

J. B. ERWIN & H. VAN ALTENA.

Transparent Chromatope.

No. 233,084 *Fig. 1.*

Patented Oct. 12, 1880.

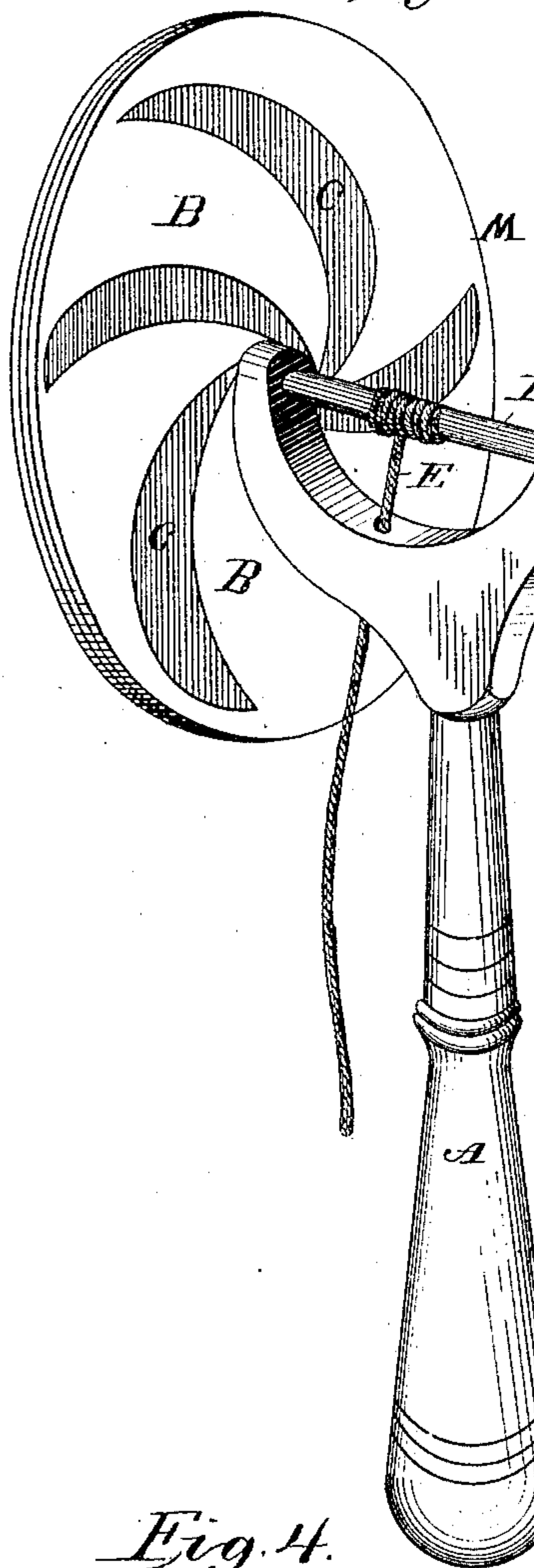


Fig. 2.

