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(54) Extendable awning assembly and support device for an extendable awning

(57) The extendable awning assembly comprises a box shell (1) connected at its ends to end plates (2) rotationally supporting ends of a winding bar in which an awning canvas is wound, and a pair of supports (8) fixed to a wall or ceiling. Each of the supports (8) comprises a support guiding element (9) arranged in a direction transverse to the axis of the winding bar, and each of the end plates (2) has a plate guiding element (10) which is inserted and slid in said support guiding element (9) to a working position. The assembly includes fixing means which in one embodiment comprise provisional elastic fixing elements and permanent fixing screws for fixing the end plates (2) to the supports (8) when they are in said working position.

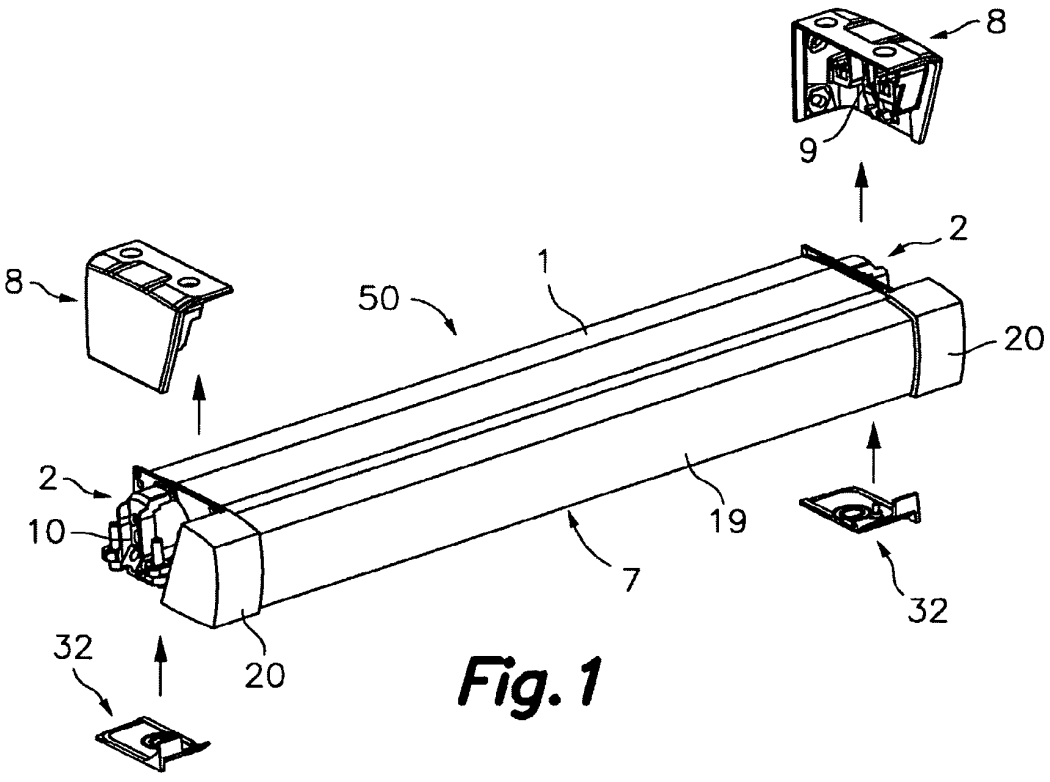

Fig. 1

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Description

Field of the Art

[0001] The present invention relates to an extendable awning assembly provided with a mounting device which allows fixing it easily, quickly and securely to a wall or ceiling.

[0002] Throughout this description, the term "wall" is used to designate any substantially vertical side support surface and the term "ceiling" is used to designate any substantially horizontal lower support surface on which supports of the awning assembly can be fixed.

Background of the Invention

[0003] Document EP 0593389 discloses an awning assembly comprising a box shell connected at its ends to end plates, each of which rotationally supports an end of a winding bar in which an awning canvas is wound and a connecting element in which there is connected a first end of an articulated arm the other end of which is connected to a loading bar fixed to a front edge of said awning canvas, wherein said end plates are fixed to a pair of supports previously fixed to a wall or ceiling by means of intermediate parts. The end plates can rotate in relation to the intermediate parts and they can be fixed thereto at a chosen angular position, and the intermediate parts can slide horizontally in relation to the supports and they can be fixed thereto in a chosen position.

[0004] One drawback of the mentioned patent EP 0593389 is that the intermediate parts increase the complexity of the assembly, complicate the mounting, and require end trim covers to conceal less aesthetically pleasing mechanisms arranged in the outer faces of the end plates.

[0005] Document EP 0186742 belonging to the public domain describes an awning assembly comprising a box shell fixed to a wall and connected at its ends to end plates. Each end plate rotationally supports an end of a winding bar in which an awning canvas is wound and a connecting element in which there is connected a first end of an articulated arm the other end of which is connected to a loading bar fixed to a front edge of said awning canvas. The mentioned connecting element is supported in the end plate such that it can rotate about a shaft between a folded position and a service position. The awning assembly further comprises a regulation device arranged to limit the rotation of the connecting element in said service position and a locking device arranged to prevent the movement of the connecting element from the service position to the folded position when the articulated arm is extended.

Summary of the Invention

[0006] According to a first aspect, the present invention aims to solve the foregoing and other drawbacks by providing an extendable awning assembly comprising a box shell connected at its ends to end plates which are fixed to a pair of supports configured to be fixed to a wall or ceiling. Each of the end plates is configured to rotationally support an end of a winding bar in which an awning canvas is wound. Each of the supports comprises a support guiding element arranged in a direction transverse to the axis of the winding bar, and each of the end plates has a plate guiding element which is inserted and slid in said support guiding element to a working position. Fixing means are arranged to fix the end plate to the support in said working position.

[0007] In a preferred embodiment, the mentioned fixing means comprise a provisional elastic fixing element fixed in each end plate and arranged to be elastically deformed by the pressure of at least one locking claw formed in the support during the movement of inserting said plate guiding element into the support guiding element and for recovering the original shape once said locking claw is surpassed and to be locked therein upon reaching the working position. Obviously, a reverse construction in which the provisional elastic fixing element is fixed to the support and the claw is formed in the end plate is also within the scope of the present invention. The fixing means further comprise one or more permanent fixing screws which are inserted into corresponding holes of each end plate and are screwed in threaded holes formed in the corresponding support or in nuts retained without the possibility of rotating in the support.

[0008] Thus, to install the awning, on one hand the awning shell is connected to the end plates forming an awning unit, preferably including the winding bar, the awning canvas, the loading bar, the connecting elements and the conveniently assembled articulated arms, and on the other hand the two supports are fixed to the wall or ceiling at a predetermined distance from one another according to the length of said awning unit. The awning unit is then coupled to the supports by inserting and sliding the plate guiding elements in the support guiding elements until they reach the working position, at which time the provisional elastic fixing elements are locked in the respective claws, whereby the awning assembly is provisionally supported in the supports. Finally, the permanent fixing screws are installed.

[0009] The support guiding elements and the plate guiding elements are preferably configured to allow a relative movement between one another in a direction parallel to the axis of the winding bar in order to allow adjusting the position of the awning unit in relation to the supports and absorbing small error in the positioning of the supports. Accordingly, the holes in which the permanent fixing screws are inserted are holes elongated in the direction parallel to the axis of the winding bar allowing said adjustment of position before the permanent fixing screws are tightened.

