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

(11) **EP 1 577 612 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
25.07.2012 Bulletin 2012/30

(51) Int Cl.:
F21V 15/01 *(2006.01)* ***F21S 9/02*** *(2006.01)*

(21) Application number: **05075640.2**

(22) Date of filing: **17.03.2005**

(54) **Support for emergency lighting devices**

Halter für Notbeleuchtungsvorrichtungen

Support pour dispositifs d'éclairage de secours

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR

(30) Priority: **19.03.2004 IT VI20040063**

(43) Date of publication of application:
21.09.2005 Bulletin 2005/38

(73) Proprietor: **Beghelli S.p.A.**
40050 Monteveglio, Bologna (IT)

(72) Inventor: **Beghelli, Gian Pietro**
40050 Monteveglio (Bologna) (IT)

(74) Representative: **Iannone, Carlo Luigi et al**
Barzanò & Zanardo Roma S.p.A.
Via Piemonte 26
00187 Roma (IT)

(56) References cited:
EP-A2- 0 994 292
WO-A-98/09112
GB-A- 2 215 025
US-A- 4 587 597
US-A- 5 642 934

EP 1 577 612 B1

Printed by Jouve, 75001 PARIS (FR)

Description

[0001] The present invention relates to a supporting element for emergency lighting devices.

[0002] The main problem that arises when effecting a wall installation of an emergency lighting device is respecting as much as possible the horizontal orientation of the outer casing of the product.

[0003] Considering the modest weight of an emergency lighting device and above all the increasing necessity for effecting an extremely rapid installation, two fixing points to the wall are normally and typically used.

[0004] The fixing elements generally consist of wall dowels, each of which requires, for assembly, the perforation of a hole in the wall normally using an electric drill.

[0005] An emergency lighting device of this type is described for example in US-A-4,587,597, which discloses the technical features of the preamble of the appended claim 1.

[0006] As this system is evidently not particularly precise, in some cases, a "template" or drilling mask is supplied with the emergency lighting device.

[0007] Alternatively and on the basis of the geometry of the product, it is possible to use the casing itself of the product, as drilling reference.

[0008] Even if all these expedients, on the one hand, facilitate the installer in respecting the correct on-centre between the fixing elements of the device, on the other hand they can in no way help avoiding the drilling of fixing holes which are not horizontally aligned, with the unfortunate result that in most cases, the emergency lighting device is installed in a tilted position.

[0009] This problem is even more strongly felt when the installation of the emergency lighting device is effected with a supporting bracket which acts as an interface between the device itself and the wall onto which it is to be installed.

[0010] As is known, brackets are mainly used for practical purposes as, in particular, they have reduced encumbrance dimensions, a characteristic which makes it even more difficult for the installer to realize if they have been fixed in a tilted position.

[0011] Both mechanical systems and electronic devices are, on the other hand, currently present on the market, which are suitable for controlling the levelling of objects; in this specific case, however, it is necessary to use an auxiliary device, a solution which considerably reduces the practicalness of the installation and increases both the times and costs of the intervention.

[0012] Considering the requirements mentioned above, an objective of the present invention is therefore to indicate a support for emergency lighting devices which avoids the drawbacks mentioned above and which, in particular, allows a rapid and precise installation of the emergency lighting device.

[0013] A further objective of the present invention is to provide a support for emergency lighting devices which allows the installer to simply and rapidly verify the position and levelling of the casing of the above emergency lighting device, for its assembly and fixing to the wall.

[0014] Another objective of the invention is to indicate a support for emergency lighting devices which is particularly reliable, which is easy and economical to produce, without the use of complex or costly technologies and which allows a precise, rapid and economical installation of the emergency lighting device.

[0015] These and other objectives are achieved by a support for emergency lighting devices according to claim 1.

[0016] Further specific characteristics are indicated in the subsequent claims.

[0017] Additional objectives and advantages of the present invention are evident from the following description and enclosed drawings, provided for purely illustrative and non-limiting purposes, in which:

- figure 1 is an exploded perspective view of an emergency lighting device, according to the present invention;
- figure 2 is an exploded perspective view of a construction detail, on an enlarged scale, according to figure 1, according to the present invention;
- figure 3 is a front view of the construction detail of figure 2, according to the present invention;
- figures 4 and 5 represent two different construction phases of the support for emergency lighting devices, according to the present invention, during its fixing to the wall.

