

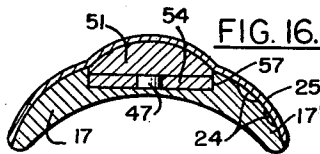
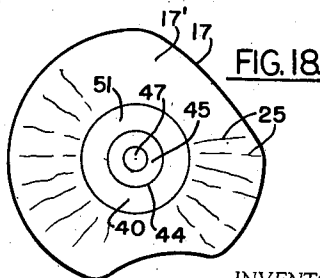
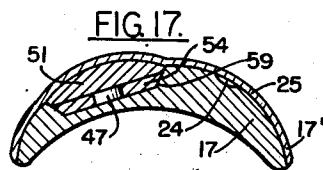
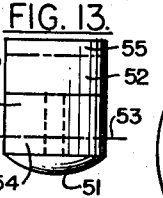
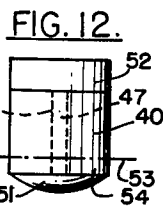
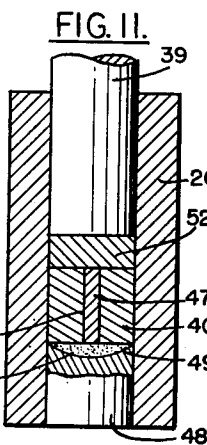
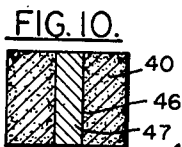
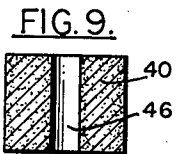
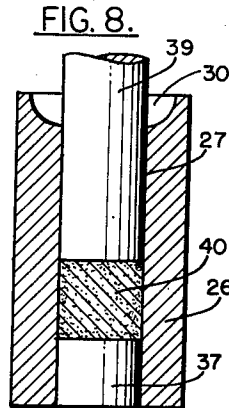
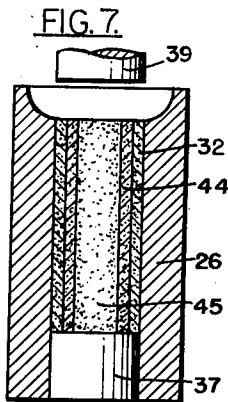
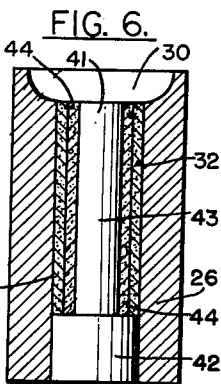
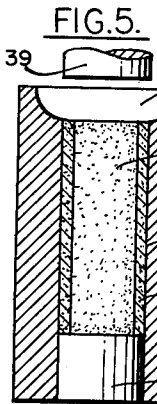
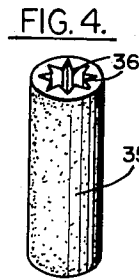
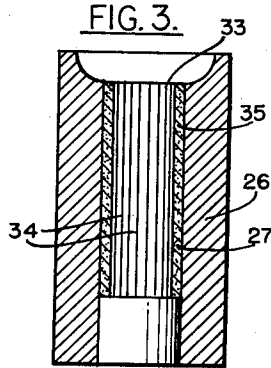
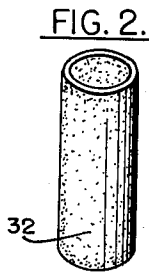
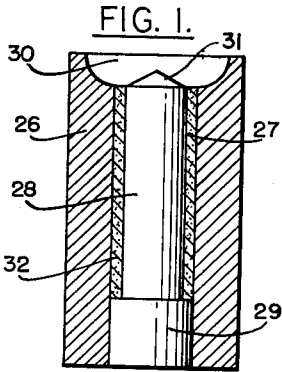
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2,673,369

METHOD OF FORMING ARTIFICIAL EYES

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UNITED STATES PATENT OFFICE

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METHOD OF FORMING ARTIFICIAL EYES

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1951, Serial No. 226,339

11 Claims. (Cl. 18—47.5)

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The present invention relates to a new method for making a prosthesis or artificial eye of granulated plastic material. This application is a continuation-in-part of my co-pending application Serial No. 607,732 filed July 30, 1945, and now abandoned, and a division of application Serial No. 679,040, filed June 25, 1946, which issued as Patent No. 2,563,462, August 7, 1952.

