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(54) ROLL-UP MOSQUITO NET WITH A REMOVABLE HEAD

(57) Roll-up mosquito net comprising a head and a rotary drum for unrolling and rolling up an anti-mosquito fabric screen arranged on said drum, said head comprising a rear face and a front face located on opposite sides with respect to the plane of extension of the screen, said drum being arranged inside the head,
wherein the head comprises two profile sections connected to one another, a first of said profile sections being a rear profile section which comprises said rear face of the head and a second of said profile sections being a front profile section which comprises said front face of the head,
the two profile sections being connected to one another by reversible connection means, said reversible connection means allowing the profile sections to be separated in a direction perpendicular to the plane of extension of the screen.

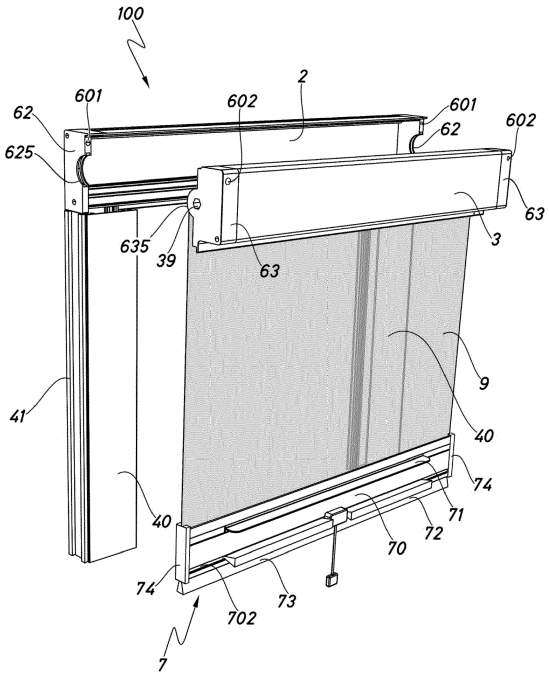

Fig.2

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Description

[0001] The present invention discloses a roll-up mosquito net with a removable head, as well as a removable head for a mosquito net.

[0002] Roll-up mosquito nets are mosquito nets that are placed on the doors or windows of buildings, rooms or chambers and that include an anti-mosquito fabric screen to prevent the passage of mosquitoes and other types of insects through said screen, such that the insects cannot access the structure, room or chamber behind the screen.

[0003] Roll-up mosquito nets comprise a rotary drum. This rotary drum makes it possible to unroll and roll up the anti-mosquito fabric screen, unrolling resulting in extension of the screen, allowing the effective length of the screen to be adjusted. The drum is housed in the head of the mosquito net.

[0004] One problem with these roll-up mosquito nets is that putting in place, fitting and maintenance of said drum are complicated, it being common to have to remove the entire mosquito net or, failing that, its head to carry out maintenance operations. This is inefficient and tiresome, especially in environments with little available space.

[0005] It is an aim of the present invention to provide a roll-up mosquito net that allows the drum to be put in place and removed quickly, efficiently and easily.

[0006] To this end, the present invention discloses a roll-up mosquito net comprising a head and a rotary drum for unrolling and rolling up an anti-mosquito fabric screen arranged on said drum. Said head comprises a rear face and a front face located on opposite sides with respect to the plane of extension of the screen. Said drum is arranged inside the head. In other words, said rear face and front face are parallel to the screen when the screen is extended out of the head. The head comprises two profile sections connected to one another, a first of said profile sections comprising said rear face and a second of said profile sections comprising said front face. The two profile sections are connected to one another by reversible connection means, said reversible connection means allowing the profile sections to be separated in a direction perpendicular to the plane of extension of the screen.

[0007] The rear profile section may be installed in an area for the installation of the mosquito net arranged on a wall or area of the window or room.

[0008] The present invention allows one of the profile sections to be removed from the head with a movement that is perpendicular to the screen. This allows access to the interior of the drum and separation of the drum without having to dismantle the entire mosquito net, only dismantling one of the profile sections. Preferably, separation of the profile sections comprises separation of the front profile section.

[0009] Since the head comprises two profile sections, and by virtue of the reversible connection means that connect them, it is possible to dismantle the head of the mosquito net and remove just one of the profile sections that form the head. This makes the performance of maintenance work on the head, on the drum or on the mosquito net easier and convenient. For example, the present invention facilitates removal of the drum housed inside the head, thus making it possible to change the anti-mosquito fabric screen, or adjust the tension of the screen, simply by taking off the reversible connection means and removing one of the profile sections that form the head, all without taking down the entire head from its position and without the need to completely dismantle the mosquito net. This makes it possible to perform said maintenance work without taking down the mosquito net from the position where it is located.

[0010] Preferably, the means for reversible connection of the profile sections of the head comprise screws that connect the two profile sections. More preferably, said screws are positioned perpendicular to said plane of extension of the screen.

[0011] Preferably, the reversible connection means comprise at least one side cover that is in contact with both profile sections simultaneously. Preferably, the drum is arranged inside the head such that the cover prevents the drum from being removed from the head via the side. Preferably, the head comprises two head covers, each arranged on one side of said head. This configuration allows the head to have a single cover on each of its sides, with a single cover for the two profile sections, said profile sections being connected to one another by means of a single cover.

[0012] Preferably, the reversible connection means comprise at least one side cover made up of two parts, each of said at least two parts being connected to each of said two profile sections, said parts being reversibly connected to one another. Preferably, the parts are connected to one another by screwing. More preferably, the mosquito net defines two side covers made up of two parts, each arranged on each side of each of the two profile sections. This configuration allows each of the two profile sections to have its own portion of the side cover, the profile sections being reversibly connected by means of the reversible connection of the covers of each of the profile sections.

[0013] Preferably, the drum is arranged in a hole in the front profile section of the head. More preferably, the drum is arranged in a hole in the cover of the front profile section of the head.

[0014] Preferably, the reversible connection means for the profile sections of the head comprise recesses and protrusions on the profile sections for connection by clipping and/or by dimensional interference between said profile sections.

[0015] Preferably, the profile sections comprise a recess and a protrusion, said recess and protrusion engaging by dimensional interference with a matching recess and protrusion on the other profile section. This allows the protrusion on one of the profile sections to slide over

the protrusion on the other profile section.

