

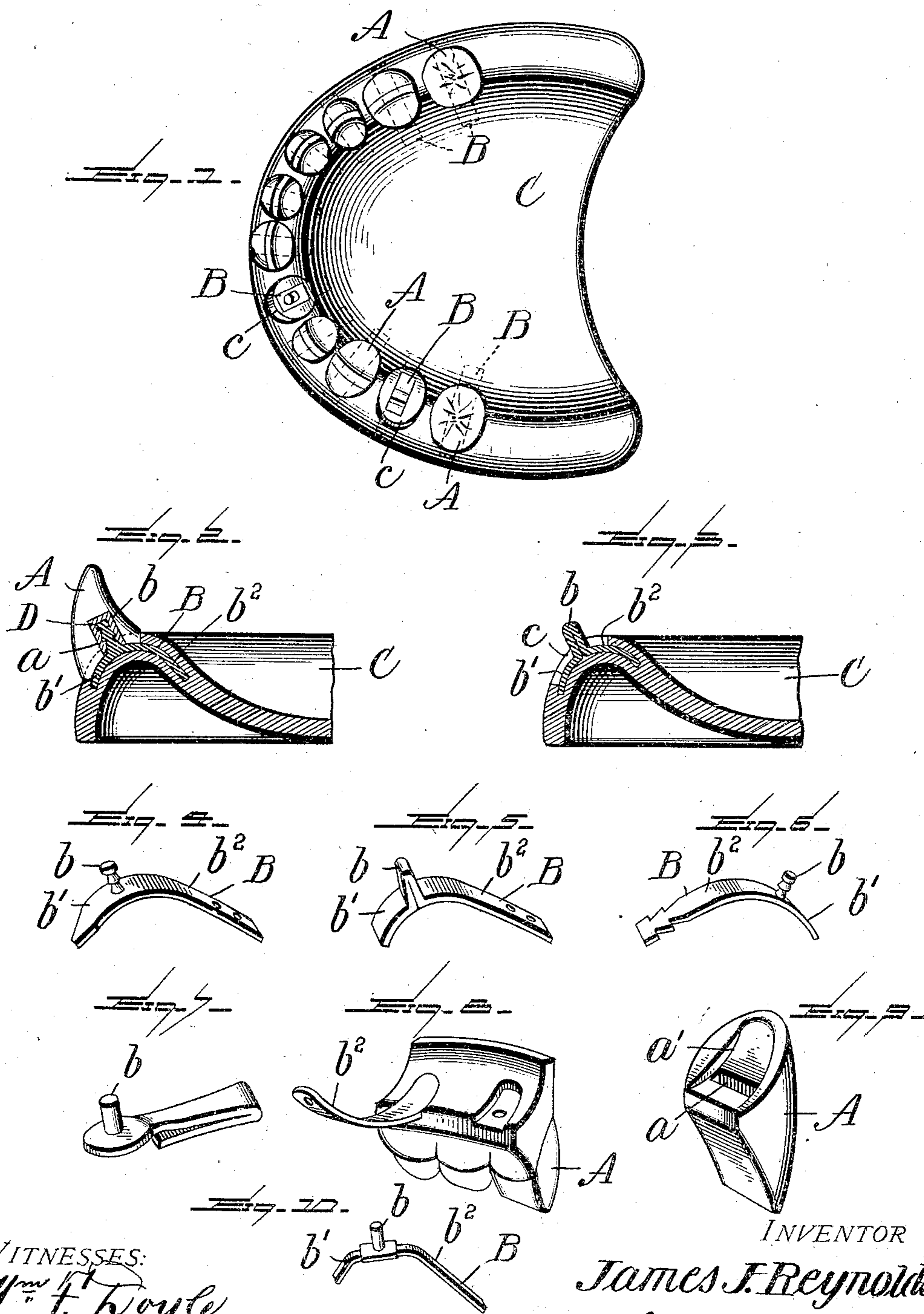
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Patented July 22, 1902.

J. J. REYNOLDS.
ARTIFICIAL TOOTH.

(Application filed Oct. 5, 1901.,)

(No Model.)



