

CUSHION FOR THE GUIDING RAIL OF A SUNSHADE FOR DOORS OR WINDOWS

Field of application

The present invention relates to a cushion for a profile of a shade for a door or window.

- 5 The present invention also relates to a profile of a shade for a door or window.

The invention also relates to a method of mounting the cushion on the profile of the shade of the door or window.

Prior Art

- 10 It is known that a shade of a door or window, for example a blind for a window, can be retracted from the door or window to allow the light to pass through, or extended along it, for darkening. The sliding action is for example of the sliding-shutter type, in which case the shade slides along a pair of uprights associated with a frame of the door or window
15 or incorporated therein.

- The uprights are generally perpendicular to the floor and the shade slides vertically. In some cases the uprights are instead horizontal and the shade slides horizontally. More particularly opposite sides of the shade are inserted in profiles, preferably plastic, which form the guide
20 of the shade in the upright. The profile has substantially the same length as the upright and is restrained in a thickness of the upright with predefined play, which facilitates the horizontal movement of the shade (in the case of a horizontally sliding shade) or vertical (in the case of vertically sliding shade). In some cases the uprights are neither
25 parallel nor perpendicular to the floor but have a predefined angle with respect thereto, for example an acute angle. This is the case, for example, of a door or window mounted on an opening in a sloping roof, such as a skylight, or of other awnings, optionally installed outside, on balconies or on terraces. The profile in these shades, since it is in the
30 upright, is also inclined with respect to the floor and the shade is

sliding with the same inclination. These shades are therefore also known as “oblique sliding shades”. Figures 1 and 1a show a detail of a profile A (Fig. 1) according to the prior art and a front-end section thereof (Fig. 1a). The profile A, as already mentioned, is inserted in the upright of the frame of a door or window and comprises a seat S for an edge or side of the shade, for example of a blind. During assembly the edge of the shade is slidably insertable in the seat S through an opening I of the profile, leaving the rest of the shade to project from the seat S (and from the upright) through a slit B of the profile, with breadth smaller than the edge of the shade, in order to restrain the edge in the seat S. The opposite edge of the shade is similarly associated with a profile of the other upright of the frame.

A sponge element C is glued along the profile. When the sponge element C is expanded, i.e. at rest, it constitutes a predetermined encumbrance and ensures spacing between the upright and the profile and keeps the shade tensioned. When instead it is compressed it acts as a cushion between the profile and the upright. This occurs in particular during the opening or closing manoeuvres, which tend to move the shade between the uprights, or under the effect of the wind.

However the sponge elements indicated above are subject to considerable limitations. First of all they are subject to alterations which affect the elasticity thereof, be it irreversibly, for example owing to wear or drying, or reversibly, for example due to changes in climate, temperature, humidity or season, which temporarily influence the elasticity, in any case preventing the sponge element from expanding sufficiently in order to fill the space between upright and profile and from guaranteeing therefore a correct pretensioning and also adequate cushioning, due to the altered elasticity of the material. Moreover the spongy material from which the sponge element is made becomes worn over time, as a consequence of repeated rubbing against the walls of the upright. The sponge element is glued to the profile but projects therefrom, also during compression, and is not very stable.

Furthermore, the wear can cause detachment of the sponge element

from the profile and further loss of efficiency both when damping the impact against the upright and during pretensioning. Moreover mounting thereof is somewhat laborious, especially if performed manually. Furthermore, especially in oblique sliding shades, the force of gravity tends to deform the shade, generating a downward bowing effect which cannot be in any way avoided by the known sponge elements.

Finally, but not least in order of importance, there is the limited cushioning capacity of the sponge element which, being arranged between the profile and the upright, constitutes even during maximum compression thereof a thickness which prevents the shade and the profile from moving further towards the upright. More particularly, during maximum compression, the sponge element loses its cushioning capacity and acts as a substantially rigid body, arranged between upright and profile, without reducing the noise and without increasing the stability of the shade. This occurs especially where there is wind, in particular, but also during the manoeuvres for opening and closing the shade.

Given all that stated above, the known shades are also somewhat noisy, especially when extended along the door or window, due to the fact that they may be struck by air currents and moved suddenly between the uprights, making the profiles hit against them. In fact, when the air acts on the surface of the shade, the shade moves the profile which, as mentioned, is coupled to the upright with predetermined play, causing it to hit against the latter.

It is known that some profiles have an integrated cushion, which substantially takes the form of two flexible walls of the profile, extending (for example perpendicularly) from one of the bases thereof and having an edge which touches the upright. The walls extend along the entire profile and are made as one piece with it.

Even if these cushioning walls solve some technical problems associated with the sponge elements mentioned above (in fact they are not generally prone to detachment from the base), they are not however effective for guaranteeing optimal pretensioning of the shade and not

even for improving the cushioning action. In fact the walls always constitute an encumbrance between profile and upright, also during maximum compression, and therefore they limit the movement of the shade in either direction, towards the uprights. This limitation is also associated with the extension of the walls along the entire profile, and therefore along the entire upright. Finally, these side walls do not solve in any way the problems of bowing associated with oblique sliding shades and they are not therefore suitable for creating effective pretensioning.