An important object of the invention consists in forming an artificial eye body or sclera and the iris of the eye of bonded, granular, plastic material.

By the present method anyone who can properly fit a glass eye, can measure, order and furnish to a user, an artificial eye fully equal in appearance and comfort to the finest made to order glass artificial eye. The plastic material used in making the artificial eye in accordance with the present invention is practically unaffected by the acid or tear solution of the eye and is, therefore, more durable than glass eyes.

Another object, therefore, of the invention is to provide a new and improved method for forming different colored or shades of irises from a mixture of selectively colored, bonded, granular, plastic material, in which the various colors or shades are blended in varying percentage and treated to simulate in shape, color and appearance any natural iris. This simple, efficient and economic method of forming the iris eliminates the expensive and highly skilled method of painting the artificial iris to simulate a human iris, or making individual irises from different colored glass in a molten state or by an elaborate color-photographic process, and also provides a novel means whereby a number of these artificial irises can be formed from a single colored body or plug at a minimum expenditure of time and effort.

Referring to the drawings in which are shown for the purpose of illustration preferred means for forming an artificial plastic eye and iris in accordance with the present invention:

Figure 1 is a vertical, sectional view of the iris mold cylinder for initially forming the granular, plastic material into tubular uncompressed form;

Figure 2 is a detailed side view of the uncompressed plastic tube formed by the iris mold shown in Figure 1;

Figure 3 is a vertical, sectional view of a modification of the iris mold shown in Figure 1;

Figure 4 is a detailed side view of a plastic tube formed by the mold shown in Figure 3;

Figure 5 is a side view with parts in section of the iris mold modified to form a two-tone colored iris button;

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Figure 6 is a side view with parts in section of the iris mold shown in Figure 5 for forming a three-tone colored iris button;

Figure 7 is a side view with parts in section of the iris mold shown in Figure 5, showing a third color or shade therein and preparatory to the heating and compression operation;

Figure 8 is a side view with the parts in section of the iris mold shown in either Figures 5 or 7, having the plunger inserted therein for compressing and forming the material into a solid homogeneous body.

Figure 9 is a sectional view of the iris button formed by the mold in Figure 7 and having an axial central opening drilled therein;

Figure 10 is a view similar to Figure 9, showing the pupil plug inserted in the central opening;

Figure 11 is a side view with parts in section of the iris compression mold modified to form the cornea;

Figure 12 is a detailed side view of the completed, solid, colored iris body or plug;

Figure 13 is a view similar to Figure 12, showing the iris plug provided with a lengthened handle portion;

Figure 14 is a side view of a colored iris button and cornea cut from the plug shown in Figure 12;

Figure 15 is a detailed side view of a modified form of iris button;

Figure 16 is a sectional view of a plastic eye body having an iris and cornea such as shown in Figure 14 embedded therein;

Figure 17 is a sectional view of a plastic eye body having an iris button and cornea such as shown in Figure 15 attached thereto;

Figure 18 is a front view of an artificial eye made in accordance with the present invention and having a three-tone iris button embedded therein.

The artificial eye body or sclera formed in accordance with the present invention is composed of granular plastic material, such as "Lucite," "Plexiglas," i. e., polyacrylic acid ester or polymethacrylic acid ester resins.

