

F. H. SKINNER.
 REMOVABLE DENTAL BRIDGE ATTACHMENT.
 APPLICATION FILED JAN. 2, 1914.

1,140,539.

Patented May 25, 1915.

Fig. 1.

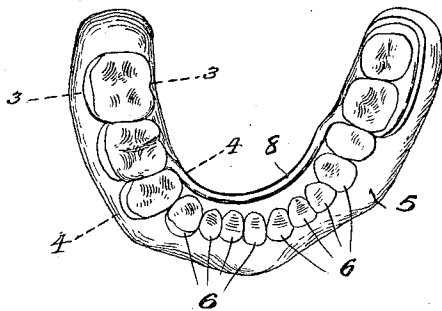


Fig. 2.

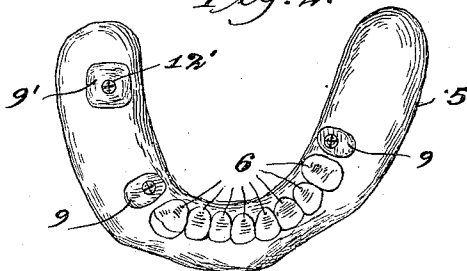


Fig. 3.

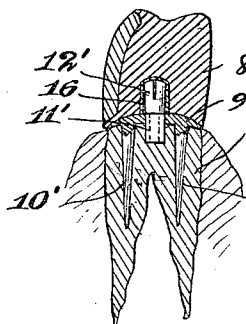


Fig. 4.

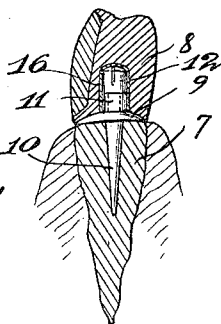


Fig. 5.

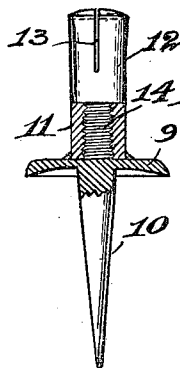


Fig. 6.



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UNITED STATES PATENT OFFICE.

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REMOVABLE DENTAL BRIDGE ATTACHMENT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK H. SKINNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Removable Dental Bridge Attachments, of which the following is a specification.

This invention relates to improvements in dentistry, and has reference more particularly to a new and improved device for removably attaching bridge-work to natural teeth abutments.

The invention relates to that type of bridge attachment which employs an abutment member permanently secured to the root of a natural tooth and carrying a spring post which frictionally engages a socket in the body member of an artificial crown on a bridge to removably secure the latter in place on the abutment member. Heretofore, so far as I am aware, such post has been formed as an integral part of the abutment member, or has been soldered or otherwise permanently mounted on the abutment member. These posts not infrequently break or, in time, lose a measure of their holding power, and consequently have to be replaced, thereby necessitating the removal of the entire abutment member from the root of a natural tooth, involving discomfort to the patient and the expenditure of considerable time and labor on the part of the dentist.

The object of the present invention is to improve upon this construction in such a manner as will make it wholly unnecessary to remove the abutment member from the root when a post has to be repaired or renewed.

The invention is illustrated in the accompanying drawing, in which—

Figure 1 is a top plan view of a lower jaw showing a dental bridge embodying my invention applied thereto. Fig. 2 is a view of the same jaw omitting the bridge. Fig. 3 is an enlarged cross section on the line 3—3 of Fig. 1. Fig. 4 is an enlarged cross section on the line 4—4 of Fig. 1. Fig. 5 is an elevation, partly in vertical section, on a further enlarged scale, of my improved attaching device. Fig. 6 is an end view of the split post.

Referring to the drawing, 5 designates

the gum of a lower jaw, and 6 a group of natural teeth therein.

7 designates the root of a bicuspid, and 7' the root of a molar, to a plurality of which roots located on opposite sides of the jaw the bridge, designated as an entirety by 8, is attached. These roots are cut off substantially flush with the edge of the gum, and 9 designates an abutment member that is fitted to the exposed end of the root 7 and carries a pin or post 10 that is cemented within the canal of the tooth as usual.

