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(54) A device for adjustably coupling lighting assemblies to false ceilings, in particular of the type formed by section members and/or panels.

(57) The invention relates to a device for adjustably coupling or affixing lighting assemblies to false ceilings, made starting from section members and/or panels, comprising a half-box shaped body, of substantially parallelepipedal configuration, having an open face, adapted to operate as a housing seat for the lampholder of the lighting assembly, and a supporting element for said lampholder, adapted to be horizontally adjustably affixed to a section member of the false ceiling, the half-box shaped body being engageable, by means of its closed face opposite to its open face, to the lampholder supporting element, according to a plurality of step selectionable position, so as to change the distance of the lampholder from the false ceiling.

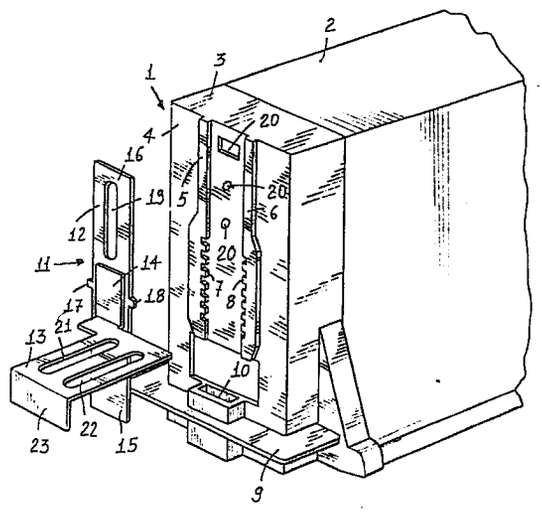

Fig. 1

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Description

A DEVICE FOR ADJUSTABLY COUPLING LIGHTING ASSEMBLIES TO FALSE CEILINGS, IN PARTICULAR OF THE TYPE FORMED BY SECTION MEMBERS AND/OR PANELS

BACKGROUND OF THE INVENTION

The present invention relates to a device for adjustably coupling or affixing lighting assemblies to false ceilings, in particular false ceilings of the type consisting of section members and/or panels.

A presently very diffused trend in the building field, and, in particular, in office, school and the like buildings, is that of making false ceilings, by using section members and panels generally made of aluminium or thermally insulating materials.

A problem related to the construction of the mentioned false ceilings is that of coupling or affixing to said false ceilings single lighting assemblies, generally consisting of box-like lampholders, frequently having a very large size, and provided for housing therein one or more fluorescent lamps.

This lighting assemblies are conventionally affixed by using rather complex devices which are generally assembled after the assembling of the false ceiling and, accordingly, require a lot of manual labour.

SUMMARY OF THE INVENTION

Accordingly, the task of the present invention is to provide a device for coupling lighting assemblies to false ceilings, of the indicated type, which may be easily and quickly associated to the false ceiling as this latter is constructed, so as to require a very reduced amount of manual labour for the subsequent application of the lampholders to said false ceiling.

Within the scope of the mentioned task, a main object of the present invention is to provide a device for coupling lighting assemblies to the false ceilings of the indicated type, which affords the possibility of affixing said lampholder in an adjustable way, in order to change, as desired, the distance of the lampholder from said false ceiling, within a very broad distance range.

Another object of the present invention is to provide a device for adjustably coupling lighting assemblies to false ceilings, in particular to false ceilings formed by section members and panels, which comprises a very reduced number of component parts and which, in the meanwhile, affords the possibility of precisely adjusting the distance of the lampholder from the false ceiling.

Yet another object of the present invention is to provide a coupling device which is adapted to support, in a very reliable way, the single lighting assemblies, at their ends.

Yet another object of the present invention is to provide such a coupling device which can be easily adapted to all of the fluorescent lampholders which are at present commercially available.

Yet another object of the present invention is to provide a device for adjustably coupling lighting assemblies to false ceilings, in particular false ceilings of the type formed by section members and metal panels, which has a very reduced cost.

