(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 375 145 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
12.10.2011 Bulletin 2011/41

(51) Int Cl.:
F21V 21/02 *(2006.01)* ***F21V 21/088*** *(2006.01)*

(21) Application number: **10275104.7**

(22) Date of filing: **04.10.2010**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **09.04.2010 EP 10250746**

(71) Applicant: **Thorn Lighting Limited**
Co Durham DL16 7UR (GB)

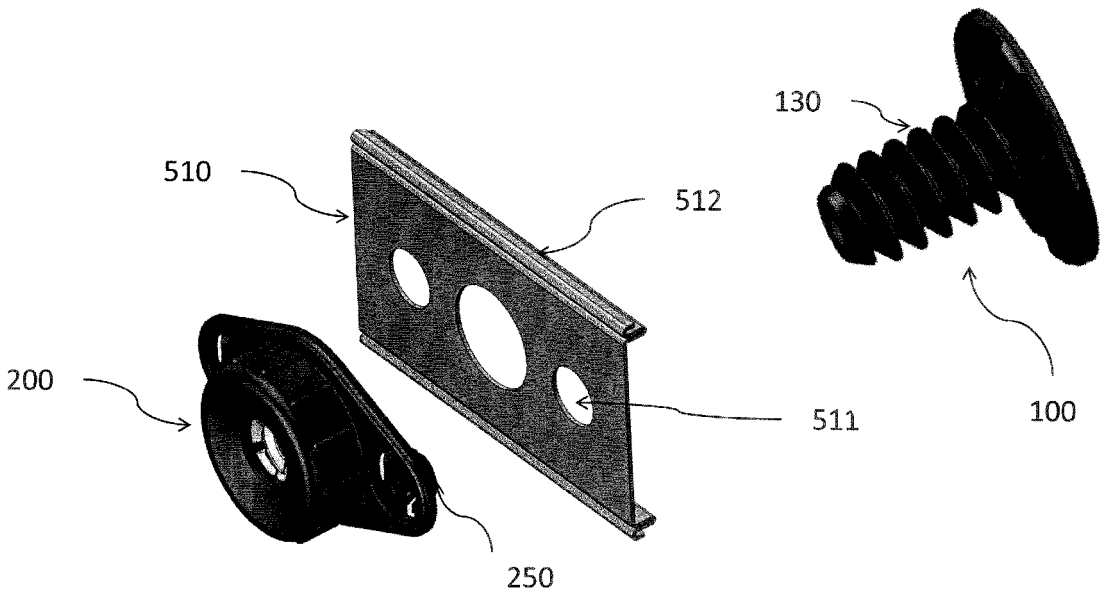
(72) Inventors:
- **Kelly, Alan**
  Spennymoor, Durham Dl 16 7GE (GB)
- **Brown, Paul**
  Newcastle Tyne and Wear NE52LT (GB)
- **Bowness, Anton**
  Newcastle upon Tyne NE2 4RR (GB)
- **Whitton, Frank**
  Crook Durham DL15 9RG (GB)
- **McNeill, Michael**
  Ovingham, Nothumberland NE42 6AL (GB)

(74) Representative: **Thun, Clemens**
Mitscherlich & Partner
Sonnenstraße 33
80331 München (DE)

(54) Mounting arrangement

(57) The invention is directed to a mounting arrangement for mounting a luminaire member (510) to a luminaire holder (1000) comprising a first mounting member (100), formed to be mounted to a luminaire holder (1000) and a second mounting member (200), formed to combine with the first mounting member (100) releasably, comprising accommodation means (250) for accommodating the luminaire member (510).

Fig. 4



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Description

[0001] The present invention relates to a mounting arrangement for mounting a luminaire member to a luminaire holder.

[0002] Large lighting systems are customarily designed to exhibit a variety of lighting effects, using a plurality of cooperating luminaires. In order to achieve the desired overall lighting effect, an exact fitting of luminaires at a location corresponding to the lighting concept is mandatory. For a sufficiently large system this proves to be quite tedious, requiring a number of workers supporting each other, resulting in rapidly increasing installation costs.

[0003] Exact alignment of the lighting means is frequently hampered by variations in the mounting face. Slight imperfections in the surface of a ceiling for example might result in an undesired tilting of a luminaire, thus putting the overall lighting effect into question. Time consuming adaptations of the mounting of a plurality of luminaires, involving in the worst case an iterated try and error method, are unavoidable in this case.

[0004] Further, supporting large or heavy luminaires during installation is impossible for a single worker, proving a plurality of workers mandatory for explicit luminaire models.

[0005] Therefore, an arrangement significantly reducing installation efforts and costs is favorable.

[0006] Accordingly, it is an object of the present invention to improve the mounting of a luminaire to a luminaire holder and to facilitate the respective mounting process, effectively reducing installation costs of luminaires.

[0007] This object is solved by a mounting arrangement according to claim 1. Advantageous modifications of the present invention are subject matter of the depending claims. According to the invention a mounting arrangement for mounting a luminaire member to a luminaire holder is provided. The mounting arrangement comprises a first mounting member, formed to be mounted to a luminaire holder and a second mounting member, formed to combine with the first mounting member releasably, wherein the second mounting member comprises accommodation means for accommodating the luminaire member.

[0008] The inventive arrangement is provided with a plurality of advantages. Involving two mounting members, the mounting process is divided into readily achievable steps, wherein a first step is represented by mounting a first mounting member to the luminaire holder, facilitated by the limited size and low weight of the first mounting member. A further step is given by combining a luminaire member to the first mounting member by means of the second mounting member, effectively mounting a luminaire member to the luminaire holder - aided by the inventive mounting arrangement. Obviously the fitting of a first mounting member to a luminaire holder can be handled by a single worker, obviating the support of a bulky luminaire.

