

- [54] **LIGHTED DISK-TYPE FLIGHT TOY
AND COMPONENTS THEREOF**

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- [52] U.S. Cl.....46/228, 46/74 D

- [51] **Int. Cl.**.....**A63h 33/26**

- [58] **Field of Search**.....46/228, 74, 226, 47

- [56]
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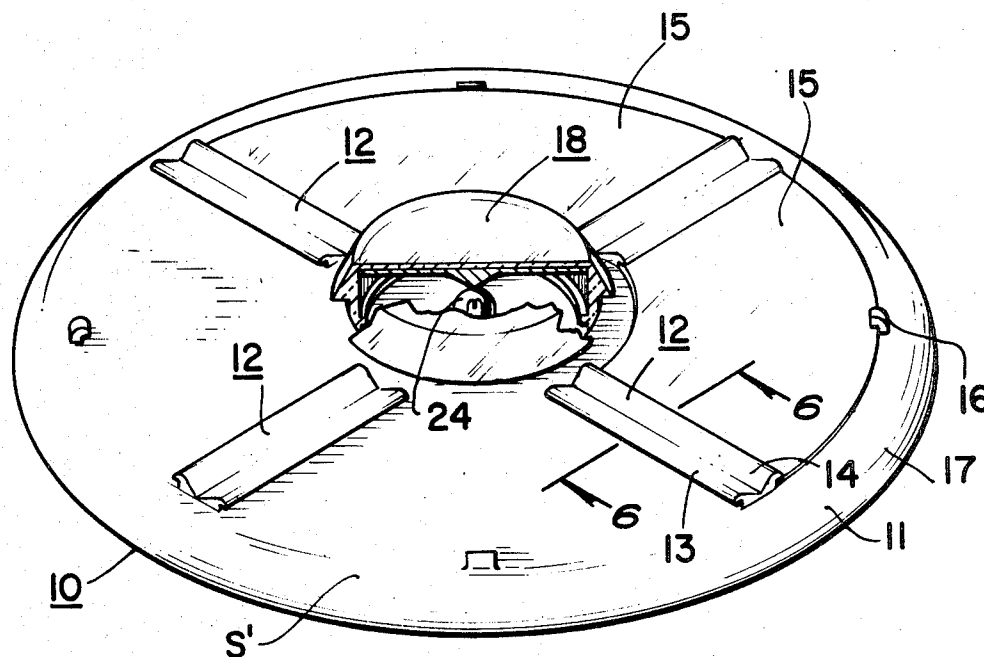
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[57] **ABSTRACT**

A disk shaped flight toy which is illuminated for night flying. An included dome, with the rest of the toy, simulates artists' conceptions of flying saucers. The dome encases suitable light means that can be selectively activated so that the object can be illuminated as desired for night flying, retrieval, and so forth. Rays from the central light object of the toy are deflected outwardly and radially so illuminate either the material of the toy itself, internally, or to reflect light from one or both opposite surfaces thereof.

