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Padeh

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[54] **JEWELRY OR TOOTH-CROWN MOLDING DEVICE**

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[52] **U.S. Cl.**..... **164/376,** 164/244, 164/DIG. 4

[51] **Int. Cl.** **B22c 7/02,** B22c 9/04

[58] **Field of Search**..... 164/376, 244, 246, 164/DIG. 4

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Attorney—William T. Hough et al.

[57] **ABSTRACT**

For use in the molding of gold crowns for teeth, and of jewelry articles, in a preferred embodiment for gold-crown production, a threaded male insert structure with the male threaded portion being insertable downwardly into a plaster-molding rubber-base hole such that the sides of the hole are supportable uprightly of the insert structure, with the insert structure defining a head structure having a threaded female receptacle centrally thereof extending downwardly in an end of the insert opposite from the threaded male portion, and the head structure defining a plurality of recesses around the periphery thereof with the openings to the recesses facing upwardly and the recess-defining structures being such as to make the recesses receivable of each of a wax stem mountable of a wax crown-form.

9 Claims, 6 Drawing Figures

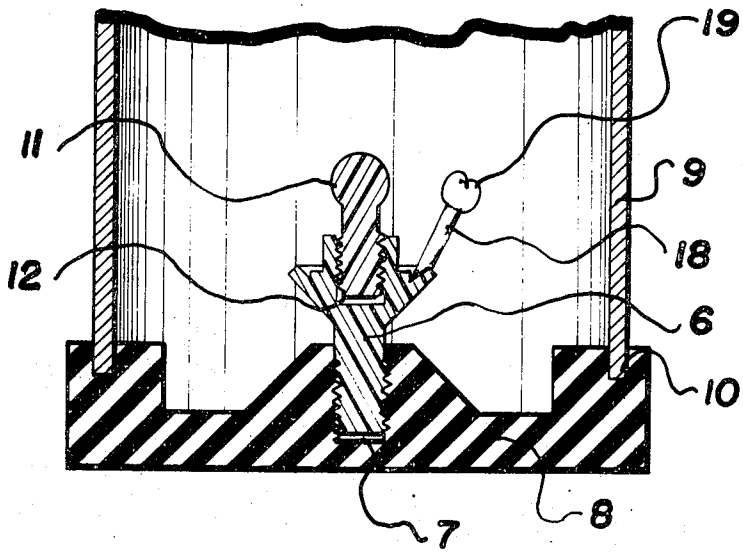
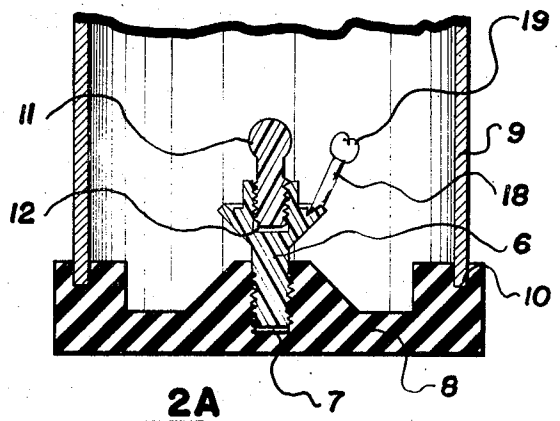


