June 28, 1960 R. W. OMAN ET AL 2,942,379

TOY

Filed March 10, 1958

Fig. 1.

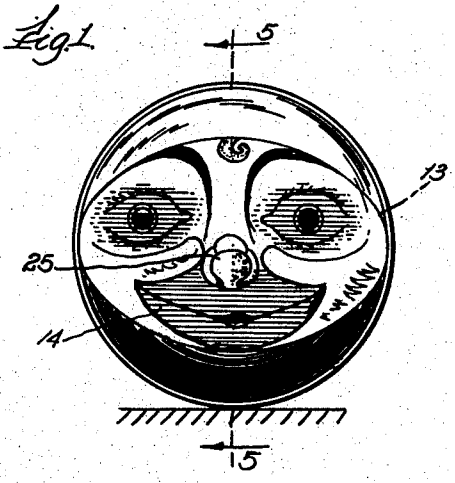


Fig. 2.

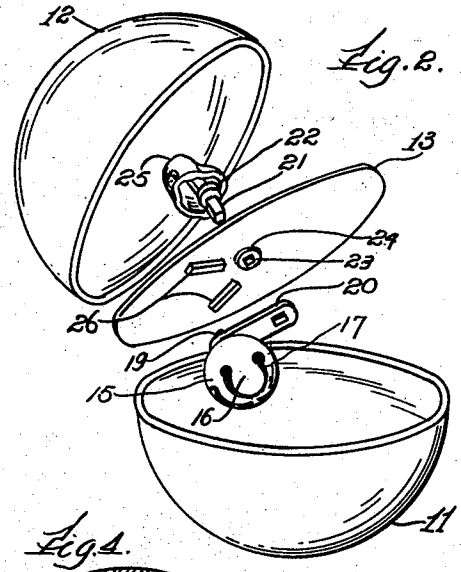


Fig. 3.

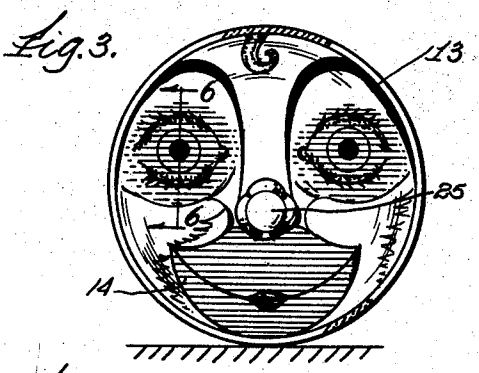


Fig. 4.

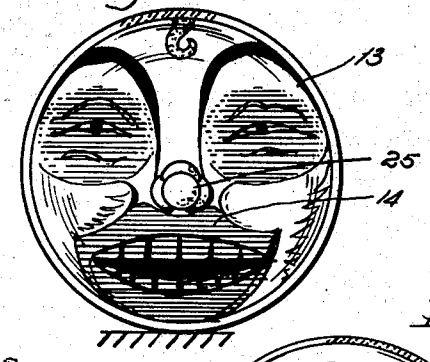


Fig. 5.

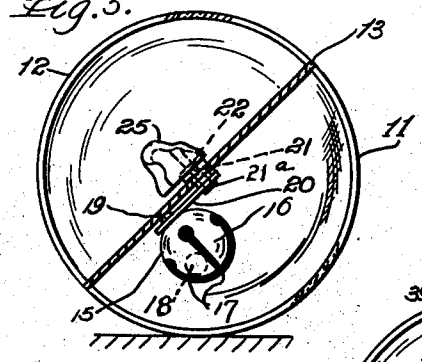


Fig. 6.

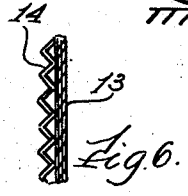


Fig. 7.

