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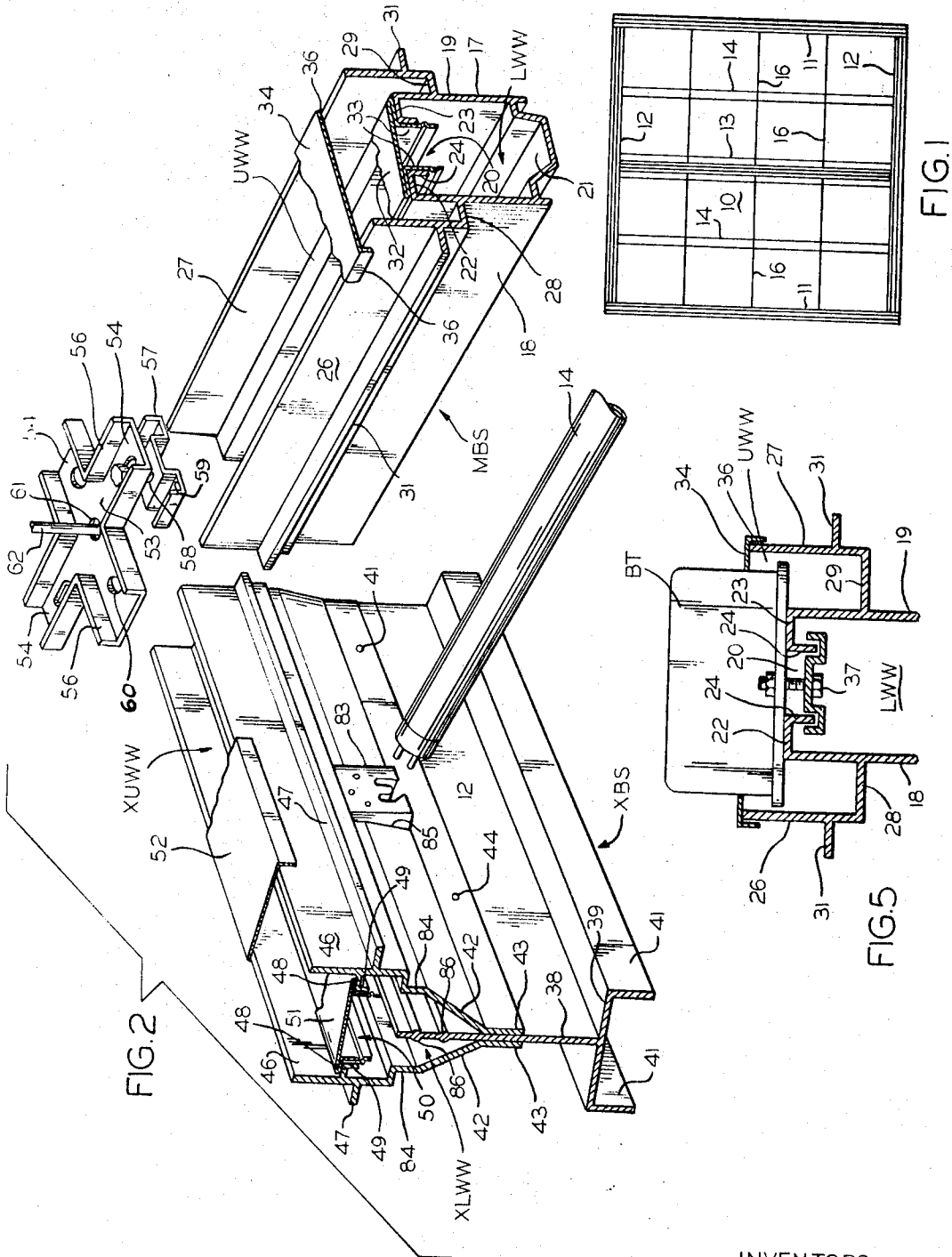
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3,450,871

