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S. MARCUS

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DOLL EYE WITH ADJUSTABLE LASH

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Fig. 1.

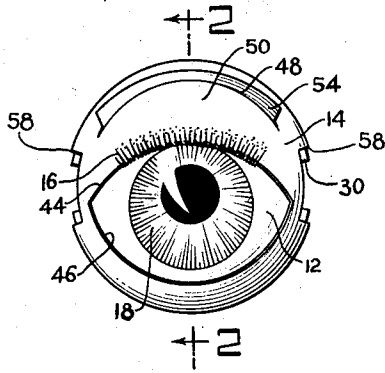


Fig. 2.

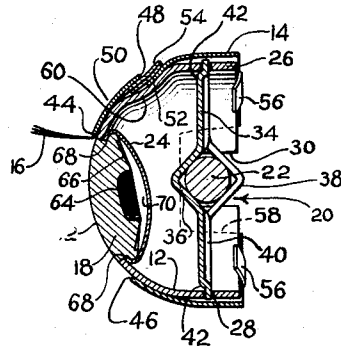


Fig. 3.

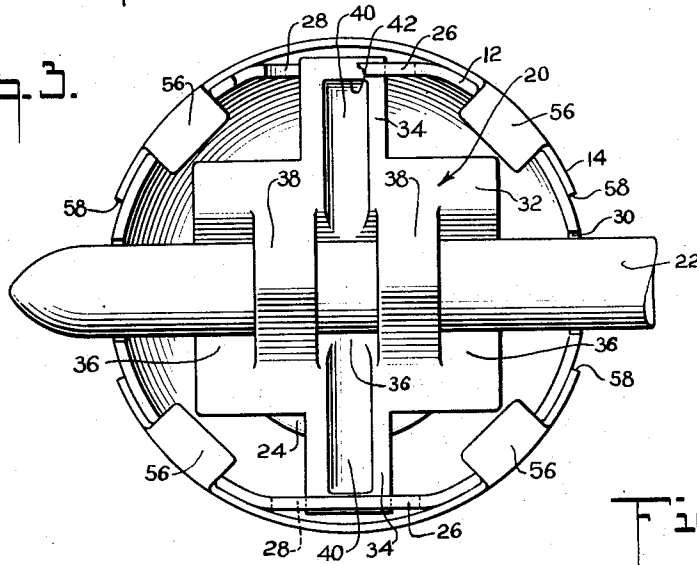


Fig. 4.

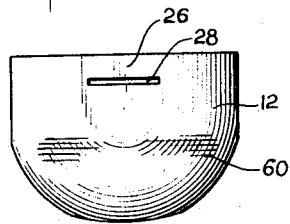
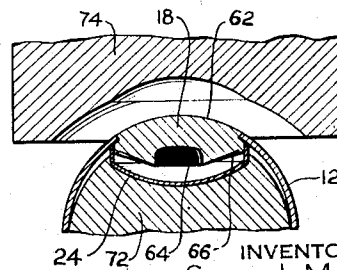


Fig. 5.



INVENTOR
Samuel Marcus

BY *James H. Franklin*
ATTORNEYS

UNITED STATES PATENT OFFICE

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DOLL EYE WITH ADJUSTABLE LASH

Samuel Marcus, Jersey City, N. J., assignor to
Margon Corporation, Bayonne, N. J., a corpo-
ration of New Jersey

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16 Claims. (Cl. 46—165)

This invention relates to doll eyes and more particularly to movable eyes for sleeping dolls.

The primary object of the invention is to generally improve doll eyes and more especially eyes provided with lashes.

One object of the invention is to provide an improved structure for affording a frictional or manual rotative adjustment of the eye about its shaft and an automatic or self-adjustment of the eye axially of the shaft. In accordance with features and objects of the invention, the conventional approximately hemispherical eyeshell is flattened somewhat at the top and bottom to form parallel sides, and closed slots are cut through these sides in the direction of the eye shaft. A clip or key is formed, this comprising a hub portion frictionally received on the shaft and outwardly extending arms the ends of which are slidably received in the aforesaid slots. These arms may be channeled to stiffen the same, the said channels terminating short of the ends to form shoulders which cooperate with the flattened surfaces of the eyeshell in order to fix the eye on the key without, however, preventing axial movement of the key in the slots. This construction has the advantage of making it unnecessary to provide perforations in the eyeshell to receive the shaft, thereby saving metal, for the eyeshell may terminate close to the shaft, and more importantly, eliminating the troublesome operation of accurately perforating the shell at the exact center-line of the eye, a step which had to be performed as a separate operation in order to insure accuracy. In the present case, the eyeshell may be cut away liberally around the shaft, for the support is solely by means of the key.

