March 26, 1935. J. DUNNER 1,995,537

EYE CONSTRUCTION FOR THE HEADS OF DOLLS AND THE LIKE

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Fig. 1.

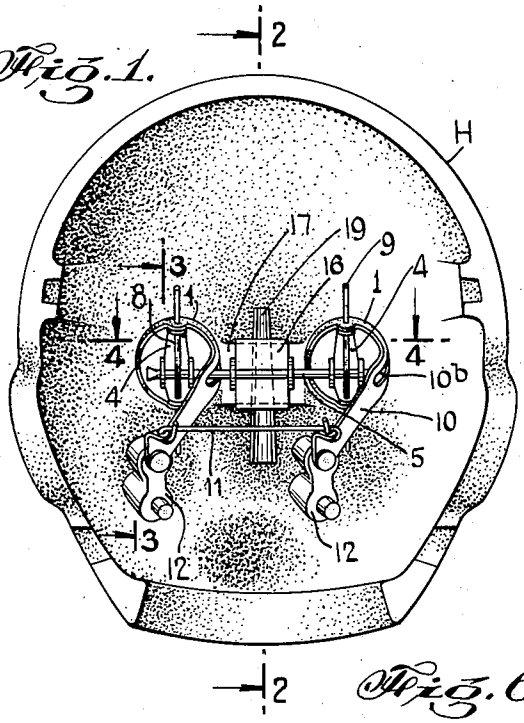


Fig. 3.

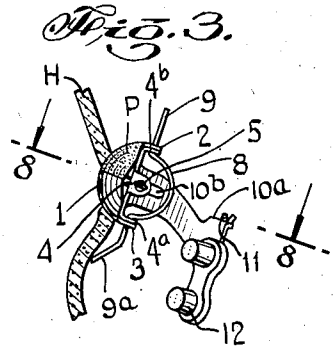


Fig. 4.

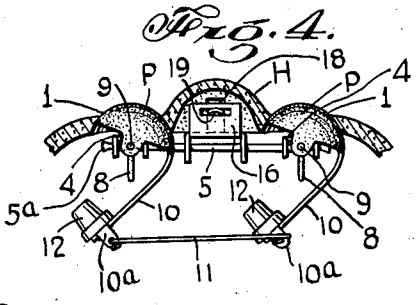


Fig. 6.

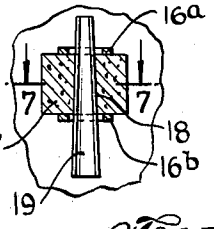


Fig. 5.



Fig. 2.

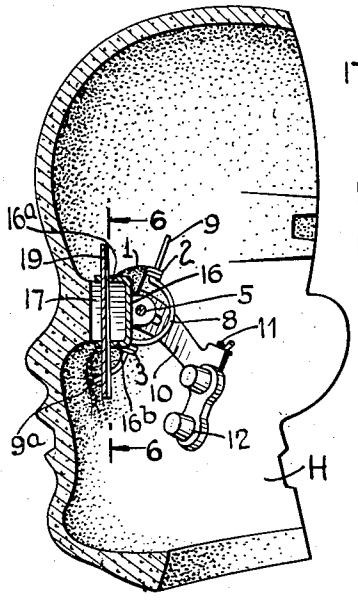


Fig. 7.

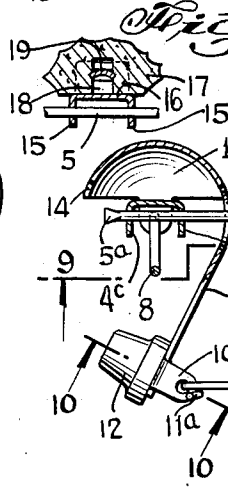
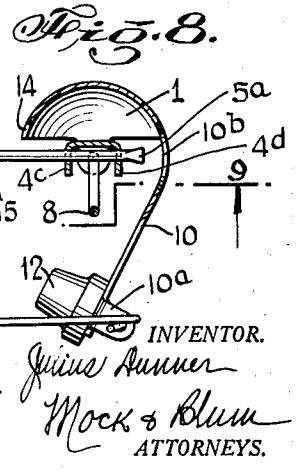


Fig. 8.



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Fig. 10.

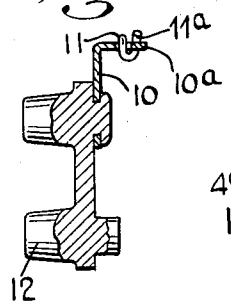


Fig. 9.

