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(54) **SCREENING ARRANGEMENT HAVING A FREELY MOVABLE SCREENING BODY**

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(73) Proprietor: **VKR Holding A/S**
2970 Hørsholm (DK)

(72) Inventor: **HINDHEDE, Per Solsø**
DK-6900 Skjern (DK)

(74) Representative: **Rohde, Vibeke Warberg et al**
Awapatent A/S
Rigensgade 11
1316 Copenhagen K (DK)

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Description

[0001] The present invention relates to a screening arrangement having a supply condition and a condition of use, comprising a screening body adapted for screening an aperture of a frame, a first operating element, a second operating element, at least one cord system including a plurality of cords, two side rails adapted to be connected to side pieces of said frame, said screening body comprising a first end edge and a second end edge, said first end edge being fastened to the first operating element and the second end edge fastened to the second operating element, said first and second operating elements extending substantially in parallel to each other in a first longitudinal direction defining, in the condition of use, a width direction, said first longitudinal direction being substantially perpendicular to a second longitudinal direction defining a height direction, and said first and second operating elements being movable independently of each other in said second longitudinal direction, each side rail extending, in the condition of use, substantially perpendicularly to the first and second operating elements in the second longitudinal direction, said screening arrangement furthermore comprises a top element adapted to be positioned at a top piece of the frame, and a top rail extending in said first longitudinal direction, a corner fitting is connected to the top element, said corner fitting comprising means for accommodation of cords of said at least one cord system, and said corner fitting comprising coupling means adapted for cooperation with bracket members mounted on a frame structure.

[0002] Screening arrangements are widely used and appreciated for screening a portion or the whole area of a window. Being flexible in use and frequently used prescribe certain requirements to the arrangement of such screening devices.

[0003] It is known to have a screening arrangement according to the opening paragraph, which is especially appreciated in use due to the two operating elements being movable independently of each other and the inherent flexible use. US patent no. 3,465,806 describes a screening arrangement of the kind mentioned in the introduction.

[0004] Several other screening arrangements only having one removable operating element and furthermore a top element are also known in the prior art, but these do not provide the same flexible use and hence provides a very different overall experience of use.

[0005] With this background it is an object of the invention to provide a screening arrangement, which is easy to mount, and which shows stability and reliability during operation, but which still has a pleasant appearance.

[0006] These and further objects are met by a screening arrangement of the kind mentioned in the opening paragraph, which is furthermore characterized in that the top element is connected to the frame by guiding coupling members on the outer side of each corner fitting over bracket members positioned at the upper ends of each side piece of said frame.

[0007] By providing the screening arrangement with a top element comprising such a corner fitting renders the arrangement easy to install, and it is possible to use a more complex cord system, which results in a more stable and reliable operation of the operating elements. By having a top element of the screening device there is space for providing a corner fitting for fastening and turning at least one cord of a complex cord system. A side effect of having a top element with a top rail is that a more pleasant and harmonic appearance is provided.

[0008] In a further development of this embodiment, the screening arrangement further comprises a set of angular brackets, each angular bracket having a first leg being accommodated in first reception means in the back side of the top rail, and each angular bracket having a second leg accommodated, in the condition of use, in reception means in the back side of a respective side rail.

[0009] This provides a screening arrangement which easy and precise installation due to the angular brackets providing a solid and precise fit between the side and top rails. When the side rails and the top rail are connected in a mitre this is of particular importance, because even a little odd connection between a side rail and top rails in a mitre will be visible.

[0010] In a further development of the screening arrangement, it further comprises first reception means in the back side of the top rail for accommodation of the first leg of the angular bracket constituted by a first track substantially parallel with the top rail.

[0011] This makes it possible to extrude the side rails comprising said track on the back side of the rails.

[0012] In another aspect the screening arrangement comprises second reception means in the back side of the top rail for accommodation a portion of said corner fitting constituted by a second track substantially parallel with the top rail.

[0013] This provides simple connection between the individual pieces of the screening arrangement, but still makes it possible to extrude the top rail.

[0014] In a further development of the preceding embodiments the screening arrangement said corner fitting comprising coupling means adapted for cooperation with bracket members mounted on a frame structure.

[0015] This facilitates the overall production and assembling of the screening arrangement, because it comprises fewer elements and further more requires fewer materials.

[0016] In a mechanically simple embodiment said corner fitting comprises a basis having a first side and an opposite second side.

[0017] In another mechanically simple preferred embodiment said basis has a wedge-shaped element extending from said first side and comprising two walls constituting a guidance for cords of said at least one cord system.

[0018] This provides a simple and effective solution for fixing and tuning at least one cord of a cord system used

in the screening arrangement.

[0019] In a further embodiment said operating elements comprise side guidance means adapted for cooperation with the side rails in order to ease the operation of the operating elements.

[0020] In a further embodiment of the invention the screening arrangement has a supply condition and a condition of use, in said supply condition, at least one fitting is releasably connected with the top element and the operating elements.

[0021] This makes it easier to install the screening arrangement, facilitates the transportation and thereby the chances of inadvertently tangling the cord system.

[0022] In another embodiment of the invention said second leg of angular bracket cooperating with the side guidance means of the operating elements in the supply condition.

[0023] This again makes it easier to install the screening arrangement, facilitates the transportation and thereby the chances of inadvertently tangling the cord system.

[0024] In the following the invention will be described in further detail by means of examples of embodiments with reference to the schematic drawings, in which

Fig. 1 is a front view of a window provided with a screening arrangement in an embodiment of the invention;
Fig. 2 is a perspective view of a detail of a screening arrangement in of Fig. 1;
Fig. 3 shows, on a larger scale, a perspective view of the screening arrangement of Fig. 1;
Fig. 4 is a view corresponding to Fig. 3 of the screening arrangement of Fig. 1 in another position;
Fig. 5 shows a detail of the screening arrangement corresponding to the position shown in Fig. 4;
Fig. 6 is a perspective view of a detail of a screening arrangement in of Fig. 1;
Fig. 7 is another perspective view of a detail of a screening arrangement in of Fig. 1;
Fig. 8 is a perspective view of another detail of a screening arrangement in of Fig. 1;
Fig. 9 is another perspective view of the details shown in Fig. 8;
Fig. 10 is a perspective view of a detail of Fig. 9;
Figs. 11 and 12 are other perspective views of the detail shown in Fig. 10;
Fig. 13 shows details of a screening arrangement in fig 1;
Fig. 14 is another perspective view of the details shown in fig. 13;
Fig. 15 is a perspective view showing details of fig. 14;
Fig. 16 shows a detail of fig. 15;
Fig. 17 shows a detail of a element of fig. 16.

[0025] Figs 1 to 5 show an embodiment of a screening arrangement generally designated 1. As shown in Fig. 1, the screening arrangement 1 is adapted to be mounted on a frame constituted by a sash 2 representing a window. The sash 2, in turn, is adapted to be connected with a stationary frame (not shown), which in a mounted position of the window lines an opening in a building. It is noted that the term "frame" is to be understood as incorporating any substantially rectangular structure positioned in any opening in a building, whether in a wall or the roof, and surrounding an aperture to be screened. Although the sash 2 shown in Fig. 1 is the sash 2 of a roof window and the screening arrangement 1 is mounted on the sash 2 of the window, a screening arrangement according to the invention may just as well be mounted on the stationary frame instead of the sash 2 and may also be utilized in connection with e.g. windows having a frame only, or in doors. The sash 2 has a top piece 21, a bottom piece 22 and two side pieces 23 and 24 surrounding an aperture, which is covered by a suitable panel element such as a glazing in the form of an insulating pane (not shown).

[0026] In the embodiment shown, the screening arrangement 1 is a pleated blind comprising a screening body 6 including a number of pleats of any suitable material, e.g. a textile material. The screening body 6 could also be a pleated blind having a cell structure. At its upper end edge, the screening body 6 is fastened to a first operating element 71 and its opposed, lower end edge is fastened to a second operating element 72. The first and second operating elements 71, 72 extend substantially in parallel to each other in a first longitudinal direction defining a width direction. The first longitudinal direction is substantially perpendicular to a second longitudinal direction defining a height direction. Thus, the width direction is parallel to the top and bottom pieces 21 and 22 and the height direction to the side pieces 23 and 24 of the sash 2.

[0027] Furthermore, the screening arrangement 1 includes a top element 4 adapted to be positioned at the sash top piece 21 such that a top rail 440 of the top element 4 extends in the first longitudinal of width direction. Side rails 8, 9 are adapted to be positioned at the left-hand side piece 23 and right-hand side piece 24, respectively, to extend in the second longitudinal or height direction. The terms "left-hand" and "right-hand" refer to the orientation shown in for instance Figs 1 and 2 and are utilized for reasons of convenience only. Similarly, the terms "front" and "back" are utilized to denote the sides of the screening arrangement 1, "front" being the side intended to face inwards into the room of the building, and "back" the outwards facing side.

[0028] The screening arrangement 1 comprises a plurality of cords constituting one or more cord systems to ensure proper operation of the screening arrangement 1. Referring in particular to Fig. 5, there are two cord systems: A first, parallel guidance cord system and a second, holding,cord system.

