July 29, 1952 M. WEISS 2,604,730

MOVABLE DOLL EYES

Filed May 25, 1949 2 SHEETS—SHEET 1

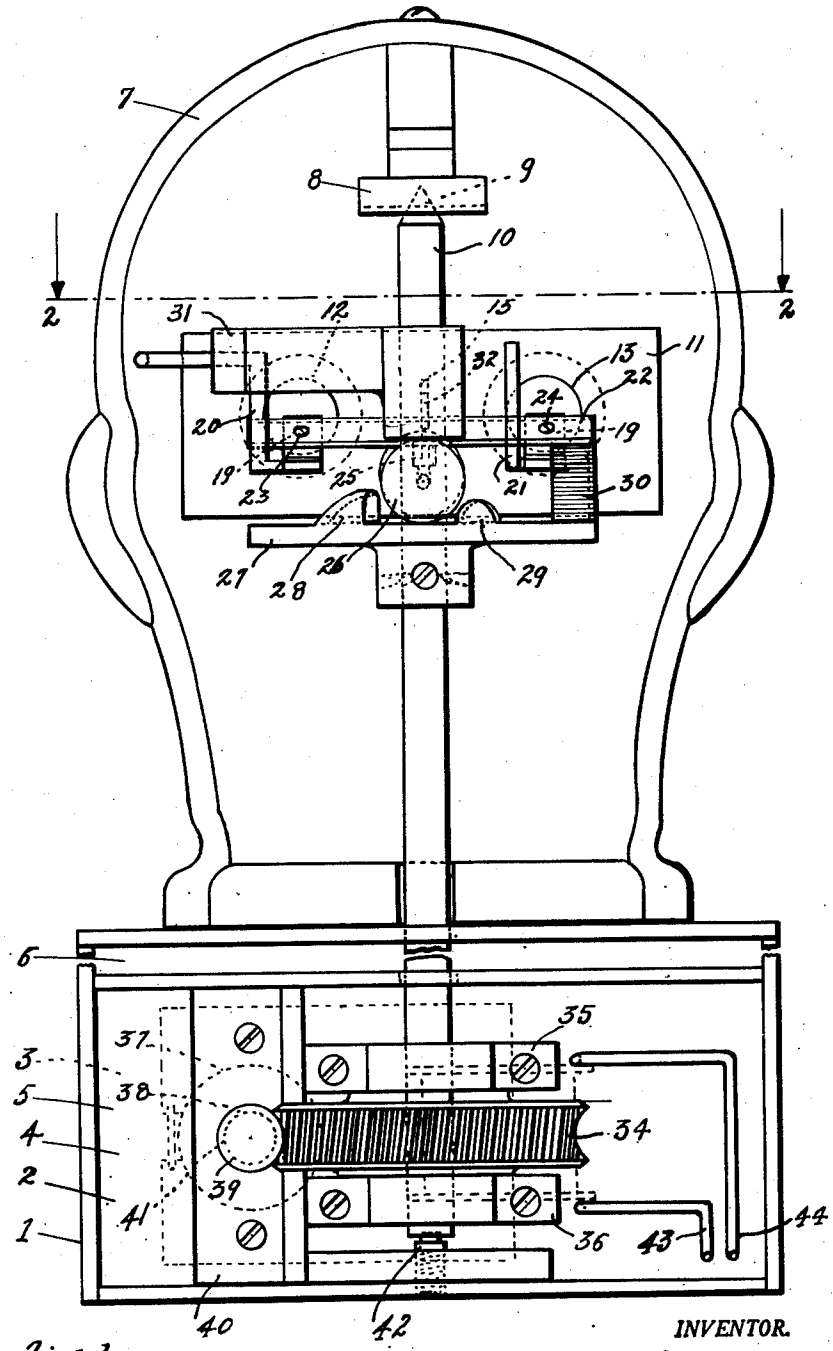


Fig. 1.

