

Oct. 22, 1940.

J. WAHLBERG

2,219,154

BALL

Filed June 13, 1938

3 Sheets-Sheet 1

Fig. 1

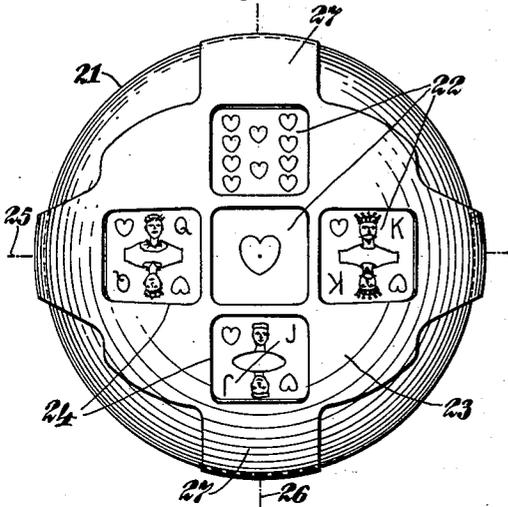


Fig. 2

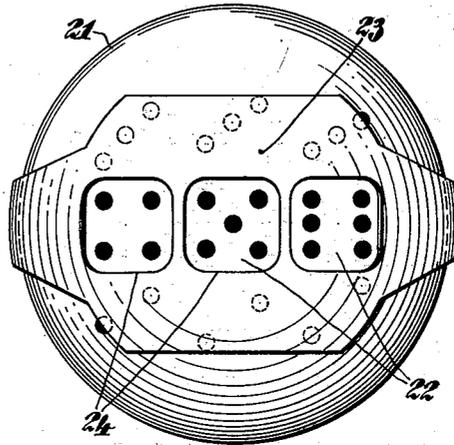


Fig. 3

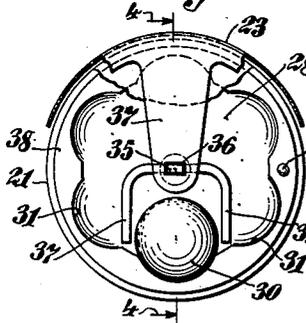


Fig. 4

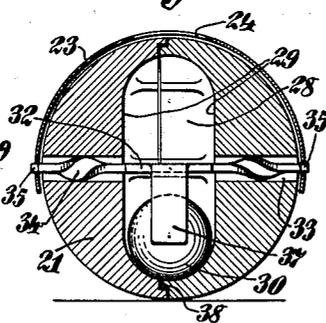


Fig. 5

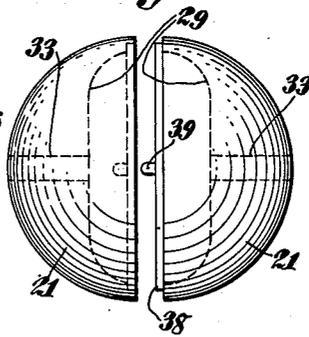


Fig. 6

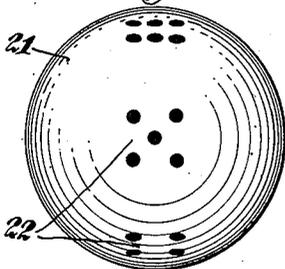


Fig. 7

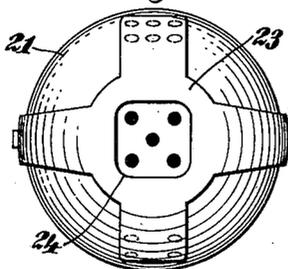


