G. F. REESE.

Dental-Plate Mold.

No. 200,760. Patented Feb. 26, 1878.

Fig. 1.

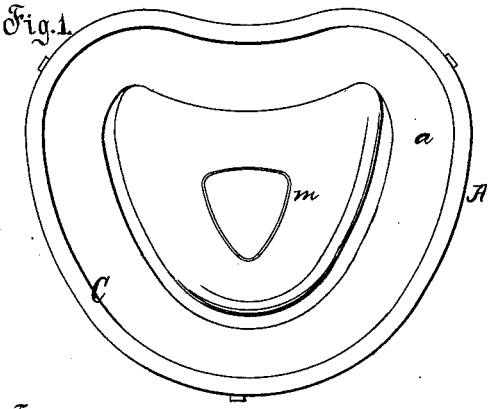


Fig. 2.

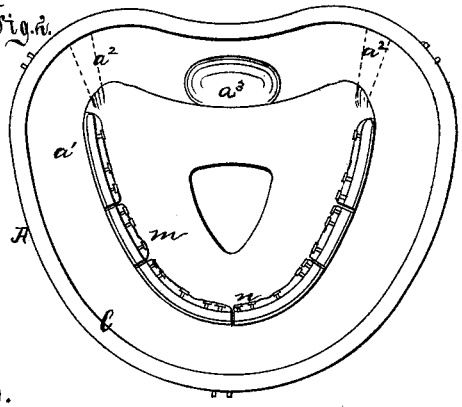


Fig. 3.

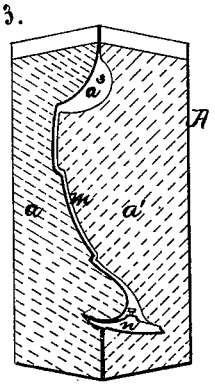


Fig. 5.

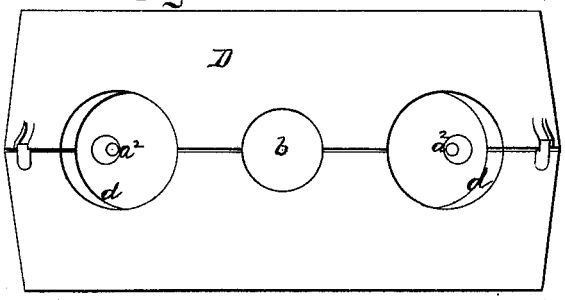


Fig. 6.

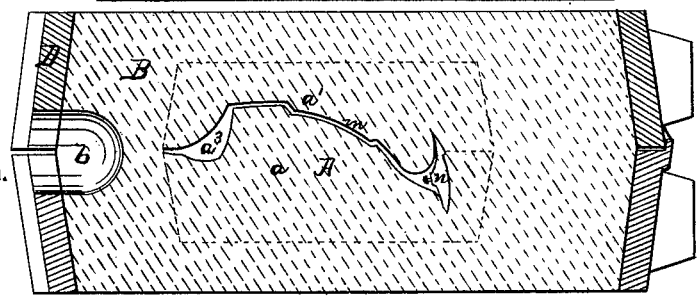
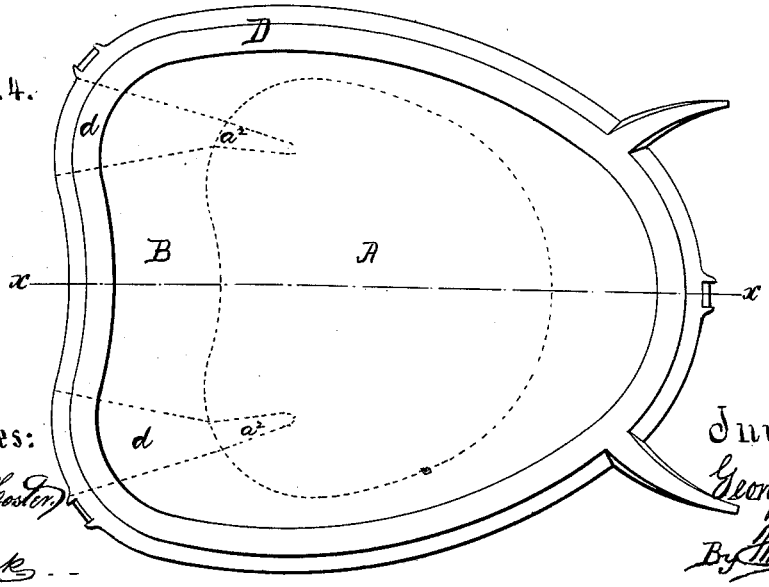


Fig. 4.



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GEORGE F. REESE, OF BROOKLYN, E. D., NEW YORK.

IMPROVEMENT IN DENTAL-PLATE MOLDS.

Specification forming part of Letters Patent No. **200,760**, dated February 26, 1878; application filed August 1, 1877.

