July 26, 1938. J. W. DAWN 2,124,767

DISGUISE MEDIUM

Original Filed July 17, 1936 2 Sheets-Sheet 1

Fig. 7.

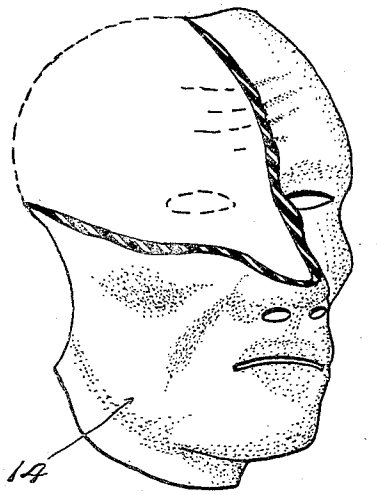
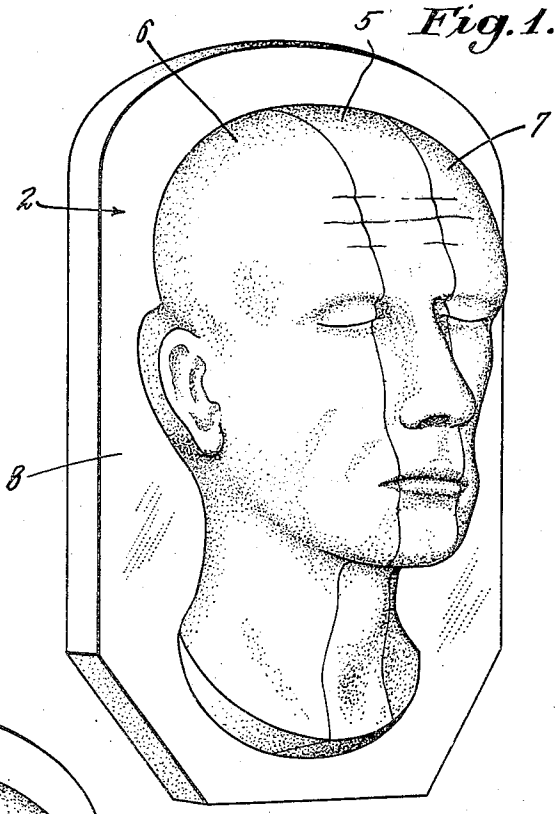


Fig. 1.



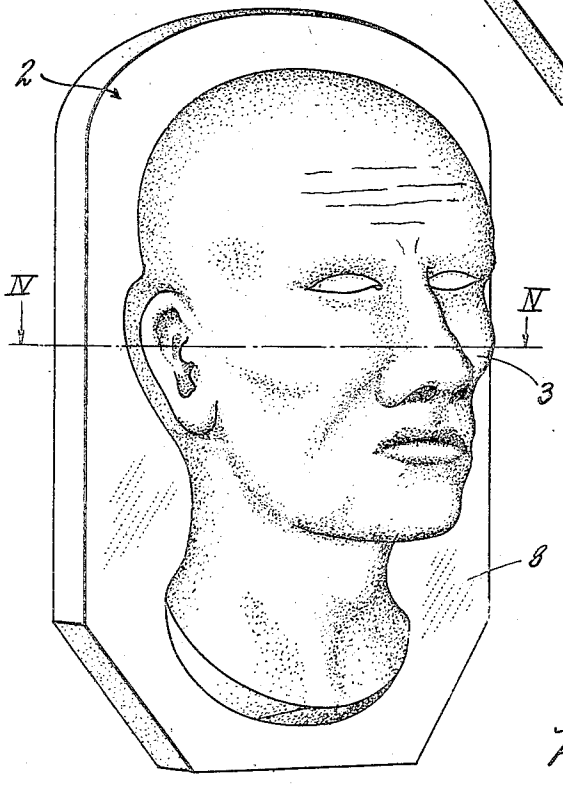


Fig. 2.

