(Model.)

M. RYNEAR.

ARTIFICIAL METAL TOOTH CROWN CAP.

No. 305,238. Patented Sept. 16, 1884.

Fig. 1.

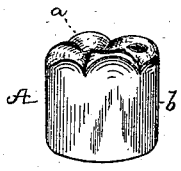


Fig. 2.

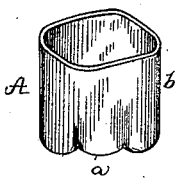


Fig. 3.

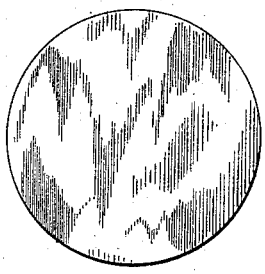


Fig. 4.

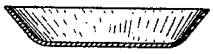


Fig. 5.

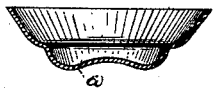
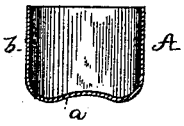


Fig. 6.



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UNITED STATES PATENT OFFICE.

MOSES RYNEAR, OF NEW YORK, N. Y.

ARTIFICIAL METAL TOOTH-CROWN CAP.

SPECIFICATION forming part of Letters Patent No. 305,238, dated September 16, 1884.

Application filed August 6, 1883. (Model.)

To all whom it may concern:

Be it known that I, MOSES RYNEAR, of New York city, in the county and State of New York, have invented a new and useful Improvement in Caps for Forming Artificial Tooth-Crowns, of which the following is a specification.

It has been found desirable in setting crowns upon the roots of natural teeth to use for the molars hollow metallic crowns or shells, preferably of gold or platinum, which are formed and fitted to the roots, and, being filled with a suitable cement, are attached permanently and directly thereto. Such metallic crowns may also be employed for bicuspids; but for the canines and incisors, and sometimes for the bicuspids porcelain or other non-metallic crowns are used, which are attached to caps first fitted to the roots and afterward permanently attached to said roots.

This invention relates to the former class of artificial tooth-crowns—those made of metal and employed more especially for the molars and bicuspids; but the invention is also applicable to crowns for canines and incisors, if it is found desirable to use metallic crowns for such teeth. Such metallic crowns have heretofore been formed and fitted to the natural roots, more generally by first fitting a metallic band around each root at its upper end after it has been cut down to a level with the gum, which band, after being so fitted to the natural contour of the root, is removed from the mouth and soldered, forming a complete ring. This ring forms the sides of the crown, the top of which, forming the grinding-surface of the tooth, is a separate piece soldered to such ring. This method of forming and fitting the metallic crowns is, however, an operation requiring considerable time and nice manipulation to insure its successful performance, and the resulting artificial tooth-crowns are frequently misshapen.

The object, therefore, that I have in view is to provide means for facilitating the work of setting metallic artificial tooth-crowns, insuring a shapely crown, enabling a much better fit of the crown to the root to be made, and with the expenditure of less time than heretofore, the result being a more perfect and efficient setting and a less costly one. This I accomplish by providing the dentist with metallic caps already formed in the shape of artificial teeth or approximating such shape. Having selected caps of the proper size and shape the task of fitting and securing them to the natural roots becomes one of easy successful performance. This is the case by reason of the uniform flexibility throughout of the cap. Where a cap contains a soldered joint it is stiff at that point and cannot be readily molded about the tooth; but this is not so with my caps, which being entirely of the same piece are of the same character at every part and can be placed upon the tooth and molded thereon to suit its contour. Another advantage is the doing away with the galvanic action, which is set up between the two metals at the joint of a soldered tooth-crown by the acids of the mouth, and which is injurious, as it destroys the metal. There being but one kind of metal in my tooth-crown, no such action can occur.

The invention consists in the peculiar cap as a new article of manufacture.

In the accompanying drawings, forming a part hereof, Figure 1 is a perspective view from the top of a cap for forming a crown for a molar; Fig. 2, a perspective view from the bottom of the same; Fig. 3, a top view of the blank from which the cap is formed; Fig. 4, a sectional view of the blank after the first stamping operation; Fig. 5, a sectional view of the blank after the stamping of the grinding-surface; and Fig. 6 a sectional view of the drawn cap. All the views are upon an enlarged scale.

A is the metallic cap, which is a shell formed from one piece of sheet metal, preferably gold or platinum, by stamping and drawing without seam or lap. It has the shape of a natural tooth-crown, or approximates such shape closely. The grinding-surface *a* is made exactly like a natural tooth, while the side walls, *b*, of the cap are parallel or have an outward flare reverse to that of a natural tooth to permit of the drawing of the cap by means of solid dies. In fitting the caps to the teeth-roots the side walls of the caps will be given the proper bevel to form a washway between the teeth, and this may be done by pinching the caps inwardly at their open ends without cutting the caps or by cutting them; but the method of applying the peculiar caps to natural teeth-roots forms no part of the invention

herein claimed, the same being included in a separate application for patent. The cap may be formed with a small hole in its top to permit the escape of superfluous cement, or it may be left to the dentist to make this opening.

In forming my peculiar caps a circular blank, Fig. 3, is first cut or punched from sheet metal, preferably gold or platinum, and this blank is then stamped down in the center, giving it a dish shape, as shown in Fig. 4. The dish-shaped piece is then stamped between male and female dies having the exact shape of the grinding-surface of a tooth, the result being the partly-formed cap shown in Fig. 5. This partly-formed cap is then forced through an open drawing-die by a male die having the shape of the completed cap, drawing the side walls of the cap out smooth without wrinkles. The edge of the cap at its open end is then cut off even, and this may be done in the drawing-die by a cutting-shoulder on the male or forcing die. It is evident that the stamping of the grinding-surface might be performed after the drawing of the sides of the cap; but I prefer the method before described. The dies for forming these several operations form no part of the invention herein claimed, and will be included in a separate application for patent.

The process described of forming caps of this character by stamping and drawing is also reserved for protection by another patent, and hence is not herein claimed.

The result of these operations is a metallic cap made in one piece, without seam or joint, and having the shape of the crown of a natural tooth, with the exception that its side walls are parallel or have a flare reverse to that of a natural tooth.

These caps will be made in a number of sizes and shapes for each class of teeth, so that little trouble will be experienced in fitting and securing them to the natural roots, and a good substitute for the natural teeth will be produced.

I am aware that it has been proposed to make cup-shaped sockets or hollow shells in the form of human teeth for forming artificial tooth-crowns; but such crowns have been made in two pieces, as before explained, or they have been formed in one piece by cutting and bending sheet metal into shape, and completed by soldering meeting edges. Both these forms, however, possess the disadvantages already explained.

I am not aware that a seamless metallic cap in the shape of a natural tooth has before been produced and used for forming an artificial tooth-crown.

What I claim is—

As a new article of manufacture, a seamless metallic cap for forming an artificial tooth-crown, having the shape of a natural tooth upon its grinding-surface, substantially as set forth.

This specification signed and witnessed this 23d day of May, 1883.

MOSES RYNEAR.

Witnesses:

RICHD. N. DYER,

EDWARD H. PYATT.