Aug. 29, 1961 C. E. PAUL 2,998,249

TUMBLER TOY

Filed Jan. 21, 1959 3 Sheets-Sheet 1

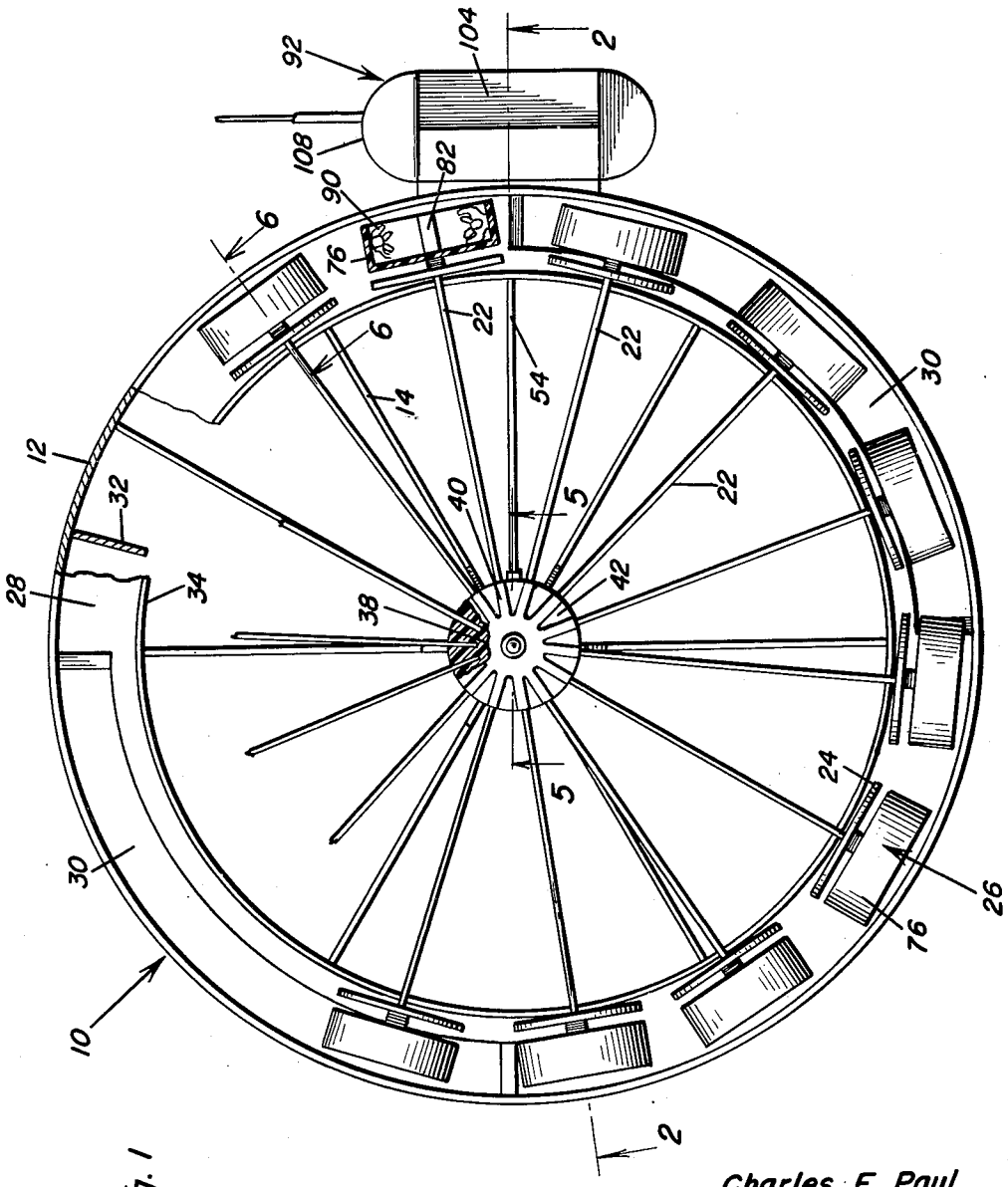


Fig. 1

Charles E. Paul

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson Attorneys

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TUMBLER TOY

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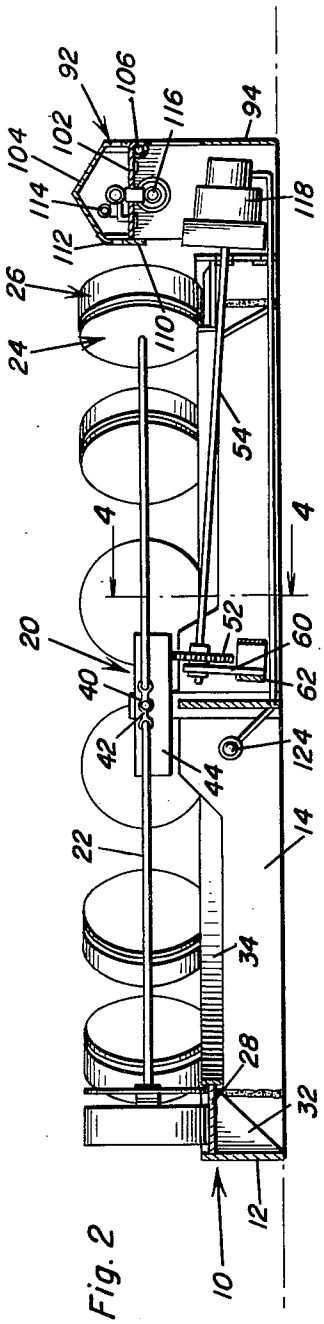


