Title
TRACK GUIDE BLIND EDGING

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ABSTRACT

A roller blind including, a roller, a length of blind fabric attached to and rollable onto said roller, a first track positioned adjacent a vertical side of the blind fabric and a second track positioned adjacent an opposite vertical side of the blind fabric, a respective flexible elongate edging being attached to and extending down each of said vertical sides of the blind fabric to retain said blind in slidable engagement with said first and second tracks, the elongate edging including a front face and a rear face, wherein a protrusion extends longitudinally along the front face of the elongate edging, and a groove extends longitudinally along the rear face of the elongate edging, whereby when said length of blind fabric is wound onto the roller the groove of an overlaying portion of the elongate edging engages with the protrusion of any underlying portion of the elongate edging or *vice versa*. 
TRACK GUIDE BLIND EDGING

FIELD OF THE INVENTION

The present invention relates generally to track guided blind or awning systems and in particular to an edging for attachment to the blind fabric of an interior or exterior blind system.

BACKGROUND OF THE INVENTION

Track guided blind and awning systems are used in various applications. One type of track-guided system disclosed in the prior art includes a length of cord held within the folded vertical edges of the blind fabric. The cords form expanded edges on either side of the blind fabric that are configured to engage with a keyway in a respective vertical track attached to either side of a window or other opening. In this way the blind can be moved lengthways along the track to open or close the blind.

One problem with existing blind systems that include expanded edges resides in the fact that as the blind fabric is wound onto the roller of the blind system, the thickened portion created by the cord can create axial displacement of the blind fabric, since the expanded edge has a tendency to be tightly wound onto the roller.

The resultant misalignment of the edges of the blind can cause rippling or warping of the blind fabric that reduces the lifespan and aesthetics of the window covering. The axial displacement of the blind fabric can also cause the edges to be worn or caught by the roller or vertical track of the blind system.

The expanded edge created by the cord also increases the diameter of the rolled blind. This results in the overall diameter of the rolled blind to be larger which affects the aesthetics and means that a larger cover or pelmet is required to conceal the rolled blind.

It should be appreciated that the term ‘blind’ or ‘awning’ can be substituted for each other throughout the specification.

It should also be appreciated that any discussion of the prior art throughout the specification is included solely for the purpose of providing a context for the present invention and should in no way be considered as an admission that such
prior art was widely known or formed part of the common general knowledge in the field as it existed before the priority date of the application.

SUMMARY OF THE INVENTION

In accordance with an aspect of the invention, but not necessarily the broadest or only aspect there is proposed a roller blind including, a roller, a length of blind fabric attached to and rollable onto said roller, a first track positioned adjacent a vertical side of the blind fabric and a second track positioned adjacent an opposite vertical side of the blind fabric, a respective flexible elongate edging being attached to and extending down each of said vertical sides of the blind fabric to retain said blind in slidable engagement with said first and second tracks, the elongate edging including a front face and a rear face, wherein a protrusion extends longitudinally along the front face of the elongate edging, and a groove extends longitudinally along the rear face of the elongate edging, whereby when said length of blind fabric is wound onto the roller the groove of an overlaying portion of the elongate edging engages with the protrusion of any underlying portion of the elongate edging or vice versa.

The groove may alternatively extend along the front face and the protrusion extend along the rear face, whereby the groove of an underlying portion of the elongate edging engages with the protrusion of any overlaying portion of the elongate edging.

The engagement of the protrusion with the groove as the blind fabric is wound onto the roller results in a smaller diameter compared to conventional roller blinds that include a cord contained within the folded edge. This reduction in the bulging at the ends of the rolled blind means that the blind fabric is held more tightly on the roller therefore reducing warping. The reduction in the overall size of the rolled blind also improves the aesthetics of the blind system.

The engagement between the protrusion and groove also inhibits the axial displacement of the blind, which could otherwise cause misalignment of the edges of the blind as it is wound onto a roller.

Accordingly, the thickness of the elongate edging and engagement of the protrusion with the groove inhibits warping and ripping of the blind fabric as can occur with existing blind systems.
The elongate edging is attached to the either side of the blind and may be stitched, welded, glued or otherwise secured thereto.