[0029] The first cord system, i.e. the parallel guidance cord system, comprises two cords, of which one cord 91 (cf. Fig. 5) being adapted to extend from the right-hand

lower corner of the sash 2, up through or along the first operating element 71 and further up to the top element 4. The other cord is routed in a mirror-inverted manner. At the top element 4, each cord may be connected with a respective pre-tensioning device adapted to be connected with the top element 4 in a track and/or to press against the top cover portion of the cover 430. Alternatively or additionally, there may, as shown, be a pre-tensioning device in the form of a spring 71a in the first operating element 71. The cord 91 forms a loop 91a, the engagement between the loop 91a and the spring 71a being carried out in a manner known *per se.* The second operating, element 72 may be provided with a similar parallel guidance cord system, or parallelism may be ensured by the second cord system, the holding cord system. The pre-tensioning devices entail that the cords are held at a suitable tension all of the time, thereby ensuring that the operating elements 71 and 72 are at all times kept substantially in parallel with the top and bottom pieces 21, 22 of the sash 2 during operation of the screening arrangement1. In the mounted position, the cords are hidden behind the side rails 8, 9. The ends of the cords 91 are connected to the screening arrangement 1 itself and/or the sash 2 near the sash bottom and top pieces 22,21.

[0030] The second cord system, i.e. the holding cord system, comprises a holding cord 93 provided to extend in a closed loop. Referring to the embodiment shown, the route of the holding cord 93 extends from one end connected with the other end (for instance by means of a simple knot or in any other manner) at the corner fitting 3 through the first operating element 71 through a first set of apertures of the screening body, and along the second operating element 72, along the opposite sash side piece 24. The holding cord 93 makes a turn near the sash bottom piece 22 and returns to the second operating element 72, up through the screening body through a second set of apertures to the first operating element 71, through the first operating element 71 and up to the corner fitting 3. Another holding cord (not shown) correspondingly runs in mirror-image fashion in relation to the central vertical axis of Fig. 5 between the diametrically opposite corners. To provide proper tension of the holding cord 93, a spring 72a is arranged in the second operating element 72. By the illustrated position of the spring 72a, an excellent parallel guidance of the second operating element 72 is achieved, although a spring alternatively or supplementary could be arranged at one of the cord holders 8, 9.

[0031] In Fig. 2 the screening arrangement 1 is shown in a supply condition attained at the manufacturer and indicating the condition or state, in which the screening arrangement 1 is supplied and delivered. In the supply condition, a set of angular brackets 85 is connected to the top rail 440 of the top element 4. This operation is advantageously carried out by a suitable tool to secure that the angular brackets assume correct positions. The top rail 440 has two ends, which in the embodiment shown are mitred, and of which the left-hand mitred end 445 and the right-hand mitred end 446 are indicated in Fig. 2. The mitred ends 445, 446 are adapted to be joined to a respective mitred end of the side rails 8, 9. The operating elements 71, 72 and the screening body 6 are held at the top element 4 by means of two fittings 10. In the embodiment shown the fittings 10 are identical to each other. The cords 91 of the guidance cord system and the holding cords 93 of the holding cord system are secured in the fittings 10. Furthermore, two corner fittings 3 appear from Fig. 2, the configuration and function of which will be described in further detail below.

[0032] Figs 1 and 3 show the screening arrangement 1 in an intermediate position between the supply condition and the condition of use, as the operating elements 71, 72, the screening body 6 and the cords of the cord systems are still secured to the top element 4 by means of the fittings 10. The top rail 440 has been joined to side rails 8, 9 in joints by means of angular brackets 85. Opposite ends of the operating elements 71, 72 are introduced into these side rails 8 and 9. The fittings 10 are releasably connected to the top element 4 and the operating elements 71, 72 in any suitable manner, for instance by means of snap engagement means for cooperating with the top element 4 and the operating elements 71, 72, respectively, to provide positive engagement with these elements. Other means for releasable connection are conceivable as well, including the use of adhesive, interlocking elements of for instance the VELCRO® type etc. The fittings 10 assist in the mounting of the screening arrangement 1 by keeping the cords securely and defining the overlap between the side guidance elements of the operating elements 71, 72 and the angular bracket 85. This facilitates the mounting, as the top element 4 may be connected with the sash 2 without interfering with the cords as these are at all times kept tight by the fitting 10 or fittings 10. Furthermore, the side guide rails may be joined properly with the top rail 440 without the risk of entangling of the cords or that the side guidance element and hence the operating elements 71, 72 are displaced and not introduced correctly into the respective side rail. Alternative means for holding the cords temporarily to the fitting 10 include the use of a supplemental fitting separate from the fitting 10 and designed more or less exclusively for holding the cord, and may be quite simple. In principle, the cords could be attached temporarily to e.g. the second operating element 72 by adhesion.

[0033] In the condition of use of the screening arrangement 1 shown in Fig. 4, the fittings 10 have been removed, and the cord systems attached properly as will be described in further detail below. The first and second operating elements 71, 72 are movable independently of each other in the second longitudinal direction, for instance to the position shown in Fig. 4. In the embodiment shown, the operating elements 71 and 72 are adapted to act as handles during operation of the screening arrangement 1, i.e. when moving one or both of the operating elements 71 and 72 and hence the screening body

6 between a non-screening position corresponding to the position shown in Fig. 1 and a screening position, in which the screening body 6 covers the sash aperture partly or fully. However, instead of being manually operated, the screening arrangement 1 may be operated by other means, e.g. by electrical operating means.

[0034] Installation of the entire screening arrangement 1 in a frame, for instance the sash 2 of Fig. 1, is carried out in the following manner:

> The screening arrangement 1 is provided in its supply condition shown in Fig. 2. At the installation site, the top element 4 is connected to the frame, i.e. for example the sash 2. In the embodiment shown in the above, this is thus carried out by guiding the coupling members on the outer side of corner fitting 3 over bracket members positioned at the upper ends of each sash side piece. A bracket (not shown) for connection of the cord systems is fastened to the each of the side pieces 23, 24, near the bottom piece 22. Following this, the side rails 8, 9 are joined to the top rail 440 at the mitred ends by means of the angular brackets 85. A more detailed description of the manner of mounting the screening arrangement is disclosed in Applicant's co-pending international applications No. PCT/DK2007/050047 and PCT/DK2007/050157.

[0035] In the step of joining the side rails 8,9 to the top rail 440, each side rail is brought from a position, in which the side rail 8,9 is out of alignment with the second longitudinal direction, to a position, in which the side rails is in alignment with the second longitudinal direction, during the step of connecting the side rails 8,9 to the top rail 440. During this step, the operating element 71, 72 and consequently the side guidance element are kept substantially stationary by means of the fittings 10 ensuring an overlap between the side guidance element of the first operating element 71 and the angular bracket 85. The side guidance element thus abuts slightly on the back side of the angular bracket 85. The second leg 860 of the angular bracket is thus inserted into the track in the back side of the side rail 8 while the side guidance element acts as a guide to the angular bracket. The cords of the cord system are also kept tight on the fittings 10.

[0036] Only when the side rails 8 and 9 have been secured to their respective side piece 23,24, the cords are let loose. Eventually, the engagement between the fitting 10 and the operating elements 71, 72 is released. Now, the screening arrangement is in its condition of use. Slight deviations of the above described mounting procedure may, of course, occur.

[0037] Fig. 6 shows the top rail 440 of the top element 4 having angular brackets 85 mounted at each end in a first track 447 on the back side of the top rail 440. Said first track 447 is shown in Fig. 7, which is the same perspective view having the angular brackets 85 removed from the track at both ends. The first track 447 is constituted by the back side surface 450 of the top element 440 and the walls 451 protruding from the back side portions 454, 455 extending on the back side of the top element 440. Fig. 7 also shows a second track 448, which is constituted by the above-mentioned walls 451 and the walls 453 also protruding from the back side portions 454, 455 extending from the top element 440. The walls 451, 453 and back side portions 454, 455 constituting the tracks 447, 448 extend in the longitudinal direction of the top element 440 providing the tracks 447, 448 with parallel planes, which provides for an easier production process for instance by extrusion.

[0038] Figs 8 and 9 are different perspective views showing the top element 440 having a corner fitting 3 mounted at both ends in the second track 448.

[0039] Fig. 10 is a perspective view of a corner fitting 3 according to the screening arrangement 1 of Fig. 1. The corner fitting 3 comprises a basis 330 having a first side 340 and an opposite second side 341 (cf. Fig. 12). The basis 330 has a wedge-shaped element 331 extending from said first side 340, which wedge - shaped element 331 has a base 334 substantially per-pendicular to said first side 340 and being adapted to engage with a second track 448 of a top rail 440. The wedge-shaped element 331 furthermore comprises two walls 332, 333 constituting a guidance for at least one cord 91, 93 (cf. Fig. 5) of the screening arrangement 1 in order to guide said cord to a recess 335 in said wedge-shaped element 331 where the cord can be fastened or turned as appropriate. The cords of the screening arrangement 1 can be fastened or turned by means of the walls 337, 338 shown in Fig. 11.

