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(54) Improvements in or relating to toys

(57) A toy includes a first enclosed portion (5) having a first bore (15) and a second enclosed portion (10) having a second bore (25). The first enclosed portion provides a gas pressure from the first bore to enter the second enclosed portion via the second bore. The toy also has a rotating member (75) rotatable situated in the second enclosed portion and a plurality of fins (85). In addition, the toy includes a pointer element (35) situated in the second enclosed portion which is coupled to a center portion of the rotating member. Thus, when the gas pressure entering from the second bore is applied to at least one of the plurality of fins, the rotating element rotates the pointer element.

Fig 1a

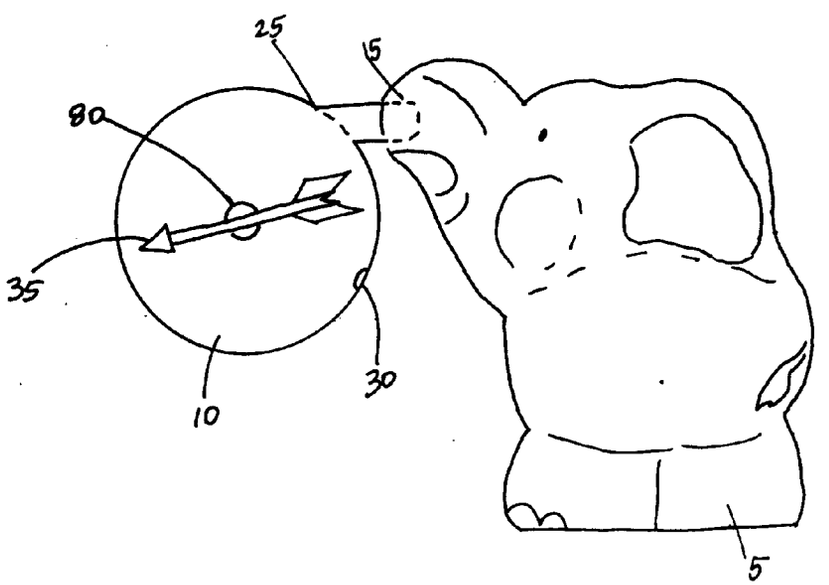

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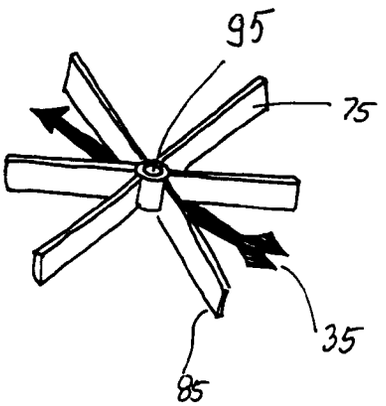
Fig 5



Description

[0001] The present invention relates to an educational and an entertaining toy, and in particularly to the toy having a first portion that provides a gas into a second portion to spin an arrow member of the second portion.

[0002] Various types of conventional toy devices have been made to educate, entertain and amuse children. Often, the conventional devices show different objects with which children identify. The objects that can be identified by children are sometimes randomly pointed to by a spinning arrow.

[0003] A conventional toy device is described in U.S. Patent No. 369,404. This conventional toy device determines marking chances. The toy device includes a dial and a pointer spinning on the dial. The pointer is spun by hand actuating a fly-wheel driven via a toothed wheel and via a pneumatic plunger. The toothed wheel is provided with a pawl and a rachet to engage the fly-wheel. In addition, the pneumatic plunger is provided with a rackbar engaging the toothed wheel, thereby turning the toothed wheel at will.

[0004] Another conventional toy device is described in U.S. Patent No. 1,357,706. This toy device has an air-motor for actuating toys including a circumferential vanes, an enclosed rotor, motion transmitting means, a counterweight to balance operative parts of the toy and air injecting means. The air injecting means include elastic resilient air pressure accumulative means, with which a relative steady, continuous current of the air is transmitted to vanes of the rotor. Thus, air under pressure is supplied to the rotor activating the motion transmitting means.