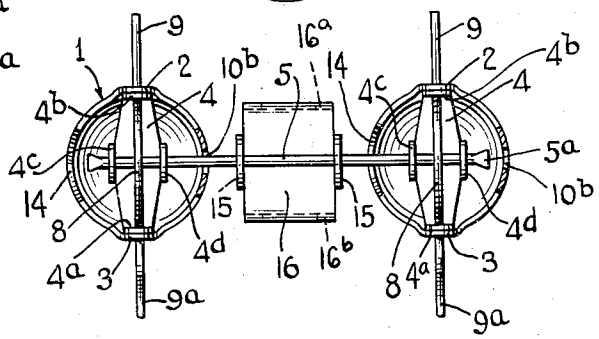


Fig. 11.

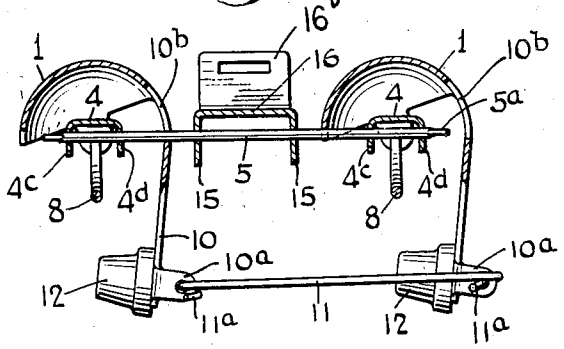


Fig. 12.

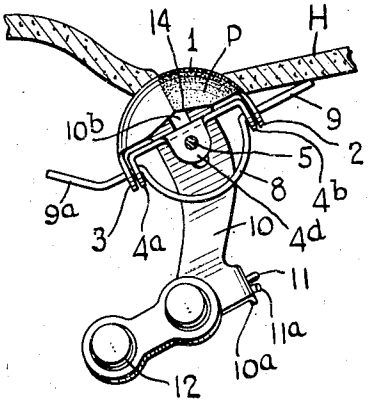


Fig. 13.

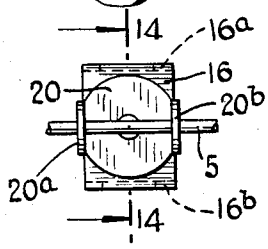


Fig. 15.

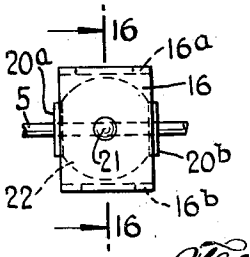


Fig. 16.

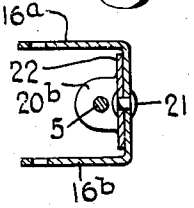


Fig. 14.

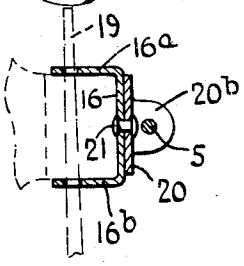
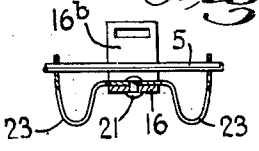


Fig. 16a.



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Fig. 17.

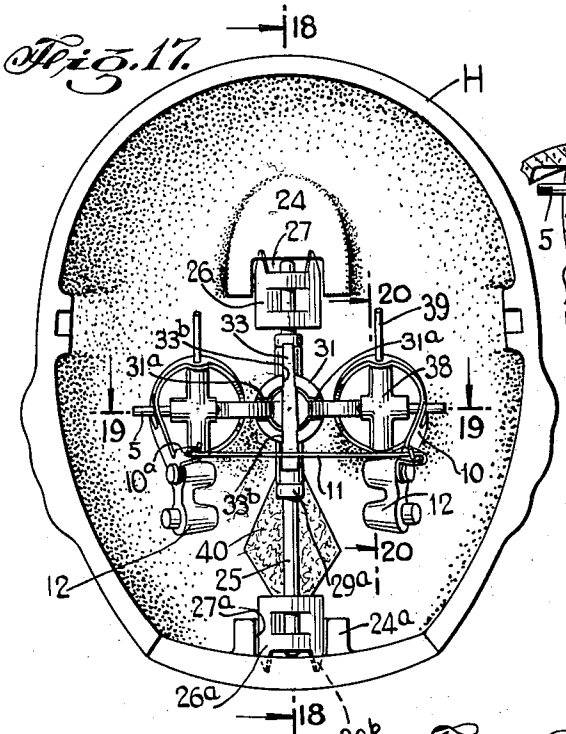


Fig. 19.

