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 MEANS FOR SECURING ARTIFICIAL DENTURES.

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898,546.

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Fig. 1.

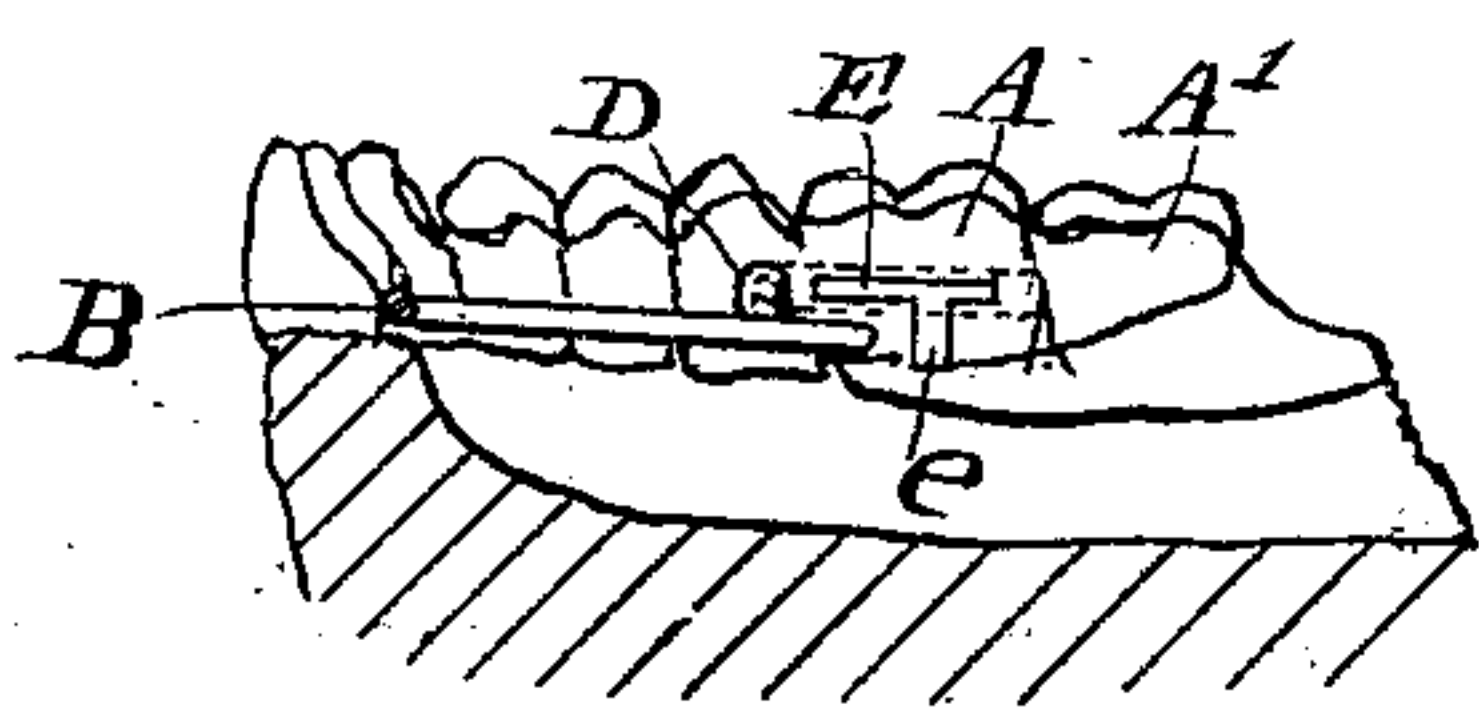


Fig. 2.

