R. R. CONE.

EYE MOVING MECHANISM FOR DOLLS.

APPLICATION FILED DEC. 31, 1917.

1,322,763. Patented Nov. 25, 1919.

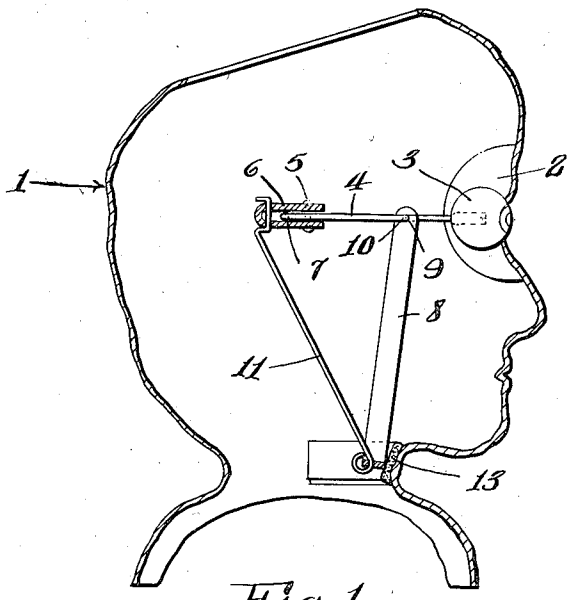


Fig. 1.

Fig. 2.

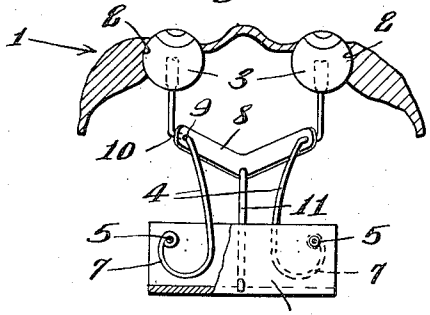


Fig. 3.

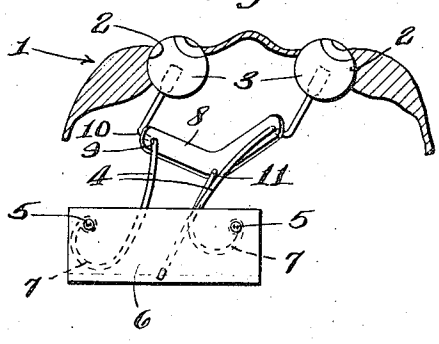
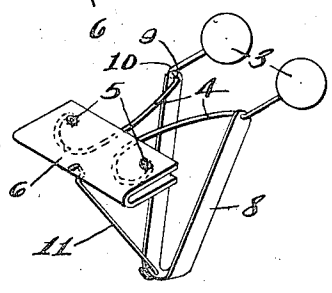


Fig. 4.



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UNITED STATES PATENT OFFICE.

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EYE-MOVING MECHANISM FOR DOLLS.

1,322,763. Specification of Letters Patent. Patented Nov. 25, 1919.

Application filed December 31, 1917. Serial No. 209,708.

To all whom it may concern:

Be it known that I, RALPH R. CONE, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga and State of New York, have invented a certain new and useful Eye-Moving Mechanism for Dolls, (Case B,) of which the following is a specification.

This invention relates to dolls having movable eyes, and has for its object a particularly simple and efficient mechanism for opening and closing the eyes and also for turning them to the right and left in their sockets; and the invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a vertical sectional view of a doll's head provided with one form of my invention, showing the eye mechanism in side elevation.

Fig. 2 is a plan view, partly broken away of the eye moving mechanism, contiguous parts of the head being also shown.

Fig. 3 is a view similar to Fig. 2 showing the position of the parts when the eyes are turned to the left.

Fig. 4 is a perspective view of this eye moving mechanism.

This invention comprises a device or means for turning the eyes of a doll laterally, that is, to the right or the left, and also for opening and closing the eyes.

1 designates the doll's head having internal sockets 2 on the outer corners or sides of the eye openings of the head in which sockets the eyes or balls 3 are seated to turn about a horizontal plane common to both eyes as when the doll's head is changed from standing to recumbent position, and vice versa, and about vertical parallel axes when an impulse is given to the eye mechanism to the right or to the left.

In this embodiment of my invention, said mechanism comprises a device having a parallel lever movement laterally to turn the eyes about their vertical axes, and 4 designates the levers which are fixed respectively at like ends to the eyes 3 and have their other ends pivoted at 5 to a link 6 at points spaced apart and remote from the eyes 3. The levers 4 owing to their parallel movement transmit and equalize the lateral throw of the link 6, which acts as an inert member, to the eye balls 3 so that they have a like turning movement about parallel axes. The member 6 also acts as a weight to turn the eyes 3 about a common horizontal axis when the head is being moved from standing to recumbent position or vice versa. This member or weight 6 is preferably in the form of a strip folded lengthwise usually along its median line and the levers have like ends inserted in the eyes 3 and their other ends widened as by bending the same into the form of a loop as at 7, the loops extending between the folds of the member 6 in order to engage the opposing faces of the folds and prevent twisting of the links and hence twisting of the eyes.

