Jan. 18, 1938. A. BRINKMAN 2,105,462

BALL SWINGING TOY

Filed March 29, 1937

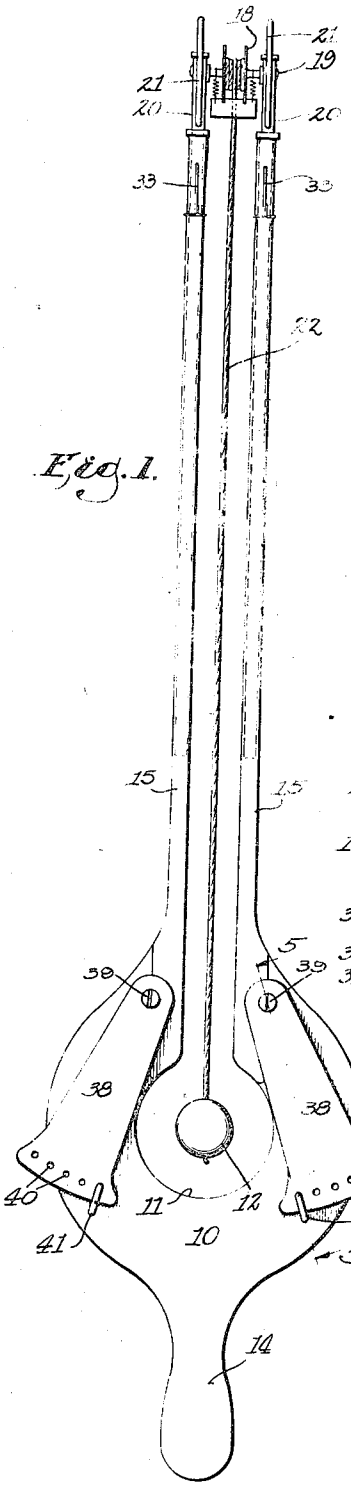


Fig. 1.

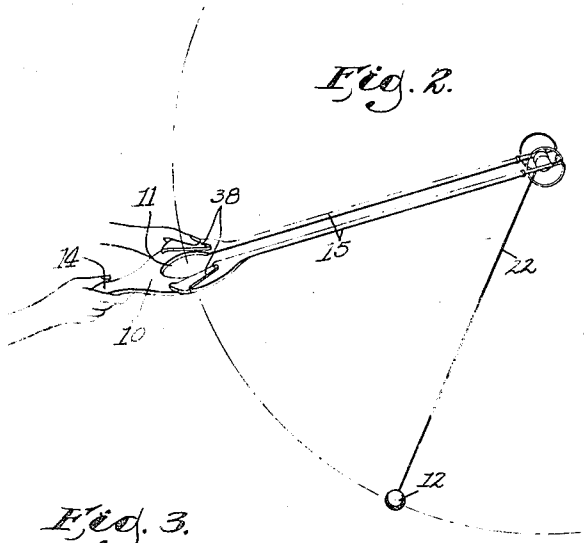


Fig. 2.

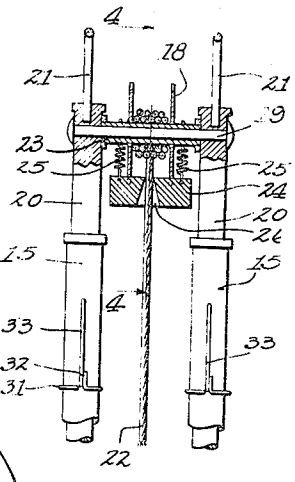


Fig. 3.

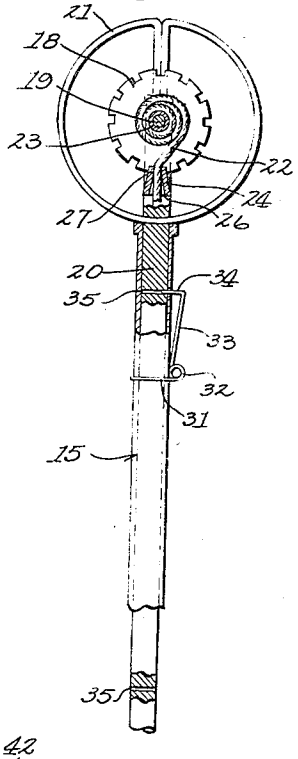


Fig. 4.

