W. J. P. OLSEN.

PUZZLE OR TOY.

APPLICATION FILED APR. 8, 1911.

1,004,680. Patented Oct. 3, 1911.

Fig. 4.

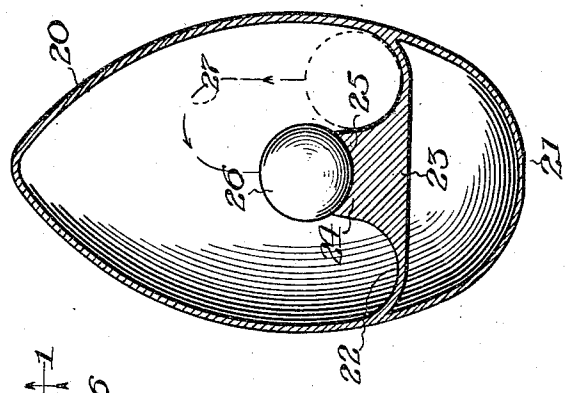


Fig. 2.

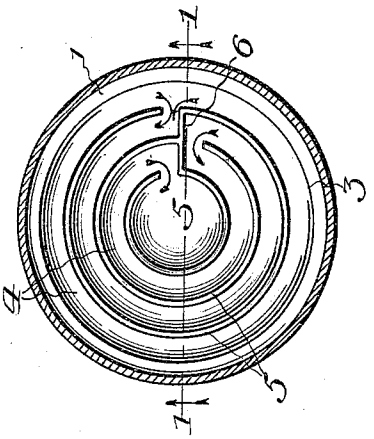


Fig. 3.

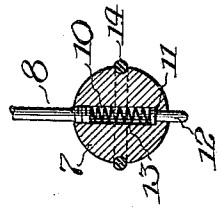
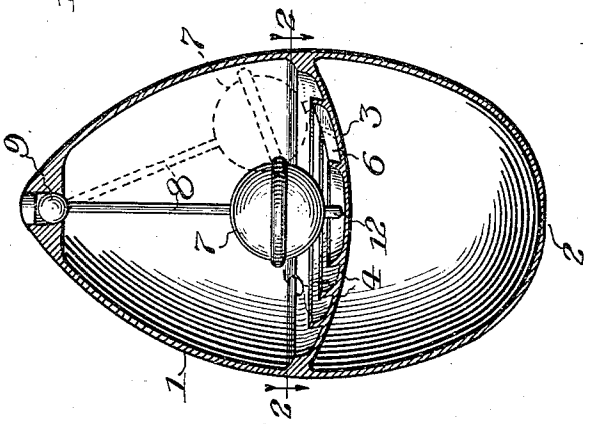


Fig. 1.



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PUZZLE OR TOY.

1,004,680. Specification of Letters Patent. Patented Oct. 3, 1911.

Application filed April 8, 1911. Serial No. 619,681.

To all whom it may concern:

Be it known that I, WALDEMAR JENS PETER OLSEN, a subject of the King of Denmark, (having made my first declaration of becoming a citizen of the United States,) residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Puzzles or Toys, of which the following is a full, clear, and exact description.

My invention relates to puzzles or toys which require prescribed manipulation and peculiar arrangement of the parts in order to accomplish a certain feat. Its object is to construct an ovoid or egg-shaped object in such manner that its interior parts are secreted from view, and which, by turning the egg in various positions until its balance-weight is disposed in alinement with its major axis, the egg may be caused to stand upon one end. This I accomplish by the means and in the manner hereinafter fully described and as more particularly pointed out in the claims, reference being had to the accompanying drawings, forming a part hereof, in which:

Figure 1 is central vertical section of my invention showing the egg standing upon one end with the center of gravity in alinement with its major axis. Fig. 2 is a transverse horizontal section thereof taken on line 2—2, Fig. 1, showing one arrangement of the maze-plate or circuitous path for throwing the parts out of balance. Fig. 3 is a detail view in section of the balance-weight used in connection with this device. Fig. 4 is a view similar to Fig. 1 of one modified construction.