[0009] Fostering the easy fitting to the luminaire holder, preferably the first mounting member is formed to accommodate attaching means to attach the first mounting member to a luminaire holder. For example, attaching means can be easily accommodated by arranging expedient openings, slots, channels or other guiding means in the respective first mounting member.

[0010] Further, in an advantageous modification of the present invention, the first mounting member comprises attaching means to attach the first mounting member to a luminaire holder. For example, hook-like assemblies might be formed to combine with elements of a suspended ceiling, or clamping means might be arranged.

[0011] Facilitating the mounting, the accommodation means are preferably arranged to form a snap-fitting or latching connection with the luminaire member. This creates the possibility to provide accommodation for the luminaire member in a swift and efficient manner, advantageously without the usage of tools, contributing to reduced efforts and costs.

[0012] In a preferred embodiment, the mounting arrangement is provided with the possibility to be moved with respect to the luminaire member, even while accommodating the luminaire member, and for example also while the luminaire member is latched or snap-fittingly combined to the mounting arrangement. This could be achieved for example by a combination, limiting movement preferably in one direction of restriction, whereas clearance for movement is provided advantageously in the plane normal to the direction of restriction.

[0013] Advantageously, one of the mounting members comprises accommodation faces for accommodating the luminaire member form-fittingly, preferably obviating unnecessary limitations concerning the movement of the luminaire member with respect to the mounting arrangement. Favorably, a slight margin remains in at least one direction, to provide the possibility to adapt the position of the luminaire member with respect to the mounting arrangement.

[0014] In an advanced embodiment, one of the mounting members comprises snap-fitting or latching means, formed to combine snap-fittingly the first mounting member with the second mounting member. Preferably the usage of tools can be obviated while combining the second mounting member to the first mounting member. Accordingly, the possibility to support the luminaire member two handed, while mounting the luminaire member to the luminaire holder emerges. Thus, a significant improvement in the mounting of luminaires is achieved, saving costs and efforts.

[0015] Advantageously one of the snap-fitting or latching means comprises a plurality of snap-fitting or latching positions, enhancing opportunity for various modifications in the spatial relation of luminaire member and luminaire holder. An alteration of the spatial relation for example can be gained by the choice of one of the plurality of snap-fitting or latching positions. In a preferred embodiment the snap-fitting or latching means are ar-

ranged to provide an alteration in the distance of luminaire member and luminaire holder by the choice of an appropriate latching position. And further with providing a set of latching positions the possibility is raised to exhibit a predefined alteration procedure, adapting a complex lighting system to a variety of luminaire holders.

[0016] Preferably, one of the snap-fitting or latching means is arranged to lock the snap-fitting or latching means in one of the plurality of snap-fitting or latching positions. Fostering the possibility to adapt to various luminaire holders, a reliable spatial relation of luminaire member and luminaire holder is achieved.

[0017] In an advantageous modification of the present invention, one of the snap-fitting or latching means combining the first mounting member with the second mounting member is formed at least in part as a thread or winding. A thread or winding provides a continuous set of latching positions for combining the first and the second mounting member, implicating all the benefits of a plurality of latching positions and further providing a very precise range of adjustment. Thus, the mounting arrangement can be adapted to various luminaire members and even to a variety of lamp holders providing a versatile use.

[0018] Further, the possibility is provided to compensate imperfections of the lamp holder surface by expedient choice of the latching position. Moreover, since a defined set of latching positions is given, mounting of the luminaire member on tilted surfaces is facilitated by mimicing the slope in the choice of respective latching positions.

[0019] In a preferred embodiment of the present invention, one of the snap-fitting or latching means for combining the first mounting member with the second mounting member is arranged to perform a rotation with respect to the corresponding other snap-fitting or latching means, advantageously while being in a fitted state.

[0020] Preferably said snap-fitting or latching means are arranged to lock by the rotation and unlock by a reversed rotation, facilitating the save and defined arrangement of the luminaire member with respect to the luminaire holder.

[0021] In an advantageous modification of the invention one of the mounting members, favorably the second mounting member, comprises a plurality of members.

[0022] In this case, one of the mounting members comprises advantageously a first assembly member and a second assembly member, formed to combine snap-fittingly. In a preferred embodiment the first and second assembly members are arranged rotatable with respect to each other while being snap-fittingly combined. This raises opportunity to suppress rotational movement of the luminaire member with respect to the corresponding mounting member, while at the same time a comprised assembly member is provided with the possibility to be rotated. In an advanced embodiment the rotatable assembly member is combined to the latching or snap-fitting means of the corresponding mounting member and advantageously contributes to locking the combination.

[0023] Moreover, in an advantageous modification of the invention, the mounting arrangement is formed to provide a combination of the luminaire member with the luminaire holder compliant to regulations for luminaires corresponding to a higher protection class, for example IP 01 and higher. Preferably, the mounting arrangement comprises a sealing member, arranged to be fitted to one of the mounting members. Advantageously the sealing member is formed to seal the mounting arrangement, preferably one of the mounting members, water- respectively air tight to the luminaire member.

[0024] A further aspect of the invention is directed to a luminaire, comprising a luminaire member formed to be combined with a luminaire holder by a mounting arrangement according to the invention.

[0025] Preferably, the luminaire member is formed as a base plate. The base plate for example comprises snap-fitting or latching means, formed to combine the base plate with additional luminaire members.