[0010] To dismount the awning, the mentioned permanent fixing screws are first removed, and then the provisional elastic fixing elements are released from the re-

spective locking claws by elastic deformation of the provisional elastic fixing element using a tool as a lever. To that end, the support or the end plate has a passage formed therein which allows introducing said tool up to the provisional elastic fixing element, and the provisional elastic fixing element has a notch in which an end of the tool can be coupled.

[0011] In one embodiment, the support is approximately trihedron-shaped with a side wall in the inner side of which the corresponding support guiding element is arranged, a rear wall in which holes through which the support can be fixed to a wall by means of screws or bolts are formed and an upper wall in which holes through which the support can be fixed to a ceiling by means of screws or bolts are formed. The outer side of the side wall is free of mechanical elements or functional configurations, thereby it can be smooth and does not need to be concealed by added trim elements.

[0012] This embodiment allows two variants. A first variant allows inserting the awning unit from the front side of the supports backwards, for which the support guiding elements are arranged in a direction running from a front region of the supports to the respective rear walls thereof, and the plate guiding elements are arranged in the same direction. In the second variant the support guiding elements are arranged in a direction running from a lower region of the supports to the respective upper walls thereof and the plate guiding elements are arranged in the same direction, which allows inserting the awning unit from the lower side of the supports upwards.

[0013] Each of the end plates is configured to further support a connecting element in which there is connected a first end of an articulated arm the other end of which is connected to a loading bar fixed to a front edge of said awning canvas. These connecting elements can be of a known type, wherein each connecting element is supported in the end plate such that it can rotate about a shaft substantially parallel to the axis of the winding bar between a folded position and a service position, and a regulation device is arranged to limit the rotation of the connecting element in said service position for adjusting the inclination of the arms, and therefore the inclination of the awning canvas, to a desired angle with respect to the horizontal when the awning is rolled out. Furthermore, locking devices preferably prevent the movement of the connecting elements from the service position to the folded position when the articulated arms are extended.

[0014] Therefore, the fixing means for fixing the end plates to the supports do not allow the possibility of regulating the angular position of the box because the inclination of the awning is regulated by means of the regulation devices associated with the connecting elements supporting the articulated arms.

[0015] The box shell has a longitudinal front opening through which the awning canvas and the articulated arms extend when the awning is completely or partially rolled out, and the loading bar is configured to close said longitudinal front opening enclosing the awning canvas and the articulated arms inside the box when the awning is in a closed position.

[0016] According to a second aspect, the present invention provides a supporting device for an extendable awning comprising a pair of supports provided with elements for fixing said supports to a wall or ceiling and elements in which end plates connected to an end of a box shell are fixed to said supports, wherein each of said end plates rotationally supports an end of a winding bar in which an awning canvas is wound. Each support comprises a support guiding element arranged in a direction transverse to the shaft of said winding bar and configured to receive, inserted in a sliding manner to a working position, a plate guiding element attached to the corresponding end plate, and in that fixing means are arranged to fix the end plate to the support in said working position.

[0017] In a preferred embodiment, said fixing means comprise a locking claw formed in each support and arranged to elastically deform a provisional elastic fixing element fixed in the end plate, or vice versa, during the insertion of said plate guiding element into the support guiding element and to be locked with said provisional elastic fixing element when the latter recovers the original shape once said locking claw is surpassed upon reaching the working position.

[0018] The fixing means further comprise reversible permanent fixing means, such as one or more permanent fixing screws for example, which are inserted into holes of each end plate and are screwed in the corresponding support or in nuts retained in the support.

Brief Description of the Drawings

[0019] The foregoing and other features and advantages will be more obvious from the following description of exemplary embodiments referring to the attached drawings, in which:

Figure 1 is a perspective view of an extendable awning assembly according to an embodiment of the present invention with an awning unit separated from supports fixed to a wall or ceiling;

Figure 2 is a perspective view of the extendable awning assembly of Figure 1 with the awning unit connected to the supports;

Figure 3 is a partial perspective view showing one of the ends of the awning unit, one of the supports and a corresponding cover;

Figure 4 is a perspective view showing the inner sides of an end plate of the awning unit, the support and the cover being separated;

Figure 5 is a perspective view showing the outer sides of the end plate, the support and the cover being separated;

Figure 6 is a perspective view showing the inner sides of the end plate, the support and the cover being assembled;

Figure 7 is a perspective view showing the outer

sides of the end plate, the support and the cover being assembled;

Figure 8 is a side elevational view of the outer sides of the end plate and the cover assembled;

Figure 9 is a cross-section view taken along the plane IX-IX of Figure 8;

Figure 10 is a perspective view of a provisional elastic fixing element; and

Figures 11 and 12 are side elevational views of the inner side of a support and the outer side of an end plate according to another embodiment variant, respectively.

Detailed Description of Exemplary Embodiments

[0020] Referring first to Figures 1 to 9, the extendable awning assembly according to an embodiment of the present invention comprises a box shell 1 connected at its ends to end plates 2 and a pair of supports 8 in which said end plates 2 (Figures 1 and 2) are fixed. The mentioned supports 8 are configured to be fixed to a wall or ceiling and each of the end plates 2 is configured to rotationally support an end of a winding bar 3 in which an awning canvas is wound 4 (shown by means of broken lines in Figure 8), and a connecting element 5 in which there is connected a first end of an articulated arm 6 the other end of which is connected to a loading bar 7 fixed to a front edge of said awning canvas 4.

[0021] The winding bar 3 is thus housed inside the box shell 1. The box shell 1 has a longitudinal front opening through which the awning canvas 4 and the articulated arms 6 extend when the awning is completely or partially rolled out. The loading bar 7 comprises a closing profile 19 configured to close said longitudinal front opening of the box shell 1 enclosing the awning canvas 4 and the articulated arms 6 inside the box when the awning is in a closed position (Figure 8). The closing profile 19 of the loading bar 7 has its ends connected to end coverings 20 which are coupled to the supports 8 when the awning is in a closed position (Figure 2). The two end plates 2, the two supports 8 and the two end coverings 20 are symmetrical with respect to a centre plane perpendicular to the winding bar 3.

[0022] Each of the mentioned connecting elements 5 (Figures 4 to 8) defines a bracket 23 supporting an articulation pin 22 (Figures 4 and 6) to which there is articulately connected the corresponding end of the articulated arm 6. The connecting element 5 is supported in the corresponding end plate 2 such that it can rotate about a shaft 21 substantially parallel to the axis of the winding bar 3 between a folded position and a service position. A conventional regulation device is arranged to limit the rotation of the connecting element 5 in said service position for adjusting the inclination of the arms, and therefore the inclination of the awning canvas, to a desired angle with respect to the horizontal when the awning is rolled out. The regulation device is also associated to a conventional locking device preventing the movement of the connecting element 5 from the service position to the folded position when the corresponding articulated arm 6 is extended.

[0023] The box shell 1 and the two end plates 2 connected thereto form an awning unit 50. This awning unit 50 furthermore preferably includes the winding bar 3, the awning canvas 4, the connecting elements 5, the articulated arms 6 and the loading bar 7 installed in an operative condition (Figures 1 and 2).

