

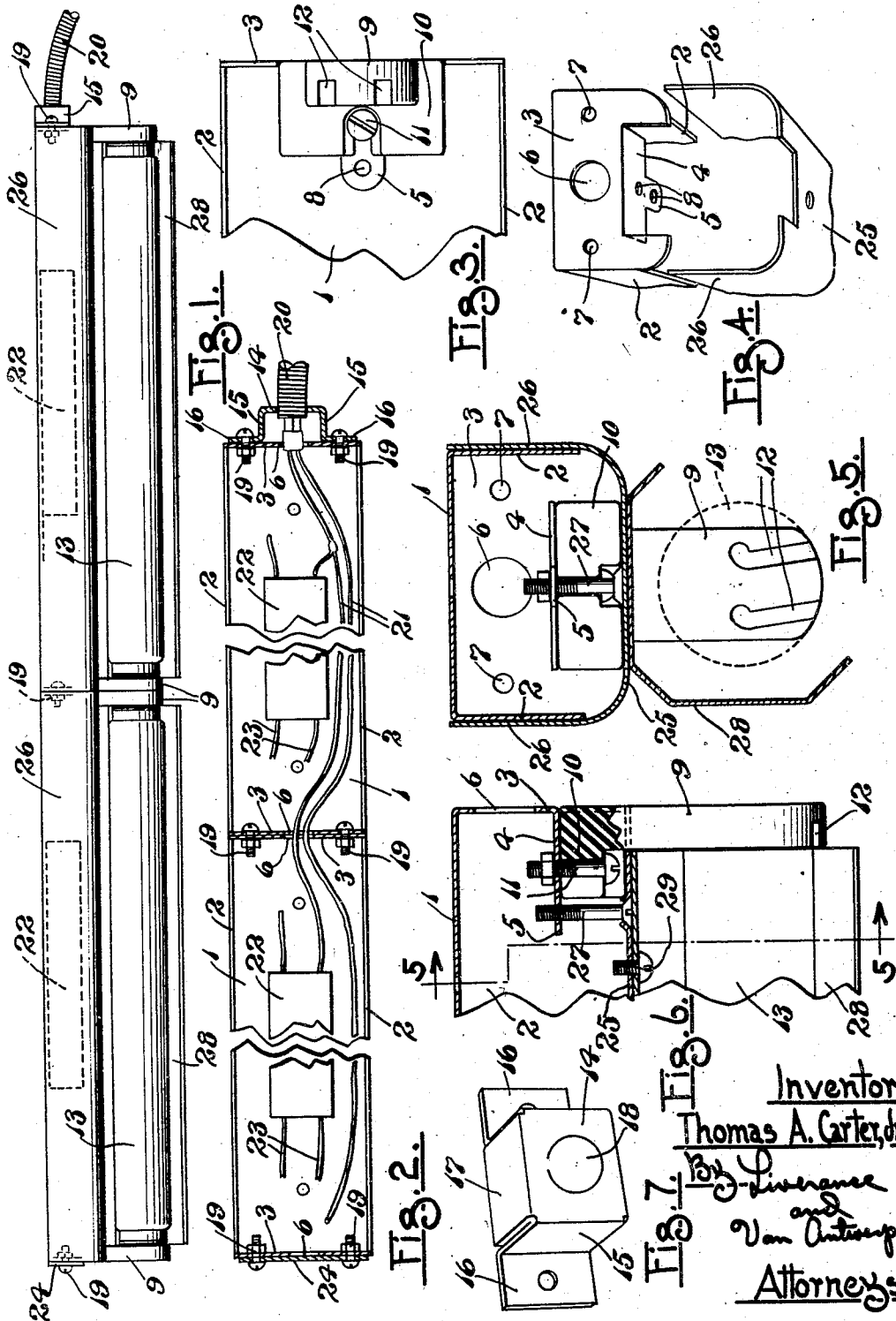
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T. A. CARTER, JR

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LIGHTING STRUCTURE

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Inventor
Thomas A. Carter, Jr.
By
D. J. Linschme
and
Van Antwerp
Attorneys

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LIGHTING STRUCTURE

Thomas A. Carter, Jr., Grand Rapids, Mich., assignor to Grand Rapids Store Equipment Company, Grand Rapids, Mich., a corporation of Michigan

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This invention relates to a lighting fixture, being more particularly concerned with a very practical and useful mounting fixture for lighting tubes such as fluorescent lighting tubes. The present invention is primarily concerned with a structure which is adapted to be applied for lighting to show cases, display cases, cabinets and the like, which, being of varying lengths, require one or more of the lighting tubes. With my invention the lighting tube mounting structure is made in sections which may be connected together end to end to thereby carry as many of the lighting tubes as may be required for a desired length of show or display case or cabinet. And a single section alone in itself is complete to carry and support one of the lighting tubes, while two or more of the sections connected together in longitudinal alinement carry a plurality of the tubes, one for each of the sections of the support.

