Jan. 20, 1953 P. H. HERRICK 2,625,771

MOTORIZED WHEELED FIGURE TOY

Filed Dec. 13, 1949

2 SHEETS—SHEET 1

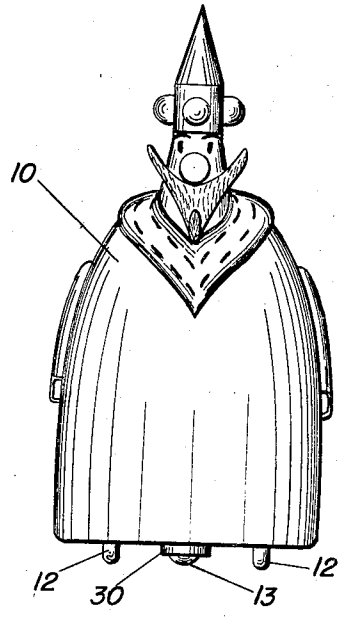


FIG. 1.

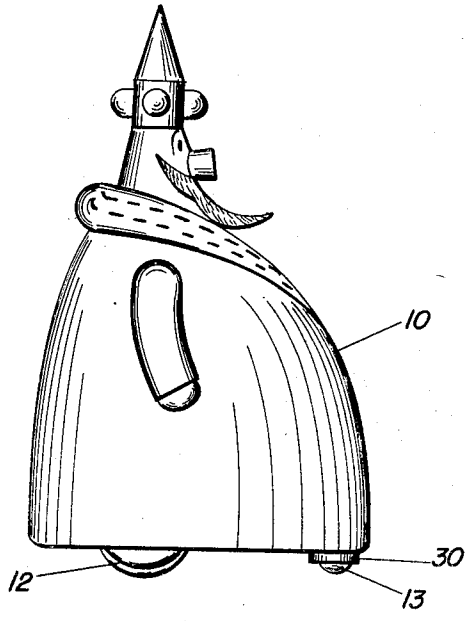


FIG. 2.

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MOTORIZED WHEELED FIGURE TOY

Filed Dec. 13, 1949 2 SHEETS—SHEET 2

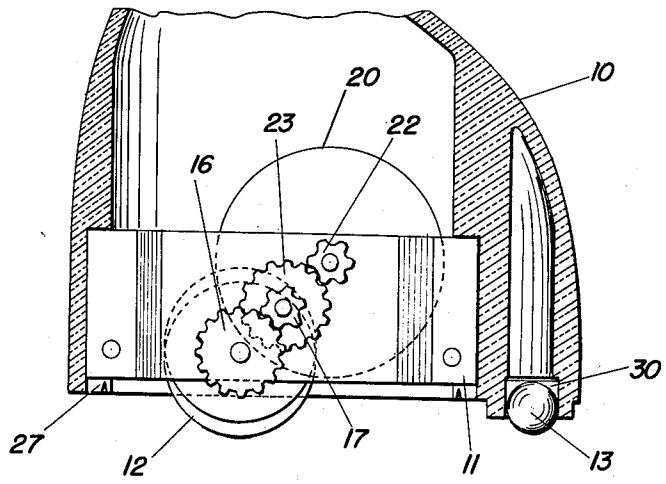


FIG. 4.

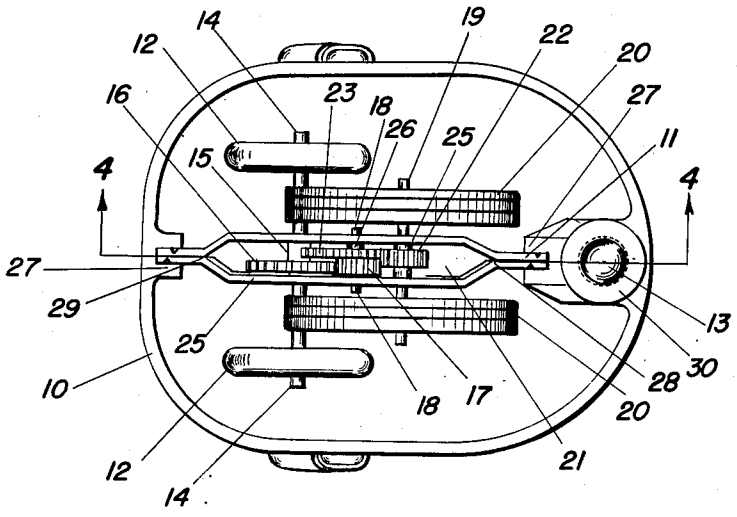


FIG. 3.

