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(71) Applicant (for all designated States except US): MAT-
TEL, INC. [US/US]; 333 CONTINENTAL BOULE-
VARD, El Segundo, CA 90245-5012 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): DE LA TORRE,

Gabriel [US/US]; 6603 CHALET DRIVE, Bell Gardens,
CA 90201 (US).

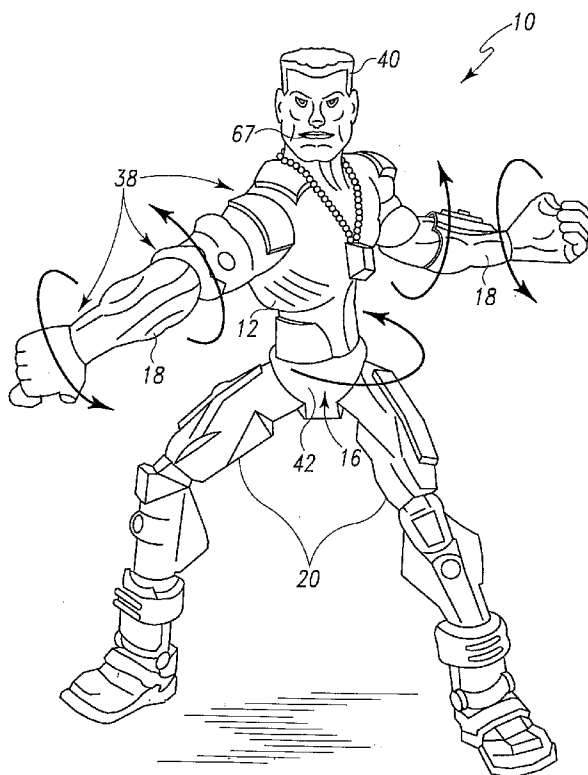
(74) Agent: MOHR, Joseph, A.; KOLISCH HARTWELL,
P.C., 520 S.W. YAMHILL STREET, SUITE 200, Portland,
OR 97204 (US).

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[Continued on next page]

(54) Title: CUSTOMIZABLE ACTION FIGURES



(57) Abstract: Customizable action figures comprising a torso, a transmission mechanism supported in the torso, and an appendage operatively connected to the transmission mechanism. In some examples, the customizable action figures may include an upper torso rotatably connected to a lower torso. In some examples, the customizable action figures may include an appendage having a plurality of segments, with each segment configured to move relative to one or more neighboring segments. In some examples, the customizable action figures may include a set of arms, with each arm being configured to be selectively coupled to the transmission mechanism, or each arm may be configured to move differently than an other arm in the set.

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CUSTOMIZABLE ACTION FIGURES

Related Applications

[0001] This application claims priority under 35 U.S.C. § 119(e) to U.S. Provisional Application No. 60/734,710 filed on November 7, 2005 and U.S. Patent Application Serial No. _____, filed on November 7, 2006, the disclosure of which is incorporated herein by reference for all purposes.

Background

[0002] Action figures provide entertainment to persons using them. Customizable action figures may include a torso, a transmission mechanism supported in the torso, and an appendage operatively connected to the transmission mechanism. A torso may house the transmission mechanism. Action figures may have various shapes, such as the shape of a human, an animal, a robot, or a fanciful creature. A transmission mechanism may drive an appendage to move and may comprise interconnected gears and levers. The appendage may resemble an arm, leg, or other extremity, and it may have segments that move with one or more degrees of freedom.

[0003] Examples of customizable action figures are found in U.S. Patent Nos. 1,270,781; 1,359,030; 1,456,422; 3,010,253; 3,425,155; 3,611,625; 3,648,405; 3,775,900; 3,858,353; 3,947,994; 3,955,311; 3,988,855; 4,003,158; 4,125,961; 4,135,327; 4,274,224; 4,571,209; 4,597,574; 4,601,672; 4,623,318; 4,655,725; 4,657,518; 4,669,998; 4,680,019; 4,723,932; 4,738,649; 4,790,789; 4,968,280; 4,988,324; 4,995,846; 5,044,960; 5,257,873; 5,394,766; 5,620,352; 5,727,982; 6,022,263; 6,106,359; 6,224,456; 6,296,543; 6,422,871; 6,422,916; 6,482,068; 6,494,763; 6,524,158; 6,579,143; 6,585,556; 6,601,326; 6,682,392; 6,685,530; 6,692,332; 6,817,921; 6,830,497; 6,869,331; and U.S. Published Applications 2002/0155; 2004/0198; and 2005/0020; and Foreign Patents CH 646612, CH 675081; FR 2666514; GB 2201899; JP 4288187; and JP 6023154. All of these references are incorporated herein by reference for all purposes.

Summary

[0004] The present disclosure is directed to customizable action figures comprising a torso, a transmission mechanism supported in the torso, and an appendage operatively connected to the transmission mechanism. In some examples, the customizable action figures may include an upper torso rotatably connected to a lower torso. In some examples, the customizable action figures may include an appendage having a plurality of segments, with each segment configured to move relative to one or more neighboring segments. In some examples, the customizable action figures may include a set of arms, with each arm being configured to be selectively coupled to the transmission mechanism, or each arm may be configured to move differently than an other arm in the set.

Brief Description of the Drawings

[0005] Fig. 1 is a perspective view of a customizable action figure.

[0006] Fig. 2 is a front view of the customizable action figure of Fig. 1 with a front portion of the torso removed.

[0007] Fig. 3 is a perspective view of the customizable action figure of Fig. 1 with an appendage removed.

[0008] Fig. 4A is a front view of an appendage of the customizable action figure of Fig. 1.

[0009] Fig. 4B is a front view of a second appendage of the customizable action figure of Fig. 1.

[0010] Fig. 5 is a perspective view of a hand of the customizable action figure of Fig. 1 and an object.

[0011] Fig. 5A is a cross sectional view of a coupling member partially inserted into a socket of an object in a rotation position.

[0012] Fig. 5B is a cross sectional view of a coupling member fully inserted into a socket of an object in a stationary position.

[0013] Fig. 6 is a schematic view of a sound mechanism of the customizable action figure.

Detailed Description

[0014] A first customizable action figure 10 and components thereof is shown in Fig. 1. A second customizable action figure 10 is shown in Fig. 2. Similar components are given the same reference number. Customizable action figure 10 may include a housing or torso 12, a transmission mechanism 14 (shown in Fig. 2) supported in torso 12, an actuator 16 operatively connected to transmission mechanism 14, and one or more appendages 18 operatively connected to transmission mechanism 14. Transmission mechanism 14 may also be drivingly connected to other appendages, such as legs, a head, wings, or other structures. In some examples, customizable action figure 10 includes a sound mechanism 19 (shown in Figs. 2 and 6) mounted in torso 12. Legs 20 may support torso 12 from above a play surface 21.

[0015] Torso 12 may house transmission mechanism 14 as shown in Fig. 2. As shown in Fig. 2, torso 12 may define a cavity 22 of sufficient size to contain transmission mechanism 14. Various projections, apertures, and support members may be provided in torso 12 to support the various components of transmission mechanism 14, such as base plate 25 supported on legs 20. Torso 12 may include shoulder apertures 24 and 25, through which transmission mechanism 14 may be connected to a right arm 26 and left arm 27.