[0016] Preferably, one of the profile sections includes a stop, said stop limiting the movement of a protrusion on the other of the profile sections.

[0017] Preferably, the mosquito net includes lateral guides for guiding the extension and unfolding of the screen. More preferably, said lateral guides are arranged in lateral profile sections of the mosquito net. Preferably, said lateral guides are symmetrical. More preferably, the mosquito net comprises two lateral guides, one on each side. Even more preferably, the lateral profile sections include a space for receiving a side of the anti-mosquito fabric screen. These guides may also allow the anti-mosquito screen to be sealed, facilitating its positioning and reducing the likelihood of said screen being in the incorrect position following extension. These guides also make it possible to keep the fabric of the screen covered and prevent it from coming out of said guides owing to the effect of the wind. Moreover, these guides may include other internal components of the mosquito net inside them. Preferably, said lateral profile sections are removably attached to the wall. Preferably, said lateral profile sections include housings for a damper or a pad. Said damper or pad makes it possible to fill any gaps formed between the wall and the profile section owing to uneven walls, adapting its shape to the shape of various walls. Preferably, said lateral profile sections may include a bore for screwing the latter to the wall or window.

[0018] Preferably, the lateral profile sections include means for securing to a door, wall or window. More preferably, the rear profile section of the head includes elements for securing to a door, wall or window. This makes it easier for the profile section that is removed to be the front profile section. If the drum is arranged in the front profile section of the head, this allows the removal of the drum by separating the front profile section from the rear profile section, separating the two profile sections via their reversible connection, without the need to remove the rear profile section.

[0019] Preferably, the mosquito net includes an end element located at the free end of the screen. The end element makes it possible to unroll and extend the anti-mosquito fabric screen by pulling. Preferably, said end element is removable. This allows the end element to be removed from the mosquito net when the head with the screen is removed. This end element also makes it possible to conceal the most distal portion of the screen.

[0020] Preferably, the mosquito net includes a pulling element for unrolling and rolling up the screen. Preferably, said pulling element is arranged on the end element. More preferably, said pulling element is a pull bar. In a preferred embodiment, said pull bar is a profile section arranged on the end element and serving as a pulling means for the mosquito net for unrolling or rolling up the latter. The end element may include an external slot for housing said pulling means. More preferably, the mosquito net comprises more than one pulling means.

[0021] Preferably, the anti-mosquito fabric screen includes a support on its distal end. More preferably, said support is a rubber support. More preferably, said support comprises a hook. Preferably, the end element comprises a housing, said support being arranged in said housing limiting the movement of the screen in the direction parallel to the plane of extension of the screen. More preferably, the mosquito net comprises a cover arranged on the end element to block the movement of the support of the screen in a direction perpendicular to the plane of extension of the screen. Preferably, said support is a pad or an elastic support, for example a rubber support.

[0022] The present invention also discloses a head for a mosquito net as described above, and comprising a rear face and a front face parallel to the plane of extension of a roll-up anti-mosquito screen arranged on a rotary drum arranged inside said head, said head comprising two profile sections, a first of said profile sections comprising said rear face and a second of said profile sections comprising said front face, said profile sections being connected to one another by reversible connection means.

[0023] For a clearer understanding of the present invention, drawings illustrating exemplary embodiments of the subject matter of the invention are attached by way of explanatory but non-limiting example.

Figure 1 shows a perspective view of a first embodiment of a mosquito net according to the present invention.

Figure 2 shows a perspective view of the first embodiment with the profile sections separated.

Figure 3 shows a perspective view of a head of a mosquito net according to the present invention.

Figure 4 shows a view in cross section of the head of Figure 3 in its assembled and dismantled positions.

Figure 5 shows a schematic perspective view of the reversible connection means of the head according to the first embodiment of the invention.

Figure 6 shows a perspective view of the end element of the mosquito net according to the first embodiment of the invention.

Figure 7 shows a perspective view of a lateral guide of the mosquito net according to the present invention.

Figure 8 shows a perspective view of a second embodiment of a mosquito net according to the present invention.

[0024] Figures 1 to 7 show a first embodiment of a mosquito net 100 according to the present invention. The

mosquito net of Figure 1 is a roll-up mosquito net 100 comprising a rotary drum 93 for unrolling and rolling up a screen 9 of anti-mosquito fabric arranged on said drum 93.

[0025] The mosquito net 100 comprises a head 1. The drum 93 is arranged inside the head 1. Unrolling and rolling up the screen 9 allows movement of the screen 9. In the case of the example shown, said unrolling and rolling up causes extension in a vertical direction, although other arrangements are also possible.

[0026] The head 1 comprises a rear face, which is hidden in Figure 1, and a front face, which is visible in Figure 1. Said rear and front faces are parallel to the screen when the screen is unrolled out of the head.

[0027] The head 1 comprises two profile sections 2, 3 connected to one another. One of the profile sections 2 comprises the rear face of the head 1, said profile section 2 being a rear profile section 2. One of the profile sections 3 comprises the front face of the head 1, said profile section 3 being a front profile section 3. The rear profile section 2 is located more proximal to the wall or window where the mosquito net 100 is located, while the front profile section 3 is located more distal to said wall or window. The two profile sections 2, 3 are connected to one another by reversible connection means.

[0028] The reversible connection means also comprise elements that generate dimensional interference between said two profile sections 2, 3.

[0029] The reversible connection means for the profile sections 2, 3 of the head 1 comprise a side cover made up of two parts 62, 63. In Figure 1, the profile sections 2, 3 are shown connected by the reversible connection means, whereas in Figure 2 they are shown dismantled after separating the reversible connections.

[0030] Figure 3 shows, in perspective, the two profile sections 2, 3 separated while Figure 4 shows, in two views in cross section, the separation of said profile sections 2, 3 from a first position in which the profile sections 2, 3 are in contact by dimensional interference (drawing on the left) to a position in which the profile sections 2, 3 are shown separated (drawing on the right).

[0031] The profile section 2 comprises a protrusion 52 or protruding surface. The profile section 3 also comprises a protrusion 53 or protruding surface. Said protrusions 52, 53 engage by dimensional interference with a matching protrusion 52, 53 on the other profile section, one of said protrusions 52, 53 acting as a recess. The contact between the protrusions and recesses creates dimensional interference that prevents movement in the direction of removal of the screen 9, especially of the profile section 3, the protrusion 53 of which is arranged at the bottom, being recessed with respect to the protrusion 52.

