Oct. 27, 1936. G. F. HUMPHREY 2,058,692

SPINNING TOP

Filed Feb. 11, 1936

FIG. 1.

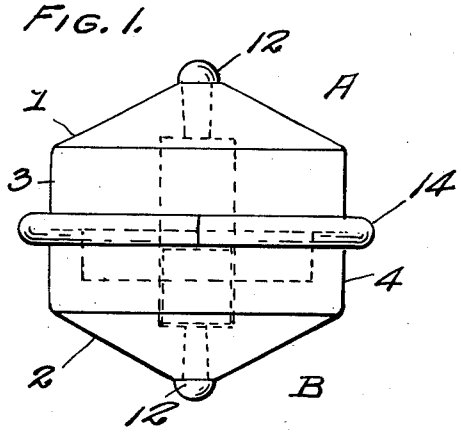


FIG. 5.

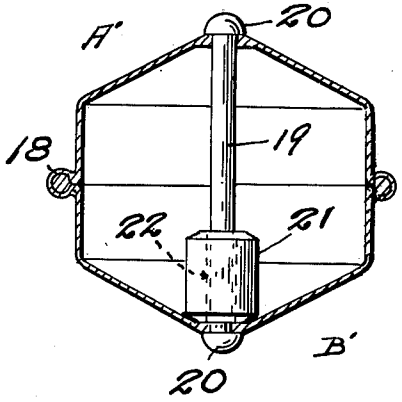
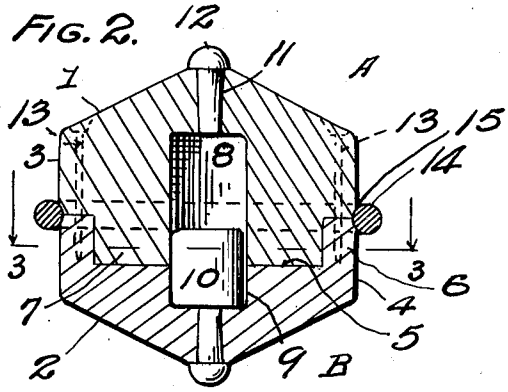


FIG. 2.



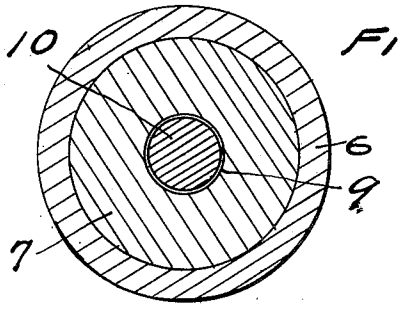


FIG. 3.

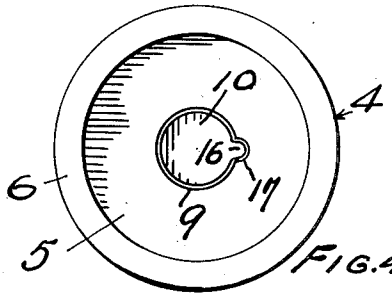


FIG. 4.

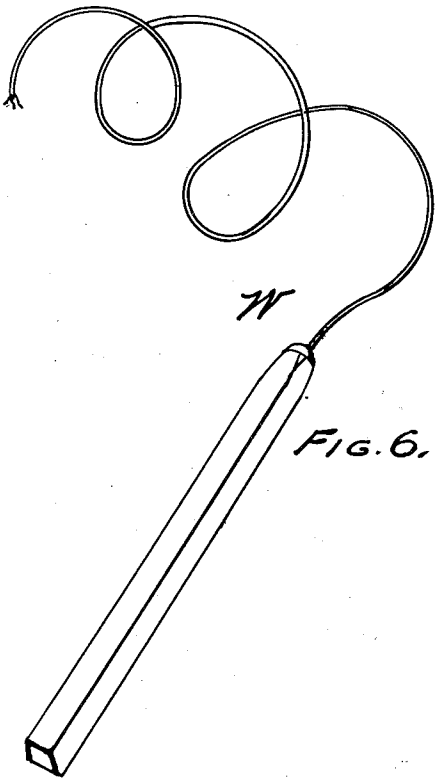


FIG. 6.

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SPINNING TOP

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Application February 11, 1936, Serial No. 63,416
In Canada July 19, 1935

10 Claims. (Cl. 46—64)

The present invention relates to improvements in spinning tops of the duplex, reversible type, which tops may be spun upon either of their two spinning points, in any of the usual modes appropriate for the purpose. The primary object of the invention is the provision of a toy of this character which may readily be started spinning, and which will continue to spin for a substantial period of time after its initial start, and which is also capable of being "whipped" while spinning to continue indefinitely its spinning motion.

