April 21, 1953 L. W. BROWN 2,635,385

TOY BALLOON

Filed Dec. 11, 1950

Fig. 1.

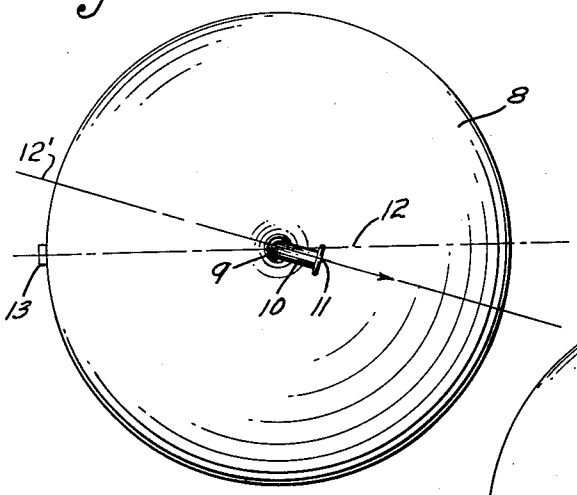
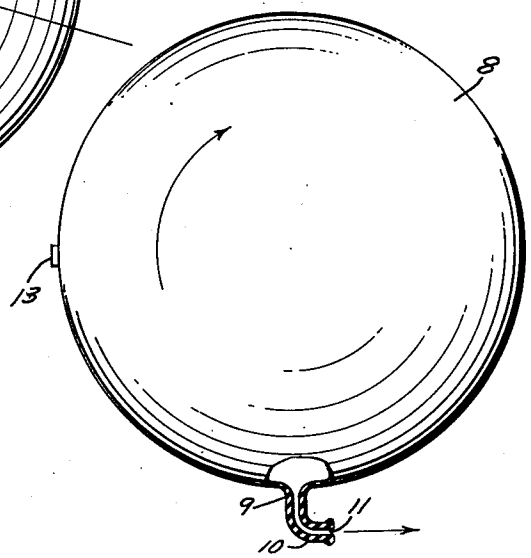


Fig. 2.



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Patented Apr. 21, 1953 2,635,385

UNITED STATES PATENT OFFICE

2,635,385

TOY BALLOON

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Application December 11, 1950, Serial No. 200,253

2 Claims. (Cl. 46—56)

1

This invention relates to toy balloons and more particularly to an inflatable balloon that is propelled through the air by expulsion of inflating medium therefrom during deflation.

The objects of the present invention are to provide an inflatable toy balloon with a small hollow neck which may be used for inflating the balloon, said neck being arranged to discharge the inflating medium with a jet effect for propelling the balloon through the air; to provide an inflatable balloon with a neck having an opening so related to the balloon body that inflating medium expelled through said opening is directed substantially tangentially of the balloon for effecting rotation of said balloon and at an angle to the plane of rotation for propelling said balloon in a direction substantially perpendicular to the plane of rotation; to provide means on the balloon body for cooperating with the forces acting thereon from expulsion of the inflating medium whereby the balloon body rotates and tends to move substantially in a direction defined by the axis of rotation; and to provide an inflatable toy balloon that will be entertaining and serve as an economical amusement device.

In accomplishing these and other objects of the present invention, I have provided improved details of structure, the preferred form of which is illustrated in the accompanying drawings, wherein:

Fig. 1 is a side elevation of a balloon embodying the features of the present invention.

Fig. 2 is a plan view of the balloon illustrated in Fig. 1.

Referring more in detail to the drawings:

In the form of the invention illustrated in the drawing, the balloon body 8 is hollow with a thin wall and of expansible material such as rubber, whereby the body is inflatable. The body is provided with a single hollow neck 9 and nozzle 10 which has a small aperture 11 communicating with the interior of the body 8, whereby discharge of inflating medium from the body member 8 through the neck 9 and nozzle 10 provides a jet effect and a rotating force on the balloon. The nozzle 10 is preferably directed substantially tangentially to the body 8 and downwardly at an angle to the central horizontal plane 12, as illustrated in Fig. 1. With a balloon structure having one neck 9 and nozzle 10 the exhaust or discharge of the inflating medium tends to rotate the balloon body in a direction opposite the direction of discharge of the inflating medium and about an axis perpendicular to a plane 12' defined by the direction of discharge of the inflating

