Sept. 16, 1952 R. B. THORP 2,611,018

MIMIC DIAGRAM PANEL

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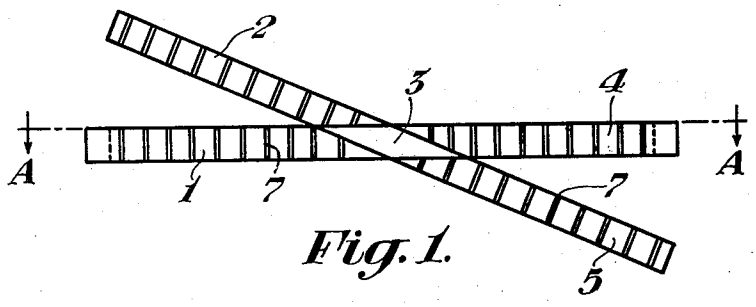


Fig. 1.

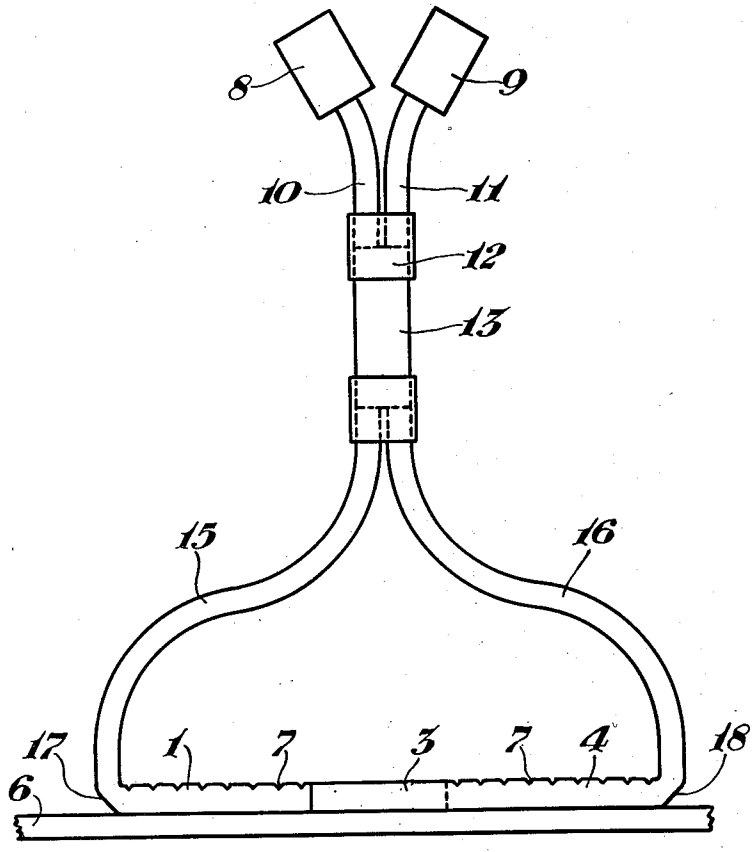


Fig. 2.

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MIMIC DIAGRAM PANEL

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3 Claims. (Cl. 177—311)

1

This invention relates to mimic diagram panels of the kind described in co-pending patent application No. 88,008 in the names of L. H. Peter and E. A. Sheppard and has for its object the provision of improved arrangements for illuminating certain of the variable or controlled representations or symbols whereby a saving is effected in the number of light units employed.

In diagram panels of this kind it is sometimes necessary that certain of the representations or symbols are always illuminated simultaneously and according to the invention two or more strips or plates of transparent material bearing such representations or symbols are connected by means of individual rods of transparent material to one single rod of transparent material to which is supplied light from one or more light units, the arrangement being such that light from each light unit is transmitted by internal reflection through the single rod and thence through each individual rod to the strips or plates bearing the representations or symbols to be illuminated.

In one embodiment of the invention comprising a track diagram for a railway signalling system, the representation of the railway tracks which require to be illuminated includes one or more cross-overs. The representation of each cross-over comprises four separate sections, forming the arms of a letter X, and it is desired to illuminate simultaneously one or other of the pairs of sections forming the diagonally opposite arms of the X in order to indicate which route, of which the cross-over forms a part, is set up.

It may also be desired to illuminate the sections with white light when the route is set up and with red light when that portion of the track is occupied by a vehicle. In accordance with the above mentioned prior application, each of the four sections would be illuminated separately with its own light units, one white and one red being supplied for each of the four sections, making eight lamps for the whole cross-over. In the arrangement according to the invention, however, only four light units, two white and two red, are required.

