

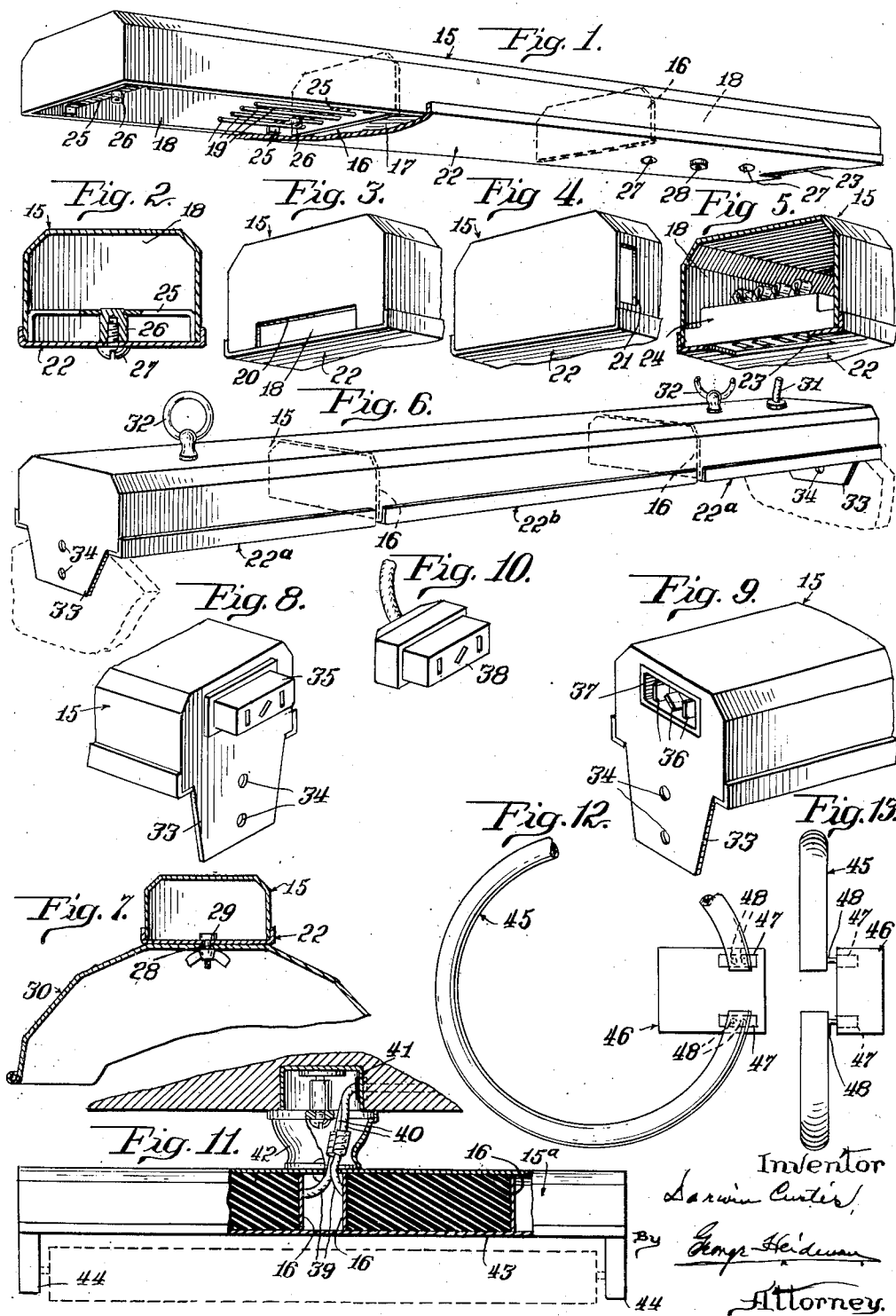
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D. CURTIS

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HOUSING FOR CURRENT CARRYING AND CONTROLLING ELEMENTS

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Inventor
Darwin Curtis
 By *George Heideman*
 Attorney.

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HOUSING FOR CURRENT CARRYING AND
CONTROLLING ELEMENTS

Darwin Curtis, Winnetka, Ill.