Finally cushions made of another material are known, in particular plastic materials, suitable for being mounted on a section of the edge of the profile and for performing their cushioning function between the section of the edge on which they are mounted and the section of upright facing it. However these cushions are also affected by the same problem mentioned above for known sponge elements, namely they constitute a substantially rigid body, especially during maximum compression, situated between the upright and the profile section on which they are mounted, without being able to improve the pretensioning or the cushioning action or being able to increase the stability of the shade.

The technical problem forming the basis of the present invention is that of devising a cushion for a shade of a door or window, for example for the blind of a light-screening system, which is very simple to produce and simple to mount on the profile, also mechanically, and which is able to reduce effectively the noise caused by the movement of the profile in the upright, avoiding damage to the shade due to the opening, closing or adjustment manoeuvres or to the action of the wind, while also ensuring an optimum tension of the shade, both in windy conditions and when there is no wind, and which finally is low-cost and able to overcome all the limitations and the drawbacks which still affect the known cushions.

WO2013/182956, FR2430512, US2014/076507, US2012/325416 and WO/2012/050518 disclose cushion system according to the prior art.

The co-extruded profile must be criticised since it cannot react to winter and to summer conditions.

Summary of the invention

The idea forming the basis of the present invention is that of providing a cushion system including a cushion for a shade of a light-screening system, the cushion comprising a first portion on a first section of a profile, the profile
5 being intended to be inserted in an upright of a door or window, and a second portion which acts as cushion between the upright and a second section of the profile.

The first section and the second section of the profile may be different or partially overlapped. For example the first portion of the cushion may be
10 mounted on a first section of the profile and the second portion is connected to one end of the first portion and is intended to operate along a second section of the profile which is completely free from the first portion.

The second portion of the cushion may comprise a first part which performs its cushioning function already at one end of the first section of the profile and
15 a second part which performs its cushioning function along the second section of the profile.

One end of the second portion is preferably coplanar with a surface of the first portion. Advantageously, according to the proposed solution disclosed above, during maximum compression, the second portion of the cushion does not
20 constitute any encumbrance between the profile and the upright.

According to the proposed solution disclosed above, the first portion is a channel which can be mounted on the first profile section and the second portion is a tongue with one end on the channel, which extends outside the channel, at least in the longitudinal direction of the channel. In particular, the
25 flexible tongue is on one face of the channel and extends in the direction L along which the profile extends, beyond the side opening of the channel. More particularly the channel has a front opening FR and two opposite lateral openings LAT and said at least one flexible tongue extends beyond the lateral openings or opening

of the channel.

According to a preferred embodiment of the present invention, the technical problem disclosed above is solved by a cushion for a profile of a shade for a door or window, comprising a channel which can be
5 mounted on the profile, having a substantially C-shaped cross section, and at least one flexible tongue on the channel, which acts as cushion between the profile and a frame (or upright) for assembly of the profile, and characterized in that said at least one flexible tongue extends in the longitudinal direction L of the channel, projecting outside thereof from
10 at least one side. More particularly the flexible tongue extends beyond the lateral openings or opening of the channel.

Advantageously, projecting outside of the channel, the tongue acts as cushion on a section of the profile on which the channel is not mounted and allows the profile to come very close to the upright.

15 Preferably the flexible tongue has a proximal portion fixed on the channel and a remaining portion projecting from the channel also in a vertical direction V, so as to be spaced from the channel.

More particularly, at rest, i.e. when there is no action, for example of the air, on the shade, a distal end of the flexible tongue is spaced both
20 in longitudinal direction (L) and in transverse direction (direction V) from the channel. Preferably, when the parts are assembled and in said rest position, the end of the flexible tongue touches the upright. A plurality of channels are fixed, preferably with a predefined spacing, on the two profiles intended to be inserted in the opposite uprights of the
25 door or window. Even more preferably, with parts assembled, the ends of the flexible tongues, when at rest, touch the two uprights, at different points of the uprights.

Instead, in the operative compression phase, the flexible tongue is bent and the distance in transverse direction of its distal end with respect to
30 the profile (or to a plane comprising the flank of the channel) is reduced.

In a preferred embodiment of the present invention, the at least one

flexible tongue is curved at rest. In particular, the tongue forms a chute having a maximum height at the distal end and minimum height at the proximal end, where it is substantially coplanar with the flank of the channel. The height of the chute formed by the flexible tongue, and therefore its curvature, vary depending on the cushioned load until a state of maximum compression is reached where the chute is flattened and is substantially coplanar with the flank of the channel.

It is quite possible for the flexible tongue to be shaped differently when at rest, for example as a straight section, extending in the longitudinal direction with respect to the flank of the channel, with a predefined angle relative thereto, and assuming a varyingly accentuated curvature depending on the cushioned load following the varyingly accentuated movement of the profile towards the upright.

Similarly, it is quite possible for the flexible tongue to have a different curvature when at rest, for example to have the shape of an overturned chute, namely to have an opposite concavity with respect to the concavity of the chute described further above.

In particular, in one embodiment, said at least one flexible tongue is concave upwards with respect to a surface of the channel to which it is fixed. In another embodiment said at least one flexible tongue is concave downwards with respect to a surface of the channel to which it is fixed. Other curvatures of the tongue fall within the scope of protection of the present invention.

