Jan. 30, 1934. W. LORENZ ET AL 1,945,150

EYE MECHANISM FOR DOLLS

Filed July 29, 1932

Fig. 1.

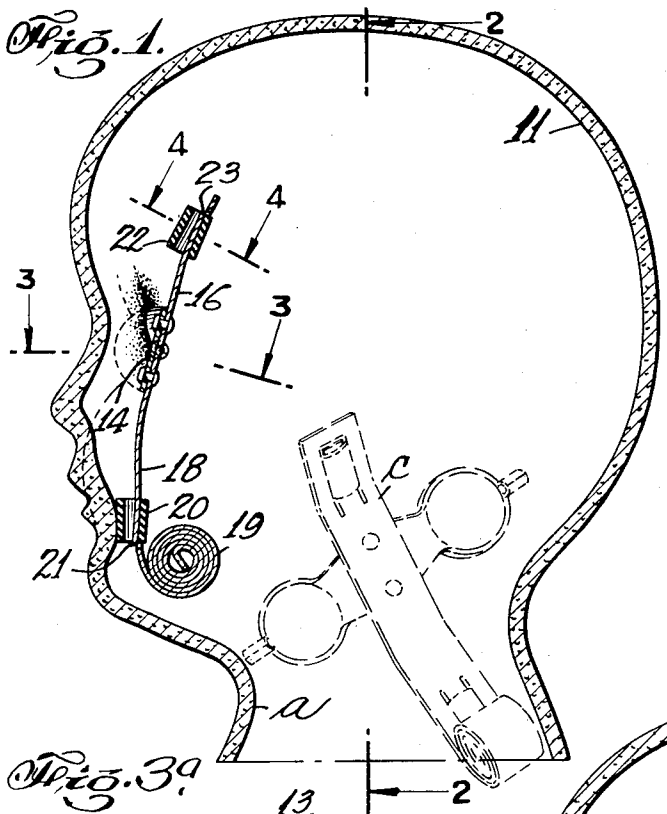


Fig. 3a.

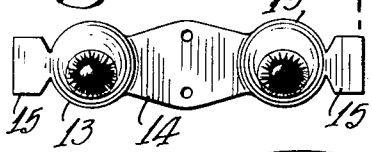


Fig. 2.

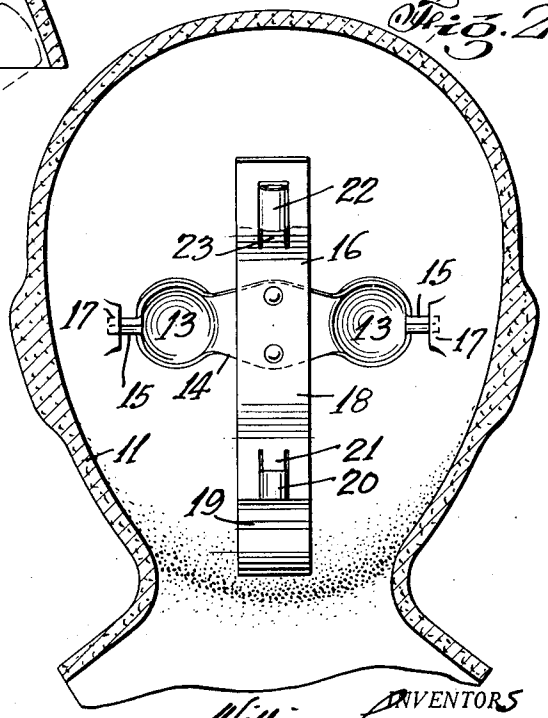


Fig. 3.

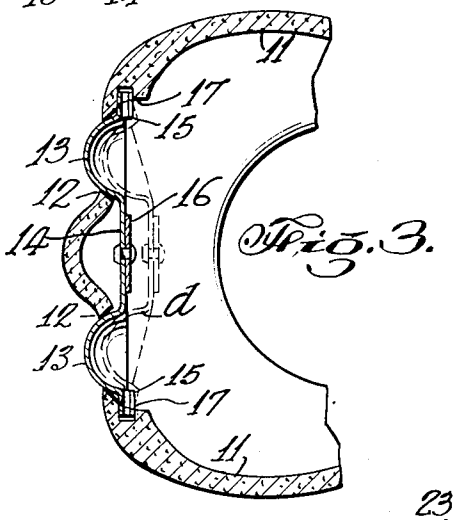
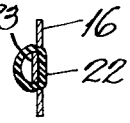


Fig. 4.



