J. F. ADAMS.

KALEIDOSCOPE.

No. 169,882. Patented Nov. 16, 1875.

Fig. 1.

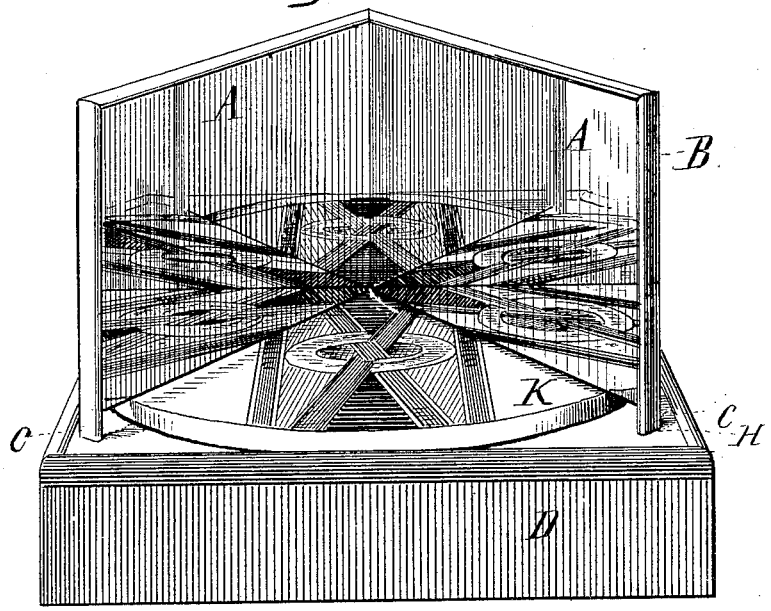


Fig. 2.

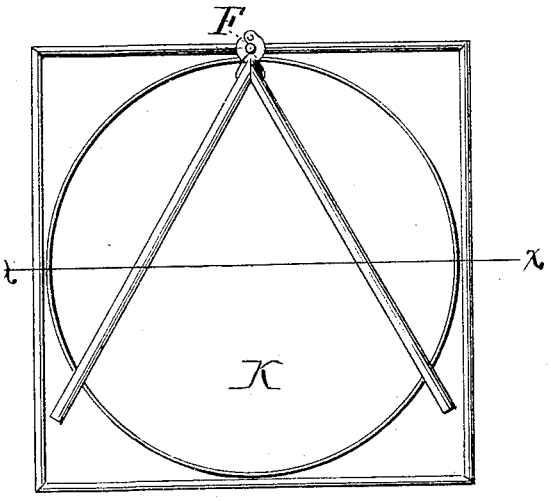


Fig. 3.

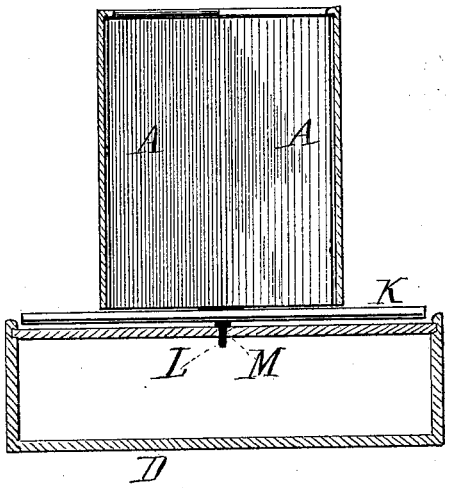
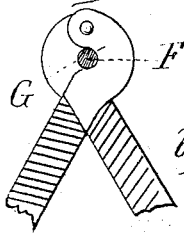


Fig. 4.



Witnesses
E. K. Long
M. M. Philipp

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by Munson & Philipp Atty's

UNITED STATES PATENT OFFICE.

JOHN F. ADAMS. OF IRVINGTON, NEW YORK.

IMPROVEMENT IN KALEIDOSCOPES.

Specification forming part of Letters Patent No. **169,882**, dated November 16, 1875; application filed September 27, 1875.

To all whom it may concern:

Be it known that I, JOHN F. ADAMS, of Irvington, in the county of Westchester and State of New York, have invented a new and useful Improvement in Toys; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of the specification.

