# United States Patent [19]

**Tepper et al.**

[11] **3,755,960**

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[54] **DOLL GIVING PARTICULAR VOCAL RESPONSES ON MOVEMENT OF PARTICULAR APPENDAGES**


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[73] Assignee: **Topper Corporation,** Elizabeth, N.J.



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[21] Appl. No.: **167,725**

[52] **U.S. Cl.** ..... **46/118,** 46/232, 46/175 AR

[51] **Int. Cl.** ..... **A63h 5/00**

[58] **Field of Search** ..... 46/117, 118, 245, 46/247, 232



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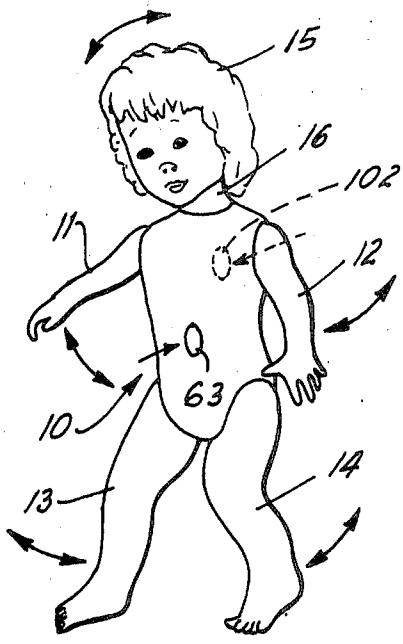
[57] **ABSTRACT**

A doll including a hollow body containing a talking mechanism. An appendage is movably mounted on the body, and means within the body responds to movement of the appendage for operating the mechanism. The appendage may be an arm, a leg, or the head of the doll. The talking mechanism may have several actuators for producing different spoken expressions, and movement of different appendages causes operation of different actuators. A talking mechanism actuator may be operated by depressing a depressible portion of the doll body. Movement of a particular actuator produces the same spoken expression each time. Means are provided to render the talking mechanism inoperative.