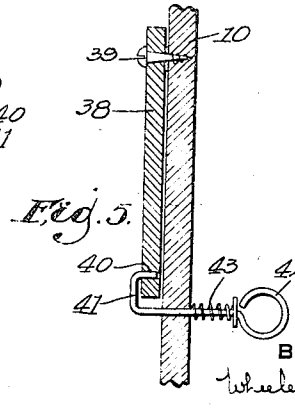


Fig. 5.

INVENTOR
Adolph Brinkman
BY
Wheeler, Wheeler & Wheeler
ATTORNEYS

Patented Jan. 18, 1938 2,105,462

UNITED STATES PATENT OFFICE

2,105,462

BALL SWINGING TOY

Adolph Brinkman, Milwaukee, Wis.

Application March 29, 1937, Serial No. 133,530

7 Claims. (Cl. 273—97)

My invention relates to improvements in ball swinging toy.

The primary object of my invention is to provide a safe mechanical toy which will teach children to skillfully manipulate objects traveling at high speed and at the same time provide for entertainment calling for sufficient physical activity to keep them interested for indefinite periods of time.

Further objects are to provide means whereby the degree of required skill and accuracy of manipulation may be varied; to provide means whereby a ball can be caused to revolve about an axis at different radial distances from the axis and be made to pass through a narrow gateway at one point in its circle of revolution; to provide means whereby such a ball may be connected with an axially rotatable supporting member or spool by a flexible cord, a portion of which may be wound upon the spool and releasably secured with the ball at different radial distances from the spool; to provide means for conveniently securing and releasing the cord in association with its axial support, whereby variations in the radial distance of the ball may be made handily and quickly; to provide means whereby the support may be connected with a suitable handle at different distances from the handle corresponding in each adjustment with the radial distance of the ball from the spool.

In the drawing:

Figure 1 is an elevation of a mechanical toy embodying my invention.

Figure 2 is a perspective view illustrating manipulation of the toy.

Figure 3 is an enlarged detail view of the spool supporting end, with the spool and associated parts shown in section.

Figure 4 is a view, partly in side elevation and partly in section, drawn to line 4—4 of Figure 3.

Figure 5 is a fragmentary sectional view drawn to line 5—5 of Figure 1.

Like parts are identified by the same reference characters throughout the several views.

A handle body 10, preferably comprising a flat plate of wood or metal, is provided with an aperture 11, which may be conveniently termed a gateway, through which a suspended ball 12 may swing. At one side the body 10 has a shank 14, and at the other side a pair of rods 15, preferably tubular in form, extend in parallel relation to each other, and either directly or indirectly support a spool 18 mounted upon a cross rod or shaft 19. This shaft may be supported either directly or indirectly from the rods 15, preferably by means of tubular telescoping extensions 20 which may have terminal wire rings 21.

The ball 12 is supported from the spool 18 by a flexible cord 22 of fabric or metal, the cord having one end secured to the spool 18 and a portion of the cord being preferably wound thereon. The spool 18 may be fixed to a spacing sleeve 23 which is rotatable upon the shaft 19. When the cord has been wound upon the spool to the desired extent, it may be kept from unwinding by means of a fastening plug 24 suspended from the sleeve by coil springs 25. This plug 24 has a conically tapered aperture 26 through which the cord 22 passes. The aperture 26 has its smallest diameter at the side of the block which faces the spool. The cord snugly fits this portion of the aperture, and when the plug is in normal position the cord bends abruptly in a lateral direction in order to be wound upon the spool, thereby creating sufficient friction at 27 to secure the cord to the block 24. To change the adjustment of the cord with reference to the extent to which it is wound upon the spool, the block 24 will be pulled downwardly or in the direction of the body 10 or the block 24 may be manually tilted until the cord passes through the aperture 26 more nearly in a straight line. Thereupon the cord may be drawn through the block in either direction until the desired readjustment in length is effected. Manual release of the block will then allow it to return to normal position and automatically fasten the cord with the ball 12 at the desired radial distance from the spool.