To all whom it may concern:

Be it known that I, GEORGE F. REESE, of Brooklyn, E. D., county of Kings, in the State of New York, am the inventor of an Improved Mold for Dental Plates and similar castings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a mold for dental plates and other similar castings of metal; and it consists in a mold composed of an inner flask, in which is the matrix proper, formed separately and by itself, and an outer flask or mold, which envelops the said inner mold, together with the suitable ingates, as hereinafter described, for the purpose specified, and as more particularly recited in the claims.

Figures 1 and 2 are plans of the interior of the two sections of the inner mold containing the matrix proper, the mold being shown opened. Fig. 3 is a longitudinal central sectional view of the inner mold, the mold being closed. Fig. 4 is a side view of the completed mold, showing the outside envelope. Fig. 5 is a top or plan view of the same, showing the ingates. Fig. 6 is a longitudinal central sectional view of the completed mold on the line *x x*, Fig. 4, and showing the relative positions of the inner mold and its outer envelope.

In fabricating my mold I employ plaster-of-paris, as is usual in such cases, and the pattern used is the customary wax impression well known in dentistry.

A is the inner mold. This is formed in the usual manner, in the two sections a a^1.

I employ the metal rings or frame C to hold the plaster until it sets or hardens. This inner mold contains the matrix *m*, and is provided with the ingates a^2. The two sections of the frame C are made somewhat dishing or conical, so that they may be removed from the plaster mold when it is set or hardened.

In the matrix are placed the artificial teeth to which the plate is to be cast, in the usual way, as seen at *n*.

B is the outer mold or envelope. To form this I employ the frame D, made in two removable sections, as shown, to hold the plaster until it hardens.

In placing the inner mold within its envelope B, I proceed as follows: The mold A is thoroughly saturated with water, it being, of course, removed from the frame C. It is then held within the frame D, and the plaster to constitute the envelope is poured about it, so that such plaster entire surrounds it, as seen in Fig. 6. A continuation of the ingates a^2 is made through the envelope B by means of wax points or stems inserted in said ingates a^2, and extending outward through openings in the frame at *d*. The completed mold is now ready to be dried in a suitable oven.

Molds for dental plates have hitherto been constructed in two sections or halves—an upper and a lower. In drying the same in the oven, preparatory to casting, the two sections have been found to be exceedingly liable to shrink away from each other at their joint, and thus to not only increase the depth of the matrix, and thus give a thicker plate than is desired as the result of the casting, but also to make an opening or space between the two sections of the mold, communicating with the matrix, through which the molten metal will flow, thus giving an imperfect casting requiring great labor to finish.

It is evident that my mold, composed of the inner mold A incased in its outer envelope B, is intended to obviate these objections and difficulties, for the inner wet mold will at its outer surface, on being surrounded by the plaster envelope, as described, become assimilated with or adhere very closely to the incasing-plaster, and its two sections be held closely together; and that, upon being heated in the drying-oven, the envelope B will prevent the sections of the mold A from shrinking apart; or, in other words, the action of the heat in drying the entire mold will be prevented by the incasing-plaster B, which, in drying, will shrink tightly around and down upon the matrix plaster case A, from operating to open the seam or joint of the two sections of the said matrix-case A, or from otherwise disturbing the relative positions of the two sections of said case A.

I am, by means of my mold and its incasing-envelope, enabled to cast a very thin dental plate of metal, which is an accurate reproduc-

tion of the wax model, and requires but little labor to finish.

In the mold A, at a^3, I form a pocket in the matrix, just above the line of the intended casting, and communicating with the matrix. By means of this pocket a^3, when the metal is poured into the mold, I secure its even distribution and perfect filling in a fused state throughout the matrix, for the molten metal will overflow into the pocket a^3, and, being therein in greater bulk than throughout the thin plate formed in the matrix, will maintain its fused state for a longer time than the metal in the matrix, and will, by its heat, cause the metal in the matrix to flow evenly, and be uniformly and fully distributed throughout the mold, and thus form a perfect casting.

In the outer envelope, at b, I form a pocket or recess in the plaster, for the purpose of ascertaining when the mold is sufficiently dry in the oven. I place some of the unfused metal in this pocket when the mold is introduced into the drying-oven, and allow the mold to remain in the oven until this metal fuses in the said pocket. This is taken as an indication that the mold has dried sufficiently for the purposes of casting.

Heretofore, in dental molds, there has been no means provided for ascertaining definitely when the mold is sufficiently dry to be used for molding without injury to the mold or failure in the casting. By means of the pocket b in my mold it is evident that it can always be definitely known when the mold is properly dried.

It is not my intention to claim hereunder the peculiar process I employ to fabricate my improved dental mold, as it is my intention to claim the same under a separate application for Letters Patent; but I wish to limit this application to the mechanical structure only of my improved dental mold.

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

1. A mold for casting metal dental plates, composed of the inner mold A, in which is the matrix, and formed distinct by itself, and entirely incased by the envelope B, together with suitable ingates a^2, as described, and for the purpose specified.

2. In a mold for casting metal dental plates, composed of the inner mold A and its incasing-envelope B, having suitable ingates a^2, the pocket or recess a^3, communicating with the matrix, as and for the purpose specified.

3. In a mold for casting metal dental plates, the recess b in the envelope B which incases the inner mold A, as described, and for the purpose specified.

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