



(11) **EP 2 085 129 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
05.08.2009 Bulletin 2009/32

(51) Int Cl.:
A63H 13/02 (2006.01) A63J 19/00 (2006.01)

(21) Application number: **08252726.8**

(22) Date of filing: **18.08.2008**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT
RO SE SI SK TR**
Designated Extension States:
AL BA MK RS

- **Ono, Hiroko**
Tokyo (JP)
- **Kojima, Atsunori**
Hong Kong (HK)
- **Kubota, Takeshi**
Tokyo (JP)

(30) Priority: **31.01.2008 JP 2008021572**

(71) Applicant: **Bandai Co., Ltd.**
Tokyo 111-8081 (JP)

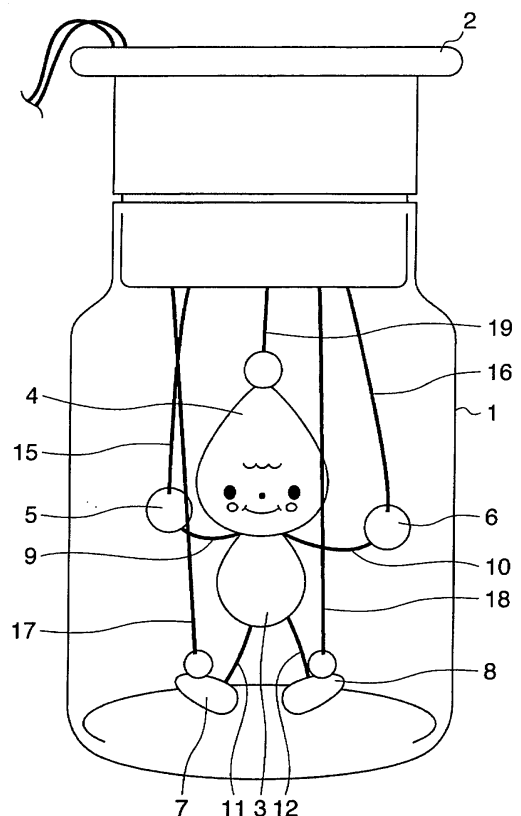
(72) Inventors:
• **Kitsugi, Kaori**
Tokyo (JP)

(74) Representative: **Nicholls, Michael John**
J.A. Kemp & Co.
14 South Square
Gray's Inn
London
WC1R 5JJ (GB)

(54) **Marionette toy**

(57) A marionette toy is provided with a container to accommodate a marionette, a lid for the container, a plurality of suspending members and a driving mechanism. One end of each of the suspending members one is connected to the marionette to suspend the marionette. The driving mechanism drives at least one of the suspending members and is arranged inside the lid.

FIG. 1



Description

[0001] The present invention relates to a marionette toy such as a marionette accommodated in a container.

[0002] It is conventionally proposed to drive a marionette by a solenoid or music box (Japanese Patent Laid-Open No. 48-24838, Japanese Utility Model Laid-Open No. 54-17390, and Japanese Utility Model Registration No. 3110565).

[0003] According to Japanese Patent Laid-Open No. 48-24838, a skeleton marionette is swung by pulling up and down three control strings using three solenoids.

[0004] According to Japanese Utility Model Laid-Open No. 54-17390, a sound input to a microphone or a sound input from the terminal of a stereo system is amplified, and a solenoid is driven by a change in amplified voltage, so that a marionette keeps dancing as far as the sound is input (page 2 of the original specification). A suspension string 12 hanging from a marionette support tool 11 suspends this marionette. An operation compensating spring 10 suspends the marionette support tool 11. With this mechanism, the marionette moves to the left and right largely and claps hands.

[0005] According to Japanese Utility Model Registration No. 3110565, suspension strings connected to the right hand, head, and left hand of a marionette accommodated in a container are swung by a music box.

[0006] In the marionette described in Japanese Patent Laid-Open No. 48-24838, the control strings can be easily entangled with the main body and the suspension string. In addition, the marionette disclosed in Japanese Patent Laid-Open No. 48-24838 requires the three solenoids, increasing the number of components. A driving mechanism such as the solenoids is exposed to spoil the appearance.

[0007] In the marionette described in Japanese Utility Model Laid-Open No. 54-17390, the control strings can be easily entangled likewise because the control strings and suspension string are excessively long for the entire length of the marionette. In particular, the motion of the marionette becomes complicated due to the operation compensating spring, so that the control strings can be easily entangled with the main body and suspension string. As a driving mechanism such as solenoids and springs is exposed, the control strings may be entangled the driving mechanism. Once the string is entangled, it is often difficult to disentangle due to the complicated driving mechanism. The exposed driving mechanism spoils the appearance. The marionette keeps moving as long as a sound is continuously input. This may waste the power.

[0008] According to Japanese Utility Model Registration No. 3110565, the marionette is merely suspended by the control strings at its main body and two hands, and the right and left feet do not move very actively. The driving mechanism including the music box is exposed, and the strings can accordingly be easily entangled with it. Particularly, if the string is entangled with the gear of

the music box or the like, it will be very difficult to disentangle it. The exposed driving mechanism spoils the appearance, as the matter of course. Furthermore, the right and left feet are in contact with the bottom of the container. When the main body moves, the feet may generate noise.

[0009] The present invention has as its feature to solve at least one of the above and other problems. Other problems will be understood throughout the entire specification.

[0010] According to the first aspect of the present invention, there is provided a marionette toy comprising:

- a container to accommodate a marionette;
- a lid for the container;
- a plurality of suspending members one end of each of which is connected to the marionette to suspend the marionette; and
- a driving mechanism which drives at least one of the plurality of suspending members and is arranged inside the lid.

According to the second aspect of the present invention, there is provided a marionette toy wherein the driving mechanism comprises control means which starts operation upon detection of a sound, stops operation after having operated for a predetermined period of time, and shifts to a power saving mode when a sound not less than a threshold is not input for not less than a predetermined period of time after stopping, and the plurality of suspending members have such lengths that at least while the driving mechanism is stopped, two feet of the marionette are spaced apart from a bottom of the container.

[0011] According to the third aspect of the present invention, there is provided a marionette toy wherein the plurality of suspending members include a first string which suspends a right hand of the marionette, a second string which suspends a left hand of the marionette, a third string which suspends a right foot of the marionette, and a fourth string which suspends a left foot of the marionette, and the third string and the fourth string are located in front of the first string and the second string with respect to a front side of a main body of the marionette.

[0012] According to the fourth aspect of the present invention, there is provided a marionette toy wherein the driving mechanism includes

a first seesaw member with one end which locks the first string and the other end which locks the second string, a second seesaw member with one end which locks the third string and the other end which locks the fourth string, driving means which drives the first seesaw member, and motion converting means which transfers motion of the first seesaw member to the second seesaw member and

changes a moving direction of the second seesaw member to be different from a moving direction of the first seesaw direction.

[0013] According to the fifth aspect of the present invention, there is provided a marionette toy wherein the motion converting means includes

a first shaft member which serves as a pivot shaft of the first seesaw member,

a second shaft member which is arranged parallel to the first shaft member, coupled to the first shaft member through a coupling member, and moves along a circular arc when the first seesaw member seesaws, and

a third shaft member which is arranged parallel to the first shaft member and serves as a pivot shaft of the second seesaw member, and

the second shaft member engages with the second seesaw member, and when the second shaft member moves along the circular arc, the second seesaw member seesaws about the third shaft member as a center.

[0014] According to the sixth aspect of the present invention, there is provided a marionette toy wherein the first string and the second string are respectively locked by the first seesaw member through locking members that can be removed from the first seesaw member.

[0015] According to the seventh aspect of the present invention, there is provided a marionette toy wherein the third string and the fourth string are respectively locked by the second seesaw member through locking members that can be removed from the second seesaw member.

