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[54] **TOY SPINNING TOP**

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[51] **Int. Cl.²** **A63H 7/02;** A63H 7/00

[58] **Field of Search** 46/67, 68

[56] **References Cited**

FOREIGN PATENTS OR APPLICATIONS

1,047,915 10/1966 United Kingdom 46/68

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[57] **ABSTRACT**

A toy spinning top in which two discs are covered by a transparent dome. The dome and an upper one of the discs are rotatably drivable relative to the other disc with the upper disc having toy vehicles secured thereto. A cam surface carried by the upper disc engages, on relative rotation of the two discs, a cam follower carried by the other disc thereby to operate an auxiliary element such as the pivotal arm of a trackside train signal.

9 Claims, 2 Drawing Figures

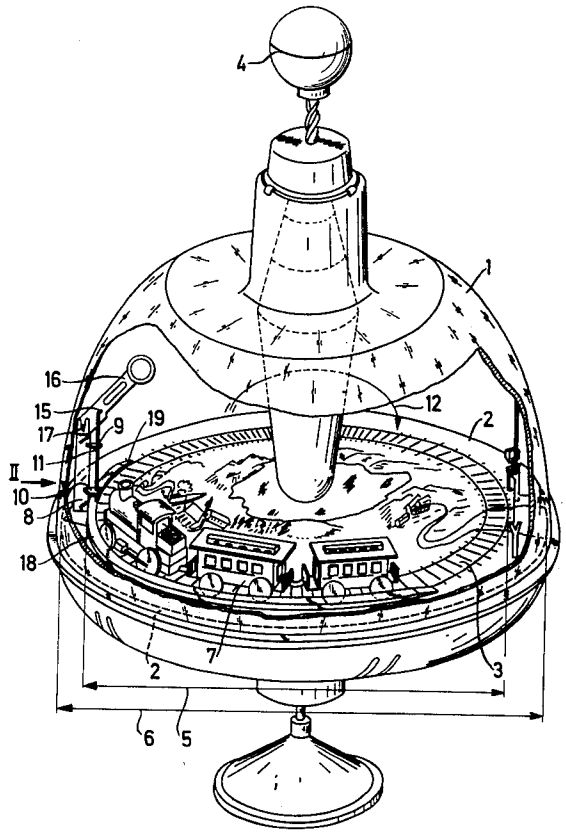
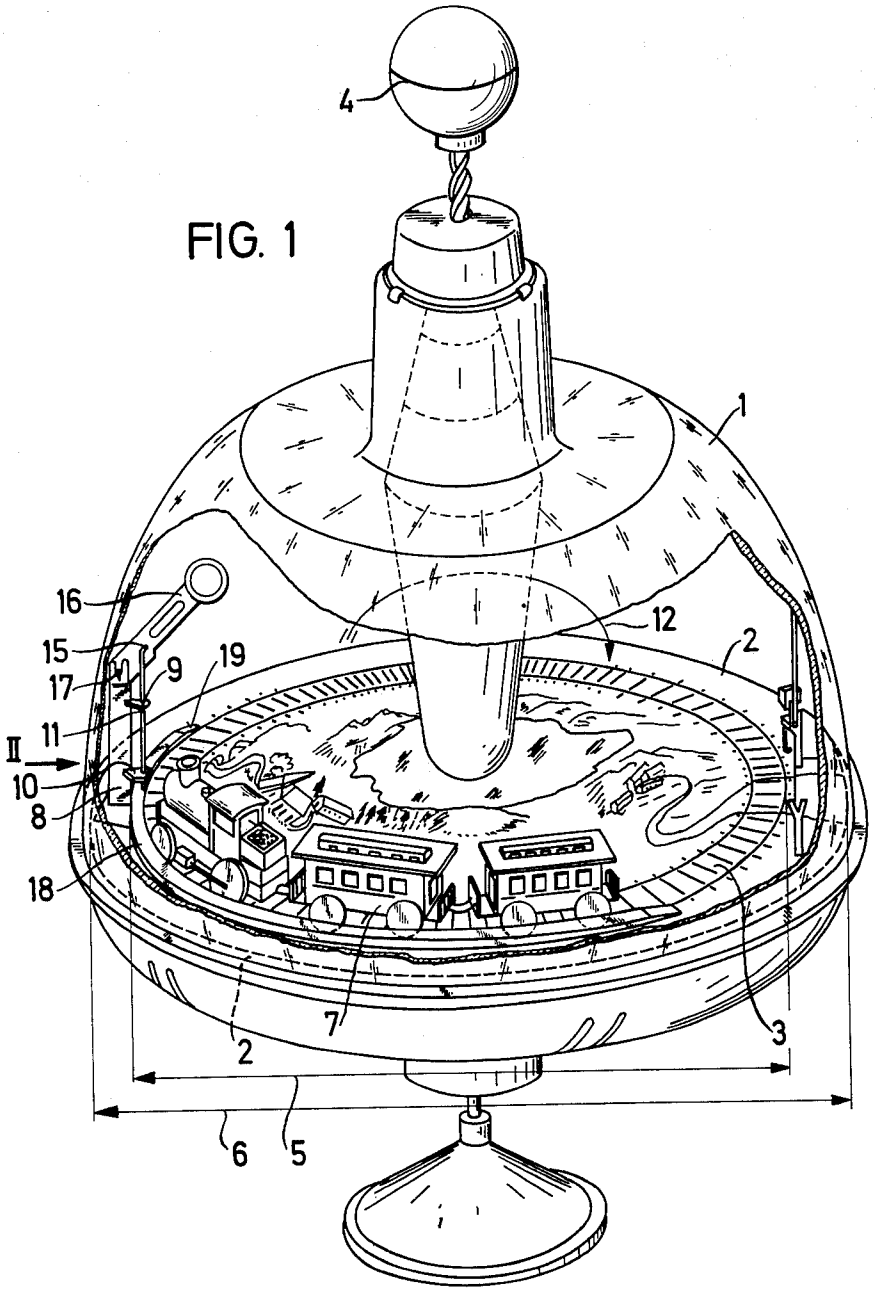


