

Feb. 23, 1971

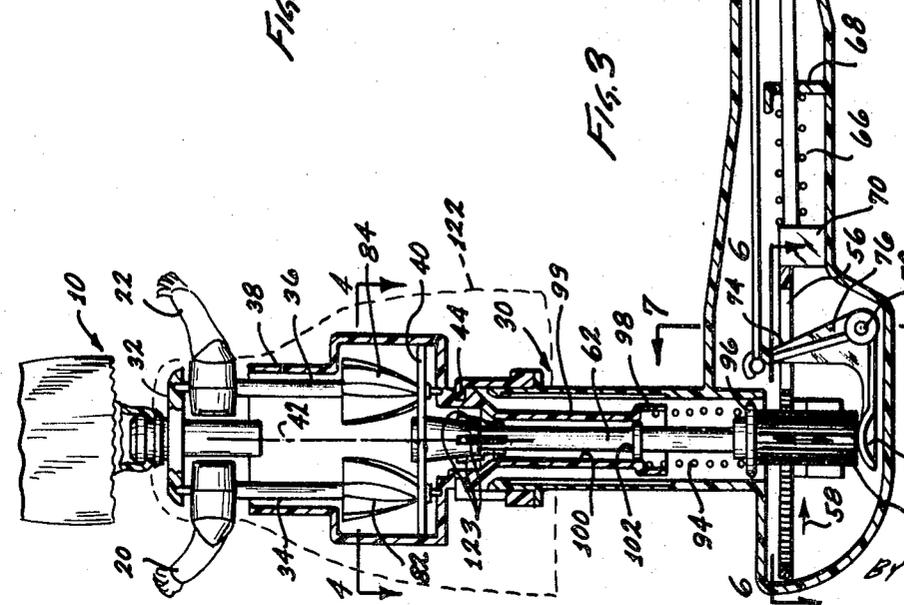
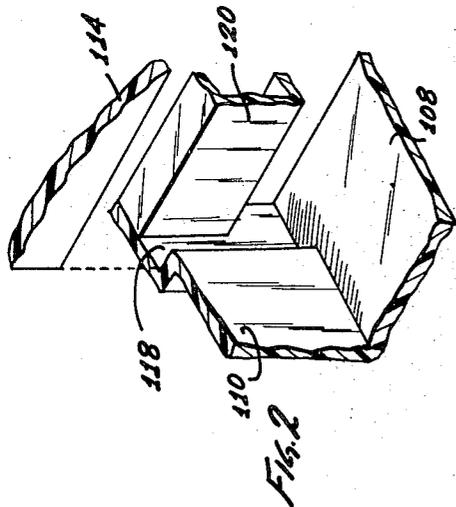
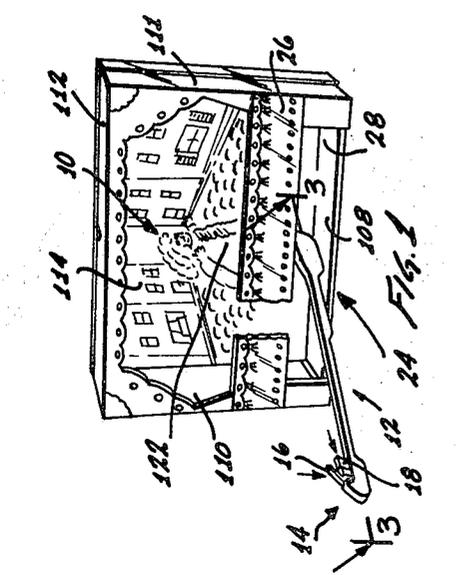
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3,564,764

