(No Model.)

W. W. SHEFFIELD.

SUPPORT FOR ARTIFICIAL DENTURES.

No. 318,581. Patented May 26, 1885.

Fig. 2.

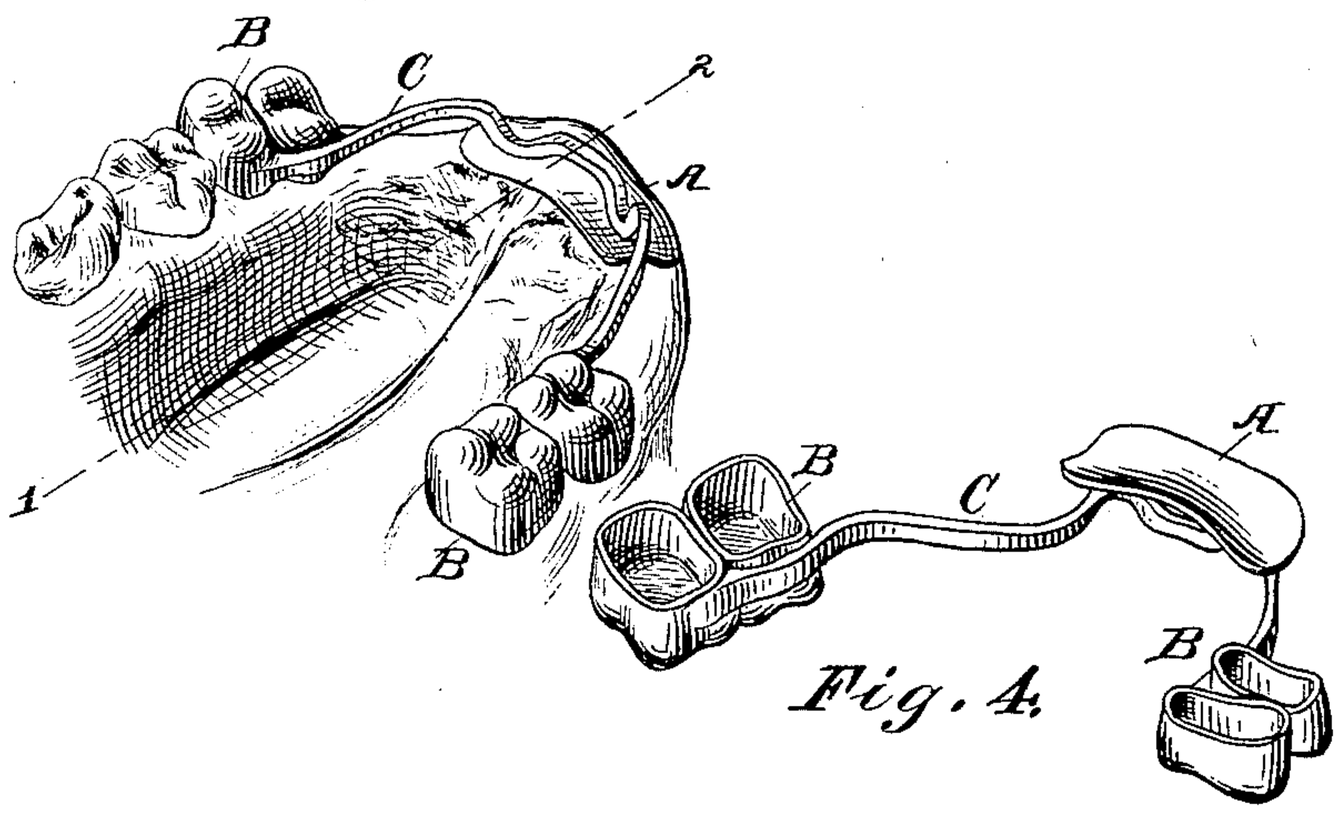


Fig. 1.

Fig. 4.

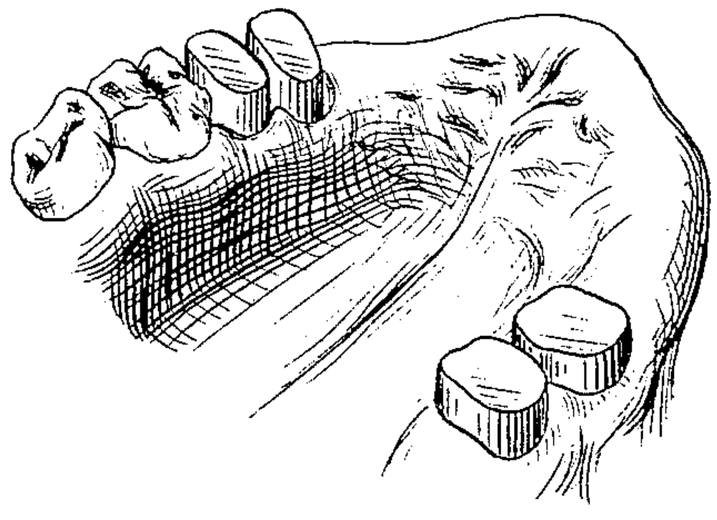
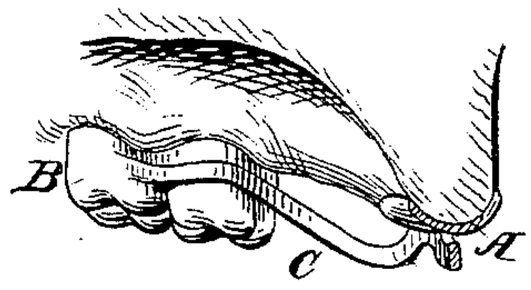


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

WASHINGTON W. SHEFFIELD, OF NEW YORK, N. Y.