Furthermore, with my invention, a very useful and practical structure is provided for assembling substantially the entire construction at a bench, and after assembly mounting it either in one, two, three or more sections upon the display case or cabinet with which it is to be used, thereafter applying a sheet metal cover over each of said sections, whereupon the fixture is complete and is ready to receive the lighting tubes which are detachably carried in parallel relation to and one for each of the sections of the structure. Likewise after installation, if for any reason it is necessary to inspect or repair the fixture, it is readily done by merely removing the replaceable lighting tubes and taking off the cover of any section whereupon all of the construction is exposed; and if necessary can be taken in its substantially assembled form from the case or cabinet to which it has been attached.

It is of course to be understood that the lighting tube supporting fixture may be used in many other places than in show cases, display cases and display cabinets and that the invention is not restricted to the one place of use designated. My invention achieves in a very practical and economical manner the advantageous results stated, as well as many others not at this time enumerated, but which will appear and be understood from the following description, taken in connection with the accompanying drawing, in which:

Fig. 1 is an elevation of the lighting fixture in accordance with my invention, showing two of the sections thereof connected together in longitudinal alinement.

Fig. 2 is an enlarged elevation and partial sec-

tion showing two sections of the fixture connected together and with the covers and the sockets which carry the lighting tubes removed.

Fig. 3 is a fragmentary enlarged elevation of one end of a section of the lighting fixture without the cover and illustrating the tube carrying socket, one of which is at each end of each section.

Fig. 4 is a fragmentary perspective view of one end of a section showing the sheet metal parts, with the cover separated from the base member.

Fig. 5 is a transverse section substantially on the plane of line 5—5 of Fig. 6.

Fig. 6 is a central vertical section taken longitudinally at one end of a section of the lighting fixture, and

Fig. 7 is a detail of structure of a junction box to be applied at one end of a lighting fixture made in accordance with my invention, into which the tubular housing carrying the current wires is inserted.

Like reference characters refer to like parts in the different figures of the drawing.

In the construction disclosed, a supporting or base member of channel form is provided for each section of the fixture. Such channel form includes a web 1 with spaced apart flanges 2 longitudinally thereof and at right angles to the web (see Fig. 5). At each end the metal is turned at right angles to make an end 3 which is brazed, soldered or otherwise connected to the ends of the flanges 2. Each end 3 at its outer portion is struck inwardly into a shelf 4, which parallels the web 1, and which at its central portion has an integral projecting tongue 5 as best shown in Fig. 4. A relatively large opening 6 is made through each of the ends 3 midway between the flanges 2, and two smaller openings 7 are made, one at each side of the opening 6, as shown in Fig. 4. The shelf 4 and the tongue 5 are provided with openings 8 spaced form each other as shown.

A socket of electro-insulating material comprises an outwardly extending arm 9 and a base 10 extending inwardly at right angles from the arm 9, which base seats against the shelf 4 with the outer face of the arm 9 in the same plane with the outer face of the adjacent end 3 (Fig. 6). The socket is detachably secured to the shelf 4 by a bolt 11 which passes through a slot in the base 10 and through the opening 8 in the shelf 4, as in Fig. 6. There is a socket at each end of each section of the fixture and each of the sockets at its inner face is provided with slots 12 for reception of pins which project from the ends of a cylindrical fluorescent lighting tube

13, the pins being releasably received and held within the slots 12.

