O. R. ANGELL.

CENTRIFUGAL TOP.

APPLICATION FILED JUNE 11, 1919.

1,377,544.

Patented May 10, 1921.

Fig. 1.

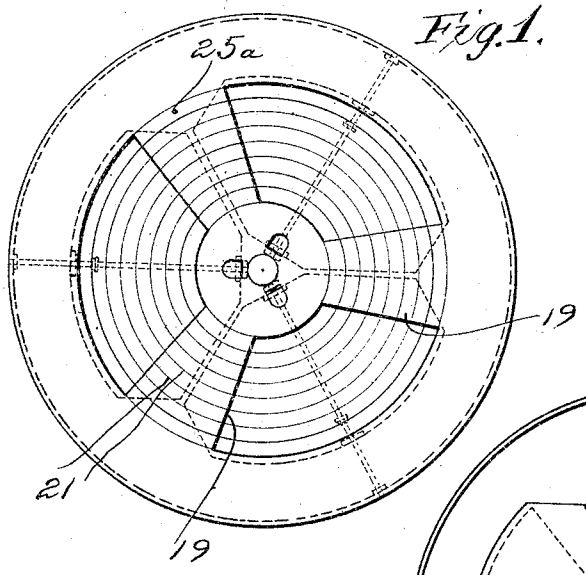


Fig. 6.

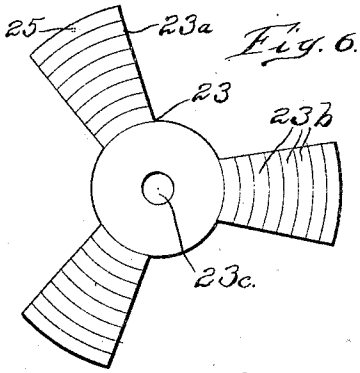


Fig. 2.

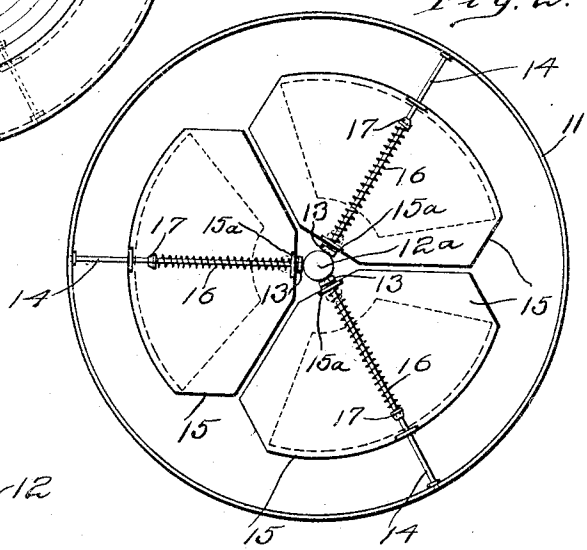


Fig. 3.

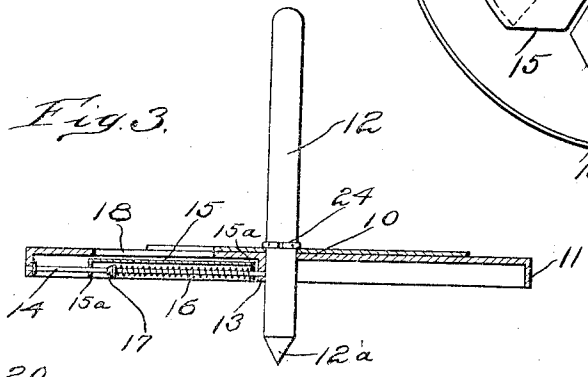


Fig. 4.

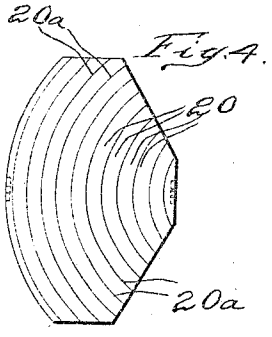
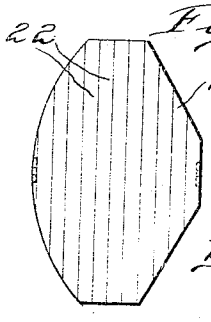


Fig. 5.



