Sept. 12, 1939. V. F. WIGAL 2,173,031

GYROSCOPIC TOY

Filed July 18, 1938

Fig. 1.

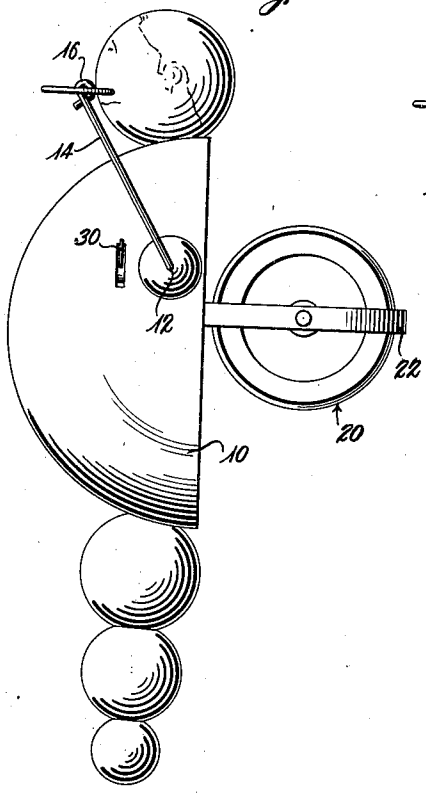



Fig. 2.

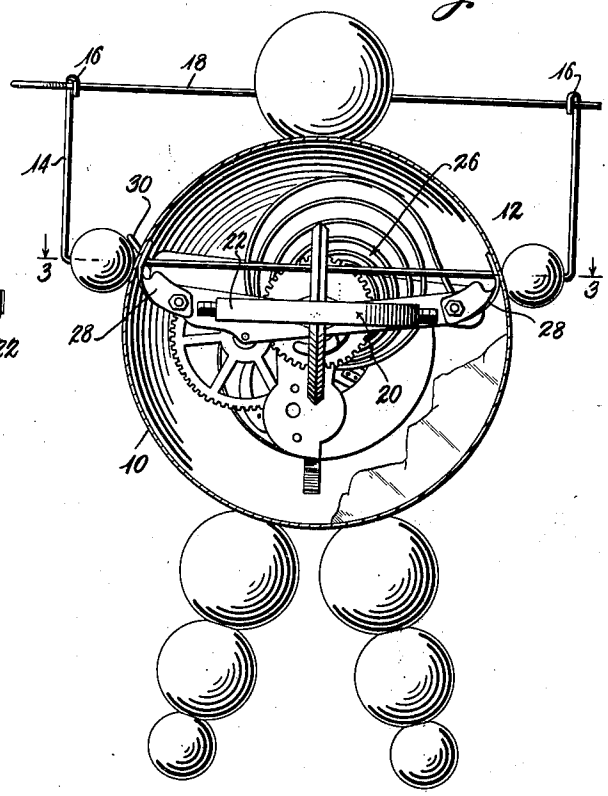
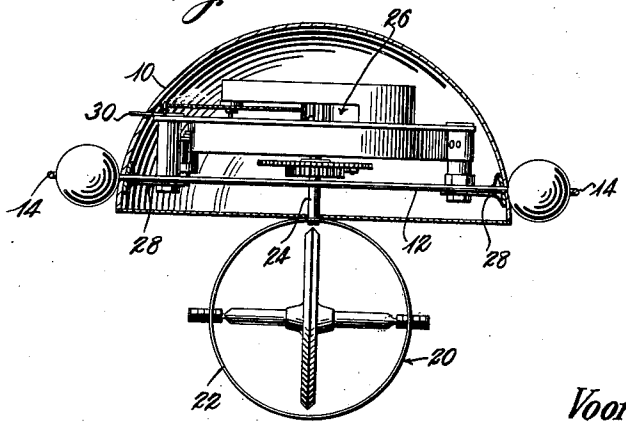



Fig. 3.




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## GYROSCOPIC TOY

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Application July 18, 1938, Serial No. 219,915

7 Claims. (Cl. 46—50)

This invention relates to improvements in toys, and more particularly to that class of toys embodying a gyroscopic element as a part thereof.

The object of the invention is to associate a gyroscopic element with a toy in such a manner that the toy will be caused to perform or move in an interesting manner.

It is a further object of the invention to provide a gyroscopic toy which includes as a part thereof means for rotating or imparting movement in a cyclic path to the gyroscopic element relative to the body of the toy.