[0024] As shown in Figure 4, each support 8 is approximately trihedron-shaped with a side wall 8a, a rear wall 8b and an upper wall 8c. The side wall 8a has, formed in an inner side thereof, a support guiding element 9, the rear wall 8b has holes 17a formed therein through which bolts 31 or the like (Figure 4) can be installed to allow fixing the support 8 to a wall or another substantially vertical side support surface, and the upper wall 8c has holes 17b formed therein through which bolts or the like (not shown) which allow fixing the support 8 to a ceiling or another substantially horizontal lower support surface can be installed. To install the awning assembly, the two supports 8 are fixed to the wall or ceiling at a predetermined distance from one another consistent with the length of the awning unit 50 (Figure 1).

[0025] Each of the supports 8 comprises a support guiding element 9 (Figure 4) in the form of two substantially parallel facing surfaces arranged in a direction transverse to the shaft of said winding bar 3, and each of the end plates 2 has a plate guiding element 10 in the form of two substantially parallel facing surfaces configured to be inserted and slid in a guiding manner between the two facing surfaces forming said support guiding element 9. Durante the mounting, the plate guiding element 10 is inserted and slid in said support guiding element 9 (Figure 1) to a working position defined by the contact of lugs 24 formed in the end plate 2 with stop surfaces 25 formed in the support 8 (Figure 9).

[0026] To fix the end plate 2 to the support 8 in said working position fixing means comprising a provisional elastic fixing element 11 and a pair of permanent fixing screws 13 are arranged. The provisional elastic fixing element 11 (individually shown in Figure 10) is preferably made of steel and has a fixing portion 26 in which a hole 27 through which the provisional elastic fixing element 11 is fixed to the end plate 2 by means of a screw 28 or the like is formed (Figure 5) and an outwardly projecting locking portion 29. A pair of locking claws 12 (Figure 4) are formed in the support 8.

[0027] The provisional elastic fixing element 11 and the locking claws 12 are configured and arranged such that during the insertion of the plate guiding element 10 into the support guiding element 9 the locking portion 29 of the provisional elastic fixing element 11 is elastically deformed by the pressure exerted thereon by the locking claws 12. When the end plate 2 reaches the working position (Figure 9), the locking portion 29 of the provisional elastic fixing element 11 has surpassed the position of the locking claws 12, whereby it elastically recovers the

original shape and locks in the locking claws 12.

[0028] The lugs 24 of the end plate 2 have holes 14 which, when the end plate 2 is coupled to the support 8 in the working position, they are facing corresponding holes (not shown) formed in the support 8 and communicating with housings in which respective nuts 15 (Figure 4) are installed and retained such that they cannot rotate. The permanent fixing screws 13 are inserted through the holes 14 of the end plate 2 and screwed to the nuts 15 retained in the support 8. Alternatively, if the material of the support 8 is hard enough, instead of the mentioned nuts 15 there may be a threading in the corresponding holes of the support 8 and the permanent fixing screws 13 can be screwed directly in the threaded holes of the support 8.

[0029] The parallel surfaces forming the guiding elements 9 of the supports 8 and the plate guiding elements 10 of the end plates 2 have a sufficient depth to allow a movement of the awning unit 50 relative to the supports 8 in a direction parallel to the axis of the winding bar 3, and the holes 14 formed in the lugs 24 of the end plate 2, in which the permanent fixing screws 13 are inserted, are holes elongated in the direction parallel to the axis of the winding bar 3. This allows adjusting the position of the awning unit 50 in relation to the supports 8 and absorbing a possible lack of precision in the positioning of the supports 8 before tightening the permanent fixing screws 13.

[0030] The support 8 defines a passage 16 between the two locking claws 12. When the end plate 2 is coupled and fixed to the support 8 in the working position (Figure 9), this passage 16 allows introducing a tool, such as a screwdriver or the like, to couple it to the locking portion 29 of the provisional elastic fixing element 11 and to elastically deform it until releasing it from the locking claw 12 when the awning unit 50 is to be dismounted from the supports 8. For this purpose, the provisional elastic fixing element 11 has a notch 30 formed at the end of the locking portion 29 configured to facilitate coupling an end of the tool. In the case of an alternative embodiment in which the claws are formed in the end plate and the provisional elastic fixing element 11 is fixed to the support, the mentioned passage can be formed in the end plate 2.

[0031] When the end plate 2 is coupled and fixed to the support 8, there is formed between them an opening giving access to the heads of the permanent fixing screws 13 and to the passage 16 through which the locking portion 29 of the provisional elastic fixing element 11 can be reached by means of a tool. This opening is closed by means of a cover 32 which is fixed to the end plate 2 by means of a screw 33 or the like. Since the relative positioning between the end plate 2 and the support 8 in a direction parallel to the axis of the winding bar 3 allows a certain margin of variation in accordance with the elongated holes 14, the fixing screw 33 of the cover 32 is screwed in a nut (not shown) retained such that it cannot rotate but can slide along a channel formed in the end plate 2.

[0032] It will be observed in the embodiment shown in Figures 1 to 9 that the support guiding element 9 is arranged in a direction running from a lower region of the support 8 to the upper wall 8c thereof (Figure 4), and the plate guiding element 10 is oriented accordingly in the end plate 2 (Figure 5), such that when the supports 8 are fixed to a wall or ceiling, the awning unit 50 including the end plates 2 is coupled to the supports 8 introducing it from a lower part thereof and sliding it upwards (Figure 1).

[0033] Figures 11 and 12 show an alternative embodiment variant which is entirely similar to the embodiment described above in relation to Figures 1 to 9 except in that here the support guiding element 9 is arranged in a direction running from a front region of the support 8 to the rear wall 8b thereof (Figure 11) and the plate guiding element 10 is obviously oriented accordingly in the end plate 2 (Figure 12). This allows coupling the awning unit 50 including the end plates 2 to the supports 8 when the latter are fixed to a wall or ceiling by introducing the awning unit 50 from a front part of the supports 8 and sliding it backwards, which can be advantageous in determined circumstances.

[0034] A person skilled in the art will be capable of introducing modifications and variations to the embodiments shown and described without departing from the scope of the present invention as defined in the attached claims.

Claims

1. An extendable awning assembly comprising:

a box shell (1) connected at its ends to end plates (2), each of which is configured to rotationally support an end of a winding bar (3) in which an awning canvas (4) is wound; and
a pair of supports (8) configured to be fixed to a wall or ceiling and in which said end plates (2) are fixed,

characterized in that:

each of said supports (8) comprises a support guiding element (9) arranged in a direction transverse to the shaft of said winding bar (3);
each of the end plates (2) has a plate guiding element (10) which is inserted and slid in said support guiding element (9) to a working position; and
fixing means are arranged for fixing the end plate (2) to the support (8) in said working position.

2. The extendable awning assembly according to claim 1, **characterized in that** said fixing means comprise a provisional elastic fixing element (11) fixed to the end plate (2) and arranged to be elastically deformed by the pressure of at least one locking claw (12)

formed in the support (8), or vice versa, during the insertion of said plate guiding element (10) into the support guiding element (9) and for recovering the original shape once it has surpassed said locking claw (12) and to lock therein upon reaching the working position.

3. The extendable awning assembly according to claim 2, **characterized in that** said fixing means further comprise at least one permanent fixing screw (13) which is inserted into a hole (14) of the end plate (2) and is screwed in the support (8) or into a nut (15) retained in the support (8).