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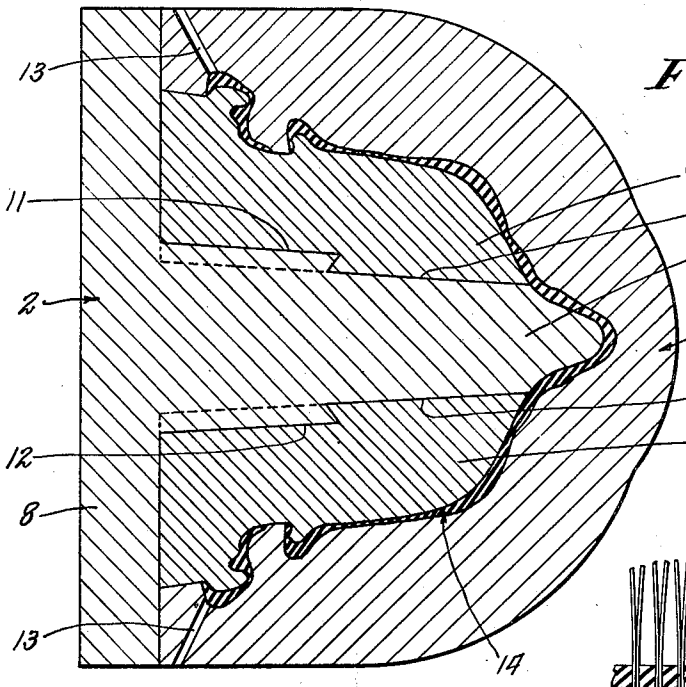


Fig. 4.

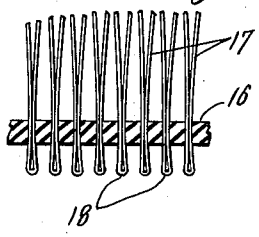


Fig. 5.

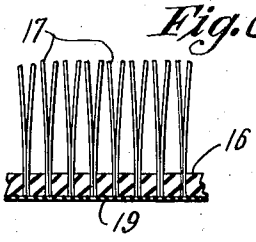


Fig. 6.

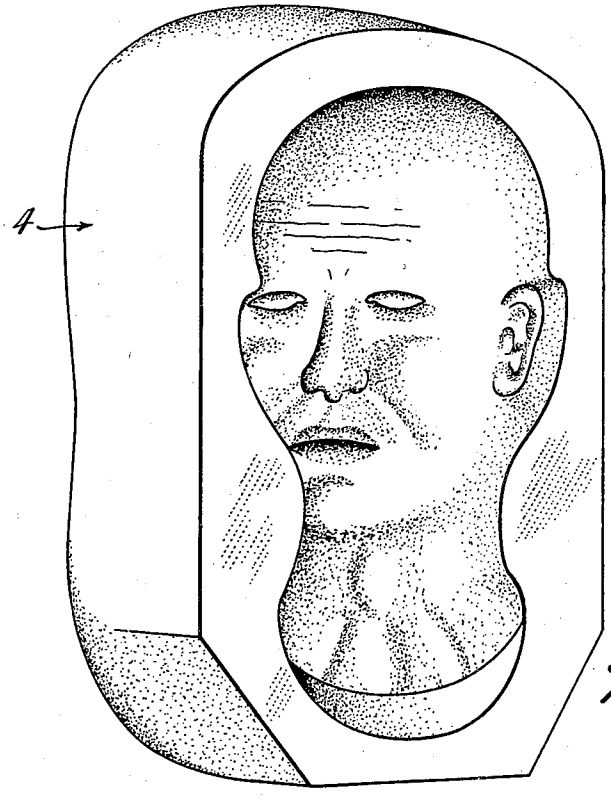


Fig. 3.

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DISGUISE MEDIUM

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8 Claims. (Cl. 35—1)

This invention relates to materials, compositions and methods whereby members adapted to transform features and bodily contours may be prepared and applied. In general, the invention relates to the preparation and utilization of disguise or transforming members capable of closely fitting and adhering to desired portions of the body for the purpose of changing the original contours and creating a different, novel or predetermined impression or appearance, which is distinguishable from the appearance of the original.