[0026] As an example, the snap-fitting or latching means for combining additional luminaire members to the base plate might be arranged in a hook-like form, favorably providing a snap-fitting face to combine with other luminaire members.

[0027] Further, to facilitate the accommodation of the luminaire member, the luminaire member comprises an opening, arranged to cooperate with the accommodation means. Preferably, the luminaire member comprises one or a plurality of openings that are formed to suppress rotational movement of the luminaire with respect to the mounting arrangement.

[0028] In a preferred embodiment, the accommodation means are formed to suppress rotational movement by a polygonal or oblong shape. And it is also conceivable that the spatial relation of openings, preferably protruded by the accommodation means of the mounting arrangement, is provided with the possibility to suppress rotation. For example a set of distant openings, can be protruded with bolt-like accommodation means, suppressing rotational movement.

[0029] Moreover, in the case of openings cooperating with the accommodation means it is favorable to provide the luminaire member with snap-fitting faces adjacent the openings, which are more preferably formed to allow movement of the luminaire member while being snap-fittingly combined to the mounting arrangement.

[0030] Even more preferably the mounting arrangement comprises an anti rotational bracket mounted between the first mounting member and the luminaire holder, preventing rotation of the mounting arrangement around the mounting point.

[0031] In the following, the present invention and preferred embodiments thereof are explained in more detail with respect to the enclosed figure. It is shown in

Fig. 1 an embodiment of an inventive mounting arrangement in a cross sectional view;

Fig. 2 the embodiment of figure 1 in a perpendicular view;

Fig. 3 a first and a second mounting member; wherein a mounting member comprises a plurality of members;

Fig. 4 an embodiment of a second mounting member and a corresponding luminaire member;

Fig. 5 further embodiments of the invention;

Fig. 6 a mounting arrangement, provided for luminaires with a higher protection class;

Fig. 7 an anti rotational bracket as part of an embodiment of the invention;

Fig. 8 an embodiment of a first mounting member with an anti rotational bracket;

Fig. 9 a mounting arrangement including an anti rotational bracket, and

Fig. 10 a mounting arrangement including a luminaire and an anti rotational bracket.

[0032] The support of a luminaire 500 of large dimensions or heavy weight for a substantial time while mounting it to a luminaire holder 1000 requires substantial efforts, and in the worst case a plurality of workers. Aided by the inventive mounting arrangement 1, this can be improved.

[0033] The inventive mounting arrangement 1 comprises a first mounting member 100 and a second mounting member 200. Both mounting members 100 and 200 are lightweight and easy to handle, imposing preferably less than 250g of weight each.

[0034] To mount a luminaire member 510 to a luminaire holder 1000 using the inventive mounting arrangement 1, it is necessary to fit a first mounting member 100 to the luminaire holder 1000. First Mounting member 100 is provided with the possibility to accommodate expedient attaching means 1001 for a variety of lamp holders 1000. As shown in the embodiment of figure 1, an essentially pole-like or frusto-conical first mounting member 100, comprises a tubular central hole, to accommodate a variety of nails or screws, adapting to miscellaneous surfaces of lamp holders 1000.

[0035] Further, it is also conceivable, that the first mounting member 100 comprises oblong openings, rails or other guiding means to accommodate attaching means in an efficient manner. Figure 5 shows further modifications of the inventive mounting arrangement 1. First mounting member 100 comprises a circle like base plate 110, provided with oblong openings 111, for the accommodation of attaching means. The oblong shape of the openings 111 raises opportunity to vary the position of the first mounting member 100 with respect to the luminaire holder 1000.

[0036] In a preferred modification of the invention the first mounting member 100 might also comprise attaching means 1001, combining the first mounting member 100 with a ceiling, as an example of a lamp holder 1000. In a preferred embodiment, even a snap fitting of clamping connection to a rail system, a suspended ceiling or the like is conceivable.

[0037] In addition to the embodiments of figures 1 to 4, the first mounting member 100 as depicted in figure 5 comprises accommodation means 150, for accommodating the luminaire member 510, arranged to suppress rotational movement of the luminaire member 510 with respect to the first mounting member 100, by protruding sufficiently spaced openings in luminaire member 510. As will become obvious, other means to suppress rotational movement of the luminaire member 510 are also conceivable.

[0038] Preferably the first mounting member 100 comprises snap fitting means 130 to combine with the second mounting member 200. Embodiments of figures 1 to 5 show frusto-conical snap-fitting means 130, to be combined with the second mounting member 200, arranged in the center region of the circle like base plate 110.

[0039] Advantageously snap-fitting means 130 are provided with a thread. The surface of the thread or winding 131 represents a plurality of essentially triangular snap-fitting faces, providing an almost unlimited set of latching positions. Thus snap-fitting means 130, at least in part are formed as a thread or winding. To support the latching, the first mounting member 100 might be of predominantly conical or tapered shape, preferably of frusto-conical shape.

[0040] In a preferred modification of the invention snap-fitting means 130 are arranged to protrude respective openings of luminaire member 510, as depicted for example in figures 1 to 5. Providing an expedient shape of the snap-fitting means in combination with adapted latching positions enhances the possibilities to adapt to a variety of luminaire holders 1000. In the examples of figures 1 to 5 the length of snap fitting means 130 determines the adaption range of the distance between luminaire member 510 and luminaire holder 1000. Preferably the snap-fitting means 130 are formed to provide an adjustment range of 1 to 100 mm of the distance of luminaire member 510 to luminaire holder 1000, for example a thread is provided in a corresponding length of 1 to 100 mm.