Fig. 8



Fig. 9



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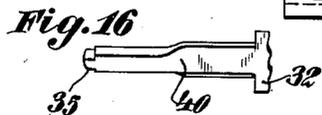
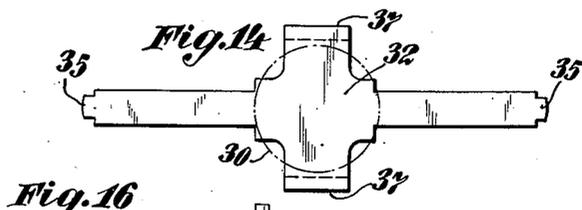
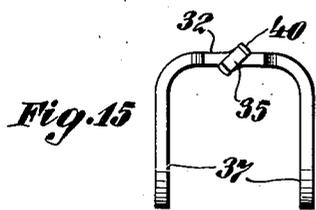
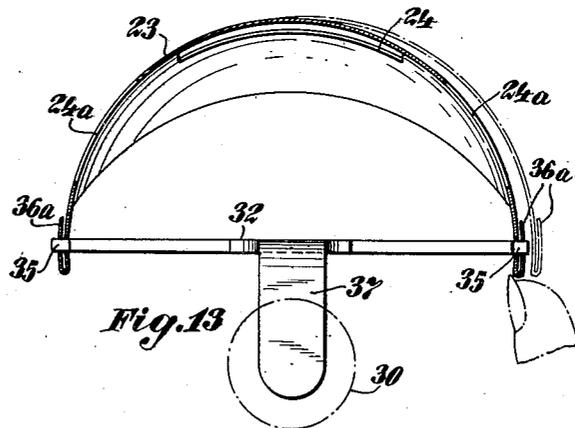
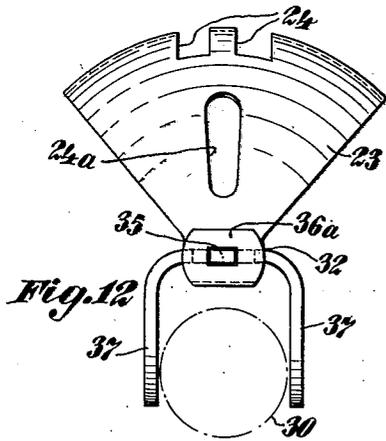
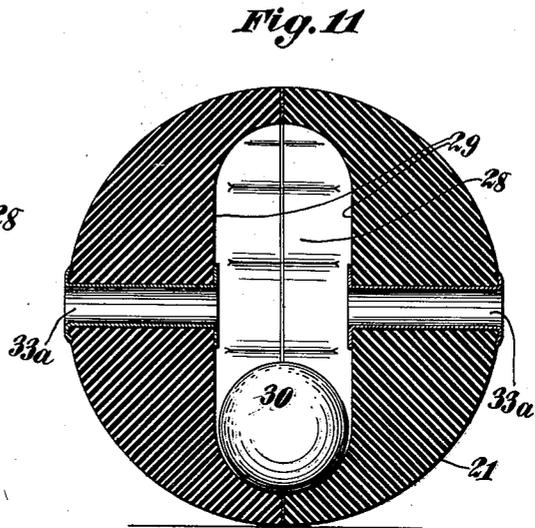
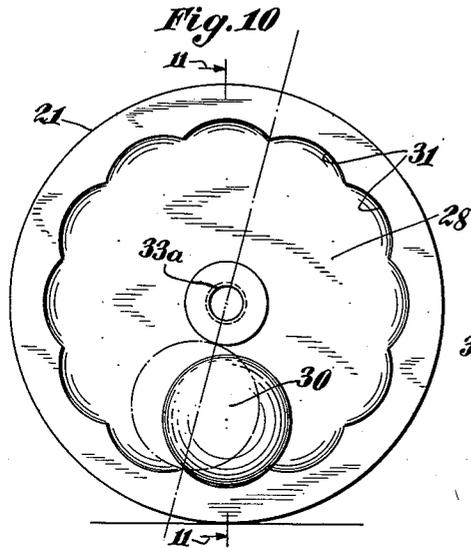
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2,219,154

