

Apr. 17, 1923.

1,451,810

L. S. BOWER
COLOR MIXING DEVICE
Filed Oct. 29, 1921

2 Sheets-Sheet 1

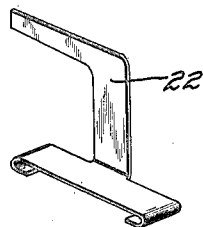
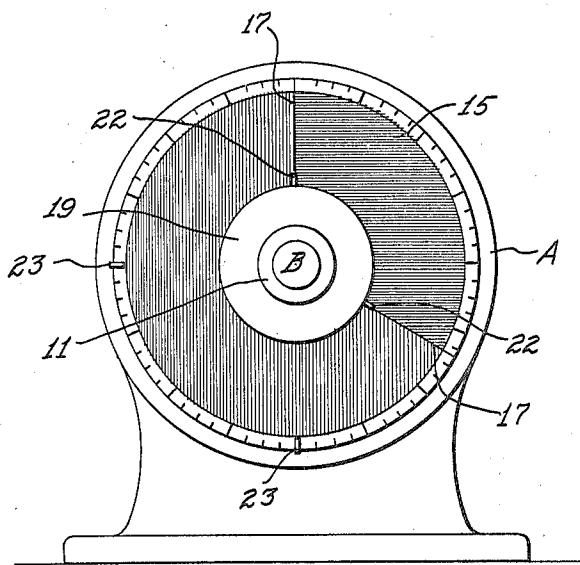
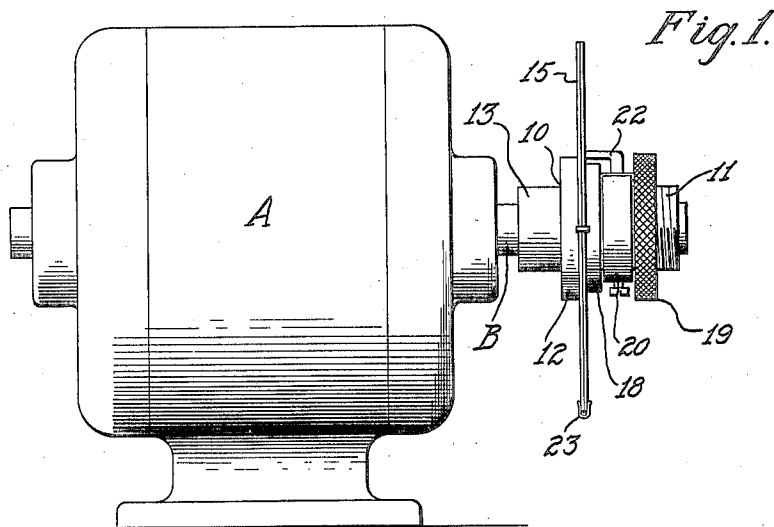


Fig. 6.

Fig. 2.

Gerald L. Longley

WITNESS:

Lyda Sue Bower.

INVENTOR

BY

Victor J. Evans

ATTORNEY

Apr. 17, 1923.

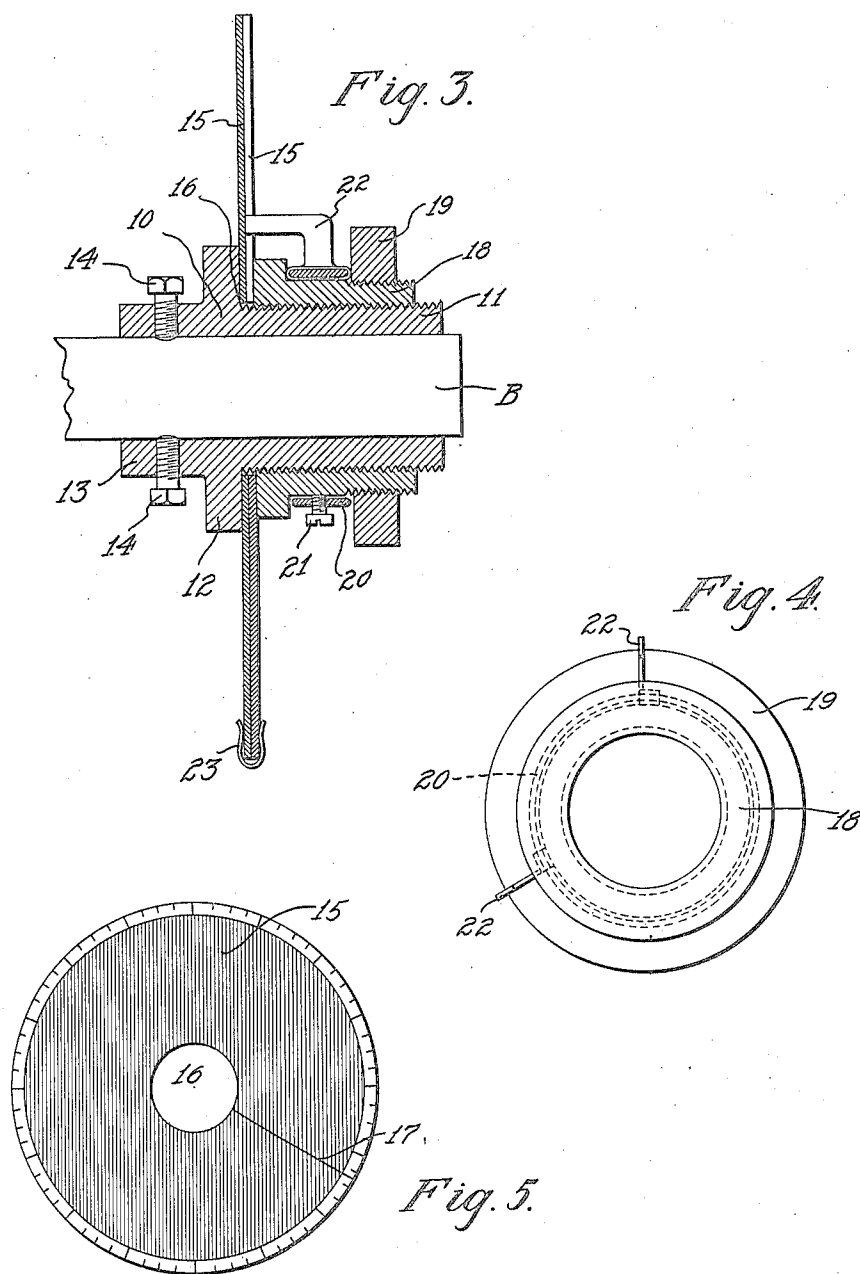
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2 Sheets-Sheet 2



