March 23, 1943. R. ORTH 2,314,420

FLUORESCENT LIGHTING EQUIPMENT

Filed March 28, 1942 2 Sheets-Sheet 1

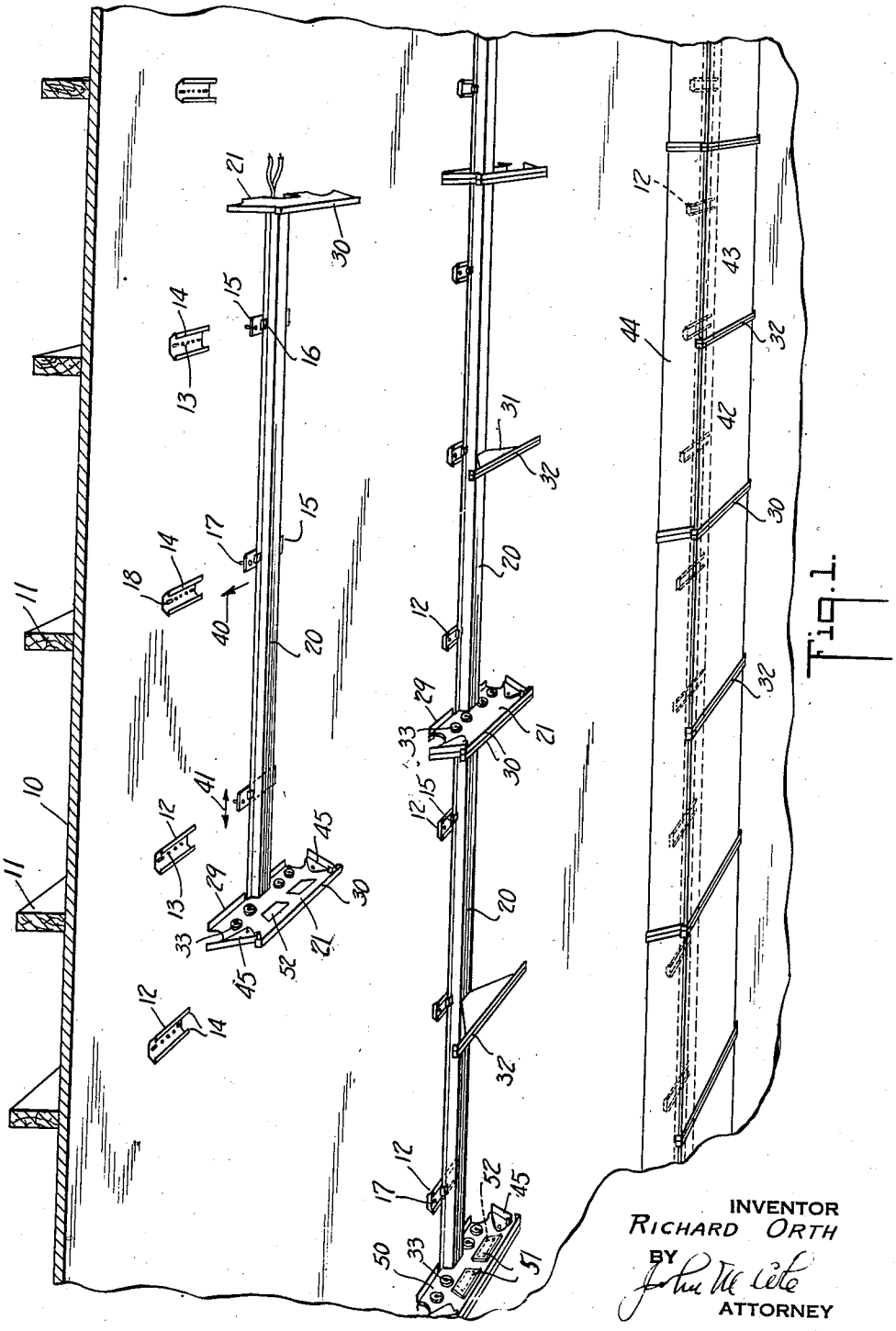


Fig. 1.

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Fig. 2.