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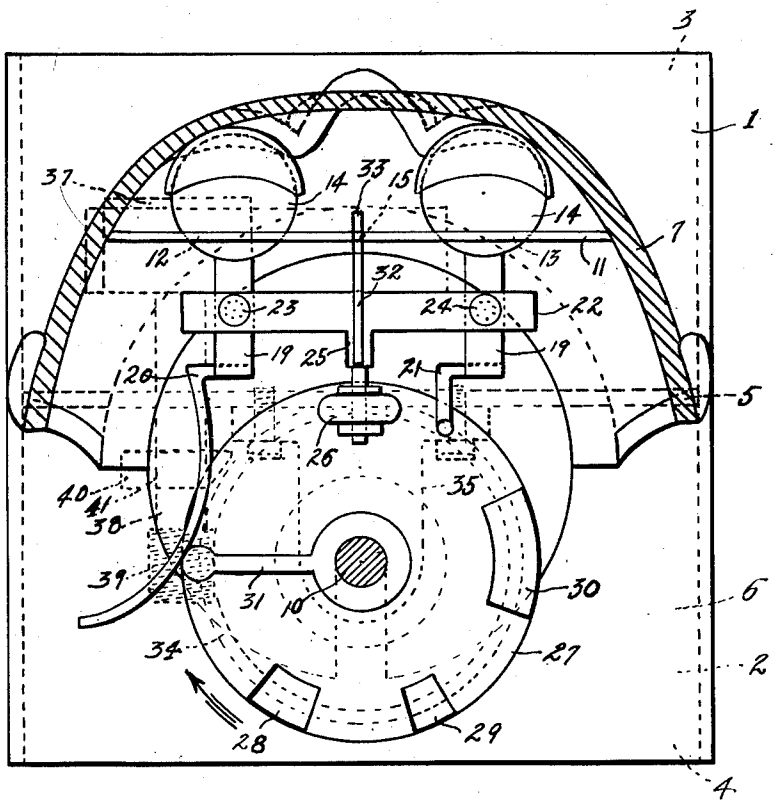


Fig. 2

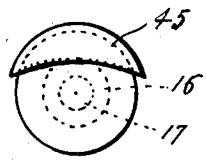


Fig. 3.

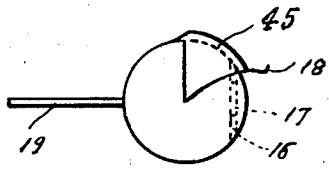


Fig. 4.

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UNITED STATES PATENT OFFICE

2,604,730

MOVABLE DOLL EYES

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Application May 25, 1949, Serial No. 95,232

1 Claim. (Cl. 46—168)

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The object of the invention is to provide a novel movement transmitting mechanism to turn the eyeballs up and down. The eye lid is so connected to the eyeball, that when the eyes are turned up and down they are given a winking movement, thus imparting to them a look of animation.

Another object of the invention is to provide means to move the eyes laterally intermittently in opposite directions.

A further object of the invention is to provide means to restore the eyes to mesial position after their movement laterally.

Details of construction and arrangement of parts will be apparent as the description proceeds, reference now being had to the figures of the accompanying drawings forming a part of this application, and wherein like reference numerals indicate like parts.

In the drawings:

Figure 1 is a view in elevation looking into the back of the doll head and supporting base, and illustrating my improved operating mechanism incorporated therein.

Figure 2 is a cross sectional view taken on line 2—2 in Figure 1.

Figure 3 is a front view of the eyeball, illustrating the eye lid mounted thereon and connected thereto.

Figure 4 is a side view of the eyeball, illustrated in Figure 3.

Referring more particularly to the drawings by characters of reference, reference numeral 1 designates a supporting base, which may be divided into a plurality of compartments.

The lower compartment 2 is divided into a forward compartment 3 and a rear compartment 4 by a transverse wall 5 removably fixed therein. The upper compartment 6 may be used to display various articles of merchandise.

The doll head 7 is a simulacrum of a smiling doll mounted on the supporting base. The doll head may be cast of plastic or other suitable material.

In the upper portion of the doll head there is provided a bearing 8 adapted to receive the conical end 9 of the cam shaft 10. In the doll head, back of the eyeball sockets there is provided a transversally extending fixedly secured flat plate 11 having provided therein two apertures 12 and 13 adapted to receive a portion of the spheres 14, 14 constituting the eyeballs, as shown in Figure 2. The plate is adapted to hold the eyeballs in their sockets and to permit the associated movements thereof with ease. In

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the plate positioned in the middle thereof between the two apertures there is provided a vertically extending through slot 15, the purpose of which will more fully appear as the description proceeds.

