United States Patent

Glass et al.

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[45] **Sept. 19, 1972**

[54] ILLUMINATED FIGURE TOY

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[21] Appl. No.: **214,081**

[52] **U.S. Cl.** **46/228,** 46/170, 46/239

[51] **Int. Cl.** **A63h 3/26**

[58] **Field of Search**.....46/228, 239, 135, 170

[56] **References Cited**

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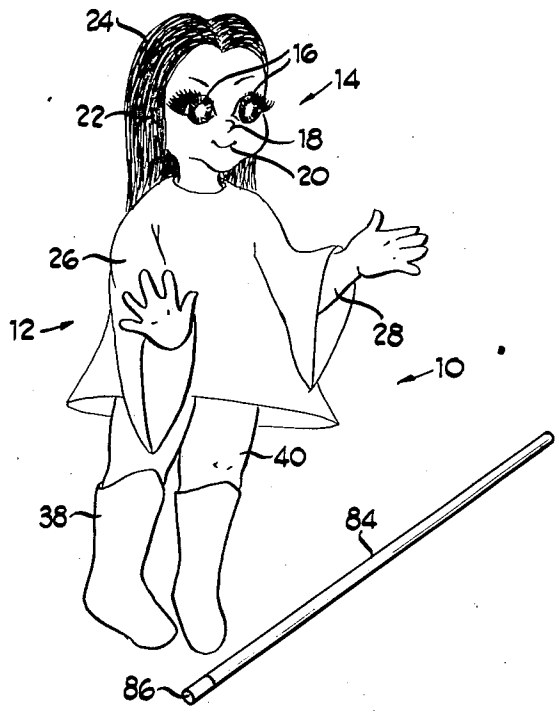
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[57] **ABSTRACT**

An illuminated toy figure having simulated human features with a battery powered light unit in the interior thereof. The light unit includes a movable contact element and a fixed contact element and a movable member for holding the movable contact element away from the fixed element when the figure is in a reclining position but permitting the circuit to close with the two contact elements in engagement when the figure is in an upright position. The movable contact element has a magnetically attracted portion and the figure is provided with a magnetic element, which when placed near the movable contact, draws it out of engagement with the fixed contact to open the electrical circuit, even when a figure is in an upright position.

