Aug. 28, 1923. 1,466,286

J. F. HEARN

LUMINOUS INDICATOR

Filed April 15, 1922

Fig. 1.

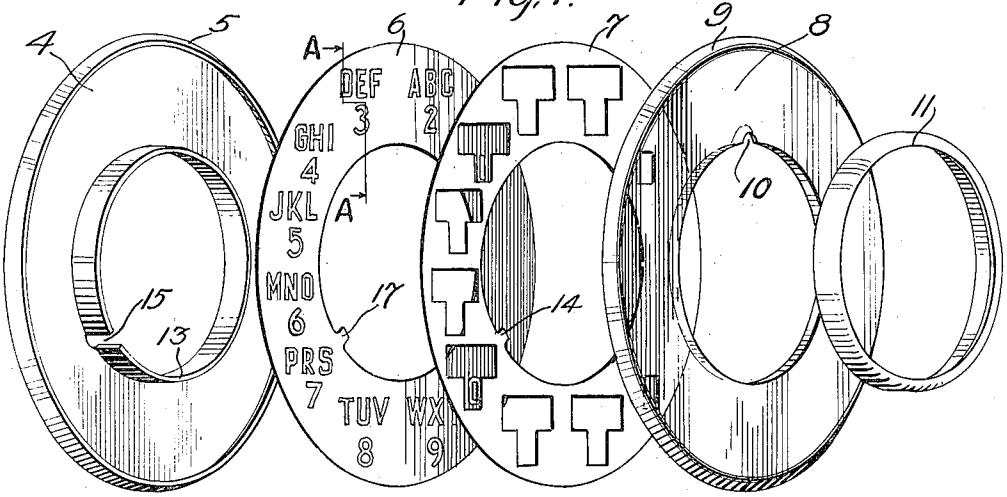


Fig. 4

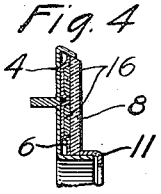


Fig. 2.

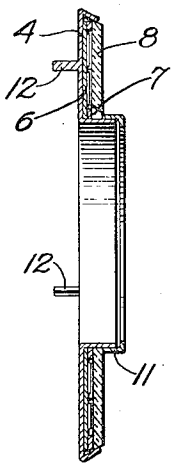
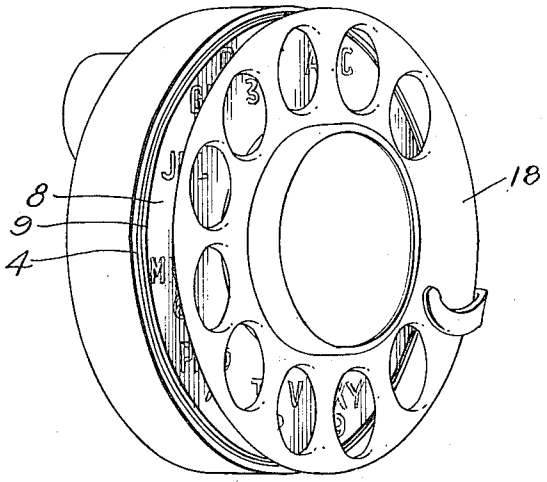


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN F. HEARN, OF PASSAIC, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

LUMINOUS INDICATOR.

Application filed April 15, 1922. Serial No. 553,208.

To all whom it may concern:

Be it known that I, JOHN F. HEARN, a citizen of the United States, residing at Passaic, in the county of Passaic, State of New Jersey, have invented certain new and useful Improvements in Luminous Indicators, of which the following is a full, clear, concise, and exact description.

This invention relates to luminous indicators and particularly to luminous number and instruction plates used in connection with automatic telephone calling devices and the like.

In automatic telephone systems, it is necessary for the calling party to initiate a call by setting up on a calling device the number of the party with whom a connection is desired. It is difficult to initiate such a call in the dark, or in ill-lighted places, such as hallways and public booths, with the ordinary characters in a calling device as they are not plainly visible. It is, therefore, desirable to provide the number plates of such devices with luminous characters so that they may be readily operated under such conditions. The life of phosphorescent or radio-luminous paints used for such purposes is such that occasional removal of the character bearing plate is necessary so that the characters may be retouched or replaced. It is, therefore, essential to provide for the ready removal of the part bearing the luminous characters. In order to protect the luminous characters and prevent damage thereto, a suitable transparent covering which does not contact with the characters and is capable of withstanding a maximum amount of abuse without breaking, or even abrading to the extent of rendering it difficult to see the characters, may be employed. For this purpose celluloid, or an equivalent material, has been found to be satisfactory if it is permitted to rotate with the finger wheel of the calling device.