Referring to the drawings, 1 represents the shell or casing that houses the various mechanical parts of the puzzle, and which is preferably made of thin metal such as aluminum or of celluloid or similar material that is preferably non-transparent. This casing is substantially ovoid or egg-shaped, one end being tapered and having an apex and the other or butt-end being rounded. A flattened portion or seat 2 of comparatively small area is made on the butt end of the shell in alinement with the major axis of said casing, and upon which the same is adapted to stand when the balance-weight is in proper position in the interior of the shell.

The interior of the shell or casing is preferably divided into two compartments or sections by a transverse concavo-concave partition or plate 3. This plate is curved to an arc struck from the apex or point of the shell and its upper surface is provided with a plurality of concentrically arranged channels 4 communicating with each other at their ends. These channels are formed by several concentrically arranged walls or ribs 5 that are inclined outwardly and are provided with cross-webs or stops 6 at suitable intervals so that a circuitous path is formed from the other edge of plate 3 inward to a central open space that is in alinement with the major axis of the shell. The weight for balancing and unbalancing the egg is adapted to move around through this path until it comes to rest in the central open space in which position the egg will stand upright when the flattened portion is placed upon a smooth and level surface.

The balancing-weight which I have shown in Fig. 1 of the drawings comprises a solid metal ball 7 of suitable dimensions mounted on the lower end of a pendulum or link 8 which latter is connected to the apex or point of the shell by universal joint 9 at its upper end to permit of the free movement of the same in every direction. In order to secure the pendulum to the weight a suitable channel 10 is cut radially through the weight and the lower end of the pendulum tapped therein. The opposite end of said channel is reduced in diameter and forms a shoulder 11 through which the shank of a plunger or pawl 12 is inserted and which is kept normally pressed outwardly by a coiled expansion spring 13 interposed between the end of the pendulum and the head of said plunger. The outer end of said plunger is preferably rounded or tapered so that the same will easily ride over the ribs when moving in an outward direction and thus less resistance will be offered when the weight is thrown out of plumb. If desired, in order to reduce the noise caused by the pendulous weight striking against the interior of the shell a suitable rubber cushion or belt 14 may be seated in a groove or recess in the same, as shown.

When the ball is in the position shown in Fig. 1 of the drawings, the puzzle or toy is in perfect balance as the center of gravity is disposed axially through the same, and by carefully placing the same so that the flattened portion 2 rests upon a smooth and level surface it will stand upon its end.

When, however, it is given a sudden lateral movement the weight will swing on the pendulum so that the lower end of the plunger will snap successively over the walls 5 thus disturbing the center of gravity to such an extent that the egg will be out of balance and will not stand on its end. Upon tilting the egg so that the weight will be guided by the plunger through the path until the central open space is reached, as indicated by the arrows in Fig. 2 of the drawings, it will again become balanced.

In the modification shown in Fig. 4 of the drawings, the shell or casing 20 is preferably made of glass or other transparent material having a flattened portion 21 on the same end as in the preferred form. A suitable concentric gutter 22 is formed adjacent the inner surface of the shell or casing preferably on the upper surface of a transaxial partition 23. The central portion of the partition is preferably provided with a raised platform or embossment 24 in the upper surface of which is a suitable depressed or concave seat 25. The ball 26 in this instance is a free ball;—that is, it is unsecured to any portion of the shell or casing, and in order to balance the egg it is necessary to "jump" the same from the gutter into the seat as suggested by the dotted arrows 27. This can be accomplished on account of the shell being transparent so that the movement of the ball may be seen, and as soon as the same has been placed in its seat 25 the center of gravity will be axially disposed and the egg will stand upon its flattened end portion 21.

While I have shown and described but two forms in which my invention may be carried out, it is of course obvious that many other constructions are possible in which the principle here employed is involved. All such modifications, carrying out the idea of balancing the weight or center of gravity to one side of the axial center of the shell or casing for the purpose of preventing the standing of the egg, and of returning the weight to the axial center of the egg to permit it to stand on its end I desire to have included within the scope of my claims.

