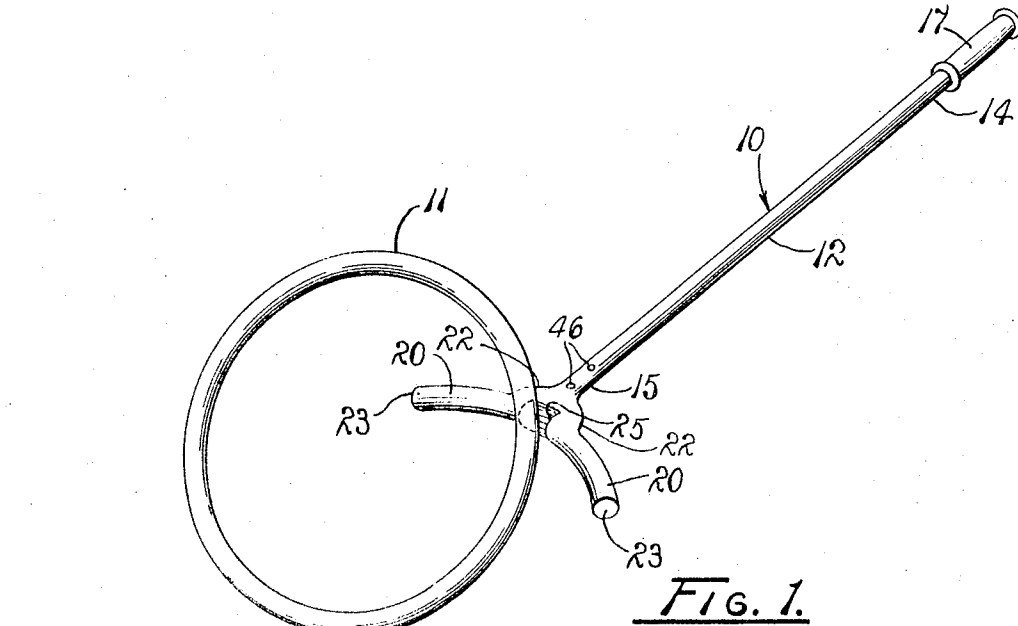
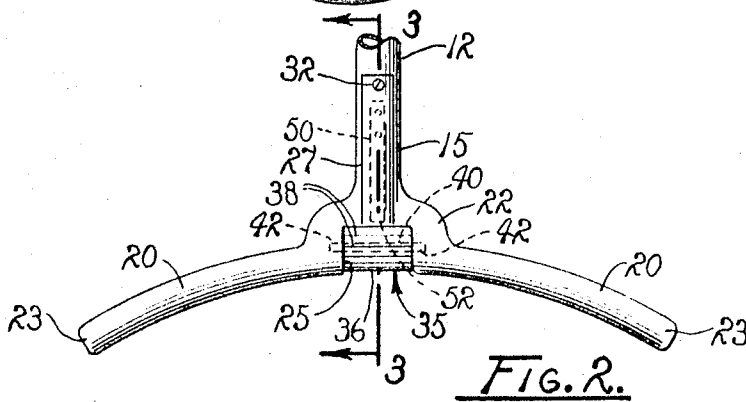
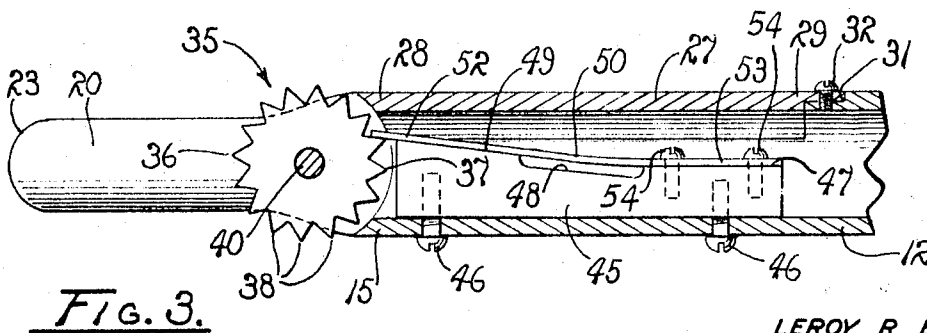


Sept. 2, 1969

L. R. BATTERSON ETAL
CONTROL DEVICE FOR HOOP TOYS

3,464,149

Filed Feb. 8, 1968



LEROY R. BATTERSON
ROBERT L. BATTERSON
INVENTORS

Husner & Hurl
ATTORNEYS

1

3,464,149

CONTROL DEVICE FOR HOOP TOYS

Leroy R. Batterson, 3420 S. 182nd Place, Seattle, Wash. 98148, and Robert L. Batterson, 5581 N. Callisch, Fresno, Calif. 93726

Filed Feb. 8, 1968, Ser. No. 703,928

Int. Cl. A63h 33/02

U.S. Cl. 46—114

2 Claims

ABSTRACT OF THE DISCLOSURE

A control device for a hoop toy having an elongated control rod providing a handle end and an opposite hoop engaging end including hoop driving means and hoop centering means on said hoop engaging end of the control rod for rotatably driving the hoop in a substantially upright longitudinally aligned attitude with respect to the control rod incident to the application of a pushing force against the handle end of the control rod.

