

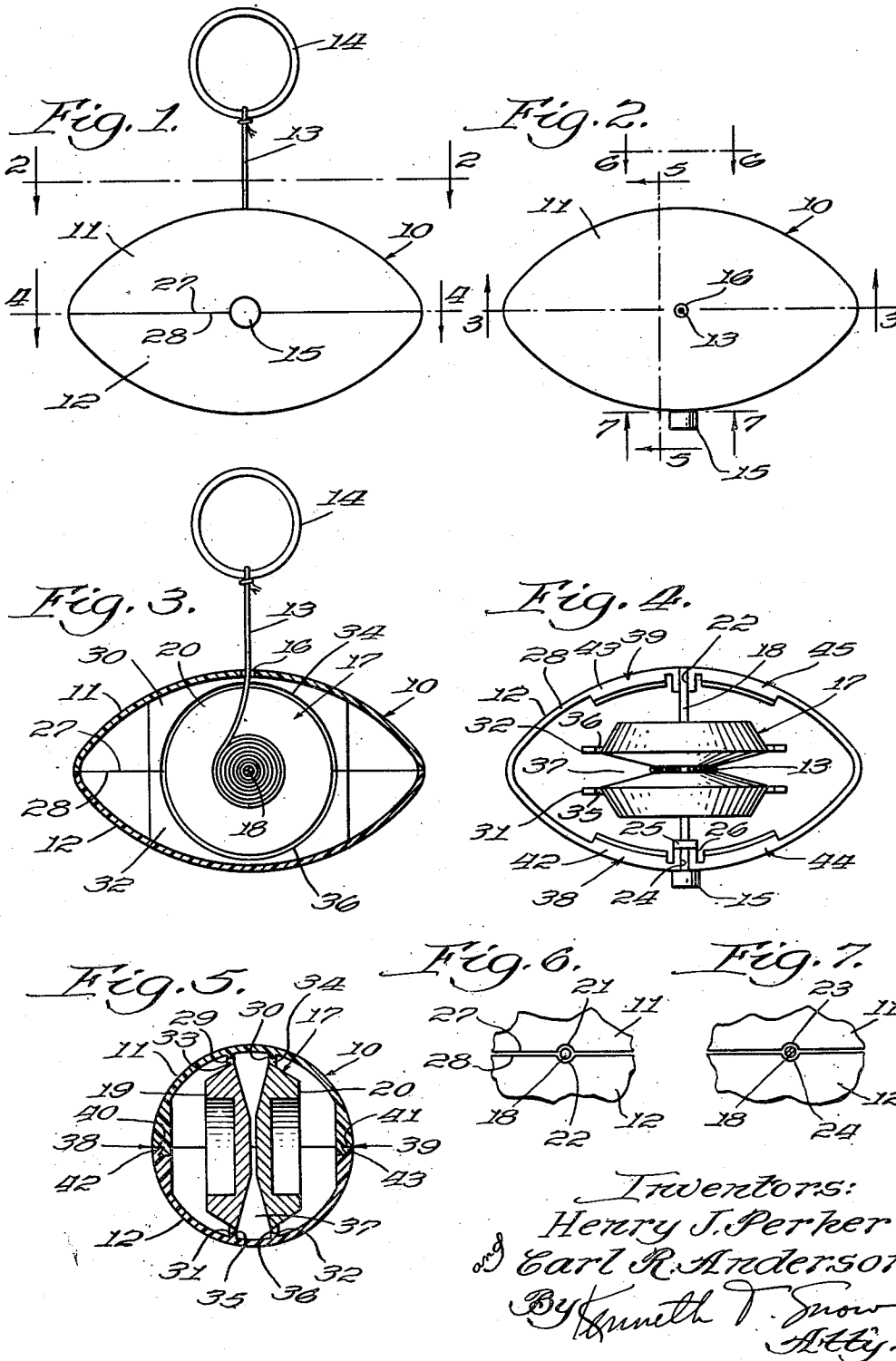
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TETHERED AERIAL TOP

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TETHERED AERIAL TOP

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1

This invention relates to a new and improved toy.

