Jan. 12, 1926. 1,569,225

L. S. GUNDERMAN

MECHANICAL TOY

Filed March 8, 1924 2 Sheets-Sheet 1

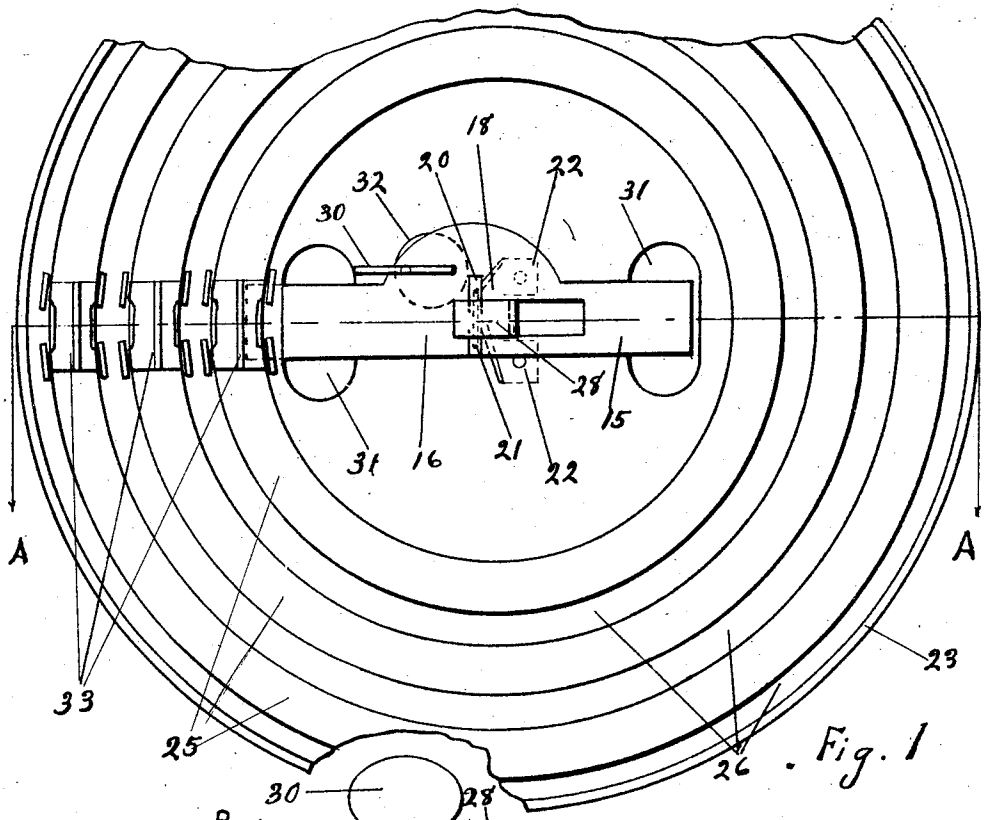


Fig. 1

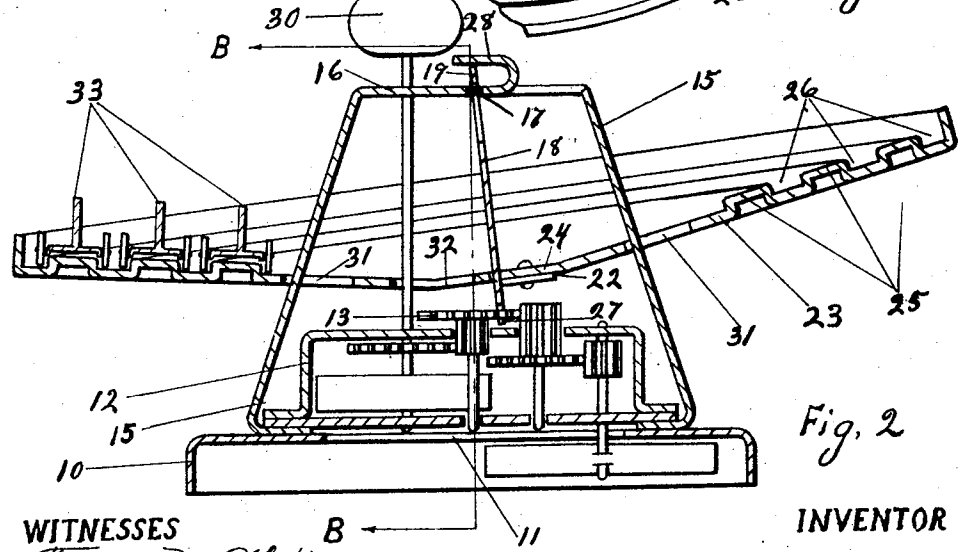


Fig. 2

WITNESSES

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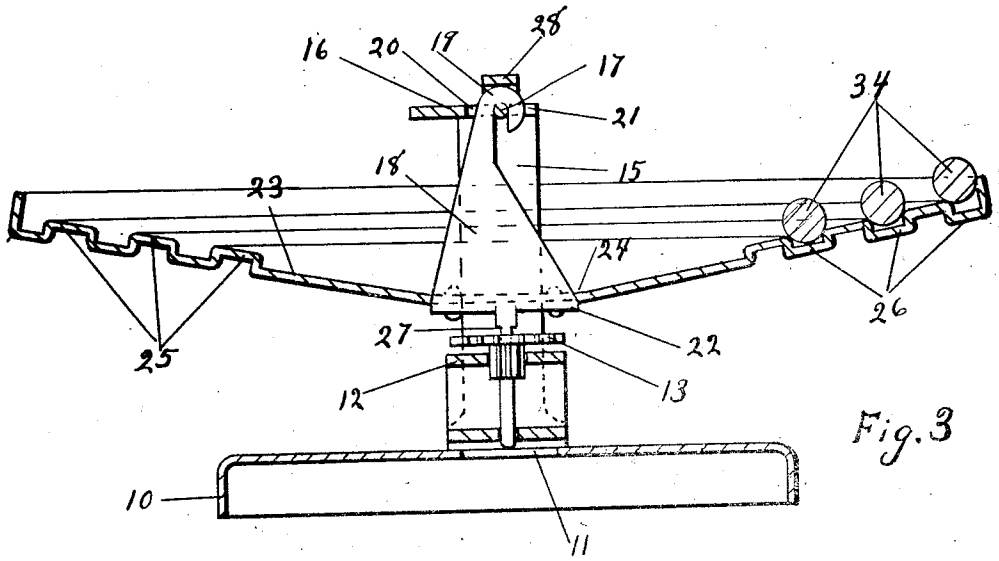


Fig. 3

