Nov. 9, 1965 H. BRUDNEY 3,216,150

SELECTIVELY USABLE WINKING OR BLINKING DOLL EYE CONSTRUCTION

Filed March 26, 1962

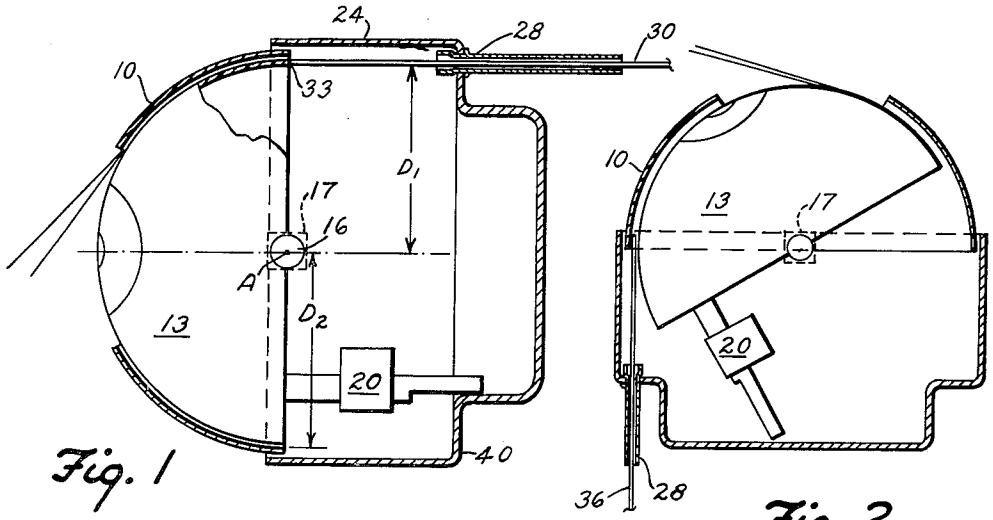


Fig. 1

Fig. 2

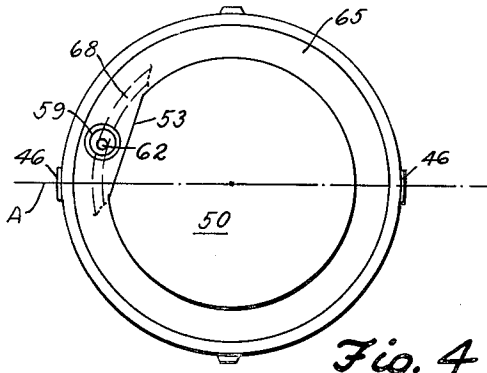


Fig. 4

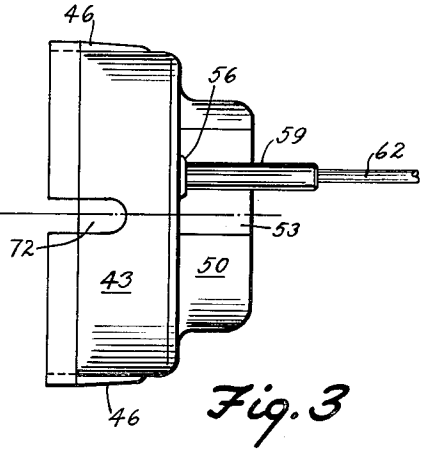


Fig. 3

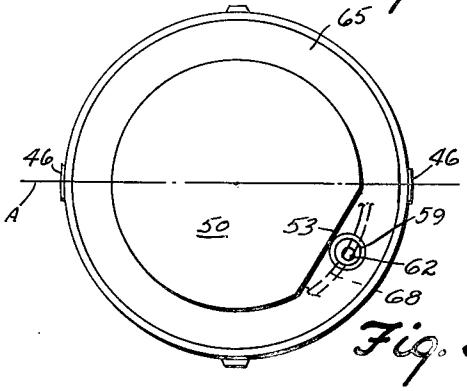


Fig. 5

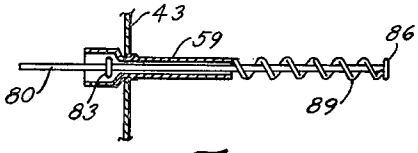


Fig. 6

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SELECTIVELY USABLE WINKING OR BLINKING DOLL EYE CONSTRUCTION

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11 Claims. (Cl. 46—169)

This invention relates to doll eyes of the movable or sleeping type, having a bias weight and more particularly to an eye having a manually operative element for effecting movement of the eyeball independently of the weight.

