bed and palate introduced between the teeth and the mouth unnecessary. In carrying out this part of my Invention, I would state that I have found, on an extensive examination, that in the variation between extreme cases of the mouths of persons (so far as the sets of teeth are concerned) there is not a large difference, and that if four or five sets of teeth, slightly differing in dimensions, be made, such a series will, if the palates and beds be well made, be suitable for most if not all the cases which a dentist will be called on to treat; and, in carrying out my Invention, I cause a series of distinct sets of mineral teeth to be moulded, each set being but in a small degree less or larger than another set, so that when a dentist is about to prepare for fixing a set of teeth he will take a cast of the mouth, in order to make the palate and bed correct to the mouth, and he will at once know which of the sized sets will be the proper one for the particular case. But in place of taking the cast of the mouth by the means of soft wax, placed in what are called "model pans" of the ordinary kind, one part of my improvements consists in using model pans or sets with teeth, or projecting surfaces of the dimensions of teeth, so that a patient having two model pans or sets in the mouth

at one time will, by shutting the mouth and pressing the wax (or plastic matter used) cause it to take the form of the two surfaces of the mouth, and the feeling and countenance of the patient will indicate whether the height and diameter of the teeth, palates, and beds, are agreeable and proper for the patient's case, by which means an exact measure for the set of artificial teeth will be ascertained by the dentist, and at the same time casts for obtaining models will be obtained; by such means the dentist, if he record the dimensions, which he will be facilitated in doing by means of the measuring apparatus hereafter explained, will be able to complete a set of artificial teeth without in most cases requiring to see the patient more than once.

Description of Measuring Apparatus.

Figure 1 is a plan of the apparatus, and Figure 2 a front view of the same, showing the mode of using the apparatus. Figure 3 is a plan and side view of the measuring instrument separately. *a* is a plate carried by the lower ends of the three uprights *b*, which are marked or graduated with divisions, as shown. *c* is the measuring instrument (the three bars of which are also graduated), which fits exactly on to the uprights *b*, so that when model pans such as above described, or a model set, or a set of artificial teeth, are placed upon the mould plate a^1, the dimensions may be very correctly ascertained and recorded.

My improvement in the manufacture of palates and beds for teeth consists in the use of tortoiseshell in their manufacture, and the process for doing which, together with the machine or apparatus employed, I will now proceed to describe.

Description of the Shaping or Moulding Apparatus.

Figure 4 shews a plan of the apparatus for compressing and moulding the shell into the desired form for palates or beds; Figure 5, a longitudinal section; Figure 6, a transverse section through the dotted lines 1, 1. Figure 7 shews the instruments or levers when open before operating by side pressure; and Figures 8, 9, 10, 11, 12, 13, and 14 show the other parts of the apparatus separately. *a* is a plate upon which the dovetail plate *b* slides. b^1 are holes in the slide *b* to receive the studs on the under side of the plate *c*, to which are attached the moulds, models, or forms (in type metal) for the beds and palates. The arms or levers *d*, *d*, are connected to the plate *a* by the pin d^1 passing through them, and thereby forming joints or axes upon which they move. d^2, d^2, are links which connect the levers *d* to the pressing

piece e; and d^3, d^3, are other links which connect the frame and screw f to the levers d, so that when the screw f is turned the presser e is forced towards the mould or model of the mouth (either the bed or the palate). The levers d are drawn inwards by the connecting links d^2 and d^3. g is a plate having several holes to correspond with those in the plate a, and the two are firmly screwed together by screws, as shewn. The plate g has an opening through it to receive the piece of cork g^1, which is pressed downward into the recess formed around the mould and between the levers d by the die or presser h, which corresponds with the opening in the plate g, there being screws g^2 on the plate g which pass through the flange on the upper surface of the pressing instrument h, which is acted upon by the screw nuts g^3 during the operation of moulding. The mode of using this apparatus is as follows:—The plate a, having the mould, model, or form fixed upon, is first connected to the levers d and to the plate g by the pin d^1 passing through them; the two plates a and g are combined together and secured by the screws, as shewn; a piece of tortoiseshell cut to the desired form is next placed on the model, and the piece of cork g^1 is introduced into the opening in the plate g; then the die or presser h is inserted, and screwed firmly down. The apparatus is to be put into boiling water for fifteen to twenty minutes, when the die or presser h is to be screwed down until the piece of cork is forced upon the shell into the recess formed around the mould or model, as shewn in Figure 5. By turning the screw f the presser e will advance towards the centre of the mould, and the levers d will be drawn inwards so as to compress the shell in all directions; and as the presser e approaches the mould the lower ends of the pins e^1 come in contact with the angles formed by the projecting part of the plate b and carry it and the mould or model forward. The apparatus being allowed to cool, the parts are to be separated, and the moulded or shaped shell removed, in order to have the mineral or other teeth fitted to it, they being such as on one side to fit the mouth and the other side to fit the recess or surface (whatever be its form) of the mineral teeth which is to come next it, any defect of fitting being removed by scraping the tortoiseshell.

