

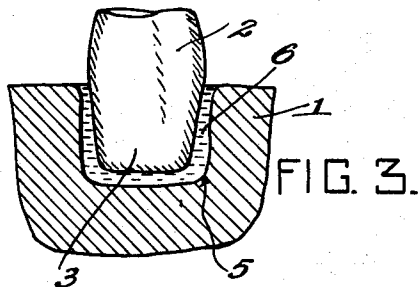
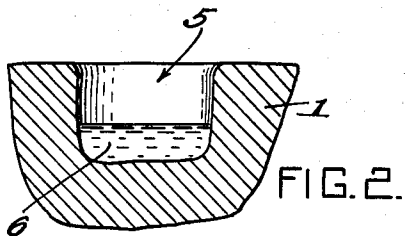
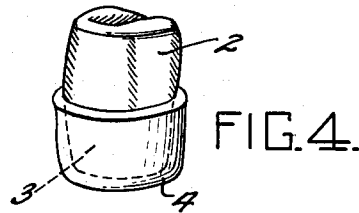
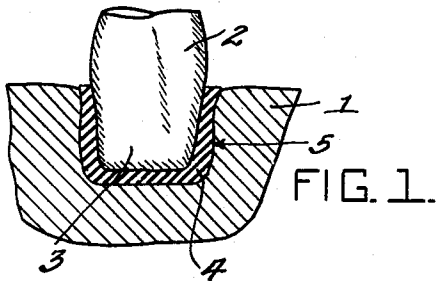
June 16, 1953

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2,641,802

METHOD FOR PRODUCING DENTURES

Filed Oct. 4, 1950



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UNITED STATES PATENT OFFICE

2,641,802

METHOD FOR PRODUCING DENTURES

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Application October 4, 1950, Serial No. 188,435

3 Claims. (Cl. 18—55.1)

1

This invention relates to an improved method and means for producing dentures, having particular reference to a novel procedure for determining and fixing the final operating positions of artificial teeth in moldable denture bodies.

In the procedure presently followed by the dental profession in forming artificial teeth, the molded plate or body of the denture has permanently joined or embedded therein a required number of artificial teeth. The body of the denture with the teeth comprise a rigid assembly, conforming as closely as possible to the configurations of the mouth in which the denture is applicable. However, regardless of the high degree of care, skill and experience of the dentist, and associated technicians, the dentures formed are often found to be not exactly in conformity with various physical peculiarities of a patient's mouth or jaw articulation, with the result that considerable grinding of such dentures is commonly required to render the same adaptable for practical service. Often in such cases, it is necessary to discard a denture because of its ill-fitting attributes and replace the same with another.

It is an object of the present invention to provide a denture in which the teeth carried thereby have their operating positions determined after the body of the denture has been molded and fitted to the mouth.

It is another object of the invention to provide a denture in which the teeth thereof will conform faithfully to the physical peculiarities of the mouth and wherein this result is attained without grinding of the teeth of the denture in fitting the same to the mouth of a patient.

A further object of the invention is to provide a denture having a molded body adapted for insertion in the mouth and wherein the body at the time it is molded is formed with tooth-receiving sockets adapted to receive a dental cement capable of quickly setting at low temperatures or while in the mouth of the patient, the said cement at the time of insertion into the denture socket receiving the tooth or teeth of the denture and supporting the same in a manner sufficiently movable so that the tooth or teeth will assume a natural operating position depending upon the individual bite characteristics of the patient, the cement initially permitting the teeth to move to a limited extent in a substantially universal manner in response to forces set up by the patient's jaw articulation. Thereafter, the cement hardens to retain the teeth in definite positions in the denture.

2

A still further object of the invention is to provide in such a method of denture manufacture a core adapter which is inserted in the denture body in a manner receiving the root regions of associated artificial teeth, the adapter being formed from deformable material, so that the same may be removed from the denture to form a socket or sockets therein suitable for the reception of the quick-acting cement and the root bases of artificial teeth.

For a further understanding of the invention, including additional objects and advantages thereof, reference is to be had to the following description and the accompanying drawing, wherein:

Fig. 1 is a vertical sectional view taken through the body of a denture of the invention, and illustrating the same provided with a molded socket containing an artificial tooth and a core adapter formed in accordance with the present invention;

Fig. 2 is a similar view disclosing the socket molded body of the denture with a quantity of quick-acting cement contained therein;

Fig. 3 is a similar view disclosing an artificial tooth operatively positioned in the cement-containing socket, with the adapter removed from the tooth;

Fig. 4 is a perspective view of an artificial tooth having the adapter of the present invention mounted thereon;

Fig. 5 is a similar view of the adapter itself.