At one end of the fixture whether of one or more sections, a box of sheet metal is attached. This box comprises an end 14, from which two sides 15 are turned inwardly at right angles and each terminates in an outwardly turned ear 16. From the opposite edges of the part 14, sides 17 are turned inwardly, thereby providing a rectangular parallelepiped box which may be placed against the outer side of an end 3 of the fixture and secured thereto by bolts 19 which pass through the openings 7 in the end 3 and similar openings made in the ears 16. The part 14 of the box is preferably provided with a knock-out portion 18 of circular form which is partially severed from the part 14 and can be completely severed by punching it from the body of the part 14, making an opening for the entrance of one end of a tubular housing 20, in which electric circuit wires 21 are housed and which will pass through the opening 6 in the adjacent end 3 of the section, and also through the openings 6 in the adjacent ends 3 of two alined sections, as shown in Fig. 2. The wires may be connected to so-called auxiliaries 22 which are choke coils in the circuit which supplies electric current to the fluorescent lighting tubes in conjunction with other wires 23 which are indicated in Fig. 2. However, the manner in which the wires are connected with the sockets and tubes is no part of the present invention and is not illustrated. It is evident that the sections may be placed together end to end with openings 7 of contacting ends 3 of the sections in conjunction, and then secured rigidly together by bolts 19 passing through the openings 7. At the opposite end of the completed fixture whether there are one, two or more sections, a plate 24 covering the openings 6 and 7 may be attached using the same bolts 19, as shown in Fig. 2.

It will be evident that the assembly of the lighting fixture whether in one or a plurality of sections, may be accomplished at a bench. The choke coil auxiliaries 22 are secured to the web 1 of the channel base members, the sockets are secured in place, the wiring is connected as required, the junction box at the end where the wiring comes to the fixture is secured by the bolts 19 passing through the ears 16, and the assembly is complete except for the cover which is to go over the open side of each of the sections of the structure; and afterward the lighting tubes 13 connected with the sockets. In such assembled condition, all of the assembly having been performed at a bench, the fixture may then be secured to the show case or display case with which it is to be used, there being openings through the web 1 for the passage of screws for such purpose. After the fixture has been fastened in place as stated, to the show case or cabinet or the like, a cover of sheet metal is applied to each section. This cover of sheet metal is of channel form, having an outer side 25 and two inwardly extending spaced apart flanges 26, and as shown in Fig. 4, each end of the side 25 is recessed to provide for the outward projection of the arms 9 of the sockets, one of which is at each end of each section of the fixture. The cover is placed over the open side of each section, frictionally engaging therewith, as illustrated in Fig. 5. After it has been pressed to place it is releasably secured by screws 27, one at each end which passes through the part 25 and thence through the openings 8 in the tongues 5 (Fig. 6). Preferably the open-

ing in the outer side 25 of the cover will be countersunk to receive the countersunk head of the screw 27. There may also be connected with the outer side 25 of the cover a reflector 28, screws 29, as shown in Fig. 6 being used to make the attachment. The reflector is merely an addition to the structure and may or may not be used.

It is evident that by removing the screws 27 a cover with the connected reflector may be removed from any of the sections of the fixture, thereby exposing the interior construction and wiring and also rendering the sockets accessible for removal if they need to be removed for any purpose. The reflector has an open side as shown, whereby the lighting tubes 13 are readily connected with the spaced sockets carrying them, or removed therefrom for replacement.

The construction described is of a very practical and useful nature. All of the work being done on the bench in the way of assembling the supporting base, sockets, auxiliary choke coils and wiring, the work is done much easier and is liable to be much better than attempting to assemble the parts upon the case or cabinet with which to be used. If more than one section is to be used the sections may be connected together at the bench and the wiring and sockets used therewith assembled so that the entire structure is complete when it is taken to the case or cabinet to be secured in place, except for the attachment of the covers, one for each section, and the connection of the lighting tubes with the sockets. The invention has proven to be particularly useful in service.

The claims appended hereto define the invention which is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. In a construction of the class described, an elongated support of sheet metal having a base or web, sides spaced from each other extending outwardly at right angles to the base, and ends also extending outwardly at right angles from the ends of the base, each of said ends having a central portion struck inwardly to provide a shelf parallel with the base, a socket secured to each of said shelves, each socket having an outwardly extending arm provided with means to receive the end pins of an elongated lighting tube, whereby the lighting tube may be releasably carried by and between the arms of said sockets, said ends having openings therein adapted to come into conjunction with like openings in the end of a similar support positioned end to end therewith, thereby providing for the releasable connecting together of the contacting ends of two alined base members, and said ends having other openings for the passage of wiring, and a sheet metal cover of channel form telescoped over the side flanges of said support, the outer side of said covering at its ends having recesses for the passage of outwardly projecting portions of said sockets.

2. In a construction of the class described, an elongated support of channel form having a base, side flanges, one at each edge of the base and lengthwise thereof, and ends, one at each end of the base, said ends also being of sheet metal and at their outer portions having a central part thereof struck therefrom and turned inwardly to provide a shelf paralleling the base of the channel, sockets of electro-insulating material positioned with one end of each against said shelf, and each having an outwardly projecting arm, the outer face of which is in substantially the same

plane as the outer face of the adjacent end of said support, means for releasably connecting the sockets to said shelves, said ends having openings for the passage of current carrying wires, and an elongated sheet metal cover of channel form having sides adapted to telescope over the side flanges of said supporting member, and means for connecting said cover with said shelves.