Having thus described the nature of my Invention, and the manner of performing the same, I would have it understood that I do not confine myself to the details as herein given, so long as the peculiar character of any part of my Invention be retained. But what I claim is,—

First, the mode herein described of manufacturing artificial teeth where mineral teeth are used, whereby the making of the teeth to the particular case, or leaving a sufficient substance at the base of the tooth or teeth, to allow of its being ground or cut away to fit a particular case, and the subsequent

cutting of the surfaces of the mineral teeth which come next the mouth, in order to fit the beds and palates, are rendered unnecessary.

Secondly, I claim the manufacture of beds and palates for teeth, and of artificial palates where no teeth are required, of tortoiseshell. And,

Thirdly, I claim the arrangement of machinery or apparatus herein described.

In witness whereof, I, the said George Fellowes Harrington, have hereunto set my hand and seal, this Twenty-ninth day of January, in the year of our Lord One thousand eight hundred and fifty.

GEORGE FELLOWS (L.S.) HARRINGTON.

Signed and sealed by the within-named George Fellows Harrington, in the presence of

THO^{S} S. EDGCOMBE, Sol^{r},
Portsm̃.

EDGCOMBE, Extra.

AND BE IT REMEMBERED, that on the Twenty-ninth day of January, in theyear of our Lord 1850, the aforesaid George Fellows Harrington came before our said Lady the Queen in Her Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

Enrolled the First day of February, in the year of our Lord One thousand eight hundred and fifty.

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1857.

A.D. 1849. Aug 1. N°12,717.

HARRINGTON'S SPECIFICATION.

FIG 1.

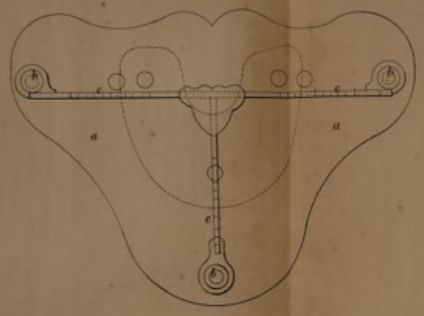


FIG 2.

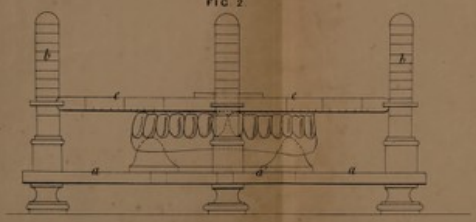
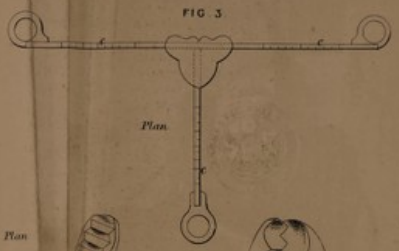
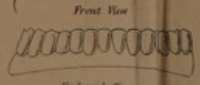
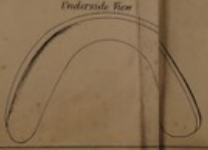


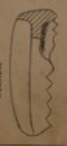
FIG 3.



Various Views of a Set of mineral of Teeth.







The enrolled drawing is colored.

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HARRINGTON'S SPECIFICATION

(3 SHEETS)

FIG. 6.