The colored iris which is embedded in the eye body so as to match the natural eye, is preferably made of the same plastic, granular material used to form the eye body or sclera. This plastic material is colored and then may be ground in a machine that reduces it without heating to the desired degree of fineness. This machine is provided with suitable means for obtaining either a fine or coarse granulated, plastic material, so that the different colored batches of plastics of coarse or fine grains may be selectively blended or mixed

in desired proportions to produce an artificial iris that matches in color shades any natural iris. The artificial iris comprises completely polymerized, fused, acrylic, fine and coarse granules of different shades which are blended together so that the finished iris is provided with sharply defined colored areas harmonizing with the original colors of the granules, so as to simulate a natural iris in size, shape, pattern and appearance, and in which adjacent fine granules are blended with the areas defined by the large granules to form blended edges with the different shades arranged in juxtaposition so as to be free from sharp dividing lines and simulate a natural iris.

The mold for making the colored or shaded irises may be of any desired shape and size and preferably one size iris mold is used and the formed iris turned to any desired diameter before being cut from the iris plug. As shown, the iris mold is formed with a cylindrical body 26 (Figure 1), having a center and axial opening 27 of uniform diameter therethrough, and arranged to receive a removable cylindrical rod or plunger 28, the lower end of which is formed with an enlarged shoulder or base portion 29 of substantially the same diameter as the opening 27 so as to properly center the rod 28 in the cylinder 26. The rod or stem 28 extends upwardly from the base 29 and is of such a diameter as to form an annular clearance with the inner wall of the opening 27. The upper end of the cylinder 26 may be recessed or dish-shaped, as at 30, and the rod 28 may be formed with a tapered end 31 which extends into the recess 30 when the parts are assembled so as to facilitate the pouring of the dry, granular plastic into the cylinder 26. The desired color or shade of plastic material which constitutes the outer periphery of the artificial iris is then introduced in granular form of the proper fineness into the cylinder 26, to fill the space between the wall of the opening 27 and the rod 28, and the parts are then heated without being subjected to pressure to form the uncompressed tubular colored or shaded body 32 (Figure 2) having smooth cylindrical inner and outer surfaces.

Instead of forming the tubular body 32 with an inner smooth surface, it is often desired, in order that the iris simulate in appearance the natural iris, that it be provided with longitudinal ribs or serrations on its inner surface, in such a case, instead of using a smooth cylindrical rod such as 28, a rod or member 33 having circumferentially disposed, spaced projections or ribs 34 (Figure 3), is arranged to be inserted within the cylinder 26, to form a clearance between the wall of the axial opening 27 and the rod 33, so that the desired colored or shaped material in granular form may be introduced into the mold and, upon being subjected to heat, forms an uncompressed tubular body 35 (Figure 4), having inwardly disposed ribs 36, for the purposes which will subsequently be described. The diameter of each of the rods 28 and 33 determines the thickness of the tubular body 32 and may be varied as conditions require or may be omitted if a single color or shade is to form the iris plug. Thus, it will be seen that the plastic body or sclera 17 comprises a translucent, completely polymerized, acrylic, plastic body, and that the colored iris 54 is formed from similar material including completely polymerized, fused, acrylic, dry granules. The granules in the finished iris constitute or form sharply defined colored areas that harmonize with the original colors of the granules so as to simulate a natural iris in size, color, shape, pattern and ap-

pearance, and in which the colored areas are blended at their edges with adjacent colored areas. Additionally, the adjacent fine granules are blended with the area defined by the large granules so that the different shades are arranged in juxtaposition and are free from sharp dividing lines. Moreover, a portion of the iris may be tinged any desired shade by the addition of a minute quantity of the desired tinging color of transparent, acrylic, dry plastic.