Preferably, in the various embodiments, the at least one flexible tongue is coplanar with a surface of the channel on which it is fixed, in a working phase of maximum cushioning between the profile and the frame.

Advantageously the Applicant has obtained very satisfactory results by means of the use of plastic material for the flexible tongue. Preferably the channel is also made of plastic material. Even more preferably the channel and the tongue are formed as one piece.

According to a particularly advantageous aspect of the present invention, the cushion comprises a first flexible tongue projecting from one side of the channel and a second flexible tongue projecting from an opposite side of the channel.

5 Each of said first and second tongues may be formed in accordance with that which has already been mentioned. For example both tongues may have a curvature directed upwards. The two flexible tongues may be two chutes directed towards the same flank, to which they are fixed by means of the respective proximal ends, substantially coplanar with
10 the flank.

It is quite possible for the shape of the tongues to be different, for example in terms of curvature. Likewise it is possible for the tongues to have the same concavity, but with a different slope or opposite concavity (one directed downwards and one directed upwards), or for
15 one tongue to be straight and extend obliquely in relation to the flank and the other tongue to be curved.

In a preferred embodiment of the invention the two tongues are symmetrical. Preferably the tongues have the same length and/or the same curvature.

20 According to one aspect of the present invention the tongues are arranged in the manner of bull's horns, with the proximal ends fixed to the channel, i.e. to a flank thereof.

The channel comprises a bottom intended to touch a rib of the profile and two flanks. At least one of the flanks, preferably the flank on which
25 the flexible tongue is not fixed, comprises a flange or protrusion directed towards the interior of the channel, intended to be inserted in a groove of the profile for rapid engagement.

One flank, preferably the flank with the flange, is inclined towards the opposite flank, reducing the breadth of the opening of the channel with
30 respect to the bottom, when at rest.

The channel does not have a cushioning function. The channel ensures

rapid engagement with the profile.

The present invention solves the technical problem disclosed above also by means of a profile of a shade for a door or window, comprising a plurality of cushions of the type described above, the cushions being spaced, preferably with a predetermined spacing. The cushion is provided with a groove along its entire length or at predetermined points, said groove being intended to receive the tip of the flange of the cushion. According to one embodiment, the groove is on the cushion and the tip on the profile.

According to one aspect of the present invention the thickness of the profile is smaller along predetermined sections where the cushions are mounted. Along said predetermined sections the profile defines seats which are closed by mounting of the cushion in such a way that, when the parts are assembled, the surface of the profile on the sides of the cushion is coplanar with the flank of the cushion from where the flexible tongue projects. Advantageously, according to this aspect of the present invention, the profile, in a working phase of total compression of the flexible tongue, is substantially touching the upright. Advantageously neither the flexible tongue nor the channel forms an impediment and encumbrance between the profile and the upright.

The technical problem disclosed above is also solved by a shade system comprising a frame which includes two opposite uprights for receiving a respective profile of a shade and two profiles inserted in the uprights, each of the profiles comprising a plurality of cushions, preferably with a predefined and optionally variable spacing.

Finally the technical problem is also solved by a method for performing cushioning between a profile and an upright according to the present invention comprising the steps of:

- preparing a profile of a shade for a door or window;
- mounting on a rib of the profile a plurality of cushions, each one comprising a channel, mounted on the rib of the profile and having a

substantially C-shaped cross-section, and at least one flexible tongue on the channel, intended to provide a cushioning action between the profile and a frame for assembly of the profile,

5 said at least one flexible tongue extending in the longitudinal direction (L) of the channel and projecting outside thereof on at least one respective side;

- inserting the profile in the upright with the corresponding cushions directed towards the upright.

10 Further characteristic features and advantages of the present invention will become clearer from an example of embodiment thereof provided purely by way of a non-limiting example with reference to the accompanying drawings.

Brief description of the accompanying drawings

15 Figures 1 and 1a are a detail of a profile A (Fig. 1) and a front-end section thereof (Fig. 1a).

Figure 2 is a perspective view from above of a cushion according to the present invention.

Figures 3a and 3b are side views of the cushion of Figure 1.

Figure 4 is a rear view of the cushion of Figure 1.

20 Figure 5 is an enlarged detail of the view of Figure 2b.

Figure 6 is a perspective view from below of the cushion according to the present invention.

Figures 7a-7c are a front, side and perspective view of the cushion according to an embodiment of the present invention.

25 Figures 8a-8b are a perspective view and a side view of the cushion of Figure 2, mounted on a profile, according to the present invention.

Figures 9a-9b are the perspective view and the side view of the cushion

of Figure 2, mounted on the profile and in a different working phase with respect to Figures 8a, 8b.

Figure 10 is a perspective view of the cushion of Figure 2, mounted on a profile inserted in an upright, according to the present invention (the
5 portion of the upright in the region of the cushion is shown cut-away).

Figure 11 is a perspective view of the cushion of Figure 2, mounted on a profile for a light-screening or curtain system, according to the present invention.

Figure 12 is a perspective view of the cushion of Figure 2, mounted on a
10 profile for a fly screen, according to the present invention.

Figures 13a-13b are front-end views of a cushion, mounted on a removable edge of the upright.

Figure 14 is a front-end sectioned view of the cushion, removable edge and upright of Figures 13a-13b.

