

No. 786,748.

PATENTED APR. 4, 1905.

B. W. FORDYCE.  
ARTIFICIAL DENTURE.  
APPLICATION FILED JUNE 4, 1904.

Fig. 1.

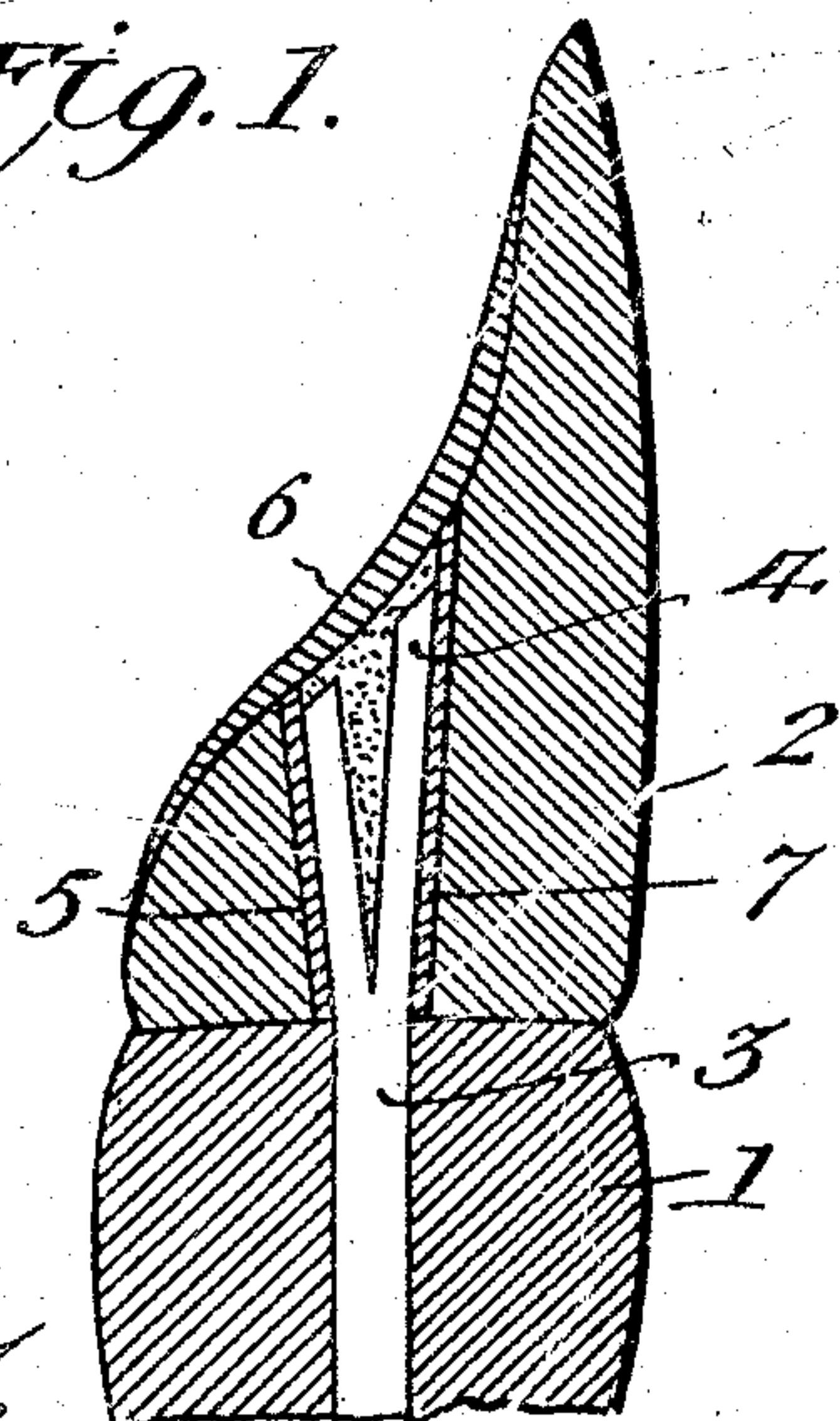


Fig. 2.