Fig. 2

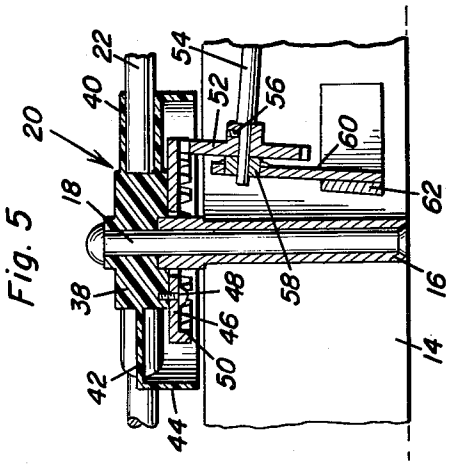


Fig. 5

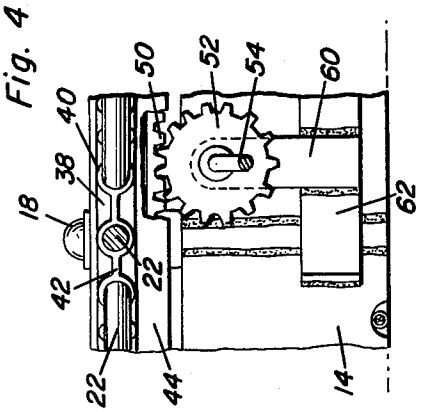


Fig. 4

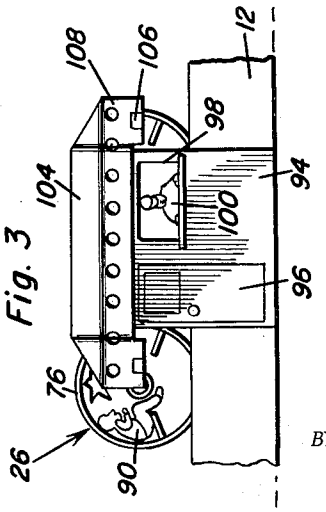


Fig. 3

Charles E. Paul

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Aug. 29, 1961 C. E. PAUL 2,998,249

TUMBLER-TOY

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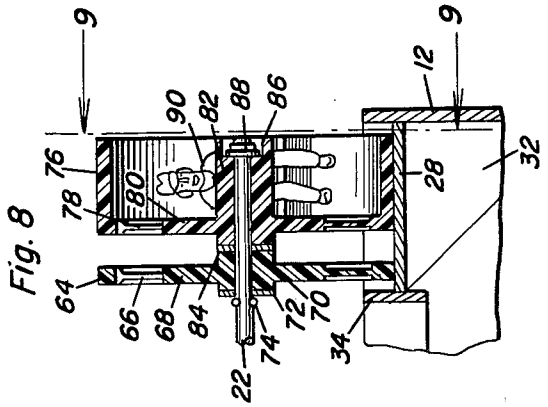


