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H. BRUDNEY ETAL

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ROLLING AND SLEEPING EYE FOR DOLLS

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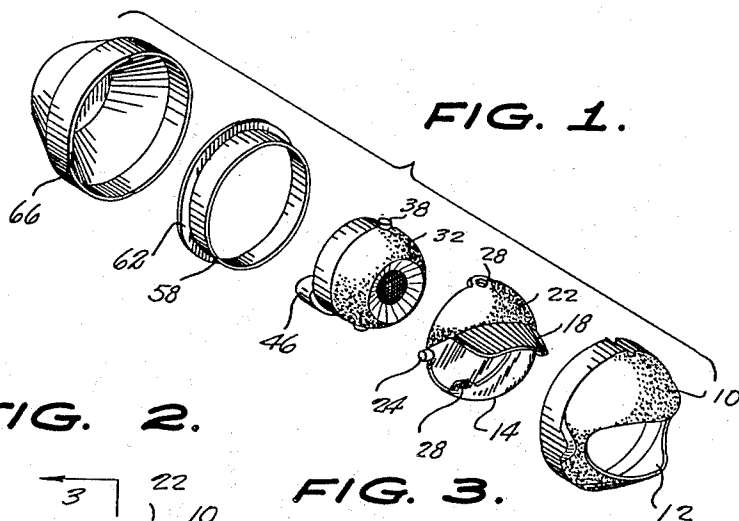


FIG. 2.

FIG. 3.

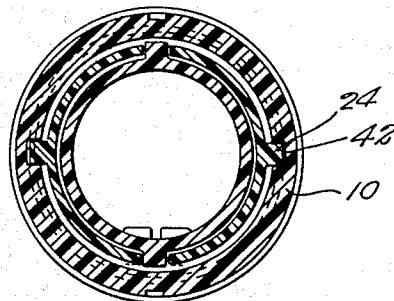
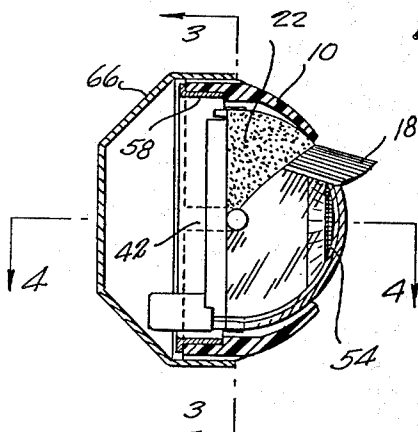
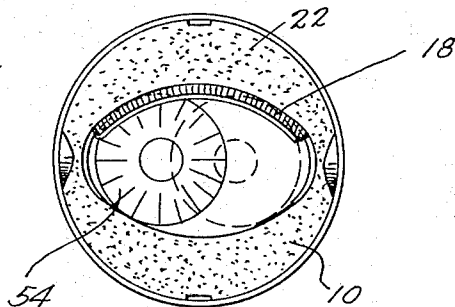
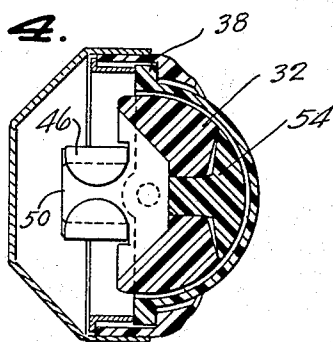


FIG. 4.

FIG. 5.



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ROLLING AND SLEEPING EYE FOR DOLLS
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This invention relates to doll eyes and more particularly to eyes of the type having a compound rolling and sleeping movement.

It is an object of the invention to provide an integral eye unit of the kind described which will be simple in structure, readily manufactured by mass production methods, and relatively low in cost.

It is another object of the invention to provide an eye having compound motion about vertical and horizontal axes.

It is still another object of the invention to provide an eye so constructed as to simplify the automatic attachment of an eyelash thereto.

It is yet another object of the invention to provide an eye having a compound motion which will have a realistic, lifelike appearance.

The construction of our novel eye contemplates the use of an eye shell for housing a generally semi-spherical, transparent, plastic member, which member carries the eyelash and is mounted for pivoting on a horizontal axis to simulate an eye closing, the area above the lash being flesh tinted to effect a closed eyelid. Carried within the transparent shell, and mounted for rotation on a vertical axis, is an eyeball member to which is fastened a weight for effecting both motions. Thus, motion about the vertical axis is effected by moving the head of the doll in a horizontal plane, wherein the inertia of the weight maintains the eyeball in position so that relative motion simulates rolling of the eyeball. When, however, the head of the doll is placed horizontally, the weight effects pivotal movement of the combined transparent shell and eyeball unit so that the lash carried by the transparent unit moves across the opening of the eye shell to effect a sleeping simulation.

Referring now to the drawing,

FIG. 1 is an exploded perspective of the several elements which make up the integral unit.

FIG. 2 is an elevation in cross section of the assembled unit.

FIG. 3 is a section through 3—3 of FIG. 2.

FIG. 4 is a section through 4—4 of FIG. 2; and

FIG. 5 is a front view of the assembled eye showing relative rolling movement of the eyeball.