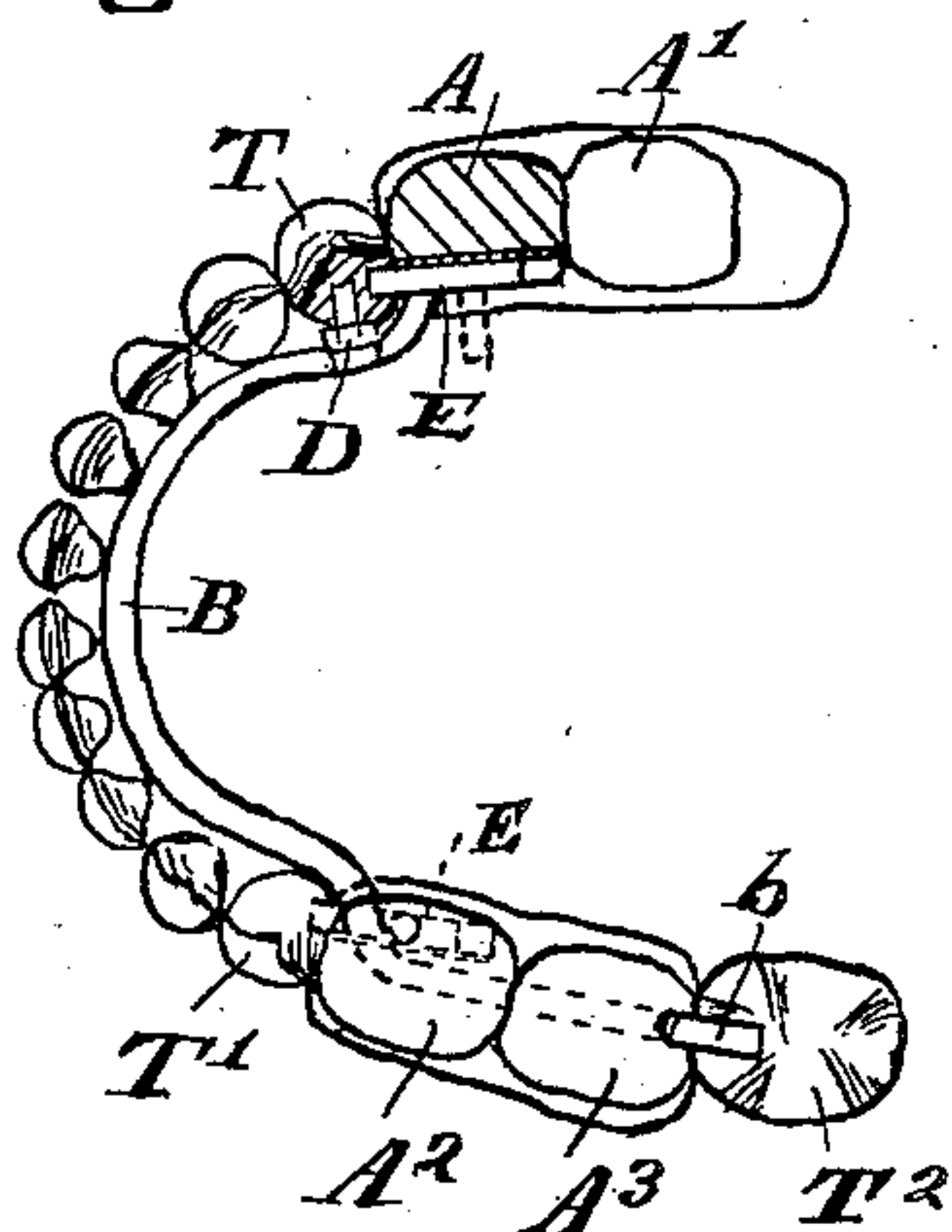


Fig. 3.