It is an object of the invention to provide a movable eye for toys and the like, of such construction that it may be furnished to doll manufacturers for use either as a winking eye or a blinking eye, with no change in any of the component parts other than mode of assembly for the particular purpose desired. It is another object of the invention to provide a movable eye of the kind described, which can be readily and economically manufactured and which, for the most part, uses conventional components and construction.

Briefly, the invention comprises a movable doll eye construction having the usual front shell and a rear casing of modified construction, there being a pivotally mounted hollow and semi-spherical eyeball within the housing effected by the shell and casing, the eyeball being mounted on trunnions in the usual manner and having a biased weight to effect opening and closing functions, an conventionally known. The rear casing is provided with an eyelet at a particular point, in such a manner that the axis of the eyelet substantially intersects the rear edge of the eyeball. A rod or actuator is inserted through the eyelet and extends outwardly thereof for reciprocal manipulation in any desired manner. The inner end of the rod, by virtue of the disposition of the eyelet, is engageable with the rear edge of the eyeball in one form of the invention, and in another form of the invention, a flexible rod is so disposed as to lie between the outer surface of the eyeball and the inner surface of the front shell. In either case, movement of the rod forwardly into the rear casing effects, either by direct abutment or by frictional drive, a rotative movement of the eyeball about the trunnion axis. A particularly unique feature of the invention resides in disposing the eyelet in such position in the rear casing that the rod guided by such eyelet may engage the eyeball either above or below the trunnion axis. Thus, in the assembly of the eye, an eye capable of effecting a winking or closing action can be realized by orienting the rear casing with the eyelet above the trunnion axis before assembling such casing to the front shell. On the other hand, by orienting the casing so that the eyelet is below the trunnion axis, a blinking or opening effect can be achieved. In other words, in the instance of a weight operated eyeball, the eye can be closed for a winking effect by movement of the rod, whereas if the eye is already closed by action of the weight, a blinking or awakening effect is had by movement of the rod, all depending upon the mode of assembly of the casing and shell.

A detailed description of the invention now follows, in conjunction with the appended drawing, in which:

FIG. 1 shows a longitudinal cross section of the essential components of one form of the invention, the eye being in an upright position, and the actuating rod disposed to achieve a winking or closing effect;

FIG. 2 is a longitudinal cross section of an eye having the same components as FIG. 1, but of modified assembly, with the eyeball shown being moved from sleeping condition, a modified rod being disposed to rotate the eyeball to awakening position;

FIG. 3 is an elevation of a modified rear casing construction having a different eyelet position;

FIG. 4 is a rear view of the casing of FIG. 3 showing the eyelet in position above the trunnion axis;

FIG. 5 is a view similar to FIG. 4 but rotated 180 degrees so that the eyelet is disposed below the trunnion axis; and

FIG. 6 shows fragmentarily a modified rod actuation.

Referring now to FIG. 1 there is disclosed a movable doll eye comprising a front shell **10**, the eyeball **13** having trunnions such as **16** carried in a known manner in trunnion housing bearings **17**, and having an actuating weight **20**. The eyeball is of the generally semi-spherical hollow plastic construction type and is enclosed within the front shell **10** and a conventional rear casing **24**, and actuable by the weight **20**, all as well known. The trunnion bearings and the optical axis are coplanar and symmetrically related. The rear casing **24** is provided with a guide means such as an eyelet **28**, which eyelet is secured by known methods, such as crimping or the like, to the casing at a distance D_1 from the trunnion axis A so that an actuating element such as a rod **30** may be inserted through the eyelet and thus through the casing to have an inner end abuttable with the peripheral rear edge **33** of the eyeball. The rear edge of the eyeball is substantially circular or at least at the same distance, top and bottom, from the trunnion axis. Thus D_1 equals D_2. The eyelet **28** is carried on the rear casing at such a point with respect to the diameter thereof that 180 degree reorientation of the casing with respect to the front shell would bring the eyelet into alignment with the lower edge of the eyeball, as will be readily understood by comparison of FIGS. 1 and 2, although FIG. 2 represents a slightly modified form of rod actuation. Referring particularly to FIG. 1, it will be appreciated that the rod, if thrust inwardly by any instrumentality will abut the edge of the eyeball and cause the eye to move to a closing position. Depending upon the dimensions involved, the rod **30** may require a certain amount of flexibility so that it can bend or flex around the inside of the front shell as it pushes the eyeball in counter-clockwise movement about the trunnion axis.

