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M. J. GERRELLS

2,195,672

AUTOMATIC DIAL ILLUMINATOR

Filed March 6, 1939

Fig. 1.

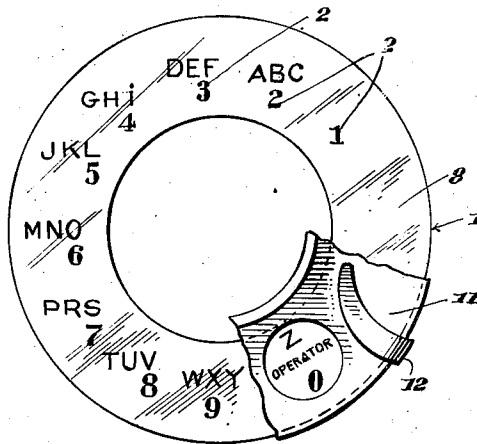


Fig. 3.

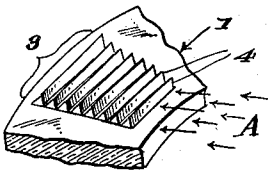


Fig. 2.

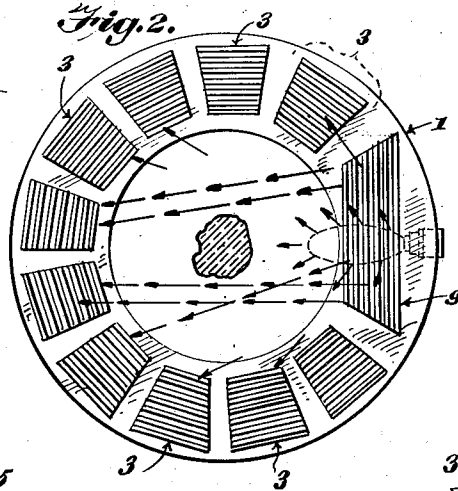


Fig. 5.

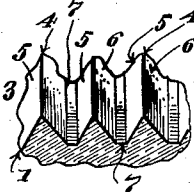


Fig. 4.

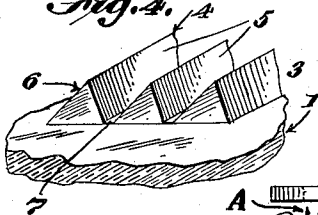
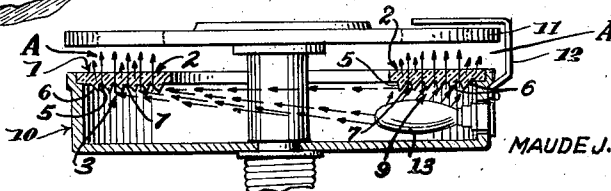


Fig. 6.



Fig. 7.



Inventor,

MAUDE J. GERRELLS.

334 E. C. Brooman & Co.
Attorneys

UNITED STATES PATENT OFFICE

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AUTOMATIC DIAL ILLUMINATOR

Maude J. Gerrells, San Antonio, Tex.

Application March 6, 1939, Serial No. 260,213

3 Claims. (Cl. 40—130)

This invention relates to an automatic dial illuminator, and more particularly to a novel and useful improvement upon the structure disclosed in my United States Patent No. 2,147,944, dated February 21, 1939.

An object of the invention is to simplify and improve the prism unit disclosed in the structure of said allowed application.

Another object of this invention is the production of a novel and useful prismatic serratic disk for an automatic dial illuminator.

Another object of this invention is the production of a single transparent flat disk with sets of prismatic serrations formed in its under face, the serrations of each set having their top and bottom portions at slight angles to the serrations in the other sets, for the purpose of receiving and distributing light rays thrown off from a common light source.

A still further object of the invention is the novel construction of the prismatic units or sets, involving the peculiar formation of each serration and the space between each two contiguous serrations, whereby the light rays are received and reflected or thrown through the disk in a highly efficient manner.

With the foregoing and other objects in view, the invention comprises certain other novel constructions, combinations and arrangements of parts as will be hereinafter fully described, illustrated in the accompanying drawing, and more particularly pointed out in the appended claims.

In the drawing,

Figure 1 is a top plan view of a disk constructed in accordance with the present invention, showing the usual finger guard or stop, and a portion of the ordinary rotatable finger disk.

Figure 2 is a bottom plan view of a disk.

Figure 3 is a fragmentary, inverted, perspective view of the disk, showing particularly one set of serrations.