4. The extendable awning assembly according to claim 2, **characterized in that** the support (8) or the end plate (2) defines a passage (16) which allows introducing a tool to release said provisional elastic fixing element (11) from said locking claw (12) by elastic deformation of the provisional elastic fixing element (11).

5. The extendable awning assembly according to claim 1, **characterized in that** the support (8) has a side wall (8a) in an inner side of which said support guiding element (9) is arranged, a rear wall (8b) in which holes (17) through which the support (8) can be fixed to said wall are formed and an upper wall (8c) in which holes (17) through which the support (8) can be fixed to said ceiling are formed.

6. The extendable awning assembly according to claim 5, **characterized in that** said support guiding element (9) is arranged in a direction running from a front region of the support (8) to said rear wall (8b).

7. The extendable awning assembly according to claim 5, **characterized in that** said support guiding element (9) is arranged in a direction running from a lower region of the support (8) to said upper wall (8c).

8. The extendable awning assembly according to claim 3, **characterized in that** said support guiding element (9) and said plate guiding element (10) are configured to allow a relative movement in a direction parallel to the axis of the winding bar (3), and said hole (14) into which said permanent fixing screw (13) is inserted is a hole elongated in the direction parallel to the axis of the winding bar (3).

9. The extendable awning assembly according to claim 1, **characterized in that** the end plate (2) is configured to support a connecting element (5) in which there is connected a first end of an articulated arm (6) the other end of which is connected to a loading bar (7) fixed to a front edge of said awning canvas (4).

10. The extendable awning assembly according to claim 9, **characterized in that** said connecting element (5) is supported in the end plate (2) such that it can rotate about a shaft (18) between a folded position and a service position, and a regulation device is arranged to limit the rotation of the connecting element (5) in said service position.

11. A supporting device for an extendable awning comprising a pair of supports (8) provided with elements for fixing said supports (8) to a wall or ceiling and elements by which end plates (2) connected to an end of a box shell (1) are fixed to said supports (8), wherein each of said end plates (2) is configured to rotationally support an end of a winding bar (3) in which an awning canvas (4) is wound, said supporting device being **characterized in that** each support (8) comprises a support guiding element (9) arranged in a direction transverse to the shaft of said winding bar (3) and configured to receive, slidingly inserted to a working position, a plate guiding element (10) attached to the corresponding end plate (2), and **in that** fixing means are arranged to fix the end plate (2) to the support (8) in said working position.

12. The supporting device according to claim 11, **characterized in that** said fixing means comprise a locking claw (12) formed in each support (8) and arranged to elastically deform a provisional elastic fixing element (11) fixed in the end plate (2), or vice versa, during the insertion of said plate guiding element (10) into the support guiding element (9) and to be locked with said provisional elastic fixing element (11) when the latter recovers the original shape once said locking claw (12) is surpassed upon reaching the working position.

13. The supporting device according to claim 12, **characterized in that** said fixing means further comprise at least one permanent fixing screw (13) which is inserted into a hole (14) of the end plate (2) and is screwed in the support (8) or in a nut (15) retained in the support (8).

14. The supporting device according to claim 13, **characterized in that** said support guiding element (9) and said plate guiding element (10) are configured to allow a relative movement in a direction parallel to the axis of the winding bar (3), and said hole (14) into which said permanent fixing screw (13) is inserted is a hole elongated in the direction parallel to the axis of the winding bar (3).