[0040] Fig. 12 shows the second side 341 of the corner fitting 3 having outer side walls 342, 343, 345 extending from the surface of the second side 341 for cooperation with bracket members positioned on the side pieces 23, 24 of a window sash 2. Within the area constituted by said outer side walls 342, 343, 345 two further walls 346, 347 are positioned, also adapted for cooperation with bracket members positioned on a window sash 2.

[0041] Fig. 13 shows a side rail 8, operating elements 71, 72 and the screening body 6 of a screening arrangement 1. The operating elements 71, 72 are provided with side guidance members 700 connected to each end for guiding the operating elements in a track 701 of the side rails 8, 9. Fig. 14 is a perspective view showing the backside of fig. 13. Only one side guidance member 700 is shown, which is connected to the second operating element 72. The side guidance member 700 has a side guidance element 705 extending from the body 702 of the side guidance member 700 and being adapted to glide in the track 701 of the side rail 8. Fig. 15 is a view only showing a side rail 8 and the second operating element 72 connected to a side guidance member 700 engaging with the track 701 of the side rail 8. In Fig. 16 the first operating element 71 has been removed from the side guidance member 700 in order to show the detail of the engagement between the side guidance member 700

and the track 701 of the side rail 8. The side guidance element 705 of the side guidance member 700 is inserted in the track 701 and a surface 703 (cf. Fig. 17) from which the side guidance element 705 extends is adapted to glide towards a first wall 706 extending on the backside of the side rail 8. The first wall 706 and a second wall 707 also extending on the backside of the side rail 8 constitute the track 701. During operation of the operating elements 71, 72 having side guidance members 700 at both ends, the side guidance elements 705 are kept is the track 701 by a shoulder portion 704 between the side guidance element 705 and the surface 703. Fig. 17 is a perspective view of the side guidance member 700 better showing the surface 703 and the shoulder portion 704 from which the side guidance element 705 extends. Further, Fig. 17 shows elements 710, 711 adapted for connecting the side guidance member to the operating elements 71, 72.

[0042] The invention should not be regarded as being limited to the described embodiments. Several modifications and combinations within the scope of the claims of the different embodiments will be apparent to the person skilled in the art.

List of reference numerals

[0043]

1 screening arrangement
2 sash
21 top piece
22 bottom piece
23 side piece
24 side piece
3 corner fitting
330 basis
331 wedge-shaped element
332, 333 walls
334 base
335 recess
337, 338 walls
340 first side
341 second side
342, 343, 345 outer side walls
346, 347 further walls
4 top element
430 cover
440 top rail
445 first mitred end
446 second mitred end
447 first track
448 second track
450 back side surface
451, 453 walls
454, 455 back side portions
6 screening body
71 first operating element
72 second operating element
71a, 72a springs
700 side guidance member
701 track
702 body
703 surface
704 shoulder portion
705 side guidance element
706 first wall
707 second wall
8 side rail
85 angular bracket
850 first leg
860 second leg
9 side rail
10 fitting
93 holding cord

Claims

1. A screening arrangement (1) having a supply condition and a condition of use, comprising:

a screening body (6) adapted for screening an aperture of a frame,
a first operating element (71),
a second operating element (72),
at least one cord system including a plurality of cords,
two side rails (8, 9) adapted to be connected to side pieces of said frame,
said screening body (6) comprising a first end edge and a second end edge, said first end edge being fastened to the first operating element (71) and the second end edge fastened to the second operating element (72),
said first and second operating elements (71, 72) extending substantially in parallel to each other in a first longitudinal direction defining, in the condition of use, a width direction, said first longitudinal direction being substantially perpendicular to a second longitudinal direction defining a height direction, and said first and second operating elements (71, 72) being movable independently of each other in said second longitudinal direction,
each side rail extending, in the condition of use, substantially perpendicularly to the first and second operating elements in the second longitudinal direction,
said screening arrangement (1) furthermore comprising a top element (4) adapted to be positioned at a top piece of said frame, comprising a top rail (440) extending in said first longitudinal direction,
a corner fitting (3) being connected to the top element (4), said corner fitting (3) comprising means for accommodation of cords of said at least one cord system, and

said corner fitting (3) comprising coupling means adapted for cooperation with bracket members mounted on said frame,
characterized in that
the top element (4) is adapted to be connected to said frame by guiding coupling members on the outer side of each corner fitting (3) over bracket members positioned at the upper ends of each side piece (23,24) of said frame.

2. A screening arrangement (1) according to claim 1, further comprising a set of angular brackets (85), each angular bracket having a first leg (850) being accommodated in first reception means in the back side of the top rail (440), and each angular bracket having a second leg (860) accommodated, in the condition of use, in reception means in the back side of a respective side rail (8, 9).

3. A screening arrangement (1) according to claim 2, comprising first reception means in the back side of the top rail (440) for accommodation of the first leg (850) of the angular bracket (85) constituted by a first track (447) substantially parallel with the top rail (440).

4. A screening arrangement (1) according claim 3, comprising second reception means in the back side of the top rail (440) for accommodation a portion of said corner fitting (3) constituted by a second track (448) substantially parallel with the top rail (440).

5. A screening arrangement (1) according to any one of the preceding claims, wherein said corner fitting (3) comprises a basis (330) having a first side (340) and an opposite second side (341).

6. A screening arrangement (1) according to claim 5, wherein said basis (330) has a wedge-shaped element (331) extending from said first side (340) and comprising two walls (332, 333) constituting a guidance for cords of said at least one cord system.

7. A screening arrangement (1) according to claim 5, wherein a second side (341) of the corner fitting (3) has outer side walls (342, 343, 345) extending from the surface of the second side for cooperation with bracket members positioned on said side pieces (23, 24).

8. A screening arrangement (1) according to claim 7, wherein two further walls (346, 347) are positioned within the area constituted by said outer side walls (342, 343, 345), also adapted for cooperation with bracket members positioned on a frame, preferably in the form of a window sash (2).

9. A screening arrangement (1) according to any one of the preceding claims, wherein said operating elements (71, 72) comprise side guidance means adapted for cooperation with the side rails (8, 9).

10. A screening arrangement (1) according to any one of the preceding claims, having a supply condition and a condition of use, in said supply condition, at least one fitting (10) is releasably connected with the top element (4) and the operating elements (71, 72).

11. A screening arrangement (1) according to claim 10, wherein said second leg (860) of angular bracket (85) cooperating with the side guidance means of the operating elements (71, 72) in the supply condition.

12. A screening arrangement according to claim 1, wherein the screening arrangement (1) is adapted to be mounted on a frame constituted by a sash (2) of which the top piece (21), the bottom piece (22) and the two side pieces (23, 24) surround said aperture, and the bracket members are positioned at the upper ends of each side piece (23, 24) of the sash.

Patentansprüche

1. Abschirmanordnung (1) mit einem Lieferzustand und einem Benutzungszustand, umfassend:

einen Abschirmkörper (6), der zum Abschirmen einer Öffnung eines Rahmens angepasst ist,
ein erstes Betätigungselement (71),
ein zweites Betätigungselement (72),
mindestens ein Schnursystem, das eine Vielzahl von Schnüren umfasst,
zwei Seitenschienen (8, 9), die angepasst sind, um mit Seitenteilen des Rahmens verbunden zu werden,
wobei der Abschirmkörper (6) eine erste Endkante und eine zweite Endkante umfasst, wobei die erste Endkante an dem ersten Betätigungselement (71) und die zweite Endkante an dem zweiten Betätigungselement (72) befestigt sind,
wobei die ersten und zweiten Betätigungselemente (71, 72) sich im Wesentlichen parallel zueinander in einer ersten Längsrichtung erstrecken, die in dem Benutzungszustand eine Breitenrichtung festlegt, wobei die erste Längsrichtung im Wesentlichen senkrecht zu einer zweiten Längsrichtung ist, die eine Höhenrichtung festlegt, und die ersten und zweiten Betätigungselemente (71, 72) unabhängig voneinander in der zweiten Längsrichtung verschiebbar sind,
wobei jede Seitenschiene sich im Benutzungszustand im Wesentlichen senkrecht zu den ers-

ten und zweiten Betätigungselementen in der zweiten Längsrichtung erstreckt,
wobei die Abschirmanordnung (1) des Weiteren ein oberes Element (4) umfasst, das angepasst ist, um an einem oberen Teil des Rahmens positioniert zu werden, und eine obere Schiene (440) umfasst, die sich in der ersten Längsrichtung erstreckt,
wobei ein Eckbeschlag (3) mit dem oberen Element (4) verbunden ist, wobei der Eckbeschlag (3) Mittel zum Aufnehmen von Schnüren von mindestens einem Schnursystem umfasst, und wobei der Eckbeschlag (3) Kopplungsmittel umfasst, die zum Zusammenwirken mit Halterelementen angepasst sind, die auf dem Rahmen befestigt sind,
dadurch gekennzeichnet, dass
das obere Element (4) angepasst ist, um mit dem Rahmen durch Führen von Kopplungselementen auf der äußeren Seite von jedem Eckbeschlag (3) über Halterelemente verbunden zu werden, die an den oberen Enden von jedem Seitenteil (23, 24) des Rahmens positioniert sind.