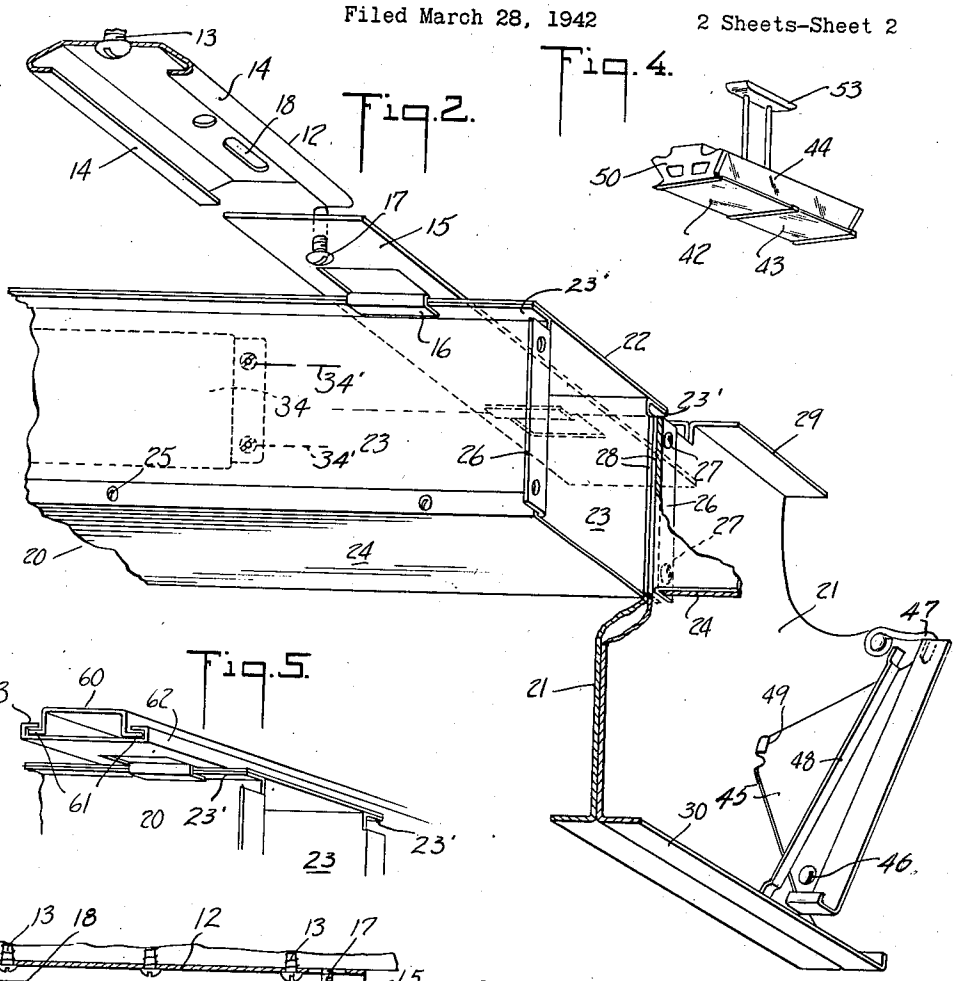
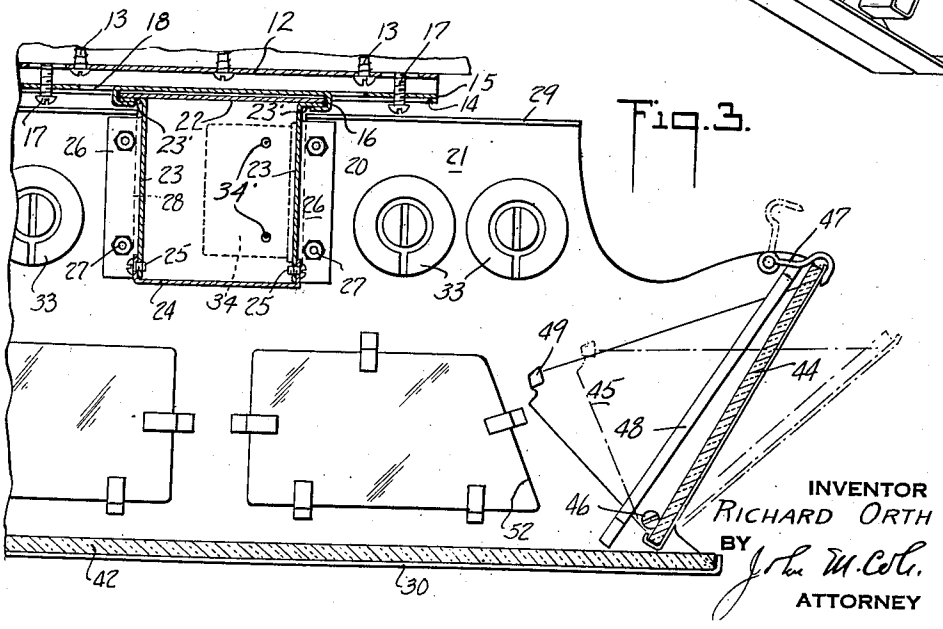