A principal object of this invention is to provide a toy of the type having a reciprocating movement wherein a body is extended and withdrawn on a string.

An important object of this invention is the provision of a toy utilizing a rotatable inertia member and is an improvement over the toy shown in our presently pending application entitled Toy Airplane and having Serial Number 99,146.

Another important object of this invention is to supply a string operated rotatable inertia member toy with shield enclosing baffles to positively maintain the operating string within the rotatable inertia member.

A further important object of this invention is to provide a toy with a string operated rotatable inertia member journaled within a housing and baffle walls fixed to the housing and located adjacent the periphery of the inertia member a distance not greater than the diameter of the string for the purpose of retaining the string confined in the rotatable inertia member.

A still further important object of this invention is the provision of means for interlocking a two part housing enclosure for a toy or the like.

Another and still further important object of this invention is to provide an interlocking tongue and groove joint for a two part plastics housing in which the interlock is accomplished by a flexing of the parts to permit an overlap of the one part on the other part.

Other and further important objects of this invention will become apparent from the disclosures in the following specification and accompanying drawing.

In the drawing:

Figure 1 shows a front elevational view of the toy of this invention.

Figure 2 is a plan view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a sectional view taken on the line 5—5 of Figure 2.

Figure 6 is an elevational side-view detail as viewed from the line 6—6 of Figure 2.

Figure 7 is a sectional view taken on the line 7—7 of Figure 2.

As shown in the drawings:

The reference numeral 10 indicates generally a

2

housing and in the particular adaptation shown, the housing of this toy is in the shape of a ball, and more particularly a football. The housing 10 includes an upper housing part 11 and a lower housing part 12 to form a complete enclosure for the toy of this invention. The toy housing 10 is suspended on a string 13 with a finger ring 14 at the upper end thereof. As further shown in Figure 1, a hand winding knob 15 is positioned on the side of the football housing 10 and permits manual winding of a rotatable inertia member to be described hereafter. As best shown in Figure 2, the top of the housing 10 and particularly the upper half 11 includes therein a restricted aperture 16 through which the holding string 13 passes.

Mounted within the ball housing is a rotatable inertia member 17 as shown in Figures 3, 4 and 5. This rotatable inertia member 17 is fixedly mounted on a shaft 18 and includes spaced side discs 19 and 20 which together comprise or constitute the rotatable inertia member. The shaft 18 is journaled within the housing 10 and is carried therein between the upper and lower housing parts 11 and 12. As best shown in Figure 6 one end of the shaft 18 is journaled on one side of the ball housing 10 within opposed and aligned open notches 21 and 22 for journally receiving that end of the shaft. The notch 21 is in the upper housing part 11 whereas the lower and aligned open notch 22 is in the lower housing part 12. Figure 7 shows the journal support of the other end portion of the shaft 18 carried at the other side of the ball housing 10 within opposed and aligned open notches 23 and 24. As in Figure 6 the notch 23 is in the upper portion 11 of the ball housing and the aligned lower notch 24 is in the lower notch of the ball housing. The hand turning knob 15 is mounted integrally on the outer end of the shaft 18 which extends outwardly from the housing 10 as best shown in Figure 4. Spaced inwardly from the knob 15 and also mounted integrally with the shaft 18 is an annular flange 25 which maintains the shaft 18 in fixed transverse position by reason of its engaging the inner surface of a boss 26 within which the open notch 24 is formed. The annular flange 25 thus prevents endwise or axial movement of the shaft 18 in a direction outwardly of the ball on the side of the hand knob 15. Further, the knob 15 prevents endwise movement of the shaft 18 in the other direction, and thus the shaft is positively confined by reason of the flange 25 and the hand turning knob 15.