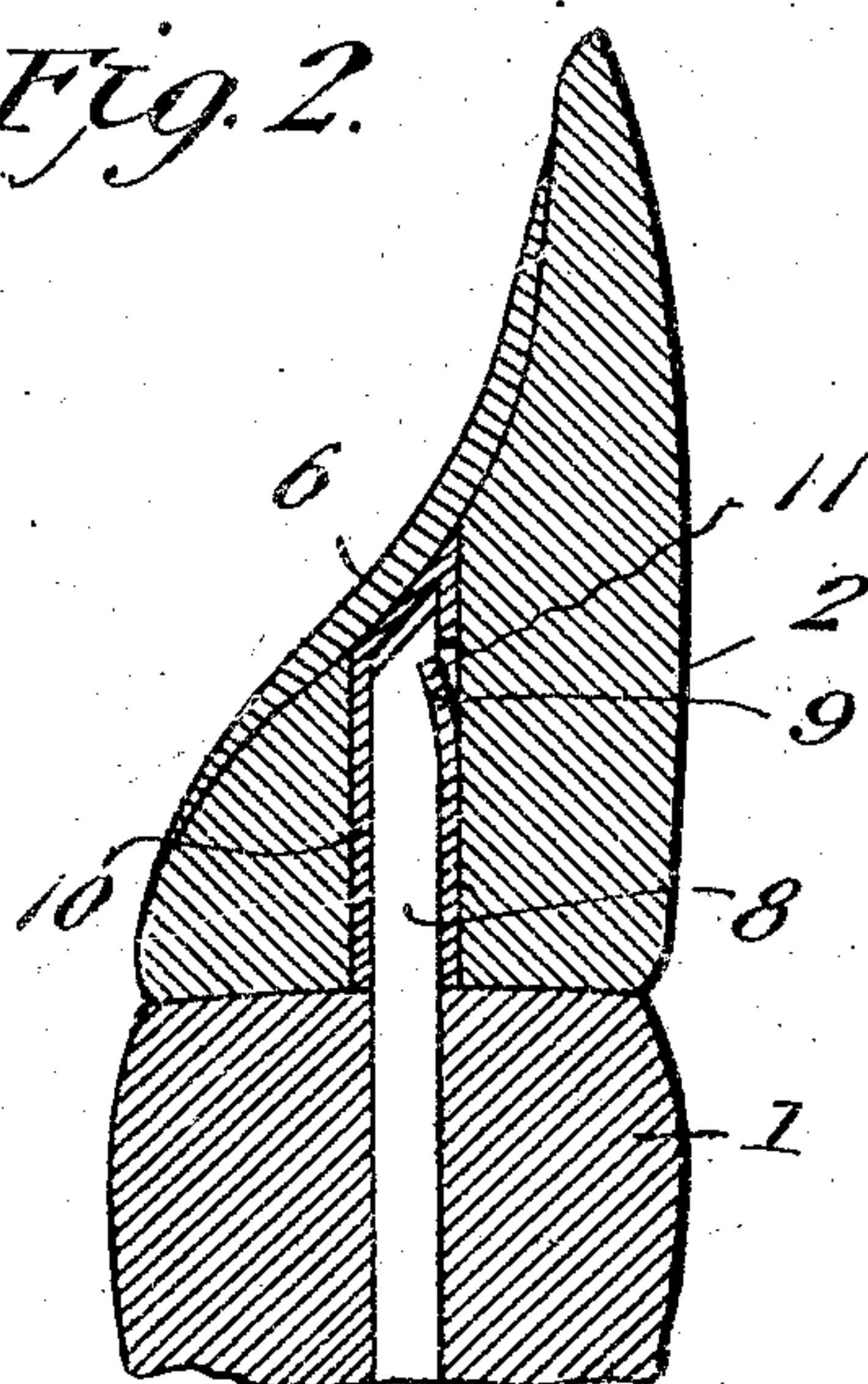


Fig. 7.

