

Dec. 17, 1929.

H. L. UNGERER

1,740,129

ANNUNCIATOR AND OPERATING MEANS THEREFOR

Filed July 30, 1926

2 Sheets-Sheet 1

Fig. 1.

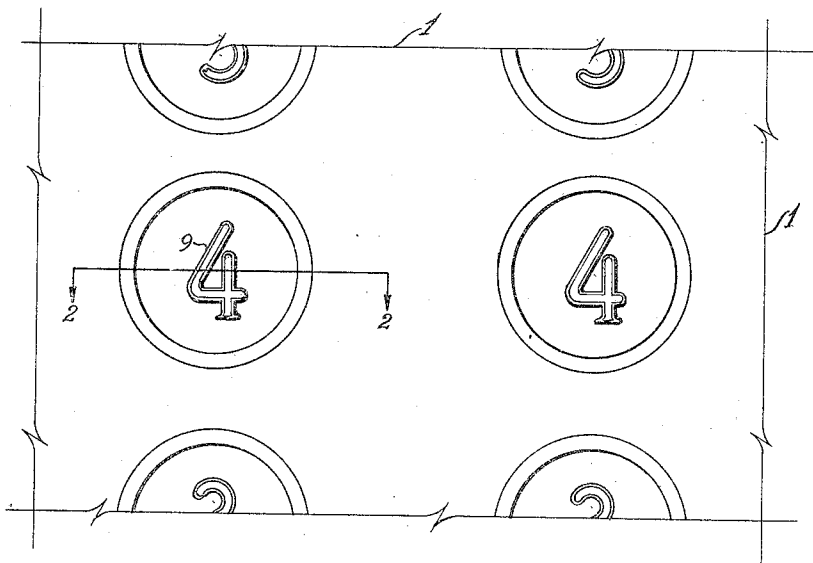


Fig. 2.

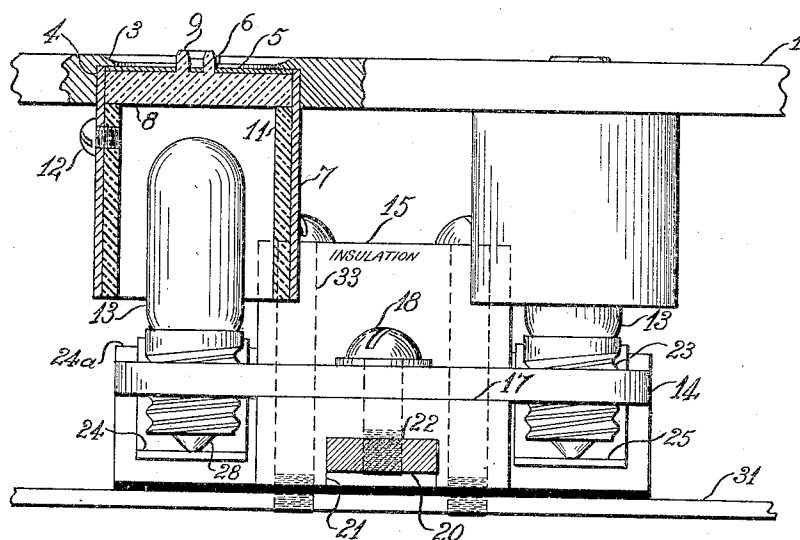


Fig. 3.

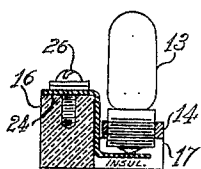
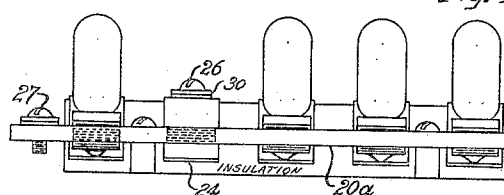


Fig. 4.