PUPPET SHOW TOY

Filed Dec. 16, 1968

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

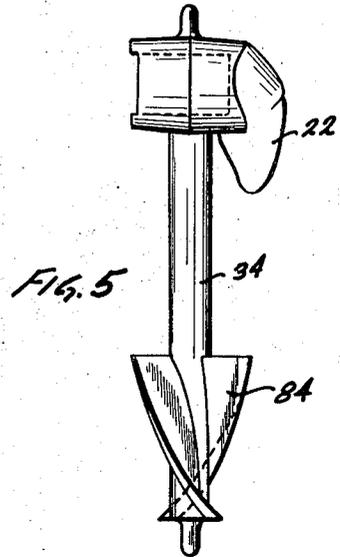
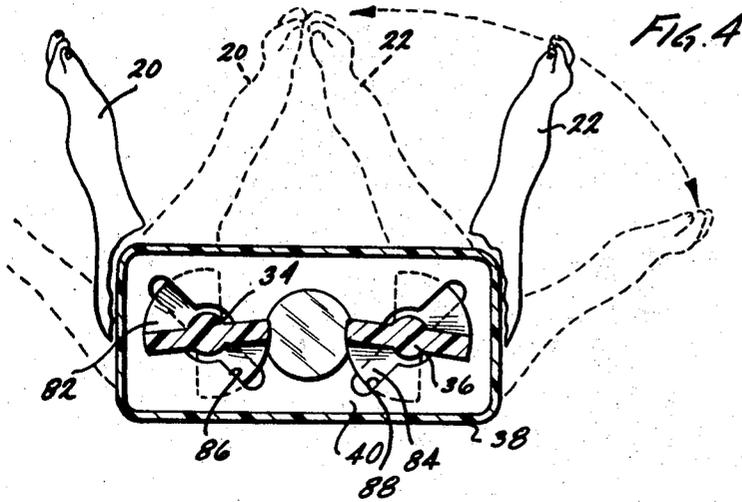


FIG. 6

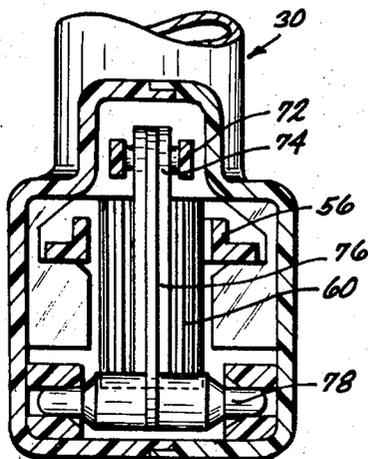
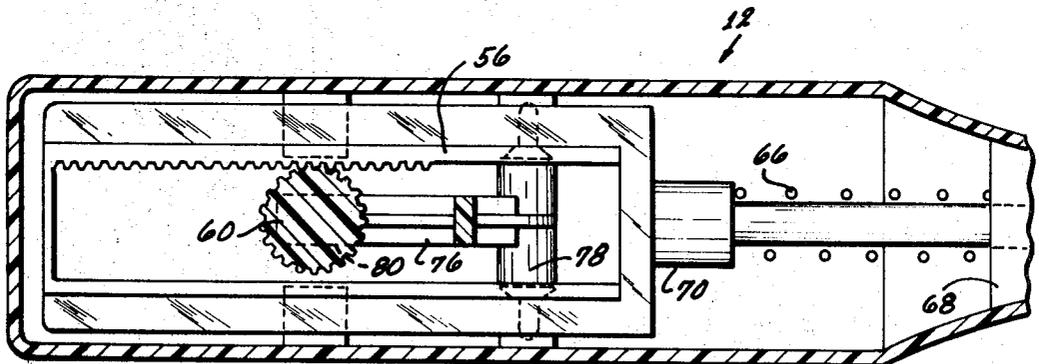


FIG. 7

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3,564,764

**PUPPET SHOW TOY**

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Filed Dec. 16, 1968, Ser. No. 784,149

Int. Cl. A63h 7/00

U.S. Cl. 46—126

2 Claims

**ABSTRACT OF THE DISCLOSURE**

A puppet show toy which enables the operator to move the puppet from a position in the audience. The toy includes a figure which can be pivoted to face in any direction and having arms that can be clapped together. A long frame extends laterally from the figure, and a control box on the end of the frame carries a lever for controlling figure pivoting and a trigger for controlling clapping of the arms.

