



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
19.06.2024 Bulletin 2024/25

(51) International Patent Classification (IPC):
E06B 9/40 (2006.01) E06B 9/58 (2006.01)

(21) Application number: **23208011.9**

(52) Cooperative Patent Classification (CPC):
E06B 9/40; E06B 9/581

(22) Date of filing: **06.11.2023**

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

(71) Applicant: **Bandalux Industrial, S.A.**
36660 Moraña (ES)

(72) Inventor: **Garcia Garcia, Emiliano**
36660 MORAÑA (PONTEVEDRA) (ES)

(74) Representative: **Isern Patentes y Marcas S.L.**
Avda. Diagonal, 463 Bis, 2°
08036 Barcelona (ES)

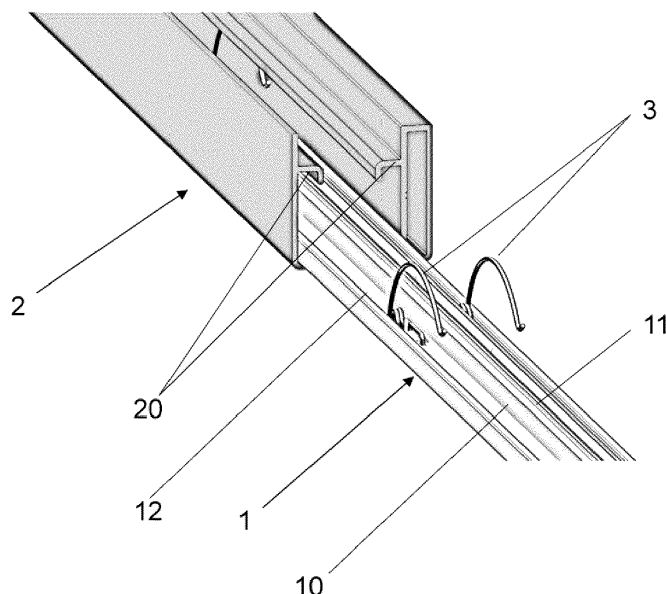
(30) Priority: **17.11.2022 ES 202231918 U**

(54) **DAMPING ARRANGEMENT FOR ROLLER BLINDS**

(57) A damping arrangement for roller blinds, comprising a profile (1) intended to be inserted into a vertical upright (2), the profile having a central portion (10) with a slot (11) intended to hold a fabric sheet and two lateral sections, and damping means configured to make contact with the vertical upright (2). The damping means comprise a plurality of longitudinally distributed damping members (3), damping members (3) being formed by a

wire body made of a single piece, which has two arched tabs (30) spaced apart and joined by an intermediate portion (31) in contact with a flat surface of the profile (1), the arched tabs (30) protruding through corresponding slotted portions (4) present in the lateral sections (12). Each of the tabs (30) has a helical spring, and extending from each of the springs (32) is a stepped portion (33) that ends at the intermediate portion (31).

FIG. 1



Description

OBJECT OF THE INVENTION

[0001] The object of the present invention is to provide a damping arrangement for roller blinds.

[0002] More specifically, the invention proposes the development of a damping arrangement for roller blinds, provided with a plurality of damping members between the upright and the profile that supports the fabric sheet.

BACKGROUND OF THE INVENTION

[0003] Currently, systems for solar protection of windows, doors or similar, such as roller blinds provided with a fabric that can be rolled on a shaft, movable between two uprights arranged vertically and parallel to each other, which act as guide means for the rollable fabric, are known.

[0004] A known problem in the previously described systems is that due to the action of the wind or involuntary impacts, the fabric can come out of the guiding uprights and cause noises that can be bothersome for users. To solve this problem, there are damping systems to avoid sudden blows between the rollable fabric and the uprights.

[0005] One example of a known solution comprises a profile intended to be inserted into a vertical upright, the profile having a substantially T-shaped cross section such that it defines a central portion with a slot intended to hold a fabric sheet with a zipper attached on both sides of the fabric and two lateral sections, and damping means distributed along the profile, configured to make contact with the vertical upright. The damping means can comprise a series of pieces with flexible features which are placed by sliding on each of the lateral sections, being made up of a rolling track and a tab-like extension. However, this system requires placement in each of the lateral sections, which implies a longer assembly time and, furthermore, there is the possibility that they could slide in an undesirable way when the profile is mounted on the upright.