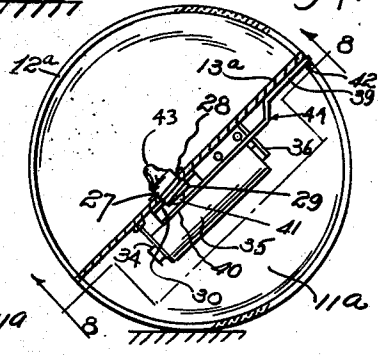
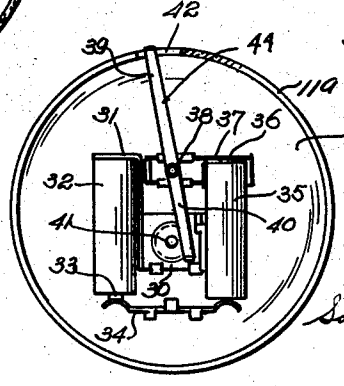


Fig. 8.



INVENTOR.
Richard W. Oman.
and Marvin I. Glass.
BY
Sears, Anderson, Swidler & Fitch
Attorneys

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2,942,379

TOY

Richard W. Oman, 2829 38th Ave. S., Minneapolis, Minn., and Marvin I. Glass, 57 E. Ohio St., Chicago, Ill.; said Oman assignor to Marvin I. Glass

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3 Claims. (Cl. 46—228)

This invention relates to improvements in toys and particularly toys which are self-righting, and are popularly called "roly-poly" toys.

Toys of this general class are usually constructed with a base which may be spherical or of a generally convex or bulbous shape which is usually circular in horizontal cross section. However, the self-positioning feature of these devices need not necessarily be obtained by the use of a convex surface which has a circular cross section. It is sufficient that the device, when canted or tilted so as to rock it into any position away from its normal rest position, is capable of self-righting itself so that when placed upon a level surface, it will normally seek a predetermined rest position.

Toys of this general character described in the past have usually been made more attractive to children by printing or otherwise displaying on the outer surface of the toy some type of picture which by reason of color, subject matter or otherwise, is attractive to children. In some cases, distinctive, ornamental heads or other objects have been mounted on the top of the toy or elsewhere to make the toy still more attractive to the younger set.

The principal purpose of the invention described herein is to make a toy of this character still more distinctive and attractive to children by the use of variable pictures which are animatable so that when the toy is rocked or rolled on its base, the scene that is observed by the child changes in subject or in character and becomes, in effect, alive or animated.

We have discovered that this result can be simply and efficiently obtained by employing variable picture surfaces of the general type such as are disclosed in the patent to Saalburg, No. 1,465,564. It will be understood that in addition to the specific type of picture surface which is employed by Saalburg, other known types of variable pictures which have been developed for use in producing such animated scenes as have been referred to, may be employed.

It will be understood that one of the advantages of our invention is the fact that the animation effect is produced by the use of a variable picture in which the animated effect is produced by the movement of the toy when it is rolled or rocked back and forth or in any other manner by the child in playing with the toy.

The drawings accompanying this application disclose one form of the invention which has been successfully used in the construction of a child's toy of the character described. As shown, the toy is preferably of the round ball type so as to be rugged, easily manipulated, and safe for the child.

In the drawings:

Figure 1 is a front elevation of the toy in its rest position on a flat level surface;

Figure 2 is an exploded view of the toy shown in Figure 1, showing the parts separated from each other and including an attention-directing device;

Figure 3 is a front elevation similar to Figure 1, but

showing the toy in a rocked position as compared with its rest position in Figure 1;

Figure 4 is a front elevation similar to Figure 1, but showing the toy rocked into still another position in order to bring into view a still different picture;

Figure 5 is a section taken on the line 5—5 of Figure 1;

Figure 6 is a section taken on the line 6—6 of Figure 3;

Figure 7 is a view similar to Figure 5, but showing a different type of attention-directing device; and

Figure 8 is a section taken on the line 8—8 of Figure 7.