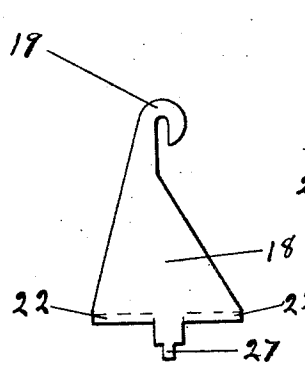


Fig. 4

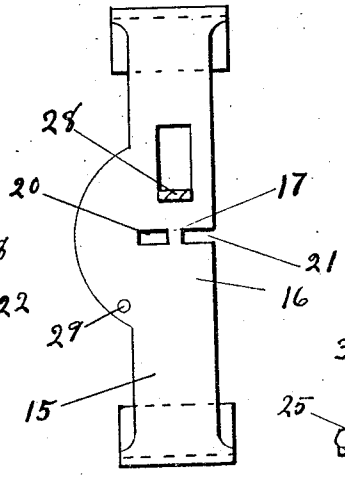


Fig. 5

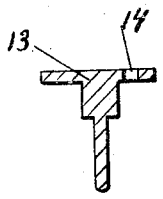


Fig. 6

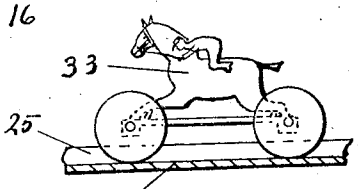


Fig. 7

WITNESSES

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Patented Jan. 12, 1926. 1,569,225

UNITED STATES PATENT OFFICE.

