



## Description

The invention relates to a luminaire for line illumination, comprising:

a first trunk with a top wall and side walls connected thereto;  
 an elongate batten provided with an outer surface which has means for accommodating and supplying an electric lamp and which is detachably fastened to said trunk;  
 a channel-shaped coupling piece with a longitudinal direction, a top wall, and side walls for connecting the first trunk to an adjoining trunk, which coupling piece partly overlaps the first trunk and the adjoining trunk and comprises means for fixing it to the first trunk and the adjoining trunk.

Such a luminaire is known from DE-A-32 14 595.

In the known luminaire, the coupling piece is present inside the relevant trunks, supported in flanged rims thereof. Projections are present at the top wall of the coupling piece, which projections can be manually rotated about an axis parallel to the top wall by means of a handle and can press against the top walls of the trunks. Owing to the deformations which occur during this, bulges in the side walls of the coupling piece will press against the side walls of the trunks, so that these trunks are tightly clamped.

It is a major disadvantage of the known luminaire that the coupling piece leads to a substantial local narrowing of the trunks. This means that the trunks must be given a more voluminous shape than if the coupling piece were absent. It is another disadvantage that deformations in the coupling piece and/or the trunk must be realized in order to render the bulges effective. There is a risk that deformations of the trunk may become visible.

A coupling piece for trunks is known from US-A-3,275,355 which comprises two mutually opposed U-shaped bodies which enter one another and whose bottoms can be pulled towards one another by means of screws, such that the bodies will clamp themselves into the trunks. The coupling piece is very voluminous, also on account of a reinforcement provided therein. A coupling piece inside a trunk has the additional disadvantage that it may form an obstacle to any continuous electric wiring present in the trunk.

A coupling piece which is U-shaped in cross-section is known from DE-U-1 874 882, whose top wall has flat extensions with holes, which extensions face away from one another. The coupling piece is laid over two adjoining elongate luminaires and fixed to these luminaires at the areas of the extensions by means of bolts and nuts. A suspension member can be fastened to the coupling piece between the luminaires for suspending the luminaires. The coupling piece has the disadvantage that it is difficult to fasten and that it provides a con-

nection of low rigidity between the luminaires, so that the linearity of luminaires connected to one another is not ensured. It is a further disadvantage that the coupling piece still has fastening means inside the luminaires.

It is an object of the invention to provide a luminaire of the kind described in the opening paragraph whose coupling piece occupies little space in the trunk and is nevertheless of a simple, sturdy construction which is easy to operate.

According to the invention, this object is achieved in that the coupling piece has inwardly flanged, longitudinally extending portions at its side walls, by means of which portions the coupling piece hooks itself externally around the first trunk, and in that the coupling piece has a pressure piece between its top wall and the top wall of the first trunk, which pressure piece is held clamped against the top wall of the first trunk by means of a screw passed through a threaded hole in the top wall of the coupling piece.

The coupling piece of the luminaire now is present not inside, but externally around the trunk, so that it occupies no space at all in this trunk and allows free passage to any elements which may extend through the trunk, such as electrical cables. The coupling piece may hook entirely around side walls of the trunk by means of its flanged portions, for example flanged rims, or around a profile extending in the longitudinal trunk direction, for example an external or internal fold or rim.

The pressure piece may be so dimensioned that it cooperates with the first trunk only. A separate pressure piece for an adjoining trunk may then be present. It is important, however, for a rigid coupling of trunks when the pressure piece extends substantially throughout the entire coupling piece, and the coupling piece has a second screw in a second threaded hole so as to keep the pressure piece clamped against an adjoining trunk.

The pressure piece may take the form, for example, of a plate. In a favorable embodiment, the pressure piece has side walls which bear on the side walls of the trunk. These side walls not only provide a major stiffening of the pressure piece, and thus of the coupling piece, and thus of the coupling between the trunks, but they also contribute to an accurate alignment of trunks parallel to their top walls.

