F. OKEL.

TOY.

APPLICATION FILED AUG. 13, 191

1,252,158.

Patented Jan. 1, 1918.

2 SHEETS—SHEET 1.

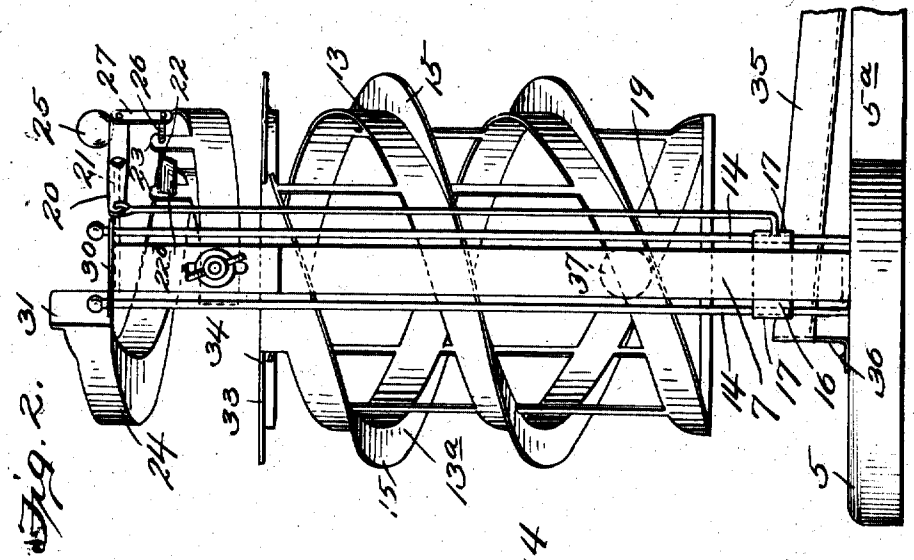


Fig. 2.

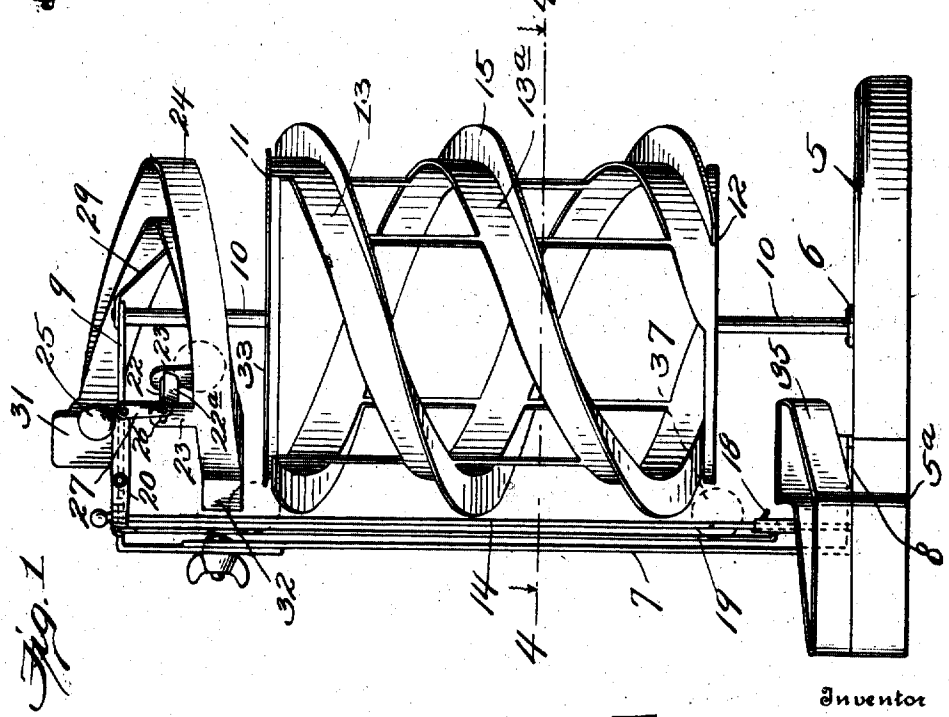


Fig. 1.

Witness

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2 SHEETS—SHEET 2.

Fig. 4.

