

Feb. 27, 1968

E. W. FRANGOS

3,370,377

GYROSCOPIC TOP

Original Filed Aug. 19, 1963

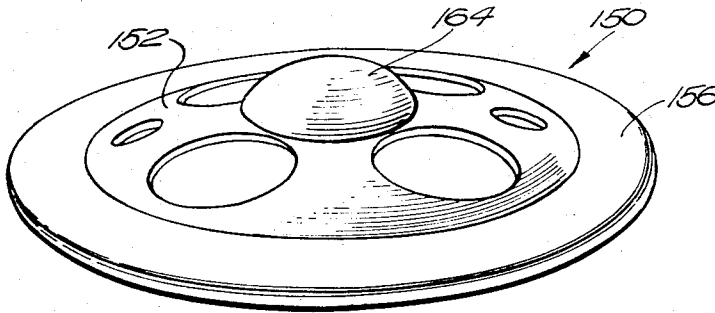


FIG. 1

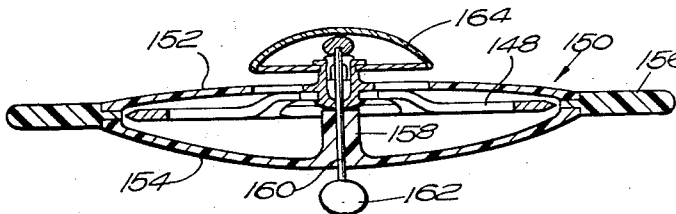


FIG. 2

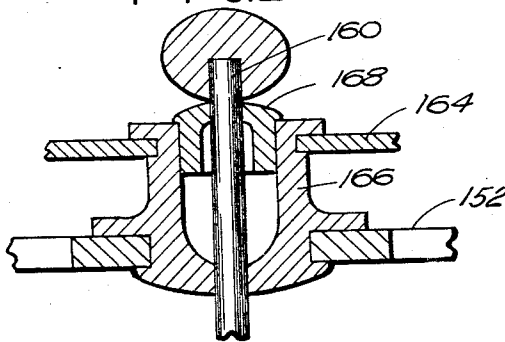


FIG. 3

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3,370,377

GYROSCOPIC TOP

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Original application Aug. 19, 1963, Ser. No. 302,872, now
Patent No. 3,287,846, dated Nov. 29, 1966. Divided
and this application Nov. 25, 1966, Ser. No. 596,952
1 Claim. (Cl. 46—50)

ABSTRACT OF THE DISCLOSURE

A gyro action toy is provided in which a rotor is mounted for rotation about an axis and driven by means of a string wound about the rotor hub and by rapidly pulling the string a high speed of rotation is imparted to the rotor, this in turn providing a gyro effect for the toy.

This application is a division of my copending application Ser. No. 302,872, filed Aug. 19, 1963 now Patent 3,287,846.

This invention relates generally to bandalore type tops and more particularly is directed towards improvements in gyroscopic tops of the sort shown in my Patents 2,645,881 and 2,794,294.

The tops shown in the above patents employ a pair of rotor sectors mounted in spaced relation on a central axle and are adapted to be set into rotation by means of a cord wound about the axle in one instance, and rotated in opposite directions by opposed cords attached thereto in another instance. Different types of attachments are provided to support the tops in various positions and to permit various gyro movements.

The present invention has for its object the providing of improvements in gyroscopic tops.

Another object of this invention is to provide a versatile gyroscopic top which may produce a variety of gyroscopic actions in addition to the conventional bandalore gyrations.

FIG. 1 is a perspective of modification, and,

FIGS. 2 and 3 are sectional views showing details in the construction of the device in FIG. 1.

In FIGS. 1 to 3 there is illustrated the invention, embodying a heavy metal rotor 148 mounted for rotation within a very slim housing 150 comprising a pair of slightly dished or convex plates 152 and 154 marginally connected by means of their peripheries mounted in snapping engagement within an annulus 156. The plate 154 will be seen to be formed with an axial boss 158 through which extends a spindle 160. The lower end of the spindle, as viewed in FIG. 22, carries a head 162, as does the upper end which is enclosed in a housing 164. As best shown in FIG. 23, a hub 166 joins together the smaller housing 164 and the rotor 148. A bearing 168 is mounted to the hub and rotatably engages the spindle

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160. The outer end of the bearing 168 bears against the inner end of the head 162 enclosed within the housing 164.

It will be understood that the rotor may be given an initial rotary momentum by wrapping a cord about the hub 166 and pulling on the cord. The device may be then put to a number of interesting demonstrations. For example, the device may be balanced along its peripheral edge and tilted at various attitudes. The unique arrangement for assembling the various parts makes for a very rugged and low-cost construction and also permits ready assembly and disassembly of the parts for added interest.

The invention described herein is of simple, yet rugged and low-cost construction and provides a gyroscopic top which is easy to operate and can be employed to produce a variety of gyroscopic motions and demonstrations in addition to the conventional bandalore type gyration. Also, the top may be easily wound and gyrated without the cord becoming snagged about the hub or axles. Furthermore, the bearing arrangements provide smooth and trouble free operation with an optional control over top rotation. Many unusual and interesting experiments may be performed with the top.

While the invention has been described with particular reference to the illustrated embodiments, it will be understood that numerous modifications thereto will appear to those skilled in the art. It will also be understood that the above description and accompanying drawings should be taken as illustrative of the invention and not in a limiting sense.

Having thus described my invention, what I claim and desire to obtain my Letters Patent of the United States is:

1. A gyroscopic top, comprising an annulus, a pair of dished members of circular outline mounted in spaced relation to one another to define a chamber of generally elliptical cross-section, the outer peripheries of said members being connected to the inner periphery of said annulus, a spindle mounted coaxially to one of said members and extending coaxially through the other of said members, a hub rotatably mounted adjacent the free end of said spindle, a rotor fixed to said hub and disposed within said chamber, a portion of said hub extending out through said other member to accommodate a winding cord for rotating said rotor.

References Cited

UNITED STATES PATENTS

617,665	1/1899	Waterhouse	46—50
1,784,684	12/1930	Bell	46—61
2,747,326	5/1956	Doyle	46—50

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