

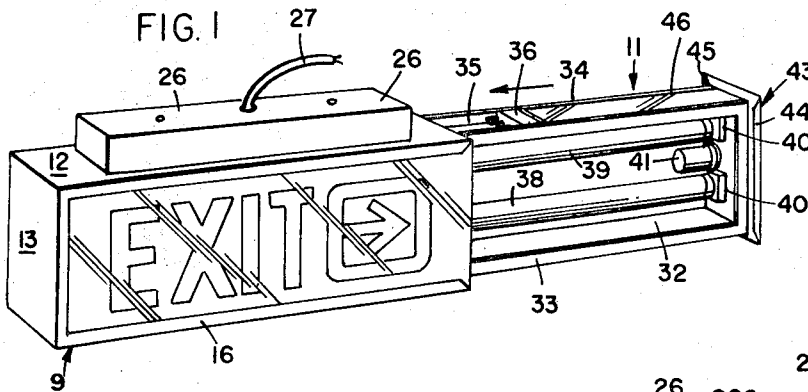
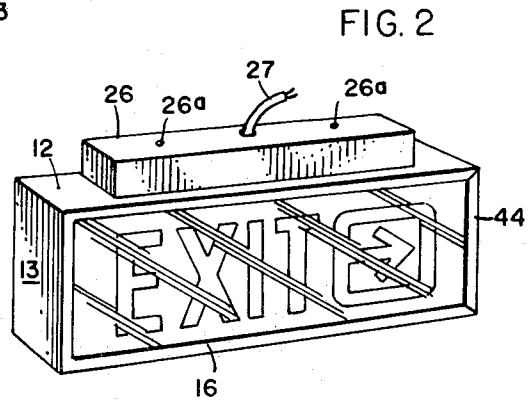
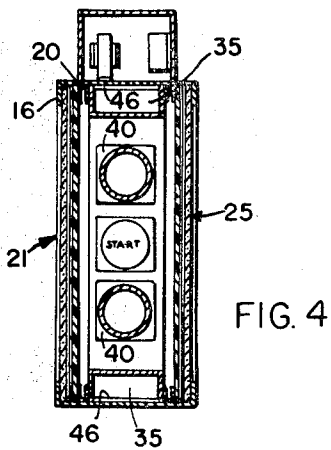
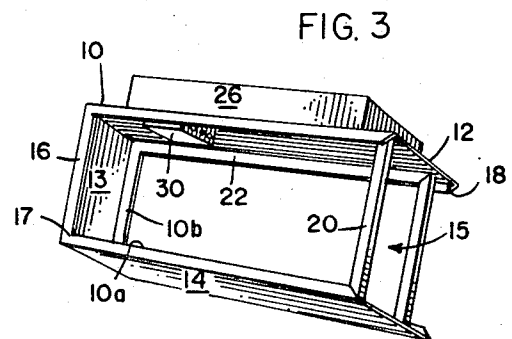
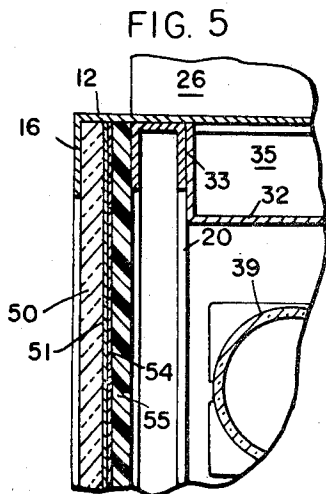
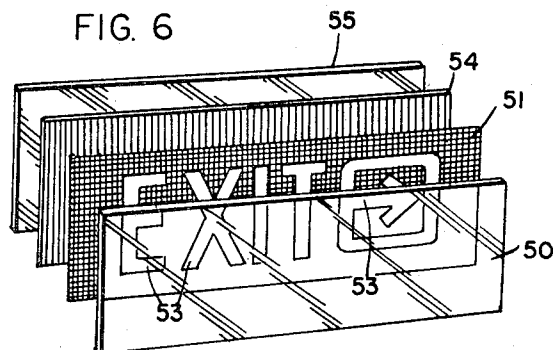
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DISPLAY SIGN

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DISPLAY SIGN

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4 Claims

ABSTRACT OF THE DISCLOSURE

A sign includes a box-shaped housing including an integral cabinet having at least one side providing a window for displaying indicia. The cabinet provides a top, bottom and one side of the housing together with a frame for the window. The cabinet also defines one open side to receive a chassis on which is mounted a source of light to illuminate the sign. An electrical receptacle is mounted on the interior of the cabinet; and a mating plug is mounted on the chassis so that the plug disconnects from the receptacle when the chassis is removed from the cabinet. Electrical power is fed to the receptacle and thence to the plug. Wires are routed through a raceway provided in the periphery of the chassis to couple to sockets mounted on opposing sides of the chassis and which receive the fluorescent tubes. A display subassembly is received in a channel in the cabinet adjacent the window; and it includes a faceplate and a diffusion plate behind it. An indicia-bearing member and a color-providing film, if any, are interposed between the faceplate and the diffusion plate.

