Sept. 30, 1952 J. W. KRAPP 2,611,995

ILLUMINATED TOP

Filed June 5, 1948 2 SHEETS--SHEET 1

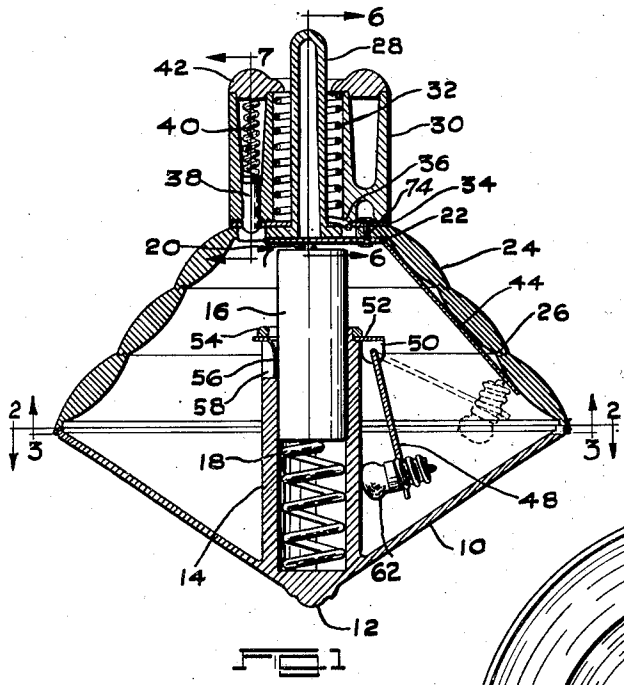


FIG. 1

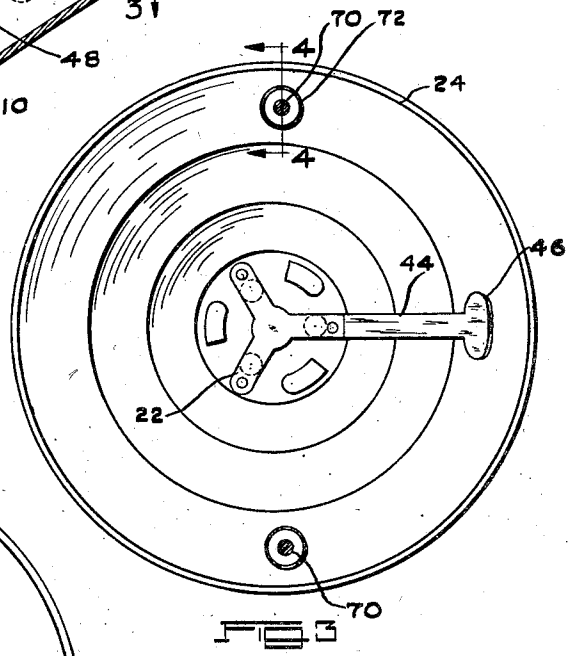


FIG. 3

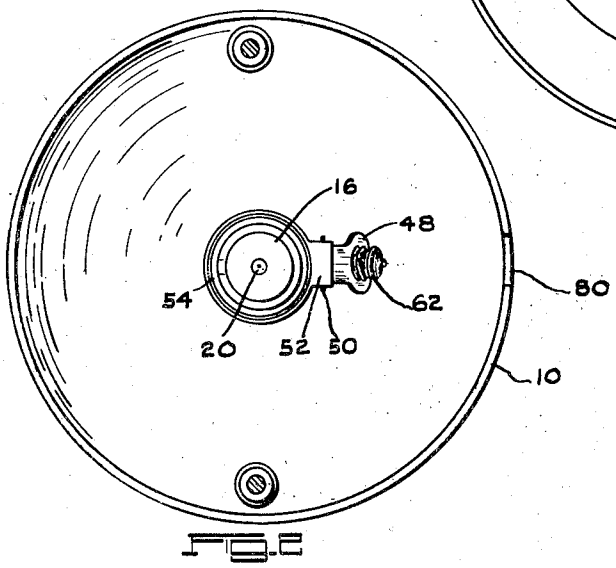


FIG. 2

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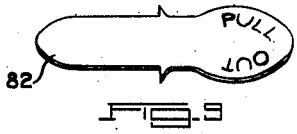