BACKGROUND OF THE INVENTION

Hoop toys have long been popularly employed as amusement devices for their adaptability to being propelled in rolling engagement along the ground. This was initially accomplished by hand or with a paddle-type control stick. During use, the hoop would be rotatably driven by the successive application of a force against the hoop in a direction substantially tangentially of its rearwardly disposed upper periphery which resulted in a sporadic velocity of rotation making control of the hoop difficult. Directional turning of the hoop was accomplished by the frictional contact of the hand or stick so as to impose a force laterally against the hoop on its side opposite to the direction of the desired turn. However, the maneuverability and the duration of a particular sequence of operation was substantially shortened by the drag imposed upon the hoop by such frictional controlling procedures. Consequently, it was virtually impossible to maneuver the hoop with any degree of precision for executing even relatively simple circular patterns of hoop travel. Furthermore, it is highly desirable that any movable toy produce some audible motor simulating sound, particularly when such toys are used by small children. Such sound has not been heretofore produced by the conventional hoop toys or their control devices.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide an improved control device for hoop toys.

Another object is to provide such an improved control device which is capable of affording a continuously smooth driving force against the hoop.

Another object is to provide a control device of the character described which enables precise maneuvering of the hoop under full driving force.

Another object is to provide a control device for a hoop toy which utilizes a control rod capable of maintaining the hoop in optimum centered upright relation with respect to the rod for maximum stability and control of the hoop during use.

Another object is to provide a control device for hoop toys which affords a substantially frictionless drive for engagement with the control rod during use.

Another object is to provide a control device for hoop toys which is capable of producing an audible motor simulating sound during use.

Another object is to provide a control device for hoop toys which utilizes a roller in driving engagement with the hoop which has a plurality of peripherally extended

2

teeth and a sound producing member successively engageable with the teeth during rotation of the roller against the hoop.

Other objects and advantages of the present invention will become more fully apparent upon reference to the following description and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a control device embodying the principles of the present invention shown in operating position with respect to a hoop toy.

FIG. 2 is a somewhat enlarged fragmentary bottom plan view of the hoop engaging end of the control device of FIG. 1.

FIG. 3 is a further enlarged central longitudinal section through the hoop engaging end of the control device, taken on line 3—3 of FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring more particularly to the drawing, a control device embodying the principles of the present invention is generally indicated in FIG. 1 by the reference numeral 10. The control device is shown in driving and controlling relation to a hoop toy 11 which may be formed in any desired diameter, of any cross sectional configuration such as round, oval, square, or flat, tubular or solid, and of any suitable substantially rigid lightweight material such as aluminum, hard plastic or the like.

The control device 10 provides an elongated hollow control rod 12 constructed of a substantially rigid material similar to the material of the hoop. The control rod includes a handle end 14 and an opposite hoop engaging end 15. In order to insure proper gripping of the control rod by an operator, a handle grip 17 is mounted on the handle end 14 thereof.

The hoop engaging end 15 of the control rod 12 includes a pair of oppositely spaced arcuate hoop centering legs 20 disposed in symmetrical coplanar relation to the axis of the control rod. Each of the centering legs has an inner angularly related offset end 22 which, as shown, may be formed integrally with the hoop engaging end of the control rod or which alternatively may be secured thereto by any suitable fastener member. Each of the legs terminates in an outer end 23 which, by virtue of the arcuity of its respective leg, is axially outwardly disposed from the hoop engaging end 15 of the control rod. The inner ends 22 of the centering legs 20 are laterally spaced to define therebetween a hoop receiving notch 25.

An elongated, substantially rectangular arcuate cover plate 27 is provided in the upper periphery of the control rod 12 in rearward extension from the hoop receiving notch 25. The cover plate has a forward end 28 adjacent to the hoop receiving notch 25 and an opposite rearwardly disposed stepped end 29. The rearward end is disposed in intimate facing engagement with a shoulder 31 formed in the upper periphery of the control rod screw-threadably to receive a locking screw 32 there-through for holding the cover in place.

An elongated cylindrical cog wheel or roller 35 is disposed within the hoop receiving notch 25 which has an outer peripheral portion 36 recessed slightly within the notch from the outwardly forwardly disposed surfaces of the hoop centering legs 20 and an opposite inner periphery 37 radially extended into the interior of the control rod 12. The roller has means including a plurality of equally circumferentially spaced radially, peripherally disposed, extended teeth 38 which are rotatable about an elongated axle shaft 40 providing opposite ends 42

3

individually extended into the opposite inner ends 22 of the hoop centering legs 20.