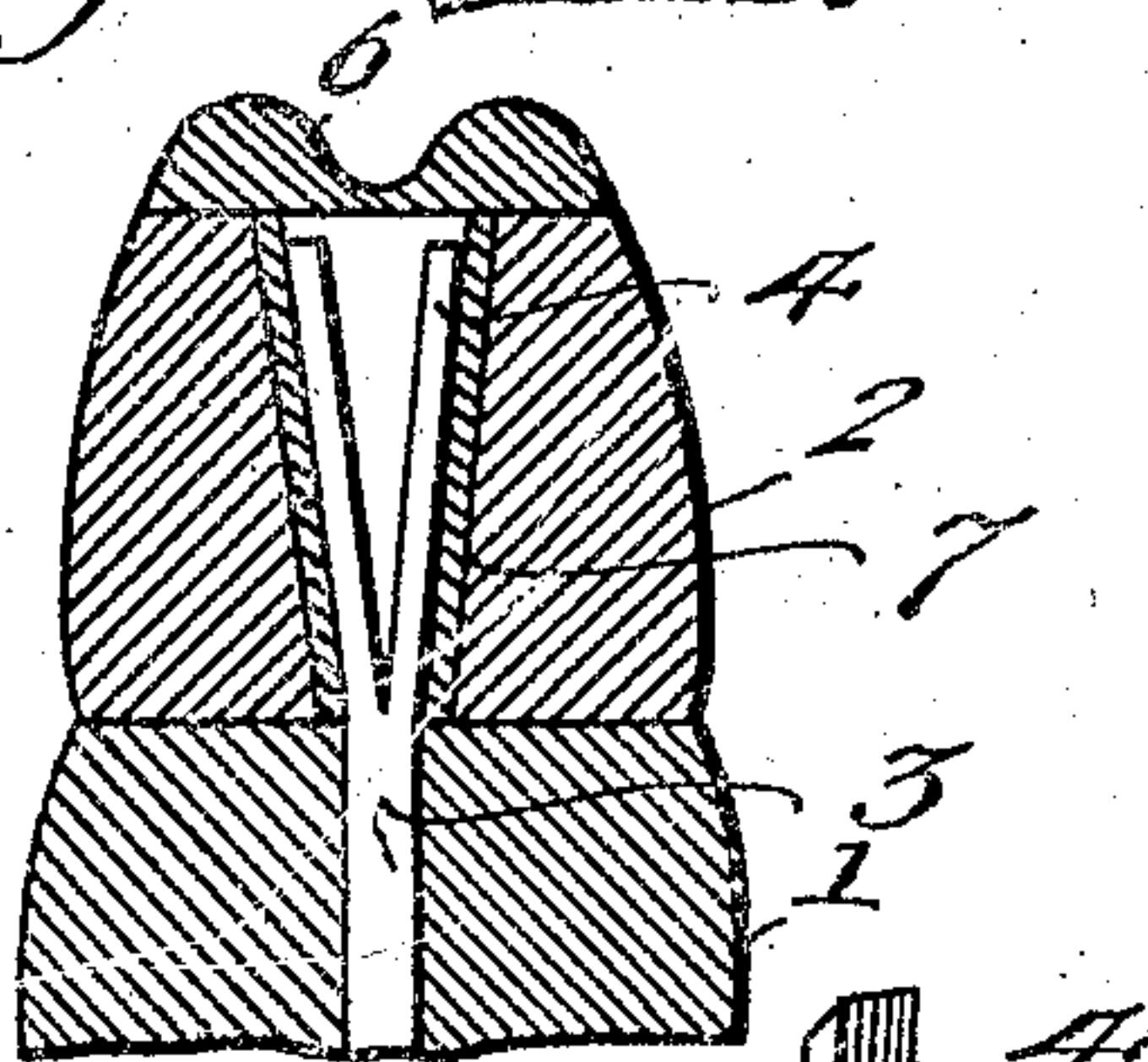


Fig. 5.