FIG. 1



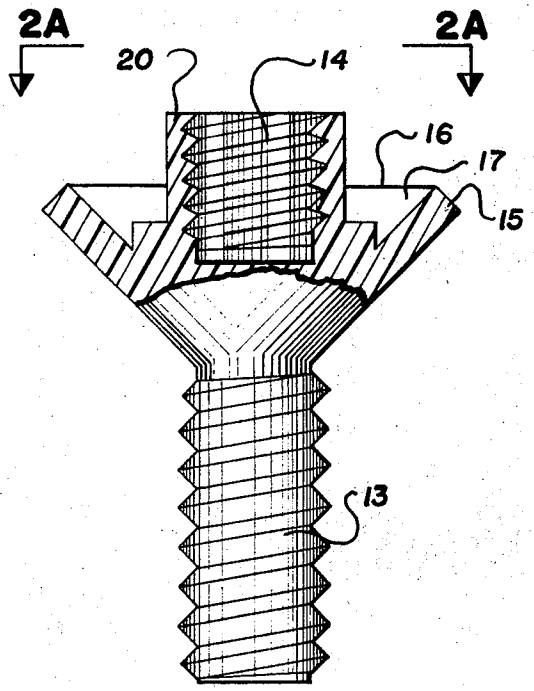


FIG. 2

FIG. 2A

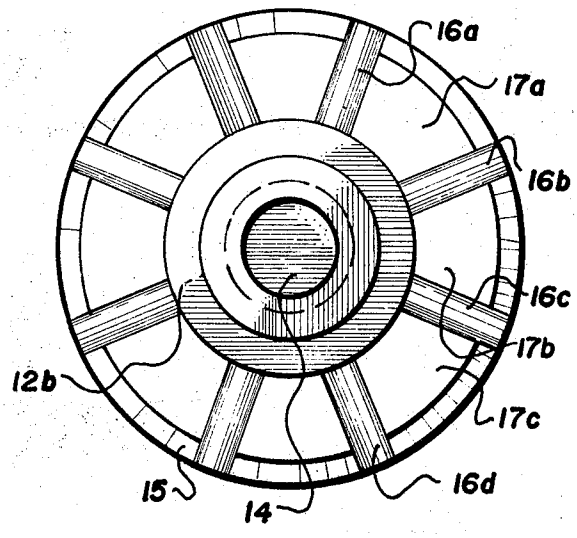
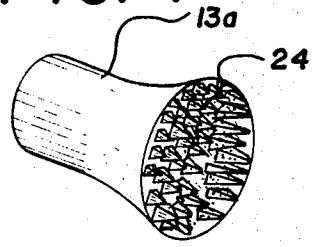


FIG. 4



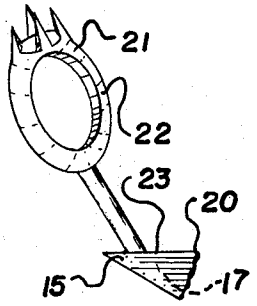
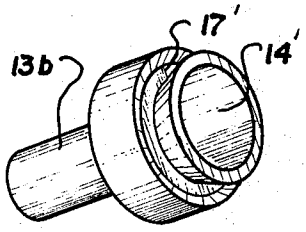


FIG. 3

FIG. 5



JEWELRY OR TOOTH-CROWN MOLDING DEVICE

This invention is directed to an article utilizable with conventional gold-tooth cap-molding and jewelry-molding apparatus.

BACKGROUND OF THE INVENTION

Prior to this invention, it has been the common practice in the molding of gold tooth-crowns to mold one at a time, utilizing a wax crown mounted on a wax stem with the end of the stem secured in wax hardened thereabout within a hole central of a base or a plurality in a depression around the central hole-structure, around which an enclosing cylindrical tube is placed before pouring thereinto a hardenable plaster. In addition to being limited to solely a single crown being produced per operation, the female receptacle in which the stem is secured in melted wax often becomes dingy with the result that the dirty particles in the female receptacle serve to bring about imperfection(s) (such as porosity in the mold form and/or in the utilization of the mold form of the plaster because of either getting into the critical portion and causing distorted shapes or by plugging the passage through which normally the melted gold would be poured.

SUMMARY OF THE INVENTION

An object of this invention is to avoid and/or overcome problems and difficulties of the type discussed above.

Another object is a simple article utilizable with conventional apparatus for increasing the rate of production of gold tooth crowns.

Another object is to obtain an article of low cost and simple construction utilizable solely once and being thereafter disposable or expendable.

Another object is an article of a composition consistent with present molding techniques.

Another object is to obtain a reduced percentage of reject crowns by use of a novel article of this invention.

Another object is to reduce gold spills during casting.

Other objects become appararent from the preceding and following disclosure.

One or more of the above-noted objects are obtained by the invention as defined hereafter.

The invention is broadly a form having a downwardly extending male projection insert supportably mountable within the typical hole structure of the conventional type base of a molding apparatus, the upper part of the insert including a head structure shaped to be uprightly supportable of a plurality of stem structures of tooth-crown head and stem structures normally of conventional dental-brand wax. Additionally, desired and/or suitable conventional plastic(s) may be used. In a preferred embodiment the head structure includes opposite from the male projection a downwardly extending female receptacle shaped to uprightly supportably receive the second insert's male projection. Preferably each male projection includes male threads of helical nature and the female receptacles each preferably include female threads preferably of helical shape. Also preferably the structure receivable of the ends of the tooth-crown stem are a plurality of recesses extending around the periphery of the head with the opening of each recess facing upwardly and preferably with each recess being supportable of one stem. Preferably the entire insert is composed of wax.

With regard to jewelry molding, the technology is basically the same as that for tooth crown molding except for the shapes being jewelry items such as rings or the like, instead of tooth crowns.

THE FIGURES

FIG. 1 illustrates a cross-sectional in-part side view of the typical molding apparatus having mounted in a central hole thereof the wax button of this invention.

FIG. 2 illustrates an enlarged view of the wax button in partial cross-sectional side view.

FIG. 2A illustrates a view of the wax button taken along lines 2A—2A.

FIG. 3 illustrates a typical wax ring mold and stem mountable in the wax button.

FIG. 4 illustrates an alternate form of a wax button in perspective view.

FIG. 5 illustrates in perspective view still another alternate form of the wax button.

DETAILED DESCRIPTION OF THE INVENTION

In greater detail, FIG. 1 illustrates a side in-part cross-sectional view of a typical molding apparatus used by dental technicians and by jewelers for the molding of crowns such as silver or gold crowns of teeth or by jewelers for the molding of gold rings, for example. Mounted in the hole 7 of the typical rubber base 8 is the wax-button form of this invention as well as the insert 11 of this invention in the receptacle 12 in the upper part of the wax button 6. The cylindrical wall 9 is mounted in the groove 10 of the base 8.

