

[54] **KALEIDOSCOPE**
 [76] **Inventor: Alfred A. Orans, 225 Ellison Ave., Westbury, N.Y. 11590**
 [22] **Filed: Mar. 31, 1972**
 [21] **Appl. No.: 239,872**
 [52] **U.S. Cl. 350/5**
 [51] **Int. Cl. G02b 27/08**
 [58] **Field of Search 350/5**

1,274,656 8/1918 Zabielski..... 350/5
 754,143 3/1904 Johnson..... 350/5
 3,011,392 12/1961 Prochazka..... 350/5

Primary Examiner—Samuel S. Matthews
Assistant Examiner—Michael D. Harris
Attorney—Albert F. Kronman

[56] **References Cited**
UNITED STATES PATENTS
 3,039,356 6/1962 Knittel..... 350/5
 2,727,426 12/1955 Lopez..... 350/5
 3,255,661 6/1966 Marban..... 350/5
 1,518,204 12/1924 Husted..... 350/5

[57] **ABSTRACT**
 A hollow cylindrical fluid-tight container is freely carried upon the object end of a kaleidoscope. Vanes within the container serve to agitate the fluid when the container is rotated. Free floating colored members within the fluid form changing patterns as the container is rotated. Illumination for the container is supplied solely by artificial illumination.

