

No. 652,047.

Patented June 19, 1900.

N. T. SHIELDS & G. F. JERNIGAN.

ARTIFICIAL TOOTH.

(Application filed Sept. 23, 1899.)

(No Model.)

Fig. 1

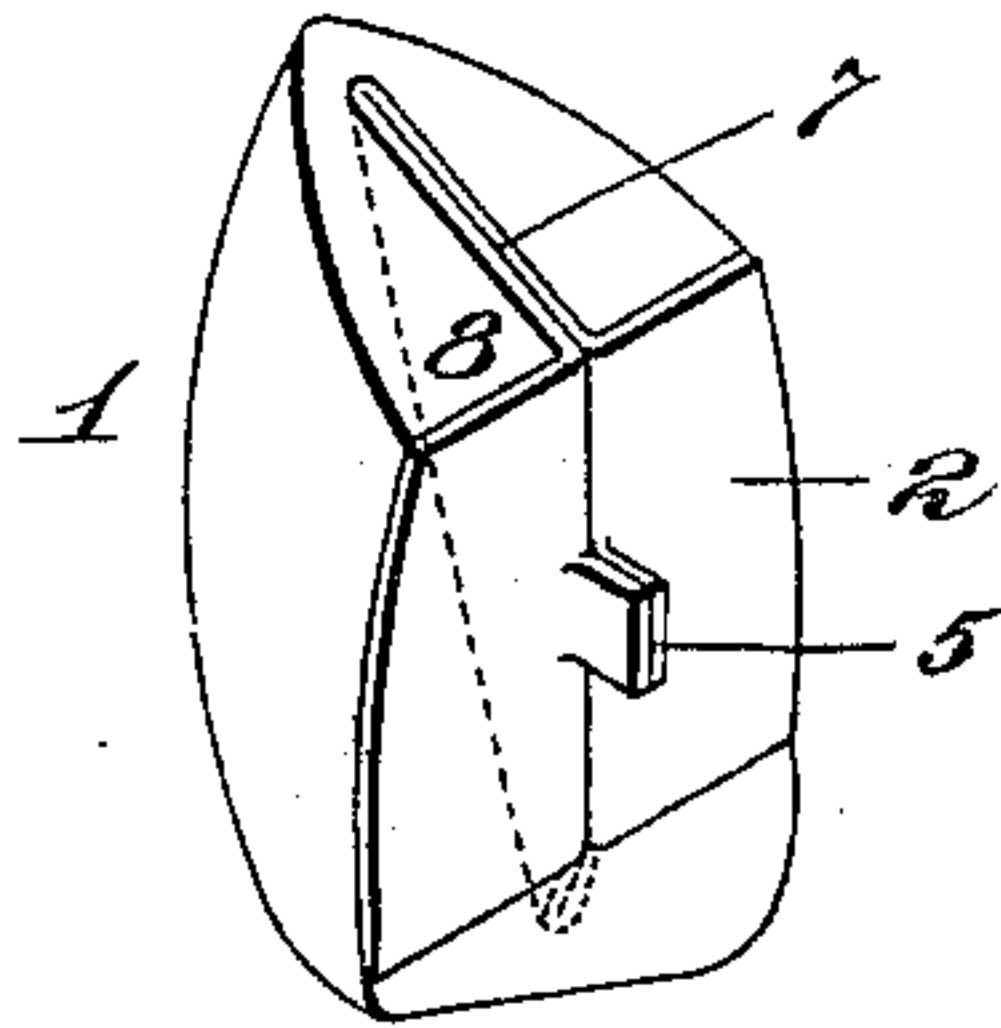


Fig. 2

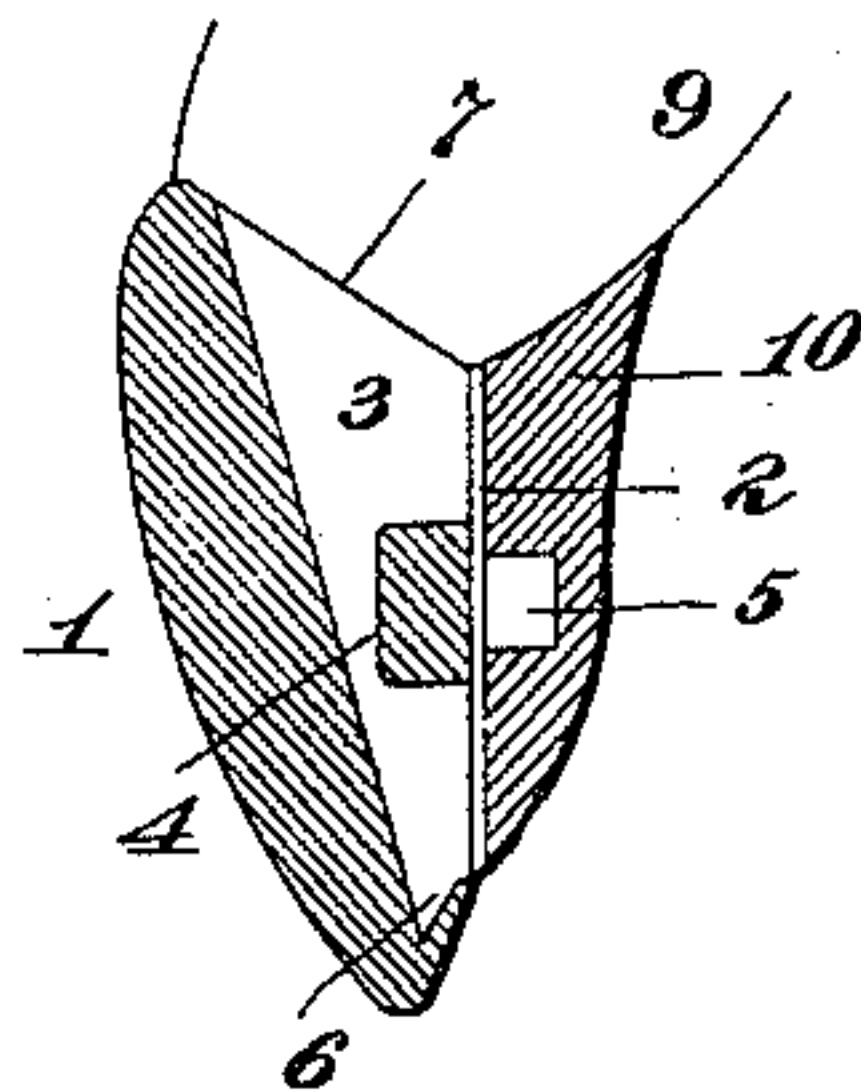


Fig. 3

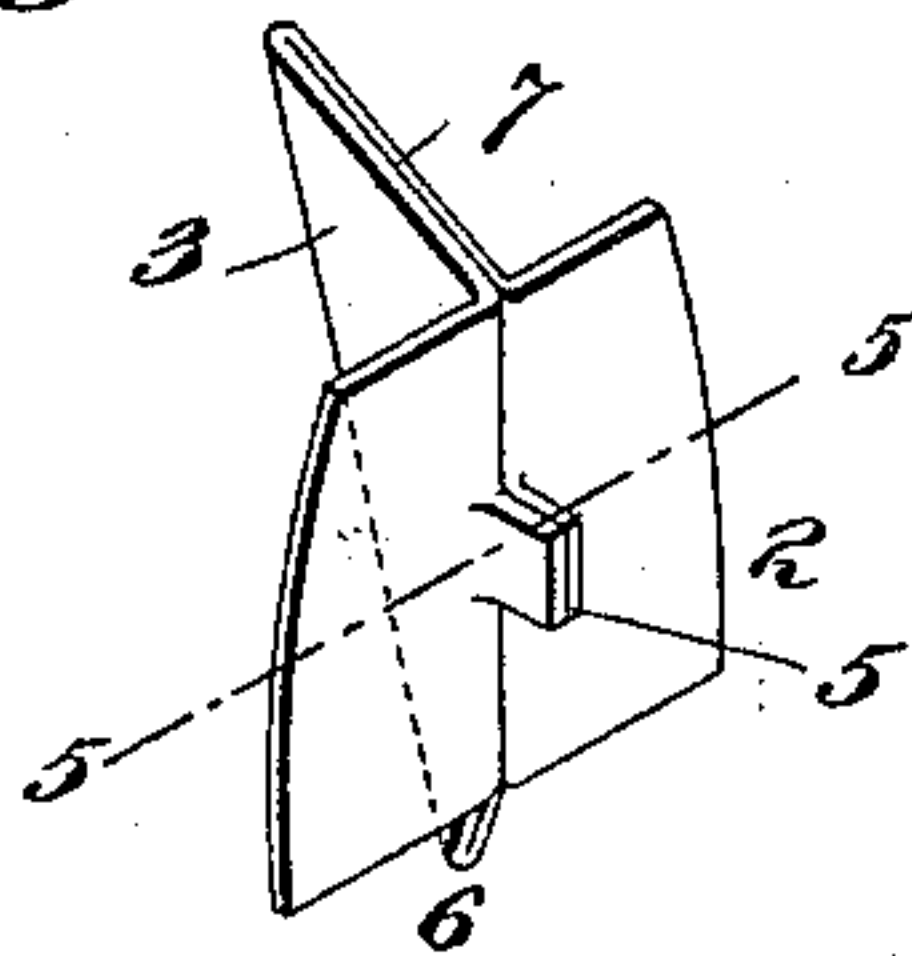


Fig. 4

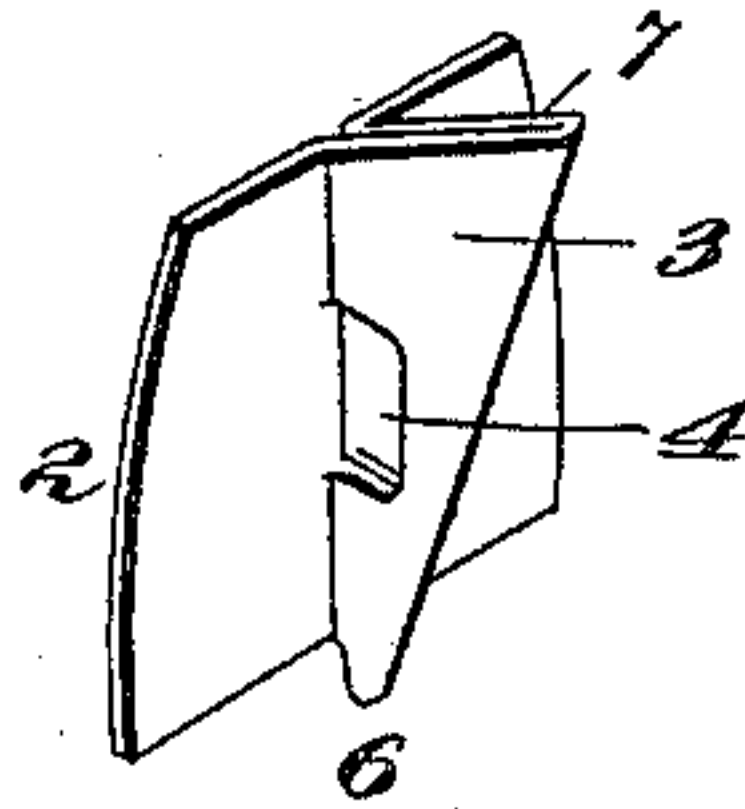
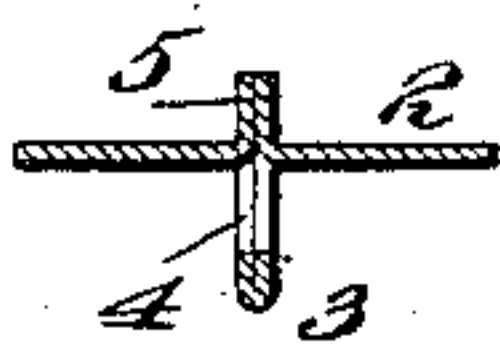


Fig. 5



Witnesses:

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UNITED STATES PATENT OFFICE.

NELSON T. SHIELDS AND GEORGE F. JERNIGAN, OF NEW YORK, N. Y.

ARTIFICIAL TOOTH.

SPECIFICATION forming part of Letters Patent No. 652,047, dated June 19, 1900.

Application filed September 23, 1899. Serial No. 731,406. (No model.)

To all whom it may concern:

Be it known that we, NELSON T. SHIELDS and GEORGE F. JERNIGAN, citizens of the United States, residing in the borough of Manhattan, city of