The capabilities of a flexible rod are further demonstrated in the somewhat modified form of FIG. 2, which differs from FIG. 1. Thus, the eyelet **28** is at the bottom of the casing instead of at the top by 180 degree rotation of the casing before assembly. Also, a fairly flexible rod **36** is used and it is positioned in the spacing between the eyeball and the front shell, but not touching the eyeball when the eye is open, as will be understood, in order to avoid interference with the action of the weight. When, however, the eye is in sleeping position, inward movement of rod **36** will cause it to curve around the inside surface of shell **10** and to engage or wedge against the eyeball surface whereby, by frictional drag, the eyeball can be rotated so that the eye effects an awakened or opened condition, partial opening being shown in FIG. 2. It will, of course, be appreciated that absolute concentricity between the inner surface of the shell and the outer surface of the eyeball is not necessary in order to achieve the wedging effect. In any event, the rod would not exactly follow a perfect circle in going around the inner surface of the shell, but would be bent into a curvature of greater radius and could not help but engage the eyeball surface. Accordingly, a small degree of eccentricity might readily be provided for in manufacture, but is by no means critical and as a practical matter, absolutely concentric surfaces are quite usable for the purpose.

Comparison of FIG. 1 and FIG. 2 make it apparent that absolutely identical parts can be used to achieve either a blinking eye or a winking eye, it being merely a matter of

whether the eyelet is located at the bottom or top of the assembly. It should be noted that the generally radial flange **40**, normally pressed into the rear casing configuration, forms a suitable base for securement of the eyelet.

Referring now to FIG. 4 a rear casing **43** is shown of somewhat modified form, having the conventional opposed trunnion housing **46**. Casing **43** is similar to the casings of FIGS. 1 and 2, except that the narrowed diameter end housing portion **50** is provided with a flattened circumferential surface **53**. Such flattening of the surface provides a recess to accommodate the flange **56** of the eyelet **59** through which the actuator rod **62**, which may be a non-flexible pin, reciprocates, as in the above forms of the invention. The eyelet is secured in the radial portion **65** of the casing and is disposed at a point so that its axis is only slightly spaced from the trunnion axis *a* and normal thereto. The eyelet axis is aligned with the rear edge **68** (shown dotted in FIG. 4). There is an advantage in such arrangement in that the reciprocal movement of the rod can be substantially less to effect the same degree of eyeball rotation as compared with the arrangement shown in FIGS. 1 and 2. Accordingly, such instrumentality as is used to operate the rod need have but very slight movement.

As in the instance of FIGS. 1 and 2, the casing of FIG. 4 can be rotated 180 degrees so that the eyelet **59** is below the trunnion axis, as shown in FIG. 5. Assembly with the front shell (not shown) is the same in either case, and as explained in conjunction with FIGS. 1 and 2, is a mere matter of orientation in assembly, since the trunnion housing **17** and the slots **72** in rear casing **43** (FIG. 3) are symmetrical with respect to the optical axis of the eyeball. Accordingly, the casing orientation of FIG. 4, being above the trunnion axis, would effect a winking eye, as in FIG. 1, while the orientation shown in FIG. 5 would effect a blinking eye, as in FIG. 2.

Insofar as the motivation of the rod in any of the modifications described above is concerned, this is a matter of choice for the doll manufacturer who uses movable eyes of the kind described. Eyeball movement and limb or mouth movement can be combined by suitable mechanism. The rod can be rigid or can be a sufficiently flexible plastic to be curved around corners if need be for coupling to some mechanism within the doll body whereby reciprocation is effected. The rod may also be brought out through a suitable aperture in the body so as to be directly hand manipulated. The particular mode or means for effecting ready reciprocation is not within the scope of the present invention. Accordingly, no claim made thereto, and no specific illustration is given on the drawing.

