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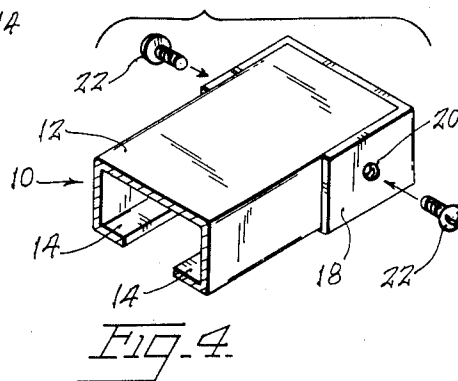
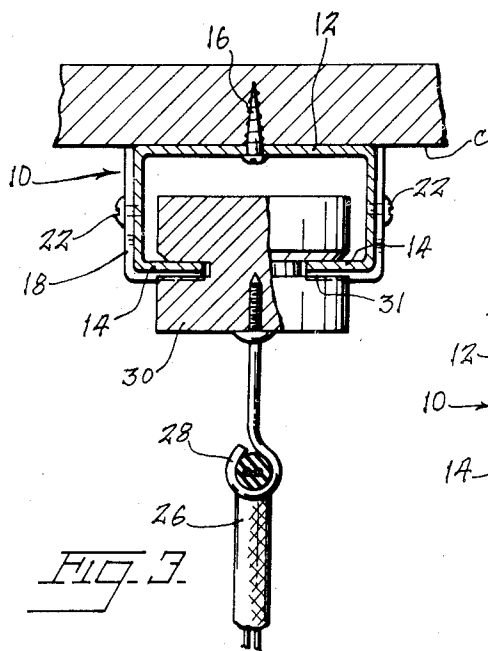
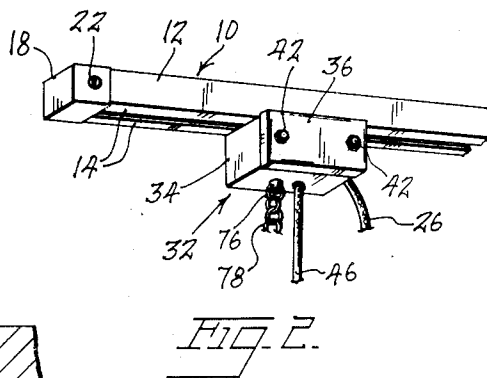
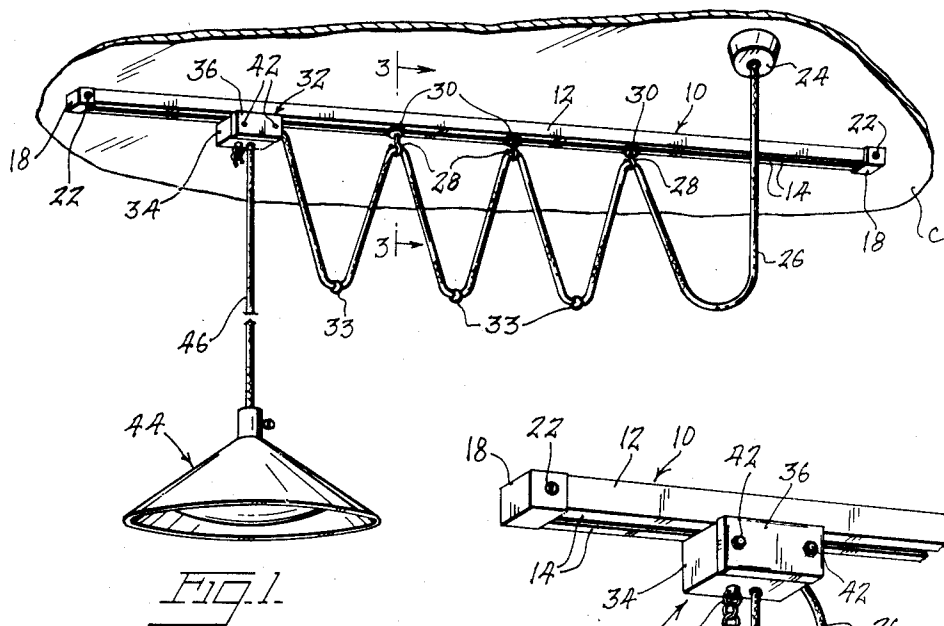
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INTERCHANGEABLE FIXTURE FOR ELECTRIC LIGHTS

