(No Model.)

C. H. SEEGER.

ARTIFICIAL TOOTH.

No. 552,203. Patented Dec. 31, 1895.

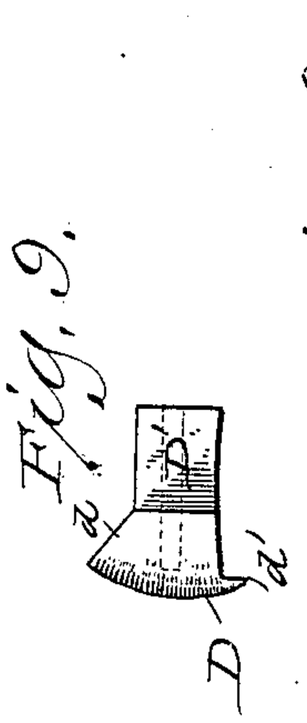
Fig. 1.

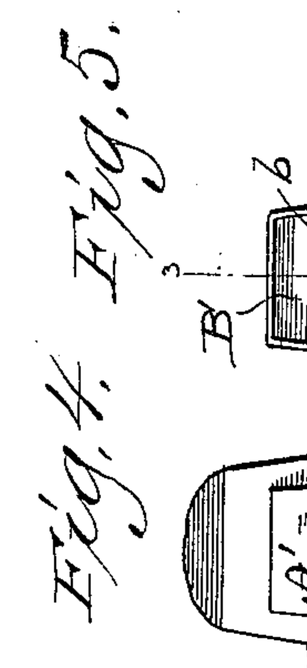
Fig. 2.

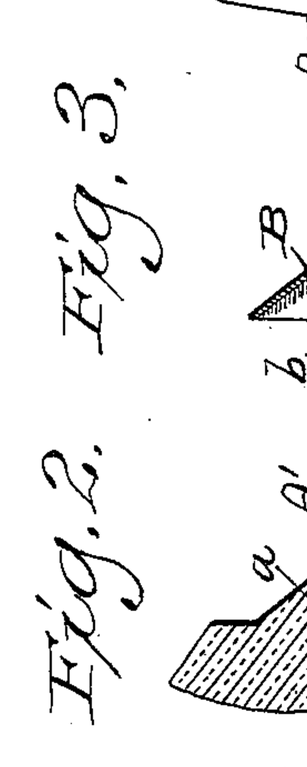
Fig. 3.

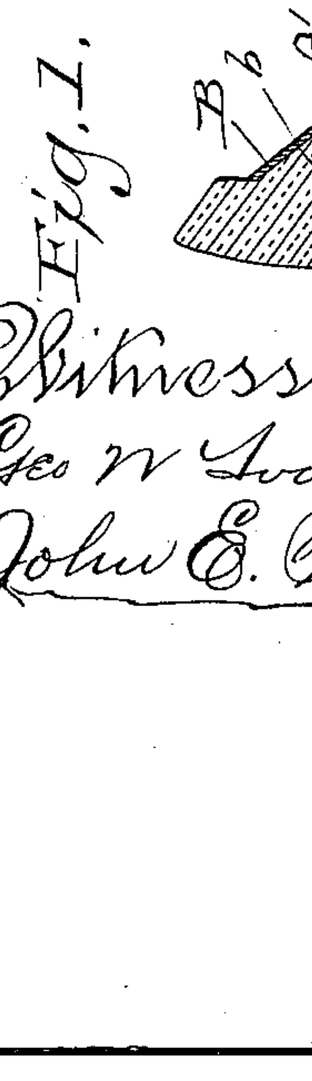
Fig. 4.

