No. 711,324. Patented Oct. 14, 1902.

W. P. LACY.

ARTIFICIAL DENTURE.

(Application filed Feb. 15, 1902.)

(No Model.)

Fig. 1.

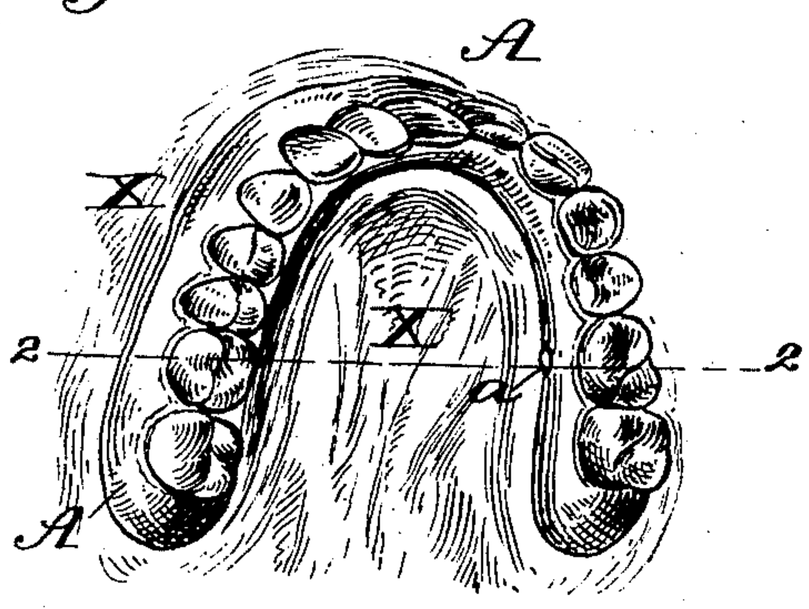

Fig. 2.

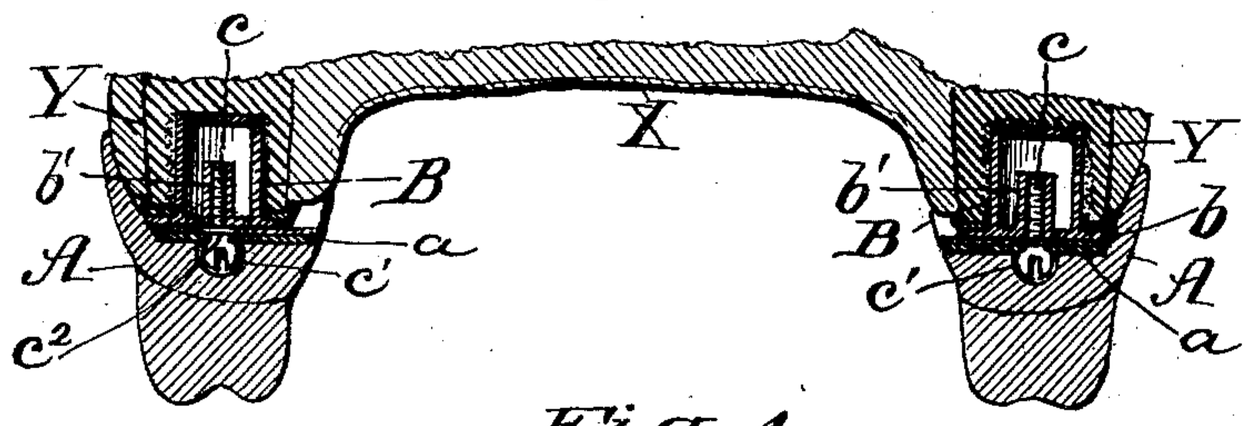

Fig. 3.

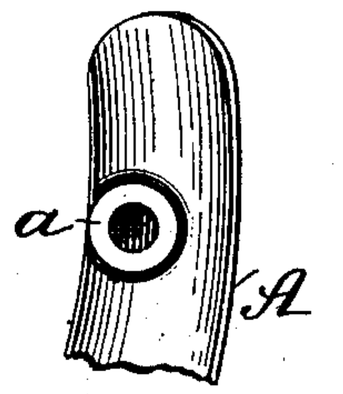

Fig. 4.