[0016] Transmission mechanism 14 may transmit energy applied to actuator 16 relative to torso 12 to appendages 18 through a series of gears. As shown in Fig. 2, transmission mechanism 14 may include a waist gear 28, a torso gear 29, a shoulder gear 30, and a neck gear 32. Each of the aforementioned gears may be drivingly interconnected such that movement of one gear causes the other gears to move.

[0017] Waist gear 28 may be fixedly secured to actuator 16 and rotate about a vertical axis V1 as actuator 16 is rotated relative to torso 12 by a user. Waist gear 28 may engage torso gear 29 having a horizontal axis of rotation H1. Rotation of waist gear 28 rotates torso gear 29 about a horizontal axis H1. Rotation of torso gear 29 causes shoulder gear 30 to rotate about a generally

horizontal axis H2. Shoulder gear 30 may be mounted at either aperture 24 or 25 and, optionally, a different gear may be mounted in the other aperture. In some embodiments, customizable action figure 10 may include two shoulder gears. As shown in Fig. 2, torso gear 29 may be a compound gear, including a first gear 31 engaged by waist gear 28 and a larger diameter spur gear 34 configured to engage shoulder gear 30.

[0018] In this example, shoulder gear 30 moves arm 27 when gear 30 is driven by torso gear 29. Arm 26 may couple to shoulder gear 30 at shoulder aperture 24 or 25 by a drive rod 37 attached to the proximal end of arm 27 as shown in Figs. 4A and 4B. Drive rod 37 is slidably received in a channel in shoulder gear 30 with a friction fit. Shoulder gear 30 rotates drive rod 37. As explained more fully below, drive rod 37 may engage movement mechanisms 38 drivingly connected to appendages 18.

[0019] Shoulder gear 30 may also mesh with neck gear 32 causing neck gear 32 to rotate about a vertical axis V2 when shoulder gear 30 rotates. Neck gear 32 may be rigidly attached to a head 40. As a result, head 40 may rotate as neck gear 32 rotates. In some examples (not shown), the neck gear may be a mushroom gear with an articulation point located in the head.

[0020] Transmission mechanism 14 may be configured such that neck gear 32 and waist gear 28 rotate in the same direction. It is within the scope of this disclosure, however, that transmission mechanism 14 may be configured such that neck gear 32 and waist gear 28 rotate in opposite directions. Further, transmission mechanism 14 and neck gear 32 may be configured such that neck gear 32 and waist gear 28 rotate at the same rate or at different rates.

[0021] A user may actuate actuator 16 to introduce energy into customizable action figure 10 by way of transmission mechanism 14. Energy input into actuator 16 is transmitted through transmission mechanism 14 to appendage 18 to move appendage 18 relative to torso 12.

[0022] Actuator 16 may take numerous forms. For example, actuator 16 may be a belt configured to slide around torso 12, a button configured to move into and out of torso 12, or a lever configured to pivot into and out of

torso 12. In the non-exclusive examples shown in Figs. 1 and 3, actuator 16 is a hip section 42 configured to rotate relative to torso 12. In this example, legs 20 are pivotally attached to hip section 42. To facilitate rotation, torso 12 may include a fin or other element (not shown) projecting therefrom against which a user may exert rotating force relative to actuator 16. In one illustrative and non-exclusive example, a user may rotate lower torso 42 relative to torso 12 to rotate waist gear 28, thus, driving transmission mechanism 14 and in turn driving movement of appendage 18.

[0023] Appendage 18 may include a plurality of segments 46 and movement mechanisms 38. Movement mechanisms 38 may include gearing configured to move one segment relative to another as explained more fully below. For example, movement mechanism 38 may rotate, bend, or extend one segment relative to another segment. Appendage 18 may include various combinations of movement mechanisms such that a first segment rotates relative to second segment, while a third segment bends relative to the second segment, etc. Different appendages may include different combinations of segments 46 and movement mechanisms 38, such as shown in Figs. 4A-4B.

[0024] Sets of interchangeable appendages 18 may be provided to allow a user to interchangeably customize customizable action figure 10. As shown in Fig. 3, shoulder gear 30 may be configured to selectively receive and release appendages 18. An aperture in shoulder gear 30 may be sized to receive drive rod 37 (shown in Figs. 4A-4B) of appendages 18.

[0025] Fig. 4A shows one example of right arm 26 configured to move in a certain manner. Right arm 26 shown in Fig. 4A may include segments 46 including a shoulder or first segment 50, an upper arm 52, a forearm 54, and a hand or third segment 56. Upper arm 52 and forearm 54 may be rigidly connected in some examples and in such examples collectively define a second segment. Drive rod 37 may drivingly couple right arm 26 to shoulder gear 30 through shoulder aperture 25.

[0026] Right arm 26 may include a first segment gear train 58 drivingly connected to first segment 50 and drive rod 37. First segment gear train 58

may rotate first segment 50 when driven by drive rod 37. As shown in Fig. 4A, first segment gear train may include multiple gears, such as a main gear 59 and a transfer gear 61. In the example depicted in Fig. 4A, main gear 59 rotates first segment 50 and transfer gear drives a second segment gear 60.

[0027] Second segment gear 60 may be drivingly connected to the second segment, such as in this example to upper arm 52. Rotation of second segment gear 60 typically causes the second segment to rotate. As is well known in the art, the size and number of gears in first segment gear train 58 relative to second segment gear 60 may cause the second segment to rotate at the same rate or a different rate than first segment 50 as well in the same direction or in a different direction than first segment 50.

[0028] In the example depicted in Fig. 4A, right arm 26 includes a fourth segment gear train 65 drivingly connected to fourth segment 56 and to first segment gear train 58. In some examples, such as depicted in Fig. 4A, fourth segment gear train 65 is drivingly connected to first segment gear train 58 via a redirection mechanism 64. Redirection mechanism 64 may account for the second segment having an angle and straight shafts being used to drivingly connect first segment gear train 58 with fourth segment gear train 65. Redirection mechanism 64 may include gears having cooperatively angled teeth that facilitate coupled rotation of the gears at an angle.

[0029] Fourth segment gear train 65 may rotate fourth segment 56 relative to the second segment as main gear 59 of first segment gear train 58 rotates. Different combinations of gear sizes may be used in fourth segment gear train 65 to cause fourth segment 56 to rotate at the same rate or a different rate than first segment 50 and/or the second segment. Further, it is well known within the art that different numbers of gears may be used in fourth segment gear train 65 to cause fourth segment 56 to rotate in the same direction or a different direction than first segment 50 or the second segment.

[0030] Fig. 4B shows another example of right arm 26 configured to move in a certain manner. Right arm 26 shown in Fig. 4A may include segments 46 including a shoulder or first segment 50, an upper arm 52, a forearm 54, and a hand or third segment 56. In some examples, upper arm 52

is rigidly attached to first segment 50. Drive rod 37 may drivingly couple right arm 26 to shoulder gear 30 through shoulder aperture 25.