7 Claims, 10 Drawing Figures



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SHEET 1 OF 2

Fig 3

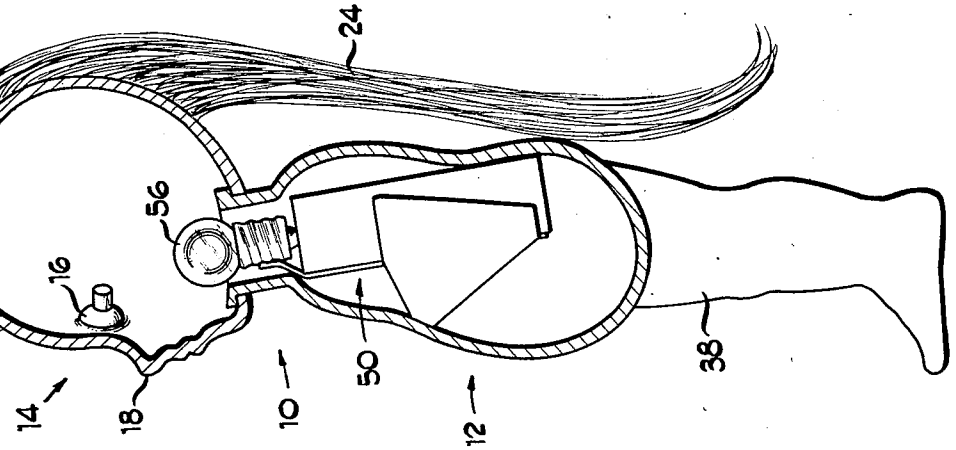


Fig 2

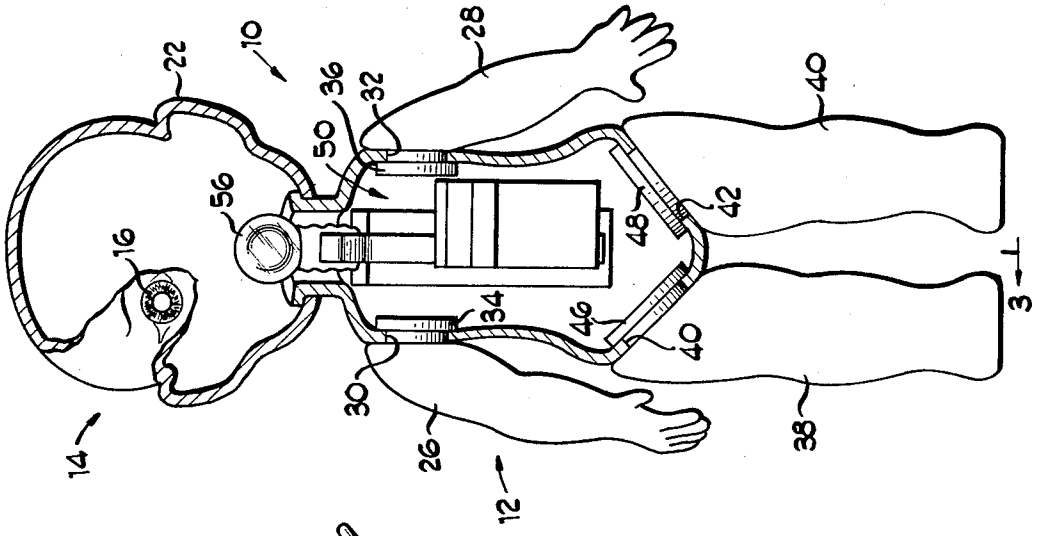
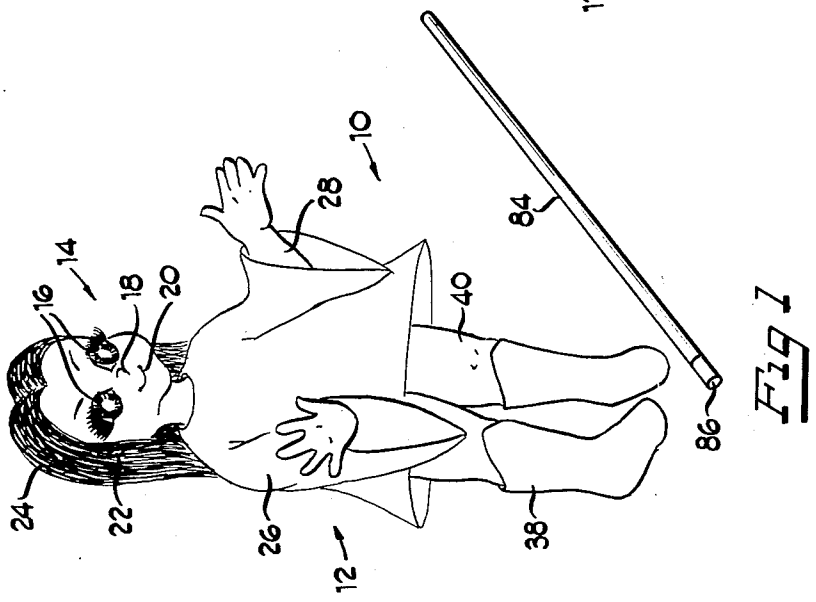