**7 Claims, 10 Drawing Figures**



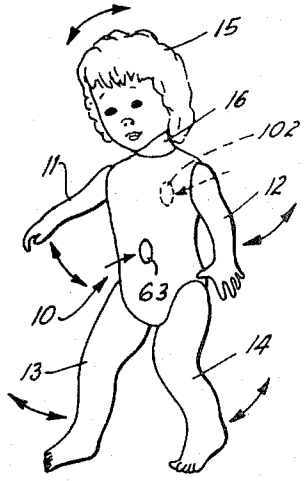



FIG. 1

FIG. 9

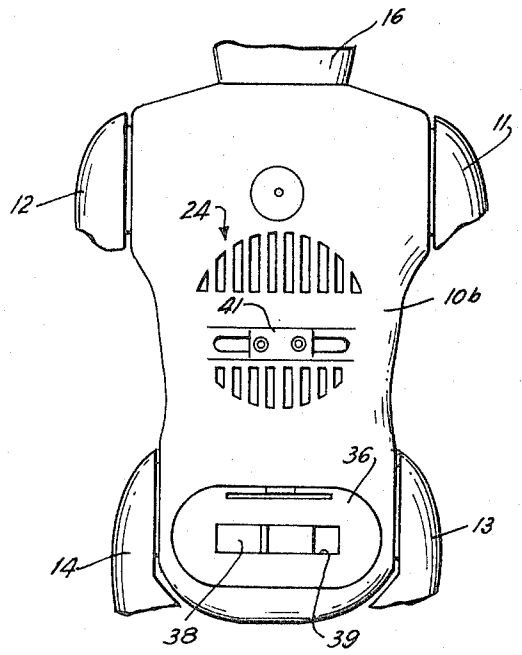



FIG. 7

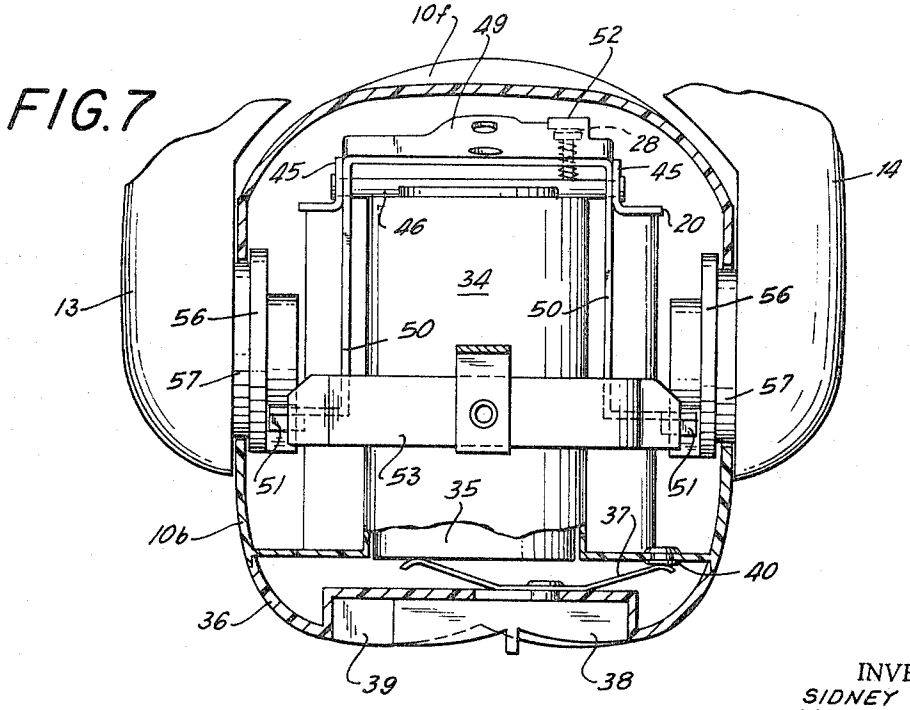