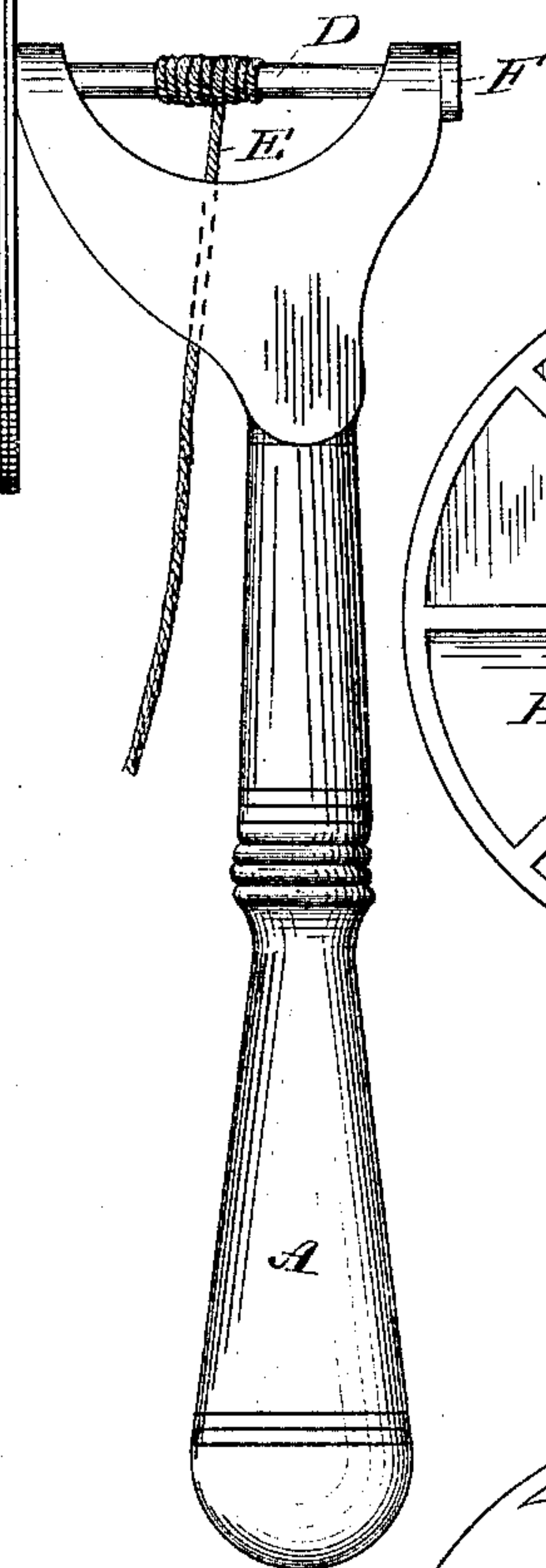


Fig. 3.