Fig. 4.

Fig. 5.

Fig. 3.



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FLUORESCENT LIGHTING EQUIPMENT

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Application March 28, 1942, Serial No. 436,653

5 Claims. (Cl. 240—78)

The present invention relates to fluorescent lighting equipment, and is more particularly directed toward fluorescent lighting equipment adapted for continuous row mounting.

It is frequently desirable to provide continuous fluorescent lighting equipment which is mounted immediately below the ceiling where space requirements are limited and the mountings may be completely hidden, and the present invention is more particularly directed toward the provision of equipment for this purpose.

Fluorescent lamps, more commonly used for the class of lighting to which the present invention is directed, are of nominal 4' length, and hence each unit of lighting equipment has a length of 4', or a little more than 4' depending upon the details of construction. When such equipment is arranged end to end its over-all length is a multiple of such dimension. It has heretofore been customary, particularly where continuous fluorescent equipment is to be mounted close to the ceiling, to provide attaching devices for securing the equipment to the ceiling which must be spaced at exact distances in accordance with the exact dimension of the lighting equipment. This has made it necessary to use great care in locating the supports for the lighting equipment on the ceiling particularly where the devices secured to the ceiling are separable from the fixture structure. Frequently it is necessary to rely entirely upon the plastered ceiling to support the lighting equipment requiring the use of toggle bolts, expansion bolts. In practice the spacing of the joists or furring members used to support the ceiling itself would practically never coincide with the spacing required by the fixtures.

The present invention contemplates that the fluorescent lighting equipment will be made up in individual lengths which carry the fluorescent lamp sockets, auxiliaries and wiring and arranged so that a desired number of these units may be secured together end to end. The exact length of fixture unit or of the row imposes no close restriction on the location of the fixed supports.

According to the present invention the wireway units are provided with laterally extending flanges which can slidably receive transversely extending members, and as a result these members may be located in any position along the wireway. To support these transversely extending members the present invention contemplates the use of track members which can be secured to the ceiling at such intervals as convenient and having no specific necessary relation with the length of the fluorescent lighting unit or row. They will usually be spaced so that at least two of the track members may be above each lighting unit. According to the present invention these track members, which are preferably secured to the floor joists (in wooden constructions) receive the sliders which in turn carry the wireways. In this way it is possible to mount a row of track members parallel with one another below the ceiling, keeping them in reasonable parallelism and alignment, and to preassemble the lighting units (without lamps or glass) and then move the entire preassembled continuous wireway (or a suitable length of wireway) into position beneath the track members where it may be secured permanently in place.

A further object of the present invention is to provide an improved wireway which may be made of easily formed sheet metal parts welded and secured together and to arrange this wireway so that it provides the flanges by which the wireway may carry the sliders.

Other and further objects will hereinafter appear as the description proceeds.

The accompanying drawings show, for purposes of illustrating the present invention, an embodiment in which the invention may take form, together with modifications of certain parts, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In these drawings:

Figure 1 is a perspective view of a ceiling with lighting equipment at various stages of installation;

Figure 2 is a perspective view at an enlarged scale and different angle than Figure 1;

Figure 3 is a transverse sectional view through the lighting equipment;

Figure 4 is a perspective view of a modified construction in the form of a pendent mounted individual unit; and

Figure 5 is a perspective view illustrating a modified form of construction.

