United States Patent [19]

Thorn et al.

[11] **3,775,900**

[45] **Dec. 4, 1973**

[54] **TOY DOLL**

[75] Inventors: **Herbert Thorn,** Flushing; **Michael Ieda,** Fort Solanga, both of N.Y.

[73] Assignee: **Ideal Toy Corporation,** Hollis, N.Y.

[22] Filed: **May 1, 1972**

[21] Appl. No.: **248,996**

[52] **U.S. Cl.** **46/120,** 46/118, 46/247

[51] **Int. Cl.** **A63h 11/00**

[58] **Field of Search** 46/118, 119, 120, 46/247, 144

[56] **References Cited**

UNITED STATES PATENTS

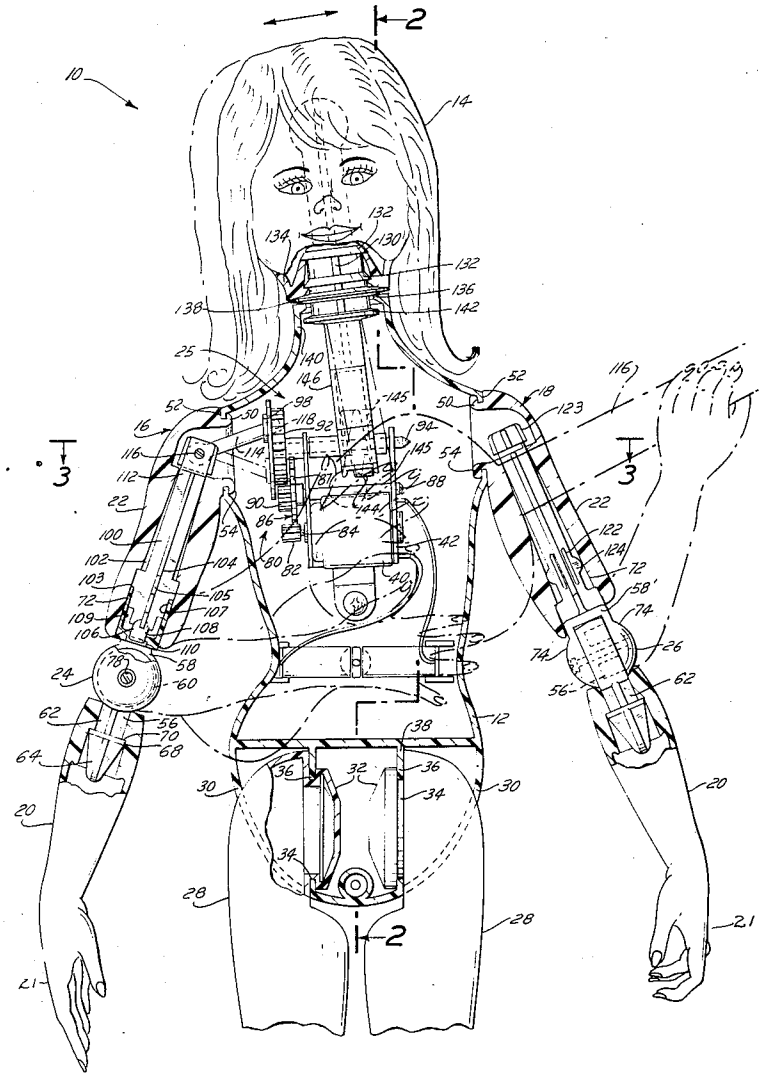
2,570,778	10/1951	DeVane	46/119
3,566,537	8/1971	Tepper et al.	46/247
3,641,702	2/1972	Gardel	46/120

Primary Examiner—Louis G. Mancene
Assistant Examiner—J. Q Lever
Attorney—Richard M. Rabkin

[57] **ABSTRACT**

A toy doll having a torso and a pair of arms includes a selectively operable electric motor mounted in the torso and connected through a transmission to the forearm portion of one of the arms in order to oscillate that forearm portion in a selectable predetermined plane upon actuation of the drive means. The driven forearm is connected to its associated upper arm portion by an articulated joint which is rotatably mounted in the upper arm and drivingly connected to the transmission system so that the upper arm portion remains motionless while the forearm portion is oscillated. The electric motor also is operably connected to the doll's head to oscillate the head from side to side while simultaneously oscillating the forearm in order to simulate human movements while playing a musical instrument or the like.

