S. JENKINS.

KALEIDOSCOPE.

APPLICATION FILED MAY 21, 1909.

951,126.

Patented Mar. 8, 1910.

3 SHEETS—SHEET 1.

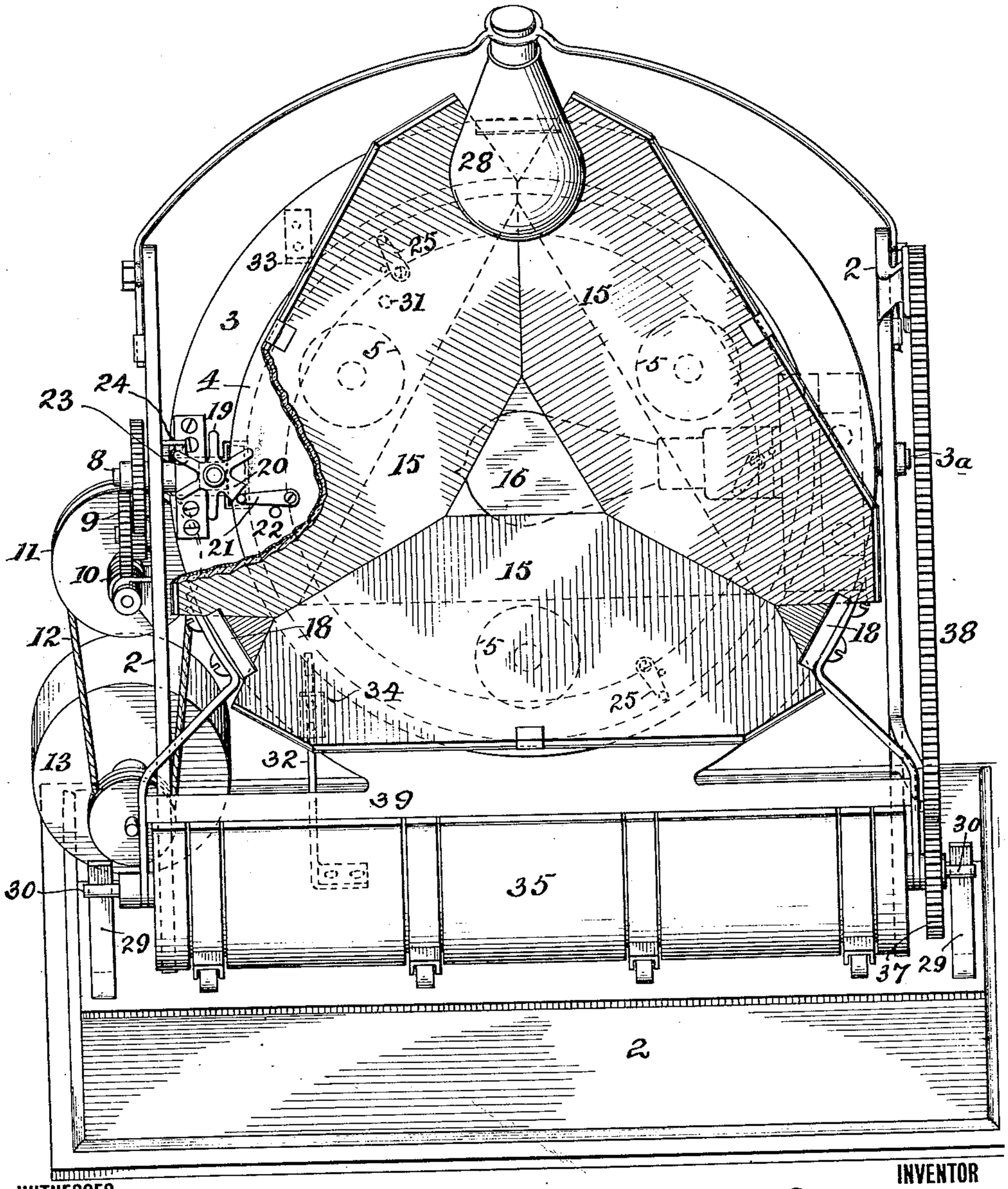

FIG. 1

WITNESSES

Daniel Webster, Jr.