Other and further advantages of the invention will be apparent from the following detailed description taken in conjunction with the accompanying drawing wherein a preferred embodiment of the principles of the invention has been selected for exemplification.

In the drawing:

Figure 1 is a side elevational view of a toy embodying the principles of my invention.

Figure 2 is a rear elevational view of the device shown in Figure 1 with parts thereof broken away to show the operating mechanism.

Figure 3 is a horizontal sectional view taken on the line 3—3 of Figure 2.

Referring more particularly to the drawing, wherein like numerals refer to like parts, 10 is illustrative of a toy body of any desired configuration or material, the particular kind of toy body forming no part of the present invention. Journalled through the toy body 10 is a shaft 12 having exteriorly disposed and angularly bent opposed end portions 14 which may simulate the arms of a figure toy. The extremities 16 of the portions 14 may be in the form of loops, spring clips or the like and adapted to rotatably engage a rod or bar 18 which may simulate a horizontal bar and with respect to which the toy operates to rotate or oscillate. The toy will perform whether the arm simulating portions 14 are fixed or pivoted to the body portion of the toy but pivotally attached arms, such as illustrated, effect a more animated action. Also, the arms may be relatively short to dispose the center of gravity of the toy body close to the axis of the bar 18 about which it rotates whereby the toy body will make a maximum number of turns about the bar with each winding.

Coming now to the novel features of my invention, a gyroscopic element indicated generally at 20 is keyed by means of its stirrup 22 to a rotating shaft 24 which, in the form of the invention illustrated, protrudes exteriorly of the toy body 10. Any suitable means may be employed for imparting rotation to the shaft 24 and a convenient means has been found to be a coil spring motor, indicated in its entirety by numeral 26, such as conventionally employed in clock movements, and may include gearing and a governor of the usual type. Spring motor 26 may be conveniently disposed within the body portion of the toy 10 and secured to the inner wall thereof by means of the lugs 28. A control lever 30 is preferably provided extending through a wall of the toy body 10 in such a position that it may be readily accessible to the operator.

The purpose of the spring motor 26 is to rotate or impart movement in a cyclic path to the gyroscope element 20 whereby the precession of the spinning gyroscope will cause the toy body 10 to gyrate or oscillate with respect to the bar 18. In operation, when the gyroscope is spinning and being rotated, the entire mechanism, including the toy body 10 and its arms 14, and the spring motor 26 and gyroscopic element 20 carried thereby, swings from the pivotal extremities of the arms 14 about the bar 18 turning for a while in a direction, then stopping and turning in the opposite direction. This reversal of a motion takes place at each half revolution of the stirrup 22 of the gyroscope 20 or at each half revolution of the gyroscopic element relative to the toy body 10.

As a further novel feature of the invention, the spring motor 26 may be so arranged that the shaft 24 thereof is adapted to wind the coil spring, and the gyroscopic element 20, which is secured to the outer extremity of the shaft 24, can thus also operate as a winding key for the spring motor.

While I have shown the device suspended from the rod or bar 18 by means roughly simulating a pair of arms, the device will operate in a similar manner if suspended by its feet or by one hand and one foot. Further, the rod or bar 18 need not be horizontal but the device will operate in a similar manner about a vertical or any other angularly disposed axis.

It will be understood that the device herein illustrated and described is exemplary only of a great variety of specific modifications such as may come within the scope of the following claims.

I claim:

1. A toy including a gyroscopic element and means for rotating said gyroscopic element relative to the body of the toy.

2. A toy including a gyroscopic element and means for moving said gyroscopic element in a cyclic path relative to the body of the toy.

3. A toy including a gyroscopic element and means including a coil spring for rotating said gyroscopic element relative to the body of the toy.

4. A toy including a gyroscopic element rotatably mounted exteriorly of the body of the toy and means housed interiorly of the body of the toy for moving said gyroscopic element relative to the body of the toy.

5. A toy including a spring operated rotatable shaft and a gyroscopic element carried by said shaft to operate therewith.

6. A toy including a spring operated rotatable shaft and a gyroscopic element keyed to an extremity of said shaft to rotate therewith, the wheel of said gyroscopic element being disposed in a plane in alignment with said shaft.

7. A toy including a gyroscopic element and a coil spring adapted to rotate said gyroscopic element relative to the body of the toy, said gyroscopic element operating as a key to wind said coil spring.

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