[0006] Therefore, there is a need to find a damping system that is easy to assemble and has a low cost, while ensuring that no bothersome sounds are produced in the case of air currents strong enough to move the sheet of sun protection fabric.

[0007] Furthermore, the applicant is currently unaware of any invention that has all of the features described in this specification.

DESCRIPTION OF THE INVENTION

[0008] The present invention has been developed with the aim of providing a damping arrangement which is configured as a novelty within the field of application and solves the previously mentioned drawbacks, also contributing other additional advantages that will be obvious

from the description below.

[0009] It is therefore an object of the present invention to provide a damping arrangement for roller blinds, of the type comprising a profile intended to be inserted into a vertical upright, the profile having a substantially T-shaped cross section such that it defines a central portion with a slot intended to hold a sheet of fabric and two lateral sections, and damping means distributed along the profile configured to make contact with the vertical upright. In particular, the invention is characterised in that the damping means comprise a plurality of longitudinally distributed damping members, each of the damping members being formed by a wire body (acting as a torsion spring) made of a single piece, which has two arched tabs spaced apart and joined by an intermediate portion in contact with a flat surface of the profile, in which the tabs protrude through corresponding slotted portions present in each of the lateral sections of the profile, the tabs of which protrude from the two lateral sections of the profile, in which each of the tabs has a spiral-shaped spring, and extending from each of the springs is a stepped portion that ends at the intermediate portion, and positioning means to secure the damping member to the profile.

[0010] Thanks to these features, a damping arrangement is obtained that simplifies the assembly and therefore reduces the installation time. The geometry of the damping member allows the damping action in the lateral sections of the profile to be obtained with a single piece, without the need to have two pieces, one for each lateral section, as is the case in the state of the art. Given that the damping member is housed in a slotted portion, this also ensures its positioning at all times, meaning before assembly and when in use.

[0011] It must be mentioned that by having the spring in a spiral shape, this guarantees that no damping force is lost, regardless of the tension or pressure received by the damping member when it is located between the profile and the upright.

[0012] Advantageously, the profile has a substantially H-shaped cross section. In this way, even though the damping member is made of metal material, it prevents contact of this material with the metal upright, thus preventing possible bothersome noises.

[0013] According to another aspect of the invention, the intermediate portion has a V-shaped path.

[0014] Preferably, the positioning means consist of projections in each of the slotted portions, which are able to be embedded into the holes defined in the helical springs.

[0015] According to the invention, the end of each tab has a termination with a substantially V-shaped bend.

[0016] Also preferably, the damping members that form part of the arrangement can be distributed longitudinally in an equidistant manner along the length of the profile.

[0017] It is understood that the fabric sheet may be made of textile fabric or a conventional plastic material

commonly used in the roller blind sector.

[0018] The damping arrangement described represents an innovative structure with structural and constituent features heretofore unknown for its intended purpose, reasons which, taken together with its usefulness, provide it with sufficient grounds for obtaining the requested exclusivity privilege.

[0019] Other features and advantages of the damping arrangement object of the present invention will become apparent from the description of a preferred but not exclusive embodiment illustrated by way of non-limiting example in the attached drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0020]

Figure 1 is a partial perspective view showing the damping arrangement for roller blinds according to the present invention;

Figure 2 is a cross-sectional view of the damping arrangement mounted on an upright of a roller blind assembly;

Figure 3 is a partial plan view of the profile that forms part of the damping arrangement;

Figure 4 is a cross-sectional view of the profile that forms part of the damping arrangement;

Figure 5 is a perspective view of a damping member that forms part of the arrangement according to the invention;

Figure 6 is a side elevation view of the damping member shown in Figure 5;

Figure 7 is a plan view of the damping member shown in Figure 5;

Figure 8 is a partial perspective view of a section of the profile that forms part of the arrangement of the invention; and

Figure 9 is a partial perspective view showing the arrangement of a damping member in a slotted portion of the profile.

DESCRIPTION OF A PREFERRED EMBODIMENT

[0021] In view of the aforementioned figures, and in accordance with the adopted numbering, one may observe therein a preferred exemplary embodiment of the invention, which comprises the parts and elements indicated and described in detail below.