FIG. 3

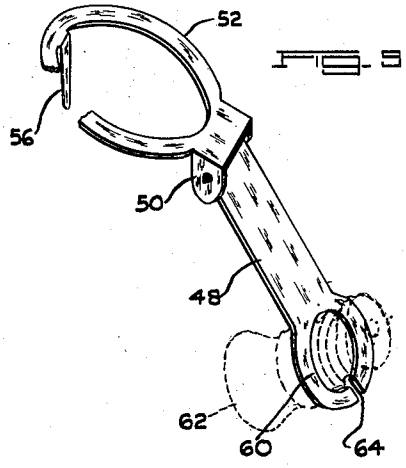


FIG. 5

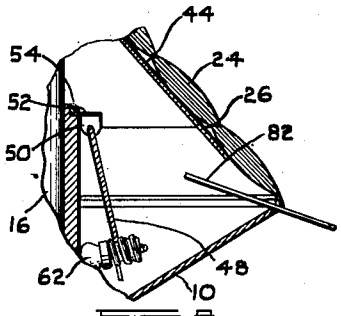


FIG. 8

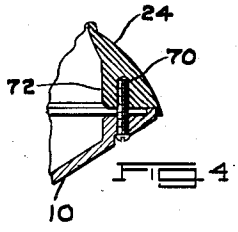


FIG. 4

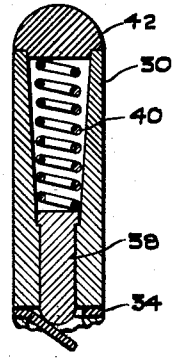


FIG. 7

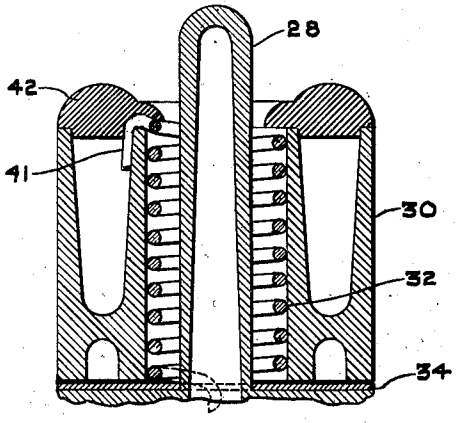


FIG. 6

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ILLUMINATED TOP

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Application June 5, 1948, Serial No. 31,312

1 Claim. (Cl. 46—69)

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This invention relates to tops and similar spinning devices, and particularly to said devices when provided with an internal illuminating means.

There are many types of spinning tops manufactured and marketed, but so far as is known there are none which include an internal illuminating device so that the said top will glow and give off light during operation. Such an arrangement is much to be desired, particularly in connection with increasing the saleability and attractiveness of the device.

The primary object of this invention is to provide a spinning top mechanism including an arrangement for illuminating the interior thereof.

A still further object is the provision of an internally illuminated top which automatically becomes illuminated when spun and in which the illuminating source is extinguished when the top is stopped.

Another object is to provide an arrangement for a top having internal illumination whereby the said illuminating means can be prevented from being energized when the top is being shipped or when stored.

A still further object of this invention is the provision of an improved construction for tops especially adapted for being internally illuminated.

These and other objects and advantages will become more apparent upon reference to the following description taken in connection with the accompanying drawings in which:

Figure 1 is a vertical section taken through a top constructed according to this invention;

Figure 2 is a plan section indicated by the line 2—2 on Figure 1 and looking down on the lower half of the top;

Figure 3 is a section indicated by the line 3—3 on Figure 1 and looking up beneath the upper half of the top;

Figure 4 is a fragmentary section indicated by the line 4—4 on Figure 3 and showing the arrangement of the means for attaching the upper and lower parts of the top together;

Figure 5 is a perspective view showing a portion of the centrifugal switch means within the body of the top;

Figure 6 is a section indicated by the line 6—6 on Figure 1 and showing the construction of the winder for the top;

Figure 7 is a view indicated by the line 7—7 on Figure 1 and showing the arrangement of the ratchet portion of the winder for the top;

Figure 8 is a fragmentary view showing the

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manner of inserting a non-conductive member into the body of the top to prevent the switch mechanism therein from completing the circuit to the source of illumination; and

Figure 9 is a perspective view showing the form of insulating tab which is inserted into the body of the top as shown in Figure 8.

