

Fig. 1.

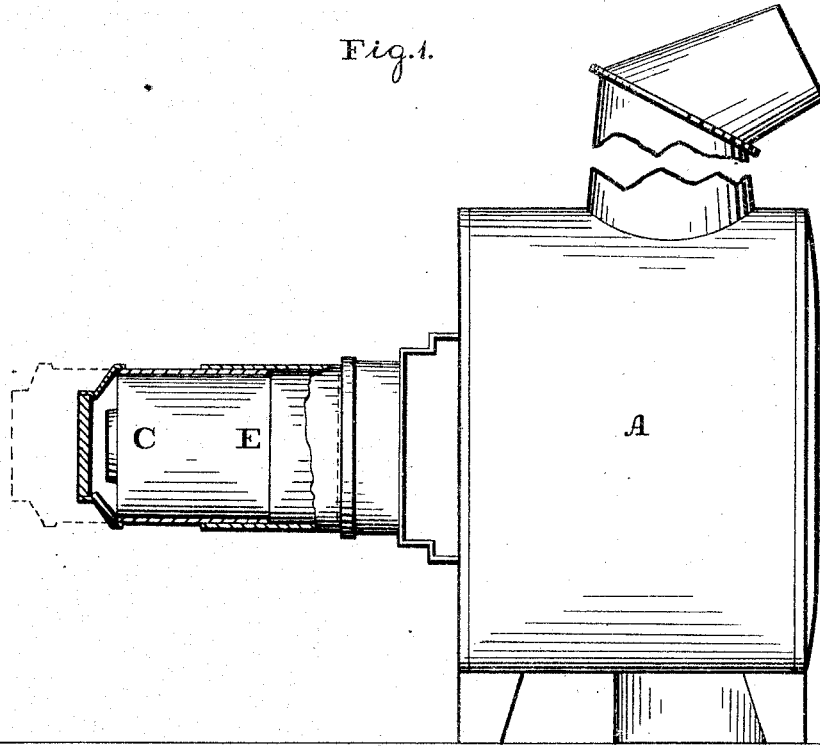


Fig. 2.

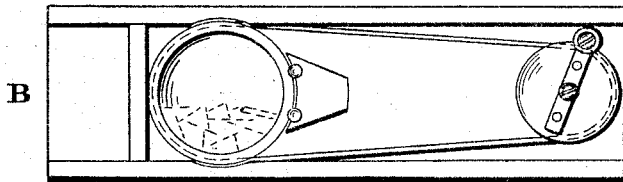
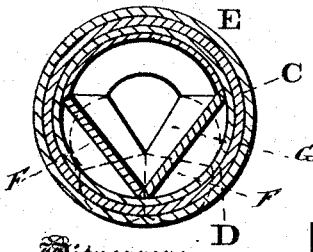


Fig. 3.



Witnesses:  
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Fig. 4.

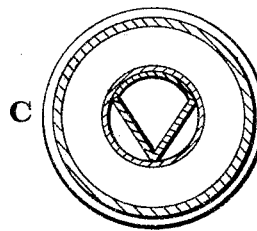
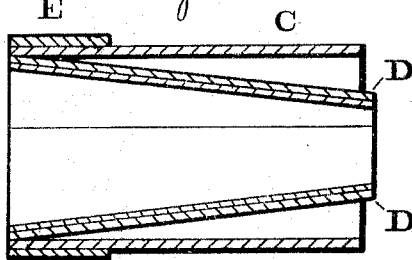


Fig. 5.



Inventor:

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# UNITED STATES PATENT OFFICE.

ALFRED C. FERRIS AND CHARLES E. SCHOOL, OF PHILADELPHIA, PA.

## IMPROVEMENT IN KALEIDORAMAS.

Specification forming part of Letters Patent No. **163,173**, dated May 11, 1875; application filed March 18, 1875.

*To all whom it may concern:*

Be it known that we, ALFRED C. FERRIS, and CHARLES E. SCHOOL, both of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Kaleidorama; and we do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which our invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a side view of a magic lantern having our invention applied thereto. Fig. 2 is a face view of a kaleidoscope to be displayed by said lantern. Figs. 3 and 4 are views of opposite ends of the device embodying our invention. Fig. 5 is a central longitudinal section thereof.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention has for its object the production of kaleidoscopic effects by a magic lantern, or other displaying lantern; and it consists of a reflector, which, adapted to be arranged in the tubes of the condensers, is constructed to concentrate the light, and to be most effective for the purpose intended.

Referring to the drawings, A represents a magic-lantern, which is constructed as usual, and B represents a kaleidoscopic slide therefor, in which the pieces of glass, &c., or trinkets, are confined between two transparent disks, whose rotary motion is imparted by a pulley-wheel and band or cord, or otherwise, as is well known. C represents a cylinder, within which is arranged longitudinally a cone, D, and on the external face of which, at one end, is a collar, E; which makes one end of the cylinder of greater diameter than the other end. Within the cone D are longitudinally-arranged reflectors F F, which consist of pieces of reflecting surfaces of tapering form, and joining to each other at one side, the other sides spreading, and held apart by a brace-piece, G, which bears against said other sides, and is confined by the conical tube or cone D. The narrow end of the cone will be supported by a disk, which is secured to the cylinder C, and has an opening, so as to encircle the cone.

The device, thus constructed, is what we term a kaleidorama, which is to be introduced into the tubes of the condensers of a magic or other display lantern, the collar E fitting closely to the wider tube, so as to properly sustain the device, while the remainder of the cylinder, being of less diameter, occupies the narrow tube of the condensers, and not in contact therewith, so that the focus of the lantern may be adjusted as required. The lamp of the lantern is lighted, and the slide B applied in position, care being taken to bring the trinkets or objects of the slide in direct line of the condensers, so that they will be properly reflected in the kaleidorama. Now, rotate the objects, and the kaleidoscopic effect will be most beautifully and distinctly thrown on the screen or other place of display, the distinctness or sharpness of which is due to the conical or taper form of the reflectors which serve to concentrate the light.

In the present case the circle of reflection is divided into five sectors, but by decreasing the angle of the reflectors, the number of sectors may be increased.

The device is applicable to various-sized condensers, the wide ends of the reflectors requiring, however, to be about equal to the diameters of the condensers, or sufficient to produce the proper angle.

The kaleidorama, as constructed, will be found to be especially applicable to ordinary magic lanterns, since it is simple and inexpensive.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The kaleidorama, consisting of the tapering or conical reflectors F, and adapted to operate with the condensers of the lantern A, substantially as and for the purpose set forth.

2. The cylinder C, with cone D and reflectors F therein, and the collar E encircling the cylinder, substantially as and for the purpose set forth.

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Witnesses:

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