15 Figure 15 is a perspective, partially cut-away view of the cushion, removable edge and upright of Figures 13a-13b.

Detailed description of the invention

With reference to the accompanying drawings, some embodiments of the cushion and of the profile of a shade of a door or window according
20 to the present invention are described below.

In the following description the term “shade” comprises any accessory designed to control the light and/or the air passing through a door or window. For example, and without claiming to be exhaustive, the shade may be a curtain, a fly screen, a louver system, each one having a
25 specific function along the door or window, such as for example partial or total screening of light by reducing, with vertical or horizontal sliding, the light section of the door or window (curtain), protection against insects by total closure of the section of the door or window, but without light-screening effect (fly net), or partial or total screening of

light by reduction, with horizontal slats, of the entrance openings for the light via the door or window (louvers).

Moreover, in the description given and within the scope of the present invention, the term “door or window” comprises any opening on the walls of a building, whether built in brick, wood or other material. For example, again only by way of example, the door or window comprises entrance doors, windows or ventilation and illumination openings, French doors for access to balconies, etc. etc.

With reference to Figure 10, a shade 500 having an edge 501 slidably associated with a profile 100 is shown in schematic form. The profile 100 is inserted in an upright 1000 of the frame of a door or window and comprises a seat S for the edge 501 of the shade 500, for example of a blind 500.

More particularly, during assembly, the edge 501 of the shade 500 is slidably insertable in the seat S through a side opening of the profile, leaving the rest of the shade 500 to project from the seat S (and from the upright) through a front slit 120 (Figs. 8a and 9b) of the profile 100, which has a breadth smaller than the edge 501 of the shade 500, in order to restrain the edge 501 in the seat S.

The opposite edge of the shade 500 is similarly associated with a profile 120 of the other upright 1000 of the frame (not shown). When the air acts on the surface of the shade 500, the shade moves the profile 100 between the uprights 1000.

According to the various uses, the shade 500 can be retracted totally or partially from the door or window to allow the passage of light or air (depending on the function for which the shade is designed) or extended along it, in order to block out light or reduce the passage of air. The sliding action is for example of sliding-shutter type, in which case the shade 500 slides along a pair of uprights 1000, associated with a frame of the door or window or incorporated therein.

The uprights 1000 may be perpendicular to the floor and the shade 500

slidable vertically. In some cases the uprights are instead horizontal and the shade 500 slides horizontally. The profile 100 may have the same length as the upright 1000 and is restrained in a thickness 1005 of the upright 1000, which facilitates the horizontal movement of the shade (in the case of a horizontally sliding shade) or vertical movement (in the case of a horizontally sliding shade).

According to the present invention a cushion 1 is provided for the shade 500 which comprises a first portion 10 able to be mounted on a first section 101 of the profile 100 and a second portion 20 which acts as cushion between the upright 100 and a second section 102 of the profile 100. Again referring to Figure 10, given solely by way of example and with reference to a specific embodiment of the invention, the cushion 1 is visible through a portion 1010 of the upright 1000 shown in cut-away form.

In Figure 10 the cushion 1 is at rest and has a distal end 26 of the second portion 20 in contact or in the proximity of, i.e. very close to, to a surface 1020 of the upright 1000. In this working phase the second portion is not deformed.

In Figure 8a the cushion 1 is shown alone on the profile 100 and the first 101 and the second section 102 are clearly indicated. The first section 101 and the second section 102 of the profile 100 may be different or partially overlapped.

For example the first portion 10 of the cushion may be mounted on a first section 101 of the profile and the second portion 20 is connected to one end 12 of the first portion 10 and is intended to operate along a second section 102 of the profile which is completely free from the first portion 10.

However the second portion 20 of the cushion may comprise a first part 22 which exercises its cushioning function already at one end 12 of the first section 101 of the profile and a second part 26, 24 which exercises its cushioning function along the second section 102 of the profile.

Preferably one end 22 of the second portion 20 is coplanar with a surface of the first portion 10. More particularly the first portion 10 has a flat surface 14 intended to remain in contact with an upper surface 160 (Fig. 9b) of the profile and the end 22 of the second distal portion 20 is coplanar with the surface 14 or slightly raised or sloping with respect thereto.

Advantageously, according to the proposed solution disclosed above, during maximum compression, the second portion 20 of the cushion 1 does not constitute an encumbrance between the profile 100 and the upright 1000. Preferably, during said compression phase, the second portion 20 is touching or very close to the profile 100.

Figure 9b shows schematically the cushion 1 during maximum compression or in any case in a very compressed condition. In this drawing the upright 1000 has been omitted only in order to highlight more clearly the features of the profile 100 and the cushion, forming the subject of the invention, but it is obvious that the upright 1000, and more particularly the surface 1020, serves to compress the cushion 1 between upright and profile 100, and to reach the position of Figure 9b.

Figures 8b and 9a are side views of Figures 8a and 9b, respectively. In relation to these drawings, again given solely by way of example, these show a profile 100 according to the present invention provided with a central section 130 which forms the seat S for the edge 501 of the shade 500. The central section 130 has a base 131 and two flanges 133 which extend from the base 131, coplanar therewith, which form the opposite edges 101, 102 of the profile 100, on which the cushions 1 are mounted.