3. In a construction of the class described, an elongated supporting section of sheet metal of channel shaped form in cross section having an open side, and ends integral therewith at the ends of the support, each of said ends having a central outer portion thereof turned inwardly to provide a shelf substantially paralleling the length of the support with a finger extending inwardly from the inner edge of each shelf, sockets of electro-insulating material connected one to each shelf and extending outwardly therefrom beyond the open side of the supporting section, said sockets being adapted to releasably hold and carry an elongated lighting tube between them, a cover of sheet metal channel shaped in cross section having the sides thereof in telescoping relation to the sides of said supporting section, and releasable screw connecting means connecting said cover at each end thereof with said fingers.

4. In a construction of the class described, an elongated supporting section of channel shape in cross section made from sheet metal having a continuously open side lengthwise of the support, and ends of sheet metal at each end of the support having wire passing openings therethrough, each of said ends of the support having an outer portion struck therefrom and turned inwardly substantially at right angles to provide a shelf substantially parallel the length of the support, a socket of electro-insulating material having a base portion located against each of said shelves and an arm portion extending outwardly beyond an open side of the support, means for connecting said sockets to said shelves with the outer faces of the arms of said socket in substantially the same plane with the outer sides of the ends of said support, and an elongated covering member of sheet metal of channel cross section having a releasable telescoping engagement with said support over the open side thereof, combined with means for releasably connecting said cover at its ends to said shelves.

5. A lighting fixture for elongated fluorescent cylindrical bulbs having end prongs to be engaged with depending socket elements, comprising a reflector element, a channel element and a cover element, all of sheet metal, said cover element consisting of an elongated rectangular metal plate having down-turned and in-turned end flanges, said in-turned end flanges carrying downwardly depending socket elements for said bulbs and said cover element carrying between said flanges a choke coil box and said channel element having openings in the base adjacent to the ends thereof to receive the downwardly depending socket elements carried by such in-turned flanges, said channel element also having upstanding side

flanges to cover the sides of said cover element between said down-turned and in-turned end flanges.

6. A lighting unit for a tubular fluorescent lighting element having end prongs, comprising a unitary sub-assembly receiving a choke coil box and socket members for said end prongs and the wiring connections therebetween, all permanently mounted in said sub-assembly, said unitary sub-assembly being constructed to be mounted upon a wall or hung from a ceiling, said sub-assembly including an integral elongated sheet metal base member having an outside face and an inside face, said base member being provided with means for attaching the choke coil box to the inside face thereof and having readily accessible portions to carry socket members for said end prongs, a second elongated sheet metal member to close and cover the inside face of said base member and said choke coil and providing open spaces through which said socket members project, said socket members projecting sufficiently beyond said enclosing member to receive the end prongs of said lighting element and readily attachable and detachable connections at the ends of said unit to connect said base member and said enclosing member together, said enclosing member being readily attachable and detachable from said base member without disturbing the choke coil box, the socket members and the wiring connections therebetween.

7. A lighting fixture for elongated fluorescent cylindrical bulbs having end prongs to be engaged with depending socket elements comprising, channel and cover elements of sheet metal, said cover element consisting of an elongated rectangular metal plate having downturned and inturned end flanges, said inturned end flanges carrying downwardly depending socket elements for said bulbs and said cover element carrying between said flanges a choke coil box, and said channel element having openings in the base adjacent to the ends thereof to receive the downwardly depending socket elements carried by said inturned flanges, said channel element also having upstanding side flanges to cover the sides of said cover element.

8. A lighting fixture for elongated fluorescent cylindrical bulbs having end prongs to be engaged with depending socket elements comprising, channel and cover elements of sheet metal, said cover element consisting of an elongated rectangular metal plate having downturned and inturned end flanges and downturned sides, said inturned flanges carrying downwardly depending socket elements for said bulbs, and said cover element carrying between said flanges a choke coil box and said channel element having openings in the base adjacent to the ends thereof to receive the downwardly depending socket elements carried by said inturned flanges, said channel element having flanges cooperatively engaging with the downturned sides of said cover element whereby the channel and cover elements make an enclosure in which said choke coil box is located.

THOMAS A. CARTER, JR.