

Improved method for producing models or reproductions of parts of the human body / [Alfons Kroener].

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COMPLETE SPECIFICATION.

**"Improved Method of Producing Models or Reproductions of
Parts of the Human Body".**

I, ALFONS KROENER, Artist, of 16, Monhauptstrasse, Breslau, in the German Empire, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

5 This invention consists of an improved method of producing reproductions of parts of the human body and is particularly advantageous for reproducing injured or unhealthy parts. By means of my invention I am enabled in the case of injured or unhealthy parts or members to obtain an exact reproduction of the natural form and also of the character of the affection and the peculiarities
10 or nature of the coloration occasioned thereby. In this way I can reproduce not only the contour but also the whole appearance of the injured or unhealthy part.

According to my invention I first take or produce a plaster cast or hollow
15 mould of the part or member to be reproduced; this can be done in any suitable way. I then apply a thin layer of colored wax or wax composition to the interior wall of the cast. This may conveniently be effected by painting the wax or composition into the cast by means of a small brush. This thin layer which I will call the skin coat should be applied in a colour or colours corresponding
20 as exactly as possible with the exterior of the part or member the healthy or unhealthy parts being properly reproduced in a corresponding color to the original. Having thus applied the skin coat corresponding to the exterior of the original I now apply at the back of said skin coat a second coat or layer of wax or wax composition, this second coat being of such color that, appearing
25 through the skin coat, it will represent a very exact reproduction of the natural colour of the subject. Before applying this second coat I may paint on behind the skin layer a representation of the veins, arteries and other parts which are visible through the skin of the original. After applying the second coat, above referred to in sufficient thickness I fill into the mould a body or filling of wax,
30 wax composition or other suitable material, the color of which is not important.

In order to illustrate the invention I will first describe the modelling of a
35 healthy arm by way of example. To effect this I proceed as follows. I first paint the skin coat into the mould or cast in the proper relative color corresponding to that of the skin. I then paint upon said skin coat the arteries and colorations of the skin such as are found in the healthy arm, (for instance the
40 muscles or the like which show through the skin of the subject) so that these arteries, muscles or parts will appear through the skin coat of the reproduction. I then apply behind the painted skin coat a sufficient thickness of wax or wax composition of the same color as that of the skin layer. Finally the body or filling of wax or other suitable material is introduced into the mould. On removing the model from the mould it will form a very exact reproduction both as
45 regards shape and coloration of the subject. The arteries, muscles and the like show through the external layer or coat imparting a very natural appearance to the model.

[Price 8d.]

Method of Producing Models or Reproductions of Parts of the Human Body.

The invention constitutes a great improvement over the method hitherto in use, namely, that of painting a cast or model of the subject after the production of same. By thus painting a finished cast or model, either with ordinary colour or pigment or with coloured wax it is impossible to properly reproduce the character of the original. Such a method can at the best only give unnatural or approximated reproductions of the subject. 5

I will further illustrate the present invention by describing its application for reproducing an injured member, for instance a hand with a blister thereon.

For this purpose a thin skin coat is painted into the recess in the cast or mould corresponding to the blister, this coat being of exactly the same thickness and colour as the skin covering the blister. Behind this skin coat I apply a coat or layer of wax or wax composition corresponding in color to that of the water or secretion of the blister. This representation of the secretion, showing through the skin coat of the model will give the latter a most natural appearance. 10

The other parts of the hollow mould or cast are then coated exactly in the manner hereinbefore described the healthy skin coat being first painted in, then the arteries, muscles and the like painted on said skin layer, then a layer of sufficient thickness and corresponding in color to that of the natural skin applied behind the arteries, muscles *etc.*, and finally a body or filling to complete the model. Before commencing to apply the outer healthy skin coat the inflammation surrounding the blister should be painted in at the proper place in wax or wax composition of the proper red coloration. Looking at such a model the complete and natural reproduction of the injured part is most striking, an effect which could never be attained by painting a model in the old way. 15

In modelling a blistered part as just described, the space between the skin of the blister and the hand or part may be left empty, after painting in the outer skin coat of the blister or this space may be filled with a properly coloured liquid so that the blister seems to contain a watery secretion exactly like the original. 20

It is of advantage to mix a suitable quantity of resin with the wax or wax composition to give it greater strength and to render it more transparent, and in order to deprive the mixture or composition of its stickiness a little oil may be mixed with the whole mass. 25

A wax composition constituted as follows may advantageously be used for the painting in of the outer skin coat.

For a translucent, light-yellow composition 170—270 grammes Dammar resin is mixed with 80—150 grammes Carnauba wax and 80 grammes white beeswax and a suitable quantity of castor oil is then mixed with the mass. 30

To obtain a less translucent, almost white wax composition 170—270 grammes best white Dammar resin is mixed with 80—230 grammes Carnauba wax a suitable quantity of castor oil being added. 35

A suitable composition for the body or filling material of the model can be obtained by mixing 270 grammes Dammar resin mastic or Burgundy pitch with 80 grammes Japan wax, paraffin or ordinary beeswax and 170 grammes Carnauba wax. In order to obtain transparent objects, Dammar resin may be mixed with a suitable quantity of paraffin wax. 40

To bring the mass or composition into a suitable condition for painting, the resin may be triturated and melted together with the wax, stirring constantly. The clear thin fluid mass is freed from scum and filtered. When it is cold a suitable or desired quantity of it is melted and mixed with oil colour or pulverulent pigment of the requisite color. When a cold sample of the coloured mass possesses the required shade or tone the composition can be painted in a thin fluid form, into the hollow plaster cast by means of a small brush as above described. 45

It will be understood that the invention is in no way limited to the employment of the particular compositions above described which are merely given as examples. 50

Method of Producing Models or Reproductions of Parts of the Human Body.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is:—

1. A method of producing models or reproductions of parts of the human
5 body characterized by taking or preparing a hollow cast or mould
of the part to be reproduced, then introducing or applying to the
interior thereof a thin surface layer or skin coat of wax or semi transparent wax
or wax composition or mixture colored to correspond to the nature
or character of the skin of the subject whether healthy or
10 otherwise, then painting in (if necessary) behind the said layer or coat the
arteries or other parts which differ in color from the skin, then applying behind
the said surface layer or skin coat a layer or coat of a suitable shade or color
and suitable thickness so that the natural character of the model will be preserved
and not prejudiced by the showing of said last mentioned layer through said
15 thin skin coat nor by the introduction of the filling or body of the model when
this is introduced and finally introducing said filling or body, substantially as
described.

2. The method of modelling or reproducing parts of the human body sub-
stantially as therein described.

20 Dated this 23rd. day of August 1902.

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