[0018] With particular reference to figures 1-3 mentioned above, 1 indicates a shaped wall fixing bracket, which represents a support casing for the assembly of the emergency lighting device; in particular, the bracket 1 comprises a box in relief 1A, suitable for the containment and connection of the wires, passing through the collar 19 of the box 1A and through the tube-presser 2, on the multipolar terminal board 4.

[0019] The box 1A is further completed by a side washer 3 and a hermetic or airtight lid 6, which is positioned in front of it, with the interposition of a suitable washer 5.

[0020] The hermetic lid 6 is fixed at the front of the protruding box 1A by means of two upper appendages 15 which click into relative projections 15A situated above the box 1A.

[0021] The emergency lighting device comprises a shaped casing 7, suitable for being fixed to the lid 6 of the bracket 1, which is inserted into the shaped element 7A of the casing 7, a piloting circuit, generically indicated with 9 in figure 1 and comprising an Ni-Cd or Pb 8 battery, a shaped reflector 10, a neon tube 11 (preferably with a power of 8 Watts), applied in front of the reflector 10 by means of neon-holder elements 12, and a transparent front protection screen, generically indicated with 13 in figure 1.

[0022] In particular, according to the present invention, the bracket 1 consists of a shaped plastic element 20,

suitable for being fixed to a wall, which forms the main body of said bracket 1.

[0023] At least two housings, indicated with 21 and 22 respectively in figures 2 and 3, are situated on the plastic element 20, for fixing the bracket 1 to a wall; said housings 21, 22 can be used as centering masks during the drilling of the wall with an electric drill.

[0024] Their particular geometry, moreover, allows the installer to effect a series of vertical and horizontal shifts of the bracket 1, in order to regulate its orientation.

[0025] The correct position of the bracket 1 is determined, according to the present invention, thanks to the use of a levelling bubble 14, which is inserted inside a housing 18, suitable shaped and envisaged in correspondence with a lower portion of the plastic element or casing 20 of the bracket 1.

[0026] Figures 2 and 3 provide a more detailed illustration of the elements forming the bracket 1, object of the present invention; in particular, these are identified as the main body or plastic casing 20 of the bracket 1, the hermetic lid 6 (produced according to the safety standard IP65) for the closing of the shaped box 1A fixed to the body 20 of the bracket 1 and the levelling bubble 14, inserted in the shaped housing 18 of the body 20.

[0027] In this particular case, the levelling bubble 14 preferably consists of a cylindrically-shaped hermetic ampoule made of a thermoplastic material or glass, and a yellow liquid, contained inside, present in a smaller quantity with respect to the inner volume of the ampoule, so that the resulting air bubble is free to move inside the volume of the ampoule in relation to the orientation of its body.

[0028] By using the shaped bracket 1, it is therefore possible to determine the horizontal installation position when the air bubble is situated in correspondence with the centre line of the ampoule; this position can be further revealed by the formation of a notch on the body of the ampoule which offers further help for the installer in determining the perfect horizontal alignment of the bracket 1.

[0029] The assembly of the support and relative emergency lighting device, according to the present invention, is substantially effected as follows (represented in more detail in figures 4 and 5 enclosed with the present invention).

[0030] The bracket 1 is fixed to the wall with the use of fixing elements (in particular dowels), which are assembled inside the housings 21 and 22 of the shaped body 20 of the bracket 1.

[0031] The installer can determine the perfect horizontal alignment of the bracket 1 by verifying the position of the air bubble present inside the levelling bubble 14, which, as clearly illustrated in figures 4 and 5, is preferably assembled in front of the installer, on the front surface of the body 20.

[0032] Once the bracket 1 has been fixed to the wall, the installer can connect the feeding and/or control wires, generically indicated with 16 in figure 4, coming from the collar 19 of the box 1A, on the multipolar terminal board 4.

[0033] This also simplifies the electric installation mode of the emergency lighting device, according to the invention, as it is sufficient to house the multipolar terminal board 4, to which the wires 16 are connected, inside the casing or shaped box 1A and subsequently close the hermetic lid 6, equipped with the washer 5, on the box 1A, which is directly connected to the body 20 of the bracket 1.

[0034] The installation of the emergency lighting device is completed by effecting an insertion operation of the shaped element 7A, situated above and inside the casing 7, on the protruding box 1A, according to the procedure indicated by the arrow F in figure 5.