BACKGROUND

The present invention relates to a display sign such as an EXIT sign that might be mounted in the corridor of a building to indicate the direction in which the nearest exit lies or as might be placed above such exit.

Most commercially available EXIT signs of the kind with which the present invention is concerned include a rectangular fixture with at least one side displaying the indicia EXIT together with an arrow, if any. A source of light is mounted within the box; and access to the light source is achieved by removing the glass faceplate. If one of the sources of light is burned out, it must be replaced while the faceplate is thus removed.

SUMMARY

The present invention provides for an EXIT sign having a generally box-shaped cabinet, at least one face of which is provided with a window for displaying the EXIT indicia together with a directionality arrow, if any, and an open side which receives a chassis on which is mounted the fluorescent tubes or other source of light. An electrical connector having a female and a male member is adapted to be connected when the chassis is inserted in the cabinet. The female member is mounted on the interior of the cabinet; and the male member of the connector is mounted on the chassis. Thus, when the chassis is removed from the cabinet, the plug is disconnected from the receptacle.

The chassis has a generally rectangular shape; and a recess is provided partially about its periphery for defining a raceway to route the wires from the male member of the connector to the sockets which receive each fluorescent tube. A cover plate is provided on the chassis raceway for covering the wires as placed therein.

A ballast is mounted to the exterior of the cabinet; and it is adapted to be mounted to a ceiling or wall. The chassis is provided with a second cover plate mounted thereto; and when fully received in the cabinet, this cover

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plate forms a finished exterior surface with the remainder of the cabinet.

Thus, the present invention provides an EXIT box or sign in which the light sources may be fully removed; and when the box is connected in this modular manner, a clean chassis with new tubes may be substituted; and the one removed may be taken to a remote location so that a number of such chassis can be cleaned in common and the tubes replaced if required. In a very large building which might have a few hundred such EXIT signs, this permits a program of preventive maintenance and regular cleaning of the EXIT signs in which it is not required that the tubes be replaced or the EXIT sign cleaned while a maintenance man is perched at the top of a ladder.

Other features and advantages of the present invention will be obvious to persons skilled in the art from the following detailed description of a preferred embodiment accompanied by the attached drawing in which identical reference characters will refer to like parts in the various views.

THE DRAWING

FIG. 1 is a perspective view of an EXIT sign according to the present invention in which a chassis is partially inserted in a cabinet;

FIG. 2 is a fully assembled EXIT box according to the present invention;

FIG. 3 is a perspective view of the cabinet portion of the EXIT box of FIG. 1;

FIG. 4 is a transverse cross section view of the EXIT box of FIG. 2;

FIG. 5 is a close-up view of a portion of FIG. 4 showing a preferred guide channel for the display assembly; and

FIG. 6 is an exploded view of the preferred display assembly shown in FIG. 5.

DETAILED DESCRIPTION

Turning now to FIG. 1, the EXIT sign or box of the present invention is seen to comprise two main separable elements, namely, a housing generally designated 9 and a chassis generally designated 11 and adapted to be received within the housing 9. The housing 9 includes a cabinet 10 seen in greater detail in FIG. 3 and has first and second side windows 10a and 10b. The chassis 10 has a top 12, a left side 13 and a bottom 14 which are formed into a unitary box-shaped receptacle which defines an open side 15. The peripheral side edges of the top 12, side 13 and bottom 14 are turned inwardly toward the windows 10a to form a side flange 16 with beveled mating edges as at 17. A similar flange 18 is formed at the other window 10b of the cabinet 10. The side opening 15 is opposite the cabinet side 13; and it receives the chassis 11 as presently explained.

A first rectangular-shaped guide member 20 is mounted interior of the cabinet 10 and spaced inwardly of the flange 16 to define a channel or guide therebetween for receiving a display assembly (generally designated by reference numeral 21 in FIG. 4) adjacent the window 10a. A similar rectangular-shaped guide member 22 is mounted interior of the cabinet 10 to cooperate with the other side flange 18 in defining another channel for receiving a second display assembly 25 adjacent the opposite window 10b.

Mounted above the top 12 of the cabinet 10 is a ballast 26 onto which are fed wires 27 which are connected to a source of electricity (not shown) for energizing the light source presently to be described. The top of the ballast 26 is provided with apertures as at 26a for receiving bolts to secure the entire EXIT sign to a ceiling. The female or receptacle portion of a conventional

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electrical connector, designated 30 in FIG. 3, is mounted to the top 12 interior of the cabinet 10.

Turning now to the chassis 11, it comprises a main frame 32 having a generally rectangular shape and outwardly extending side flange members 33 and 34 which, together with the frame 32 define a peripheral raceway 35 about the frame 32. A male or plug portion 36 of the connector is mounted in the raceway 35 and adapted to mate with the receptacle portion 30 of the connector when the chassis 11 is inserted within the cabinet 10. During insertion, the side flanges 33 and 34 of the chassis 11 are guided between, and slide along, the guide members 20 and 22 mounted in the cabinet 10.