6 Claims, 6 Drawing Figures

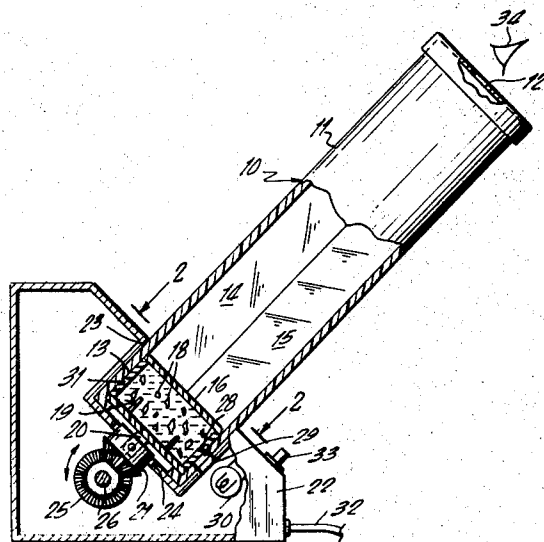


FIG. 1

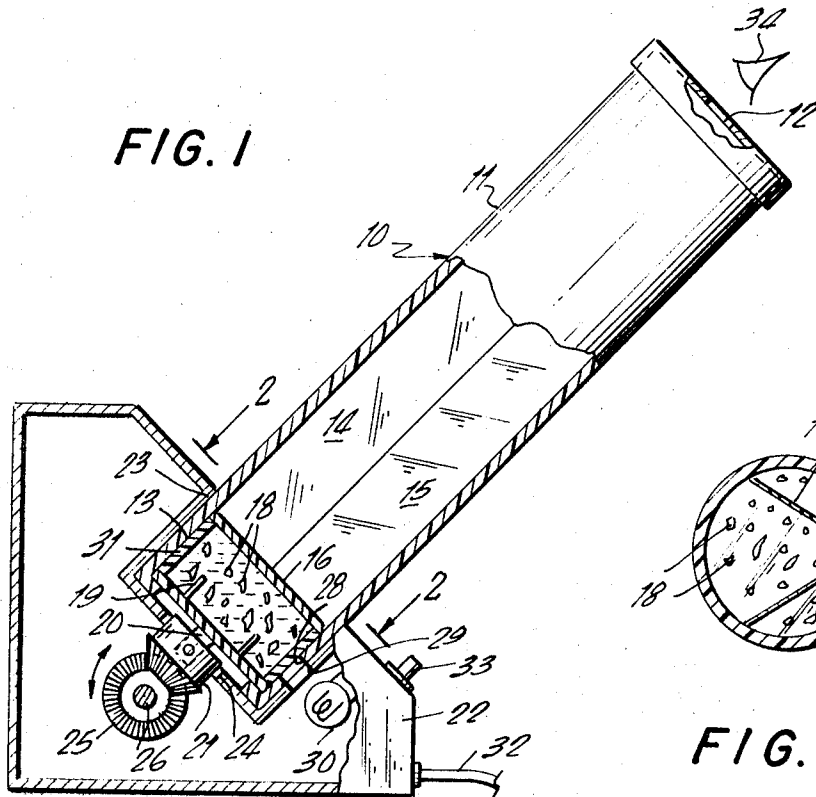


FIG. 2

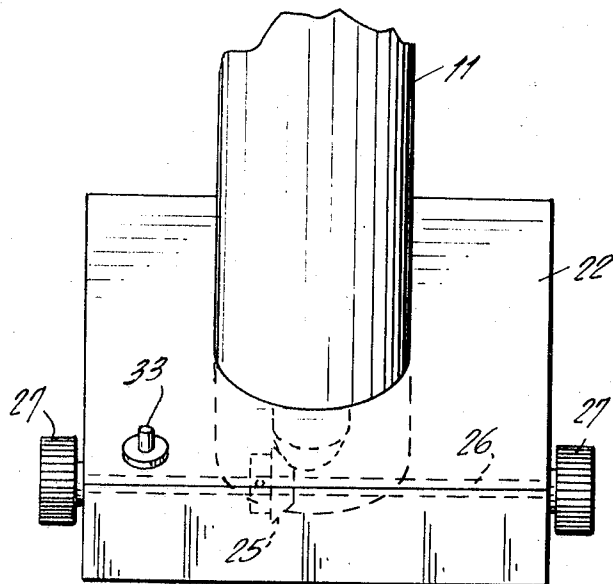
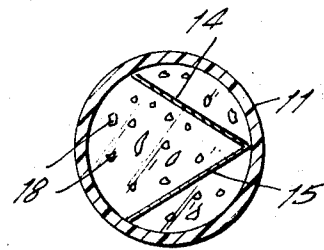


FIG. 3

FIG. 4

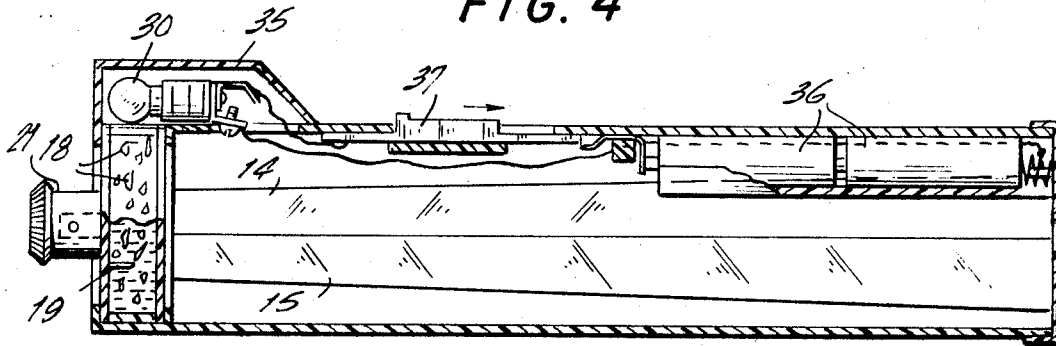


FIG. 5

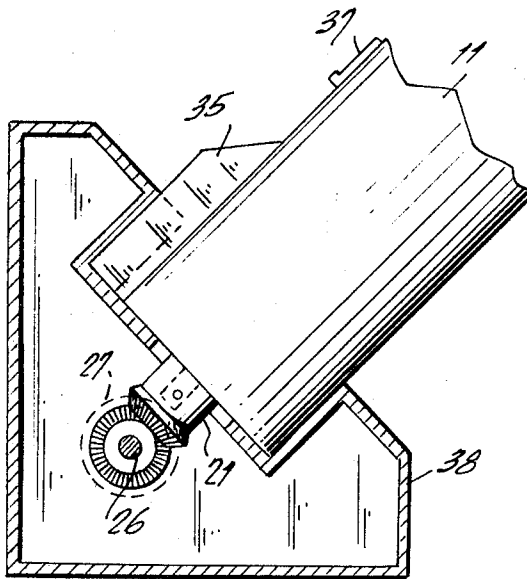
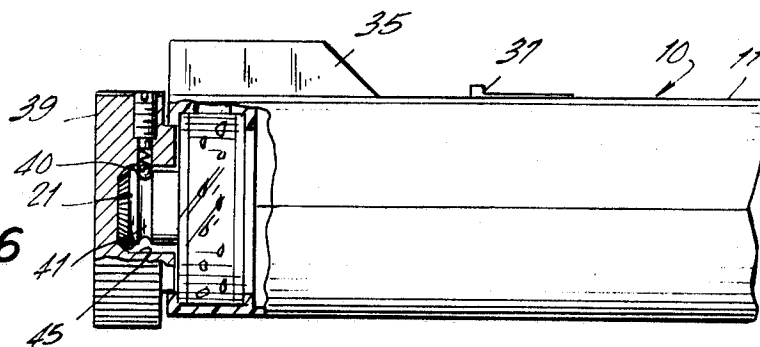