The color of human irises which usually are composed of different shades of brown, gray or blue or a mixture of any one or more of these colors, can be accurately reproduced to form an artificial iris by selectively blending these three colors and subjecting the mixture to proper heat and pressure in a heated press or the like. Accordingly, separate batches of fine and coarse gray, blue and brown dry, granular material are reduced to the desired degree of fineness by being passed through a grinding machine, so as to be available for immediate use. Assuming two colors or shades, such as blue and brown, are required to form an artificial iris corresponding to a human iris and that a light shade of blue is required to form the outer periphery of the artificial iris, then this particular shade is first made up by properly blending the necessary colors and the same is introduced into the iris cylinder 26 to form the tubular uncompressed body 32 (Figure 2). Similarly, the desired shade of granular brown plastic of the proper fineness is mixed and the rod 28 is removed from the cylinder 26 and a plug 37 (Figure 5) is inserted in the lower end of the opening 27, so as to close the same. The preformed tubular body 32 now rests on the top of the plug 37 and the space or opening in the tube 32 is filled with the desired shade of brown plastic 38. A press head or plunger 39, of substantially the same diameter as the opening 27, is then inserted into the cylinder 26 under sufficient heat and pressure to compress and reduce the two color shades into a solid cylindrical body 40, substantially of the size as shown in Figure 8. During this operation the different colors or shades of the granular plastic materials are fused or bonded together under heat and pressure to cause the lines of demarcation to be very irregular, so as to simulate in appearance the color of the human iris with which the artificial iris is to be used.

Instead of forming the outer periphery of the iris of cylindrical form, it may be desired, in order to simulate the natural iris, to provide ribs between the two colors, in which event tube 35 of the desired color or shade (Figure 4) is substituted for the tube 32 in the cylinder 26 (Figure 5), so that in its final form the compressed solid body 40 will be provided with longitudinal ribs or serrations between the two colors. Should it be desired to add a third color or shade to simulate the natural iris, then the outer periphery of the artificial iris is first formed in the manner as shown in Figure 1 and upon removal of the rod 28, a rod or member 41 (Figure 6), of smaller diameter than the tubular member 32 is inserted in the cylinder 26. The rod 41 has a base 42 of substantially the same diameter as the opening 27 and has its reduced stem portion 43 extending upwardly through the opening in the tubular member 32 to a point adjacent the recess 30. The desired color or shade which is to form a portion of the iris between its outer and inner peripheries, is then introduced between the inner wall of the tubular member 32 and the rod 41 to

form, when the parts are subjected to heat, an uncompressed intermediate tubular portion 44. The rod 41 is then removed from the cylinder 26 and the plug 37 (Figure 7) again inserted in the bottom of the opening 27 and the color or shade 45, which is to form the inner periphery or part of the iris, is then poured in dry, granular form into the cylinder 26, to fill the opening in the tubular body 44. The press head 39 under sufficient heat and pressure is then introduced into the cylinder 26 to compress and use the different colored or shaded plastic materials into a solid cylindrical homogenous body 40. It will, of course, be manifest, that the thickness of either the tubular plastic body 32 or 35 may be varied as desired by the simple expedient of using rods of different diameters. Moreover, instead of the smooth cylindrical rod 41 (Figure 6) a rod of the same diameter having ribs thereon may be provided, so that the iris plug in its final form will have radial ribs formed therein to simulate in appearance a natural iris.

The completed iris plug 40 upon removal from the cylinder 26 (Figure 8), is drilled to form a central opening 46 (Figure 9) into which is inserted a black rod 47 (Figure 10) that forms the pupil of the eye. The iris plug 40 with the pupil running through it is then placed back into the mold 26, so as preferably to have fused thereon at the same time, a cornea at one end and a handle portion at its opposite end. For this purpose, a plug 48 (Figure 11), having an upper concave surface 49, is inserted in the bottom of the cylinder 26 upon removal of the plug 37, and a sufficient amount of transparent, granular material is poured into the concave portion 49 of the plug 48 to fill the same. The solid iris body 40 is then inserted in the cylinder 26 so that the lower end thereof engages the material 50 and a few grams of granular, transparent material are poured on top of the body 40. The heated head 39 under proper pressure is now introduced into the cylinder 26, to simultaneously fuse the transparent convex cornea 51 and a handle portion 52 (Figure 12) on opposite ends of the solid body 40. The body 40, upon removal from the cylinder 26, is then chucked in a lathe so as to be held firmly in position by the handle 52 and the portion of the body adjacent thereto. The iris body is then cut transversely to the desired thickness such as at the point 53 (Figure 12) to form a complete iris 54 of the desired shade or color to match a natural iris.