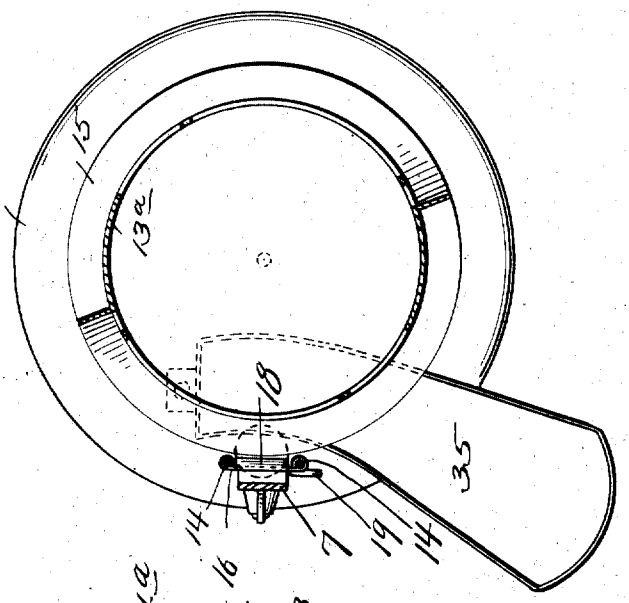
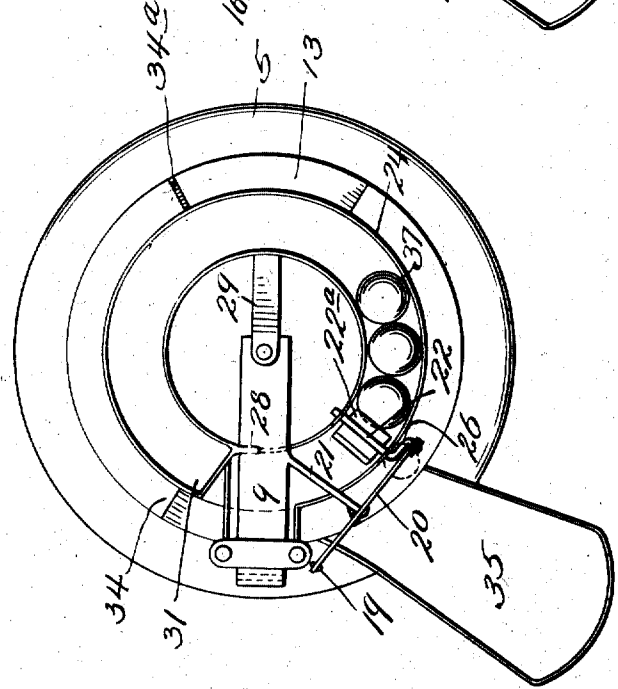


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRED OKEL, OF WHEELING, WEST VIRGINIA.

TOY.

1,252,158. Specification of Letters Patent. Patented Jan. 1, 1918.

Application filed August 13, 1917. Serial No. 185,975.

To all whom it may concern:

Be it known that I, FRED OKEL, a citizen of the United States, residing at Wheeling, in the county of Ohio and State of West Virginia, have invented new and useful Improvements in Toys, of which the following is a specification.

This invention relates to game apparatus or toys of the type embodying a spiral track with movable or rolling playing pieces, and may be termed a toy turbine.

The main object of the invention is to provide a toy of an amusing character wherein a plurality of successively operating playing pieces or balls are automatically fed to and gravitate vertically in engagement with a spiral track in the form of a cylinder and thereby continuously and rapidly rotate said cylinder with an interesting mechanical movement, self-acting means to regularly release the balls from an elevated position and cause them to travel over the track being provided and actuated and controlled by a trip means adjacent to the lower exit of the balls.

The invention consists in the construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

In the drawings:—

Figure 1 is a side elevation of a toy embodying the features of the invention.

Fig. 2 is a similar view looking at the toy in a different position.

Fig. 3 is a top plan view of the toy.

Fig. 4 is a horizontal section taken in the plane of the line 4—4, Fig. 1.