Fig. 8

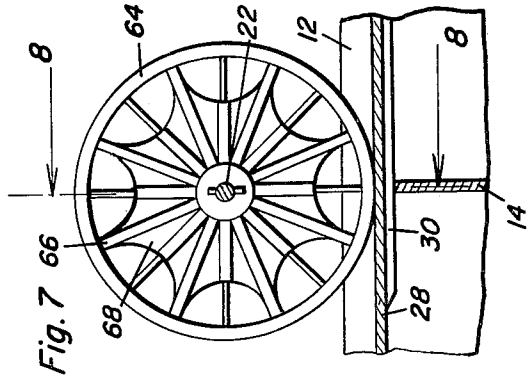


Fig. 7

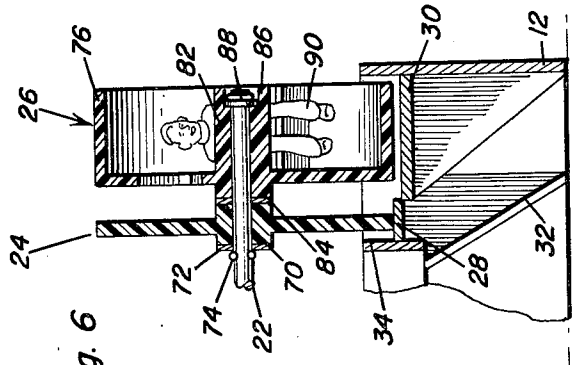


Fig. 6

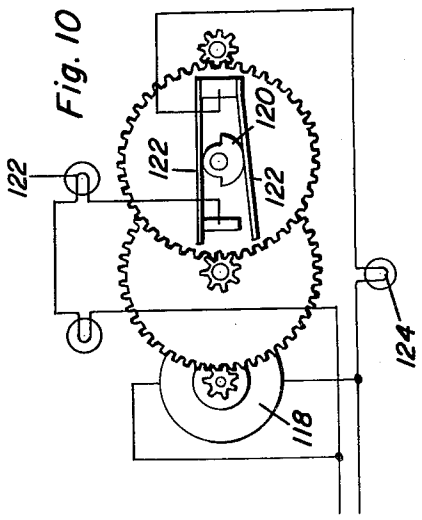


Fig. 10

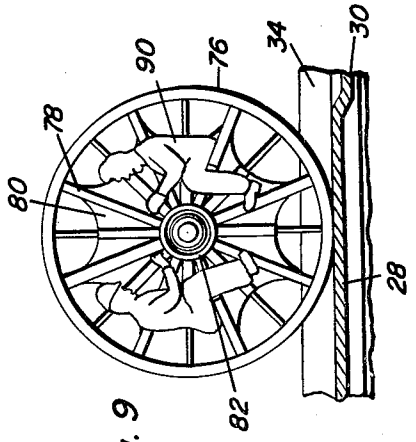


Fig. 9

Charles E. Paul

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson Attorneys

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2,998,249
TUMBLER TOY

Charles E. Paul, 60 Eller Ave., Buffalo, N.Y., assignor of one-half to Lena Z. Paul, Buffalo, N.Y.

Filed Jan. 21, 1959, Ser. No. 788,164
7 Claims. (Cl. 272—31)

The present invention generally relates to an amusement device and more particularly to a toy of the roundabout type which is electrically driven and which includes a plurality of generally cylindrical tumblers movable in a circular path and on a circular track wherein the tumblers are rotatably engaged with the track for a portion of their movement and are freely rotatable during a portion of their movement thereby providing a tumbler toy having a highly novel structural arrangement for providing an entertaining toy.