Fig 1



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Fig 4

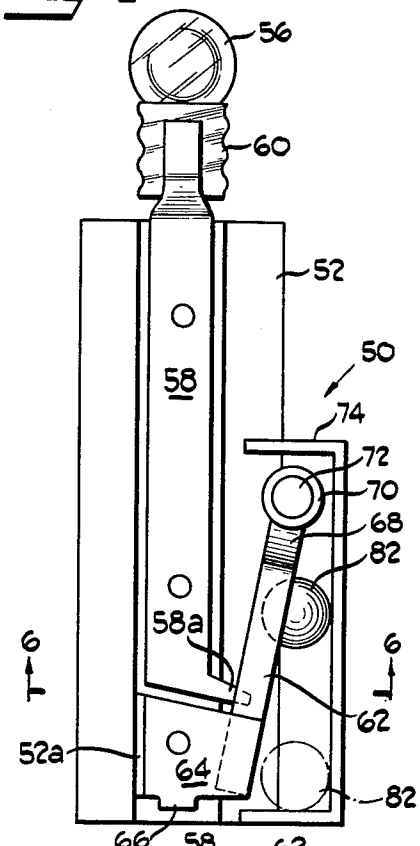


Fig 5

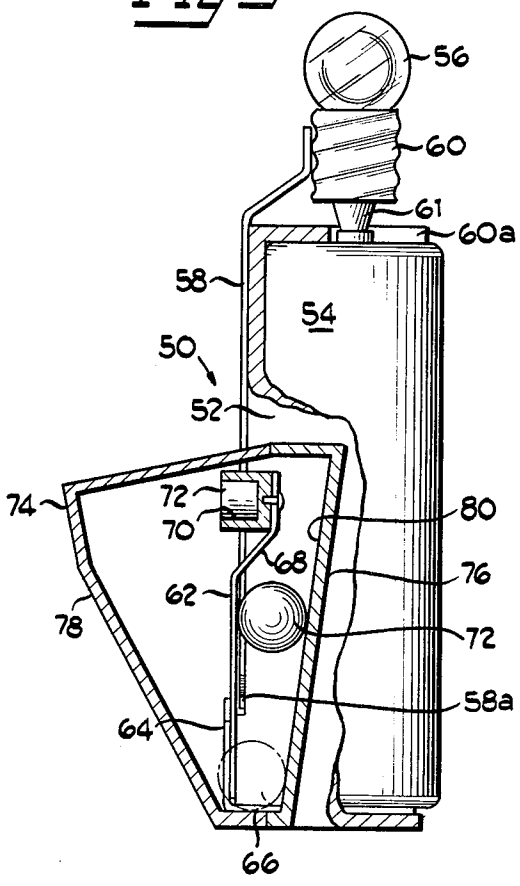


Fig 6

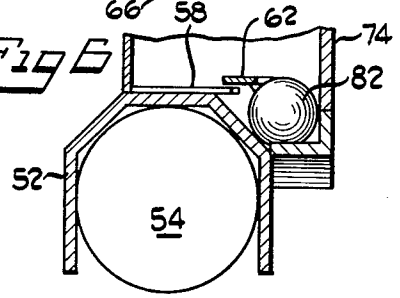


Fig 8

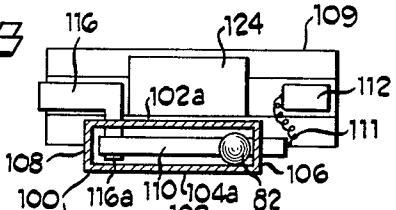


Fig 9

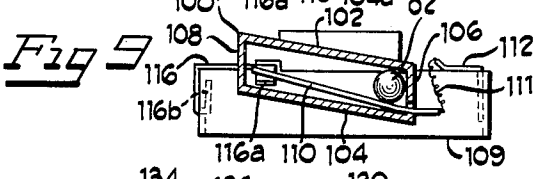


Fig 10

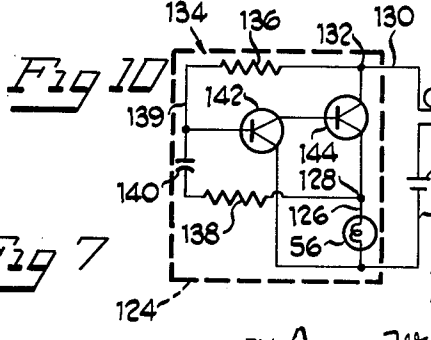
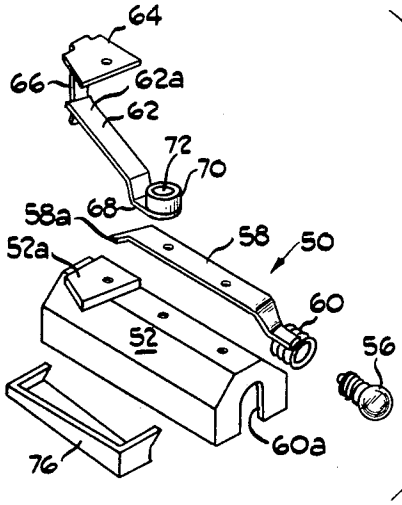


Fig 7



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ILLUMINATED FIGURE TOY

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to illuminated toy figures.

2. Brief Description of the Prior Art

It is known in the art, to provide illuminated toy figures wherein a source of light is disposed in the interior of a figure body with the body having openings, such as simulated eye openings, through which the light may shine. Generally speaking, such figures are activated by a switch or by depressing a portion of the body to close a contact.

It is the object of this invention to provide an illuminated toy figure which is operable depending upon the position the figure is situated, and further may be rendered inoperative from the exterior of the toy, even when positioned in an operative position.

SUMMARY OF THE INVENTION

This invention is directed, in brief, to the provision of an improved illuminated toy figure.

The best mode currently contemplated for carrying out the invention includes a hollow body supporting a head with simulated facial features, having light transmitting portions thereon, preferably in the eyes. The body supports a battery powered light unit having fixed and movable contact elements. The movable contact element is positioned within a chamber having a rollable member therein which is in engagement with an inclined track. The relative orientation of the track, the rollable member and the movable contact is such that when the doll is placed so that it is prone or supine the rollable element holds the movable contact away from the fixed contact. When the doll is placed uprightly, the rollable member moves down the inclined ramp and away from the movable contact member so as to permit the movable contact member to engage the fixed contact member. The movable contact member further is provided with a magnetically attractable portion and the doll is provided with a magnetic wand-like element, which, when placed near the movable contact member to the exterior of the doll, moves the movable contact member away from the fixed contact member to open the circuit, even when the doll is in the upright position.