2 Claims, 6 Drawing Figures



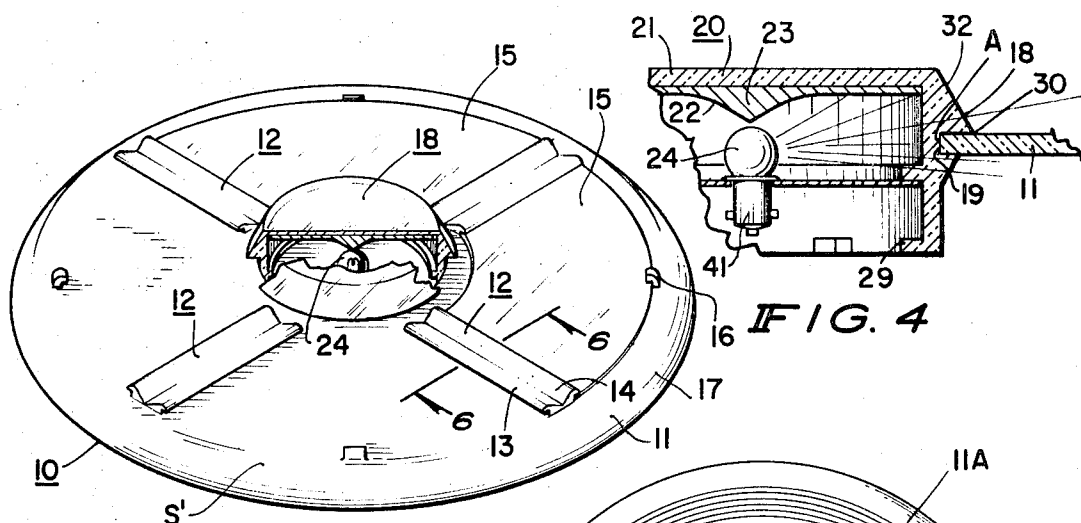


FIG. 1

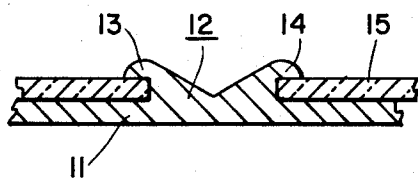


FIG. 6

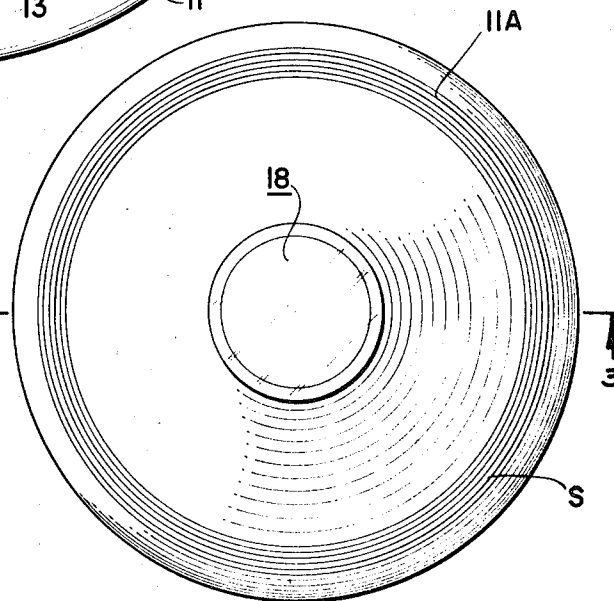


FIG. 2

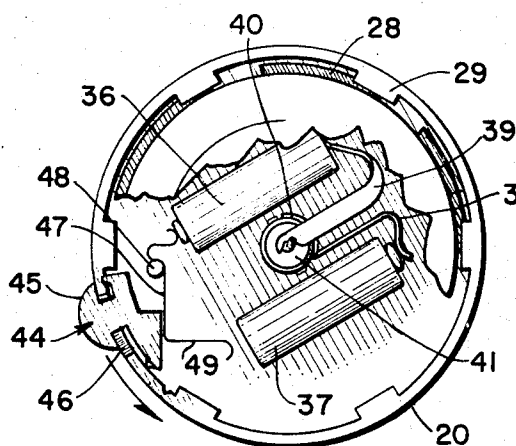


FIG. 5

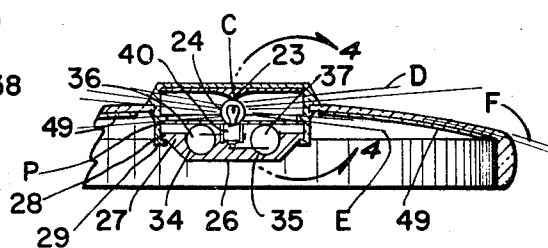


FIG. 3

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LIGHTED DISK-TYPE FLIGHT TOY AND COMPONENTS THEREOF

The present invention relates to flight objects such as toys or missiles tossed among players and, more particularly, to a new and improved, inverted dish-shaped object which can be selectively lighted for night flying and/or retrieval.

Many years ago children and young adults found considerable amusement in tossing to each other dish-shaped disks such as pie-tins, metal saucers, and so forth. Recently certain manufacturers have commercialized on this sport by designing disk-shaped plastic toys which have flight characteristics such that the toys can be carried great distances with proper tossing and/or by the aid of favorable breezes or winds.

There has remained the problem of easy retrieval of such disk-shaped objects when the same fall into bushes, grassy areas, and so forth. Additionally, none of these flight objects, to the inventors' knowledge, are lighted so the same can be suitable for night flying in parks, along the seashore, and so forth.

Accordingly, a principal object of the present invention is to provide a new and improved disk-shaped toy which is lighted.

A further object is to provide a disk shaped toy which resembles artists' conceptions of flying saucers.

An additional object is to provide an inverted saucer configured toy having a dome area provided with selectively actuatable light means.

A further object is to provide an insert kit for flying disks, by which kit the disk can be lighted.

A further object is to provide reflective and/or illuminative means which will aid the visual presentation of such flying object when in flight or at retrieval times.

A further object is to provide a central construction incorporating battery and light means for flying object toys.

An additional object is to provide a lighted toy wherein the central portion thereof is constructed such that light emanates essentially radially outwardly, thus avoiding light dissipation as through the top of such object.