[0031] Right arm 26 in the example shown in Fig. 4B may include first segment gear train 58 drivingly connected to first segment 50 and to drive rod 37. First segment gear train 58 in this example may rigidly attach to first segment 50 and cause first segment 50 to rotate as drive rod 37 rotates. Additionally or alternatively, first segment gear train 58 may include a plurality of gears (not pictured).

[0032] Forearm 54 of right arm 26 shown in Fig. 4B may be pivotally connected to upper arm 52. In the example shown in Fig. 4B, upper arm 52 is rigidly attached to first segment 50. A pin 69 may couple forearm 54 with upper arm 52 and allow forearm 54 to pivot relative to upper arm 52. In the example shown in Fig. 4B, forearm 54 freely pivots as first segment 50 rotates when driven by rotation of drive rod 37.

[0033] In some examples, fourth segment 56 of right arm 26 shown in Fig. 4B is rotatably connected to forearm 54. In such an example, fourth segment 56 typically freely rotates as forearm 54 pivots relative to upper arm 52. However, in some examples fourth segment is rigidly attached to forearm 54 and in some examples fourth segment is pivotally attached to forearm 54.

[0034] Left arm 27 may be similarly configured as either right arm 26 shown in Fig. 4A or right arm 26 shown in Fig. 4B. As described for right arm 26, left arm 27 may include the same or similar segments and the same or similar gearing as shown and described for right arm 26. As a result, in some examples left arm 27 may move the same or similarly to right arm 26 shown in Fig. 4A and in other examples left arm 27 may move the same or similarly to right arm 26 shown in Fig. 4B.

[0035] Appendage 18 may be configured to support a coupling member 66 attached to object 62 with hand or fourth segment 56 as shown in Fig. 5. A socket 63 may be provided in hand 56 for receiving object 62. Socket 63 may include a first socket region 71 and a second socket region 75. Second socket region 75 typically has a different cross sectional area than first socket

region 71. In the examples shown in Figs 5, 5A, and 5B, second socket region 75 has a larger cross sectional area than first socket region 71.

[0036] Coupling member 66 may be rigidly attached to object 62 and may include different regions 68 for interfacing with different regions of socket 63. For example, as shown in Figs 5, 5A, and 5B, coupling member 66 may include two regions: a first coupling region 70 distal from object 62 and a second coupling region 72 proximate to object 62. Coupling member 66 may be supported by socket 63 in two or more positions, such as a rotation position (shown in Fig. 5A) and a stationary position (shown in Fig. 5B).

[0037] In the rotation position shown in Fig. 5A, coupling member 66, and therefore object 62, may rotate relative to fourth segment 56 when appendage 18 moves or when directly rotated by a user. In the rotation position shown in Fig. 5A, first coupling region 70 is loosely supported by first socket region 71 and second socket region 75. Second coupling member 72 may be disposed outside socket 63. First socket region 71 may be sized to have a cross sectional area that receives first coupling region 70 with sufficient friction to retain first coupling region 70 therein, but not so much friction that rotation of first coupling region 70 is unduly restricted.

[0038] In the stationary position shown in Fig. 5B, coupling member 66, and therefore object 62, may be held stationary relative to fourth segment 56. In the stationary position shown in Fig. 5B, first coupling member may extend into first socket region 71 and second coupling member 72 may extend into second socket region 75. Second socket region 75 may be sized to have a cross sectional area that fits sufficiently tight against second coupling member 72 that rotation of second coupling member 72 is restricted.

[0039] Customizable action figure 10 may include a sound mechanism 19 for producing sounds as depicted in Fig. 6. Sounds may include words, phrases, music, or sound effects, such as crashing or sword swooshing sounds. As is typical in the art, sound mechanism 19 may include a power supply 74, such as a battery, a processor and memory 76 to store sound data, circuitry 78 to transfer sound data, a switch 82 to activate sound mechanism 19, and a speaker 80 to convert sound data into sound waves. Sound

mechanism 19 may be mounted in torso 12 and link to transmission mechanism 14 with via switch 82.

[0040] Moving transmission mechanism 14 may activate sound mechanism 19 to produce sounds by means of switch 82. Movement of a component, such as a projection on a rotating component (not shown), of transmission mechanism 14 may cause switch 82 to toggle sound mechanism 19 between active and inactive states. Additionally or alternatively, switch 82 may toggle sound mechanism between different active states. For example, sound mechanism 19 may be configured to produce different sounds each time transmission mechanism 14 is actuated or it may be configured to produce different sounds as actuator 16 is actuated in different directions.

[0041] Customizable action figure 10 may include legs 20 to support torso 12 from a play surface 21. Legs 20 may be pivotally connected to torso 12 to enable the legs to simulate walking and to be positioned in different stances. The pivotal connections may comprise ball joints, a connection through transmission mechanism 14, or any other suitable pivotal connection means.

[0042] As can be seen from the above description, an action figure may include a set of interconnected body segments, a transmission mechanism mounted in a housing and operatively coupled to the set of body segments, an actuator operatively connected to the transmission mechanism, wherein actuating the actuator drives the transmission mechanism, and an appendage operatively connected to the transmission mechanism and configured for selective removal from the transmission mechanism, the appendage having a plurality of adjacent segments with each segment configured to move relative to an adjacent segment when the appendage is driven by the transmission mechanism.

[0043] As can further be seen from the above description, an action figure may include a torso, a transmission mechanism supported in the torso, a hip section connected to the torso, rotation of the hip section relative to the torso driving the transmission mechanism, a first appendage drivingly connected to the transmission mechanism, the first appendage being

configured to move in a first manner when the first appendage is driven by the transmission mechanism, and a second appendage drivingly connected to the transmission mechanism, the second appendage being configured to move in a second manner when the first appendage is driven by the transmission mechanism, wherein the first manner of motion and the second manner of motion are different.

[0044] The above description makes it further apparent that an action figure may include a housing, a transmission mechanism supported in the housing, a set of two or more arms, each arm in the set being configured to selectively couple with the transmission mechanism and including: a plurality of adjacent segments, each segment configured to move relative one or more to adjacent segments, and at least one movement mechanism mounted between adjacent segments, each movement mechanism being configured move one segment relative to an adjacent segment; wherein the movement mechanisms are configured to move the segments differently in at least two arms in the set.

[0045] While embodiments of a customizable action figure and methods of use thereof have been particularly shown and described, many variations may be made therein. This disclosure may include one or more independent or interdependent inventions directed to various combinations of features, functions, elements and/or properties, one or more of which may be defined in the following claims. Other combinations and sub-combinations of features, functions, elements and/or properties may be claimed later in this or a related application. Such variations, whether they are directed to different combinations or directed to the same combinations, whether different, broader, narrower or equal in scope, are also regarded as included within the subject matter of the present disclosure. An appreciation of the availability or significance of claims not presently claimed may not be presently realized. Accordingly, the foregoing embodiments are illustrative, and no single feature or element, or combination thereof, is essential to all possible combinations that may be claimed in this or a later application. Each claim defines an

invention disclosed in the foregoing disclosure, but any one claim does not necessarily encompass all features or combinations that may be claimed.