R. M. Kelly.

INVENTOR

Sylvester Jenkins

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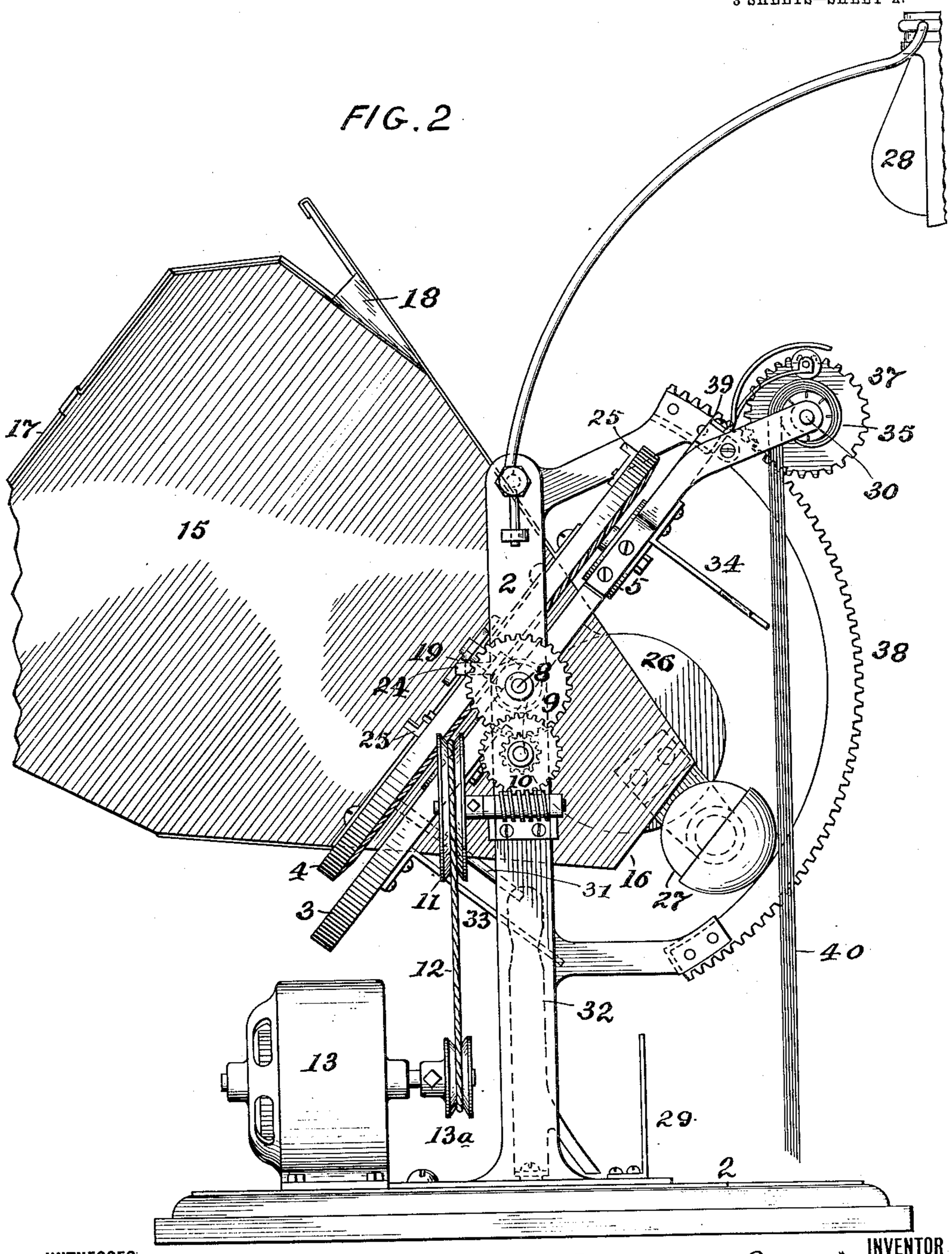
3 SHEETS—SHEET 2.