The numeral 5 designates a base of suitable dimensions and form and at the center thereof is a foot bearing 6 of any preferred form. A frame upright 7 has its lower extremity 8 angularly bent and secured on the base and its upper extremity 9 extended inwardly over the top of the toy and the bearing 6 below. Between the bearing 6 and the extremity 9 of the upright 7 a shaft 10 is vertically disposed and free to rotate, and fixed to and surrounding the said shaft is an open cylinder comprising upper and lower disk heads 11 and 12, the shaft and cylinder providing a motor means or unitary rotating means serving as the main entertaining and amusing feature of the toy. Between and extending downwardly from the head 11 to the head 12 is a spiral track 13 of L-shape in cross-section and having the open side thereof outermost. Secured to the base 5 adjacent to the upright 7 and to the upper extremity 9 are a pair of upright rods 14 which are spaced a suitable distance and form a vertical guideway, the lower flange 15 of the cylinder track 13 moving close to the said guideway at differing elevations during the rotation of the cylinder. Loosely mounted on the lower portions of the rods 14 is a trip slide comprising a body 16 with end sleeves 17 and an upper flange 18 projecting inwardly and freely movable between the said rods. A trip rod 19 has its lower end secured to the body 16 and its upper end attached to a combined check and release device embodying a lever 20 intermediately fulcrumed on an arm 21 projecting from the upper extremity 9 of the upright 7, and an oscillating crank rod 22 having bearing in opposed projections 23 rising from a feed chute or trough 24 disposed above and over the upper head 11 of the cylinder. The lever 20 has an operating handle or grip 25, and attached to the inner end thereof and to the crank 26 of the rod 22 is a link 27 whereby the said rod is operated. The rod 22 carries an angular check or stop 22^a and a release flange 22^b in opposite positions over the chute or trough 24 to control the movement of the playing pieces. The chute or trough 24 is of spiral form and held in fixed suspended position by connecting braces 28, 29 and 30 between different portions thereof and the upper extremity 9 of the upright 7. The bottom of the upper closed end 31 of the chute or trough 24 is about on a level with the plane of the upper surface of the extremity 9 of the upright 7, and from said high point the chute or trough gradually inclines downwardly to a straight outlet 32 at its lowest point and terminating close to the upper portions of the rods 14. The upper head 11 of the cylinder has a horizontally disposed peripheral flange 33 which projects outwardly equally with the horizontal flange of the L-shaped spiral track 13 and has a slot or passage 34 cut therethrough to permit the playing pieces to successively engage the upper terminal of the track and clear the flange 33 during the rotation of the cylinder. The playing pieces are held up by the flange 33 at the outlet 32 of the chute or trough 24 between the rods 14 until the passage or slot

84 of the flange 33 comes under each playing piece when the latter will be released and permitted to gravitate over the track 13.

The cylinder will regularly operate by the use of the single spiral track 13, but it is preferred that two spiral tracks 13 and 13ª be used and connected at their upper and lower extremities to diametrically opposite portions of the heads 11 and 12 so as to quicken the action of the playing pieces and their delivery to the said spiral tracks, and the flange 33 also has a slot or passage 34ª cut therethrough at a point diametrically opposite the slot or passage 34. From this construction it will be seen that a playing piece will be fed to or permitted to gravitate downwardly over the spiral tracks 13 and 13ª at half revolutions of the cylinder. Both of the tracks 13 and 13ª are of similar structure and each is of L-shape in cross-section with a lower horizontal flange as hereinbefore noted in connection with the one track. These horizontal flanges terminate above the location of the trip device in connection with the lower portions of the rods 14 so as to permit a clearance of the playing pieces and operation thereof in connection with the said trip device. The base has a tray or trough 35 mounted thereon and so shaped as to catch the playing pieces as they are released or become disengaged from the trip device, the said tray extending laterally and in part supported by the base 5 and an extension 5ª of the latter. The tray is also disposed at an outward and downward angle of inclination through the medium of a prop 36 at the inner end thereof and whereby the playing pieces are caused to gravitate or move toward the outer extremity of the tray. The playing pieces in the present instance consist of metal balls 37 of any suitable number and, in the operation of the device, these balls are placed in the chute or trough 24 and first engage the check or stop flange 22ª which holds all of the balls from movement toward the outlet of the said chute or trough. To start the balls moving automatically, the inner extremity of the lever 20 is raised to let one ball pass the stop 22ª and immediately the lever is released and assumes its normal position so that the remaining balls are checked and the released ball passes onto the outlet 32 of the chute or trough 24, and if one of the slots or passages 34 or 34ª is not in position to permit the ball to engage the adjacent track 13 or 13ª, the cylinder is manually turned until a clearance of the ball is effected and the ball then moves downwardly between the rods 14 over the track with which it is in engagement and the balls in the chute or trough are held against movement until the ball that has been moving downwardly between the rods 14 strikes the flange 18 of the trip slide to depress the latter or the body 16 thereof and simultaneously exert a downward pull on the trip rod 19 which actuates the lever 20 and causes another ball to be released by raising the inner end of said lever and oscillating the rod 22 and raising the check or stop 22ª. This operation becomes successive until all of the balls are released from the chute or trough 24, the balls regularly falling into the lower tray 35, and after the balls have collected in the said tray they may be manually raised and again deposited in the chute or trough 24, or, if desired, delay need not ensue until all of the balls have fallen into the lower tray, but the balls may be picked up one at a time and deposited in the upper chute or trough and thereby maintain the cylinder in continuous motion as long as the balls are moving downwardly between the rods 14 in contact with either one of the tracks thereof.