Inventor:
Otis R. Angell.
by Clyde L. Rogers
his atty.

UNITED STATES PATENT OFFICE.

OTIS R. ANGELL, OF BOSTON, MASSACHUSETTS.

CENTRIFUGAL TOP.

1,377,544. Specification of Letters Patent. Patented May 10, 1921.

Application filed June 11, 1919. Serial No. 303,310.

To all whom it may concern:

Be it known that I, OTIS R. ANGELL, a citizen of the United States, and resident of Jamaica Plain, Boston, county of Suffolk, Commonwealth of Massachusetts, have invented an Improvement in Centrifugal Tops, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts in each of the several views.

This invention relates to tops and particularly to a top equipped with centrifugally controlled elements. A principal object of the invention is to provide centrifugally controlled elements with a color scheme and application selective in character and automatically variable by the action of the centrifugal elements to present constantly changing and varying color effects to the observer, according as the speed of the top varies. The foregoing and other objects and advantages of the invention will more fully appear from the following detailed description, and the distinctive features of novelty will be pointed out in the appended claims.

Referring to the drawings:

Figure 1 is a plan view of a centrifugal top embodying the invention;

Fig. 2 is a bottom plan view thereof;

Fig. 3 is a central vertical section;

Fig. 4 is a plan view of one of the centrifugally acting segments equipped with a preferred form of my novel color scheme;

Fig. 5 is a plan view showing another form of color scheme on a centrifugally acting element; and

Fig. 6 is a plan view of a detachable element adapted to be used with the device.

10 indicates a disk platen preferably produced of plate or sheet metal with a down-turned peripheral flange 11. This disk has fixed centrally therethrough a pivot pin 12 on which the top turns, this pin having a pointed lower extremity 12^a as usual. The disk 10 is formed at its central hole through which the pin 12 passes with a plurality of down-turned lugs or projections 13, three of these lugs being produced in the present embodiment embracing and fitting the pivot pin and aiding to hold the disk in fixed relation thereto. Extending from each of the lugs 13 radially outward to the peripheral flange 11 is a rod 14, there being thus as shown three of these radial rods equally spaced around the circumference of the disk. Slidably guided on each of the rods 14 is a segmental plate 15 with down-turned ends 15^a through which the rod passes. Each segmental plate 15 is engaged by a compression coil spring 16 fitted on the rod 14 and re-acting against a button or collar 17 fixed on the rod so as to normally hold the plate 15 at an inner limit of sliding movement or with its inner edge substantially engaged with a central lug 13. The disk 10 is equipped with segmental apertures 18 over a major portion of each of the segmental plates 15 so that the major portion of each plate is exposed to view from above while the extremities of the respectively segmental plates are covered for some little distance by the intermediate segmental web portions 19 of the disk 10. The location and dimension of the slots 18 is also such that when the plates 15 are in normal inward position as shown, the plates 15 are exposed substantially to the outer edges thereof while some little extent of the inner portions of said plates is covered. In accordance with my invention the top surfaces of each of the segmental plates 15 is equipped with a series of arcuate color ring segments or bands 20 produced in varied and selected colors and the surface of the intermediate segmental webs 19 of the disk are also equipped with a series of arcuate color ring segments or bands 21 varied and selected as to color. The color selection for the several rings on both the radially movable segment plates 15 and the intermediate web segments 19 is such as to produce certain predetermined blendings of colors to produce certain definite color effects as the top is rotated and the segmental plates 15 hence moved out by centrifugal force. By reference to Fig. 3 it will be noted that a substantial range of outward movement is permitted the plates 15 on the rods 14 from their normal inner position as shown. Thus as the top is started at a relatively high speed the plate segments 15 will be moved outward to a maximum degree bringing the series of color rings on the web segments 19 into register with a certain series of color rings on the radially movable plates 15 the relation of colors on these series of segments and of the segment webs being selected for certain