[0032] One of the profile sections 2 comprises a protrusion that is a stop 51 for limiting the movement of the protrusion 53 of the other profile section 3. This stop 51 is shown arranged in the inner part of the profile section which has its protrusion at the top in the dimensional interference, although other configurations are possible. The protrusion 53 comprises a zone 54 with a change of direction to facilitate interference with a matching zone 524 on the protrusion 52 of the other profile section.

[0033] The profile sections 2, 3 may also comprise bores 26, 36a, 36b for screwing on a cover 60 or a part of a cover 62, 63.

[0034] The mosquito net 100 also includes two lateral profile sections 40. Said lateral profile sections 40 comprise lateral guides that guide the screen 9 during its extension. These lateral profile sections 40 include a slot for housing a side of the anti-mosquito fabric screen 9, facilitating the movement for extending and rolling up the screen 9. These lateral profile sections 40 comprise dampers 41 or a pad arranged in a housing in said profile sections 40.

[0035] The mosquito net 100 further includes an end element 7 at the free end of the screen 9. This element 7 is a removable element 7. The mosquito net comprises a pulling element 71 for unrolling and rolling up the screen 9, said pulling means being arranged on the end element 7. In the example shown in Figure 1, the end element 7 comprises two pulling element 71, 72. The element 73 is a pad with the function of sealing the mosquito net. The pulling element 71 includes a support 700 to facilitate pulling. The end element 7 further comprises an internal housing 792 for a distal support 920 for the screen 9.

[0036] Figure 5 shows the reversible connection of the parts 62, 63. Each of said parts 62, 63 is arranged on each of said profile sections 2, 3. The parts 62, 63 of each of the profile sections 2, 3 are reversibly connected to the part of the other profile section by means of screws 8. The part 62 of the rear profile section 2 includes a bore 601 for the insertion of a screw 8. Likewise, the part 63 of the front profile section 3 includes a bore 602 for the insertion of a screw 8. At least one of said bores 601,602 is a through bore. In Figure 5, the bore 602 in the front profile section 3 is a through bore.

[0037] These parts 62, 63 have a shape matching the other part 62, 63 in such a way that the reversible connection between them prevents the removal of a drum located inside the head. In Figure 4, this matching shape comprises a concave area 625 in the part 62 and a convex area 635 in the part 63. One of the parts 63 also comprises a hole 39 for supporting the drum 93 arranged inside the head. Unscrewing the screws 8 allows one of the profile sections to be separated (in the example shown, the front profile section 3) without dismantling the mosquito net. If the drum is supported in the hole 39 in the front profile section 3, the drum 93 is separated from the mosquito net 100 together with the front profile section 3.

[0038] Figure 6 shows the end element 7. The end element 7 comprises three slots 701, 702, 703 in which are arranged two pulling element 71, 72, for unrolling and rolling up the screen 9, and the pad 73. The pulling element 71 is shown as a pull bar. The pad 73 also acts as a damper. The slot 701 is shown arranged in the upper part of the front face of the end element 7 while the slot

702 is shown arranged in the lower part of the front face of the end element 7, the two being separated by a central portion 70 of said front face of the end element 7. The groove 703 for the pad 73 is located in the lower part of the end element 7. The end element 7 further comprises covers 74 (which have been omitted to facilitate understanding of the drawing, being shown in Figure 2). Removal of the covers 74 allows the insertion or removal of the pulling element 71, 72 and the pad 73 in their respective slots 701, 702, 703.

[0039] The end element 7 further comprises an internal housing 792 for a distal support 920 for the screen 9 such that the support 920 is located between a rear face 75 and a front face 70 of the end element 7. The distal support 920 is a rubber support.

[0040] The distal support 920 for the screen 9 comprises an elastic hook 92 at its end, which is an area of the support 920 with dimensions greater than those of the body of the support. The distal element 7 also comprises stops 709 internally. These stops 709 make it difficult for the distal support 920 for the screen 9 to move in the direction of rolling up of the screen parallel to the plane of extension of the screen. The cover 74 (not shown) prevents the screen from moving sidewards, in a direction perpendicular to the plane of extension of said screen. Thus, the support 920 is fixed in three directions by the presence of the stop 709, the faces 70, 75 of the end element 7, and the cover 74, respectively, allowing the screen 9 to be secured removably to the end element 7. This allows the end element 7 of the mosquito net to be removed for maintenance of said element 7 or of the screen 9.

[0041] Figure 7 shows a lateral profile section 40, in which each profile section 40 comprises two dampers 41. The profile section 40 also includes a stop 42.

[0042] Figure 8 shows a second embodiment. In this second embodiment, the reversible connection means for the profile sections 2, 3 of the head 1 comprise a cover 60 for the head 1. This cover 60 is shown arranged on one side of the profile sections 2, 3 of the head and is a single cover 60 for the two profile sections of the head, covering both profile sections 2, 3 simultaneously, unlike the first embodiment in which the head included a cover comprised of two pieces. Removal of said cover 60 allows the head 1 to be dismantled by separating the two profile sections 2, 3. This cover 60 also prevents the removal of the drum 93 via the side of the head 1. In the example shown, the head 1 comprises two covers 60, one for each of the sides of the head. Elements similar to those described for the first embodiment have been designated using the same numerals.

[0043] Although the invention has been described and illustrated with reference to a representative example, it will be appreciated that this exemplary embodiment is in no way limiting on the present invention and therefore any of the variants included, directly or as equivalents, within the content of the attached claims must be considered to be included within the scope of the present invention.

Claims

1. Roll-up mosquito net comprising a head and a rotary drum for unrolling and rolling up an anti-mosquito fabric screen arranged on said drum, said head comprising a rear face and a front face located on opposite sides with respect to the plane of extension of the screen, said drum being arranged inside the head,
   characterized in that the head comprises two profile sections connected to one another, a first of said profile sections being a rear profile section which comprises said rear face of the head and a second of said profile sections being a front profile section which comprises said front face of the head,
   the two profile sections being connected to one another by reversible connection means, said reversible connection means allowing the profile sections to be separated in a direction perpendicular to the plane of extension of the screen.

