May 14, 1929. T. G. GRIGGS 1,713,432

TOY PARACHUTE

Filed May 9, 1928

Fig. 1.

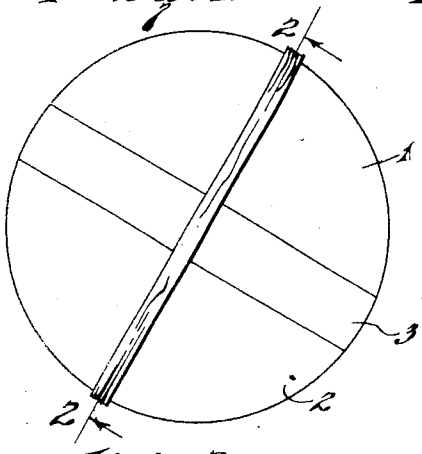



Fig. 3.

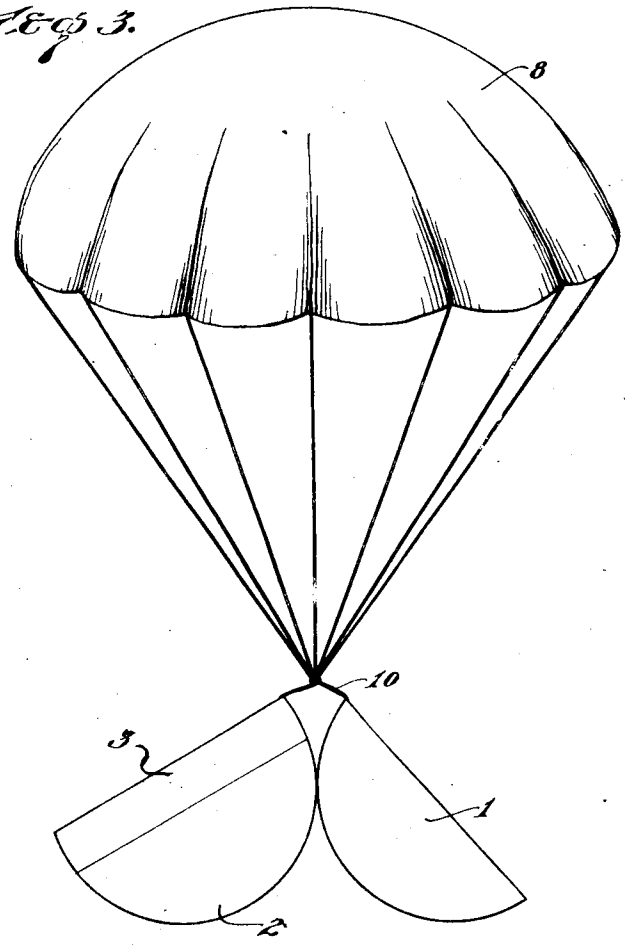



Fig. 2.

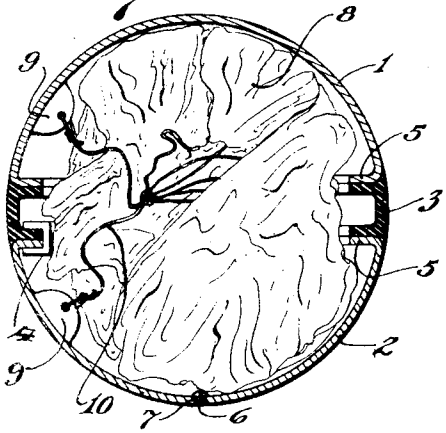



Fig. 6.

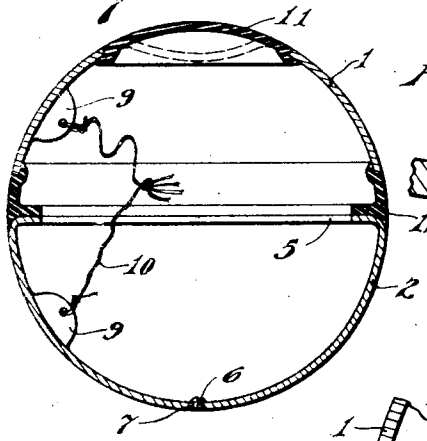



Fig. 5.

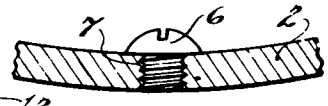



Fig. 7.

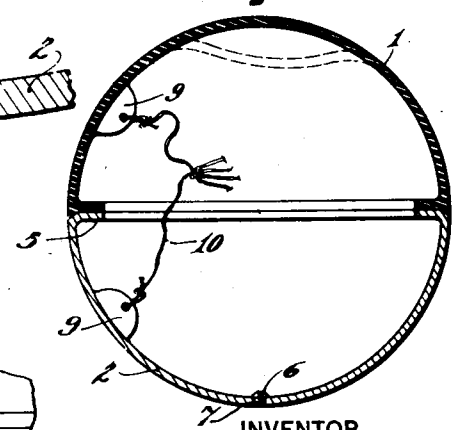
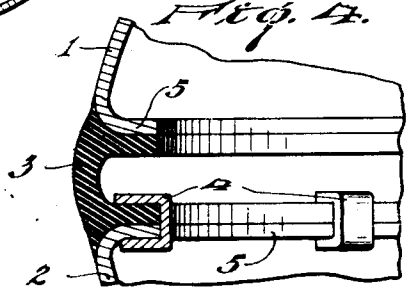



Fig. 4.




WITNESSES

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# UNITED STATES PATENT OFFICE.

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## TOY PARACHUTE.

Application filed May 9, 1928. Serial No. 276,411.