[0005] In accordance with the present invention, a toy includes a first enclosed portion having a first bore and a second enclosed portion having a second bore. The first enclosed portion provides a gas pressure from the first bore to enter the second enclosed portion via the second bore. The toy also has a rotating member rotatable situated in the second enclosed portion and a plurality of fins.

[0006] In addition, the toy includes a pointer element situated in the second enclosed portion which is coupled to a center portion of the rotating member. Thus, when the gas pressure entering from the second bore is applied to at least one of the plurality of fins, the rotating element rotates the pointer element.

[0007] One of the advantages of the present invention is that the toy can be utilized as an educational tool for a user such as a child, and, at the same time, the toy can be entertaining for the user.

[0008] The following is a description of some specific embodiments of the invention, reference being made to the accompanying drawings, in which:

[0009] Figure 1a shows a toy including a first and second toy portions according to the present invention.

[0010] Figure 1b shows an alternative exemplary embodiment of the toy according to the present invention.

[0011] Figure 2a shows a front view of an enclosure portion of the second toy portion.

[0012] Figure 2b shows a profile view of the enclosure portion illustrated in Figure 2a.

[0013] Figure 3 shows a first cover of the second toy portion.

[0014] Figure 4 shows a second cover of the second toy portion.

[0015] Figure 5 shows a propelling member and fins of the second toy portion.

[0016] Figure 6 shows a profile view of the first cover, the propelling member and the fins of the second toy portion.

[0017] Figure 7 shows an alternative exemplary embodiment of the toy according to the present invention.

[0018] Figure 8a shows a front view of an alternative enclosure portion of the second toy portion of the toy illustrated in Figure 7.

[0019] Figure 8b shows a profile view of the alternative enclosure portion illustrated in Figure 8a.

[0020] Figure 1a shows a toy 1 according to the present invention which includes a first toy portion 5 and a second toy portion 10. The first toy portion 5 has a hollow portion for receiving a gas (e.g., air) and is preferably composed of a soft material, e.g., a rubber material. The first toy portion 5 can also be composed of other compressible materials. The first toy portion 5 draws in the gas through a first bore 15 into the hollow portion, and then pumps the gas out through the same first bore 15 which extends from an external position into the hollow portion.

[0021] In particular, the gas is pumped out from the first toy portion 5 by depressing a part (e.g., the hollow portion) of the first toy portion 5 (e.g., the user presses on two opposite parts or on a single part of the first toy portion 5). Thus, the gas is extracted from the first toy portion 5 via the first bore 15. The gas is drawn into the first toy portion 5 by releasing the pressure on one or more parts of the first toy portion 5. Since the first toy portion 5 is prestressed to return to its undepressed state, the gas reenters the first toy portion 5 through the same first bore 15.

[0022] Figure 1b shows for an alternative exemplary embodiment of the present invention. The first toy portion 5 further includes a second bore 20 for drawing in (and extracting out) the gas. Thus, when the user stops applying the pressure on one or more parts of the first toy portion 5 (i.e., the parts are released from their depressed state), the gas is drawn into the first toy portion 5 through the second bore 20.

[0023] The first and second toy portions 5, 10 may have, for example, a shape of an animal (e.g. an elephant), a cartoon character (e.g., "Bugs Bunny"), a human figure (e.g., a clown) and/or any other geometrical shape.

[0024] As shown in Figures 2a and 2b, the second toy portion 10 includes an enclosure portion 55. The enclosure portion 55 has, preferably, a circular shape. In an

alternative exemplary embodiment of the present invention, the enclosure portion 55 may have a square shape, a rectangular shape, a star shape, an oval shape or any other geometric shape. The enclosure portion 55 includes an extending member 40 having a third bore 25 and an external opening 45. The extending member 40 couples the first toy portion 5 with the second toy portion 10 by inserting the extending member 40 into the first bore 15. In particular, a cross-section of an opening of the first bore 15 is slightly larger than a cross-section of the extending member 40. As such, when the extending member 40 is inserted into the first bore 15, a substantially gas tight seal is formed at the connection of the extending member 40 and the first bore 15.

