March 21, 1961 E. H. GREVE 2,975,547

TOY

Filed May 11, 1959

Fig. 1.

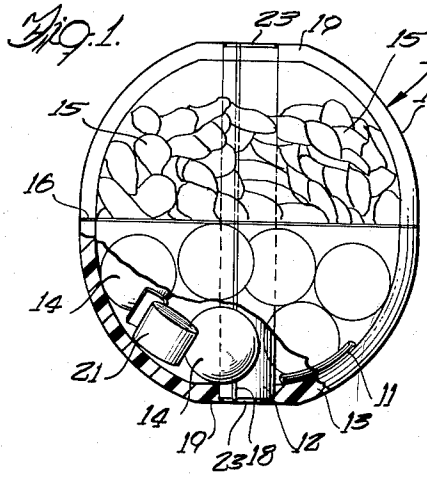


Fig. 2.

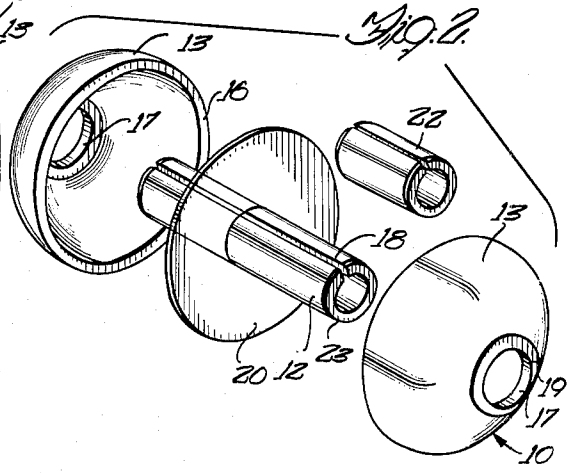


Fig. 3.

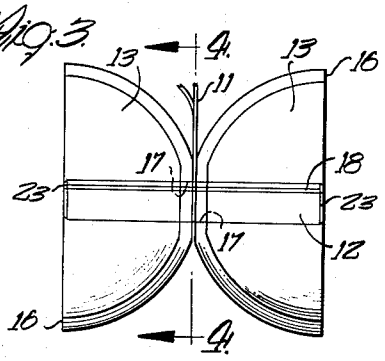


Fig. 4.

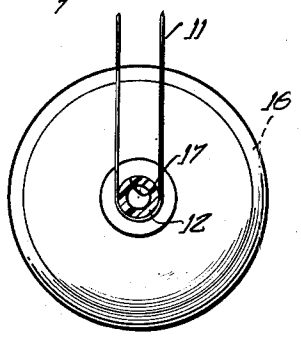
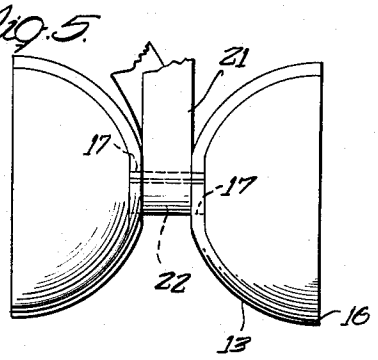


Fig. 5.



Inventor
Edward H. Greve
By Donald L. Welsh
Attorney

United States Patent Office 2,975,547 Patented Mar. 21, 1961

2,975,547

TOY

Edward H. Greve, Oaklawn, Ill.
(111 N. Century, Memphis 11, Tenn.)

Filed May 11, 1959, Ser. No. 812,165

6 Claims. (Cl. 46—11)

This invention relates to a toy of the type known as "Diablo" which comprises an elongated body and is suspended for rotation about the longitudinal axis of the body by a string or other long flexible element extending around the underside of a central portion of the body of reduced thickness and retained thereon by opposite end portions of the body each increasing gradually in thickness away from the central portion.

The primary object of the invention is to construct the body in a novel manner enabling the end portions to form a container for the string and other articles such as candy prior to their use as the toy.

Another object is to achieve the foregoing by dividing the body into a plurality of pieces arranged for assembly in different relative positions for the toy and the container.

A more detailed object is to separate the end portions of the body from the central portion and use the latter to retain the end portions assembled in their container positions while permitting reassembly into toy positions.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings in which:

Figure 1 is a side elevational view of a toy embodying the novel features of the present invention, a part being broken away and shown in section;

Fig. 2 is an exploded perspective view of the toy;

Fig. 3 is a side elevational view with the parts in their playing positions with one type of flexible element;

Fig. 4 is a sectional view taken along the line 4—4 of Fig. 3;

Fig. 5 is a view similar to Fig. 3 and showing another type of flexible element.

