W. WENDTLAND.

ARTIFICIAL EYE.

APPLICATION FILED JUNE 22, 1920.

1,373,579. Patented Apr. 5, 1921.

Fig. 1

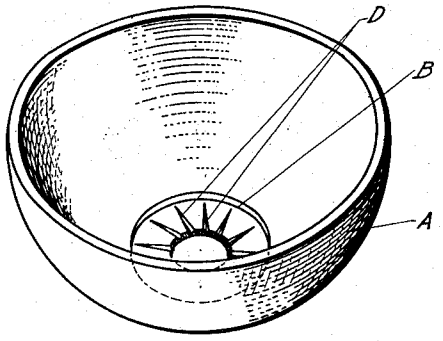


Fig. 2

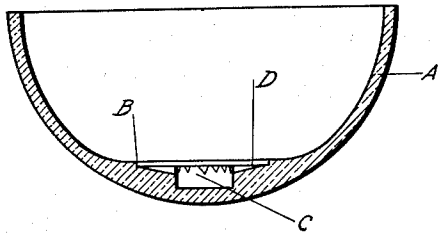


Fig. 3

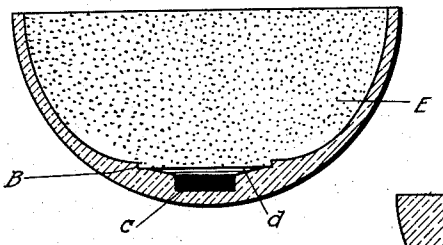


Fig. 5

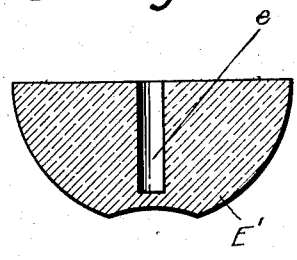
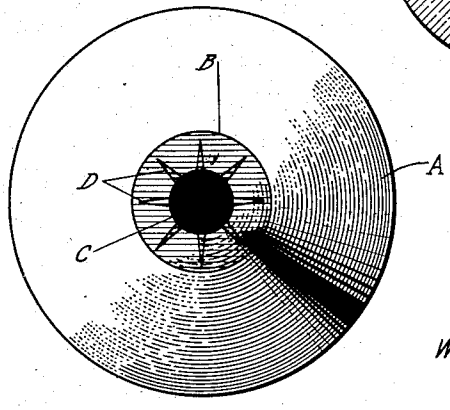


Fig. 4



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WILLIAM WENDTLAND, OF NEW YORK, N. Y.

ARTIFICIAL EYE.

1,373,579. Specification of Letters Patent. Patented Apr. 5, 1921.

Application filed June 22, 1920. Serial No. 390,847.

To all whom it may concern:

Be it known that I, WILLIAM WENDTLAND, a citizen of the United States, residing at New York city, borough of Manhattan, county and State of New York, have invented a certain new and useful Artificial Eye, of which the following is a specification.

This invention relates to artificial eyes for dolls, manikins, or the like, and while especially adapted for pivotally mounted eyes, intended to open and close, when the doll is moved from a reclining to an upstanding position, and vice versa, is equally applicable for use as a stationary eye.

The object of the invention is to produce an artificial eye which shall closely resemble the natural eye, in a simple, and efficient manner.

Some artificial eyes heretofore made have very closely resembled the natural eye, but in the manufacture of such eyes the resemblance to the natural eye is entirely dependent upon the skill of the workman involved. If the workman is highly skilled, the result is proportionately good, whereas, in the absence of such skill the finished eye proportionately fails to simulate the natural optic. Accordingly, in the manufacture of such eyes considerable expense is entailed, and the process of making is relatively slow and calls for the highest genius on the part of the workman. Consequently such eyes are found only in the higher priced dolls, and the cheaper dolls are usually provided with eyes that bear only a passing resemblance to the natural eye.

With these considerations in mind, the object of this invention, from a more specific standpoint, is to so construct artificial eyes that they may be manufactured in large quantities in an expeditious manner and by practically unskilled labor, and will, nevertheless, be more uniform than the eyes heretofore produced and more closely resemble the natural eye than some of the more expensive and carefully constructed optics hereinbefore referred to.

A further object of this invention is to construct an eye of a minimum number of parts and, in practice, the eye of this invention may be said, in effect, to be a one piece eye.

Features of the invention, other than those specified, will be apparent from the hereinafter detailed description and claims, when read in conjunction with the accompanying drawings.

The accompanying drawings illustrate one practical embodiment of the invention, but the construction therein shown is to be understood as illustrative, only, and not as defining the limits of the invention.

In the accompanying drawings, Figure 1 is a perspective view of a shell constituting the eye ball.

Fig. 2 is a central section of the shell shown in Fig. 1.

Fig. 3 is a view corresponding to Fig. 2, but showing the shell colored to simulate the iris and pupil backed by an opaque medium;

Fig. 4 is a face view of the finished eye; and,

Fig. 5 is a modified form of backing.

In making the eye of this invention, I first form a pressed or molded shell A, preferably of glass. As a part of the pressing or molding operation, there is preferably formed in the base of the shell, a recess B, corresponding to the iris in the eye and the center of this recess is provided with a depression C corresponding to the pupil. From the depression C radiate a plurality of tapering channels or grooves D corresponding to the rays of the iris. The shell A is pressed or otherwise formed in one operation and forms the basis of the construction. These shells may be made in large quantities in an automatic manner and so expedite and economize in the manufacture of the structure.