2

medium. The tendency of the body to rotate about an axis perpendicular to the plane 12' is altered by a weight or mass 13 suitably secured to the body member on the horizontal plane 12 and substantially 90° from the neck 9 in the opposite direction to the direction of discharge of the inflating medium. The weight or mass 13 is spaced from a central plane 12' in which the exhaust of the inflating medium tends to rotate the nozzle for offsetting the axis of rotation of the balloon body from a perpendicular to the plane 12', Fig. 1, to a perpendicular to the plane 12. This weight is small, but has sufficient effect whereby the exhaust of the inflating medium through the nozzle 10 effects rotation of the body member 8 about an axis perpendicular to the horizontal plane 12 and also tends to elevate the balloon or otherwise propel same along the axis of rotation.

The weight or mass 13 is secured to the balloon body in a position relative to the nozzle 10 whereby when the balloon is free in the air the gravitational force due to the weight cooperates with the jet effect of the discharge of the inflating medium to tilt the balloon body from the position that the discharging inflating medium would tend to rotate the balloon to a position wherein the jet effect causes the balloon body to move upwardly in the air.

In using a balloon constructed as described, the balloon body 8 is suitably inflated by blowing or otherwise applying inflating medium or air into the nozzle 10 and hollow neck 9 in sufficient quantity and pressure to properly inflate and expand the body 8. When the inflated balloon body is released the inflating medium exhausts or discharges through the nozzle 10 and applies a reaction force to the balloon body in a direction opposite to the direction of discharge of said inflating medium. The weight or mass 13 tends to offset the axis of rotation and cooperates with the jet effect of the discharging inflating medium whereby the force acting on the balloon body has two components, one of which tends to rotate the balloon about an axis perpendicular to the horizontal plane 12. The other component is perpendicular to said plane 12 and tends to lift the balloon body. Therefore the balloon body rotates and moves substantially in a line perpendicular to said plane. The aperture in the nozzle is small relative to the total capacity of the balloon body whereby the forces acting on the balloon body due to the discharge of the inflating medium will rotate and lift the body to a substantial height.

It is believed obvious that I have provided an inflatable toy balloon with a nozzle through which the inflating medium is discharged, so related to the body structure as to simultaneously effect rotation of the body and propelling of the body substantially along the axis of rotation, thereby providing a toy for entertainment and amusement.

What I claim and desire to secure by Letters Patent is:

1. A toy jet propelled balloon for movement through the air when free comprising, a hollow inflatable body, jet means communicating with the interior of the body for discharge of inflating medium therefrom during deflation of said body and operating to direct said inflating medium substantially tangentially from the inflated body for applying rotating forces thereto, and a mass on the side of the body relative to the axis of rotation of said body and spaced from said jet means and offset from a plane defined by the center of the body and the line of discharge of the inflating medium to provide a gravitational force acting on the body in spaced relation to the jet means when said body is free in the atmosphere for tilting the axis of rotation of the body and the line of exhaust of the inflating medium, said mass being such that gravity acting thereon will cause the line of exhaust to be directed downwardly at an angle to a plane which is perpendicular to the axis of rotation whereby the discharging inflating medium rotates the body and propels same substantially along the axis of rotation of said body during deflation of said body.

2. A toy jet propelled balloon for movement through the air when free comprising, a hollow inflatable body, a hollow neck extending from the body and terminating in an angular portion having an opening directed substantially tangentially of the body, said opening communicating with the interior of the body for exhaust of inflating medium from the body and discharge of said inflating medium during deflation of said body through the opening in the hollow neck with a jet effect which applies rotating forces to the body, and a mass on the side of the body relative to the axis of rotation of said body and spaced from the hollow neck in the opposite direction to the discharge of inflating medium therefrom, said mass being spaced from the central plane in which the exhausting inflating medium tends to rotate the hollow neck to provide a gravitational force acting on the body in spaced relation to the hollow neck when said body is free in the atmosphere for offsetting the axis of rotation of the body and the line of exhaust of the inflating medium, said mass being such that gravity acting thereon will cause the line of exhaust of inflating medium from the hollow neck to be directed downwardly at an angle to a plane which is perpendicular to the axis of rotation whereby the discharging inflating medium rotates the body and propels same substantially along the axis of rotation of said body during deflation of said body.

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