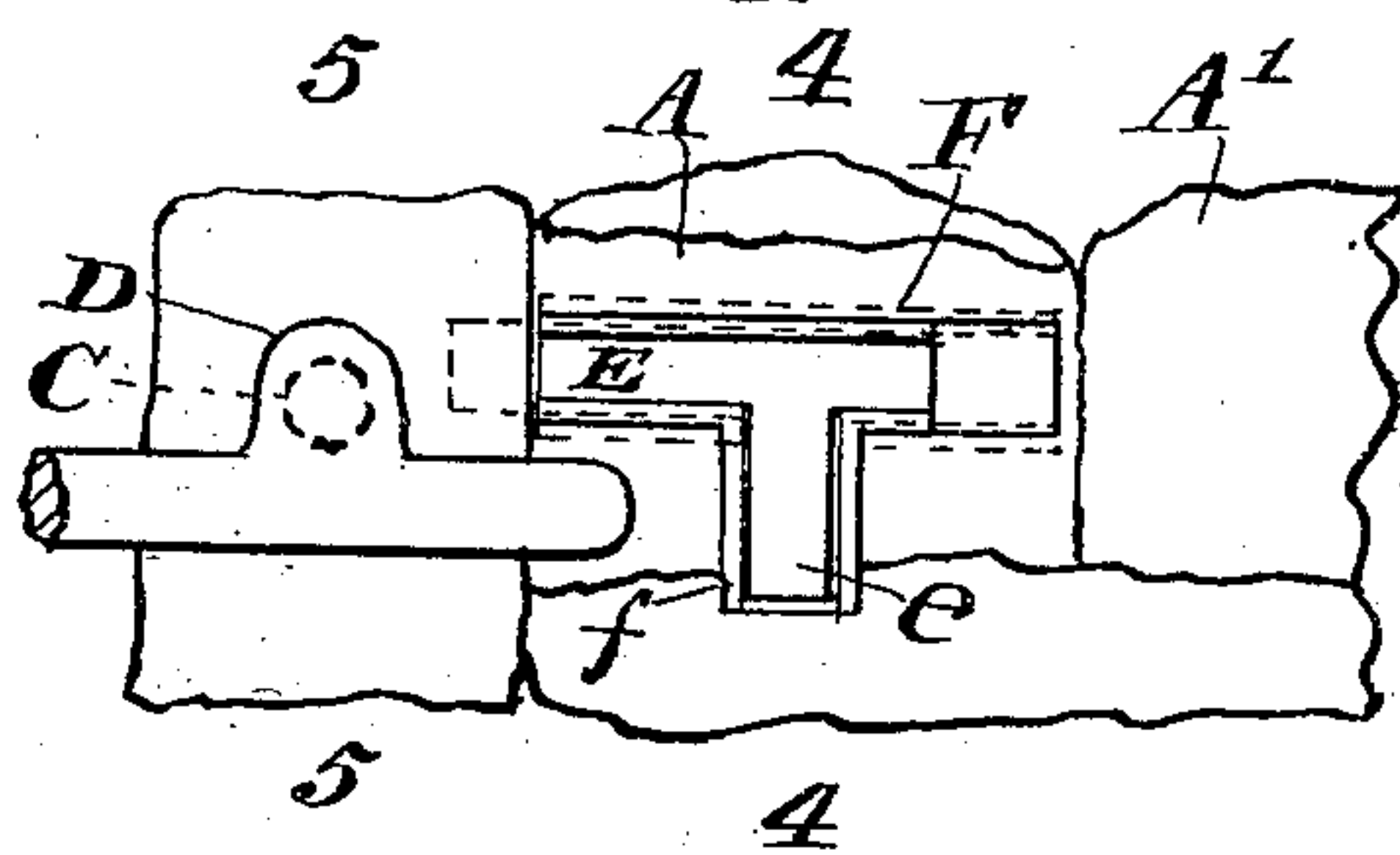


Fig. 4.

