Jan. 15, 1924. 1,480,549

C. J. EMERSON

DENTAL STRESS BREAKER

Filed March 6, 1923

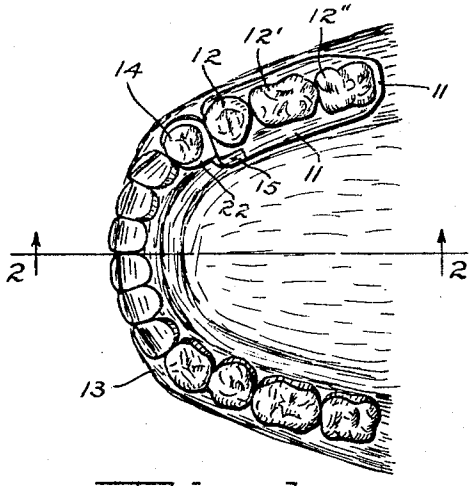


Fig. 1.

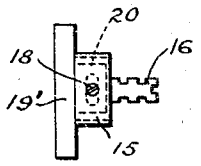


Fig. 4.

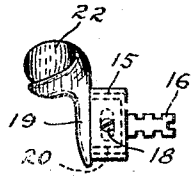


Fig. 3.

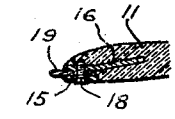


Fig. 5.

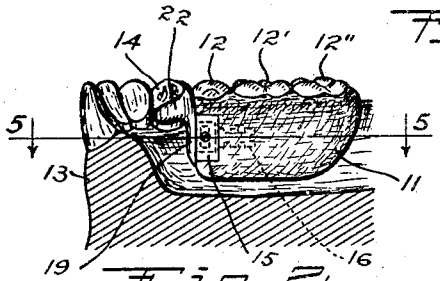


Fig. 2.

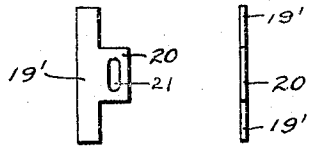


Fig. 6. Fig. 7.

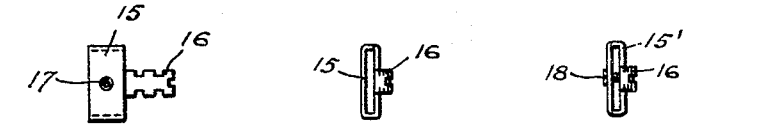


Fig. 8. Fig. 9. Fig. 10.

Inventor:

CHARLES J. EMERSON.

Witness:

R. J. Honomichl.

By Willard Eddy, Attorney

Patented Jan. 15, 1924. 1,480,549

UNITED STATES PATENT OFFICE.

CHARLES J. EMERSON, OF OMAHA, NEBRASKA.

DENTAL STRESS BREAKER.

Application filed March 6, 1923. Serial No. 623,285.

To all whom it may concern:

Be it known that I, CHARLES J. EMERSON, a citizen of the United States, residing in the city of Omaha, county of Douglas, and State of Nebraska, have invented certain new and useful Improvements in Dental Stress Breakers, and have described the same in the following specification, illustrated by the accompanying drawings.

My invention relates to that class of stress breakers which are commonly employed by dentists for fixing bridges and other dentures in position in the human mouth, and which individually comprise a metallic connection between the denture and the retaining device engaging an abutting or adjacent tooth. Such stress breakers are of special importance with dentures which have only one end attached to an abutting tooth or the like. It is the main object of the invention to simplify the construction of stress breakers of the specified class; to facilitate the disassembling of the stress breaker for purposes of renewal or substitution of parts; to obviate all need of using a lingual bar for holding a denture in place in the mouth; to avoid weakening the denture by the structural application of the stress breaker thereto; and to facilitate the removal of the denture from the mouth of the user for purposes of cleansing etc. To accomplish these results I incorporate in my improved stress breaker as parts thereof a plate united with a retaining device which is adapted to engage a stationary, or abutment, tooth, a slotted lug projecting from the plate, a boxing embedded in the body of the denture for the accommodation of the lug, and means for retaining the lug slidably in the boxing.