BAFFLE SUPPORT FOR SUSPENDED CEILING CONSTRUCTION

Filed May 24, 1967

Sheet 1 of 2



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Sheet 2 of 2

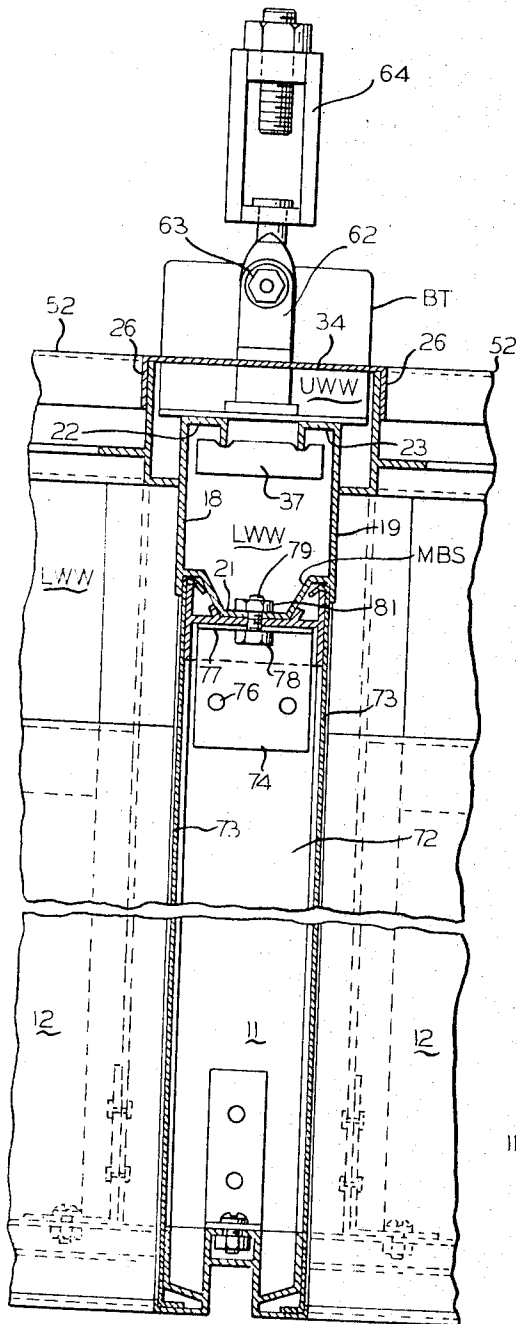


FIG. 3

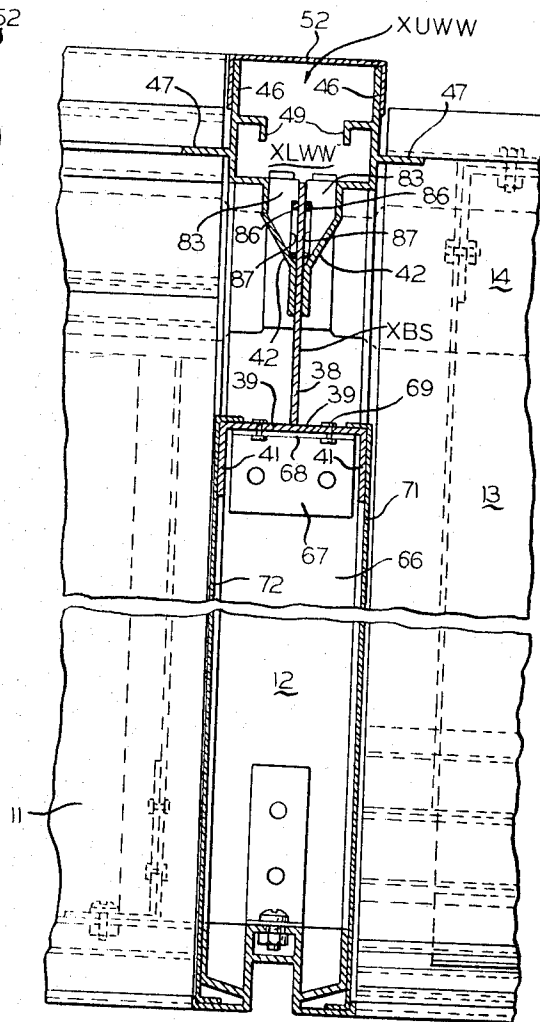


FIG. 4

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BAFFLE SUPPORT FOR SUSPENDED CEILING CONSTRUCTION

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4 Claims

ABSTRACT OF THE DISCLOSURE

A baffle support for the baffle members of a suspended ceiling construction wherein the baffle support includes wireways having structure for isolating low and high supply voltages from each other, and wherein the wireways are adapted to provide isolation of high and low supply voltages from leads to control and communication equipment. In a form of such baffle support, a wireway is provided with structure for locating receptacles for elongated fluorescent luminaires.

Suspended ceilings are constructed to supply lighting and conditioned air to the space below, and where the space is divided by partitions into smaller units, not only must ventilation be supplied to smaller areas, but in many cases special communication equipment and auxiliary light. The suspended ceiling structure is required to provide the necessary space for both low and high voltage wiring for these purposes.

However, modern electrical construction codes require high and low voltage wiring to be isolated from each other, and heretofore conventional suspended ceilings have not been compatible with the needs for both kinds of wiring. It is to the provision of baffle supports for suspended ceiling construction capable of accommodating both kinds of wiring that this application is especially directed.

With the foregoing considerations in mind it is a principal object of this invention to provide a ceiling baffle support for accommodating both high and low voltage wiring for electrical load devices supported by the baffle supports, and for electrical load devices in the space below the structure.

An ancillary object is to provide a baffle support having a pair of wireways therein which selectively may be isolated from each other, so that each wireway may have power leads therein at a particular potential different from the other.