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EYE MECHANISM FOR DOLLS

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4 Claims. (Cl. 46—40)

This invention relates to eye mechanisms for dolls and has for an object to simplify mechanisms of this kind, to reduce the cost of manufacture and to provide a mechanism that cannot readily get out of order. Another object of the invention is to provide an eye mechanism for mounting in a doll head in which the eyes rotate and are controlled by a gravity member whereby the eyes are opened and closed, said eyes being provided with a bearing and a bridgepiece made from a single piece of sheet stock; another object of the invention is to provide a pivotally mounted eye mechanism in which the eyes and bearings are formed from a single piece of sheet stock. Another object of the invention resides in the method of attaching the mechanism to the doll head by bending or bowing the attaching member; other objects of the invention will be more particularly understood from the following specification and the accompanying drawing selected to show a variety of forms of the invention and, in which

Fig. 1 is a vertical sectional elevation of a doll head with the eye mechanism mounted therein;

Fig. 2 is a vertical elevation of the doll head on line 2—2 of Fig. 1, including a rear view of the eye mechanism;

Fig. 3 is a cross section of the doll head and eye mechanism on line 3—3 of Fig. 1;

Fig. 3*a* is a plan view of the sheet stock for the eye member, bridgepiece and bearings before these parts are shaped;

Fig. 4 is a cross section on line 4—4 of Fig. 1, showing the rubber cushion or bumper.

The so-called sleeping dolls are provided with eye members which fit into the eye sockets of the doll head and are pivotally mounted and controlled by a pendulum or weight so that when the doll head is vertical the eyes are in open position and when the head is reclining the eyes are moved by the weight on their pivots to the sleeping position. According to modern practice, the doll head is cast or moulded in a single piece and the eye mechanism is applied through the opening in the neck. This limits the size of the mechanism and makes it highly desirable to use a simple mechanism which does not require adjustment after it is installed and which will not readily get out of order.

To meet these requirements, the eye mechanism in the present invention comprises an eye member of a single piece of sheet metal upon which an imitation of the eyes is printed and then pressed into hemispherical formation to match the eye sockets of the doll head, at the same time cylindrical bearings are formed from this sheet stock projecting from the edge of the eyes and substantially in alignment with the centre of the eye hemispheres. The bridgepiece connecting the eyes may be extended to form a depending member supporting a weight or pendulum, or it may have a separate member secured to it for this purpose. The bridgepiece retains the flat shape of the sheet stock and is easily bent or bowed so that the over-all width of the mechanism may be reduced when entering the neck aperture of the head, and also, so that the cylindrical bearings may be contracted to enter the bearing apertures provided in the head. When this mechanism is inserted and the eyes aligned with the eye sockets and pressed into place so as to straighten the bridgepiece, the bearings are thereby forced into the bearing apertures and the mechanism is assembled without further attention or adjustment.

In applying the present invention, it is desirable, although not essential, that a tool be inserted through the neck with suitable spaced cutters to mill the eye sockets of the doll head so as to secure smooth and suitably aligned apertures for the eyes to rotate in. It is also desirable that another tool be used with the eye sockets as a gage for drilling the apertures in the doll head for the bearings of the eye member, thereby insuring a free movement of the eyes when they are assembled.

The pendulum member is made from sheet stock and has an arm struck therefrom on which a sleeve of soft rubber is provided to act as a bumper and prevent noise in the operation of the eye mechanism.

In a modified form the eye member is mounted in a bridgepiece which is impaled in the walls of the head and is forced into position by bowing the spring stock of the bridgepiece. This bridgepiece has lugs struck therefrom close to the impaled ends which engage and support the bearings of the eye-piece.