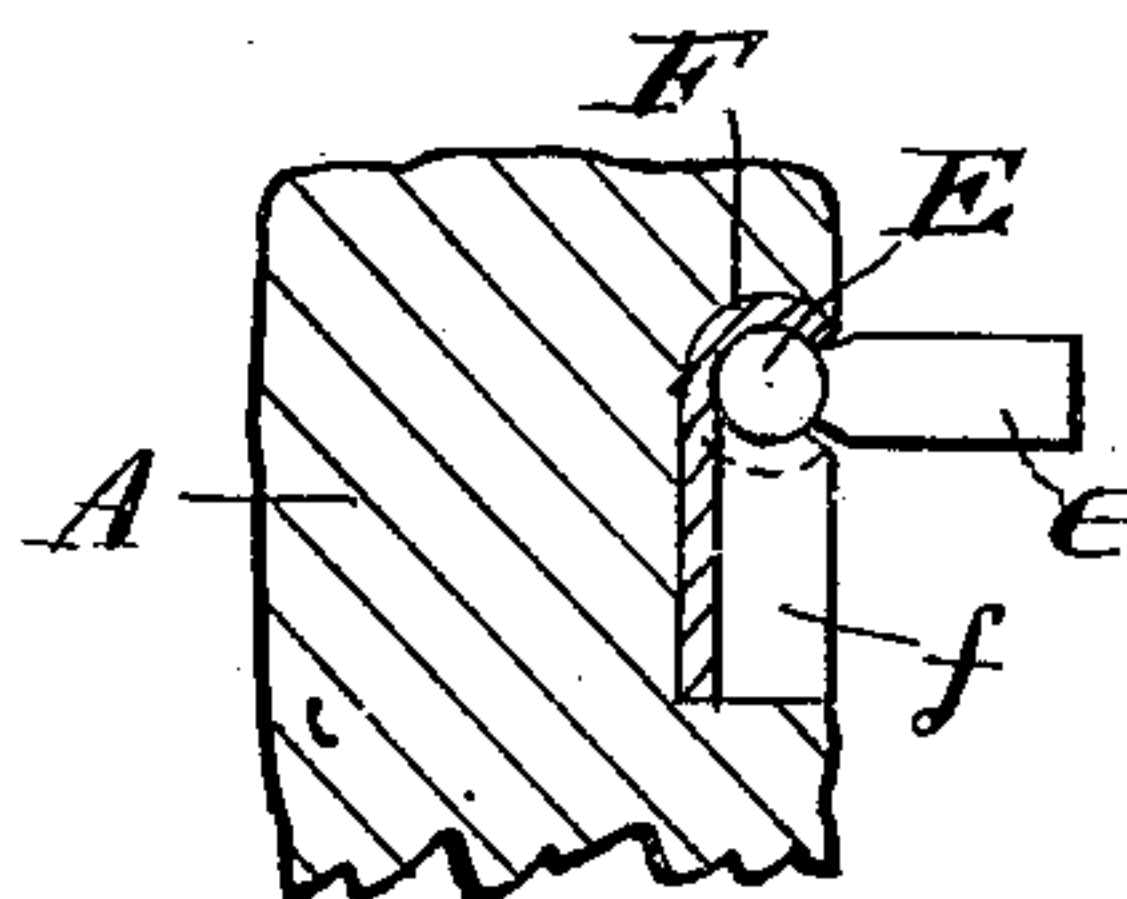
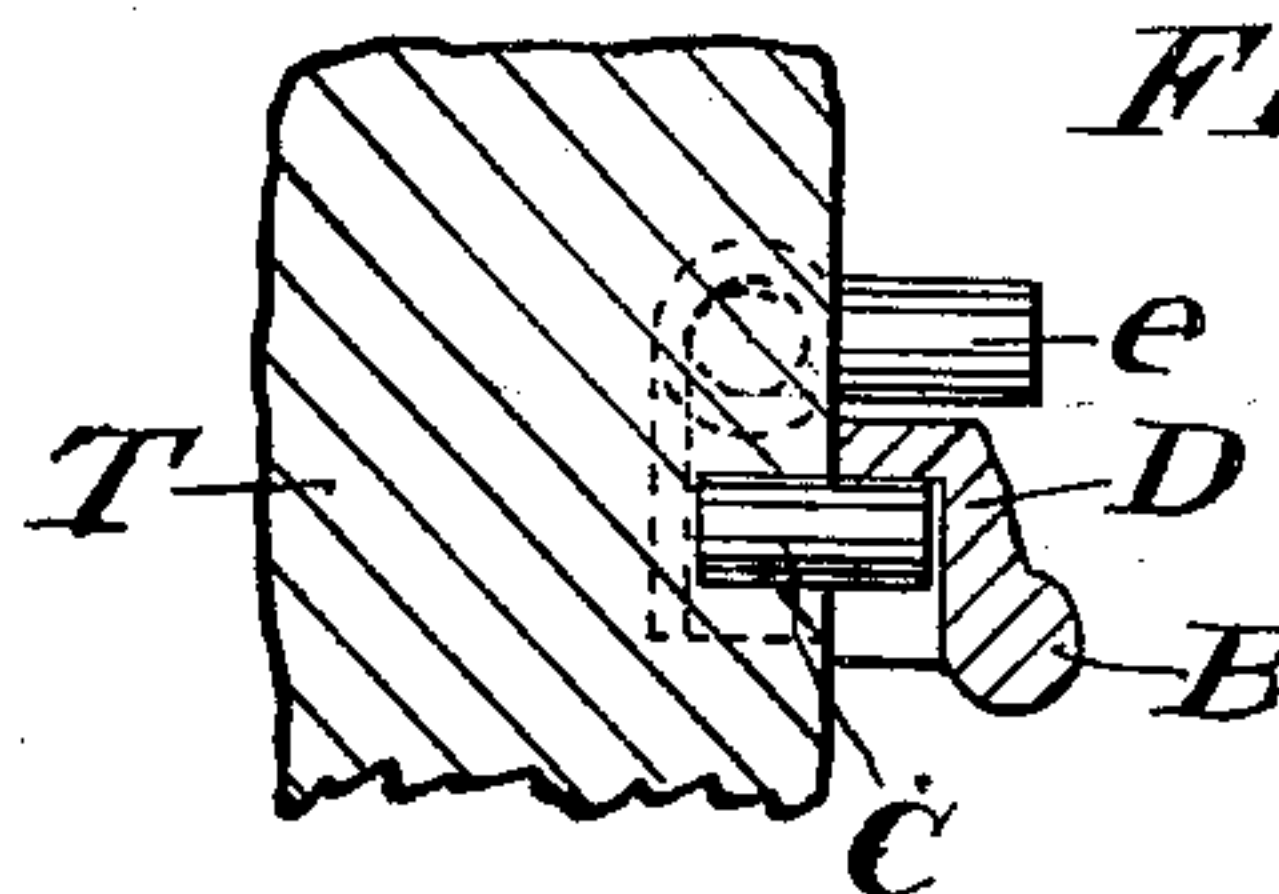