13 Claims, 4 Drawing Figures



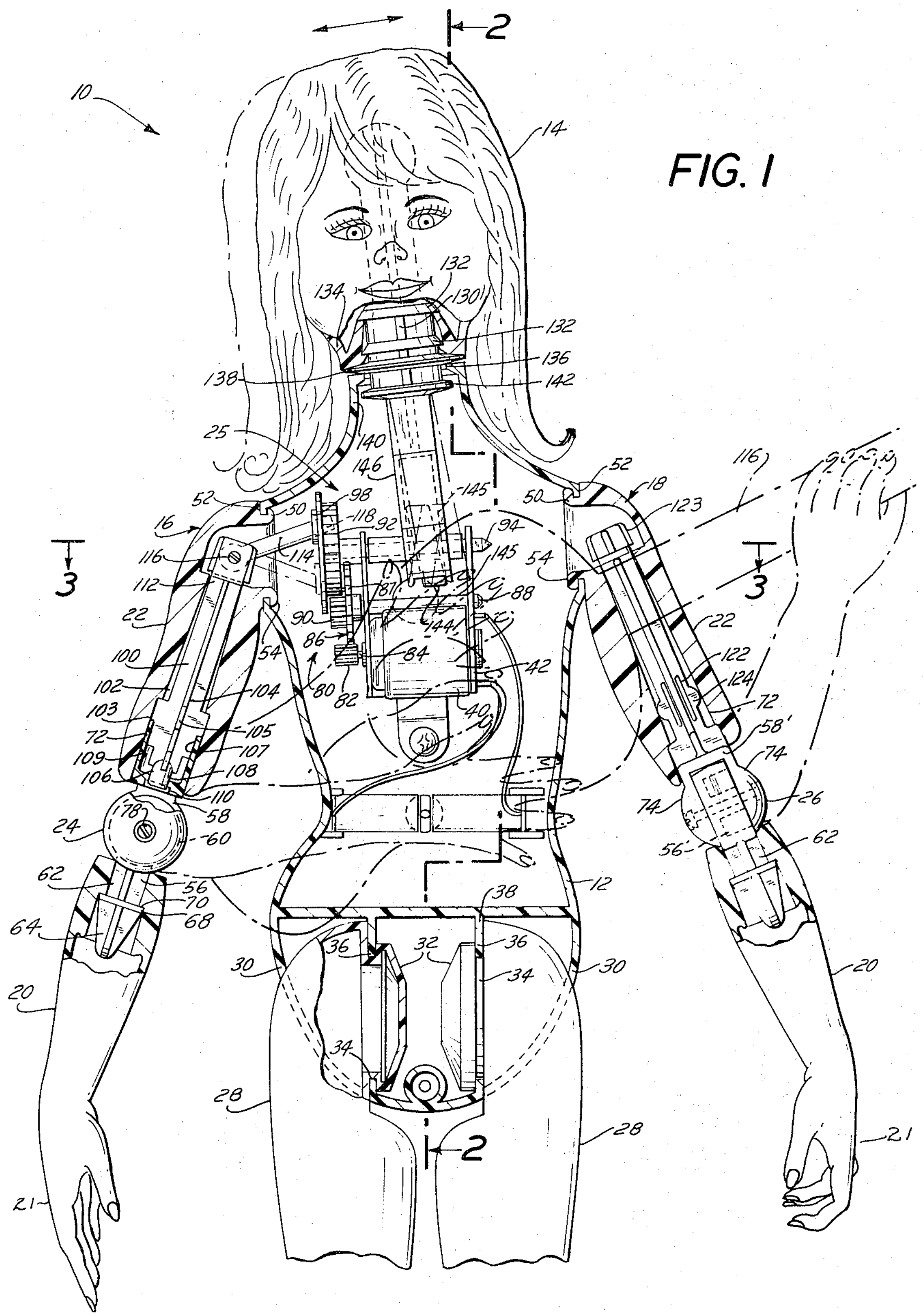

10
14
132
134
130
132
136
138
142
140
146
25
145
98
118
92
94
52
50
52
18
116
123
16
114
145
54
116
112
181
88
90
144
3
3
22
86
84
42
22
100
82
80
122
102
104
124
103
105
40
72
72
58'
74
109
107
106
108
110
78
58
26
24
60
74
56'
62
62
56
70
12
38
64
68
36
32
36
30
34
30
20
20
34
28
28
2
2
21
21