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2 Sheets-Sheet 1



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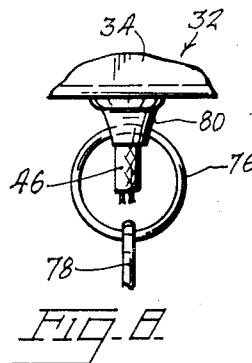
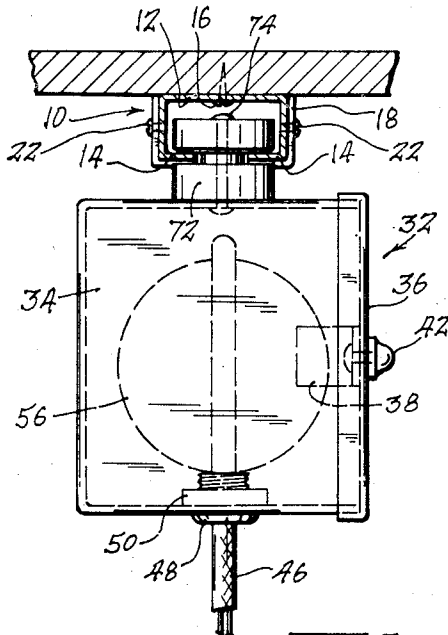
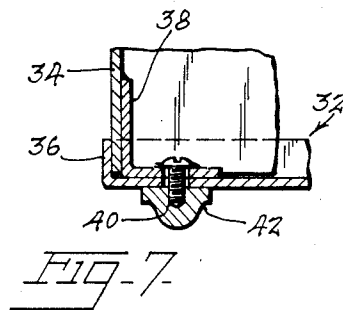
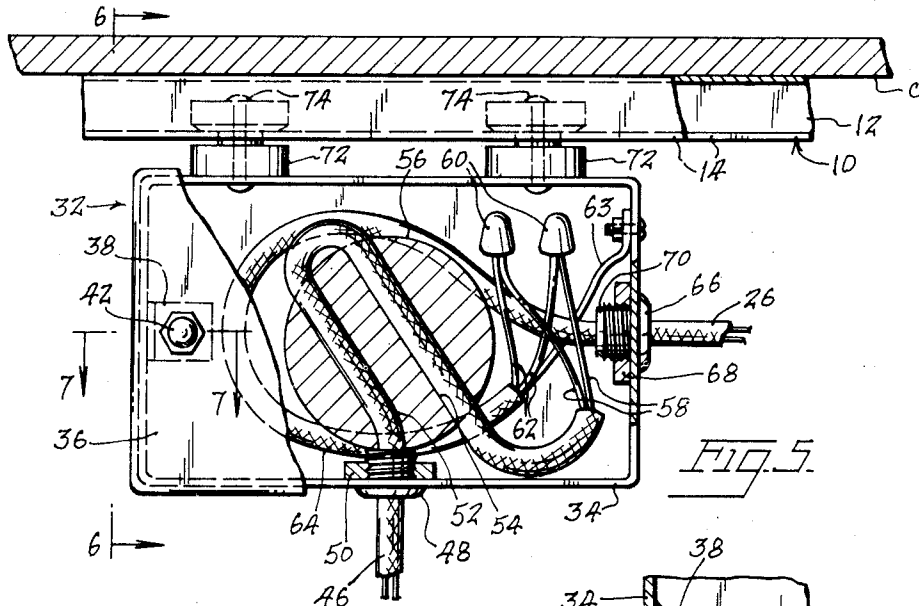
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INTERCHANGEABLE FIXTURE FOR ELECTRIC LIGHTS

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2 Sheets-Sheet 2



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INTERCHANGEABLE FIXTURE FOR ELECTRIC LIGHTS

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1 Claim. (Cl. 191—12)

The present invention relates generally to the art of lighting fixtures and their associated supports. In particular, the invention has reference to a ceiling-mounted track and to an electrical junction box mounted for movement longitudinally of the track.

Heretofore, it has been proposed to provide ceiling-suspended lighting fixtures, so designed as to be suspended by means of their cords from an overhead track, whereby said lighting fixtures can be adjusted along the length of the track to selected locations within a room.

However, lighting fixtures of the type referred to have their cords connected to an electrical outlet mounted in the ceiling, with the intermediate portions of the cords being suspended at intervals along the length of the cords from guides adapted to be moved along the overhead track. The end of the cord remote from the outlet is then connected directly to the lighting fixture.

A construction such as has been described above requires that the cord of the lighting fixture be connected directly to the stationary outlet of the ceiling, and as a result, ready interchangeability of the lighting fixtures, with its attendant reduction in manufacturing cost and cost to the consumer, is not possible.

In view of the above, the main object of the present invention is to provide, in a lighting fixture of the type referred to, means facilitating ready interchangeability of the lighting fixture with other fixtures, with any selected fixture being adapted to be suspended from and connected electrically to a traveling junction box, which junction box can be, along with its overhead track, a standard item usable with any electrical lighting fixture.

A more specific object of the invention is to provide a junction box of the type referred to having means projecting upwardly from the same adapted for rollable or slidable mounting in an overhead track, with the junction box being designed to be open from the side, for the purpose of making the necessary electrical connections between the cord extending into the junction box from the stationary, ceiling-mounted outlet, and the cord extending from an electrical fixture selected for suspension from the junction box.