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Patented Jan. 20, 1953

2,625,771

UNITED STATES PATENT OFFICE

2,625,771

MOTORIZED WHEELED FIGURE TOY

Pat H. Herrick, Baltimore, Md.

Application December 13, 1949, Serial No. 132,680

1 Claim. (Cl. 46—105)

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This invention relates to amusement devices and more particularly to those of a mechanically powered nature. Further such may be termed to be in the classification of inertia-wheel powered toys.

The common form of inertia wheel toys are made with one flywheel and an arrangement of mechanisms that are built into the body of the toy structure so as to be supported thereby. This form has the objection that it is somewhat overbalanced towards one side and involves a considerable amount of its cost in the assembly of its parts and is easily damaged beyond repair. In this invention the mechanism includes a plurality of fly wheels that balance the device and retain a great deal of stability. The mechanism is designed for outside assembly so that it may be inserted, installed and held in the body of the toy with considerable facility and low labor cost.

It is therefore an object of this invention to provide a new and improved inertia wheel powered toy that will avoid one or more of the disadvantages and limitations of the prior art.

Another object of the invention is to provide a new and improved inertia wheel-powered toy that will employ a plurality of flywheels to absorb energy and later use it in the propulsion of the device, in a most effective manner and provide for great stability.

A further object of the present invention is to provide a new and improved inertia powered wheel toy that will provide for a wobbling travel movement and other unusual actions.

Other objects will be evident as the invention is described more in detail.

For a clearer comprehension of the invention, its objects and the principles thereof, reference is made to the accompanying drawings. These drawings in conjunction with the following description outline a particular form of the invention by way of example, while the claim indicates the scope of the invention.

Referring to the drawings:

Figure 1 is a front elevation of an amusement device embodying this invention;

Figure 2 is a side elevation of Figure 1;

Figure 3 is a view looking up at the bottom of the device to show its mechanism; and

Figure 4 is a sectional view taken along line 4—4 of Figure 3.

Similar reference characters refer to similar parts throughout the drawings.

In the particular construction illustrated, a carriage for carrying the body 10 of a toy and supporting the mechanism consists of a frame

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11 on which wheels 12 and a ball 13 serve as the mobile carrier elements in contact with the ground. The wheels 12 are two in number mounted on the same shaft 14. The shaft 14 is journalled in the bearings 15 of the frame 11. Its position in the wheels is slightly eccentric with respect to the wheels 12 so the shaft in its rotation will induce a wobbling or eccentric revolving of the wheels 12. The shaft 14 has a gear 16 of sixteen teeth keyed to it. This gear 16 meshes with another gear 17 having six teeth and keyed to a second shaft 18 parallel to the first mentioned gear 16 but spaced away sufficiently from it to enable it to mesh effectively with it. Another shaft 19 also journalled in the frame, carries two fly wheels 20 situated outside the frame but fastened to this shaft 19 so it will revolve with them. The middle portion of the shaft 19 carries a small gear 22 of six teeth tightly attached to it in the space 21 within the frame 11. This gear 22 meshes with another gear 23 on the shaft 18 having sixteen teeth. All the shafts are journalled in the frame 11 and have their gears located within the space 21 contained between the two flat walls 25 that compose the frame. The walls 25 converge towards each other at the front 28 and back 29 of the frame, and are welded together for holding the mechanism together, while the flywheels operate outside the walls. The shafts are kept in position in their bearings in the walls and the gears are separated from the walls by collars 26 or other means suitable for the purpose. Rolling of the wheels 12 on a flat surface rotates their shaft 14 and its gear 16. This gear 16 in turn actuates the gear 17 which it meshes with and revolves it in an opposite direction. As this gear 17 rotates it revolves the shaft 18 with it, which in turn rotates the gear 23. The gear 23 rotates the gear 22 so that the shaft 19 is revolved and the flywheels 20 with it. The flywheels are relatively heavy and absorb considerable energy as they are speeded up. This energy is stored when the rubbing of the wheels 12 is stopped and permits the wheels to continue their rotation. This rotation and the energy in the flywheels keeps all these gears and shafts mentioned running and the wheels 12 with them. If the wheels 12 are made to contact a flat surface on a horizontal plane, they will keep rotating thereon and move the carriage across the floor for some distance and until the energy of the inertia is expended. The user of the toy repeats the operation and the toy keeps running across the floor as many times as may be desired. In running across the floor the ec-