The invention is illustrated, by way of example, in the accompanying drawing of which

Figure 1 shows a representation on a track diagram panel of a cross-over, which may be part of a railway track layout represented on the panel as a whole; and

Figure 2 represents a plan view along the line A—A.

Referring to the drawing, the cross-over is depicted on the panel 6, which is preferably formed of a suitable transparent material, by lines painted on its rear surface and abutting against this surface, in such positions that they coincide with the painted representation of the cross-over, are four strips 1, 2, 4, 5 of similar material each having one end cut at an angle and abutting against a diamond shaped piece 3. The rear surface of each of the four strips is provided with scribed lines or shallow grooves 7 which become illuminated by internal reflection of light passed into the strips, as described in the aforementioned co-pending application, to indicate certain traffic conditions to the signalman for whose information the diagram panel is provided.

With a cross-over of the kind illustrated it is desired that when the strips are illuminated they always be illuminated in pairs, either 1 together with 4 or 2 together with 5. For the purpose of illuminating strips 1 and 4 with either white or red light, two lamp holders 8, 9 are provided one of which contains a red filter for colouring the light therefrom.

A rod 10, 11 of transparent material extends from each light unit to a single rod 13 with one end of which they are held in butting engagement by a suitable ferrule 12. The other end of the single rod 13 is similarly held in butting engagement with two individual rods 15, 16 leading to the ends of the strips 1, 4 so that when one of the lamps is lit the light rays therefrom are transmitted by internal reflection through the rod 10 and 11 connecting the light unit to the single rod 13, through the single rod and thence through both individual rods 15, 16 to the two strips 1, 4.

The strips 1, 4 may be formed integral with the rods 15, 16 or may be held in butting engagement therewith. Similarly, rods 10, 11, 13, 15 and 16 may all be formed in one piece. The corners 17, 18 where the light rays have to be deflected substantially at right angles to enter the strips 1, 4 are preferably formed at an angle of approximately 45° to the strips to ensure as complete reflection as possible, and, if desired a suitable mark, not shown, may be placed over this point to prevent light rays not so reflected from passing through the panel. The other pair of strips 2, 5 are similarly dealt with and it will then be seen that four lamps only are required for this portion of the track diagram instead of the usual eight required hitherto.

It is evident that the invention is not limited to the arrangement above described by way of example. For instance, more than two strips

or plates may be simultaneously illuminated by butting more individual rods against the end of the single rod, or each individual rod may be split into two or more branches, each leading to a different strip or plate or each feeding the strip or plate at a different point. Furthermore, more than two light units may be used or, alternatively, but a single light unit may be employed for each group of simultaneously illuminated strips or plates.

Having thus described my invention, what I claim is:

1. For a railway signalling system, a mimic track diagram panel depicting a cross-over comprising, in combination, a sheet of transparent material; four strips or plates of transparent material in surface contact with said sheet and each having delineated thereon a representation of one arm of said cross-over, said representation being adapted to be illuminated by internal reflection of light within said strip or plate; a first single rod of transparent material; a first pair of individual rods of transparent material in light transferring engagement with one end of said first single rod and a diagonally opposed pair of said strips or plates; a second single rod of transparent material; a second pair of individual rods of transparent material in light transferring engagement with one end of said second single rod the other diagonally opposed pair of said strips or plates; and means for at times illuminating the other end of said first single rod or said second single rod.

2. A mimic diagram panel comprising a sheet of transparent material having representations delineated on one surface thereof, a strip of transparent material having other representations delineated on one surface thereof adapted to be illuminated by internal reflection of light within said strip, a median portion of said strip being in surface contact with the rear surface of said sheet, the two ends of said strip being bent and extending to the rear of said sheet, a member of light-conducting material abutting the two ends of said strip in light transferring engagement therewith, and two individual sources of light in light transferring engagement with said light-conducting member, each of said light sources being adapted to illuminate said strip through both ends thereof.

3. In a mimic diagram panel, the combination comprising, a strip of transparent light-conducting material having a median portion with representations delineated thereon adapted to be illuminated by internal reflection of light, the two ends of said strip being bent and extending rearwardly of said median portion, a member of light-conducting material abutting the two ends of said strip in light transferring engagement therewith, and two individual sources of light in light transferring engagement with said light-conducting member, the light from each of said sources passing into said strip from both ends thereof.

ROGER BENNETT THORP.

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