According to one aspect of the present invention, the above mentioned task and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a device for adjustably coupling lighting assemblies to false ceilings, in particular to false ceilings of the type formed by section members and/or metal panels, having the characteristics claimed in claim 1.

Further characteristics and advantages of the adjustable coupling device, according to the invention are defined in the depending claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will become more apparent hereinafter from the following detailed disclosure of a preferrend embodiment of the device for coupling in and adjustable way lighting assemblies to false ceilings, in particular false ceilings of the type consisting of section members and/or panels, which is illustrated, by way of an indicative but not limitative example, in the accompanying drawings, where:

Figure 1 is a partially exploded perspective view illustrating a possible embodiment of the adjustable coupling device according to the invention;

Figure 2 illustrates the device shown in figure 1 applied to a false ceiling, and supporting a lampholder shown in broken away form;

Figure 3 is a side view of the device shown in figure 2; and

Figure 4 schematically illustrates a lampholder applied to a false ceiling by coupling, to the ends of said lampholder, two adjustable coupling devices according to the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the above mentioned figures, and, more specifically to figure 1, the adjustable coupling device according to the invention has been herein indicated at the reference number 1, and supports, at one end thereof, a lampholder 2, preferably of the fluorescent lamp type.

As shown, the adjustable coupling device 1 comprises a substantially parallelepipedal box-like body 3, having an open face, which may be snap fitted to the end of the lampholder 2, and an opposite closed face 4.

According to the invention, on the outer surface of the face 4 of the half-box shaped body 3 of the subject device there are provided, at a substantially central position, two integral ribs 5 and 6 which longitudinally extend along a portion of the height of the face 4 of the half-box shaped body 3.

The ribs 5 and 6 are provided, at the top thereof, with a substantially rectangular cross-section which is enlarged at the bottom into two opposite portions, thereon there are defined opposite rack portions 7 and 8; each said rack portion is provided with a plurality of teeth having a substantially rectangular

cross-section.

At the bottom, the half-box shaped body 3 is provided with a peripheral edge 9 at the center of which there is defined a substantially rectangular cross-section seat indicated at the reference number 10.

This seat 10, as shown in figure 1, is provided at a substantially intermediate longitudinal position with respect to the face 4 of the body 3, and the width of the seat 10 substantially corresponds to the transverse distance of the two rack portions 7 and 8.

As it should be apparent, the half-box shaped body 3 is provided for association with lamp holder 2 by means of a simple insertion and, if desired, it may be firmly affixed thereto by means of any suitably means, for example by glueing.

The adjustable coupling device 1 according to the invention comprises, moreover, as a main part thereof, a preferably metallic small plate, indicated overally at the reference number 11.

This composite small plate 11 comprises a first flat portion, which substantially vertically extends and has a rectangular shape, being indicated at 12, therewith there is associated, for example by means of welding, a further plate portion 13 of substantially L-shape.

More specifically, the L-shape small plate 13 may be affixed to the flat portion 12 by means of any known means: for example by welding to said flat portion 12 a tab portion 14 bent at a right angle and upwardly extending.

As is shown, the L-shaped flat portion 13 is welded to the vertically extending flat portion or small plate 12 so as that the greater leg of the L lies in a substantially horizontal plane, and crosses the vertically extending flat portion 12 at a given height.

Thus, the vertically extending flat portion 12 will be divided, from the greater leg of the L, into a lower portion 15 and a top portion 16.

At a given position, transversely of the flat portion 12, there are formed two integral teeth 17 and 18 which also have a substantially rectangular cross-section and are provided for snap engaging with the teeth of the respective rack portions7 and 8 of the half-box shaped body 3 as it will become more apparent hereinafter.

Through the top portion 16 of the flat portion 12 of the composite small plate 11 there is formed a longitudinal slot 19 which cooperate with a hole 20.