[0035] In this way, the emergency lighting device is directly inserted onto the bracket 1 and consequently the perfect horizontal alignment of the latter also allows the transparent screen 13 of the emergency device to be fixed in a perfectly horizontal position.

[0036] The electric connection is also ensured by a series of terminals situated inside the shaped element 7A of the casing 7, which contact the relative terminals 17 of the multipolar terminal board 4, which are accessible outside the hermetic lid 6 (figure 5).

[0037] The characteristics of the support for emergency lighting devices, which is object of the present invention, appear evident from the above description, as also its advantages.

Claims

1. A support for emergency lighting devices, comprising a plastic element which forms a shaped body (20) of a bracket (1), said bracket (1) being fixed to a wall by means of fixing elements, which are assembled inside at least two housings (21, 22) of said shaped body (20), said housings (21, 22) also constituting the centering elements for regulating the orientation of said bracket (1), **characterised in that** each of said housings (21, 22) has a substantially elongated shape, a first one (21; 22) of said elongated housings (21, 22) being substantially vertical and a second one (22; 21) of said elongated housings (21, 22) being substantially horizontal and **in that** at least one levelling bubble (14) is inserted in at least one seat (18), which is provided in said shaped body (20) of the bracket (1), in order to determine the exact horizontal installation position of said bracket (1) and of the emergency lighting device.

2. The support according to claim 1, **characterised in that** said horizontal housing (22; 21) has an height which is comprised within the height of said vertical housing (21; 22).

3. The support according to claim 1 or 2, **characterised in that** said housings (21, 22) have a shape com-

prising a first and a second portion, said first portion being substantially round-shaped, and said second portion having a substantially axial development.

4. The support according to any of claims 1-3, **characterised in that** said bracket (1) comprises at least one box element (1A), in which at least one multipolar terminal board (4) is contained for the connection of feeding and/or control wires (16).

5. The support according to claim 4, **characterised in that** said box element (1A) has at least one hermetic lid (6), which closes said box element (1A) by the interposition of at least one washer (5).

6. The support according to claim 5, **characterised in that** said emergency lighting device includes a shaped casing (7), which is fixed to said lid (6) of the bracket (1), said lid (6) being inserted in a shaped element (7A) of the casing (7), a piloting circuit (9), a shaped reflector (10), a light source (11), which is applied in front of said reflector (10), and a transparent front protection screen (13).

7. The support according to claim 1, **characterised in that** said levelling bubble (14) comprises a hermetic ampoule containing a contrast liquid, which is present in a smaller quantity with respect to the inner volume of the ampoule, so that an air bubble is formed, which is free to move inside the volume of the ampoule in relation to the orientation of said shaped body (20) of the bracket (1).

8. The support according to claim 6, **characterised in that** said shaped element (7A) of the casing (7) of said emergency lighting device is inserted in said box element (1A) of the bracket (1), so as to automatically carry out an electric connection between a first plurality of terminals, which are placed inside said shaped element (7A) of said casing (7), and a second plurality of terminals (17) of said multipolar terminal board (4), which are accessible outside said at least one hermetic lid (6).

Patentansprüche

1. Halter für Notbeleuchtungsvorrichtungen, umfassend ein Kunststoffelement, das einen geformten Körper (20) eines Trägers (1) bildet, wobei der Träger (1) an einer Wand mittels Fixierelementen fixiert ist, die innerhalb von mindestens zwei Gehäusen (21, 22) des geformten Körpers (20) montiert sind, wobei die Gehäuse (21, 22) auch die Zentrierelemente zur Ausrichtung der Orientierung des Trägers (1) bilden, **dadurch gekennzeichnet, dass** jedes der Gehäuse (21, 22) eine im Wesentlichen längliche Gestalt aufweist, wobei ein erstes (21; 22) der länglichen Gehäuse im Wesentlichen vertikal und ein zweites (22; 21) der länglichen Gehäuse (21, 22) im Wesentlichen horizontal ist, und dass mindestens eine Nivellierblase (14) in mindestens einen Sitz (18) eingefügt ist, der in dem geformten Körper (20) des Trägers (1) vorgesehen ist, um die exakte horizontale Installationsposition des Trägers (1) und der Notbeleuchtungsvorrichtung zu bestimmen.