It is important for the ease of mounting of the coupling piece to the trunk that the coupling piece and the pressure piece should be permanently interconnected while their mutual distance is variable. A permanent connection may be realized, for example, in that tongues of the pressure piece project through slots in the top wall of the coupling piece and have folded ends. The length of the tongues determines the distance over which the coupling piece and the pressure piece can be moved relative to one another then. When the coupling piece is provided around a trunk, the coupling piece now is a coherent unit, while the pressure piece can nevertheless move towards the top wall of the coupling

piece so as to provide space for the trunk, and can subsequently be clamped against this trunk.

In a favorable modification, the coupling piece and the pressure piece are coupled with an adjustable mutual distance. It is possible then to set a comparatively small mutual distance for the purpose of easy mounting around the trunk.

In an embodiment, accordingly, the pressure piece has for each screw a respective opening in a projecting portion facing the top wall of the coupling piece, through which projecting portion a narrowed portion of the relevant screw projects with rotation possibility and in which projecting portion a widened free-end portion of the screw is accommodated. This embodiment has the additional advantage that the compression force of the screws is transmitted to the trunk with a better distribution over the pressure piece. The widened free-end portion may be obtained, for example, in that the narrowed portion is upset at its free end, so that it can no longer pass through the opening.

The coupling piece may be used for suspending a linear arrangement of luminaires from a ceiling by means of suspension members or cables. Threaded holes in the coupling piece may, for example, have been broken out from the inside and provided with screw-threads. The coupling piece is suitable for comparatively high mechanical loads, for example if the trunk has a length suitable for accommodating several battens.

An embodiment of the luminaire according to the invention is shown in the drawing, in which

Fig. 1 is an exploded view of the luminaire;

Fig. 2 is an exploded view of the coupling piece; and

Fig. 3 is a cross-section taken on the line III-III in Fig. 1.

In Figs. 1 and 3, the luminaire for line illumination comprises a first trunk 10 with a top wall 11 and side walls 13 connected thereto. The trunk 10 has a mounting opening 12 opposite the top wall 11 for accommodating an elongate batten 1 which has an outer surface 2 comprising means 3 for accommodating and supplying an electric lamp, for example an elongate fluorescent lamp. The batten 1 can be detachably fastened to the trunk 10, in the Figures by means of a coupling member 6.

The luminaire has a channel-shaped coupling piece 30 with a longitudinal direction, a top wall 31, and side walls 32 for connecting the first trunk 10 in line with an adjoining trunk 10', such that the coupling piece 30 partly overlaps the first trunk 10 and the adjoining trunk 10'. The coupling piece 30 comprises means for fixing it to the first trunk 10 and the adjoining trunk 10'.

The coupling piece 30, see Fig. 3, has inwardly flanged portions 33 at its side walls 32, in the form of hooks in the Figure, which extend in its longitudinal

direction and with which the coupling piece 30 hooks itself around the first trunk 10, i.e. into inward folds 15 present in the side walls 13 of the trunk 10 in the Figure. The coupling piece 30 has a pressure piece 36 between its top wall 31 and the top wall 11 of the first trunk 10, which pressure piece is held clamped against the top wall 11 of the first trunk 10 by means of a screw 34 passed through a threaded hole 35 in the top wall 31 of the coupling piece 30.

Before the batten 1, see Figs. 1 and 3, is provided in the trunk 10, the trunk 10 can be pressed sideways into the coupling piece 30 because the trunk 10 is still elastic then. Once the batten 1 is present, the trunk can only be passed into the coupling piece 30 in its longitudinal direction.

The pressure piece 36, see Fig. 2, extends substantially throughout the entire coupling piece 30. The coupling piece 30 has a second screw 34 in a second threaded hole 35 for keeping the pressure piece 36 clamped against the adjoining trunk 10'.

In the Figures, the pressure piece 36 has side walls 37 which will bear on the side walls 13 of the trunk 10.