FIG. 2



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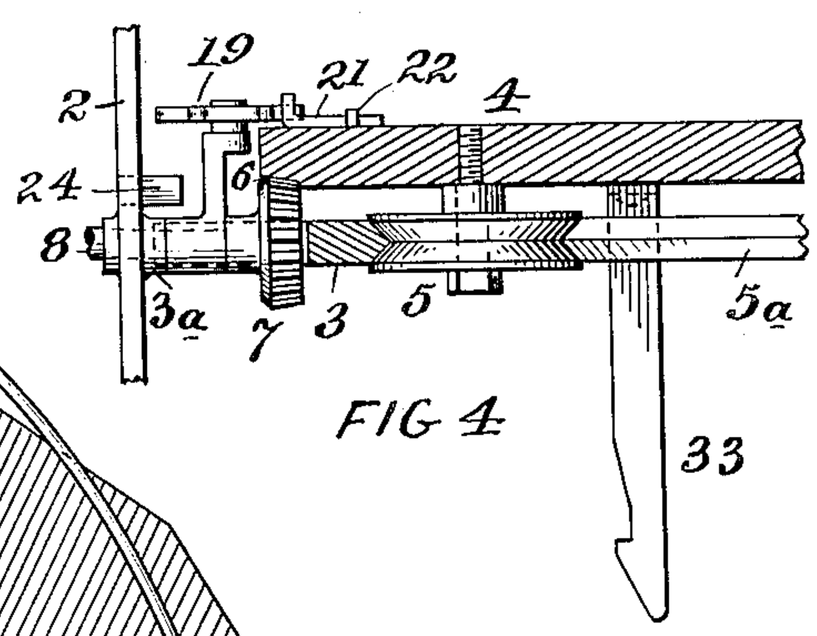

FIG 4

FIG. 3

WITNESSES

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UNITED STATES PATENT OFFICE.

SYLVESTER JENKINS, OF LANSDALE, PENNSYLVANIA.

KALEIDOSCOPE.

951,126. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed May 21, 1909. Serial No. 497,496.

To all whom it may concern:

Be it known that I, SYLVESTER JENKINS, a citizen of the United States, and resident of the city of Lansdale, county of Montgomery, and State of Pennsylvania, have invented an Improvement in Kaleidoscopes, of which the following is a specification.

My invention has reference to kaleidoscopes and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

The object of my invention is to provide a form of kaleidoscope which will give very large and variegated reflecting effects and which may be especially adapted for use for window displays of stores by permitting a large number of persons at one time to look into the kaleidoscope and also for attracting attention and interest in connection with advertising matter.

In the use of my improved kaleidoscope I prefer to pivot it in such manner that its reflecting surfaces are intermittently brought into reflecting position, so as to face toward the observer and rotate upon its axis, and at the other times to be moved out of reflecting position, when combined with means for introducing into view advertising charts or aprons to catch the eye of the observer during the period in which he is waiting the return of the reflecting effects from the kaleidoscope proper.

My invention consists primarily in a kaleidoscope formed of reflecting surfaces so grouped as to flare toward the observer and between which reflecting surfaces the materials upon which the reflection is dependent are supported and held while being required to assume different positions during the rotation of the kaleidoscope.

It further consists in the above construction when combined with means for projecting light rays into the front or open end of the kaliedoscope.

It further consists in the first mentioned devices combined with means for projecting light rays through the smaller or rear end of the kaleidoscope.

It further consists in the above described kaleidoscope when combined with means for automatically rotating it in an inclined position; also the last mentioned construction when further combined with means for oscillating the kaleidoscope about a transverse axis.

My invention also consists of a kaleidoscope pivoted on a transverse axis, combined with means to rotate and rock the kaleidoscope, and a screen brought into and out of view during the oscillation of the kaleidoscope.

