

H. L. MOREAU.  
PROCESS OF MAKING SCULPTORS' MOLDS.  
APPLICATION FILED AUG. 22, 1910.

996,783.

Patented July 4, 1911.

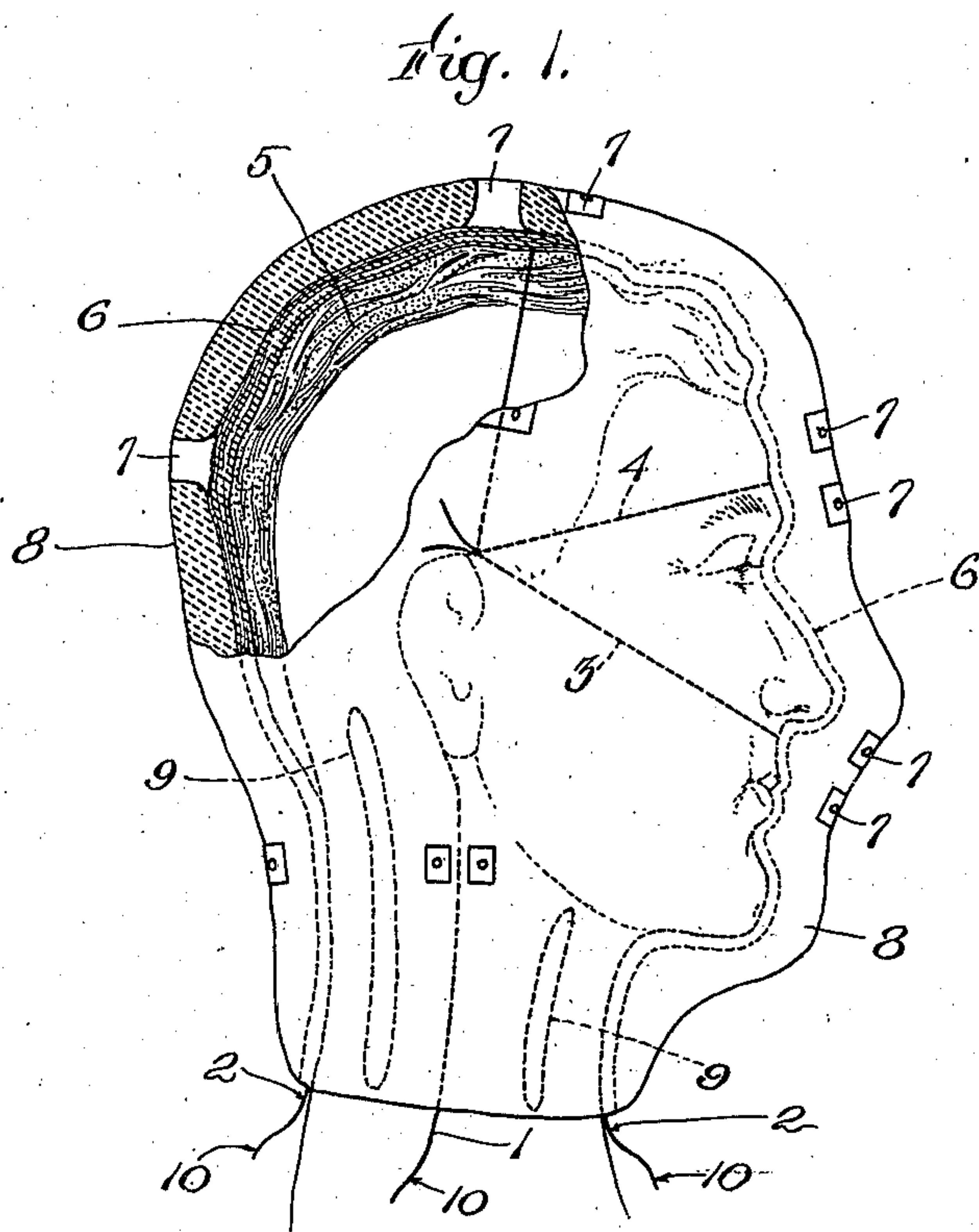


Fig. 2.