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FIG. 5

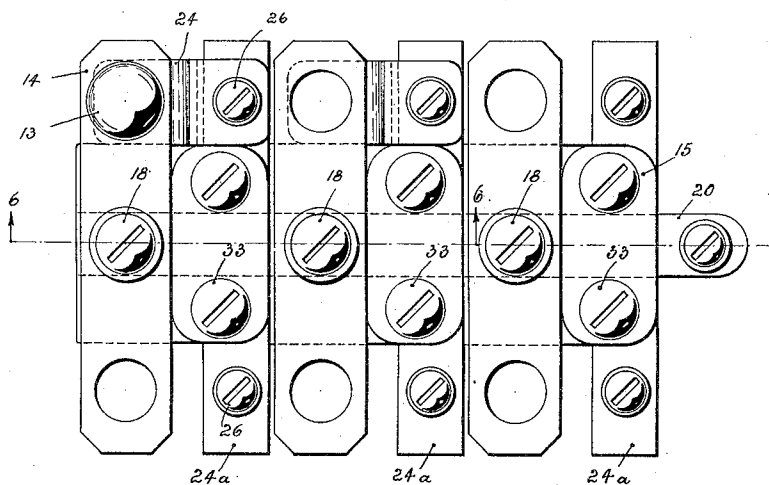


FIG. 6

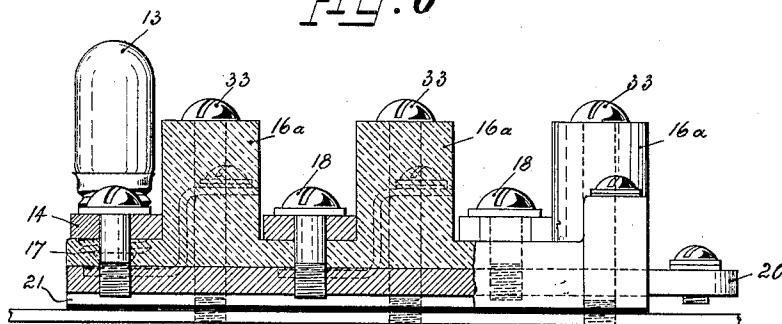
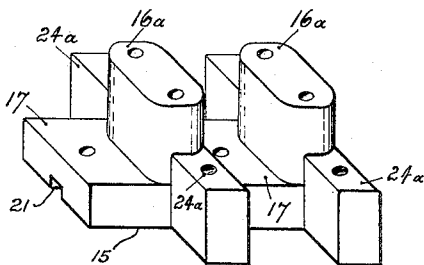


FIG. 7



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ANNUNCIATOR AND OPERATING MEANS THEREFOR

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This invention relates to electric annunciators and particularly to methods of constructing, combining and arranging the parts thereof. It is an object of this invention to provide an annunciator having novel means for illuminating the signal parts, such as the well known miniature lamps which are commonly used in the selective indication annunciator of the visual signal type. Another object is to provide novel mounting and current conducting means.

Another object of the invention is to provide novel indicating means adapted to be illuminated by the flashing of the signal lights.

Other objects and advantages to be obtained by the use of my novel apparatus will become apparent from an inspection of the accompanying drawings made in conjunction with the following explanation.

In the drawings Figure 1 shows a portion of an annunciator panel with certain of the indications thereon.

Figure 2 is a section thru the annunciator box showing mounting means for the flashlights and also the interior construction of the indicating and illuminating parts.

Figure 3 is a cross-sectional view taken in a plane passing through the center of one of the lamps shown in Figure 4.

Fig. 4 is a view of a modified construction.

Fig. 5 is a plan view of the parts shown in Figs. 2 and 3 but not including the upper portion of the annunciator construction.

Fig. 6 is an elevation view partly in section along the line 6—6 of Fig. 5.

Fig. 7 is a view in perspective of a portion of the insulating bed.

Referring to the drawings, reference character 1 designates generally the panel of the annunciator. At the proper points in the panel openings are provided as shown at 2. These openings are preferably circular in form and with the edges thereof beveled as shown at 3 in Figure 2. In the preferred construction as shown in drawings the beveled portion 3 extends but a short distance into the panel 1, the rest of the thickness of the panel having a straight cylindrical bore

of a diameter substantially equal to the diameter at the outer surface, this being illustrated clearly at 4 in Figure 2. Into this straight cylindrical bore is inserted a thin disc of opaque material, preferably metal, as indicated by reference character 5 in Figure 2. Disc 5 has one or more cut-away portions, centrally located as indicated at 6, for a purpose which will presently appear.

After the insertion of disc 5 there is placed in the bore 4 a bushing or retaining sleeve 7 of suitable material as shown in Figure 2. There is then inserted in sleeve 7 another disc 8 constructed of transparent or translucent material, preferably glass. This second disc 8 has one or more raised portions as indicated at 9, which portions are adapted to fit thru the corresponding opening 6 in disc 5 and extend upwardly therefrom. This raised portion is intended to be of such a shape and outline as to serve as an indication or signal, it being understood that the annunciator is used for signal giving or other indicating purposes.