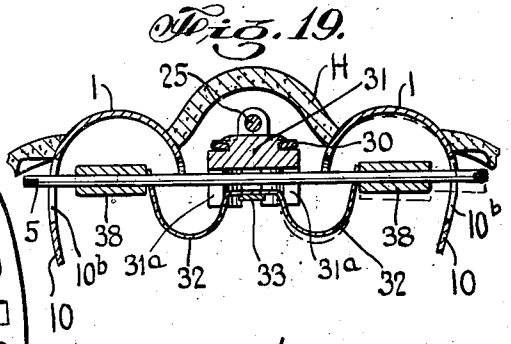


Fig. 20.

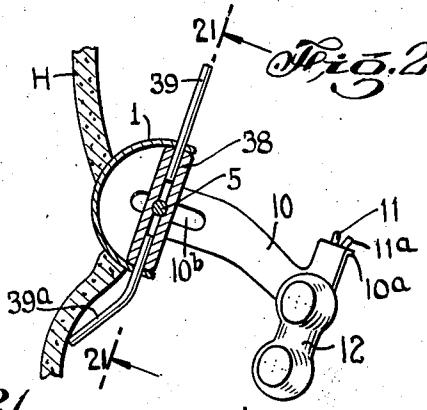


Fig. 18.

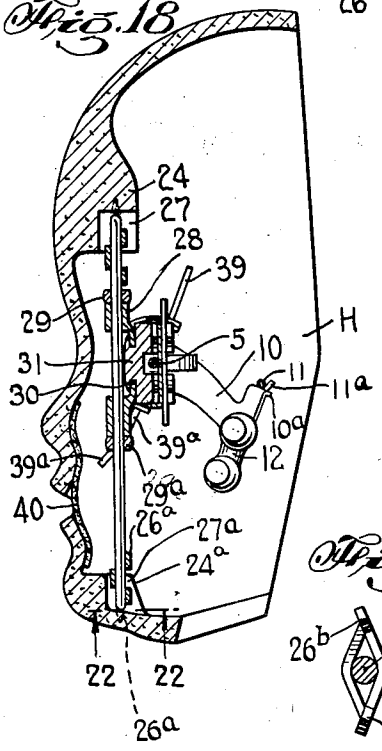


Fig. 21.

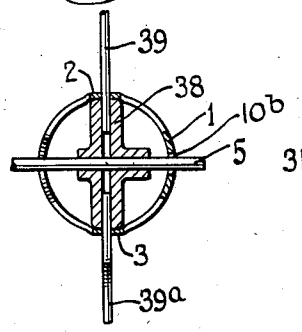


Fig. 23.

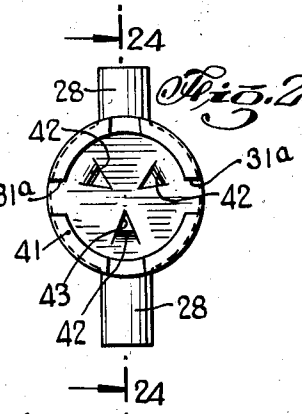


Fig. 24.

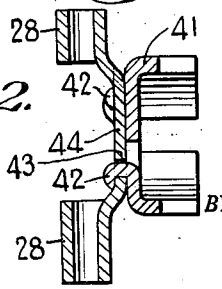


Fig. 21a.

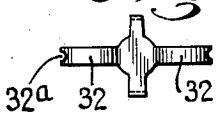


Fig. 22.

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Fig. 25.

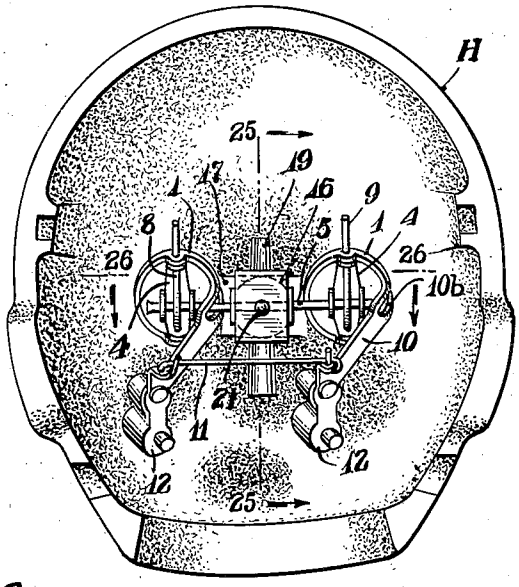


Fig. 26.

