

1,294,592.

Patented Feb. 18, 1919.

Fig. 1.

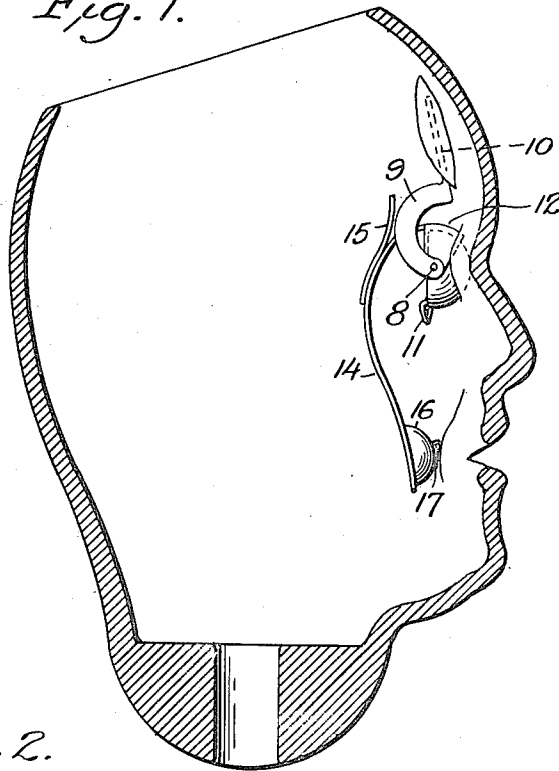


Fig. 2.

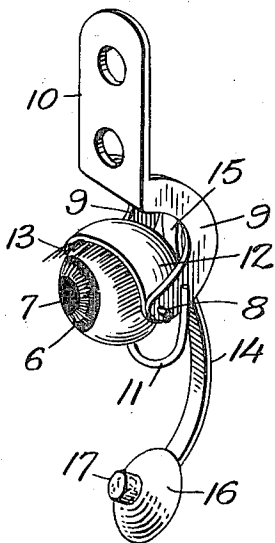


Fig. 3.

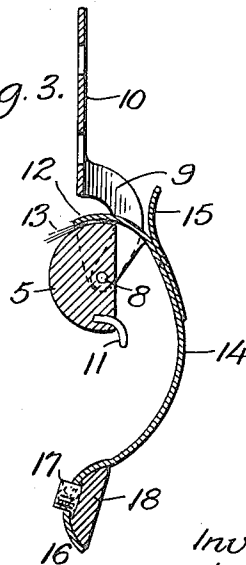
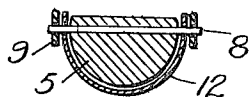


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MECHANICAL EYE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DAVID ZAIDEN, a subject of Russian Government, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Mechanical Eyes, of which the following is a specification.

This invention relates to mechanical eyes and especially eyes for toy figures and where certain movements are provided for whereby the eyes are closed when the figure is placed in a recumbent position to simulate sleep, and the object of the invention is to provide certain simple and cheap arrangements and constructions which are not liable to get out of order.

These and other objects and details of the invention are more fully described in the following specification, set forth in the claims appended hereto, and illustrated in the accompanying drawings, wherein to illustrate the device:

Figure 1 is a vertical sectional view of a doll's head showing the location and mechanism for closing one of the eyes.

Fig. 2 is a perspective view of one of the eyes with its bracket and closing means.

Fig. 3 is a vertical sectional view of the same.

Fig. 4 is a horizontal sectional view with the lid closed.

A serious objection to the operation and the mechanism of mechanical eyes as heretofore made is the liability of the eye or eyes to break loose from their attaching means in consequence of the weight which operates the closing and the inadequate means for securing the same to the interior of the head of the figure, the latter being generally of a friable and thin composition very limited means is afforded and the weight in its movement is very apt to jar the parts so as to break the attaching means and release the mechanism.

To lighten the construction of the parts it is therefore found advisable to provide individual eyes and frames carrying the same and moving only such part that is of very light weight and which requires very little operating effort.

