June 25, 1957 K. T. BEYRODT 2,796,697

PARACHUTE BALL TOY

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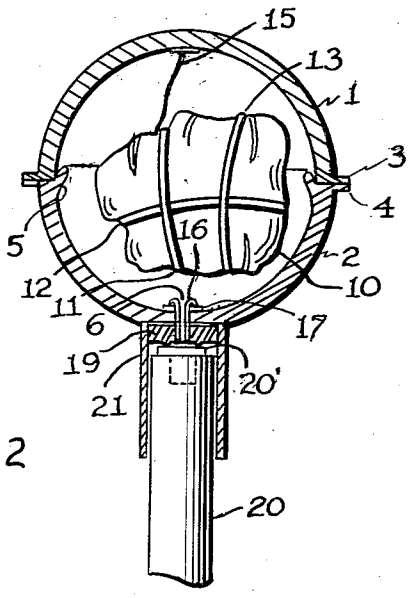


Fig 2

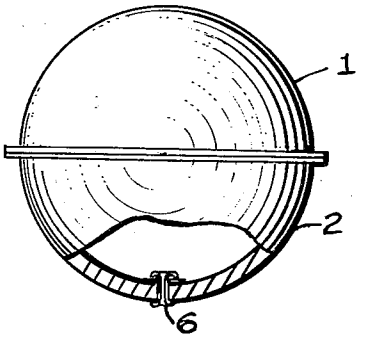


Fig 1

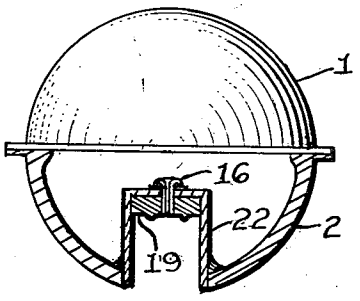


Fig 3

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PARACHUTE BALL TOY

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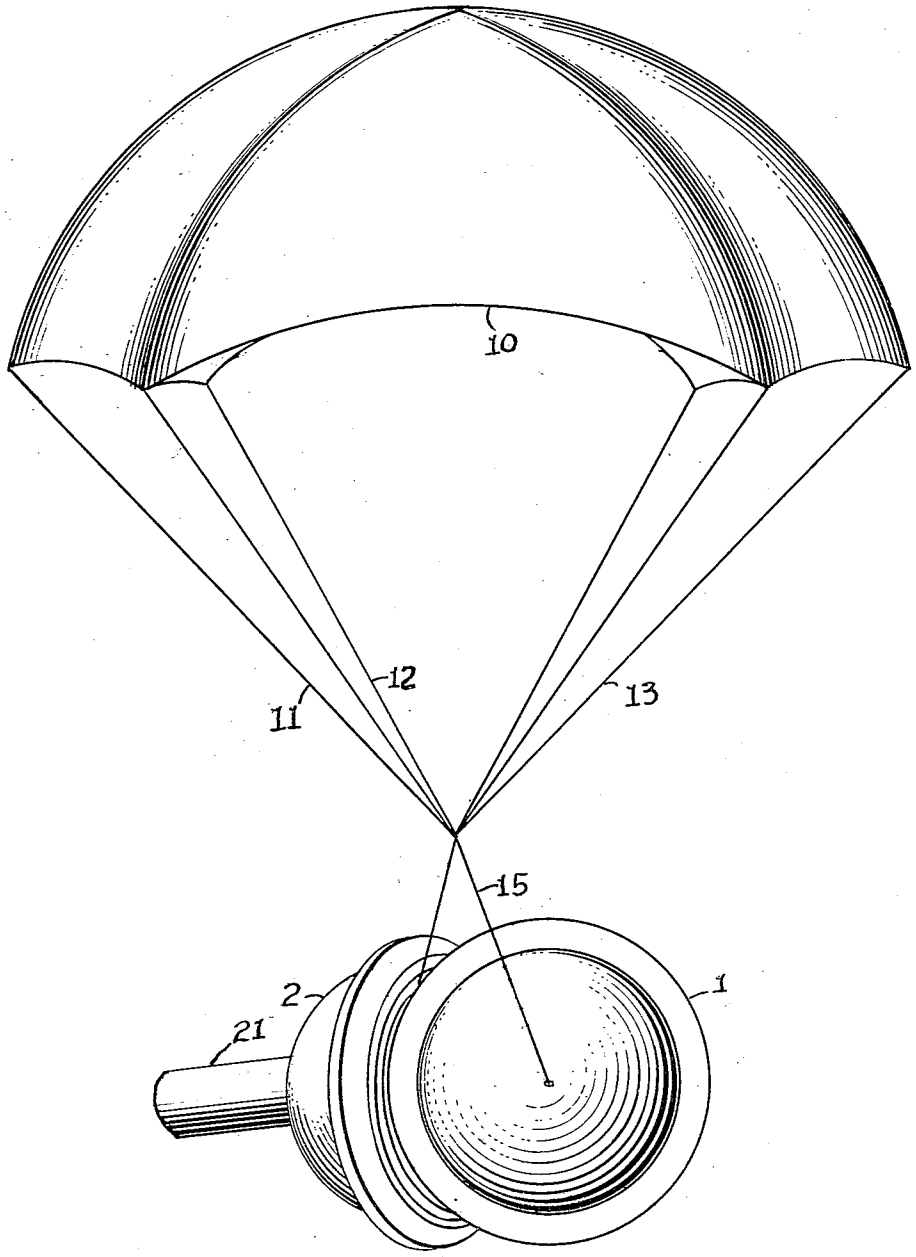