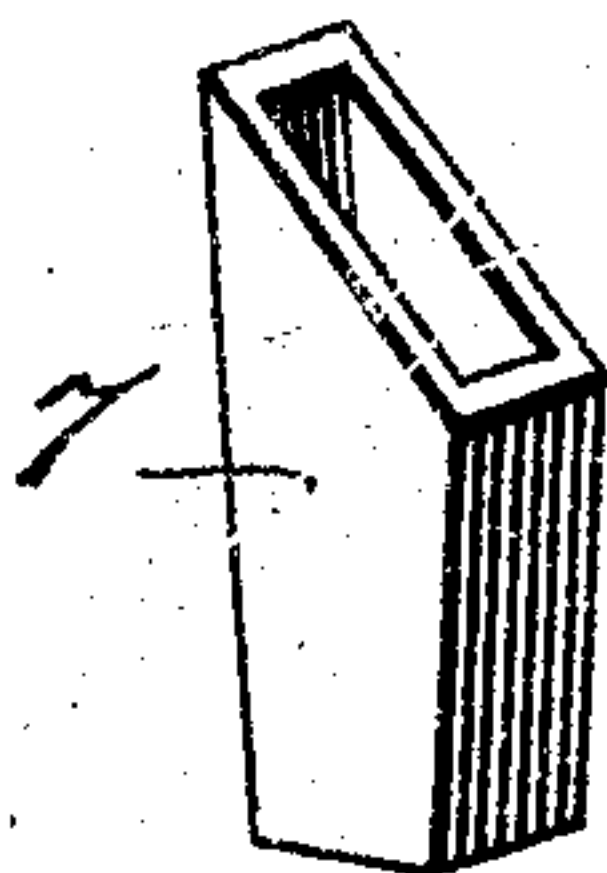


Fig. 3.

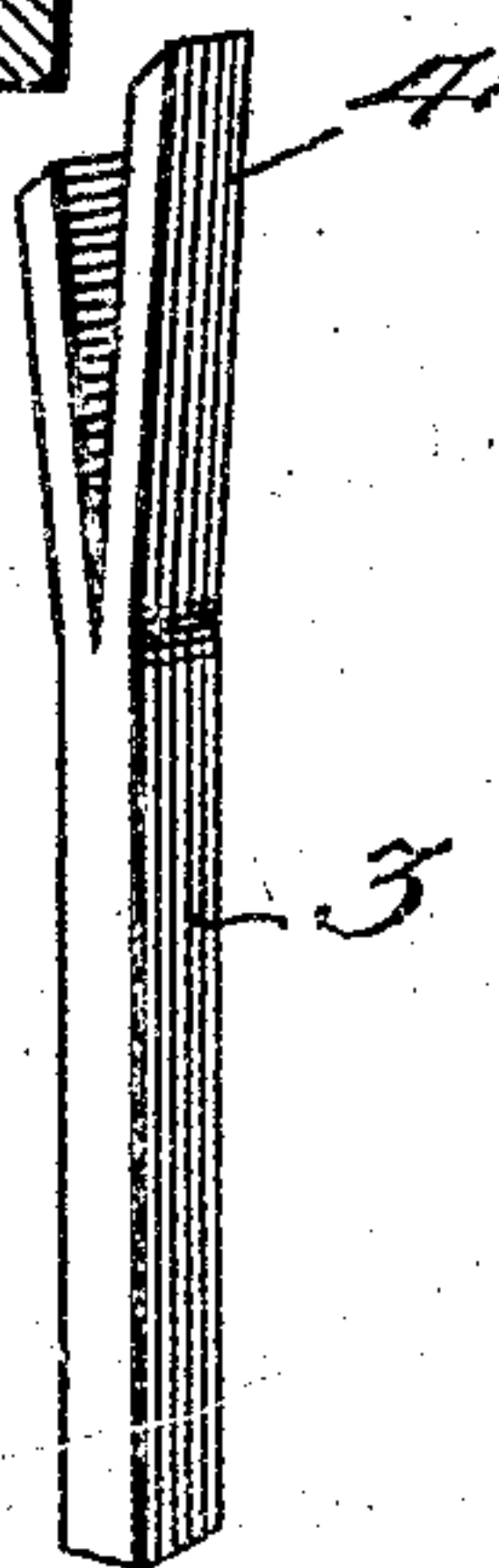


Fig. 6.