In Figure 1 a plastered ceiling is indicated at 10 and the joists which support the ceiling are indicated at 11. These joists are usually spaced 16" but may be spaced varying amounts. A row of sheet metal track members are secured to the ceiling in any convenient manner, for example, by screws 13 passed directly into the joists. Where the ceiling is of concrete or other material suitable attaching devices will be employed. In securing these track members it is merely necessary to be sure that they are reasonably near parallel with one another at the same level and

arranged in a straight line to form a row where the lighting equipment is to be placed.

The track members 12, as shown in Figures 1 to 3, have inwardly bent flanges 14, 14 adapted to receive sliders 15, these sliders being merely flat sheet metal strips of the proper width and length. Each slider has two downwardly and inwardly bent hooks 16 spaced to accommodate the wireway to be described. The sliders can enter into the track members from either end and are provided with screws 17 which may be threaded up into slots 18 in the track members after the sliders have been inserted into the track members thereby preventing accidental shifting of the sliders or supported fixture.

The wireway 20 is preferably composed of a length of flat sheet steel 22 adapted to form the top wall of the wireway, two flanged side members 23, 23 and a bottom or cover plate 24. The flanges 23' on the sides 23, 23 are welded to the margins of the top plates 22 so as to form double thick outwardly extending flanges. These flanges are receivable within the hooks 16 of the sliders 15 and the parts preferably have sufficient clearance to facilitate the sliding movement of the wireway relative to the sliders and to also permit a limited twisting or turning of the slider member about a vertical axis, whereby it may pass lengthwise of a track member which is not at exactly right angles of the general direction of the row of tracks. The bottom member 24 is detachable from the remainder of the wireway so as to facilitate inserting the auxiliaries and wiring and is held in place by screws 25.

The side members 23, 23 are preferably flanged at the ends as at 26, and the cross plates 21 are secured to these flanges by bolts 27, the bolts usually passing through two cross plates back to back and two sets of flanges as indicated at the right of Figure 2. The cross plates 21 have holes 28 in alignment with the wireway to facilitate passing the wires lengthwise of the equipment. They have stiffening flanges 29 at the top which are cut away so as to not interfere with the moving of the hooks 16 lengthwise of the wireway. The bottom edges of the cross plates 21 are flanged as indicated at 30. The bottom cover 24 carries center supports 31 with flanges 32 opposite the flanges 30. The plates 21 carry fluorescent lamp sockets 33.

Where it is desired to install a continuous row of this lighting equipment a suitable number of wireways with cross plates are secured together and, when the wireway is upside down and the cover off, the installation of auxiliaries 34 and of wiring 34' can be completed. The cover plates may then be placed in position. The installation of the tracks in the ceiling is an independent operation. The wireway with cross plates attached and sliders loose on the wireway is raised up near the ceiling level, the sliders brought opposite the tracks and manipulated so as to pass into the tracks. The entire wireway may be moved laterally, as indicated by the arrow 40 in Figure 1, so that the entire support will be taken by the tracks. When the sliders are in the tracks they form a longitudinal guideway so that the entire trough can be shifted to the right or left, as indicated by the arrow 41 in Figure 1.

The row of lighting equipment is then in a position close to the ceiling, as illustrated near the middle of Figure 1, and is ready to receive the enclosing glass or plastic. As here shown this enclosing glass or plastic employs two horizontal panels 42 and 43 supported by the flanges 30 and 32 and side panels 44. These side panels are supported by plates 45 pivoted to the cross plates 21 at 46 and normally held in the upper position by hooks indicated at 47. Each plate 45 is held behind a strap 48 and is provided at the rear with a projection indicated at 49 adapted to engage this strap so as to limit the downward swinging of the side panels 44. When the side panels are swung down to the dotted line position, as indicated in Figure 3, the entire side of the fixture unit is open affording free access for lamp renewal and cleaning.

The cross plates 50 employed at the ends of the row may be the same as those employed in the intermediate portions of the row of lighting equipment, except that they are not cut out as at 28. They close off the end of the wireway and may be provided with glass panels 51 over the openings 52.