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

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MEANS FOR SECURING ARTIFICIAL DENTURES.

No. 898,546.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, EDGAR S. BARNES, GEORGE T. WILLIAMS, and CHARLES B. REYNOLDS, citizens of the United States, and residents of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Means for Securing Artificial Dentures, of which the following is a specification.

Our invention relates to certain improvements in the means employed for mounting and securing in place of artificial dentures and comprises the parts and combinations of parts hereinafter particularly described in the claims.

The object of our invention is to provide means whereby, under certain conditions, artificial dentures may be secured in place and yet be readily removable at will.

In the drawings we have shown our invention embodied in the form which is now preferred by us and which serves well to illustrate our invention.

Figure 1 is a sectional elevation showing the teeth upon one side of a jaw. Fig. 2 is a plan view of a jaw having teeth secured in accordance with our invention. Figs. 3, 4 and 5 are details on a larger scale showing the means whereby we secure the teeth in place, Figs. 4 and 5 being sections respectively upon the lines 4, 4, and 5, 5 of Fig. 3.

Our invention is intended more particularly for use under conditions where it is very difficult or impracticable to satisfactorily secure a few artificial teeth by the methods now in vogue. Its use enables the teeth to be securely held and yet permits ready removal when desired. Typical conditions to which it is peculiarly adapted are shown in the drawings. These conditions consist of the absence of all the molar teeth on one side and the absence of all but the rear molar on the other side. Under these conditions we would preferably insert two teeth, A, A¹, upon one side and two teeth A², A³ upon the other side, mounting the teeth upon a side upon a common base and connecting the bases upon opposite sides by a connecting wire or bar B, which is curved and lies at the base of the front teeth. The method of securing these teeth in place involves the use of projectile and retractile pins or bolts which may be made to enter sockets or holes provided in a natural tooth, or a crown or like part which is permanently

secured to a natural tooth. The bolts and their sockets may be interchangeably used upon the natural teeth or the artificial teeth, as best suits the particular case.