An object of this invention is to provide a calling device with a luminous dial of simple construction and economical to manufacture and maintain.

Another object is to provide a luminous indicator having a movable transparent facing to protect the luminous characters.

Other objects will appear hereinafter.

In general the invention comprises a plate having luminous characters thereon, a case for said plate, and a flexible, transparent facing over said plate fitting said case with sufficient looseness to permit it to rotate with respect to the case.

In the drawing, Fig. 1 shows the component parts of a luminous indicator, or number plate, for use on a calling dial of an automatic telephone system.

Fig. 2 is a cross-sectional view of the assembled number plate.

Fig. 3 shows in perspective the assembled calling dial with its number plate in position.

Fig. 4 shows a modification of the plate bearing the luminous characters.

The component parts of the number plate are held in place by an annular casing 4 having an inner annular flange 13 and an inwardly beveled outer flange 5. An annular plate 6 is inserted in the casing. This plate, of thin celluloid, paper, or other suitable material, has painted thereon luminous characters. Over it is placed the covering 7 provided with openings corresponding to the various luminous characters or groups of such characters on the plate. By registering the openings in covering 7 with luminous characters on the plate 6, the letters are visible and are still somewhat set-in so as to be protected from wear. Plate 6 and covering 7 are provided with lugs 17 and 14, respectively, which register with slot 15 in case 4 and prevent relative movements between these parts. A facing 8 of transparent flexible material, such as celluloid, is inserted within casing 4 over the plate 6 and covering 7. It has a beveled outer edge 9 so as to fit under the edge 5 of casing 4 and is flexible so that it may be easily warped into place. Facing 8, although positively held against falling out, is loosely fitted so as to permit it to revolve when contacted with any sharp article which may be used in operating the finger wheel of the calling device. If facing 8 could not revolve when contacted with such articles, it would soon become mutilated so that the characters would not be easily visible therethrough making replacement necessary. A notch 10 is provided in the inner edge of the protective facing 8 so that a suitable tool or instrument may be inserted to remove the facing 8 from casing 4 to permit the repainting of luminous characters or the replacing of plate 6 when the paint has lost its luminosity, and also to

permit the replacing of the facing 8 should it become damaged. This notch also permits the use of a simple tool for warping the facing so it may be easily inserted in the casing 4. The clamping ring 11, slightly oval in shape, may be fitted over the annular flange 13 of the casing 4. Its oval shape is designed to hold it firmly in place and yet permit its easy removal. The assembled number plate may be provided with projecting lugs 12 for insertion in corresponding holes in the body of the calling device to correctly position it thereon.

A rotatable finger wheel 18 is fitted over the mechanism above described.

The characters on plate 6 may be either painted on a flat surface with luminous paint or they may be first depressed in the plate and the depressions filled with luminous material. Supposing plate 6 to have depressed letters, Fig. 4 represents a cross-section through A—A. In this case the luminous material 16 does not project above the surface of the plate so the covering 7 may be dispensed with.

Although telephone calling devices have been selected for the purpose of illustrating the invention, obviously it may be applied to other devices employing number plates. While the invention is particularly adapted to luminous number plates where the characters are made of luminous material, the structure disclosed is also applicable to number plates having non-luminous transparent or translucent characters which are illuminated from the rear of the dial.

The invention claimed is:

1. The combination of a calling device with a number plate having depressed characters filled with luminous material, and a rotatable protective facing therefor.

2. The combination of a calling device with a number plate having luminous characters, and a transparent rotatable protective facing over said plate and out of contact with said characters.

3. A calling device comprising a rotatable finger wheel, a number plate having luminous characters thereon, and a transparent protective facing for said number plate rotatable with said finger wheel.

4. A calling device comprising a rotatable finger wheel, a number plate having luminous characters, a case for said plate, a transparent protective facing for said plate engaging said case and rotatable with said finger wheel.

5. A luminous indicator comprising a plate bearing luminous characters, a case for said plate, and a transparent protective facing for said plate rotatably engaging said case.

6. A luminous indicator comprising a plate bearing luminous characters, a cese for said plate, a transparent facing rotatable with respect to said plate and case, said facing having an opening therein to facilitate in removing and inserting it in said case.

7. A calling device comprising a finger wheel, a number plate having luminous characters thereon, a protective facing therefor having a beveled outer edge, an annular metallic holder for the number plate and protective facing, and an outer rim on the holder having its upper edge spun over to fit over said beveled edge on the transparent facing.

In witness whereof, I hereunto subscribe my name this 13th day of April A. D., 1922.

JOHN F. HEARN.