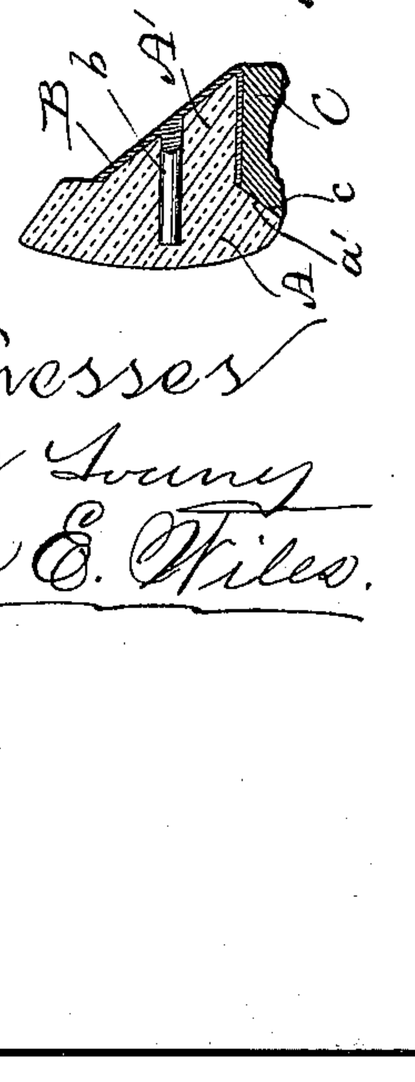
Fig. 5.

Fig. 6.

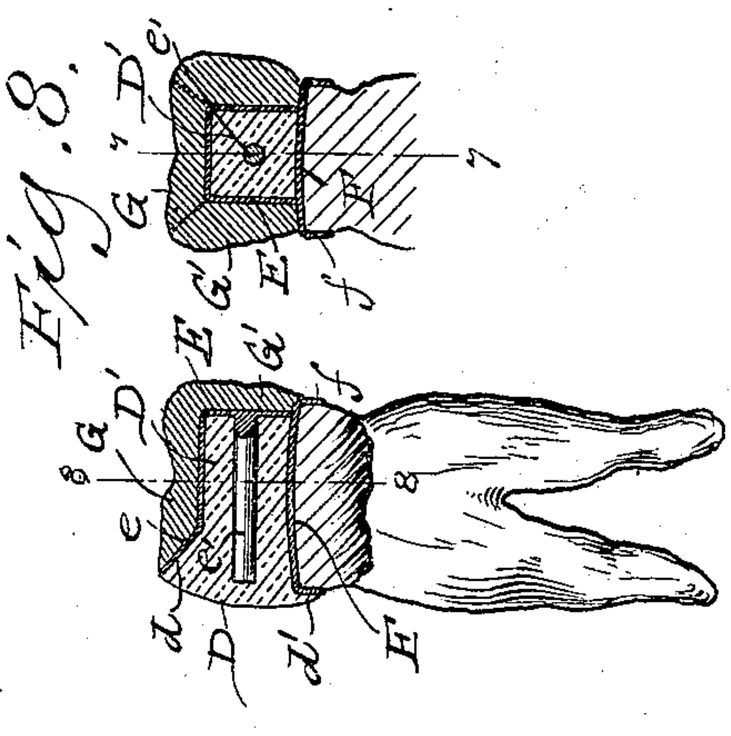
Fig. 7.


Fig. 8.

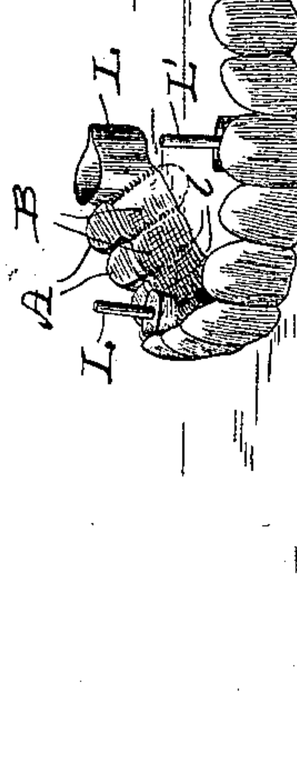
Fig. 9.

Fig. 10.