Referring now to the drawing, the invention comprises a front eye socket 10 which may be of plastic, having front aperture 12, and housing a generally semispherical shaped, transparent, plastic shell 14. Shell 14 has a lash element 18, an opaque flesh tinted area 22 above the lash, diametrically opposed horizontal trunnions 24, and vertical axis trunnion rings 28. It will be noted that a large area, in fact, the major portion of the element 14, is transparent, for a purpose to be hereinafter described. Within the shell 14 an eyeball unit 32 is disposed having vertical trunnions 38 which will be understood to be forcibly snapped within the respective trunnion rings 28 of shell 14. Thus, the eyeball unit has motion in a horizontal plane about a vertical axis within shell 22. Shell 22, on the other hand, by virtue of trunnions 24 fitting into respective internal grooves 42 of socket 10, has motion about a horizontal axis carrying along with it the eyeball unit 32.

A weight 46, which may be of metal, is wrapped for securement about a rearwardly extending tongue 50 integrally molded with the eyeball unit which is preferably

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of plastic. The eyeball unit also carries a pupil an iris element 54 in the form of a separate button which may be inserted and secured within the main body of the eyeball, as shown in FIG. 4.

Accordingly, the degree of motion permitted the eyeball and effected by the weight 46 would be on a vertical axis with respect to shell 14, but on a horizontal axis along with shell 14.

The trunnions 24 are locked within respective grooves 42 by a metallic ring 58 having a flange 62 which abuts the rearwardly facing rim of the socket 10. Thus, ring 58 has a force fit internally of socket 10 to maintain the socket, the transparent shell, and the eyeball assembled as a unit. A rear closure housing 66 encompasses the outer periphery of the socket 10 at its largest diameter and closes the rear of the eye unit, frictionally gripping the periphery of socket 10 in a well known manner.

Particular attention is directed to the transparent shell 14 and it will be noted that the lash 18 may be a so-called hard lash integrally molded therewith and subsequently colored or painted black, or it may be a so-called soft lash inserted by automatic machinery in a slit (not shown) provided within the material of this shell, by method currently in use. The tinted area 22 of the shell closes the front aperture of socket 10 when the eye is in sleeping position so as to simulate a closed eyelid. The lash at that time is disposed at the bottom of the aperture 12.

The transparency of shell 14 effects a lifelike appearance when the eyeball is viewed therethrough, and is distinct improvement over prior art constructions, wherein intermediate lash-carrying shells have been apertured to expose the eyeball. Such aperturing of lash-carrying shells, albeit shells of the prior art may have independent motion of the eyeball, nevertheless effects a sunken or dull eye appearance. The present invention, providing the glistening, transparent shell 14, gives life to the eye while at the same time affords a sealing protection against dust, grit, and foreign objects to the eye mechanism. However, a very important effect of using a frontally enclosed shell, such as 14, as compared with the cutout type of the prior art, is that it enables proper positioning of the lash as to angle in the course of assembly of soft lash to this element of the eye. Manufacture is simplified, since any additional forming operation is eliminated.

A further lifelike effect of the transparent shell results in giving the eyeball an appearance of realistic depth and it also eliminates the rather obvious gap of prior constructions between the upper lid portion and the lower eye portion required for movement. At the same time, the transparent shell, carrying the lash, gives more natural sleeping eye effect by moving the lash and lid downwardly to simulate sleeping, rather than the eye and lid integrally.

The particular shape of the rear end of the eyeball may be as shown in the drawing or, of course, it may be more rounded in order to give greater movement on vertical axis without interfering with the adjacent portions of the rear of the shell 14. It will, of course, be understood that suitable clearance between the eyeball body and transparent shell 14 will be provided for in order that a full extent of rolling, as indicated in FIG. 5, can be achieved.

Having thus described our invention we are aware that various changes may be made without departing from the spirit thereof, and, accordingly, we do not seek to be limited to the precise illustrations herein given except as set forth in the appended claims.

We claim:

1. A rolling and sleeping eye for dolls comprising

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front socket element having an aperture, a spherically shaped shell within said socket, said shell having a transparent portion and an opaque portion, means for mounting said shell for rotation within said socket so as to expose either of said portions through said aperture, said shell being mounted on a horizontal axis to effect alternate exposure of said portions, an eyeball within said shell and mounted for pivoting on a vertical axis and being visible through said aperture when said shell is positioned with said transparent portion in front of said eyeball, to simulate an open eye, said eyeball being concealed by said opaque portion when said shell is rotated to a position on said horizontal axis to bring said opaque portion in front of said eyeball to simulate a sleeping closed eye and a single weight carried by said eyeball normally below the horizontal pivotal axis of said shell whereby said single weight effects both rolling of said eyeball on said vertical axis by inertia and also pivoting of said shell on said horizontal axis by gravity.

2. In a doll eye unit as set forth in claim 1, said shell being molded of plastic material and having a lash integrally molded therewith.

3. In a doll eye unit as set forth in claim 1, said shell being molded of plastic material and having a lash comprising soft hairs secured thereto.

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4. In a doll eye unit as set forth in claim 1, said shell and said eyeball means having trunnion means therebetween to permit relative rotation on a vertical axis, said shell having diametrically opposed trunnion pins, said socket element having respective diametrically opposed trunnion grooves for receiving said pins, and a ringlike closure member frictionally fitting within said socket to lock said trunnion pins within said grooves.

5. In a doll eye unit as set forth in claim 4, including a rear housing having a flange disposed in frictional fit over a portion of the outer periphery of said socket element.

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