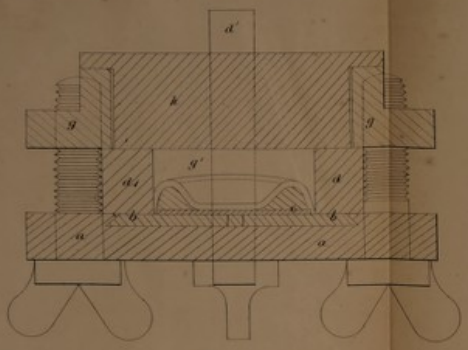
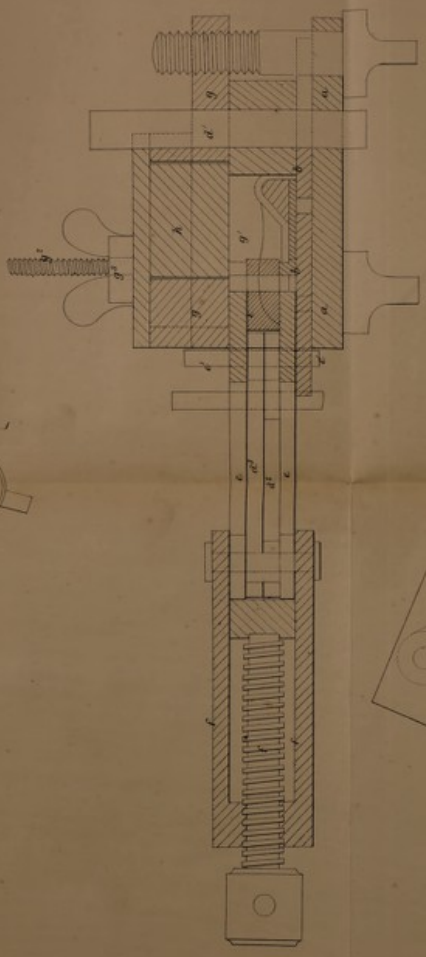
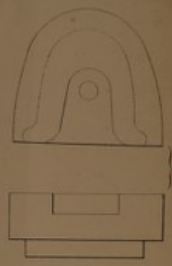


FIG. 5.





Separate views of the pressing instrument used when moulding a palate

FIG. 4.

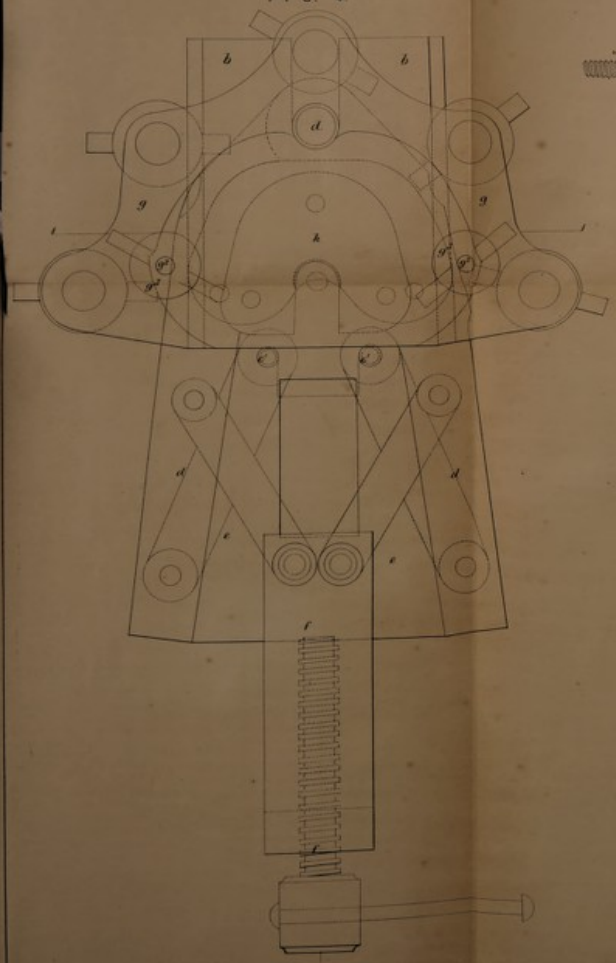
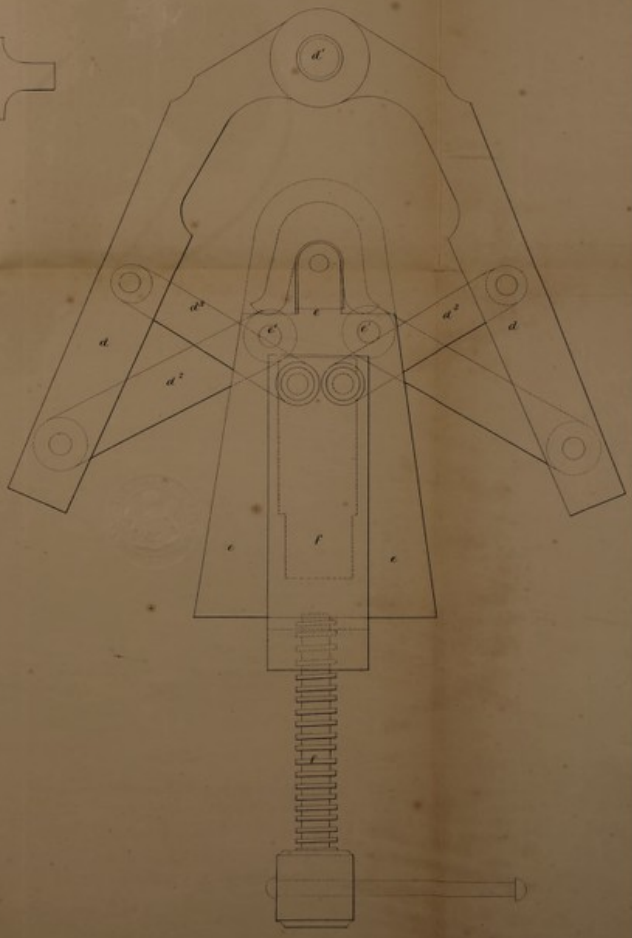