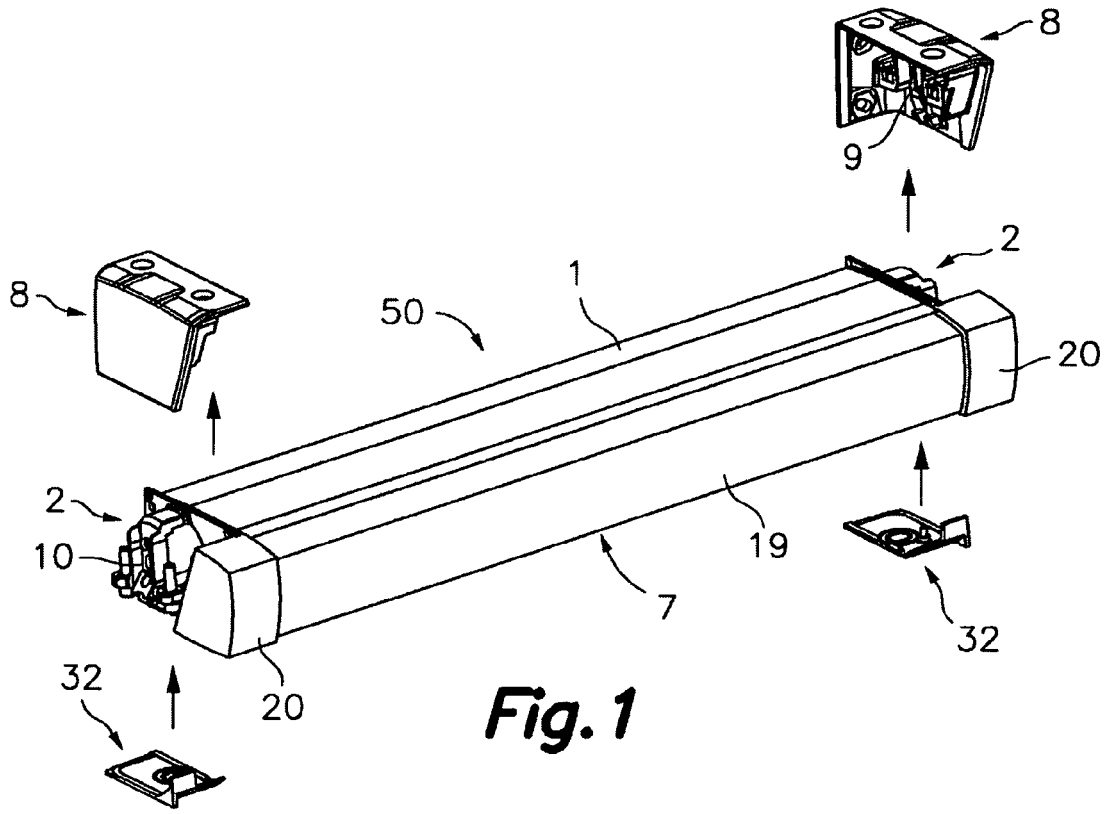

Fig. 1

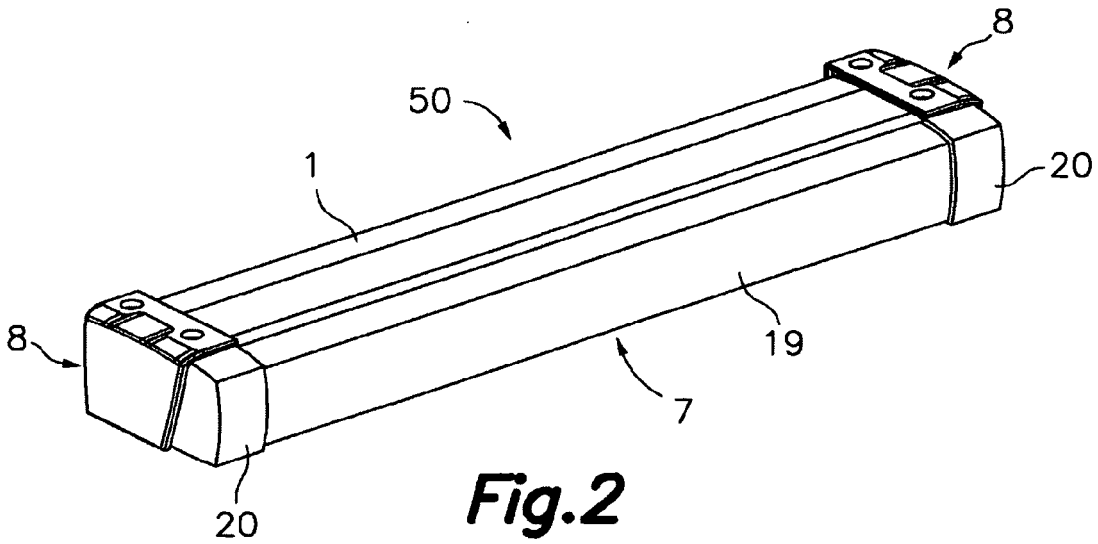

Fig. 2

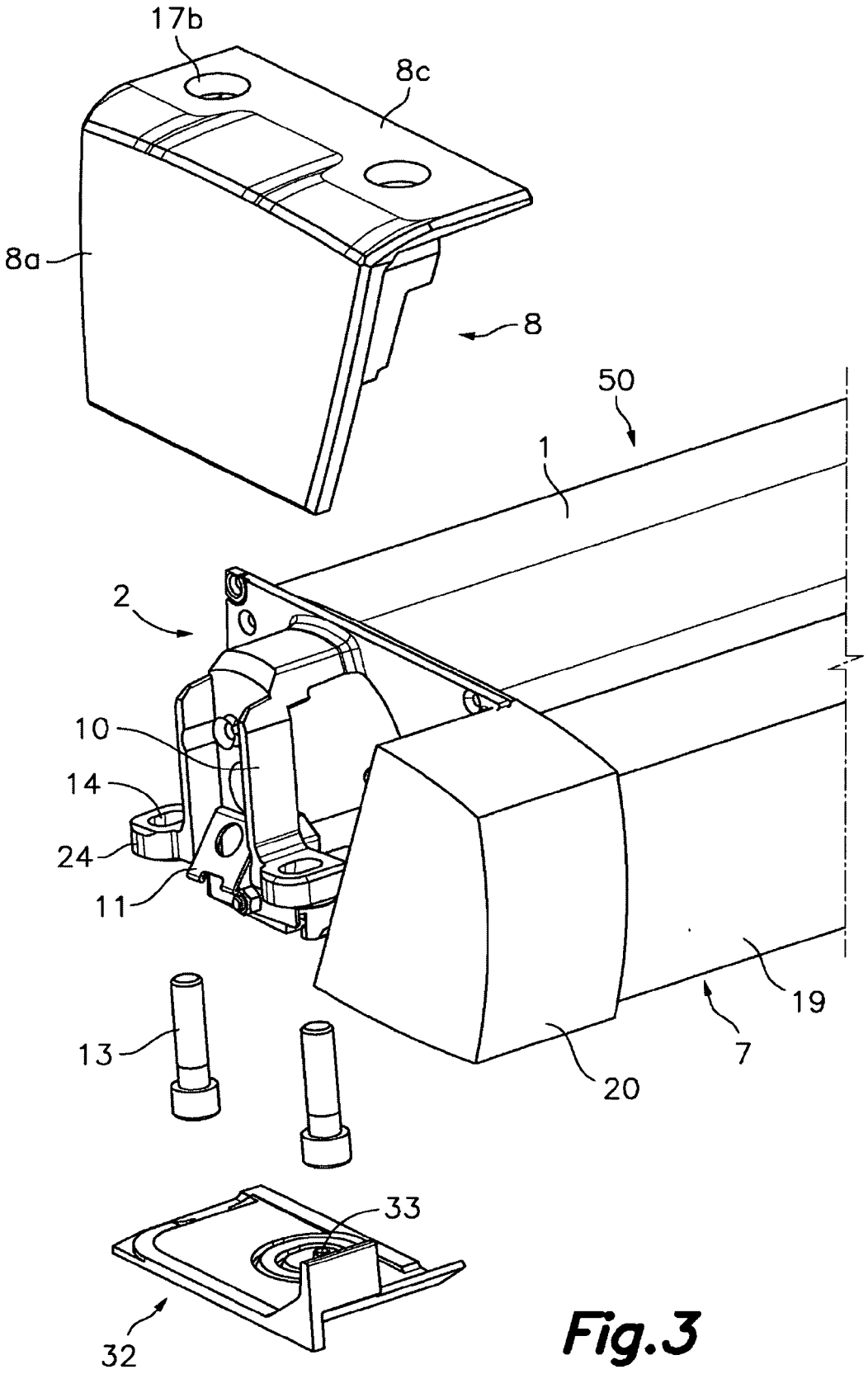

Fig.3

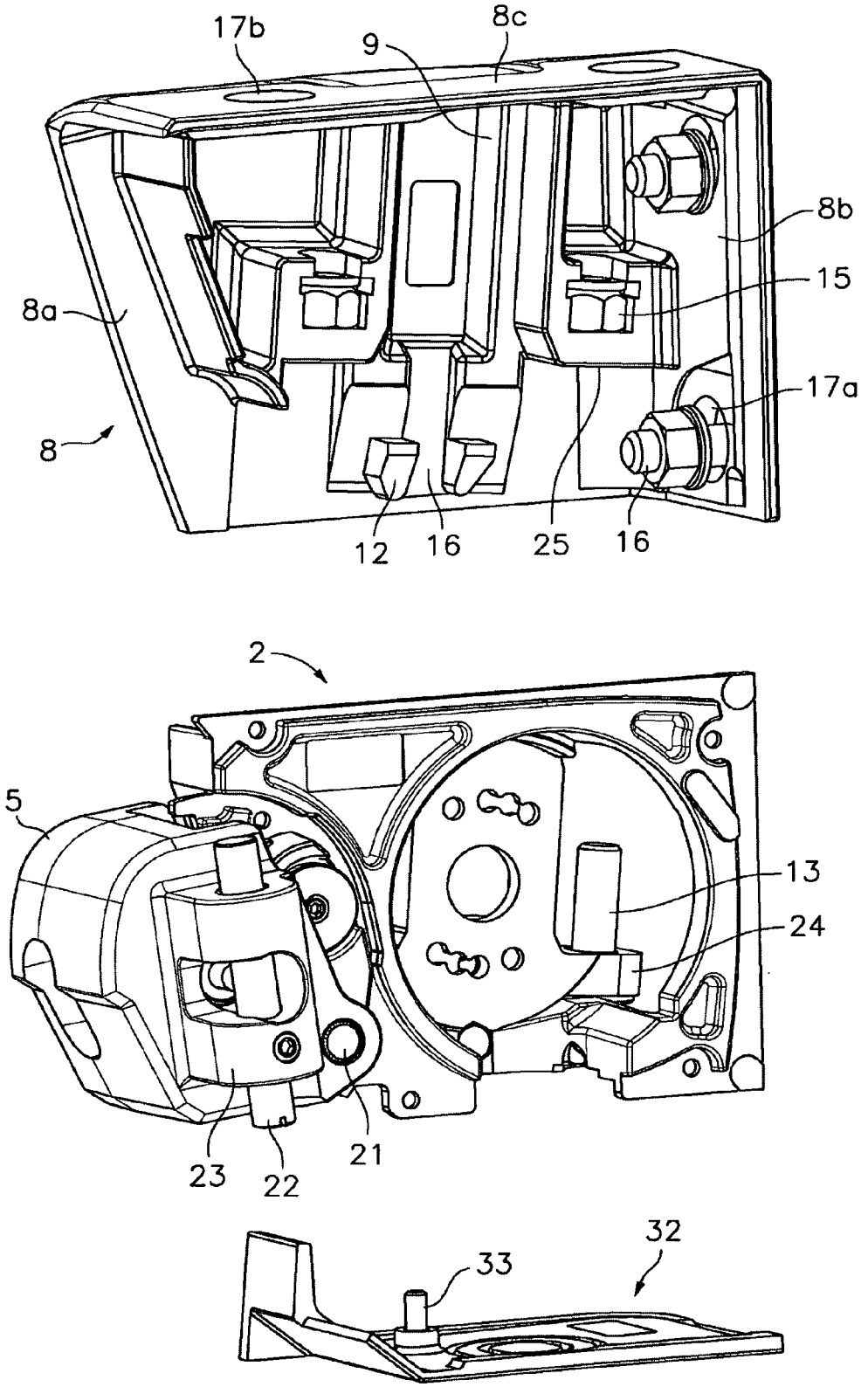

Fig.4

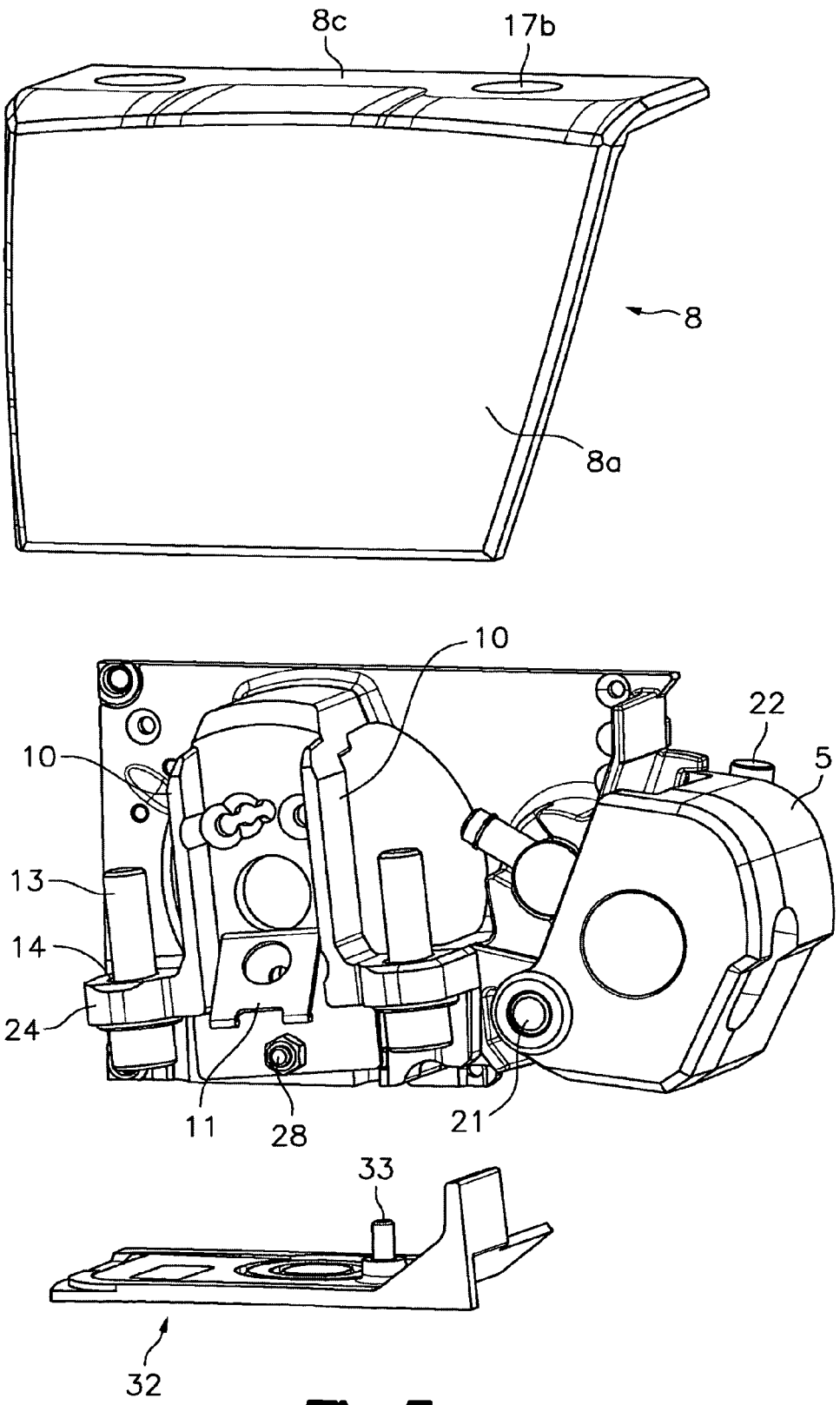

Fig.5

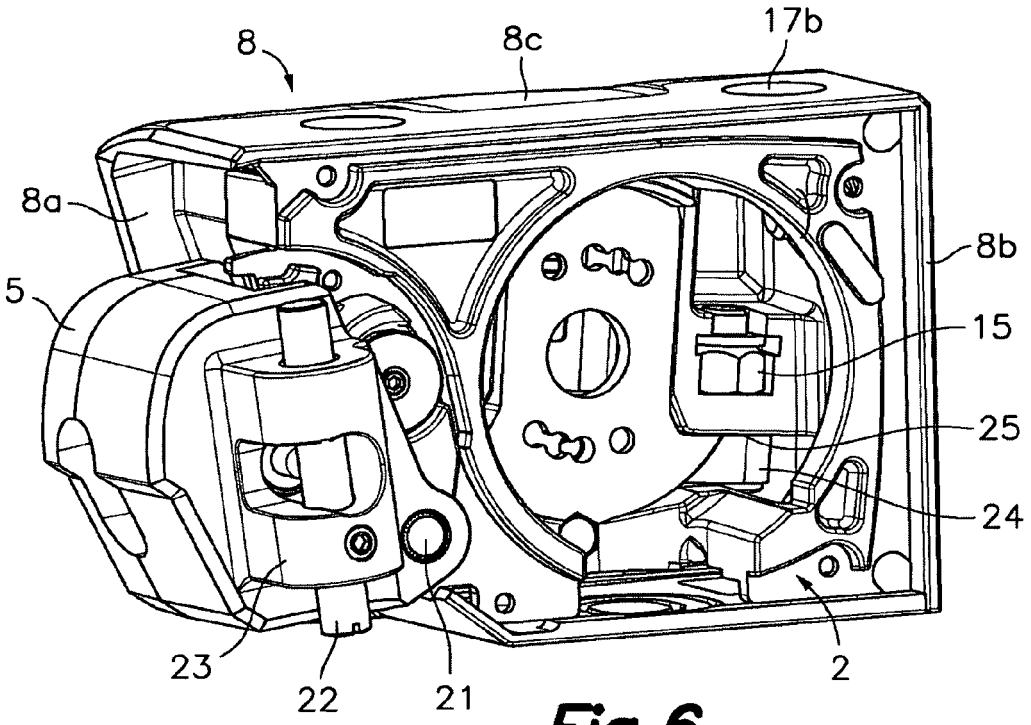

Fig.6

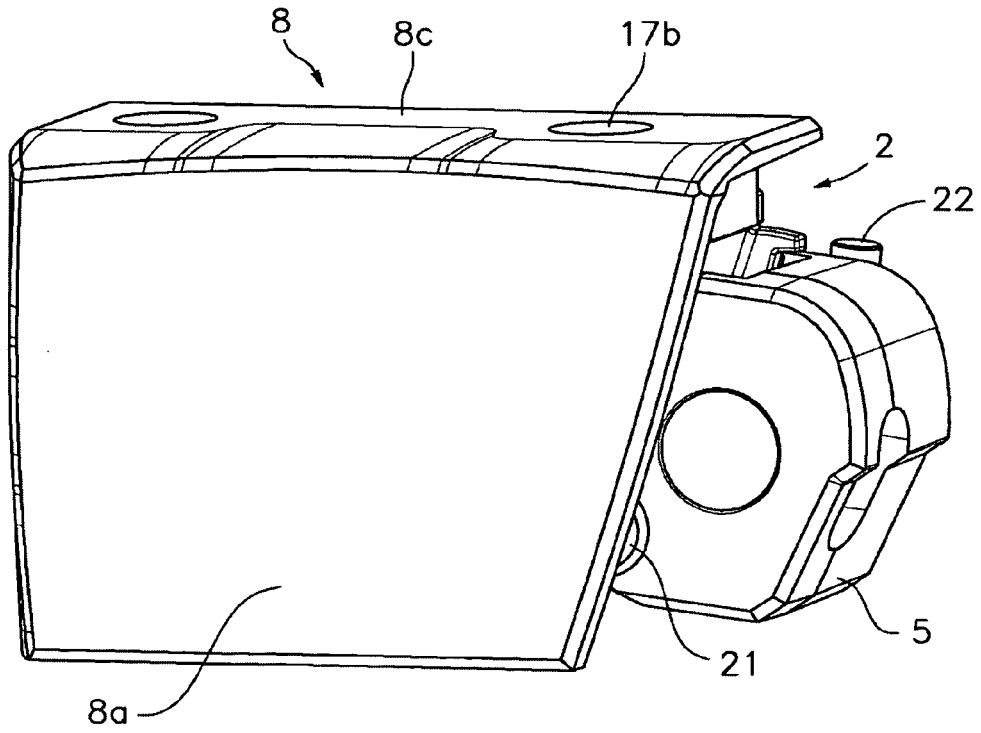

Fig.7

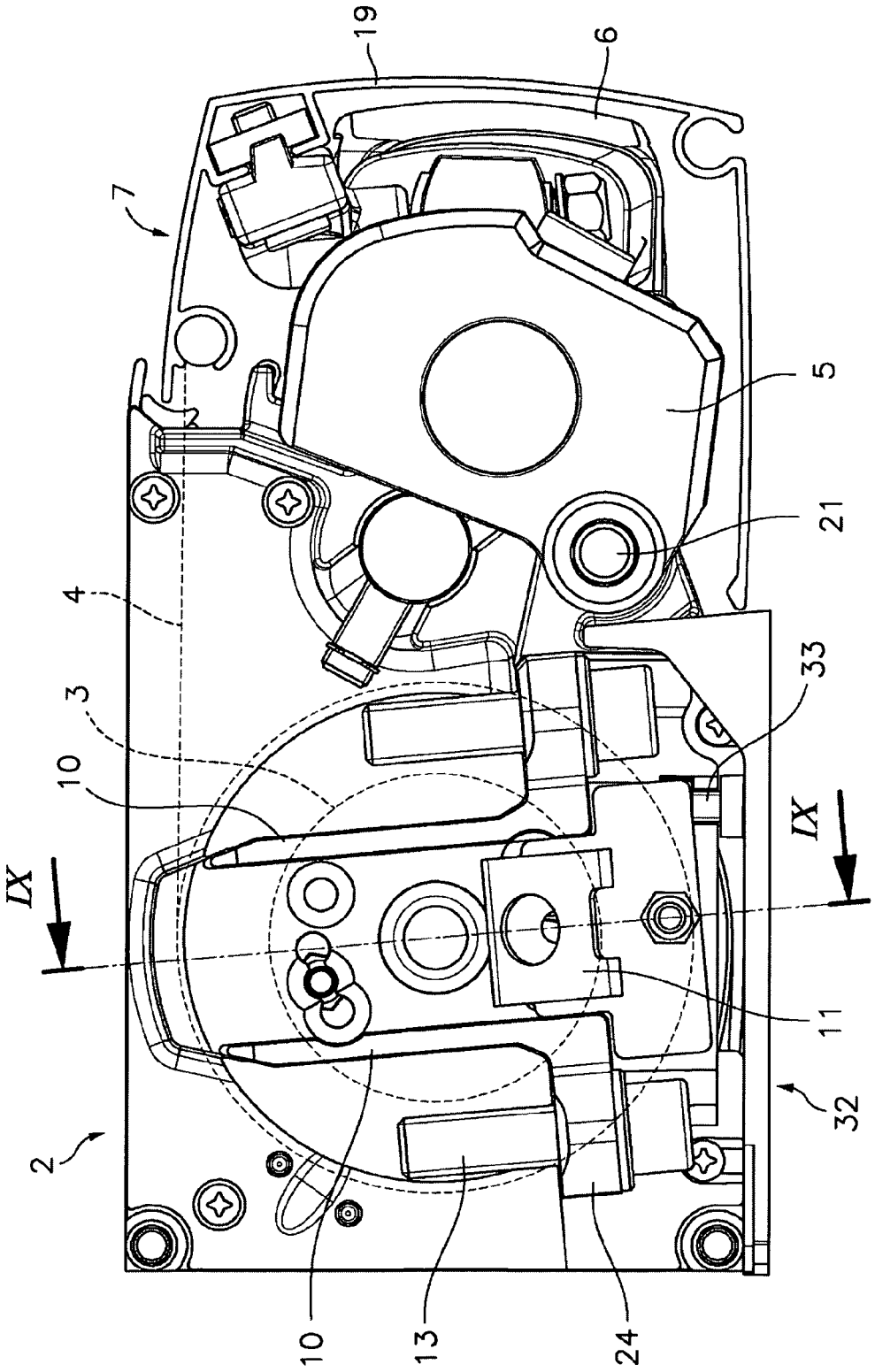

Fig.8

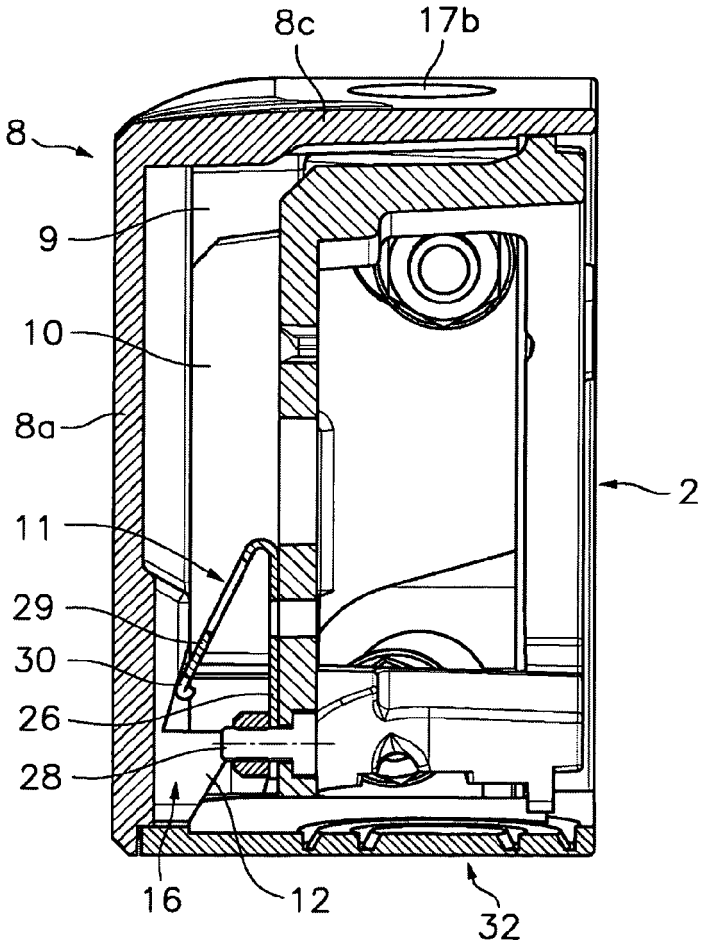

Fig.9

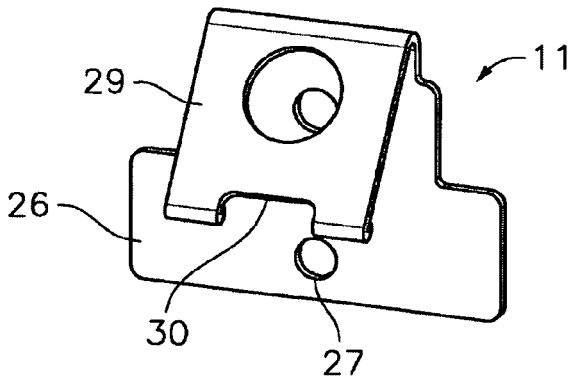

Fig.10

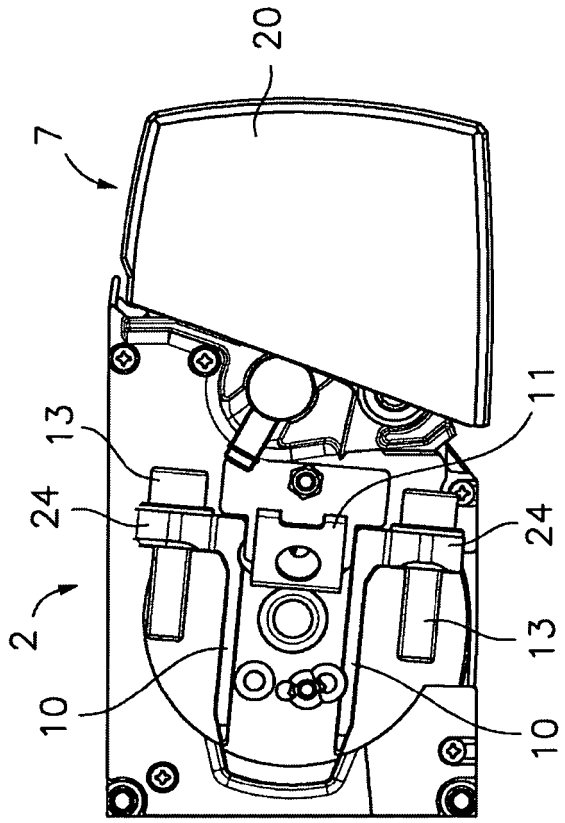

Fig.12

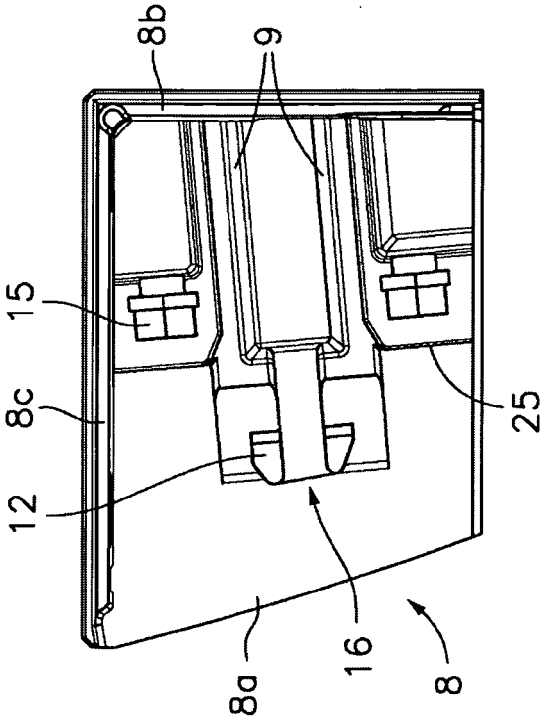

Fig.11

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PARTIAL EUROPEAN SEARCH REPORT

under Rule 62a and/or 63 of the European Patent Convention. This report shall be considered, for the purposes of subsequent proceedings, as the European search report