Referring to the drawings, it will be seen that the toy is, in the present instance, constructed of three main elements. The base or lower element is in the form of a hollow, hemispherical shell **11** constructed of opaque plastic material, and a similarly shaped hollow shell **12**, also made of plastic material but transparent so that it will serve as a protective window, is attached to the lower shell **11** to complete the body of the toy which is in the form of a ball. Through this window **12**, the child can see the upper surface of a diametrically extending partition element **13** on the front side of which (not visible in Figure 2), there are placed formations constituting the variable picture element **14**, indicated in Figure 6, which in this case is intended to represent a multi-view element of the type shown in the Saalburg patent. The partition element **13** may also be fabricated of plastic material.

When the parts shown in Figure 2 are assembled into the position shown in Figure 5 of the drawings, the three elements previously referred to are united together permanently by any suitable cement or other means compatible with the materials of which the elements **11**, **12** and **13** are made. In the form of the invention shown in Figures 2 and 5, it should not be necessary to effect any repairs to the toy throughout its useful life, which normally, in the case of toys of this general character, may be somewhat limited.

By an inspection of Figures 1, 3 and 4, it will be recognized that the rolling or rocking movement of the toy cooperating with the multi-view character of the variable element **14** on the front of the partition **13** will enable the child, in manipulating the toy, to see various pictures or types of pictures through the transparent upper shell or window **12**. It will be apparent from looking at Figure 5, which shows the toy in the rest position, that rocking the toy forwardly or backwardly around a horizontal axis will cause different views to be presented. Also, because of the fact that the partition **13** is normally inclined to the vertical, it is possible to obtain a still different effect by rocking the ball sidewise, which has the effect of changing the angle of incidence from the line of sight from the eye to the surface of the multi-view element **14**. Obviously, if the line of sight were exactly horizontal, and if the normal position of the partition **13** were at all times vertical, the rocking of the ball sidewise might not change the angle of incidence sufficiently to give a satisfactory animated effect.

Instead of providing a fixed weight at the bottom of the opaque shell or base **11** so as to always bring the ball back to its rest position, as shown in Figure 1, and Figure 5, we prefer to use instead of a dead weight a live weight in the form of a spherical jingle bell **15** of the usual construction, made of a sheet of brass or similar suitable bell metal formed up to provide three or four lobes **16** constituting the surface of the sphere and separated by slits or openings **17**. Within the sphere there is contained a small metal ball **18** which is free to roll around the interior of the hollow sphere of the bell **15**.

Said bell **15** is united by a rivet **19** to one end of a small arm **20**, the other end of which is riveted on the end of a small square shaft **21** extending through the

center of the partition **13** and having its axis perpendicular to the plane of said partition. As shown best in Figure 2, the upper end of the shaft **21** has a fixed collar or shoulder **22** and there is a bushing **23** in the aperture **24** of the partition **13**. The bushing **23** serves as a spacer between the shoulder **22** and the arm **20**, and the lower end of the rectangular stem or shaft **21** is riveted over on the other side, as shown at **21***a*, so as to hold the said parts together while still enabling the arm **20** to rock the shaft **21** in the partition **13**.

In order to prevent excessive rocking movement of the arm **20**, there are formed a pair of stops on the underside of the partition **13**. These take the form of small ribs **26** formed or fixed on the underside of the partition **13**, which preferably are made of plastic material. It will be observed that the stops **26** are located below the center of the ball so that the position of the jingle bell **15** which in this instance constitutes the stabilizing weight for the device, will be a substantial distance below the center of the toy. The slight oscillations of the arm and bell between the stops **26** as the toy is rocked or rolled by the child will contribute to the proper ringing of the bell while at the same time, the slight displacement of the weight of the bell **15** will not be sufficient to interfere materially with the stability of the toy.

In order to make the device still more attractive, to the upper end of the shaft **21** there is secured, a plastic formation **25** in the form of a nose for the clown's face in the pictures displayed by this particular toy.