FIG. 7.



The enrolled drawing is colored

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HARRINGTON'S SPECIFICATION

SHEET 2
(3 SHEETS)

FIG. 1
Separate views of plate a

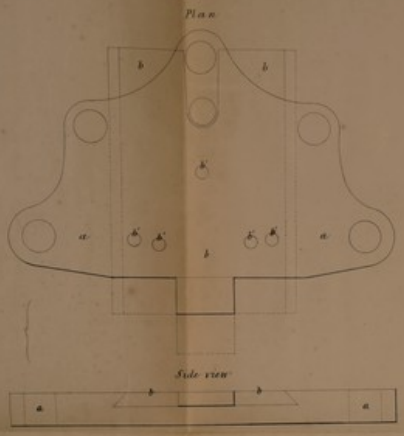


FIG. 8.
Separate views of plate g

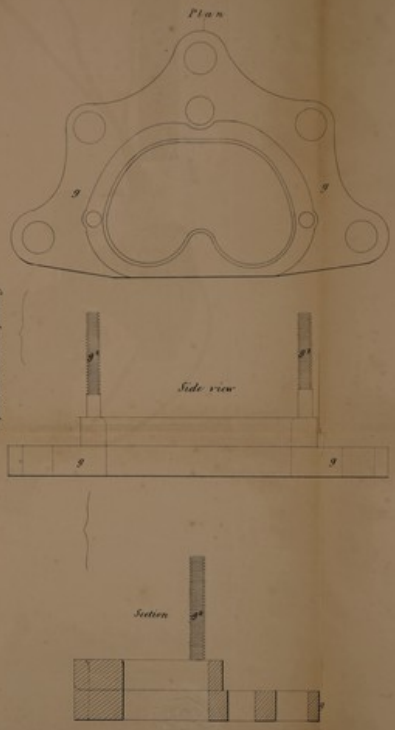


FIG. 9.
Separate views of the die or groove k.

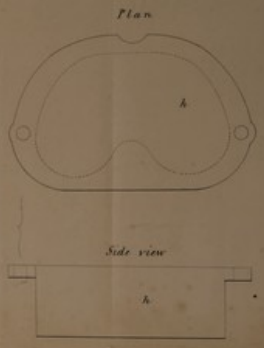
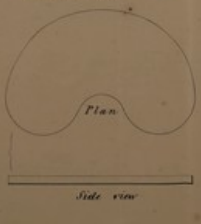


FIG. 10.
Separate views of the piece of cork g'

FIG. 11.
Separate views of plate c to which the medal palate in type metal is fixed

FIG. 12.
Separate views of plate c to which the medal bed in type metal is fixed

FIG. 14.
Separate views of a piece of Tortoise shell before being moulded or shaped



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