These edges 101, 102 comprise recesses 103, 104, which are preferably equally spaced along the edge or with a predefined, optionally variable spacing, and which form points for insertion of the first portion 10 of the cushion 1. In the region of said recesses 103, 104 and under the base 131 of the profile (more particularly under the flanges 133) or preferably along the entire base of the profile (again under the flanges 133) grooves 132 with a longitudinal extension L are provided, these

forming seats for rapid engagement of the cushions 1.

In one aspect of the present invention the thickness of the profile 100 is smaller in the region of the recesses where the cushions are mounted. In said recesses the profile defines seats which are closed by mounting
5 of the cushion in such a way that, when the parts are assembled, the surface of the profile on the sides of the cushion is coplanar with the flank of the cushion from where the flexible tongue projects. Advantageously, according to this aspect of the present invention, the profile, in a working phase of total compression of the flexible tongue, is
10 substantially touching the upright. Advantageously neither the flexible tongue nor the channel forms an impediment and encumbrance between the profile and the upright.

Depending on the type of shade 500 used, a specific mounting arrangement of the cushions 1 is foreseen.

15 Preferably, for the shades subject to lower stresses, for example for fly screens which allow air to pass through even when closed, the cushions 1 are mounted alternatively on the opposite edges 101, 102 of the profile.

For example, referring to Figure 11, a cushion 1 is mounted in a recess
20 103 of an edge 101 of the profile 100, starting from one end A of the profile 100. Proceeding towards the second end of the profile 100 a second cushion 1 is mounted along a recess 104 of an edge 102 opposite to the edge 101 on which the first cushion 1 is mounted. Opposite the recess 104, on the opposite edge 101, there is a recess
25 103-x but this recess 103-x is not engaged by a cushion 1. Similarly, opposite the recess 103, on the edge 102, there is a recess 104-x and this recess is not engaged by a cushion 1.

Still in the direction towards the second end B of the profile 100, a third cushion 1 is mounted in a recess 103a of the edge 101. At the groove
30 103a, on the edge 102, there is a recess 104-x not engaged by a cushion 1.

Preferably, in the case of shades subject to greater stresses, for example light-screening curtains which may even totally prevent the passage of air, a greater number of cushions are mounted. Figure 12 shows an exemplary embodiment in which a respective cushion 1 is mounted in
5 each recess 103 and 104 of the edges 101 and 102.

With reference to Figures 1-7, some specific embodiments of the cushion 1 according to the present invention are described below.

In particular, as shown in Figure 2, the first portion 10 may be a channel 10 which can be mounted on the first section 101 of profile 100
10 and the second portion 20 may be a flexible tongue 20 with one end 22 on the channel 10, which extends outside the channel 10, at least in the longitudinal direction L of the channel 10.

More particularly the flexible tongue 20 is on one face 14 of the channel 10 and extends in the direction L along which the profile 100 extends,
15 beyond the lateral opening LAT of the channel. Again more particularly the channel 10 has a front opening FR and two opposite lateral openings LAT and said at least one flexible tongue 20 extends beyond the lateral openings or opening LAT of the channel 10.

According to a preferred embodiment of the present invention, the
20 cushion 1 for a profile 100 of a shade 500 of a door or window comprises a channel 10 which can be mounted on the profile 100, having a substantially C-shaped cross section, and at least one flexible tongue 20, 21 on the channel 10, which acts as cushion between the profile 100 and a frame 1000 (or upright) for assembly of the profile
25 100, and is characterized in that said at least one flexible tongue 20, 21 extends in the longitudinal direction L of the channel 10, projecting outside thereof on at least one side 11, 12.

In particular, the flexible tongue 20 projects beyond the opening LAT or the lateral openings LAT of the channel.

30 Advantageously, projecting outside of the channel, the tongue acts as cushion on a section 102 of the profile on which the channel 10 is not

mounted and allows the profile 100 to come very close to the upright 1000, during compression of the tongue.

5 The flexible tongue 20, 21 preferably has a proximal portion 22, 23 fixed on the channel 10 and a remaining portion 24, 25, 26, 27 projecting from the channel 10 also in a vertical direction V, so as to be spaced from the channel 10.

10 More particularly, at rest, i.e. when there is no action exerted by the air or a user on the shade 500, a distal end 24, 25 of the flexible tongue is spaced both in a longitudinal direction (L) and in a transverse direction (direction V) from the channel 10.

Preferably, when the parts are assembled, in the rest position, the end 24 of the flexible tongue 24, 25 touches the upright 1000.

15 In one embodiment the tongue at rest does not touch the upright and a space of one or more millimetres is left between the upright and the profile.

20 A plurality of channels 10 are fixed, preferably with a predefined spacing, on the two profiles 100 intended to be inserted in the opposite uprights of the door or window. Even more preferably, when the parts are assembled, the ends of the flexible tongues, when at rest, touch the two uprights, at different points of the uprights.

Instead, during the working compression phase, the flexible tongue 20 is bent and the distance in the transverse direction (V) of its distal end 24, 25 with respect to the profile 100 (or to a plane comprising the flank 14 of the channel 10) is reduced.