This invention relates to toy parachutes, an object of the invention being to provide a toy in the nature of a hollow ball composed of sections held together for a predetermined length of time by suction or partial vacuum, and which sections separate while the ball is in the air after being thrown, releasing a parachute enclosed within and connected to the sections of the ball so that the device will descend slowly to the ground.

My invention has particularly to do with a toy which may be used as a ball but which is composed of sections, some portion of the ball or one of the sections being elastic so as to allow air to be forced out of the ball, the sections of the ball held together by suction or partial vacuum until the pressure within the ball equals the atmospheric pressure, when the sections will separate to allow a parachute within the ball to function.

My invention is capable of various modifications and construction to carry out the ideas broadly as above expressed, and the toy may be manufactured and sold at a reasonably low price.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a view in elevation of my improved toy and showing the sections held together by a rubber band around the same so that the ball may be used as any other ball and may be conveniently stored and shipped;

Figure 2 is a view in section on the line 2—2 of Figure 1, the rubber band being omitted;

Figure 3 is a view in elevation showing the ball sections separated and supported by a parachute which is normally enclosed in the ball sections;

Figure 4 is an enlarged fragmentary view in section showing the elastic channel ring member of the ball partly compressed;

Figure 5 is an enlarged fragmentary view in section showing the screw which has a loose threaded engagement with the ball section, and past which the air can be forced out and sucked into the ball, this screw being capable of adjustment to vary the timing of the passage of the air and consequently vary the operation of the toy;

Figure 6 is a view in section illustrating a modification;

Figure 7 is a view similar to Figure 6, illustrating another modification.

My improved toy comprises a hollow spherical ball which in Figures 1, 2 and 3 includes two sections 1 and 2 which may be of metal or any other suitable material but which are inflexible and inelastic; and between these sections 1 and 2 a channel-shaped annular ring 3 is provided of a maximum diameter of the ball and secured to section 2 by U-clamps 4 or any other suitable means.

This elastic ring section 3 is capable of compression or contraction and expansion, and the sections 1 and 2 have inturned annular flanges 5 which engage the flanges of the ring 3. The section 1 has a sufficient surface bearing against the ring section 2 to insure an airtight juncture therewith so that when air pressure is reduced within the ball, the suction or partial vacuum will hold the section 1 against the ring section 3, it being understood of course that the ring section 3 is rigidly secured to the ball section 2.

To permit and regulate the passage of air from the ball and into the ball I provide a section 6 located in a screw-threaded opening 7 in one of the ball sections. It is to be understood that the air can pass around the screw through the opening 7 but that this movement of the air will be slow, and by adjusting the screw in the opening the rapidity of the movement of the air can be regulated sufficiently for all practical purposes. In any event, the screw is intended to indicate a device or means by which an adjustment may be had so as to time and regulate the passage of air through the wall of the ball.

The ball normally encloses a parachute 8, and perforated lugs on the ball sections are connected by a cord or other flexible connecting device 10 to which the parachute is connected. This cord or other flexible device 10 not only couples the parachute to the ball sections but it also prevents the ball sections from complete separation.

The operation of the device above described is as follows:

With the parachute 8 enclosed, the ball sections 1 and 2 are pressed toward each other. This action compresses the elastic, channel-shaped ring 3, causing the air within the ball to be forced out through the opening 7 past screw 6. When the pressure on the ball sections is released, the suction or partial vacuum within the ball holds the sections tightly together. The ball is then thrown into the air and as the air seeps into the ball past the screw 6, it will bring pressure within the ball to atmospheric pressure, when the ball sections will separate, releasing the parachute 8, and the latter will support the ball sections and float slowly to the ground, the parts in this position being indicated in Figure 3.

In the modification illustrated in Figure 6, I show the ball section 1 as having an elastic compressible section 11 intermediate its ends, and an elastic ring 12 at its edge. This ring 12 insures an airtight juncture with the ball section 2. In other respects the construction will be the same as that above described, and like reference characters indicate like parts.

In Figure 7 I show the ball section 1 as entirely of rubber or other elastic material, and in other respects the construction is like that shown in Figure 6.

In all forms of my invention some means is provided for compressing the air within the ball to discharge the same from the ball and hold the ball sections together by suction or partial vacuum for a length of time sufficient to allow the ball to be thrown in the air before the sections separate, and while I have illustrated several forms of my invention to carry out this broad idea I would have it distinctly understood that I do not limit myself to specific details of construction but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. A toy of the character described, including a hollow casing composed of a plurality of sections, a parachute normally enclosed in the casing, and means operated by pressure upon the casing to force air out of the casing and hold the sections of the casing together by suction or partial vacuum.

2. A toy of the character described, including a hollow casing composed of a plurality of sections, a parachute normally enclosed in the casing, means operated by pressure upon the casing to force air out of the casing and hold the sections of the casing together by suction or partial vacuum, and adjustable means controlling the passage of air through the wall of the casing.

3. A toy, including a hollow ball composed of sections, a parachute normally enclosed in the ball and connected to the several sections thereof, and an elastic channel-shaped ring located between the sections of the ball, secured to one section, and held to the other section by suction or partial vacuum within the ball.

4. A toy, including a hollow ball composed of sections, a parachute normally enclosed in the ball and connected to the several sections thereof, an elastic channel-shaped ring located between the sections of the ball, secured to one section, and held to the other section by suction or partial vacuum within the ball, one of said sections having an opening therein, and an adjusting screw in said opening to regulate the passage of air through the opening.

Signed at New York, in the county of New York and State of New York this 8th day of May A. D. 1928.

THEODORE G. GRIGGS.