Other objects of the invention center about the eyelash and particularly its mounting and provision for adjustment of the position thereof relative to the eye and shaft. In accordance with features and objects of the present invention, an approximately hemispherical eyeshell is provided which may be conventional in having pupil, iris, and white portions. An approximately hemispherical outer shell encloses the eyeshell and is tinted to simulate an eyelid. This outer shell is cut away to expose the iris and a somewhat elliptical portion of the white eyeball, the exposed area conforming generally to the eye opening of the doll head in which the eye is to be used, or being larger particularly at the bottom. The outer shell is slit across the top at a point back of the necessary or effective eyelid area, to receive the eyelash, and the eye-

lash projects outwardly from beneath the eyelid portion while its inner edge or foundation is clamped in the slit. The desired adjustment of the eyelash is obtained by simply making the entire outer shell adjustable relative to the eyeshell, and for this purpose, the outer shell has lugs at its rear edge which are bent around the rear edge of the eyeshell, thus securing the shells together but permitting the outer shell to be oscillated, so that the position of the eyelash may be changed to conform to the top of the eye opening in the doll head receiving the eye. The outer shell is cut away for a substantial distance at each side so that the oscillation referred to may be obtained without interference with the eye shaft. As a further detailed improvement, the eyeshell is preferably indented at the top an amount sufficient to receive the eyelash foundation and the inwardly displaced metal of the outer shell at the slit, this being done so that the outer shell may retain its spherical configuration for a close fit against the eye opening as the eye oscillates against the opening during the normal opening and closing movements of the eye.

Still another object of the invention is to improve the coloration and appearance of the iris. The eyeshell is preferably provided with a separate comparatively thick lens for the iris and pupil. The inner surface of the lens may be blackened to form a pupil and may be provided with radial indentations to simulate iris lines. The periphery of the lens may be channeled to receive the edge of the metal eyeshell, thus locking the parts together. In accordance with the present invention, a shallow cup-shaped sheet metal member is colored on the inside with a desired iris background color, and this cup is placed around the inner part of the lens, the edge of the cup being turned inwardly to bite into the periphery of the lens and thereby permanently anchor the color cup in position. This arrangement insures centering and secure anchorage of the color disk; it is dust-proof; and the colored surface is spaced from the lens by a uniform amount, thus improving the effect and appearance of the eye.

To the accomplishment of the foregoing, and such other objects as will hereinafter appear, my invention consists in the doll eye elements and their relation one to the other, as hereinafter are more particularly described in the specification and sought to be defined in the claims. The specification is accompanied by a drawing in which:

Fig. 1 is a front elevation of a doll eye embodying features of the invention;

Fig. 2 is a section taken in the plane of the line 2-2 of Fig. 1;

Fig. 3 is a rear elevation drawn to an enlarged scale;

Fig. 4 is a plan view of the eyeshell alone; and

Fig. 5 is explanatory of the method of securing the color cup to the eye.

Referring to the drawing, the complete eye assembly comprises an approximately hemispherical eyeshell 12, an outer shell 14 adjustably secured over the eyeshell 12 and carrying the eyelash 16, a lens 18 secured in the eyeshell 12 and exposed through a suitable opening in outer shell 14, a key 20 frictionally or manually adjustable on an eye shaft 22 and automatically self-adjustable relative to the eyeshell 12, and a color cup 24 anchored on and in effect forming a part of the lens 18.

Considering the structure in greater detail, the eyeshell 12 is made by drawing sheet metal to approximately hemispherical shape. The metal may be initially colored white, or may be sprayed after being formed, in which case the large central perforation for the lens is preferably formed before the spraying operation. The shell is flattened somewhat at the top and bottom to form the parallel surfaces 26, best shown in Fig. 3. These flattened surfaces are slotted to form closed slots 28, best shown in Fig. 4, these slots extending in the direction of the eye shaft 22. The sides of the eyeshell are cut away at 30, to form enlarged openings or recesses which freely clear the shaft 22.