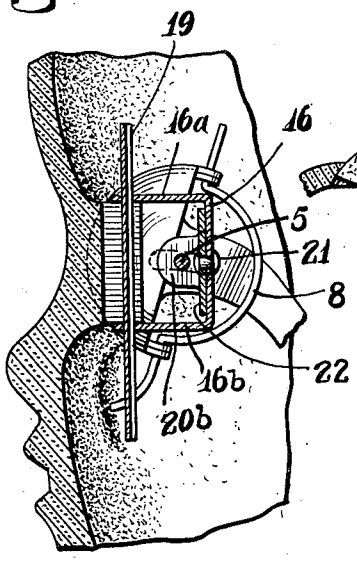


Fig. 27.

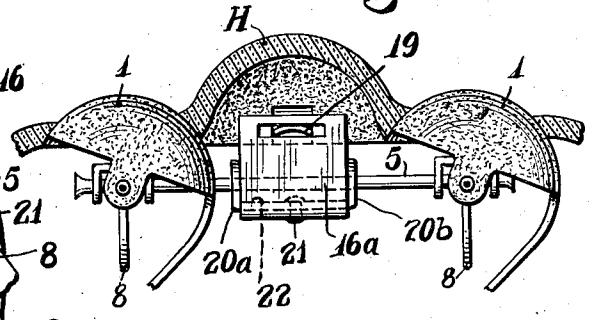
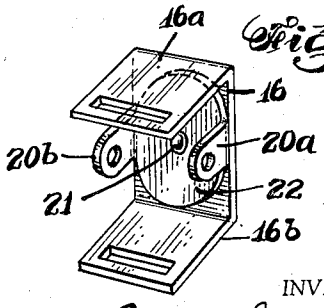


Fig. 28.



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Mock & Blum

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Patented Mar. 26, 1935

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UNITED STATES PATENT OFFICE

1,995,537

EYE CONSTRUCTION FOR THE HEADS OF DOLLS AND THE LIKE

Julius Dunner, Brooklyn, N. Y., assignor to Ideal Novelty & Toy Co., Brooklyn, N. Y., a corporation of New York

Application January 6, 1932, Serial No. 584,981

5 Claims. (Cl. 46—40)

My invention relates to a new and improved eye-construction for the heads of dolls, and the like.

One of the objects of my invention is to provide an eye construction which can be assembled as a unit independently of the head, the unit being readily assembled with the head.

Another object of my invention is to provide an eye construction in which the eyeball members are readily adjustable in order to allow for irregularities in the formation of the eye-sockets of the head.

Another object of my invention is to provide an eye construction which shall be readily adjustable in all respects.

Another object of my invention is to provide a simple and durable unit which can be manufactured at low cost.

Another object of my invention is to provide an eye construction in which the eyes simultaneously roll or move sidewise, and in which the eyes also roll simultaneously up and down, and in which one of the eyes can be rolled in a vertical direction independently of the other. This last mentioned adjustment makes it possible to produce a "winking" effect.

Other objects of my invention will be set forth in the following description and drawings which illustrate preferred embodiments thereof, it being understood that the above general statement of the objects of my invention is intended merely to generally explain the same and not to limit it in any manner.

Fig. 1 is a rear elevation showing the eye construction applied to the head of a doll, the eyes being shown in the open position and rolled to one side.

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

Fig. 5 is a front elevation showing how the eyeball members have been rolled horizontally to one side.

Fig. 6 is a sectional view on the line 6—6 of Fig. 2, and showing the wedge-shaped retaining member.

Fig. 7 is a sectional view on the line 7—7 of Fig. 6.

Fig. 8 is a sectional view on the line 8—8 of Fig. 3, the eyeball members being shown in what may be designated as the "normal" position. In this normal position the pupil of each eye is in the center of the opening or socket which is provided therefor in the head of the doll.

Fig. 9 is a sectional view on the line 9—9 of Fig. 8.

Fig. 10 is a sectional view on the line 10—10 of Fig. 8.