Heretofore, in the construction of toys, such as kaleidoscopes, &c., in which mirrors are used to multiply an arbitrary design formed of different-colored objects, the means for changing the objects which are multiplied by said mirrors have either been very expensive or inconvenient and easily broken, or, as has commonly been the case, no means at all have been used to permit such change. Such toys, therefore, after a short time, become uninteresting, and are either destroyed or thrown aside by the user.

The object of my invention is to produce a toy which shall multiply the colored objects any number of times within a certain limit, to produce symmetrical figures, and yet permit, without the removal of any of its parts, the changing of the objects, and consequently the design, which can be cheaply made, and can be taken apart and packed in compact form, when desired, for shipment, &c., and which can be enjoyed by more than one person at a time. It consists in the construction of the toy, as will be more fully hereinafter described.

Figure 1 is a perspective view of my toy ready for use. Fig. 2 is a top-plan view of the same. Fig. 3 is a vertical section through lines *x x*, Fig. 2. Fig. 4 is a plan view, partly in section, of a peculiarly-formed hinge used to connect the mirrors.

Two mirrors, *a a*, formed of glass or other suitable reflecting material, are secured in frames, made of wood or other suitable substance, by any of the common modes of fastening in use. Each frame, at one end, is provided with a downwardly-projecting support, C, which fits in a recess, H, made in the cover of the box D. The other ends of said frames are each provided with a leaf, E, the two on the two frames forming a hinge, which, when the mirrors are in the position shown in Figs. 1 and 2, leave a recess, into which a pin secured to the box D fits. The ends of the frames are beveled at such an angle as to cause the leaves E to impinge upon them, and permit the adjacent edges of the mirrors to touch, and yet prevent their being fractured by contact. The hinges are constructed as shown in Figs. 2 and 4, to permit the frames, when raised from the box D, to be folded back to back, so as to enable them to be packed in a small space in the box D, and easily cleaned. A disk, K, which receives the objects for the design, is provided with a pin, L, journaled in the box D at M, Fig. 3, so as to turn freely therein. Its perimeter is provided with a rim of any convenient height to prevent objects placed upon said disk from being thrown off by centrifugal force, or from other causes. The disk projects beyond the mirrors, as shown in Fig. 2, and is rotated by hand, or by any suitable means—such as friction disks or gearing, journaled in the box, and operated without by a crank or equivalent device. Instead of this disk a plate sliding in suitable guides on the box may be employed, which may be moved backward and forward beneath the mirrors, to vary the design formed by the objects upon it. The box D is made of sufficient size to receive the disk, the mirrors, and objects used in forming the designs, and afford protection when not in use. The frames are raised above the disk to permit its free movement beneath them by the pin and supports described. Instead of said pin and supports, other equivalent means, such as projections upon the box, &c., may be employed for this purpose.

The bevel of the frames B may be so varied as to cause the mirrors in position to form any desired angle with each other, and therefore any desired multiplication of the design formed by the objects upon the disk.

In Fig. 1 I have shown a disk of paper of one color for a ground, and a strip fitting over the same, which has a ring concentric with the disk, and bars radiating from its center, and crossing each other, and the ring, together with parallel bars, forming chords of the disk, which produces a six-pointed star, having circles and bars at its points. This design may be varied, the colored disk and strips being retained.

Any objects, such as are used in kaleidoscopes, pieces of textile material, buttons, and scraps of all kinds, such as are found in every household, may be used instead of the objects which are furnished with the toy as part of its outfit.

The advantages possessed by my toy are, that it can be cheaply manufactured; it enables the designs to be constantly varied without the removal of any of its parts; those portions of it which are easily broken, and which enable the design to be multiplied and changed, are secured from injury when not in use by being packed in the box, and the whole forms a useful and instructive toy, which more than one person may enjoy at a time. Its size may be varied, to adapt it to the use of designers in calico, carpet, and other factories, without changing the principles of its construction.

Having thus fully described my invention and the merits it possesses, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a pair of mirrors, of an open movable receptacle for the objects forming the design moving beneath the mirrors, substantially as shown and described.

2. The frames holding the mirrors, provided with leaves E, forming a hinge, substantially as shown and described.

3. In combination with the frames, the supports H, the pin secured to the box, over which one hinge of the frames rests, and the box D, substantially as shown and described.

4. In combination with the mirrors and disk, the box D, constructed to support and receive the same, substantially as shown and described.

5. The frames raised above the disk, in combination with the hinges and the box, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN F. ADAMS.

Witnesses:
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