Briefly, the present invention incorporates a tumbler toy including a circular trackway having certain areas thereof depressed below certain other areas together with a rotatable assembly which includes a plurality of tumblers in the form of cylindrical members rotatably mounted on the outer ends of support arms together with a wheel mounted adjacent to and slightly inwardly of each tumbler with the wheel and tumbler having substantially the same radius so that both the wheel and tumbler will normally be engaged with the track except when the tumbler passes over a depressed area of the track whereby the wheel then supports the entire arm and the tumbler is allowed to rotate freely which, due to offcenter weight in the tumbler, will provide erratic rotational movement of the tumbler as it proceeds around the circular track for providing a highly entertaining toy. Further, the entire rotatable assembly is driven by an electric motor disposed within a simulated ticket house having a novel roof construction and blinker light assembly for providing a highly novel toy with there also being provided a blinker light near the central turret of the rotatable assembly for further enhancing the novelty of the toy. Therefore, it is the primary object of the present invention to provide a toy construction having features set forth in the immediately preceding and which is extremely inexpensive to manufacture, long lasting, dependable, attractive and highly entertaining.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a plan view of the tumbler toy of the present invention with one of the tumblers shown in section and part of the trackway broken away and a portion of the tumbler and wheel assemblies being omitted for clarity;

FIGURE 2 is a transverse, vertical sectional view taken substantially upon a plane passing along section line 2—2 of FIGURE 1 illustrating certain of the details of construction of the toy;

FIGURE 3 is a partial side elevation of the toy illustrating the front view of the simulated ticket house;

FIGURE 4 is a detailed sectional view, an on enlarged scale, taken substantially upon a plane passing along section line 4—4 of FIGURE 2 illustrating the structural details of the central turret;

FIGURE 5 is a detailed sectional view, on an enlarged scale, taken substantially upon a plane passing along section line 5—5 of FIGURE 1 illustrating further structural details of the turret;

FIGURE 6 is a detailed sectional view taken substantially upon a plane passing along section line 6—6

of FIGURE 1 illustrating the details of construction of one of the tumblers and an associated wheel;

FIGURE 7 is an elevational view of one of the wheels with the arm and a portion of the track being shown in section;

FIGURE 8 is a sectional view similar to FIGURE 6 but taken along section line 8—8 of FIGURE 7 illustrating the relationship of the wheel and tumbler when they are are at the same elevation;

FIGURE 9 is an elevational view of the outside end of a tumbler taken substantially upon a plane passing along reference line 9—9 of FIGURE 8; and

FIGURE 10 is a schematic view of the wiring diagram for the toy illustrating the cam for operating the blinker lights.

Referring now specifically to the drawings, the numeral 10 generally designates the tumbler toy of the present invention which generally includes a cylindrical wall member 12 which is vertically disposed and which rests upon any suitable flat supporting surface. Rigidly connected with the inner surface of the cylindrical wall 12 is a plurality of radially extending and horizontally disposed brace members 14 which are generally in the form of vertical brace plates. Rigidly interconnecting the inner ends of the brace plates 14 is a tubular socket 16 which rotatably supports and carries a removable vertical headed pin 18.

Mounted on the pin 18 is a turret assembly generally designated by the numeral 20 which is rotatably carried by the pin 18 and the upper end of the socket 16 and which has a plurality of radially extending horizontally disposed arms 22 of circular cross-section. Each of the arms 22 carries a wheel generally designated by the numeral 24 adjacent the outer end thereof and a tumbler generally designated by the numeral 26 on the outer end thereof and outwardly of the wheel 24. The wheel 24 and tumbler 26 are rollingly supported on an annular trackway 28 which is horizontally disposed and which is disposed against the inner surface of the wall 12 and arranged slightly below the upper end of the wall 12 as clearly illustrated in FIGURES 6 and 8.

At circumferentially spaced points, the trackway 28 is provided with downwardly offset arcuate portions 30 which are disposed below the plane of the trackway 28 with the offset portions extending radially only under the tumbler 26 wherein the arm 22 and the tumbler 26 will be supported solely by the wheel 24 which continues to engage the trackway 28. Due to the depressed area 30 disengaging or being spaced from the tumbler 26, the tumbler 26 is free to rotate about the axis of the arm 22.

For supporting the trackway 28, there is provided a plurality of circumferentially spaced triangular reinforcing gussets 32 which are connected to the inner surface of the wall 12 and the undersurface of the trackway 28. Of course, the radial braces 14 also serve to support the trackway by virtue of their engagement with the depressed portions 30 as indicated in FIGURE 7. Connected with the inner edge of the trackway 28 is a cylindrical wall 34 which has an upper edge generally parallel to and in the same plane as the upper edge of the outer wall 12 and projecting above the trackway 28 and having a lower edge projecting below the trackway 28.