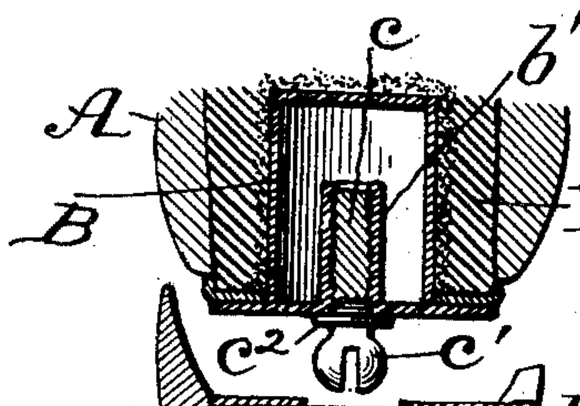

Fig. 5.

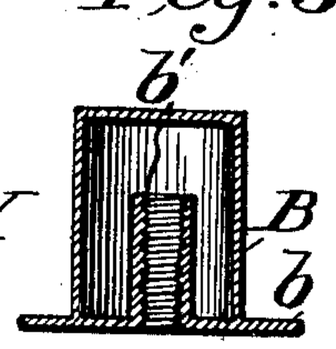

Fig. 6.

Fig. 7.

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ARTIFICIAL DENTURE.

SPECIFICATION forming part of Letters Patent No. 711,324, dated October 14, 1902.

Application filed February 15, 1902. Serial No. 94,233. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PETER LACY, a citizen of the United States, residing at South Boston, in the county of Halifax and State of Virginia, have made certain new and useful Improvements in Artificial Dentures, of which the following is a specification.

It is the object of my invention to provide an improvement in that class of artificial dentures which are supported in the mouth without the aid of a suction-plate, usually employed for the purpose. It is more particularly an improvement in that class of dentures which are attached to natural tooth-roots.

The construction, arrangement, and combination of parts are as hereinafter described and claimed, reference being had to accompanying drawings, in which—

Figure 1 is a perspective view showing an artificial denture applied to the upper jaw according to my invention. Fig. 2 is an enlarged cross-section of the same on line 2 2 of Fig. 1. Fig. 3 is a top plan view of one of the side wings or portions of the artificial denture shown in Figs. 1 and 2. Fig. 4 is an enlarged section illustrating the construction and arrangement of the means or devices for anchoring the artificial denture to the jaw. Fig. 5 is an enlarged central longitudinal section of the tubular anchor fixed in the jaw. Fig. 6 is a side view of the detachable anchor or post enlarged. Fig. 7 is a longitudinal section of an artificial crown or tooth adapted to be secured to the jaw by means of my improved detachable anchor.

