No. 624,331. Patented May 2, 1899.

G. K. HENDERSON.

SHADE FINDER.

(Application filed Apr. 5, 1898.)

(No Model.)

Fig. 3

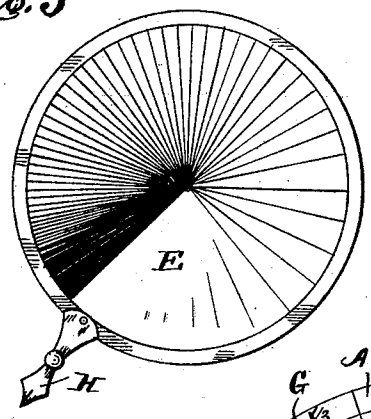


Fig. 2.

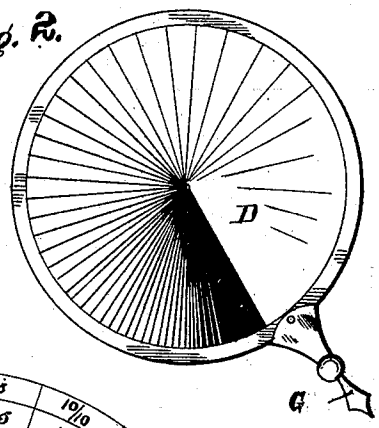


Fig. 1.

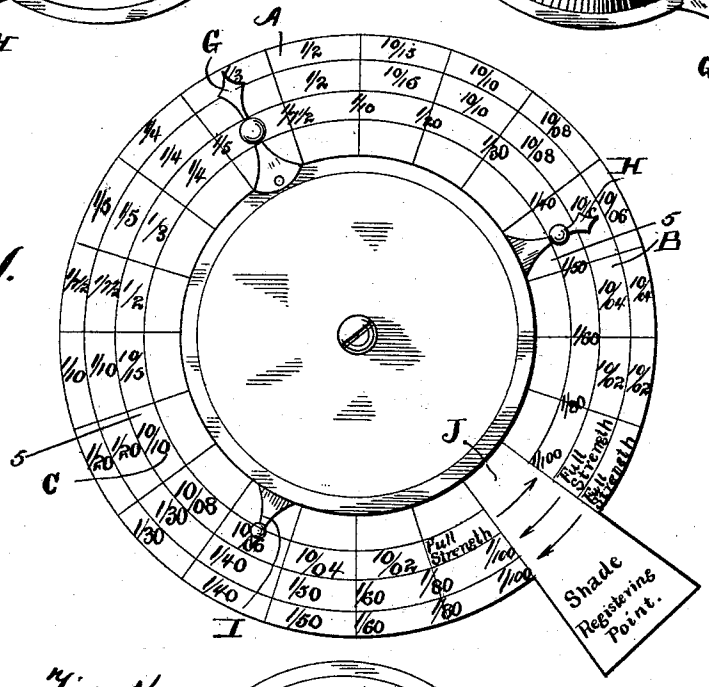


Fig. 5

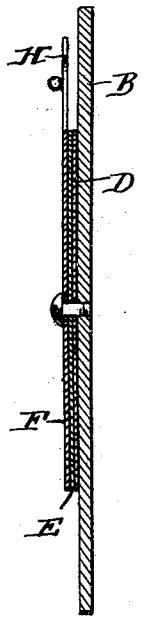
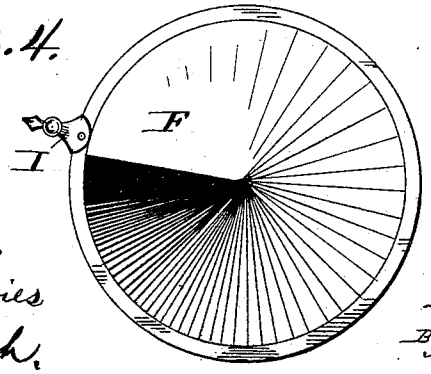


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE KEVEN HENDERSON, OF COSHOCTON, OHIO.

SHADE-FINDER.

SPECIFICATION forming part of Letters Patent No. 624,331, dated May 2, 1899.

Application filed April 5, 1898. Serial No. 676,583. (No model.)