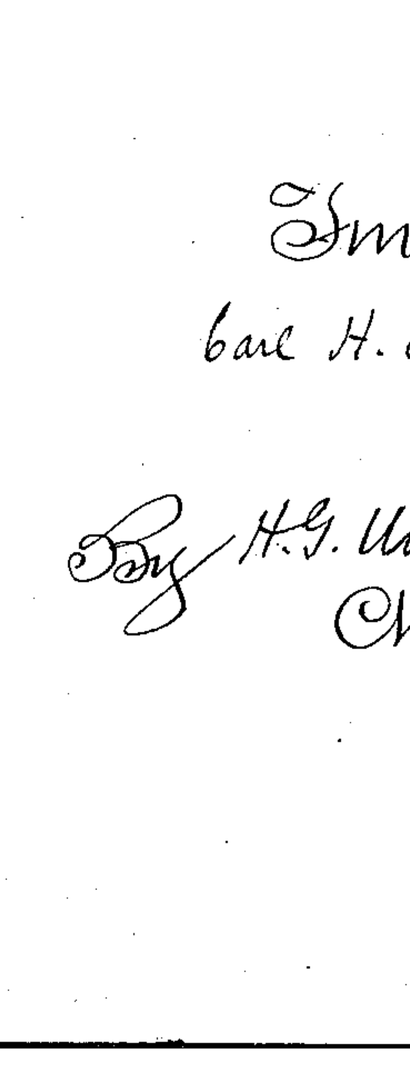
Fig. 11.

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UNITED STATES PATENT OFFICE.

CARL H. SEEGER, OF MANITOWOC, WISCONSIN.

ARTIFICIAL TOOTH.

SPECIFICATION forming part of Letters Patent No. 552,203, dated December 31, 1895.

Application filed December 7, 1891. Serial No. 414,308. (No model.)

To all whom it may concern:

Be it known that I, CARL H. SEEGER, a citizen of the United States, and a resident of Manitowoc, in the county of Manitowoc, and in the State of Wisconsin, have invented certain new and useful Improvements in Artificial Teeth; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in the construction of artificial teeth, and relates more particularly to improvements in what is known in the art as "crown and bridge work."

The various features of my invention will be more fully hereinafter described, and pointed out in the appended claim.

In the accompanying drawings, illustrating my invention, Figure 1 is a sectional view of an artificial tooth constructed in accordance with my invention, and adapted for use in connection with other teeth to form a bridge. Fig. 2 is a sectional view of the porcelain front or body of the tooth. Fig. 3 is a similar section of the metallic backing for the same with an attached metallic grinding portion. Fig. 4 is a rear elevation of the part illustrated in Fig. 2. Fig. 5 is a similar view of the part shown in Fig. 3. Fig. 6 is a sectional view of the metallic grinding portion. Fig. 7 is a sectional view taken on line 7 7 of Fig. 8 of a tooth-crown constructed in accordance with my invention as applied to a single tooth—in this instance a molar. Fig. 8 is a vertical cross-section of the same on line 8 8 of Fig. 7. Fig. 9 is a side elevation of the porcelain facing and body portion detached. Fig. 10 is an inverted plan view of the metallic backing or shell for same. Fig. 11 is a perspective view of a series of teeth embodying my invention and secured together ready to be placed upon and attached to the remaining teeth or roots and forming a complete bridge.

The principal object of my invention is to provide an improved artificial tooth for crown and bridge work of such construction that all or substantially all of the artificial tooth which is exposed to view shall be of porcelain, while at the same time a suitable metallic backing is provided for supporting said porcelain portion in position.

In the aforesaid drawings the first six figures represent my improvements as applied to bridgework, while Fig. 11 represents a complete bridge.

In said figures, A represents a body portion of porcelain shaped upon one side to correspond in size and contour with the natural tooth and provided with a projecting portion A′ upon its inner side. A metallic backing B is provided with a recess B′ of a size and shape to correspond with the projection A′. A pin *b* is provided upon the inner surface of the metallic backing B, and is arranged to fit into a tubular recess or passage *a* extending from the rear surface of the projection A′, which recess or passage preferably extends well toward the front or outer surface of the porcelain portion A of the tooth.

In preparing this form of teeth for use in the construction of bridgework, I first prepare the metallic grinding or wearing portion C of the tooth, forming the grinding-surface of the same in such a manner as to cause it to properly articulate with the opposed tooth of the opposite jaw, and forming its other surfaces so as to conform to the contour of the surfaces of the porcelain part A and the metallic backing B.