2. Abschirmanordnung (1) nach Anspruch 1, wobei die Abschirmanordnung ferner einen Satz von winkligen Haltern (85) umfasst, wobei jeder winklige Halter einen ersten Schenkel (850) aufweist, der in ersten Aufnahmemitteln in der Rückseite der oberen Schiene (440) aufgenommen ist, und jeder winklige Halter einen zweiten Schenkel (860) aufweist, der in dem Benutzungszustand in Aufnahmemitteln in der Rückseite von einer entsprechenden Seitenschiene (8, 9) aufgenommen ist.

3. Abschirmanordnung (1) nach Anspruch 2, wobei die Abschirmanordnung erste Aufnahmemittel in der Rückseite der oberen Schiene (440) zur Aufnahme von dem ersten Schenkel (850) des winkligen Halters (85) umfasst, die durch eine erste Führung (447) im Wesentlichen parallel zu der oberen Schiene (440) ausgebildet sind.

4. Abschirmanordnung (1) nach Anspruch 3, wobei die Abschirmanordnung zweite Aufnahmemittel in der Rückseite der oberen Schiene (440) zur Aufnahme eines Teils von dem Eckbeschlag (3) umfasst, die durch eine zweite Führung (448) im Wesentlichen parallel zu der oberen Schiene (440) ausgebildet sind.

5. Abschirmanordnung (1) nach einem der vorherigen Ansprüche, wobei der Eckbeschlag (3) eine Basis (330) umfasst, die eine erste Seite (340) und eine gegenüberliegende zweite Seite (341) aufweist.

6. Abschirmanordnung (1) nach Anspruch 5, wobei die Basis (330) ein keilförmiges Element (331) aufweist, das sich von der ersten Seite (340) erstreckt und zwei Wände (332, 333) umfasst, die eine Führung für Schnüre des wenigstens einen Schnursystems bilden.

7. Abschirmanordnung (1) nach Anspruch 5, wobei eine zweite Seite (341) des Eckbeschlags (3) äußere Seitenwände (342, 343, 345) aufweist, die sich von der Oberfläche der zweiten Seite zum Zusammenwirken mit winkligen Haltern, die auf den Seitenteilen (23, 24) positioniert sind, erstrecken.

8. Abschirmanordnung (1) nach Anspruch 7, wobei zwei weitere Wände (346, 347) in der Fläche, die durch die äußeren Seitenwände (342, 343, 345) gebildet wird, positioniert sind und auch angepasst sind zum Zusammenwirken mit winkligen Haltern, die auf einem Rahmen positioniert sind, vorzugsweise in der Form eines Fensterflügels (2).

9. Abschirmanordnung (1) nach einem der vorherigen Ansprüche, wobei die Betätigungselemente (71, 72) seitliche Führungsmittel umfassen, die zum Zusammenwirken mit den Seitenschienen (8, 9) angepasst sind.

10. Abschirmanordnung (1) nach einem der vorherigen Ansprüche, wobei die Abschirmanordnung einen Lieferzustand und einen Benutzungszustand hat, wobei in dem Lieferzustand mindestens ein Beschlag (10) lösbar mit dem oberen Element (4) und den Betätigungselementen (71, 72) verbunden ist.

11. Abschirmanordnung (1) nach Anspruch 10, wobei der zweite Schenkel (860) eines winkligen Halters (85) mit den seitlichen Führungsmitteln der Betätigungselemente (71, 72) in dem Lieferzustand zusammenwirkt.

12. Abschirmanordnung (1) nach Anspruch 1, wobei die Abschirmanordnung (1) angepasst ist, um auf einem Rahmen montiert zu werden, der durch einen Fensterflügel (2) gebildet wird, bei dem das obere Teil (21), das untere Teil (22) und die zwei Seitenteile (23, 24) die Öffnung umschließen, und wobei die winkligen Halteelemente an den oberen Enden von jedem Seitenteil (23, 24) des Fensterflügels positioniert sind.

Revendications

1. Système d'occultation (1) présentant un état de repos et un état d'utilisation, comportant :

un corps d'occultation (6) conçu pour occulter une ouverture d'un encadrement,

un premier élément de fonctionnement (71),
un deuxième élément de fonctionnement (72),
au moins un système à cordons incluant une pluralité de cordons,
deux rails latéraux (8, 9) conçus pour être raccordés à des pièces latérales dudit encadrement,
ledit corps d'occultation (6) comprenant un premier bord d'extrémité et un deuxième bord d'extrémité, ledit premier bord d'extrémité étant attaché au premier élément de fonctionnement (71) et le deuxième bord d'extrémité étant attaché au deuxième élément de fonctionnement (72),
lesdits premier et deuxième éléments de fonctionnement (71, 72) s'étendant sensiblement parallèlement l'un à l'autre dans une première direction longitudinale définissant, à l'état d'utilisation, une direction de largeur, ladite première direction longitudinale étant sensiblement perpendiculaire à une deuxième direction longitudinale définissant une direction de hauteur, et lesdits premier et deuxième éléments de fonctionnement (71, 72) étant mobiles indépendamment l'un de l'autre dans ladite deuxième direction longitudinale,
chaque rail latéral s'étendant, dans l'état d'utilisation, de façon sensiblement perpendiculaire aux premier et deuxième éléments de fonctionnement, dans la deuxième direction longitudinale,
ledit système d'occultation (1) comportant, de plus, un élément supérieur (4) conçu pour être positionné au niveau d'une pièce supérieure dudit encadrement (2), comprenant un rail supérieur (440) s'étendant dans ladite première direction longitudinale,
une pièce d'angle (3) étant raccordée à l'élément supérieur (4), ladite pièce d'angle (3) comportant des moyens destinés au logement des cordons dudit au moins un système à cordons, et
ladite pièce d'angle (3) comportant des moyens de couplage conçus pour coopérer avec des éléments de support montés sur ledit encadrement,
caractérisé en ce que
l'élément supérieur (4) est conçu pour être raccordé à l'encadrement par des éléments de couplage et de guidage situés sur le côté extérieur de chaque pièce d'angle (3) sur des éléments de support positionnés au niveau des extrémités supérieures de chaque pièce latérale (23, 24) dudit encadrement.

2. Système d'occultation (1) selon la revendication 1 comprenant, de plus, un ensemble de supports angulaires (85), chaque support angulaire présentant une première branche (850) qui est logée dans des premiers moyens de réception dans le côté arrière du rail supérieur (440), et chaque support angulaire comportant une deuxième branche (860) logée, à l'état d'utilisation, dans des moyens de réception situés dans le côté arrière d'un rail latéral respectif (8, 9).

3. Système d'occultation (1) selon la revendication 2, comprenant des premiers moyens de réception situés dans le côté arrière du rail supérieur (440) destinés au logement de la première branche (850) du support angulaire (85) constitués par une première piste (447) sensiblement parallèle au rail supérieur (440).

4. Système d'occultation (1) selon la revendication 3, comprenant des deuxièmes moyens de réception situés dans le côté arrière du rail supérieur (440) destinés au logement d'une partie de ladite pièce d'angle (3) constitués d'une deuxième piste (448) sensiblement parallèle au rail supérieur (440).

5. Système d'occultation (1) selon l'une quelconque des revendications précédentes, dans lequel ladite pièce d'angle (3) comprend une base (330) présentant un premier côté (340) et un deuxième côté opposé (341).

6. Système d'occultation (1) selon la revendication 5, dans lequel ladite base (330) comporte un élément configuré en forme d'équerre (331) s'étendant à partir dudit premier côté (340) et comportant deux parois (332, 333) constituant un dispositif de guidage pour des cordons dudit au moins un système à cordons.

7. Système d'occultation (1) selon la revendication 5, dans lequel un deuxième côté (341) de la pièce d'angle (3) présente des parois latérales extérieures (342, 343, 345) s'étendant à partir de la surface du deuxième côté en vue de coopérer avec des éléments de support positionnés sur lesdites pièces latérales (23, 24).

8. Système d'occultation (1) selon la revendication 7, dans lequel deux parois supplémentaires (346, 347) sont positionnées à l'intérieur de la zone constituée par lesdites parois latérales extérieures (342, 343, 345), conçues également pour coopérer avec des éléments de support positionnés sur un encadrement, de préférence, sous la forme d'un châssis de fenêtre (2).

9. Système d'occultation (1) selon l'une quelconque des revendications précédentes, dans lequel lesdits éléments de fonctionnement (71, 72) comportent des moyens de guidage latéraux conçus pour coopérer avec les rails latéraux (8, 9).

10. Système d'occultation (1) selon l'une quelconque des revendications précédentes, présentant un état de de repos et un état d'utilisation, dans ledit état de repos, au moins une pièce d'ajustement (10) étant raccordée de manière amovible à l'élément supérieur (4) et aux éléments de fonctionnement (71, 72).