The telescoping members 20 may be adjusted so that when the rods 15 are in an upright position the ball 12 will be suspended in the aperture or gateway 11, as shown in Figure 1, whereupon the rods 20 may be secured by any suitable means. In Figure 4 I have illustrated a piece of resilient wire coiled about rod 15 at 31, with one end portion helically coiled at 32 and extended to form a latch arm 33 having a terminal locking portion 34 which enters apertures in the rod 15 and its associated telescoping member 20, the latter being provided with apertures 35 at intervals along its length.

The gateway 11 may be varied in size to increase or diminish the degree of skill required to cause the ball to pass through it without striking. In Figures 1 and 5 I have illustrated means for narrowing the cross diameter of the gateway by means of gate members 38, each pivoted to the body at 39. Near the other end each gate member 38 is provided with an arcuate row of aper-

tures 40, in any one of which a hook-shaped locking wire 41 may be entered. The locking wire extends through the body 10 and is formed into an eye 42 which serves as a handle. A spring 43 coiled upon the shank tends to hold the hook-shaped end 41 in the locking position.

In operation, the mechanism will preferably be held as indicated in Figure 2, and manually manipulated to cause the suspended ball 12 to swing in an extending arc until it can be swung in a complete circle having a radius equal to its distance from the spool. Steadiness of the hands of the operator and accuracy of eyesight will be required to attain proficiency in causing the ball to pass through the gateway without striking the body 10 or the gates 38. As the operator becomes proficient the telescoping arms 26 may be extended and the cord 22 readjusted to correspond to the increased length. Also, the gates 38 may be readjusted to narrow or widen the gateway in proportion to the degree of the operator's skill.

I claim:

1. The combination with a set of spaced bars having a handle member at one end provided with a gateway in communication with the space between the bars, a shaft connecting the bars at a substantial distance from the handle, a rotatable spool mounted on said shaft, a ball having a flexible connection with said spool at a sufficient radial distance from the shaft to allow the ball to swing through said gateway, and means for varying the dimensions of the gateway.

2. The combination with a set of spaced bars having a handle member at one end provided with a gateway in communication with the space between the bars, a shaft connecting the bars at a substantial distance from the handle, a rotatable spool mounted on said shaft, a ball having a flexible connection with said spool at a sufficient radial distance from the shaft to allow the ball to swing through said gateway, and gate means pivotally connected with the handle member for varying the transverse dimensions of the gateway.

3. The combination with a set of spaced bars having telescoping extensions, of end means for holding the bars in fixed relation to each other, a rotatable member supported between the bars, a ball suspended from the rotary member at a substantial distance therefrom and adapted to be swung between the bars by manipulation of said end holding means, and means for varying the transverse dimensions of the space through which the ball passes when swung in a circular path.

4. The combination with a rotatable support, of a weight suspended from said support at a substantial distance therefrom and adapted to be held by said rotatable force at such distance when swung in a circular path, manually operated means for causing said weight to swing, means providing a gateway for said weight in one portion of said path, and means for varying the dimensions of the gateway.

5. The combination with a rotatable support, of a weight suspended from said support at a substantial distance therefrom and adapted to be held by centrifugal force at such distance when swung in a circular path, manually operated means for causing said weight to swing, means providing a gateway for said weight in one portion of said path, and means for varying the dimensions of the gateway and its distance from the center of the circle of weight rotation.

6. The combination with a set of spaced bars having extensible sections, of end means for holding the bars in fixed relation to each other, a rotatable member supported between the bars, a weight suspended from the rotary member at a substantial distance therefrom and adapted to be swung between the bars by manipulation of said end holding means, and means for adjusting and locking the weight at different distances from the rotary member in accordance with adjustments of said extensible sections.

7. In a device of the described class, the combination of a support, a rotary member mounted on one end portion of the support, a weight having a flexible connection secured to and partially coiled upon the rotary member, and an anchor block resiliently supported from the rotary member and having an aperture through which said flexible connection passes, said block being movable into and out of contact with the rotary member and adapted, when in contact therewith, to hold the flexible connection in various positions of extended adjustment by abrupt flexion of the connection across the wall of the aperture in the block when the latter is in proximity to said rotary member.

ADOLPH BRINKMAN.