The improved device may be suitably ornamented and will be found to be very entertaining for both children and adults.

I claim as my invention:—

1. In a toy of the class described, a base, a rotatable cylinder supported in upright position on the base and having spiral track means extending downwardly thereover provided with a lower flange, a spiral chute held above the cylinder and also downwardly inclined toward a lower outlet end thereof, an upright guide adjacent to the cylinder with which the flange of the track means adjacently coöperates, a trip device at the lower portion of the outlet guide, a combined check and release means coöperating with the chute and connected to the trip device for automatic operation, a lower tray adjacent to the trip device and supported on the base, and movable playing pieces which are deposited in the chute and successively movable downwardly over the upright guide in engagement with the flange of the track means and operating the trip device to control the feed of the playing pieces from above.

2. In a toy of the class described, a base, a rotatable cylinder supported in upright position on the base and having spiral track means extending downwardly thereover provided with a lower flange, upright guide means with which the flange of the track means adjacently coöperates, and means for feeding playing pieces at the upper part of the cylinder and upright guide, said playing pieces being movable downwardly over the guide means in engagement with the track means flange and operating to successively release subsequent playing pieces from engagement with the cylinder and guide.

3. In a toy of the class described, a base, a rotatable cylinder supported in upright position on the base and having double track means extending downwardly thereover in spiral form and provided with lower flanges,

an upright guide adjacent to which the flanges of the track means coöperate, a chute disposed above the cylinder and having an outlet adjacent to the upright guide, trip and check and release devices respectively associated with the guide and the chute, and balls introduced in the chute and fed from the latter in succession to the top of the cylinder and guide and operating the trip and check and release devices by their descent.

4. In a toy of the class described, a base, a rotatable cylinder supported in upright position on the base and having spiral track means extending downwardly thereover, an upright guide adjacent to the cylinder and consisting of a pair of rods spaced apart and with which the track means adjacently coöperates, means for feeding playing pieces disposed above the cylinder, connected devices for regulating the feed of the playing pieces, and a lower tray for receiving the playing pieces from the guide.

5. In a toy of the class described, an upright cylinder supported for free rotation and having track means extending downwardly thereover in spiral form, the upper end of the cylinder being provided with a flange with opposite slots therethrough, an upright guide consisting of a pair of spaced rods with which the track means of the cylinder adjacently coöperates, means for receiving playing pieces and feeding them to the top of the cylinder and guide, and playing pieces consisting of balls which are successively fed to the top of the cylinder and the guide and descend vertically over the latter and released at the lower extremity of said guide.

6. In a toy of the class described, a rotatable cylinder supported in upright position and having spiral tracks extending downwardly thereover of L-shape in cross-section to provide lower flanges, a pair of upright rods spaced apart to form a guide and located adjacent to the flanges of the tracks, a lower tray disposed to receive the playing pieces from the lower portion of the guide, an upper spiral chute disposed over the cylinder and having an outlet adjacent to the upper portion of the guide, the cylinder having a top flange with diametrically opposed slots therein, a combined check and release device supported over a part of the chute, a lower slidable trip device mounted on the rods and connected to the check and release device, and balls which are placed in the chute and successively fed to the top flange of the cylinder and the guide to descend vertically over the latter in contact with the tracks to rotate the cylinder.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRED OKEL.

Witnesses:
FRANK A. BLISKE, Jr.,
FRED L. MILLER.