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FIG. 2

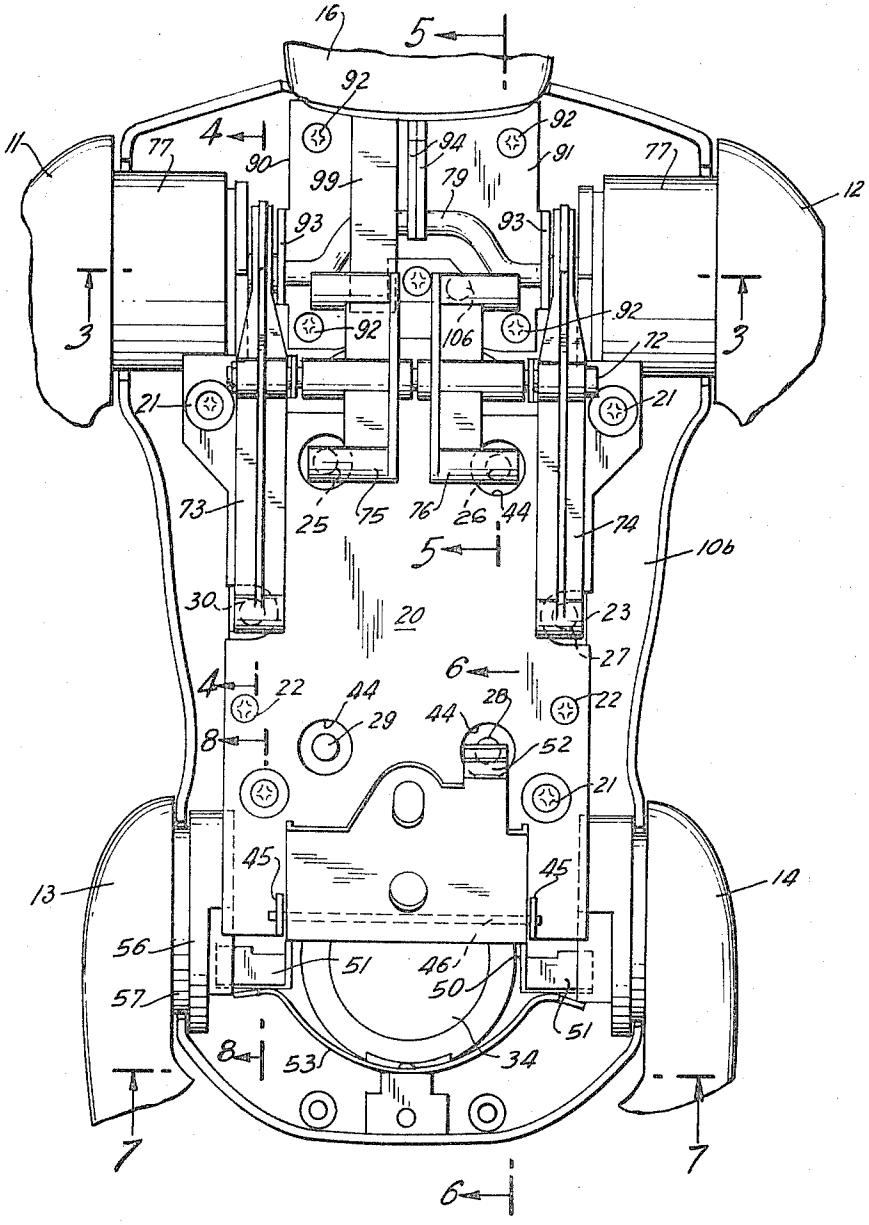


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FIG.3

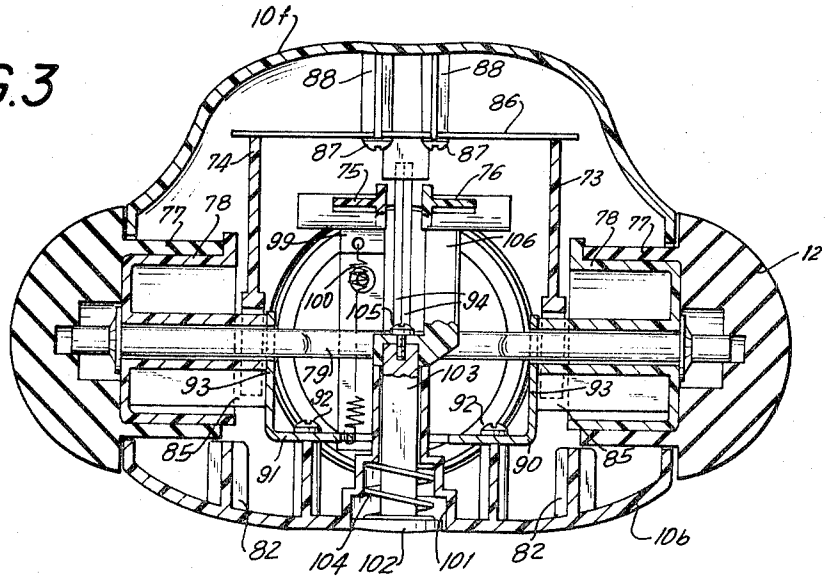
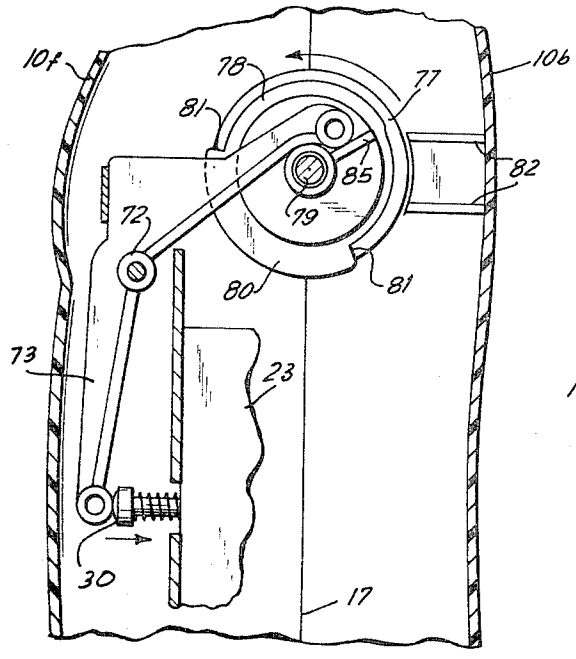