Yet another object is to provide a baffle support having a wireway therein for leads supplying power to elongated fluorescent luminaires extending between a pair of such baffle supports, such wireway being characterized by structure for supporting and locating a receptacle for supporting the luminaire.

In the drawings:

FIG. 1 is a bottom plan view of a typical module of a suspended ceiling structure having the improvements according to the present invention embodied therein;

FIG. 2 is an exploded isometric view of a pair of baffle supports for each suspended ceiling;

FIG. 3 is a transverse vertical section taken through a main baffle support and baffle of the module seen in FIG. 1, looking at the sides of the cross baffles and cross baffle supports intersecting such main baffle;

FIG. 4 is a transverse vertical section taken through a cross baffle of the module seen in FIG. 1, looking at the side of a main baffle intersecting such cross baffle, and a ventilating baffle intersecting such cross baffle; and

FIG. 5 is a detail vertical cross sectional view through a main baffle support showing an upper wireway for the main baffle, and showing a fluorescent luminaire ballast transformer secured in the upper wireway.

Referring now particularly to FIG. 1 of the drawings, the improvements according to the present invention are embodied in a typical module of a suspended ceiling construction denoted by the reference numeral 10 and consisting of laterally spaced main baffles 11 and laterally spaced cross baffles 12. The latter may be joined at each end to the end of a main baffle 11 in a manner as is shown in an application of Segil and White, Ser. No. 558,723, filed June 20, 1966 for Suspended Ceiling Construction. A ventilating baffle 13 extends in parallel relationship to the main baffles 11, and midway therebetween, between the two cross baffles 12, and may be constructed as is seen in Segil and White application Ser. No. 558,770, filed June 20, 1966, now Patent No. 3,361,050 for Ventilating Baffle for Suspended Construction.