FIG. 1

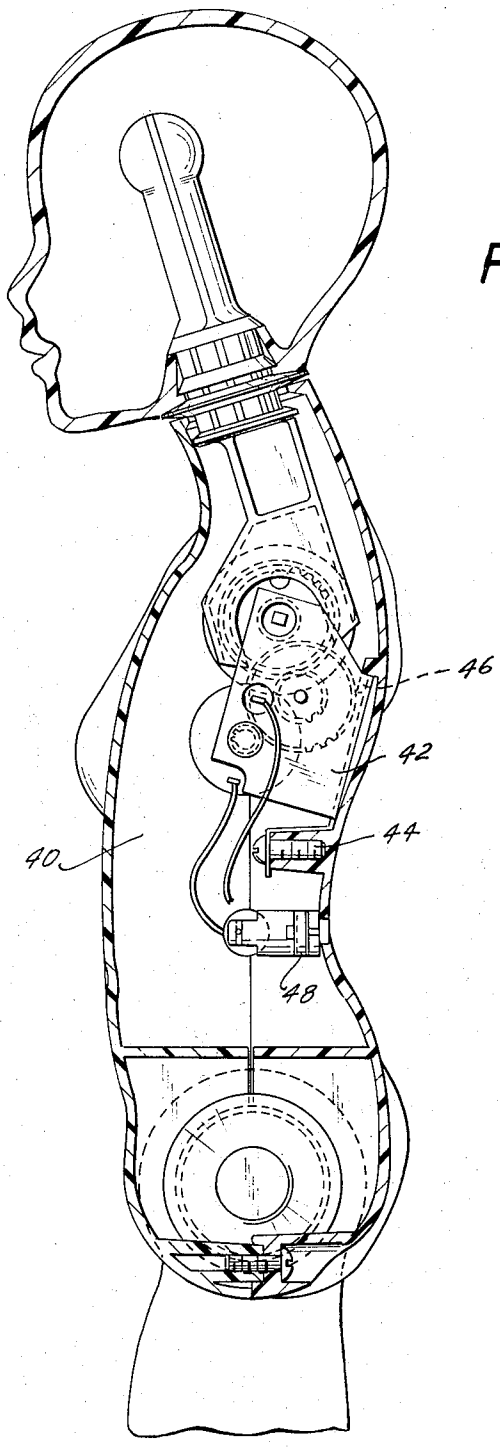


FIG. 2

FIG. 4

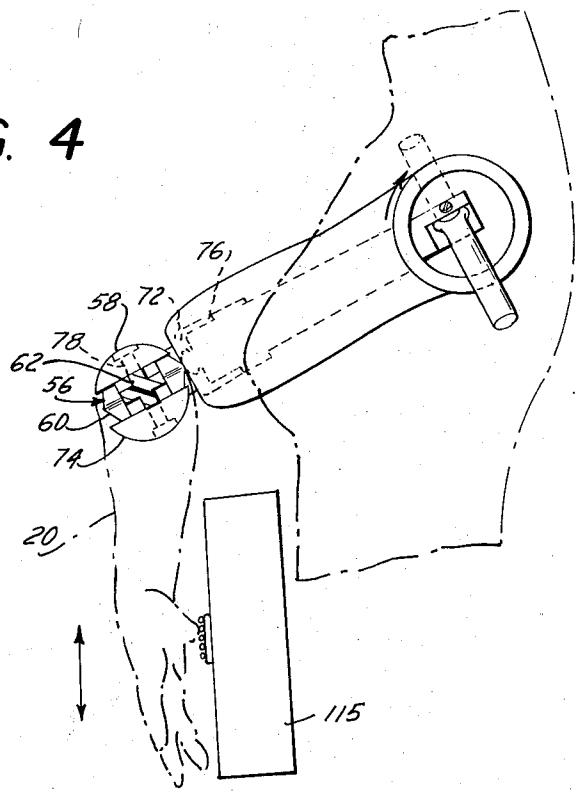
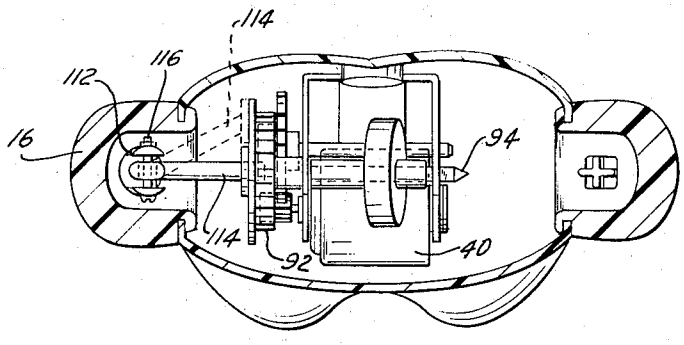


FIG. 3



TOY DOLL

The present invention relates to toy dolls and in particular to motorized dolls which are assembled and driven to simulate human movements and activities.

A number of mechanized toy dolls of the above type have been previously proposed in which one or both of the doll's arm is driven or oscillated in a plane in order to simulate human movements. Such dolls are often utilized in conjunction with toy musical instruments such as simulated guitars, violins, banjos and the like with the oscillation of the doll's arms simulating strumming of the guitar or actuation of the bow for the violin. However, in these types of dolls, such as, for example the dolls shown in U.S. Pat. No. 1,519,410, the oscillated arm is usually formed in one-piece construction so that the arm is oscillated about the doll's shoulder, with both the upper and forearm portions of the arm being moved to simulate the desired action. Movement of the doll's entire arm in this manner is not realistic in appearance, but rather has a mechanical appearance which does not truly simulate the actual motions of a human playing the instrument. For example, when playing a guitar only the forearm portion of the person's arm normally is moved to produce the strumming action while the upper arm portion remains relatively motionless. Thus, since none of the previously proposed mechanical dolls have the capacity to move only the forearm portions of their arms, they do not closely simulate human movements and therefore are not fully satisfactory.