[0016] Further features of the present invention will become apparent from the following description of non-limiting embodiments with reference to the attached drawings, in which:

[0017] Fig. 1 is a front view showing the outer appearance of a marionette toy according to an embodiment;

[0018] Fig. 2 is a left side view showing the outer appearance of the marionette toy according to the embodiment in Fig. 1;

[0019] Fig. 3 is a view showing the interior of a lid according to the embodiment in Fig. 1;

[0020] Fig. 4 is a view showing the first seesaw (front surface) according to the embodiment in Fig. 1;

[0021] Fig. 5 is a view showing the first seesaw (rear surface) according to the embodiment in Fig. 1;

[0022] Fig. 6 is a view showing the second seesaw according to the embodiment in Fig. 1;

[0023] Fig. 7 includes views for describing the linked movements of the first and second seesaws according to the embodiment in Fig. 1;

[0024] Fig. 8 is a view showing a solenoid according to the embodiment in Fig. 1;

[0025] Fig. 9 is a view showing bearings which receive the pivot shaft of the second seesaw according to the embodiment in Fig. 1;

[0026] Fig. 10 is a view showing a state in which only the second seesaw according to the embodiment in Fig. 1 is mounted;

[0027] Fig. 11 is a view showing an example of a lock-

ing member for a control string according to the embodiment in Fig. 1;

[0028] Fig. 12 is a view showing a state in which the locking members are locked by the second seesaw according to the embodiment in Fig. 1;

[0029] Fig. 13 shows four holes through which control strings according to the embodiment in Fig. 1 are to be inserted;

[0030] Fig. 14 is a view showing an example of a state in which a marionette according to the embodiment in Fig. 1 operates;

[0031] Fig. 15 is a view showing an example of the state in which the marionette according to the embodiment in Fig. 1 operates;

[0032] Fig. 16 is a block diagram showing a configuration example of a controller according to the embodiment in Fig. 1;

[0033] Fig. 17 is a diagram showing driving pattern examples according to the embodiment in Fig. 1; and

[0034] Fig. 18 is a flowchart of a control method according to the embodiment in Fig. 1.

[0035] Fig. 1 is a front view showing the outer appearance of a marionette toy according to an embodiment. A container 1 is a jar type container for accommodating a marionette and is transparent. More specifically, the container 1 has a jar shape. A jar shape refers to an almost cylindrical shape with one end closed. Usually, the closed end of a container is called the "bottom", and the other open end of the container is called the "mouth". As the container 1 is transparent, the marionette contained in the container 1 can be seen externally.

[0036] The mouth of the container 1 is provided with a detachable lid 2. The lid 2 may be tapered. That surface of the lid 2 which is to come into contact with the inner surface of the mouth of the container 1 may be provided with an elastic material such as rubber. This aims at preventing the lid 2 from accidental disengagement while facilitating engagement/removal of the lid 2.

[0037] The main body of the marionette comprises a torso 3 and head 4. The torso 3, the head 4, a right hand 5, a left hand 6, a right foot 7, and a left foot 8 are made of, e.g., an ABS resin. A right arm 9 which links the torso 3 and right hand 5, a left arm 10 which links the torso 3 and left hand 6, a right leg 11 which links the torso 3 and right foot 7, and a left leg 12 which links the torso 3 and left foot 8 are formed of threads such as polyamide-based synthetic fibers (e.g., nylon (registered trademark)).

[0038] The right hand 5 is connected to one end of a control string 15. The control string 15 is an example of the first string that suspends the right hand of the marionette. The other end of the control string 15 is connected to one end of the first seesaw through a cylindrical member (to be described later).

[0039] The left hand 6 is connected to one end of a control string 16. The control string 16 is an example of the second string that suspends the left hand of the marionette. The other end of the control string 16 is connected to the other end of the first seesaw through a cylindrical

member (to be described later). The control strings 15 and 16 are an example of a plurality of suspending members one end of each of which is connected to the marionette to suspend it.

[0040] The right foot 7 is connected to one end of a control string 17. The control string 17 is an example of the third string that suspends the right foot of the marionette. The other end of the control string 17 is connected to one end of the second seesaw through a cylindrical member (to be described later). The left foot 8 is connected to one end of a control string 18. The control string 18 is an example of the fourth string that suspends the left foot of the marionette. The other end of the control string 18 is connected to the other end of the second seesaw through a cylindrical member (to be described later).

[0041] Desirably, the control strings 17 and 18 are respectively connected to the toes of the corresponding feet, or front instep portions of the feet. Then, the control strings 17 and 18 can be respectively arranged in front of the control strings 15 and 16 which serve to suspend the hands. More specifically, if the control strings 17 and 18 are spaced apart from the control strings 15 and 16, the control strings can be suppressed from being entangled with each other.

[0042] A suspension string 19 connects the head 4 to the lid 2. The control strings 17, 18 and 19 give an example of a plurality of suspending members one end of each of which is connected to the marionette to suspend it.

[0043] Although the control strings 15 to 18 are driven by a driving mechanism provided inside the lid 2, the suspension string 19 is not driven. The suspension string 19 may be replaced by a control string which is driven by the driving mechanism.

[0044] Fig. 2 is a left side view showing the outer appearance of the marionette toy according to this embodiment. As described above, the control strings 17 and 18 are located in front of the control strings 15 and 16 with respect to the front side of the main body of the marionette. This aims at suppressing entanglement of the control strings.

[0045] Referring to Fig. 2, the two feet are both spaced apart from the bottom of the container 1. The lengths of the control strings 17 and 18 are set such that this separate state is maintained at least while the driving mechanism is stopped. The lengths of the control strings 17 and 18 may be set such that the separate state is maintained also when the right and left feet 7 and 8 are driven. This can suppress noise which can occur when the right and left feet 7 and 8 accidentally come into contact with the bottom to cause a malfunction.

[0046] Referring to Figs. 1 and 2, the insteps of the right and left feet 7 and 8 are respectively provided with spherical weights. This prevents the toes of the right and left feet 7 and 8 from facing up when pulling the corresponding control strings upward.

[0047] Fig. 3 is a view showing the interior of the lid

according to this embodiment. The lid 2 is halved into an upper portion and a lower portion 30. A first seesaw 31 and second seesaw 32 are axially supported inside the lower portion 30. One end of the first seesaw 31 locks the control string 15, and the other end of the first seesaw 31 locks the control string 16. One end of the second seesaw 32 locks the control string 17, and the other end of the second seesaw 32 locks the control string 18.

[0048] Fig. 4 is a view showing the first seesaw (front surface) according to this embodiment. The first seesaw 31 is formed such that a pivot shaft 34 can be fitted and inserted in it, and seesaws about the pivot shaft 34 as the center. The pivot shaft 34 is an example of the first shaft member serving as the pivot shaft of the first seesaw member.

[0049] The two arms of the first seesaw 31 are provided with locking portions 39 and 33 at their distal ends. The locking portions 39 and 33 respectively lock almost cylindrical locking members (to be described later). Note that the locking portion 39 locks the control string 15, and that the locking portion 33 locks the control string 16.

[0050] The first seesaw 31 is provided with two magnets 36 and 37. The magnetic poles of the magnets 36 and 37 on a side seen in Fig. 2 differ. When the first seesaw 31 is mounted in the lid 2, a solenoid serving as a driving means is arranged on a side opposing the magnets 36 and 37. The direction of the magnetic field generated by the solenoid is changed by switching the direction of the current flowing to the solenoid. This serves as the driving force of the first seesaw 31. The magnets 36 and 37 may be, e.g., permanent magnets, but can be electromagnets such as solenoids. One of the magnets 36 and 37 may be a ferromagnetic body, and the remaining one may be omitted.

[0051] Fig. 5 is a view showing the first seesaw (rear surface) according to this embodiment. A pin 35 is arranged under the pivot shaft 34 to be parallel to it. A coupling member 38 couples the pin 35 to the pivot shaft 34. When the first seesaw 31 seesaws, the pin 35 moves along a circular arc about the pivot shaft 34 as the center. The pin 35 serves to transfer the driving force to the second seesaw 32. In this manner, the pin 35 is an example of the second shaft member that is arranged parallel to the first shaft member, is coupled to the first shaft member through a coupling member, and moves along a circular arc when the first seesaw member seesaws.

[0052] Fig. 6 is a view showing the second seesaw according to this embodiment. A pivot shaft 41 is fitted and inserted in the second seesaw 32. The pivot shaft 41 is arranged parallel to the pivot shaft 34 and pin 35. The second seesaw 32 seesaws about the pivot shaft 41 as the center. The pivot shaft 41 is an example of the third shaft member that is arranged parallel to the first shaft member and serves as the pivot shaft of the second seesaw member.

[0053] The second seesaw 32 is provided with followers 43 and 44 at its upper portion to receive the pin 35 described above. The pin 35 engages in a U-shaped

groove 45 formed between the two followers 43 and 44. As the second shaft member (pin 35) engages with the second seesaw member (second seesaw 32) in this manner, when the second shaft member moves along a circular arc, the second seesaw member seesaws about the third shaft member (pivot shaft 41) as the center.

[0054] Fig. 7 includes views for describing the movements of the cooperated first and second seesaws according to this embodiment. As is seen from Fig. 7, the moving direction of the first seesaw 31 is different from that of the second seesaw 32. More specifically, when the first seesaw 31 ascends to the right (descends to the left), the second seesaw 32 descends to the right (ascends to the left). On the contrary, when the second seesaw 32 ascends to the right, the first seesaw 31 descends to the right. This is because the pivot shafts 34 and 41 are axially supported by the corresponding bearings inside the lid. When the pin 35 moves interlocked to the motion of the first seesaw 31 to the left and right along a circular arc, the second seesaw 32 moves in the opposite direction through the groove 45 serving as an engaging portion.