BALL

Filed June 13, 1938

3 Sheets-Sheet 2



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2,219,154

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Filed June 13, 1938

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Fig. 17

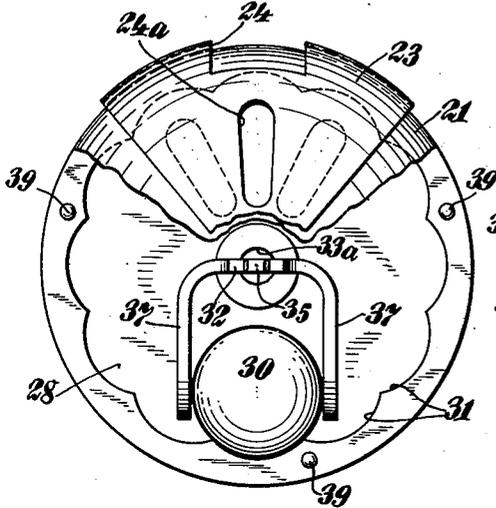


Fig. 18

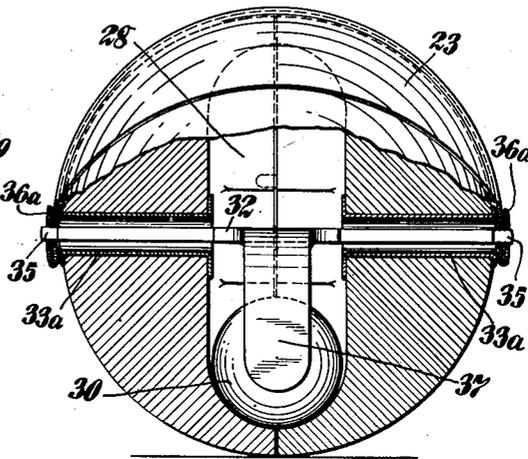


Fig. 19

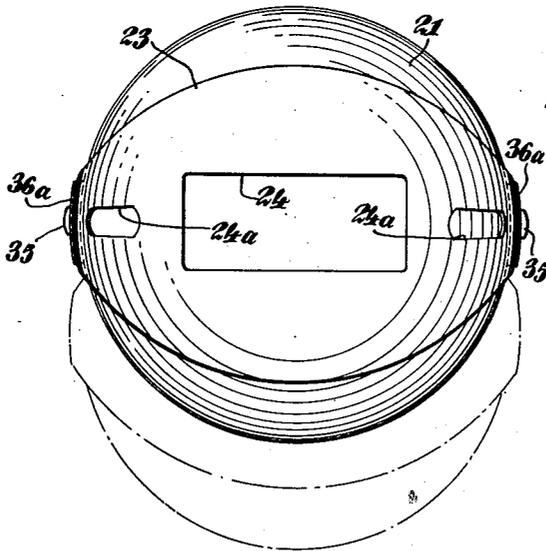
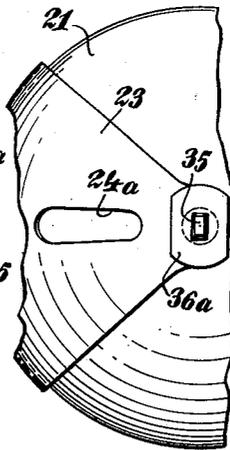


Fig. 20



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UNITED STATES PATENT OFFICE

2,219,154

BALL

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Application June 13, 1938, Serial No. 213,339

2 Claims. (Cl. 273—146)

The invention herein disclosed relates to devices in the nature of balls or spheres for playing games and for use as toys, etc.

5 Objects of the invention are to provide a ball construction, which may be used for playing games of chance and skill and which will be particularly interesting and entertaining in its actions.

10 Further objects are to provide a ball having the characteristics mentioned, which can be produced quite simply and inexpensively in a variety of different materials and which will be entirely practical and desirable in every way.

15 The aforesaid and other desirable objects are attained by the special novel features of construction, combinations and relations of parts hereinafter described, illustrated in the accompanying drawings and broadly covered in the claims.

20 The drawings illustrate a number of different forms of the invention, but it is to be understood that the structure may be further modified and changed all within the true intent and broad scope of the invention.

25 Figs. 1 and 2 are plan views of one form of the invention designed for playing a card game and the second form designed for playing a dice game.

30 Fig. 3 is a broken view indicating part of one half of the sphere and portions of the overlying mask broken away to disclose inner parts of the device.

Fig. 4 is a cross-sectional view of one of the balls as on line 4—4 of Fig. 3.

Fig. 5 is a side view showing the two parts of the sphere separated.