Referring to the drawings, a top constructed according to this invention generally comprises separable upper and lower body parts within which there is a battery, a light bulb, and a centrifugally operated switch means for completing the circuit between the light bulb and the battery.

In the drawings the bottom portion of the body part is indicated by the reference numeral 10 and this part includes the spinning point 12 on which the body rests when the top is in operation.

The bottom part 10 of the top body is preferably constructed of a plastic material which is substantially opaque but which may, to advantage, be made of a light color so as to be light reflective.

Upstanding from the center part of the body part 10 is a sleeve 14 which slidably receives a battery 16. A spring 18 is placed in the bottom of the sleeve 14 for urging the battery upwardly in order to cause the center terminal thereof as at 20 to engage a contact plate 22 mounted inside the upper body part 24 of the top body.

The upper body part 24 is preferably of a translucent or transparent material such as plastic and may comprise a series of superimposed annular rings having inter-engaging parts as indicated at 26. These rings may be made of different colors, if desired, and cemented together where they meet in order to form an integral upper body part. Upstanding from the top of the upper body part is a stem 28 and which slidably receives a winder member 30 within which there is the elongated torsion spring 32.

The winder construction is substantially conventional and is adapted for cooperation with a winding plate 34 mounted on the outside of the top of the body part 24. This plate comprises a series of apertures which receive the hooked over lower end 36 of the spring 32 and another series of apertures which receive the ratchet plunger 38 of the winder which is urged downwardly toward the bottom of the winder by a spring 40. The manner in which the plunger 38 cooperates with the winding plate 34 will best be seen in Figure 7.

The upper end of the spring 32 is anchored as shown in Figure 6 wherein it will be noted that

the upper free end of the spring is bent over and engages a recess in the winder body as at 41 and is retained in position by the annular cap member 42 which is cemented to the upper surface of the body of the winder.

In operation the winder is merely placed in the position shown in Figure 1 and then turned clockwise about the stem 28 until the spring 32 is coiled to the desired tightness. Thereafter the top is set in motion by holding the winder 30 and pressing downwardly on the stem 28 in order to dislodge the plunger 38 from its engagement with the winding plate. When the plunger 38 disengages the wound up spring 32 will exert a spinning thrust on the top body.

As mentioned before the top of this invention is adapted for being internally illuminated. Accordingly, the contact plate 22 has an extending arm or finger 44 thereon which extends down one side of the inside of the top part of the body as shown in Figures 1 and 3. This finger may terminate in a somewhat enlarged end part as at 46.

In vertical planar alignment with the finger 44 there is a swinging arm 48 which is pivotably mounted adjacent the upper end of the sleeve 14 of the bottom part 10 of the top body. The arm 48 is pivoted as in the depending ears 50 of a ring 52 mounted about a reduced diameter upper end portion of the sleeve 14 and retained thereon by a retaining ring 54. The ring 52 includes a spring finger 56 bearing through a slot 58 in the sleeve 14 against the side of the battery 16. The lower or free end of the arm 48 is apertured as at 60 for receiving a light bulb 62 and the material around the aperture is preferably split as at 64 so that the separate parts of the formation at the end of the arm 48 may adapt themselves to the thread around the base of the bulb. The bulb 62 acts as a weight on the end of the arm 48 and when the top is spinning at or above a predetermined speed the said arm will swing outwardly to the position indicated by the dashed line in Figure 1. When the arm is in this position a circuit is completed through the light bulb from the battery which causes the said bulb to be illuminated. Thus the electrical circuit is formed by the center terminal 20 of the battery 16, the contact plate 22 together with finger 44, the bulb tip terminal, the screw casing of the bulb, the arm 48, the ring 52, spring finger 56 and the outer casing of the battery 16, which latter is the second terminal of the battery. Ordinarily there would be a certain amount of dynamic unbalance of the top body, because of the one sided position of the swinging arm and the contact finger 44. However, this is accommodated by features of construction to be later described.