predetermined color effects resulting from the blending of the colors on the webs and the plates from the rotation of the top. Then as the speed of the top gradually diminishes the plates 15 will move progressively inward bringing the respective ones of the color rings thereon into register with rings on the webs 19 representing other colors, so that there will be a gradual melting and changing of the color rings as noted by the observer, the speed of the top of course being always sufficient as long as it is running at all to blend the colors of the web segments 19 and the plates 15 to give the effect of a continuous ring of solid color to the observer. To make this color blending and variegated color ring effect more perfect I preferably form the outer portions of the arcuate color rings 20 on a larger curve than the major intermediate portions thereof as indicated at 20^a, the reason for this being that these outer portions are normally concealed under the web members 19 when the plates 15 are inward, but as the plates are pressed outward by centrifugal force, each color ring 20 of the plates 15 comes into register with ring segments of the web 19 of considerably larger circumference, *i.* e., farther outward toward the periphery and hence this distorting or flattening out effect indicated at 20^a will bring the color rings of the movable plate segments more nearly into correct register with the web portions 19 at all times.

In Fig. 5 I show a form of the radially movable segment plates designated 15′ wherein the color bands 22 corresponding to the color rings or bands 20 are formed as straight parallel bands which coöperate with the color bands or rings of the web portions 19 to produce variable predetermined color blendings, though in this case the demarkation of color effects produced is not as sharp and clear as in the first described form. It is also practicable and within the scope of the invention to produce the springs 16 of variable compression effect, or otherwise to vary the tendency of the several plate segments 15 to move outward by centrifugal force and so that said segment plates will occupy slightly different radial positions. This produces a particularly pleasing blending of colors and causes the top to appear to move with a slightly eccentric motion giving a color effect similar to that of a revolving pin-wheel as the powder is burning therein,—this effect being produced at intervals which alternate with other intervals when on a definite alinement of the segments the true circles of the various colors will again appear. Since the color effects in the series of ring bands and the automatic variation thereof during the spinning of the top is due to the blending of the colors on the web portions 19 of the platen disk 10 with those of the radially movable plates 15, it is possible to vary at will the combinations of colors produced by such blending by changing one of said members. This may be done most conveniently by superposing another plate showing different combinations of color rings over the web portions 19, thus concealing the color rings on the web portions 19 and presenting others in place thereof. For this purpose I show a color plate 23 equipped with three radial segmental arms 23^a bearing color rings 23^b of any desired combination adapted for blending with the color rings of the segments 15 and different from the color rings on the web portions. This plate 23 has a central hole 23^c so that it may be slipped over the pivot pin 12 and a retaining spring ring 24 detachably engaged with a groove of the pin 12 just above said plate serves to hold the same in place superposed on the webs 19. For holding this plate against angular displacement it may be provided with a depending lug or pin 25 engageable with a recess 25^a in the platen 10. I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

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

1. A centrifugal top comprising a rotatably mounted platen having openings therein alternating with web portions, radial rods borne by said platen underneath the top thereof, members mounted on said rods for movement by centrifugal force and equipped in conjunction with said platen to produce variable and changing color effects according to the speed of rotation of the top, and springs anchored to said platen and tending to draw said members radially inward against the action of centrifugal force.

2. A centrifugal top comprising a rotatably mounted platen having a depending peripheral flange, guide rods borne by said platen, and extending radially inward from said flange, and members responsive to centrifugal force slidingly mounted on said rods equipped with springs tending to draw them inward, said members and said platen having coöperative equipment for varying sensory effect changeable according to the speed of the top.

3. A centrifugal top comprising a rotatably mounted platen having openings therein alternating with web portions and having also a depending peripheral flange, radial guide members borne by said flange,

and radially movable plates slidingly mounted on said guide members underneath said platen equipped with springs tending to draw them inward, said plates located beneath said openings, and said plates and platen web portions having cooperative series of differently colored bands adapted for blending, to produce predetermined color effects changeable according to the speed of the top.

In testimony whereof, I have signed my name to this specification.

OTIS R. ANGELL.