[0022] Moreover, the terms first, second, third, and the like in the description and in the claims are used to distinguish between similar elements and not necessarily to describe a sequential or chronological order. The terms may be interchanged under appropriate circumstances and the embodiments of the invention may operate in sequences other than those described or illustrated herein.

[0023] Moreover, the terms upper, lower, up, down, and the like in the description and in the claims are used

for descriptive purposes and not necessarily to describe relative positions.

[0024] Thus, the damping arrangement for roller blinds comprises a profile (1) intended to be inserted into a longitudinal housing present in a vertical upright (2), the profile having a substantially T-shaped cross section such that it defines a central portion (10) with a centred slot (11) intended to hold a fabric sheet (6) and two lateral sections (12), the central portion (10) protruding in a direction perpendicular to the two lateral sections (12). In addition, damping means distributed along the profile (1) and configured to make contact with the vertical upright (2) are provided.

[0025] Now, as can be seen in Figures 5 to 7, the damping means comprise a plurality of longitudinally distributed damping members (3), each of the damping members (3) being formed by a wire body that has two arched tabs (30) spaced apart and joined by an intermediate portion (31) in contact with a flat surface of the profile (1), as will be mentioned in detailed later. The arched tabs (30) protrude through corresponding slotted portions (4) present in each of the lateral sections (12) of the profile (1) in such a way that they protrude outward from one side of the two lateral sections (12) of the profile (1) and can flex to achieve the damping effect.

[0026] During use, the highest part of the tabs (30) of each damping member (3) is in contact with a region (20) of the upright (2) formed by ribs at all times, as shown in Figure 2.

[0027] It is noted that the intermediate portion (31) has a V-shaped path.

[0028] As can be seen in detail in Figures 5 and 6 more clearly, each of the tabs (30) has, at one end, a helical spring (32), and extending from each of the helical springs (32) is a stepped portion (33) that ends at the intermediate portion (31), as well as positioning means to attach the damping member (3) to the profile (1).

[0029] In particular reference to the positioning means, the same consist of projections (5) present in each of the slotted portions (4), which are able to be embedded into the internal hole (35) that is defined by the helical springs (32), which ensure that the damping members (3) remain in place.

[0030] The end of each tab (30) has a termination with a substantially V-shaped bend (34).

[0031] Returning to the damping members (3), the same are distributed longitudinally in an equidistant manner along the length of the profile (1) to ensure that the damping members (3) always remain in their region (20) of the upright (2).

[0032] Advantageously, the lateral sections (12) of the profile (1) have, on the free edge thereof, a projecting termination (13) that is perpendicular to the flat region present in the lateral sections (12), such that it defines a longitudinal hollow space (E) (see Figure 4), wherein the intermediate portion (31) of the damping member (3) is housed. This prevents the damping member (3) from impacting the aluminium vertical upright (2) by movement

while performing the damping function and, therefore, does not cause any noise. The upper part of the damping member (3) is always in contact and thus does not generate unwanted noise if the fabric sheet (not shown) moves from the effect of an air current.

[0033] Figure 8 more precisely shows the shape of the slotted portions (4), which have a general elongated shape, with a first section (40) having a larger cross section wherein the helical spring is housed, and a second section (41) with smaller cross section made up of an extension (42), wherein the stepped portion (33) is supported and a third section (43) that is offset with respect to the second section (41) (in a plan view) by means of a step that facilitates assembly of the damping member (3).