In the accompanying drawings, which illustrate the best manner in which I have contemplated applying the principles of the invention, Fig. 1 is a plan view of a portion of a human jaw with a plurality of natural teeth therein, a denture seated on the jaw, and a stress breaker which is constructed in accordance with these principles and operatively applied as a connection between the denture and the clasp on an abutment tooth. Fig. 2 is a vertical section on the section line 2—2 in Fig. 1. Fig. 5 is a section on the section line 5—5 in Fig. 2. The remaining figures are enlarged details.

The denture shown in the drawings comprises the denture body 11 and the three artificial teeth 12, 12′ and 12″, which are partly embedded therein. This body, being of vulcanite, has in its base from end to end thereof a concavity fitted to the toothless ridge of gum of the jaw 13, adjacent to the abutment tooth 14. The boxing 15 is a short tubular housing formed from a plate of metal and countersunk and embedded in an end and lingual side portion of the body. The forward end, or mouth, of the boxing is flush with the mesio-lingual edge of the denture, and forms a finishing surface for that part of the denture. One of the side walls of the boxing, being the wall which is seen in Figures 1, 2, 3 and 4, is flush with the lingual surface of the same body, while the opposite side wall of the boxing has the notched rearward extension 16 anchored immovably in the vulcanite as shown in Fig. 5. These side walls are centrally perforated by the alined holes 17 for the screw 18, which is a screw-pointed pin, by which the walls are connected. The dental clasp 22, being a retaining device of a common make, is adapted securely to engage the abutment tooth 14 in a well known manner and conveniently to be detached therefrom by the hand of the wearer. The plate 19 is a stem formed integrally with the clasp by soldering or otherwise. Its straight distal edge makes a sliding contact with the plane front end of the denture and constantly closes and covers the otherwise open front end of the boxing 15. It has the rearwardly extending portion or lug 20, working in the boxing, and also has the slot 21 for the screw 18, which is freely slidable up and down therein lengthwise of the slot. Fig. 4 is a side elevation of the boxing together with an unfinished blank 19′ from which the stem 19 is formed. The same parts, with the stem in finished form and with the clasp integrally united therewith, are shown operatively assembled in Fig. 3. Figures 6 and 7 are respectively a side elevation and an edge elevation of the blank 19′ from which the plate 19 is formed. Figures 8 and 9 are respectively side and end elevations of the boxing, made in one piece. Fig. 10 is an end elevation of an alternative form of the boxing, made in two contiguous parts, with the screw 18 slightly displaced.

The described construction produces between the denture and the clasp stem a sliding engagement resembling a joint made by

a mortise and a tenon which have a slot and pin connection with each other. It allows the denture such freedom of movement as to compensate not only for all tissue displacements caused by mastication, but also for a limited resorbtion, or shrinkage of the tissues of the gum. It also allows the terminal tooth 12 to have in the material of the denture body an ample and secure footing, or embedment unreduced by removal of any part either of the tooth or the vulcanite.

I claim as my invention—

1. A dental stress breaker comprising a narrow tubular boxing imbedded longitudinally in a denture body and having one side flush with the lingual surface of the body as well as one end forming a lingual edge of the body, a transverse retaining pin removably seated in the boxing, and a slidable plate covering the mouth of the boxing and having a slotted portion extending into the boxing and working in its own plane on the retaining pin.

2. A dental stress breaker comprising a thin tubular boxing imbedded longitudinally in a denture and having its mouth flush with one end of the denture, a retaining pin extending transversely through the boxing, and a sliding plate secured to a retaining device and having a slotted portion extending into the boxing and slidable therein on the retaining pin.

3. A dental stress breaker comprising a thin tubular boxing imbedded longitudinally in the lingual side of a denture body and having its lingual side wall flush with the lingual surface of the denture body in general, while one end of the boxing is flush with one end of the denture body, a thin plate secured to a retaining device and slidably closing the mouth of the boxing, a slidable lug extending from the plate into the boxing, an oblong slot in the lug, and a retaining pin seated in the boxing and working in the slot.

4. A dental stress breaker comprising a tubular boxing imbedded in the body of a denture, a retaining pin seated in the boxing, a clasp adapted to engage and to disengage an abutment tooth, a plate secured to the clasp, a lug extending from the plate into the boxing and having a slot for the accommodation of the pin and slidable thereon.

Witness my signature at Omaha, Nebraska, March 2d, 1923.

CHARLES J. EMERSON.