Referring now particularly to FIGURE 5, the turret 20 includes a generally cylindrical hub 38 having a plurality of outwardly extending and radially disposed sockets 40 integral therewith with the sockets 40 being interconnected by a web 42 with the webs 42 and the sockets 40 having a depending cylindrical protective flange 44 on the outer edge thereof. Each of the sockets 40 receives a radial arm 22 therein and will propel the arm 22 about the axis of the pin 18 in a manner described hereinafter.

Attached to the lower surface of the hub 38 is a gear plate 46 which is secured in position by removable screw threaded fasteners 48 and which has depending peripherally disposed gear teeth 50 thereon which are arranged concentrically with the vertical axis of the pin 18 and inwardly of the flange 44 with the lower end of the gear teeth 50 terminating above the lower end or edge of the flange 44 thereby preventing any possible injury by persons becoming entangled with the gear teeth 50.

For driving the gear 46, there is a pinion gear 52 in meshing engagement therewith with the pinion gear 52 being mounted on a drive shaft 54 and secured there by a suitable setscrew 56 or the like. The end of the shaft 54 projects beyond the gear 52 and is received in a bearing 58 carried by a bracket 60 supported from one of the braces 14 by a bracket 62.

Referring now specifically to FIGURES 6–9, the wheel 24 includes an annular rim 64 with a plurality of radially extending spokes 66 with web portions 68 interconnecting the spokes with a central hub 70 interconnecting the inner end of the spokes and also the webs 68. The wheel 24 may be decoratively colored in any suitable manner and may simulate a decorative circus wagon wheel. A washer 72 is disposed against the inner end of the hub 70 and the arm 22 is provided with a pair of projections 74 engaging the outer surface of the washer 72 for retaining the washer 72 in position and preventing inward movement of the wheel 24. The projections 74 are preferably formed by swaging a portion of the arm 22 outwardly. The wheel 24 rides on the horizontal surface of the inner portion of the trackway 28 and the portion of the trackway 28 upon which the wheel 24 rides is continuous and in the same horizontal plane.

The tumbler 26 includes a cylindrical outer wall 76 with the inner edge thereof having a plurality of radially extending spokes 78 integral therewith with the spokes having webs 80 partially interconnecting the same and having a generally elongated central hub 82 which is journaled on the outer end of the arm 22. The hub extends slightly beyond the inner edge of the cylindrical member 76 and is spaced from the hub 70 by a spacing washer 84. The outer end of the hub 82 is provided with a countersink or recess 86 receiving a retainer 88 of any suitable nature which retains the hub 82 and thus the tumbler 26 on the arm 22 for free rotation. Also mounted within the confines of the cylindrical member 76 is a pair of figurines 90 which may be representative of any human or animal and which may be colored in any desired coloring or decoration. The figurines 90 cause an unbalance in the tumbler 26 so that when the tumbler 26 is not engaging the trackway 28, such as when it registers with the depressed portion 30, the tumbler 26 will oscillate about the axis of the arm 22 due to the unbalanced condition trying to reach a condition of equilibrium.

Disposed to one side of the toy 10 is a simulated ticket house generally designated by the numeral 92 and which includes a generally hollow enclosure 94 having a simulated door 96 and ticket window 98 with a ticket agent 100 disposed behind the ticket window 98. A top wall 102 is provided for the enclosure 94 and a pivotal roof 104 is connected to the top wall 102 by hinge pins 106 along the outer edge of the roof 104. The roof 104 is provided with rounded ends 108 and is also provided with a longitudinally extending ridge with downwardly inclined surfaces terminating in vertically disposed side wall portions 110 having apertures 112 therein which apertures may be provided with a transparent colored covering. Mounted within the enclosure defined by the roof 104 and the top wall 102 is a blinker light 114. Also, the top wall 102 is provided with a constant light 116 below the lower surface thereof for illuminating the ticket window 98 and the ticket agent 100. Also mounted within the enclosure 94 is a small electric motor 118 having a power output shaft 54 which is driven at a reduced speed by a

conventional reduction gear mechanism. Also, the motor 118 drives a cam 120 which engages a pair of spring loaded switch arms 122 for energizing the blinker light 114 in the ticket house 92 and also the blinker light 124 which is mounted on one of the braces 14 immediately under the turret 20 whereby the blinking lights will blink in response to rotation of the tumblers thus providing a highly novel lighting effect.