The operation of forming a cornea 51 on the end of the iris plug 40 is repeated by returning the plug 40 to the cylinder 26, until the entire plug 40 is used. Each time the plug 40 is returned to the cylinder 26, an additional amount of transparent material is added, so as to lengthen the handle 52, as clearly illustrated at 55 in Figure 13. In other words, substantially the same amount of plastic material is added to the handle as is removed from the body to form each of the irises 54. The lengthening of the handle 52, as the body is reduced to form the several irises, insures a proper gripping means for holding the body 40 in a fixed position in the lathe during each cutting operation. It will be seen that the length of the plug 40 is such that a number of iris buttons and corneas may be formed from a single iris plug. However, the handle portion 52 may, if desirable, be omitted.

The differently colored or shaded granular plastic material in either fine or coarse form when introduced into the iris mold 26 to form the

solid iris plug 40, is subjected to a temperature of about 300° F., in order to heat the grains to a point where the individual grains fuse or melt into each other without materially affecting the size, shape or volume of the grains and without changing the molecular structure of the material. During the compression and heating operation, the material in the iris cylinder 26 is subjected to a pressure of two tons or more per square inch, as contrasted to the slight pressure used in molding by the dental process. The iris plug or button 54 may be formed of a single color or color combination, two colors with either a different color periphery or a different color around the pupil, or three colors or shades with different colors around the pupil and a different colored or shaded periphery. The circumferentially disposed spaced ribs or projections formed in the body of the iris by the rod 33 (Figure 3) preferably are located between the outer periphery and the portion of the iris surrounding the pupil, and may be associated with either a two- or three-tone or shaded iris and may vary in size and location, in order that the completed iris will simulate in appearance the natural iris with which it is to be used.

The colored iris 54 and transparent cornea 51, when removed from the plug 40, are of the shape shown in Figure 14 and the iris may have a straight annular edge 56 arranged to fit in a complementary formed recess or socket 57, previously formed in the outer surface of the body of the eye 17 and located at the proper optical center to match the human eye (Figure 16). The outer surface of the cornea has a greater curvature than that of the eye body (Figures 16 and 17).

In order to make the outer edge of the iris appear slightly darker as is the case in most human eyes, it is found by scientifically and correctly tapering the side 58 of the iris button 54 and forming the outer surface of the eye body 17 with a complementary formed recess 59 (Figure 17) that the iris, by refraction and reflection, when inserted in the body 17, is provided with a shaded portion around its periphery which very closely simulates a natural iris in size, shape, color and appearance. The iris button 54, either with a straight edge or a beveled edge, is firmly secured into the counterbore of the eye body 17 by being fused therein or by a cement composed of the same plastic as the material of which the body of the eye and the iris are made. The pupil rod 47 is inserted after the iris plug 40 is formed and before the cornea is attached, and a portion of the rod 47 is removed when forming each of the iris buttons 54 and corneas 51.

It will be seen that an artificial eye constructed in accordance with the present invention can be made and reproduced in substantially the same manner that a doctor or optician orders lenses for glasses. Briefly, the initial fitting of an artificial eye to match a human eye would be selected from a trial set kept in stock. This fitting set would contain approximately 120 blanks, that is artificial eyes without irises or corneas, rights and lefts, as specified in different shapes, sizes, or curve depths, and properly numbered or classified, so as to be easily selected. From these blanks or sets practically 99% of all artificial eye cases could be correctly fitted for size, shape and appearance, and the bodies of the eyes or scleras would be made in several shades of "off white" to match the wearer's good eye. This stock set of fitting may also contain about 130 unmounted irises of different shades and standardized per-

centage mixtures of blue, gray and brown, all definitely numbered. To match varied colored eyes, the fitter may specify one color around the pupil, another color for the main part of the iris, and still a third color for the outer periphery of the iris, or a one or two color or shade of iris may be selected to match the natural iris.