[0055] In this manner, the members such as the pivot shaft 34, pin 35, coupling member 38, pivot shaft 41, followers 43 and 44, groove 45, and the like operate like a kind of toggle mechanism. More specifically, these members give an example of a motion converting means which transfers the motion of the first seesaw member to the second seesaw member and changes the moving direction of the second seesaw member to be different from that of the first seesaw member.

[0056] Fig. 8 is a view showing a solenoid according to this embodiment. The solenoid 51 is arranged at the position to oppose the magnets 36 and 37 described above. A bearing 52 to receive one end of the pivot shaft 34 is arranged almost above the solenoid 51. A bearing 53 to receive the other end of the pivot shaft 34 is arranged to oppose the bearing 52.

[0057] Fig. 9 is a view showing bearings which receive the pivot shaft of the second seesaw according to this embodiment. Bearings 54 and 55 of the pivot shaft 41 are arranged almost under the bearing 53 at a more inner (center) side of the lid 2.

[0058] Fig. 10 is a view showing a state in which only the second seesaw according to this embodiment is mounted. The second seesaw 32 is mounted at a position lower than that of the first seesaw 31. Hence, during assembly, the second seesaw 32 is mounted inside the lid 2 first.

[0059] Fig. 11 is a view showing an example of a locking member for the control string according to this embodiment. Locking members 61 are made of a flexible material such as an ABS resin and almost cylindrical. Each locking member 61 has a space (a groove) extending inward from one end. The locking portions 39 and 32, a locking portion 42, and the like engage with this space. The locking portions 39, 32, and 42 have pin-like projections which engage with a recess formed on the inner

side of the locking member 61. More specifically, the locking portions are sandwiched by the locking member.

[0060] Since each locking member 61 is made of the flexible material such as the ABS resin, it can be easily removed from the locking portions 39, 32, and 42. The control string is locked at one end of the locking member 61. The suspension string 19 may employ a similar locking member.

[0061] Fig. 12 is a view showing a state in which the locking members are locked by the second seesaw according to this embodiment. Locking members 61 are fitted in the respective locking portions of the second seesaw 32. In the first seesaw 31 as well, locking members 61 are fitted in the respective locking portions.

[0062] Fig. 13 shows four holes through which the control strings according to this embodiment are to be inserted. Holes 71 to 74 are formed in the bottom of the lid 2 so that the control strings 15 to 18 can respectively extend through them.

[0063] Figs. 14 and 15 are views showing examples of a state in which the marionette according to this embodiment operates. As the first and second seesaws 31 and 32 described above move in the opposite directions, the hands and feet move in the opposite directions.

[0064] Fig. 16 is a block diagram showing a configuration example of a controller according to this embodiment. The controller is arranged on the upper portion of the lid 2 except for the solenoid 51. Upon detection of a sound through a microphone 81, a controller 80 drives the solenoid 51 to start operation of the driving mechanism. When it is determined via a timer 85 that the driving mechanism has operated for a predetermined period of time, the controller 80 stops power supply to the solenoid 51. This stops the mechanism. After the stop, if a sound equal to or exceeding a threshold is not input from the microphone 81 for a predetermined period of time or more, the controller 80 shifts to a power saving mode. In the power saving mode, the controller 80 stops detection of an input sound until a power switch 83 is operated again. This can economize the power of a battery 82.

A memory 84 stores the driving patterns of the solenoid 51 corresponding to the marionette dance patterns. The controller 80 selects one of the plurality of driving patterns and drives the solenoid 51 using the selected pattern.

[0065] Fig. 17 is a diagram showing driving pattern examples according to this embodiment. In this case, four driving patterns A, B, C, and D are shown. The four driving patterns A, B, C, and D may be selected with the same probability, or with different probabilities.

[0066] In these driving patterns, the right hand and left foot, or the left hand and right foot may move upward twice or more continuously. In this continuous driving, the hand and foot may stay at the upper position. Alternatively, after each time the hand and foot are driven, they may be restored to the neutral position and may move upward again. The action of the marionette will be more rhythmic in the latter case.

[0067] Fig. 18 is a flowchart of a control method ac-

cording to this embodiment. In step S90, when the power switch 83 is turned on, the controller 80 starts operation upon reception of the power supplied from the battery 82.

[0068] In step S91, the controller 80 counts a predetermined period of time using the timer 85, and checks whether or not a sound is input from the microphone 81 before the predetermined period of time is counted. When the sound is input, the process advances to step S92.

[0069] In step S92, the controller 80 stops monitoring the sound input from the microphone 81. This prevents the marionette from continuous operation by the sound generated by its action.

[0070] In step S93, the controller 80 generates a random number. The number of random numbers to be generated coincides with, e.g., the number of driving patterns stored in the memory 84.

[0071] In step S94, the controller 80 selectively reads out a driving pattern corresponding to the generated random number from the memory 84, and drives the solenoid 51 in accordance with the readout driving pattern.

[0072] In step S95, the controller 80 determines whether or not to stop driving the solenoid 51. For example, the determination criterion can include whether or not lapse of a predetermined period of time is confirmed from the output of the timer 85, or whether or not the same driving pattern is repeated a predetermined number of times. When driving is ended, the process advances to step S96.

[0073] In step S96, the controller 80 resumes monitoring the sound input from the microphone 81.

[0074] In step S97, the controller 80 counts a predetermined period of time using the timer 85, and checks whether or not a sound is input from the microphone 81 before the predetermined period of time is counted. When a sound is input, the process returns to step S93. If no sound is input, the flow advances to step S98.

[0075] In step S98, the controller 80 performs auto power off as an example of the power saving mode. When auto power off is performed, power consumption of the battery 82 is suppressed until the power switch 83 is operated again. As the power saving mode, the controller 80 may intermittently monitor the microphone input without completely disconnecting power supply. In this case, the process advances to step S92 when a sound is input to the microphone 81 again.

[0076] As has been described above, according to this embodiment, the driving mechanism is built in the lid of the container, so that string entanglement can be suppressed while maintaining the good appearance.

[0077] Although the above embodiment is exemplified by a marionette, another object that cannot be called a puppet may be employed. Although the sound is employed in the above embodiment as an example of a phenomenon to be detected by the controller, a physical phenomenon (e.g., vibration, light, or electromagnetic waves) other than the sound may be employed.

[0078] According to the first aspect of the present in-

vention, since the driving mechanism to drive the marionette is arranged inside the lid of the container, entanglement of the string with the driving mechanism can be suppressed while maintaining the good appearance. Even if the control string is entangled with the marionette or the like, it may be easily disentangled by removing the lid from the container.

[0079] According to the second aspect of the present invention, even when the marionette operates upon detection of a sound, power conservation is facilitated. When the two feet of the marionette easily come into contact with the bottom of the container, if accidental vibration occurs in the standby state after the operation is stopped, the two feet strike the bottom of the container to generate noise. When noise is generated, the marionette keeps operating undesirably. By employing a structure in which the feet of the marionette do not easily come into contact with the bottom of the container, a state such as continuous operation of the marionette can be suppressed.

[0080] According to the third aspect of the present invention, even if a plurality of strings are employed to suspend the two hands and two feet, the strings which suspend the two hands and the strings which suspend the two feet are spaced apart from each other. Thus, the strings are not easily entangled with each other.

[0081] According to the fourth aspect of the present invention, since the motion of the first seesaw member can be transferred to the second seesaw member, the number of driving means such as a motor and solenoid can be reduced to one. The driving mechanism becomes compact and can be easily built inside the lid of the container. Also, the moving direction of the second seesaw member can be changed to be different from that of the first seesaw member. Hence, despite the simple mechanism, the marionette can move in a complicated manner.

[0082] According to the fifth aspect of the present invention, a comparatively simple arrangement can realize a motion converting means. This can provide a toy that is not broken easily and advantageous in terms of the manufacturing cost.

[0083] According to the sixth and seventh aspects of the present invention, the respective strings are locked by the seesaw members through the locking members removable from the seesaw members. Even if the strings are entangled with each other, they can be disentangled easily by removing the locking members.

[0084] As many apparently widely different embodiments of the present invention can be made without departing from the spirit and scope thereof, it is to be understood that the invention is not limited to the specific embodiments thereof except as defined in the appended claims.

[0085] This application claims the benefit of Japanese Patent Application No. 2008-021572 filed on January 31, 2008, which is hereby incorporated by reference herein in its entirety.

