

(No Model.)

A. T. McMILLIN.

MEANS FOR CONSTRUCTING SEAMLESS METAL TOOTH CROWNS.

No. 570,044.

Patented Oct. 27, 1896.

Fig. 1.

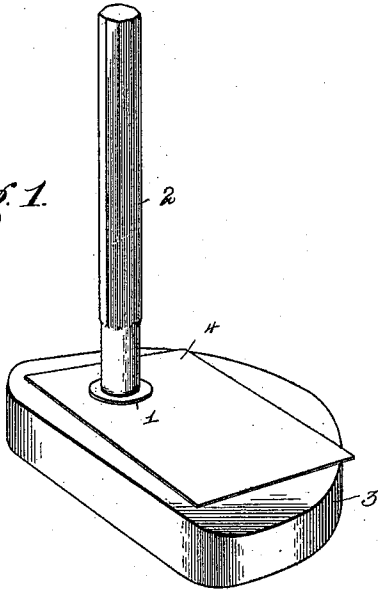


Fig. 2.

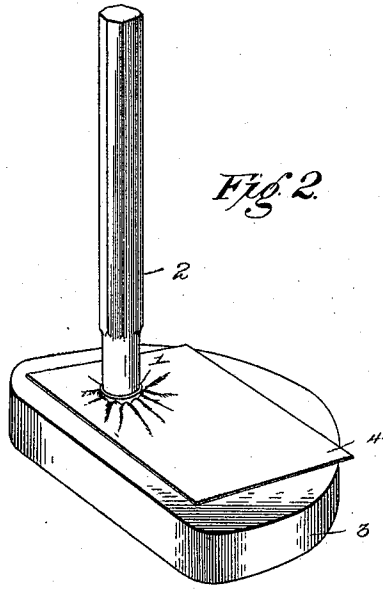


Fig. 3.

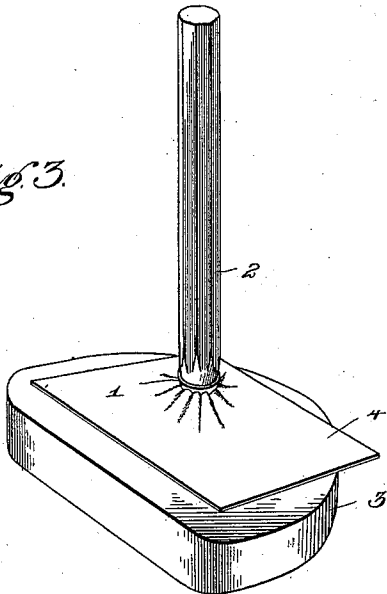


Fig. 4.

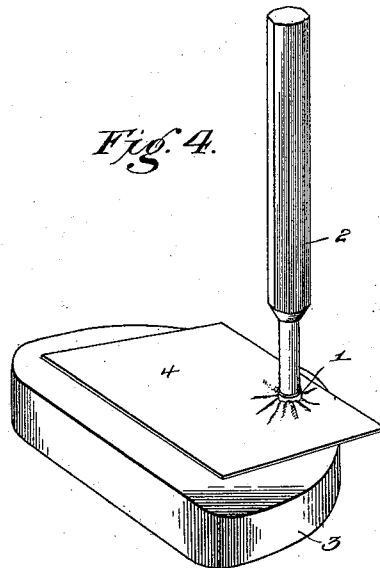
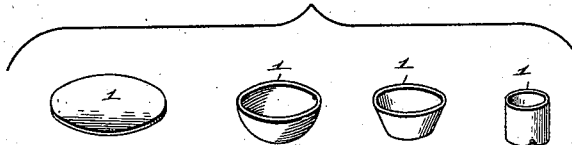


Fig. 5.



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Witnesses.

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UNITED STATES PATENT OFFICE.

ANDREW T. McMILLIN, OF PARIS, TENNESSEE.

MEANS FOR CONSTRUCTING SEAMLESS METAL TOOTH-CROWNS.

SPECIFICATION forming part of Letters Patent No. 570,044, dated October 27, 1896.

Application filed May 24, 1895. Serial No. 550,563. (No model.)