Although the inventions herein described are applicable to numerous uses, they will be particularly described with reference to the stage and motion picture work. In these arts it is often desirable that an actor's facial characteristics be modified or changed so as to more truly and typically represent the fictitious character (or historical character) whose part he is to play. The materials and methods of this invention permit an actor to change his features completely and if desired, such change may transform the actor into one of entirely different racial characteristics or cause him to very closely resemble a historical or different individual. The disguising members whereby these results are attained, when prepared from the materials and in accordance with this invention, do not restrict or impede natural muscular movements but instead permit substantially complete freedom of motion and change in expression.

Generally stated, the invention relates to the preparation of disguising members which are capable of closely fitting the normal contours of a desired portion of the body, the disguising members being of a varying thickness, the external surface of such disguising members being predetermined and capable of creating the desired impression or appearance.

The disguising members are made from a novel composition which has remarkable resiliency, flexibility and mobility, so that it has substantially the same firmness and mobility as human flesh. The mobility and flexibility of these disguising members permits the wearer to manipulate his disguise by his normal underlying muscles, the disguising member becoming a manipulatable, substantially integral part of the wearer's body. The physical characteristics of the disguising members permit the wearer to expose himself to the unusual heat of arc lights and other sources of illumination used in theatrical and motion picture production work, without destruction of the disguising members.

The invention also provides means whereby the disguising members may be attached to and made a part of the wearer so that lines of demarcation between the disguise and the wearer are not observable. Moreover, the invention hereinafter described in detail provides novel ingredients and methods of compounding the same whereby a disguising member of the required physical characteristics may be readily attained.

An object of the present invention, therefore, is to disclose and provide a novel composition particularly adapted for use in the production of yieldable, flexible and extremely mobile objects.

A further object of the invention is to provide a disguise member capable of closely fitting a portion of the body of the wearer and altering his outward appearance without substantial limitation upon the movements of the wearer.

A further object is to provide means and methods of forming disguise members provided with an inner surface adapted to closely fit a desired portion of anatomy and an outer surface differing in contour from said inner surface, the disguise member being composed of a resilient, flexible, stretchable, yieldable and mobile composition having approximately the flexibility and firmness of human flesh.

These and other objects, advantages, adaptations and uses of the invention will become apparent to those skilled in the art from the following detailed description of preferred modes of operation and procedure, it being understood that the invention is not limited to the specific details set forth.

In describing the invention, reference will be had to the appended drawings, in which:

Fig. 1 is a perspective view showing a cast of a person's head.

Fig. 2 is a perspective view of the cast after it had been built up to alter the features.

Fig. 3 is a mold impression of the altered cast shown in Fig. 2.

Fig. 4 is a section through the mold and the cast of Fig. 1, the section being taken generally along a plane indicated at IV—IV of Fig. 2.

Figs. 5 and 6 are enlarged views of a portion of a disguise illustrating a method of attaching hair to said disguise.

Fig. 7 is a perspective view, partly broken away, of the finished disguise.

It has been discovered that a suitable disguise composition may be prepared by combining gelatin, water, a plasticizing agent and a coagulant or precipitant, the resulting composition having a mobility, resiliency and flexibility closely ap-

proximating that of the human flesh. If desired, the composition may have pigmenting materials embodied therein, these pigmenting materials rendering the disguise member substantially opaque and imparting to it a color which can be caused to closely approximate flesh tones or tints.

For example, this invention contemplates digesting a hydrophilic colloid such as gelatin, agar-agar, and the like, with water and compounding mixture with a water-miscible plasticizing agent. Relatively pure, hard gelatins are preferred and particularly good results have been obtained by the use of gelatins of 200 bloom and 250 bloom, this being a trade classification well known in the art. When other types of gelatin are employed, it may be necessary to adjust the alkalinity or acidity of the mixture so as to permit operation during digestion at least to take place in the region of the isoelectric point of the gelatination. No such adjustment need be made, however, when hard, purified gelatins such as 250 bloom gelatin, are used.