[0041] The inventive mounting arrangement 1 comprises a second mounting member 200. Mounted to the luminaire holder 1000, first mounting member 100 serves as a base for combining with the second mounting member 200, effectively mounting a luminaire member 510 to the lamp holder 1000.

[0042] The second mounting member 200 is provided with the possibility to swiftly combine with the first mounting member 100, advantageously obviating the use of

tools. This creates the possibility to use both hands to support the luminaire member 510 or mounting members connected to it, while fitting the luminaire member to its operating position. Further the time spent to support heavy weights, as imposed by a luminaire 500 for example, is significantly reduced, fostering productivity of workers involved.

[0043] Accordingly, luminaire member 510 is preferably combined with the second mounting member 200. For certain luminaire models it is conceivable to form the second mounting member 200 integrally with luminaire member 510.

[0044] However, the second mounting member 200 is preferably formed as a separate member, provided with accommodation means 250 to accommodate a luminaire member 510, to be mounted to a lamp holder 1000.

[0045] Embodiments of figures 1 to 4 sketch a second mounting member 200, provided with a plurality of accommodation means 250. As can be seen in figure 4, the accommodation means 250 are formed to protrude openings 511, arranged in the luminaire member 510. With providing a plurality of protruded openings 511 in the luminaire member 510 rotation of the luminaire member 510 with respect to the second mounting member 200 is effectively suppressed. However, it is conceivable that this is achieved also by an expedient shape of the openings 511 or the protruding accommodation means 250. As an example, a suitable shape might comprise a polygonal or an oblong element.

[0046] Moreover openings 511 exceed protrusions members 260 comprised in the accommodation means 250 in size, creating the possibility to slightly align the luminaire member 510 with respect to the second mounting member 200 and thus to the mounting arrangement 1, even in an accommodated state.

[0047] In the embodiment of figure 1 the accommodation means 250, comprise snap-fitting means 255, in turn exceeding the openings 511 of luminaire member 510 in size. Snap-fitting means 255 are formed to resiliently pass through openings 511, subsequently snapping in place to provide a safe and reliable connection of the second mounting member 200 to the luminaire member 510, fostered by the conical shape of snap-fitting means 255 and edgewise mounting to pole-like protrusion members 260 in this embodiment of accommodation means 250.

[0048] Preferred embodiment of figure 5 comprises accommodation means 250 of essentially circular shape. Accommodation means 250 resiliently protrude an essentially circular opening provided in luminaire member 510. Snap-fitting means 255 integral to accommodation means 250, formed as snap-fitting faces jutting out the perimeter of circular accommodation means 250, exceed the minimal diameter of the respective opening protruded in size, thus providing a snap-fitting combination with the luminaire member 510.

[0049] In a preferred embodiment it is also conceivable that the opening protruded is of oblong shape, allowing for adaption of the position of the mounting arrangement 1 with respect to the luminaire member 510. Further, also for this case it is favorable to provide snap-fitting means 255 exceeding a minimal diameter of the opening protruded in size.

[0050] Moreover, in a preferred modification of the invention sufficient clearance is provided by snap-fitting faces, arranged adjacent to openings 511. Snap fitting means 255, accommodation means 250 or the second mounting member 200 are preferably formed of an elastomer, supporting the resilient interaction of the snap-fitting means 255 with the luminaire member 510, but other resilient assemblies are also conceivable.

[0051] To combine the first and second mounting member 100, 200 swiftly, the second mounting member 200 is provided with snap-fitting or latching means 230. In the embodiments of figures 1 to 5, second mounting member 200 is pressed onto the thread of the first mounting member 100. Advantageously the first and second mounting members 100, 200 are formed to effectively avoid screw-like turning to snap the first and second mounting members 100, 200 into their latching position.

[0052] Preferably snap-fitting means 230 comprise a winding 231, advantageously formed as a fraction of a winding 231. As an example this can be achieved by slots 232 arranged in the preferably tubular snap-fitting means 230. Supporting the latching of the snap-fitting means 230, preferably the slots 232 provide a clearance is for resilient movement of fractions of the winding. Advantageously fractions of the winding 231 are arranged to latch with respective faces of a thread provided by the first mounting member 100.

[0053] However, it is also conceivable that the invention is provided with other means to latch with faces of the thread, provided with the first mounting member. For example, a ball bearing like assembly can be stipulated, wherein the respective balls latch with the thread.

[0054] Providing snap-fitting or latching means 130, 230 formed to bend resiliently, creates opportunity to advantageously allow for a clearance between snap-fitting means 130 and 230, enhancing the snap-fitting and latching possibilities and also facilitating the snap fitting process. Advantageously the clearance might originate from a tapered shape of snap-fitting means 130, providing a stopping face for the snap-fitting means 230. In the embodiments of figures 1 to 5 this is achieved by a frustoconical shape of snap-fitting means 130.

[0055] Figure 5 shows also a detailed view of a winding 231 provided in a preferred embodiment of a second mounting member 200. Second mounting member 200 is preferably formed of an elastomer or another material provided with sufficient flexibility to snap on snap-fitting or latching means 130, in this embodiment preferably a thread. Fractions of winding 231 are formed to bend resiliently obviating the need to use a turning technique to advance to a subsequent latching position. The resilient bending is fostered by a plurality of slots 232, in the depicted case a regular arrangement of four slots, separat-

ing fractions of a winding 231, allowing to bend the fractions of winding 231 resiliently. In this embodiment slots 232 lead to a ring shaped body of the second mounting member 200, which is representing a base element for mounting and accommodating preferably resilient snap-fitting or latching means 230.

