June 17, 1952 L. D. RODABAUGH 2,601,006

WHEELED TOY

Filed Nov. 29, 1946

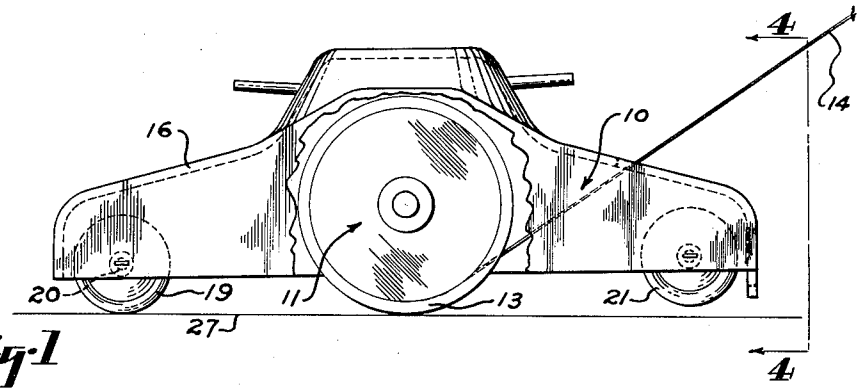


Fig. 1

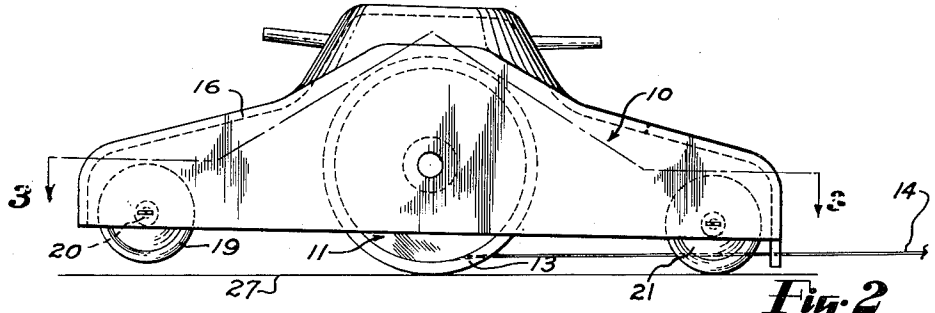


Fig. 2

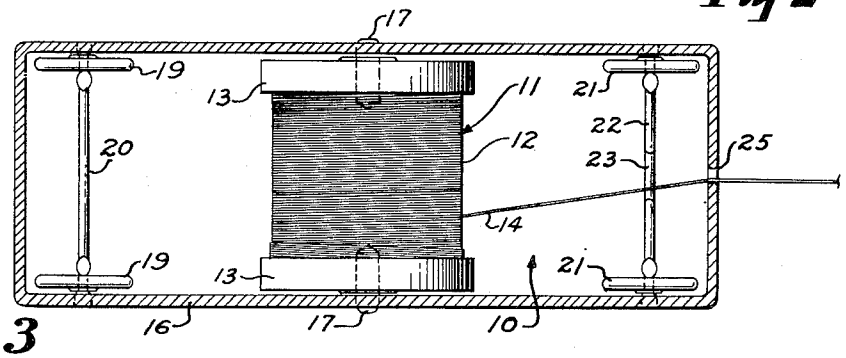


Fig. 3

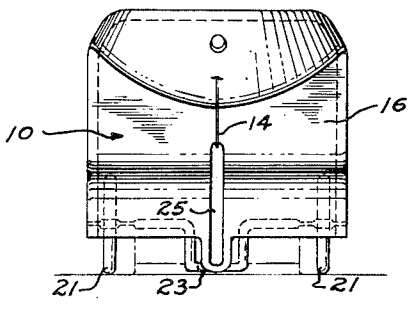


Fig. 4

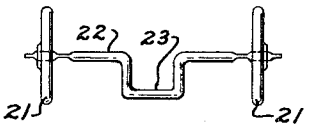


Fig. 5

INVENTOR.
LOUIS D. RODABAUGH
BY Jay, Golrick & Jay
ATTORNEYS

Patented June 17, 1952

2,601,006

UNITED STATES PATENT OFFICE

2,601,006

WHEELED TOY

Louis D. Rodabaugh, Oberlin, Ohio

Application November 29, 1946, Serial No. 712,822

2 Claims. (Cl. 46—206)

1

The present invention relates to a wheeled toy that is adapted to move across a floor or like surface in opposite directions by motive power supplied solely by the manipulation of a cord or the like attached to the toy.