Where an individual pendent unit is desired instead of continuous equipment, the wireway with two cross plates 50 may be supported in a conventional ceiling support such as indicated at 53 in Figure 4. Where a single unit is to be supported close to the ceiling one may employ the same form of supports as shown in the drawings.

In the modified form of construction illustrated in Figure 5 the track members 60 are in the form of inverted channels with laterally extending flanges 61 and the sliders 62 are arranged with inwardly bent flanges 63 to fit about the flanges 61 on the fixed members 60.

Since it is obvious that the invention may be embodied in other forms and constructions within the scope of the claims, I wish it to be understood that the particular form shown is but one of these forms, and various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

1. Means for supporting from a ceiling or the like a row of fluorescent lamp sockets, comprising a plurality of track members disposed substantially parallel with one another at random spacings in a level row, a plurality of sliders each receivable by a track member from the end thereof whereby the sliders may be received by the track members after installation of the track members, the sliders each having opposed, inwardly-facing, downwardly-extending hooks below the level of the track members, the hooks forming a longitudinally extending guideway, a wiring channel of greater length than the overall spacing of the track members and having outwardly extending, longitudinal flanges at the top thereof receivable in the hooks and forming a continuous trackway for moving the sliders lengthwise of the wiring channel to place them at the spacings to correspond with the spacings of the track members, and pairs of fluorescent lamp sockets supported at spaced intervals along the wiring channel.

2. Continuous lighting equipment comprising a plurality of tubular wireway units of predetermined length, secured together end to end to form a continuous wireway of multiple length, each unit having cross plates at the ends extending laterally of the wireway, fluorescent lamp sockets carried by the cross plates and adapted to support fluorescent lamps between the plates, fluorescent lamp auxiliaries for the lamps carried by a unit mounted in the wireway and connected to the sockets, wiring extending throughout the wireway whereby all the wiring for the entire

lighting equipment may be installed before hanging the lighting equipment, the wireway units having laterally extending flanges at the top of the same length as the wireway units, and supporting means for the wireway comprising a plurality of fixedly secured track members substantially parallel with one another at a common level and at random spacings, and members having sliding engagement along the wireway flanges and relative to the track members.

3. In combination, a wireway having longitudinally extending, outwardly projecting flanges at the top, sliders extending transversely of and above the wireway and having hooks to receive the flanges to permit movement of the sliders along the wireway, fixed track members parallel with one another and at a common level and random spacing less than the length of the wireway, the sliders being slidable lengthwise of the track members and supported thereby, and socket supporting members extending laterally of the wireway at regularly spaced intervals.

4. In fluorescent lighting apparatus, a plurality of horizontal supporting plates held substantially parallel with one another and at a common level, the plates having downwardly extending, inwardly facing hooks, a continuous wire way and body comprising unit sections each of which includes a normally horizontal longitudinally extending top plate and two dependent side plates having narrow flanges welded to the margins of the top plate to form two external flanges of double thickness and an inverted channel narrower in width than the top plate, the side flanges having outwardly extending end flanges spaced below the top flanges, bolts securing the end flanges of one section to the corresponding end flanges of an adjacent section to form a continuous wire way and body having continuous side flanges above the end flanges, the side flanges being received in the hooks whereby the wire way and body may slide longitudinally without interference of the end flanges and the hooks, fluorescent lamp auxiliaries and wiring in the wire way, and closure plates detachably secured across the channel bottoms.

5. In combination, a combined wireway and fluorescent lamp auxiliaries housing, composed of a plurality of units of lengths corresponding to fluorescent lamp lengths secured together end to end and having along the top thereof continuously outwardly extending side flanges, fluorescent lamp sockets arranged in pairs and held in fixed relation on each unit, wiring and auxiliaries in the wireway, cross plates closely above the wireway and having downwardly-extending, inwardly-facing hooks extending under the flanges and slidable therealong whereby the plates may assume various spacings along the wireway, and fixed track members substantially parallel with one another and at a common level, the track members having longitudinally extending flanges above which the side edges of the cross plates may slide so that when the cross plates are at the level of the track members and at corresponding spacings, the wireway and parts carried thereby may be bodily moved laterally to bring the cross plates and tracks into engagement.

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