A bouncing ball device includes a number of legs extended radially outward for increasing a bouncing effect of the ball and includes a number of end members detachably or changeably secured to the legs. A sound and/or a light generating device may be received in the ball for generating a sound or a light. A circuit board is received in the ball, a buzzer and one or more light bulbs are attached to the circuit board, and a spring member may be used for selectively energizing the buzzer or the light bulbs. A housing is received in the ball for receiving the circuit board.
BOUNCING BALL HAVING SOUND OR LIGHT GENERATING DEVICE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a bouncing ball device, and more particularly to a bouncing ball device having a sound and/or a light generating device provided therein.

[0003] 2. Description of the Prior Art

[0004] Typical bouncing balls comprise a spherical ball made of resilient materials, such as the rubber, for allowing the ball to be bounced or spring backward when hitting onto the ground or the other object. The typical bouncing balls may not be used to generate voices or sounds or lights.

[0005] The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional bouncing balls.

SUMMARY OF THE INVENTION

[0006] The primary objective of the present invention is to provide a bouncing ball device including a sound and/or a light generating device provided therein for generating a sound or a light and for recreational purposes.

[0007] The other objective of the present invention is to provide a bouncing ball device including a number of spring legs extended radially outward therefrom for increasing the bouncing effect thereof.

[0008] In accordance with one aspect of the invention, there is provided a bouncing ball device comprising a ball body including a plurality of legs extended radially outward therefrom for increasing a bouncing effect of the ball body.

[0009] The ball body further includes a plurality of end members, and means for securing the end members to the legs. The legs each includes a cavity formed therein, the end members each includes a projection extended therefrom and engaged into the cavity of the legs respectively.

[0010] A first leg of the legs of the ball body includes an aperture formed therein, and a sound generating device received in the ball body for generating a sound through the aperture of the first leg.

[0011] The sound generating device includes a circuit board received in the ball body, a buzzer attached to the circuit board, and means for energizing the buzzer.

[0012] The energizing means includes a conductor member provided on the circuit board, and a spring member having a first end secured on the circuit board and a second end for selectively engaging with the conductor member.

[0013] A housing may further be provided and received in the ball body for receiving the circuit board, and includes a tube extended therefrom and engaged into the first leg of the ball body. The housing includes a spring arm extended therefrom and engaged with the circuit board for retaining the circuit board in the housing.

[0014] A light generating device is further provided and received in the ball body for generating a light and includes a circuit board received in the ball body, at least one light device attached to the circuit board, and means for energizing the at least one light device.

[0015] The energizing means includes a conductor member provided on the circuit board, and a spring member having a first end secured on the circuit board and a second end for selectively engaging with the conductor member.

[0016] Further objectives and advantages of the present invention will become apparent from a careful reading of a detailed description provided hereinbelow, with appropriate reference to accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 is a perspective view of a bouncing ball device in accordance with the present invention;

[0018] FIG. 2 is an exploded view of the bouncing ball device;

[0019] FIG. 3 is a partial exploded view showing the housing members for being received in the bouncing ball device;

[0020] FIG. 4 is a rear perspective view showing a circuit board of the bouncing ball device;

[0021] FIGS. 5 and 6 are perspective views showing the other embodiments of the bouncing ball device;

[0022] FIG. 7 is a partial exploded view showing the further embodiment of the bouncing ball device;

[0023] FIG. 8 is a partial exploded and cross sectional view of the bouncing ball device as shown in FIG. 7; and

[0024] FIG. 9 is a perspective view illustrating the operation of the bouncing ball device.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0025] Referring to the drawings, and initially to FIGS. 1-4, a bouncing ball device in accordance with the present invention comprises a ball body 2 including one or more ball members 20 secured together by such as the welding or molding processes and including a chamber 21 formed therein. The ball body 2 includes a number of spring legs 5 extended radially outward therefrom for increasing the bouncing effect of the ball body 2 (FIG. 9). The spring legs 5 include a cylindrical shape 52 having a decorative end member 53 attached to the end portions thereof.

[0026] As shown in FIGS. 1, 5, 6, 7, the decorative end members 53 may be formed into various kinds of shapes and patterns or colors. As shown in FIGS. 7 and 8, the decorative end members 53 may each include a projection 55 engaged into a cavity 54 of the corresponding cylindrical-shaped spring legs 52, by such as a force-fitted engagement, for allowing the decorative end members 53 to be detachably or changeably secured to the spring legs 52. The decorative end members 53 may also be solidly secured to the spring legs 52 with adhesive materials or by welding processes, or the like.