The channel-shaped coupling piece 30 and the pressure piece 36 are permanently coupled to one another with a mutual movement possibility, in the Figures with an adjustable mutual distance, see Fig. 3. The pressure piece 36 has for each screw 34 a respective opening in a projecting portion 38 which is directed towards the top wall 31 of the coupling piece 30 and through which a narrowed portion 39 of the relevant screw 34 is passed with rotation possibility, while a widened free-end portion 40 of the screw 34 is accommodated in said projecting portion 38. When the screws 34, for example Allen screws, are turned out, the pressure piece 36 is pulled up towards the top wall 31 of the channel-shaped coupling piece 30. The pressure piece 36 will retain any selected position once given to it and is suitable for moving the trunk 10 into the interior of the coupling piece 30. The pressure piece 36 is suspended on the widened free-end portion 40. When the trunk 10 has been brought into position, the screw 34 can be turned inwards.

The channel-shaped coupling piece has openings 41, see Fig. 2, in which, for example, a suspension member or a chain can be fastened and through which a supply cable can be passed into the interior. A corresponding oval opening 42 is present in the pressure piece 36.

## Claims

1. A luminaire for line illumination, comprising:

a first trunk (10) with a top wall (11) and side walls (13) connected thereto;  
an elongate batten (1) provided with an outer surface (2) which has means (3) for accommodating and supplying an electric lamp and

which is detachably fastened to said trunk (10);  
 a channel-shaped coupling piece (30) with a longitudinal direction, a top wall (31), and side walls (32) for connecting the first trunk (10) to an adjoining trunk (10'), which coupling piece (30) partly overlaps the first trunk (10) and the adjoining trunk (10') and comprises means for fixing it to the first trunk (10) and the adjoining trunk (10'),

characterized in that the coupling piece (30) has inwardly flanged, longitudinally extending portions (33) at its side walls (32), by means of which portions the coupling piece (30) hooks itself externally around the first trunk (10), and in that the coupling piece (30) has a pressure piece (36) between its top wall (31) and the top wall (11) of the first trunk (10), which pressure piece is held clamped against the top wall (11) of the first trunk (10) by means of a screw (34) passed through a threaded hole (35) in the top wall (31) of the coupling piece (30).

2. A luminaire as claimed in Claim 1, characterized in that the pressure piece (36) extends substantially throughout the entire coupling piece (30), and the coupling piece (30) has a second screw (34) in a second threaded hole (35) so as to keep the pressure piece (36) clamped against the adjoining trunk (10').
3. A luminaire as claimed in Claim 1 or 2, characterized in that the pressure piece (36) has side walls which bear on the side walls (13) of the trunk (10).
4. A luminaire as claimed in Claim 1, 2 or 3, characterized in that the channel-shaped coupling piece (30) and the pressure piece (36) are permanently interconnected while their mutual distance is variable.
5. A luminaire as claimed in Claim 4, characterized in that the channel-shaped coupling piece (30) and the pressure piece (36) are coupled to one another with an adjustable mutual distance.
6. A luminaire as claimed in Claim 5, characterized in that the pressure piece (36) has for each screw (34) a respective opening in a projecting portion (38) facing the top wall (31) of the coupling piece (30), through which projecting portion (38) a narrowed portion (39) of the relevant screw (34) projects with rotation possibility, and in which projecting portion (38) a widened free-end portion (40) of the screw (34) is accommodated.

