

UNITED STATES PATENT OFFICE.

WEBSTER BARROWS, OF MALDEN, AND HECTOR L. MOREAU, OF BOSTON,
MASSACHUSETTS.

PROCESS OF MAKING COPIES OF CERTAIN OBJECTS IN SOLID MATERIAL.

1,020,679.

Specification of Letters Patent.

Patented Mar. 19, 1912.

No Drawing.

Application filed May 24, 1911. Serial No. 629,225.

To all whom it may concern:

Be it known that we, WEBSTER BARROWS, a citizen of the United States, residing at Malden, in the county of Middlesex and State of Massachusetts, and HECTOR L. MOREAU, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have jointly invented new and useful Improvements in the Process of Making Copies of Certain Objects in Solid Material, of which the following is a specification.

This invention relates to the art or process of making an exact copy of an object which it is desired to reproduce in solid material, and it has for its object to render the process more exact, more expeditious, more satisfactory and cheaper than any process now in use.

To accomplish the results to be herein specified, we will use as an illustration the process of copying a face of a man, which has portions covered with hair; for this makes the process more difficult. It will be readily understood that the omission of the hair from any part renders the process more easy and simple. To begin with, we place behind each ear a support preferably made of cotton, usually moistened. Into the ears we also prefer to place a small amount of the same cotton. Over all the portions covered by hair we prefer to place a very thin covering of some substance like tissue paper. All undercuts are filled, preferably with cotton, thereby eliminating part models. The nostrils are left open so that the patient can breathe while the operation is going on. We first cover the face or the parts which we intend to reproduce, with a coating of paraffin or similar substance. Over the paraffin we place a coating of a solution of some waxy substance and we cover these two with a coating of plaster. The paraffin covers the objects to be copied so as to produce an exact copy and a perfect mold. For this purpose we have found nothing which is so good as paraffin. Paraffin has also the quality of cooling quickly and even when warm it will not burn the skin. The coating of waxy material may be made from either of many kinds of wax, but we have found a combination of beeswax and rosin to be the best. For this combination we prefer to use about four-fifths beeswax and one-fifth of rosin.

Paraffin has no strength and little body or resistance to heat, its chief purpose being to obtain an exact copy of the model. The waxy material is for the purpose of obtaining strength and body, with toughness. It must be used as a liquid and in that condition it would be too warm to be endured on any sentient being while cooling, and it would probably produce a distortion of the features if applied to the face. But as applied over the paraffin it answers the purpose the best of anything that we know and is probably the best material for that purpose. The plaster is used to give solidity and the necessary strength but it has another purpose. It is desirable that the process of taking a mold should be accomplished as quickly as possible. The plaster being wet and cold, and it should be used quite cold, will congeal quickly the waxy coating between it and the paraffin, so as to relieve the heat upon the skin and retain the texture and all the lines of the body, which would be otherwise distorted. The heat of the wax, if continued, would destroy the mold, especially if there was any perspiration beneath it, as the mold would probably twist out of shape if the plaster backing was not used. In our experience we have found it to be very desirable if not necessary, to use these three coatings or shells and in the order and manner stated, as they have a combined action as well as each an action of its own.

The paraffin may be applied by spraying or with a sponge, but we prefer to apply it and the waxy solution with brushes. The plaster backing is applied with some tool convenient for working it quickly, as a mason's small trowel. We prefer to make the thickness of the paraffin about $\frac{1}{16}$ of an inch; that of the waxy solution about $\frac{1}{8}$ of an inch, and the plaster backing about $\frac{1}{2}$ of an inch, although the plaster backing might need to be thicker if it was a large mold. The material best adapted for the making of the cast is alabaster plaster, but a cheaper plaster may be used for the outside of the mold. As soon as the cast has become sufficiently hard, or as soon as it begins to heat, the mold should be removed in order to retain all the fine lines or texture of the surface which the heating of the plaster would destroy.

Practically any desired pose of the body

or any part of it, or any desired expression of the face may be obtained by this process. The use of this process is not confined to making copies of parts of the human or
5 other animated bodies, but it can be used with great advantage in obtaining copies of many objects. Its special value is where copies of sentient models are to be obtained.

10 Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. The process of obtaining a cast of an irregular body, consisting of applying to the body a coating of paraffin, then a coating of some material of a stronger or more
15 tenacious nature which will unite with the paraffin and then covering the two with a coating of plaster or other material which will combine all three into one solid mass;
20 the removal of this combination and the

making therein a cast of the body substantially as described.

2. The process of making molds for casting of irregular bodies, consisting in applying to the object to be duplicated a coat of
25 paraffin, then a coat of liquid composition of wax and rosin and then a coat of plastic material, substantially as described.

3. The product obtained by the herein described process, comprising an interior layer
30 of paraffin, a middle layer of combined wax and rosin and an external layer of plastic material, all united into one composite mold for the purpose specified and substantially as described.

WEBSTER BARROWS.
HECTOR L. MOREAU.

Witnesses:

LOLA M. HEAD,
CHAS. ALLEN TABER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
