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MIMIC DIAGRAM PANEL FOR RAILWAY AND OTHER INDICATION SYSTEMS

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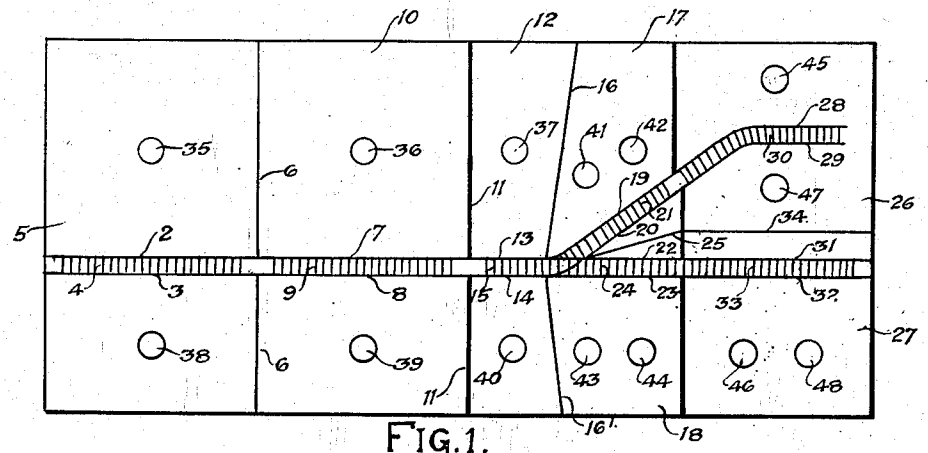

FIG. 1.

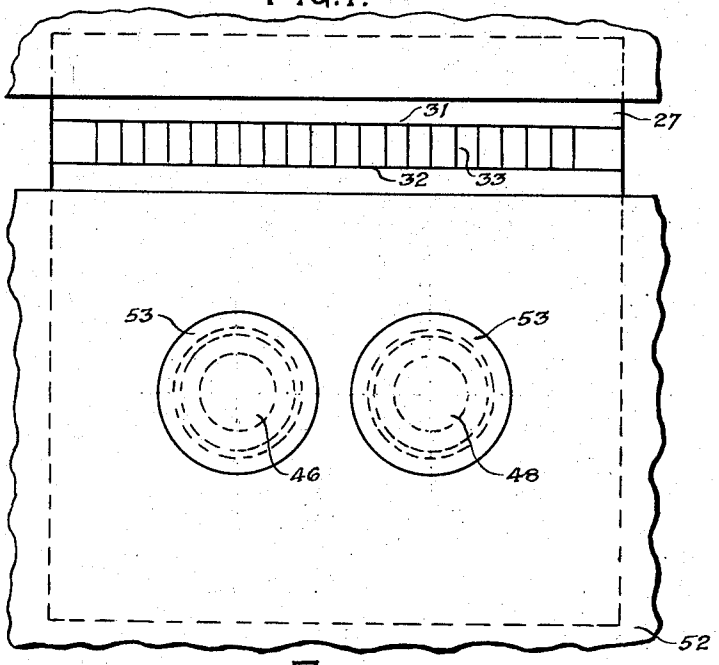

FIG. 2.

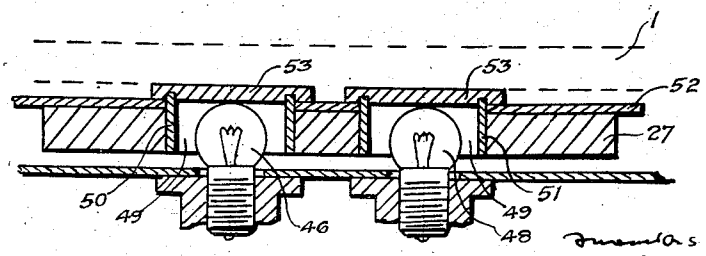

FIG. 3.

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MIMIC DIAGRAM PANEL FOR RAILWAY AND OTHER INDICATION SYSTEMS

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6 Claims. (Cl. 177—311)

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This invention relates to mimic diagram panels for railway or other indication systems of the kind described in the specification of our prior patent application No. 88,008 in which the invariable portion of the representation on the panel and any symbols associated therewith are carried on the surface of the panel and illuminated by internal reflection, the variable or controlled portions of the representation being carried on the faces of plates or strips of transparent material also illuminated by internal reflection.