WITNESSES:

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JAMES JARRETT REYNOLDS, OF HUNTINGTON, WEST VIRGINIA.

ARTIFICIAL TOOTH.

SPECIFICATION forming part of Letters Patent No. 705,143, dated July 22, 1902.

Application filed October 5, 1901. Serial No. 77,725. (No model.)

To all whom it may concern:

Be it known that I, JAMES JARRETT REYNOLDS, of Huntington, in the county of Cabell and State of West Virginia, have invented certain new and useful Improvements in Artificial Teeth; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in artificial teeth and dentures; and the objects of the invention are, first, to produce artificial dentures or teeth in which platinum pins are not necessary; second, to enable the teeth to be secured in position on the supporting plate or bridge after the latter is completed; third, to provide an anchor for the tooth which is first attached to the plate or bridge and the tooth subsequently attached thereto, and, fourth, to enable a broken tooth to be readily replaced without necessarily revulcanizing the plate or removing the bridge.

The nature of the invention will be defined in the claims.

Some of the desirable features of my invention are, first, that the plate can be finished and polished before the teeth are attached, making it much easier to do than when the plate is vulcanized to the teeth, as in the old methods; second, the festoons of the artificial gum can be carved to more closely resemble the natural gum; third, the backs of the teeth can be also carved or formed to resemble the backs of natural teeth, thereby affording more comfortable touch to the tongue; fourth, if a tooth should break off the plate can be restored to perfect condition by simply selecting a tooth to fit the place and setting it with cement, obviating the necessity of revulcanizing the plate, as would have to be done under the old methods.

In the accompanying drawings I have illustrated the invention as applied to a plate, but do not restrict myself to this particular application thereof, the essential features of the invention which I desire to protect being set forth in the claims.

I will now proceed to describe the invention with reference to the accompanying drawings, in which—

Figure 1 is a view of an artificial denture

or plate provided with my invention. Fig. 2 is an enlarged section through the plate and a tooth attached thereto by my invention. Fig. 3 is a detail section with tooth removed. Figs. 4, 5, 6, and 7 are detail views of different anchors detached. Fig. 8 is a detail view of a gum-section, and Fig. 9 is a detail view of a tooth detached.

In my invention the artificial teeth A are provided with sockets *a*, which are preferably of larger interior diameter than the orifices thereof, so as to afford a firm anchorage for cement. These teeth are attached to the support—such as a plate, bridge, &c.—by means of anchors B, which comprise a stud or pin portion *b* and an enlarged base portion, preferably comprising two band-like flanges *b'* *b*², extending in front and rear of the pin and beyond the base of the teeth, as shown. The pins *b* may be either round or flat, as shown in the drawings. Each tooth may also be provided with a slight groove *a'* to fit over or accommodate the adjoining portions of the base-flanges, as shown in Fig. 9.

The anchors B are secured in position on the tooth-support before the teeth are attached thereto, and the elongated base flange or flanges *b'* *b*² thereof give a very firm and substantial bearing and afford a much more secure fastening than is attainable by the use of pins or pivots embedded in the tooth and riveted or embedded in the plate or ridge, as heretofore. When applied to rubber plates, for example, the flanges *b'* *b*² are embedded in the material of the plate C, and the anchors extend across the sockets or recesses *c* therein, into which sockets the base of teeth are fitted. The pins *b* project outwardly from such sockets *c*, as shown in Fig. 1. After the support or plate is complete and the anchors firmly attached thereto the sockets *a* of teeth A are filled with cement, and then the teeth are forced over the pins and into the sockets *c*, so as to completely protect the anchors from moisture and firmly secure the teeth in place.