A major portion of the structure will be of a plastic material which may be colored in any desirable manner and which provides for a certain degree of transparency so that the various lights will provide a pleasing appearance and an attractive toy. The gears 46 and 52 are of metallic construction and the electric motor 118 may be of the type which will operate off of low voltage dry cell batteries in order to eliminate any possibility of electrical shock being imparted to persons using the device.

As the tumblers are moved around the trackway 28 due to rotation of the gear 52 and rotation of the turret 20, the tumblers will rotate in one direction as long as they are resting against the upper surface of the trackway 28 and will rotate in any direction freely when the tumbler overlies the recess portion 30 which direction of rotation will be determined by the unbalance provided by the figures 90 or which may be built into the tumbler.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A toy roundabout comprising an annular horizontally disposed trackway, a turret disposed centrally of said trackway, means rotatably supporting said turret, means for driving said turret about a vertical axis, a plurality of arms carried by said turret and extending radially therefrom, a wheel mounted on each arm in rolling overlying contact with the trackway, and a cylindrical tumbler rotatably mounted on each arm radially outwardly of the wheel in rolling overlying contact with the trackway, said trackway having circumferentially spaced depressed portions disposed in the path of movement of the tumblers whereby the arms will be supported solely by the wheels during a portion of their movement for permitting free rotation of the tumblers about the longitudinal axis of said arms during such portions.

2. The structure as defined in claim 1 wherein said tumbler is generally cylindrical and provided with at least one figurine therein for creating an unbalanced condition in each of the tumblers.

3. The structure defined in claim 2 wherein said means for driving the turret includes a plate gear mounted on said turret and having depending gear teeth, an elongated radially disposed drive shaft, a drive pinion on said drive shaft in meshing engagement wth the plate gear, and a motor connected with the drive shaft for rotating the turret, said turret having a depending flange outwardly of the plate gear for preventing entanglement of foreign articles with the meshed drive gear and plate gear.

4. The structure as defined in claim 3 wherein said drive shaft is provided with an electric motor, a housing for the electric motor, said housing simulating a ticket office with the motor mounted therein in concealed relation, a blinker light under said turret and a blinker light in the roof portion of the simulated ticket house for operation in response to rotation of the motor thereby providing a pair of blinking lights.

5. The structure as defined in claim 4 wherein said ticket house is provided with a roof panel having a longitudinal crown and rounded ends, hinge means connecting the roof panel to the housing adjacent the outer edge thereof for permitting renewal of the bulb for the blinker

lights, said roof panel having a depending flange with a plurality of apertures therein for permitting egress of light.

6. A roundabout comprising an annular flat track having one surface thereof lying in a single horizontal plane, a central turret disposed at the center of the trackway, means connected with the turret and causing rotation of the turret, a plurality of radially extending arms rigidly affixed to the turret and extending in overlying relation to the trackway, each of said arms having a wheel journaled thereon engaging the flat surface of the annular trackway, said wheel overlying and rollingly contacting the trackway for continuous support and rotation during movement of the arm about the center of the turret, a cylindrical tumbler freely rotatably mounted on each arm radially outwardly of the wheel, said tumbler overlying the trackway and having a peripheral surface in rolling contact therewith whereby the tumbler will normally rotate along with the wheel, said trackway having circumferentially depressed portions disposed outwardly of the path of movement of the wheel and in the path of movement of the tumbler whereby the arm will be supported solely by the wheel when the tumbler is passing over the depressed portions of the trackway thereby enabling free rotational movement of the tumbler on the arm while

the tumbler is passing over the depressed portions of the trackway, said tumbler including off-center weight means for overbalancing the tumbler whereby the tumbler will normally be caused to rotate when passing over the depressed portions.

7. The structure as defined in claim 6 wherein said eccentric weight is in the form of at least one figurine mounted on the tumbler, said means for rotating the turret includes a gear rigid with the turret, a pinion gear in meshing engagement with the gear on the turret, and means disposed radially outwardly of the trackway and connected with the pinion gear for driving the pinion gear and turret, said means being disposed in a simulated ticket office for concealing the drive means.

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