In the present invention the eye-ball is made of glass, china, celluloid or other suitable material with the iris 6 and the pupil 7 and it need not be a complete globule but it has a shaft 8 passing horizontally through

its diameter and back of the iris. The ball is suspended by means of the shaft or spindle in the brackets 9 of the hanger 10 and is retained from movement by means of an arm 11, one end of which is located in the ball while the other end is soldered or otherwise secured to the brackets.

Journalled on the shaft 8 within the brackets is the lid 12 which is a section of a globular shell concentric with the eye-ball and adapted to freely move over and cover a part of the same and especially the pupil and iris when the doll is reclined. On the outer edge of the lid is pasted or otherwise secured the lashes 13 while the other or interior edge carries a depending spring support 14 having upwardly extending resilient means or spring arm 15 adapted to engage the hanger 10, or the head of the doll in its vicinity, to ease the outward movement of the lid when the doll or figure is resting horizontally. If the figure is held vertically, however, the weight 16 at the lower end of the spring 14 elevates the lid and exposes the eye and the stud or buffer 17 of the weight comes in contact with the inner wall of the head and is checked, leaving the front edge of the lid and the lashes above the eye.

The force of the weight is not only arrested by the buffer 17 but the resiliency of the arm 14 also tends to relieve the parts of the eye and the hanger from any serious jar or shock which might otherwise loosen and disarrange them when the weight is stopped while the rear movement of the weight is eased by the spring 15 and jarring and rattling by the weight is thereby eliminated.

The eyes and their parts are thus adapted to be carried separately in the head of the figure and the hanger 10 located above the eye-opening and retained by plastic material which is allowed to harden and hold the device permanently.

As will be seen in Fig. 3, the lower end of the arm 14 is formed as a cup comprising the weight 16 and through a perforation in the bottom of the same extends the buffer 17 of cork or rubber. Within the cup is then poured molten lead or similar material and the whole forms a simple and cheap means for operating the lid and relieving the same from sudden shocks.

The lightness of this structure and its freedom from jar as the parts move will insure both security of the hanger and of the

delicate parts comprising the eye and its mechanism. If one of the eyes should break loose the other is not affected and access may be had to the interior of the head by means of its upper opening which is usually covered with hair.

It is obvious that the device may be otherwise arranged or altered without departing from the essential features above described or from the scope of the appended claims.

What I claim as new is:

1. In mechanical eyes, the combination with an eye-ball, of a bracket rigidly carrying the same, a lid movably associated with the ball and the bracket, a weight operating the lid, and resilient means limiting the movement of the lid.

2. In mechanical eyes, the combination with a stationary eye-ball, of a bracket carrying the same, a lid hinged adjacent the eye-ball and adapted to move over the same, a spring-arm depending from the lid, a weight at the end of the spring-arm, and resilient means controlling the movement of the lid in its outer movement.

3. In mechanical eyes, the combination with an artificial head having eye-openings, of eye-balls at the openings, a bracket adapted to rigidly support each eye-ball, a spindle carrying the latter, a lid journaled on the spindle, a spring-arm depending from the lid, a weight attached to the spring arm adapted to rotate the lid and be controlled in

its movement in one direction, a spring adapted to control the movement of the lid in the opposite direction, lashes on the lid, and means securing the bracket within the head.

4. In a mechanical eye, the combination with a head, of a stationary eye-ball, a bracket carrying the same, a lid with lashes journaled in the bracket and adapted to move over the eye-ball, an arm securing the eye-ball to the bracket, a spring arm depending from the upper edge of the lid, a weight at the end of the spring-arm and adapted to move the lid and be arrested in one direction by the head, a spring projecting upward from the spring arm and adapted to impinge the bracket and arrest the movement of the weight in the reverse direction, and a plastic mass securing the bracket to the head.

5. In a mechanical eye, the combination with a hanging bracket, of a rigid eye-ball, a pivoted lid associated with the bracket and eye-ball, a depending resilient arm secured to the rear edge of the lid, a perforated cup at the lower end of the arm, a buffer in the perforation, and a weight fitted in the cup to control the movement of the lid and resilient arm.

Signed at New York, in the county of New York and State of New York, this 28th day of Sept., A. D. 1918.

DAVID ZAIDEN.