2. Halter gemäß Anspruch 1, **dadurch gekennzeichnet, dass** das horizontale Gehäuse (22; 21) eine Höhe aufweist, die innerhalb der Höhe des vertikalen Gehäuses (21; 22) umfasst ist.

3. Halter gemäß Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Gehäuse (21, 22) eine Gestalt umfassend einen ersten und einen zweiten Bereich aufweisen, wobei der erste Bereich im Wesentlichen rund-förmig ist und der zweite Bereich eine im Wesentlichen axiale Ausrichtung hat.

4. Halter gemäß einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** der Träger (1) mindestens ein Boxelement (1A) umfasst, in dem mindestens ein multipolares Anschlussbrett (4) für die Verbindung von Versorgungs- und/oder Steuerungs-Leitungen (16) enthalten ist.

5. Halter gemäß Anspruch 4, **dadurch gekennzeichnet, dass** das Boxelement (1A) mindestens einen hermetischen Deckel (6) aufweist, der das Boxelement (1A) durch die Einfügung von mindestens einer Dichtung (5) schließt.

6. Halter gemäß Anspruch 5, **dadurch gekennzeichnet, dass** die Notbeleuchtungsvorrichtung ein geformtes Gehäuse (7), das an dem Deckel (6) des Trägers (1) fixiert ist, wobei der Dekkel (6) in ein geformtes Element (7A) des Gehäuses (7) eingeführt ist, einen Steuerkreis (9), einen geformten Reflektor (10), eine Lichtquelle (11), die vor dem Reflektor angebracht ist, und einen transparenten Frontschutzschirm (13) enthält.

7. Halter gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die Nivellierblase (14) eine hermetische Ampulle umfasst, die eine Kontrastflüssigkeit enthält, die mit einer geringeren Menge in Bezug auf das innere Volumen der Ampulle vorhanden ist, so dass eine Luftblase gebildet ist, die frei ist, sich innerhalb des Volumens der Ampulle in Beziehung zu der Orientierung des geformten Körpers (20) des Trägers (1) zu bewegen.

8. Träger gemäß Anspruch 6, **dadurch gekennzeichnet, dass** das geformte Element (7A) des Gehäuses (7) der Notbeleuchtungsvorrichtung in das Boxelement (1A) des Trägers (1) eingeführt ist, um so au-

tomatisch eine elektrische Verbindung zwischen einer ersten Vielzahl von Anschlüssen, die innerhalb des geformten Elements (7A) des Gehäuses (7) platziert sind, und einer zweiten Vielzahl von Anschlüssen (17) des multipolaren Anschlussbretts (4) auszuführen, die außerhalb des mindestens einen hermetischen Deckels (6) zugänglich sind.

Revendications

1. Support pour dispositifs d'éclairage de secours, comprenant un élément plastique qui forme un corps profilé (20) d'une console (1), ladite console (1) étant fixée à un mur au moyen d'éléments de fixation, qui sont assemblés à l'intérieur d'au moins deux logements (21, 22) dudit corps profilé (20), lesdits logements (21, 22) constituant également les éléments de centrage pour le réglage de l'orientation de ladite console (1), **caractérisé en ce que** chacun desdits logements (21, 22) a une forme essentiellement allongée, un premier (21 ; 22) desdits logements de forme allongée (21, 22) étant essentiellement vertical et un second (22 ; 21) desdits logements de forme allongée (21, 22) étant essentiellement horizontal, et **en ce qu'**au moins un niveau à bulle (14) est inséré dans au moins un siège (18), qui est aménagé dans ledit corps profilé (20) de la console (1), afin de déterminer la position d'installation horizontale exacte de ladite console (1) et du dispositif d'éclairage de secours.

2. Support selon la revendication 1, **caractérisé en ce que** ledit logement horizontal (22 ; 21) a une hauteur qui est comprise dans la hauteur dudit logement vertical (21 ; 22).

3. Support selon la revendication 1 ou 2, **caractérisé en ce que** lesdits logements (21, 22) ont une forme comprenant une première et une deuxième parties, ladite première partie étant de forme essentiellement arrondie et ladite deuxième partie ayant un développement essentiellement axial.