[0056] In the embodiments of figures 1 to 4 snap-fitting or latching means 230 are arranged as a separate member of the second mounting member 230. Preferably second mounting member 200 comprises a plurality of assembly members, in the embodiment of figures 1 to 4, a first assembly member 210, a second assembly member 220 and the snap-fitting means 230.

[0057] Fractions of a winding 231, separated entirely by slots 232, are fitted to an essentially triangular base frame 234, preferably integrally. Advantageously snap fitting or latching means 230 are formed of a resilient material, preferably an elastomer. Thickness of base frame 234 is advantageously thinner than the wall thickness of winding 231, forming a preferred resilient joint. Advantageously outer faces of winding 231 are formed to mate with first or second assembly member 210, 220 form-fittingly.

[0058] As can be seen in embodiments of figure 1 to 4, first assembly member 210 is formed to combine snap-fittingly with second assembly member 220. Clarifying this, Figure 3 depicts a second assembly member 220, comprising a base plate of parallelepiped shape - supporting a stable construction and providing the possibility to form accommodation means 250, suppressing rotational movement of the luminaire member 510 - and a ring-like snap-fitting face connected to the base plate. The snap-fitting face comprises a flange-like bulge, preferably serving as a bearing for the second assembly member 220.

[0059] Second assembly member 220 is advantageously formed to combine with the first assembly member 210 snap-fittingly. Preferably being of essentially ring-shaped form, second assembly member 220 comprises a bulge, formed to snap behind said bulge of assembly member 210 to complete the snap-fitting connection.

[0060] The depicted snap-fitting connection is arranged to reliably and safely combine the first assembly member 210 with second assembly member 220 and moreover the first 210 and second assembly member 220 are provided with the possibility to be rotated with respect to each other, while being snap-fittingly connected.

[0061] Preferred embodiment of figure 4 shows a second assembly member 220 comprising additional guiding means, for accommodating snap-fitting means 230 arranged in the second mounting member 220. While being snap-fittingly connected, first and second assembly members 210, 220 enclose snap-fitting means 230. Accommodated by guiding means snap fitting means 230 can be rotated with respect to first assembly member 210 in combination with second assembly member 220.

[0062] Advantageously first and second mounting members 100, 200 can be rotated with respect to each other, preferably in a snap-fitted state. In an advantageous modification of the present invention snap-fitting means 130 or 230 are arranged to lock by performing said rotation. In the embodiments of figures 1 to 5, with performing a rotation of the second mounting member 200 - and in particular of snap fitting means 230 - winding 231 of second mounting member 200 engages with the thread of first mounting member 100, locking the combination of snap-fitting means 130 and 230 in a latching position. Advantageously thread or winding 231 comprised in the second mounting member is provided with a pitch distinct from a thread or winding comprised in the first mounting member 100, also fostering a swift locking.

[0063] Thus, a reliable latching position is achieved, providing a defined spatial relation of luminaire member 510 and luminaire holder 1000. Comprising a plurality of latching positions, predominantly allowing a defined variation in the distance between luminaire member 510 and luminaire holder 1000, compensation of imperfections in the composition of a luminaire holder 1000 is facilitated. Slopes or the like can be balanced or, on the other hand can also be achieved, fostering a swift mounting as stipulated by the lighting design. Locking one of the mounting members 100, 200 in a latching position provides a reliable fitting of the luminaire member 510 to the luminaire holder 1000, inhibiting further unintended modifications.

[0064] However, the embodiments of figures 1 to 4 are arranged to unlock the snap-fitting or latching combination, allowing for the adjustment of a latching position, by simply reversing the rotation described above. An easy to use unlocking procedure, facilitating final adjustments significantly, contributes also in reducing installation efforts and costs.

[0065] Further, in the embodiments of figures 1 to 5, essentially circular second assembly member 220 comprises corrugations, preferably arranged at the perimeter, to support the grip of a hand, aiding rotational movement.

[0066] In one of the embodiments of figure 5, corrugations are arranged on a bulge, jutting out of second mounting member 200. Preferably second mounting member 200 comprises two bulges to form accommodation means for a sealing member 280, in an example forming accommodation faces to provide a contact area for the sealing member with other members, preferably the luminaire member 510.

[0067] Advantageously the inventive mounting arrangement 1 comprises a sealing member 280, as shown for example in figure 6. Sealing member 280 is preferably formed to snap form-fittingly on one of the first or second mounting members 100, 200, while maintaining the possibility to combine first and second mounting members 100, 200. Advantageously, the sealing member 280 is formed to seal the respective mounting member 100, 200 with the luminaire member 510 water- and preferably also air-tight, to aid the mounting of a luminaire compliant to

a higher protection class, exceeding at least class IP01. Sealing member 280, as depicted in embodiment of figure 6, is arranged to fit between the second mounting member 200 and luminaire member 510, allowing the engagement of accommodation means 250. It is understood that an expedient thickness of the sealing member 280 is mandatory, to allow the use of accommodation means 250. The arrangement of sealing member 280 between first or second mounting member 100, 200 and luminaire member 510 is supported by mentioned accommodation faces, providing a contact area for sealing member 280 and luminaire member 510.

[0068] Preferably the sealing member 280 is arranged between first or second mounting member 100, 200 and luminaire member 510. Thus, in an advantageous modification of the invention, sealing member 280 is formed of a compressible material, preferably a resilient elastomer, a rubber or a foam material, to support the sealing and increase the contact area while being compressed between first or second mounting member 100, 200 and luminaire member 510. Advantageously the sealing member 280 and the luminaire member 510 in combination are arranged to fully enclose a first or a second mounting member 100, 200 except of openings for accommodation means 250, attaching means 1001 or respective snap-fitting means 130, 230.