35 Fig. 6 is a view of the assembled sphere carrying a single equatorial row of markings for a dice game.

Fig. 7 is a similar view showing the external masking device applied to the sphere.

40 Figs. 8 and 9 are broken detail views of the mask support which is pivoted axially in the sphere and is held by the smaller ball rotatable within the same.

45 Fig. 10 is a face view of one of the ball sections illustrating the seating action of the internal ball confined within the same.

Fig. 11 is a cross-sectional view of the assembled ball complete except for the outside mask and support for the same.

50 Fig. 12 is a detached end view of the mask and the internal ball actuating support therefor.

Fig. 13 is a side view of the same parts with the mask or shield partly broken away and in section.

55 Figs. 14, 15 and 16 are details of the rotatable support for the shield.

Fig. 17 is a broken side view of another embodiment of the complete ball structure.

60 Fig. 18 is a broken cross-sectional detail of the same.

Fig. 19 is a plan illustrating particularly the form of mask shown in Fig. 17.

Fig. 20 is a further broken detail of the same mask and ball construction.

In Fig. 1, the invention is shown embodied in a ball for playing card games. Accordingly, the ball which is designated 21, carries markings 22, simulating or corresponding to the different elements of a card game.

Partially covering the ball and closely conforming thereto is a mask or shield 23, having an opening or a series of openings 24, for disclosing the different card markings. This mask is supported in a manner to be described, so that it will always occupy a predetermined position when the ball is at rest. For this purpose, it is pivotally supported on an axis 25, passing through the center of the ball. The markings or designations 22, extend about the ball in an equatorial zone represented by the line 26, at a right angle to the pivotal axis 25, and means are provided within the ball which will urge it to roll along this equatorial zone and which will bring it to rest at some point along the equatorial zone 26. The shield may be balanced to come to rest covering the top of the ball, thus to render the indications easily readable from any point of view above the ball.

The shield may be made of light and thin material, so as not to materially impede the action of the ball and closely conforming to the spherical outline of the ball, it may and actually will at times roll with the ball, particularly when the ball has started rolling on some other than the equatorial axis 26. This feature of having the shield rotate bodily with the ball may be promoted by providing the shield with one or more extensions or spherical continuations 27, in the direction of the equatorial axis, that is, at right angles to the axis of pivotal support 25, and which with a certain extent of movement with the shield, may contact the floor or supporting surface and thus make the shield temporarily at least, a part of the rolling supporting surface of the ball.

Fig. 2 illustrates a modification in which the markings 22, are representative of dice. This view illustrates the point also that the number of openings or windows in the shield may vary, there being three in a row in this case, instead of a group of five as in the first instance.

The balls may vary widely in size. Thus for card games and the like, the balls may be of sufficient diameter for the markings to be readily identified by a number of players. In other instances, the balls may be quite small, for example in cases such as illustrated in Figs. 6 and 7, where the markings consist of only a single row of identifying characters 22, and the mask has only a single window 24, for exposing one identification at a time.

In Figs. 3 and 4, the means for causing the ball to rotate along the equatorial axis, for causing it to stop at some point on that axis and for supporting and balancing the shield in predetermined relation are illustrated. These views show how the ball is made with an inner annular cavity 28, having substantially parallel side walls 29, at right angles to the rotational axis 25, and forming a chamber for confining a smaller ball 30, to movement in the equatorial plane of the larger ball. Pockets 31, in the rim of this chamber provide seats for the smaller ball, enabling the latter to balance the containing ball in a predetermined position of rest on the equatorial axis.

The shield is shown as supported by a spindle 32, having its ends journalled in bearings 33, formed or provided in the containing ball. The spindle is shown as formed from flat stock twisted at 34, to provide substantially circular journal portions and the ends of the spindle are shown as protruding and shouldered at 35, for engagement by the perforated end portions 36 of the shield. This construction enables the shield being quickly snapped in place over the ends of the spindle or as easily removed at will. The intermediate portion of the spindle is shown as having dependent arms 37, spaced to form a fork embracing the balancing ball 30. This enables the inner ball to balance and determine the position of the shield relative to the outer, containing ball.