The present invention is particularly applicable to a toy of the type known as "Diablo." Referring to the drawings, such a toy shown for purposes of illustration comprises generally an elongated body 10 of circular cross section and an elongated flexible element such as a string 11. A central portion 12 of the body is of reduced diameter and opposite end portions 13 increase gradually in diameter moving outwardly from the central portion to the ends. To use such a toy, the body is suspended from the string by extending the middle portion of the string half way around the central portion of the body and holding the two end portions of the string in spaced positions above the body so that the string forms a U. Then, one end portion of the string is raised quickly while the other one is lowered to let the body roll along the string and rotate about its longitudinal axis. When the body reaches the lowered end portion of the string, that portion is raised quickly to throw the spinning body upwardly to a high position where it engages the raised end portion of the string and again rolls along the string. This process is repeated as long as the user desires or until he fails to catch the body on the raised end portion of the string.

In accordance with the present invention, the body 10 is

constructed in a novel manner such that it may be used not only with the string 11 to form the toy, but also, it may be used to form a container for the string and any other objects or favors such as marbles 14 or pieces 15 of candy. To these ends, the end portions 13 are formed as hollow cup-like members separate from the central portion 12 which forms a connector retaining the members releasably in either container positions or playing positions. In the container positions, outer peripheral edge or lip portions 16 of the end cups oppose each other substantially in abutting relation as shown in Figs. 1 and 2 and form a hollow enclosure. In the playing positions, the edge portions face in opposite directions and away from each other while the cups remain joined by the connector 12 as shown in Figs. 3 and 5. To hold the end cups releasably in their different positions, the connector 12 is formed as an elongated member extending through central holes 17 in the respective cups and frictionally gripping the edges of such holes. The connector thus retains the end cups in either of their positions while permitting their reassembly in the other position.

While the end cups 13 may be of conical shape, they preferably are generally hemispherical at shown in the drawings so that, when assembled in their container positions, they form another toy, in this case, a ball. To provide a smooth exterior at the junction line of the cups in their container positions, the opposed edge portions 16 are formed as flat annular surfaces facing along the common axis of the cups and lying substantially in the same plane normal to the axis. The holes 17 for receiving the connector 12 are formed in the bottoms of the cups and are concentric with the cup axes. In the present instance, the cups are formed of a suitable hard material which preferably is transparent to permit visual observation of the objects enclosed by the cups, an acrylic resin having been found to be satisfactory.

To enable the connector 12 to retain the end cups 13 in both of their positions, its length is equal approximately to the diameter of the sphere formed by the cups so that its end portions extend into the cup holes 17 far enough to grip the cups when their axially facing edges 16 abut each other. The connector generally is of the same cross-sectional shape as the cup holes which herein is cylindrical. The frictional gripping force conveniently is provided by making the diameter of the connector slightly larger than the diameter of the cup holes and forming the connector as a tube of resilient material split along its length as indicated at 18. This split enables the tube to be compressed radially to a diameter less than that of the cup holes for entry into the holes, the tube then expanding into gripping engagement with the edges of the holes after such entry.

The ends of the connector tube 12 preferably are flat and lie in a plane normal to the tube axis. This simplifies the construction by enabling a plurality of the connectors to cut from a longer tube by a saw or other cutting element movable transversely of the tube axis. Also, the flat ends of the connector may easily be made to lie flush with the exterior of the cups by forming the latter with annular flattended areas 19 on the bottoms of the cups surrounding the holes. To facilitate entry of the tube into the end cup holes 17, the peripheries of the ends of the tube are beveled slightly as indicated at 23. In this instance, the connector tube is formed of the same thermosetting resin as the cups.

Where different objects like the marbles 14 and the candy 15 are packaged together between the cups 13, it is desirable to keep them separated. This is accomplished by a divider 20 in the form of a thin disk apertured centrally to receive the connector tube and located in the transaxial plane of abutment of the cup edge sur-

faces 16. The diameter of the divider may be as large as the outer periphery of the cups so that the disk is clamped between the edge surfaces as shown in the drawings, or the disk diameter may be slightly less than that of the inner periphery of the cups so as to be within the edge surfaces.

The adjustability of the end cups 13 relative to the connector tube 12 is advantageous in enabling the cups not only to be placed close together as shown in Fig. 3 for use with the string 11, but also, to be separated as shown in Fig. 5 for use with a wider elongated flexible element such as a tape 21. Such a wider element is desirable for persons who are just learning how to use the toy. As in the case of the string, the tape may also be sorted in rolled condition in one side of the container formed by the cups.

If desired, the end cups 13 may be retained in their container positions by an external wrapping or adhesive tape (not shown). In such a case, a shorter connector tube 22 may be provided to hold the cups assembled in only their playing positions as shown in Fig. 5. This shorter tube also may be stored in the container formed by the end cups.