Fig. 11 is a view similar to Fig. 8 but showing the eyeballs rolled horizontally to one side. In Fig. 11 the eyeballs have been rolled to a position which is opposite from that shown in Fig. 1.

Fig. 12 is a detail sectional view showing how the eyes have been turned vertically so as to simulate the "sleeping" effect.

Fig. 13 is a detail view showing the device for securing angular adjustment.

Fig. 14 is a sectional view on the line 14—14 of Fig. 13.

Fig. 15 is a view similar to Fig. 13 and showing a modification.

Fig. 16 is a sectional view on the line 16—16 of Fig. 15.

Fig. 16*a* is a modification of the device shown in Fig. 15.

Fig. 17 is a view similar to Fig. 1 and showing a modification. In Fig. 17 the eyeball members are shown in the "normal" position.

Fig. 18 is a sectional view on the line 18—18 of Fig. 17.

Fig. 19 is a sectional view on the line 19—19 of Fig. 17.

Fig. 20 is a sectional view on the line 20—20 of Fig. 17.

Fig. 21 is a sectional view on the line 21—21 of Fig. 20.

Fig. 21*a* is a detail front elevation of the spring which is illustrated in Fig. 17.

Fig. 22 is a sectional view on the line 22—22 of Fig. 18.

Fig. 23 is a modification of the means for assembling the support for the eye.

Fig. 24 is a sectional view on the line 24—24 of Fig. 23.

Fig. 25 is a view similar to Fig. 1, showing the modification of Fig. 15 installed in a complete device.

Fig. 26 is a section on the line 25—25 of Fig. 25.

Fig. 27 is a section on the line 26—26 of Fig. 25.

Fig. 28 is a perspective view of the device illustrated in Fig. 15.

Referring to the first embodiment, the head H of the doll can be of any suitable shape and it can be made of any suitable material. The eye construction includes a pair of eyeball members 1. These may be made from any suitable material,

such as metal celluloid or the like which can be formed into shape.

As shown in Fig. 3, the top of each eyeball member 1 can have a layer of pink paint P in order to simulate the eyelid. In the "sleeping" position of the doll, this layer P registers with the opening or socket of the head H.

As shown in Figs. 3 and 9, each eyeball member 1 has rearwardly projecting and perforated top and bottom lugs 2 and 3. A holding member 4 comprises a sheet of flat metal having top and bottom perforated lugs 4*b* and 4*a* which respectively abut the lugs 2 and 3. The holding member 4 also has rearwardly projecting perforated lugs 4*c* and 4*d* through which the shaft 5 passes. The assembly between each holding member 4 and its respective eyeball member 1 is completed by means of a spring wire which has a central U-shaped portion 8 and legs 9 and 9*a*. Each of these legs passes through a pair of abutting lugs. The bent shape of the wire portion 8 provides sufficient clearance in order to permit the eyeball members 1 to turn upon the shaft 5 which extends through the pairs of perforated lugs 4*c* and 4*d*.

As shown in Fig. 1 for example, each eyeball member is provided with a rearwardly extending arm 10, having a perforation 10*b*. The arms 10 are provided with eyes 10*a*, and these eyes 10*a* are connected by means of a link 11 having upwardly bent ends 11*a* which pass through the eyes 10*a*. The arms 10 are also provided with weights 12. The weights 12 cause the eyeball members 1 to turn up and down about a horizontal axis in order to produce the "sleeping" effect shown in Fig. 12. The weights 12 also cause the eyeball members 1 to roll about a vertical axis so as to produce the rolling effect shown in Fig. 5. The link 11 causes the eyeball members 1 to roll in unison and to move up and down in unison. However, there is enough lost motion or loose fit between the link 11 and the arms 10, in order to make it possible to turn one of the eyeballs around a horizontal axis so as to produce the sleeping effect shown in Fig. 12, while the other eyeball member 1 remains open. This can be done by manually manipulating the eyeball member from the outside of the head, so that a winking effect can be secured.

As shown in Fig. 8 for example, the eyeball members 1 are provided with recesses 14, said recesses 14 being opposite to the arms 10. Referring to Fig. 8, if the eyeballs are rolled about a vertical axis, the wall of the right-hand recess 14 will contact with the shaft 5, thus limiting the rolling movement in this direction. The rolling movement in the other direction is limited by the contact between the wall of the left-hand opening 10*b*, and said shaft 5. The recesses 14 preferably have curved walls. The shaft 5 passes through the lugs 15 of a supporting frame 16. The shaft 5 is provided with flattened and enlarged ends 5*a* so that the eyeball members cannot slip off the ends of said shaft.