Figure 4 is a fragmentary, inverted, perspective view of the disk, showing a few serrations greatly enlarged, to better understand the novel structure of the device.

Figure 5 is an enlarged fragmentary, inverted, view of the disk, while

Figure 6 is a vertical sectional view of the same.

Figure 7 is partly a vertical section and partly an elevation of the automatic dial illuminator, showing my improved disk in position on the casing, and constituting the cover for the casing.

Referring to the drawing, in which I have shown the preferred embodiment of my inven-

tion, 1 designates a disk, formed of any suitable transparent material. On the upper or outer face of disk 1 are any number of numerals or means for designating stations to be called, which numerals are shown at 2.

On the bottom or under face of disk 1 are formed sets of serrations 3. Each set 3 is directly under a numeral 2 (Fig. 1). Each set 3 comprises a plurality of depending parallel serrations 4. Each serration 4 is provided with an inclined outer face 5 and an inclined inner face 6. The outer face is of a more radical inclination, than comparatively straight face 8, and is of less height. This novel structure is for the purpose of more efficiently receiving the light rays from lamp 13 against the face or faces 5. Between each two contiguous serrations 4 there is a flat base 7 which allows the reflected light rays (Figs. 2 and 7) that have collected in great density, to more readily pass through this thinner portion of said disk 1, for illuminating the numerals and the letters on the outer or top face of the disk.

Under the blank space 9 (Fig. 1), I form a set of serrations 9; these serrations are shown in Fig. 2 as being longer than the serrations of the other sets 3, to cause rays from lamp 13 to be reflected around or by the central post, to all of said sets 3.

The serrations in each set are at an angle to the serrations in the other sets, whereby the light rays are more efficiently reflected, for increasing the volume of reflection, and thereby the efficiency of the disclosure of the indicating markings on the face of the disk to the operator.

In Figure 7 a casing 10 is shown with the disk 1 setting down in the casing, and forming the cover for the casing. Above disk 1 is the usual rotatable finger disk 11, and attached to casing 10 is the usual finger guard or stop 12. These details are further disclosed in my former patent, hereinbefore referred to.

Besides forming a cover for casing 10, the disk 1, by reason of its novel structure, greatly simplifies the structure shown in my former patent, besides increasing the efficiency of operation of the illuminator, because of the peculiar construction of each unit or set 3.

The passage of the light rays from a single and common light source, 13, is indicated at A, Fig. 3, with said rays striking against the outer faces 5 of the serrations in each unit 3 and unit 9.

While I have described the preferred embodiment of my invention and illustrated same in the accompanying drawing, certain changes or alter-

ations may appear to one skilled in the art to which this invention relates during its extensive manufacture of same, and I, therefore, reserve the right to make such alterations or changes as shall fairly fall within the scope of the appended claims.

What I claim is:

1. In an automatic dial illuminator, the combination with a casing, of a transparent body on said casing and provided on its under face with a series of sets of serrations of uniform size, designating means on the outer face of said transparent body over each set of serrations, a single set of serrations of greater area than each of the first-mentioned sets formed upon the under face of said transparent body, and a lamp on said casing below said transparent body and directly beneath said set of serrations of greater area, whereby the rays from said lamp will be reflected by said set of larger area of serrations to the serrations of the first-mentioned sets.

2. In an automatic dial illuminator, the combination of a casing, and a supporting post therein, of a transparent cover on said casing, said transparent cover being provided with a series of circularly aligned sets of serrations formed integral with the under face of said transparent cover and a single set of serrations formed on the under face of said cover and of greater length than each of the other sets, designating means on the outer face of said transparent cover over each of said first-mentioned sets, each set of serrations comprising parallel serrations, each serration provided with an inclined outer face and with a comparatively straight inner face, the inclined outer face extending towards the center of said casing, each two contiguous serrations being provided with a flat base therebetween, and a lamp in said casing under said single set of long serrations, whereby the rays from said lamp will be reflected from the serrations of the set of greater length past said supporting post to all of the first-mentioned sets of serrations.

3. In an automatic dial illuminator, the combination with a casing and its supporting post, of a transparent cover for the casing having a plurality of circularly aligned sets of serrations formed integral with the under face thereof and a single set of serrations formed on the under face of said cover and of greater area than each of the other sets, designating means on the outer face of said transparent cover and directly over said first-mentioned sets, and a lamp in the casing under the set of serrations of greater area, whereby the rays from said lamp will be reflected by the last named set past the post to all of the sets of uniform size.

MAUDE J. GERRELLS. 30