FIG.4



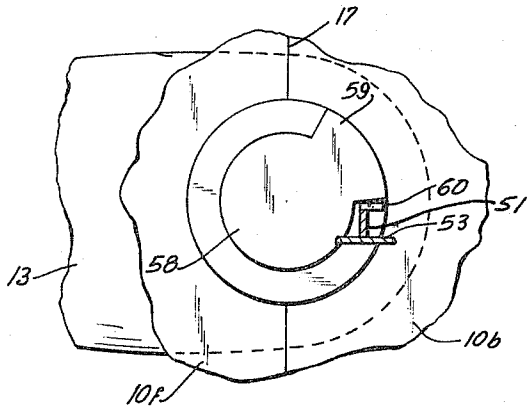




FIG.8

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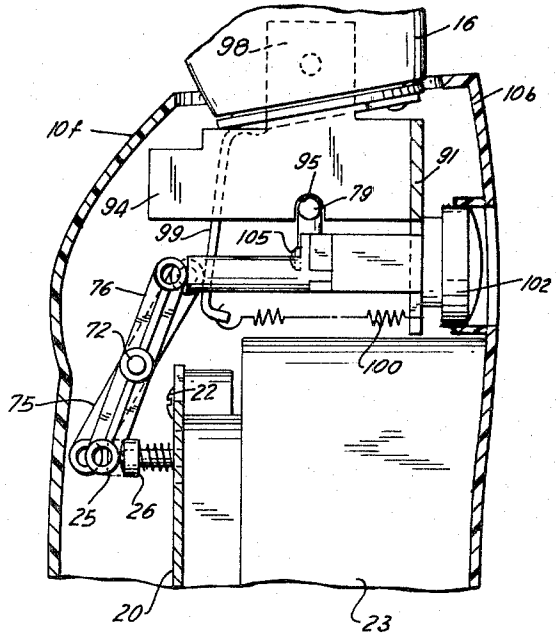
FIG.5