Accordingly, it is an object of the present invention to accurately simulate various human body movements with a mechanized toy doll.

Another object of the present invention is to simulate the movements of a human body while playing a musical instrument such as a guitar or the like.

Yet another object of the present invention is to provide a mechanical toy doll having the capacity to oscillate the forearm portions whereof while the upper arm portions remain motionless, which doll is relatively simple in construction and inexpensive to manufacture.

In accordance with one aspect of the present invention, the toy doll includes a torso having a head mounted thereon for side to side oscillation and a pair of arms pivotally connected to the torso so that the configuration of the arms with respect to the torso can be selectively adjusted. Each of the arms have upper arm and forearm portions, with the forearm portions thereof including hands whose fingers are formed in a predetermined configuration. In addition, at least one of the doll's arms includes an articulated joint adjustably interconnecting the upper and forearm portions thereof as the elbow of the arm for selective rotation of the forearm portion about a pair of perpendicularly extending axes. One of the axes extends longitudinally through the upper arm portion and the other axis extends generally perpendicularly thereto so that the forearm portion of the doll may be placed in any of a substantially infinite number of relative positions with respect to the upper arm portion.

A selectively operable electric motor is mounted in the torso and is operatively connected to the articulated joint of the arm through a transmission system which is adapted to oscillate the joint and forearm portion along the longitudinally extending axis of the upper arm upon actuation of the motor. In this manner

the forearm portion and the hand associated therewith are oscillated in a predetermined and preselected plane while the upper arm portion remains motionless. Accordingly, the doll of the present invention has the capacity of simulating the movements of a human playing an instrument, wherein the arm having the articulated joint is positioned to simulate the position of a human hand and forearm strumming a guitar.

The other arm of the doll also can be articulated between the upper arm and forearm portions thereof, so that the configuration of the arm can be varied. In this regard, one contemplated use of the doll is to simulate playing of a guitar and thus the non-driven articulated arm would be positioned to hold the long fretted neck of the guitar while the driven or oscillated arm simulates the strumming of the guitar.

The transmission system utilized in the doll also is operatively connected between the motor and the head of the doll to oscillate the doll's head from side to side with respect to the torso in order to simulate the swaying movement of the head of a person playing the guitar and following the "beat" of the music.

The above, and other objects, features and advantages of this invention will be apparent in the following detailed description of an illustrative embodiment thereof which is to be read in connection with the accompanying drawings, wherein:

FIG. 1 is a front elevational view, partly in section, of a mechanized toy doll constructed in accordance with one embodiment of the present invention;

FIG. 2 is a partial side sectional view taken along line 2—2 in FIG. 1;

FIG. 3 is a sectional view taken along line 3—3 of FIG. 1; and

FIG. 4 is a schematic illustration of the motion of the articulated forearm portion of the driven arm in the doll of the present invention.

Referring to the drawing in detail, and initially to FIG. 1 thereof, it will be seen that a toy doll **10**, embodying the present invention, has a torso **12**, a head **14**, and a pair of arms **16, 18** respectively. Each of the arms includes a forearm portion **20** and an upper arm portion **22** joined at the elbow of the arms by articulated joint members **24, 26** respectively. The forearm portion **20** of the right arm **16** is selectively driven through a drive system **25** for oscillation in a predetermined plane, selected by adjustment of the arm about joint means **24**, as more fully described hereinafter, while simultaneously rocking head **14** from side to side with respect to the torso of the doll in order to simulate human movements. Of course, each forearm **20** has a hand **21** formed on the free end thereof with the fingers in each hand arranged in a predetermined configuration.

Torso **12** is supported by a pair of legs **28** which are pivotally secured to the torso through openings **30** formed therein. The upper ends of the legs are formed with heads **32** having annular recesses **34** which are received in apertures **36** formed in a rigid frame **38** contained within the torso. By this arrangement, the doll can be placed in a standing position supported by legs **28** or in a seated position, by merely pivoting the legs to a horizontal configuration in a conventional manner.