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3 Claims. (Cl. 240—78)

My invention relates to housings, more especially intended for the use of tubular electric lamps of the double ended, vapor type, commercially known as fluorescent lamps, which are adapted to contain the lamp control elements, including what are generally known as ballast elements, thereby providing a single unit, with no extraneous wiring aside from the usual feed or supply wire, which will minimize time and labor and facilitate installation.

The invention contemplates a housing with the ballast elements arranged therein so as to provide wire receiving portions at opposite ends thereof for serving a plurality of elongated tubular lamps through the medium of suitable receptacles or suitable lamp holders; the invention in its preferred form contemplating a housing with a plurality of compartments produced by transversely disposed walls which confine the control or ballast elements to one compartment and the wire and current carrying elements or splices for lamp holders or receptacles to the other compartments; the housing being provided either with a single or sectional cover.

The invention also involves a housing formed to serve as means for attaching lamp holders at its ends; and also contemplates a ballast holding housing which, either in its ends, sides, top or bottom, is provided with openings that are coincident with receptacles located in the housing, or openings adapted to receive the contact blades of suitable lamp holders, whether the lamps be of the elongated or of a circular or irregular shape.

Other objects of the invention consist in the provision of a housing to which a reflector may be readily and removably secured; and also in the provision of housings provided with plug-and-socket ends to permit the housings to be arranged in electrical end-to-end or tandem relation without need for extraneous wiring between the aligned housings.

The foregoing enumerated objects and the advantages inherent in the invention will be readily comprehended from the detailed description of the accompanying drawing wherein—

Figure 1 is a perspective view of one form of my improved housing with a portion of the bottom cover member broken away to disclose one of the wire containing portions or compartments and method of securing the cover in place.

Figure 2 is a cross sectional view of one end of the housing, disclosing the method of cover fastening employed in Figure 1.

Figure 3 is a perspective view of one end of

the housing shown provided with a lamp holder base or contact blade receiving slot in the housing end wall.

Figure 4 is a similar view showing the housing side wall provided with the slot.

Figure 5 is a similar view with the end wall removed, showing the end of the housing provided with a receptacle and the bottom or cover provided with a slot coincident with the receptacle.

Figure 6 is a perspective view of a modified form of the housing provided with lamp holder attaching portions—with portions of the lamp holders shown in dotted lines; the housing cover being made in sections to correspond with the compartments in the housing and the housing provided with a feed wire entry and with means for suspending the housing.

Figure 7 is a cross sectional view of the housing and a reflector illustrating a method for removably securing the reflector, a portion of the reflector being broken away.

Figure 8 is a perspective view of one end of a housing intended for aligned or tandem arrangement of housings; the end of the housing being provided with a plug connector.

Figure 9 is a similar view of the opposite end of the housing—or of the adjacent end of an aligned housing—the housing end wall being provided with a plug receiving base or socket adapted to match the plug connector of the housing end shown in Figure 8.

Figure 10 is a perspective view of a plug connector and portion of a feed wire adapted to be inserted in the base or socket end of a line of units or housings.

Figure 11 shows a housing in elevation with an intermediate portion in section, illustrating a modified form of feed line and ballast arrangement, as well as cover fastening, in conjunction with an outlet box arranged in a ceiling.

Figure 12 is a plan view of a modification of my housing employing a circular tubular lamp of which a portion is broken away.

Figure 13 is a side view thereof.

My improved housing is especially intended for use with double ended lamps of the vapor or fluorescent type in connection with which certain ballast elements are employed; the housing usually being of length commensurate with the length of the tubular lamps.

In the exemplification of the invention shown in Figure 1, the housing is, preferably of rectangular configuration and of thin sheet metal,

consists of top, sides and end walls which may be integral as shown; the housing at predetermined points being provided with transversely disposed walls 16 whereby the housing is divided into separate cells or compartments—the compartment at 17 intermediate the walls 16, 16 constituting the control or ballast elements receiving compartment while the compartments intermediate each wall 16 and the adjacent end wall constitute the current carrying elements, splices, or lamp holder wire connection receiving compartments 18, 18.