As shown in the drawings, the body portion A is formed with an outwardly-beveled surface *a′* adjacent to the metallic grinding or wearing portion C, and the said metallic wearing portion is provided with a corresponding surface *c* and is thus caused to extend across the entire grinding-surface of the tooth, so that said surface is formed entirely of metal, and at the same time the metal is effectually concealed from view. After the grinding or wearing portion C of the tooth has been thus fitted it is joined securely to the surface of the backing B by solder, when the body portion A and said backing are secured together by means of cement applied to the abutting surfaces of the projection A′ and the backing B, and of the pin *b* and the recess *a*, respectively. The series of teeth are then secured together by means of solder *l* applied to their adjacent inner edges, and the usual caps and anchoring-pins L L and L′ L′ respectively. Now suppose it is desired to apply my improvements to a single tooth—for instance, to a molar—so as to form a crown, as in Figs. 7 to 10 inclusive. For this purpose

a body portion D is provided, said body portion having a projection D′ arranged to extend across nearly the entire crown of the tooth. A backing E is constructed with a recess E′ adapted to fit over the projection D′, as in the form first described. In this form also the body part D is provided with an inclined surface *d* adjacent to the grinding or wearing portion of the tooth and the backing E is provided with a correspondingly-inclined surface *e*, and a pin *e′* is located upon the inside of the recess E′ and arranged to engage a recess or passage in the body portion D, in the manner before described. In adapting this form of my improvement to the crown of a tooth, I first fit a suitable cap F, having a marginal flange *f*, to the top of the root, and after said cap has been properly fitted I solder the backing E thereto, as has been before described. I then form the grinding or wearing portion G of the tooth in the manner before described, and preferably provide side portions G′ G′, arranged to extend downward upon the inner and side surfaces of the backing E. This portion G is then soldered upon the backing, and the porcelain portion D is then cemented to the metallic portion in the same manner as with the first-described form and the completed crown is secured upon the root by cement.

As a further improvement, the porcelain body D is preferably provided with a projecting flange *d′*, adapted to cover and conceal the flange *f* of the cap F upon the outer surface of the tooth.

It will be observed that in every case I perform the operations of soldering the metallic parts together entirely before the porcelain body is secured thereto. By this method I secure a much more durable crown or bridge, from the fact that the cracking or checking of the porcelain due to the application of heat is entirely avoided, while the liability of discoloration of the porcelain surface due to this cause is overcome, and a much better appearance is insured.

By my improvements I am furthermore enabled to provide much more natural looking teeth than those in which the metallic backing or foundation and the metallic grinding surfaces are visible, while at the same time all the strengthening and wearing qualities that may be derived from the metallic parts are likewise retained.

The several shapes or styles of teeth, together with their corresponding backings, may obviously be manufactured and kept in stock, and instead of having to construct the backing for the teeth whenever they are prepared for use it will only be necessary to select the proper tooth and its corresponding backing and then to form and apply the grinding or wearing portion, when the whole may be cemented firmly together. In this manner much labor is saved, and the process of constructing a single crown or a series constituting a bridge is very materially simplified.

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

An artificial tooth comprising a body portion shaped upon its outer side to correspond in size and contour with the natural tooth, and provided with an angular projecting portion upon its inner side, intermediate of its upper and lower ends and having a horizontal recess extending inwardly from the rear surface of said intermediate projecting portion, a metallic backing provided with a horizontal and an angular portion corresponding exactly in shape to the contour of said intermediate projecting portion and having a forwardly projecting pin on its inner surface for engagement with said recess, said backing and pin being cemented to said projecting portion and recess, and a metallic grinding or wearing portion soldered to the horizontal portion of said backing and conforming at its front end with the adjacent projecting portion of the tooth body, behind which it is wholly concealed, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Manitowoc, in the county of Manitowoc and State of Wisconsin, in the presence of two witnesses.

CARL H. SEEGER.

Witnesses:
C. B. TROST,
FRANK J. TROST.