11. Système d'occultation (1) selon la revendication 10, dans lequel ladite deuxième branche (860) du support angulaire (85) coopère avec les moyens de guidage latéraux des éléments de fonctionnement (71, 72) à l'état de repos.

12. Système d'occultation (1) selon la revendication 1, dans lequel le système d'occultation (1) est conçu pour être monté sur un encadrement constitué par un châssis (2) dont la pièce supérieure (21), la pièce inférieure (22) et les deux pièces latérales (23, 24) entourent ladite ouverture, et dans lequel les éléments de support sont positionnés au niveau des extrémités supérieures de chaque pièce latérale (23, 24) du châssis.

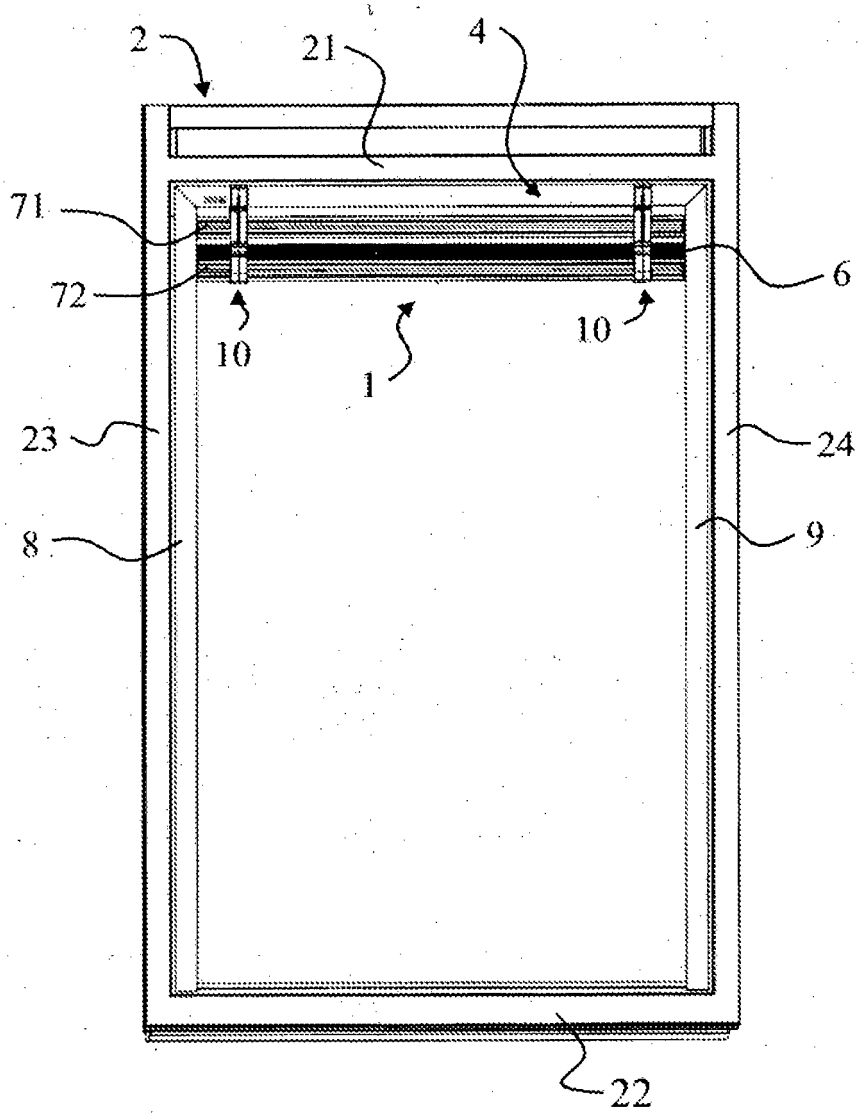


Fig. 1

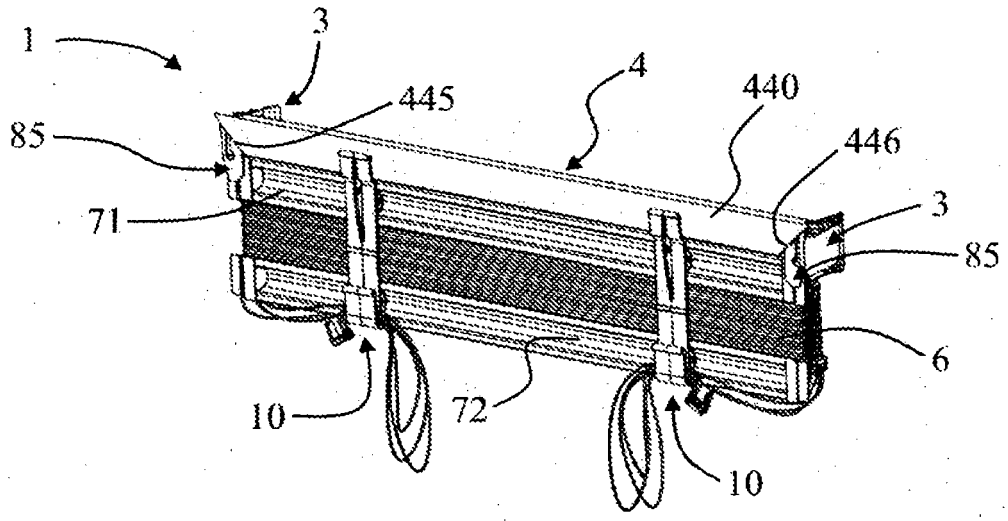


Fig. 2

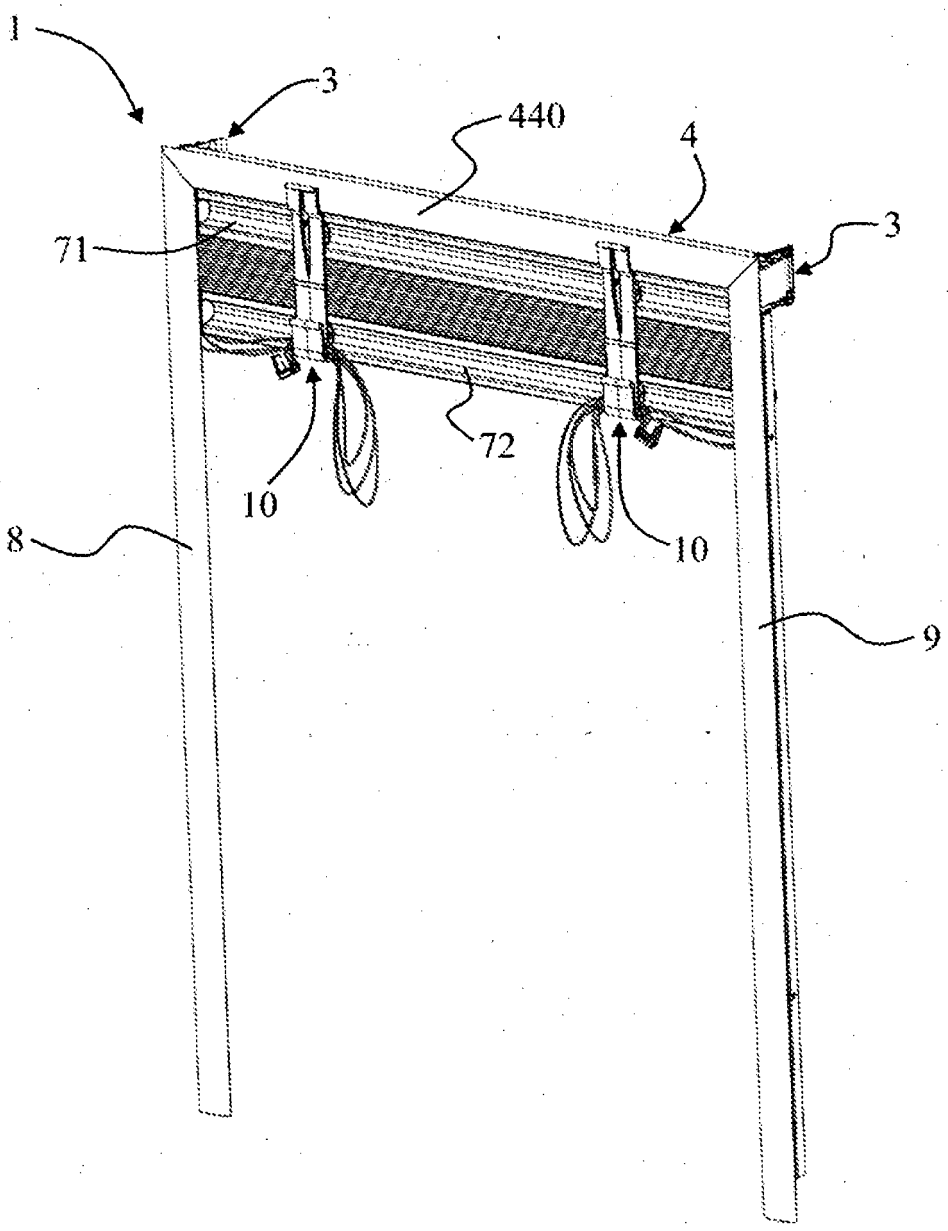


Fig. 3

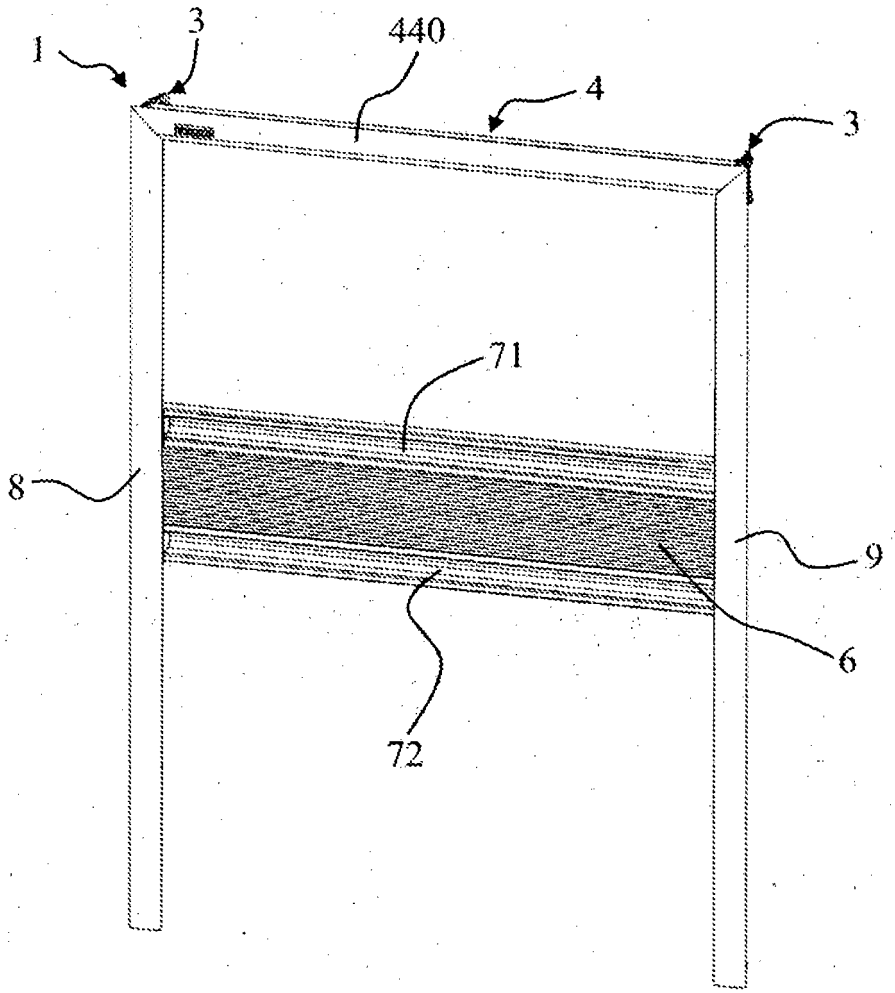


Fig. 4

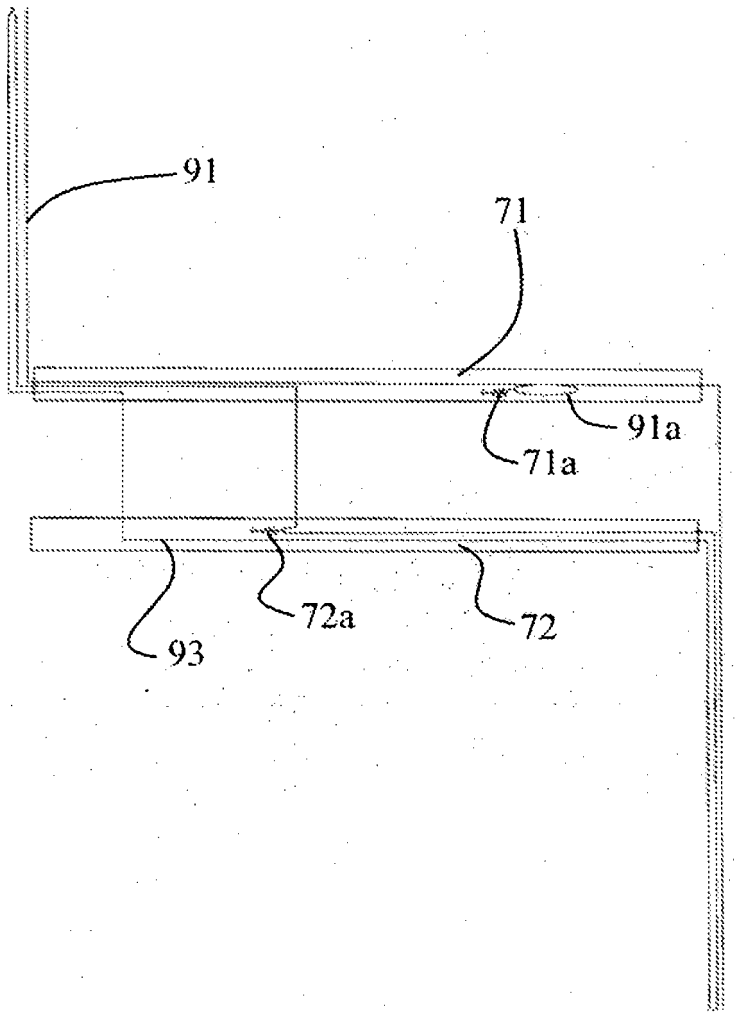
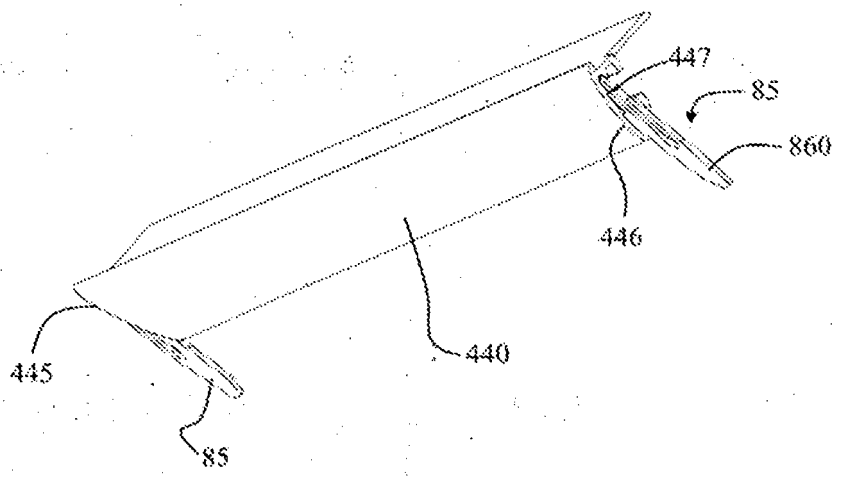


Fig. 5


447
85
860
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440
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85

Fig. 6

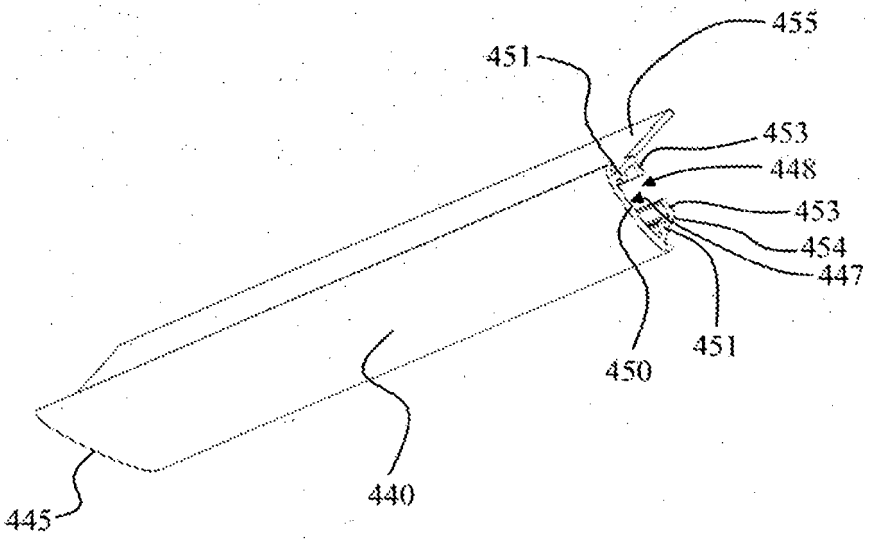
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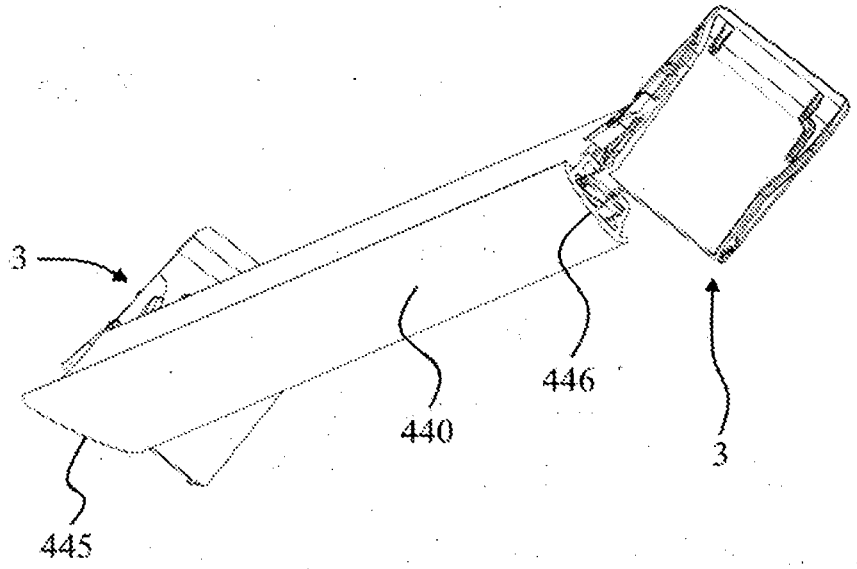
Fig. 7