The ballast elements, of well known construction and in keeping with requirements, are sealed in a plastic compound. Heretofore the ballast elements were sealed in a separate housing and the latter attached at the place of installation to a receptacle holding channel, necessitating more or less extraneous lengthy wiring between the separate ballast housing and the receptacles at opposite ends of the open-sided channel. These individual ballast housings with their exposed wires frequently have been damaged, producing a noisy fixture or became entirely useless. My invention is designed to eliminate the separate ballast housing and the difficulties mentioned, by providing a single housing or unit provided with a ballast holding compartment or cell in which the ballast elements may be sealed and tampering therewith prevented. I therefore propose providing the partitions or intermediate walls 16, 16 with openings for passage of the wires 19 (see Figure 1) into the end cells or compartments 18, 18 in which the necessary current carrying elements and wires between the feed wire, the ballast wires 19 and the receptacles or lamp holders may be made.

The compartments 18, 18 are provided with openings to the housing exterior either arranged in the housing end walls as shown at 20 in Figures 3—in the side walls as shown at 21 in Figure 4—or in the cover member 22 as shown at 23 in Figures 1 and 5; the end wall being omitted in Figure 5 to show the arrangement of a receptacle 24 in the end compartment of the housing 15, with the sockets of the receptacle aligned with the opening 23. The end compartments of the portions of housing shown in Figures 3 and 4 may also be provided with suitable receptacles arranged to have their sockets align with the openings 20 or 21; the openings 20, 21 and 23 also being adapted to receive the contact spring base portions of lampholders for direct connection to the ballast wires 19 in fixtures where no receptacles are employed.

The housing 15, preferably adjacent the ends but sufficiently removed therefrom to accommodate the receptacles, is provided with transversely extending straps 25 having angularly disposed ends which may be soldered or otherwise immovably secured to the housing side walls; the straps or brackets 25 being shown provided with tapped bushings as at 26 to receive the screws 27 whereby the cover 22 is removably secured in place. The cover is also shown provided with openings as at 28 to receive suitable screws or bolts as shown at 29 in Figure 7 for securing a reflector 30 to the lower or cover side of the housing.

Instead of a continuous or one sheet cover extending from end to end of the housing as shown in Figure 1, each cell or compartment of the housing may be provided with a separate cover as shown at 22^a, 22^a and 22^b in Figure 6; the cover section 22^b if desired being sealed in place by the ballast element surrounding compound, 75

while the cover sections 22^a, 22^a for the end cells or compartments are removably secured in place in the manner heretofore described, it being understood that the housing preferably adjacent each end of each end cell or compartment is then provided with a strap or bracket 25, although a single strap approximately at the longitudinal center of the cell or compartment may be employed.

The upper side of the housing preferably is provided with an opening for the feed wire as shown at 31 in Figure 6 and also may be provided with suitable loops or supporting means as at 32.

Where the housing is to be employed with lamps of considerable length and as an element of safety, the end walls of the housing may be made with a depending portion 33, see Figure 6, to which the lamp holders, portions of which are shown in dotted lines, may be mechanically secured by screws arranged in the holes shown at 34.

In order to adapt my improved housing to situations where a continuous stream of light is desired, I illustrate adaptations in Figures 8 and 9 wherein the end cells or compartments 18 of the housing, in addition to the lamp-holder receiving receptacles, also are provided with plug and socket elements which permit end-to-end connection between aligned units, each unit being, of course, provided with its individual lamps and lamp-holders.

In Figure 8, where merely one end of the housing is shown, the end wall is provided with a projecting plug connector 35, whose embedded contact springs are connected with suitable current conducting elements or wires arranged in the end cell or compartment 18 of the housing; the plug being provided with the usual contact spring holding slots as shown and adapted to receive the contact blades or prongs 36 arranged in the socket member or receptacle 37 secured in the slot formed in the end wall of an aligned housing unit; the contact blades or prongs 36 at their inner ends being attached to suitable current conducting wires or elements arranged in the adjacent end cell or compartment. It will be understood, of course, that where a housing unit is intended to be arranged in tandem, one end of each unit is provided with the plug connector 35 and the other end provided with the socket or receptacle 37; the socket at the outer end of the end unit of the line being adapted to receive the feed line plug 38, shown in Figure 10, which is similar to the plug connector 35 of Figure 8.