Under the conditions shown in Fig. 1 and in the upper half of Fig. 2, that is, where there is no tooth with which to connect at one side, we prefer to use an additional pin and socket, which may be of fixed character, and which extends in a direction differing radically from that of the other pin or bolt. By the use of the two pins the artificial teeth may be secured in place. These pins or bolts connect respectively the artificial teeth (or the base upon which they are mounted), with natural teeth, or a crown or like member fixed to a natural tooth. The movable pin or bolt is preferably constructed as shown in detail in Figs. 3 and 4. This consists of the bolt E, having the lateral arm e, mounted to slide in a suitable casing F, embedded in or supported by the artificial teeth A, A¹, or the base upon which these teeth are mounted. In its principle and construction this bolt is essentially like the bolt which is used to secure house doors. The casing in which it is mounted has a downward extension f, in which the lateral arm e lies when the bolt is projected to lock the teeth in place. We have shown this casing E, and e, as consisting of tubes open upon their outer side over a segment insufficient to permit escape of the bolt. The socket for the reception of the bolt end may be formed either in a filling or inlay in the adjacent tooth T, or in a crown placed upon the tooth root. Considerations of decay forbid forming it in the walls of a tooth itself. Where there is a natural tooth or a crown, as T², back of the artificial teeth, as A², A³, it is not necessary to employ the supplemental pin C, as is shown in Fig. 1. This pin C, we prefer to fix in the fixed tooth or crown, and to have a socket, as D, carried by the bar B, which fits over it and prevents movement from front to rear. With a rear tooth, as T², for the artificial teeth A², A³, to back up against, the supplemental pin C is not needed.

When the artificial teeth are put in place or withdrawn, the bolts E are withdrawn, when the whole may be easily lifted out. This permits removal whenever desired for purposes of cleaning or otherwise. Where there is a back tooth, as T², we prefer to pro-

vide an additional support for the base which carries the artificial teeth. In Fig. 5 this is shown as a pin or arm which projects over the top of the tooth T². This may be a continuation of the bar B, or entirely independent thereof.

By the means described the use of a plate or partial plate is avoided and the teeth securely held while being also removable at will. This invention may be applied to either upper or lower teeth.

Having thus described our invention, what we claim and desire to secure by Letters Patent is;

1. A means for securing artificial dentures in place, comprising a movable bolt member and a socket member therefor, one carried upon the artificial dentures and the other upon the natural teeth, said bolt member having a side projection for operating engagement and the bolt guide or support having a recess into which said projection may be placed by turning the bolt, thereby securing a smooth surface.

2. A means for securing artificial dentures in place comprising a bolt mounted to slide lengthwise the row of teeth within guides carried by the artificial dentures, a socket member for said bolt carried by a natural tooth, and means for turning said bolt upon its axis and thereby locking it against retraction.

3. A means for securing artificial dentures in place, comprising a sliding bolt and a socket member therefor carried, one by a natural tooth and the other by the artificial dentures, independent means carried by the same parts and engageable to prevent move-

ment between the natural and artificial dentures in the direction of the length of the said bolt.

4. A means for securing artificial dentures in place, comprising a bolt member mounted to slide in sunken guides in the artificial denture and in the direction of the row of teeth, said bolt being rotatable in its guides and having a side projection by which it may be reciprocated, the artificial denture having a recess into which said projection may be turned to lock the bolt in place when the bolt end is projected, a socket member for the reception of said bolt end carried by a natural tooth, an arm carried by the artificial denture and lying alongside a natural tooth or a member carried thereby, said arm and tooth having pin and socket members engageable by movement transversely of the direction of the row of teeth.

5. A means for securing artificial dentures in place, comprising a bolt slidable in the direction of the row of teeth, a pin projecting transversely of said direction and a socket member engageable with said pin, said pin and socket member being fixed, one to the said artificial dentures and the other to the natural teeth.

In testimony whereof we have hereunto affixed our signatures at Seattle, Washington, this 14th day of October, 1907.

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GEO. T. WILLIAMS.

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Witnesses:

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