To all whom it may concern:

Be it known that I, GEORGE KEVEN HENDERSON, of Coshocton, in the county of Coshocton and State of Ohio, have invented new and useful Improvements in Shade-Finders, of which the following is a full, clear, and exact description.

My invention relates to an apparatus for determining the proper proportions of the primary colors in order to obtain any desired shade; and it has for its object the production of an apparatus which can by proper manipulation produce any given shade by the combination of the three primary colors—namely, yellow, red, and blue.

The invention consists, broadly, in three sheets of gelatin or equivalent translucent or transparent material mounted on a base and so mounted as to pass one over the face of the other, the said base having a scale properly divided, whereby to give the proper proportion of each color on the respective sheets.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a plan view of the device embodying my invention. Figs. 2, 3, and 4 are views of the sheets or disks; and Fig. 5 is a cross-section of the device.

Referring to the drawings, A, B, and C designate concentric circles secured to the base of the device in any suitable manner, A being the outer circle, which gives proportions of yellow; B, the central circle, giving the proportions of red, and C the inner circle, giving the proportions of blue, each circle being graduated from the one-hundredth part to the full strength of the color used.

D, E, and F represent the sheets, preferably in the form of disks mounted one over the other on a common pivot on the base of the device; D, the yellow, being located undermost; E, the red, being located centrally, and F the blue, uppermost. The yellow is imprinted on paper and the red and blue on celluloid, gelatin, isinglass, mica, glass, or other transparent or translucent material that allows the colors to blend or mix. The imprinting is accomplished by half-tone, gelatin-printing, photolithography, or other process.

G, H, and I designate levers or handles attached to the several disks D, E, and F. G is the longest lever and corresponds with the outer circle, around which it rotates. H is the central lever or handle, which corresponds with the central circle, around which it rotates. I is the shortest lever or handle, corresponding with the inner circle and around which it also rotates. These levers when moved to give any given shade rest on figures which give the proportions of color or colors required in blending or mixing the same. The uppermost figures on these circles represent the proportion of color to be used, and the undermost figures represent the proportion of reducing-ink to be mixed with the same. J represents the shade-registering point at which the apparatus gives the desired color, the levers or handles indicating the proportions of color by which it is blended. These disks D, E, and F are centrally pivoted to the framework or base of the apparatus and are rotated through the medium of the levers, as aforesaid.

Each sheet or disk is graded from the lightest to the deepest shade of the color on it, and the arrows at the shade-registering point indicate in what direction the sheet is to be moved by its handle in order to go from the lightest shade to the full strength of the color.

It is to be understood that I do not limit myself to the exact design and arrangement of the parts shown in the accompanying drawings and described above, for it is evident that I may make various changes without exceeding the scope of the appended claims. I also wish it understood that while using the term "translucent" throughout my claims I do not limit myself to using a material for the sheets or disks which is translucent merely—that is, not transparent; but the term "translucent" is to be considered in its broadest sense—namely, as meaning perspicuous or capable of being looked through.

From the foregoing description, taken in connection with the accompanying drawings, the operation of my device will be obvious.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A device of the character described, comprising a base, and contrasting, colored, trans-

lucent sheets mounted upon said base, each of said sheets bearing a plurality of shades of its respective color graded from light to deep, as and for the purpose set forth.

2. In a device of the character described, the combination of complementary-color-bearing sheets mounted upon a base having a scale whereby to give the proportion of the respective colors on the sheets to form a desired shade, as and for the purpose set forth.

3. The combination of three sheets, each bearing shades of one of the complementary colors and the outer and middle sheet being translucent, and a circular scale concentric to said sheets, as and for the purpose set forth.

4. A device of the character described, comprising three superposed sheets in the form of disks mounted concentrically, each of said disks bearing shades of one of the complementary colors and the outer and middle disk being translucent, a pointer attached to each disk, and a graduated circular scale concentric to said disks as and for the purpose set forth.

5. A device of the character described, comprising three superposed sheets in the form of disks mounted concentrically, each of said disks being colored with shades of one of the complementary colors graded from light to deep, three circular scales concentric to said disks and each graduated from a small amount to the full strength of the respective colors on the disks, and a pointer attached to each disk, each of said pointers being of such a length as to describe a circle corresponding to the circular scale of the respective color of the disk to which it is attached, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE KEVEN HENDERSON.

Witnesses:

WILLIAM H. BATES,

M. F. LESTER.