LESTER S. GUNDERMAN, OF PITTSBURGH, PENNSYLVANIA.

MECHANICAL TOY.

Application filed March 8, 1924. Serial No. 697,740.

To all whom it may concern:

Be it known that I, LESTER S. GUNDERMAN, citizen of the United States, residing at 251 Kennedy Ave., N. S., Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Mechanical Toys, of which the following is a specification.

This invention relates to a game apparatus or toy of the type embodying a circular track with moving or traveling play pieces and may be termed a circular speed way.

The object of this invention is to improve the construction and operation of such toys so constructed that the conical disc is suspended on an inverted U shaped bracket over a motor shaft the suspension point being in a vertical line with the motor shaft, the conical disc being driven in a circular swinging manner.

Another object is the novel means of imparting a rotary wave motion to the outward edge of the depressed disc.

Referring to the accompanying drawing, Fig. 1 is a partial plan view of the disc track, the play pieces and the support, the motor and base being omitted.

Fig. 2 is a view of the toy on line A—A, Fig. 1.

Fig. 3 is a section on line B—B, of Fig. 2, and shows a modified form of play pieces.

Fig. 4 is a detailed view of the vertical connecting member.

Fig. 5 is a plan and part section view of the supporting member.

Fig. 6 is a section of a driving gear carrying a bearing at one side of its center.

Fig. 7 is an elevational view of one form of play pieces.

The toy comprises a base 10, which is preferably of a metal sheet pressed to form a raised surface, a hole 11 is provided in the surface to accommodate motor parts. Secured to the base is a suitable spring motor the upper frame of which is indicated by 12. The motor may be of any standard type, one of the motor gears 13 being mounted on the end of the gear shaft outside of the motor frame, the gear being provided with a bearing 14 at one side of the center of the vertical axis thereof.

Mounted on the base 10 is a supporting member 15 which is in the form of an inverted U shaped metal strip, the upper part 16, being made parallel with the base 10, the part 16 has a pin bearing 17 which is in a vertical line with the axis of the gear 13, the pin bearing supports an upright member 18, the upper end of which is made in the form of a hook 19, the hook is passed through the slots 20 and 21, and is supported on the pin 17. The slots 20 and 21 are for preventing the upright 18 from being rotated when the toy is in action.

Part of the lower end of the upright 18 is bent outwardly forming an angle 22 to which a shaped disc 23 is secured, the disc is preferably of sheet metal, formed into a conical shape, the control portion 24 being mounted on the angle portion 22 of the upright member 18.

The disc 23 has raised or annular members 25 thereon, the space 26 between the annular members are circular tracks or runways. The lower end of the upright 18 is provided with a depending pivot bearing 27 which resides in the bearing 14 in the gear 13, serving to swing the upright 18 and the conical disc 23 in a circular manner. To prevent the pin 27 from being accidently disengaged from the gear bearing 14 a retaining lug 28 is provided. One end of the retaining lug is punched out of the supporting member 15, and bent backwardly over the hook 19 in such a manner that pivot pin 27 cannot become disengaged from the bearing 19, but will be sufficiently free to swing in a circular manner.

A suitable bearing 29 in the upper portion of the U member 15 is provided for the support of the winding key.

The conical disc 23 has openings 31 provided for the U member 15 to pass through for the support of the said disc.

An opening 32 is also provided for the key 30 to pass through the disc for winding of the motor. It being obvious that the openings 31 and 32 are sufficiently large enough that the disc 23 will not strike on the support 15 or the winding key 30, to interfere with the operation of the toy.

Fig. 1 shows play pieces on wheels set over the annular members 25 which come in contact with the inside of the wheels when being guided around the disc 23; the other form of play pieces being of spherical bodies rest on the upper corners of the annular members 25, as shown in Fig. 3, which cause the spherical bodies to move in a true circular path about the disc 23.