Eyes of Americans are almost never a true, single color, but composed of different shades of blue, gray and brown, almost invariably a combination of two or three of these colors. The present method and means of making irises of several shades of each color blended together in fixed predetermined percentage quantities enables the matching of the color effect of practically every human eye. The exact design of the color formation in the human eye and the artificial eye is of little importance, for if the color effect is the same, the design difference can only be detected by a minute inspection to which the wearer is not ordinarily subjected.

The fitting procedure for artificial eyes may be illustrated as follows: the fitter selects the proper blank to match the good eye and, in this connection it may be mentioned, that in a percentage of cases where an eye is lost by accident, the upper lid muscles are affected and it is not unusual that a flatter eye must be used to permit proper lid action. In other cases, an eye with a greater curvature may be needed to prevent the lid from dropping. Since the fitting set of artificial eyes contains the same size blank in several radii of curvature, it is only a matter of trial to select the most desirable curve for each particular case. The proper colors for the iris would be selected and the diameter of each iris and pupil specified. The blank may then be marked with a waterproof, china-marking, wax pencil or by other means to show the exact position desired for the iris and for the center of the eye. This position or fit would also be measured and recorded.

Thus, simple, efficient and economical means are provided for forming an artificial eye body, colored iris and cornea that will simulate in every detailed respect the natural eye of the wearer and which may be ordered or duplicated in the same manner as eye glasses are made and without requiring the presence of the eye maker. The parts of the artificial eye are preferably formed from the same plastic material so that the composite eye is light and durable and readily shaped to fit the eye socket of the wearer. Moreover, the transparent, protective, plastic coating 17' over the vein lines 25, that may be formed by engraving minute channels or irregular shaped grooves 24 (Figures 16 and 17) on the outer surface of the body 17 and filling these channels with plastic red ink or suitable coloring material, and over the iris prevents these parts from being detrimentally affected by the tear solution in the eye or by handling, so that the wearing qualities of the artificial eye are materially enhanced.

It is to be understood that the methods disclosed for forming the artificial eye bodies and irises are merely illustrative and that such other means may be employed as fall within the purview of one skilled in the art without departing from the spirit of the invention and the scope of the claims.

I claim:

1. An improved method of forming artificial irises from plastic material which includes introducing granular, colored or shaded plastic into a cylinder mold, having a rod of reduced diameter extending axially therein, subjecting the material to heat without pressure to form a tubu-

lar uncompressed plastic body, withdrawing the rod from the mold, pouring different or shaded granular plastic into the tubular uncompressed plastic body, subjecting the tubular body and the plastic therein to heat and pressure to compress and form the same into a solid colored body, and fusing under heat and pressure a transparent cornea of plastic material to one end of the solid body.

2. An improved method of forming artificial irises and corneas from plastic material which includes introducing dry granular, colored or shaded plastic into a cylinder mold, having a rod of reduced diameter extending axially therein, subjecting the material to heat without pressure to form a tubular uncompressed plastic body, withdrawing the rod from the mold, pouring different colored or shaded, dry granular plastic therein into the tubular uncompressed plastic body, subjecting the tubular body and the plastic to heat and pressure while in the mold to compress and form the material thereof into a solid colored body, fusing under heat and pressure a transparent cornea of plastic material to one end of the solid body, and cutting the solid body adjacent the cornea to form a colored iris button having integrally united thereto a transparent cornea.