Claims**1.** A marionette toy comprising:

a container to accommodate a marionette; 5
 a lid for said container;
 a plurality of suspending members one end of each of which is connected to said marionette to suspend said marionette; and
 a driving mechanism which drives at least one of said plurality of suspending members and is arranged inside said lid. 10

2. The toy according to claim 1, wherein said driving mechanism comprises control means which starts operation upon detection of a sound, stops operation after having operated for a predetermined period of time, and shifts to a power saving mode when a sound not less than a threshold is not input for not less than a predetermined period of time after stopping, and said plurality of suspending members have such lengths that at least while said driving mechanism is stopped, two feet of said marionette are spaced apart from a bottom of said container. 15 20 25**3.** The toy according to claim 1 or 2, wherein said plurality of suspending members include a first string which suspends a right hand of said marionette, 30
 a second string which suspends a left hand of said marionette,
 a third string which suspends a right foot of said marionette, and
 a fourth string which suspends a left foot of said marionette, and 35
 said third string and said fourth string are located in front of said first string and said second string with respect to a front side of a main body of said marionette. 40**4.** The toy according to claim 3, wherein said driving mechanism includes a first seesaw member with one end which locks said first string and the other end which locks said second string, 45
 a second seesaw member with one end which locks said third string and the other end which locks said fourth string,
 driving means which drives said first seesaw member, and 50
 motion converting means which transfers motion of said first seesaw member to said second seesaw member and changes a moving direction of said second seesaw member to be different from a moving direction of said first seesaw direction. 55**5.** The toy according to claim 4, wherein

said motion converting means includes
 a first shaft member which serves as a pivot shaft of said first seesaw member,
 a second shaft member which is arranged parallel to said first shaft member, coupled to said first shaft member through a coupling member, and moves along a circular arc when said first seesaw member seesaws, and
 a third shaft member which is arranged parallel to said first shaft member and serves as a pivot shaft of said second seesaw member, and
 said second shaft member engages with said second seesaw member, and when said second shaft member moves along the circular arc, said second seesaw member seesaws about said third shaft member as a center.

6. The toy according to claim 4 or 5, wherein said first string and said second string are respectively locked by said first seesaw member through locking members that can be removed from said first seesaw member.**7.** The toy according to claim 4, 5 or 6, wherein said third string and said fourth string are respectively locked by said second seesaw member through locking members that can be removed from said second seesaw member.