The light from the light bulb either passes through the upper portion of the top body, or is reflected from the inside of the bottom part 10 and then through the top part of the body. The net result is to cause the upper part of the body to glow with a fairly uniform illumination.

Since the top is spinning at a relatively high rate of speed at this time, the illumination of the several bands around the top is exactly uniform so far as can be determined by the eye. It will be apparent that it is not necessary that the lower part be opaque but that it could be translucent, as well as the upper part, if desired. It also will be apparent that the several rings comprising the upper part of the body could

be formed of differently colored material, if desired, in order to increase the attractiveness of the top. It is also conceivable that the upper part of the top could have mounted therein a thin translucent member, such as paper or some other article, which could be printed or otherwise colored and thereby impart certain color characteristics to the top when spinning and illuminated.

Inasmuch as it is necessary occasionally to separate the top and bottom parts of the top body in order to replace the bulb or battery therein, the said parts are preferably retained together by a pair of screws 70 on opposite sides of the top body and which pass through bosses 72 formed on the upper and lower body parts.

These bosses 72 are offset slightly, with respect to the center 20 and the finger 48, that is, a straight line passing through the centers of the bosses 72 will lie to one side of the center 20 and on the side of the center 20 opposite to the finger 48 as may be seen from Figure 2. This, to a partial degree, compensates for the dynamic unbalance above referred to.

Inasmuch as plastic materials are to be preferred in fabricating the top body, the presence of the contact plate 22 inside the upper part of the top body and the winding plate 34 outside of the upper part of the top body is utilized for increasing the structural strength of the assembled unit by connecting the said plates by a series of rivets 74. These rivets not only retain the said plates in position, but tend to distribute the stress of winding and spinning the top about the upper body part, and thereby to reduce the possibility of breakage thereof.

Since it is preferable completely to assemble the tops at the place where they are manufactured and to ship them to the place where they are sold, it is desirable to prevent the circuit from the battery through the light bulb from being completed. According to this invention this is accomplished by slotting the rim part of the body 10 as at 80 in a position that aligns with the contact arm 48 and the finger 44, so that there can be introduced into the said slot a non-conductive member as at 82 which will positively prevent the light bulb from engaging the contact finger 44.

This member 82 may comprise a piece of stiff paper or cardboard, and the exact configuration thereof is illustrated in Figure 9.

This slot 80 is formed directly opposite to the arm 48 and, due to the mass eliminated, further compensates for the dynamic unbalancing. Thus, the removal of weight at this point and the offset relation of the bosses 72 counterbalance the arm 48.

From the foregoing description it will be apparent that this invention provides for a novel spinning top construction such that not only is the manufacture of the device relatively simple, thus resulting in an inexpensive product, but which has the distinct advantage over articles of manufacture presently on the market, in having considerable more sales appeal and attractiveness.

It will be understood that this invention is susceptible to modification in order to adapt it to different usages and conditions and, accordingly, it is desired to comprehend such modifications within this invention as may fall within the scope of the appended claim.

I claim:

A spinning top adapted to be internally illuminated comprising an upper conical body part comprising a series of superimposed annular rings of translucent material, a lower conical part substantially opaque but of light reflective material, a sleeve upstanding from said body part coaxially with said body, a battery supported in said sleeve, a contact plate in the inside top of the upper part of said body engaging one terminal of said battery and having an extension along the inside of one side of said upper part, a contact ring on said sleeve having a finger engaging the other terminal of the battery and including a pivot, and a contact arm swingably suspended from said pivot and having a bulb receiving aperture in the free end thereof, a light bulb removably mounted in said aperture, said arm being in planar alignment with said extension whereby said bulb in said aperture will engage said contact plate when said arm swings outwardly through centrifugal forces acting

thereon, said superimposed rings being of different colors.

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