The flat portion 12, in particular, may be further stabilized by means of a rivet to be inserted into the mentioned slot 19 and hole 20.

In turn, through the greater leg of the L-shaped flat portion 13 there are provided two further transversal slots 21 and 22, which longitudinally extend in a parallel way to one another.

The shorter leg 23 of the L is bent at a right angle and extends substantially downwardly.

During the construction of the false ceiling, the composite small plate 11 will be directly installed and, to this end, it will be affixed, for example, to an element 24 of the false ceiling, by means of suitable bolt and nut assemblies 25, engaged in an adjustable way in the slots 21 and 22 and coupling the composite plate 11 to the section member 24.

More specifically, two half-box shaped bodies 3 will be affixed to the ends of the lampholders 2, and each body 3 will be snap engaged, by means of the cooperation of the teeth of the rack portions 7 and 8 and teeth 17 and 18 of the flat portion 12 so as to affix, at the desired distance from the false ceiling, the lamp holder 2.

In this connection, it should be apparent that the lower portion 15 of the flat plate 2, during these affixing step of the lamp-holder 2 will engage in the seat 10 defined on the face 4 of the body 3.

In order to complete the coupling of the lampholder to the composite plate 11, the slot 19 of the vertically extending flat portion 12 will be registered with respect to the hole 20 and, through the slot 19 and hole 20 any suitably permanent affixing means will be introduced, such as, for example, the rivet 26 shown in particular in figure 3.

Figure 4 shows the lamp-holder 2 fixed to the false ceiling at the two ends thereof, by using two adjustable coupling devices 1 according to the invention.

As shown, the false ceiling, consisting of panels P, is coupled to the room ceiling S, by means of any known means, for example suspending wires F.

As it should be apparent the lampholder 2 may be affixed to the ceiling in a very stable and safe way. In fact, a further aspect which contributes to improving this coupling is the stabilizing stress of the moment exerted by the weight of the lampholder and each composite plate 11 associated with the coupling devices 1 applied to the ends of said lampholder 2.

From the above disclosure it should be apparent that the invention fully achieves the intended task and objects.

More specifically a device for adjustably coupling lighting assemblies to false ceilings has been provided which is very simple construction wise and requires, for the coupling of each lamp holder, very quick and simple manual operations.

While the invention has been disclosed and illustrated with reference to a preferred embodiment thereof, it should be apparent that it is susceptible to several modifications and variations all of which will come within the spirit and scope of the invention as defined in the accompanying claims.

Claims

1. A device for adjustably coupling lighting assemblies of the fluorescent lamp type to false ceilings made of section members and metal panels, characterized in that it comprises a half box-shaped body of substantially parallelepipedal configuration, having an open face, adapted to receive and restrain therein one end of the lampholder of said lighting assembly, to a supporting element for said lampholder, adapted to be coupled in an horizontally adjustable way to a section member of the false ceiling, said half box-shaped body being engageable, by means of its closed face opposite to

said open face, with said supporting element according to a plurality of snap selectionable positions, so as to change the distance of the lampholder from the ceiling.

2. A device, according to claim 1, characterized in that said half-box shaped body is provided, on the outer surface of its closed face, with two parallel longitudinal ribs, having a substantially rectangular cross-section and partially extending along said closed face, each said rib defining at the top a respective rack portion, the opposite rack portions of said ribs including a plurality of cooperating teeth having a substantially ractangular cross-section.

3. A device according to claim 1, characterized in that said half-box shaped body is provided, on the outer surface of said closed face, with an integral seat, having a substantially rectangular cross-section, which is defined under said rack portions and having a width which substantially corresponds to the distance of said rack portions.

4. A device according to claim 1, characterized in that said supporting element engageable with said half-box shaped body consists of a composite plate, comprising a flat vertically extending rectangular portion and a substantially L-shaped portion rigid therewith and arranged with the greater leg of the L laying in a horizontal plane, crossing said vertically extending flat portion at a given height so as to define, on said vertically extending flat portion, a top portion, while a bottom portion of the shorter leg of said L downwardly extends from said horizontal plane.