4. Support selon l'une quelconque des revendications 1 à 3, **caractérisé en ce que** ladite console (1) comprend au moins un élément formant boîtier (1A), dans lequel est contenu au moins un bornier multipolaire (4) pour la connexion de fils d'alimentation et/ou de commande (16).

5. Support selon la revendication 4, **caractérisé en ce que** ledit élément formant boîtier (1A) a au moins un couvercle hermétique (6), qui ferme ledit élément formant boîtier (1A) avec interposition d'au moins une rondelle (5).

6. Support selon la revendication 5, **caractérisé en ce que** ledit dispositif d'éclairage de secours comprend une coque profilée (7), qui est fixée audit couvercle (6) de la console (1), ledit couvercle (6) étant inséré dans un élément profilé (7A) de la coque (7), un circuit de pilotage (9), un réflecteur profilé (10), une source de lumière (11), qui est appliquée à l'avant dudit réflecteur (10), et un écran de protection avant transparent (13).

7. Support selon la revendication 1, **caractérisé en ce que** ledit niveau à bulle (14) comprend une ampoule hermétique contenant un liquide de contraste, qui est présent en une petite quantité relativement au volume interne de l'ampoule, de façon qu'une bulle d'air soit formée, qui soit libre de se déplacer à l'intérieur du volume de l'ampoule en relation avec l'orientation dudit corps profilé (20) de la console (1).

8. Support selon la revendication 6, **caractérisé en ce que** ledit élément profilé (7A) de la coque (7) dudit dispositif d'éclairage de secours est inséré dans ledit élément formant boîtier (1A) de la console (1), de façon à réaliser automatiquement la connexion électrique entre une première pluralité de bornes, qui sont placées à l'intérieur dudit élément profilé (7A) de ladite coque (7), et une deuxième pluralité de bornes (17) dudit bornier multipolaire (4), qui sont accessibles depuis l'extérieur dudit au moins un couvercle hermétique (6).