The plasticizing agents employed are preferably water-miscible and glycerine, glycol, glycerol, and glycerol derivatives such as diethylene glycol, ethylene glycol, methylene glycol, ethers thereof, etc., are examples. In most instances it is also highly desirable to include in the composition a coagulating or precipitating agent for the purpose of increasing the melting point of the composition. Precipitating agents which have been used successfully include formaldehyde, tannic acid, trichloracetic acid, sulfosalicylic acid, phosphomolybdic acid, phosphotungstic acid, etc. Substances ordinarily referred to as protein precipitating agents are usually capable of being employed in the composition of this invention. The quantity of precipitating agent employed should be regulated so as not to cause the material to become lumpy or too thick and viscous during processing, since it is difficult to remove air bubbles therefrom when an excess of precipitating agent is employed and the resulting products become too stiff and lack flexibility.

In compounding the material, it is to be kept in mind that the resulting composition should have extreme mobility and be substantially free from air pockets or bubbles. Moreover, the composition should have a melting point of between about 60° C. and 100° C. The lower temperature limit is of importance in that it insures a finished product which will not soften undesirably nor become liquid or runny upon exposure to the heat of arc lights and other sources of illumination used in the theatre and on the motion picture stage. The melting point preferably does not exceed 100° C. since compositions of higher melting point lack the required mobility and flexibility and are not as readily applied to the wearer. In general, therefore, the melting point of the composition should be between 60° C. and 100° C. although splendid results are obtained when compositions having a melting point of between 70° C. and 80° C. are used.

The following example describes in detail the preparation of a suitable composition:

A solution is prepared containing 400 grams of glycerine and about 210 grams of water. 0.5 gram (approximately 15 drops) of 45% formaldehyde solution is added to the glycerine, the formaldehyde in this example constituting the precipitating agent. This solution is heated to a temperature of about 65° C. or 70° C. The heating is preferably done in a wax bath since temperature control is more readily attained in this manner. In the event the final product is to be pigmented, approximately 110 grams of a pigmented glycerine is added to the solution first described. The pigmented glycerine is simply a mixture of zinc and titanium oxides together with coloring oxides, such mixture being preferably obtained by rubbing the pigments into the glycerine in a mortar or milling it several times through a roller mill. The 110 grams of pigmented glycerine may contain about 10 grams of pigment. After the pigmented glycerine has been thoroughly incorporated, 280 grams of a pure, hard, granulated gelatin of say between 180 and 250 bloom, is incorporated with accompanying agitation until a uniform mass is obtained. After solution has taken place, an aromatic substance such as oil of cloves or the like, may be added for the purpose of masking the odor of the gelatin. The mixing and heating operations described above are preferably carried out in an uncovered pressure cooker but after solution has been obtained the lid of the pressure cooker is applied and the cooker connected to a condensing trap and then to a vacuum pump. The contents of the cooker are then gradually heated to a temperature of between 110° C. and 135° C., temperatures of 130° C. being eminently suited. The mass is digested under vacuum in the manner described for a period of from 1½ to 2½ or 3 hours, depending upon the size of the batch, type of gelatin being employed, melting point of final product, etc. An appreciable quantity of water is collected in the trap positioned in the suction line. The temperature should at no time become sufficiently high to cause glycerine or glycerine-gelatin to pass over into the trap. At the end of the digesting period the apparatus is disassembled and the hot liquid mass poured into suitable molds. The cooled product will be found to be a resilient, elastic mass. In the event the vacuum had been applied for a sufficient length of time, the mass will be free from air bubbles and the like and completely homogeneous in appearance. Such product will be found to contain from about 50% to 70% of glycerine, 25% to 35% of gelatin, and may have a pigment content up to about 12%, depending upon the amount of pigment introduced. Necessarily, small quantities of the precipitating agent will also be present. When the specific proportions described hereinabove are employed, the final product will contain approximately 60% of glycerine, 32% of gelatin and 8% of pigments.

The hydrous gels of this invention are to be distinguished from rubber compositions in that they have greater mobility and flexibility. They are capable of being reheated to form liquids which can be cast and repeated reheating and recasting will not alter the properties of the composition.