Fig 4

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United States Patent Office

2,796,697

Patented June 25, 1957

2,796,697

PARACHUTE BALL TOY

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Application September 9, 1954, Serial No. 454,905

4 Claims. (Cl. 46—86)

This invention relates to toys, and more particularly to a parachute type toy.

The present invention consists essentially of two halves of a rubber ball, one half of which has a sealable small orifice; a short cord connected to the two halves on the inside, and a parachute with elastic shroud lines attached to the short cord. The parachute is rolled up and placed inside the two halves. The two halves of the ball are placed together, squeezed, and released, while the orifice is kept closed, thus creating a partial vacuum which will hold them together. The ball is thrown in the air at which time the orifice is opened automatically. After a predetermined time the halves will break apart, the parachute will open and the whole combination will descend.

Accordingly, a principal object of the invention is to provide a new and improved toy means.

Another object of the invention is to provide new and improved parachute toy means.

Another object of the invention is to provide a new and improved educational toy which demonstrates scientific principles.

Another object of the invention is to provide a new and improved outdoor toy which is entertaining and safe in operation.

Another object of the invention is to provide a toy comprising a pair of elastic members adapted to fit together, one of said members having a small orifice, and a parachute adapted to be contained inside said joined members.

Another object is to provide a novel outdoor toy for children which is safe, entertaining and educational in that it demonstrates the scientific principles of air timing devices and the power of air pressure differentials.

These and other objects of the invention will be apparent from the following specification and drawings of which:

Figure 1 is a sectional side view of one embodiment of the invention.

Figure 2 is a sectional side view of another embodiment of the invention.

Figure 3 is a sectional side view of a third embodiment of the invention.

Figure 4 is a side view illustrating the use of the invention.

Referring to Figures 1 and 2, the invention comprises two elastic hemispheres **1** and **2** which may be similar to the halves of a rubber ball. The two halves preferably have a pair of flanges **3** and **4** which are adapted to fit together to form an air tight seal. One of the members preferably has an inside flange **5** which is adapted to enhance the vacuum seal and serves as a guide when closing the ball. One of the members **2** has a small orifice **6** the size of which is chosen to leak air at a predetermined rate so that a vacuum seal will be broken in a predetermined time. The orifice **6** may be a simple eyelet member **16** squeezing washer **17** or may comprise a more elaborate air valve, if desired.

The members 1 and 2 should preferably have sufficient

elastic strength to regain their spherical shape even though there is a partial vacuum inside. A folded parachute **10** is shown inside the joined members **1** and **2**, the parachute being tightly folded up and wrapped with elastic shroud lines **11**, **12** and **13**. At least three lines should be used for the proper operation of the parachute or more may be used, if desired. The two half members **1** and **2** are connected together by a short cord **15** which is connected to the parachute cords as shown in Figure 4.