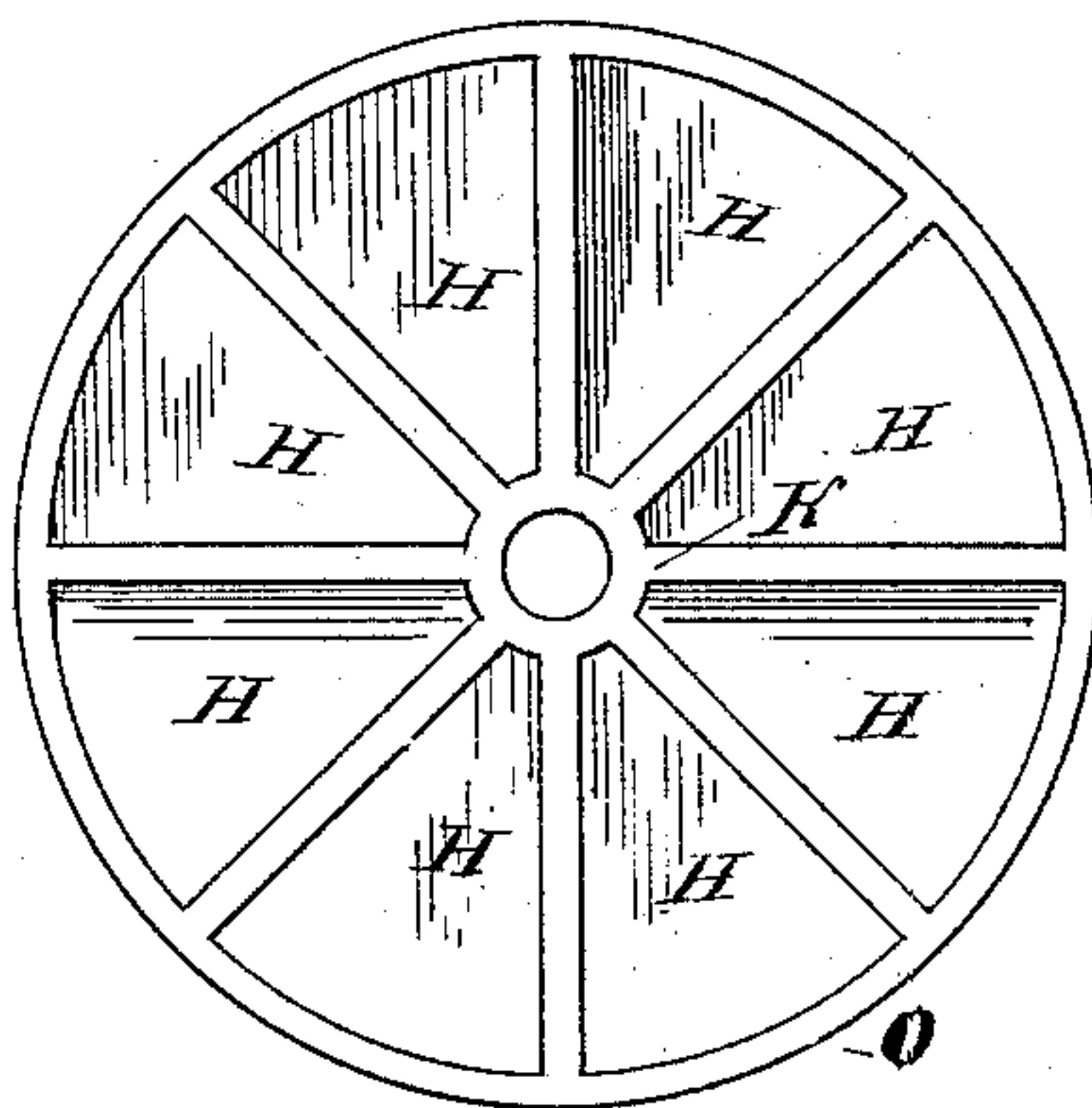


Fig. 4.