**BACKGROUND OF THE INVENTION**

Field of the invention

This invention relates to puppet toys.

Description of the prior art

The enjoyment of simple puppets can be enhanced by separating the operator from the puppet and reducing the amount of operator movement occurring in the manipulation of the puppet. This helps to create the impression that the puppet figure is alive and controlled by itself. The enjoyment can be further enhanced if the operator can control the puppet while remaining in the audience, so that he can gain the pleasure of observing the figure in much the same manner as the rest of the audience.

**SUMMARY OF THE INVENTION**

In accordance with the present invention, an animated puppet toy is provided which enables operation from a position in the audience and with relatively small movements of the operator. The puppet toy comprises an animated figure, an elongated control frame extending laterally from the figure, and a control station at the end of the frame carrying levers or the like for controlling movements of the figure.

In one embodiment of the invention, the figure is mounted for pivoting, or rotation, to face in any direction, and is provided with arms which can be brought together. The rotation of the figure and the clapping of the arms are controlled by separate levers or triggers at the control station, which can be operated by small finger movements. The puppet figure is designed for appearance on a stage which has a long slot beneath the area where the figure appears. The long control frame extends from the bottom of the figure and through this slot to the operator, who may stand in the audience at one side of the stage. In addition to the operation of the levers, the operator may move the entire frame along the slot to move the puppet figure to any location on the stage.

The novel features of the invention are set forth with particularity in the appended claims. The invention will be best understood from the following description when read in conjunction with the accompanying drawings.

**BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a perspective view of a puppet and stage constructed in accordance with the invention;

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FIG. 2 is a partial perspective view of the stage apparatus of FIG. 1;

FIG. 3 is a sectional side view of the puppet apparatus taken on the line 3—3 of FIG. 1;

FIG. 4 is a sectional view taken on the line 4—4 of FIG. 3;

FIG. 5 is an elevation view of an arm operating member;

FIG. 6 is a sectional view taken on the line 6—6 of FIG. 3; and

FIG. 7 is a sectional view taken on the line 7—7 of FIG. 3.

**DESCRIPTION OF THE PREFERRED EMBODIMENTS**

As shown in FIG. 1, the puppet apparatus comprises a puppet FIG. 10 which is mounted on one end of an elongated control frame 12. A control station 14 at the other end of the frame carries two manual operating means in the form of a lever 16 and a trigger 18. The lever 16 controls pivoting, or limited rotation of the puppet figure, to face it in any direction, while the trigger 18 controls a pair of arms 20 and 22 on the figure to clap them together. The figure is well adapted for presentation on a stage 24. The stage has a fence 26 forming an elongated slot 28 through which the control frame extends. In addition to rotational and hand movements of the figure, it can be moved laterally along the stage to any location thereon by lateral movement of the control frame 12.

FIG. 3 illustrates the puppet and the details of the control mechanism thereof. The puppet figure 10 is disposed at the top of a housing 30, while the control frame 12 extends laterally from the bottom of the housing 30 to its control station 14. The figure 10 has a head mounted on a shoulder structure 32, the shoulder structure being part of a body frame 38. A pair of arm shafts 34 and 36 extend through the body frame, each shaft having an upper end pivotally mounted on the shoulder structure 32 and an opposite end pivotally mounted on a lower portion of the body frame 38. Each arm 20 and 22 is fixed to an arm shaft, so that the arms are clapped together by rotation of the shafts 34 and 36 about their axes.