FIG. 1

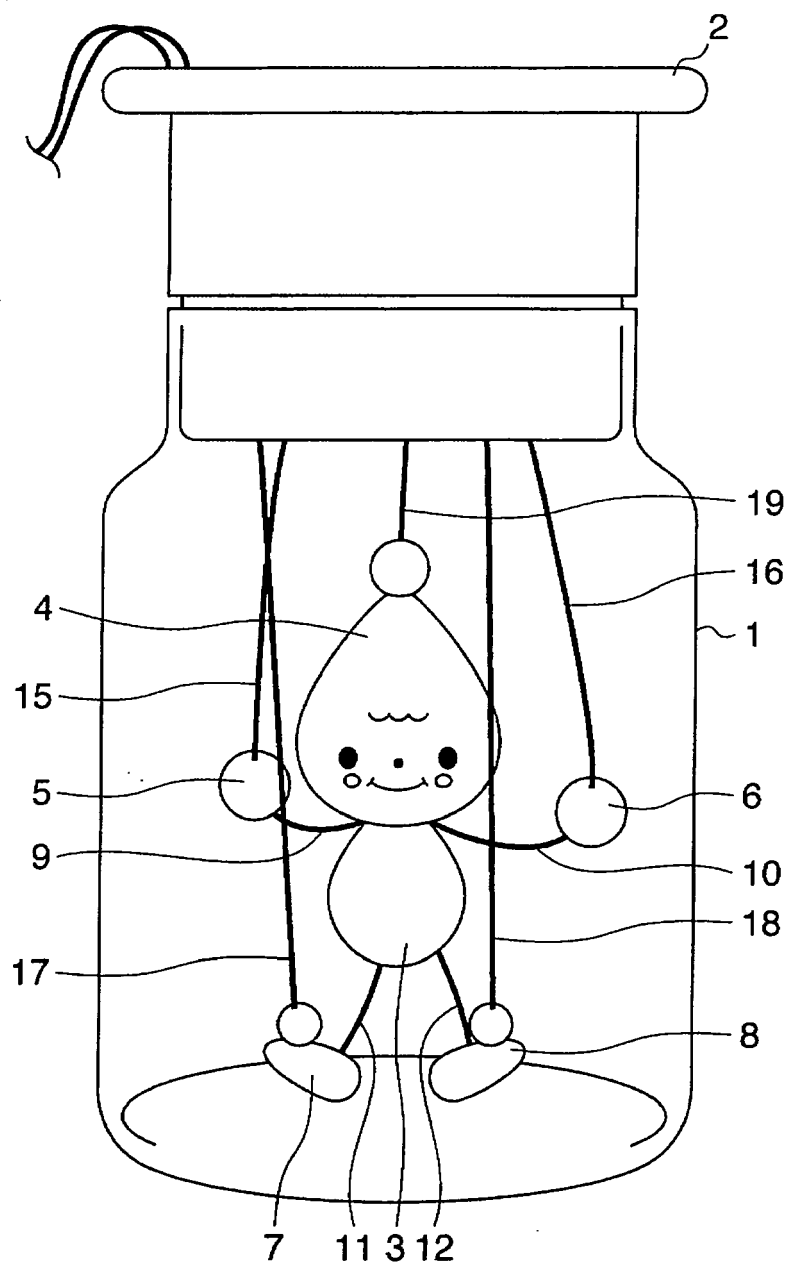


FIG. 2

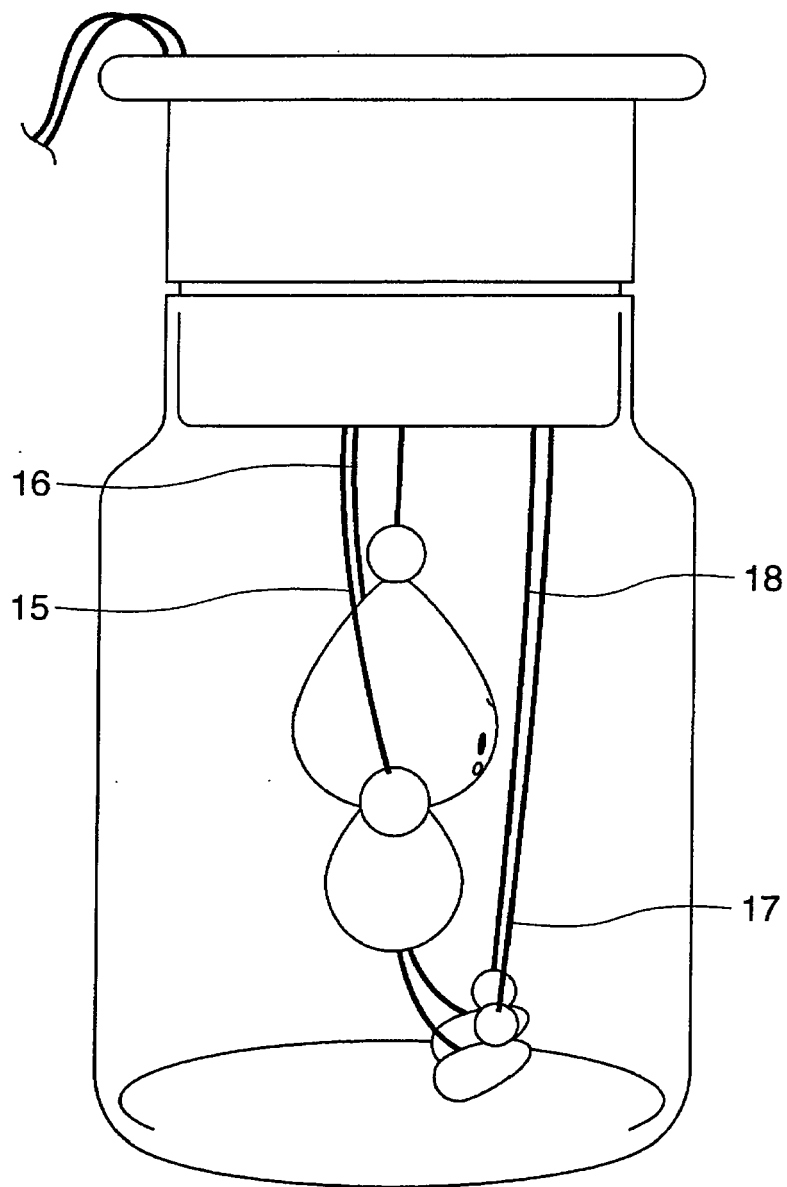


FIG. 3

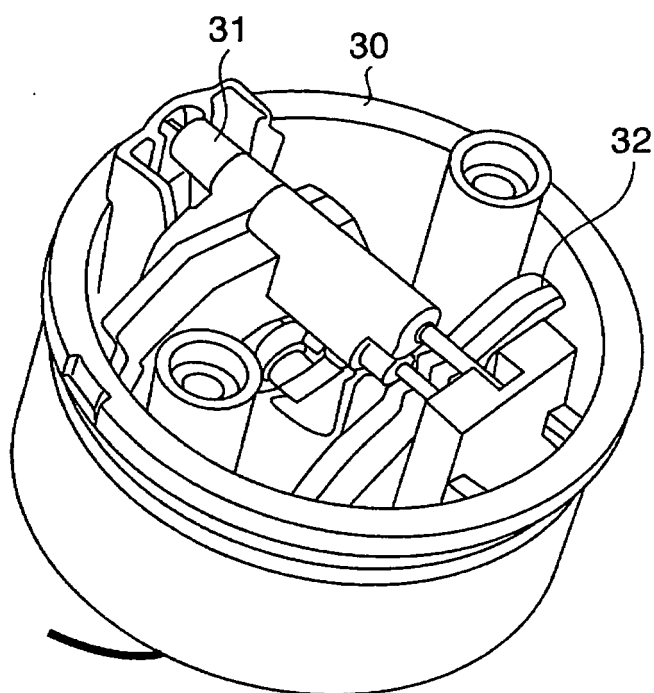


FIG. 4

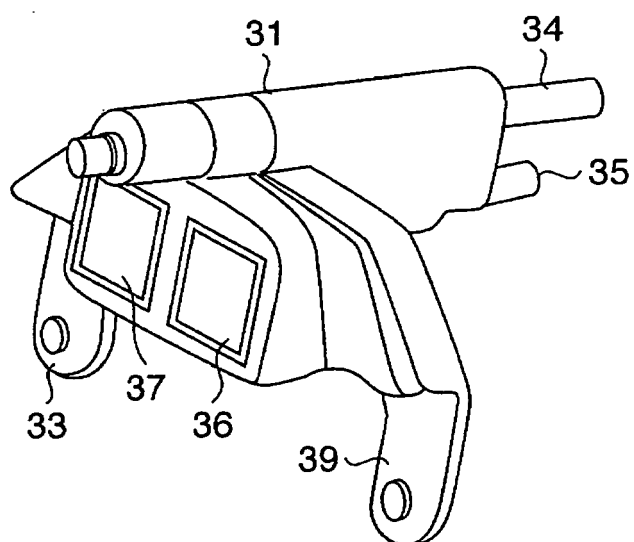


FIG. 5

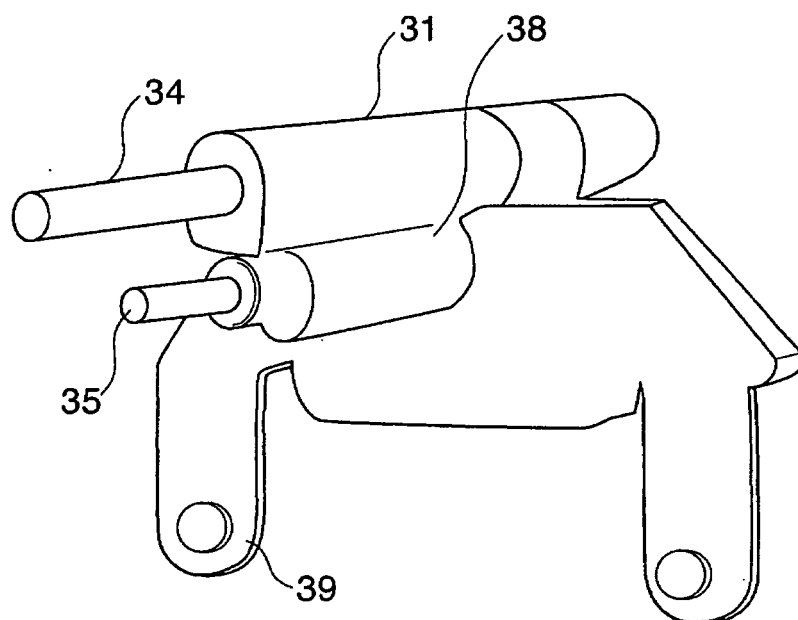


FIG. 6