[0046] Where the disclosure recites “a” or “a first” element or the equivalent thereof, such recitations include one or more such elements, neither requiring nor excluding two or more such elements. Further, ordinal indicators, such as first, second or third, for identified elements are used to distinguish between the elements, and do not indicate a required or limited number of such elements, and do not indicate a particular position or order of such elements unless otherwise specifically stated.

[0047] Inventions embodied in various combinations and subcombinations of features, functions, elements, and/or properties may be claimed through presentation of claims in a related application. Such claims, whether they are directed to different inventions or directed to the same invention, whether different, broader, narrower or equal in scope to the other claims, are also regarded as included within the subject matter of the present disclosure.

CLAIMS

What is claimed is:

1. An action figure comprising:
 - a set of interconnected body segments;
 - a transmission mechanism mounted in a housing and operatively coupled to the set of body segments;
 - an actuator operatively connected to the transmission mechanism, wherein actuating the actuator drives the transmission mechanism; and
 - an appendage operatively connected to the transmission mechanism and configured for selective removal from the transmission mechanism, the appendage having a plurality of adjacent segments with each segment configured to move relative to an adjacent segment when the appendage is driven by the transmission mechanism.
2. The action figure of claim 1, wherein the housing is a torso segment and the actuator comprises a hip segment rotatably connected to the torso segment, the hip section being configured to actuate the transmission mechanism when rotated relative to the torso.
3. The action figure of claim 1, wherein the appendage includes:
 - a first segment proximate to the torso;
 - an second segment adjacent to the first segment; and
 - a third segment adjacent to the second segment and distal from the first segment.

4. The action figure of claim 3, wherein the appendage includes a first movement mechanism drivingly connected to the first segment and to the second segment, the first movement mechanism being configured to rotate the second segment relative to the first segment and including:

a first segment gear train drivingly connected to the transmission mechanism; and

a second segment gear drivingly connected to the first segment gear train.

5. The action figure of claim 4, wherein the first movement mechanism is configured to rotate the first segment in a first direction and is configured to rotate the second segment in a second direction opposite the first direction.

6. The action figure of claim 4, wherein the appendage includes a second movement mechanism drivingly connected to the third segment, the second movement mechanism being configured to rotate the third segment relative to the second segment and including a third segment gear drivingly connected to the first segment gear train.

7. The action figure of claim 5, wherein the appendage includes a second movement mechanism drivingly connected to the third segment, the second movement mechanism being configured to rotate the third segment relative to the second segment in the first direction and including a third segment gear drivingly connected to the first segment gear train.

8. The action figure of claim 3, wherein the appendage includes a third movement mechanism connected to the first segment, the third movement mechanism being configured to rotate the first segment relative to the housing and including a drive rod drivingly connected to the transmission mechanism.

9. The action figure of claim 8, wherein the second segment includes:

a fourth segment adjacent to the first segment,

a fifth segment pivotally connected to the fourth segment at an end distal from the first segment.

10. The action figure of claim 9, wherein the fourth segment includes a slot at an end distal from the first segment and the fifth segment includes a pin extending through the slot in the fourth segment.

11. The action figure of claim 4, wherein the third segment includes a socket for receiving an object inserted therein.

12. The action figure of claim 11, wherein the socket defines:

a first cavity having an opening with a first area; and

a second cavity adjacent to the first cavity, the second cavity having a second area which is smaller than the first area.

13. The action figure of claim 12, wherein the object includes:

a body; and

a projection having:

a first portion which is proximate to the body and which has a first cross sectional area; and

a second portion which is distal from the body and which has a second cross sectional area which is smaller than the first cross sectional area.

14. The action figure of claim 1, further comprising a sound mechanism configured to produce sound when the actuator is actuated.

15. An action figure comprising:
a torso;
a transmission mechanism supported in the torso;
a hip section connected to the torso, rotation of the hip section relative to the torso driving the transmission mechanism;
a first appendage drivingly connected to the transmission mechanism, the first appendage being configured to move in a first manner when the first appendage is driven by the transmission mechanism; and
a second appendage drivingly connected to the transmission mechanism, the second appendage being configured to move in a second manner when the first appendage is driven by the transmission mechanism;
wherein the first manner of motion and the second manner of motion are different.

16. The action figure of claim 15, wherein:
the first appendage includes:
a first segment proximate to the torso;
a second segment adjacent to the first segment; and
a third segment adjacent to the second segment and distal from the first segment; and
the second appendage includes:
a fourth segment proximate to the torso;
a fifth segment adjacent the fourth segment; and
a sixth segment adjacent to the fifth segment and distal from the fourth segment.

17. The action figure of claim 16, wherein:

a) the first appendage includes:

i) a first segment gear train drivingly connected to the first segment and to the transmission mechanism, the first segment gear train being configured to rotate the first segment relative to the torso; and

ii) a second segment gear drivingly connected to the second segment and to the first segment gear train, the second segment gear being configured to rotate the second segment relative to the first segment; and

b) the second appendage includes a drive rod drivingly connected to the fourth segment and to the transmission mechanism, the drive rod configured to rotate the fourth segment relative to the torso;

c) wherein the fifth segment is pivotally connected to the fourth segment, the fifth segment being configured to freely pivot relative to the fourth segment as the fourth segment rotates.

18. The action figure of claim 17, wherein the first appendage further comprises a third segment gear train drivingly connected the third segment and the first segment gear train, the third segment gear train being configured to rotate the third segment relative to the second segment.

19. An action figure comprising:
a housing;
a transmission mechanism supported in the housing;
an actuator operatively connected to the transmission mechanism,
actuation of the actuator driving the transmission mechanism; and
a set of two or more arms, each arm in the set being configured to
selectively couple with the transmission mechanism and including:
a plurality of adjacent segments, each segment configured to move
relative one or more to adjacent segments, and
at least one movement mechanism mounted between adjacent
segments, each movement mechanism being configured move one segment
relative to an adjacent segment;
wherein the movement mechanisms are configured to move the
segments differently in at least two arms in the set.

20. The action figure of claim 19, wherein a first arm in the set
includes:
a first segment proximate to the housing;
a second segment adjacent to the first segment;
a third segment adjacent to the second segment and distal from the
first segment;
a first movement mechanism comprising a first segment gear train
drivingly connected to the first segment and to the transmission mechanism,
the first segment gear train being configured to rotate the first segment
relative to the housing; and
a second movement mechanism comprising a second segment gear
drivingly connected to the second segment and to the first segment gear train,
the second segment gear being configured to rotate the second segment
relative to the first segment.

21. The action figure of claim 20, wherein a second arm in the set includes:

- a fourth segment proximate to the housing;

- a fifth segment pivotally connected to the fourth segment; and

- a sixth segment adjacent to the fifth segment and distal from the fourth segment; and

- a third movement mechanism comprising a drive rod drivingly connected to the fourth segment and to the transmission mechanism, the drive rod configured to rotate the fourth segment relative to the housing;

wherein the fifth segment is configured to freely pivot relative to the fourth segment as the fourth segment rotates.