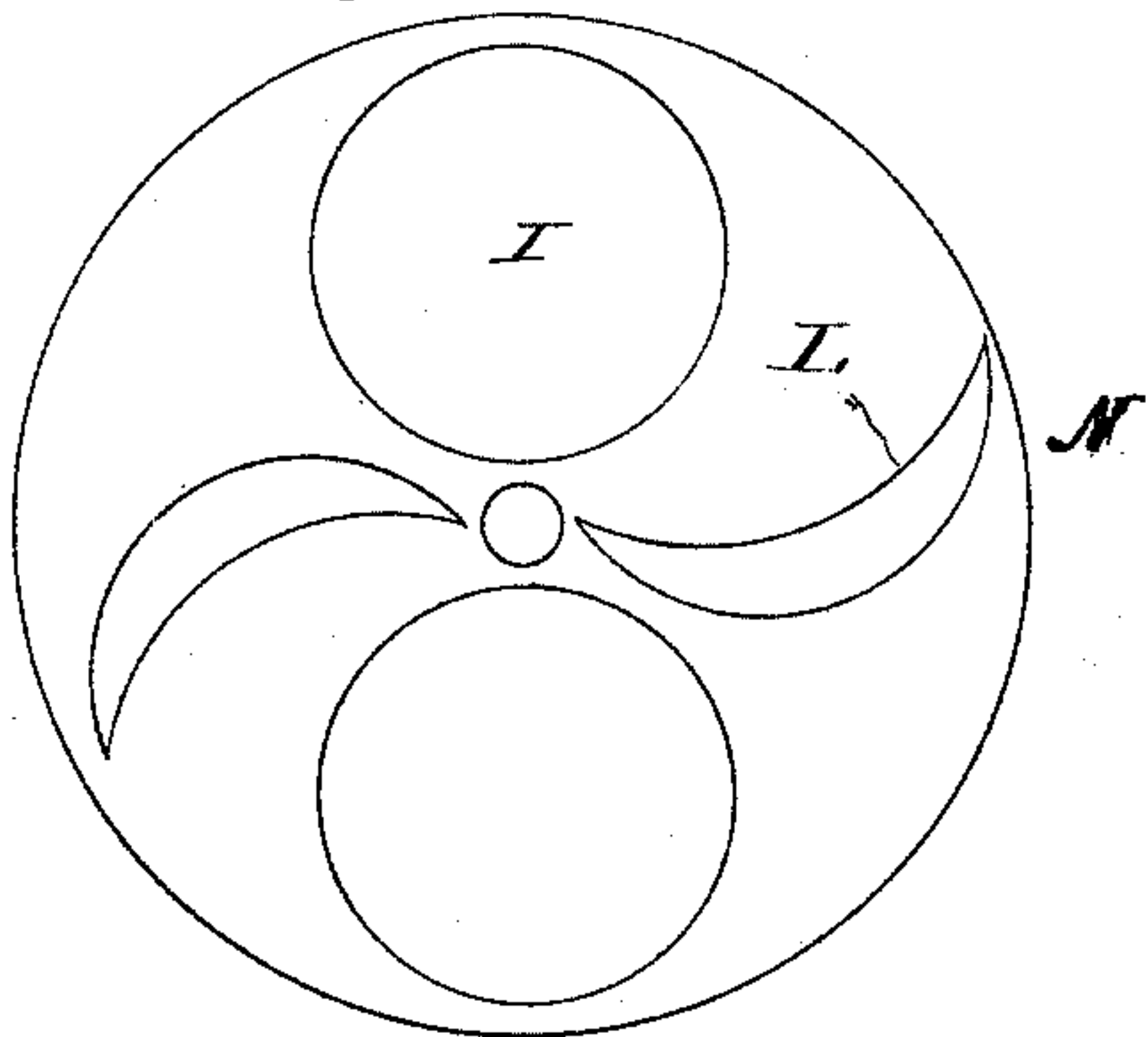
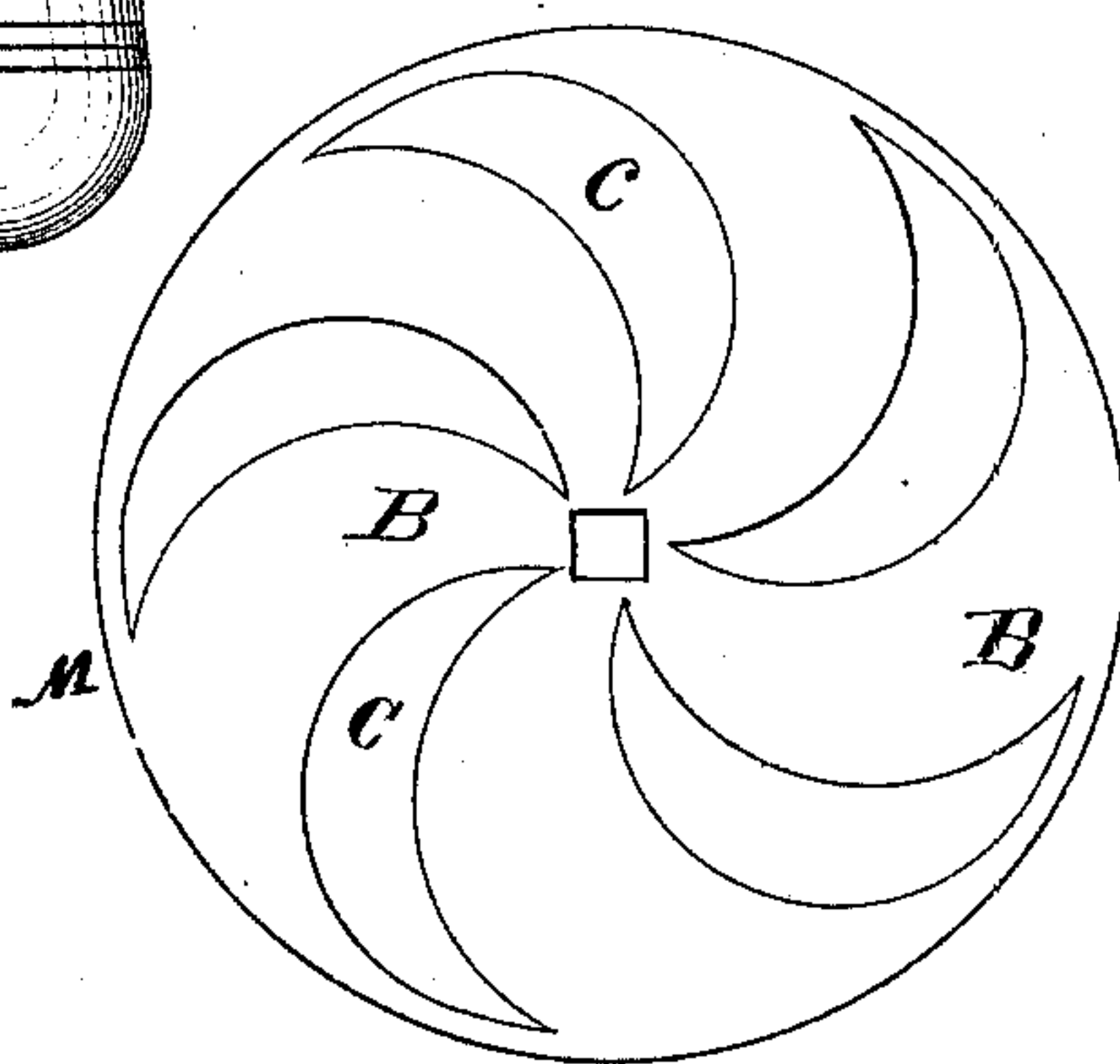