25 In one embodiment, the tongue 20 during maximum compression is touched along its upper surface 151 by the upright 1000 and along its lower surface 151 by the profile 100, in particular by an upper surface 160 of the flange 133 which extends beyond the base 131 of the central section 130 of the profile 100. The upper surface 160 is situated
30 opposite to the surface in which the groove 132 which forms the seat for rapid engagement of the cushion 1 is provided.

In a preferred embodiment of the present invention, the at least one flexible tongue 20, 21 is curved at rest. More particularly the tongue forms a chute having maximum height at the distal end 24 and minimum height at the proximal end 22, where it is substantially
5 coplanar with the flank 14 of the channel or slightly raised and/or slightly inclined with respect thereto. The height of the chute formed by the flexible tongue, and therefore its curvature, vary depending on the cushioned load until a state of maximum compression is reach where the chute is flattened and is substantially coplanar with the flank 14 of
10 the channel 10.

It is quite possible for the flexible tongue to be shaped differently when at rest, for example as a straight section, extending in a longitudinal direction with respect to the flank 14 of the channel, at a predetermined angle with respect thereto, assuming a varyingly accentuated curvature
15 depending on the cushioned load following the varyingly accentuated movement of the profile towards the upright.

Similarly, it is quite possible for the flexible tongue to have a different curvature when at rest, for example to have the shape of an overturned chute, namely to have an opposite concavity with respect to the
20 concavity of the chute described further above.

In particular, in one embodiment, at least one flexible tongue 20, 21 is concave upwards with respect to a surface 14 of the channel 10 to which it is fixed. In another embodiment at least one flexible tongue 20, 21 is concave downwards with respect to a surface 14 of the channel 10
25 to which it is fixed. Other curvatures of the tongue fall within the scope of protection of the present invention.

Preferably, in the various embodiments, the at least one flexible tongue 20, 21 is coplanar with a surface 14 of the channel 10 on which it is fixed, in a working phase of maximum cushioning between the profile
30 100 and the frame 1000.

Preferably the cushion 1 is made of plastic material and the channel and the tongue are formed as one piece. In one embodiment the

material for the flexible tongue 20, 21 is plastic and is different from the material used for the channel. Preferably the channel is also made of plastic material.

5 According to a particularly advantageous aspect of the present invention the cushion comprises a first flexible tongue 20 projecting from a side 12 of the channel 10 and a second flexible tongue projecting from an opposite side 14 of the channel 20, according to that shown, for example, in Figures 2 to 4.

10 Each of the two tongues may be formed in accordance with that which has already been mentioned. For example both tongues may have a curvature directed upwards. The two flexible tongues may be two chutes directed towards the same flank 14, to which they are fixed by means of the respective proximal ends 22, 23, substantially coplanar with the flank 14.

15 It is also quite possible for the shape of the tongues to be different, for example in terms of curvature. It is likewise possible for the tongues to have the same concavity, but with a different slope or opposite concavity (one directed downwards and one directed upwards), or for one tongue to be straight and extend obliquely with respect to the flank
20 14 and the other tongue to be curved.

In a preferred embodiment of the invention the two tongues are symmetrical. Preferably the tongues have the same length and/or the same curvature.

25 According to one aspect of the present invention the tongues are arranged in the manner of bull's horns, with the proximal ends fixed to the channel, i.e. to a flank 14 thereof.

The channel comprises a bottom 15 intended to touch a rib of the profile 100 and two flanks 13, 14. At least one of the flanks, preferably the flank 13 on which the flexible tongue 20, 21 is not fixed, comprises
30 a flange 16 or protrusion directed towards the interior of the channel 20 and intended to be inserted in a groove 132 of the profile 100 for rapid

engagement. According to one embodiment the groove is on the cushion and the tip on the profile.

One flank 13, preferably the flank with the flange 16, is inclined towards the opposite flank 14, reducing the breadth of the opening 17
5 of the channel 10 with respect to the bottom 15, when at rest.

The channel does not have a cushioning function. The channel ensures rapid engagement with the profile.

In one embodiment, shown schematically in Figures 7a-7c, a single tongue is provided, extending from one side only of the channel, beyond
10 the lateral opening LAT.

According to one aspect of the present invention the cushion comprises two flexible tongues, as for example shown in Figure 6, and one flexible tongue has greater elasticity than the other flexible tongue.

Advantageously a different elasticity of the two tongues allows an
15 improvement in the pretensioning of the shade associated with specific doors or windows, for example it allows an improvement in the pretensioning of the oblique sliding shades. In fact one flexible tongue, namely the one intended to be mounted towards a tendentially looser portion of the shade (screen) - which therefore has a greater bowing or
20 concavity - may have greater elasticity and therefore extensibility, while the tongue intended to operate towards a tendentially tauter portion of the shade (screen) - which therefore has a smaller bowing or concavity - may have a smaller elasticity and therefore smaller extensibility. A similar technical effect, according to the present invention, can be
25 obtained using two flexible tongues of equal elasticity, but with a different curvature or extension at rest. Similarly, for specific installations, it is possible to envisage that the cushions intended to be mounted on an edge of the profile may have flexible tongues with a greater elasticity than the elasticity of the flexible tongues on the other
30 edge of the profile or it is possible to envisage that the cushions intended to be mounted on a profile (i.e. on both its sides) may have flexible tongues with a greater elasticity than the elasticity of the flexible

tongues on the other profile (i.e. on both its sides). The different elasticity of one tongue with respect to the other is preferably marked visibly, for example by means of respective colouring or numbering. A cushion may have two tongues of different colour.