[0025] The enclosure portion 55 also has an attachment member 50 situated substantially in a center of the enclosure portion 55 and extending outwards from an inside wall 57 of the enclosure portion 55. In addition, the enclosure portion 55 has a fourth bore 30 through which the gas may enter and/or exit the second toy portion 10.

[0026] The second toy portion 10 also includes a first cover 60 shown in Figures 3 and 6. The first cover 60 has a circular shape or other shapes which correspond to the shape of a periphery 58 of the enclosure portion 55. Thus, a periphery 61 of the first cover 60 is smaller less than a periphery 58 of the enclosure portion 55 so that the first cover 60 can be situated within the enclosure portion 55. In addition, an opening 65 is provided in a center of the first cover 60. An outer (e.g., visible) side of the first cover 60 may be divided into a number of sections, for example 4, 6, or 8. Each section of the first cover 60 may, for example, have a different color, text, picture, and/or drawing.

[0027] The second toy portion 10 also includes a propelling member 75 shown in Figures 5 and 6. The propelling member 75 is rotatably situated within the enclosure portion 55. The propelling member 75 includes a plurality of fins 85 (e.g., four, six, or eight) having a flat shape. It is possible that the plurality of fins 85 have a curved shape or other shapes to receive at least some of the gas pressure provided through the extending member 40.

[0028] A second attaching arrang: 80 (shown in Figure 6) includes a second extending member 90 which is coupled to an internal opening 95 of the propelling member 75. A periphery of the second extending member 90 is smaller than the periphery of the opening 65 of the first cover 60 so that the second extending member 90 can extend thorough the opening 65. Also, a periphery of the internal opening 95 is larger than the periphery of the attachment member 50 of the enclosure portion 55. Therefore, the second extending member 90 is coupled (e.g., fixedly) to the internal opening 95, and the propelling 75 is coupled to the enclosure portion 55 via the attachment member 50.

[0029] The second toy portion 10 also includes a pointer member 35 (e.g., an arrow indicator) which is coupled to the enclosure portion 55 via the second attachment member 90 of the second attaching arrangement 80 and (e.g., indirectly) via the attachment arrangement. The first cover 60 is rotatably situated on the extending member 90 of the second attachment arrangement 80 and positioned between the pointer member 35 and the propelling member 75.

[0030] The propelling member 75 is rotatably situated in a groove of the enclosure portion 55 on the attachment member 50. The attachment member 90 of the second attaching arrangement 80 is fixedly coupled to the pointer member 35. The attaching arrangement 80 then extends through the opening 65 of the first cover 60 and is fixedly coupled to the propelling member 75 via a bore 100 of the propelling member 75. The attachment member 50 is rotatably coupled to the propelling member 75. Thus, the propelling member 75 and the pointer member 35 can be rotated inside of the second toy portion 10.

[0031] The second toy portion 10 also has a second cover 70 shown in Figure 4. The second cover 70 is, preferably, a transparent cover so that the user (e.g., a child) can see the first cover 60 and the pointer member 35 by looking through the second cover 70. By placing the second cover 70, which has a periphery 71 (substantially corresponding to the periphery 58 of the enclosure portion 55), over the periphery 58 of the enclosure portion 55, an enclosed housing is formed to situate the elements of the second toy portion 10.

[0032] In operation, when the user depresses one or more parts of the first toy portion 5, the gas present in the hollow portion of the first toy portion 5 is expelled through the first bore 15 into the second toy portion 10. The gas enters into the second toy portion 10 through the opening 45 of the extended member 40 and then into the enclosure portion 55 through a third bore 25. A force of the gas (i.e., the gas pressure) contacts at least one of the fins 85 of the propelling member 75, and actuates a rotatable motion of the propelling member 75 and the pointer member 35, without rotating the first cover 60. The pointer member 35 spins in the same rotational direction and speed as the fins 85. The user can observe the rotational movement of the pointer member 35 through the second cover 70.