Application Number
EP 11 38 0097

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2009/027559 A1 (LLAZA SA [ES]; LLAGOSTERA FORN JOAN [ES]) 5 March 2009 (2009-03-05)	11	INV. E04F10/06
A	* abstract; figures 3-6 * * page 4, line 5 - line 9 * * page 5, line 18 - line 30 *	12-14	
X	FR 2 935 411 A1 (FRANCIAFLEX [FR]) 5 March 2010 (2010-03-05)	11	
A	* abstract; figure 1 * * page 6, line 3 - line 4 *	12-14	
X	DE 26 34 103 A1 (ROEDELBRONN HORST) 2 February 1978 (1978-02-02)	11	
A	* figure 1 *	12-14	

TECHNICAL FIELDS SEARCHED (IPC)

E04F

INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

Place of search	Date of completion of the search	Examiner
The Hague	22 August 2012	Cornu, Olivier

CATEGORY OF CITED DOCUMENTS

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

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

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04E07)

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Office européen des brevets

INCOMPLETE SEARCH
SHEET C

Application Number
EP 11 38 0097

Claim(s) completely searchable:
11-14

Claim(s) not searched:
1-10

Reason for the limitation of the search:

according to the indications made by the applicant in his telefax on 29.06.2012.

Context:
The application as originally filed contains more than one independent claims in the same category (apparatus):
Claims: 1 and 11
1. The subject matters of these two claims are not disclosed as interrelated products or apparatus. (cf. Part F - Chapter IV, 3.2.(i))
2. They do not constitute different uses of a product or apparatus.
3. They are not alternative solutions to a particular problem, where it is inappropriate to cover these alternatives by a single claim.
The requirements of rule 43(2) EPC are therewith not fulfilled.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 38 0097

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

22-08-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009027559 A1	05-03-2009	ES 1065986 U	01-12-2007
		ES 2358695 A1	13-05-2011
		WO 2009027559 A1	05-03-2009
FR 2935411 A1	05-03-2010	NONE	
DE 2634103 A1	02-02-1978	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 0593389 A **[0003] [0004]**
- EP 0186742 A **[0005]**