Referring to Fig. 2, it can be seen that the frame 16 has top and bottom flanges 16*a* and 16*b* which abut the top and bottom surfaces of an inner projection 17 of the doll head H.

Referring to Fig. 7, the projection 17 has a central recess 18. The flanges 16*a* and 16*b* are provided with slots and a wedge 19 can be driven through said slots and through the recess 18, so as to lock the frame 16 upon the projection 17. The wedge 19 is upwardly tapered and its longitudinal edges may also be forwardly tapered. When the wedge 19 is driven into position, the vertical wall of the frame 16 is caused to tightly abut the inner vertical wall of the projection 17, so that the eyeball members are forced into proper position.

Referring to Fig. 8, it can be seen that each eyeball member can be longitudinally shifted along the shaft 5. This facilitates the ready adjustment of the eyeball members into proper position when the assembly is made with the head. If for example the openings in the head of the doll are not properly spaced or aligned, the adjustment of the eyeball members with respect to their shaft makes it possible to readily allow for any such irregularity.

Referring to Fig. 13, the frame 16 has the construction previously specified. A turnable disc 20 is turnably connected to the rear or inner wall of the frame 16, by means of a pivot member 21. This turnable disc 20 has rearwardly extending lugs 20*a* and 20*b* in which the shaft 5 is mounted. This construction facilitates an angular adjustment of the shaft and of the eyeball members mounted thereon.

In the modification shown in Figs. 15 and 16, the shaft 5 is mounted in the lugs 20*a* and 20*b* of a disc 22 which is turnably mounted upon the inner surface of the frame 16.

Referring to Fig. 16*a*, this shows a spring 23 which is turnably connected to the frame 16 by means of the pivot member 21. Said spring 23 has perforated legs through which the shaft 5 passes, and said spring 23 serves to press the shaft 5 forwardly so that the eyeball members are forced into the openings or sockets of the head. It will be noted that the frame 16 is non-turnably connected to the head of the doll, and that each eyeball member can turn freely with respect to the shaft 5 and that the shaft 5 and the eyeball members do not turn in unison.

Referring to the embodiment shown in Fig. 17, the inner wall of the head H is provided with an inward projection 24 adjacent the top thereof and with a projection 24*a* at the bottom thereof. The projection 24 extends downwardly and the projection 24*a* extends upwardly. A vertical supporting rod 25 is connected to said projections 24 and 24*a*. For this purpose locking members 26 and 26*a* are slidably mounted upon the rod 25. The locking members 26 and 26*a* have a tight frictional fit on the rod 25, the rod 25 having its outer surface suitably roughened for this purpose. The projections 24 and 24*a* are provided with guide recesses 27 and 27*a* into which the locking members 26 and 26*a* may enter. These locking members 26 and 26*a* have prongs, such as the prongs 26*b* of the member 26*a*, which can be forced into the material of the head H. This is accomplished by means of any suitable tool.

The central part of the rod 25 is provided with a sleeve 28, this being turnably held in position by means of vertically slidable friction stops 29 and 29*a* which have a tight frictional fit on the rod 25. The sleeve 28 is provided with a central ring-shaped portion 30, and said sleeve can be adjusted up and down. A frame member 31 has its front end extending through said ring 30 and this projecting front end of the frame 31 is enlarged and flattened, in order to produce a rivet-like connection, so that the sleeve 28 and the supporting frame 31 turn in unison around the rod 25.

As shown in Fig. 17, the frame 31 is provided with horizontal recesses 31*a*, in which the shaft 5 is mounted. The shaft 5 is forwardly urged or

pressed by means of a spring 32. The spring 32 has curved legs whose ends are provided with arcuate recesses 32*a*. The legs of the spring 32 press against the shaft 5, thus urging it forwardly. The spring 32 is urged forwardly and is held in position by means of a wedge-shaped pin 33 which fits into the top and bottom recesses 33*b* of the frame 31. Said recesses 33*b* are wedge-shaped, and the pin 33 has a tight drive-fit therein. Cross-shaped members 38 are mounted upon the shaft 5 and these cross-shaped members 38 are connected to the eyeball members by means of pins 39 and 39*a* which pass through perforated lugs of said eyeball members. Any suitable means are provided for limiting the inward movement of the pins 39 and 39*a*. Said pins 39 and 39*a* act to limit the up and down turning movement of the eyeball members. The means for limiting the rolling movement of the eyeball members is the same as that previously described.