centric placement of the wheels on the shaft 14 gives the carriage 11 a wobbling movement, which is transmitted to the body 10. The speed or rate of the travel of the toy by itself, is relatively slow in this particular form but strong enough to keep going against normal resistance. This is due to the arrangement of the gearing. The front wheel 13 is in the form of a ball or ball bearing and is set in a socket 30 pressed in the front of the body 10 at the lower front. It is arranged to level up the body in its travel over the ground. It permits movement of the body in any direction and offers little frictional resistance. The body 10 is arbitrarily contoured to indicate a man, and since the wheels 12 are not conspicuous because of being partially covered, their eccentric rotation gives a typical wobbly walking action to the toy. The interior of the body has slotted channel pieces 27 arranged therein in which the front and back portions, 28 and 29 respectively of the frame can be inserted and held. The mechanism is inserted as a unit in the body channels and locked in place by bending over the projecting ends of the channel piece 27 on the body to obstruct the removal of the frame mechanism 11. This may be done with pliers or other tool, very simply and quickly.

The toy is therefore in two main sections, the body and the mechanism. The former can be stamped out of some thin or light material or molded out of plastic. The mechanism is assembled very quickly by production methods. The assembly of the mechanism in the body and the locking of same in place is simple and expeditious as already indicated especially as it avoids screws and the like. It also enables the device to be made substantial, accurate and workable. The use of the several gears is to improve the operation and reduce the chances of early breakage, which most toys suffer from. The gearing makes the action steadier and more positive and it provides sufficient power to overcome any usual resistance and obstacles that is encountered during the travel of the toy. The mechanism is protected and will operate even if the body is injured, since it is an independent unit. The toy is therefore able to meet the conditions under which it is used in a satisfactory manner, and is less expensive to manufacture than other toys of a like nature previously commercialized. The inertia wheel action in this toy eliminates the necessity for springs, and offers a simpler way of powering the device so it will operate by itself when set down on a floor.

While but one general form of the invention is shown in the drawings and described in the specifications, it is not desired to limit this application for patent to this particular form, as it is appreciated that other forms of construction could be made that would use the same principles and come within the scope of the appended claim.

Having thus described the invention, what is claimed is:

A toy simulating a human body, said body being hollow and having an unimpeded lower end, said body also having a pair of diametrically opposed internal grooves provided within the inner walls thereof at the lower end, a frame, a shaft transversely carried by said frame and extending on opposite sides of the frame, a pair of wheels eccentrically mounted on said shaft, one at each end of the shaft and rotatable therewith, a ball bearing carried by said body forward of the wheels, a second shaft parallel to the first shaft and located above the pair of wheels, said second shaft being also carried by the frame, said second shaft extending on opposite sides of the frame and said second shaft being shorter than the first shaft, a pair of flywheels, one at each end of the second shaft and rotatable therewith, each of said flywheels extending above the first shaft and being located between each side of the frame and each of the aforesaid wheels, gearing means between said shafts and bendable extensions at opposite ends of said frame insertible in the aforesaid grooves and frictionally locked therein, whereby said frame and the parts carried thereby are insertible through the unimpeded lower end of the body and are quickly attachable and detachable as a unit.

PAT H. HERRICK.

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