The utilization of this plastic composition in the product of disguises will be best understood by considering the appended drawings. In the event it is desired to convert a Caucasian into a Mongol, a cast **2** is first taken of the Caucasian actor's face. Fig. 1 represents such a cast. The technique of obtaining the cast need not be described herein as it forms no part of the present invention. The cast obtained and illustrated in Fig. 1 is then covered with a suitable plastic material **3** so as to build up desired portions of the face. For example, the cheek bones, nose, chin and regions around the lips are built up on the cast. Those portions adjacent the eyes, nostrils, ears, etc., are thinned down by gradually dimin-

ishing the thickness of the applied plastic material. Fig. 2 illustrates the cast after it has been sculptured so as to convert the original cast into the Mongol type.

A plaster cast is now taken of the built-up cast illustrated in Fig. 2. The cast thus obtained forms a female mold 4, illustrated in Fig. 3. Thereafter the specially applied plastic material is removed from the original cast (Fig. 1) for the purpose of permitting the original Caucasian cast to act as an interior matrix or male die in conjunction with the female mold of Fig. 3.

For the purpose of facilitating the formation of the female mold 4, the original cast 2 is preferably cut into sections, such as the intermediate section 5 and the side sections 6 and 7. The intermediate section is preferably wedge shaped and integral with the back 8 of the cast. 9 and 10 indicate lines of division between the three sections and as shown the lines of division 9 and 10 may flare outwardly as they approach the back 8. In addition, dovetailed grooves may be formed in the side sections 6 and 7, such grooves being adapted to cooperate with wedge-shaped portions 11 and 12 attached to the central section 5. Such dovetail construction permits the three sections of the cast 2 to be held together in proper relationship. Furthermore, the removal of the cast from the female mold is facilitated by first withdrawing the center section with its back 8 and then the side sections 6 and 7. By making the center section 5 in wedge shape, its withdrawal from the mold is facilitated and the side sections 6 and 7 are more readily released.

In forming the disguise member, the female mold 4 having on its interior surface the contours of the Mongol type, made as above described, is placed in operative relationship with respect to the original cast 2, as shown in Fig. 4. The hydrophilic gelatinous composition of this invention is then heated and poured into the space between the cast 2 and the female mold 4. If desired, a quantity of the heated and liquid gelatinous composition may be poured into the female mold 4 and the cast 2 then inserted, excess quantities of the composition being permitted to run out through openings 13 formed in the mold 4. After cooling, the cast 2 is removed and the now cold disguise member 14 extracted from the female mold. It is to be understood that the inner and outer surfaces of the molds may be coated with a suitable material for the purpose of facilitating removal of the disguise member. The resulting disguise member is therefore provided with an interior surface corresponding to the normal features of the Caucasian actor, the external surface of the disguise member now having the contours of the desired Mongolian type with the enlarged cheek bones, wide nose and other characteristics which had been built up as illustrated in Fig. 2 and in Fig. 7, the latter figure showing the disguise with a section thereof partly broken away and suitable edge portions removed so as to permit the mask to be fitted onto the actor's face.

The disguise member so made can be applied to the actor's face by means of spirit gum or other suitable adhesive and the line of demarcation between the edges of such disguise member and the actor's skin rendered substantially indistinguishable by brushing such edges with a solvent, the strokes being directed from the disguise member onto the skin of the wearer. Hot water may be used as a suitable solvent for this purpose since this medium softens the disguise member, rendering it semi-liquid and permitting the edges thereof to be attenuated to a desirable extent. Ordinary make-up, grease paint, or the like may then be applied to the entire head and neck of the actor, both over the disguise member and his exposed skin, further obliterating any possibility of distinguishing between the disguise member and the normal skin areas of the wearer. Because of the flexibility of the disguise member and its extreme mobility, the actor may then manipulate his jaws, mouth, nose and brows in a normal manner, the disguise member being actuated by the normal muscles without impediment.

Although the example given hereinabove referred to the production of a disguise member capable of fitting over the entire face of a subject, it is to be understood that disguise members for any desired portion of anatomy may be produced in a similar manner. For example, cheek bones, chins or noses alone may be changed in configuration, hands may be rendered puffy or malformed, etc.