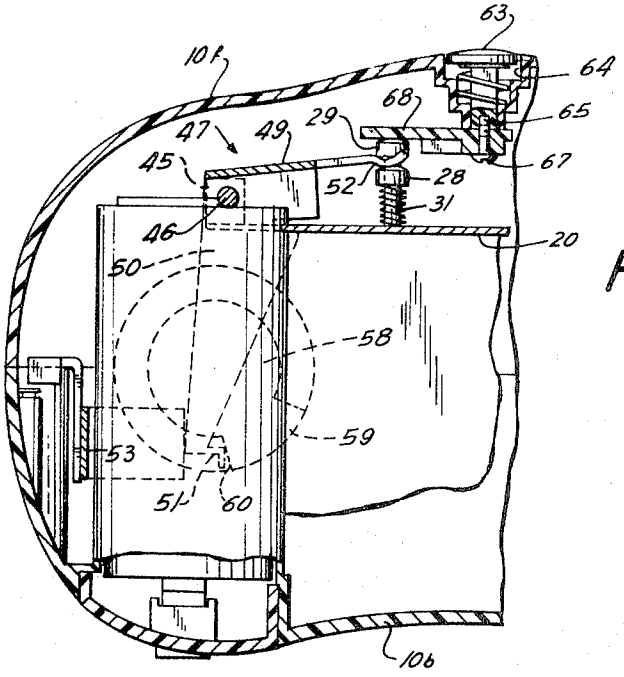




FIG.6

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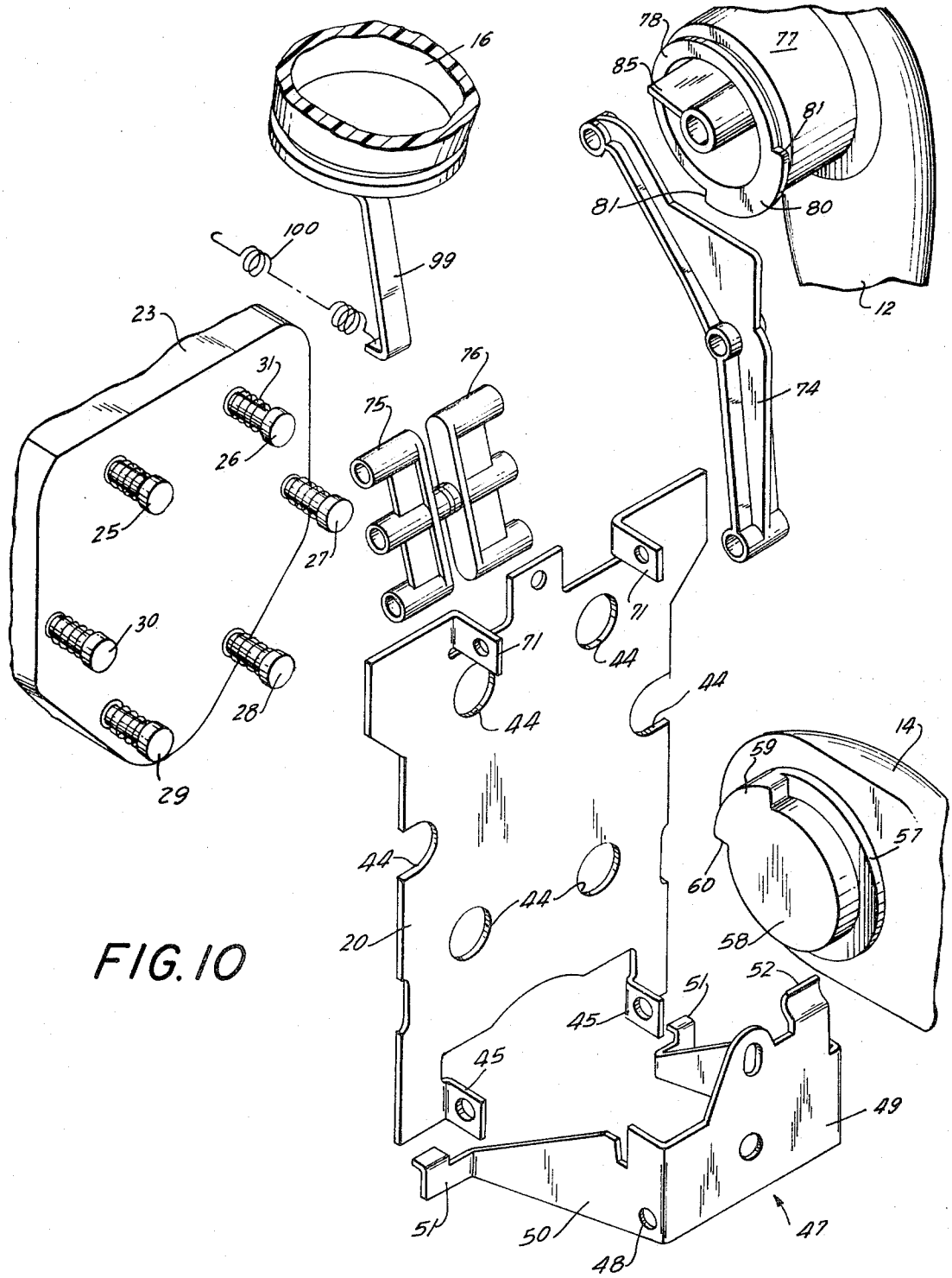


FIG. 10

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# DOLL GIVING PARTICULAR VOCAL RESPONSES ON MOVEMENT OF PARTICULAR APPENDAGES

This invention relates to talking dolls of the type which contain recorded-speech mechanisms.

Talking mechanisms for dolls are generally of two types, namely, mechanical and electrical. When a mechanical mechanism is employed, the end of a string usually hangs through a hole in the doll body, and by pulling the string a spring is tensioned which then operates the mechanism. Electrical mechanisms include a switch exposed on the doll body which is closed to produce talking. In none of these dolls, however, is there any relationship between movement of the doll, or parts thereof, and operation of the talking mechanism, except for some which combine eye or mouth movement with talking.

It is an object of the present invention to provide a doll in which talking is initiated by moving one or another appendage of the doll, rather than by pulling a string or closing a switch, thereby increasing its play value with respect to conventional talking dolls.

It is another object of the invention to provide such a doll wherein the talking mechanism stores a plurality of spoken expressions, and movement of different appendages causes different expressions to be spoken. At least some of the expressions may have a natural relationship to the appendage with which it is associated, thereby greatly delighting the child playing with the doll.

It is a further object of the invention to provide means for rendering the talking mechanism inoperative at will so that when desired the doll can be played with as with any ordinary doll without causing sounds to be produced.

