Dec. 15, 1953 B. L. SAMUELS ET AL 2,662,340

DOLL EYES

Filed Dec. 16, 1949

Fig. 1

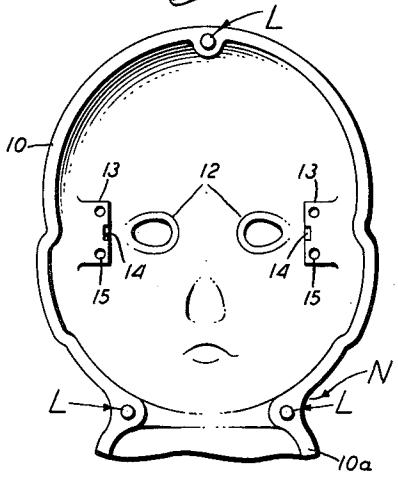


Fig. 2

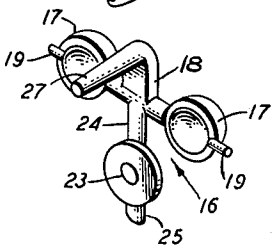


Fig. 3

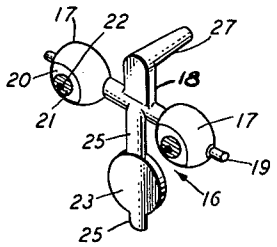


Fig. 4

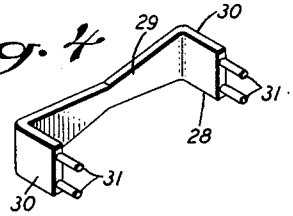


Fig. 5

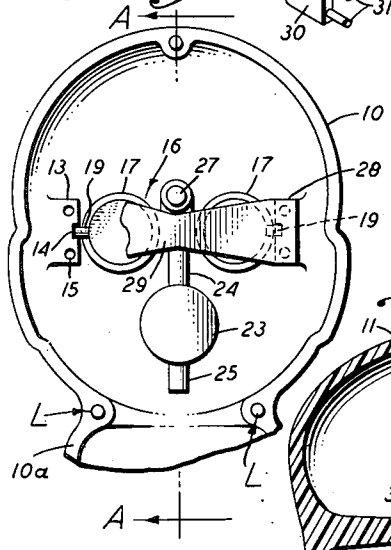


Fig. 6

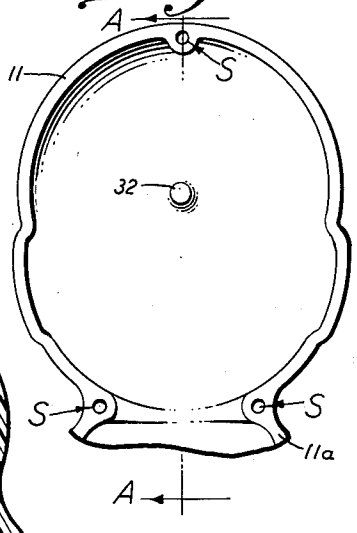
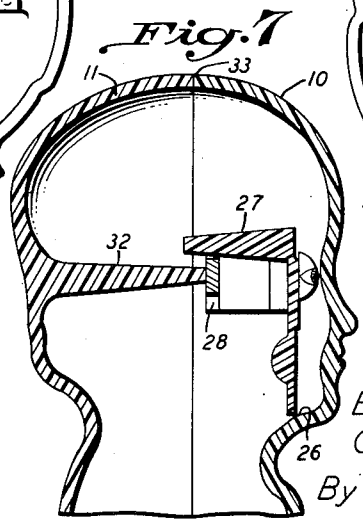


Fig. 7



INVENTORS
Benjamin Louis Samuels.
Oscar Doster.
By Mock & Blum
Attorneys.

Patented Dec. 15, 1953

2,662,340

UNITED STATES PATENT OFFICE

2,662,340

DOLL EYES

Benjamin Louis Samuels and Oscar Doster, Toronto, Ontario, Canada, assignors to Reliable Plastics Co., Limited, Toronto, Ontario, Canada, a corporation of Ontario

Application December 16, 1949, Serial No. 133,292

3 Claims. (Cl. 46—169)

1

This invention relates to a new and improved eye-set for dolls and other toys, to a new and improved combination between an eye-set and the head of a doll or other toy, and to a new and improved combination between an eye-set and the head and body of a doll or other toy. Whenever a doll is referred to herein, it includes other figures.

One of the objects of the invention is to provide a turnable eye-set in which the eyes are molded integrally with a depending bar whose weight biases the eyes of said eye-set to their normal open position when the doll-head is vertical, in which case said depending biasing bar may be vertical. In such vertical position, the lower end of said biasing bar may abut a part of the inner wall of said head, thus providing a stop for limiting the turning movement of the eye-set in the eye-opening direction, thus maintaining the eyes in open position.