Frequently it is desired to apply hair to the disguise as, for example, upon chins, brows or scalps. The present invention provides a novel and highly satisfactory method of attaching hair to the disguise in such manner that it is securely fixed thereinto and at the same time given an entirely natural appearance. Figs. 5 and 6 diagrammatically illustrate enlarged sections of a disguise member indicated at 16, showing the method of incorporating hair. Each individual hair 17 is threaded through the disguise member 16 by doubling the hair through the broken eye of a needle (not shown) which is then inserted through the disguise member 16. The needle is then withdrawn, leaving the looped end 18 of the hair projecting on the internal side of the disguise member 16. After the hairs have been inserted in this manner, the looped ends are either sheared off or seared off and a thin layer 19 of a suitable cement (which may comprise some of the heated gelatinous composition) is applied to coat over the seared or sheared ends of the hair.

It is to be understood that the invention is not limited to the use of any particular material or materials for molds or dies although ordinary casting plaster has been successfully employed. Moreover, those skilled in the art will readily appreciate that numerous changes and modifications can be made in adapting the invention to uses which are analogous. All changes and modifications coming within the scope of the appended claims are embraced thereby.

I claim:

1. A molded member provided with an inner surface adapted to normally conform to a desired portion of anatomy and an outer surface differing in contour from said inner surface, said member being of variable thickness and composed of a resilient, flexible and moldable composition approximating the flesh in flexibility and firmness, said composition consisting essentially of a hydrated hydrophilic colloid and a plasticizing agent, and having a melting point of between 70° C. and 80° C.

2. A molded member provided with an inner surface adapted to normally conform to a desired portion of anatomy, said member being of variable thickness and composed of a resilient, flexible and moldable composition approximating the flesh in flexibility and firmness, said composition consisting essentially of a colloid from the

group consisting of gelatin, agar-agar, water and a water-miscible plasticizing agent.

3. A molded member provided with an inner surface adapted to normally conform to a desired portion of anatomy and an outer surface differing in contour from said inner surface, said member being of variable thickness and composed of a resilient, flexible and moldable composition approximating the flesh in flexibility and firmness, said composition consisting essentially of a hydrated hydrophilic colloid and a plasticizing agent from the group consisting of glycerine, glycol, glycerol and glycol derivatives, and having a melting point of between 60° C. and 100° C.

4. A molded member provided with an inner surface adapted to normally conform to a desired portion of anatomy and an outer surface differing in contour from said inner surface, said member being of variable thickness and composed of a resilient, flexible and moldable composition approximating the flesh in flexibility and firmness, said composition consisting essentially of gelatin and a water-miscible plasticizing agent from the group consisting of glycerine, glycerol, glycol and glycol derivatives, and having a melting point of between 60° C. and 100° C.

5. A molded member provided with an inner surface adapted to normally conform to a desired portion of anatomy and an outer surface differing in contour from said inner surface, said member being of variable thickness and composed of a resilient, flexible and moldable composition approximating the flesh in flexibility and firmness, said composition containing water, 50% to 70% of glycerine, 25% to 35% of gelatin and a small amount of precipitating agent, and having a melting point of between 60° C. and 100° C.

6. A molded member provided with an inner surface adapted to normally conform to a desired portion of anatomy and an outer surface differing in contour from said inner surface, said member being of variable thickness and composed of a resilient, flexible and moldable composition approximating the flesh in flexibility and firmness, said composition consisting essentially of a hydrated hydrophilic colloid and a plasticizing agent from the group consisting of glycerine, glycerol, glycol and glycol derivatives, and having a melting point of between 60° C. and 100° C., said member being adapted to be attached to the body of a wearer with an adhesive and to be blended thereto by application of a solvent to the edges of the member.

7. A method of forming a disguise member which comprises: forming a cast of a desired portion of the body of a wearer, forming a mold from the said cast; forming a cast of the required disguise; casting a disguise member in said mold and last named cast from a composition consisting essentially of hydrophilic colloids and plasticizing agent, removing said disguise member from the said mold, applying said disguise member to the desired portion of the wearer, and blending the edges of the disguise member into the wearer by application of a solvent to the edges of said member.

8. A molded member provided with an inner surface adapted to normally conform to a desired portion of anatomy and of variable thickness, said member being composed essentially of hydrophilic colloids and plasticizing agents, said member being resilient, flexible, approximating the human flesh in firmness and having a melting point of between about 60 degrees C. and 100 degrees C.

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