Drive system **25** includes an electric motor **40** rigidly mounted in a frame **42** secured within torso **12** of the doll in any convenient manner, as for example, by the bolt **44** and tab **46**, seen in FIG. **2**. Motor **40** is driven

by a current source (not shown), typically comprising a plurality of batteries maintained in a remote control unit. This unit is connected to the doll's body by an external connecting cord running from the control unit and terminating in an electrical plug connector which is adapted to mate with a receptacle **48** in the back of the doll to complete the circuit and supply power to the motor. The plug on the electrical control unit, and the receptacle **48**, are provided for the convenience of a child playing with the doll so that the control unit may be readily disconnected from the doll to allow the child to play with the doll without utilizing the control unit.

In one embodiment of the present invention it is contemplated that the control unit may be formed to simulate a juke box with a plurality of prerecorded musical programs therein. When the control unit or juke box is activated, the musical programs are played and the doll is activated by the operation of motor **40**, as more fully described hereinafter, to cause the doll to simulate the playing of a musical instrument.

Referring again to FIG. **1**, it is seen that the arms **16** and **18** are pivotally mounted on torso **12** in a conventional manner by an annular embossment **50** formed at the upper ends thereof with a groove **52** which is received in an annular opening **54** formed in the torso. Annular groove **52** frictionally engages the edge portion of the torso which defines apertures **54** so that the arms of the doll can be pivoted to any desired relative configuration with respect to the torso and to each other. The arms then will remain in the selected position due to the tight frictional contact between the embossment and the torso.

The articulated joint **24** forming the elbow of arm **16** is constructed of two relatively rigid plastic elements **56** and **58**. Member **56** includes a relatively flat circular portion **60** and an elongated stem **62** (see also FIG. **4**) having an arrow-shaped head **64** which is forced through an opening **66** in the upper portion of forearm **20**. The shoulder **68** formed by head **64** engages an annular rim **70** in forearm **20** to prevent removal of the forearm from stem **62** while permitting relative rotation of the forearm with respect to stem **62**, so that the relative position of the forearm with respect to joint **24** and to upper arm portion **22** can be varied.

Member **58** includes a generally cylindrical upper portion **72** and a pair of integrally formed generally hemispherical sections **74** which contain the circular section **60** of member **56** therebetween. The cylindrical section **72** of member **58** is loosely received in a cylindrical bore **76** formed in upper arm portion **22** to permit the joint to be rotated with respect to the arm either manually or by the drive system **25**, as more fully described hereinafter. Hemispherical members **74** and member **60** are pivotally interconnected in any convenient manner, such as for example, by a rivet or a nut and bolt assembly **78**, so that forearm portion **20** can be pivoted about joint **24** to a plurality of positions. The nut and bolt assembly, while permitting this pivotal motion, holds elements **60, 72** in relatively tight frictional contact with each other so that the forearm **20** will remain in any position to which it is pivoted.

Articulated joint **24** and thus forearm **20** is oscillated through a transmission system **80** operatively connected between motor **40** and the joint. This transmission system is activated from motor **40**, as seen in FIG. **1**, by a spur gear **82** mounted on the end of the take-off shaft **84** of the motor. Spur gear **82** drives an integrally formed compound gear **86** by engagement with the larger gear **87** thereof. Gear **87** is the first of a plurality of gears in a speed reduction gear train which reduces the speed of rotation of motor **40** as applied to arm **16** and head **14**, in order to recreate and simulate life-like movements. If this speed reduction were not provided by the gear system, arm **16** and head **14** would move too rapidly in violent gyrations which would not be life-like nor consistent with those of a human. Moreover, the gearing arrangement serves to increase the torque applied to the forearm **20** of arm **16** and to the head of the doll.

Compound gear **86** is rotatably mounted on a shaft **88** supported in frame **42** and includes a smaller pinion gear **90** which is integrally formed on one side of gear **87**. Gear **90** is positioned in driving engagement with a larger diameter pinion gear **92** and the latter is rigidly secured to a shaft **94** that is rotatably mounted in frame **42** so that shaft **94** is rotated upon rotation of gear **92**. The outer surface **96** of gear **92** is provided with a hole or recess **98** adjacent the periphery of the gear. This hole, which is displaced from the axis of rotation of gear **92**, operates as a crank during rotation of gear **92**, upon actuation of motor **40**, to convert the rotary drive of the motor **40** to an oscillating motion of forearm **20**.