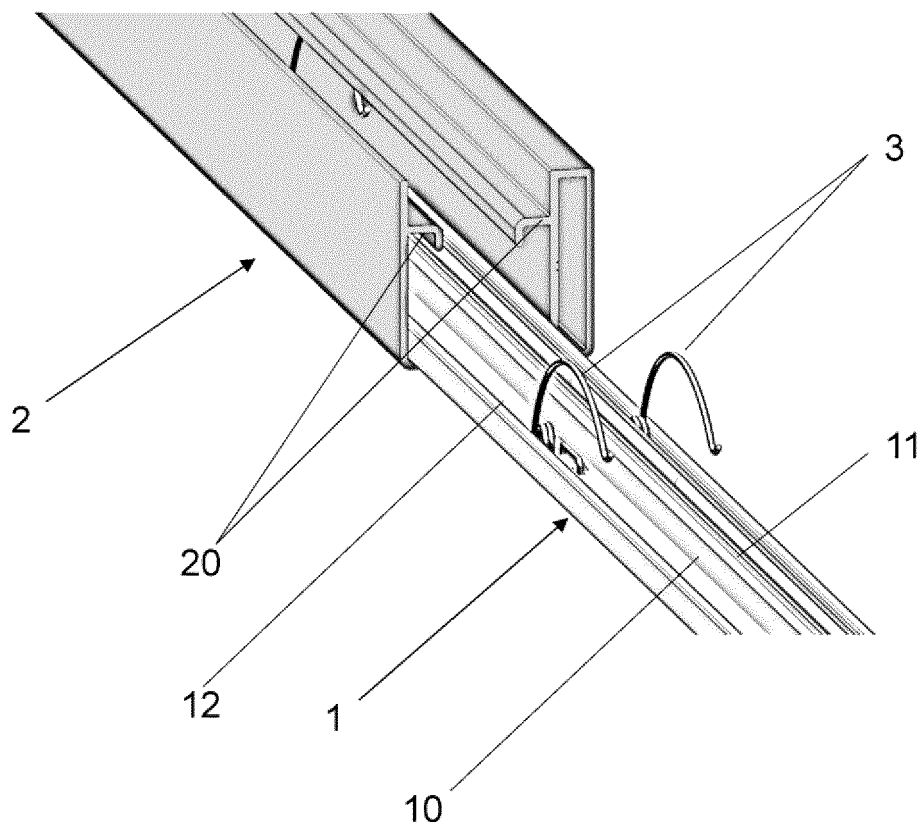
[0034] The details, shapes, dimensions and other complementary elements used in the manufacturing the damping arrangement of the invention may be suitably replaced with others that do not depart from the scope defined by the claims below.

Claims

1. A damping arrangement for roller blinds, comprising a profile (1) intended to be inserted into a vertical upright (2), the profile having a substantially T-shaped cross section such that it defines a central portion (10) with a slot (11) intended to hold a fabric sheet and two lateral sections, and damping means distributed along the profile (1) configured to make contact with the vertical upright (2), **characterised in that** the damping means comprise a plurality of longitudinally distributed damping members (3), each of the damping members (3) being formed by a wire body made of a single piece, which has two arched tabs (30) spaced apart and joined by an intermediate portion (31) in contact with a flat surface of the profile (1), wherein the arched tabs (30) protrude through corresponding slotted portions (4) present in each of the lateral sections (12) of the profile (1), the tabs (30) of which protrude from the two lateral sections (12) of the profile (1), in which each of the tabs (30) has a helical spring, and extending from each of the springs (32) is a stepped portion (33) that ends at the intermediate portion (31), and positioning means for securing the damping member (3) to the profile (1).
2. The damping arrangement according to claim 1, **characterised in that** the intermediate portion (34) has a V-shaped path.
3. The damping arrangement according to claim 1, **characterised in that** the positioning means consist of projections in each of the slotted portions, which are able to be embedded in the springs (32).

4. The damping arrangement according to any of the preceding claims, **characterised in that** the end of each tab (30) has a termination with a substantially V-shaped bend.
5. The damping arrangement according to any of the preceding claims, **characterised in that** the damping members (3) are distributed longitudinally equidistant along the length of the profile (1).
6. The damping arrangement according to claim 1, **characterised in that** the lateral sections of the profile have, on the free edge thereof, a protruding termination perpendicular to the flat region present in the lateral sections, such that it defines a longitudinal hollow space wherein the intermediate portion of the damping member (3) is housed.
7. The damping arrangement according to claim 1, **characterised in that** each of the slotted portions in which the damping members (3) are housed has a first section (40) intended to house the helical spring, a second section (41) with a smaller cross section with respect to the first section (40) formed by an extension intended to support the stepped portion (33) of the damping (3) member and a third section (43) that is displaced with respect to the second section (41) by means of a step.