3. An improved method of forming artificial irises and corneas from plastic material which includes introducing dry granular, colored or shaded plastic into a cylinder mold having a rod of reduced diameter extending axially therein, subjecting the material to heat without pressure to form a tubular, uncompressed, plastic body, withdrawing the rod from the mold, pouring different colored or shaded, dry granular plastic into the tubular uncompressed body while in the mold, subjecting the tubular body and the plastic therein to heat and pressure to compress and form the same into a solid body, drilling an opening through said body, inserting a plug of plastic material in the opening to form the pupil of the eye, introducing the solid body into a mold having a concave end portion into which is previously applied a transparent layer of granular plastic material, subjecting the solid body and transparent material to heat and pressure to fuse the latter to the solid body and form a convex, transparent surface or film on the end of the body that constitutes the cornea of the artificial eye, and cutting the solid body adjacent the cornea to form a colored iris button having a transparent cornea integrally united thereto.

4. An improved method of forming artificial irises and corneas from plastic material which includes introducing dry granular, colored or shaded plastic into a cylinder mold, having a rod of reduced diameter therein, subjecting the material to heat without pressure to form a tubular, uncompressed, plastic body, withdrawing the rod from the mold, pouring different colored or shaded dry granular plastic into the tubular uncompressed plastic body, subjecting the tubular body and the plastic therein to heat and pressure to compress and form the same into a solid colored body, forming an axial opening in the solid body, inserting a plug of plastic material in the opening to form the pupil of the eye, introducing the solid body into a mold having a concave end portion into which is previously applied a transparent layer of granular plastic material subjecting the solid body and transparent material to heat and pressure to fuse the latter to the solid body and form a convex, transparent

surface that constitutes the cornea of the artificial eye, cutting the solid body adjacent the cornea to form a colored iris button having a transparent cornea, integrally united thereto, inserting the remaining uncut portion of the solid body into the concave mold applying a transparent layer of granular material into the concave mold to form on the end of the body a convex cornea, and cutting the solid body adjacent the cornea to form another iris button, said solid body being of such length that a number of iris buttons and corneas are formed therefrom.

5. An improved method of forming artificial irises and corneas from plastic material which includes introducing dry granular colored or shaded plastic into a cylinder mold having a rod of reduced diameter therein, subjecting the material to heat without pressure to form a tubular, uncompressed plastic body, withdrawing the rod from the mold, inserting a second rod of smaller diameter than the tubular uncompressed plastic body into the latter, pouring different colored or shaded, granular plastic into the mold between the tubular uncompressed body and the second rod, subjecting the tubular body and the plastic therein to heat to form an uncompressed inner tubular body within the first mentioned tubular body, withdrawing the second rod from the mold, and introducing into the inner tubular body colored or shaded granular plastic, and subjecting the tubular bodies and plastic while in the mold to heat and pressure to compress and form the same into a solid colored or shaded body, fusing under heat and pressure a transparent cornea of plastic material to one end of the solid body, and cutting the solid body adjacent the cornea to form a colored iris button having a transparent cornea integrally united thereto.

6. An improved method of forming artificial irises as called for in claim 5 in which the second rod is provided with circumferentially spaced outwardly extending spaced ribs.

7. An improved method of forming artificial irises and corneas from plastic material which includes introducing dry granular, colored or shaded plastic into a cylinder mold having a rod of reduced diameter therein, subjecting the material to heat without pressure to form a tubular uncompressed plastic body, withdrawing the rod from the mold, inserting a second rod of smaller diameter, than the tubular uncompressed plastic body into the latter, pouring different colored or shaded, granular plastic into the mold between the tubular uncompressed body and the second rod, subjecting the tubular body and the plastic therein to heat to form an uncompressed inner tubular body within the first mentioned tubular body, withdrawing the second rod from the mold, introducing into the inner tubular body colored or shaded granular plastic, subjecting the tubular bodies and plastic to heat and pressure to compress and fuse the same into a solid colored or shaded body, drilling an opening through the solid body, inserting a pupil plug of plastic material into the opening fusing under heat and pressure a transparent cornea of plastic material to one end of the solid body, cutting the solid body adjacent the cornea to form a colored iris button having a transparent cornea integrally united thereto, inserting the solid body into the mold, applying a transparent layer of granular material into the concave mold to form another cornea on the end of the solid body, and cutting of the body adjacent the cornea to form an iris button, said solid body being of such length

that a number of irises and corneas are formed therefrom.