My invention also comprehends details of construction which, together with the features above specified, will be better understood by reference to the drawings in which:

Figure 1 is a front elevation looking obliquely down into the kaleidoscope embodying my invention; Fig. 2 is a side elevation of the same in tilted position and with the advertising charts in an extended condition; Fig. 3 is a side elevation of the kaleidoscope in its normal position looking from the opposite side from which Fig. 2 is viewed; and Fig. 4 is a sectional view of a portion of the same.

2 is the main frame and may be formed in any suitable manner and of any suitable shape.

3 is a pivoted frame journaled at 3^a to the main frame and is adapted to be oscillated automatically, the two extreme positions of such oscillation being shown in Figs. 2 and 3. This frame 3 is preferably made in annular form and provided with an inwardly directed circular guideway 5^a, with which guide-wheels 5 engage, said wheels being journaled to the rotary frame or turn-table 4 supported by and oscillating with the said frame 3. The manner of connecting these frames is more fully indicated in Fig. 4. A shaft 8 extends through one of the pournals 3^a of the pivoted frame 3 and has upon its end a bevel gear 7 which engages gear teeth 6 on the under side of the rotary frame or turn-table 4. The shaft 8 is driven by spur gearing 9 and worm and worm wheel gearing 10, which latter is, in turn, driven by a band wheel 11, band 12 and a motor 13 having a grooved driving wheel 13^a. The motor 13 is shown as an electric motor, but may be of any construction desired. It is also immaterial to my invention in what manner the rotary frame or turn-table 4 is driven, and hence I do not restrict myself to the mechanism shown.

A kaleidoscope of peculiar construction is secured to and rotates with the turn-table 4. As shown, this kaleidoscope consists of three substantially triangular and flat reflectors 15, having their oblique faces brought into alinement to form a frustum having a tri-

angular cross section. The smaller ends of these reflectors are, in effect, cut off so as to leave a smaller triangular opening which may be faced with a plain or frosted glass window 16, so as to close the bottom of the kaleidoscope.

The kaleidoscope flares outwardly or in the direction of the observer and is preferably open, as indicated at 17. Near the outer end and at the juncture of the several reflecting surfaces 15 are arranged triangular corner pieces 18 having inturned edges, the object of which is to prevent the materials, which are to produce the color effects, from sliding out of the kaleidoscope when the juncture of two of the reflecting surfaces is passing the lowermost path in the revolution of the kaleidoscope and turn-table, as indicated in dotted lines in Fig. 3. The materials employed in the kaleidoscope may be of any kind whatever, it being totally immaterial to the invention. The design or color effects desired may be produced by proper selection of materials to be used, but there is no restriction with regard to such use.

In the construction of the kaleidoscope, I prefer to form it of a metal backing with glass reflectors, but the particular construction is immaterial so long as the special form of outwardly flaring reflecting surfaces is employed.

The normal position of the turn-table and kaleidoscope is that indicated in Fig. 3, as in this position the rotation of the kaleidoscope will not discharge the materials, which it contains, out of the open end; and moreover, it permits the kaleidoscope to be arranged at a reasonably low position, such as in bulk window and allows a large number of persons to simultaneously look into the open end and view the color effects. The weight of the kaleidoscope may be counter-balanced by a counter-balance weight 26, which is rigidly secured to the pivoted frame 3. When the apparatus is in the position shown in Fig. 3 the extensions of the shaft 30, carried in the frame 39 forming part of the pivoted frame 3, rest against the upwardly extending spring stops 29 and thereby limit the oscillation of the frame 3 in assuming the normal position.