FIG. 1



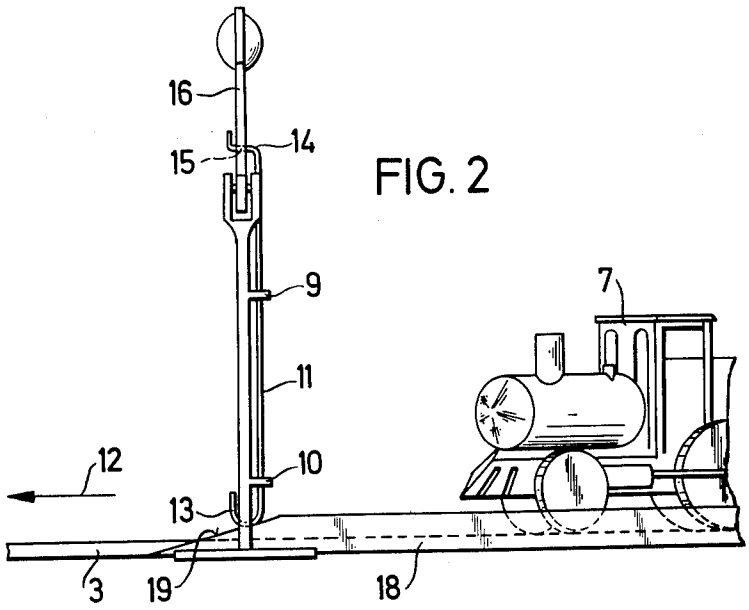


FIG. 2

TOY SPINNING TOP

The invention relates to a toy spinning top having a rotatable transparent dome covering a relatively stationary disc and a rotatable disc preferably of transparent material and suitably supporting shaped bodies for rotation therewith.

In spinning top toys of the above described kind it is desirable to secure the shapes to the rotatable disc so as to occupy the outermost possible region of the spinning top so that a child may satisfactorily observe the shapes and their movement from the outside. It is further desirable to arrange the rotatable disc directly above the stationary disc so that the rotatable disc is not apparent even when the top is viewed from the side, so that the child gains the impression that the shapes move by themselves above the stationary disc. Pictorial motives may be printed on the stationary disc which thus represents a kind of screen over the surface whereof the shapes move, with the rotatable disc being invisible.

Heretofore such spinning tops have sought only to provide relative rotational movement of the disc and whatever shaped bodies such as toy cars or trains which may be supported thereon. The present invention thus seeks to provide a spinning top whose components effect further movements in addition to the rotary movement of the discs, and more particular further movements which are dependent on the relative rotational position of discs and hence toy shapes as may be supported thereon. The cost of construction should, in this context, be as low as possible and furthermore the toy image should not be interfered with by mechanical components.

According to the present invention I provide a toy spinning top comprising a transparent dome, a first disc and a transparent disc of smaller diameter than the first disc covered by said dome, drive means to rotate said dome and said second disc about an axis and relative to said first disc, a vertically deflectable member mounted on the marginal region of said first disc and projecting into the marginal region of the second disc and a cam surface supported on said second disc and positioned to deflect the deflectable member on rotation of the second disc relative to the first disc.

In order to prevent jerking movement of the deflectable member when it meets the cam surface, the latter may be formed on a wedge surface inclined to the plane of the rotatable disc or of the horizontal disc.