An elongated clapper mounting block 45 is disposed within the interior of the control rod 12 closely adjacent to its hoop engaging end 15 and is secured to the lower inner periphery of the rod by a plurality of mounting screws 46. The mounting block provides a downwardly disposed connecting surface 47 which is in substantially coplanar relation with the longitudinal axis of the control rod. The mounting block further includes an intermediate recess 48 and a forwardly disposed lower angularly related anvil or clapper striking surface 49 closely adjacent to the inner periphery of the roller 35.

An elongated clapper 50 is constructed of an elongated substantially flat strip of resiliently flexible material such as spring steel, plastic or the like, which has opposite forwardly and rearwardly disposed ends 52 and 53, respectively. The rearward end of the clapper is secured to the rearward connecting surface 47 of the mounting block by a plurality of mounting screws 54. The clapper is angularly bent intermediate its ends adjacent to the recess 48 within the mounting block and the forward end 52 thereof is disposed in overlying relation to the anvil striking surface 49 and in endwardly extended overlapping relation with the teeth 38 at the inner periphery 37 of the roller 35.

OPERATION

The operation of the described embodiment of the subject invention is believed to be clearly apparent and is briefly summarized at this point. Prior to engagement with the control rod 12, the hoop 11 is disposed in a substantially upright position and is provided an initial rotating force or otherwise maintained in such upright position by any suitable support. The handle grip 17 of the control rod is grasped by the operator for precise manipulation of the hoop receiving end 15 thereof against the outer periphery of the hoop. The hoop engaging end is preferably disposed in a position somewhat below the horizontal diameter of the hoop so that upon the application of a pushing force on the handle end 14 of the control rod, the hoop is rotatably driven along the ground or other support surface.

The hoop is preferably disposed in coaxially aligned relation with the control rod 12 with its outer periphery frictionally engaged with the outer toothed periphery 36 of the roller 35 which it drives. It will be noted, however, that if the hoop is initially engaged by one of the hoop centering legs 20, the curvature of the legs will move the hoop laterally inwardly toward the hoop receiving notch 25 between the legs and into the desired driving engagement with the roller during continuous application of the pushing force against the handle end 14 of the control rod 12. The hoop centering legs further permit the execution of relatively sharp turns of the hoop by appropriate manipulation of the handle end of the control rod with the legs facilitating continuous engagement to maintain the hoop in the desired driving relation with the hoop engaging end of the control rod and to preclude falling of the hoop.

During the described driving engagement of the outer periphery of the hoop 11 with the outer toothed periphery 36 of the roller 35, the clapper 50 is effective to produce an audible motor emulating sound. With particular reference to FIG. 3 of the drawing, the roller is driven in a counterclockwise direction as viewed with, the teeth 38 at the inner periphery 37 of the roller successively engaging the forward end 52 of the clapper member 50.

4

During each engagement, the forward end of the clapper is flexed away from the forward striking surface 49 of the mounting block 45. Upon release from the engaged tooth 38 during continued rotation of the roller 35, the forward end of the clapper is released for return movement in sharply slapping engagement against the striking surface 49 and against the succeeding tooth of the roller with the striking surface providing a sounding surface for producing an audible sound which is substantially amplified through the interior of the hollow control rod.

In view of the foregoing, it is readily apparent that the structure of the present invention provides an improved control device for driving and controlling a hoop toy. The hoop centering legs of the control rod minimize falling of the hoop from its desired substantially upright traveling position and permit the execution of intricate circular patterns of hoop travel including figure eights and other multiple circle configurations. Even with a minimum of use, the operator can attain a high degree of proficiency in executing such intricate patterns of hoop travel with the clapper member continually producing a motor emulating sound which is not obtainable with any structures heretofore known.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A hoop rolling and controlling device comprising an elongated control rod having a handle end and an opposite hoop engaging end, a roller mounted on the hoop engaging end of the rod for rotation about an axis substantially normal to the length thereof in alignment therewith disposed for driven engagement with a hoop rolled by the device whereby the roller is rotated, said roller having means including peripherally disposed teeth for engaging said hoop, and an elongated resiliently flexible clapper mounted on the rod having a distal end disposed for engagement with the teeth of the roller whereby upon rotation of the roller the clapper is successively carried by said teeth to a stressed position and released for resilient return whereby an auditory signal is produced.

2. The device of claim 1 including an anvil mounted on the rod and disposed for successive clapper engagement upon successive return of the clapper from stressed position.

References Cited

UNITED STATES PATENTS

1,103,030	7/1914	Cafferty	46—114
1,764,982	6/1930	Reich et al.	46—114
2,861,389	11/1958	Baker	46—114
2,970,403	2/1961	Land	46—220
3,077,699	2/1963	Falciglia	46—114
3,078,620	2/1963	Frye et al.	46—220
3,123,937	3/1964	Pace	46—220
3,233,361	2/1966	Conaghan	46—114

LOUIS G. MANCENE, Primary Examiner

H. DINITZ, Assistant Examiner

U.S. Cl. X.R.

46—220