Nov. 4, 1947. N. ZIMMERMAN 2,430,318

KALEIDOSCOPIC TOY

Filed Dec. 8, 1945

Fig. 1.

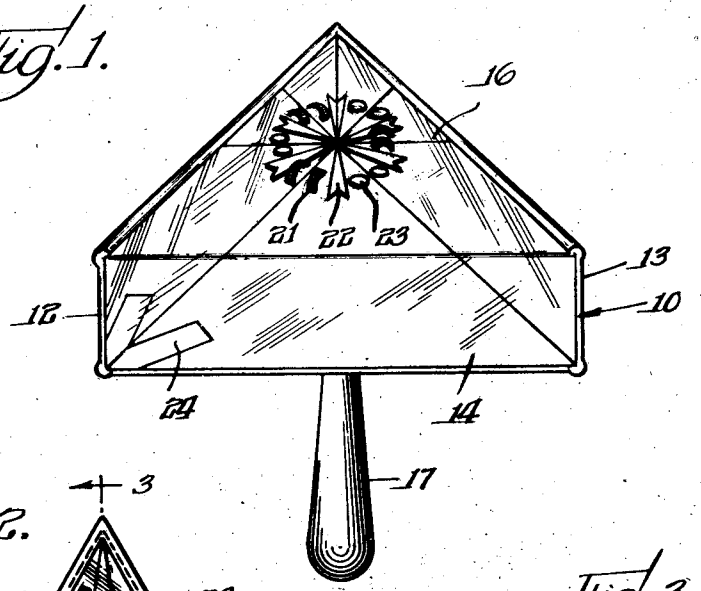


Fig. 2.

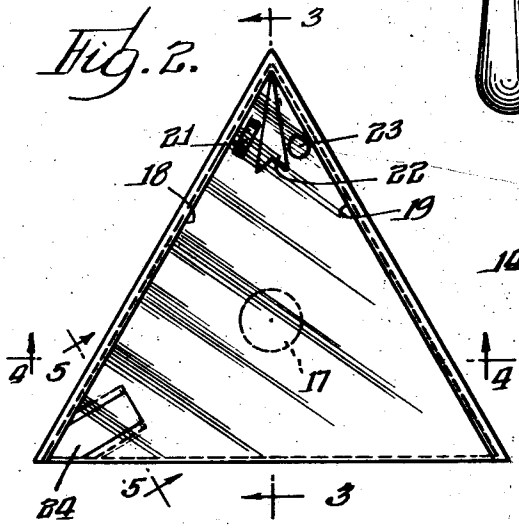


Fig. 3.

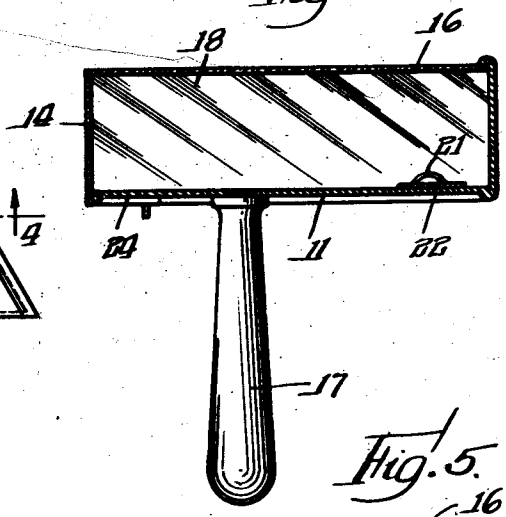


Fig. 4.

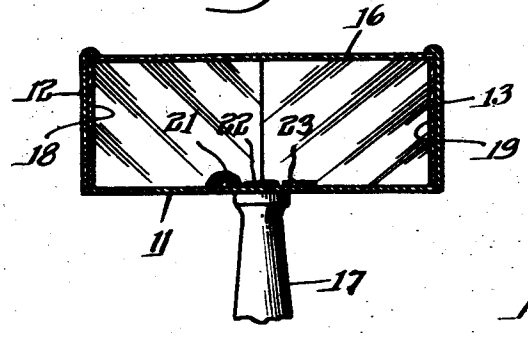
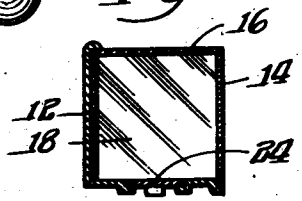


Fig. 5.



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KALEIDOSCOPIC TOY

Naoma Zimmerman, Chicago, Ill.

Application December 8, 1945, Serial No. 633,590

3 Claims. (Cl. 88—15)

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My invention relates in general to a child's toy and, more in particular, to a closed box structure functioning as a kaleidoscope, and also having the characteristics of a child's rattle.

The principal object of my invention is the provision of a novel child's toy.

Another object is the provision of a kaleidoscope of simple, but effective, design suitable for handling by small children.

Still another object is the provision of a kaleidoscope in the form of an enclosed box with at least two contiguous reflecting side surfaces, means for supporting said box in a position to view such surfaces, and at least one brightly colored object within the box.

A preferred form of the invention is shown in the accompanying drawing wherein—

Fig. 1 is a perspective view of the complete toy;

Fig. 2 is a plan view thereof;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2 looking in the direction of the arrows;

Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 2; and

Fig. 5 is a sectional view on the line 5—5 of Fig. 2.