What I claim as new is:

1. A puzzle comprising a closed shell having a flattened portion on one end, and an anchored weight within said shell the centering of which balances said shell upon its flattened end.

2. A puzzle comprising a closed shell having a flattened portion on one end, an anchored weight within said shell the centering of which balances said shell upon its flattened end, and means that normally prevent the centering of said weight.

3. A puzzle comprising a closed shell having a flattened portion on one end, a runway interposed between the ends of said shell, and an anchored weight guided by said runway, the centering of which balances said shell upon its flattened end.

4. A puzzle comprising a closed shell having a flattened portion on one end, a runway interposed between the ends of said shell, an anchored weight guided by said runway, the centering of which balances said shell upon its flattened end, and means that normally prevent the centering of said weight.

5. A puzzle comprising a closed shell having a flattened portion on one end, a transaxial partition disposed mediate the ends of said shell and having a central restricted area, and an anchored weight within said shell adapted to be placed in said area and balance the shell on its flattened end.

6. A puzzle comprising a closed shell having a flattened portion on one end, a transaxial partition disposed mediate the ends of said shell and having a central restricted area, an anchored weight within said shell adapted to be placed in said area and balance the shell on its flattened end, and means that normally prevent the placing of said weight in said area.

7. A puzzle comprising a closed shell having a flattened portion on one end, a partition mediate the ends of said shell having a circuitous path thereon leading from its outer edge to the axial center of said shell, and an anchored weight within said shell that normally travels in said path and when centered is adapted to balance said shell on its flattened portion.

8. A puzzle comprising a closed shell having a flattened portion on one end, a transaxial partition disposed mediate the ends of said shell and having a central restricted area, a weight connected to one end of said shell, the placing of which in said area balances said shell, and means that normally prevent the seating of said weight.

9. A puzzle comprising a hollow closed shell of substantial ovoid shape and having a flattened portion on one end, a central area arranged transverse to the axis of said shell, a channel between said area and shell, and a ball normally guided by said channel and adapted to be moved to said area and balance said shell on its flattened portion, said ball capable of movement transverse to said channel.

10. A puzzle comprising a hollow closed shell of substantial ovoid shape and having a flattened portion on one end, a central area arranged transverse to the axis of said shell, a channel between said area and shell, and a pendulous ball disposed in said channel and adapted to be moved to said area and balance said shell on its flattened portion.

11. A puzzle comprising a hollow closed shell of substantial ovoid shape and having a flattened portion on one end, a central area

arranged transverse to the axis of said shell, a series of concentric connected channels between said area and shell, and an anchored ball guided in said channels and adapted to be moved to said area and balance said shell on its flattened portion.

12. A puzzle comprising a hollow closed shell of substantial ovoid shape and having a flattened portion on one end, a central area arranged transverse to the axis of said shell, a series of concentric connected channels between said area and shell, and a ball pendent from the apex of said shell and guided in said channels and adapted to be moved to said area and balance said shell on its flattened portion.

13. A puzzle comprising a closed shell having a flattened portion on one end, a transverse platform intermediate the end of said shell, a central restricted area on said platform, a concentric runway surrounding said area, a weight guided by said runway the seating of which balances said shell on its flattened end, and means normally preventing the seating of said weight, said weight being capable of movement transverse to said pathway.

14. A puzzle comprising a closed shell having a flattened portion on one end, a platform, a central restricted area thereon, concentric connected channels surrounding said area, and a movable body guided by said channels the seating of which balances said shell on its flattened end, said body capable of movement in a direction transverse to said channels when moving away from said area.

In witness whereof I have hereunto set my hand this 1st day of April A. D. 1911.

WALDEMAR JENS PETER OLSEN.

Witnesses:
T. H. PENISTON,
E. C. WILLIAMS.