The key 20 may be stamped from sheet metal. It comprises a hub portion 32 and a pair of arms 34 projecting outwardly therefrom. The hub portion is incised to form parallel straps 36 and 38, the alternate straps being bent in opposite directions to form a passage for receiving the shaft 22. The straps are preferably bent angularly, as shown in Fig. 2, rather than semi-circular, for in this manner, they may be given a tight resilient fit on the shaft. The fit is such that the eye may be manually adjusted around the shaft until the pair of eyes appear to gaze properly through the eye openings in the doll head, yet the eyes then remain locked to the shaft for common movement under the influence of the conventional weight arm. The arms 34 project into the slots 28 but the width of the arms is substantially less than the length of the slots, thus affording side to side movement of the eyeshell relative to the key. Means are provided to lock the eyeshell and key against disassembly and to prevent vertical movement of one relative to the other. In the present case, the arms 34 are channeled at 40, thus stiffening the arms, and these channels terminate just inside the flattened surfaces 26 of the eyeshell, thereby forming shoulders 42 which prevent vertical movement of the eyeshell relative to the key.

The outer shell 14 is also formed of sheet metal bent to approximately hemispherical configuration. It is preferably tinted a flesh color either before the stamping operation or by spraying the shells after they have been stamped and cut to proper shape. The front of the outer shell is cut away on lines 44 and 46, the line 44 conforming to the top of the eye opening in the doll head, and the line 46 conforming to the bottom of the eye opening or being displaced somewhat further downwardly in order to help insure close fit between the eyeshell and the eye opening. It

will be understood that the white surface of the eyeshell exposed in the opening corresponds to the eyeball, and it will also be understood that the lens 18 is exposed through the opening. The outer shell is slit across the top at 48, this slit being located far enough rearwardly of the line 44 to provide an adequate eyelid area 50 therebetween. In other words, as the eye tilts downwardly to close, the eyelid area 50 comes across the eye opening and the eye may be fully closed without exposing the slit 48. The rear edge 52 of the slit is bent inwardly and the foundation 54 of eyelash 16 is passed through the slit and there clamped in position. The lash is disposed on the inner surface of lid 50, and then projects outwardly, as is indicated in Fig. 2. The clamping of the foundation 54 in the slit is adequate to hold the lash in place, but, if desired, cement may also be applied.

As has already been mentioned, the lash is adjustable relative to the eyeshell, and, for this purpose, the entire outer shell is adjustable. Specifically, the rear edge of the outer shell is provided with lugs 56 which are bent inwardly over the rear edge of the eyeshell and which function to hold the shells in nested or assembled relation. Because of the generally circular configuration of the shells, the outer shell is oscillatable about the eyeshell, this oscillation taking place about an axis perpendicular to the plane of key 20. Thus, the angular disposition of lash 16 relative to the eyeshell, or relative to the eye shaft 22, may be changed. In this way, the lash may be tilted until it best conforms to and fits within the top edge of the eye opening in the doll head.

The outer shell is cut away for a substantial distance at the sides, as is indicated at 58, so that there is no interference with the shaft 22 as the outer shell is oscillated over the desired range of movement. The top of the eyeshell 12 is preferably indented, as is shown at 60 in Figs. 2 and 4. This indentation is made large enough to receive the eyelash foundation and the inwardly displaced edge 52 of the eyelash slit. The idea is to so receive these parts that the outer surface of the outer shell, particularly at the eyelid 50, may conform to the surface of a sphere, for in this way, a close fit between the eye assembly and the eye opening in the doll head may be maintained during opening and closing of the eye.

The lens 18 is preferably made of a comparatively thick body of Celluloid or like transparent material. The outer surface 62 conforms to the surface of a sphere and forms a smooth continuation of the outer surface of the eyeshell 12. The inner surface may be indented at 64 and colored black to simulate the pupil of the eye. The area outside the pupil is preferably provided with radial indentations 66 which simulate iris lines. This surface is preferably conical in order to dispose the pupil 64 a substantial distance within the eye, thus adding depth and realism to the appearance of the finished eye. The peripheral part of the rear surface may be colored somewhat, but whether or not such coloration is provided near the edge of the iris, it is desirable to provide a colored background for the iris, and this is obtained by using a sheet metal color cup 24.