5 Advantageously, again and only as an example with reference to Figure 6, each cushion forms at least two points or zones of contact with the upright. These zones of contact may be only two points, at the ends of the flexible tongues, in the state of maximum extension of the flexible
10 is all the greater the higher the compression.

Such a configuration creates optimal pretensioning and cushioning. In fact, at rest, the distal ends of the opposite flexible tongues associated with a plurality of cushions can form a plurality of points for contact and pretensioning corresponding to a respective plurality of matching
15 points on the surface of the upright, without however involving the whole surface of the upright. In the working phase, the greater the compression, the greater (more extensive) may be the zone of contact of the flexible tongues of said plurality of cushions with respective zones of contact on the surface of the upright.

20 Advantageously, the cushions of the present invention, more particularly the cushions of Figure 6, may be mounted on both sides of the profile.

The cushion 1 according to the present invention is particularly advantageous also in the arrangement for mounting thereof between the
25 upright 1000 and an extractable edge of the upright.

With reference to Figures 13a-13b, an upright 1000 is shown schematically, comprising a removable rib 2000 which can be engaged by means of a quick fit, for example snap-engagement, in the upright, said rib being structured to form a profile for restraining the profile 100
30 inside the upright and a face of the upright without holes.

The removable rib 2000 is inserted in a seat 1040 or channel which

extends longitudinally along the upright 1000, on one of its flanks 1060, and inside which seat elastic means operate, situated between the rib 2000 and the bottom 1050 of the upright, said elastic means restraining the rib between the bottom and the flank 1060.

- 5 Advantageously assembly of the removable rib 2000 is performed by fitting the rib 2000 inside the seat 1040, without screws, and disassembly is performed by extracting the rib from the seat, with a simple manoeuvre involving compression of the elastic means. No hole is provided on the face of the upright bounded by the removable rib.
- 10 Moreover the upright can be installed flush with the wall situated alongside a window, with the bottom of the upright inset in the wall and the face of the upright flush, or so as to form so-called continuous façades. In this case the upright is placed between two neighbouring openings and forms two seats for two profiles, a first profile associated
- 15 with a shade which extends in a first direction, to cover a first opening of the continuous façade, and a second profile associated with another shade which extends in a second direction, so as to cover a second opening of the continuous façade of a building.

- At least one of the flanks 1060 is associated with the removable rib
- 20 2000, and elastic means are arranged between the removable rib and a bottom of the upright, in order to restrain the rib between the bottom and the flank.

- Advantageously, according to the present invention, the elastic means are formed by the cushion 1. The flank associated with the removable
- 25 rib comprises a lateral wall and a shoulder, substantially parallel to the lateral wall, which forms, with the bottom of the upright, the seat for receiving the rib inside which the cushion 1 operates, pushing the rib from the bottom of the upright towards an abutment on the flank.

- According to this aspect of the invention the cushion 1 comprises a
- 30 channel, with a substantially C-shaped cross-section, mounted or able to be mounted on an edge 2010 of the removable rib 2000, and a flexible tongue 20, having one end 22 on the channel 10 and an opposite end 24 spaced from it and touching the bottom 1050 of the

upright. Advantageously a plurality of cushions 1 may be easily and rapidly mounted on the edge 2010 of the channel, with a predefined or variable spacing from each other, in order to exert a pressure along the whole rib 2000, improving fixing inside the upright 1000.

- 5 The flank 106 may comprise a rigid side-wall and the removable rib 2000 is engaged so as to be inset relative to the rigid side-wall. The rigid side-wall forms one side of the upright and is formed as one piece with the upright. The removable rib 2000 comprises a face 2001 which defines a front profile of the upright and a lateral wall 2020
10 perpendicular to the face, comprising the edge 2010 on which the cushions are mounted. The lateral part of the rib substantially has the same length as the face but, advantageously, may be narrower than the face, owing to the presence of the cushions between bottom and rib. The rib made in this way is easier to assemble also due to the reduced
15 width.

Preferably a plurality of cushions are mounted with predefined or variable spacing on the edge of the removable rib. The spacing is preferably comprised between 15 cm and 20 cm.

- In one embodiment the cushion 1 to be mounted on the edge of the
20 removable rib 2000 has a channel with the parallel flanks 13, 14, intended to remain in contact with the opposite sides 2020, 2021 of the removable rib 2000, and a bottom 15 which touches, when the parts are assembled, one end 2030 of the removable rib 2000. The cushion 1 comprises at least one flexible tongue 20, 21 which extends in the
25 longitudinal direction (L) of the channel 10, projecting outside thereof on at least one side 11, 12, and characterized in that said at least one flexible tongue 20, 21 is fixed on the bottom 15 of the channel.

- The other characteristic features of the channel and the flexible tongue, such as for example the curvature at rest of the tongue, its concavity
30 upwards with respect to the surface of the channel to which it is fixed (bottom), the coplanarity of the tongue with a surface of the channel to which it is fixed (bottom), in a working phase of maximum cushioning between the upright and the removable rib, etc., have already been

described with reference to Figures 1-12 and consequently any repetition is avoided.