Luminaires 14 extend between the cross baffles 12 in parallel relationship to the ventilating baffle 13 and main baffle 11, and generally midway therebetween. Reflecting or diffusing baffles 16 may extend between a main baffle 11 and ventilating baffle 13 in a manner well known in the art, for the purpose generally of concealing the luminaire 14. The manner of securing such reflecting or diffusing baffles 16 at their ends to the main baffles 11 and the ventilating baffles 13 form no part of the present invention.

The main and cross baffles 11 and 12 are adapted to be supported from extrusions of light weight metal, such as aluminum, as seen particularly in FIG. 2. A main baffle support MBS comprises a box section 17 having spaced vertical sides 18 and 19 and a lower connecting bottom web 21. The top of the box section 17 is partly closed by a pair of intumed webs 22 and 23, each being provided with a downward extension 24, and defining a slot 20 therebetween. The box section 17 is flanked by flanges 26 and 27 spaced from respective walls 18 and 19 of box section 17 and integrally connected thereto by webs 28 and 29. Stiffener flanges 31 extend outward from each of the flanges 26 and 27.

The two intumed webs 22 and 23 are adapted to support a closure plate 32 having spaced clips 33 adapted frictionally to engage the downward extensions 24 to close the slot 20 of the box section 17 and thereby define a lower wireway LWW.

The tops of the spaced flanges 26 and 27 are adapted to support a cover 34 having snap flanges 36 along the sides thereof engageable with the outer sides of the spaced flanges 26 and 27. The cover 34, the spaced flanges 26 and 27, and the closure plate 32 thereby define an upper wireway UWW.

The two wireways LWW and UWW may carry leads at differential potentials, such leads being effectively isolated from each other by the closure plate 32 for box section 17.

As seen in FIG. 5, the webs 22 and 23 may be adapted to support a ballast transformer BT which can be held in position by a holding nut and bolt assembly 37, extending through the slot 20, said assembly being adapted to engage with the extensions 24 to hold transformer BT in place. The ballast transformer BT may have the secondary thereof provided with leads, not shown, extending into the wireway LWW.

A cross baffle support XBS for the cross baffle 12 consists of a vertical central web 38 intersected by a horizontal flange 39 having the sides thereof provided with spaced depending flanges 41. The central web 38 is flanked by divergent side members 42, each having a lower element 43 which is stitched to the central web 38 by rivets 44.

Each of such side members 42 is coextensive with a section comprising a certical flange 46 having a stiffener rib 47 extending along the outer face thereof. Each of such vertical flanges 46 has an inward facing ledge or rib 48 with a downturned extension 49, defining a slot 50, and defining with the divergent side members 42 a partly closed lower wireway XLWW. Such wireway XLWW can be completely closed along the upper extremities thereof by a wireway divider 51, closing the slot 50, and similar to the closure plate 32 seen with reference to main baffle support MBS.

The tops of the spaced flanges 46 are adapted to support a cover 52, similar to the cover 34 for the main baffle support MBS, previously described. The wireway divider 51, the cover 52 and the flanges 46 define an upper cross baffle wireway XUWW. The two wireways XLWW and XUWW may enclosed leads at different potentials effectively isolated from each other.

The main baffle support MBS and the cross baffle support XBS are joined at their ends to a support spider 53 arranged as a cruciform as seen in FIG. 2, with flat arms 54. Stiffener ribs 56 extend upward from the arms 54. Each of the arms 54 is held against the flat inturned webs 22 and 23 of main baffle support MBS, and against the ledges or ribs 48 of cross baffle section XBS by means of a securing nut 57 and bolts 58, the nut 57 spanning the slot 20 or 50 as the case may be. Nut 57 has grooves 59 engageable with the downward extensions 24 of webs 22 and 23 and the extensions 49 of ribs 48. The bolts 58 extend through apertures 59 in the arms 54, and the spider 53 has a central aperture 61 for a hanger bolt 62 having a swivel connection 63 to an adjustable hanger system 64, in turn connected to an overhead structure, not shown.