2. Mosquito net according to the preceding claim, **characterized in that** the reversible connection means comprise screws that connect the two profile sections.

3. Mosquito net according to the preceding claim, **characterized in that** said screws are positioned perpendicular to said plane of extension of the screen.

4. Mosquito net according to any one of the preceding claims, **characterized in that** the connection means comprise at least one side cover.

5. Mosquito net according to the preceding claim, **characterized in that** said side cover is made up of two parts, each of said at least two parts being connected to each of said two profile sections, said parts being reversibly connected to one another.

6. Mosquito net according to any one of the preceding claims, **characterized in that** the reversible connection means for the profile sections of the head comprise recesses and protrusions on the profile sections for connection by clipping and/or by dimensional interference between said profile sections.

7. Mosquito net according to the preceding claim, **characterized in that** the profile sections comprise a recess and a protrusion, said recess and protrusion engaging by dimensional interference with a matching recess and protrusion on the other profile section.

8. Mosquito net according to either of Claims 6 and 7, **characterized in that** one of the profile sections in-

cludes a stop, said stop limiting the movement of a protrusion on the other of the profile sections.

9. Mosquito net according to any one of the preceding claims, **characterized in that** it includes lateral guides.

10. Mosquito net according to any one of the preceding claims, **characterized in that** it includes an end element located at the free end of the screen.

11. Mosquito net according to Claim 10, **characterized in that** the end element comprises a housing, a support for the screen being arranged in said housing limiting the movement of the screen in the direction parallel to the plane of extension of the screen.

12. Mosquito net according to any one of the preceding claims, **characterized in that** the mosquito net includes a pulling means for unrolling and rolling up the screen.

13. Mosquito net according to any one of the preceding claims, **characterized in that** it includes individual lateral profile sections comprising guides that guide the screen as it extends, each of said profile sections in turn comprising a damper or pad for filling any gaps formed between the wall and the profile section owing to uneven walls, said damper or pad adapting its shape to the shape of various walls.

14. Head for a mosquito net according to any one of the preceding claims, **characterized in that** it comprises a rear face and a front face parallel to the plane of extension of a roll-up anti-mosquito screen arranged on a rotary drum arranged inside said head, said head comprising two profile sections, a first of said profile sections being a rear profile section which comprises said rear face of the head and a second of said profile sections being a front profile section which comprises said front face of the head, said profile sections being connected to one another by reversible connection means.