It will be apparent that the end cups 13 may be assembled easily in either of their two positions on the connecting tube 12. This is made possible both by the releasable fit between these parts and by the tube length which is equal approximately to the diameter of the exterior of the sphere formed by the cups. Due to the hollow character of the cups and the container resulting therefrom, not only may all parts of the toy, including the string, be kept together in assembled relation within the enclosure, but also, other objects like the marbles 14 and the candy 15 may be added to increase the appeal of the toy. When the end cups are assembled to form the "Diablo" top, their generally hemispherical shape contributes to the balance of the toy; that is, it tends to ensure that the axis of the cups is normal to the plane of the string 11 or tape 21, the string engaging the cups to prevent cocking of the axis away from such normal.

I claim as my invention:

1. A toy having, in combination, two generally hemispherical hollow members having axially facing peripheral surfaces opposing each other substantially in abutment in a plane whereby the members form a hollow spherical container, said members having aligned circular holes centered on a common axis of said container normal to said plane, a cylindrical connecting element of resilient material having a length equal approximately to a diameter of said container and a normal diameter slightly larger than the diameter of said holes and split longitudinally to permit radial contraction to a diameter equal to said hole diameter for entry into said holes, said connecting element fitting into said holes and expanding radially into frictional gripping engagement with the edges of the holes to maintain said members releasably in abutment with each other while permitting reassembly of the members in different positions on the element with said peripheral surfaces facing axially away from each other, a thin apertured divider sheet telescoped over said connecting element and clamped between said peripheral surfaces to divide said container into two compartments, and an elongated flexible part enclosed in one of said compartments and adapted to be wrapped partially around said element when said members are in said different positions.

2. A toy having, in combination, two hollow cup-like members having axially facing peripheral surfaces opposing each other substantially in abutment in a plane whereby the members form a hollow container, said members having aligned openings centered on a common axis of said container normal to said plane, a tubular connecting element of resilient material having a length equal approximately to the spacing of said holes with the members forming said container and a normal cross section slightly larger than the size of said holes and split longitudinally to permit radial contraction to a size equal to that of said holes for entry into the holes, said connecting element fitting into said holes and expanding radially into frictional gripping engagement with the edges of the holes to maintain said members releasably in abutment with each other while permitting reassembly of the members in different positions on the element with said peripheral surfaces facing axially away from each other, a thin apertured divider sheet telescoped over said connecting element and lying in said plane to divide said container into two compartments, and an elongated flexible part enclosed in one of said compartments and adapted to be wrapped partially around said element when said members are in said different positions.

3. A toy having, in combination, two generally hemispherical hollow members having axially facing peripheral surfaces opposing each other substantially in abutment in a plane whereby the members form a hollow spherical container, said members having aligned circular openings centered on a comman axis of said container normal to said plane, a cylindrical connecting element of resilient material having a length equal approximately to a diameter of said container and a normal diameter slightly larger than the diameter of said openings and split longitudinally to permit radial contraction to a diameter equal to said opening diameter for entry into said openings, said connecting element fitting into said openings and expanding radially into frictional gripping engagement with the edges of the openings to maintain said members releasably in abutment with each other while permitting reassembly of the members in different positions on the element with said peripheral surfaces facing axially away from each other, and an elongated flexible part enclosed in said container and adapted to be wrapped partially around said element when said members are in said different positions.

4. A toy having, in combination, two hollow cup-like members having axially facing peripheral surfaces opposing each other substantially in abutment in a plane whereby the members form a hollow spherical container, said members having aligned openings centered on a common axis of said container normal to said plane, an elongated connecting element of resilient material having a length equal approximately to the spacing of said openings with the members forming said container, said connecting element fitting into said openings and frictionally gripping the edges of the openings to maintain said members releasably in abutment with each other while permitting reassembly of the members in different positions on the element with said peripheral surfaces facing axially away from each other, and an elongated flexible part enclosed in said container and adapted to be wrapped partially around said element when said members are in said different positions.

5. A toy having, in combination, two hollow cup-like members having axially facing peripheral surfaces opposing each other substantially in abutment in a plane whereby the members form a hollow spherical container, said members having aligned openings centered on a common axis of said container normal to said plane, and an elongated connecting element having a length equal approximately to the spacing of said openings with the members abutting to form said container, said connecting element fitting into said openings and frictionally gripping the edges of the openings to maintain said members releasably in abutment with each other while permitting reassembly of the members in different positions on the element with said peripheral surfaces facing axially away from each other.

6. A toy having, in combination two hollow cup-like members having axially facing peripheral surfaces opposing each other substantially in abutment in a plane whereby the members form a hollow container, said members having generally cylindrical surfaces defining aligned

openings centered on a common axis of said container normal to said plane, and an elongated connecting element having a length equal approximately to the spacing of said openings when the peripheral surfaces abut so that the members form said container, said connecting element fitting into said openings and frictionally gripping the cylindrical surfaces of the openings to maintain said members releasably in abutment with each other while permitting reassembly of the members in different positions on the element with said peripheral surfaces facing axially away from each other.

References Cited in the file of this patent

UNITED STATES PATENTS

1,245,965 Pratt ---------- Nov. 6, 1917

FOREIGN PATENTS

907,212 France ---------- June 18, 1945