July 4, 1944. S. H. GAINSLEY 2,352,676

TOY

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Fig. 2

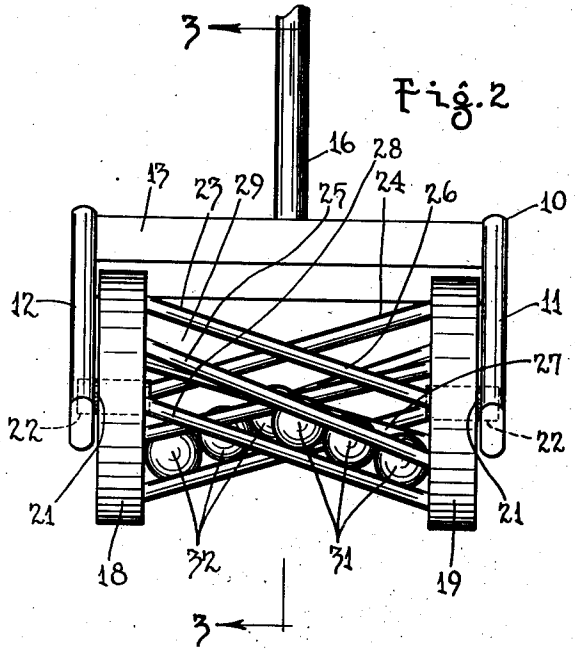


Fig. 1

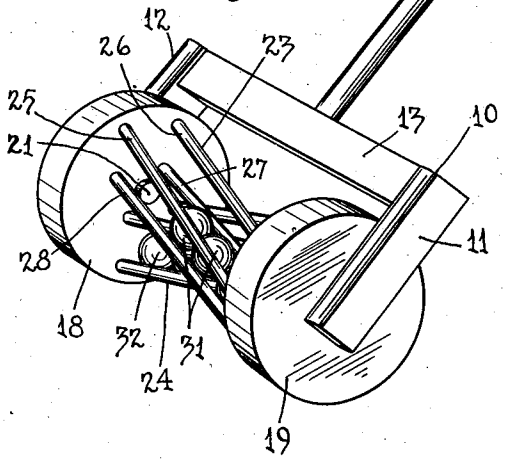
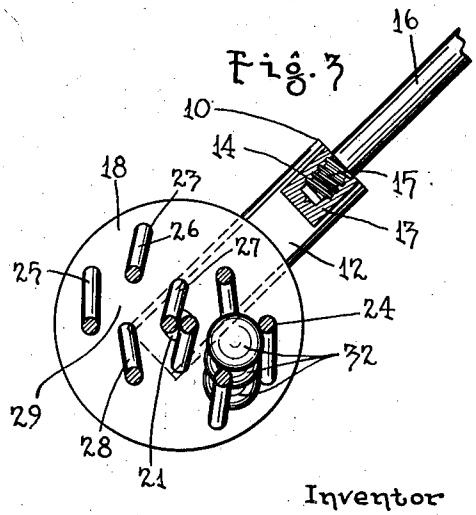


Fig. 3



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UNITED STATES PATENT OFFICE

2,352,676

TOY

Sheldon H. Gainsley, Minneapolis, Minn.

Application May 4, 1944, Serial No. 534,059

6 Claims. (Cl. 46—114)

My invention relates to toys and particularly to wheeled toys, and has for an object to produce a toy which is attractive in appearance and entertaining to the user.

Another object of the invention resides in providing a toy having a moving object adapted to be moved through propulsion of the wheels of the toy.

A still further object of the invention resides in providing a toy having spaced wheels and having a guide disposed between said wheels and along which the object is adapted to move as the wheels rotate.

A still further object of the invention resides in arranging the guide on the skew so as to cause the guide to incline when the wheels are in one position and to procure movement of the object from end to end of the guide by gravity.

Another object of the invention resides in providing a plurality of such guides symmetrically disposed about the axis of the wheels.

A still further object of the invention resides in constructing the guide in the form of a cage and within which the object is disposed.

A feature of the invention resides in using one or more balls as the movable object.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawing:

Fig. 1 is a perspective view of a toy illustrating an embodiment of my invention.

Fig. 2 is a front elevational view of the toy shown in Fig. 1.

Fig. 3 is a cross-sectional view taken on line 3—3 of Fig. 2.

My improved toy comprises a frame 10 constructed with two legs 11 and 12 attached to a cross-bar 13. The cross-bar 13 is formed with a threaded socket 14 illustrated in detail in Fig. 3, which receives the threaded end 15 of a handle 16. The handle 16 projects upwardly and rearwardly from the device and terminates in a knob 17.

Rotatably mounted in the frame 10 are two wheels 18 and 19 which are secured together in a manner to be presently described. Each of these wheels has a trunnion 21 projecting outwardly therefrom, said trunnions being received in suitable sockets 22 in the lower ends of the legs 11 and 12 of frame 10. By means of this construction, the wheels 18 are mounted for rotation.