To accomplish this conversion of rotary motion to oscillating motion, a rock shaft **100** is positioned in bore **76** of arm **16**. In the illustrative embodiment of the invention the rock shaft is integrally formed with a pair of intersecting webs **102, 104**, although other configurations of the rock shaft can also be utilized. While otherwise generally clearing the walls of the bore **26**, webs **102, 104** have extensions **103, 105** respectively in frictional engagement with the wall forming bore **76** in upper arm portion **22**. Extensions **103, 105** serve to keep the rock shaft and thus joint **22** and forearm **20** in a relatively fixed and stable position, unless driven or manually moved. The lower end **106** of rock shaft **100** is provided with a pair of auxiliary extensions **107** and a head **108** which is snap fit in an aperture **110** formed in the base of the cylindrical portion **72** of member **58** to hold the articulated joint assembly in the arm. Extensions **107** frictionally engage the inner wall **109** of cylindrical portion **72** and this engagement, in conjunction with the cooperation of head **108** and opening **110**, is sufficient to effect oscillation of member **58** and thus joint **24** in bore **76** when motor **40** is activated. Additionally, the frictional engagement between wall **109** of cylindrical portion **72** and extension **107** permits joint **24** to be manually rotated in bore **76** so that its configuration with respect to arm **16** may be varied.

The upper end or head **112** of rock shaft **100** is pivotally connected to a rod **114** by a pivot pin **116** along an axis which intersects the longitudinal axis of the rock shaft and the axis of rotation of gear **92**. Head **112** is slightly larger than bore **76** and cooperates with arm **16** to retain rock shaft **100** in position within upper arm portion **22**. The end **118** of rod **114**, opposite pivot **116**, is received in hole **98** formed adjacent the periphery of gear **92**. Thus, upon actuation of motor **40**, gear train **80** is driven, causing rotation of gear **92** and movement of the end **118** of rod **114** in a circular path about the axis of rotation of gear **92**. This circular motion causes pivot shaft **116**, and thus rock shaft **100**, to oscillate about the longitudinal axis of the rock shaft, as seen in FIGS. **3** and **4**. As a result, articulated joint **24** is oscillated about the axis, because of the engage-

ment of extension **109** and head **108** in cylindrical portion **72,** and forearm **20** is oscillated in a predetermined plane, selected in accordance with the position in which the arm has been placed. For example, as seen in FIGS. **1** and **4,** if the doll were utilized to simulate the playing of a guitar **114,** with forearm portion **20** pivoted to the configuration illustrated in these Figures, the oscillation of articulated joint **24** will cause the forearm **20** and its hand **21** to move in a plane parallel to the surface of guitar **115,** thereby simulating strumming of the guitar strings **117.**

Of course, it is to be understood that because of the articulation of forearm **20** with respect to upper arm **22** and because of the pivotal mounting of the entire arm assembly at the shoulder of the torso, arm **16** may be positioned in numerous configurations to simulate other human actions. For example, the arm may be moved to a position where its hand **21** is near the scalp or back of the doll so that the oscillating motion of the hand simulates a scratching action. Other types of simulated movements are also possible with appropriate positioning of arm **16.**

It is noted that the hands **21** of both arms **16** and **18** are preferably formed in a configuration which will enhance the simulated playing of guitar **115.** Thus, hand **21** of arm **16** is slightly opened to conform to the configuration of a hand strumming a guitar, while the hand **21** of arm **18** is slightly closed in order to frictionally engage the fretted neck **116** of guitar **115** and hold it in position during operation of the doll. Of course, hands **21** may be provided in other configurations depending upon the principal actions intended to be simulated by the doll.

In the illustrative embodiment of the present invention arm **18** is not driven by motor **40,** but is simply a static arm which can be placed in a plurality of predetermined positions by appropriate adjustment of its articulated joint **26.** The latter is formed of substantially the same construction as articulated joint **24,** having a pair of rigid members **56'**, **58'** which correspond substantially to the members **56** and **58** of articulated joint **24.** Thus, member **56'** includes a stem portion **62** which is frictionally engaged in forearm **20** so that the configuration of this forearm can be adjusted with respect to joint **26.** Member **58'** on the other hand, is formed integrally with a shaft **122** rotatably mounted in upper arm portion **22** by the frictional engagement of extensions **124** thereon with the wall forming the bore **72** of this arm. Shaft **122** is retained in upper arm **22** by the head portion **123** thereof which is slightly larger in diameter than the bore **72** of the arm. In this case, since arm **18** is not driven, member **58'** does not have a cylindrical frictional coupling such as that of the articulated joint **24,** but rather the hemispherical sections **74** thereof are formed integrally with the shaft, in the manner illustrated in FIG. **1.** This arrangement permits adjustment of joint **26** with respect to upper arm **22** and simultaneous adjustment of forearm **20** with respect to the joint so that the forearm **20** and its hand **21** can be moved to a plurality of positions as desired by the child. Additional adjustment and variations are provided by the pivotal mounting of the entire arm assembly at the shoulder of the torso **12.** In this manner both arms **16** and **18** are adjustable to innumerable positions during play so that a variety of actions can be simulated by the doll when motor **40** is activated.

It is noted that although the illustrative embodiment of the present invention has been described with only one of the arms **16** connected to motor **40,** it is contemplated that the motor can be connected by a duplicate drive train **80** to the arm **18** so that both arms can be simultaneously driven by the motor.