New York, State of New York, have invented a certain new and useful Improvement in Artificial Teeth, of which the following is a description.

Our invention relates to various new and useful improvements in artificial teeth intended either for crownwork, bridgework, metal-plate work, or any other artificial dentures requiring soldering; and the object of our invention is to provide an improved artificial tooth which, while permitting it to be secured in place with great firmness, shall at the same time be cheap to manufacture, of great strength, and of improved appearance.

The improved artificial tooth which we have invented is provided with a suitable metal backing so intimately connected with the tooth during its process of manufacture as to constitute practically a part thereof, and said backing offers a very much larger surface for the engagement of the solder than is now possible, whereby the tooth will be secured in position with great firmness. We prefer to make this backing of platinum or some other white metal, and we do not extend it clear to the cutting or grinding edge of the tooth, whereby the transparent brilliancy of the completed article will not be affected. In order to secure the backing referred to firmly in place, we form integral therewith a longitudinal rib or keel, which extends lengthwise of the tooth throughout substantially its entire portion almost to the very extreme cutting or grinding edge, and the composition of the tooth is molded upon the said rib or keel in such a way that when the tooth is baked the metal will be rendered practically homogeneous with the tooth composition. By thus mounting a longitudinal rib within the tooth we very materially strengthen the same and overcome the possibility of accidental breakages in use.