Fig. 1 shows the play pieces in the form of a horse and rider on wheels, a side eleva-

tion is shown in Fig. 7. Fig. 3 shows a modified form of moving play pieces in the shape of spherical bodies. While the play pieces are not shown in different colors it is to be understood that they are to be each of a different color.

The operation of the device is as follows:

The play pieces are placed on the track, 25, then by tightening the motor spring by turning the key 30 the gear 13 will be rotated.

The play pieces are placed on the tracks, then by tightening the spring by turning the key the gear 13 will carry the upright in a circular swinging manner carrying the disc also in a circular swinging manner causing the periphery thereof to have a circular advancing elevation thereon, which causes the play pieces to travel by gravity.

In guiding the wheels of one form of play pieces around the disc the annular members come in contact with the inside edges of the wheels, in the other form of play pieces the spherical members rest on the bottom of track 15.

I claim:—

1. A toy comprising a base, an inverted U shaped member mounted in the base, a spring motor including a driving gear in said U-shaped member, an upright member eccentrically mounted and freely movable in said driving gear and movable on said U-shaped member, a disc attached to said upright member, tracks forming a structurally integral portion of said disc, and playing pieces adapted to travel on said tracks.

2. A toy comprising a base, an inverted U-shaped member mounted on the base, a driving motor including a driving gear mounted on said base, an upright member suspended and freely movable on said U member the lower end of said upright being mounted in said driving gear and being carried in a circular manner by said gear, a conical disc being mounted on said upright, and playing pieces adapted to travel on said disc.

3. A toy comprising a conical shaped disc having circular tracks thereon, said tracks forming a structurally integral portion of the disc, an upright mounted on the said disc, the upper portion of the said upright being carried on a bearing in the inverted U shaped member, the lower end of the said upright extending into a motor gear at one side of the center thereof to swing the disc in a circular manner causing the rim of the said disc to progressively elevate and depress and the objects to travel around the tracks by gravity.

4. A toy comprising a base, an inverted U shaped member mounted on the base, a spring motor including a driving gear in said U-shaped member, an upright member eccentrically mounted and freely movable in said driving gear and movable on said U-shaped member, a portion of said U-shaped member bent over one end of said upright, a disc attached to said upright member, tracks forming a structurally integral portion of said disc, and playing pieces adapted to travel on said tracks.

5. A toy comprising a base, an inverted U-shaped member mounted on the said base, a spring motor including a driving gear mounted on said base. an upright member eccentrically mounted and freely movable in said driving gear and suspended on said U-shaped member, a conical disc attached to said upright member, tracks forming a structurally integral portion of said disc, and playing pieces adapted to travel on said tracks.

6. A toy comprising a base, a supporting member and a spring motor including a driving gear mounted on said base, an upright member eccentrically mounted and freely movable in said driving gear and suspended on said supporting member, a disc attached to said upright member, tracks forming a structurally integral portion of said disc, and playing pieces adapted to travel on said tracks.

7. A toy comprising a base, a supporting member and a spring motor including a driving gear mounted on said base, an upright member eccentrically mounted and freely movable in said driving gear and pivotally suspended on said supporting member, a retaining lug over one end of said upright preventing vertical movement thereof, a disc attached to said upright member, tracks forming a structurally integral portion of said disc, and playing pieces adapted to travel on the said tracks.

8. A toy comprising a base, a supporting member mounted thereon, a spring motor including a driving gear mounted on said base, a conical disc having tracks thereon, an upright member mounted on the center of said conical disc, the upper end of said upright member mounted on said supporting member, the lower end of said upright member pivoted in said gear at one side of the center thereof, to swing said disc in a circular manner, and playing pieces to travel on said tracks.

9. A toy comprising a base, a supporting structure mounted thereon, a spring motor including a driving gear mounted on said base, a conical disc having circular tracks thereon, an upright member mounted on said disc, the upright freely mounted on said supporting structure, a member mounted over the end of said upright, the lower end of said upright freely mounted in said gear at one side of the center thereof to swing the disc in a circular manner, and playing pieces to travel on said tracks.

In testimony whereof I affix my signature.

LESTER S. GUNDERMAN.