An object of the invention is to provide a toy of the character referred to in which the toy will move away from the operator by the operator elevating the cord beyond a certain angle with respect to the toy and holding the cord taut, and which toy will reverse its direction and come to the operator by a lowering of the cord and drawing the cord toward the operator, the movement of the toy being of substantially greater magnitude than the movement of the cord.

A further object of the invention is to provide a toy of the character described in which the motive power for the toy is transmitted through the cord and the cord also serves to guide the toy.

Other objects and advantages of the invention will be apparent from the following description of a preferred form of the invention, reference being made to the accompanying drawing wherein:

Fig. 1 is a side view in elevation of a toy showing the position of the various parts of the toy when it is moved in one direction, part of the toy being shown broken away from sake of clarity;

Fig. 2 is a view similar to that of Fig. 1 but showing the positions of the parts of the toy when the toy is moved in the opposite direction;

Fig. 3 is a view taken on line 3—3 of Fig. 2;

Fig. 4 is an end view of the toy taken on line 4—4 of Fig. 1; and

Fig. 5 is a view of an axle and wheels for the toy.

It is to be understood that the invention may be embodied in different forms of toys or the like, but for the purposes of illustrating my invention, I have shown a toy tank indicated at 10, which toy is adapted to move across a floor or like surface under the control of the operator thereof, the movement being controlled by a cord or the like manipulated by the operator.

Motive power for the toy is provided by a rolling member 11 which is comprised of a cylindrical body 12 having two friction bands 13 surrounding opposite ends thereof for forming treads on which the body 12 is adapted to roll. The treads 13 are best formed of rubber or rubber-like material which will provide a fair degree of traction between the surface and the body 12. Preferably, the outside diameter of the treads

2

13 is approximately one-ninth greater than the diameter of the body 12 intermediate the treads. A filament such as a cord 14, or other string-like material, is wound about the rolling member 11 intermediate the treads 13, and this filament is extended laterally with respect to the axis of the member 11 from the underside thereof, as may be clearly seen in Figs. 1 and 2.

A frame in the form of a shell 16, which in the present embodiment of the invention is in the shape of a tank body, is attached to the rolling member 11 by two hubs 17 which project axially from the member 11 and these hubs are journalled in openings in the sides of the shell 16. The shell 16 may be of any suitable material, such as sheet metal or molded plastic material. A set of wheels 19 are mounted on an axle 20 secured in one end of the shell 16 and wheels 21 are mounted on an axle 22 at the opposite end of the shell. As may be seen, the ends of axle 22 are flattened and received in slots in the sides of the shell so that the axle cannot rotate. The central portion of the axle 22 has a dipped portion 23 formed therein through which the cord 14 may pass when the cord is extended substantially horizontally or at but a slight angle to horizontal. An upwardly extending slot 25 is formed in the end of the shell 16 and the cord 14 extends through this slot. The edges of the slot may be rounded so that the cord may pass over the edges with a minimum of friction.

In the preferred form of the invention, the sets of wheels 19 and 20 do not touch the surface, on which the toy is placed, at the same time so that a substantial part of the weight of the shell is supported by the rolling member 11. Referring to Fig. 1, wheels 19 are shown engaging the surface 27 while wheels 21 are elevated. Referring to Fig. 2, it will be seen that the shell 16 may be tilted in the opposite direction from that shown in Fig. 1 so that wheels 21 engage the surface 27 while wheels 19 are elevated. It will be seen that the wheels 19 and 21 assist in the guiding of the toy as it moves over the surface.