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the doll or illuminated figure of this invention;

FIG. 2 is a fragmentary vertical section view through the doll of this invention;

FIG. 3 is a section view taken generally along the line 3—3 of FIG. 2;

FIG. 4 is an elevation view of the battery powered light unit utilized in the doll of this invention;

FIG. 5 is another view of the unit shown in FIG. 4 with portions broken away for clarity of illustration;

FIG. 6 is a fragmentary sectional view of the light unit shown in FIGS. 4 and 5;

FIG. 7 is a composite perspective view of the components of the light unit utilized with the doll of this invention;

FIG. 8 is a partial section view of a modified form of a light unit utilized with this invention;

FIG. 9 is another view of the alternate light unit form of this invention illustrated in FIG. 8; and

FIG. 10 is a circuit diagram of the light unit utilized in the illuminated figure of this invention.

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail a specific embodiment therefor, with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENT

The novelty doll **10** or illuminated figure of this invention includes a doll body having a torso **12** with a head **14** positioned thereon. The head **14** has simulated human characteristics, including eyes **16**, nose **18**, mouth **20**, and simulated ears **22**. The head further includes simulated strands of hair **24**. Preferably, the eyes **16** are light transmitting, either transparent or translucent, to let light shine therethrough.

The doll body further includes a pair of arms **26** and **28** having flanged ends **34** and **36** which extend through openings **30** and **32** to articulate the arms for relative movement to the torso **12**. The doll body also includes legs **38** and **40** which extend through openings **42** and **44** of the torso and, particularly, the flanged ends **46** and **48** thereof, to also articulate the legs for limited movement relative to the doll torso **12**.