The outer spherical member forming the body of the complete ball structure may be produced in various ways and made up in various materials such as rubber, wood, metal, molded plastics or the like, and be variously colored or be transparent, translucent or opaque, as desired.

Figs. 3, 4 and 5 illustrate the ball as molded or formed in two parts having an interfitting joint 38, and dowel connection 39, at the meeting faces and secured together as by cement or other fastening.

Figs. 10 and 11 illustrate a ball made in two parts, of molded rubber and having the bearings provided by bushings 33a, secured in the parts. These views also illustrate the feature that when desired, the masking shield and its supporting and positioning structure may be omitted, leaving the ball simply controlled by the inner weight to constrain it to rolling movement in the equatorial plane and to stopping at some point along that plane or zone.

Figs. 12 and 13 show how for larger sizes the ends of the thin light shield may be reinforced by doubling back the tips of the same at 36a, where they engage over the shouldered ends 35, of the spindle and also illustrate the point that various shape and size slots or openings 24a, may be provided in the sides or other portions of the shield.

Figs. 14, 15, 16, show how the end portions of the spindle may be twisted at 40, to hold the shield slanted off to one side or the other, instead of in a true vertical position such as illustrated in Fig. 12. This same result can be effected by locating the slots in the ends of the shield in different angular relations.

Figs. 17, 18, 19, 20, illustrate further details of possible modifications, particularly for larger size balls. The mask in these views is shown as having a central large opening 24, and smaller slot openings 24a, at opposite ends of the same, which may be utilized for example, for exposing different

questions and answers, puzzle elements, advertising features and the like. Fig. 19 also shows in broken lines how as the ball advances in a rolling movement in the plane of the equatorial zone, the shield will remain upright covering the top of the ball.

The controlling mechanism within the ball and particularly in connection with the external shield causes the ball to execute a great variety of unusual evolutions more or less erratic in character, 10 depending largely on the manner in which the ball is rolled or started on its course. Always however, the control is applied to keep the ball rolling or to bring it into the general plane of the circular chamber, which is substantially at a right 15 angle to the normal axis of rotation 25. The rotatably supported shield may be connected with its balancing mechanism, so that it will stand directly over the top or, be in different angular relations when the ball comes to rest. In rolling, 20 there may be times when the shield will roll with the ball and the ball actually roll over the shield. This makes it possible that the ball actually may stop at some time with the shield on the bottom, but this need not be objectionable and may even 25 be used to provide a special indication, such as some particular value or play in a game in which the ball is used. By governing the relative weights and sizes of the parts, the ball can be made as active or as sluggish as may be desired 30 for the playing of different games or puzzles, or use as a toy. The inner ball can be made as large as required, for if its diameter is such as to project past the center of the outer ball, the central, yoke portion of the spindle may be arched upwardly to provide necessary clearance. While the 35 substantially circular chamber 28, is shown as having parallel side walls and lying in a single plane, it is contemplated that this chamber need not lie all in one plane and the walls need not be parallel, for example, said walls might be oppositely way in their opposing faces to make the inner ball traverse a more or less curvilinear path, thus to introduce a "weaving" effect in the rolling 40 of the ball.

What is claimed is:

1. A ball, comprising a spherical body free to roll in all directions and having a substantially centrally disposed chamber with substantially parallel spaced side walls connected by a generally circular peripheral wall having pockets therein and a ball of less diameter than the space between said side walls, loosely confined in said chamber and seating in said pockets and a yoke pivoted in said spherical body on an axis substantially corresponding to the center of said generally circular chamber, said yoke having spaced arms embracing said loosely confined ball.

2. A ball, comprising a spherical body free to roll in all directions and having a substantially centrally disposed chamber with substantially parallel spaced side walls connected by a generally circular peripheral wall having pockets therein and a ball of less diameter than the space between said side walls, loosely confined in said chamber and seating in said pockets and a yoke pivoted in said spherical body on an axis substantially corresponding to the center of said generally circular chamber, said yoke having spaced arms embracing said loosely confined ball and a shield over the outside of the spherical body and supportingly connected with said pivoted yoke.

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