Referring to Fig. 2, the member 24 is a shallow dish-like piece of sheet metal, the inner surface of which is colored, for example, blue for a blue eye, and brown for a brown eye, etc. The edge 68 of the cup is turned inwardly and is thus

secured around the inner part of the lens. The parts are thus anchored together and the cup 24 in effect forms a part of the lens. It is preferably so shaped as to provide a space 70 between the lens and the cup, for this helps improve the appearance of the eye. At the same time, it is impossible for dust or the like to get between the lens and the cup, for the parts are tightly sealed together around the periphery of the lens.

The manner in which the parts are secured together will be understood by reference to Fig. 5. The lens 18 is peripherally grooved and has previously been secured to the eyeshell 12 by anchoring the edge of the eyeshell in the peripheral groove of the lens. The cup 24 is placed on a suitable bottom die member 72, and the eye is placed thereover with the lens 18 received within cup 24. A top die member 74 is then pressed downwardly and the resulting pressure exerted on the cup causes the edge of the cup to turn inwardly so that it bites its way into the edge of the lens and is received between the outer shell 12 and the ledge or shoulder at the inner part of the lens in a manner best shown in Fig. 2.

It is believed that the mode of constructing and assembling, as well as the many advantages of the improved doll eye of the present invention, will be apparent from the foregoing detailed description thereof. It will also be apparent that, while I have shown and described the invention in a preferred form, many changes and modifications may be made in the structure disclosed without departing from the spirit of the invention defined in the following claims.

I claim:

1. A doll eye comprising an approximately hemispherical eyeshell, an eye shaft, closed slots cut through the top and bottom of said eyeshell and extending in the direction of the shaft, and a key comprising a hub portion to receive the shaft and outwardly extending arms the ends of which are slidably received in said slots, the length of the slots being greater than the width of the ends of the arms received therein, whereby the eyeshell is self-adjustably movable along the shaft and relative to the key.

2. A doll eye comprising an approximately hemispherical eyeshell, an eye shaft, said eyeshell being flattened at the top and bottom to form parallel sides, closed slots cut through said parallel sides and extending in the direction of the shaft, and a key comprising a hub portion to receive the shaft and outwardly extending arms the ends of which are slidably received in said slots, the length of the slots being greater than the width of the ends of the arms received therein, the assembly being such that the eyeshell is self-adjustably movable along the shaft and relative to the key.

3. A doll eye comprising an approximately hemispherical eyeshell cut away at the sides to freely clear a shaft, said eyeshell being flattened at the top and bottom to form parallel sides, closed slots cut through said parallel sides and extending in the direction of the shaft, and a key comprising a hub portion to frictionally receive the shaft and outwardly extending arms the ends of which are slidably received in said slots, the length of the slots being greater than the width of the ends of the arms received therein, the arms of said key having shoulders which cooperate with the flattened surfaces of the eyeshell to locate the eye relative to the key, the assembly being such that the key and eyeshell assembly is frictionally adjustable around the shaft and the

eyeshell is self-adjustably movable along the shaft and relative to the key.

4. A doll eye comprising an approximately hemispherical eyeshell cut away at the sides to freely clear a shaft, said eyeshell being flattened at the top and bottom to form parallel sides, closed slots cut through said parallel sides and extending in the direction of the shaft, and a key comprising a hub portion and outwardly extending arms the ends of which are slidably received in said slots, the length of the slots being greater than the width of the ends of the arms received therein, the hub portion of said key being incised transversely of the shaft to form straps alternate ones of which are angularly bent in opposite directions to form a passage for receiving the shaft with a resilient frictional grip, the arms of said key being channeled to stiffen the same, said channels terminating short of the ends to form shoulders which cooperate with the flattened surfaces of the eyeshell to locate the eye relative to the key, the assembly being such that the key and eyeshell assembly is frictionally adjustable around the shaft and the eyeshell is self-adjustably movable along the shaft and relative to the key.