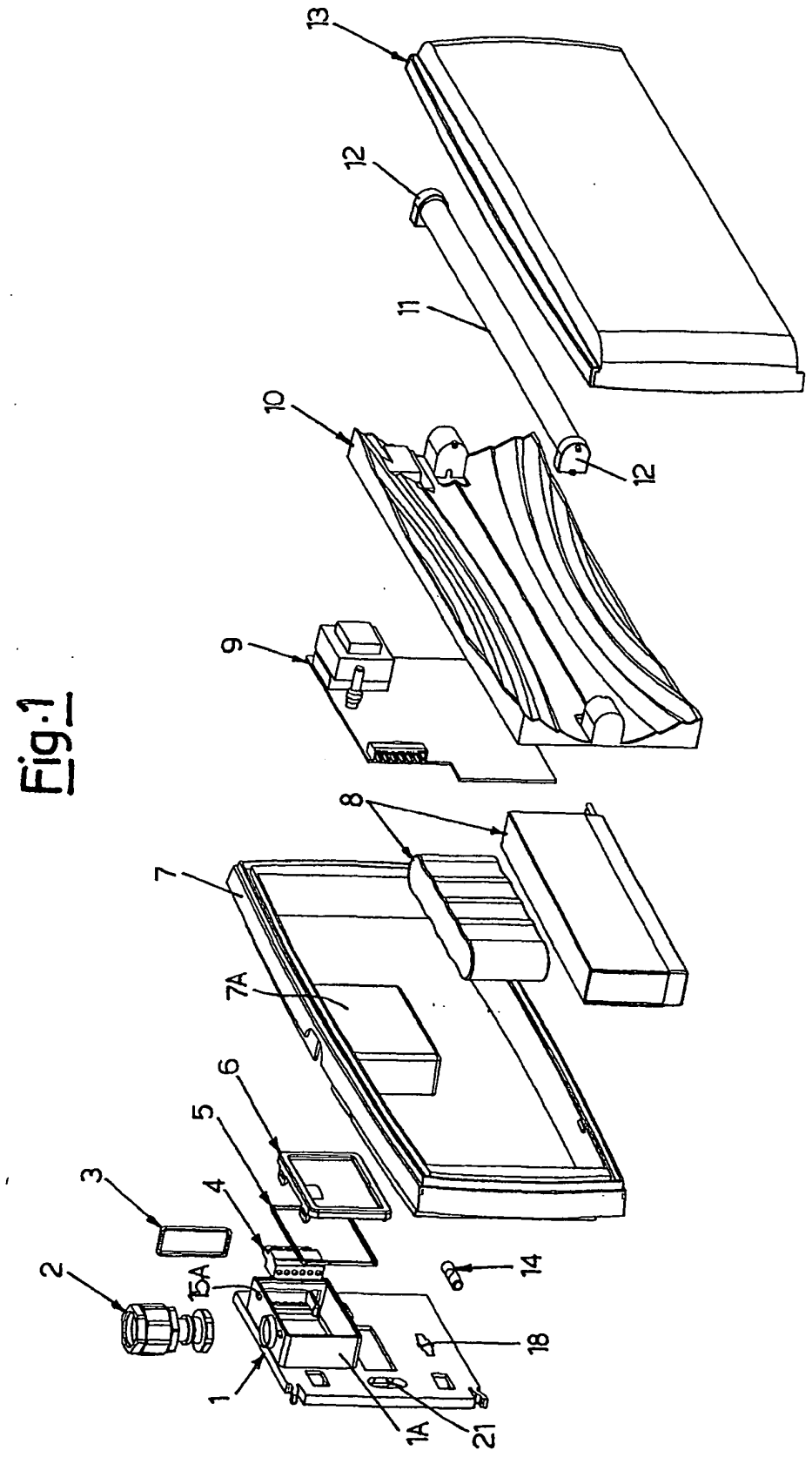


Fig.1

Fig.2

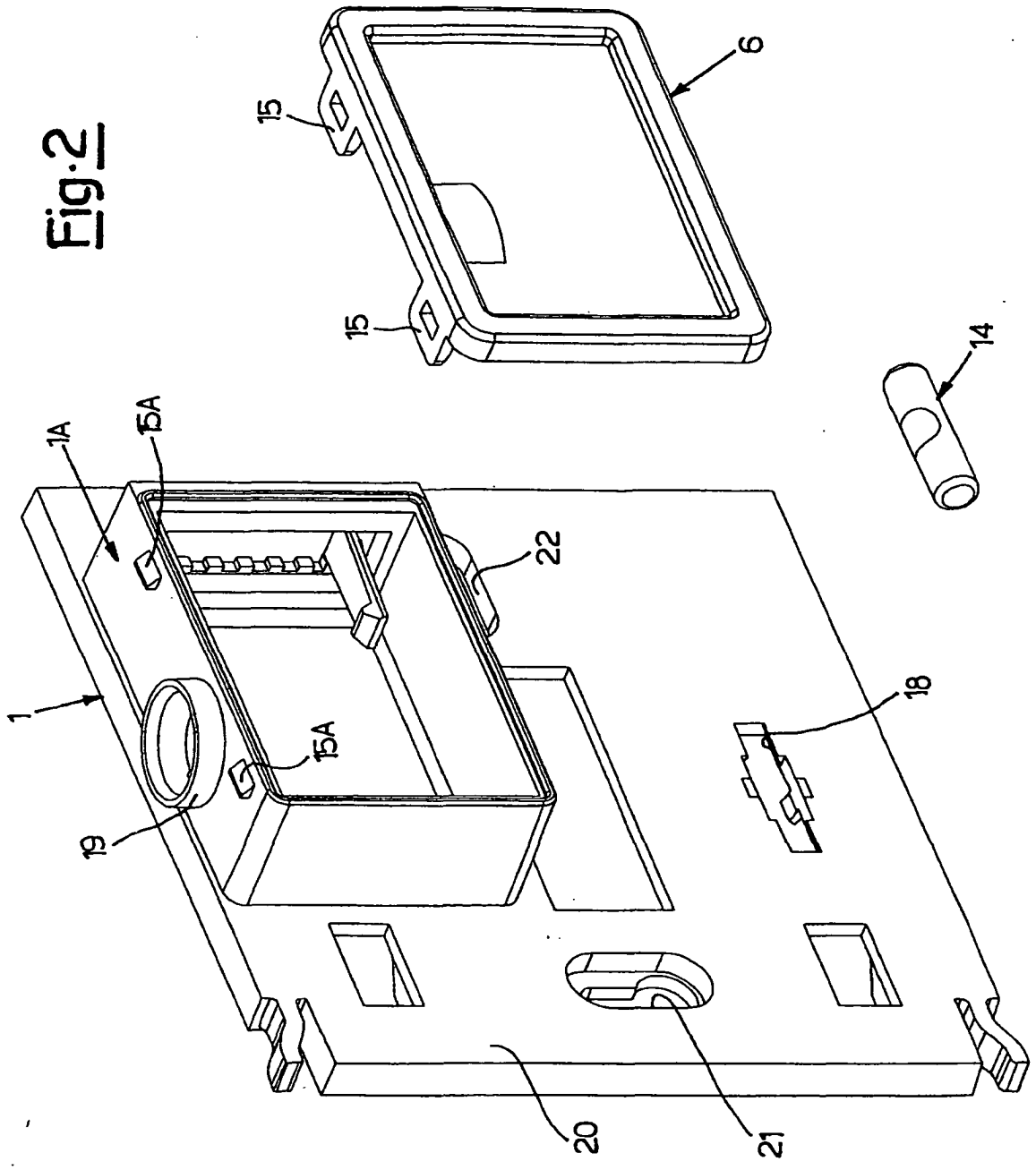


Fig.3