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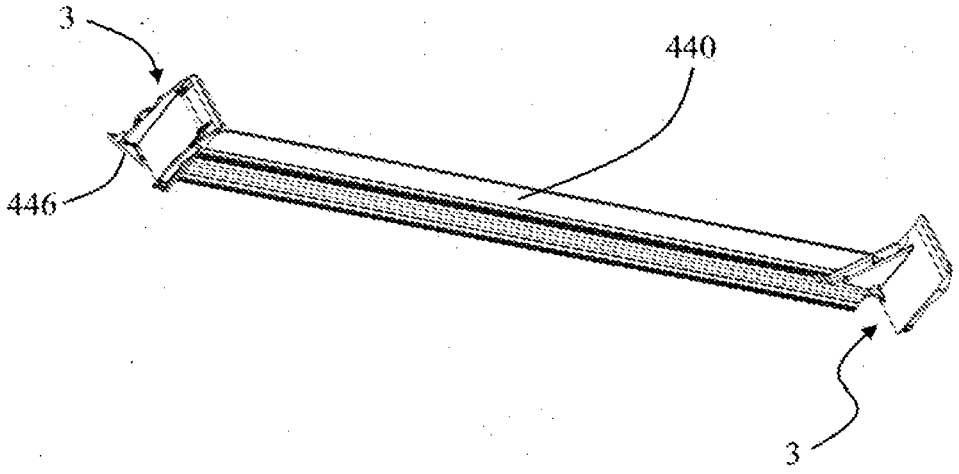