It will be understood that the socket or receptacle 37 and the plug connector 35 are independent of the lampholder receptacles arranged in the end compartments of the housing. The lampholder screw-holes 34 in the depending skirt portions 33 of the housing end walls also may be employed for mechanically securing the respective housing sections or units together.

In certain situations, for example, such as domestic or kitchen lighting, the housing 15^a shown in Figure 11 may be employed; the housing being provided with partitions or walls 16, 16 arranged to form a central compartment provided with an opening in its top for passage of the wires 39 which are intended to be spliced to the feed wires 40 in the electric outlet box 41 embedded in the ceiling of which a portion is shown in section. The spliced wires 39, 40 pass through a suitable fixture canopy as at 42 secured to the outlet adjacent the ceiling in any well

known manner; the bottom of the canopy being secured to the top of the housing 15^a about the central opening through which wires 39 pass. The housing 15^a in this exemplification has ballast elements arranged on opposite sides of the central compartment; and the bottom or cover 43 may be continuous as shown in Figure 1 or sectional as shown in Figure 6 and secured in place in the manner heretofore described; while the ends of the housing are adapted to receive suitable lamp holders as at 44, 44.

The exemplifications disclosed in Figures 1, 6 and 11 contemplate the use of elongated tubular lamps and hence the length of the housings is commensurate with that of the lamps; but where a circular lamp is contemplated, namely a tubular lamp bent into circular form, as shown at 45 in Figures 12 and 13, a smaller housing 46 is employed, with one end or portion of the housing provided with the usual ballast elements while the other end or portion of the housing is provided with openings and suitable receptacles indicated at 47 adapted to receive the lamp terminals or contact elements 48 which in this instance are shown adjacent the ends of the lamp and extend laterally therefrom, see Figure 13.

The housing 46 as stated is provided with the ballast elements sealed in a suitable compound as required, with leads extending into the adjacent compartment or portion of the housing and electrically connected with the receptacles; the housing being provided with a removable bottom cover member similar (except as to size) to the cover members heretofore described and removably secured in place.

The exemplifications are believed to be the best embodiments of the invention, but certain departures may be made without, however, departing from the spirit of the invention as defined in the appended claims.

What I claim is:

1. In a fluorescent lighting fixture, a channel housing having top, sides and end walls and a separate cover therefor, straps arranged transversely in the housing and provided with tapped bushings, screw means passing through the cover and into the bushings for securing the cover member in place, said housing being divided into separate compartments, a ballast apparatus sealed in one compartment, current conducting leads extending from said ballast into adjacent

compartments, plug-in receptacles for multiple lamp holders within the end compartments, multiple plug-in type lamp holders, openings in one of the housing walls coincident with the said receptacles to receive the prongs of the plug-in type multiple lamp holders, and wire splicing connecting the current carrying elements with the plug-in receptacles located in the end cells or compartments.

2. In a fluorescent lighting fixture, a channel housing having top, sides and end walls and a separate cover therefor, means for securing the cover in place, said housing being divided into separate compartments, a ballast apparatus sealed in one compartment, current conducting leads extending from said ballast apparatus into adjacent compartments, plug-in receptacles for multiple lampholders within the end compartments, openings in one of the housing walls coincident with said receptacles to receive the prongs of the plug-in type multiple lamp holders and wire splicing connecting the current carrying elements with the plug-in receptacles located in the end cells or compartments, the end walls having integral extensions depending from the housing, and multiple plug-in type lamp holders attached to said extensions.

3. In a fluorescent lighting fixture, a channel housing having top, side and end walls and a separate cover therefor, means for securing the cover in place, said housing being divided into separate compartments, a ballast apparatus sealed in one compartment, current conducting leads extending from said ballast into adjacent compartments, plug-in receptacles for multiple lamp holders within the end compartments, openings in one of the housing walls coincident with the said receptacles to receive the prongs of the plug-in type multiple lamp holders and wire splicing connecting the current carrying elements with the plug-in receptacles located in the end cells or compartments, the end walls having integral extensions depending from the housing, multiple plug-in type lamp holders attached to said extensions, one end wall of the housing being provided with a contact holding socket, while the other end wall of the housing is provided with a complementary contact receiving extension or plug.

DARWIN CURTIS.