In accordance with the principles and objects of the present invention, the subject toy of the invention takes the form of an inverted saucer or disk preferably having a central dome shaped area. Such central dome shaped area includes selectively actuatable light means which is encased in the dome. The upper or lower surfaces of the disk shaped object are provided with a light conductive or light reflected means so that the lighted appearance of the object at night time is enhanced. The dome is provided with suitably formed reflective means such that light as from a flashlight bulb, normally directed actually outwardly, is reflected such that light emanates radially relative to the central portion of the disk or toy. Light through the construction of the device can be made to emanate through the material outwardly or across its upper and/or lower surface. The toy can be made as an integral unit, or as separate pieces having a dome insert. Additionally, the dome construction including the lighting means may be used as insert or addition to conventional toys designed as flying objects.

The features of the present invention, together with further objects and advantages thereof, may best be understood by reference to the following description,

taken in connection with the accompanying drawings in which:

FIG. 1 is an elevation, partially broken away, of an inverted saucer type flight toy incorporating the principles of the present invention.

FIG. 2 is a top plan of the structure showing FIG. 1.

FIG. 3 is a fragmentary section, taken along a vertical plane through the device, illustrating the dome assembly and its preferred connection with the remainder of the flight toy.

FIG. 4 is an enlarged fragmentary section, taken along the arcuate line 4—4 in FIG. 3, and illustrates one manner of securement of the dome structure to the remainder of the flight toy.

FIG. 5 is an enlarged view of the base of the structure, indicating the switching means thereof.

FIG. 6 is an enlarged section taken along the lines 6—6 of FIG. 1.

In FIG. 1 hand-throwable toy 10 of the invention includes an inverted, saucer-configured member 11 which is provided with a central dome 18. Member 11 assumes a generally disk-like or saucer configuration and is downwardly concave for proper flight characteristics in a manner that is common with disk-type flight toys. Member 11A in FIG. 2 corresponds to member 11 in FIG. 1 and has a conventional smooth surface at S. Surface S' of FIG. 1, on the other hand, is provided with a retainer portion 12 having overlapping retainer margins 13 and 14. These may be employed for the insertion of pie-section configured plastic segments 15 such as light carrying "Lucite" segments. Member 11 may likewise be provided with mutually spaced retainer tabs 16 to serve to retain the outermost edge 17 of respective light carrying plastic portions 15. For convenience of illustration only one plastic section is seen in FIG. 1. Where plural retainer portions 12 are employed, such as the four portions 12 shown in FIG. 1, then four Lucite or other light emitting plastic segments may be utilized by their being inserted in place as illustrated in connection with the one member 15 seen in FIG. 1.

It is important to recall that the toy of the present invention, while usable at all times, is particularly suited for night flying. Thus, where a light source is provided as at dome 18, then the light energy emitted by such light source may be utilized to light the flying object. Accordingly, member 11 may be designed to carry and radiate light either by selective insertion of translucent segments 15, or the basic disk member, such as member 11A in FIG. 2, may simply comprise a light emitting substance or material such as that going into the trade name Lucite, as before indicated. Of course, it is conceivable that the radiation from the centrally disposed light in FIG. 1 may be desired to be emitted out over the top or the bottom surfaces of member 11, 11A, or over both surfaces, so that the lighted object can be clearly seen in flight by the players.

It will be observed that dome 18 may be either integrally formed in the flying saucer toy as an integral portion of member 11, or may comprise a separate component as seen in FIG. 4. Thus, the inverted saucer-configured member 11 may, if desired, be provided with a central, interior, circular aperture A defining an interior circular edge 19. Dome 18, of course, includes an encasement 20 having an upper central sur-

face 21 which is provided with a reflective surface 22. The reflective surface 22 may comprise the lower surface of inverted cone-shaped, reflective, metallic member 23, by way of example, or the portion 21 can simply be configured appropriately, compositely as 21 plus 23, by way of example, and have a sprayed, silk-screened, or other type of deposited reflective surface at 22. The purpose of the reflective surface at 22 is to insure that the light bulb 24, carrying floating partition P, emits light to the side areas of the dome and not through the top. Of course, light might be desired to emanate through the top portion 21 of the dome, in which event the reflective surface 22 would not be provided. However, it is deemed best, for all of the light to emit sideways and peripherally about the general horizontal plane of the member. In such event, the light can be seen above member 11, as shown at D in FIG. 3, below the same as seen by the rays E, and, additionally, the rays can be directed through and out of the material as at F such that the entire saucer area is illuminated as seen from an area beneath the same.