In the preferred construction illustrated in the drawings this signal giving character takes the form of a numeral or numerals, but obviously any other indicating character such as an arrow, for example, may be effected by merely changing the outline and contour of the projecting portion 9 and the corresponding cut out portion 6 in disc 5.

After insertion of the disc 8 there is inserted another sleeve 11 fitting closely within outer sleeve 7, as shown in Figure 2, this latter sleeve being constructed of fibre or other suitable insulating material. Some means should be provided for firmly holding fibre sleeve 11 in position and for this purpose I have shown in the drawing a screw 12 passing thru the two sleeves 7 and 11, but obviously other holding or retaining means may be employed.

Having now described the indicating structure and the means for guiding and directing the light rays to the indicating structure, I will next describe the light emitting members and the electrical means provided for causing the operation of the light emitting members.

Figure 2 shows a bulb 13 of the common type as it appears when mounted for operation in the annunciator. An inspection of this figure will show that when the bulb 13 is energized light rays will be guided and directed thru the transparent disc 8 and particularly thru the projecting portions thereof to illuminate the character formed by the said projecting portions, it being obvious that the metallic disc 5, being of an opaque substance, will obstruct the light rays from all portions of the opening 2 with the exception of the central portion, which is taken up by the indicating character. In other words, with my particular illustration in mind, the energization of lamp 13 causes a glass numeral, such as the numeral 4 as shown in Figure 1, to be brilliantly illuminated. Inasmuch as the opaque disc 5 covers the remaining portions of the opening, the effect produced is that of an illuminated numeral shining thru a relatively dark surface.

The shanks or bases for the flashlight bulbs pass thru suitable threaded openings in horizontal bars 14, which bars are constructed of brass or other suitable conducting material. With the arrangement of signal lights, as shown in Figures 1, 2, 3, 5 and 6 of the drawings in double file formation, the preferred method of mounting these horizontal conducting bars 14 is to have a block of insulating material, as 15, extending the entire length of the annunciator, and forming a single continuous bed having alternate raised and depressed portions, as shown respectively at 16 and 17 in Figure 3 (which is a sectional fragmentary view through the vertical axis of a lamp 13 in Figure 4 at right angles to Figure 2) and Fig. 7 the lower portion 17 occurring opposite the bulbs 13 so that the horizontal cross bars 14 adapted to rest thereon, and the higher portions 16 occurring between successive lower portions (see also Figs. 5, 6 and 7) and consisting of upstanding lugs or bosses 16^a flanked on either side by shoulders 24^a rising to a height intermediate that of the bosses 16^a on the one hand and that of the lowest portions 17 on the other. Suitable means such as screws 18 are provided for attaching these cross bars 14 to the respective lower portions 17 of the longitudinally extending insulating bed 15. Means for carrying current to the various cross bars 14 preferably consist of a longitudinal feed strip 20 extending the entire length of the annunciator and having at its extreme end a terminal post (see Figures 5 and 6) which serves for the attachment of a current conducting wire. This feed strip 20 is secured to the bed 15 preferably by providing a groove, as shown at 21, in the bed of sufficient width and depth to receive the feed strip 20. The screws 18 are made of sufficient length to extend thru the bed 15 and into suitable threaded holes 22 provided in feed strip 20 for the purpose.

There is thus provided a path for current from each of the bulb shanks 23 to the feed strip 20 by way of the corresponding cross bars 14 and retaining screw 18.

Having described the means for conveying current to one end of the filaments of the various flashlights, I will now describe the means employed individually for returning the current from the other end of the filaments. This means, in the preferred embodiment as illustrated, comprises a strip 24 of thin brass or other suitable metal for each bulb, which is bent at right angles at two points, as indicated in Figures 3, 5 and 6. The upper end of each of these strips 24 is preferably secured to the corresponding shoulder 24^a on the insulated bed 15 by means of any suitable fastening member, as for example screw 26. The other end of each of the strips 24 extends horizontally beneath the threaded opening in the cross bar 14 and is adapted to be contacted by the tip 28 of the bulb shank 23 when the bulb is screwed into the cross bar. Inasmuch as strip 24 is fixedly secured at only one point in cantilever fashion, it is obvious that this lower end of each of the strips 24 is free to yield to pressure exerted thereagainst by screwing down the associated bulb. Likewise it is apparent from the manner of bending the strips that each strip will have a tendency to remain in contact with its corresponding tip 28 so long as it remains firmly secured at its other end by means of screw 26.