George L. Fung

WITNESS:

Lyda Sue Bower.

INVENTOR

BY *Victor J. Evans*

ATTORNEY

UNITED STATES PATENT OFFICE.

LYDA SUE BOWER, OF COVINGTON, GEORGIA.

COLOR-MIXING DEVICE.

Application filed October 29, 1921. Serial No. 511,516.

To all whom it may concern:

Be it known that I, LYDA SUE BOWER, a citizen of the United States, residing at Covington, in the county of Newton and State of Georgia, have invented new and useful Improvements in Color-Mixing Devices, and of which the following is a specification.

This invention relates to color devices, particularly to instruction or comparing devices, and has for its object the provision of a motor driven device by means of which any and all shades of all colors may be quickly and easily produced for purposes of instruction in institutions of learning and the like or for purposes of comparison in paint or dye factories.

An important and more specific object is the provision of a novel holding means adapted for association with the shaft of an electric motor or other rotary device, a plurality of disks of different colors being disposable upon this holding device and being secured thereon in adjusted position whereby certain cut-out portions of the respective disks may be brought or left to registration according to a predetermined plan whereupon subsequent rotation of the assembled disks will, on account of the retention or continuance of vision, produce the effect of a certain shade or color which is the composite of those colors upon the exposed portions of the colored disks.

Another object is the provision of a device of this character including novel means whereby to clamp a plurality of certain disks upon the holding member, the clamping means being adjustable whereby to vary the degree of exposure of the successive disks.

An additional object is the provision of a mechanism of this character which will be simple and inexpensive in manufacture, easy to use and operate, highly efficient in action, durable in service and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed, and illustrated in the accompanying drawings in which,

Figure 1 is a side elevation of my device associated with an electric motor,

Figure 2 is an end elevation,

Figure 3 is a longitudinal sectional view,

Figure 4 is a detail face view of the locking nuts,

Figure 5 is a detail elevation of one of the color disks and,

Figure 6 is a detail view of the hook member.

Referring more particularly to the drawings the letter A designates an electric motor of any ordinary or preferred type and B designates the shaft thereof.

In carrying out my invention I provide a sleeve device 10 which is adapted to be engaged upon the shaft B and which includes an elongated threaded portion 11, an annular flanged portion 12 and an extension 13 through which extends a plurality of set-screws 14 by means of which the sleeves may be clamped upon the shaft of the motor. It is preferable that the threads upon the threaded portion 11 be comparatively coarse though such is not absolutely essential as will be hereinafter described. The dimension of these parts is not essential as it is readily apparent that they may be varied within wide degrees depending upon the diameter of the shaft and the power of the motor with which the device is associated.

Designed to be engaged upon the threaded portion of this sleeve 10 is a series of disks 15 which may be constructed of brass, tin, fibre or other suitable material, these disks being provided centrally with a hole 16 and being provided with cut-out portions 17. The outer portions of the disks are calibrated or graduated in fractions of inches or in centimeters and meters as may be preferred, these graduations being clearly indicated in the drawings and for a purpose to be described.

In actual practice it is preferred to use about seven of these disks which are painted or otherwise colored with the colors of the solar spectrum, namely; red, orange, yellow, green, blue, indigo and violet.

As stated above these disks 15 are designed to be placed upon the threaded portion of the sleeve 10, any suitable number of the disks being employed as will be hereinafter described. It is of course necessary to rigidly secure the disks upon the sleeve and in order to effect such action I make use of a nut member which comprises a collar 18 internally threaded so as to be screwed upon the threaded portion 11 of the sleeve 10 and provided at its outer edge portion with an

annular flange 19 which is preferably knurled, filed or otherwise roughened whereby to provide an efficient grip to prevent slipping within the hand of the operator.

