July 13, 1937. C. E. BECKER 2,087,014

TOOTH MOLD

Filed May 28, 1936

Fig. 1.

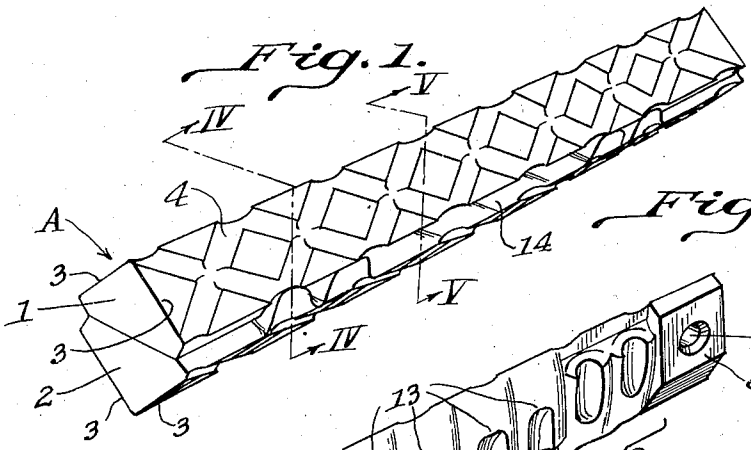


Fig. 2.

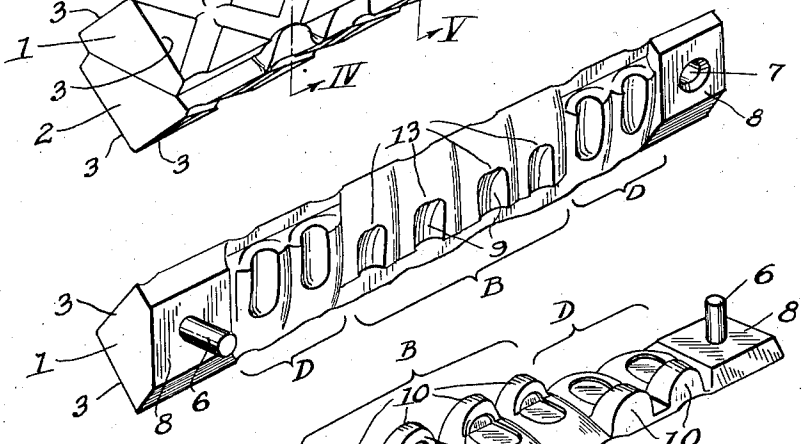


Fig. 3.

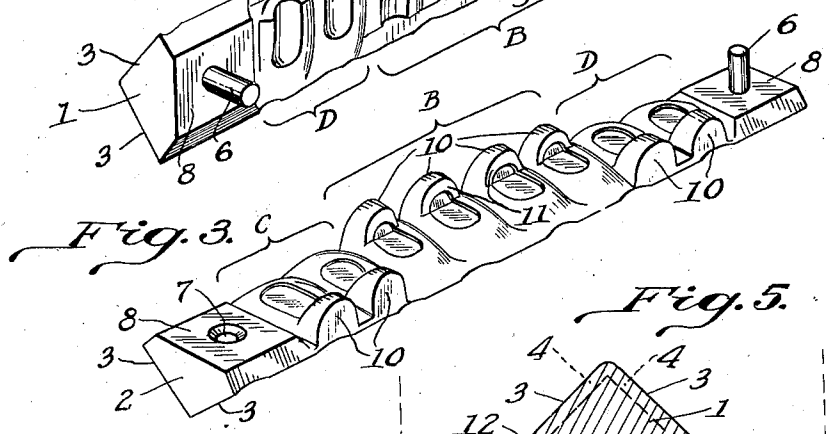


Fig. 4.

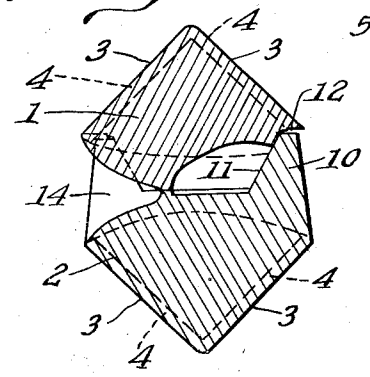
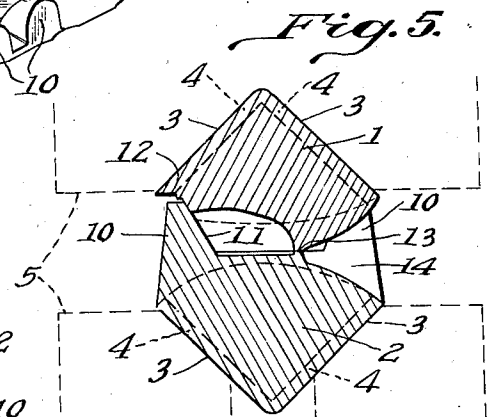


Fig. 5.