FIG. 1



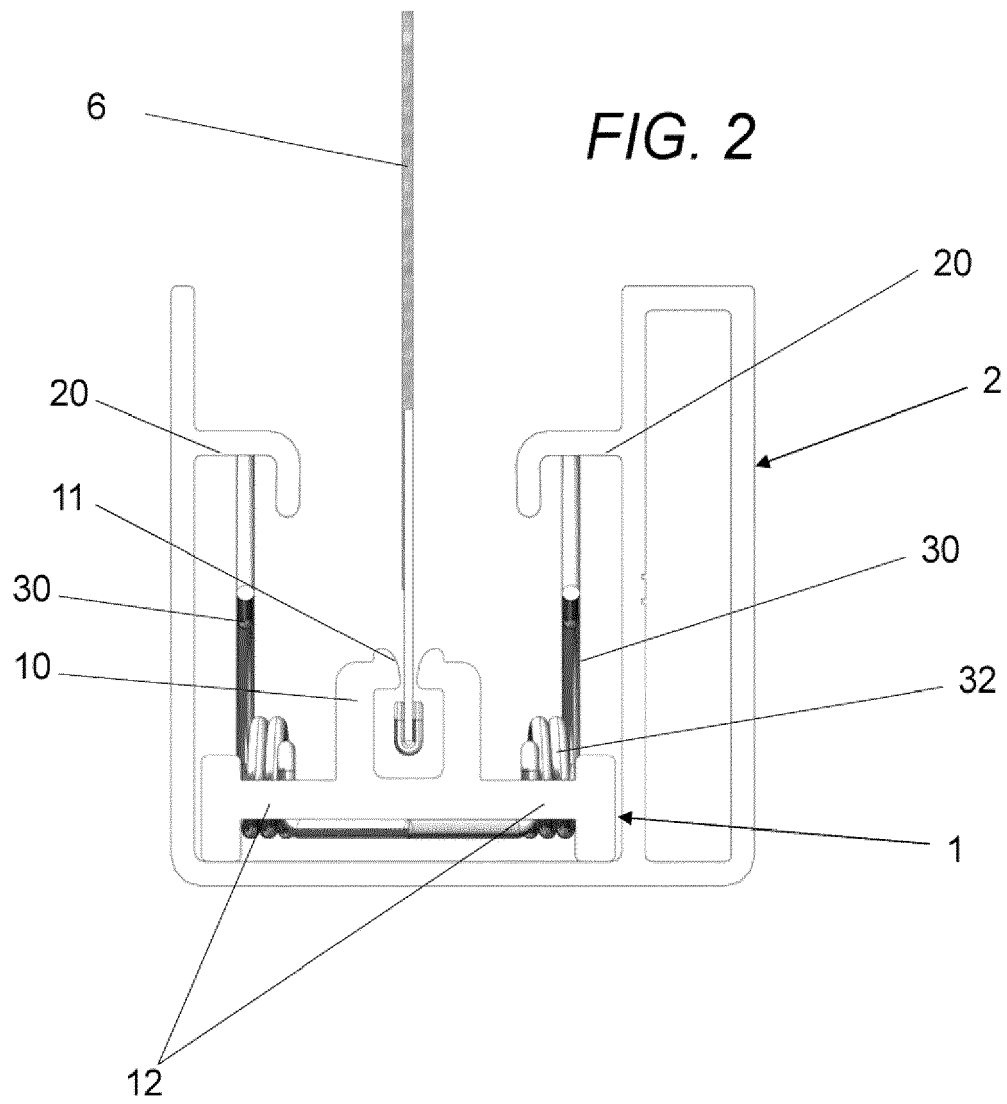


FIG.3

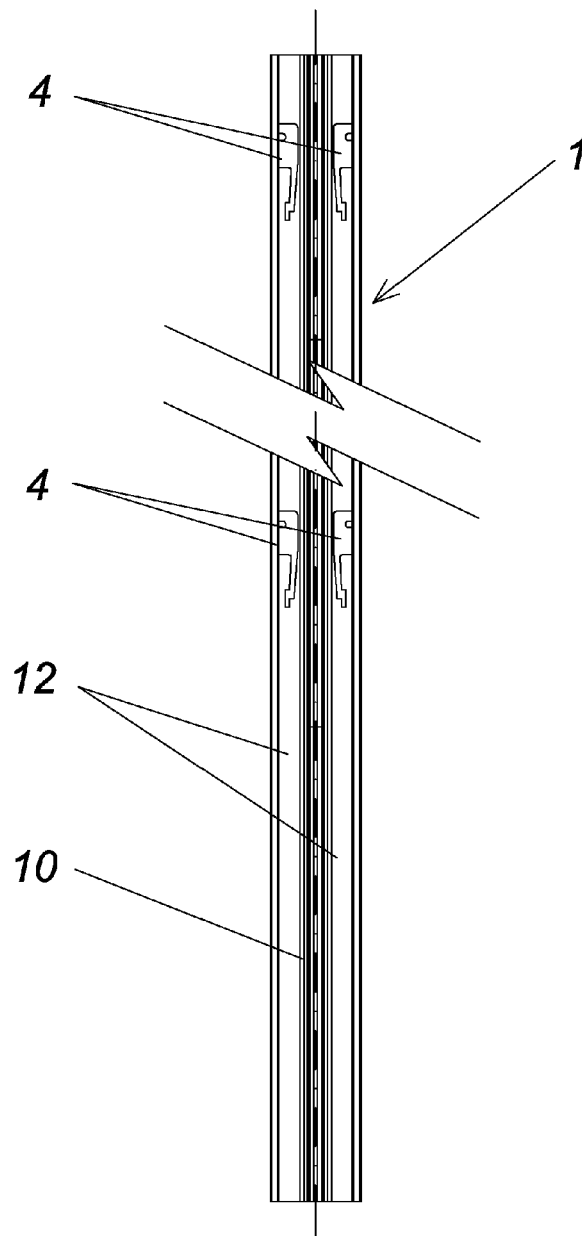


FIG.4

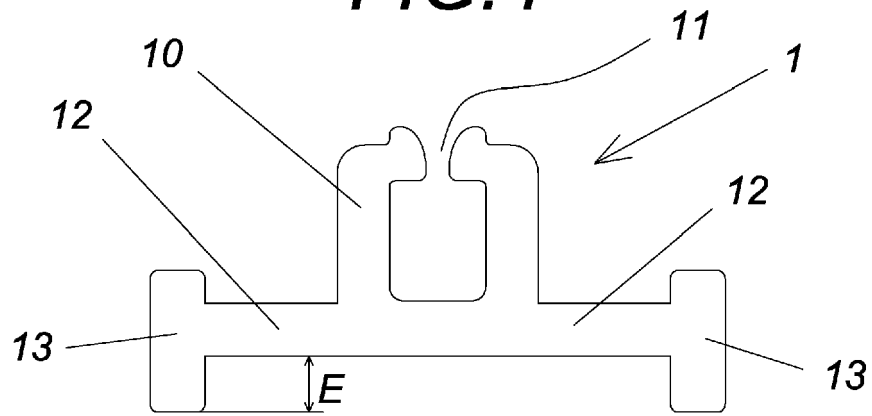


FIG.5

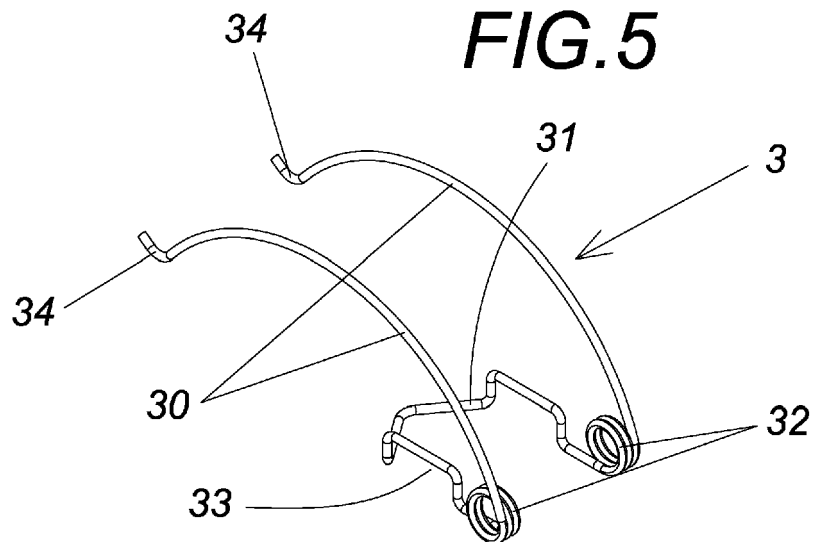


FIG.6

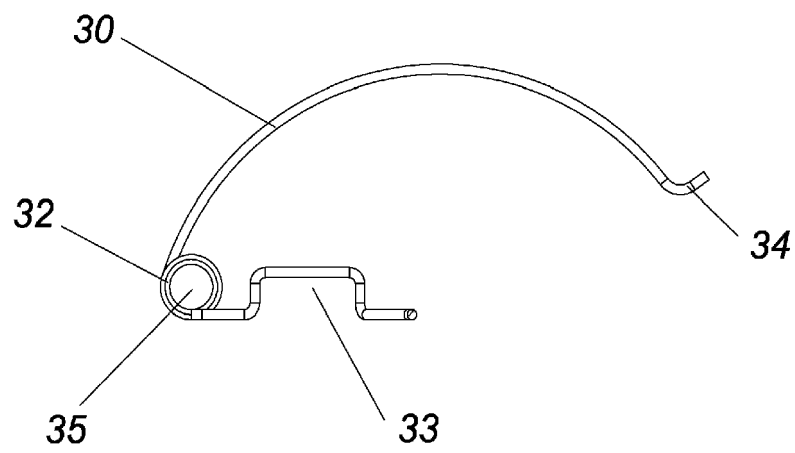


FIG.7

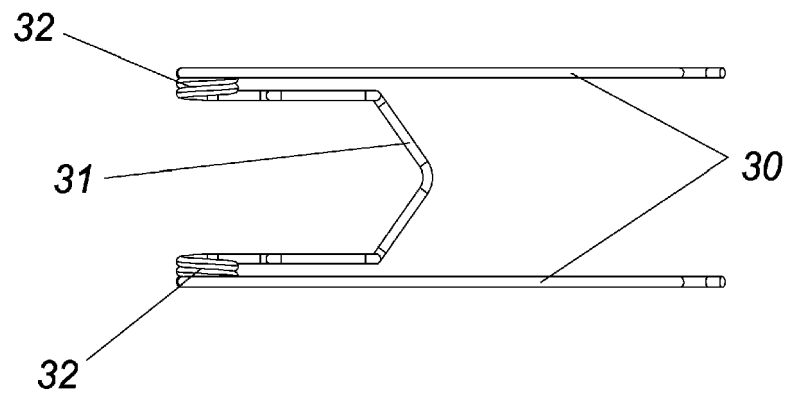


FIG. 8

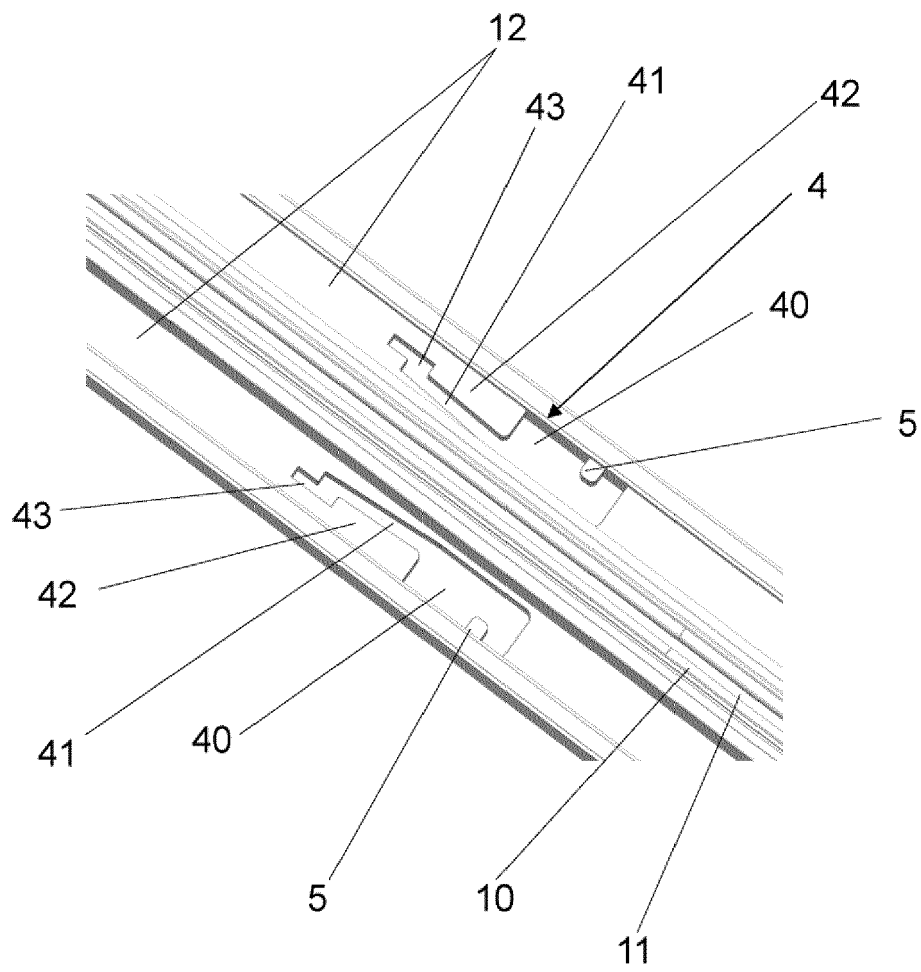
