Nov. 22, 1927. 1,649,964

W. F. LITTLE

REFLECTION GAUGE

Filed Aug. 20, 1924

Fig. 1

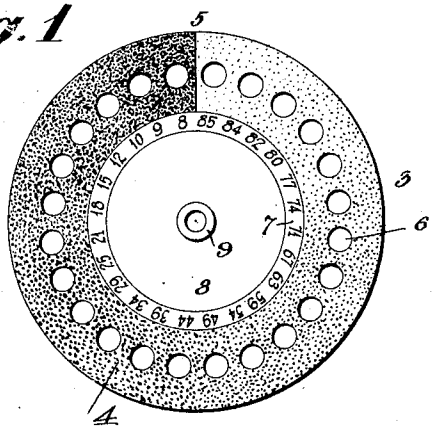


Fig. 2

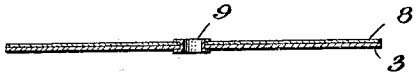


Fig. 3

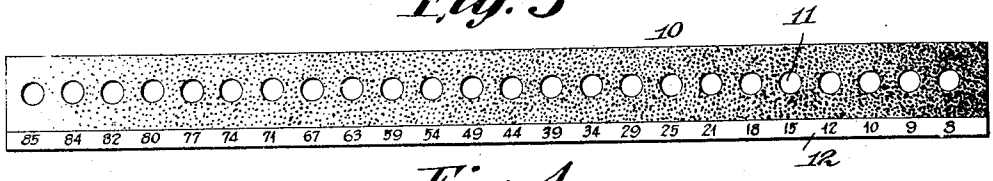
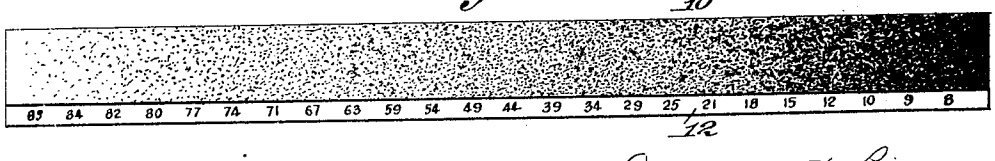


Fig. 4



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Patented Nov. 22, 1927. 1,649,964

UNITED STATES PATENT OFFICE.

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REFLECTION GAUGE.

Application filed August 20, 1924. Serial No. 733,105.

The invention relates to a gauge for measuring reflection factors of diffusely reflecting surfaces, and has for its objects to provide a cheap and readily portable device having no moving parts, which may be carried in the vest pocket or in a pocket book, and by means of which the reflection factors of surfaces may be obtained without the use of test lamps or other illuminating devices. These and further objects will more fully appear in the followinng specification and accompanying drawings considered together or separately.

The invention will be more thoroughly understood with the aid of the description given in connection with the accompanying drawings in which like parts in all of the several figures are designated by corresponding characters of reference, and in which

Fig. 1 is a face view of the preferred embodiment of the invention.

Fig. 2 is a section on the line 2—2 of Fig. 1, and

Fig. 3 is a face view of a slightly modified form of the device.

Fig. 4 is a front view of another modification of the invention.

In the preferred embodiment of the invention 3 designates a circular card which may be of paper or any other suitable opaque material. Around the disc, and at the periphery thereof, is printed, or otherwise impressed or delineated, an annular "shaded wedge" 4 which, starting from the point 5 with black is gradually and by almost imperceptible degrees, shaded to merge into white at the same point, the "wedge" from black to white having made a circle.

Within the boundaries of the wedge the card is provided with a circular series of perforations 6, preferably circular in form, and on the card preferably inside of the wedge and in circular series is arranged a series of numbers 7 each designating an approximate reflection factor.

The perforations may, if desired, instead of being in the shaded portion, be alongside of the same.

In order to protect the face of the card, a disc 8 preferably of transparent celluloid, is secured thereto. In Figs. 1 and 2 the disc 8 is secured in position by means of an eyelet or hollow rivet 9.

In Fig. 3 the wedge 10 is straight and the sight openings 11 are arranged along the wedge. The factor numbers 12 are arranged alongside of the same. The surface of the card bearing the wedge and numerals may be protected by means of a transparent sheet, or the same may be treated to a coat of transparent varnish.

In operation the gauge is placed over the reflecting surface, such as a wall, ceiling, floor, etc, and the said surface is viewed through the openings 6 or 11 as the case may be. When the light reflected from the surface being tested through an opening corresponds in brightness with that portion of the shaded wedge surrounding the opening, the factor number at the opening will give the percentage of light reflected from the surface.

The operator must refrain from comparing the color or tint of the surface with that of the wedge, and deal with the brightness only. This may be facilitated by observing the gauge and surface by "twilight vision", that is, by partly closing the eyes whereby color differences will not be apparent.

Some reflecting factors (approximate) are as follows:

	Per cent.
Blotting paper	70–75
Kraft wrapping paper	30–40
Wall papers	10–70
White lead and oil paint	70
Light buff paint	65
White bond paper	70

The perforations in the gauge may be omitted, as may also the scale 6 or 12. Fig. 4 shows the form of gauge illustrated in Fig. 3 without the perforations. It will be understood that the circular form shown in Fig. 1 may also be made in the same manner.

In using a gauge without the perforations the comparison with the reflection surface may be made as exact as if the openings were present.

In addition to its use as a means for measuring reflection factors of diffusely reflecting surfaces, the device may also be employed in connection with a photometer in which the light of the comparison lamp, or other source of illumination, is kept constant, the photometric balance being obtained by varying the comparison surface, that is, varying reflection factor of the comparison surface (the shaded wedge). In

this case the scale may be omitted when the reflection factor of the test surface is known.

In accordance with the provisions of the patent statutes the principle of the invention has been described, together with the apparatus which is now considered to represent the best embodiment thereof, but it is desired to have it understood that the apparatus shown is merely illustrative, and that the invention may be carried out in other ways.

The invention having been described, what is claimed as new and desired to be secured by Letters Patent, is as follows:

1. In a reflection gauge, the combination with a body having a shaded surface and a plurality of perforations in the shaded portion, of a sequence of numbers representing reflection factors arranged relative to the perforations so as to correspond approximately with the reflection values of the surface surrounding each perforation.

2. In a reflection gauge, the combination with a body having an area shaded in uninterrupted sequence from black to white and a plurality of perforations extending in a series lengthwise through the shaded portion, of a series of numbers associated therewith and designating approximately the light reflection factors of the shaded area.

3. In a reflection gauge, the combination with a body having an area shaded gradually from black to white and a plurality of perforations extending lengthwise through the shaded portion, of a sequence of numbers arranged parallel to the perforations each in proximity to a perforation and designating approximately the light reflection factor of the shaded area surrounding the adjacent perforation.

This specification signed this eleventh day of August, 1924.

WILLIAM F. LITTLE.