5. A doll eye comprising an approximately hemispherical eyeshell having a pupil and iris portion, a shaft carrying said eyeshell, an outer shell on the eyeshell and tinted to simulate an eyelid, said outer shell being cut away to expose the iris and eyeshell, an eyelash comprising hair strands secured to the outer shell with the lash strands projecting forwardly from beneath the eyelid portion, said outer shell being secured to said eyeshell by means permitting manual frictional adjustment of said outer shell relative to the eyeshell and the shaft in order to change the position of the eyelash to conform to the top of an eye opening in which the eye is to be used.

6. A doll eye comprising an approximately hemispherical eyeshell having a pupil and iris portion, a shaft carrying said eyeshell, an outer shell enclosing the eyeshell and tinted to simulate an eyelid, said outer shell being cut away to expose the iris and a part of the eyeshell, an eyelash comprising hair strands secured to the outer shell with the lash strands projecting forwardly from beneath the eyelid portion, said outer shell having lugs at its rear edge bent around the rear edge of the eyeshell, whereby said outer shell is secured to the eyeshell but may be oscillated relative to the eyeshell and the shaft in order to change the position of the eyelash.

7. A doll eye comprising an approximately hemispherical eyeshell having a pupil and iris portion, an approximately hemispherical outer shell enclosing the eyeshell and tinted to simulate an eyelid, said outer shell being cut away to expose the iris and a part of the eyeshell, said outer shell being slit across the top at a point back of the effective eyelid area, an eyelash comprising hair strands secured in a foundation, said foundation being received in said slit with the lash strands projecting forwardly from beneath the eyelid portion, said outer shell having lugs at its rear edge bent around the rear edge of the eyeshell, whereby said outer shell may be oscillated relative to the eyeshell in order to change the position of the eyelash.

8. A doll eye comprising an approximately hemispherical eyeshell having a pupil and iris portion, a shaft carrying said eyeshell, an approximately hemispherical outer shell enclosing the eyeshell and tinted to simulate an eyelid,

said outer shell being cut away to expose the iris and a part of the eyeshell, an eyelash comprising hair strands secured to said outer shell with the lash strands projecting forwardly from beneath the eyelid portion, said outer shell being so secured to said eyeshell that said outer shell may be manually frictionally oscillated relative to the eyeshell in order to change the position of the eyelash, said outer shell being cut away for a substantial distance at the rear in order to permit adjustment of the eyelash, as aforesaid, without interference with the eye shaft.

9. A doll eye comprising an approximately hemispherical eyeshell, an approximately hemispherical outer shell mounted on the eyeshell and tinted to simulate an eyelid, said outer shell being slit across the top at a point back of the effective eyelid area, an eyelash comprising hair strands secured in a foundation, said foundation being received in said slit with the lash strands projecting forwardly from beneath the eyelid portion, said eyeshell being indented at the top to receive the eyelash foundation and displaced material of the outer shell at the slit, whereby said outer shell retains the desired spherical configuration for close fit against a doll eye opening.

10. A doll eye comprising an approximately hemispherical eyeshell having a pupil and iris portion, a shaft carrying such eyeshell, an approximately hemispherical outer shell enclosing the eyeshell and tinted to simulate an eyelid, said outer shell being cut away to expose the iris and a part of the eyeshell, said outer shell being slit across the top at a point back of the effective eyelid area, an eyelash comprising hair strands secured in a foundation, said foundation being received in said slit with the lash strands projecting forwardly from beneath the eyelid portion, said outer shell having lugs at its rear edge bent around the rear edge of the eyeshell, whereby said outer shell is secured to the eyeshell but may be oscillated relative to the eyeshell in order to change the position of the eyelash, said outer shell being cut away at the rear in order to permit adjustment of the eyelash, as aforesaid, without interference with the eye shaft, said eyeshell being indented at the top to receive the eyelash foundation and displaced material of the outer shell at the slit, whereby said outer shell retains the desired spherical configuration for close fit against the doll eye opening.

11. In a doll eye, the combination with a lens of a cup-shaped sheet metal member colored on the inside with a desired iris background color, said cup enclosing the inner part of the lens, and the edge of said cup being turned inwardly and interlocked with the periphery of the lens in order to secure the cup to the lens.