[0069] Embodiment of figure 6 depicts second mounting member 200 fully enclosed by sealing member 280, wherein sealing member 280 is provided with an opening for accommodation means 250. Accommodation means 250 are arranged to combine snap-fittingly with luminaire member 510, compressing sealing member 280 between luminaire member 510 and second mounting member 200, while being snap-fittingly combined. Furthermore, sealing member 280 is formed to provide an air-tight sealing of luminaire member 510 with mounting member 200. The air tight sealing is achieved by compressing the sealing member 280 between luminaire member 510 and second mounting member 200, covering respective openings of luminaire member 510 entirely.

[0070] A further aspect of the invention is directed to a luminaire 500 comprising a luminaire member 510 formed to be combined with a luminaire holder 1000 by a mounting arrangement 1 according to the invention.

[0071] Benefiting from the inventive mounting arrangement 1, mounting of a luminaire 500 can be further facilitated by a luminaire member 510 formed as a base plate, as depicted in the embodiment of figure 2 or 4. The respective luminaire member 510 comprises snap-fitting or latching means 512, for combining the base plate with additional luminaire members. In the embodiment of figure 4 snap-fitting or latching means 512 are arranged in a hook-like form, preferably cooperating with an oblong cover of the respective luminaire 500, also following the concept of readily achievable mounting steps.

[0072] Further, the luminaire member 510, formed as a base plate in the embodiment of figure 4, comprises a plurality of openings 511, arranged to suppress rotational movement of the luminaire with respect to the inventive mounting arrangement 1.

[0073] It is obvious that the inventive mounting system 1 is provided with various benefits to facilitate the mounting of luminaire members 510 or luminaires 500 to a lamp holder 1000. Further, it is understood that according to the invention the combination of specific embodiments depicted as an example is not excluded.

[0074] With the aid of the inventive mounting arrangement 1 the mounting process is transformed to mounting steps effectively using and taking into account the capabilities of a single worker, thus resulting in a swift and precise mounting of a luminaire, improving installation time and effort.

[0075] If it is desired to mount the luminaire using only one point the problem of rotational stability around the one point arises. In a further embodiment of the present invention shown in Fig. 7 - Fig. 9 a solution to this problem is shown.

[0076] An anti rotational bracket 300 is mounted between the surface onto which the luminaire shall be mounted, e.g. the luminaire holder 1000, and a first mounting member 310. This mounting member 310 corresponds to the mounting member 100 from Fig. 5. This anti rotational bracket comprises a mainly flat surface and four bracket legs 305. The bracket legs 305 extend beyond the surface of the anti rotational bracket 300 toward the direction of the luminaire. At the end of each bracket leg 305 a mounting clip 301 is formed by a bend in the bracket leg 305.

[0077] The anti rotational bracket 300 furthermore comprises mains cable entries 302, direct fixing holes 304 and BESA fixing holes 303.

[0078] The first mounting member 310 can be rotated when in position on the anti rotational bracket 300 in order to align fixing holes within the first mounting member 310 and the direct fixing holes 304 or the BESA fixing holes in the anti rotational bracket 300. The first mounting member 310 and the anti rotational bracket 300 are mounted to the surface, the luminaire shall be mounted to, e.g. using screws. This can easily be seen in Fig. 8. Afterwards a luminaire member 510 connected to a second mounting member 320 is inserted.

[0079] As can easily be seen in Fig. 9 the bracket legs 305 enter into mounting rails 331 on the surface of the luminaire member. The mounting clips 301 lock into position with the mounting rails 331. The anti rotational bracket 300 and the first mounting member 310 are held on the mounting surface by screws. The luminaire member 510 is held in position by the mounting clips 301 and the second mounting member 320 which connects to the first mounting member 310.

[0080] The bracket legs 305 and the mounting clips 301 ensure a fixed position of the luminaire member 510. A rotation around the one point, it is fixed to is no longer possible.

[0081] Fig. 10 finally shows the entire assembly of the mounting arrangement including a luminaire 600 mount-

ed to the luminaire member 510. It can easily be seen that it is now possible to mount the luminaire at one single mounting point without the risk of unintended rotation.

Claims

1. Mounting arrangement (1) for mounting a luminaire member (510) to a luminaire holder (1000), comprising a

   • first mounting member (100, 310), formed to be mounted to a luminaire holder (1000) and a
   • second mounting member (200, 320), formed to combine with the first mounting member (100, 310) releasably,
   comprising accommodation means (250) for accommodating the luminaire member (510).

2. Mounting arrangement (1) according to claim 1, **characterized in that**
   the first mounting member (100, 310) is formed to accommodate attaching means (1001) to attach the first mounting member (100, 310) to a luminaire holder (1000).

3. Mounting arrangement (1) according to any preceding claim,
   characterized in that
   the first mounting member (100, 310) comprises attaching means (1001) to attach the first mounting member (100, 310) to a luminaire holder (1000).

4. Mounting arrangement (1) according to any preceding claim,
   characterized in that
   the accommodation means (250) are arranged to form a snap-fitting or latching connection with the luminaire member (510)

5. Mounting arrangement (1) according to any preceding claim,
   characterized in that
   one of the mounting members (100, 200, 310, 320) comprises snap-fitting or latching means (130, 230) formed to combine snap-fittingly the first mounting member (100, 310) with the second mounting member (200, 320).