The baffle support structures MBS and XBS thus far described are respectively adapted to support the main baffle 11 and the cross baffle 12. Each such baffle is constructed substantially as seen in Segil et al. application Ser. No. 558,723, filed June 20, 1966, which application discloses interlocking end members to define when in interlocking relationship, a corner post at the intersection of the main and cross baffles.

In the case of the cross baffle 12, it is provided with an end interlocking member 66, see FIG. 4, having an L-shaped bracket 67 riveted at 68 to the inner face of end member 66 with an horizontal leg 68 riveted at 69 to the lower flange 39 of the cross baffle support XBS. The skin 71 of cross baffle 12 extends only to the top of the flange 39 and embraces the depending flanges 41.

In the case of main baffle 11, it likewise is provided with an end interlocking member 72 adapted to interlock with end member 66 of cross baffle 12, and sides 73 movable into abutting relationship with the sides 18 and 19 of the main baffle support MBS. The interlocking end member 72 of baffle 11 is likewise provided with a bracket 74 riveted thereto at 76, and having an horizontal leg 77. A bolt 78 is secured to leg 77 and passes through an aperture 79 in the bottom web 21 and a nut 81 engaged with bolt 78 is reached through the slot 20 between the spaced webs 22 and 23, as seen in FIG. 3.

In lieu of a main baffle 11, as seen in FIG. 4, ventilating baffle 13 may be provided, and secured to the support spide 53 as previously described. Such ventilating baffle may be constructed as seen in Segil et al. application Ser. No. 558,770 filed June 20, 1966.

The cross baffle support XBS has the divergent webs 42 notched at 85 to received a receptacle 83 for the fluo-

cent tube 14, as seen in FIG. 2. As seen in FIG. 4 also, the central web 38 of cross baffle support XBS is provided with a pair of spaced lands 86 spaced a distance corresponding to a widegroove 87 on the back face of the receptacle 83. By reason of the wide notch 85 for the receptacle 83 and the spaced lands on the web 38, the receptacle is properly located. The dimensions of the receptacle 83 are such as to fit snugly between the central web 38 and vertical elements 84 of the diverging side members 42. The receptacle 83 is moved to position with a snap action by the resilience of the vertical elements 84. The lands 86 resist any downward force by reason of the weight of the luminaires 14, and they may additionally be cemented in place by epoxy or other cement.

By reason of the structure herein described, voltages of different potentials can be effectively isolated from each other. For example, the upper wireways UWW and XUWW can be employed for high voltage leads, while the lower wireways LWW and XLWW can be employed for low voltage leads. If desired, either or both may be employed for leads carrying control voltages for equipment located below the structure described. For example, the cross and main baffles disclosed may in certain cases be disposed on room dividers, not shown. The baffles, being hollow, can have the necessary leads pass there-through from the baffle supports MBS or XBS.

While the invention has been described in terms of a preferred embodiment thereof, its scope is scope is intended to be limited only by the claims here appended.

We claim:

1. In a grid of a suspended ceiling, a pair of spaced parallel baffle supports, an elongated luminary extending between said parallel baffle supports, each of said baffle supports having a vertical central web, side members diverging from said central web, a notch in said diverging side members, and a receptacle positioned in said notch and supported therein for supporting one end of said elongated luminary.

2. The invention according to claim 1 wherein said diverging side members have elements flanking said central web and spaced from the same, and wherein said receptacle is held between said central web and one of said flanking elements and within said notch.

3. The invention according to claim 2 wherein said central web is provided with horizontal lands spaced a distance corresponding to a slot in said receptacle to locate said receptacle on said vertical web.

4. The invention according to claim 3 wherein said receptacle is slidable to position between said central web and said one flanking element and wherein said one flanking member and said horizontal land locate said receptacle on said vertical web.

References Cited

UNITED STATES PATENTS

3,321,878	5/1967	Brown et al.	52—220
3,359,697	12/1967	Smith et al.	52—506
3,361,050	6/1966	Segil et al.	98—40

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52—506, 588, 28