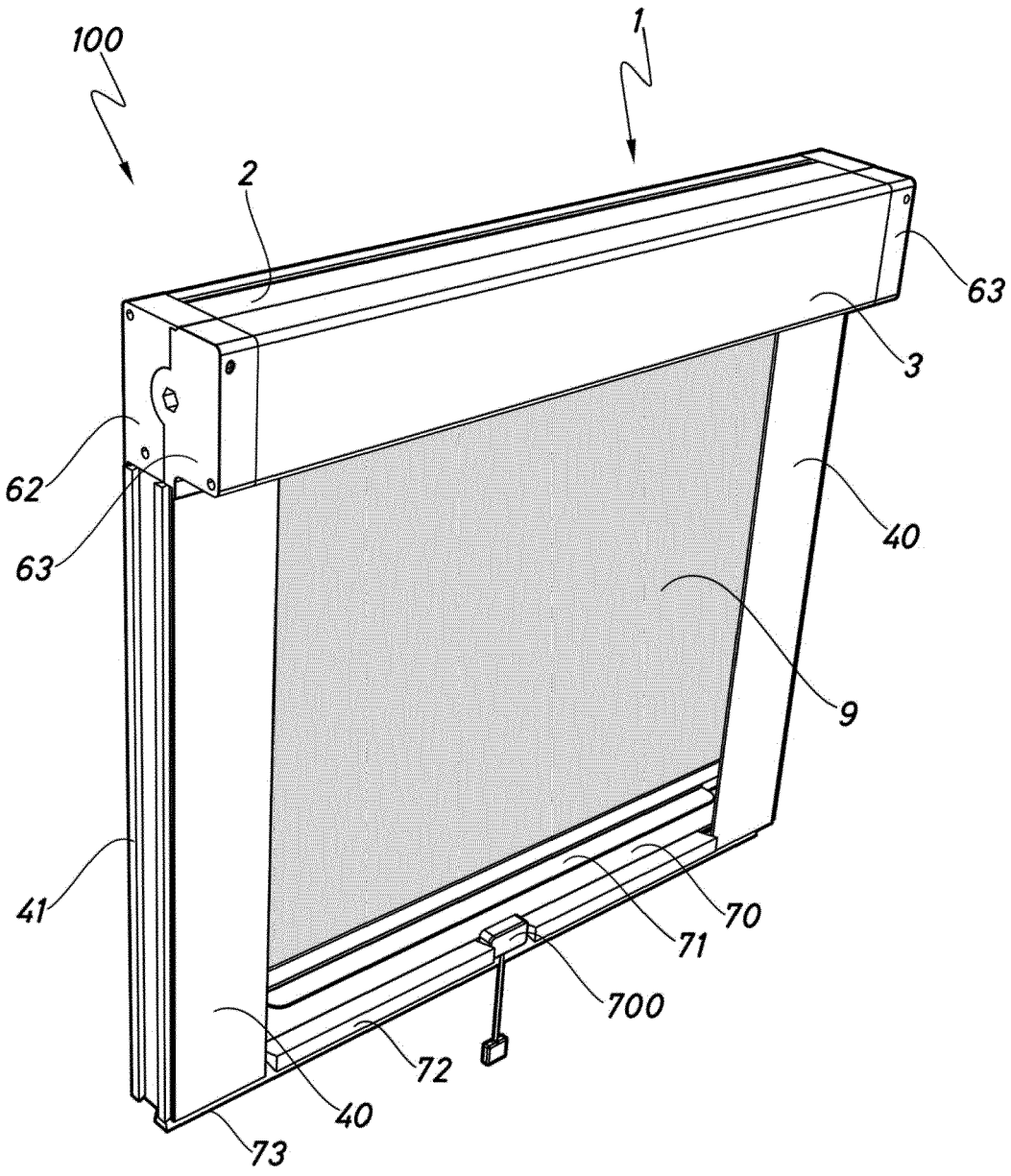

Fig.1

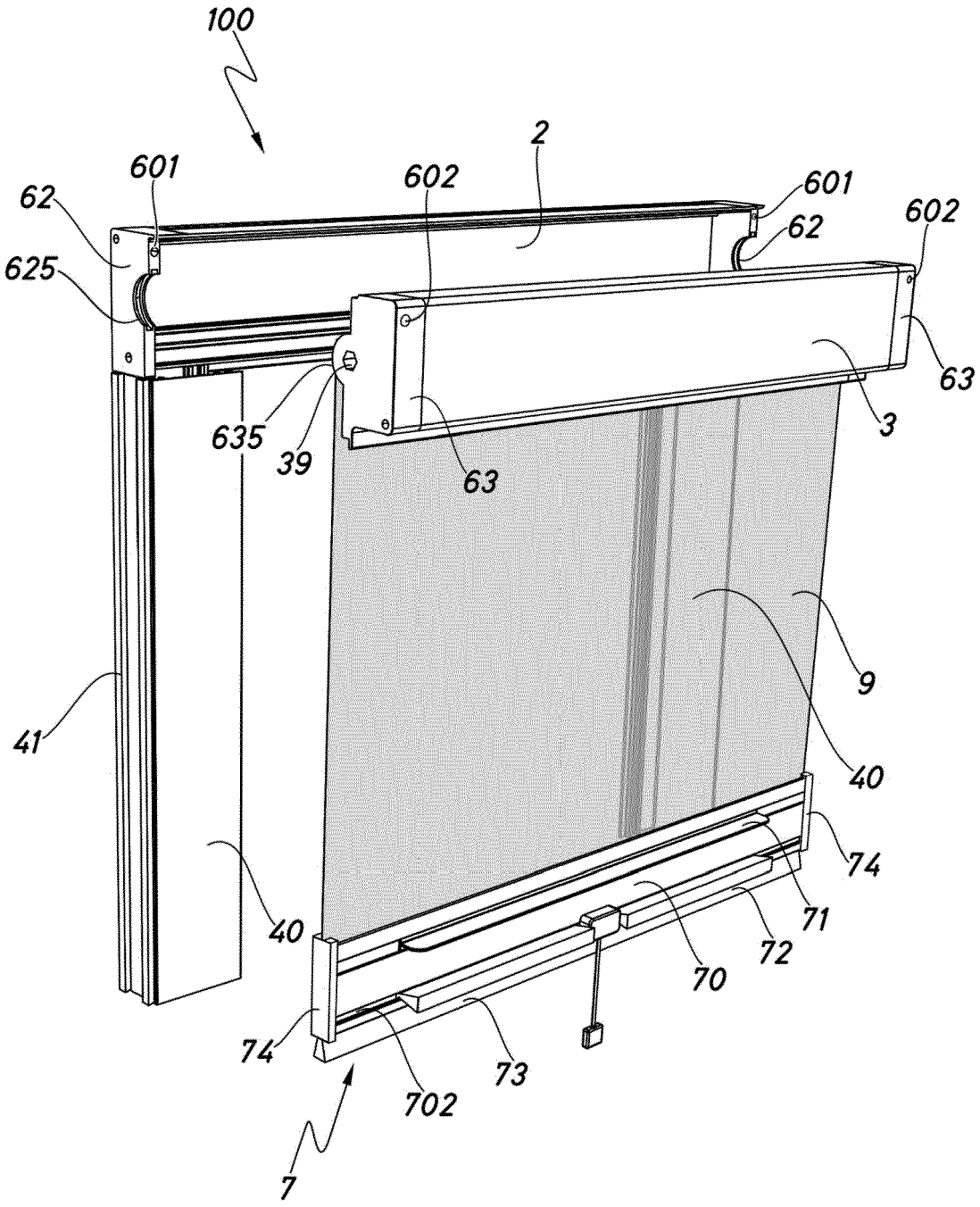
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Fig.2