Drive system **25** is also adapted to provide simultaneous movement of head **14** in a side to side motion with respect to torso **12.** To accomplish this motion head **14** is frictionally engaged with a supporting stem or rod **130** and is secured thereto by a pair of shoulders **132** formed on the rod and engaged with complementary shoulders molded in the neck portion **134** of the head. This arrangement not only secures the head to the supporting rod but permits the head to be rotated on the rod so that the configuration of the head with respect to the torso can be selectively varied as desired.

Rod **130** extends downwardly from head **14** through an aperture **136** in torso **12** towards drive system **25.** The rod is provided with an annular bearing surface **138** located between neck portion **134** of head **14** and the neck portion **140** of torso **12.** An additional annular member **142** is integrally formed on rod **130** and located within the interior of torso **12** so that head **14** is not removable from the torso. However, the rod has a diameter which is slightly less than the diameter of opening **136** so that rod **130** may wobble within opening **36** in neck portion **140** to cause wobbling of head **14.**

To accomplish this wobbling motion, shaft **94** is provided with a wobble plate **144** connected thereto for rotation with the shaft. The wobble plate **142** is engaged by a follower track **145** formed integrally on the end **146** of rod **130** and having a greater width than the plate. Upon oscillation of wobble plate **144,** track **145** is moved from side to side, as indicated by the solid and dotted lines in FIG. **1,** so as to cause oscillation of rod **130** in neck **140.** In this manner head **114** is moved from side to side to simulate the rhythmical motions of the head which normally accompany the playing of a guitar.

Accordingly, it is seen that a relatively inexpensive and simply constructed doll is provided in which the single motor **40** is adapted to drive only the forearm portion of the arm while it simultaneously oscillates the head of the doll from side to side thereby simulating human movements in a realistic manner.

Although an illustrative embodiment of the present invention has been described herein with reference to the accompanying drawings, it is to be understood that the invention is not limited to that precise embodiment and that various changes and modifications may be effected therein by one skilled in the art without departing from the scope or spirit of this invention.

What is claimed is:

1. A toy comprising, a torso, a pair of arms mounted on said torso and having upper arm and forearm portions, a selectively operable rotary drive means mounted in said torso and transmission means operatively connecting said drive means to the forearm portion of one of said arms, through the upper arm portion thereof, for oscillating said forearm portion in a predetermined plane upon actuation of said drive means while its associated upper arm portion remains motionless, said transmission means including means adjustably interconnecting said forearm portion to said upper arm portion for permitting the relative position of said

forearm portion with respect to said upper arm portion to be varied independently of the oscillation thereof by said drive means, whereby the plane in which said forearm portion is oscillated may be varied;

said adjustable interconnecting means comprising first and second relatively rigid members pivotally interconnected and located at the elbow of said one arm, to permit relative pivotal movement of said forearm portion with respect to said upper arm portion, said first and second members being relatively tightly frictionally engaged whereby said forearm remains fixed in any position to which it is moved with respect to said upper arm;

said first and second rigid members being adjustably connected to said first arm portion and said forearm portion respectively to permit the annular position of said forearm portion to be varied with respect to said rigid members and to permit the angular position of said rigid members and the pivotal connection therebetween to be varied with respect to said upper arm portion;

said transmission means including a longitudinally extending rock shaft rotatably mounted in the upper arm portion of said one arm and operatively connected to said forearm portion thereof, a first crank operatively connected to said drive means for rotation thereby and means operatively connected between said first crank and said rock shaft for oscillating said shaft in response to rotation of said first crank;

said means operatively connected between said first crank and said rock shaft being connected to said rock shaft at a position intersecting the longitudinal axis of the rock shaft and said first crank being located in said torso with its axis of rotation intersecting the connection between said rock shaft and said connecting means thereby to oscillate said rock shaft about its longitudinal axis;

said first crank comprising a rotatably mounted pinion gear and said means operatively connected between said first crank and said rock shaft comprising an elongated rod pivotally connected at one end to said rock shaft at said position intersecting the longitudinal axis thereof and operatively connected at its other end adjacent the periphery of said pinion gear, said pinion gear being located in said torso with its axis of rotation intersecting the pivotal connection between said rod and said rock shaft whereby said other end of said rod rotates with said pinion gear and said rock shaft is oscillated about its longitudinal axis.

2. The toy doll as defined in claim **1** wherein said transmission includes a gear train drivingly connected between said drive means and said pinion gear, said gear train including a plurality of rotatably mounted gears adapted to reduce the speed of rotation of said drive means to provide a life-like motion to said forearm portion and to increase the torque of the drive means.

3. The toy doll as defined in claim **1** including a head and means operatively connected between said head and said drive means for oscillating said head with a generally side to side motion in response to actuation of said drive means.