Figure 2 shows another embodiment of the invention which is slightly more elaborate in that it is used with a throwing stick **20**. The throwing stick enables the ball to be thrown much higher and further. Otherwise, the operation is entirely the same. In this embodiment a tubular member **21** is mounted around the orifice **6**. The tubular member **21** serves as a guide for the throwing stick and the rubber insert **20'** at the tip of the stick seals the orifice **19**.

In the operation of this embodiment the stick is inserted and the ball squeezed. Therefore, the rubber seal **20'** will hold the vacuum pressure. The stick is then moved with a whipping or snapping motion whereupon the ball will fly off the end of the stick.

Figure 3 shows another embodiment of the invention which may be used with a stick or without. In this embodiment the tubular member **22** is recessed in one of the hemispheres. Therefore, the vacuum seal may be created either with a stick or by holding the operator's thumb over the opening end of tubular member **22**.

The operation of the invention may be summarized as follows:

After the parachute has been folded up and the elastic cords have been wound tightly around it, it is laid inside the cup with the orifice, the other cup is placed on top of it so that it looks like a complete round rubber ball.

If you place your thumb over the orifice to close it and then push downward with the thumb and release the pressure of the thumb without breaking the seal at the orifice, the rubber ball will take its full round shape and a partial vacuum will have developed inside the ball, which is sufficient to hold the two halves together until the seal at the orifice is broken and air is allowed to fill the vacuum.

If the seal at the orifice is not broken, the ball can be thrown high into the air and will only open after a fixed time delay. At this time the ball will fly apart, the parachute will unfold quickly and float to the ground with the two cups serving as ballast.

To make the device more practical and trouble free, a few refinements should preferably be incorporated:

1. The rubber should be of suitable durometer and should be distributed properly so that upon release of the thumb pressure the ball snaps back to its spherical shape without collapsing at the flange and breaking the vacuum seal.

2. Both cups should have slight thin flanges **3** and **4** all around the outside of the open end which would greatly help to seal the two cups all around the periphery.

3. One of the cups, preferably the one with the orifice should have a flange **5** on the inside of the opening. This reinforcement should extend upwardly into the other cup so as to form a guide for the second cup and facilitate centering the two cups when closing the ball. If necessary, to prevent the collapse of the flange section under the pressure of the vacuum, a ring shaped wire insert in the flange section may be advisable.

Various other contents may be inserted inside the hollow sphere, for instance, confetti, colored streamers or balloons adapted to be self-inflating with a CO_2 cartridge without departing from the scope of the invention.

Other throwing means may also be used with the in-

vention such as sling shots or spring operated launching boards.

I claim:

1. A toy comprising a first elastic hemisphere, a second elastic hemisphere adapted to mate in air-tight fashion with said first elastic hemisphere to form a complete sphere, said second hemisphere having an orifice through its wall, a tubular member affixed to said second hemisphere on the convex side thereof surrounding said orifice, a throwing rod having a diameter equal to the inner diameter of said tubular member and having its end nested within said tubular member, a sealing member affixed to the bottom end of said rod and positioned to cover the orifice upon the insertion of said rod in said tubular member, a parachute, and a plurality of cords connecting said parachute to each of said elastic hemispheres.

2. Apparatus as in claim 1 wherein said orifice is located at a pole of said second hemisphere.

3. Apparatus as in claim 1 wherein said orifice has a hollow eyelet inserted therein.

4. A toy comprising a first elastic hemisphere, a second elastic hemisphere adapted to mate in air-tight fashion with said first elastic hemisphere to form a complete sphere, said second hemisphere having a circular opening at its pole, a tubular member affixed to said second hemisphere on the outside thereof surrounding said opening and a wall sealing the terminal end of said tubular member, said end wall having an orifice at its center, a throwing rod having a diameter equal to the inner diameter of said tubular member and having its end nested within said tubular member, a sealing member affixed to the bottom end of said rod and positioned to cover the orifice in the end wall of said tubular member upon insertion of said rod in said tubular member, a parachute, and a plurality of cords connecting said parachute to each of said elastic hemispheres.

References Cited in the file of this patent

UNITED STATES PATENTS

1,536,722	Miller	May 5, 1925
1,713,432	Griggs	May 14, 1929
1,914,449	Murray	June 20, 1933

FOREIGN PATENTS

634,200	Great Britain	Mar. 15, 1950