An electric light 28, having a suitable reflector, may be arranged immediately above and in front of the open end of the kaleidoscope when in its normal position, and said light may be supported from the main frame in any convenient manner. Similarly, an electric light 27 may be supported at the rear of the glass window 16 and may be secured to the kaleidoscope so as to oscillate with it and the pivoted frame 3. Ordinarily, when the light 28 is employed, the light 27 may be shut off, and vice versa. When the light 28 is relied upon, the materials employed in the kaleidoscope would be more of an opaque structure. When the light 27 is employed, the materials within the kaleidoscope should be more of a transparent structure. It is evident, however, that by proper combination of materials, both lights could be used at one time to considerable advantage. I would also state that while the light 27 is indicated as moving with the kaleidoscope, this is not at all necessary as it may be supported in any other suitable manner, without departing from the spirit of the invention.

When the frame 3 is oscillated to the position indicated in Fig. 3, a downwardly projecting notched arm 34 snaps into engagement with the locking spring 32, which prevents the frame 3 changing its position until the proper time arrives. The turn-table 4 is provided with a downwardly extending rod 31 which is caused to travel with the rotating turn-table, and which, during its travel strikes the upper end of the spring 32 and moves it out of engagement with the notched arm 34 at the proper moment to release frame 3 and permit of its oscillation into the position indicated in Fig. 2. On the opposite side of the pivot of the frame 3, is a second notched arm 33, similar in all material respects to the arm 34 except that it is somewhat longer. The shapes of these arms, 33, and 34, are best shown in Fig. 4, where one of the arms, namely 33, is illustrated in side elevation. When the frame 3 is oscillated in the opposite direction, namely that shown in Fig. 2, it will be seen that the arm 33 engages the spring locking device 32 to hold the frame 3 against tilting backward until the proper time. As indicated in Fig. 2, the rod 31 on the turn-table 4 is shown in the act of striking the spring 32 to release the arm 33.

The mechanism for insuring the oscillation of the frame 3 is as follows. Journaled upon the pivoted frame 3 is a star wheel 19 having a long arm 23 and a short stubby arm 20, best shown in Fig. 1. A lug 24 extends laterally from the main frame 2 and is adapted to be struck by the long arm 23 of the star wheel 19 to turn it slightly when the frame 3 is being oscillated. The turn-table 4 is provided with a number of arms 25 which are adapted to strike all of the arms of the star wheel except the short one 20, and hence, during the rotation of the turn-table, said arms 25 will each rotate the star wheel one tooth, until the position of the star wheel shown in Fig. 1 is arrived at. In addition to the pivoted arms 25 there is an additional pivoted arm 21, which when turned outward rests against a stop 22 and this arm 21 is longer than the arms 25, so that it presses upon the short stubby arm 20 of the star wheel as shown. When this condition takes place the turn-table 4

cannot rotate upon the frame 3 and consequently the driving mechanism in trying to rotate the turn-table, causes it, through the arm 21 and the star wheel 19 to press upon the frame 3 and oscillate it, changing it from the position indicated in Fig. 3 into the position indicated in Fig. 2, namely, one in which the kaleidoscope is thrown upward and backward, so that its open end 17 is directed away from the observers. When this oscillation is taking place, the long arm 23 of the star wheel 19 (which is diametrically opposite the short arm 20) strikes the stop or obstruction 24 on the main frame 2 and moves the star wheel upon its axis so as to make the short arm 20 slide under the arm 21 on the turn-table. When this is done the turn-table 4 instantly starts to rotate and the pivoted frame 3 will be locked in the position shown in Fig. 2, by the arm 33 and the spring 32. The rotation of the turn-table 4 causes the arm 21 to strike upon the side of the short arm 20 of the star wheel and turn it one tooth, after which the other arms 25 strike each of the other teeth in succession and cause the star wheel to rotate with a step by step movement.