FIG. 2 illustrates a side enlarged view of the wax button of this invention, with the upper portion thereof shown in partial cross-section. The wax btton includes the male insertable portion 13, the female receptacle 14, the peripheral ring 15, the partitioning walls 16 dividing the space 17 into several compartments for receiving a stem 18 of a wax mold of a crown 19, the receptacle 14 is in a central upwardly extending projection 20.

FIG. 2A illustrates a view taken along lines 2A—2A, better illustrating the partitioning walls 16*a*, 16*b*, 16*c*, and the like, dividing the annular space into segmented spaces 17*a*, 17*b*, 17*c*, and the like. Also the receptacle 14 is viewable with the peripheral edge 15 as well as the upwardly projecting structure 20 and the upper surface of shoulder 12*b*.

FIG. 3 illustrates a typical jewelry ring wax form 21 with the wax stem 22 illustrated in a mounted position in the space 17 embedded in wax 23, the wax button being shown merely in part.

FIG. 4 illustrates an alternative wax button in which the male portion 13a does not have threads and merely fits downwardly into the hole 7 of the base 8, and in which there are upwardly projecting preferaby pointed projections 24 between which typically a stem 22 or 18 or the like is insertable downwardly into a molten wax for thereby supporting a plurality of stems between the plurality of upwardly extending projections 24.

FIG. 5 illustrates still another embodiment in which the downwardly extending male member 13b does not have threads, and in which the space 17′ is not divided into segmented compartments. Also the receptacle 14′ is not threaded and is receivable of a second base member such as 13*b*, as 13 would be receivable in receptacle 14, for the mounting of a plurality of wax buttons one on top of the other in order to further increase the

number of rings or tooth crowns as the case may be that may be produced simultaneously.

It should be noted that the advantage of the insert **11** is to proudce a hole into which the gold, for example, may be poured which would eventually overflow into the passages formed by the respective stems, the gold that is first poured into the hole advantageously collecting dust or dirt particles which might otherwise clog the stem and/or crown passages in the hardened plaster and/or which would cause porosity in the castings if the particles were carried into the casting cavities.

With regard to the FIG. **2** receptacle **14**, a primary benefit of this receptacle **14** is the ability of the technician to mount a second wax button's insertable shaft portion **13** into the receptacle **14** in order to uitlize a plurality of wax buttons simultaneously to produce a large number of castings per single operation — i.e. several castings per wax button as well as two or more wax buttons utilized per operation.

The substitution of equivalent structures and/or modifications as would be apparent to persons of ordinary skill in either the dental molding art or the jewelry molding art are within the spirit and scope of this invention.

I claim:

1. A molding device utilizable with a dental or jewelry plaster-forming cylindrical tube and base having a central upper opening therein, comprising in combination: a first male insert means comprising a formed low-melting point composition and including a male insert projection having a laterally-outwardly facing wall and extending longitudinally axially and the male insert projection being of a predetermined cross-sectional size suitable for mounting of the projection within the base central upper opening, the male insert means further including a head structure defining a plurality of laterally-upwardly directed receptacles such that said receptacles are each receivable of a wax-stem end in a manner supportable of the stem axis in a laterally upwardly direction, said head including an outwardly facing wall structure extending substantially axially to said male-insert projection, and the wall structure at a base thereof including a shoulder defining an inner-extremity stem-end receiving-space of each of said receptacles, said shoulder being spaced laterally-outwardly a predetermined distance greater than the laterally-outward location of the male insert projection laterally outwardly facing wall, such that upon inserting the stems and upon thereafter forming a hardened plaster cast around the male insert means, and upon inverting the plaster cast and upon melting-removing the composition from the plaster cast, each stem passage is laterally off-set from the molten-metal inlet axial passage resulting from the cast around the male insert projection.

2. The molding device of claim **1**, in which said plurality are arranged around the periphery of said head.

3. The molding device according to claim **2**, in which said head structure includes a central downwardly extending depression of a size substantially snugly uprightly receivable of a second male insert of a size about the same as said first male insert.

4. The molding device of claim **3**, in which said first male insert projection has male helical threads and in which said central depression includes structure defining female threads meshable with male helical threads of said second insert means.

5. The molding device according to claim **1**, including at least a second insert means of a structure substantially the same as said first insert means.

6. The molding device according to claim **5**, in which said composition comprising substantially wax.

7. The modling device according to claim **3**, including a plug snugly insertable within said depression, said plug having a hemispherical upper-head surface.

8. The molding device of claim **1**, in which said composition comprises substantially wax, and in which said base is rubber.

9. The molding device of claim **1**, including a plug-insert having a head-projection, said plug-insert being snugly insertable within said downwardly extending central depression with said head-projection extending above said downwardly extending central depression.

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