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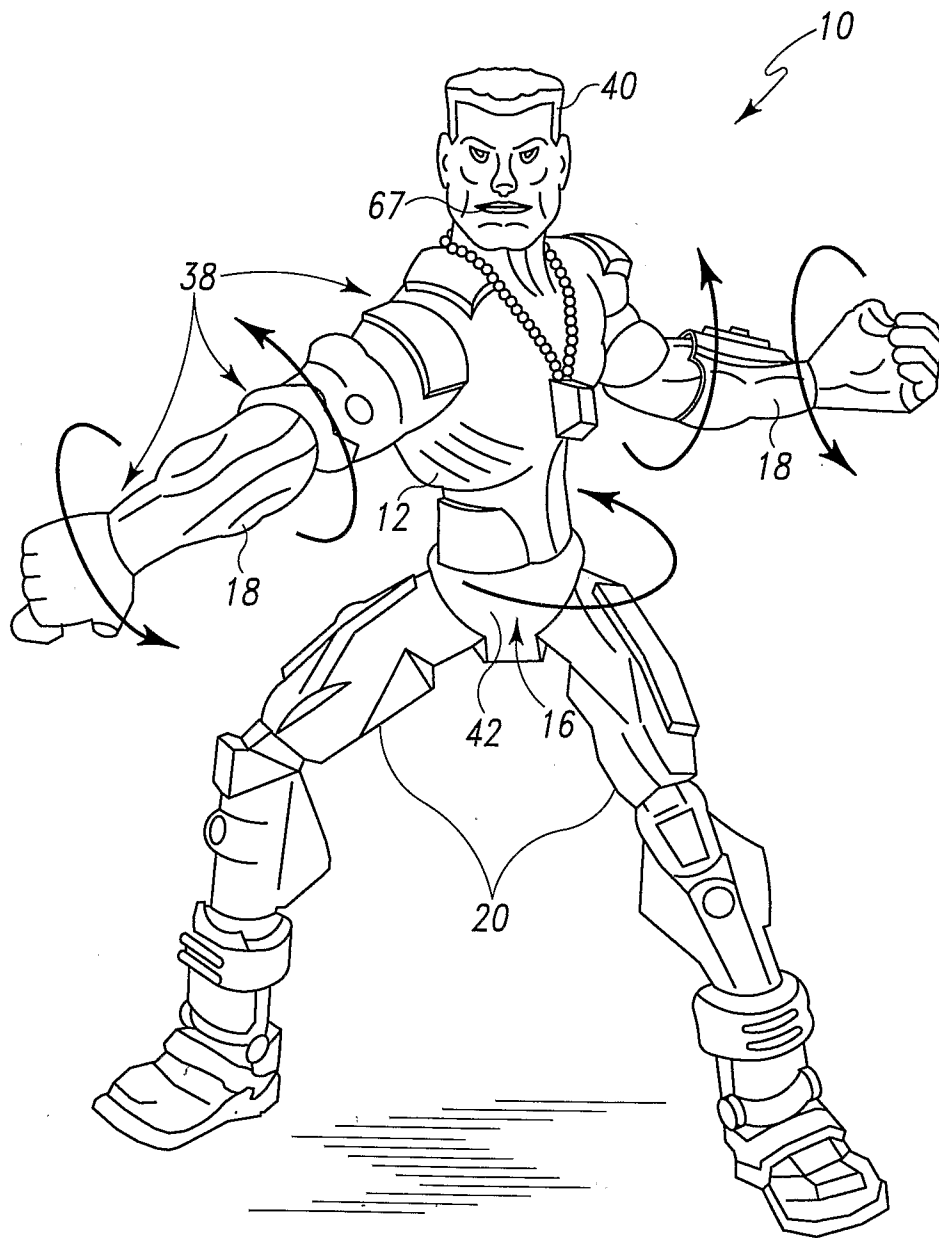