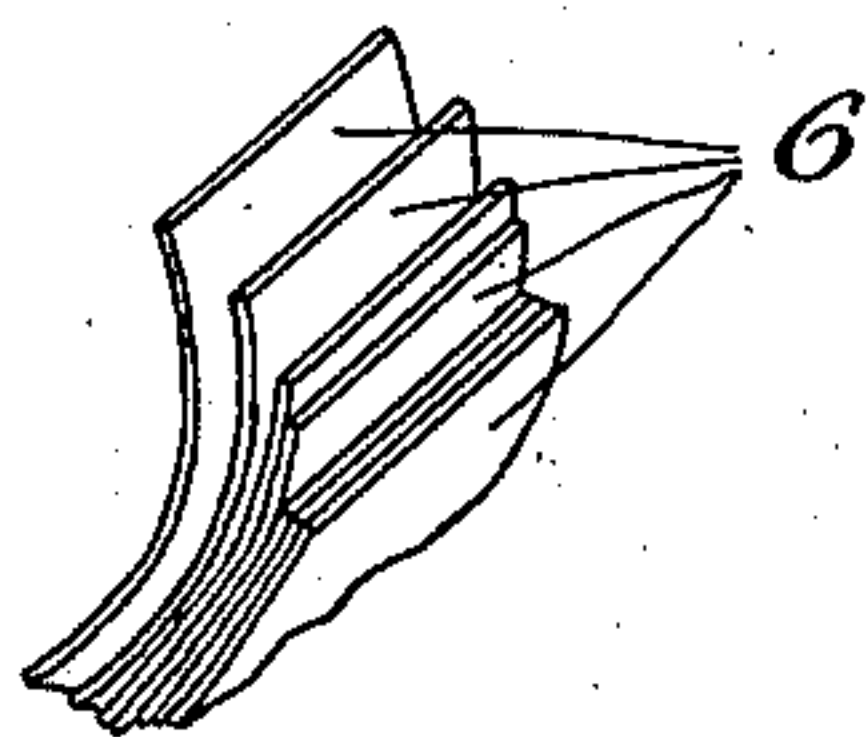
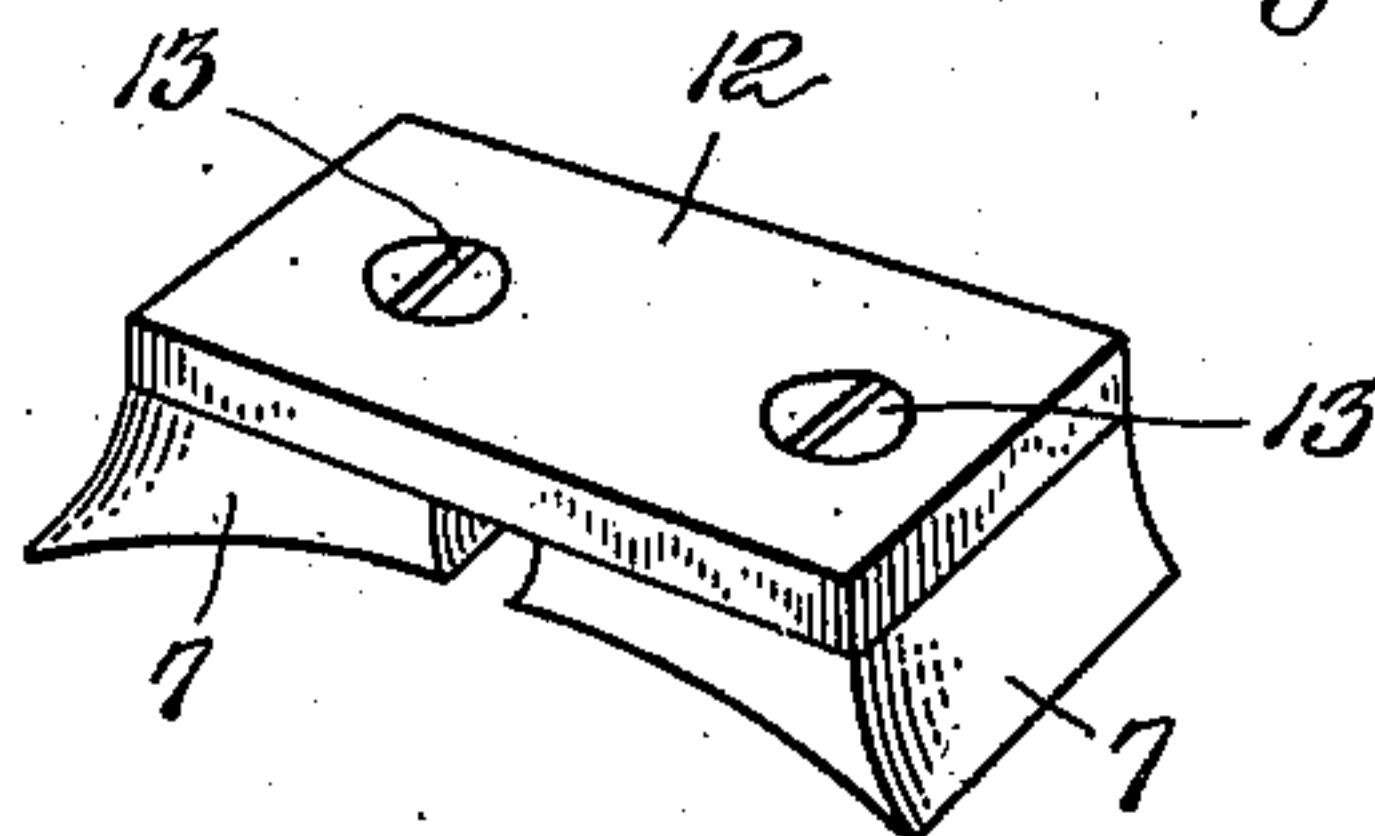