Another specific object of importance is to provide, in a junction box of the type referred to, means facilitating the attachment of the cord of the lighting fixture thereto, in such a manner as to insure against twisting or fraying of the portion of the cord that is disposed within the junction box, thus to assure a good electrical connection without possibility of short circuiting, etc.

Yet another object of importance is to provide, in a device of the type referred to, a junction box which will be designed to constitute a weight means, heavier than the guides connected to the cord that extends from the ceiling-mounted outlet, the junction box when discharging this function being adapted to relieve the cord extending from said outlet of any weight that would otherwise be imposed thereupon by the suspended fixture.

Still another object of importance is to provide, in a device of the type referred to, a construction which will

be attractively designed, so as to be adapted for incorporation in the decorative scheme of a room without detracting from the decor of the room.

Still another object of importance is to provide, in a junction box and overhead track permitting interchangeability of suspended lighting fixtures, a relatively simple construction, which will be adapted for long, trouble-free use, mass production methods of manufacturing, and ease of installation or removal of an associated lighting fixture.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claim in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view, looking upwardly at a lighting fixture suspended from a ceiling by means of the track and junction box constituting the present invention.

Fig. 2 is a fragmentary perspective view similar to Fig. 1 showing a modified fixture suspension means.

Fig. 3 is an enlarged transverse sectional view through the track on line 3—3 of Fig. 1.

Fig. 4 is a fragmentary, enlarged perspective view of one end of the track together with its associated end cap, parts being shown disassembled.

Fig. 5 is an enlarged view in side elevation of the junction box, the scale being reduced slightly below that of Fig. 3, the cover of the junction box being partially broken away and portions being shown in section within the box, the track being illustrated fragmentarily and in side elevation.

Fig. 6 is a transverse sectional view on the same scale as Fig. 5, taken on line 6—6 of Fig. 5, showing the junction box in end elevation.

Fig. 7 is a detail sectional view, enlarged above the scale of Fig. 5, on line 7—7 of Fig. 5.

Fig. 8 is a fragmentary end elevational view of a junction box, on the same scale as Fig. 6, showing the modified light fixture suspension means of Fig. 2.

Referring to the drawings in detail, the reference numeral 10 generally designates an elongated, straight track comprising a downwardly opening channel member 12 formed with inwardly projecting guide flanges 14 formed upon the lower edges of the side walls thereof. At selected intervals along the length of the track, lag screws 16 or equivalent fastening elements are extended through openings formed in the web of the track, into a ceiling C. The track can be a single channel member, or alternatively, can comprise a plurality of end-abutting, like channel members. The track may be secured to the ceiling, wall or to any suitable surface.

At opposite ends of the track, there are applied end caps 18. These are of rectangular, box-like formation, and are formed open at their tops and at their inner ends, the open inner ends of the end cap (see Fig. 4) receiving the associated end of the channel member 12. The side walls of the channel member are formed with transversely aligned openings, registering with openings 20 of the end caps, and the openings of the channel member side walls can be threaded to receive connecting screws 22 whereby the end caps are detachably, fixedly connected to the ends of the track for the purpose of closing the same at said ends thereof.

An electrical outlet 24 is connected fixedly to the ceiling C at a selected location, preferably adjacent the track 12, and extending from said outlet is a cord 26.

At selected locations along the length of the cord, the cord is passed through loops formed in the lower ends of hangers 28 (see Fig. 3) threaded into the undersides

of circular guide blocks or rollers 30 having peripheral grooves 31 receiving the guide flanges 14.

Within the scope of the appended claim, it is proposed that any of various means may be employed for suspending the cord 26 at selected intervals along the length thereof from the track 10, in a manner to permit sliding of the cord along the track. Thus, it is mainly important that the suspension means 28, 30 be freely slidable along the length of the track, toward and away from one another.

The suspension of the cord at selected intervals along the length from the track in the manner referred to provides depending V-shaped portions of the cord, and these are weighted through the use of ball elements 33 or the like.

The end of the cord remote from the outlet 24 extends into one end of a junction box generally designated 32. The junction box includes a metal container 34, arranged longitudinally of the track 10, said container being closed at its ends, bottom, top, and one side. The other side of the container is left wholly open, and is normally closed by a peripherally flanged cover 36. Referring to Fig. 7, at opposite ends of the receptacle, adjacent the open side thereof, there are secured fixedly to the end wall of the receptacle angle brackets 38, and welded to the angle brackets are outwardly projecting screws 40, passing through openings formed in the opposite ends of the cover. After positioning of the cover upon the screws 40, cap nuts 42 are applied to the screws, for the purpose of fixedly connecting the cover to the container.