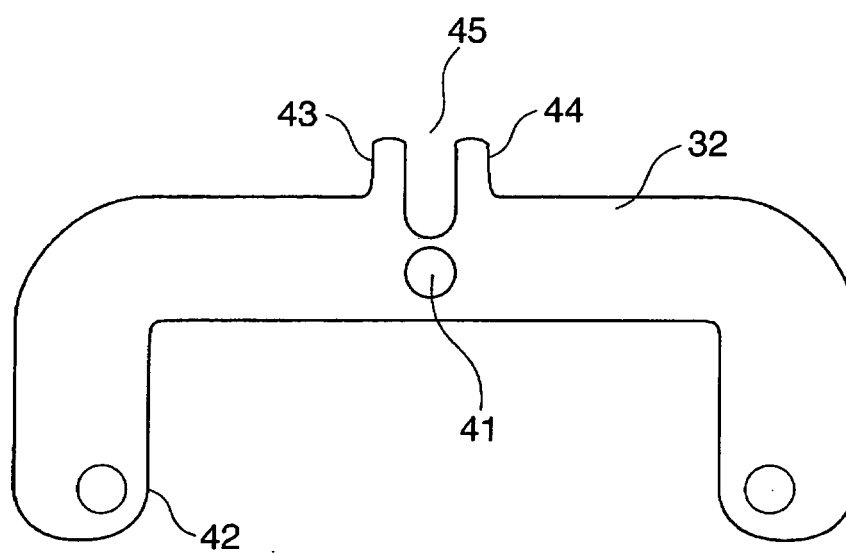


FIG. 7

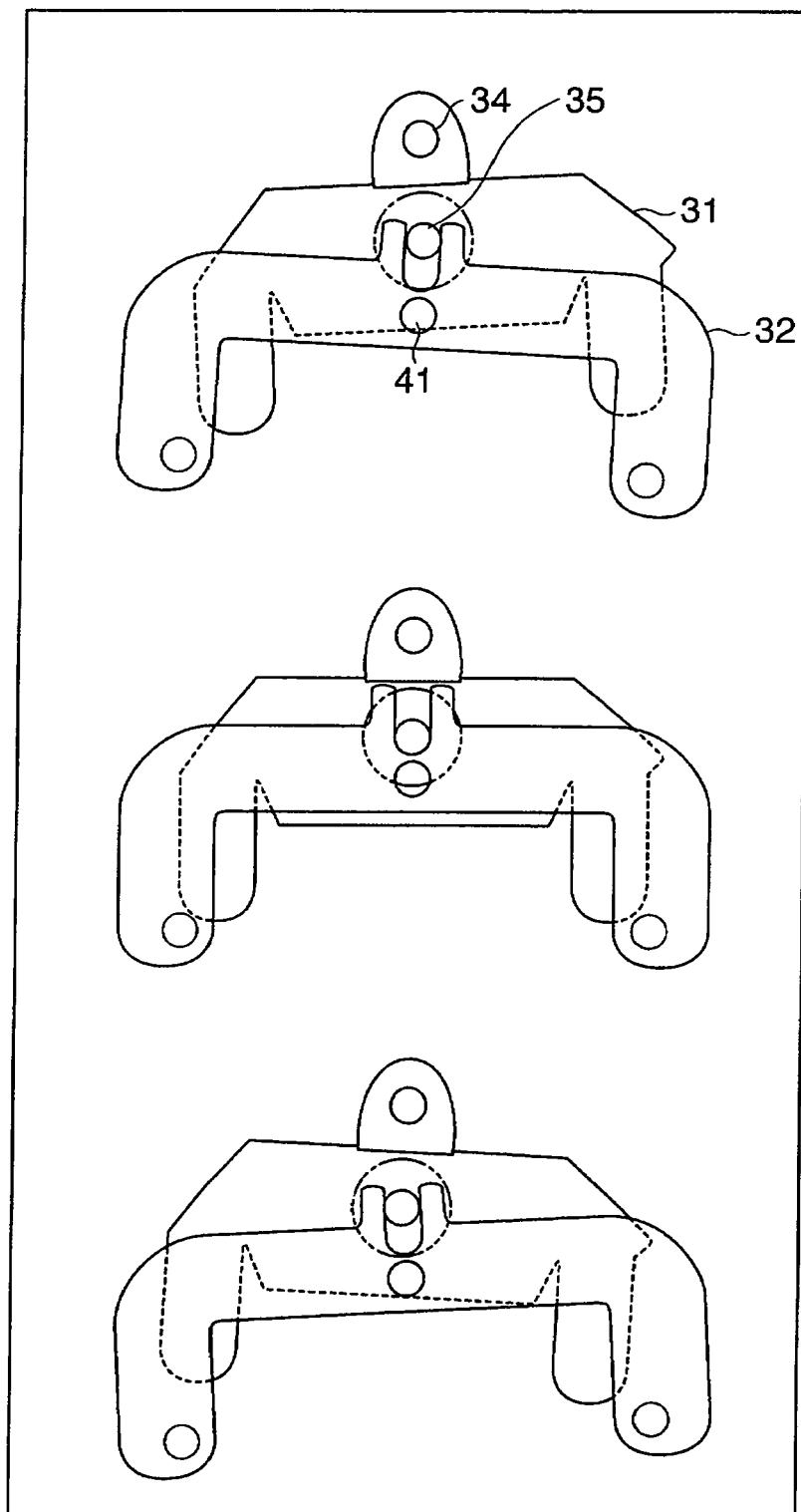


FIG. 8

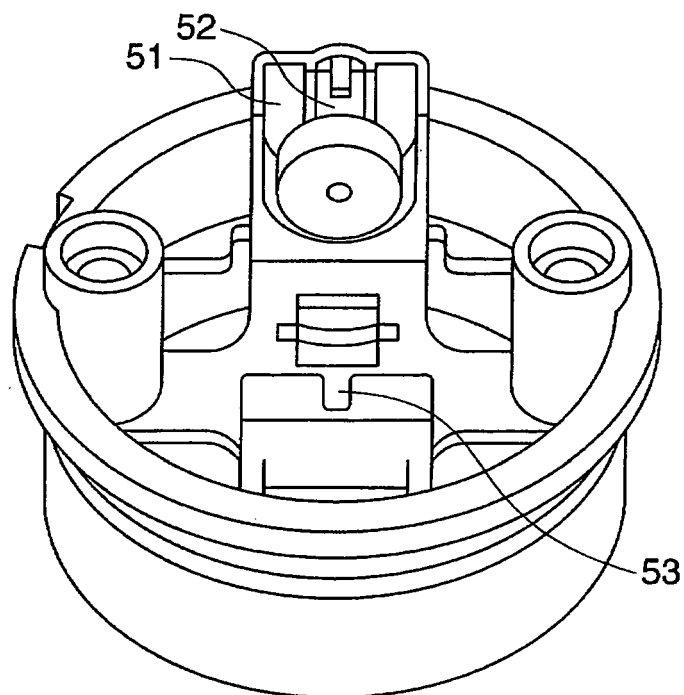


FIG. 9

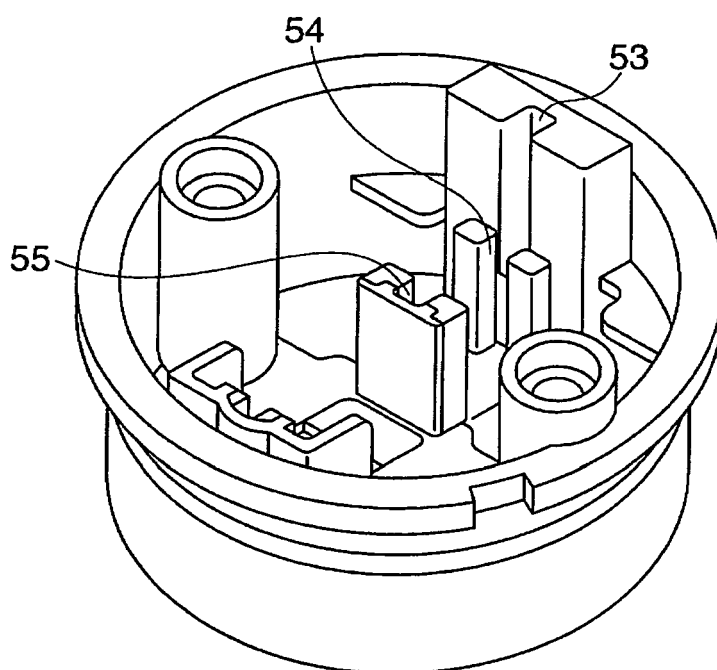


FIG. 10

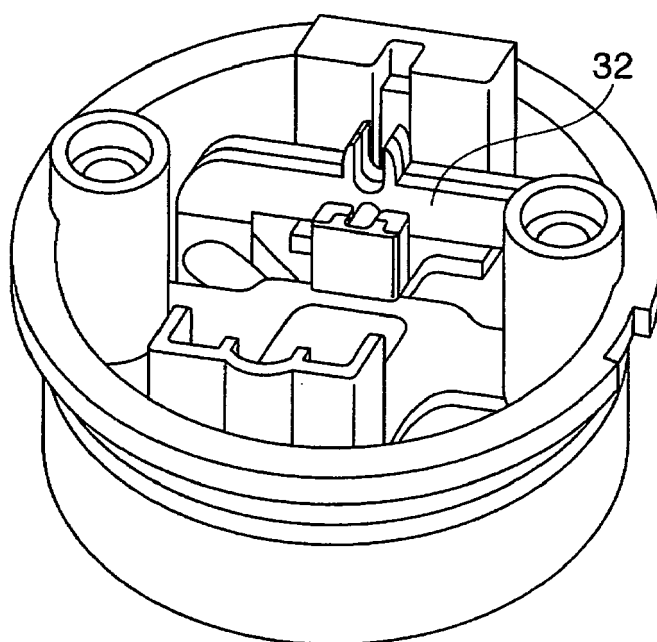


FIG. 11