Fig. 3.



Witnesses:  
H. C. Bowser.  
Edward Maxwell

Inventor:  
Hector L. Moreau,  
by *Geo. W. Maxwell,*  
Attorney.



# UNITED STATES PATENT OFFICE.

HECTOR L. MOREAU, OF IPSWICH, MASSACHUSETTS.

PROCESS OF MAKING SCULPTORS' MOLDS.

996,783.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed August 22, 1910. Serial No. 578,372.

*To all whom it may concern:*

Be it known that I, HECTOR L. MOREAU, a citizen of the United States, and resident of Ipswich, in the county of Essex and State of Massachusetts, have invented an Improvement in Processes of Making Sculptors' Molds, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present process of making a reproduction from life (or, for that matter, from inanimate objects also) usually requires not only a plurality of molds but also considerable skilled work in modifying the molds to counteract the inevitable distortions which are produced by the various processes as now practiced. For instance, in taking a life mask of the face of a person, plaster of Paris is usually applied in mass to the subject, so that the softer flesh parts sink in somewhat, so that the replica from said mold would present a less plump appearance than the living subject, and it is therefore the custom of sculptors to counteract, by the skilful use of the knife on the plaster of Paris, such distortions or inaccuracies of the mold, thus requiring not only a first mold, but a casting therefrom, modified as stated, and then another mold from said casting, etc. This is only one of the many features of the cumbersome process as at present employed, which it is the object of my invention to eliminate.

By my process, the mold material is applied in such a manner and in such thin layers that it has no tendency to press in or distort the features, a correct mold is made at the start, thereby eliminating much of the time and expense heretofore required, the mold receives a correct impression of such portions of the subject as have heretofore been usually left entirely to the sculptor's chisel, such as the hair and beard, the mold is readily removed from the subject, the material composing the mold may be used over again repeatedly, the parts thereof are readily separated and again joined, etc. All these and further advantages of my invention will be pointed out more at length in the course of the following description of the process in all its preferred steps, and said process will be more particularly defined in the appended claims.

In the drawings, I have shown one form of mold constructed according to my process,

whereby the latter may more readily be understood, Figure 1 showing the mold partly in section and partly in side elevation; Fig. 2 being a perspective view illustrating the applying portion of the process; and Fig. 3 a perspective view of a portion of the mold-securing means.