I consider the round pins *b* preferable, as they will not weaken the teeth so much as the flat pins. The sockets *a* in the teeth would have to be round and somewhat larger at the bottom than at the orifice, so as to provide substantial attachment of the cement. The pins *b* should be roughened or corrugated, as

shown in Fig. 2, so as to engage the cement. The extended base-flange of the anchor can be bent to conform to any shaped ridge or support. The pins *b* are not baked in the substance of the tooth, as by the old method, but are set in after the plate is finished by suitable cement or gutta-percha, as at D, Fig. 2. The anchors can be made of any good strong metal, such as German silver, &c., and of different shapes, as shown in Figs. 4, 5, 6, and 7, for examples. The groove *a*², which receives the flange, serves to prevent the tooth from rotating on the pin. The end of the pin reaches to near the biting edge of the tooth, and the end of the base-flange *b*² extends well upon the back near the gum end, reducing the leverage on the tooth. Of course the size and shape of the teeth will have to be varied, but will not vary the size and shape of anchors materially. In teeth where the bite is very close the advantage of the double extended base-flanges is apparent. They would in such case be strong enough to support the tooth without any rubber, which takes room, especially in partial sets. In bridgework gold backings can be made to cover base or back of teeth and assembled, with the teeth temporarily attached to the backings; then remove teeth and attach anchors; then set teeth as in platework. The base-flanges could be made to bend over the end of the tooth next to the gum onto the labial surface, which would give additional strength to the same.

What are termed "gum-sections" (see Fig. 8) can also be secured in the same manner by my anchorings. These gum-sections are combinations of two or more artificial teeth integrally formed and manipulated as one tooth. Where the sections contain more than two teeth, it would not always be necessary to employ an anchor for each tooth represented in the gum-section. The number and dimensions of anchors employed will be best determined by the dentist, according to the particular case in hand. The rearwardly-extending flange *b*² is most important, and in some cases the forwardly-extending flange might be quite short or even omitted; but the double-flanged anchors are most useful.

One great advantage of my anchorage is the fact that the flanges may be extended beyond the base of the teeth and into the material of the support, thereby affording greater bearing-surface to the teeth and distributing the strain more uniformly through the support and stiffening the latter where it would ordinarily be weakest, without requiring unsightly and uncomfortable accumulation of material at back of teeth to support same.

The base-flanges may be perforated, as in Fig. 4, or roughened or serrated, as in Fig. 6, or reinforced, as in Fig. 7, to afford more

secure anchorage thereof in the plate. I have shown these various forms of anchors as merely indicating some constructions thereof, all, however, preserving the essential feature of at least one elongated base-flange which may be attached to or embedded in the plate to afford a secure hold, and which is provided with a pin to which the tooth may be attached. As shown in Figs. 4, 6, and 7, the pin *b* is a separate piece from the base-flange. In Fig. 5 it is shown as formed integrally with the base-flanges by bending the metal.

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

1. The combination of the anchor having a pin, and a laterally-extending base-flange adapted to be embedded in the supporting-plate; with a tooth having a socket to engage the pin and a recess to fit over the base-flange and prevent turning of the tooth on the pin, substantially as described.

2. An anchor for artificial teeth having a tooth-engaging pin and opposite base-flanges extending laterally beyond the base of the attached tooth and adapted to be embedded in the tooth-support; with a tooth having a socket to engage the pin, and a recess in its base to fit over the adjoining portions of the base-flanges, all substantially as described.

3. The combination of the support having a tooth-socket, an anchor in each socket having opposite laterally-extending base-flanges projecting beyond the socket and embedded in the material of the support; with a tooth having a socket to engage the anchor-pins and recesses to fit over the base-flanges; said tooth being fitted into the socket of the support and secured to the anchor-pin by cement, substantially as described.

4. The combination of an artificial plate; with an anchor having a pin, and a laterally-extending base-flange adapted to be embedded in the plate, said anchor projecting beyond the base of the attached tooth, and a tooth having a socket to engage the pin substantially as described.

5. The combination of the artificial plate having a tooth-socket, the anchor in said socket having a pin in the socket and a laterally-extending base-flange projecting beyond the socket, and secured to the plate; with a tooth having a socket to engage the pin and seated in the socket of the support and secured to the pin, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES JARRETT REYNOLDS.

In presence of—

DON WEIDER,
S. C. HENNEN.