- 5 Rotatably mounted upon the intermediate portion of this collar 18 is a ring 20 which is designed to be locked in any desired adjusted position with respect to the collar by means of a suitable set screw 21. Secured
10 upon and extending outwardly of this ring 20 is a series of hook-shape members 22 which are arranged at preferably equidistant points along the periphery of the ring. These hooks 22 are designed to engage
15 against the edges of the cut-away portions 17 of the disks 15 whereby to hold the disks 15 against relatively rotation when they are secured upon the sleeve.

- In assembling my device it will be apparent that the sleeve 10 is disposed upon the shaft B after which the set screws 14 are tightened to hold the sleeve securely with respect to the shaft so that when the motor is operated the entire sleeve
25 and associated parts will be rotated. Depending upon the colors or shades to be displayed or seen, the selected disks 15 are placed upon the threaded portion 11 of the sleeve after which the nut member is threaded
30 into the sleeve and screwed up against the outermost disk, with the cut-out portions of the disk arranged in more or less overlapping relation depending upon the degree or area of the different successive colors to
35 be displayed or exposed. The relative proportions of the different colors may of course be readily seen by means of the graduations upon the disks so that in this way practically all shades may be easily obtained. It will
40 be seen that owing to the provision of the graduations that mathematical precision may be had as to the relatively areas or proportions of the different colors. The hook members 22 carried by the ring 20 of course
45 engage against the edges of the cut-away portions of the disks. It will be seen that owing to such engagement of the hooks with the edges of the cut-away portions of the disks, relative rotation of the disks with
50 respect to one another will be absolutely prevented while the engagement of the nut member with the outermost disk will hold all the disks firmly assembled upon the threaded portion 11 of the sleeve with one endmost
55 disk engaged by the nut member and the other endmost disk engaged against the flange 12 of the sleeve member 10.

- In actual practice it may also be found advisable to make use of a plurality of U-shaped spring clips 23 which naturally
60 would be made of different sizes so that they might be engaged upon only two disks, three disks or in fact the desired number of disks which might be employed, these
65 clips being clearly engaged over the outer

portions of the disks whereby to hold them in clamping engagement with one another, this action merely supplementing the holding action of the nut member.

In actual practice when the motor is rotated it will be apparent that my device will be rotated carrying with it all of the disk members. Owing to the fact that the disk members are provided with cut-out portions which will more or less display certain areas
70 of the disks next beneath, the different disks of course being differently colored, it will be apparent that on account of the retention or continuance of human vision the rapid
75 rotation of the disk will result in giving the appearance of a single color. In this way it will be quite obvious that the device is well adapted for use in schools, colleges and other institutions of learning whereby to acquaint the pupils with the different color
80 values and the proportions of the different colors which go to make up the different shades and different combinations, the device also being readily capable of use in factories of paint manufactures, dye manufactures and others whereby to constitute a
85 testing device for comparing the newly made colors with certain well known standard dye shades so that exact correspondence may be maintained.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided an extremely simple and consequently inexpensive device which is easily used and which may be associated with any ordinary or preferred type
90 of electric motor regardless of the details of the latter, the device being furthermore capable of use in association with any sort of mechanism which will insure rapid and continual rotation of the element at a constant
95 speed. It will be observed that the device will be highly efficient especially inasmuch as it requires no attention from the operator other than the initial setting of the parts in the proper relation and it will also be apparent that I have provided ample means whereby variation may be made so as to display or produce different colors or different
100 shades of any color practically ad libitum.

While I have shown and described the preferred embodiment of the invention, it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention I claim:

1. A color device of the character described comprising an elongated sleeve member adapted to be clamped upon the shaft of a motor or other driven device, said sleeve member being formed with an outwardly extending flange and being threaded from said

flange to its outer end, a plurality of selectively usable disk members each having a central hole engageable upon the threaded portion of the sleeve and being provided with a cut-out portion extending from the outer edge to the hole, said disk members being colored with the colors of the solar spectrum, a nut member threaded upon said sleeve and engageable with the outermost disk member to hold all of the disk members in clamping engagement with one another against said flange for preventing relative rotation of the disk members, and a plurality of spring clips engageable upon the peripheries of said disk members for the purpose specified.

2. A color device of the character described comprising an elongated sleeve member adapted to be clamped upon the shaft of a motor or other driven device, said sleeve member being formed with an out-

wardly extending flange and being threaded from said flange to its outer end, a plurality of selectively usable disk members of different colors each having a central hole engageable upon the threaded portion of the sleeve and being provided with a cut-out portion, a nut member threaded upon said sleeve and engageable with the outermost disk member and being adapted to hold all of the disk members in clamping engagement with one another against said flange for preventing relative rotation of the disk members, said nut member comprising a collar threaded upon the threaded portion of the sleeve, and a ring rotatably adjustable upon the collar and carrying a plurality of hooks engageable with the edges of the cut-away portions of the disks as and for the purpose specified.

In testimony whereof I affix my signature.

LYDA SUE BOWER.