For more conveniently describing my process, let it be supposed that a mold of a head (from life or otherwise) is to be made. The skin is first smeared with oil. The moustache and eyebrows are then filled with thick paste, starch, or starch-like substance, preferably flour paste, so as to render them stiff or somewhat less pliable than normal. The hair of the head is then treated with similar paste or with oil, or with a layer of very thin cold wax, or a layer of tissue paper may be applied as a separator. Then a solution of wax-like material, relatively quick-setting, and capable of being melted at a low temperature, is prepared, preferably consisting of beeswax and rosin (the latter to stiffen the beeswax), and then applied to the subject melting-hot by means of a soft brush. I have discovered that a perfect mold can be made in this manner. I wish at this point to emphasize the importance of this part of my invention and to make it clear that this is the most important feature of the invention. The melting point of the mold material is above the object treated, i. e. it is above blood-heat, and said material becomes fluid at a temperature which permits its application in thin layers without injury to the skin. By applying, in a series of exceedingly thin light layers, a substance capable of being so applied and capable of at once conforming accurately to the curves and angles of the subject and setting or becoming fixed in said conformation, there is no tendency and, in fact, no possibility of depressing the soft flesh or distorting any delicate feature. By having the wax or mold material of such composition that it does not melt at blood-heat and yet becomes readily fluid at a temperature which permits of its application in the thin layers mentioned without injury to the skin, and then by putting such a composition on in said thin layers, the wax takes on the minutest details of the object to which it is applied. Rendering the wax thin by heat (or in other words providing a mold material subservient to heat in the respects already explained, and applying the heat as a part



of the process) gives better results than if a solvent were used for softening the mold material, because the heat leaves the thin or melted mold material denser and there is no resulting tendency to draw or contract. Each individual layer is so thin and light that it may be said to rest upon the surface without weight, or at least without effect thereon. The first layer, when painted on with the brush, instantly conforms with the utmost nicety to the surface upon which it is brushed or painted, and the next layer reinforces the first layer and aids in perpetuating the initial conformation secured by the first or foundation layer, and each succeeding layer acts as a reinforcing and strengthening support and brace until finally a thickness has been attained which is not only permanent but sufficiently strong to withstand all the subsequent handling which may be necessary. After the first few layers have been applied by means of the brush, the melted wax may be put on in a much more rapid fashion and in a less fluid state, as the function thereof is simply to strengthen and reinforce the first few layers, said first few layers being those which are depended upon for receiving the mold-shape and providing the molding surface for subsequently receiving the plaster of Paris or other substance which is poured into the wax mold to make the ultimate cast for the sculptor's guidance.

I have found that by using a soft brush, made, for instance, of camelhair, and applying the hot wax thereby with a quick, short, delicate movement, so that only a thin layer of the wax is left on the face and so that the larger body of the wax contained in the brush is not permitted to rest or tarry upon the flesh, there is no liability of burning or injuring the flesh. The successive layers, at the beginning of the operation as stated, are all applied in substantially the same way by the brush, each successive layer cohering with the preceding layer so that a considerable thickness is quickly built up by a series of rapid to-and-fro brushing movements of the brush, said brush being frequently dipped into the melting-hot wax for the double purpose of getting a fresh supply and maintaining at the proper temperature the portion thereof which is in the brush.

In order that the mold may be readily divided into such number of parts of such definite shape as may be desirable or required by the particular subject of which a mold is being made, I lay on the subject, before the wax is applied, one or more fine wires along those lines where it is desired that the mold shall subsequently part. For instance, in making the mold for a bust, the wire is secured under one arm-pit and thence passed up along the top of the shoulder and the side of the neck to the lobe of the ear, and thence

carefully around the outermost projection or rim of the ear to the top thereof, vertically over the head, about the opposite ear in the same way, down the neck and along the shoulder and secured around or under the opposite arm. Another wire is extended over the head at right angles to the first wire, being led down over the forehead, nose, mouth, chin, neck, etc. at the front and along the hair, neck, etc. at the back. Other wires may be applied in such directions and relations to each other and to the subject as the skill of the operator or the peculiarities of the subject may require. Then the layers of wax are applied, as already explained, said wax serving not only to take the mold impression but to hold the fine wires in place against the subject. After the first few layers of wax have been applied, suitable anchor blocks or holding straps are applied at those places where the various parts of the mold, when subsequently separated, must be held together, said anchoring devices being maintained in place by the subsequent layer or layers of wax. Also preferably strengthening strips are inserted where desirable, and also held in place by being embedded in the wax as the building-up of the mold proceeds.