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TOOTH MOLD

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Application May 28, 1936, Serial No. 82,305

8 Claims. (Cl. 18—34.1)

This invention relates to molds, and has particular reference to molds of the type employed in the manufacture of artificial teeth, although in other aspects, the mold comprising the present invention may be employed in the manufacture of other cast articles or bodies.

One of the objects of the invention resides in the provision of a simple, efficient and improved mold so designed as to permit of rapid and accurate manufacture of artificial teeth, and wherein the mold consists of easily assembled separable sections which may be readily united to produce a composite mold having registering depressions or pockets in the opposed meeting faces of said sections and adapted for the reception of the moldable tooth-forming materials, and wherein the exterior side surfaces of the assembled mold sections are of such shape that when the mold is received within a press, the said sections will be held in secured relationship, relative movement thereof prevented, and the depressions or pockets maintained in exact registration.

Another object of the invention resides in the provision of an improved mold in which artificial teeth of perfect form may be produced and wherein the teeth will possess the form and articulation of natural teeth.

A further object of the invention resides in a tooth mold consisting of separable upper and lower parts with the tooth-forming pockets or cavities in each part disposed in oppositely arranged groups having interfitting abutments which, when the mold parts are assembled, preserve the alignment or registration of the pockets or cavities of said parts to positively preclude any relative motion between said parts which would tend to destroy or alter the intended form of the teeth cast in the mold.

A still further object of the invention resides in the provision of a tooth mold of simple, sturdy and inexpensive construction, adaptable for long periods of use without detrimental wear or deterioration, a mold devoid of removable locking winches or keys and a mold composed of but a minimum of parts.

For a further understanding of the invention, reference is to be had to the following description and the accompanying drawing, wherein:

Fig. 1 is a perspective view of the improved tooth mold comprising the present invention;

Fig. 2 is a perspective view, looking toward the bottom, of the top section of the mold;

Fig. 3 is a perspective view of the lower section of the mold;

Fig. 4 is a transverse sectional view on the line IV—IV of Fig. 1;

Fig. 5 is a similar view on the plane indicated by the line V—V of Fig. 1.

Referring more particularly to the drawing, A designates the improved mold in its entirety. In this instance, the mold is formed to comprise upper and lower sections 1 and 2 respectively, usually of metal.

The metallic bars constituting the upper and lower sections are of corresponding length and are formed to include reversely inclined, longitudinally extending, outer side surfaces 3, the latter being provided with a plurality of shallow intersecting grooves 4 which provide for the circulation of heating gases around the mold when the latter is positioned in the channels of a clamping press 5. One end of each of said bars is, in this instance, provided with a dowel pin 6, or other equivalent projection, which is adapted to be positioned within an opening 7, or other form of positioning depression, formed in the opposite end of each bar from the pin or projection 6, the ends of said bars being formed with meeting surfaces 8. Through the meeting of the dowel pins, or equivalent positioning projections, which may or may not be integrally formed with said bars, primary registration is obtainable between the separable sections.

Each bar or section, between the surfaces 8, is formed with a plurality of tooth-shaped pockets or cavities 9 which are adapted to register with similarly shaped pockets or cavities formed in the other complemental section. In the single form of the invention illustrated in the drawing, each section is formed with eight of the pockets or cavities; four of the centrally situated pockets or cavities comprising the group B, are disposed on one side of the mold and uniformly face in one direction, while the end pockets, comprising the groups C and D, are disposed on the opposite side of the mold, with respect to its vertical center line, and face in the opposite direction as regards the pockets comprised in group B.

The pockets forming groups C and D include upstanding end abutments 10 which are arranged on the right side of the lower mold section 2 when the latter is viewed as in Fig. 4, while the pockets comprising group B are also formed with corresponding abutments 10, which are arranged on the left side of the section 2 of the mold, as disclosed in Fig. 5. These abutments are formed to include inclined inner surfaces 11 which constitute the end walls for the pockets or cavities 9, the upper ends of the abutments 10 being received within recesses 12 provided in the under and outer edge portions of the top section 1, the said top section has its lower or under face formed with deeper pockets or cavities than those provided in the lower section and includes end surfaces 13 which engage with corresponding surfaces on the top of the lower section to form proper seating engagement between the sections of the mold. When in the registering positions

disclosed in Figs. 4 and 5, the said mold sections are additionally formed with complemental inwardly directed channels 14 which enable heating gases passing around the mold to more rapidly penetrate the metallic body of the mold sections to reach the material undergoing heating, forming and pressing treatment in the mold cavities.