Referring to Fig. 17, it can be seen that the perforated arms 10 are provided on opposite sides of the eyeball members. The inner wall of the head is provided with a piece of material 40, such as cloth or the like, and this may have a red color so as to simulate the interior of the mouth.

In the modification shown in Figs. 23 and 24, the supporting frame for the shaft comprises a stamping 41 having lugs 42 stamped out of its front surface. Said lugs 42 enter openings 43 which are provided in the web 44 of the sleeve 28, and said tongues 42 are bent over so as to serve as locking tongues.

Referring to the second embodiment, it will be noted that each eyeball member can be longitudinally adjusted with respect to the shaft. Likewise, the legs of the spring 32 press against the shaft adjacent the central points of the eyeball members. Likewise, each eyeball member has a universal mounting with respect to the shaft 5.

Referring to Fig. 18, the bridge or frame member 31 can be riveted into position at any desired angle, so that the shaft 5 has the proper inclination.

Referring to Figs. 1 and 10, and assuming that the normal position of the head is the vertical position, it can be seen that the connecting link 11 is connected to the eyes of the arms 10 by means of vertical eyelets which are formed at the ends of the link 11 and that said vertical eyelets are connected to the horizontal eyelets of the arms 10. This construction causes the eyes to roll simultaneously while permitting the "winking" effect previously specified.

Referring to Figs. 13 and 16, there is considerable friction between the supporting member 16 and the turnable shaft support 20 or 22, so that the turnable shaft support remains in the position in which it has been adjusted.

Referring to Fig. 16*a*, the spring support 23 is shaped so that the shaft 5 is urged forwardly towards the front of the head of the doll, so that the eyeball members are properly located in the sockets. If desired, the eyeball members can be yieldingly pressed into the sockets of the head of the doll.

Referring to Fig. 19, the shaft 5 may pass through suitable openings provided in the legs of the spring 32. The shaft support 31 has a bore which is sufficiently wide so that the spring 32 may press the shaft 5 forwardly so that the eyeball members 1 are located in proper position. If the shaft 32 is provided with recesses 32*a* at the ends of its legs, the same function is secured, because the shaft 5 fits loosely in the support 31.

I have shown several embodiments in which the eyeball members turn with respect to the supporting shaft. However, in certain aspects of my invention, I do not wish to exclude a construction in which the eyeball members and the shaft turn in unison, and either said construction may be used for many of the purposes of my invention.

I have shown preferred embodiments of my invention, but it is clear that numerous changes and omissions can be made without departing from its spirit.

I claim:

1. An eye construction for dolls, comprising a bracket member having forwardly extending legs, a pin passing through said legs and a part of the adjacent portion of the head of the doll, a spindle support turnably connected to said bracket member by means of a pivot pin intermediate said legs, a spindle mounted in said spindle support, and eyeball members mounted on said spindle.

2. An eye construction for dolls, comprising a bracket member having forwardly extending legs, a pin passing through said legs and a part of the adjacent portion of the head of the doll, a spring connected to said bracket member intermediate said legs, said spring also having legs, a spindle mounted on the legs of said spring, and eyeball members mounted on said spindle.

3. An eye construction for a doll-head which has eye-sockets, comprising a bracket member connected to the interior of the front of the head of the doll, a spring connected to said bracket member, said spring having legs, a spindle mounted on the legs of said spring, and eyeball members mounted on said spindle, said spring being connected to said bracket member by a pivot pin which is operative to permit said spring to be turned until the eyeball members are aligned with the eye-sockets.

4. A doll-head having an inner extension, a frame having legs which abut opposite surfaces of said extension, a connecting pin passing through said extension and through said legs, a supporting member located intermediate said legs and turnably connected to said frame, a spindle mounted on said supporting member, and eyeball members mounted upon said spindle.

5. A doll-head having an inner extension, a frame having legs which abut opposite surfaces of said extension, a connecting pin passing through said extension and through said legs, a supporting member located intermediate said legs and turnably connected to said frame, a spindle mounted on said supporting member, and eyeball members mounted upon said spindle, said supporting member comprising a spring having perforated legs.

JULIUS DUNNER.