The particular construction of our invention, the features of novelty therein, and the resulting objects will be more clearly understood from the following detailed description, reference being had to the accompanying

drawings, forming a part of this specification, and in which—

Figure 1 represents a perspective view from the rear of an incisor made in accordance with our invention; Fig. 2, a longitudinal section of the same, showing the tooth applied in place to a foundation; Fig. 3, a perspective view of the backing-plate and rib removed; Fig. 4, a similar view of the same, viewed from the opposite side; and Fig. 5, a section on the line 5-5 of Fig. 3.

In all of the above views corresponding parts are represented by the same numerals of reference.

1 represents an artificial tooth which is of the desired form and size and which is made of any suitable hard enamel-like composition. We illustrate an incisor; but obviously the invention may be applied to other teeth.

2 represents the plate, which is secured on the back surface of the tooth during the process of manufacture thereof, as we will explain. This plate is formed with an integral rib or keel 3, which extends longitudinally of the tooth. Preferably the plate 2 and the rib 3 are made integral of a single piece of sheet metal, such as platinum, the rib being formed, as shown in Fig. 5, by giving to the sheet of metal a central fold. In order that the plate 2 may be held firmly in place, we prefer to form an opening 4 in the rib 3, whereby when the tooth is molded with the rib in place therein the composition of the tooth will extend through said opening. Instead of providing an opening 4 in the rib for this purpose the said rib may be corrugated or otherwise roughened, whereby the composition of the tooth will intimately engage therewith, or instead of employing a single opening 4 in the rib a plurality of openings may be formed therein. Preferably the metal removed from the opening 4 is turned up, as shown in Fig. 5, to form a projection 5; but this projection may be dispensed with, if desired. The rib 3 is provided with an integral toe or extension 6, which extends almost to the extreme cutting or grinding edge of the tooth, as shown, and which very materially strengthens the same. Since this toe or extension projects actually within the composition of the tooth, it further assists in holding the plate 2 rigidly in place. The edge 7 of the rib 3 opposite to

the toe 6 extends flush, or approximately so, with the cervical end 8 of the tooth, whereby when the tooth is to be secured in place to a suitable foundation 9 the soldering metal 5 will follow the line of the edge 7 and assist in holding the tooth in place.

In manufacturing our improved teeth we mold the composition in the proper form over the rib 3 and in intimate contact with the 10 plate 2, this being performed in any suitable way. After the teeth have been molded they are baked, so as to harden the composition, and upon removal from the oven and cooling it will be found that the plate 2 will be very 15 intimately secured in position. As a matter of fact we have found in practice that it is impossible to strip the plate 2 from the teeth by means of a sharp instrument. In applying the tooth in place the edge 7 is first 20 ground to the required angle, the tooth is applied to the proper foundation 9, and the gold solder 10 is then run in place. As we have before said, this solder follows to a certain extent the line of the edge 7 of the rib 3, so 25 as to assist in the fastening of the tooth. Where a very neat joint is required, a small strip of gold may be placed over the cervical end 8 of the tooth and fixed to the projection 5, so that the very slight joint which would 30 otherwise appear between the cervical end 8 and the foundation 9 will be closed.

Instead of making the plate 2 with the rib 3 in one piece, as described, these elements may be formed in any other way—such, for 35 instance, as by the use of two pieces of sheet metal bent at right angles, each piece constituting one-half of the plate 2 and one-half of the rib 3.

Having now described our invention, what 40 we claim as new, and desire to secure by Letters Patent, is as follows:

1. As a new article of manufacture, an artificial tooth formed with a substantially-flat metal plate on the rear surface thereof baked 45 in the porcelain, said plate being formed with an integral central rib extending therefrom at right angles within the tooth and tapering toward the grinding edge thereof, said rib having a projecting toe which extends be- 50 yond the line of said plate toward the cutting or grinding edge of the tooth, substantially as set forth.

2. As a new article of manufacture, an artificial tooth formed with a substantially-flat metal plate on the rear surface thereof baked 55 in the porcelain, said plate being formed with an integral central rib extending at right angles thereto and embedded in the tooth, and said rib being formed with an opening there- 60 in into which extends the tooth composition, substantially as set forth.

3. As a new article of manufacture, a back- ing-plate for artificial teeth made of a single piece of sheet metal longitudinally folded at 65 its center to form a tapered rib, and an opening extending through said rib, substantially as set forth.

4. As a new article of manufacture, a back- ing-plate for artificial teeth made of a single 70 piece of sheet metal longitudinally folded at its center to form a tapered rib, and an opening extending through said rib, the metal re- moved from said opening being bent oppo- sitely to form a projecting lug, substantially 75 as set forth.

This specification signed and witnessed this 20th day of September, 1899.

NELSON T. SHIELDS.
GEORGE F. JERNIGAN.

Witnesses:

FRANK L. DYER,
S. O. EDMONDS.