[0033] When the user releases the squeezed parts of the first toy portion 5, the pressure of the gas no longer acts on the fins 85 in the second toy portion 10. Thus, the gas reenters the hollow portion of the first toy portion 5 through, preferably, the second bore 20 when at least one part of the first toy portion 5 is released. In an alternative exemplary embodiment, the gas may reenter the hollow portion of the first toy portion 5 from the second toy portion 10. In particular, the gas enters the second toy portion 10 through the fourth bore 30 and then exits to the first toy portion 5 through the third bore 25. Thus, the rotatable motion of the propelling member 75 and the pointer member 35 slows down until a complete stop is reached.

[0034] In an alternative exemplary embodiment of the present invention, the toy 1 may also include at least one audible device 22 (e.g., a squeaker and/or a sound emitting device (not shown)). The audible device 22 may be situated in the second bore 20 of the first toy portion 5. When the user squeezed the first toy portion 5, the gas expelling through the audible device 22 emits a squeakering sound or other sounds. In an alternative exemplary embodiment of the present in invention, the second toy portion 10 includes at least one further audible device (not shown).

[0035] Alternatively, the audible device may also include a sound chip coupled to a sound device (e.g., a speaker) positioned, for example, at the second bore 20. The sound ship may control the sound device to emit one or more predetermined sounds and/or melodies when the gas pressure is applied to the first toy portion 5.

[0036] The audible device may also play a predetermined music when the air pressure is applied to the first toy portion 5. The predetermined music may corresponds to a musical arrangement pointed to (on the first cover 60) the pointer member 35.

[0037] One of the advantages of the present invention is that the toy 1 can be utilized, for example, as an educational tool for children. When the pointer member 35 stops spinning, it may be pointing to a different section of the first cover 60. As described above, the first cover 60 may have different text, pictures, figures, colors, etc. in each section. Thus, the spinner toy 1 can be educational and, at the same time, entertaining for the user (e.g., the child).

[0038] Figure 7 shows another alternative exemplary embodiment of the present invention. In particular, as shown in Figures 8a and 8b, the second toy portion 10 is similar (e.g., in its functions, shape, size, composition and/or color) to the second toy portion 10 of the embodiment described above. In this embodiment, the second toy portion does not require the propelling member 75 (shown in Figures 5 and 6), the first cover 60 (shown in Figure 3), the fourth bore 30 and/or the attachment member 50 (shown in Figures 2a and 2b). The enclosure portion 55 may have the first cover 60 (shown in Figure 3) situated in the second toy portion 10.

[0039] Particularly, the enclosure portion 55 includes at least one element 100. In a preferred exemplary embodiment, the enclosure portion 55 may include two, four, eight or more elements 100. The elements 100 are larger than a diameter of a cross-section of the extending member 40 and also larger than a diameter of the periphery of the fourth bore 30. The elements 100 may be made of a plastic material, a resin material, a metal material, a magnetic material, a glass material and/or any combination of the above. The elements 100 may have different shape, form, and/or color (e.g., a cartoon character, an animal, a toy and/or a geometrical figure).

[0040] In operation, when the gas pressure enters the enclosure portion 55 from the first portion 5 via the extending member 40, the gas is projected, e.g., along an internal periphery of the enclosure portion 55 so that the elements 100, which are detached from any part of the enclosure portion 55, are projected by the gas pressure to rotate, e.g., in a clockwise manner. The elements 100 can also move in other various directions using the force of the gas. It is also possible that the at least one element 100 may be attached to at least one part of the second toy portion 10.

[0041] When the elements 100 move inside the enclosure portion 55, a sound may also be generated, which can be appealing to the user, e.g., a child. The second toy portion 10 may also include the audible device 22 as described above for the embodiment illustrated in Figure 1b.