Between the two wheels 18 and 19 are mounted two guides 23 and 24. These guides are in the form of elongated cages and are similar in construction. Due to their similarity, only the guide 23 will be described in detail. This guide consists of four rods 25, 26, 27 and 28, which are each securely attached to the wheel 18 at one end and to the wheel 19 at the other end, thus holding said wheels in proper relation. The rod 25 is attached to each of said wheels near its periphery, while the rod 27 is attached to each of said wheels inwardly of the periphery thereof. The rod 26 is attached to the wheel 18 near its periphery and to the wheel 19 inwardly thereof, while the rod 28 is attached to the wheel 19 near its periphery and to the wheel 18 inwardly thereof. These rods and the guide or cage 23 formed thereby are skewed so that a passageway 29 is formed therebetween and which extends in a helical manner from one wheel to the other. The cage 24 is diametrally opposite from the cage 23 and skews in the same direction, so that when the left hand end of the cage 23 is uppermost, the right hand end of the cage 24 is uppermost, as shown in Fig. 2.

Within the passageway 29 of the cages 23 and 24 are disposed balls 31 and 32. These balls are confined to the passageways 29 by means of the rods 25, 26, 27 and 28, which are spaced apart a distance less than the diameters of said balls. The balls may thus freely travel from one end of the guides 23 and 24 to the other.

The operation of the invention is obvious. When the wheels 18 and 19 are rotated by wheeling the toy over the floor or ground, the guides 23 and 24 rotate with the said wheels. Such rotation causes the guides to alternately change from horizontal to inclined position and vice versa. As the said guides change position, the balls roll by gravity from one end to the other of the passageways 29. Due to the arrangement of the guides 23 and 24, the balls in each guide or cage travel in opposite directions, thus giving a pleasing and entertaining appearance to the toy.

In the construction of the toy, the wheels, rods and frame may all be constructed of wood. In such case, the rods may be made from dowel pin stock or similar material and are set into holes drilled in the wheels proper, which holes are made at the correct angle to cause the rods to skew when the various parts are assembled.

The advantages of my invention are mainfest. The toy is extremely simple in construction. By

unscrewing the handle, the toy may be confined in a small space to facilitate packing for shipping. The toy, if desired, may be constructed almost entirely of wood. Considerable action is given to the balls as they travel from one end of the guides to the other. The toy is exceedingly interesting and entertaining to smaller children and requires little or no instructions to use.

Changes in the specific form of my invention, as herein described, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In a toy, a pair of spaced ground-engaging wheels, means for supporting said wheels for rotation, a guide extending between said wheels and attached thereto and an object guided by and movable along said guide, said guide being disposed on the skew to cause the object to move by gravity from one end of the guide to the other as the wheels are rotated.

2. In a toy, a pair of spaced ground-engaging wheels, means for supporting said wheels for rotation, an elongated cage extending between said wheels and attached thereto and an object guided by and movable along said cage, said cage being disposed on the skew to cause the object to move by gravity from one end of the cage to the other as the wheels are rotated.

3. In a toy, a pair of spaced ground-engaging wheels, means for supporting said wheels for rotation, a cage consisting of a number of spaced rods extending between said wheels and attached thereto and a ball guided by said cage and movable along said rods, said rods being disposed on the skew to cause the ball to move by gravity from one end of the cage to the other, as the wheels are rotated.

4. In a toy, a pair of spaced ground-engaging wheels, means for supporting said wheels for rotation, a cage extending between said wheels and attached thereto and having an elongated passageway therebetween and a ball received within said cage and movable along said passageway, said cage being disposed on the skew to cause the ball to move by gravity from one end of the cage to the other as the wheels are rotated.

5. In a toy, a pair of spaced ground-engaging wheels, means for supporting said wheels for rotation, a plurality of guides extending between said wheels and attached thereto, said guides being arranged in symmetrical relation about the axis of said wheels, and corresponding objects guided by and movable along said guides, said guides being disposed on the skew to cause the objects to move by gravity from one end of the guides to the other as the wheels are rotated.

6. In a toy, a pair of spaced ground-engaging wheels, a frame for supporting said wheels for rotation, a plurality of guides extending between said wheels and attached thereto and arranged in symmetrical relation about said wheels and objects guided by and movable along said guides, said guides being disposed on the skew to cause the objects to move from one end of the guides to the other as the wheels rotate, said guides being all skewed in the same direction to cause an object on the guide nearest the frame to move in one direction and an object on a guide farthest from the frame to move in the opposite direction.

SHELDON H. GAINSLEY.

DISCLAIMER

2,352,676.—*Sheldon H. Gainsley*, Minneapolis, Minn. Toy. Patent dated July 4, 1944. Disclaimer filed June 4, 1945, by the inventor.

Hereby enters this disclaimer to claims 1, 5, and 6 in said specification.

[*Official Gazette July 3, 1945.*]