It is an additional object of the invention to provide such a doll wherein operation of the talking mechanism may be initiated by depressing a portion of the doll body as well as by moving an appendage.

As used in the present specification and claims, the term "doll" is intended to mean any replica of a living thing, e.g., humans, animals, fish, birds, and the term "appendage" is intended to mean any appendage to the body of such a living thing, e.g., arms, legs, head, tail, fins, wings.

Additional objects and features of the present invention will be apparent from the following description in which reference is made to the accompanying drawings.

In the drawings:

FIG. 1 is a perspective view of a talking doll incorporating the present invention;

FIG. 2 is a fragmentary front elevational view of the doll, on a larger scale, with the front half of the doll body removed;

FIG. 3 is a horizontal cross-sectional view taken along line 3—3 of FIG. 2;

FIG. 4 is a fragmentary vertical cross-sectional view taken along line 4—4 of FIG. 2;

FIG. 5 is a fragmentary vertical cross-sectional view taken along line 5—5 of FIG. 2;

FIG. 6 is a fragmentary vertical cross-sectional view taken along line 6—6 of FIG. 2;

FIG. 7 is a horizontal cross-sectional view taken along line 7—7 of FIG. 2;

FIG. 8 is a fragmentary vertical cross-sectional view taken along line 8—8 of FIG. 2;



FIG. 9 is a fragmentary rear elevational view of the doll; and

FIG. 10 is an exploded perspective view of some of the internal parts of the doll.

The doll chosen to illustrate the present invention, and shown in FIG. 1, is a replica of a human child. The doll comprises a body 10 to which arms 11 and 12, and legs 13 and 14, are movably connected. A head 15 is also movably connected to the body by a neck 16. Body 10 is hollow and comprises a front half 10*f* and a back half 10*b* (FIGS. 2–9) which meet and are joined together along a vertical line of separation 17 (FIGS. 4, 6, and 8).

Projecting forwardly and horizontally from back wall 10b are four posts (not shown) which carry a vertical, generally rectangular metal plate 20 (FIGS. 2 and 10), the plate being secured to the free ends of the posts by screws 21. Secured to the rear face of plate 20, i.e., between the plate and rear body wall 10b, by screws 22, (FIGS. 2 and 5) is a talking mechanism 23 (FIGS. 2, 4–6, and 10).

Talking mechanism 23 is of completely conventional design, and therefore is not illustrated and will not be described in great detail. Within the housing of mechanism 23 is a small phonograph record bearing six separate but interleaved spiral grooves and an electric motor for rotating the record. Also provided is a stylus adapted to move along any of the grooves at any one time, and a speaker for reproducing the sounds in the groove engaged by the stylus. The speaker faces rearwardly and is positioned adjacent to a grill 24 (FIG. 9) formed in the back portion 10b of the doll body. Projecting forwardly from the front wall of the talking mechanism housing are six actuator push-buttons 25, 26, 27, 28, 29, and 30. A compression spring 31 surrounds the stem of each actuator button to normally maintain the button in extended condition. Each of push buttons 25–30 is associated with one of the six spiral grooves on the record, and momentarily depressing any one of the push buttons causes the sound on its respective groove to be reproduced. When the stylus reaches the end of that particular groove, the talking mechanism automatically resets itself and is ready to reproduce the sound on any of the grooves should any of the buttons 25–30 be depressed.

Rear body portion 10b is formed with a battery compartment 34 (FIGS. 2 and 7) accommodating a battery 35 for energizing the motor of talking mechanism 23. Battery compartment 34 opens rearwardly, and a cover 36 (see also FIG. 9) snaps into place to close the compartment. The electric circuit includes, in addition to the talking mechanism motor and battery 35 (and of course suitable wiring which is not shown), a switch including a movable spring contact 37 carried by a slider 38 movable horizontally within a slot 39 in cover 36. When slider 38 is in the position shown in FIG. 7, contact 37 engages both battery 35 and a stationary switch contact 40 to close the circuit. When slider 38 is moved to the left in FIG. 7 (to the right in FIG. 9), contact 37 leaves contact 40, and the talking mechanism is rendered inoperative. The circuit also includes a rheostat (not shown) including a wiper carried by a slider 41 (FIG. 9). By adjusting slider 41, and hence the rheostat, the speed of the talking mechanism motor can be adjusted and hence the speed of talking may be changed.