Referring more particularly to the drawing, the numeral 1 designates the molded body of a plate, bridge or denture used in the restoration of missing teeth from the human mouth. The body may be formed from the customary materials used in producing dental moldings, such as metal, rubber or one or more of the so-called plastics. The body is produced by the standard techniques followed by the dental profession with the exception that in this instance, the artificial teeth 2 to be joined with the body 1 have their root regions 3 positioned in a cap or core adapter 4, which may be formed from molded rubber, soft metal or other deformable material. At the time the body 1 is molded, the adapters 4 produce in the molded body sockets 5 which hold the tooth or teeth 2 in position, particularly when the teeth are surrounded by the adapters 4.

The dentist may then place the molded body with the tooth or teeth positioned therein in a patient's mouth to observe how the teeth and the denture generally conform with mouth configurations and articulation. The denture is

3

then removed from the mouth and the tooth or teeth 2 together with the deformable adapter or adapters 4 carried thereby are removed from the socket or sockets 5. In such a socket, there is placed a quantity 6 of a conventional quick-setting dental cement and the tooth or teeth 2 with the adapter or adapters 4 removed therefrom is forced into the cement which is in a somewhat mobile or fluid state.

The denture is then placed in the mouth of the patient and the latter is required to bite on the denture with sufficient force to cause the tooth or teeth 2 to assume positions in the yieldable cement best adapted for the proper jaw articulation of the patient. After this has been accomplished, within a matter of ten to fifteen minutes, the cement, indicated at 6, hardens and then for the first time permanently unites the tooth or teeth 2 with the denture body 1. Outside of cleaning the denture to remove surplus cementing material which may have accumulated thereon, the denture is in condition for immediate and sustained use by the patient.

It will be noted that in this operation, no need is developed for grinding the teeth, since the mastic bed afforded by the cement 6, when placed in the socket or sockets 5, assures proper conformity of the tooth or teeth to the peculiarities of the patient's mouth, the teeth being somewhat mobile as regards their operating position or positions during this initial stage of fitting the denture to the mouth. It is only after the cement sets and hardens that permanency in the operating positions of the denture teeth is secured.

The term "denture" as utilized herein connotes any appliance either fixedly or removably positioned in or attachable to the oral cavity and adapted to function as a tooth support. It embraces within its purview such devices as plates, bridges, and the like.

It will be understood that certain features and sub-combinations are of utility and may be employed without reference to other features and sub-combinations. This is contemplated by and is within the scope of my claims. It is further obvious that various changes may be made in details within the scope of my claims without departing from the spirit of my invention. It is, therefore, to be understood that my invention is not to be limited to the specific details shown and described.

I claim:

1. The method of forming dentures, which comprises: molding a denture body in a manner effecting the shaping and conformity thereof with

4

the physical requirements of an edentulous mouth space which the denture is to occupy, disposing in said body while the same is in a formative state the root region of an associated artificial tooth, said region having applied thereto a removable cap which conforms generally to the configuration of the region on which the cap is mounted, whereby to form in said body a socket of controlled configuration and possessing greater dimensions than said tooth region, and following molding of the denture body and said socket removing the tooth and its cap therefrom.

2. The method of forming dentures, which comprises: molding a denture body in a manner effecting the shaping and conformity thereof with the physical requirements of an edentulous mouth space which the denture is to occupy, disposing in said body while the same is in a formative state the root region of an associated artificial tooth, said region having applied thereto a removable cap which conforms generally to the configuration of the tooth region on which the cap is mounted, whereby to form in said body a socket of controlled configuration and possessing greater dimensions than said root region, following molding of the denture body and said socket removing the tooth and its cap therefrom, separating the cap from said tooth, replacing the tooth in said socket and cementing the tooth in a fixed occlusally determined position in said socket.

3. The method of forming dentures, which comprises: molding a denture body in a manner effecting conforming thereof with the physical requirements of an edentulous mouth space which the denture is to occupy, disposing in said body while the same is in a formative state the root region of an artificial tooth which is to form a part of the completed denture, the root region of the tooth so positioned containing a removable cap conforming generally to the configuration of said root region, removing the tooth and cap from said body to produce in the latter a tooth-receiving socket of predetermined configuration and which possesses greater dimensions than said root region, and causing the denture body to set and harden into rigid form adaptable for use in the mouth.

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