Fig. 9

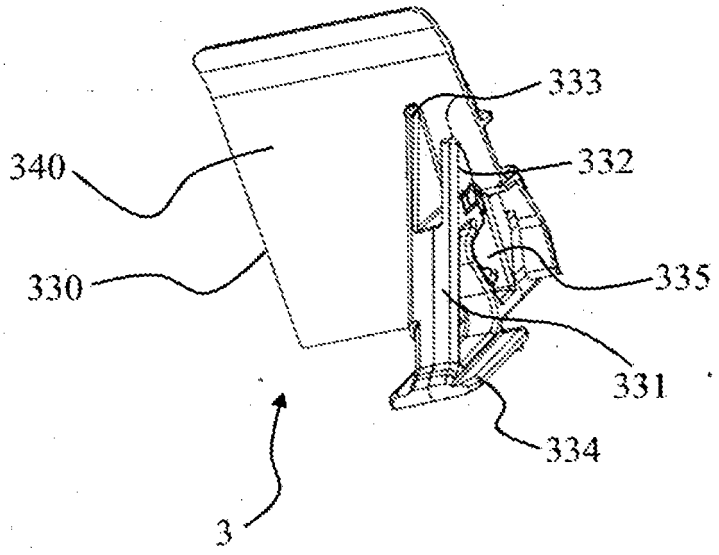

Fig. 10

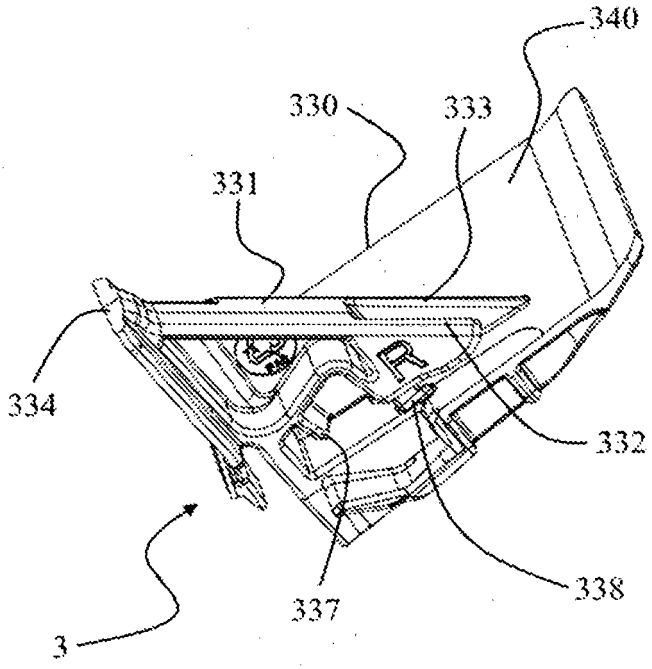

Fig. 11

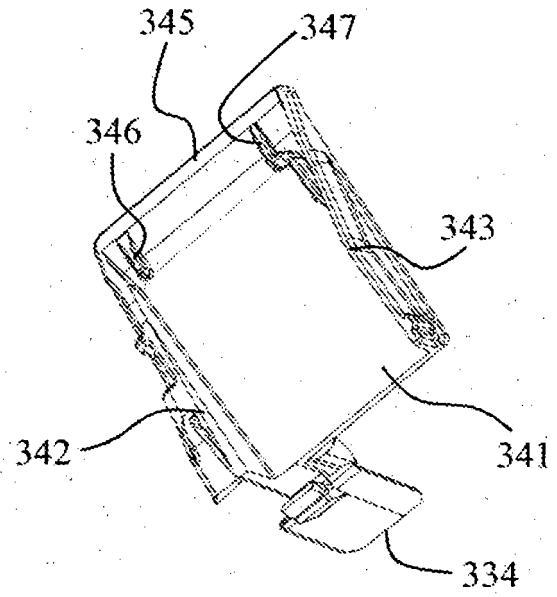

Fig. 12

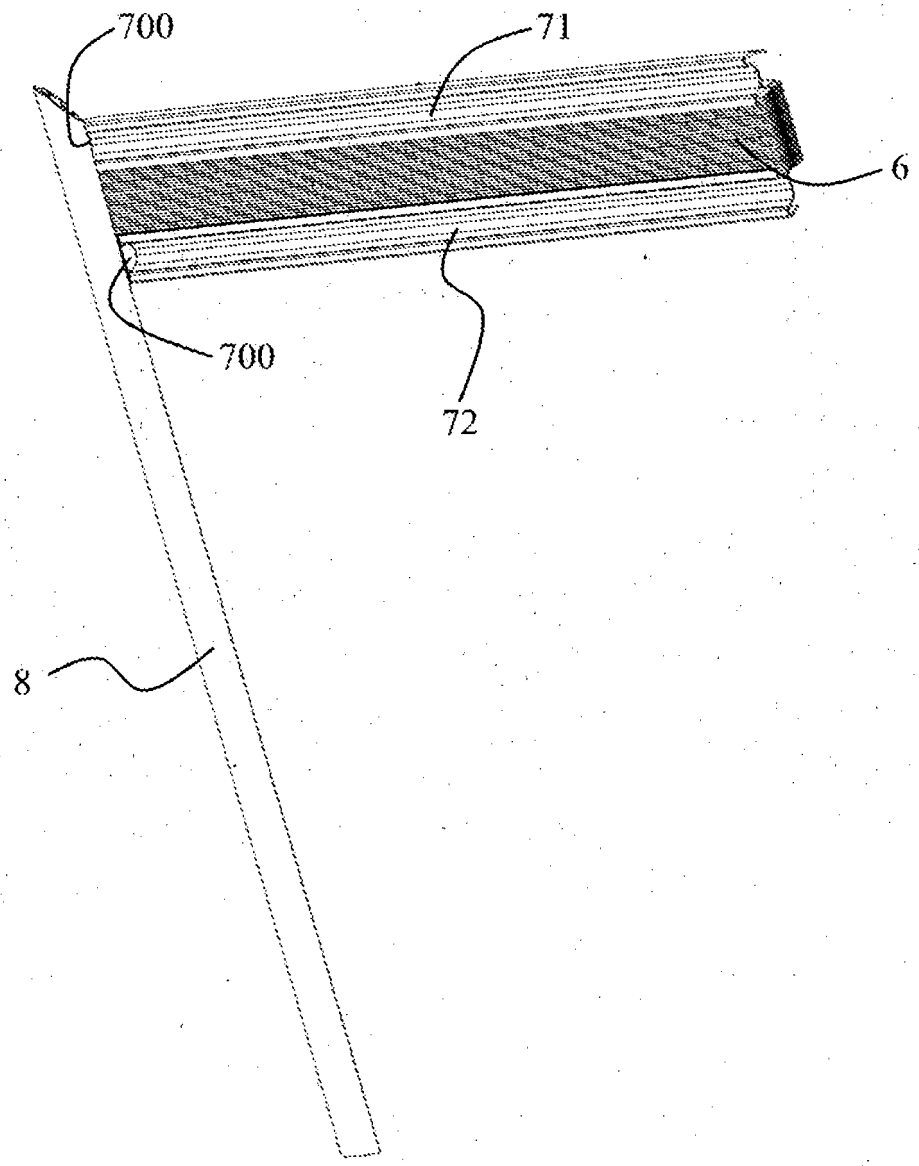

Fig. 13

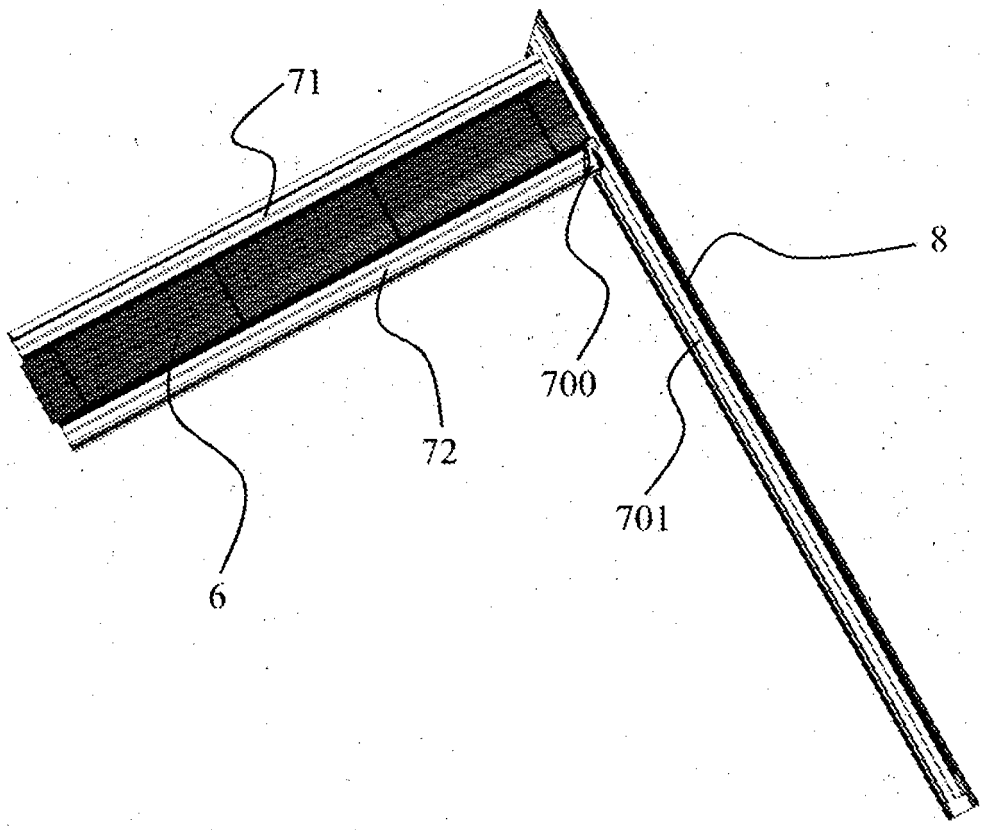

Fig. 14

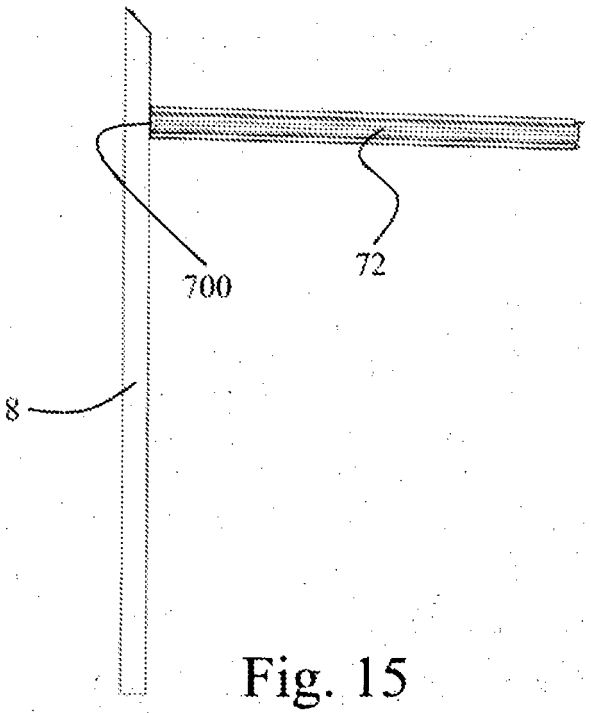

Fig. 15

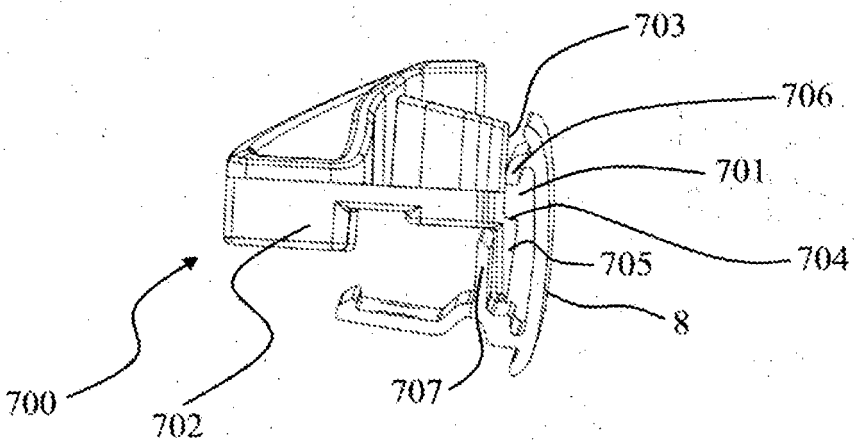

Fig. 16

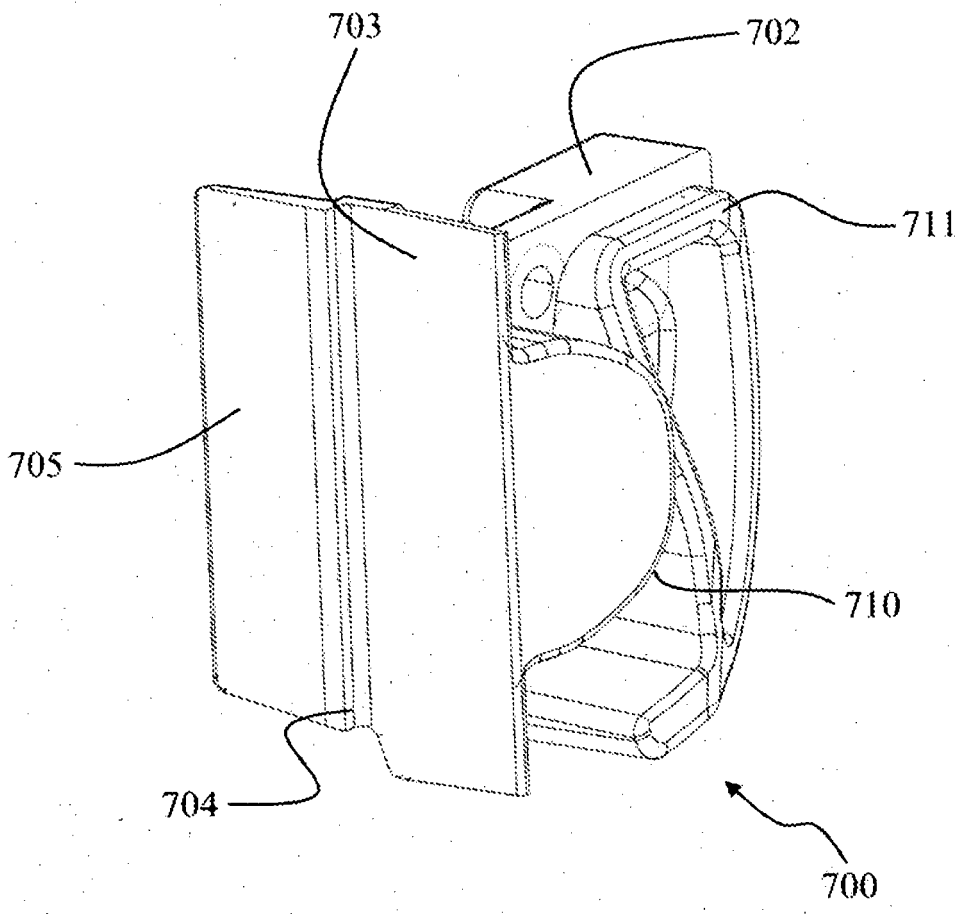

Fig. 17

REFERENCES CITED IN THE DESCRIPTION

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