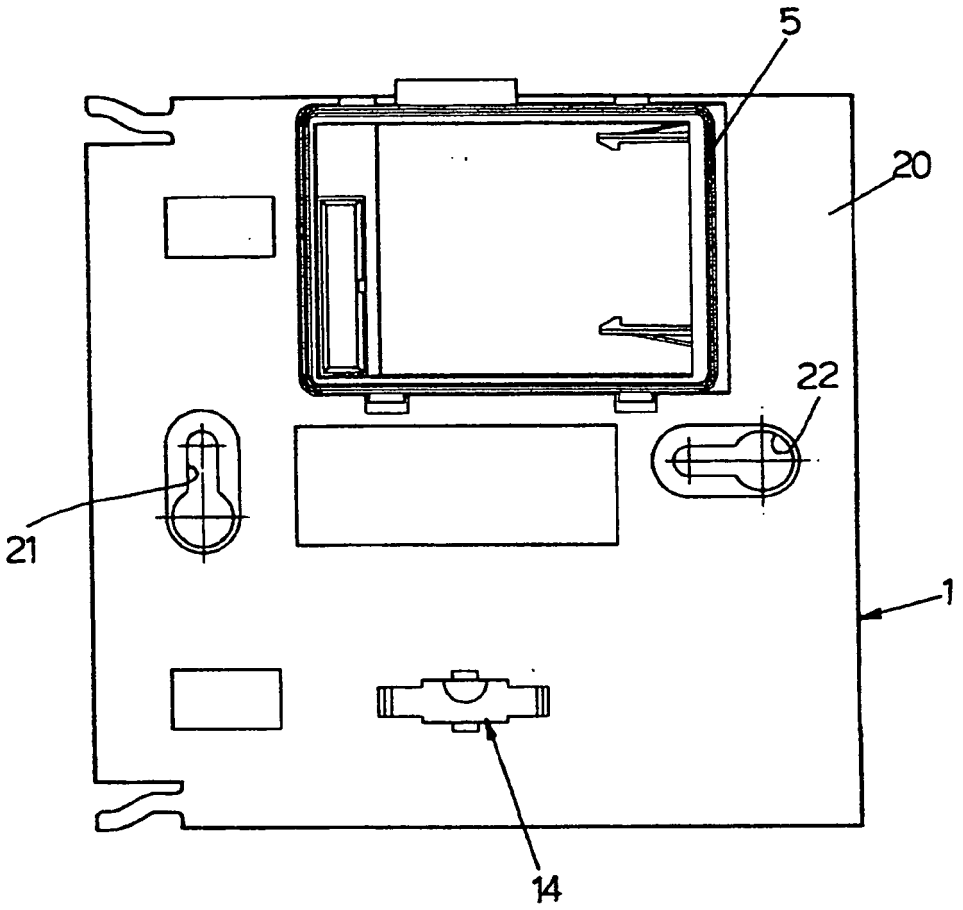


Fig.5

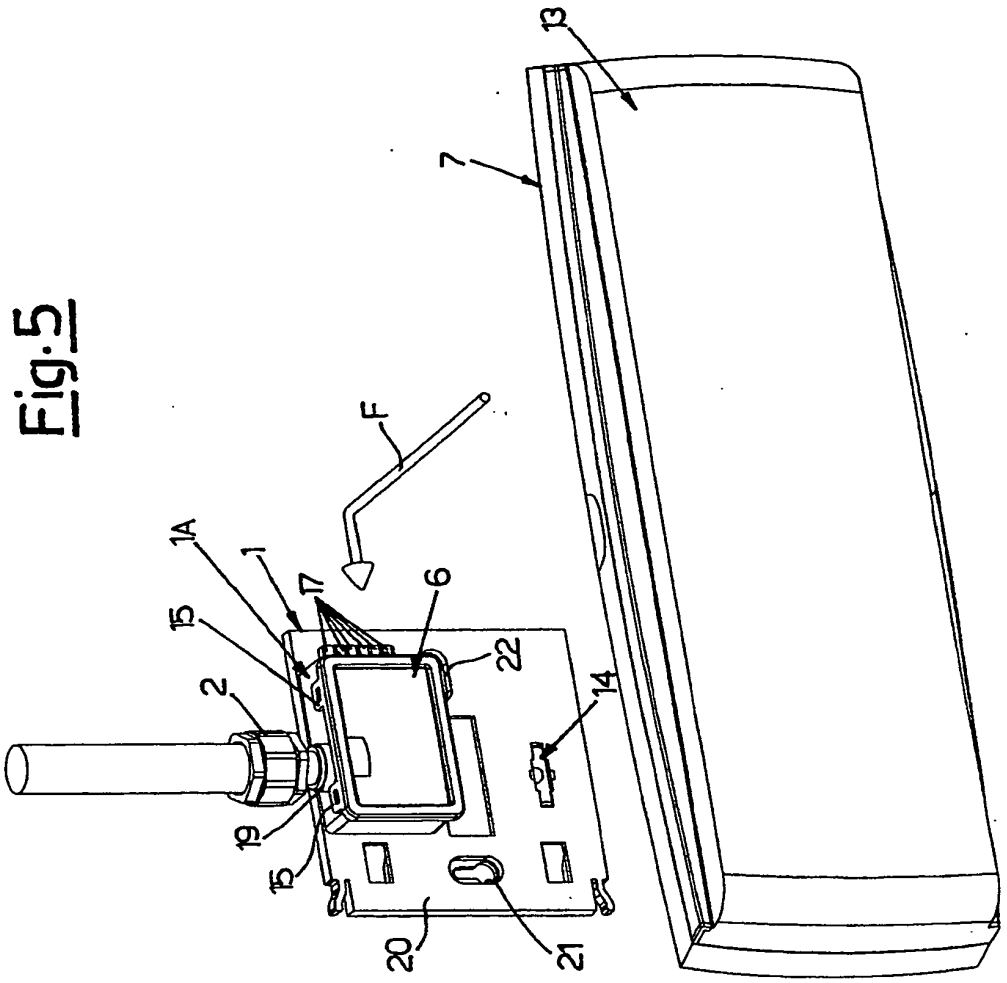