The upper half 11 of the ball housing 10 is pro-

3

vided with a lower peripheral engaging surface 27 which meets with a similar peripheral engaging surface 28 of the lower half 12 of the ball housing 10. Means hereafter to be described are provided on these cooperative engaging surfaces 27 and 28 for interlocking the upper and lower halves of the ball into a fixed unitary housing for completely enclosing the rotatable inertia member 17. In the operation of this toy, the rotatable inertia member has a string 13 wound between the halves 19 and 20 with the string thereafter passing upwardly out through the restricted aperture 16 in the upper half 11 of the housing 10. The housing parts are interlocked and inasmuch as the housing 10 forms a complete enclosure the hand engaging knob may be rotated to cause the string 13 to wind up on the shaft 18 between the rotatable inertia member parts 19 and 20. The operator thereafter puts his finger through the finger ring 14 and lets the ball drop away from him. The inertia member 17 rotates as the ball 10 descends and when the ball reaches the bottom of the string 13 the operator of the toy thereafter gives the string 13 a slight jerk causing the rotatable inertia member to wind up on the string 13 so that in effect the toy has a reciprocating motion with the ball portion going to and from the operator on the string 13 as a carrier or track.

As best shown in Figures 3, 4 and 5 each of the housing parts 11 and 12 has a pair of baffle walls projecting inwardly toward each other to constitute a complete spaced baffle confining the periphery of the rotatable inertia member halves 19 and 20. The top housing part 11 carries the baffle walls 29 and 30 and the lower housing part 12 carries the upwardly extending baffle walls 31 and 32 which are spaced apart a distance equal to the spacing of the walls 29 and 30 and are in vertical alignment therewith. The baffle walls 29 to 32 inclusive are sufficiently long to extend beyond the rotatable inertia member 17 on both sides thereof. As shown in Figures 3 and 4 the walls 29 and 30 are provided with semi-circular open notches 33 and 34 respectively. The baffle wall 29 is positioned adjacent the half 19 of the rotatable inertia member and the semi-circular notch 33 therein has a radius just slightly greater than the radius of the rotatable inertia member 17. Thus the inner edge of the semi-circular notch 33 within the baffle wall 19 closely surrounds the upper portion of the half 19 of the rotatable inertia member. It is preferable that the space between the outer circumference of the rotatable inertia member and the inner edges of the semi-circular notches 33 and 34 be less than the diameter or thickness of the operating string 13 so that as the string 13 moving inwardly and outwardly through the restricted aperture 16 cannot pass through to parts of the interior of the housing 10 beyond the extremities of the rotatable inertia member. Similarly the baffle wall 30 having the semi-circular notch 34 is in alignment with the half 20 of the rotatable inertia member and further confines the string 13 between the rotatable inertia member halves 19 and 20. The baffle walls 31 and 32 extending upwardly from the lower half 12 of the housing 10 are provided with equal and opposite semi-circular open notches 35 and 36 respectively, so that as the housing parts 11 and 12 are brought together with their peripheral surfaces 27 and 28 in engagement the baffle walls 29 and 31 will be in alignment, and the cooperative upper and lower semi-circular notches 33 and 35 combine to form a full annular circle within which the

4

half 19 of the rotatable inertia member passes. The radial distance between the outer circumference of the rotatable inertia member and the circumference of the circle formed by the notches 33 and 35, as previously stated is less or not greater than the diameter or thickness of the operating string 13. Similarly the notch 36 in the baffle wall 32 cooperates with the notch 34 in the upper baffle wall 30 forming a full annular circle within which the half 20 of the rotatable inertia member passes and rotates. Here again the space between the circumferences of the rotatable inertia member and the diameter of the opening formed by the notches 34 and 36 is not greater than the thickness of the string 13.