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES B. ERWIN AND HENRY VAN ALTENA, OF MILWAUKEE, WISCONSIN;
SAID VAN ALTENA ASSIGNOR TO SAID ERWIN.

TRANSPARENT CHROMATROPE.

SPECIFICATION forming part of Letters Patent No. 233,084, dated October 12, 1880.

Application filed November 29, 1879.

To all whom it may concern:

Be it known that we, JAMES B. ERWIN and HENRY VAN ALTENA, of the city of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Transparent Chromatropes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the accompanying drawings represents a perspective elevation of our invention. Fig. 2 is a side view of the same. Fig. 3 represents a disk composed of transparent colored material. Fig. 4 represents a disk of paper, tin, or any equivalent material, having one or more openings. Fig. 5 also represents a disk of paper, tin, or other equivalent material, having fanciful-shaped perforations or openings.

The object of our invention is to provide a device for blending colors, while it at the same time produces a variety of fanciful-shaped figures, and also automatically changing the figures and the shade and color of the various figures produced.

It is a well-known fact that when a spoked wheel is revolved rapidly the spokes become invisible, and there appears to be a vacant opening between the periphery and axle. We avail ourselves of this fact to change the color and shade of the figures produced by our device.

M represents a disk having openings C C, between which are blanks B B, which form the body of the disk. When this disk is revolved rapidly the body of the disk B B becomes invisible. Back of this disk we place a transparent disk (shown in Fig. 3) formed of a variety of colors, H H H H, arranged in sections.

The transparent disk may be arranged to change the relative position of its colors to the opening automatically, when it is obvious that a part only of the colors can be seen through

the openings C, the other colors being hid or obscured by the blanks B B.