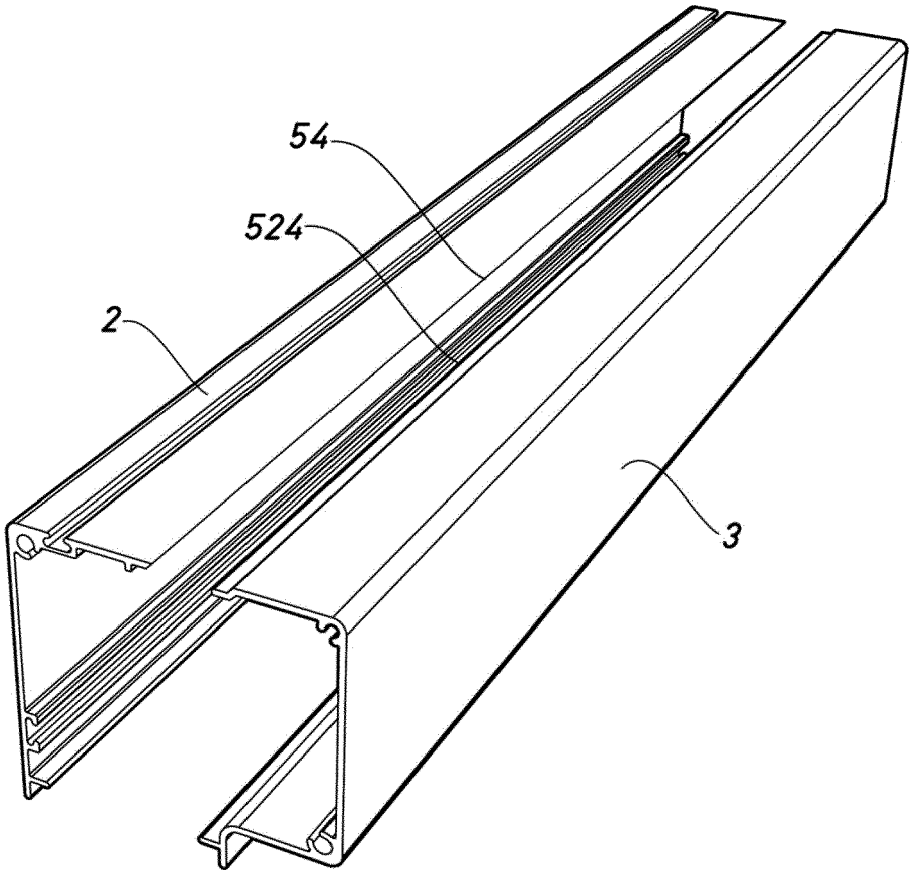

Fig.3

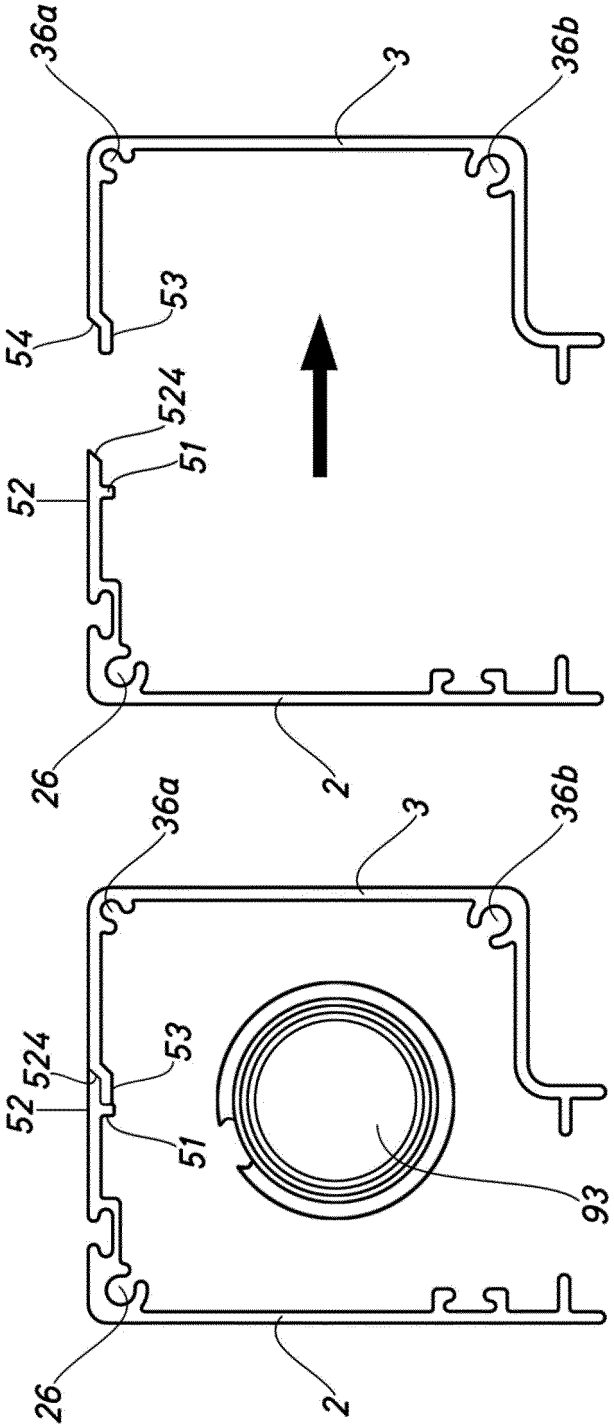

Fig.4

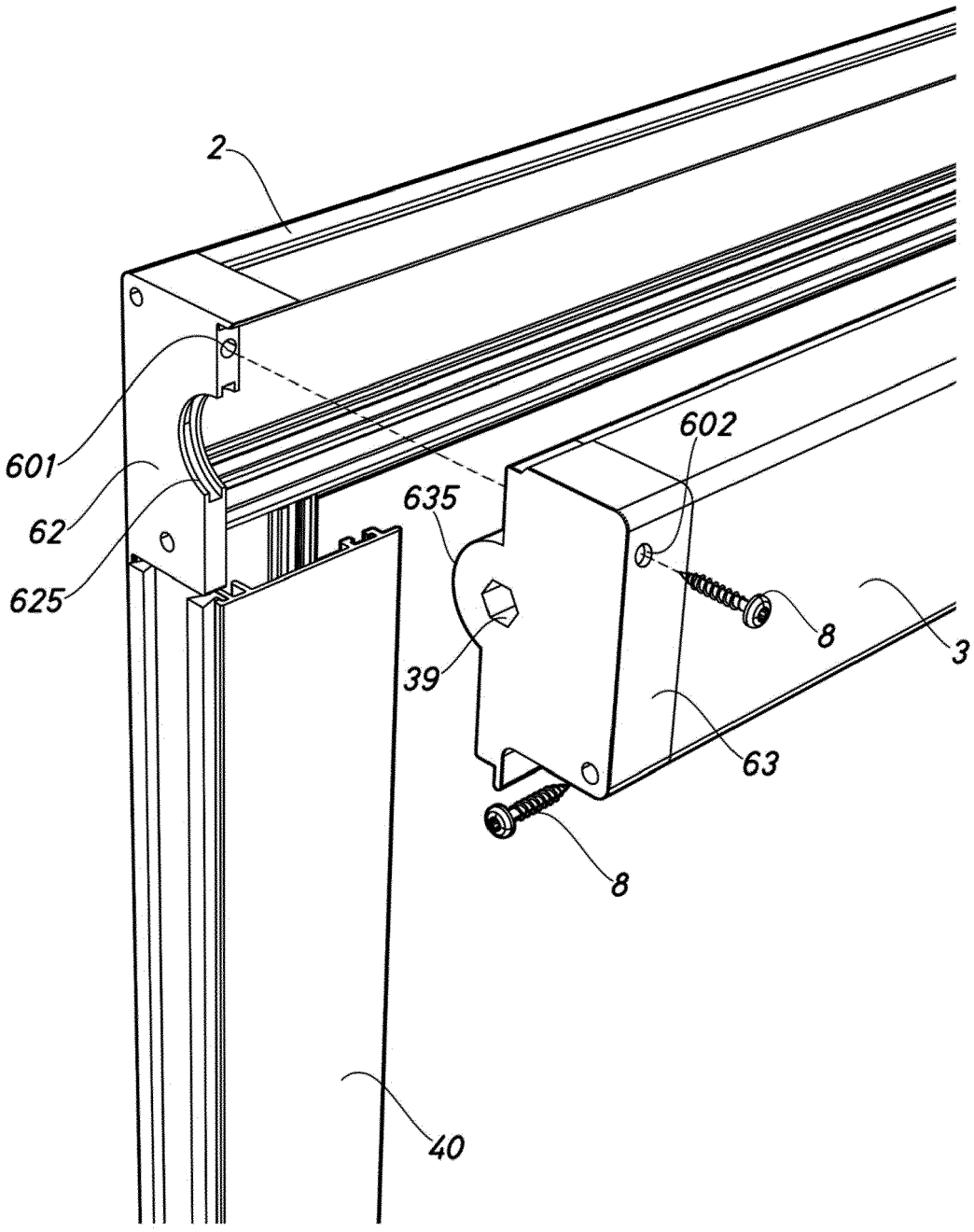

Fig.5

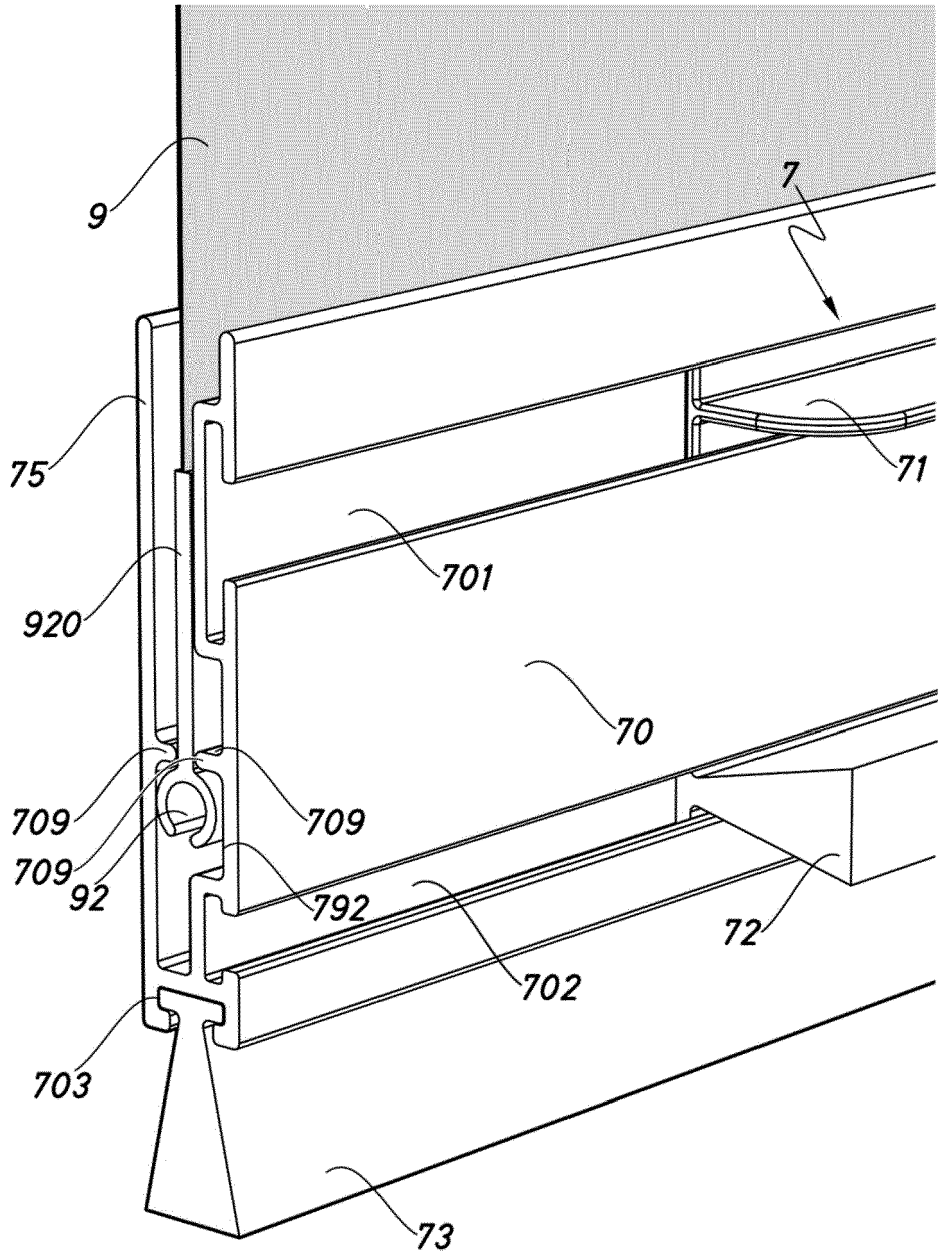

Fig.6

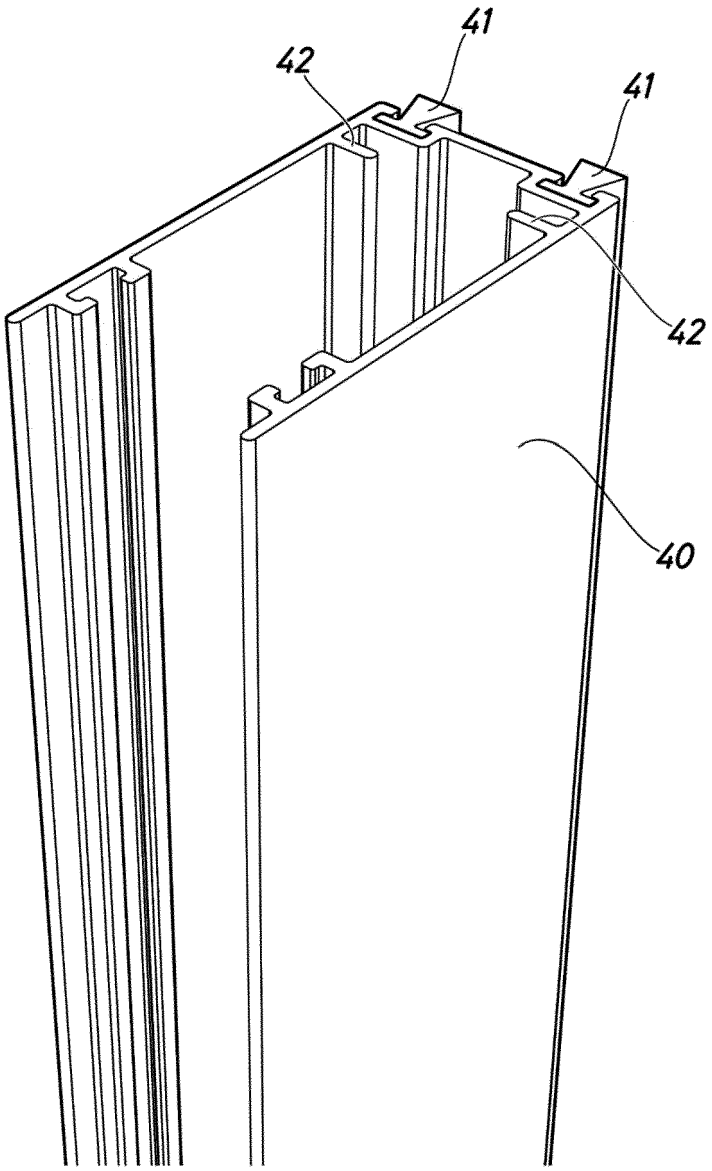

Fig.7

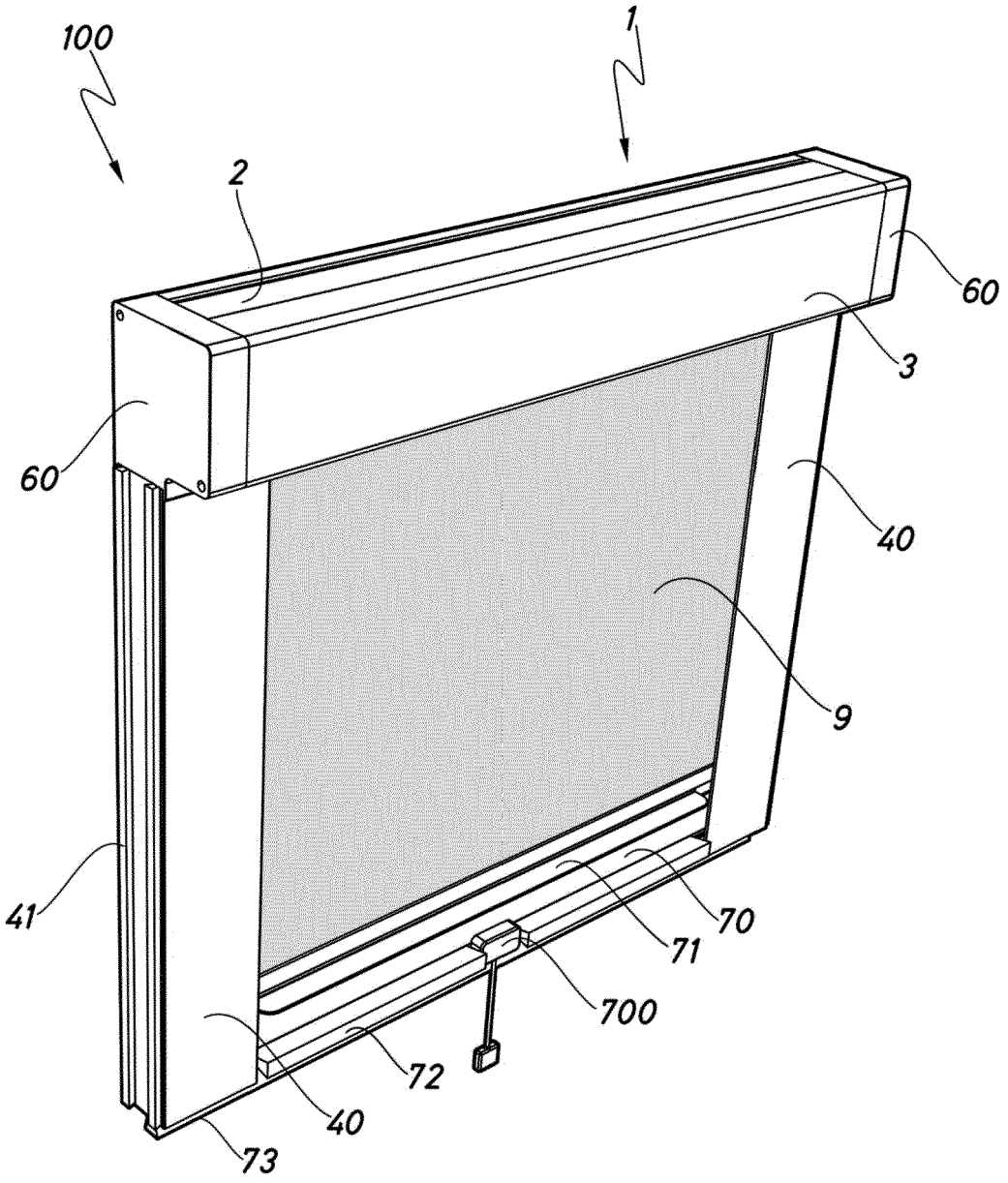

Fig.8

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EUROPEAN SEARCH REPORT

Application Number
EP 23 38 2720

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 Y	US 2019/323286 A1 (MENENDEZ VICTOR [US]) 24 