12. A doll eye comprising an eyeshell, a comparatively thick lens secured in said eyeshell, the outer surface of said lens conforming to the spherical shape of the eyeshell, the inner surface of said lens being black at the center to form a pupil and having radial indentations to simulate iris lines, and a cup-shaped sheet metal member colored on the inside with a desired iris background color, said cup being deeper than and receiving the inner part of the lens with a space therebetween, and the edge of said cup being turned inwardly to bite into the periphery of the lens, thereby locking the cup on the lens.

13. A doll eye comprising a generally hemispherical sheet metal eyeshell, a comparatively thick lens made of Celluloid or like material se-

cured in said eyeshell, the outer surface of said lens conforming to the spherical shape of the eyeshell, the inner surface of said lens being black at the center to form a pupil and having radial indentations to simulate iris lines, the periphery of said lens being channeled to receive the edge of the metal shell, and a shallow cup-shaped sheet metal member colored on the inside with a desired iris background color, said cup receiving the inner part of the lens, and the edge of said cup being turned inwardly between the inner shoulder of the lens and the eyeshell, thereby locking the cup onto the lens.

14. An adjustable doll eye and lash comprising an approximately hemispherical eyeshell having pupil, iris and surrounding eyeball portions, an eye shaft, a key having a hub portion frictionally mounted on said shaft and having arms extending outwardly into slidable engagement with parts of the eyeshell, the length of said engaged parts being greater than the width of the arms engaging the same, a generally hemispherical outer shell mounted over said eyeshell, said outer shell being cut away at the front to conform to the eye opening of a doll and being tinted to act as an eyelid, an eyelash secured to said outer shell and projecting outwardly from beneath said eyelid portion, said outer shell being so secured to the eyeshell as to permit rotative adjustment of the outer shell and lash relative to the eyeshell, and said outer shell being cut away to clear the shaft, whereby the assembly is rotatively frictionally adjustable about the shaft, and the lash is frictionally adjustable about the eye, and the assembly is self-adjustable axially of the shaft.

15. An adjustable doll eye and lash comprising an approximately hemispherical eyeshell having pupil, iris and surrounding eyeball portions, an eye shaft, said eyeshell being flattened at the top and bottom and slotted in the direction of the shaft, a key having a hub portion frictionally mounted on said shaft and having arms extending outwardly into and slidably received in said slots, the length of the slots being greater than the width of the ends of the arms received therein, a generally hemispherical outer shell mounted over said eyeshell, said outer shell being cut away at the front to conform to the eye opening of a doll and being tinted to act as an eyelid, an eyelash projecting outwardly from beneath said eyelid portion and secured to the outer shell, said outer shell having lugs at its rear edge bent around the rear edge of the eyeshell to hold the parts together yet permit rotative adjustment of the outer shell and lash relative to the eyeshell, and said shells being cut away to clear the shaft, whereby the assembly is rotatively frictionally adjustable about the shaft, and the lash is frictionally adjustable about the eye, and the assembly is self-adjustable axially of the shaft.

16. An adjustable doll eye and lash comprising an approximately hemispherical eyeshell having pupil, iris and surrounding eyeball portions, an eye shaft, said eyeshell being flattened at the top and bottom and there slotted in the direction of the shaft, a key having a hub portion resiliently frictionally mounted on said shaft and having arms extending outwardly into and slidably received in said slots, the length of the slots being greater than the width of the ends of the arms received therein, a generally hemispherical outer shell mounted over said eyeshell, said outer shell being cut away at the front to conform to

the eye opening of a doll and being tinted to act as an eyelid, said outer shell being slit in back of the effective eyelid portion, an eyelash projecting outwardly from beneath said eyelid portion and having a foundation clamped in said slit, said outer shell having lugs at its rear edge bent around the rear edge of the eyeshell to hold the parts together yet permit rotative ad-

justment of the outer shell and lash relative to the eyeshell, and said shells being cut away to clear the shaft, whereby the assembly is rotatively frictionally adjustable about the shaft, and the lash is frictionally adjustable about the eye, and the assembly is self-adjustably movable axially of the shaft.

SAMUEL MARCUS.