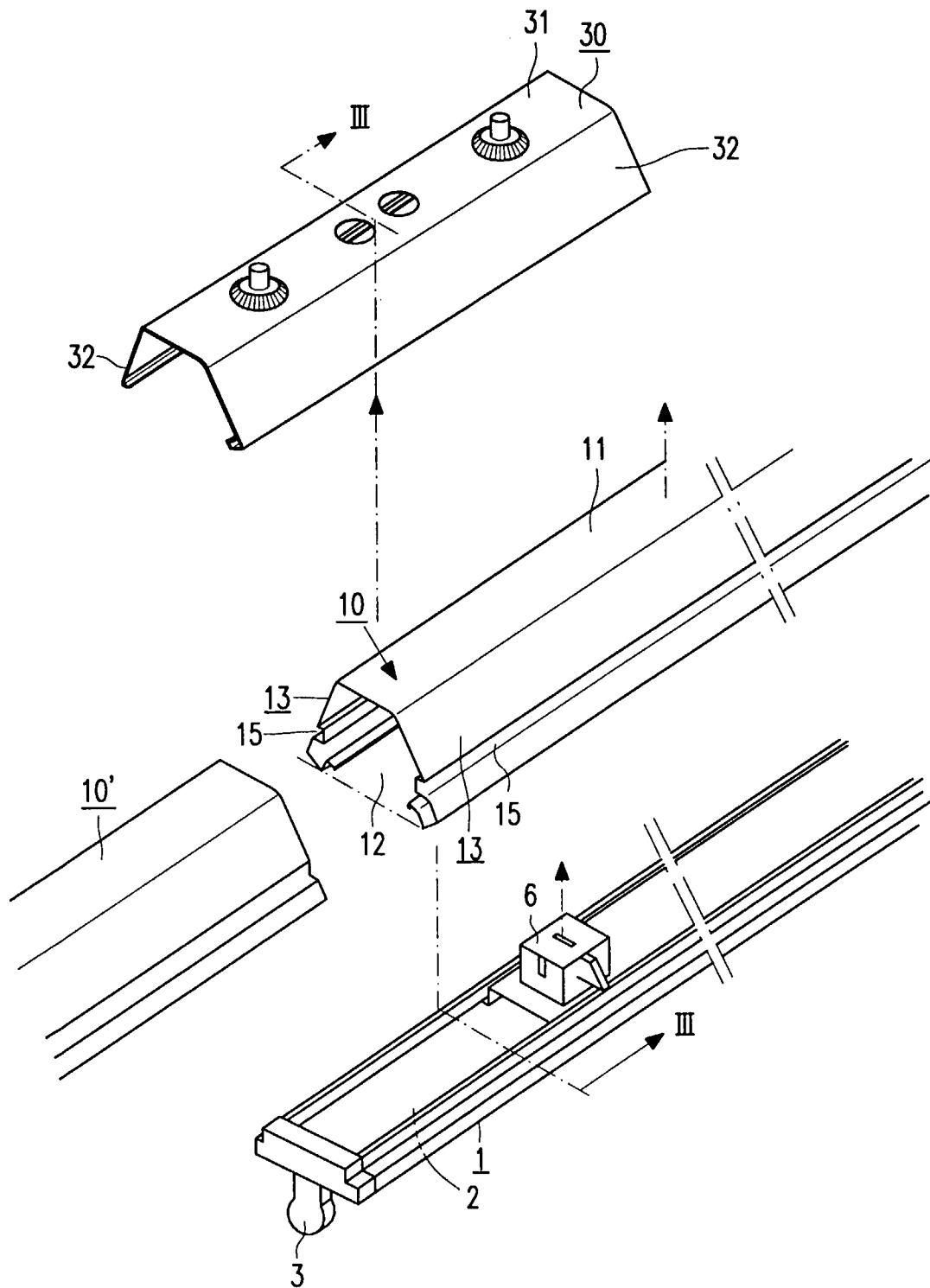


FIG. 1

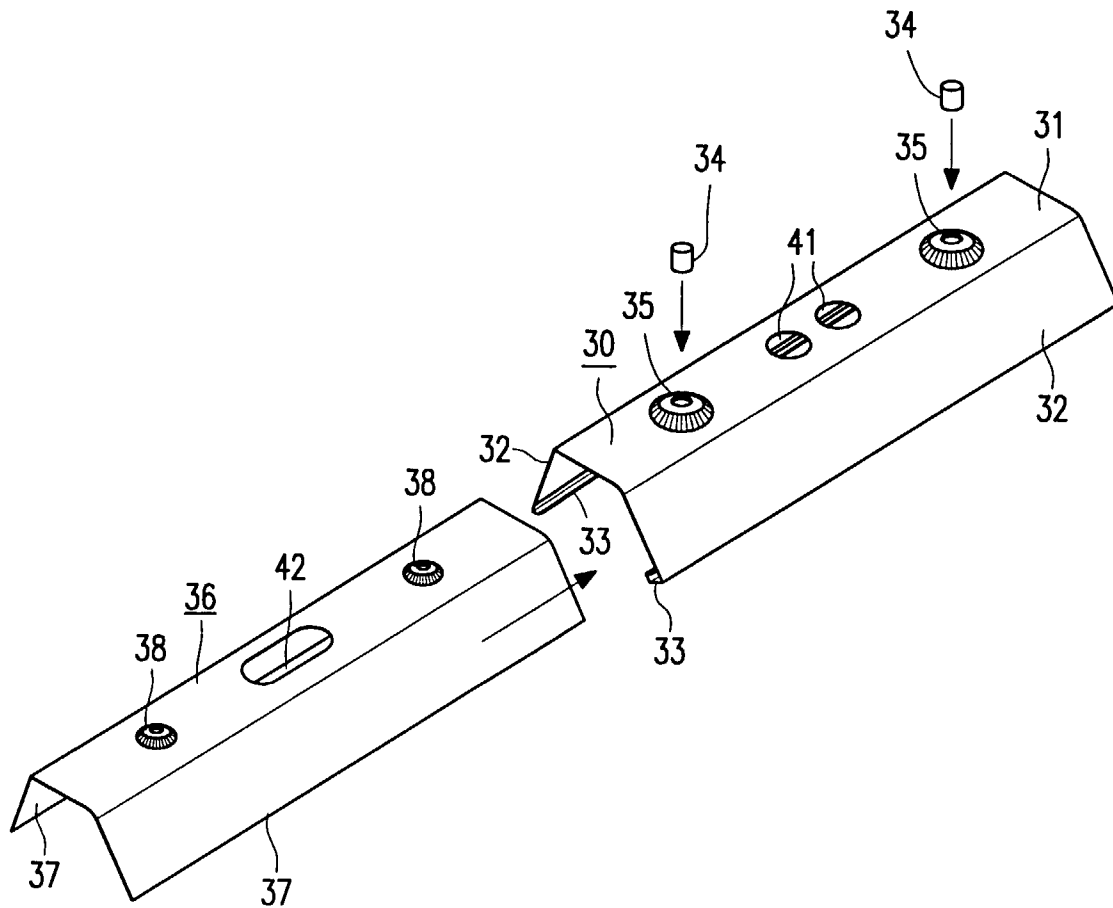


FIG. 2

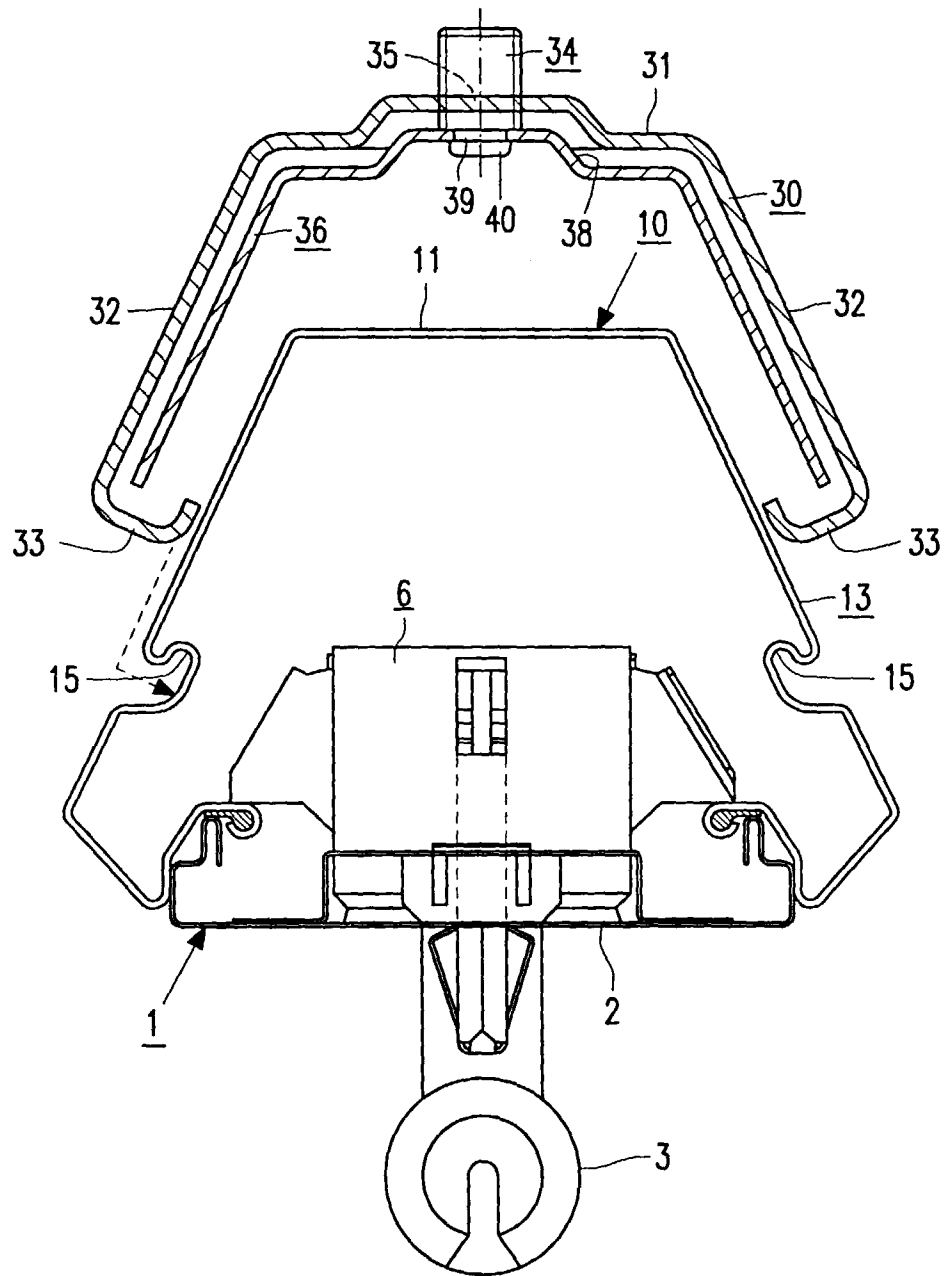


FIG. 3



European Patent  
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# EUROPEAN SEARCH REPORT

Application Number  
EP 98 20 0720

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.6)
A	FR 2 680 560 A (COMPAGNIE PHILIPS ECLAIRAGE SA) 26 February 1993 * page 4, line 2 - line 19 * * page 4, line 29 - page 5, line 25 * * figures 1,3 * -----	1	F21V21/00
			TECHNICAL FIELDS SEARCHED (Int.CI.6)
			F21V F21S
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		16 July 1998	De Mas, A
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X particularly relevant if taken alone Y particularly relevant if combined with another document of the same category A technological background O non-written disclosure P intermediate document</p> <p>T theory or principle underlying the invention E earlier patent document but published on, or after the filing date D document cited in the application L document cited for other reasons ..... &amp; member of the same patent family, corresponding document</p>			

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