In carrying out my invention I provide the duplex reversible top with a weight which is mounted to shift or slide along the axis of rotation of the top, which weight automatically moves toward the spinning point of the top for the purpose of lowering the center of gravity of the top to a point where a maximum stability will be maintained in the top while in motion. This shifting of the center of gravity of the top by means of the weight permits the utilization of kinetic energy which is stored up in the portion of the top at its center of gravity, and under influence of the kinetic energy thus stored in the weighted top the spinning motion of the top is prolonged beyond the usual period of time of the conventional spinning tops now in use. This increased capacity of the top to store up and use kinetic energy is augmented by the use of a compensating ring or balancing weight right with the top, and the movable gravity weight and rigid balancing weight, together, stabilize the motion of the spinning top so that the toy will remain in perpendicular position while spinning. Because of these stabilizing elements or weights, the top, while spinning is enabled to withstand and resist the "whipping" applied by a cord after the initial start, and while a blow from the whip may cause the top to lean slightly, these elements enable the top to return to upright or perpendicular position under the impetus of the applied whip.

The invention consists in certain novel combinations and arrangements of parts as will hereinafter be more fully set forth and claimed. In the accompanying drawing I have illustrated one complete example of the physical embodiment of my invention, together with two modifications, wherein the parts are combined and arranged according to modes I have devised for the application of the principles of my invention. It will be understood that changes and alterations may be made in these exemplifying structures within the scope of my appended claims without departing from the principles of my invention.

Figure 1 is a view in elevation of a duplex reversible top embodying my invention.

Figure 2 is a vertical sectional view of the top of Fig. 1.

Figure 3 is a horizontal sectional view at line 3—3 of Figure 2.

Figure 4 is a plan view of one of the sections of the top showing a slight modified form of my invention.

Figure 5 is a vertical sectional view of a sheet metal top in which my invention, in a modified form, is embodied.

Figure 6 is a perspective view of a whip, the cord of which, if desired, may be used, initially, to spin the top, and the whip, subsequently, may be applied to keep the top in spinning motion.

In Figures 1 through 4 the top is made up as a substantially solid body, of wood, or other suitable material, and the duplex reversible top is preferably fashioned of two sections A and B for convenience of construction and assembly, these sections having conical ends 1 and 2 respectively. The sections also are fashioned with matching cylindrical portions 3 and 4 which form the body of the top intermediate its conical ends.

The two sections of the top are joined together by means of a circular recess or socket 5 and an annular flange 6 on one section, and a complementary circular, reduced boss 7 on the other section fitted into the socket. Before these sections are joined together they are bored to form complementary central holes 8 and 9, and these two holes provide an interior recess extending on the axis of rotation of the top with the ends of the recess terminating a spaced distance from the spinning point of the two conical ends of the top. Within the chamber or compartment formed by the alined holes 8 and 9 a metal weight 10 is introduced, and when the two sections are joined, the weight is confined within its compartment, but is free to shift or move, guided by the walls of the compartment, to the bottom end of the compartment.

In the opposite ends of the top alined with its axis of rotation are mounted the pins 11, which are fashioned with spinning heads 12, preferably hemispherical in shape and exterior of the conical ends 1 and 2.

After the boss 7 has been inserted in its socket 5 to join the sections, they may be fastened rigidly together by the use of glue, cement, or other adhesive, and in some instances brads 13 may be driven into the two sections, as indicated by dotted lines in Figure 2, to rigidly hold the sections of the top in assembled position.

A compensating weight, or balancing weight 14 is fixed at the median line of the top, transversely of the axis of rotation, and as indicated in Figure 1 this weight may be a split ring of resilient metal, which is retained in an annular seat formed by complementary annular grooves 15 at the abutting edges of the two sections of the top. This split ring may be sprung over the top after the sections have been rigidly joined, and it then

retains its position in the annular groove due to its resiliency; or the ring may be seated in one of the grooves of a section, and then the other section may be put in place, under pressure, thus locating the resilient ring at the dividing line or median line between the two sections.