Fig. 1

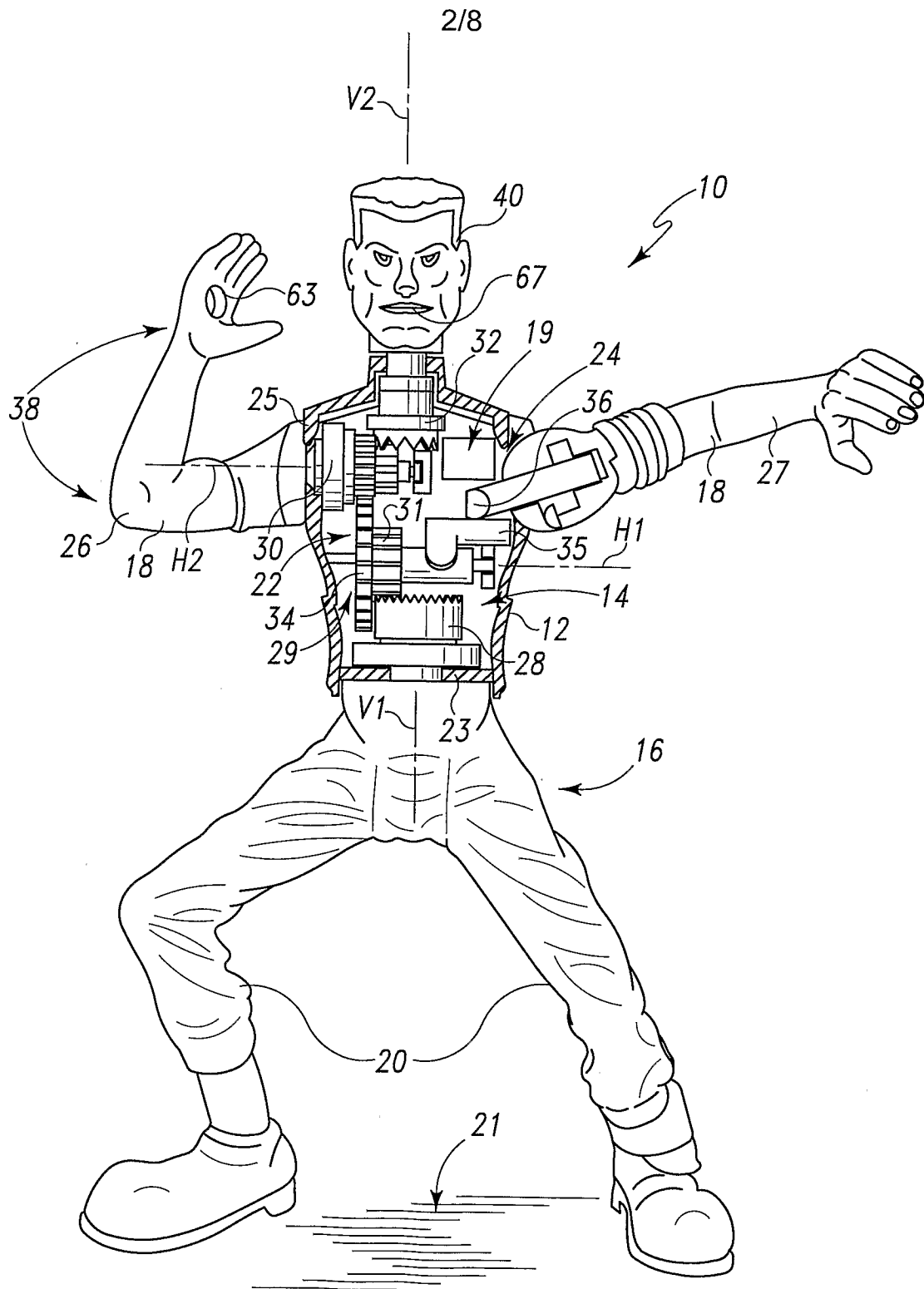


Fig. 2

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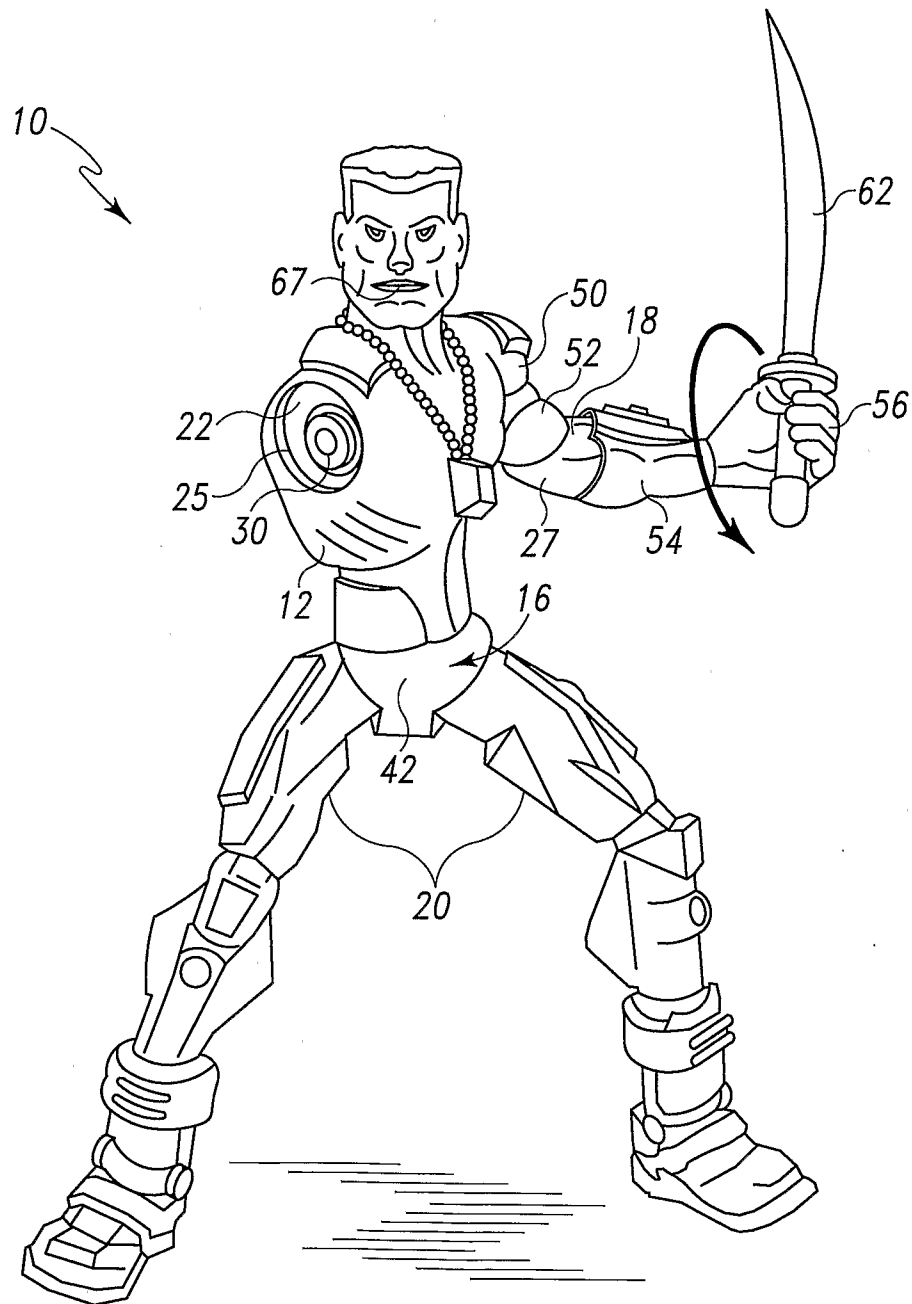