8. An improved method of forming artificial irises and corneas from plastic material which includes introducing dry granular, colored or shaded plastic into a cylinder mold having a rod of reduced diameter extending axially therein, subjecting the material to heat without pressure to form a tubular uncompressed body, withdrawing the rod from the mold, pouring different colored or shaded dry granular plastic into the tubular uncompressed body while in the mold, subjecting the tubular body and the plastic therein to heat and pressure to compress and form the same into a solid colored body, forming an axial opening in the solid body, inserting a plug of plastic material in the opening to form the pupil of the eye, introducing the solid body into a mold having a concave end portion into which is previously applied a transparent layer of granular plastic material, pouring a small amount of granular plastic on the top of the solid body, subjecting the solid body and granular material to heat and pressure, so as to simultaneously fuse to opposite ends thereof a convex cornea and a handle portion, and cutting the solid body adjacent the cornea to form a colored iris button having a transparent cornea integrally united thereto.

9. An improved method of forming artificial irises and corneas from plastic material which includes introducing dry granular, colored or shaded plastic into a cylinder mold having a rod of reduced diameter extending axially therein, subjecting the material to heat without pressure to form a tubular uncompressed body, withdrawing the rod from the mold, pouring different colored or shaded dry, granular plastic into the tubular uncompressed body while in the mold, subjecting the tubular body and plastic to heat and pressure to compress and fuse the same into a solid colored body, forming an axial opening in the solid body, inserting a plug of plastic material in the opening to form the pupil of the eye, introducing the solid body into a mold having a concave end portion into which is previously applied a transparent layer of granular plastic material, pouring a small amount of granular plastic on the top of the solid body, subjecting the solid body and granular material to heat and pressure, so as to simultaneously fuse to opposite ends thereof a convex cornea and a handle portion, cutting the solid body adjacent the cornea to form a colored iris button having a transparent cornea integrally united thereto, inserting the solid body again into the concave mold after introducing a film of transparent granular material therein, pouring a small amount of transparent granular material on the top of the solid body, subjecting the solid body and plastic granular material to heat and pressure so as to simultaneously form on opposite ends of the solid body a convex cornea and an extended handle portion, and cutting the body adjacent the cornea to form another iris button, said solid body being of such length that a number of irises and corneas are formed therefrom and when an iris is removed, the handle portion is proportionally increased in length.

10. An improved method of forming artificial irises from plastic material which includes introducing polymerized, dry, colored acrylic resin granules into a cylindrical mold provided with a rod of reduced diameter extending axially therein and provided with longitudinally spaced ribs,

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subjecting the material in the cylinder mold to heat without pressure to form a tubular uncompressed plastic body having circumferentially spaced ribs extending inwardly therefrom, pouring polymerized, acrylic, dry, different colored granules into the tubular uncompressed plastic body and subjecting the tubular body and the granules therein to heat and pressure to compress and form the same into a solid colored body, the finished iris forming sharply defined colored areas to simulate a natural iris, and said colored areas blending at their edges with adjacent colored areas.

11. An improved method of forming artificial irises from plastic material which includes introducing granular colored or shaded plastic into a cylinder mold having a rod of reduced diameter extending axially therein, subjecting the material to heat without pressure to form a tubular un-

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compressed plastic body, withdrawing the rod from the mold, pouring different colored or shaded granular plastic into the tubular uncompressed plastic body, subjecting the tubular body and the plastic therein to heat and pressure to compress and form the same into a solid colored body, and the finished iris forming sharply defined color areas which blend at their edges with adjacent colored areas.

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