In the drawing, 11 is the doll head having the neck opening at *a* through which the eye mechanism may be inserted as indicated at *c* Fig. 1. The head is provided with the usual eye sockets indicated at 12—12 and which may be milled as previously referred to to insure accurate alignment of these sockets. The eye piece as indicated in Fig. 3*a* comprises the eye members 13—13 which are suitably printed to represent eyes and are connected by the bridgepiece 14. The lugs 15 project on the outer side of each eye member. The eye piece is pressed to form the

hemispherical eyes 13 as indicated in Figs. 3 and 5 and the lugs 15 are rolled into cylindrical bearings with their axis substantially in alignment with the axes of the hemispherical eyes. The lugs 15 are notched where they adjoin the eyes to permit rolling into cylindrical form, which merges into the spherical portion of the eye to form a rigid tubular bearing.

The gravity member 18 is riveted to the bridgepiece 14 and has the lower end rolled into a coil 19 to act as a weight, this construction being preferable to attaching a separate weight to the sheet stock 18. From this stock the arm 21 is struck and upon this arm the soft rubber sleeve is mounted as indicated in Fig. 4 and arranged to engage a portion of the head when in the vertical position. The rubber sleeve is clamped between the arm 23 and the stock 16, and an air space is provided, as indicated, in Figs. 1 and 4 between the arm and the face of the rubber which engages the wall of the head so that in practice the soft rubber sleeve is bent instead of being compressed to form the cushion. The arm 18 is provided with the extension 16 upon which the rubber sleeve 22 is mounted on the arm 23 to engage another portion of the head in the reclining position. It will be noted from Figs. 1 and 4 that there is an air space between the offset arm and the rubber sleeve where it acts as a bumper, thus insuring a soft yielding surface for the impact.

In assembling this mechanism it will be observed from Fig. 3 that the head is provided with apertures at 17—17 which are located with reference to the eye sockets and that the mechanism is bent as indicated at *d* so that when the eyes register with the eye sockets, the bearings 15 register with the apertures 17 and by pressing the bridge 14 inwardly the bridge is thereby straightened and the bearing members are forced into engagement with the sockets 17 and are held in engagement therewith by the eye sockets engaging the eye members. It will be noted that if the eyes do not move freely in the eye sockets a slight inward pressure on the eyeballs from the outside will correct this condition. The eye mechanism may be removed when desired by bowing the bridgepiece as indicated at *d* which releases the bearing members from their sockets.

It will be observed in this construction that the entire mechanism is made from one integral piece of sheet stock either by blanking the eye piece and the pendulum member from one sheet or making these two pieces separately and securing them together as indicated by the drawing. This lessens the cost of manufacture and avoids the use of separate parts.

A doll eye mechanism made from a single piece of sheet stock but without bearings is disclosed in U. S. Patent 1,807,091, issued to L. W. Pollack, May 26, 1931. It is apparent that the present invention can be applied in a variety of forms and is not to be limited to the structure illustrated in the drawing.

Having thus described our invention, we claim:

1. A doll's eye construction comprising a pair of hemipherical eye members with a connecting bridge and with bearing members made from a single piece of sheet stock, said bearing members being formed from notched lugs projecting from the eye members and formed into tubular bearings in alignment with the axis of the hemispherical eyes and merged into the hemispherical eye members.

2. A doll's eye construction comprising a pair of hemispherical eye members with a connecting bridge and with bearing members made from a single piece of sheet stock, said bearing members being formed from notched lugs projecting outwardly from the eye members and formed into tubular bearings merging with the hemispherical eye members.

3. An eye mechanism for dolls comprising a pair of hemispherical eye members with a connecting bridge and with bearing members made from a single piece of sheet stock, said bearing members being formed from notched lugs projecting from said eye members and formed into tubular bearings merging into said eye members, said eye members engaging matched apertures in the head of the doll to hold the mechanism in position, and said mechanism being placed in bearing apertures in the head of the doll by bending said bridge.

4. An eye mechanism for dolls comprising a pair of eyes with a connecting bridge and with bearing members mounted to rotate in the head of the doll, a flat weighted member secured to said bridge for moving said eyes on their bearings by gravity, a soft rubber tubular sleeve placed on said flat weighted member and arranged so that the side of said sleeve engages the head of the doll, to act as a bumper for said mechanism, there being a substantial air space between the engaging side of said sleeve and the flat weighted member.

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