Plate 20 is furnished with six openings 44 through which the six push button actuators 25–30 of talking mechanism 23 project. At its lower end, plate 20 is formed with two forwardly bent apertured tabs 45 (FIGS. 2, 6, 7, and 10) supporting a horizontal pin 46. A generally U-shaped lever member 47 is pivotally mounted on pin 46, the pin passing through holes 48 in the lever member.

Lever member 47 includes a front central portion 49 and two rearwardly extending arms 50. The free end of each arm 50 is bent outwardly to define a follower 51. The upper edge of central portion 49 defines a finger 52 adjacent to and in front of actuator button 28 of talking mechanism 23. A curved leaf spring 53 is fixed at its center to the lower portion of battery compartment 34, and the ends of spring 53 press against the lower edges of followers 51. Thus, spring 53 constantly urges member 47 in a counterclockwise direction in FIG. 6, i.e., a direction in which finger 52 moves away from actuator button 28.

Therefore, to depress actuator button 28, member 47 must be pivoted in a clockwise direction in FIG. 6. This is accomplished, according to the present invention, by moving either leg 13 or 14. The upper end of each leg is formed with a disk-like member 56 joined to the leg by a reduced diameter portion 57 rotatably arranged within an opening in the doll body 10 (see FIGS. 2, 7, and 10). The inner surface of disk-like member 56 is shaped, as best seen in FIGS. 6, 8, and 10, with a smaller diameter portion 58 and a larger diameter portion 59 to define a face 60 adapted to engage follower 51. It will be appreciated, therefore, that when either leg 13 or 14 is swung upwardly toward the doll's head 15, face 60 of that leg will engage follower 51 and pivot member 47 so as to cause finger 52 to depress actuator button 28 and cause the talking mechanism 23 to operate.

The front body portion 10f is provided with a depressible portion, which as shown in FIG. 6 is in the form of a push button 63. The push button is located within a stepped opening 64, the stem 65 of the push button being slidably accommodated within the smallest diameter portion of opening 64. A compression spring 66 surrounding stem 65 urges push button 63 outwardly. Fixed to the inner end of stem 65, by means of a screw 67, is an arm 68. A portion of arm 68 is located adjacent to and in front of actuator button 29 of talking mechanism 23. Thus, when button 63 is depressed, arm 68 depresses actuator button 29 and causes operation of the talking mechanism.

At its upper end, plate 20 presents two forwardly bent, apertured tabs 71 within which a pin 72 is held (see FIGS. 2, 4, 5, and 10). Pivotally supported on pin 72 are four levers 73, 74, 75, and 76 (see also FIG. 3). The lower ends of levers 73–76 are arranged adjacent to and in front of the actuator buttons 30, 25, 26, and 27, respectively, of talking mechanism 23. Consequently, pivoting the upper end of each of levers 73–76 forwardly will cause its lower end to depress the actuator button associated with it, whereupon the talking mechanism will operate.

Movement of levers 73 and 74 is controlled by arms 11 and 12, respectively. Each arm is provided at its upper end with a hollow cylindrical extension 77 within which an annular cup-shaped element 78 is fixed (see FIGS. 2, 3, 4, and 10). Element 78 has a central bore for rotatably accommodating the end region of a fixed rod 79 having a humped central portion.

The inner edge of element 78 is provided with an enlarged diameter portion 80 (FIGS. 4 and 10) defining two faces 81. Two abutments 82, for each arm, project forwardly from rear body portion 10*b* and are arranged in the path of movement of portion 80. Consequently, faces 81 cooperate with abutments 82 to limit the movement of each arm to a swing of about 240°. A fin 85 projects inwardly from element 78 to a position beneath and behind the upper end of its respective lever 73, 74. Thus, when arm 11 is pivoted rearwardly, its respective fin 85 pushes the upper end of lever 73 upwardly and forwardly, thereby moving the lower end of lever 73 rearwardly to depress actuator button 30. Similarly, rearward movement of arm 12 causes depression of actuator button 27. A leaf spring 86 is secured by screws 87 to two posts 88 extending rearwardly from front body portion 10*f*. The end regions of spring 86 press against levers 73 and 74, above pin 72, so as to urge the levers in a direction which moves their lower ends away from their respective actuator buttons 30 and 27.