As described, the top is of symmetrical shape, with the heads and pins, the central compartment and the gravity weight alined with the axis of rotation of the top, and the annular, median, balance weight 14 is located equidistant between the pinheads or spinning points. The gravity weight 10, of course seeks a position below the median balance weight, when the top is thrown to the ground or spun with a cord in usual manner, and of course the gravity weight is at the bottom of its compartment if the top is spun by first standing it upright and unwrapping a cord from one of its conical heads. In the latter instance, the cord is first wound around a head starting at a spinning point, then the bottom point is placed upon the ground, a finger is placed on the upper spinning head or point, to retain the top in upright position, and by pulling on the cord the top is spun as the cord is unwrapped. In Figure 6 a whip is indicated as W, the cord of which may be used for spinning the top, as described, then, after the top is spinning and with the handle grasped in the hand, the whip is applied to the spinning top so that the successive blows will maintain the spinning motion of the top, indefinitely.

The top may also be spun, or started to spin, by first winding the leash or cord of the whip around the barrel 4, below the ring 14, then, while holding the top and the whip in one and the same hand, a throw-out action is given the top and a pull-back is given the whip, causing the top to spin on a vertical axis, in a clockwise direction, as the cord is unwound in this same direction.

In Figures 1, 2 and 3, where the compartment is shown as a hollow cylinder and the gravity weight as a solid cylinder, the gravity weight may or may not revolve with the top, or it may or may not revolve with the same speed as the spinning top.

In some instances it is desirable that positive means be employed to insure rotation of the weight with the top, and this may be accomplished by changing the shape of the cylindrical compartment and the solid cylindrical weight. Or, as in Figure 4, the weight 10 may be provided with a tongue 16 that slides freely in a groove 17 in the wall of the compartment as the weight slides or is shifted in its compartment.

In Figure 5 I have illustrated a hollow, sheet metal top, which may be employed to carry out my invention, and which has the conical heads A' and B'. The two metal sections may be crimped together at their median line, and the crimped formation may be welded, brazed, or soldered together to form a solid annular weight or compensating ring 18, performing the same functions as the balance weight 14.

Instead of two spaced pins, I employ in the metal top an axial pin 19 provided with exterior heads 20, 20, and these heads in addition to performing their functions as spinning points, also retain, rigidly, the two sections of the top. The gravity weight 21 is provided with a central bore 22, and the weight, by means of its bore, is mounted loosely on the pin before the sections are fastened together, so that the weight is free to slide on the axial pin, but is confined within the interior of the hollow top.

Preferably the two sections of the top are painted with contrasting colors, as red and white, and the exterior, annular, metal, weight, or balancing ring also has a contrasting color; but it will be understood that various changes in color or ornamentation may be made, as well as changes in form or shape, and size may be made in the exemplified toy, all within the scope of my appended claims.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A reversible spinning top having axially alined spinning points, a movable gravity weight within the top, and means for guiding and maintaining said weight on the axis of rotation of the top.

2. A reversible spinning top having an interior gravity weight movable along its axis of rotation for lowering the center of gravity of the top, and a transversely disposed balance weight located at the median line of the top.

3. A reversible spinning top having alined spinning points, a gravity weight within the top movable between the alined points, means for guiding the movement of said weight, and a transversely disposed balance weight located at the median line of the top.

4. A reversible spinning top having spaced alined spinning heads, an interior axially movable gravity weight within the top, axially extending means for guiding the movement of the weight, and spaced means to limit the axial movement of the weight.

5. A reversible spinning top having spaced axially alined spinning heads, an interior axially movable gravity weight, axially extending means for guiding the movement of the weight, means for limiting the movement of said weight, and a transversely disposed balance weight located at the median line of the top.

6. A reversible spinning top having spaced axially alined heads, a gravity weight axially movable between said heads, guiding means for said weight, means for limiting the movement of the weight, and a transversely disposed annular balance weight located at the median line of the top.

7. A reversible spinning top having axially alined spinning heads and an interior axial compartment, and a gravity weight movable and guided in said compartment.

8. A reversible spinning top having axially alined spinning heads and an interior axial compartment, a gravity weight movable in said compartment for lowering the center of gravity of the top, and a transversely disposed annular exterior balance weight mounted at the median line of the top.

9. A top having an interior gravity weight freely movable along its axis of rotation toward, and adapted to come to rest in close proximity to its spinning and supporting point, and thereby lower the center of gravity of the spinning top.

10. A top having an interior gravity weight freely movable along its axis of rotation toward, and adapted to come to rest in close proximity to its spinning and supporting point and co-acting means on the weight and top to insure joint rotation of the weight and top.

GEORGE F. HUMPHREY.