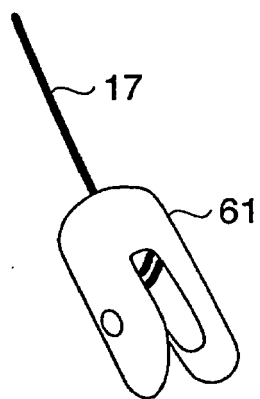


FIG. 12

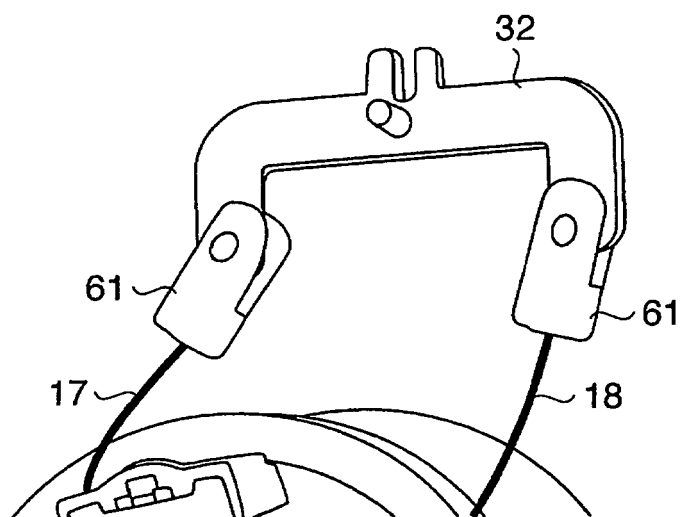


FIG. 13

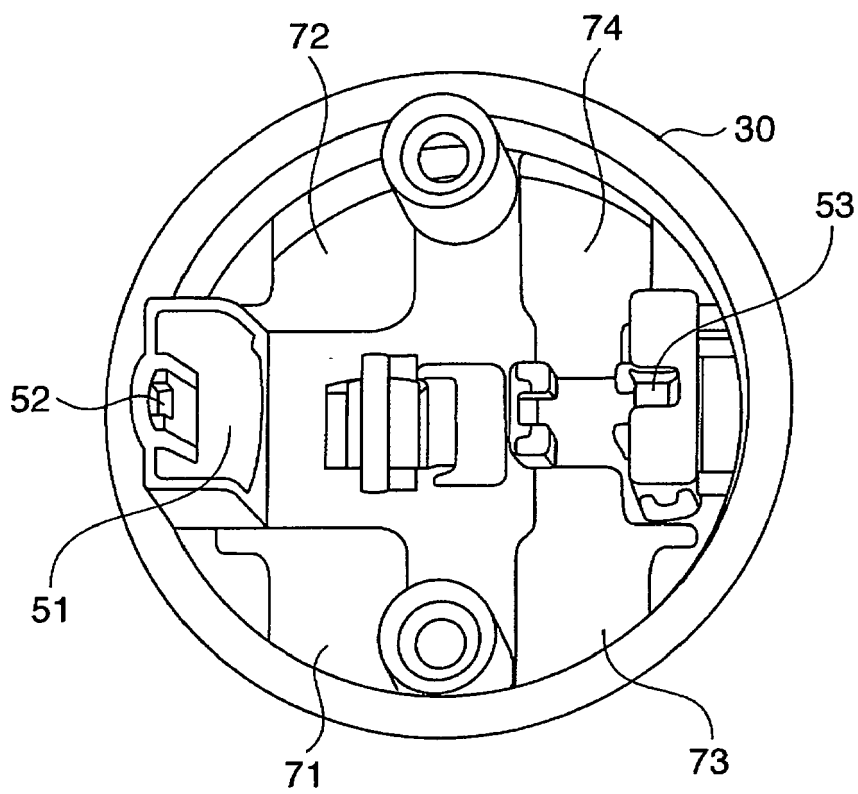


FIG. 15

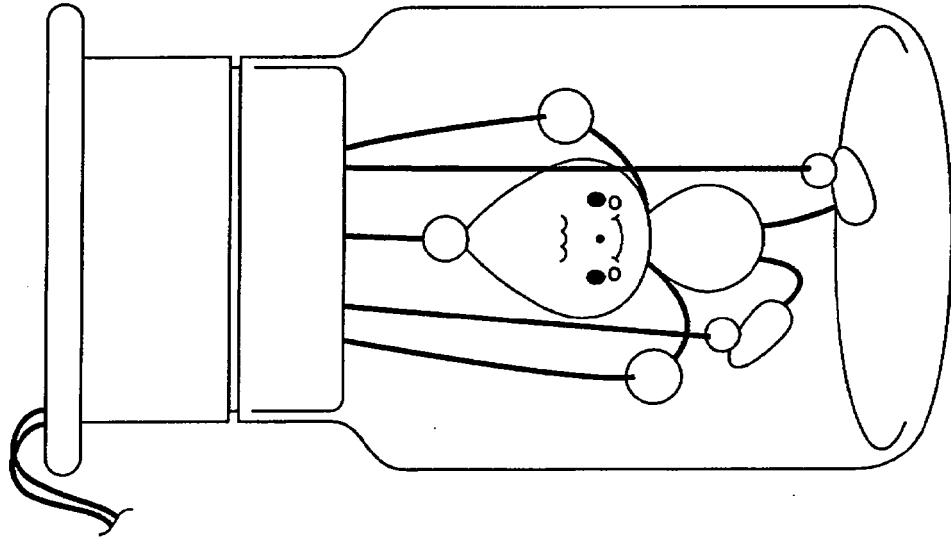


FIG. 14

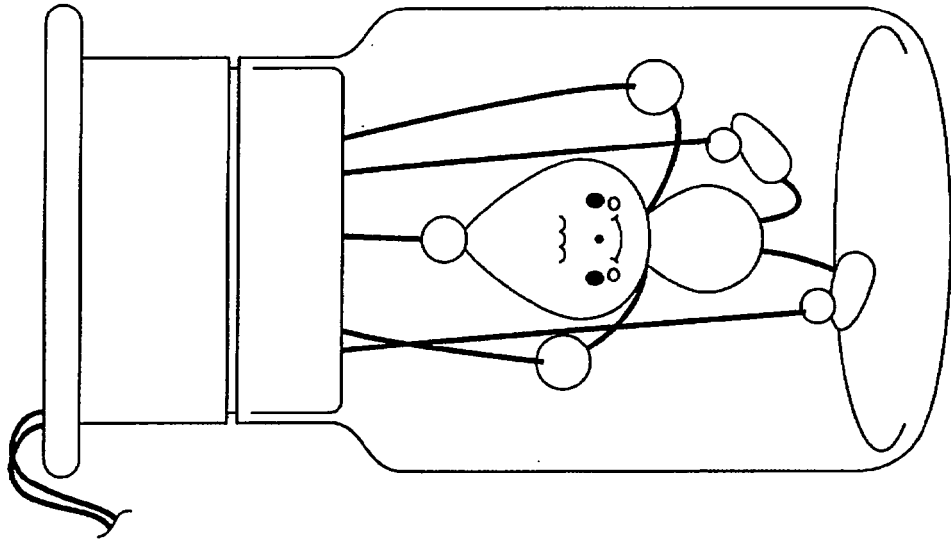
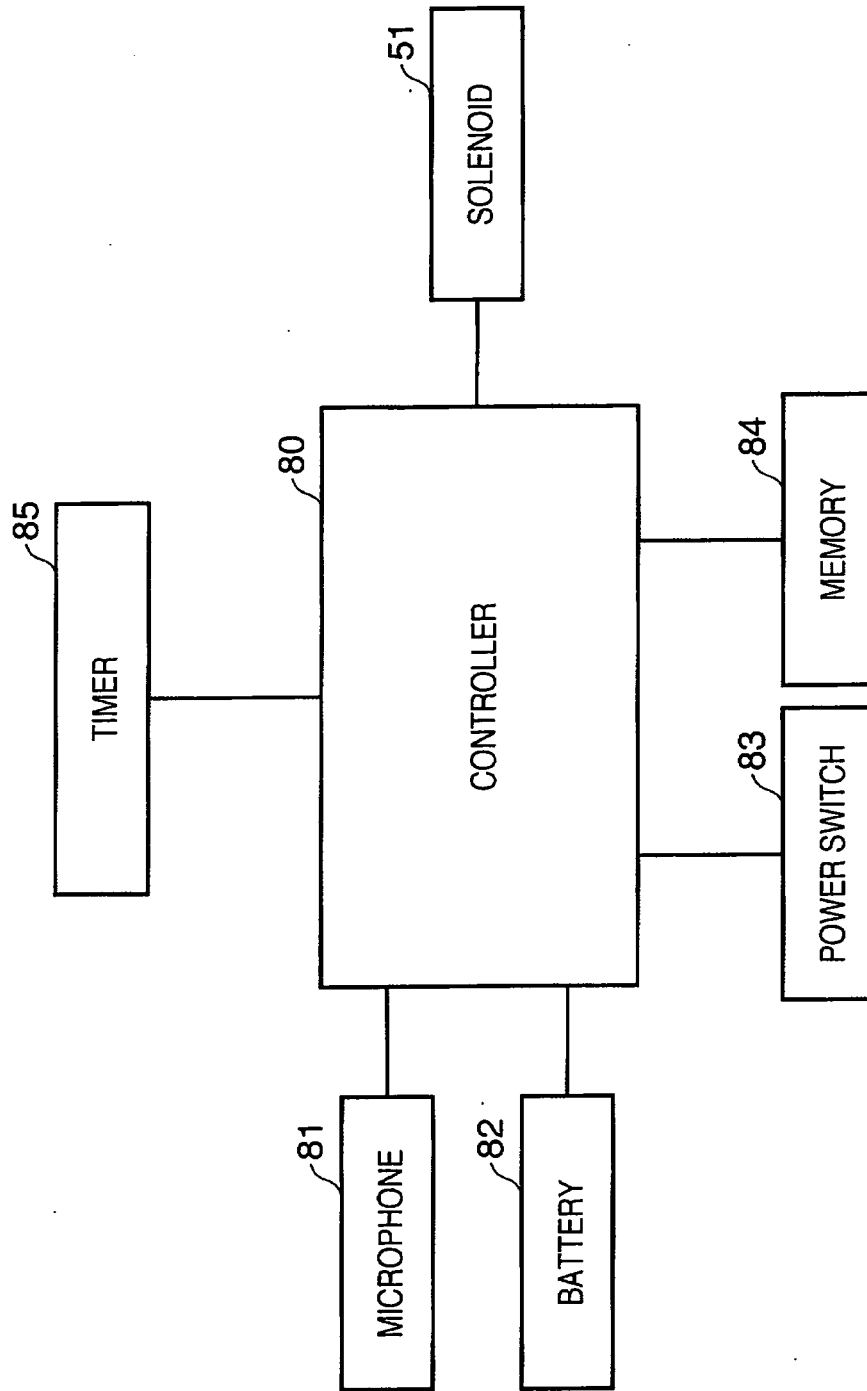