In the drawings, I have indicated a vertical side wire 1, front and back wire 2, a horizontal transverse wire 3, and a diagonal transverse wire 4, in order that my invention may be better understood. The hair is filled, as indicated at 5, with a pasty or oily substance, as previously explained, and the wax is applied in successive layers 6, until a sufficient thickness is formed to endure rougher treatment, whereupon anchor blocks 7, having roughened, corrugated, or otherwise reëntrant sides, holes, or angles for giving a good gripping surface to the wax, are placed on these initial layers 6 and then further wax is applied, preferably more or less in mass, until these blocks are embedded and held firmly stationary in the thicker outer layer 8 of wax. At such places as are required for any reason, as for instance where the mold tapers to a more or less slender portion, as about the neck, reinforcing strips 9 are inserted of wood or other material, curved or otherwise to suit the shape, which strips are embedded in the wax as the latter continues to be applied. When the requisite thickness of wax has been applied, the wire ends 10, which have been left protruding, are gently pulled, thereby lifting outwardly the fine wire, which readily cuts through the enveloping wax and severs the latter into the parts to compose the mold. These parts, having been lifted from the subject, are then secured together by plates 12 and suitable fastening means, such as screws 13. As each section or part of the mold is secured to an adjacent section or part, the operator runs a hot



knife or tool along the joint, thereby tightly closing the seam or line of severance, adding a slight amount of wax if necessary. It will be understood that tubes are inserted in usual manner in the nostrils, the ears are preferably plugged, and such other attention given to the subject as may be required, and which, being usual and not constituting a part of my invention, are not herein further referred to.

From the foregoing description, it will be evident that my invention is readily applicable to all situations where it is desired to secure an accurate mold of any given object. As the mold material, preferably wax, is applied in exceedingly thin and light layers, it has no tendency to depress a soft part such as the cheek or hair, and yet, by reason of the superposition of layer after layer, a finally rigid mold is built up capable of producing a cast or casting with absolute faithfulness of the original subject. I prefer to starch or stiffen the hair, thereby considerably facilitating the work, although a layer of tissue paper or any other suitable thin separator may be used for maintaining the first layer of wax in the desired sheet-like condition. Preferably both the paste filler and the tissue paper separator are employed.

Not only does my process secure accuracy of results, but it requires very little apparatus, is quick in its application, and comparatively inexpensive. After the desired casts have been made from the mold, practically all the material of the mold is ready to be used over again in making another mold.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The process of making a mold, which consists in providing a mold material having a melting point above blood heat and

fluidifying at a temperature which permits its application in thin layers without injury to the skin, rendering said material fluid or thin by means of heat, applying the same in successive coatings, each as thin as possible, embedding therein at the molded surface fine cutting filaments with their free ends extending outwardly a sufficient distance to be externally accessible with reference to the completed mold, and thereafter building up mold material thereupon to the desired thickness.

2. The process of making a mold, which consists in providing a mold material having a melting point above blood heat and fluidifying at a temperature which permits its application in thin layers without injury to the skin, rendering said material fluid or thin by means of heat, applying successive coatings to the object being molded by brushing the melted material over the object with a quick, short, soft brushing movement, and thereafter building up mold material thereupon to the desired thickness.

3. The process of making a mold, which consists in providing a mold material having a melting point above blood heat and fluidifying at a temperature which permits its application in thin layers without injury to the skin, rendering said material fluid or thin by means of heat, applying the same in successive coatings, each as thin as possible, thereafter building up mold material thereupon to the desired thickness, and embedding anchoring devices in the mold material during the building-up operation.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

HECTOR L. MOREAU.

Witnesses:

WEBSTER BARROWS,  
GEO. H. MAXWELL.