The bottoms of the arm shafts 34 and 36 are engaged in holes in a rectangular cam plate 40. Rotation of the cam 40 about its axis 42 moves the body frame and the arm shafts 34 and 36 around the axis 42. This causes rotation of the body frame about the axis 42, to face the figure in any direction. This does not cause the arm shafts 34 and 36 to rotate about their own axes, so no arm clapping movement occurs by reason of rotation of the figure. The body frame 38 is rotatably mounted on the housing 30 at bearing ring 44, which also prevents up and down movement of the body frame.

Control of figure rotation from the control station 14 is achieved by pressing down on the end 46 of the lever 16. This pivots the lever about the pivot 48, causing rearward movement of the lever arm 50. An elongated wire-like tension member 52 tied at one end 54 to the lever near its pivot 48, extends around the lever arm 50 and along the control frame to a rack member 56. Pressing down on the lever end 46 to cause rearward movement of the lever arm 50, pulls the tension member 52 and therefore moves the rack member 56 in the direction of arrow 58. The rack member 56 has teeth engaged with a pinion 60, the pinion being coupled through a shaft 62 to the cam plate 40. Thus, when the lever end 46 is pushed down to move the rack member 56, the cam plate 40 rotates and the figure 10 is turned.

When the lever 16 is released, a spring 66, retained in compression between a tab 68 fixed to the control frame and an enlarged end 70 of the rack member, moves the rack member back to its original position and returns the lever to its original position against a stop 104. This rotates the pinion 60 to return the figure back to face in the original direction. The operator can control the amount of downward movement of the end 46 of the rotation-controlling lever, to face the figure in any direction within a wide range. The apparatus may be constructed so that the figure can rotate 360° or perhaps slightly more, so that it can face in any direction of the compass.

Control of the arms 20 and 22 of the figure is achieved by pressing back on the trigger 18. The lower end of the trigger is fixed to one end of another tension member 72 that extends through the control frame to one end 74 of a pinion moving lever 76. The pinion moving lever 76, which pivots at 78, has another end 80 lying beneath the pinion 60. When the trigger 18 is pressed back, the lever end 80 pushes up the pinion 60, to lift the pinion shaft 62 and the cam plate 40. As will be described below, the upward movement of the cam plate 40 causes rotation of the arm shafts 34 and 36 about their axes, to move together the arms 20 and 22 of the puppet figure.

Each of the arm shafts 34 and 36 has a helical cam-follower member 82, 84, these also being shown in FIGS. 4 and 5. Each of the helical members is received in a narrow rectangular hole or slot 86, 88 in the cam plate 40. When the cam plate 40 is moved upward, while the arm shafts 34 and 36 are restrained from upward movement by the shoulder structure 32, the helical members are forced to rotate. Helical member 82 has a right-hand screw or helix, while member 84 has a left-hand helix of the same pitch. Accordingly, the helical members rotate in opposite directions as the cam plate 40 is lifted, causing the arm shafts 34 and 36 and the figure arms 20 and 22 attached thereto to rotate in opposite directions that bring them together. Thus, when the trigger 18 is pressed back, the pinion 60 is translated along its axis, and the figure arms move together.

When the trigger 18 is released, it is returned towards its forward position by reason of downward movement of pinion 60, which rotates pinion lever 76 back to its original position. To assure the downward return of the pinion 60, a pinion return spring 94 is provided which is compressed between a ledge 96 on the pinion shaft 62 and a spring retainer portion 98 formed in a tube 99 that depends from the figure housing 38. The tube 99 also has an inner bearing surface 100 for guiding a slider bearing 102 fixed to the pinion shaft to guide the shaft in its up and down movement.

The operator can control the amount of backward movement of the trigger 18 to close the figure arms 20 and 22 to any degree. The extremes of trigger movement are limited by stops 104 and 106, but the trigger can be moved to any position inbetween. The movement of the figure arms can simulate an expression of emotion of the figure, and can also be employed to allow the puppet figure to grasp articles.