The looped portions 7 are pivoted at their ends to the opposing folds on axes arranged at a right angle to the lateral movement of the member 6.

The eyes are yieldingly pressed laterally and held in their sockets 2 in order to have movement for permitting the ready placing and removal if necessary, of the eye mechanism, and compensating for change of condition of, as expansion and contraction, especially shrinkage of, the composition of which the head is formed, by suitable spring means here shown as acting to press the levers 4 apart.

8 designates the spring which is substantially U-shaped and has the ends of its branches acting to press the arms 4 laterally in opposite directions and its intermediate portion so supported from the member 6 as to be held in juxtaposition thereto during the opening and closing and lateral movements of the eyes 3.

As here shown, the opposite branches of the spring 8 are formed with perforations or eyes 9 through which deflected portions 10 of the arms 4 extend, and the intermediate part of the spring 8 is connected to the member 6 by means of a link or brace 11 connected at one end to the intermediate portion of the member 6.

The interior of the head is provided with a suitable buffer 13 arranged to receive any blow from the intermediate part of the spring 8 during movement of the eye mechanism.

In operation, during the change of position of the doll's head from standing to recumbent position, or vice versa, the mechanism moves upwardly or downwardly owing to the weight 6 and opens and closes the eyes 3, it being understood that the eyes have suitable representations of pupils and lids thereon. When the doll is in standing position an impulse or throw imparted to the weight 6 by giving a slight impulse, throw or twist to the doll, turns the eyes in the socket. An impulse tending to throw the weight to the left turns or rolls the eyes in their sockets to the right, and vice versa.

The spring yieldingly holds the eyes in their sockets permitting the mechanism to be readily placed in position, steadies the same during the movement thereof, and also compensates for expansion and contraction and especially shrinkage of the composition of the head, it being understood that oftentimes this composition continues to change its condition or shrink for several months after the doll is finished.

What I claim is:

1. The combination of a doll's head having movable eyes, and means for moving the eyes laterally comprising arms fixed at like ends to the eyes respectively and a member pivoted at spaced apart points to said arms at points remote from the eyes, said member being a strip folded lengthwise upon itself, the arms extending between the opposing sides of the folded strip, the folds being spaced apart and the arms being pivoted to one of the spaced apart folds on axis at a right angle to said folds and the portions of the arms between the folds bearing on the folds, substantially as and for the purpose set forth.

2. The combination of a doll's head having movable eyes, and means for moving the eyes laterally comprising arms fixed at like ends to the eyes respectively and a member pivoted at spaced apart points to said arms at points remote from the eyes, said member being a strip folded lengthwise upon itself, the arms extending between the opposing sides of the folded strip, the folds being spaced apart and the arms extending between the folds and pivoted to one of the folds on axis at a right angle to the folds, the portions of the arms between the folds being extended laterally and bearing on the folds, substantially as and for the purpose described.

3. The combination of a doll's head having movable eyes, means for moving the eyes laterally comprising levers fixed at like ends to the eyes respectively and a member pivoted at spaced apart points to said levers at points remote from the eyes, a spring interposed between said levers, the spring being a strip bent substantially U-shaped having its arms connected to the levers, and means connecting the intermediate part of the strip to the member to hold the same in juxtaposition to the member, substantially as and for the purpose set forth.

4. The combination of a doll's head having eyes which have an opening and closing movement, and a turning movement laterally, a device for turning the eyes comprising a vertically and laterally movable weight, and means for transmitting the movement of the weight to the eyes, comprising arms fixed to the eyes respectively and to the weight in so far as the vertical movement of the weight is concerned and being connected to the weight by a pivotal connection capable of having pivotal movement during lateral movement of the weight, and spring means tending to press the eyes laterally in opposite directions, substantially as and for the purpose described.

5. The combination of a doll's head having movable eyes, and a device for turning the eyes comprising a weight consisting of a strip folded lengthwise upon itself, arms fixed at corresponding ends to the eyes and having their other ends extending between the folds of the weight and being bent to have laterally extended portions coacting with the opposing walls of the folds to prevent twisting of the arms, a U-shaped spring having perforations through which the portions of the arms pass, and means connecting the weight and the intermediate portion of the U-shaped spring to hold the spring and weight in juxtaposition, substantially as and for the purpose set forth.

In testimony whereof, I have hereunto signed my name, at Syracuse, in the county of Onondaga, and State of New York, this 18th day of December, 1917.

RALPH R. CONE.