The present invention has for its object to provide an improved panel of the character above indicated and according to the invention the separate plates or strips bearing the variable or controlled portions of the representation are fitted together in the manner of the sections of a jig-saw puzzle to form a complete sheet covering the whole area of the panel or that part or parts thereof provided with variable or controlled representations, each of these individual plates being provided with one or more sources of light for illuminating by internal reflection the representation on the plate.

The invention is illustrated by way of example in the accompanying drawings of which—

Figure 1 is a view in front elevation of a mimic diagram panel for a simple track layout constructed in accordance with one form of the invention.

Figure 2 is a similar view on an enlarged scale of a portion of the panel shown in Figure 1, Figure 3 being a sectional view thereof.

Referring now to the drawings the invariable portions of the representation of the track layout are carried on the surface of the main panel (not shown in Figures 1 and 2) as described in the specification of our prior application No. 88,008 this main panel being indicated in dotted lines at 1 in Figure 3.

The variable or controlled portions of the track representation consist of lines representing the track rails and transverse bars engraved on the rear surface of plates fitted together in the manner of the sections of a jig-saw puzzle to form a complete sheet.

For example the lines 2, 3 and the transverse bars 4 are engraved on a plate 5. Similarly the lines 7, 8 and the bars 9 of the next adjacent portion of the track representation are engraved on a plate 10, the lateral edges of the plate 5 and 10 abutting against each other on the line 6.

The next adjacent section of the track representation is borne by a plate 12 on which are engraved the lines 13, 14 and bars 15, the left hand lateral edge of the plate 12 abutting against the corresponding lateral edge of the plate 10 on the line 11.

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Abutting against the right-hand lateral edge of the plate 12, on the line 16, 16', are two plates 17, 18 of which the upper plate 17 bears engraved lines 19, 20 and bars 21 corresponding to a track divergence while the lower plate 18 bears engraved lines 22, 23 and bars 24 corresponding to the main track, the plates 17, 18 abutting against one another on the line 25.

The extreme right-hand section of the track representation comprises plates 26, 27 abutting at their lateral edges against the corresponding edges of the plates 17, 18. The plate 26 bears the engraved lines 28, 29 and bars 30 of the diverging track while the plate 27 bears the engraved lines 31, 32 and bars 33 of the main track, the adjacent horizontal edges of the plates 26, 27 abutting together on the line 34.

The engraved representations on the plates forming the sectionalised sheet are illuminated by internal reflection as in the case of the panel of our earlier application and in order to prevent leakage of light between the several plates the substantially vertical edges of the plates are rendered opaque and these edges may be silvered or otherwise rendered reflecting to assist the internal illumination.

For the same purpose the edges of the plates 17, 18 and of the plates 26, 27 abutting against each other at the lines 25, 34 are similarly treated.

The illumination of the representation is effected by internal reflection as in the case of our earlier invention and as shown in the drawings incandescent electric lamps for this purpose are located in apertures in the plates above referred to.

Since as described in our earlier specification it is desired to illuminate the track representations in white or red light alternatively to indicate respectively the setting up of a route or its occupation by a train or vehicle, separately controlled white and red lamps are provided for each element of the representation.

The plates 5, 10, 12 are provided with white lamps 35, 36, 37 and red lamps 38, 39, 40. It will be evident that the corresponding sections of the track representation can be illuminated in white light by supplying operating current to the lamps 35, 36, 37 or these sections can be illuminated in red light by supplying operating current to the lamps 38, 39, 40.

The plate 17 is provided with a white lamp 41 and a red lamp 42 for illuminating the lines 19, 20 and the bars 21 in a corresponding colour while the plate 18 is provided with a white lamp 43 and a red lamp 44 for illuminating the lines 22, 23 and bars 24. Similarly the plates 26 and 27 are provided with white lamps 45, 46 and red lamps 47, 48 for illuminating the diverging or main track representations.

The lamps above referred to, as shown in the case of the lamps 46 and 48 in Figure 3 are each located in an aperture 49 in the plate 27, the lamp 46 being surrounded by a tubular uncoloured screen 50 and the lamp 48 by a similar red colour screen 51.

An opaque mask 52 covers the whole front face of the plate 27 except for a strip adjacent to the track representation, the other plates of the panel being similarly masked. Each lamp is screened by a circular cover plate 53.

It will be understood that in cases in which the main mimic diagram panel is of curved cross-section, the section plates above referred to should be similarly curved so that when assembled as above described they fit closely against the surface of the main panel and in this and other respects the invention is not limited to the particular construction described by way of example.