Fig. 3

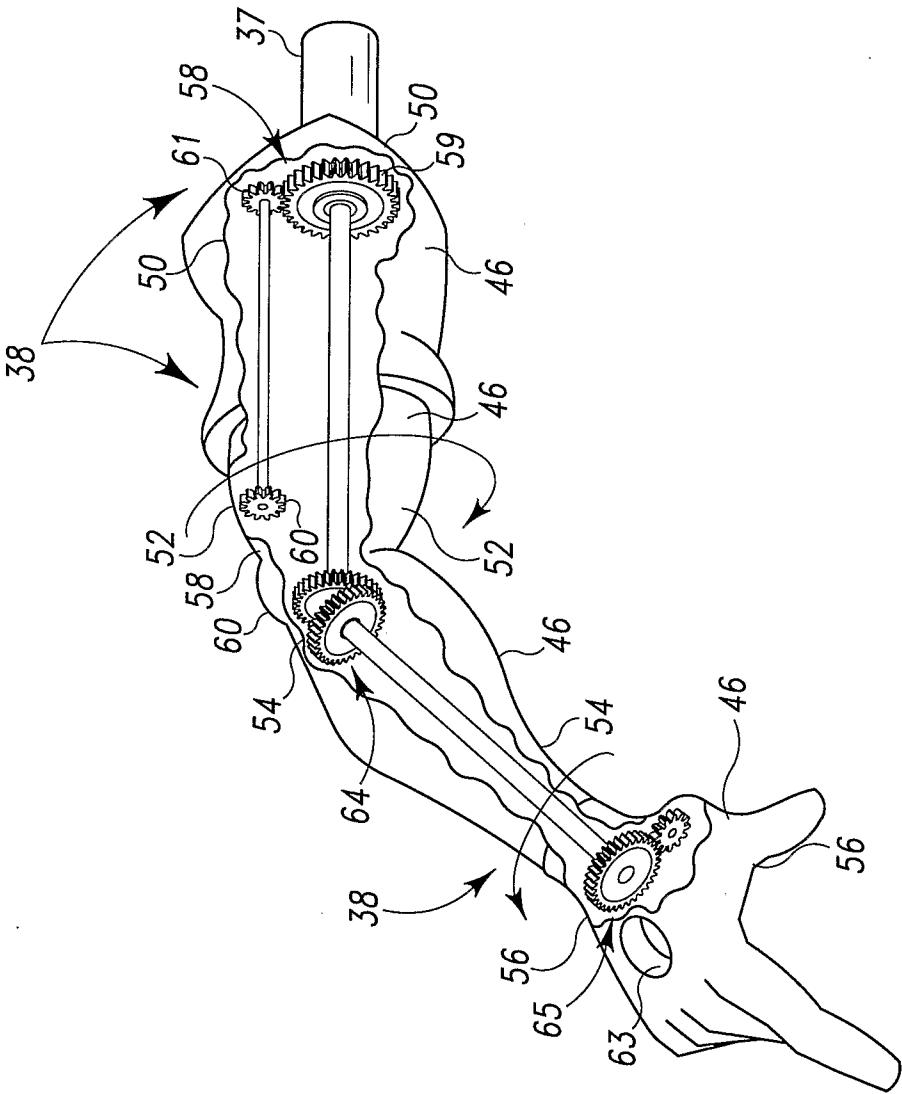


Fig. 4A

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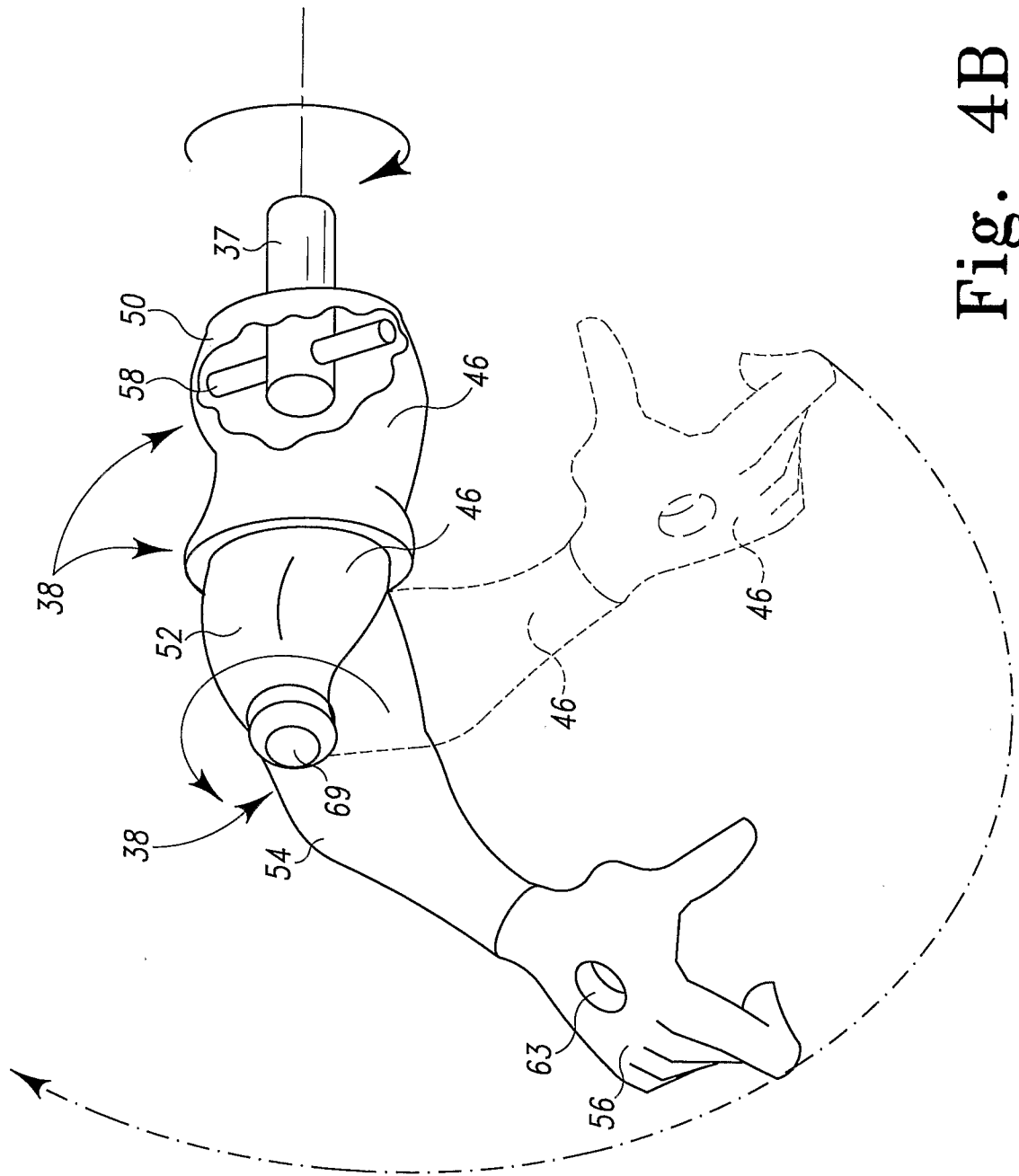


Fig. 4B

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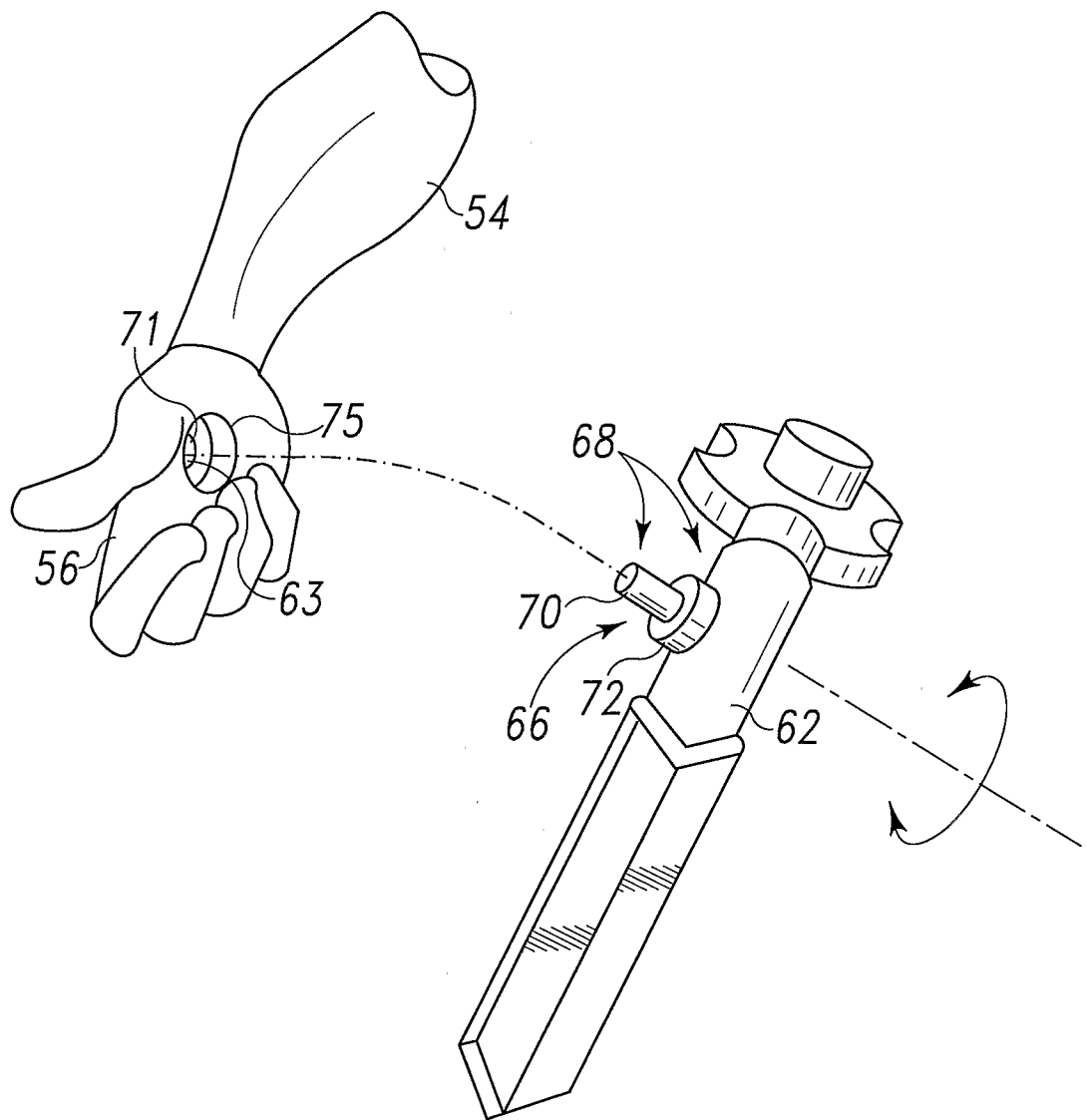