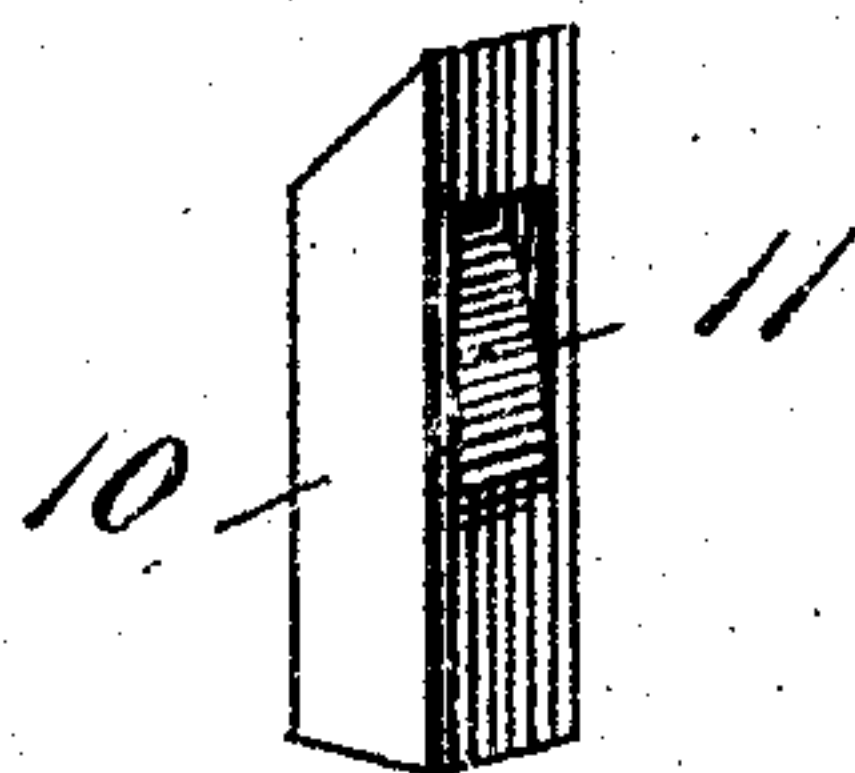
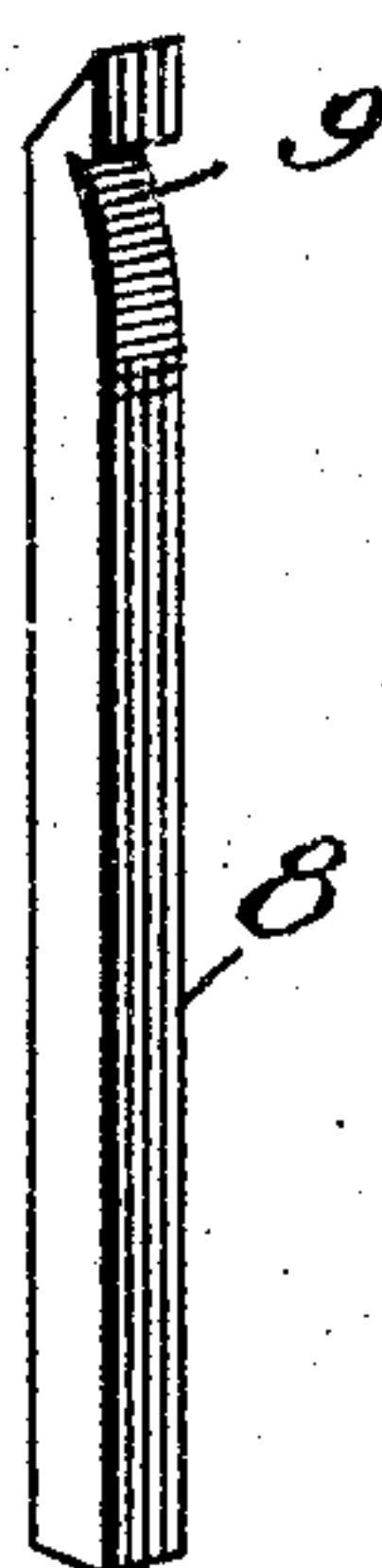