Having thus described our invention, what we claim is:

1. A mimic diagram panel for displaying a layout consisting of an invariable representation and a variable representation consisting of sections, comprising in combination, a sheet consisting of transparent material having a part bearing the invariable representation of the layout; means for illuminating said part bearing the invariable representation by internal reflection of light within said transparent material; a plurality of plates, consisting of transparent material, and having parts, respectively, bearing the sections of the variable representation, said plates being mounted close behind said sheet and fitted together so that the sections are combined to the variable representation; and means for internally illuminating each of said plates independently, whereby the sections of the variable representation are illuminated by internal reflection within said plates, respectively, and thus are rendered readily visible through said sheet.

2. A mimic diagram panel for displaying a layout consisting of an invariable representation and a variable representation consisting of sections, comprising in combination, a sheet consisting of transparent material having a part bearing the invariable representation of the layout; means for illuminating said part bearing the invariable representation by internal reflection of light rays introduced edgewise into said sheet; a plurality of plates, consisting of transparent material, and having parts, respectively, bearing the sections of the variable representation, said plates being mounted close behind said sheet and fitted together so that the sections are combined to the variable representation; each of said plates having at least an aperture; and a light source in each of said apertures for internal illumination of said plates, respectively, whereby the sections of the variable representation are illuminated by internal reflection within said plates, respectively, and thus are rendered readily visible through said sheet.

3. A mimic diagram panel for displaying a layout consisting of an invariable representation and a variable representation consisting of sections, comprising in combination, a sheet consisting of transparent material having a part bearing the invariable representation of the layout; means for illuminating said part bearing the invariable representation by internal reflection of light within said first transparent material; a plurality of plates, consisting of transparent material, and having parts, respectively, bearing the sections of the variable representation, said plates being mounted close behind said sheet and fitted together with the edge portions thereof so that the sections are combined to the variable representation; means rendering opaque the abutting edges of said plates; and means for internally illuminating each of said plates independently, whereby the sections of the variable representation are illuminated by internal reflection within said plates, respectively, and thus are rendered readily visible through said sheet.

4. A mimic diagram panel for displaying a layout consisting of an invariable representation and a variable representation consisting of sections, comprising in combination, a sheet consisting of transparent material having a part bearing the invariable representation of the layout; means for illuminating said part bearing the invariable representation by internal reflection of light within said first transparent material; a plurality of plates, consisting of transparent material, and having parts, respectively, bearing the sections of the variable representation, said plates being mounted close behind said sheet and fitted together with the edge portions thereof so that the sections are combined to the variable representation; means rendering light reflecting the abutting edges of said plates; and means for internally illuminating each of said plates independently, whereby the sections of the variable representation are illuminated by internal reflection within said plates, respectively, and thus are rendered readily visible through said sheet.

5. A mimic diagram panel for displaying a layout consisting of an invariable representation and a variable representation consisting of sections, comprising in combination, a sheet consisting of transparent material having a part bearing the invariable representation of the layout; means for illuminating said part bearing the invariable representation by internal reflection of light within said first transparent material; a plurality of plates, consisting of transparent material, and having parts, respectively, bearing the sections of the variable representation, said plates being mounted close behind said sheet and fitted together with the edge portions thereof so that the sections are combined to the variable representation; means rendering opaque the abutting edges of said plates; means for preventing the passage of light from said plates to said sheet at points other than where the sections of the variable representation are required to be seen; and means for internally illuminating each of said plates independently, whereby the sections of the variable representation are illuminated by internal reflection within said plates, respectively, and thus are rendered readily visible through said sheet.

6. A mimic diagram panel for displaying a layout consisting of an invariable representation and a variable representation consisting of sections, comprising in combination, a sheet consisting of transparent material having a part bearing the invariable representation of the layout; means for illuminating said part bearing the invariable

representation by internal reflection of light within said first transparent material; a plurality of plates, consisting of transparent material, and having parts, respectively, bearing the sections of the variable representation, said plates being mounted close behind said sheet and fitted together with the edge portions thereof so that the sections are combined to the variable representation; means rendering opaque the abutting edges of said plates; a plurality of opaque screens arranged between said sheet and said plates, respectively, each of said screens having a slot being in substantial alignment with the section of the variable representation carried by the associated one of said plates; and means for internally illuminating each of said plates independently, whereby the sections of the variable representation are illuminated by internal reflection within said plates, respectively, and thus are rendered readily visible through said sheet.

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