The operating string 13 is thus confined to the V-shaped string winding annular groove 37 in the rotatable inertia member as best shown in Figures 4 and 5, and is prevented from having lateral movement within the housing 10 by reason of the confining baffle walls 29 to 32 inclusive. The baffle walls cooperate with each other so that when the halves 11 and 12 of the housing are placed together with their peripheral surfaces 27 and 28 in engagement the baffle walls are continuous and thus there is no chance of the operating string 13 from getting out of the V-shaped annular groove between the rotatable inertia member halves 19 and 20. This prevents tangling of the operating string 13 and hence in the operation of the toy the ball housing or for that matter a housing in any shape may be propelled away from the operator and then drawn back upon the string 13 without any danger of the string getting out of the rotatable inertia member V-shaped winding groove 37. Operation of the toy at all times is thus assured.

As best shown in Figure 5, the housing parts 11 and 12 are provided with oppositely disposed interlocking members 38 and 39 on opposite sides of the ball 10. The upper housing part 11 has receiving sockets 40 and 41 respectively formed in the lower ends of these interlocking parts 38 and 39 respectively. Similarly the lower part 12 of the housing 10 is provided with projections or tongues 42 and 43 for the interlocking parts 38 and 39 respectively, and the projections 42 and 43 are arranged and constructed for interengagement with the sockets or grooves 40 and 41 respectively. The housing parts 11 and 12 are brought together with the tongue 42 positioned within the groove 40. On the opposite side of the ball the interlock 39 is accomplished by a squeezing of the upper part 11 and a slight distortion or extension of the lower part 12, so that the projection or tongue 43 snaps over into the socket or groove 41 holding the ball parts 11 and 12 firmly together. As best shown in Figure 4, the interlocking members 38 and 39 are positioned to one side of the shaft 18 and for purposes of securely interlocking the ball housing parts 11 and 12, additional and similar space interlocking means are provided on the opposite side of the shaft 18 as designated by the numerals 44 and 45.

It will thus be seen that herein is provided a novel toy, having considerable improvement over the toy in our previously filed application mentioned above, wherein the housing is substantially enclosed, and wherein means is provided for confining the operating string 13 to its position in the V-shaped notch 37 between the halves of the rotatable inertia member, thereupon forestalling or preventing entanglement of the operating string with the shaft 18 or with any other portions of the interior of the housing. Further

5

there is provided an efficient and effective interlock between the two housing parts 11 and 12 for quick and easy assembling and subsequent servicing of the interior of the ball.

We are aware that numerous details of construction may be varied throughout a wide range without departing from the principles disclosed herein, and we therefore do not propose limiting the patent granted hereon otherwise than as necessitated by the appended claims.

What is claimed is:

1. A toy comprising a body, rotatable inertia means mounted for rotation within said body, said rotatable inertia means having spaced side disc members forming a central annular slot, a string wound in said slot for causing rotation of the rotatable inertia means and an up and down movement of the body, said body having spaced walls projecting inwardly and terminating in a substantially circular inner edge closely adjacent to and lying over the outer peripheries of each of the spaced side disc members whereby the string is confined in the annular slot between the disc members.

2. A device as set forth in claim 1 in which the spacing between the circular inner edge of the inwardly projecting walls and the outer peripheries of the side disc members is not greater than the diameter of the string.

3. A toy comprising an enclosed housing having two complementary parts, means interlocking said complementary parts, said parts having opposed open notches, a shaft journaled for rotation within said opposed open notches, flange means

6

integral with said shaft adjacent said housing for maintaining fixed lateral positioning of said shaft within said housing, an inertia member mounted on said shaft within said housing, said inertia member including spaced side discs, a string wound on said shaft between said spaced side discs, said housing having a restricted opening in alignment with the annular space between the side discs for passage of said string, and means provided in said housing to maintain said string within the annular space between said side discs.

4. A device as set forth in claim 3 in which the last named means includes a pair of spaced inwardly extending aligned complementary baffle walls on each of said housing parts on each side of said inertia member side discs and spaced therefrom a distance not greater than the diameter of said string.

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