October 2019 (2019-10-24) * column 3, lines 39-48; figure 5 *	1,4,5, 9-11,13, 14 12	INV. E06B9/42 E06B9/54
X	US 2019/301242 A1 (SHIPMAN SIMON [AU]) 3 October 2019 (2019-10-03) * paragraphs [0093] - [0095]; figures 1,4,5,8,11,15,16 *	1-4, 6-12,14	
Y	US 6 691 761 B1 (ALKHOURY BOULOS PAUL [CA] ET AL) 17 February 2004 (2004-02-17) * column 3, lines 39-48; figures 1,5 *	12	
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	9 April 2024	Kofoed, Peter

CATEGORY OF CITED DOCUMENTS

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09-04-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2019323286 A1	24-10-2019	AU 2019202613 A1	07-11-2019
		US 2019323286 A1	24-10-2019
US 2019301242 A1	03-10-2019	AU 2017298564 A1	14-03-2019
		CA 3070630 A1	25-01-2018
		CN 109563730 A	02-04-2019
		EP 3488069 A1	29-05-2019
		MY 197486 A	19-06-2023
		SG 11201900333T A	27-02-2019
		US 2019301242 A1	03-10-2019
		WO 2018014089 A1	25-01-2018
US 6691761 B1	17-02-2004	NONE	

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