6. Mounting arrangement (1) according to claim 5, **characterized in that**
   one of the snap-fitting or latching means (130, 230) comprises a plurality of snap-fitting or latching positions, wherein in particular the snap-fitting or latching means (130, 230) are arranged to combine with each other by latching to one of the plurality of snap-fitting or latching positions.

7. Mounting arrangement (1) according to claim 6, **characterized in that**
   one of the snap-fitting or latching means (130, 230) is arranged to lock the snap-fitting or latching means (130, 230) in one of the plurality of snap-fitting or latching positions.

8. Mounting arrangement (1) according to any preceding claim 5 to 7, **characterized in that**
   one of the snap-fitting or latching means (130, 230) to combine the first mounting member (100, 310) with the second mounting member (200, 320) is formed at least in part as a thread or winding.

9. Mounting arrangement (1) according to any preceding claim 5 to 8, **characterized in that**
   one of the snap-fitting or latching means (130, 230) to combine the first mounting member (100, 310) with the second mounting member (200, 320) is arranged to perform a rotation with respect to the other snap-fitting or latching means (130, 230) while being in a fitted state.

10. Mounting arrangement (1) according to claim 9, **characterized in that**
    one of the snap-fitting or latching means (130, 230) to combine the first mounting member (100, 310) with the second mounting member (200, 320) is arranged to lock by the rotation and unlock by a reversed rotation.

11. Mounting arrangement (1) according to any preceding claim, **characterized in that**
    one of the mounting members (100, 200, 310, 320), in particular the second mounting member (200, 320), comprises a plurality of members.

12. Mounting arrangement (1) according to claim 10, **characterized in that**
    one of the mounting members (100, 200, 310, 320) comprises a first assembly member (210) and a second assembly member (220), wherein the first (210) and second assembly member (220) are formed to combine snap-fittingly, and in particular, both assembly members (210, 220) are arranged rotatable with respect to each other while being snap-fittingly combined.

13. Mounting arrangement (1) according to any preceding claim, **characterized in that**
    the mounting arrangement (1) comprises a sealing member (280), arranged to be fitted to one of the mounting members, formed to seal the mounting arrangement (1), in particular one of the mounting

members (100, 200, 310, 320), water and/ or air-tight with the luminaire member (510).

14. Mounting arrangement (1) according to any preceding claim,
characterized in that
the mounting arrangement (1) comprises an anti rotational bracket (300) mounted between the luminaire holder (1000) and the first mounting member (310), and
that the anti rotational bracket (300) prevents the luminaire member (510) from rotating around the first mounting member (310).

15. Mounting arrangement (1) according to claim 14,
characterized in that
the anti rotational bracket (300) comprises bracket legs (305),
that the bracket legs (305) comprise mounting clips (301), and **in that** the mounting clips (301) connect to mounting rails (331) comprised by the luminaire member (510).

16. Luminaire (500),
characterized in that
the luminaire (500) comprises a luminaire member (510) formed to be combined with a luminaire holder (1000) by a mounting arrangement (1) according to any preceding claim.

17. Luminaire according to claim 16,
characterized in that
the luminaire member (510) is formed as a base plate, in particular comprising snap-fitting or latching means (512), for combining the base plate with additional luminaire members.

18. Luminaire according to any preceding claim 16 or 17,
characterized in that
the luminaire member (510) comprises openings (511) arranged to cooperate with one of the first or second mounting members (100, 200, 310, 320) in particular suppressing rotational movement of the luminaire (500) with respect to the mounting arrangement (1).