I have shown three of the arms 25 in addition to the arm 21, but it is evident that the arm 21 may be alone employed, or employed with one or more of the arms 25 as desired. The number of the arms 21 and 25 which are put into operative position or employed will vary the speed of revolutions of the star wheel and hence, the more of these arms which are employed the more frequent will be the oscillation of the frame 3. These arms 21 and 25 are shown as pivoted, so that they may be turned into or out of operative position as desired. It will also be understood that if all of the arms 21 and 25 are turned out of operative position when the parts are in the position shown in Fig. 3, then the kaleidoscope will continue to rotate without any oscillation whatever. Furthermore, it will be understood that when the machine is in the condition of adjustment shown in Fig. 2 it will be able to oscillate back into its normal position (Fig. 3) by gravity, the moment the rod 31 releases the arm 33 from the locking spring 32. It will thus be seen that the star wheel mechanism is employed to throw the kaleidoscope into its position out of view of the observers, and the return is due to gravity. It will also be understood that while I have shown that form of mechanism for insuring the oscillation which I have found suitable for the purpose in commercial practice, the same results may be accomplished by various forms of mechanism which will occur to one skilled in mechanical arts, and hence I do not restrict myself to the automatic mechanism shown.

38 is a curved rack which is concentric with the axis of oscillation of the frame 3 and is secured to the main frame 2. The shaft 30 is journaled on the frame 39 carried by the oscillating frame 3 and this shaft may have a gear 37 which may be brought into engagement with the rack 38 so that when the frame 3 is oscillated into the position shown in Fig. 2, the gear 37 will be rotated by the rack. The shaft 30 may be provided with a drum 35 upon which are secured one or more screens, aprons or curtains 40, upon which advertising matter may be placed. When the shaft 30 and its drum 35 are rotated by the oscillation of frame 3, they unwind the aprons 40 into the position shown in Fig. 2. It will thus be seen that when the kaleidoscope is turned back and out of view of the audience the advertising apron is thrown into view so that the attention of the audience is engaged until the kaleidoscope is brought back into view. When the oscillation of the frame 3 lowers the shaft 30 and drum 35, it will, at the same time, wind up the aprons so that they are practically out of view when the kaleidoscope again assumes the normal position shown in Fig. 3.

The apron displaying mechanism may be of any suitable form of construction, and that which is shown is only given as an illustration of means which may be employed and not as a restriction to the exhibiting means which may be designed for advertising purposes. Any means may be employed which brings an apron or other device into or out of view.

While I have described my improvements in the form in which I have found them effective for commercial use, I do not limit myself to the details thereof as they may be modified in various ways without departing from the spirit of the invention.

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

1. In a device of the character described, the combination of a main frame, an oscillating frame hinged thereto, a turn-table journaled upon the oscillating frame, power devices for rotating the turn-table, mechanical devices for oscillating the oscillating frame and the turn-table carried thereby, and a kaleidoscope secured to the turn-table and rotating therewith.

2. In a device of the character described, the combination of the main frame, an oscillating frame hinged thereto a turn-table journaled upon the oscillating frame, power devices for rotating the turn-table, mechanical devices for oscillating the oscillating frame and a turn-table carried thereby, and a kaleidoscope secured to the turn-table and rotating therewith the said kaleidoscope comprising reflecting plates of substantially triangular form connected together to form

a flaring reflecting chamber with the larger end of the kaleidoscope unobstructed to view and directed toward the observer.

3. In a device of the character described, the combination of the main frame, an oscillating frame hinged thereto a turn-table journaled upon the oscillating frame, power devices for rotating the turn-table, mechanical devices for oscillating the oscillating frame and the turn-table carried thereby, a kaleidoscope secured to the turn-table and rotating therewith and timing devices for controlling the time of oscillation of the pivoted frame and the kaleidoscope carried thereby.

4. In a device of the character described, the combination of the main frame, an oscillating frame hinged thereto a turn-table journaled upon the oscillating frame, power devices for rotating the turn-table, mechanical devices for oscillating the oscillating frame and the turn-table carried thereby, a kaleidoscope secured to the turn-table and rotating therewith and timing devices for controlling the time of oscillation of the pivoted frame and the kaleidoscope carried thereby consisting of a movable part on the oscillating frame, adjustable parts on the turn-table adapted to intermittently move the movable part, a device on the turn-table to engage and lock the movable part so as to hold the turn-table against rotation on the oscillating frame, and means to move the movable part to release the device on the turn-table when the oscillation has been caused to take place.