Another object of the invention is to provide an eye-set in which the eyes remain open and motionless during part of the rotation of the doll to a reclining position and in which the eyes open before the doll is brought back to a vertical position.

A further object is an eye-set which enables simulation of the closing of the eyes to be accomplished in a smooth and natural manner as the doll is reclined.

Other objects and features of the invention are stated in the annexed description and drawings, which disclose a preferred embodiment of the invention.

Fig. 1 is an inner elevation at the rear of the front head-section, also showing the upper part of the front body-section, the longitudinal axis of the doll being shown in the vertical position;

Fig. 2 is a rear perspective view of the eye-set unit;

Fig. 3 is a front perspective view of the eye-set unit;

Fig. 4 is a front perspective view of the retaining bar;

Fig. 5 is an inner elevation at the rear of the front head-section, showing it assembled with the eye-set unit and the retaining bar, a part of the representation of the retaining bar being omitted;

Fig. 6 is an inner elevation of the rear head-section, also showing the upper part of the rear body-section; and

Fig. 7 is a transverse vertical section on the lines A—A of Figs. 5 and 6, showing the complete assembly.

2

In this embodiment, the head and body of the doll comprise a front head-section 10 which is integral with a front body-section 10*a*, and a rear head-section 11 which is integral with a rear body-section 11*a*. Only the upper parts of the body-sections 10*a* and 11*a* are shown. The body 10*a*—11*a* may be of any conventional shape, and it may be provided with arm-sockets and leg-sockets in which the respective limbs are attached to the body. As above-noted, each section 10—10*a* and 11—11*a* may be molded as a separate one-piece unit from a suitable plastic. The parts may be made of any material and in the broader aspects of the invention, each unit which is described herein as a one-piece unit may be made of a plurality of parts which are fixed to each other.

The rear edge-wall of the front section 10—10*a* is provided with a series of rearwardly projecting lugs L. The front edge-wall of the rear section 11—11*a* is provided with a series of sockets S. The two sections of the head and body are assembled by locating the lugs L in their respective sockets S. This embodiment has a neck whose narrowest portion is at N.

The front head-section 10 is provided with transversely disposed eye-openings or eye-sockets 12, whose edge-walls are bevelled so that said walls are rearwardly enlarged, in order to position the eye-members 17 accurately for turning movement in said eye-openings 12.

Transversely alined bearings 13 are molded integrally with the inner wall of front section 10. Each bearing 13 includes two vertically superposed sockets 15 and an intermediate bearing-recess 14, which is open at its rear and also adjacent the respective eye-opening 12.

The eye-set 16 may be molded from flesh-colored plastic as a one-piece unit. It comprises two cup-shaped eye-shells 17, which are integral with a transverse bridge 18 and in axial alignment. Each eye-shell 17 has an integral pivot-lug 19, which extends transversely outwardly from the respective eye-shell 17. These pivot-lugs 19 fit turnably in the bearing-recesses 14 of bearings 13. The outer convex face of each eye-shell 17 is marked or decorated in any manner to provide imitation eyes which include a white sclerotic 20, a colored iris 21, and a colored pupil 22. These surface markings may be applied to pieces of paper or other material, which are affixed to the convex outer surfaces of eye-shells 17. Alternatively, a separately molded iris may be inserted into the eye-shells 17. This iris would be decorated to simulate an eye.

The bridge 18 is integral with a depending biasing bar 25, which has a biasing weight, 23, in the form in this embodiment of an enlargement of the bar.

When the doll is held in normal upright and vertical position, the biasing bar 25 is vertical, and its lower end abuts a stop abutment 26, which may be in any suitable part of the doll, as in the front head-section 10, or at the neck joint of the head and body. The imitation eyes are then centered in the eye-openings 12.

At its upper end, the bridge 18 is integral with a laterally and rearwardly projecting lug 27, which functions as a second weight. When the doll is in said normal upright and vertical position, said projection 27 may optionally abut the upper edge of the retaining bar 28 or there may be a clearance between projection 27 and retaining bar 28. The weight of the stop-lug 27 also provides additional force to bias the eye-set 16 to turn counterclockwise relative to the head 11—10, as viewed in Fig. 7, in order to maintain the imitation eyes centered in the eye-openings 12, when the doll is vertical with its head above its body. Hence two stop-means are shown in this embodiment, for limiting said counterclockwise turning movements of the eye-set 16, in order to maintain the imitation eyes in said centered position.

It will be noted that the weights 23 and 27 are in axial alignment and spaced on opposite sides of the bridge member 18. The rearwardly projecting lug or weight 27 may be of different shape from that shown but it is preferred to utilize a shape which is cylindrical in nature.