FIG. 6



KALEIDOSCOPE

BACKGROUND OF THE INVENTION

Kaleidoscopes containing a plurality of multi-colored objects loosely carried within the object end of the viewing chamber have been made for many years. A viewing chamber is usually slowly rotated or shaken to cause the multi-colored objects to assume different positions upon a translucent surface whereby varied patterns may be viewed by the kaleidoscope user. Other prior art kaleidoscopes have employed fluid filled bulbs at the object end of the kaleidoscope and added various colored buoyant and non-buoyant objects therein. These kaleidoscopes require that the entire kaleidoscope be shaken in order to agitate the colored objects for viewing purposes. As a result, the initial agitation causes the colored objects to swirl and only during the last few seconds of the agitation are interesting patterns presented.

The present invention provides a kaleidoscope having at its object end a hollow cylindrical fluid-tight container made of transparent material, within which there is carried a fluid having a plurality of freely floating colored members. The cylinder may be rotated slowly and the slight agitation thereby imparted to the fluid results in an extremely fanciful and interesting display to the kaleidoscope user.

By enclosing the hollow cylindrical container within the opaque body of the kaleidoscope, and illuminating the interior of the container, the multi-colored free floating members appear to be moving within a black area, further enhancing the nature of the display.

SUMMARY OF THE INVENTION

Kaleidoscopes made in accordance with the present invention have the customary elongated hollow viewing tubes, a sight opening at one end of the tube and an object space at the opposite end of the tube. Opposed reflectors disposed within the tubular body serve to form patterns of the objects within the object space, which the user can view in the customary manner.

The object space encloses a freely held cylindrical fluid-tight container within which there is a quantity of fluid and a plurality of freely floating colored members. Means are provided for slowly rotating the cylindrical container whereby the freely floating colored members are caused to move about within the fluid and vary the pattern viewed through the sight opening. The container is illuminated by a small lamp directed at the particles within the fluid to provide brilliantly illuminated displays.

BRIEF DESCRIPTION OF THE DRAWINGS

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description, taken in connection with the accompanying drawings, wherein similar parts have been given the same reference numeral, in which drawings:

FIG. 1 is a view in side elevation partly cut away to show the interior construction of one embodiment of a kaleidoscope made in accordance with the present invention;

FIG. 2 is a cross-sectional view taken on line 2—2 in FIG. 1;

FIG. 3 is a view in front elevation partially broken away showing the kaleidoscope of FIGS. 1 and 2;

FIG. 4 is a view in longitudinal section of a second embodiment of a kaleidoscope made in accordance with the present invention;

FIG. 5 is a view in side elevation, partly in section showing the kaleidoscope of FIG. 4 mounted upon a stand;

FIG. 6 is a view similar to FIG. 5 showing still another cylindrical container rotating means.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings, and particularly to FIGS. 1, 2, and 3; the reference numeral 10 indicates a kaleidoscope having an elongated tubular housing 11. The housing 11 is provided with an eyepiece 12 at one end thereof and an object space 13 within its opposite end. Elongated reflective members 14, 15, such as thin mirrors with their reflective surfaces facing toward each other, are carried within the housing 11 in the manner well known in the kaleidoscope art. The mirrors 14, 15, terminate short of the bottom of the housing 11 and above the object space 13 as best shown in FIG. 1.

A hollow fluid-tight container 16 is freely carried within the object space 13 of the housing 11. The container 16 is filled with a transparent fluid 17 within which there is carried a plurality of colored flake-like particles 18. The particles 18 may be made of plastic or any other suitable material which has the property of floating freely within the fluid without settling out upon the bottom of the container 16.

The hollow fluid-tight container 16 is made of a transparent plastic, glass, or the like, whereby the interior of the container may be observed through the eyepiece 12. The bottom wall of the container is preferably black and opaque to exclude stray light. Fins 19 are also incorporated into the structure of the fluid-tight container 16 and extend upwardly into the fluid 17 and partially in the path of the colored particles 18. The fins provide mild agitation within the fluid 17 as the container 16 is rotated.

Rotation of the fluid-tight container 16 is imparted by means of a small stub shaft 20 secured to the bottom of the fluid-tight container and a bevel gear 21 which is pinned to the said shaft 20. As shown in FIG. 1, a base 22 having a well 23 therein is provided to receive the tubular housing 11. An opening 24 in the bottom of the well 23 permits the bevel gear 21 to extend therethrough and mesh with a drive bevel gear 25. The drive bevel gear 25 is carried upon a shaft 26 which extends transversely through the base 22 and to the ends of which there are connected control knobs 27 (see FIG. 3).