Fig. 4.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## ARTIFICIAL DENTURE.

SPECIFICATION forming part of Letters Patent No. 786,748, dated April 4, 1905.

Application filed June 4, 1904. Serial No. 211,188.

*To all whom it may concern:*

Be it known that I, BENSON W. FORDYCE, a citizen of the United States, residing at Bedford, in the county of Taylor and State of Iowa, have invented new and useful Improvements in Artificial Dentures, of which the following is a specification.

This invention relates to means for attaching tooth-crowns to natural tooth-roots, and particularly to means of such character embodying an anchor-post fitted in the tooth-canal and to which the crown is attached.

The object of the invention is to provide improved means for attaching artificial crowns to natural tooth-roots in such manner that when once the anchor-post is seated in the root-socket, which may be done by any means known in the art, a crown may be secured thereto and removed therefrom without destroying or causing the least injury to the anchor-post. The crown, notwithstanding the fact that it can be removed from the anchor-post, is held with great firmness and solidity thereon when placed in position on a tooth.

This attachment is applicable for use on incisor, bicuspid, and molar teeth with equal facility and rigidity. It may also be advantageously used in dental bridgework.

In the accompanying drawings, Figure 1 is a vertical sectional view through my improved tooth-crown in position on the root of a lower incisor tooth. Fig. 2 is a similar view of my invention showing a modified form of securing the artificial crown to the anchor-post. Fig. 3 is a perspective view of an anchor-post used in connection with the form of crown illustrated in Fig. 1. Fig. 4 is a similar view of the anchor-post used with the modified form of my invention. Figs. 5 and 6 are perspective views of two forms of ferrules or sockets used in connection with my improved crown. Fig. 7 is a vertical sectional view illustrating my invention as applied to a bicuspid tooth.

Similar numerals of reference indicate corresponding parts throughout the several views.

The numeral 1 indicates a portion of an incisor tooth shaped at the top to fit the base of

an artificial crown 2, which is preferably made of porcelain. I do not, however, confine myself to this particular material, as other substances well known in the art may be used.

3 indicates a metal anchor-post, the lower portion of which is cylindrical in form and adapted to be fixed in a root-canal in any well-known manner. The projecting portion of the anchor-post is in the form represented in Figs. 1 and 3 divided or split to make two spring-prongs 4, which are slightly spread apart at their ends, as shown in Fig. 3.

The crown 2 is, as heretofore stated, made, preferably, of porcelain, through the center of which an opening 5 is formed from the base outwardly and as near as possible in line with the axis of the root-canal. The walls of said opening 5 are either parallel, as in Fig. 2, or outwardly divergent from the base, as in Fig. 1, and in cross-section the opening may be square, triangular, round, rectangular, or of other form. If the opening 5 be greater in one direction than in the other, its longer axis should lie in a labiolingual direction or from before backward.

Shaped to the inner or lingual surface of an incisor or cuspid tooth and to the grinding-surface of a bicuspid or molar tooth is a metal plate or backing 6, which assists materially in holding the crown in place on the natural root of a tooth.