FIG. 6 shows a modification of FIG. 3 wherein a metal pin or stiff plastic rod **80** has a stop shoulder **83** at its inner end within casing **43** and an outer stop shoulder **86** at its outer end with a compression spring **89** between the end of eyelet **59** and stop shoulder **86** to bias the rod out of eyeball engaging position. Thus, any instrumentality pressing on the outer end actuates the rod against the spring bias to abut the rear edge of the eyeball.

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

I claim:

1. A movable doll eye comprising a front shell and a rear casing assembled thereto, to form a housing, an eyeball within said housing having an exposed peripheral rear edge, and trunnion means for effecting rotative support of said eyeball, a tubular guide means carried by said housing having an axis substantially aligned with said peripheral edge of said eyeball for guiding an actuating member into engagement therewith, and an actuating member movable in said guide means and disposed for engagement with said peripheral edge.

2. In a device as set forth in claim **1**, said eyeball edge having at least two rear portions disposed at the same distance from the optical axis thereto and on substantially the same diameter, said rear casing being engageable with said front shell for assembly in either of two positions whereat said guide means is alignable selectively with either of said rear portions.

3. In a device as set forth in claim **1**, said rear casing and said front shell being symmetrical for assembly in either of two positions 180 degrees spaced from each other, the axis of said guide means being at the same distance from the optical axis of said eyeball in either of said positions.

4. In a device as set forth in claim **1**, said eyeball being generally hemispherical and hollow and said rear edge being circular and said actuating member being a rod within said guide means slidably reciprocal with respect thereto and having an end engageable with said rear edge of said eyeball.

5. In a device as set forth in claim **1**, said rear casing comprising cylindrical portions of different diameter joined by a generally radial flange, said guide means comprising an eyelet secured to said flange.

6. In a device as set forth in claim **5**, one of said cylindrical portions being rearward of the other and of reduced diameter relative to the other and having a portion of its circumferential wall flattened to accommodate said eyelet.

7. In a device as set forth in claim **1**, said guide means comprising an eyelet and being disposed at a point sufficiently close to and adjacent the trunnion axis as to maintain engagement of said actuating member with the eyeball for a full rotative traverse thereof from open to closed positions or vice versa depending on the orientation of said eyelet with respect to the rotative axis of said eyeball.

8. In a device as set forth in claim **1**, said actuating member comprising a relatively rigid pin, and spring means engaging said pin and biasing said pin out of engagement with said edge of said eyeball.

9. A movable doll eye comprising a front shell and a rear casing assembled thereto, to form a housing, an eyeball within said housing and means for effecting rotative support of said eyeball therein, a tubular guide means carried by said housing having an axis substantially aligned with an edge of said eyeball for guiding an actuating member into engagement therewith, including an actuator element means reciprocally slidable in said guide means, a spacing intermediate the inner surface of said front shell and the outer surface of said eyeball, said actuator element means being of flexible material insertable in said spacing whereby movement of said actuator element into said spacing will cause flexure of said actuator element to frictionally engage said eyeball element for effecting rotation thereof.

10. A movable doll eye comprising a front shell and a rear casing assembled thereto to form a housing, an eyeball within said housing having an exposed peripheral rear edge, and trunnion means for effecting rotative support of said eyeball, a guide member carried by said housing having an axis substantially aligned with said peripheral edge, an actuating member movable in said guide member and having an end disposed to engage said peripheral edge to effect rotation of said eyeball, said guide member being disposed to guide said actuating member to engage said peripheral edge adjacent the rotative axis of said eyeball for effecting substantial rotation thereof by a relatively short movement of said actuating member.

11. In a device as set forth in claim **10**, said actuating member comprising a pin slidable in said guide member and a spring carried by said pin and having an end acting thereagainst and another end acting against said guide member for biasing said pin away from said eyeball, and a stop member on said pin engageable with said guide member to serve as a limit to biased movement of said pin.

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