Accordingly, the reason for the depending tapered portion at 22 is to take advantage of the fact, through Snell's law in optics, that the incident rays from the light on reflective surface 22 will reflect off such surface at equivalent angles of reflection, such that the same may be directed to the side areas inside of the dome 18.

Dome base 26, see FIG. 3, is provided with a bottom 27 having lugs 28, see FIG. 5. These lugs cooperate with lugs 29 of the dome encasement 18 so that the dome base 26 may be rotatively secured in place. The light 24 may either abut the apex or central portion C of reflector portion 23, or other means may be provided as a reaction means, such that the dome base 26 can be releasibly secured in place.

An exterior groove 30 is supplied the dome encasement 20 so that the dome can be simply snapped in place. Thus, the thrust through the central opening of member 11, such that camming surface 32 will spread upwardly the inner peripheral margin of member 11 so that, ultimately, the latter can snap in place within groove 30 as shown in FIG. 4. Various types of soft plastics are suitable for this purpose, including certain polyethylene and polyurethane and polyvinyl plastics.

In returning to FIG. 3, it is seen that the dome base 26 is provided with seats 34 and 35 for receiving batteries 36 and 37. These batteries have the usual leads 38 and 39 which support light socket 40. The light socket 40, of course, retains the lower part 41 of light 24.

If desired, the encasement 20 may be provided with switch means such as that seen in FIG. 5. This switch means 44 takes the form of a switch button 45 which is displaceable in slot 46 of encasement 20. A connector spring 47 is retained in place by means of a post 48, secured to the encasement 20. The connecting spring 49 is configured as seen such that a displacement in a counter-clockwise direction, as seen in FIG. 5, will cause a circuit connection through the batteries and light so that the light will glow. When the switch button 45 is translated in reverse direction, then the spring connection 49 lifts from the lowermost battery base so that the circuit is disconnected. Of course, the contoured, rigid electrical terminals 38 and 39 are configured to connect opposite terminals of the respective batteries to the light socket 40.

In operation, the user energizes the light source, namely light 24, by activating the light switch 45. Batteries 36 and 37 provide power to such light as by means of switch 45. When the light is energized, then illumination therefrom is reflected from surface 22 in FIG. 4 so that the light proceeds outwardly in radial directions. Thus, light illuminations proceed as at D, E and F, see FIG. 3, completely about the dome area. Where member 11 is made of Lucite or other light transmitting material, then the entire dome can be lighted. If desired, aluminum strips 49 may be secured to the under-surface of member 11 so that these can reflect light proceeding outwardly through the dome.

What is provided, hence, is an inverted-saucer-configured toy resembling artists' renditions of flying saucers. In its broadest context, the toy is lighted for night observation as between players tossing the same into the air from one location to another. It is further to be noted that, night or day, the optional lighting of the unit makes the object very visible and easy to locate.

Of additional special importance is the fact that a single bulb as, for example, a flashlight bulb can be used in advantageous manner, and, preferably, by directing the light rays of the same laterally and radially out of the dome area. In such event, the material of the "saucer" can be lighted either internally or through reflection on the upper or lower surfaces of the same, or both. Light conductive materials such as Lucite segments, and light reflected materials such as aluminum reflectors, can be used to further enhance the illuminated appearance of the object in flight.

The invention is constructed to be usable either with or without the light encasement. Accordingly, weight limitations of flying object contests currently in vogue at the beaches and parks, may be preserved for during daytime use. Furthermore, the flying saucer can be designed such that weight limitations of the object may be preserved, or essentially so, for all types of usage including sporting contests.

While particular embodiments of the particular invention have been shown and described, it will be obvious to those skilled in the art the various changes and modifications which may be made without departing from the essential features of the present invention and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of the invention.

We claim:

1. A hand-throwable, inverted-saucer configured flight object including, in combination, a downwardly concave member having an underside, and light means affixed to said downwardly concave member for illuminating the same, wherein said flight object includes a dome encasing said light means, said dome having interior light reflecting means for reflecting light emanating from said light means radially outwardly, and wherein said light reflecting means is configured as an inverted cone the apex of which depends toward said light means.

2. A hand-throwable, inverted-saucer configured flight object including, in combination, a downwardly concave member having an underside, and light means affixed to said downwardly concave member for illuminating the same, wherein said flight object includes a dome encasing said light means, said dome having interior light reflecting means for reflecting light emanat-

ing from said light means radially outwardly, wherein
said dome is translucent at selected areas, and wherein
said dome is translucent at that area which is beneath
said downwardly concave member at the latter's region
of engagement with said dome.

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