To all whom it may concern:

Be it known that I, ANDREW T. McMILLIN, a citizen of the United States, residing at Paris, in the county of Henry and State of Tennessee, have invented a new and useful Means for Constructing Seamless Metal Tooth-Crowns, of which the following is a specification.

This invention relates to dentures, and particularly to tooth-crowns of metal, and aims to provide improved means for manufacturing the same from a single blank without the liability of rupture commonly experienced by dentists in making seamless metal crowns after the process in vogue. The general way of making seamless metal crowns is to stamp a blank between male and female dies, and if necessary draw the partially-completed crown, so as to attain the required finished shape. This operation is not perfectly satisfactory, because of the frequent rupture of the metal blank during the stamping process, and chiefly is this the case when the said blank is not thoroughly annealed prior to the shaping of the same into the cap or tooth-crown. These objections are obviated by the present invention, which consists, essentially, in the provision of a bed of comparatively soft metal, a sheet of rubber to be placed upon the bed, and a series of male dies of graduated sizes and adapted to be forced into the said bed in the order of their graduation, so as to gradually conform the metal blank into the required finished shape.

To make clear the nature of the invention, so that its advantages may be fully appreciated, attention is directed to the drawings hereto attached, in which—

Figure 1 is a perspective view illustrating the relative disposition of the parts prior to shaping the blank. Fig. 2 is a view similar to Fig. 1 after the completion of the first step in the process of forming the tooth-crown. Fig. 3 is a detail view showing a further step in the process of constructing the tooth-crown. Fig. 4 illustrates a further step. Fig. 5 illustrates the different forms assumed by the blank during the practice of the invention before the finished tooth-crown is attained.

The metal blank 1, which may be of gold, platinum, aluminium, or any metal not affected by the acids of the mouth, will be of

the proper size, according to the dimensions of the finished crown, and will be preferably of circular form.

The numeral 2 indicates a series of male dies of graduated sizes, whereby the blank is gradually swaged into the required form. The block or bed 3, of comparatively soft metal, and which is essential to the successful practicing of the invention, is of lead or some composition thereof, and which can be readily indented by the dies 2 in the operation of the invention. The rubber sheet 4 is of the character commonly used in the art of dentistry for damming the teeth in certain operations where it is essential to exclude moisture from the tooth being treated.

According to the principles of the present invention the blank 1 to be fashioned into a tooth-crown is placed upon the bed or block 3, with the rubber sheet 4 between it and the said bed or block, and the die 2, to give the initial shape to the blank, is placed upon the latter and sufficient force is exerted upon the said die to partially embed its lower end into the block or bed 3, thereby causing the blank 1 to assume a shape corresponding to the working end of the said die. After this step the second die of the series, which has its working end smaller than the first die, is applied to the partially-shaped blank and sufficient pressure is brought to bear upon the second die to cause its working end to imprint the bed or block 3 and give to the blank the required shape, which is that corresponding to the working end of the die. After this operation the second die is replaced by a third male die whose working end is of smaller dimensions, and the blank is fitted to the end of the third die and is impressed into the bed or block 3 by the exercise of proper force upon the die. In these several steps it is to be remembered that the rubber sheet is interposed between the blank and the bed or block 3, so as to cushion said blank and prevent injury thereto during the swaging process. The number of dies 2 successively employed in the shaping of the tooth-crown will depend upon the size of the latter when finished, the canines and incisors requiring a greater number of dies than the bicuspid and the latter more than the molars. The finishing-dies will be provided with cusps to give to the biting-

surface of the crown the appearance of the natural tooth, which is common in the art of dentistry.

10 In order to obtain the best results, each die
5 of the series required for the formation of a tooth-crown will in turn be placed upon a new surface of the block or bed 3, thereby causing the blank to hug closely the sides of the die.

10 In practicing the invention it is to be understood that various changes in the form, proportioning, and constructing of the bed or block and the dies may be resorted to without departing from the principle or sacrific-
15 ing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

The means for constructing seamless metal tooth-crowns substantially as herein set forth, the same comprising a bed of comparatively 20 soft metal, a sheet of rubber to be placed upon the bed, and a series of male dies of graduated sizes adapted to be forced into the said bed in the order of their graduation so as to gradually conform the metal blank into the 25 required finished shape, substantially in the manner set forth.

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

ANDREW T. McMILLIN.

Witnesses:

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A. B. MITCHENER.