

# UNITED STATES PATENT OFFICE.

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## PROCESS OF MAKING MOLDS FOR PLASTER CASTS.

SPECIFICATION forming part of Letters Patent No. 524,179, dated August 7, 1894.

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*To all whom it may concern:*

Be it known that I, ANSIL W. MONROE, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have discovered a new and useful improvement in Processes of Making Molds for Plaster Casts, of which the following is a full, clear, and exact description.

The object of my invention is to make a perfectly true mold of any animate or inanimate object, for obtaining an absolutely true copy of the original by casting from this mold. For this purpose I heat paraffine or bees wax, or a mixture of both, till it attains a liquid state; in this condition I spread the paraffine bees wax or a mixture of both in a thin layer over the surface of the object to be molded, (after having prepared the same for this purpose as described below) by means of a brush, sponge or some similar contrivance; the paraffine or bees wax, which is not made hot enough to burn or injure even delicate objects, cools off in a short time, forming a thin skin over the body of the object to be molded, on which another coat of paraffine bees wax or a mixture of both is applied in the same manner; this process is repeated, till the coat of paraffine bees wax or a mixture of both acquires a sufficient thickness, allowing it to be removed from the original, the number of coats, and consequently the thickness of the mold, depending on the size of the model as well as of the judgment and ability of the molder.

For receiving the above mentioned coats of liquid paraffine bees wax or a mixture of both, I prepare the original model as follows, provided that it is not of such a nature as not to require any preparation. Smooth and hard objects must receive a wash with thin soap-water; before receiving the coating of paraffine, this wash will prevent the adhesion of the latter, and will allow of the paraffine reproducing the original with absolute correctness. All hair or animal wool on animate objects will be well filled and rubbed with common cottage cheese; this fills up the hollow spaces and greases the outer surface in such a way, as to prevent the liquid paraffine bees wax or a mixture of both from adhering; ac-

ording to the nature of the model, other materials, as fat, oil, vaseline or other lubricating substances may be used, the objects only requiring very little of such lubricating covering, as paraffine and bees wax both, and especially paraffine have very little tendency to adhere to other materials. Metals and most objects of fibrous nature require no preparation.

When the mold has sufficiently cooled off, it can easily be removed from the model, by simply lifting it off, provided, that the model is not undercut; if the model and also the mold should be of such dimensions, that there might be danger of breaking the latter, it is advisable to strengthen the same before lifting off, by coating it on the back with plaster of paris, or some other plastic material, the thickness of this coat also depending on the size of the model and the ability of the molder.

When the model is undercut, the paraffine, &c., molds have to be separated in the necessary number of parts, before the plaster coating is put on; this is done by cutting the paraffine, bees wax or a mixture of both with a slightly warmed blunt knife, while on the model, strips of tin foil are laid into these cuts, and the plaster of paris applied on the back of the mold, not thicker, than the width of the tin foil strips; the mold can then easily be removed in pieces from the model, and joined together as neatly as it covered the model.

The paraffine, the bees wax, and a mixture of both, especially and preferably the former have the quality of reproducing the most delicate details of the model, a cast made from molds of these materials, will, as to shape, be a thoroughly lifelike reproduction of the original.

Having thus described my discovery, what I claim, and desire to secure by Letters Patent of the United States, is the following:

1. The process of making molds for plaster casts consisting in first covering the surface to be copied with any soft plastic material and then covering the back of the said soft plastic material with another soft plastic material which hardens quickly and serves as a support for the first layer of soft plastic material.

2. The herein described process of making molds direct from a model for castings, consisting in first coating by painting the surface of the model with a preparation of paraffine, and then reinforcing or coating said paraffine facing with a preparation of plaster of paris, substantially as described.

3. In the process of making molds for castings, first painting the surface of the model with a layer of paraffine, inserting between sections of the model so prepared, strips of tinfoil, and reinforcing the sections with a

coating of plaster of paris, substantially as described.

4. A mold for a casting formed of sections of paraffine and plaster of paris, and having intervening strips of tinfoil, substantially as described.

In witness whereof I have hereunto set my hand this 8th day of February, A. D. 1888.

ANSIL W. MONROE.

Witnesses:

M. E. C. MONROE,

RICHARD S. CHILD, Jr.