Integral with or soldered to the abutment member 7 is an internally threaded boss 11. 12 designates the post which, as best shown in Figs. 5 and 6, is split longitudinally through the major portion of its length, as shown at 13, thereby forming a pair of prongs possessing a slight degree of transverse elasticity. The post 12 has a threaded shank 14 that engages the threaded boss 11 throughout the full length of its shank, and the upper or outer end of the post is preferably formed with a shallow transverse kerf 15 at right angles to the longitudinal slit 13 to afford a screw driver hold.

Embedded within the body portion of the bridge-plate 8 at locations registering with the split posts mounted upon the roots as described are metal socket members 16 that are of a size such as to have a snug sliding fit with the posts 12, there being sufficient friction due to the said fit to hold the bridge securely in place under service conditions; the spring prongs of the posts being slightly compressed by the socket members upon the application of the bridge to the jaw, but permitting the ready removal of the bridge upon the application of sufficient force to withdraw the socket members from the split posts.

Fig. 3 illustrates a preferred form of the bridge abutment or crown when applied to a multiple-prong root. In this case, the abutment plate or cap 9' is provided with a pair of spaced pins or posts 10' which enter the canals of the two prongs of the root. In such a case, and especially where there is a short bite, the length or height of the integral post may be reduced, relatively to the height of that shown in Fig. 4, by extending the internally threaded boss 11' through the abutment plate or cap 9' and into the upper end of the root whereby

the upper end of the threaded boss 11' may be brought substantially flush with the outer surface of the abutment cap 9', and the split post 12' is screwed therein in the manner already described.

In the application of the invention, the anchor roots, having been suitably prepared, the abutment members with their root pins, and carrying their internally threaded bosses, are permanently secured thereto by cementing in the usual and known manner. The shank of the post is then threaded into the boss. Finally, the bridge-plate, having the metal socket members 16 embedded therein, is forced down over the split posts and securely held upon the latter and against the abutment members by the frictional grip of the posts within their respective socket members. By the application of sufficient force the bridge can readily be removed from the posts for cleaning, repair or other purposes.

Prior to my present invention, bridge-anchoring posts of the general nature and character described have been made solid, have been permanently soldered or otherwise secured to the root abutment or crown, and the posts on opposite sides of the jaw have been inclined or slanted slightly inwardly or toward each other. In such cases the holding or gripping effect upon the bridge-plate has been secured as a result of springing the posts outwardly slightly during the application of the bridge. This produces a lateral strain upon the natural roots of the teeth which is undesirable and not infrequently results in producing unhealthy and diseased conditions, or else loosens the abutment crowns. My invention improves these conditions in several respects. In the first place, the posts can be, and preferably are, set vertical, thus avoiding any side strain during the appli-

cation and removal of the bridge; and the vertical splitting of the posts, combined with snugly fitting socket members, produces an ample frictional holding effect. In the second place, the individual posts being readily removable by a simple unscrewing operation, my improvement entirely dispenses with the necessity of removing the entire abutment member or crown from the root when the post happens to break or otherwise becomes defective through loss of its resiliency and holding power, thus making the operation of renewing the post a much simpler and less troublesome and expensive one than heretofore.

I claim—

1. In a removable dental bridge attachment, the combination with an abutment plate adapted to be secured to the exposed end of a natural root, of a longitudinally split spring post, an externally threaded post rigid with one of said parts, and a cooperating internally threaded boss rigid with the other of said parts, a root pin on the inner side of said abutment plate adapted to be cemented in the canal of the root, and a socketed bridge-plate frictionally engaging said spring post.

2. In a removable dental bridge attachment, the combination with an abutment plate having on one side thereof a pin adapted to be cemented in the canal of a natural root and on the opposite side an internally threaded boss, of a longitudinally split spring post having a threaded shank of reduced diameter engaging said boss, and a socketed bridge-plate frictionally engaging said spring post.

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