In Fig. 1 I illustrate an artificial denture A, which is practically horseshoe shape, the roof of the mouth being exposed in the space between its sides or wings, so that the tongue may lie in contact with the same, as in nature. This denture may be formed of vulcanized rubber, gold, or any other suitable material, having teeth applied and secured to it in the usual way. It is so molded as to accurately fit upon the jaw. It is secured in place by attachment to one or more natural tooth-roots Y. (See Figs. 2 and 4.) In order to prepare such roots for the attachment of the denture A, they are cut off nearly flush with the gum and a cap is applied. A longitudinal cavity is excavated in the teeth to receive the fixed tubular anchor or post B. (See Fig. 5.) The same consists of a relatively large tube having a flanged head b and an interior tube b', which is threaded throughout. This tube b' is secured in the cavity by means of cement in a manner well known to the profession, and the flanged head lies in contact with the butt or base of the tooth-root Y. The removable anchor or post C (see Fig. 6) has a screw-threaded shank c, adapted to enter the socket b' of the fixed post B, and also an enlarged spherical head c', which is cleft or divided transversely, thus forming two spring-jaws, as will be readily understood. Between the screw c and said head c' is arranged a flange c^2. The gum base of the denture A is provided at points corresponding with the location of the natural roots Y with a metal socket a, (see Fig. 3,) the same consisting of a metal ring which is depressed or sunk, and thus embedded in the rubber, the latter being cut away beneath sufficiently to accommodate the head c' of the attaching-anchor C. It will now be seen that when the anchor C is screwed into the socket b' of the fixed post, as shown in Figs. 2 and 4, the denture proper, A, may be readily attached by placing it in due position and then forcing it directly upward, so that the spring-heads c of the posts C enter the sockets a of the denture A and expanding in the cavity below engage the edges of the socket a, thereby firmly secure the denture. The latter then rests firmly upon the gum, which constitutes, practically, the main resisting-surface while the denture is in use in the mastication of food, the anchor devices serving mainly as anchors proper rather than points of support. In order to detach the denture A, it is pulled directly downward with sufficient force to compress the spring-jaws composing the head c' of the screw-post, so that said head passes out of the socket a. Thus the denture may be easily attached and detached, and yet when in due position is held firmly and without discomfort to the wearer.

It will be noted (see Figs. 2 and 4) that the depression of the annular socket-plate a in the denture proper, A, corresponds to or equals the thickness of the flange c^2 of the attaching screw-post C, so that no space is left for accumulation of food between the

head *b* of the fixed anchor B and the adjacent surfaces of the denture. It is apparent that the post may be readily adjusted so as to project more or less, as required to hold the denture to the jaw X as closely as may be desired. For this purpose the flange c^2 may be dispensed with when required. Then gold washers may also be arranged between the post-flange c^2 and the root-cap.

Fig. 7 shows a tooth or crown A′ having a spherical socket adapted to receive the head c' of the screw-post C, so that the tooth may be attached and detached in the same manner as the denture A.

It is to be noted that while I have indicated the presence or arrangement of two natural tooth-roots Y at opposite points in the jaw one such root may suffice to secure the denture in place, and in case of two it is not necessary that they shall be directly opposite.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an artificial denture of the class described, the combination, with a metal anchor, embedded in a natural tooth-root and having an enlarged spherical head which is cleft transversely, whereby spring-jaws are formed that normally diverge from each other, of a bridge having a socket and cavity formed therein and adapted to receive the cleft-head of the anchor, which is compressed in passing into the socket and then expands so as to engage the same in the manner shown and described.

2. In an artificial denture of the class described, the combination, with a metal anchor, embedded in a natural tooth-root and provided with a screw-socket, of the denture proper having a socket-plate embedded therein, and the detachable anchor or post, having a screw-threaded shank, adapted to screw into the fixed anchor, and a spherical head, which is compressible and adapted to enter the socket and then expand to hold the denture detachably, substantially as shown and described.

3. In an artificial denture of the class described, the combination, with a metal anchor or post embedded in a natural tooth-root, and having a flanged head, a central longitudinal tube which is screw-threaded interiorly and closed at its inner end, a detachable anchor or post having a screw-threaded shank, and a spherical head provided with the transverse cleft, whereby spring-jaws are formed, the denture proper having a metal socket-plate embedded therein, and provided with a cavity below said plate, the opening in the latter being of less diameter than the diameter of the head of the detachable anchor, when expanded, and adapted to allow passage of said head, when compressed, substantially as shown and described.

4. In an artificial denture of the class described, the combination, with a metal post or anchor embedded in a natural tooth-root, and having a screw-threaded socket, of the detachable anchor or post having a threaded shank, an enlarged and cleft head, and a horizontal flange located between the head and shank, and the denture proper having a cavity and a socket-plate arranged over the same and sunk in the denture to a depth corresponding to the thickness of the aforesaid flange, substantially as shown and described.

5. In an artificial denture of the class described, the fixed anchor or post having a cylindrical body, a flanged head and the central longitudinal tube which is threaded interiorly and closed at one end, as and for the purpose specified.

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