To complete the eye a drop of paint or other coloring matter *c* is introduced into the depression C and immediately thereafter additional paint or coloring matter *d* may be smeared over the face of the recess B, so that the coloring matter *c* serves to simulate the pupil of the eye, while the coloring matter *d* tints the iris. In practice, it is found that because of the amount of color *c* introduced into the depression C, this color will have sufficient body or mass to appear relatively dark, while the application of the same color to the face of the recess B will make the same appear relatively light as the color is of less depth at this point. It will be noted, however, that as the color fills the grooves D, it will be of greater depth in the

grooves than throughout the other portions of the iris, so that the rays of the eye will stand out sharply and well defined.

If desired, the coloring *c* and *d* may be the same color applied at the same time, or the color *c* a different color introduced into the depression C first and allowed to dry before applying the color *d*. For the purpose of illustration, however, I have shown the former method and have hatched the iris and pupil to show light blue and black, respectively. The rays are shown of the dark color, although, in practice, when a single color is used the rays are of a tone between that of the iris and pupil.

In applying the color, no skill whatsoever is required and this may be accomplished by unskilled workmen in an economical manner. In this regard, it will be noted that the depression B facilitates the application of color to the iris by definitely fixing the outlines thereof so that no care need be required in defining the outer circumference of the iris. In order to permit of the forming of the depression B within the shell, the wall of the shell is preferably made thicker at its base and this thickening of the shell at this point causes the same to form, in effect, a lens which magnifies the iris, but more particularly the pupil, so that it stands out in sharp relief and closely simulates the appearance of the natural optic.

The eye thus formed may be finished by positioning within the shell a suitable white backing to give the proper appearance to the eyeball and, in practice, this backing may be of different material or substance. For example, the shell may be filled with plaster of Paris E, as shown in Fig. 3, or, a plug E′ may be molded to fit the interior of the shell, after the manner shown in Fig. 5 and positioned within the shell in lieu of the plaster of Paris E. This plug may be of opal glass though very good results are obtainable if ordinary glass is used and embedded within the shell A, in plaster of Paris.

If the shell is filled with plaster of Paris as shown in Fig. 3, a suitable mounting may be molded into the plaster of Paris before the same becomes hard, but when the construction of Fig. 5 is employed the plug is preferably provided with a hole *e* to permit of the mounting of the eye. From the standpoint of appearance, it makes little difference which of the backings of Figs. 3 or 5 are used as they both form a white background which gives the eye a natural appearance.

It may be here noted that when color is applied to the base of the depression B, it has a tendency to build or bank up like a fillet in the outer margin of the depression and when the eye is finished this results in a ring of a darker shade of color on the outer circumference of the iris which very closely resembles such rings frequently found in the natural eye.

A marked advantage of the present invention over former eyes is that marked natural effects may be produced by unskilled workmen. No skill whatsoever is required to make the eyes of this invention. Material other than glass may be used for the shell, but glass is preferable since it imparts to the eyeball a natural luster.

It will thus appear that certain parts of the invention may be employed to the exclusion of others without departing from the spirit of the invention, the scope of which is commensurate with the appended claims.

Having thus fully described the invention, what I claim as new and desire to secure by Letters Patent is:

1. An artificial eye embodying a shell corresponding to the eyeball and provided with an interior depression corresponding to the iris, the base of which depression is recessed in the pupil portion thereof, and is further provided with grooves radiating from the recess therein, and coloring matter positioned in said recess, in the grooves and covering the base of the depression.

2. An artificial eye embodying a shell corresponding to the eyeball and provided with an interior depression corresponding to the iris, the base of which depression is recessed in the pupil portion thereof and is further provided with grooves radiating from the recess therein, coloring matter of one color positioned in the recess and coloring matter of another color positioned in the grooves and covering the base of the depression.

3. An artificial eye embodying a shell corresponding to the eyeball and provided with an interior depression corresponding to the iris, the base of which depression is recessed in the pupil portion thereof, and is further provided with grooves radiating from the recess therein, and coloring matter positioned in said recess, in the grooves and covering the base of the depression, a portion of the shell in which the depression and recess are formed being of greater thickness than the surrounding portions of the shell, whereby the pupil and iris are magnified.

4. An artificial eye embodying a shell corresponding to the eyeball and provided with an interior depression corresponding to the iris, the base of which depression is recessed to form the pupil portion thereof, and coloring matter positioned in the recess and in the depression to color the pupil and iris.

5. An artificial eye embodying a transparent glass shell corresponding to the eyeball and provided with an interior depression corresponding to the iris, the base of

which depression is recessed to form the pupil portion thereof, and coloring matter positioned in the recess and in the depression to color the pupil and iris, and backing means positioned within the shell for imparting a white appearance to the remainder of the eyeball.

6. A doll's eye comprising a substantially hemispherical shell having a depression for the pupil located at the center of the interior thereof, a clearly defined area forming a field for the iris and surrounding said depression, the outer edge of said area merging with the interior curvature of the eye shell at an angle thereto, the depression and area being suitably colored to delineate the several features of the eye.

7. A doll's eye comprising a substantially hemispherical shell having a depression for the pupil located at the center of the interior thereof, a clearly defined area forming a field for the iris surrounding said depression and having a series of radial grooves formed therein, said area merging with the interior curvature of the eye shell at an angle thereto, the depression and area being suitably colored to delineate the several features of the eye.

8. A shell for dolls' eyes comprising a substantially hemispherical body having a depression located at the center of the interior thereof adapted to be suitably colored to represent the pupil, said depression being surrounded by a clearly defined area forming a field for the iris and adapted to be suitably colored to represent the iris, the outer edge of said clearly defined area merging with the interior curvature of the eye shell at an angle thereto.

In testimony whereof I have signed my name to this specification.

WILLIAM WENDTLAND.