FIG. 16



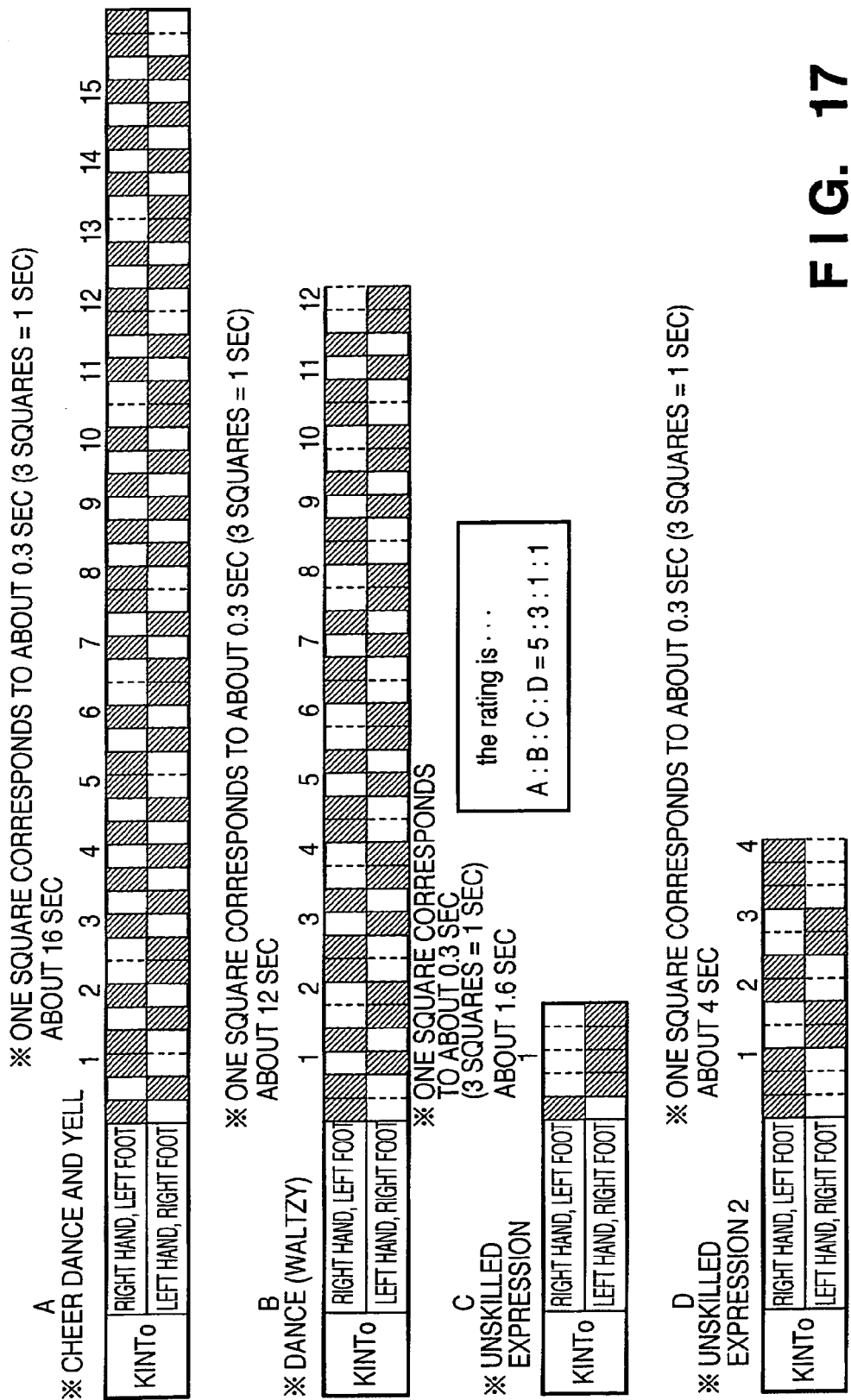
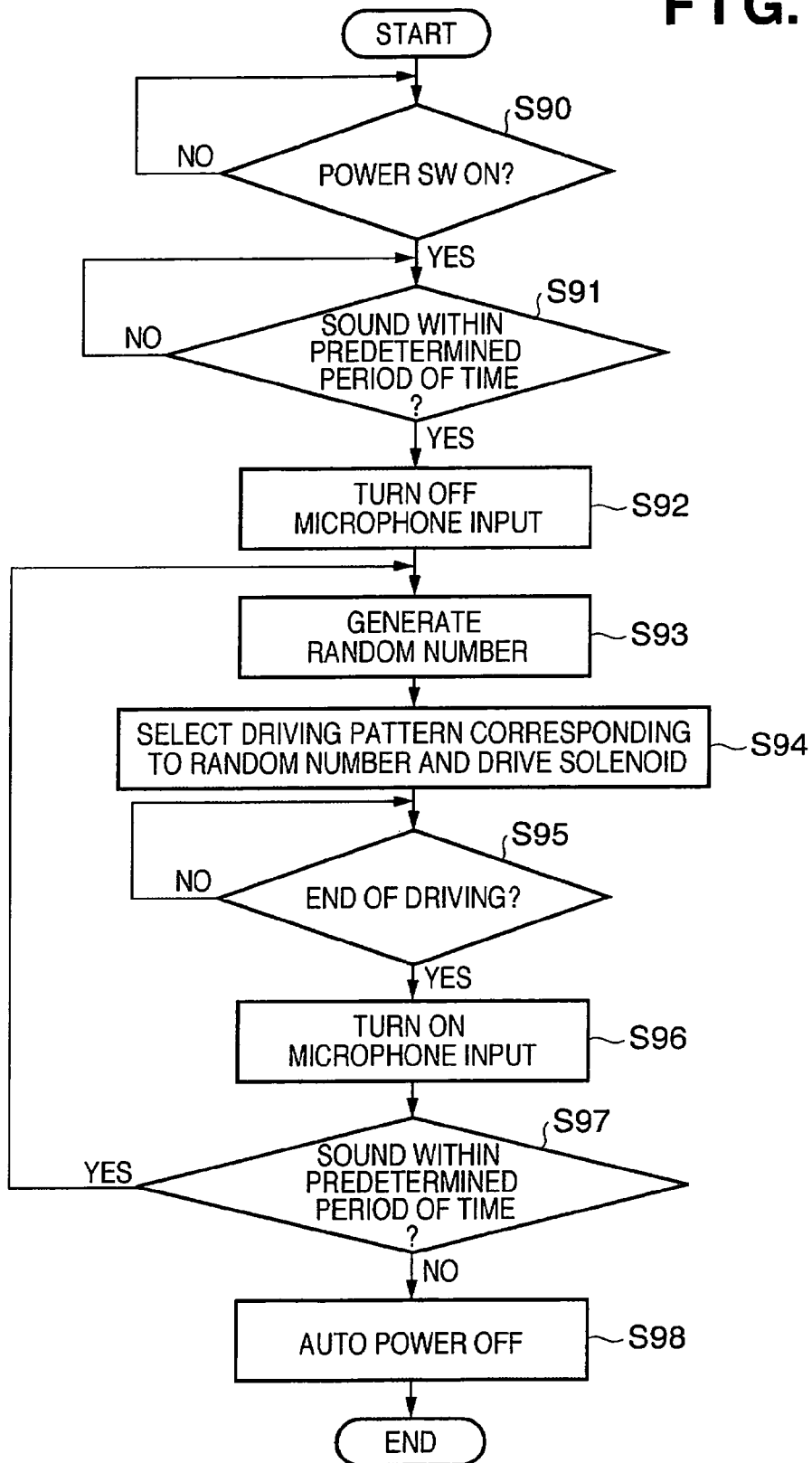


FIG. 17

FIG. 18





EUROPEAN SEARCH REPORT

Application Number
EP 08 25 2726

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 94 20 499 U1 (DUEWELHENKE GABRIELE [DE]) 16 February 1995 (1995-02-16) * claim 1; figures *	1	INV. A63H13/02 A63J19/00
A	EP 1 033 159 A (GIOCHI PREZIOSI LUSSEMBURGO S [LU]) 6 September 2000 (2000-09-06) * paragraphs [0038], [0047], [0048]; figures *	1	
A	US 2 629 966 A (RUSS JOHN A) 3 March 1953 (1953-03-03) * column 1, line 54 - column 5, line 11; figures *	1	
A	US 4 297 806 A (ILKCAGLA EDWARD A) 3 November 1981 (1981-11-03) * column 1, line 37 - line 53; figures *	1	
A	US 862 625 A (T.V.FIELD) 6 August 1907 (1907-08-06) * page 1, line 35 - line 105; figures *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			A63J A63H
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 7 November 2008	Examiner Lucas, Peter
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

 2
EPO FORM 1503.03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 08 25 2726

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

07-11-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 9420499	U1	16-02-1995	NONE
EP 1033159	A	06-09-2000	AU 2541299 A 21-09-2000 WO 0051698 A1 08-09-2000
US 2629966	A	03-03-1953	NONE
US 4297806	A	03-11-1981	NONE
US 862625	A		NONE

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- JP 48024838 A [0002] [0003] [0006] [0006]
- JP 54017390 A [0002] [0004] [0007]
- JP 3110565 B [0002] [0005] [0008]
- JP 2008021572 A [0085]