

S. E. WILHELM.
METHOD OF MAKING SHELL GOLD CROWNS FOR TEETH.
APPLICATION FILED NOV. 16, 1903.

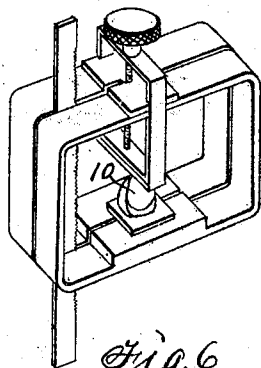
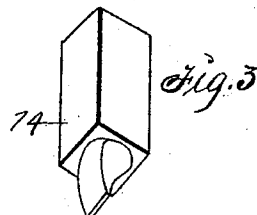
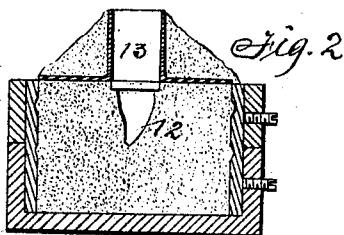


Fig. 4

Fig. 5

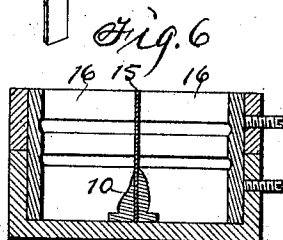
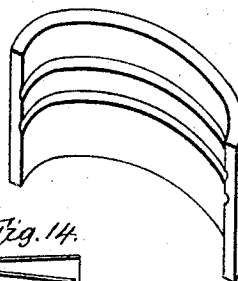
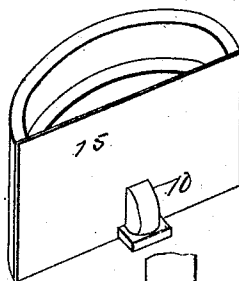
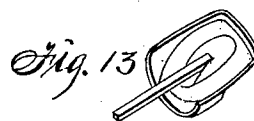
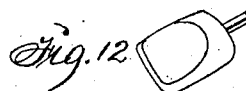
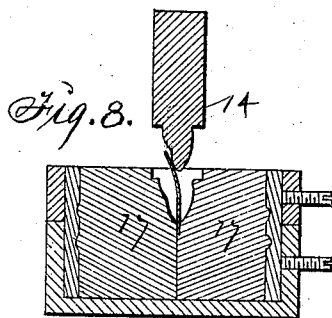
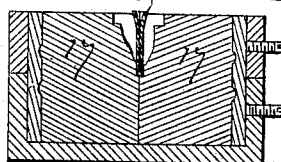


Fig. 6

Fig. 7



Witnesses:
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UNITED STATES PATENT OFFICE.

SAMUEL E. WILHELM, OF SAC CITY, IOWA.

METHOD OF MAKING SHELL GOLD CROWNS FOR TEETH.

No. 800,193.

Specification of Letters Patent.

Patented Sept. 26, 1905.

Application filed November 16, 1903. Serial No. 181,451.

To all whom it may concern:

Be it known that I, SAMUEL E. WILHELM, a citizen of the United States, residing at Sac City, in the county of Sac and State of Iowa, have invented a new and useful Method of Making Shell Gold Crowns for Teeth, of which the following is a specification.

Heretofore seamless gold caps have been produced by means of molds and the caps then pressed into shape in dies to produce gold-shell crowns for teeth.

My object is to make gold shell crowns for teeth direct from flat gold plates; and my invention consists in the method of operating an apparatus adapted for the purpose, as hereinafter set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which—

Figure 1 shows a tooth made of plaster from an impression. Fig. 2 is a sectional view of a mold in which an impression of the plaster tooth has been made in the sand in a common way. On top of the sand is placed a square form for casting a die. Fig. 3 is a perspective view of a metal male die cast in the mold. Fig. 4 is a perspective view of a device for sawing incisions in the plaster tooth preparatory for making a female die. Fig. 5 is a perspective view of a mold in three mating parts and a sheet-metal plate fitted to the plaster tooth that has incisions. Fig. 6 is a sectional view of the two-part mold, the plate, and the plaster tooth in position as required to cast a two-part female die. Fig. 7 is a sectional view of the two-part female die and a gold plate doubled and placed in the die preparatory to being subjected to the pressure of the male die. Fig. 8 is a sectional view that shows a gold plate in the female die for making a half-cap and pin crown. Fig. 9 is a perspective view of a shell-crown made from a doubled gold plate, as shown in Fig. 7. The overlapping surplus of the gold blank has been removed, so that the surface is even and smooth. Fig. 10 shows a plate adapted for reinforcing a shell-crown by soldering it thereto. Fig. 11 is a sectional view of a shell-crown reinforced. Fig. 12 is a front view, and Fig. 13 a back view, of a half-cap and pin crown. Fig. 14 shows a gold-plate blank bent double as required to be placed in the female die.

The numeral 10 designates a plaster cast

of a tooth, and 12 a mold in the sand made therewith in a common way. A matrix 13 is placed over the mold 12 and metal poured into the matrix and mold to produce a solid male die 14, adapted for use in swaging gold plate into shell-crowns, as hereinafter set forth.

To produce a two-part female die, it is necessary to make incisions in the plaster cast 10, and this is done by clamping it fast in the device shown in Fig. 4 and operating the saw-blade that extends therethrough. A flat plate 15 is then placed in position relative to a two-part flask 16, as shown in Figs. 5 and 6, and the plaster cast 10 and metal poured in to make a two-part metal female die 17.

To make a shell-crown by means of the male and female dies thus formed, a gold plate 18 is doubled and placed in the two-part female die, as shown in Fig. 7, and the male die pressed into the fold of the gold plate and female die as required to swage it into form, as shown in Figs. 9 and 11. The doubled swaged plate is then removed from the dies and the doubled edges trimmed and the edges of the crown united by brazing or in any suitable way.

To produce the forms shown in Figs. 10, 12, and 13, the same two-part female die and male die 14 are used in the same manner to shape a gold plate placed in the two-part mold without doubling it, as shown in Fig. 8.

Having thus described the purpose of my invention, the construction of the apparatus, and method of using it in making shell-crowns, its practical utility will be obvious to persons familiar with the art to which it belongs, and

What I claim as new, and desire to secure by Letters Patent, is—

The herein-described method of making gold shell crowns for teeth which mode or method consists essentially in doubling and placing a gold plate in a two-part metal female die, then pressing the male metal die upon the gold plate in the female die to swage it and then trimming off the doubled parts and then uniting the edges of the gold crown shaped in the dies, substantially as shown and described for the purposes stated.

SAMUEL E. WILHELM.

Witnesses:

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