Referring now to the drawing, the toy of my invention comprises a closed box 10 having sides, top and bottom, the top and at least one side being transparent and at least two sides set at an angle between about sixty degrees and about ninety degrees and having interior reflecting surfaces. A plurality of brightly colored objects is disposed in the box to form a kaleidoscopic image in the reflecting surfaces and a handle provides means for supporting the box in a position to view the kaleidoscopic images, as well as for shaking the box and producing a change in pattern. The child may also employ the toy as a rattle by grasping the handle and shaking it in the manner of a rattle, thereby imparting further interest therein to smaller children. The attractiveness of the rattle is enhanced by a rapidly changing kaleidoscopic pattern. The interior portion of the box is smooth so that the objects therein will readily move across surfaces of the box to produce a gradually changing pattern when movement of the box is slow. Preferably, also means is provided for the introduction and removal of objects; and, preferably, also, the objects are three dimensional so that the pattern may be more varied than if flat objects were employed.

The closed box comprises a bottom 11, sides 12 and 13, a side 14 and a top 16. A handle 17 has its end secured in the bottom 11 and projects

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downwardly so that it may be grasped in the hand to permit holding the box at arm's length.

The top 16 and side 14 are transparent, being formed preferably of clear plastic, and the interior surfaces of the sides 12 and 13 are light reflecting. Conveniently, these sides may be formed of plastic and are either molded with the bottom or suitably secured thereto. Separate strips 18 and 19 may be secured to the inner surface of the sides 12 and 13 to form the reflecting surfaces. The strips 18 and 19 may comprise conventional silvered glass mirrors, or they may comprise highly reflecting strip metals with sufficient mirror quality to suit the purpose. It is desirable that these strips be light in weight, in keeping with the objects and functions of the device of which they form a part. I have determined that the strips 18 and 19 may be secured to the inner surfaces of the sides 12 and 13 of which they form a part by the use of suitable adhesives.

An inexpensive, light, and desirable way to construct the side 14 and top 16 is to form them together from a single piece of plastic, articulate them along their dividing line and introduce the composite part comprising the top and side 14 into position and secure it in position by means of adhesives or in other suitable ways.

Within the kaleidoscope box 10, I provide a number of objects 21, 22, and 23. These may properly comprise brightly colored bits of plastic having three dimensional shapes such as conical, semi-conical, pyramidal, half-spherical and the like. The surface of the base on which they rest is preferably also colored to contrast with the colors employed in the three dimensional objects. The surface is also made smooth so that the objects will move around freely on it and the multiple reflections comprising the kaleidoscopic images may be made to change as the child holds the toy in its hand. The objects will not only change their positions relative to each other and the box but also will move on their own axes to change their absolute positions. Shaking movement will cause a rattling noise which is attractive to smaller children and the rattling is accompanied with changing of the reflected images.

While the box of my invention is suitably formed entirely closed with no means for introducing or removing the objects therein after it has been assembled, I find some advantage at times in changing the number or character of the objects therein and for this purpose provide near one corner of the box, in the base thereof, a sliding trap door or panel 24. The opening formed

by sliding the panel 24 is sufficient to permit removal and insertion of desired objects, and being near the corner the objects are readily removed by dropping this particular corner and allowing the objects to slide by gravity to the provided opening.

Preferably, the box of my invention comprises three sides of equal length and each two sides subtend an angle of sixty degrees. In any event, the angle between the two reflecting or mirrored surfaces is approximately of the order of sixty degrees but should not be greater than approximately ninety degrees. The number of sides can, to advantage, be three in number, as shown, in which case there is one clear or transparent side and two sides with reflecting inner surfaces. In any case, there must be at least one transparent side and at least two contiguous sides with reflecting surfaces forming an angle between approximately sixty degrees and ninety degrees.

What I claim as new and desire to protect by Letters Patent of the United States is:

1. A kaleidoscope comprising a closed box having top, bottom and sides, a handle projecting downwardly from the bottom, said top and at least one side being transparent, and at least two contiguous sides having inner reflecting surfaces, said surfaces subtending an angle of between about sixty degrees and about ninety degrees, at least one brightly colored, solid object disposed in the box and adapted to form a pattern, by multiple reflection in said surfaces, said pattern being viewable through a transparent side, and a sliding panel closing a relatively small aperture in the said bottom in such a manner as to leave a smooth bottom surface in the box.

2. A kaleidoscope comprising a closed box having bottom, top and three sides of equal length, said top and one side being formed of transparent plastic, said remaining two sides and bottom being formed of relatively light weight opaque material, and said opaque side having strips of mirror material on their inner surfaces extending from the bottom substantially to the top, a handle projecting downwardly from said bottom, and a plurality of brightly colored plastic or like objects in the box, said box having a kaleidoscopic function when held away from the eyes and viewed through the transparent side, and functioning as a child's rattle when shaken, inside surfaces of the box being smooth so that changing pattern effects may be obtained by causing the objects to assume gradually changing positions in the box.

3. A kaleidoscope comprising a closed box having bottom, top and three sides of equal length, said top and one side being formed of transparent plastic, said remaining two sides and bottom being formed of relatively light weight opaque material, and said opaque side having strips of mirror material on their inner surfaces extending from the bottom substantially to the top, a handle projecting downwardly from said bottom, and a plurality of brightly colored plastic or like objects in the box, said box having a kaleidoscopic function when held away from the eyes and viewed through the transparent side, and functioning as a child's rattle when shaken, inside surfaces of the box being smooth so that changing pattern effects may be obtained by causing the objects to assume gradually changing positions in the box, said bottom having a relatively small aperture near one corner thereof, and a panel slidable in the bottom to close said aperture and leave a smooth bottom surface, said objects being readily removed or inserted through said aperture.

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