Claims

1. A toy comprising:

a first enclosed portion having a first bore;
a second enclosed portion having a second bore, the first enclosed portion providing a gas pressure from the first bore to enter the second enclosed portion via the second bore;
a rotating member rotatable situated in the second enclosed portion and including a plurality of fins; and
a pointer element situated in the second enclosed portion and coupled to a center portion of the rotating member,

wherein, when the gas pressure entering from the second bore is applied to at least one of the plurality of fins, the rotating element rotates the pointer element.

2. The toy according to claim 1, wherein the rotating member and the pointer element rotate in the same rotational direction and at the same rotational speed.

3. The toy according to claim 1, wherein the second enclosed portion includes an enclosure member and a first cover covering the second enclosed portion.

4. The toy according to claim 3, wherein the first cover is composed of a transparent material.

5. The toy according to claim 1, wherein the first enclosed portion includes a third bore for at least one of receiving and expelling a gas.

6. The toy according to claim 1, wherein the second enclosed portion includes a fourth bore for at least one of receiving and expelling a gas.

7. The toy according to claim 1, wherein the pointer element includes an arrow member.

8. The toy according to claim 1, wherein the rotating member includes an attachment member coupled to the pointer element.

9. The toy according to claim 1, wherein the plurality of fins have a flat shape and include one of four flat fins, six flat fins and eight flat fins.

10. The toy according to claim 1, further comprising:

a second cover situated between the rotating member and the pointer element.

11. The toy according to claim 8, wherein the second enclosed portion includes an extending member situated on a bottom part of the second enclosed portion.

12. The toy according to claim 11, wherein the rotating portion is situated on the extending member using the attachment member.

13. The toy according to claim 1, wherein the first enclosed portion has a shape of one of a cartoon character, an animal, a toy and a geometrical figure.

14. The toy according to claim 10, wherein the second cover has a plurality of sections, each of the plurality of sections has one of a predetermined color, a predetermined text, a predetermined geometric figure and a predetermined cartoon character.

15. The toy according to claim 1, wherein the first enclosed portion includes at least one audible device.

16. The toy according to claim 15, wherein the at least one audible device is at least one of a sound emitting device and a squeaker device.

17. The toy according to claim 1, wherein the second enclosed portion includes the at least one audible device.

18. The toy according to claim 15, wherein the audible device emits a predetermined sound corresponding a predetermined position of the pointer element.

19. The toy according to claim 15, wherein the audible device include a sound chip coupled to a speaker device, the audible device controlling the speaker device to emit a predetermined sound.

20. The toy according to claim 1, wherein the second enclosed portion has a shape of one of a cartoon character, an animal, a toy and a geometrical figure.

21. The toy according to claim 1, wherein the first enclosed portion is composed of one of a rubber material and a compressible material.

22. A toy comprising:

a first enclosed portion having a first bore;
a second enclosed portion having a second bore, the first enclosed portion providing a gas pressure from the first bore to enter the second enclosed portion via the second bore; and
at least one element situated in the second enclosed portion,

wherein, when the gas pressure enters from the second bore, the at least one element moves inside of the second enclosed portion.

23. The toy according to claim 22, wherein the at least one element detached from the second enclosed portion.

24. The toy according to claim 22, wherein the second enclosed portion includes at least one of a first cover covering the second enclosed portion and a second cover positioned within the second enclosed portion.

25. The toy according to claim 24, wherein the first cover is composed of a transparent material.

26. The toy according to claim 22, wherein the first enclosed portion includes a third bore for at least one of receiving and expelling a gas.

27. The toy according to claim 22, wherein the second enclosed portion includes a fourth bore for at least one of receiving and expelling a gas.

28. The toy according to claim 22, wherein the first enclosed portion has a shape of one of a cartoon character, an animal, a toy and a geometrical figure.

29. The toy according to claim 22, wherein the first enclosed portion includes at least one audible device.

30. The toy according to claim 29, wherein the at least one audible device is at least one of a sound emitting device and a squeaker device.