In view of the foregoing, it will be evident that the present invention provides a mold which when in use will perfectly maintain in exacting registration, the pockets or cavities formed in the separable sections of the mold. Relative movement of the mold sections longitudinally and transversely is precluded by means of the pins 6, or their equivalents, arranged at the ends of the mold sections, and in addition to the dowel pins, relative movement is precluded and registration uniformly maintained by the inclusion of the oppositely disposed rows of projections or abutments 10 carried by the lower of the mold sections and engaging with the outer edge portions of the upper section.

When the mold pockets or cavities are filled with the ceramic-tooth forming materials, the said mold sections are assembled, as disclosed in Figs. 4 and 5, and are placed in a drying press, which maintains the mold sections in clamped relationship applying uniformly and inwardly directed pressures to the assembled mold and further assisting in preventing relative separation or movement between said sections. Through the mechanical strength of this construction, the inherent simplicity thereof and the absence of relatively movable locking parts, such as wedging keys hitherto common in the art, the registration of the mold sections is assured with the result that teeth produced by the molds of the present invention are uniformly characterized by their natural articulation and their ability to be immediately employed by the dentist without grinding or fitting on the part of the dentist to secure acceptable articulation.

What is claimed is:

1. A mold for the manufacture of artificial teeth comprising separable upper and lower sections, interfitting means arranged at the ends of said sections for maintaining registration therebetween, said sections between said interfitting means being provided with oppositely disposed groups of tooth-forming pockets, and upstanding abutments arranged at one end of each of said pockets and disposed on opposite sides of said lower section for seating and registration maintaining engagement with the lower and outer longitudinal edge portions of the upper section.

2. A mold for the manufacture of artificial teeth comprising separable upper and lower sections, interfitting means arranged at the ends of said sections for maintaining registration therebetween, said sections between said interfitting means being provided with oppositely disposed groups of tooth-forming pockets, and upstanding abutments arranged at one end of each of said pockets and disposed on opposite sides of said lower section for seating and registration maintaining engagement with the lower and outer longitudinal edge portions of the upper section, said abutments being relatively spaced to produce heat circulating passages therebetween.

3. A mold for the manufacture of artificial teeth comprising separable upper and lower sections, said sections intermediate the ends thereof being provided with oppositely disposed groups of tooth-forming pockets, and upstanding abutments arranged at one end of each of said pockets and disposed on opposite sides of said lower section for seating and registration maintaining engagement with the lower and outer longitudinal edge portions of the upper section, said abutments being relatively spaced to produce heat circulating passages therebetween.

4. A mold for manufacturing artificial teeth comprising separable upper and lower metallic sections, a dowel pin arranged at one end of each of said sections and receivable within an opening provided in the other of said sections, the complemental meeting surfaces of said sections being provided with oppositely disposed groups of tooth-forming pockets, integral upstanding abutments formed with the lower of said section and arranged at the base ends of said pockets, the upper portions of said abutments constituting seats for the upper section, the said sections further engaging relatively around the marginal edges of said pockets, and inwardly directed channels provided in said mold sections in opposed relationship to said abutments and providing heat access to said pockets.

5. A mold for the manufacture of artificial teeth comprising a pair of separable sections, said sections intermediate the ends thereof being provided with oppositely disposed tooth-forming pockets and an abutment arranged at one end of each of said pockets and disposed on opposite sides of one of said sections for seating and registration maintaining engagement with the outer longitudinal edge portions of the other section.

6. A mold for the manufacture of artificial teeth comprising a pair of separable sections, upwardly projecting abutments provided adjacent the opposite edges of one of said sections, the inner surface of said abutments being inwardly inclined, means for limiting relative longitudinal movement between said sections, said sections being provided with tooth-forming pockets in registration with said abutments.

7. A mold for the manufacture of artificial teeth comprising a pair of separable sections, spaced upwardly projecting abutments provided adjacent one edge of one of said sections, an additional upwardly projecting abutment provided between said first abutments adjacent the opposite edge of said section, the inner surfaces of said abutments being inwardly and downwardly inclined, the surfaces of the other section which engage the abutments on the first section being similarly inclined, and means for limiting relative longitudinal movement between said sections, said sections in registration with said abutments being provided with tooth-forming pockets.

8. A mold for the manufacture of artificial teeth comprising a pair of separable sections, one of said sections being provided with a plurality of oppositely disposed tooth-forming pockets, each open at one end, abutments formed with the other section and operating when the sections are assembled to close the open ends of said pockets, and interfitting means arranged adjacent the ends of said sections to prevent relative longitudinal movement therebetween.

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