Fixed rod 79 is held by two generally U-shaped brackets 90 and 91, FIGS. 2, 3, and 5, the central back walls of which are secured to the rear body portion 10b by screws 92. The outer arm 93 of each bracket 90 and 91 is provided with a hole for accommodating rod 79. The inner arm 94 of each bracket is furnished along its lower edge with a notch 95 within which the humped region of rod 79 is located.

Projecting upwardly from arms 94 of brackets 90 and 91 are extensions 98 (FIG. 5) upon which neck 16 is mounted so that doll head 15 can be moved in a front-to-back direction. Projecting downwardly from neck 16 is a rigid strip 99, the lower portion of which is located behind the upper end of lever 75. A tension spring 100 (FIGS. 3, 5, and 10), connected between the lower end of strip 99 and the back portion of bracket 91, urges strip 99 away from lever 75. However, when the doll head 15 is pushed rearwardly, strip 99 pushes the upper end of lever 75 forwardly, whereupon the lower end of lever 75 pushes actuator button 25 inwardly to operate the talking mechanism 23.

Located within a stepped bore 101(FIGS. 3 and 5) in back body portion 10*b* is a push button 102, the stem 103 of the push button being slidably accommodated within the smallest diameter portion of bore 101. A compression spring 104 urges button 102 outwardly to its position shown in FIG. 3. Secured to the inner end of stem 103, by a screw 105, is an extension 106. Extension 106 terminates adjacent to and behind the upper end of lever 76. When push button 102 is depressed, as indicated in FIG. 5, extension 106 pushes the upper end of lever 76 forwardly, whereupon the lower end of lever 76 depresses actuator button 26, and talking mechanism 23 is operated.

The above description indicates how each of the six actuator buttons 25–30 of talking mechanism 23 can be depressed in order to reproduce the spoken expression stored in its respective groove of the phonograph record within the talking mechanism. Preferably, there is some relationship between the spoken expression and the appendage, or other means, used to actuate each button 25–30. Thus, for example, when arm 11 is swung to depress actuator button 30, the doll may say "This is my right hand." Also, when button 63 is de-

pressed, to depress actuator button **29**, the doll may say "You're tickling me."

The invention has been shown and described in preferred form only, and by way of example, and many variations may be made in the invention which will still be comprised within its spirit. It is understood, therefore, that the invention is not limited to any specific form or embodiment except insofar as such limitations are included in the appended claims.

What is claimed is:

**1.** A doll having the form of a living thing, comprising:

a. a hollow body,

b. a sound-producing mechanism, coupled to the inside of said body, for providing a plurality of different selectable sounds simulating human talking, the mechanism having a plurality of actuators for selecting said sounds, each actuator being associated with a different one of said sounds,

c. a plurality of appendages movably mounted on said body, said appendages simulating actual appendages of the living thing, and

d. means coupled to the inside of said body, responsive to movement of a first and second of said plurality of appendages, for operating a first and second of said plurality of actuators, respectively, to provide the sounds associated with the first and second actuators.

**2.** A doll as defined in claim **1** including means for rendering said talking mechanism inoperative, when desired, so that movement of any of said plurality of appendages causes no sound to be produced.

**3.** A doll as defined in claim **1** wherein said responsive means responds to movement of either of two of said appendages for operating one of said actuators.

**4.** A doll as defined in claim **1** wherein said doll includes arms, legs, and a head mounted on said body, and wherein said appendages are selected from the group consisting of said arms, legs and head.

**5.** A doll as defined in claim **1** including a depressible portion on the surfaces of said body, and means within said body responsive to depression of said portion for operating one of said actuators.

**6.** A doll as defined in claim **1** wherein said means (d) includes a lever pivotally mounted within said body, said lever having a portion adjacent to one of the actuators.

**7.** A doll as defined in claim **6** including a member within said body movable with one of said appendages said lever engaging said member and being movable by the latter for operating said one of the actuators.

* * * * *