Extending longitudinally of the frame 32 are first and second fluorescent tubes 38 and 39 which are seated in sockets 40 mounted on opposing sides of the frame 32 as seen in FIGS. 1 and 4. Between adjacent ones of the sockets 40 is a conventional starter for a fluorescent lighting fixture, denoted by reference character 41. A covering sideplate 43 is secured to the frame 32 of the chassis 11 to close the opening 15 of the cabinet 10 when the chassis 11 is inserted therein. Side flanges 44 and 45 of the sideplates 43 cooperate with the side flanges 16 and 18 respectively of the cabinet 10 to secure the display assemblies 21 and 25.

Electrical power is coupled to the fluorescent tubes 38 and 39 by means of electrical wires which are routed from the plug 36 about the raceway 35 in a clockwise direction as viewed in FIG. 1 to the sockets 40 situated at each end of the fluorescent tubes; and a cover member 46 is secured in the raceway 35 to substantially cover the wires routed to all four of the sockets 40 received within the raceway 35. The cover 46, of course, does not extend in front of the pins of the plug 36 so as to avoid interference with the coupling of the plug 36 to the receptacle 30 and with the insertion of the chassis.

Turning now to FIG. 5, the two slides or channels defined by the rectangular-shaped guide member 20 are seen. One channel, further defined by the exterior flange 16 integral with the metal member forming the exterior casing for the cabinet 10, receives one of the display assemblies (namely 21); and the guide member 20 also secures the frame 32 within the cabinet 10 by engaging the upstanding rectangular-shaped flange member 33.

Turning now to the display assemblies 21 and 25, they are identical; and it will be realized that in certain instances only one such assembly need be employed. For example, if the EXIT sign is secured to a vertical wall. A glass faceplate 50 engages the interior surface of the flange 16 (and also the front flange 44 of the cover plate 43 secured to the chassis 11); and behind it is located a plastic film 51 having imprinted thereon in negative, the indicia "EXIT" together with the directional arrow 53. That is, the indicia in a preferred embodiment is transparent; and it is formed on an opaque ground. Behind the indicia-bearing film or plate 51, is a member 54 which is transparent and of any suitable color to provide color background for the indicia 52, if desired. Behind the color plate 54 is a diffusion plate 55 which acts to diffuse the light from the fluorescent tubes 38 and 39 to provide a uniform field of illumination for the indicia 52 and 53. When assembled, as seen in FIG. 5, the faceplate 50, the indicia-bearing member 51, the color film 54 and the diffusion plate 55 are sandwiched and/or laminated together in the channel defined by the front flange 16 and the guide member 20. It is noted that the faceplate may be glass with a painted surface.

Each of the members 51 and 54 may preferably be of a flexible plastic substance sold under the tradename Mylar; and the diffusion plate 55 may preferably be a rigid plastic plate which is translucent but not transparent and marketed under the tradename Plexiglas.

Having thus described in detail a preferred embodiment of the present invention; it is apparent that the entire chas-

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sis including the starters and the fluorescent tubes may be removed from the permanently secured housing which receives it and replaced by a similar chassis with new or cleaned fluorescent tubes. Additionally, all such removed chassis may be cleaned and their fluorescent tubes replaced at a remote location where it is safe to do so.

Further, the indicia plate or film is easily selected or changed so as to display any given directionality or any given message. Further, flexibility is added in that a color background may be provided if desired.

It will be apparent to persons skilled in the art that certain materials may be substituted for those which have been described and that certain structural changes may be made to the preferred embodiment while continuing to practice the present invention; and it is, therefore, intended that all substitutions and modifications be covered as they are embraced within the spirit and scope of the appended claims.

What is claimed is:

1. A sign including a box-shaped cabinet having at least one side provided with a display window and defining an open end side; a chassis adapted to be received in said open side of said cabinet and including a plate to close said open end side and form a flush housing there-with when so received; a source of fluorescent light mounted on said chassis and removeable from the cabinet with said chassis a ballast mounted to the exterior of said cabinet; an electrical connector including first and second mating members, said first member mounted to said cabinet on the interior thereof, said second member mounted on said chassis to engage and couple with said first member when said chassis is inserted in said housing and to disengage therefrom when said chassis is removed from said housing; first conductive means coupling current from said ballast to said first member of said connector; and second conductive means secured to said chassis conductively coupling said second connector member to said light source for transmitting electrical current thereto; and indicia-bearing means mounted in said window.

2. The structure of claim 1 wherein said chassis is generally rectangular and said light source comprises at least one fluorescent tube mounted in said chassis, said chassis defining a peripheral raceway providing a conduit for receiving said conductive means; said second connector means being secured in said conduit; and further comprising a cover for covering said conductive means in said raceway.

3. The structure of claim 2 wherein said cabinet further comprises an integral member of metallic sheet material having opposing flanges on one side depending inwardly of said window for engaging said indicia-bearing means; and further comprising a guide member mounted in said housing for defining with said flange a channel for receiving said indicia-bearing means by insertion through said open side of said housing which receives said chassis.

4. The structure of claim 3 wherein said indicia-bearing means includes a glass faceplate engaging said flange, an indicia-bearing member behind said faceplate bearing indicia to be displayed; and a diffusion plate behind said indicia-bearing member for providing a uniform field of illumination for said indicia.

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