5. In a device of the character described, the combination of the main frame, an oscillating frame hinged thereto a turn-table journaled upon the oscillating frame, power devices for rotating the turn-table, mechanical devices for oscillating the oscillating frame and the turn-table carried thereby, a kaleidoscope secured to the turn-table and rotating therewith and illuminating means arranged in front of the open end of the kaleidoscope for projecting light rays into the same when in normal position.

6. In a device of the character described, the combination of a main frame, an oscillating frame hinged thereto, a turn-table journaled upon the oscillating frame, power devices for rotating the turn-table, mechanical devices for oscillating the oscillating frame and the turn-table carried thereby, a kaleidoscope secured to the turn-table and rotating therewith and having its rear end closed by a window, and an illuminating device to the rear of the window of the kaleidoscope for projecting light rays through the same.

7. In a device of the character described, the combination of a main frame, an oscillating frame hinged thereto, a turn-table journaled upon the oscillating frame, power devices for rotating the turn-table, mechanical devices for oscillating the oscillating frame and the turn-table carried thereby, a kaleidoscope secured to the turn-table and rotating therewith, and an apron carried by the oscillating frame and adapted to be raised into view when the oscillating frame tilts so as to throw the kaleidoscope out of normal position.

8. In a device of the character described, the combination of the main frame, an oscillating frame hinged thereto a turn-table journaled upon the oscillating frame, power devices for rotating the turn-table, mechanical devices for oscillating the oscillating frame and the turn-table carried thereby, a kaleidoscope secured to the turn-table and rotating therewith, and an apron carried by the oscillating frame and adapted to be raised into view when the oscillating frame tilts so as to throw the kaleidoscope out of normal position, a rotating drum for winding the apron into a roll, and means for rotating the drum during the oscillations of the pivoted frame.

9. In a machine of the character described, a main frame or support, a turn-table supported by the main frame, a kaleidoscope carried by the turn-table, and power devices for rotating the turn-table and the kaleidoscope.

10. In a machine of the character described, a main frame or support, a turn-table supported by the main frame, a kaleidoscope carried by the turn-table, means for projecting light rays into the front of the kaleidoscope, and power devices for rotating the turn-table and the kaleidoscope.

11. In a machine of the character described, a main frame or support, a turn-table supported by the main frame, a kaleidoscope carried by the turn-table consisting of a plurality of substantially triangular reflecting surfaces connected to form angular reflecting surfaces and also constituting a flaring chamber unobstructed to view from its larger end, and power devices for rotating the turn-table and the kaleidoscope.

12. In a machine of the character described, the combination of a main frame, an oscillating frame pivoted thereto, a kaleidoscope supported by the oscillating frame and oscillated thereby, and power devices for intermittently oscillating the said kaleidoscope and its supporting oscillating frame.

13. In a machine of the character described, the combination of a main frame, an oscillating frame pivoted thereto, a kaleidoscope supported by the oscillating frame and oscillated thereby, power devices for intermittently oscillating the said kaleidoscope and its supporting oscillating frame, and an apron arranged to be elevated or lowered by the oscillating frame during its oscillations whereby the apron is raised when the kalei-

doscope is tilted in one direction and lowered when the kaleidoscope is tilted in the other direction.

14. A kaleidoscope formed of a plurality of substantially triangular-shaped reflecting plates arranged edge to edge to form a flaring chamber provided with angular surfaces arranged to support the materials which produce the reflected designs and said kaleidoscope having its larger end unobstructed to view.

15. A kaleidoscope formed of a plurality of substantially triangular-shaped reflecting plates arranged edge to edge to form a flaring chamber provided with angular surfaces arranged to support the materials which produce the reflected designs and said kaleidoscope having its larger end unobstructed to view and having its smaller end provided with a transverse window through which light rays may pass, and which also acts to prevent the materials aforesaid from escaping.

In testimony of which invention, I hereunto set my hand.

SYL. JENKINS.

Witnesses:
R. M. HUNTER,
R. M. KELLY.