31. The toy according to claim 22, wherein the second enclosed portion includes the at least one audible device.

32. The toy according to claim 22, wherein the second enclosed portion has a shape of one of a cartoon character, an animal, a toy and a geometrical figure.

33. The toy according to claim 22, wherein the first enclosed portion is composed of one of a rubber material and a compressible material.

34. The toy according to claim 22, wherein the at least one element is composed of one of a rubber material, a plastic material, a paper material, a metal material, a magnetic material, a glass material and a compressible material.

35. The toy according to claim 22, wherein the at least one element has a shape of one of a cartoon character, an animal, a toy and a geometrical figure.

Fig 1a

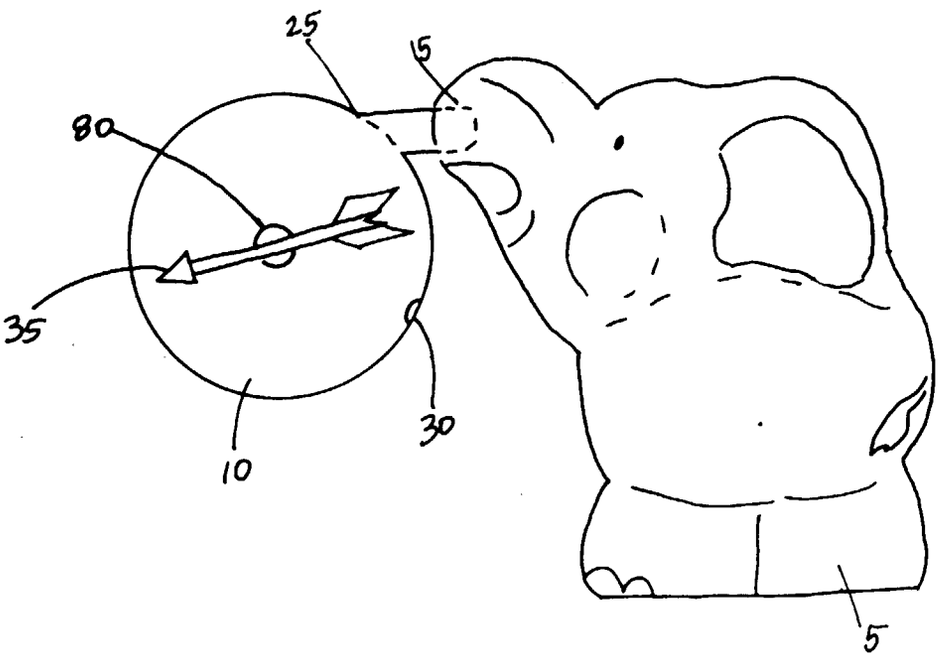


Fig. 1b