Fig. 1

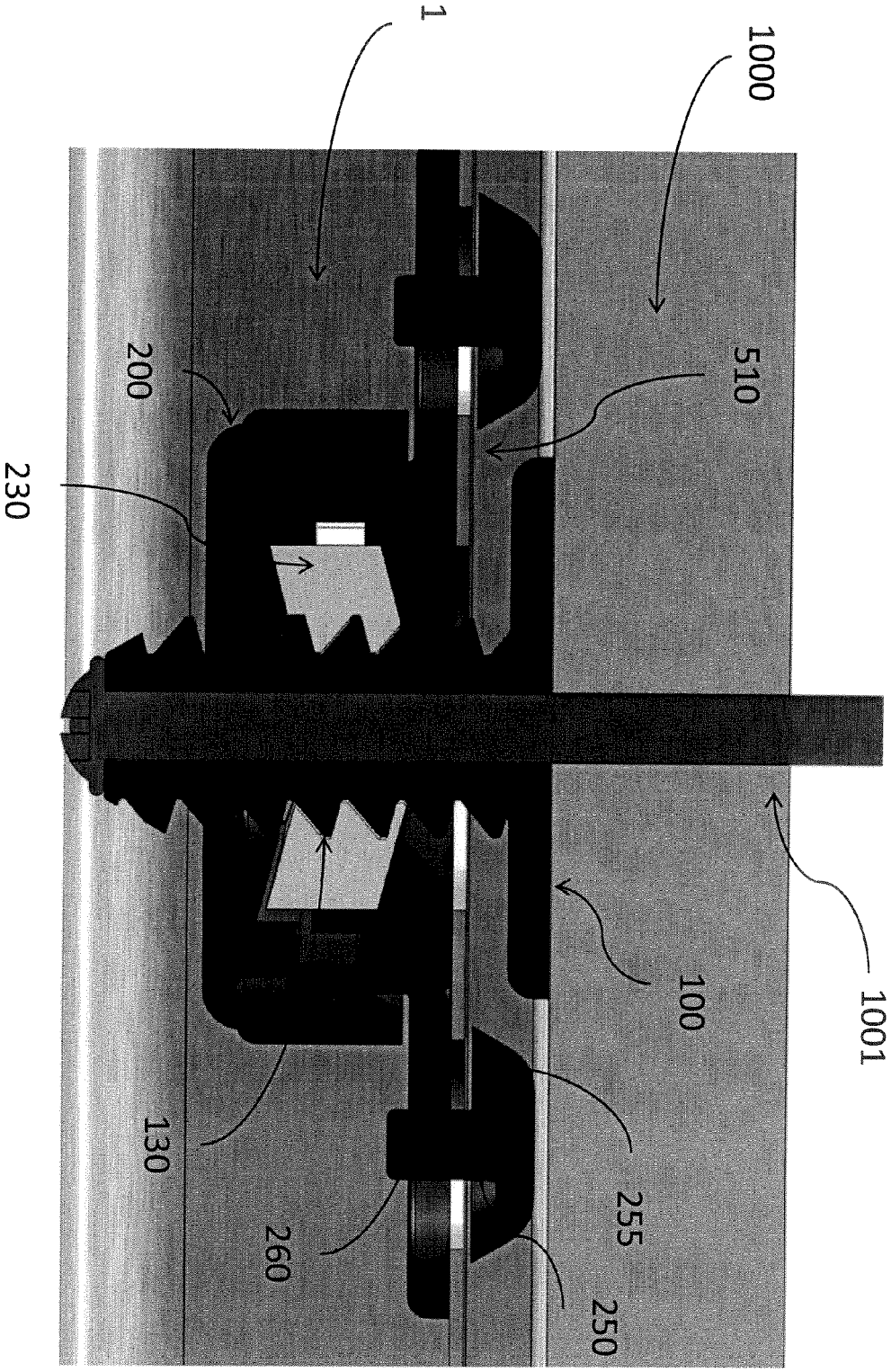

Fig. 2

Fig. 3

Fig. 4

Fig. 5

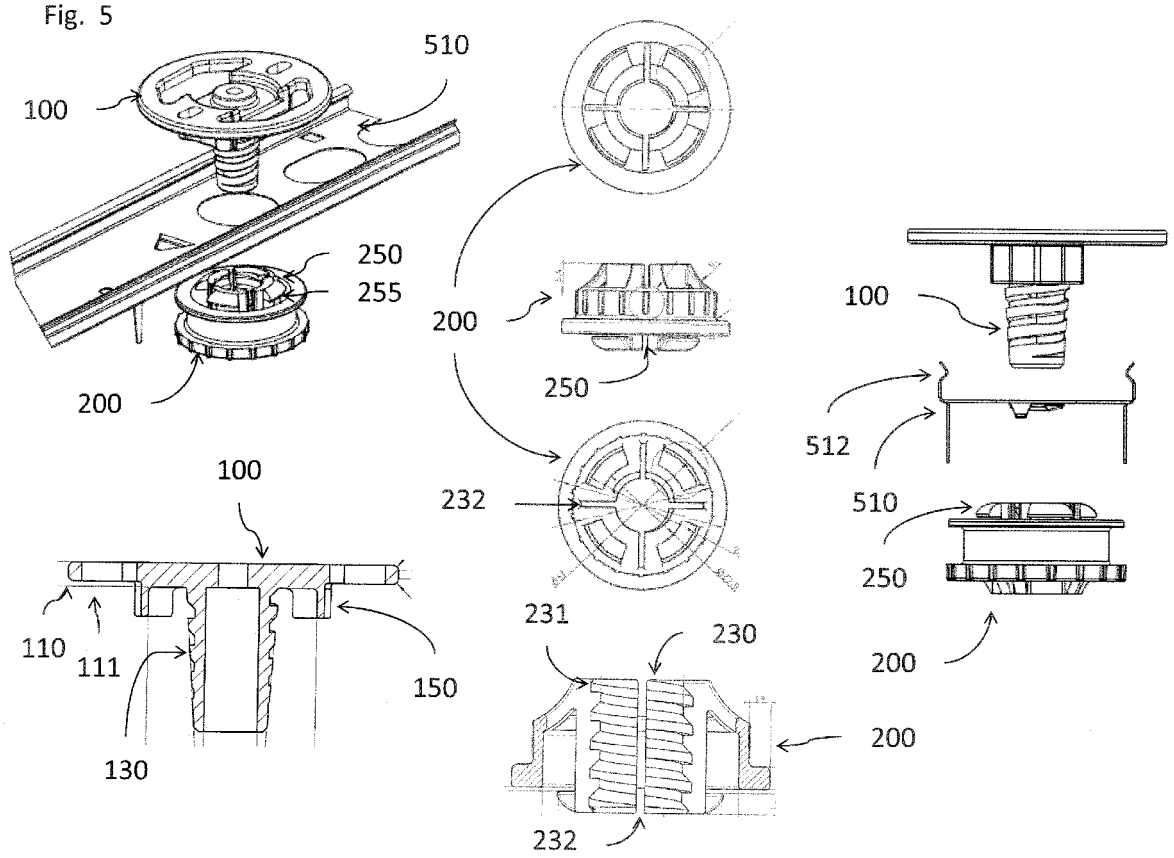
510
100
250
255
200
200
250
232
231
230
200
232
100
512
510
250
200
100
110
111
150
130

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

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EUROPEAN SEARCH REPORT

Application Number
EP 10 27 5104

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F21V
H02G
E04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	21 July 2011	Chaloupy, Marc

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