5. A device according to claim 4, characterized in that said top portion of said vertically extending flat portion is provided with two integral transversely opposite teeth projecting from the longitudinal edges of said vertically extending flat portion, and having a substantially rectangular cross-section and adapted to be snap engaged with the teeth of said rack portions in order to locate said lampholder at a set distance from said false ceiling.

6. A device according to claim 4, characterized in that the bottom portion of said vertically extending flat portion is adapted to be engaged in the seat of said half-box shaped body.

7. A device according to claim 4, charatcerized in that through the top portion of said vertically extending flat portion there is defined a longitudinal slot cooperating with a hole adapted for further stabilizing said vertically extending flat portion by means of a rivet engaged in said slot and hole.

8. A device according to claim 4, characterized in that through the greater leg of said L there are defined two spaced and parallel parallel longitudinally extending slots adapted to receive therein means for adjustably affixing said composite plate to said section member of said false ceiling.

9. An adjustable coupling device for adjustably coupling fluorescent lamp lighting assemblies to false ceilings made of section members and metal panels, according to any preceding claims, and substantially as broadly discloses and illustrated for the intended objects.

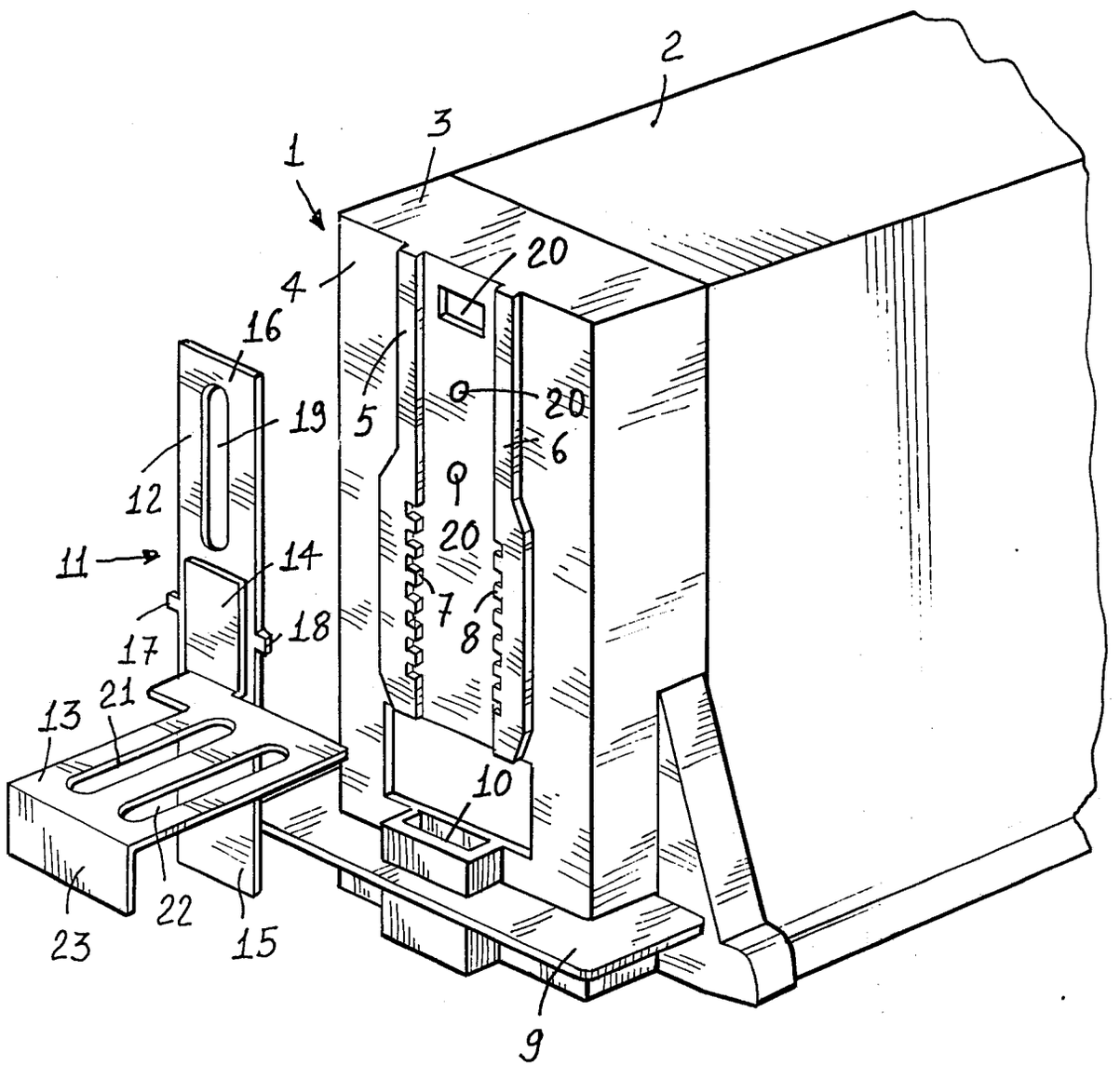

FIG. 1

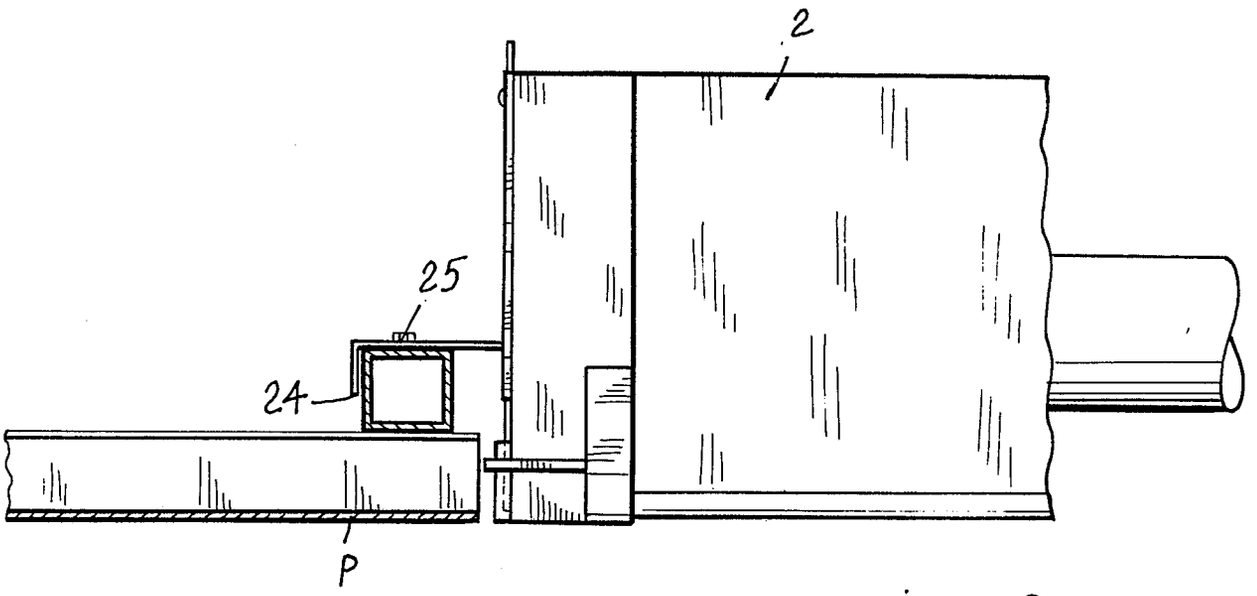

FIG. 2

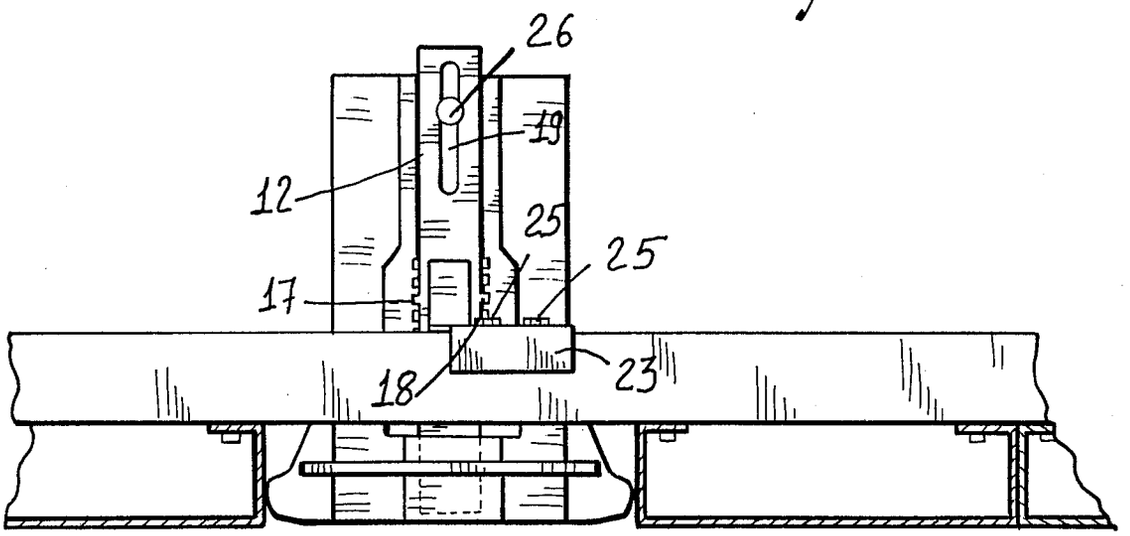

FIG. 3

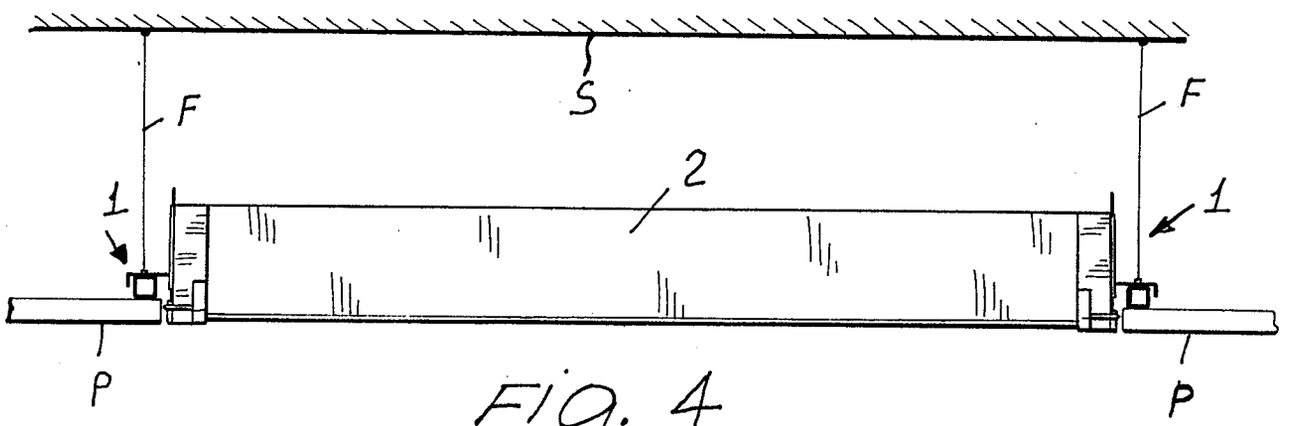

FIG. 4