The interior of the doll is provided with a light unit **50**. Light unit **50** includes a bracket **52** which is generally U-shaped in configuration and has a foot portion **52***a* on the exterior thereof, near the bottom. Bracket **52** supports a source of power, here shown in the form of a battery **54**, for illuminating the light bulb **56**. Light bulb **56** is connected to one end of contact **58**, particularly to the socket **60**, and is in engagement with battery **54**, through an opening **60***a* in the top of bracket **52**. Contact **58** also has a lateral extension or leg **58***a* at the lower end thereof or end opposite the light bulb **56**.

The light unit **50** further includes a movable contact arm **62** having a lower end **62***a* which overlies the leg **58***a* of contact **58** and is positioned between an overlying contact member **64** and the foot **52***a* of the bracket **52**. Contact member **64** has an extension **66** which extends under the battery **54** within the interior of the bracket **52** and is in contact therewith. The arm **62** has an offset upper end **68** having a socket **70** supported thereon. Socket **70** contains a metallic insert **72**.

The contact elements are maintained in an enclosure **74** connected to the bracket **52**. Enclosure **74** includes a first, or ramp, portion **76** and a second portion **78**. The ramp portion **76** has an inclined rear wall **80** for rollably supporting a movable restraining element or ball **82**.

As best seen in FIGS. **3**, **4** and **5**, when the doll **10** is configured so that it is lying on its back the rear wall will be inclined toward the doll head, so that the ball **82** will be rolled down the inclined ramp towards the end of the light unit to which the light bulb **56** is connected occupying a first or restraining position. In so doing, the ball **82** will bear against the underside of movable contact element **62**, keeping the end **62***a* out of engagement with legs **58***a* of contact strip **58**. However, when

the doll is moved so that it is generally vertically oriented, the ball will move, under the influence of gravity, down the inclined ramp to the dotted line position in FIGS. **4** and **5** at the bottom of the chamber **74**. In so doing, the ball **82** will no longer exert influence with respect to the arm **62**. This will permit the arm to engage the leg **58***a* of contact strip **58** and close the circuit therethrough to deliver power to the light **56** and illuminate the same. It is intended that the arm **62** will be free to "float" relative to the contact strip **58** so that the circuit will be intermittently opened and closed when the ball is at the bottom of the enclosure **74**, thereby producing a blinking effect as the intermittently activated light bulb **56** shines through eyes **16**. Arm **62** normally engages contact **64** and is spaced from contact **58** when the ball **82** is in the first position. In effect, arm **62** serves as a movable component of contact **64**.

The illuminated figure toy of this invention further includes a wand-like element **84** having a magnet **86** at one end thereof. In use, it is intended that even when the doll is upright and the contact arm **62** is free to engage with contact **58** and member **64** to illuminate the bulb **56**, the magnetic end **86** of wand **84** may be placed adjacent the doll, particularly close to the metallic insert **72** in socket **70**. This will cause the arm **62** to be drawn away from the contact **58**, thereby terminating the illumination of the bulb **56** as long as the wand **84** is held adjacent to the doll. When the wand is removed, the contact **62** is free to engage contacts **58** and **64** in an intermittent fashion.

FIGS. **8** through **10** illustrate a modified form of the circuitry for illuminating bulb **56**. Again, the circuitry includes a battery **54**, bulb **56**, an enclosure **100** having a rollable member **82** therein. The enclosure **100** is a parallelogram type structure having top and bottom walls **102** and **104**, side walls **102***a* and **104***a*, and end walls **106** and **108**. The wall **104** is intended to be downwardly inclined toward the doll head when the doll is placed on its back so that ball **82** will roll towards wall **108**. Enclosure **100** is connected to battery holder **109** within which it is intended the battery **54** will be held.