4. The toy defined in claim **3** wherein said means operatively connected between said head and said drive means comprises an elongated supporting rod frictionally engaged at one end in said head and extending through said torso into the interior thereof, a wobble plate rotated by said drive means, and a follower track formed in the other end of said supporting rod and received in said wobble plate, whereby said supporting rod and head are oscillated upon rotation of said wobble plate.

5. A toy doll comprising, a torso, a head, and a pair of arms operatively connected to said torso, said arms having upper forearm portions and said forearm portions having hands formed at the ends thereof, one of said arms including joint means adjustably interconnecting the upper arm and forearm portions thereof at the elbow of the arm for selective rotation of said forearm portion about first and second axes with respect to said upper arm portion, said first axes extending longitudinally through said upper arm portion and said second axes extending generally perpendicularly thereto, a selectively operable electric motor mounted in said torso, and transmission means operatively connecting said motor to said joint means, through said upper arm portion, for oscillating said joint and forearm portion about the first axes upon actuation of said motor, whereby said forearm portion and the head associated therewith are oscillated in a predetermined plane while said upper arm portion remains motionless and the relative position of said forearm portion with respect to said upper arm portion may be varied by selective rotation of said arm portion about either of said first or second axes thereby to vary the plane in which said forearm portion is oscillated;

said upper arm portions of each of said arms being rotatably mounted on said torso whereby the relative configuration of said arms with respect to said torso and to each other may be varied without interfering with said transmission means;

said transmission means including a rock shaft rotatably mounted in the upper arm portion of said one arm for oscillation about said first axis, means for oscillating said shaft, including a rod pivotally connected to one end of said rock shaft, along an axis intersecting said first axis, said rock shaft being operatively connected at its opposite end to said joint means whereby oscillation of said rock shaft causes said oscillation of said joint means and forearm portion about said axis; and

a gear train drivingly connected between said motor and said rod, said gear train including a pinion gear rotatably mounted in said torso about an axis intersecting the pivotal connection of said rod and rock shaft, said rod being operatively connected to a peripheral portion of said pinion gear at the end of said rod opposite its pivotal connection with said rock shaft whereby rotation of said pinion gear causes rotation of said opposite end of said rod about the axis of rotation of the pinion gear and oscillation of the pivotal connection between said rod and said rock shaft about said first axis.

6. The toy doll as defined in claim **5** wherein said joint means comprises a first rigid connecting member frictionally engaged in the upper arm portion of said one arm at said elbow to permit oscillation of said joint with respect thereto and being frictionally engaged with said opposite end of said rock shaft for selective relative movement with respect thereto about said first axis and for selective oscillation therewith upon actuation of said motor, a second rigid connecting member

frictionally engaged in said forearm at said elbow to permit selective adjustment of the configuration of said forearm with respect to said joint means and said upper arm, and means pivotally interconnecting and frictionally engaging said rigid connecting members about said second axis whereby the relative angular configuration of said forearm and upper arm portions may be selectively adjusted about the second axis to vary the plane of oscillation of said forearm and associated hand.

7. The toy doll as defined in claim **6** including means for mounting said head on said torso and for permitting side to side oscillation of said head with respect to the torso, and means operatively connected between said motor and said mounting means for oscillating said head with a generally side to side motion in response to actuation of said motor.

8. The toy doll as defined in claim **7** wherein said torso has a neck portion having an opening therein and said means for mounting said head comprises an elongated supporting rod mounted in said neck and extending through said opening and being operatively connected to said head, said rod having a smaller width than the diameter of said opening whereby said rod may be oscillated in said neck from side to side with respect to said torso.

9. The toy doll as defined in claim **8** wherein said means for oscillating said head comprises a rotatably mounted wobble plate rotated by said motor through said gear train and a follower track formed on the end of said supporting rod opposite said head for receiving said wobble plate and being oscillated laterally thereby, whereby said supporting rod and head are tilted from side to side with respect to said torso upon actuation of said motor.

10. The toy doll as defined in claim **9** wherein said gear train includes a plurality of rotatably mounted gears adapted to reduce the speed of rotation of said motor to provide a life-like motion to said forearm portion and said head, and to increase the torque of the motor.

11. The toy doll as defined in claim **10** wherein said head is frictionally engaged with said supporting rod whereby the relative position of said head on said rod and with respect to said torso may be varied.

12. The toy doll as defined in claim **11** wherein the other one of said arms includes articulated joint means adjustably interconnecting the upper arm and forearm portions thereof for selective rotation of said forearm portion about at least two axes.

13. The toy doll as defined in claim **12** wherein said hand on said other one of said arms includes fingers fixed in a predetermined configuration for grasping and holding a selected toy instrument therein.

* * * * *