It is obvious that when the two disks are revolved rapidly together those colors only which are opposite the openings C are visible, and when the blue colors are opposite the openings they will produce the appearance of a blue disk, when red a red disk, when green a green disk, &c., and when two or more colors are opposite the openings at the same instant they will be blended together to produce a modification of each, red and blue producing purple, &c., while the colors back of the blank spaces are obscured and do not affect the appearance.

Fig. 1 represents a convenient device for revolving the disks.

Disk M is so attached to the axle D that they revolve together. The axle D may be provided with square shoulders, and the disk M provided with a square opening at its center, as shown in Fig. 5, which fits to the square shoulder of the axle, and is thereby caused to revolve with it.

Disk O has a round opening at its center, and fits loosely upon the axle.

F represents the bearing for the axle D. When the axle is revolved the relative positions of the surfaces of the disks are constantly changing, and the several colors one after another are thus brought before the openings, the effect of which is to cause one color to fade away or blend into another or to be displaced by another.

A is a handle, which supports the axle and disks. E is a cord, by which the axle and disks are revolved alternately in opposite directions by drawing upon and releasing it, which alternate movement causes the disks to be continually shifting their relative position to each other.

The change of the figures referred to is accomplished by the addition of one or more disks, which are also suspended loosely upon the axle D.

Fig. 4 represents one form of disk, which we prefer.

I and L are openings or perforations through which the light passes as it is revolved, and

as the openings I and L cross and recross the openings C the outline and figure of the appearance produced thereby constantly change. The variety of the appearance thus produced
 5 is greatly increased by the addition of two or more perforated disks.

G is a nut, which retains the disk upon the axle.

We prefer to have the disk M made of tin
 10 or other sheet metal, or material of equal heft, which will acquire and communicate the required momentum. The other perforated disks we prefer to construct of lighter material, card-board, paper, or leather serving well for
 15 the purpose.

The colored disk O may be made of glass, gelatine, or any thin transparent substance. The relative arrangement of the colors is not material.

20 The several pieces of colored gelatine of which the disk O is formed may be secured to a skeleton frame of paper or sheet metal, as shown, or they may be cemented together at their edges and the frame dispensed with, as
 25 desired.

The outline of the openings in the disks may be changed to suit the fancy. Stars, flowers, spirals, circles, and an infinite variety of figures may be produced in all the colors.

30 When desirous to change the disks used the nut G is unscrewed from the axle, and the disks are readily withdrawn and others placed in their stead.

35 Having thus described our invention, we do not claim colored disks, broadly, without reference to the material used, as we are aware that colored card-board and other opaque or non-transparent disks have previously been revolved upon an axle in various ways for blend-

ing colors. Neither do we claim the handle A, 40 provided with axle D and cord E, broadly, as we are aware that they have been previously used for other purposes. Neither do we confine or limit ourselves to any peculiar device for revolving the disk, or to the transparent sub- 45 stance used for forming the colored disk O, or to the peculiar shape or outline of the openings or perforations in the disks M and N, or to the relative arrangement of the disks upon the axle, as none of these peculiar features 50 form the essence of our invention.

What we do claim as new, and desire to secure by Letters Patent, is—

1. The herein-described device for blending and automatically changing colors and for 55 producing and automatically changing the shape of the figures produced, consisting in one or more loosely-attached perforated opaque disks arranged to revolve upon their axis, in combination with a transparent colored disk, 60 substantially as specified.

2. The device herein described for producing a variety of various-colored figures and automatically changing the same, consisting of axle D and disk M, attached so as to revolve to- 65 gether, one or more perforated opaque disks, N, arranged to revolve loosely upon the axle both with and in opposite directions to disk M, in combination with transparent colored disks O, substantially as specified. 70

In testimony that we claim the foregoing we have hereunto set our hands this 25th day of November, 1879.

JAMES B. ERWIN.

HENRY VAN ALTENA.

Witnesses:

GEO. K. GREGORY,

W. SINNOLT.