The subject of the invention will now be described in greater detail with reference to an exemplary embodiment illustrated in the accompanying drawings in which

FIG. 1 shows a perspective plan view of a toy top according to the invention; and

FIG. 2 shows a detailed view in the direction of the arrow II of FIG. 1.

In the drawings a rotatable dome 1 surmounts a stationary disc 2 and a rotatable transparent disc 3, a transmission arrangement (not shown) being provided to effect rotation of the disc 3 and dome 1. The design of the toy spinning top corresponds to that of the German Patent Specification No. 1,180,291 and thus no detailed description of these components will be given herein. The dome 1 is made to rotate at relatively high speed by depressing a twist knob 4, and the rotary

movement of the dome 1 is transmitted through reduction gearing to the disc 3.

The diameter 5 of the disc 3 is smaller than the diameter 6 of the disc 2, and pictorial motives are printed on the surface of the disc 2, in the manner of a screen. Toy shapes 7 are secured to the peripheral region of the disc 3, the toy shapes in the illustrated embodiment representing a railway train with several carriages.

The mast 8 of a railway signal is secured to the peripheral region of the disc 2 which is not covered by the disc 3. A wire 11 is mounted for vertical deflection through mounting eyes 9,10 of the mast 8, with the lower end of the wire 11 being bent over to form a semicircular bend 13. The upper end 14 of the wire is bent sideways and protrudes into a mounting eye 15 of the signal pivot lever 16 which is pivolably mounted to the mast 8 via a mounting 17.

A cam means in the form of ridge 18 is secured to the periphery of the disc 3 and juts out radially beyond the periphery of the disc. Alternatively the ridge may be attached to the surface of the disc 3 and lie with its circumference. The cam means has a wedge-shaped member whose edge 19 is the leading edge with respect to the direction of rotation 12 of the disc 3, this edge 19 being inclined to the plane of the discs 2 and 3 and forming part of the cam surface of the cam means. The ridge extends over the entire length of the railway train formed by the shapes 7. When the disc 3 rotates the cam surface 19 which precedes the railway train runs under the lower end 13 of the wire 11 to cause the wire 11 to slide up on the cam surface and to remain in an elevated position while the entire length of the ridge passes under the end 13 of the wire. The pivoting lever 16 of the signal is lifted by the upward movement of the wire 11. The end of the toy train corresponds to the end of the ridge, and thus when the train has passed the signal, the pivot lever 16 of the signal drops back into its starting position.

While the invention has been described with reference to the operation of a signal on the passing of a toy train it will be apparent that, by the use of simple lever systems and suitably shaped and positioned cam surfaces, the invention may equally be applied to the operation of many other components, for example raisable level crossing bars.

I claim:

1. A toy spinning top comprising a transparent dome, a first disc and a second transparent disc of smaller diameter than the first disc covered by said dome, said first and second disc each having a respective marginal region, drive means to rotate said dome and said second disc about an axis and relative to said first disc, a vertically deflectable member mounted of the marginal region of said first disc and projecting into the marginal region of the second disc, cam means supported on said second disc, said cam means having a cam surface positioned to deflect the deflectable member on rotation of the second disc relative to the first disc.

2. A toy top as claimed in claim 1 and further comprising at least one toy shape secured to the second disc to be rotatable therewith.

3. A toy top as claimed in claim 1 wherein said cam means comprise a wedge-shaped member affixed to the second disc, the wedge-shaped member having a thin end, relatively thicker end and a surface extending therebetween arcuately of the second disc, and wherein said drive means is adapted to rotate said second disc

in one rotational sense and the said surface of the wedge-shape member diverges away from the second disc downstream relative to the direction of rotation of the disc to form said cam surface.

4. A toy top as claimed in claim **3,** and further comprising an arcuate extension to the wedge-shaped member, the extension being of the same uniform thickness as the thicker end of the wedge-shaped member and extending downstream therefrom relative to the direction of rotation of the second disc.

5. A toy top as claimed in claim **4,** and further comprising at least one toy shape secured to the second disc so as to be rotatable therewith, and wherein the extension has an angular extent at least equal to that of the toy shape.

6. A toy top as claimed in claim **1** wherein the cam means is integrally moulded with the second disc.

7. A toy top as claimed in claim **1** wherein the deflectable member comprises a substantially vertically extending wire, the wire having an end portion engageable with the cam surface and bent away from the cam surface to form a U-shaped cam follower.

8. A toy top as claimed in claim **7** and further comprising a second end portion to the wire, and pivoted arm operably connected to the second end portion of the wire so as to be pivoted by displacement of the wire on engagement of the cam surface and cam follower portion of the wire.

9. A toy top as claimed in claim **8,** wherein the pivoted arm comprises a signal and further comprising a toy train secured to the second disc and wherein the cam surface is positioned to raise the signal on approach of the train during rotation of the second disc.

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