A lighting fixture has been generally designated at 44 in Fig. 1, and can be of any desired type, that shown being merely one example of any of various interchangeable lighting fixtures that can be suspended from the junction box 32. The lighting fixture has a cord 46, and referring to Fig. 5, said cord at its upper end extends through a flanged bushing 48 having a threaded portion projecting upwardly within the junction box through the bottom wall thereof. A nut 50 is applied to the bushing, bearing against the bottom wall of the container 34.

The portion of the cord 46 within the container is doubled upon itself, with the legs of the doubled portion extending through parallel openings or bores 52, 54 formed in a wooden ball or block 56, which block bears against the upper end of the bushing 48.

Extending beyond the sheath of the cord 46, within the container 34, are leads 58, 58 connected by means of wire nuts 60, 60 to leads 62, 62 similarly projecting beyond the sheath of the cord 26, within the container 34. A ground wire 63 also extends out of the sheath of the cord 26, said ground wire being designated at 63 and being connected to a threaded post carried by one end wall of the container 34.

The portion of the cord 26 within the junction box is extended adjacent the ball element 56, and has been designated at 64.

To anchor the cord 26 to the junction box, the cord 26 is extended through a bushing 66 similar to the bushing 48, having a nut 68. A wire clamping ring 70 is extended about the cord portion 64 adjacent the bushing 66, to prevent slippage of the cord 26 through said bushing. The ball element 56, of course, prevents slippage of the cord 46 through its bushing 48.

The junction box is slidably carried by the track 10, through the medium of guide rollers or blocks 72 spaced longitudinally of the junction box and rotatably connected to the top wall of the junction box by means of elongated pins 74, 74. The rollers 72 are peripherally grooved correspondingly to the rollers or blocks 30, and it will thus be seen that the junction box is freely slidable along the length of the track 10.

In use, the junction box, cord 26, outlet 24, and track 10 can be manufactured as a single unit, to be used with any of a great number of different electrical fixtures 44.

In this way, manufacturing operations are simplified to a marked degree, and it is merely necessary that the purchaser select a particular lighting fixture to be associated with the junction box and overhead track.

The selected lighting fixture, of course, is electrically connected to the cord 26 with a minimum of difficulty, and without requirement of employing skilled workers. One need merely remove the cover 36, after which the wire nuts 60, 60 are employed to make electrical connections between the cords 26, 46. It will be understood, in this connection, that when the cord 46 is to be connected to the junction box, it is extended first through the bore 52 of the ball element 56 (after, of course, being extended through the bushing 48) and then is doubled upon itself for extension through the other bore 54. Thereafter, the electrical connections made through the use of the wire nuts 60 are effected.

The cover is now replaced, and the fixture is now properly connected to the junction box, ready for use.

The junction box can be shifted along the length of the track, of course, to locate the lighting fixture at a selected place in the room along the length of the track, and the cord 26 can be adjusted through the loops of the hangers 28 as necessary during the installation of the device or, for that matter, at any time thereafter.

If it is desired to change the lighting fixture as, for example, for the purpose of installing a more modern type of fixture more in keeping with changed decorations in the room, the electrical connections illustrated in Fig. 5 are readily broken, and the cord 46 is readily removed, for the purpose of insertion of a new cord extending from a different lighting fixture. The ready interchangeability of lighting fixtures is thus promoted to a high degree by the particular construction, without requirement of breaking the connections at the outlet 24, removing said outlet, or otherwise disturbing the outlet, track, or the connection of the junction box to the track.

In Figs. 2 and 8, a modified means for suspending a lighting fixture is shown comprising a ring 76 supported by a bushing 80 depending from the junction box 32. One end of a chain 78 is fastened to the ring, the other end of the chain being adapted to be secured to the lighting fixture for supporting the same. The conducting wire 46 is also electrically connected to the lighting fixture.

While we have illustrated and described the preferred embodiments of our invention, it is to be understood that we do not limit ourselves to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claim.

Having thus described our invention, what we claim as new, and desire to secure by United States Letters Patent is:

In a traveling device for suspending a light fixture from a support and for effecting an electrical connection between said fixture and an electrical outlet mounted in said support, a track mounted on said support, a junction box mounted for movement along said track, a cord extending downwardly from the junction box, a cord extending between the outlet and junction box, and means in the junction box for effecting a readily separable electrical connection therein between said cords, said second-named cord including a plurality of cord supporting means spaced longitudinally thereof and movably connected to said track, each of said cord supporting means being slidable along the track independently of the remaining means, said box including on the top surface thereof means interengaged with the track for movement longitudinally of the track, the box constituting a container closed at its top, bottom, ends, and at one side, the container being formed open at its other side, said container further including a removable cover normally closing the open side of the container, the container further including a ball element disposed therein, the first-named

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cord including a portion doubled upon itself with the container and said ball element having spaced bores receiving the legs of the doubled portion of the first-named cord.

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