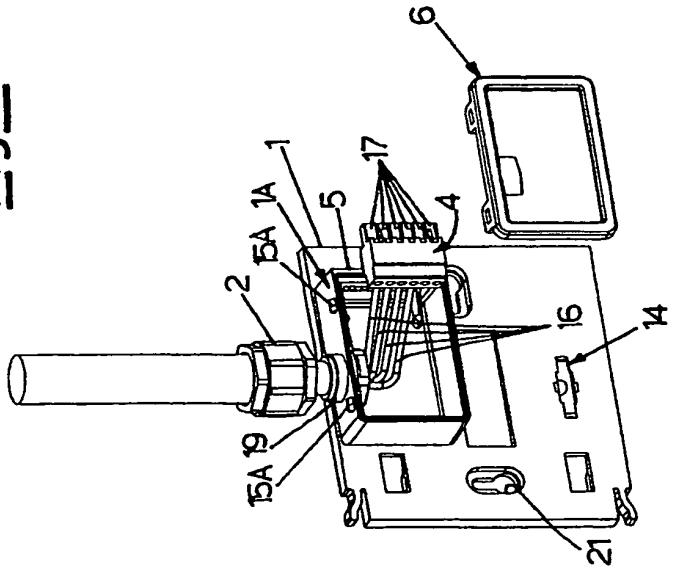


Fig.4



REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 4587597 A **[0005]**