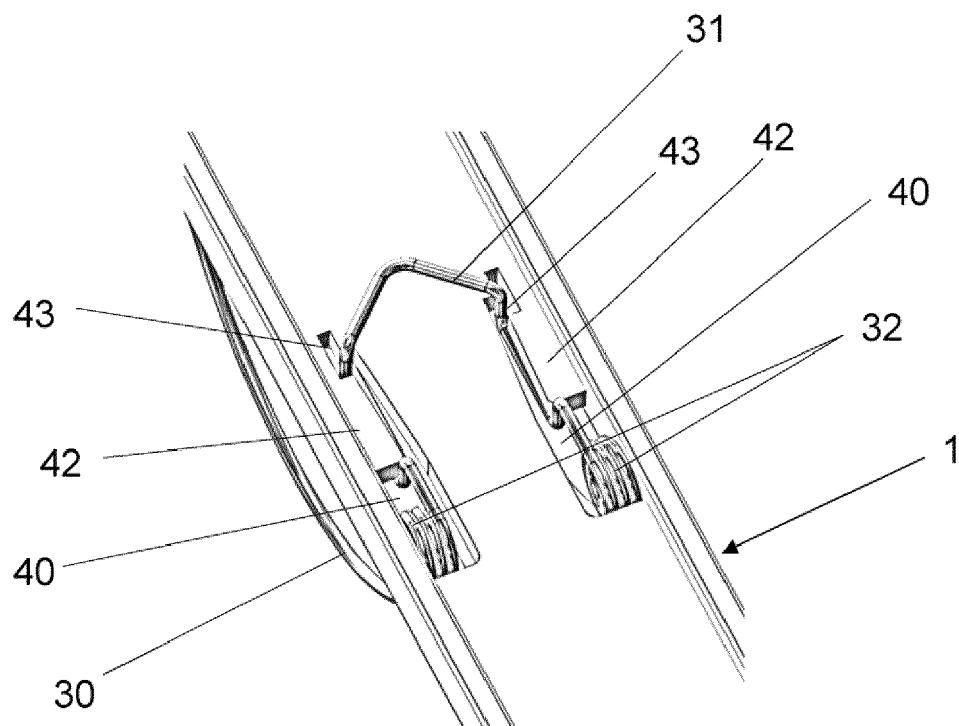


FIG. 9





EUROPEAN SEARCH REPORT

Application Number

EP 23 20 8011

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	JP 4 820021 B2 (TACHIKAWA BLIND MFG; HAYASHIGUCHI KOGYO KK) 24 November 2011 (2011-11-24) * the whole document *	1-7	INV. E06B9/40 E06B9/58
A	FR 3 062 413 A1 (BRUSTOR NV [BE]) 3 August 2018 (2018-08-03) * the whole document *	1-7	
A	EP 3 271 540 B1 (RENSON SUNPROTECTION SCREENS NV [BE]) 15 May 2019 (2019-05-15) * the whole document *	1-7	
			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		18 April 2024	Bourgoin, J
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 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 23 20 8011

5 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.

18-04-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 4820021 B2	24-11-2011	JP 4820021 B2	24-11-2011
		JP 2003013680 A	15-01-2003

FR 3062413 A1	03-08-2018	BE 1024961 A1	27-08-2018
		FR 3062413 A1	03-08-2018

EP 3271540 B1	15-05-2019	BE 1024265 A1	10-01-2018
		EP 3271540 A1	24-01-2018
		WO 2017212346 A1	14-12-2017