In Figures 7 and 8, we have shown a somewhat different type of attention-directing device. Referring to these figures, it will be seen that in place of using a simple plastic form of nose such as **25** (shown in the prior described structure), we substitute an electric light bulb **43** which is of the flasher type employing a self-contained, automatic on and off switch which is actuated by a conventional bi-metallic thermostatic element and is contained within the barrel **27** of the light bulb **43**. The outer threaded base **28** of the light bulb **43** is screwed into a threaded shell **29** carried on the partition **13***a*. The threaded shell **29** has a metallic connection to a plate **30** fastened to the back or underside of the partition **13***a*, and which plate is equipped with a spring clip **31** forming a connection to the zinc outer shell of a dry cell **32**. The center pole **33** of the dry cell **32** contacts one end of a spring **34**, the other end of the spring **34** contacting the end of the outer zinc shell of another dry cell **35**. The center pole **36** of said dry cell **35** contacts the flange of a plate **37**, also fastened to the back face or underside of the partition **13***a*. The plate **37** has a pivotal support **38** for a switch lever **44** having an outer arm or finger **39** and an inner finger **40** which can be slid into contact with the center connection **41** of the light bulb **43**.

The outer end **39** of the switch lever **44** is capable of a certain amount of movement in a slot **42** formed in the shell **11***a*. The end of the lever **44** protrudes slightly from the slot **42** so that by means of the finger, the switch lever **44** can be actuated to close the circuit of the flasher lamp, upon which the bulb **43** will begin to flash on and off without further attention of the child. This intermittently illuminates the bulb **43** which is positioned in the location of the nose of the clown shown in the picture.

It will be observed that the weight of the two dry cells **32** and **35** and the associated parts is substantially concentrated at a point located below the center of the toy when it is in the rest position shown in Figure 7, so that the weight of these parts serves to stabilize the ball and induce it to return to its rest position whenever it is rocked forwardly or backwardly or in any direction away from its rest posititon shown in Figure 7.

Various of the features of the invention believed to be new are set forth in the appended claims.

We claim:

1. A toy comprising a rockable body including a base having a convexly contoured under surface, a partition carried by said base in position for viewing from a position above said base, said partition having fixedly positioned thereon formations which are positioned relative to one another so as to present a variable picture image when seen from different angles, and a weight located in said base in a plane which includes a line extending perpendicularly through the center of said partition and has an arcuate line of intersection with said under surface, said weight being located below said partition and in spaced lateral relation from said line extending perpendicularly to said partition to thereby locate the center of gravity of said body so as to position said partition at an angle with respect to the vertical when said body is at rest, whereby rocking motion of said body relative to its position of rest will result in a change in the angle of view with respect to said formations with consequent different visual images being produced.

2. A toy comprising a rockable body, said rockable body including a base having a portion with a convexly contoured under surface and a substantially circular cross-section in a plane spaced from the crown of said under surface, a partition carried by said base in a plane parallel to said plane containing said circular cross-section and in position for viewing from a position above said plane, said partition having fixedly positioned thereon formations which are positioned relative to one another so as to present a variable picture image when seen from different angles, and a weight located in said base portion at a point spaced below said plane and in laterally spaced relation to a line extending perpendicularly through the center of said circular cross-section, thereby locating the center of gravity of said body so as to position said partition at an angle with respect to the vertical when said body is at rest, whereby rocking motion of said body relative to its position of rest will result in a change in the angle of view with respect to said formations with consequent different visual images being produced.

3. A toy comprising a rockable body, said rockable body including a base element and an upper element, said base element having a convexly contoured under surface and a substantially circular cross-section in a plane spaced from the crown of said under surface, said upper element being carried by said base element and including a transparent window, a partition carried within said body in a plane parallel to said plane containing said circular cross-section and in position for viewing through said window, said partition having fixedly positioned thereon formations which are positioned relative to one another so as to present a variable picture image when seen from different angles, and a weight located in said base at a point spaced below said plane and in laterally spaced relation to a line extending perpendicularly through the center of said circular cross-section, thereby locating the center of gravity of said body so as to position said partition at an angle with respect to the vertical when said body is at rest, whereby rocking motion of said body relative to its position of rest will result in a change in the angle of view with respect to said formations with consequent different visual images being produced.

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