SUPPORT FOR ARTIFICIAL DENTURES.

SPECIFICATION forming part of Letters Patent No. 318,581, dated May 26, 1885.

Application filed August 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, WASHINGTON W. SHEFFIELD, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Supports for Artificial Dentures, of which the following is a specification.

My invention relates to that class of artificial dentures in which the porcelain teeth are connected to and supported by a band or bar attached to supports adapted to the crowns or roots of the natural teeth; and my invention consists in means fully described hereinafter, whereby to secure a proper support for the teeth at points where there are no natural teeth or roots.

In the drawings, Figure 1 illustrates the cast upon which the denture is made, representing the roof, alveolar ridge, and teeth as arranged in the mouth. Fig. 2 is the same with the metallic portions of the denture in position. Fig. 3 is a section on the line 1 2, Fig. 2. Fig. 4 is a perspective view of a part of the metallic portion of the denture detached from the cast.

In making my improved artificial denture the teeth or roots are suitably prepared to receive the metallic crowns or capping-pieces, which are then applied *in situ*, and an impression in plaster is then taken of the mouth, and is removed after the hardening of the plaster, the crowns being embedded and withdrawn with the hardened impression. From this impression a cast is taken which represents the alveolar ridge and the teeth, the crowns covering the latter in their proper position, as in the mouth.

In the class of cases to which my improvement is adapted the supporting teeth and crowns are at a considerable distance apart, there being no intermediate teeth; and in order to afford a proper bearing between these supports I fit a plate to such portion of the alveolar ridge as may be best adapted to constitute a bearing and secure this plate to the support for the teeth. Thus when, as in the drawings, the crowns are fitted to the molars upon one side and the bicuspids upon the other, and the ridge between the molars and bicuspids is not provided with any teeth or roots, I fit to the proper portion of the ridge a plate, A, which is connected to the crowns B by the metallic bar or bridge C. Sometimes, when it is desirable to extend the teeth farther back, or beyond the bridge-support, the stay-wire is lengthened sufficiently to solder one or more teeth thereon with or without the plate A. The plate A is fitted to its place by first taking the impression of the proper portion of the alveolar ridge and making a die and counter-die from said impression and stamping up the plate between them, or the thin metal plate may be burnished into shape upon the die. The plate is placed in position upon the cast, as shown in Fig. 2, and secured thereto by wax or otherwise, and a piece of heavy wire, of platina or iridium or other suitable metal, is secured to the crowns at the opposite sides and to the plate and is bent to proper shape to constitute a support for the artificial teeth, subsequently applied thereto. The crowns, plate, and wire are now soldered together, and the artificial teeth, having metallic backings, are placed in position, with the backings in contact with the bar C, and are soldered thereto.

Any suitable means may be employed for adjusting the teeth to their proper position upon the bar C and in respect to the antagonizing teeth of the opposite jaw. For instance, the teeth may be secured by wax in position upon the bar C, and the structure may then be inserted in the mouth and the teeth then adjusted in place to articulate properly with those of the opposite jaw; or the crowns, plate, and bar may be placed in position in the mouth, and an impression may be taken in plaster placed in the mouth and hardened while the jaws are closed, and then removed with the embedded crowns, plate, and bar; and casts may be taken from the opposite sides of the mold thus made, so as to represent both jaws in proper relative position, one of the casts supporting the metallic portions of the denture. The plaster mold is then removed, exposing the crowns, plate, and bar, upon which the artificial teeth may be set by means of wax, and in proper articulation with those of the opposite jaw, represented in plaster by the other cast. The teeth are then secured by investment material at the front, the wax is removed, and they are then sol-

dered to the bar C, so as to secure a continuous structure and a continuous series of artificial teeth between the opposite crowns.

By providing the denture at a point intermediate of the supports with a plate fitted to the alveolar ridge, as described, I am enabled to secure a broad bearing for the denture at a point where it would otherwise not be supported without injury to the mouth, and without the objections which result from the use of a plate covering the roof of the mouth or any extended portion of the ridge. In some instances, where the supports are only upon one side of the mouth, the plate A may be connected to the said supports at one side only, being an extension with but one end support. This method of manufacture is attended with another advantage, from the fact that the wire C acts as a brace to hold the crowns in proper relative position during the soldering and cooling operations, preventing the displacement of the crowns, which would otherwise result from the expansion or shrinking of the metal in soldering.

Without limiting myself to the precise construction and arrangement of parts shown,

I claim—

1. The within-described improvement in the manufacture of artificial dentures, the same consisting in connecting metallic crowns adapted to the teeth by a bar extending over the alveolar ridge, attaching the said bar to a plate adapted to rest upon a portion of said ridge, and mounting the artificial teeth upon said bar, substantially as set forth.

2. The combination, in an artificial denture, of attachments adapted to the natural teeth or roots, a bar supporting the artificial teeth connected to said attachments, and a plate adapted to rest upon a portion of the alveolar ridge attached to said bar, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WASHINGTON W. SHEFFIELD.

Witnesses:
CARROLL B. ADAMS,
CLAIBORNE W. CAIN.