Fig. 5

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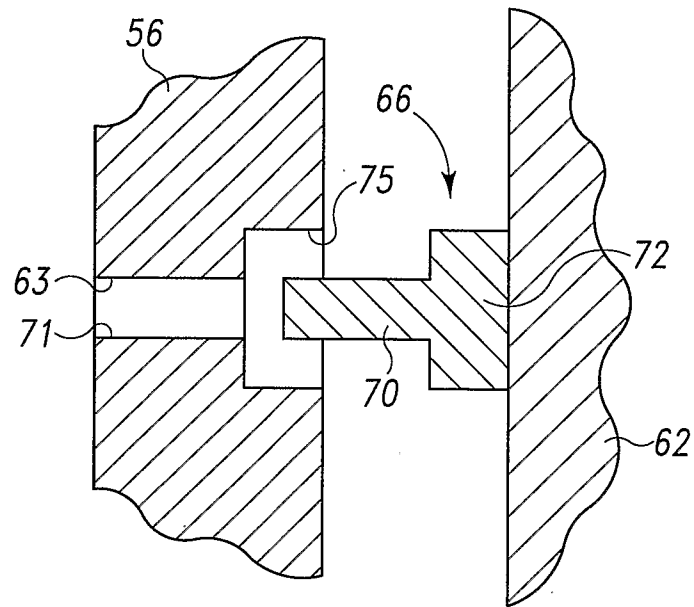


Fig. 5A

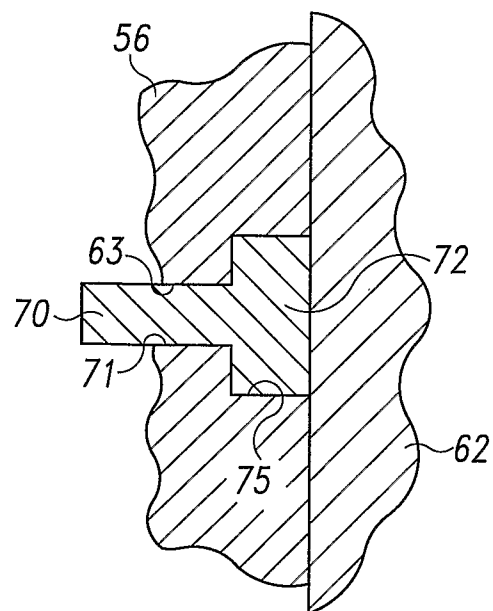
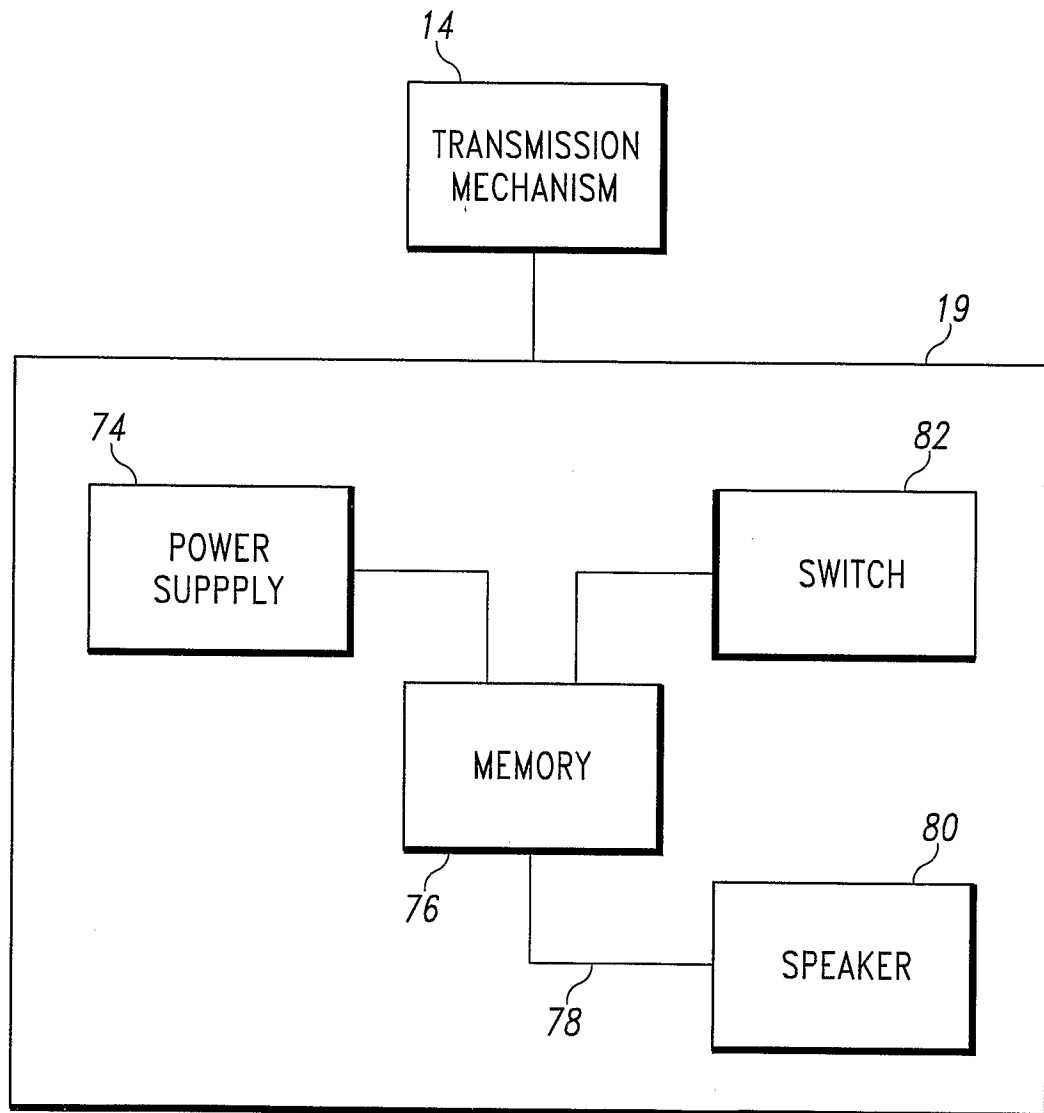


Fig. 5B

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**Fig. 6**