[0027] As shown in FIG. 2, one of the spring legs 5 includes an aperture 51 formed in the end portion thereof. A housing 3 includes two or more housing members 30, 40 to be secured together. For example, the housing members 30, 40 each includes a semi-spherical shape having a peripheral flange 31, 41 extended radially outward therefrom for engaging with each other and for being secured together...
with such as the adhesive materials or by the welding processes, or the like. The housing member 40 includes a tube 44 extended therefrom for engaging into the spring leg 5 that has the aperture 51 formed therein, and having an orifice 43 formed therein for aligning with the aperture 51 of the spring leg 5.

[0028] A circuit board 11 or the like is engaged in the housing 3 and includes a buzzer 12 engaged in the orifice 43 of the housing member 40, for example. The housing member 30 may include a spring arm 32 for engaging with or for engaging into a depression 19 (FIG. 4) of the circuit board 11 for retaining the circuit board 11 within the housing 3. A spring member 15 has an end portion secured to the circuit board 11 and has the other end portion for engaging with a conductor member 13 of the circuit board 11 and for enclosing the electric circuit of the circuit board 11 when the ball body 1 is moved or bounced.

[0029] The circuit board 11 may include one or more light devices or light bulbs 16, 17 attached thereto for generating a light when the spring member 15 contacts with the conductor member 13. The buzzer 12 may be used to generate a sound or a voice when the spring member 15 contacts with the conductor member 13 or when the electric circuit of the circuit board 11 is enclosed. One or more batteries 18 are attached to the circuit board 11 for energizing the light devices 16, 17 and the buzzer 12.

[0030] It is preferable that the ball body 2 and/or the housing 3 is made of transparent or semi-transparent materials for allowing the light to be transmitted or emitted outward through the ball body 2 and/or the housing 3.

[0031] Accordingly, the bouncing ball device in accordance with the present invention includes a sound and/or a light generating device provided therein for generating a sound or a light and for recreational purposes, and/or includes a spring legs extended radially outward therefrom for increasing the bouncing effect thereof.

[0032] Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

I claim:

1. A bouncing ball device comprising:

   a ball body including a plurality of legs extended radially outward therefrom for increasing a bouncing effect of said ball body.

2. The bouncing ball device according to claim 1, wherein said ball body further includes a plurality of end members, and means for securing said end members to said legs.

3. The bouncing ball device according to claim 2, wherein said legs each includes a projection extended therefrom and engaged into said cavity of said legs respectively.

4. The bouncing ball device according to claim 1, wherein a first leg of said legs of said ball body includes an aperture formed therein, and a sound generating device received in said ball body for generating a sound through said aperture of said first leg.

5. The bouncing ball device according to claim 4, wherein said sound generating device includes a circuit board received in said ball body, a buzzer attached to said circuit board, and means for energizing said buzzer.

6. The bouncing ball device according to claim 5, wherein said energizing means includes a conductor member provided on said circuit board, and a spring member having a first end secured on said circuit board and a second end for selectively engaging with said conductor member.

7. The bouncing ball device according to claim 5 further comprising a housing received in said ball body for receiving said circuit board.

8. The bouncing ball device according to claim 7, wherein said housing includes a tube extended therefrom and engaged into said first leg of said ball body.

9. The bouncing ball device according to claim 7, wherein said housing includes a spring arm extended therefrom and engaged with said circuit board for retaining said circuit board in said housing.

10. The bouncing ball device according to claim 7 further comprising a light generating device received in said ball body for generating a light.

11. The bouncing ball device according to claim 10, wherein said light generating device includes a circuit board received in said ball body, at least one light device attached to said circuit board, and means for energizing said at least one light device.

12. The bouncing ball device according to claim 10 wherein said energizing means includes a conductor member provided on said circuit board, and a spring member having a first end secured on said circuit board and a second end for selectively engaging with said conductor member.

13. A bouncing ball device comprising:

   a ball body, and

   a sound generating device received in said ball body for generating a sound.

14. The bouncing ball device according to claim 13, wherein said sound generating device includes a circuit board received in said ball body, a buzzer attached to said circuit board, and means for energizing said buzzer.

15. The bouncing ball device according to claim 14, wherein said energizing means includes a conductor member provided on said circuit board, and a spring member having a first end secured on said circuit board and a second end for selectively engaging with said conductor member.

16. The bouncing ball device according to claim 14 further comprising a housing received in said ball body for receiving said circuit board, said ball body including a plurality of legs extended radially outward therefrom and having an aperture formed in a first leg of said legs, said housing including a tube extended therefrom and engaged into said first leg of said ball body.

17. A bouncing ball device comprising:

   a ball body, and

   a light generating device received in said ball body for generating a light.

18. The bouncing ball device according to claim 17, wherein said light generating device includes a circuit board received in said ball body, at least one light device attached to said circuit board, and means for energizing said at least one light device.

19. The bouncing ball device according to claim 18 wherein said energizing means includes a conductor member provided on said circuit board, and a spring member having a first end secured on said circuit board and a second end for selectively engaging with said conductor member.