Figure 15 is a cut-away view of the cushion 1 mounted on the edge of the removable rib 2000. In this drawing the tongue 20 has one end 22 on the bottom of the channel 10 and extends from the bottom with predefined curvature above the bottom. However, in a preferred embodiment, the end 22 is fixed on the bottom 15 of the channel 10 but the tongue extends outside of the channel, preferably with a curvature of the type shown in Figure 6.

10 The method of performing cushioning between a profile and an upright provided by the present invention is described briefly below and can in any case be understood from the description, already given, of the structural aspects of the cushion and the profile, with the associated advantages.

15 The steps of the method comprise:

- preparing a profile of a shade for a door or window;

- mounting on a rib of the profile a plurality of cushions, each comprising a channel 10, mounted on (the rib of) the profile 100 and having a substantially C-shaped cross-section, and at least one flexible tongue 20, 21 on the channel 10, intended to provide a cushioning action between the profile 100 and a frame 1000 for assembly of the profile 100;

20 this flexible tongue 20, 21 extending in the longitudinal direction L of the channel 10 and projecting outside thereof on at least one respective side 11, 12;

- inserting the profile in the upright with the corresponding cushions directed towards the upright.

CLAIMS

1. Cushion system comprising:

-a profile (100) of a shade (500) of a door or window, the profile (100) having a longitudinal extension;

5 a cushion (1) comprising a first portion (10) fixed on a first section (101) of the profile (100) and a second portion (20) including at least one flexible tongue (20, 21),

10 characterized in that said at least one flexible tongue (20, 21) extends in the longitudinal extension of the profile (100) and is along a second section (102) of the profile (100) free from said first portion (10), to act as a cushion between the profile (100) and a frame (1000) for assembly of the profile (100).

2. Cushion system according to Claim 1, characterized in that said at least one flexible tongue (20, 21) is curved when at rest.

15 3. Cushion system according to Claim 1, characterized in that said at least one flexible tongue (20, 21) is concave upwards with respect to a surface of the profile (100).

4. Cushion system according to Claim 1, characterized in that said at least one flexible tongue (20, 21) is made of plastic material.

20 5. Cushion system according to claim 1 comprising a plurality of cushions (1) spaced with a predetermined spacing.

25 6. Cushion system according to claim 1 wherein one end (22) of said second portion (20) is coplanar with a surface of said first portion (10).

7. Cushion system according to claim 1 wherein the first portion (10) of the cushion (1) has a flat surface (14) in contact with an upper surface

(160) of the profile (100) and an end (22) of said second portion (20) of the cushion (1) is coplanar with said flat surface (14) of the first portion (10) or slightly raised or sloping with respect thereto.

5 8. Cushion system according to claim 1 wherein the profile (100) includes opposite edges (101, 102) on which the cushions (1) is fixed.

9. Cushion system according to claim 8 wherein said opposite edges (101, 102) comprise recesses (103, 104) and said first portion (10) of the cushion (1) is inserted in one of said recesses (103, 104).

10 10. Cushion system according to claim 8 wherein the cushions (1) are alternatively on the opposite edges (101, 102) of the profile (10).

11. Cushion system according to claim 1 wherein the first section (10) is a channel (10) having a substantially C-shaped cross section, mounted on and removable from the profile (100).

15 12. Cushion system according to Claim 11, characterized in that said flexible tongue (20, 21) has a proximal portion (22, 23) fixed on the channel (10) and a remaining portion (24, 25, 26, 27) projecting outside thereof from at least one side (11, 12) and projecting from the channel (10) also in a vertical direction (V).

20 13. Cushion system according to Claim 11, characterized in that said at least one flexible tongue (20, 21) is fixed on one of the two parallel flanks (13, 14) of the channel (10), extending outside the channel (10).

25 14. Cushion system according to Claim 11, characterized in that said at least one flexible tongue (20, 21) is coplanar with a surface (14) of the channel (10) to which it is fixed, in a working phase of maximum cushioning between the profile (100) and the frame (1000).

15. Cushion system according to Claim 11, characterized in that said at least one flexible tongue (20, 21) is formed as one piece with the channel (10).

16. Cushion system according to Claim 11, characterized in that it

comprises at least one first flexible tongue (20) projecting from one side (12) of the channel (10) and at least one second flexible tongue projecting from an opposite side (14) of the channel (20).

5 17. Cushion system according to Claim 11, characterized in that said channel (10) comprises a bottom (15) which is in contact with a rib of the profile (100) and two flanks (13, 14), at least one of said flanks, preferably the flank (13) on which said at least one flexible tongue (13, 21) is not fixed, comprises a flange (16) or protrusion directed towards an interior of the channel (20) and inserted in a groove of the profile
10 (100).

18. Cushion system according to claims 9, 11 and 13 wherein a thickness of the profile (100) is smaller in a region of the recesses (103, 104), the channel (10) is inserted in the recesses (103, 104) and a surface of the profile (100) on the sides of the cushion (1) is coplanar
15 with the flank (14) of the cushion (1) from where the flexible tongue (20) projects.

19. Shade system comprising a frame (1000) comprising two opposite uprights for receiving a respective profile (100) of a shade (500) and two profiles (100) inserted in the uprights, each of said profiles (100)
20 comprising a plurality of cushions according to any one of Claims 1-18.