To operate the toy, one end of the cord 14 is held by the operator and elevated and held taut as is illustrated in Fig. 1. The cord 14, when elevated as indicated, supplies torque to the member 11 in a counterclockwise direction, as viewed in Figs. 1 and 2, causing the toy to roll from the operator and in doing so the cord 14 is unwound from the member 11. Since the ratio between the diameter of the cylindrical body 12 and the outside diameter of the threads 13 is 9 to 10, the cord 14 will move in the direction of movement of

the toy through one-tenth the distance of movement of the toy. This movement is not appreciable to the operator of the toy and it gives the illusion that the toy is moving from the operator solely by holding the cord **14** taut. When the cord is nearly unwound the toy is stopped by lowering the cord to the position shown in Fig. 2, or thereabouts, and by drawing the cord toward the operator the rolling member **11** is rotated clockwise so that the toy will roll toward the operator at a rate ten times the rate of movement of the cord. As the toy rolls toward the operator the cord is rewound on the member **11** and the toy may then be reversed by unwinding the cord as described hereinbefore. It will be seen that the cord cooperates with the edges of the slot **25** to guide the toy therealong and the wheels on the shell **16** also assist in guiding the toy. Thus, the operator will have complete control over the movements of the toy.

It is necessary that sufficient weight be carried by the threads **13** to assure gripping action between the threads and the surface on which the threads roll so that the member **11** will not slide on the surface when the cord is pulled. This weight can be supplied by the material of which member **11** and the shell **16** are formed.

By my invention, a simple, durable and highly entertaining and instructive toy is provided in which a high degree of movement is obtained merely through manipulation of a cord or the like.

Although I have described but one form of the invention, it is to be understood that other forms may be adopted, all falling within the scope of the claims which follow.

I claim:

1. A vehicular toy comprising, a spool-shaped drum having friction tread formations at opposite ends for engaging the ground when the drum is resting on the ground with its axis parallel to the latter, a shell mounted to the drum and being in a form simulating a vehicle and substantially and rotatably enclosing the drum therein, ground wheels mounted to the shell at opposite ends thereof and serving to support the shell for movement along the ground, the peripheries of the wheels at one end of the shell and the peripheries of said treads being tangent to a common plane and the peripheries of the wheels at the other end of the shell and the peripheries of the treads being tangent to a common plane lying at an angle to the first mentioned plane

whereby the central portion of the shell is supported by the drum at all times and the end wheels alternatingly support the respective ends according to the tilt of the shell, said shell having an elongated vertical slot through the central part of one end wall thereof, the lower edge of said slot reaching below the lower periphery of the drum proper, a filamentary element wound about the drum with its free end extending from the underside thereof and passing freely through said slot in the shell, said element when engaged with the upper edge of said slot in the shell and pulled taut exerting a component of force whereby the element is unwound from the drum being in this position at an appreciable angle with respect to the ground and moving the toy away from the operator and said element rolling the drum in the opposite direction when the element is pulled taut and held substantially parallel with the ground against the lower edge of the slot, the element being at this time wound on the drum as the drum is rotated in the direction of the pull on the element, moving the toy toward the operator, and the drum is guided in a straight path by the element cooperating with the side edges of the slot in the shell.

2. The vehicular toy described in claim 1, wherein the ratio of the diameters of the drum and the friction treads thereof is of the order of 9 to 10.

LOUIS D. RODABAUGH.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
368,499	Teichmann	Aug. 16, 1887
1,210,690	Philbin	Jan. 2, 1917
1,349,500	Dietz	Aug. 10, 1920
1,412,015	Howerton	Apr. 4, 1922
1,779,349	Whatley	Oct. 21, 1930
1,959,622	Gessner	May 22, 1934

FOREIGN PATENTS

Number	Country	Date
227,103	Great Britain	Dec. 23, 1924

OTHER REFERENCES

Book, "General Physics" by Crew, 4th edition, pages 83 and 84.