A contact member **110** extends through opening **114** in wall **106** to the interior of enclosure **100**. Contact member **110** is connected by wire **111** with contact **112** which engages the positive end of battery **54**. Another leaf-like contact **116** is positioned within enclosure **100**, having a movable component or one end **116***a* normally spaced away from contact **110** and another end **116***b* which engages the negative end of battery **54**. A lead wire **120** extends from the negative end **123** of battery **54** to connection at **122** on circuit board **124**. Wire **126** runs from connection at **128** with the circuit board **124** to the light bulb **56**, and wire **130** connects end **116***b* with connection **132** of the circuit board. Thus, when the doll is placed uprightly, the ball **82** will roll toward wall **106**, pressing contact **116** into engagement with contact **110** and closing the circuit with bulb **56** through circuit board **124**.

It is intended that the circuitry **134** of board **124** could be utilized to establish an intermittent lightning condition when the circuit through contacts **116** and **110** is closed. In the illustrated embodiment, this is accomplished by the provision of resistors **136** and **138** in a line **139** separated by a condensor **140** and connected with wires **130** and **126** at **132** and **128**, respectively. Tubes **142** and **144** are interposed between the resistors and lead wires **130** and **120**.

Thus, it can be seen that the doll of this invention provides a unique arrangement for controlling the lighting of the dolls eyes. When the doll is rested on its back, the circuit for the light cannot be activated. When the doll is placed uprightly, the circuit is in a condition to light the bulb intermittently. In the case of the embodiment illustrated in FIGS. **1** through **7**, the circuit may be opened even when the doll is upright by placing the wand **84** with the magnetic end **86** against the doll body adjacent the metal insert **72** at the upper end of arm **62**. This will pull the arm **62** away from intermittent engagement with contact **58** until the wand **84** is removed. Thus, the individual child has a sense of control over the functioning of the doll.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, as some modifications may be obvious to those skilled in the art.

We claim:

1. An illuminated figure toy comprising:

means defining a body including a torso portion and a head portion with one of said torso and/or head portions having light transmitting portions thereon;

a battery powered light unit positioned in the interior of said body, and including a battery supporting frame with a battery carried therein;

a light bulb connected to a first contact member and supported in a position in engagement with the upper end of said battery;

a second contact member connected to the lower end of the frame in contact with the lower end of said battery, but being spaced from said first fixed contact member;

one of said contact members including a component which is movable relative to the other contact member and movable from a first circuit open position, wherein the movable contact component is out of engagement with the other said contact members, and a second circuit closed position, wherein the movable contact member is in engagement with the other of said contact members to close the circuit therethrough;

and a restraining member adjacent said movable contact member and being movable between a first position, wherein said restraining member holds said movable contact component in said first position, and a second position, wherein said restraining member is moved away from said first position and and permits movement of said movable contact component member to said second position to close the circuit between said contact members, said restraining member being loosely positioned in said body for gravity responsive movement between said first and second positions.

2. The toy figure of claim **1** wherein said first and second contact members are fixed against relative movement and said movable component comprises an intermediate contact member positioned between said first and second contact members.

3. The toy figure of claim 1 wherein said movable component has a magnetically attractable portion thereon for moving said movable component away from a circuit closed position responsive to a magnetic force.

4. The toy figure of claim 2 wherein said intermediate contact member is free to oscillate between said first and second contact members.

5. The toy figure of claim 1 wherein the movable restraining member is confined for travel along an inclined track and wherein said toy is configured for positioning in at least a first reclining position and a second upright position with said track being oriented so as to cause movement of said restraining member to

its first and second positions when the toy figure is in its first and second positions, respectively.

6. The toy of claim 5 wherein said first and second contact members are fixed against relative movement and said movable component comprises an intermediate contact member positioned between said first and second contact members.

7. The toy figure of claim 6 wherein the movable restraining member is a ball and said track is part of a wall means defining an enclosure within which said ball, movable contact and portions of said first and second contacts are located.

* * * * *