The operator normally grasps the control station 14 in the palm of one hand, with his middle, ring, and little fingers below the control station, his thumb resting on the rotation-controlling lever 16 and his forefinger extending about the trigger 18. The entire apparatus is light, and the control station can be held in the hand to support the control frame and figure. Either the lever or the trigger can be operated independently of the other, so that once the figure has been turned to face a given direction, the arms can be closed or opened without changing this direction. The thumb and forefinger are generally the most agile digits, and

therefore the apparatus encourages facile operator control.

During operation of the lever and trigger, they are largely concealed by the operator's hand. This, combined with the limited distance of finger movement required to effect any changes and the considerable lateral separation of the control station from the figure, contributes to the impression that the figure is self-directed rather than controlled by an operator.

As mentioned above, the figure is well adapted for display on a stage in the manner shown in FIG. 1. The stage 24 includes a floor 108, side walls 110 and 111, and a ceiling 112. An interchangeable set panel 114, forming the back of the stage, can be replaced by other panels to change the setting of a puppet performance. As shown in FIG. 2, grooves 118 for retaining the set panels 114, are left between the side walls, such as wall 110, and a back support member 120.

An effective manner of giving a puppet show with the apparatus of the invention is to place the puppet figure in the stage, in the manner of FIG. 1, with the top of the figure showing above the fence 26 and the control frame extending through the slot 28. A dress 122 or other covering may be placed on the figure. The control station 14 is held at one side of the stage, where the operator stands. The operator can move the puppet figure across the stage without his hand appearing in front of the set. In order to cover the entire audience, the puppet figure is preferably rotatable to face in any direction between a compass direction substantially at about 30° to the control frame and a direction about 120° away. At an angle of less than 90° away, the fact that the figure faces in a direction with a component directed at the control station where the operator is located, allows the operator to observe the puppet show.

In order to prevent damage to the puppet figure in case a child should grasp the doll figure directly and try to turn it past the limits of rotation, an override is provided. As shown in FIG. 3, spring members 123 are provided which are fixed to the cam plate 40 and which frictionally engage the pinion shaft 62, to couple them together. Without the spring members, the cam plate and pinion shaft would be free to rotate with respect to each other. The spring members rotationally couple the cam plate and pinion shaft, but allow relative rotation if a large force is employed to rotate the doll head. This overriding mechanism also allows a child to position the doll figure at any initial position prior to a show. Of course, if an override is not desired, the cam plate can be simply fixed to the pinion shaft.

Although particular embodiments of the invention have been described and illustrated herein, it is recognized that modifications and variations may readily occur to those skilled in the art, and consequently, it is intended that the claims be interpreted to cover such modifications and equivalents.

What is claimed is:

1. A puppet toy comprising:

- an elongated control frame having first and second opposite ends;
- a housing extending upwardly from said first end of said frame;
- an elongated member mounted for extension substantially vertically within said housing for rotational and axial movement;
- a cam plate fixed to an upper end of said elongated member, said cam plate having a pair of slots therein;
- a puppet figure disposed at the upper portion of said housing for rotation with said cam plate, said figure having a pair of arms for movement together and apart;
- a pair of arm shafts each fixed to one of said puppet figure arms;

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a pair of helically-formed members, each fixed to one of said puppet figure arms and engaged with one of said slots in said cam plate to rotate said arms in accordance with the axial translation of said cam plate;

5 first and second manual operating means mounted on said second end of said control frame; and

means for rotating and translating said elongated member in response to the operation of said first and second manual operating means, respectively.

10 2. The puppet toy described in claim 1 wherein: said second end of said frame is formed for grasping by the palm of the operator's hand with the middle, ring, and little fingers below said second end and the thumb above it;

one of said manual operating means comprises a lever angled upward and forward toward said figure for depressing by the thumb of the operator's hand; and the other of said manual operating means comprises a

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trigger for receiving the index finger of the operator's hand for rearward depressing.

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