A ferrule or socket 7 is fitted snugly to the shape of the opening 5, but not secured therein. When in place, the socket 7 extends from the metal plate or backing 6 to the base of the tooth-crown or slightly beyond it, if necessity demands, as in a short tooth, for instance. The opening 5 in the crown 2 illustrated in Fig. 1 is of rectangular form and narrower at the base than at the end next to the plate or backing 6, to which it is soldered or otherwise securely attached. When the socket 7 is placed in the opening 5 and the plate or backing 6, soldered thereto, is pushed toward the crown until it is firmly seated thereon, the socket will have passed through the hole 5, closely fitting it, until its smaller end has reached the base of the crown or in some cases passed beyond it.

To apply a crown of the above-described



form on an incisor root, the tooth is first prepared and the anchor-post fastened therein in the usual manner, with its forked end spread and projecting from the root of the tooth.

5 The socket is placed within the hole in the crown and the metal plate or backing pushed to place. The prongs 4 of the anchor-post are then pressed together, placed in the socket, and the crown pushed down until it is seated  
10 on the surface of the root prepared to receive it. As the crown passes to its seat the prongs 4 will spring outwardly and bear against the inner sides of the socket, thereby holding the crown firmly in position.

15 The fastening means shown in Fig. 2 comprise an anchor-pin 8, square in cross-section above the root and having a notch 9 cut in one side near its upper end. The socket 10 is also made square to fit a square hole 5 in the crown

20 2. In this variety of socket the end soldered to the metal plate or backing 6 is independently closed at its end soldered to the plate or backing. It may, however, be left open, as in socket 7, or the latter socket closed. A  
25 portion of the front side of the socket 10 is cut to form a spring 11, projected within the socket and pointing upwardly. The crown 2 is attached to the root by pushing the socket 10 in the crown 2 over the anchor-pin 8 until  
30 the spring 11 enters the notch 9 in the anchor-post, by which time the crown will be properly seated on the root. The anchor-post may be plain or provided with locking devices, such as notches and projections, which inter-  
35 lock with projections and notches in the socket.

From the above it will be seen that there is no fixed connection between the anchor-post and the metal plate or backing 6 and that a crown can be removed at any time or when  
40 broken replaced by a new one. As the anchor-post is in no way attached to other parts of the crown, it is therefore stronger, as it is not softened or annealed by heat to which other forms of posts known to me are sub-  
45 jected.

The principle of this invention may also be used in dental bridgework, and the porcelain in case of breakage can be replaced without removing the abutments, thereby making the  
50 mechanism as perfect as it was originally.

Before applying the crown to the anchor-post a sufficient quantity of cement, gutta-percha, or similar material is placed within the socket 7 to fill the space between the prongs 4 of the post and between said prongs and the plate 6, should there be any. When it be-  
55 comes necessary to remove the crown, which, as a rule, is caused by breaking or splitting of the porcelain body, the front of the crown is broken away so that access may be had to  
60 the socket 7, which is slitted, as well as the plate 6, when necessary to enable the operator to drill out or otherwise remove the cement or gutta-percha filling. The remaining  
65 portion of the crown may then be withdrawn from the anchor-post and a new crown substituted.

Having thus described the invention, what is claimed as new is—

1. An artificial denture comprising a crown 70 having a longitudinal opening therethrough extending outwardly from its base, a metal plate or backing adapted to fit closely against the inner or upper surface of said crown and close the opening therethrough, a tube or  
75 socket firmly attached to said metal plate or backing and shaped to fit the opening in said crown, and an anchor-post secured to a tooth-root, its projecting end being so formed as to bear against all sides of the socket when  
80 placed therein and be held in place by spring means.

2. An artificial denture, comprising a crown having an opening therethrough extending  
85 from its base, a metal plate or backing adapted to fit closely against the inner or upper surface of said crown and cover said opening, a socket firmly attached to said plate or backing and conforming to the shape of the opening in said crown, and an anchor-post having  
90 one end provided with a spring-fork and adapted to enter said socket and be locked therein.

In testimony whereof I affix my signature in presence of two witnesses.

BENSON W. FORDYCE.

Witnesses:

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