When the doll is inclined rearwardly in a counterclockwise direction from its position of Fig. 7, the eye-set 16 is turned clockwise around the axis of pivot-lug 19 relative to head 11—10 by the biasing bar 25 and its weight 23, whose torque exceeds that of projection 27, until the eye-shells 17 are turned to conceal the imitation eyes, and to expose only their upper flesh-colored portions through the eye-openings 12, thus simulating closed eyelids and a sleeping position of the doll.

The eye-set 16 is turnably held in position by a retaining bar 28 which has lateral and forwardly extending flanges 30 and a rear wall 29 which has concave top and bottom edges. Each flange 30 has two integral studs 31 at its front edge. These studs 31 fit respectively in the recesses or sockets 15 of the respective bearings 13.

As shown in Figs. 6 and 7, the inner face of rear section 11 has a lateral and forwardly-extending integral lug or projection 32. When the parts are assembled, the tip of projection 32 firmly abuts the rear face of wall 29 of retaining bar 28, thus holding the retaining bar 28 in position in the assembled doll, and making it unnecessary to fix the retaining bar 28 adhesively or otherwise to the front head-section 10.

The parts are easily assembled as follows:

The pivot-lugs 19 are inserted in the bearing-recesses 14 of bearings 13, so that the eye-shells 17 are located properly in the eye-openings 12. The lugs or studs 31 of the retaining bar 28 are then located in sockets 15 of bearings 13. This can be done while the front head-section 10 is in horizontal position.

The two sections of the head and body are then interfitted by means of lugs L and sockets S and said sections are then fixed adhesively or otherwise to each other, along their junction edges which are defined by the plane of line 33 of Fig. 7.

As shown in Fig. 7, the tip of projection 32 abuts the rear face of rear wall 29 of retaining bar 28, so that it is unnecessary to fix retaining bar 28 to front head-section 10, adhesively or otherwise, although this may be done prior to assembling the sections 10 and 11.

Also, in some toys, the toy figure may only have a single eye. In such case, the respective head-section will have only a single eye-opening and the eye-set will have only a single imitation eye. Such modification is an obvious equivalent for the device described herein and is within the scope of the appended claims.

In the preferred embodiment of the invention disclosed herein the eye-set has been described as being molded in one piece from suitable plastic material. However, other forms of construction such as assembly from individual units which may be of metallic or non-metallic material should be considered to be equivalent to the construction described.

A preferred embodiment of the invention has been disclosed, but the scope of the invention includes numerous changes, omissions, additions and substitutions, and also sub-combinations of the complete combination.

We claim:

1. A hollow doll-head consisting of four molded plastic one-piece units, said units being a front head-section and a rear head-section which are fixed to each other, a turnable eye-set and a retaining bar, said doll-head having a longitudinal axis, said front head-section having spaced laterally directed bearings at the rear face of its front wall, said bearings being located on a line which is transverse to said longitudinal axis, said front wall having spaced eye-openings located on said transverse line intermediate said bearings, each bearing having a lateral bearing recess which is open at its rear end, said bearings also having rearwardly directed sockets located above and below said bearing recesses, said eye-set having pivot-lugs located turnably in said bearing-recesses and having eye-members which have simulations of eyes and which are located turnably in said eye-openings, said eye-set also having biasing weight means which maintain said simulations in said eye-openings when said doll-head is in upright vertical position and which turn said eye-set to shift said simulations out of said eye-openings when said head is tilted rearwardly from said upright vertical position, said retaining bar having studs which are located in said sockets, said retaining bar overlying said pivot-lugs to maintain said pivot lugs turnably in said bearing-recesses, said rear head-section having a forward projection which substantially abuts said retaining bar to keep it in assembled position.

2. A hollow doll-head according to claim 1, in which said biasing weight means comprise a depending bar which abuts said front-head section when said simulations are in said eye-openings and a rearwardly extending projection which then abuts the upper face of said retaining bar.

3. A hollow doll-head according to claim 1, in which said eye-set has a rearwardly extending projection which abuts the upper face of said retaining bar when said simulations are in said eye-openings.

BENJAMIN LOUIS SAMUELS.
OSCAR DOSTER.

(References on following page)

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,538,891	Frisch et al.	May 26, 1925
1,859,321	Wilhelm	May 24, 1932
1,905,649	Peake	Apr. 25, 1933
1,908,942	Andes	May 16, 1933
2,002,326	Lorenz et al.	May 21, 1935
2,040,329	Paganello	May 12, 1936
2,224,680	Hoffman	Dec. 10, 1940
2,546,682	Wilhelm	Mar. 27, 1951
2,566,111	Baggott	Aug. 28, 1951

FOREIGN PATENTS

Number	Country	Date
542,294	Great Britain	Jan. 2, 1942
543,756	Great Britain	Mar. 11, 1942