The eyeball is given a lifelike appearance by being provided with an iris 16, a pupil 17 and lashes 18. Connected to and extending rearwardly from each eyeball there is provided a flat strip 19. Connected to the extremity of each strip there is provided an upwardly extending member as shown at 20 and 21, and of a configuration as illustrated in Figures 1 and 2.

The strips connected to the eyeballs are interconnected by means of a transverse member 22 pivotally mounted on the strips by means of pivots 23 and 24.

Intermediate the pivots and integrally formed with the transverse member there is provided a follower 25 provided with a roller 26 adapted to ride the cam plate 27, provided with slopes 28, 29 and 30 circumferentially spaced thereon, the profiles of which are illustrated in Figure 1. The roller adapted to ride the cams on the cam plate is of sufficient weight to cause the roller to gravitate downwardly on the cam. On the high point of the high cam, the eyes are closed. The lower cams on the cam plate impart a winking movement to the eyes.

The cam plate is fast on the cam shaft 10, and above the cam plate, fast on the cam shaft there is provided a laterally extending arm 31, adapted to move the eyes in opposite directions intermittently.

Connected to the cam follower 25 there is provided a spring strip 32, the free end 33 of which is slidably mounted in the vertically extending slot 15 in the fixed plate 11, and is adapted to restore the eyes to a mesial position. The spring strip is of sufficient strength to move the eyeballs with their cooperating means back to a mesial position without interfering with the rotation of the cam plate. The cam plate turns clockwise. The inherent resiliency of the spring strip restores it to normal neutral position after it has been deflected in the lateral movements of the eyes.

In the rear compartment of the lower compartment 2, mounted fast on the cam shaft there is a worm wheel 34. The cam shaft rotates in and is held in operative position by the bearings 35 and 36 removably mounted on the transverse wall 5 in the lower compartment.

The motor 37, the shaft 38 of which extends through an aperture in the transverse wall 5,

is provided with a worm 39 which meshes with the worm wheel to drive the cam shaft. The motor shaft rotates in and is supported by a vertical plate 40 provided with a bearing 41 for the motor shaft. The plate is positioned between the transverse wall 5 and the worm on the motor shaft so that it will not interfere with the rotation of the worm wheel. A bearing for the lower end of the cam shaft is shown at 42. The eye lid mounted on the eyeball is shown in Figs. 3 and 4 at 45.

Wires to convey electrical energy from a source of supply to the motor are shown at 43 and 44.

It is believed that the operation of the mechanism as a whole will be clear, in view of the foregoing description which has been given in connection with that of the construction of the same.

In a general way, while I have, in the above description, disclosed what I deem to be a practical and efficient embodiment of the invention, it should be well understood that I do not wish to be limited thereto as there might be changes made in the arrangement, disposition and form of the parts without departing from the principle of the present invention as comprehended within the scope of the accompanying claim.

What I claim is:

In a device of the character described, comprising, in combination, a base, a doll head mounted thereon, a cam shaft bearing mounted in the upper medial portion of the doll head, a crosswise secured flat plate having therein two spaced circular holes, and having intermediate the spaced circular holes a through vertical slot, an eyeball mounted in each circular hole, a flat strip member connected to each eyeball and extending rearwardly therefrom, an upwardly and rearwardly extending member of predetermined shaped configuration connected to the extremity of each strip member, a transverse flat cross-bar member pivotally mounted on the aforementioned strip members connected to the eyeballs, a gravity controlled cam follower connected to the aforesaid flat cross-bar member intermediate the pivots, a roller on the cam follower, a flat

spring on edge connected to the cam follower and having its free end slidably mounted in the through slot in the crosswise secured flat plate, a cam shaft having its lower end journalled in the base, and its upper end journalled in the bearing in the head, a cam plate having a plurality of circumferentially spaced slopes on the upper surface thereof fast on the cam shaft, the gravity controlled follower being actuated by the slopes on the cam plate when the cam plate is rotated, and the flat spring connected to the follower, an arm secured to the cam shaft above the cam plate and extending at a right angle from the cam shaft and adapted to intermittently effect reciprocating movement of the transverse cross-bar member pivotally connected to the eyeball strips by engaging the predetermined shaped members connected to the extremity of each strip member, power transmitting means in the base comprising a motor, a worm on the motor shaft, a worm gear fast on the cam shaft meshing with the worm on the motor shaft and adapted to impart rotation to the cam shaft, the cam plate and the extending arm above the cam plate to impart a multiplicity of movements to the eyeballs.

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