As shown in FIG. 1, the housing 11 and the well 23 are each provided with a small window 28, 29, through which light coming from a bulb 30 may enter the transparent cylindrical wall 31 of the fluid-tight container 16. The interior of the fluid-tight container 16 is thus illuminated even though the container is enclosed by the opaque housing 11. It will be understood, that the bulb 30 is energized by any convenient power source, such as the electrical line 32 controlled by the switch 33 on the base 22.

The operation of the kaleidoscope shown in FIGS. 1, 2, and 3, will become apparent from the foregoing as follows:

When the switch 33 is pressed, energizing the bulb 30, light from the bulb will illuminate the interior of the

3

fluid-tight container 16 so that the multi-colored particles 18 may be observed through the eyepiece 12. The control knobs are then rotated slowly in accordance with the desires of the viewer to gently agitate the fluid 17 within the container 16 and cause the particles 18 to change their position within the fluid 17. As the particles 18 move around, varied and beautiful patterns will be presented to the eye 34 of the viewer in accordance with wellknown kaleidoscope principles, against a black background.

Referring to FIG. 4, there is shown a second embodiment of the present invention in which the bulb 30 is carried within a small chamber 35 attached to the housing 11. In this embodiment, power is supplied to the bulb 30 by means of dry cells 36 under the control of a switch 37. Since the embodiment of FIG. 4 is relatively portable, it may be used in conjunction with the base 38 or a control knob 39 shown in FIG. 6.

The base 38 is similar to the base 22 shown in FIGS. 1 and 2, in that rotary motion is imparted to the shaft 26 by means of the control knobs 27.

The actuating knob 39 shown in FIG. 6, is provided with a spring loaded ball bearing 40, which serves to engage the bevel gear 21, within a groove 41 provided for said engagement. The actuating knob 39 is also provided with a recess 42 to receive the bevel gear 21 as shown in FIG. 6. The bottom of the recess 42 is beveled to provide engagement with the bevel gear 21 so that rotation of the actuating knob 39 will cause the fluid-tight container 16 to turn within the object space 13.

The operation of the embodiment shown in FIGS. 4, 5, and 6, is the same as that hereinabove described in connection with FIGS. 1, 2, and 3.

From the foregoing it will be seen that there have been provided kaleidoscope structures in which novel displays can be produced of a beauty and variety heretofore not known in the art. The kaleidoscopes may either be used in a stationary manner carried upon a base or lifted to the eye level of the user as desired. External light sources are not necessary for the enjoyment of the displays and a wide degree of control over the rapidity of change of display is afforded the user.

Having thus fully described the invention, what is claimed as new and desired to be secured by Letters Patents of the United States, is:

4

1. A kaleidoscope comprising an elongated hollow tubular housing, an eyepiece at one end of the housing, an object space at the opposite end of the housing, a hollow cylindrical fluid-tight container having opposed end walls and a cylindrical side wall freely carried within the object space, at least one fin member secured to the inner surface of the said container and extending inwardly thereof, a quantity of fluid within the fluid-tight container, a plurality of colored members freely carried within the said container said fin member extending partially into the path of the said colored members, elongated reflective members carried within the housing between the eyepiece and the fluid-tight container, means to illuminate the interior of the fluid-tight container through the side wall of the container, and means to rotate the said container to activate the colored particles within the container to produce kaleidoscopic displays.

2. A device according to claim 1 in which the housing is carried upon a base, the wall of the housing adjacent the said container is provided with a window, the base adjacent the housing window is provided with an aperture in register with the window and a light means is carried by the base adjacent the said aperture to illuminate the interior of the fluid filled container.

3. A device according to claim 2 in which the bottom of the fluid-tight container is provided with a stub shaft, a bevel gear is secured to the stub shaft, the base freely supports a transverse shaft and a second bevel gear, in mesh with the container bevel gear, is carried by the transverse shaft, whereby rotation of the transverse shaft will rotate the container.

4. A device according to claim 3 in which the ends of the transverse shaft are provided with control knobs to rotate the said shaft.

5. A device according to claim 1 in which the fluid-tight container is in the shape of a flat cylindrical tank and is transparent.

6. A device according to claim 1 in which the means to rotate the container includes a stub shaft secured to and extending outwardly from the container, a bevel gear secured to the stub shaft, and an actuating knob engagable with the bevel gear to drive the said bevel gear.

* * * * *

45

50

55

60

65