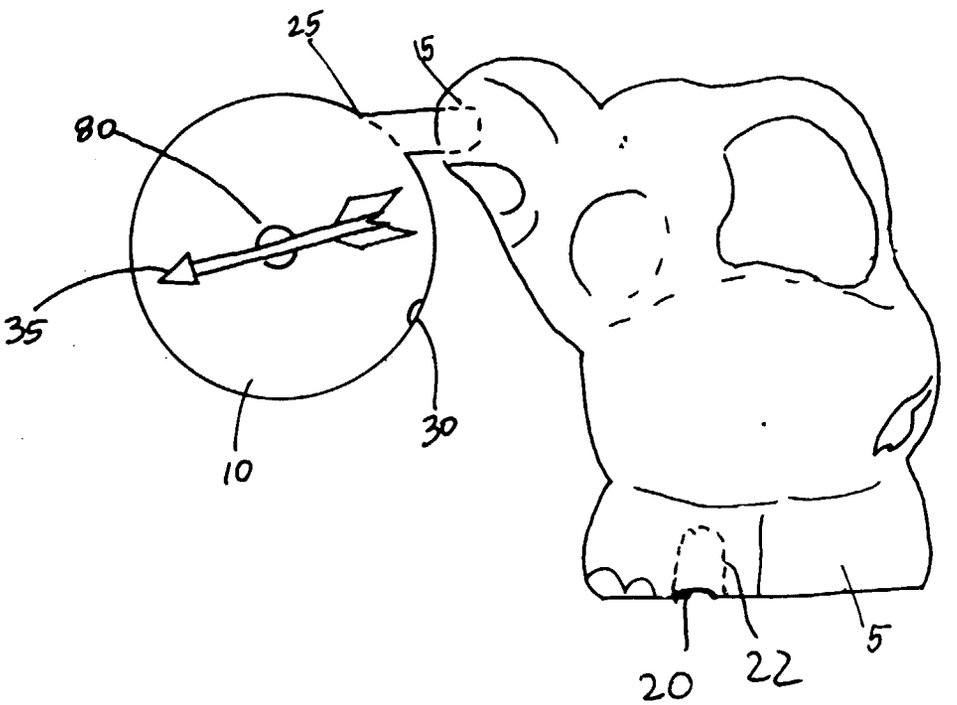


Fig 2a

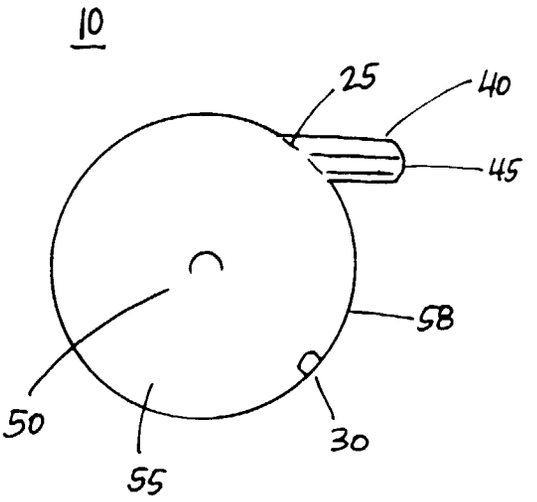


Fig 2b

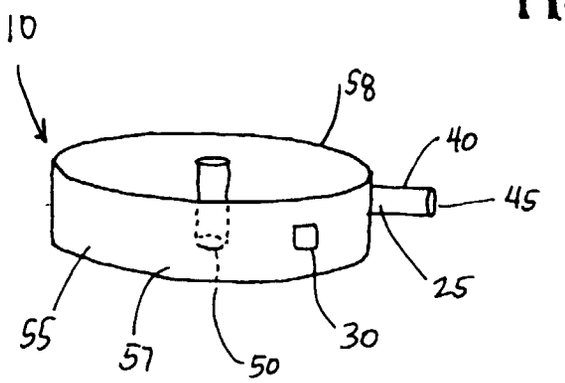


Fig 3

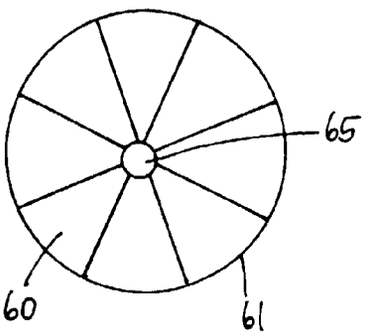


Fig 4

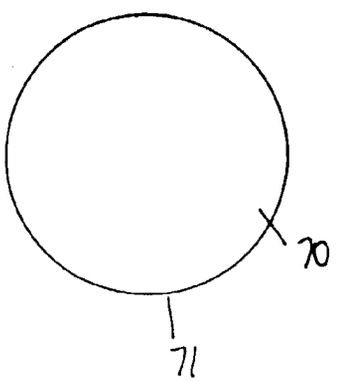


Fig 5

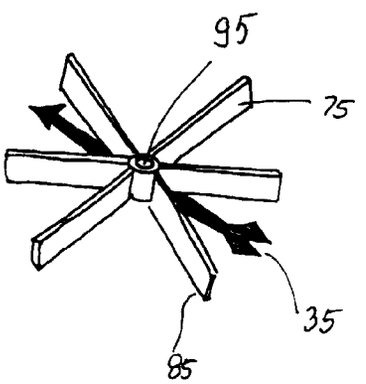


Fig 6

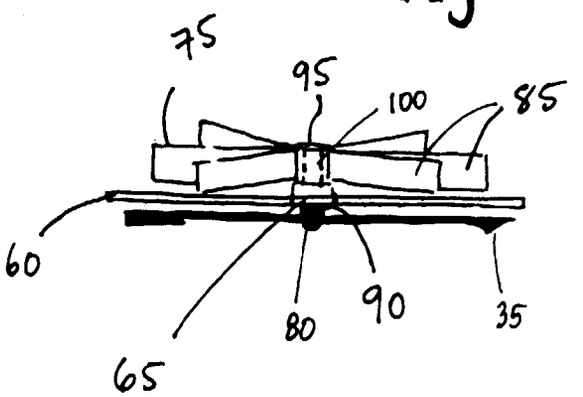


Fig 7

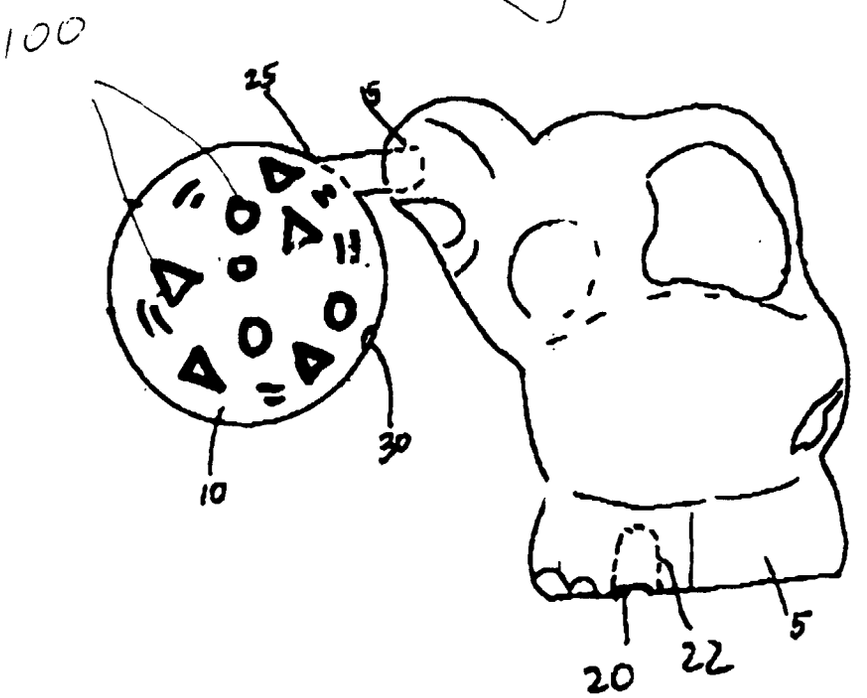


Fig 8a

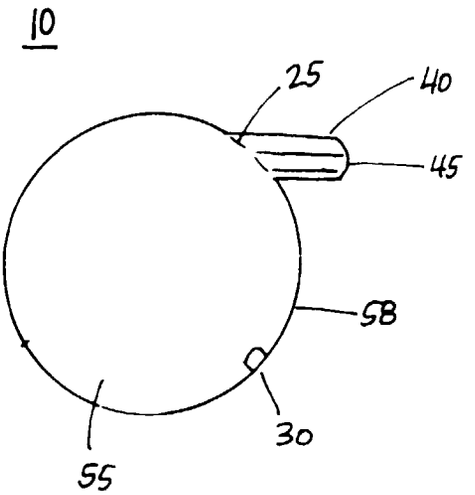


Fig 8b