Means are provided in connection with each of the screws or binding posts 26 for the attachment of current conducting wires, this means in the simplest form consisting of the ordinary pair of washers 30 in Figure 4 provided for this purpose. Any suitable means may be provided for securing the bed 15 and its associated members to the housing 31 of the annunciator. As shown here this means consists of a plurality of pins or screws 33 Fig. 2 extending straight way thru the bed at convenient points along its length, suitable holes being provided in the bosses 16^a to receive the screws. By constructing these bosses 16^a so that they rise above the level of the conducting screws 18 and 26, thereby permitting the use of the long screws 33, the entire assembly is made more secure, and the possibility of short circuiting between the screw-heads is practically eliminated.

With the construction as outlined above it is obvious that a path of current to any of the flashlights 13 may be provided upon closure of the appropriate switch, which current will pass thru the corresponding conducting wire to the proper binding post 26, thence thru the associated strip 24 to tip 28, thence to the filament of the flashlight 13, the circuit passing from shank 23 to the associated cross bar 14, thence from screw 18 to the feed strip 20, from which point a return path to the source

of current will be provided by inserting a binding post in strip 20 and a wire leading therefrom.

It is furthermore obvious that inasmuch as each of the strips 24 is completely insulated from each of the other strips 24, no short circuit can be produced by the closure of any one of the individual flashlight circuits, it being understood that each of the flashlights is placed in a circuit in which separate and individual means are provided for closing that particular circuit and only that circuit.

Inasmuch as my novel contribution consists merely in the mechanical structure, I have not deemed it necessary to illustrate the other portions of an electric system with which this structure may be associated, it being obvious that a structure of this type is capable of use in a large variety of ways and with numerous types of electric circuits and systems of circuits.

Figure 4 is a modification showing a simple mounting construction by which it is possible to have a single feed strip 20^a form the return circuit and the mounting means for each bulb shank, the bent strips 24 forming the individual feeds for the bulbs, which are placed in single file formation as shown. Obviously several of these files of bulbs may be arranged side by side, and the energization of the various lights controlled at will; it being understood that each individual strip 24 is provided with a binding post 26 and feed strip 20^a with a binding post 27.

With the foregoing description taken in connection with the accompanying drawings it will be evident that I have provided a novel type of annunciator with novel and artistic signalling and indicating means and with a compact, efficient and extremely reliable circuit making mechanism, which is of a sturdy yet simple construction, easily mounted, dismounted and replaced and which can be constructed at a low cost, much less than the cost of the ordinary structure now used for the same purpose.

I have made a disclosure in Figures 2-3 and 4 of a means for threading the bases of electrical units into an electrically energized feed bar, thereby eliminating the commonly used and correspondingly threaded female socket. This will suggest to all manufacturers and skilled mechanics and engineers in the art a method for making a very decided improvement in the manner of mounting lamps, plug type fuses, and other electrical units having bases provided with a thread or other securing means. It suggests the means for eliminating the lamp socket and its cost, the means for eliminating the lead wires and attaching screws for each lamp socket and the cost thereof. The disclosure furthermore shows a simple and a very reliable and easily installed structure.

While I have pointed out a particular and specific embodiment of my invention, it is to be understood that I do not limit myself to such specific construction but intend the scope of my invention as disclosed herein and defined in the appended claim to include modifications and other adaptations which this disclosure will readily suggest to persons skilled in the art.

I claim:

A device of the class described comprising a base of insulating material having integral projections, a plurality of conducting bars mounted transversely on said base, means for supporting a plurality of lamps on said bars and making contact with each lamp-shell contact, said lamps being in corresponding formation on each side of the longitudinal axis of the base, means for establishing electric circuits to said lamps, said means including a feed bar below the base and flexible strips contacting with each center-contact of the lamps and secured to some of the above mentioned projections, and means for securing the conducting bars and the feed bar to the base, said last named means forming a part of the lamp circuits.

Signed at Hoboken, New Jersey, July 29, 1926.

HOWARD L. UNGERER.