Preferably the elongate edging has a thickness of between 0.3 mm and 1 mm, and more preferably the elongate edging has a diameter of 0.4 mm.

Preferably the longitudinally extending groove has a depth of between 0.3 mm and 0.7 mm, and more preferably has a depth of 0.53 mm. The groove may have a generally triangular cross sectional profile. Alternately the groove may have a generally domed or angular cross sectional profile. The groove may also be in the form of a longitudinally extending shoulder that engages the protrusion.

Preferably the longitudinally extending protrusion has a height from an upper surface of the elongate edging of between 0.9 mm to 1.5 mm, and more preferably is 1.1 mm in height. The longitudinally extending protrusion may have a generally triangular cross sectional profile with an acute angle of between 40° and 55° and preferably 48.88°. Alternatively the protrusion may be domed or have an angular cross sectional profile.

The elongate edging may include a ridge that extends along a surface of the elongate edging parallel with the longitudinally extending protrusion. In one form the ridge extends longitudinally along the upper surface of the elongate edging and is used to align the edge of the blind fabric when being fixed to the elongate edging.

The respective tracks include an internal longitudinal chamber and a longitudinal slot, which forms a keyway and is open inwardly towards a corresponding side of the blind. The elongate edging passes through the slot whereby the protrusion is captured within the track chamber. Accordingly, the width of the slot is less than the combined thickness of the elongate edging and protrusion.

The track includes an open top adjacent the roller whereby the elongate edging may be fed into the open top such that the elongate edging is captured within the track chamber.

Sides of the longitudinal slot of the tracks may include capping being configured to cover the edges of the slot. The capping may be constructed from a synthetic material such as plastic. The capping reduces the opening of the slot to thereby assist in inhibiting disengagement of the elongate edging from within the
track. The capping may also reduce friction that is caused when the surface of the elongate edging slides against the edges of the slot.

It should however be appreciated that the capping is not essential and the edges of the slot may be rounded to inhibit wear of the elongate edging.

The distance between the sides of the slot or between respective capping attached thereover is preferably regular and is dimensioned to permit the elongate edgings to freely slide therewithin. The distance between sides of the slot or the capping may be between 0.7 mm and 2 mm and in one form is 1 mm.

Preferably the elongate edging is attached to opposing vertical edges of an internal window blind, wherein respective tracks are positioned on either vertical side of a window opening for engagement with the blind, however the elongate edgings could be used on coverings for other types openings and could also be used for exterior blinds or awnings.

In one form edges of the slot may be inclined inwardly of the track chamber.

The elongate edging may be constructed from plastic such as PVC or nylon or any other type of material that may be wound onto a roller and that retains a degree of rigidity to prevent disengagement from within the track.

The roller may be a spring-loaded, gearbox operated, chain operated or comprise a motorised roller. In one form the track may be an aluminium track although other materials could be used.

In another aspect of the invention there is proposed an elongate edging for attachment to a blind fabric of a roller blind, wherein a protrusion extends longitudinally along a first face of the elongate edging, and a groove extends longitudinally along an opposite second face of the elongate edging, such that when the blind fabric is wound onto a roller the protrusion and groove of the overlaying portions engage to inhibit axial displacement of the blind fabric.

The phrase "axial displacement" used throughout the specification should be understood to comprise the displacement or sideways movement of the blind longitudinally along the roller such that the edges of subsequent layers of the blind material that are being rolled onto the roller no longer overlay or align.
The invention may also be said to reside in a track guided blind system including the aforementioned elongate edging.

In still another aspect of the invention there is proposed a roller blind including, a roller, a length of blind fabric attached to and rollable onto said roller, a first track positioned adjacent a vertical side of the blind fabric and a second track positioned adjacent an opposite vertical side of the blind fabric, a respective flexible elongate edging being attached to and extending down each of said vertical sides of the blind fabric to retain said blind in slidable engagement with said first and second tracks, the elongate edging including a front face and a rear face, wherein a protrusion extends longitudinally along the front face of the elongate edging and abuts said rear face when said length of blind fabric is wound onto the roller.

Preferably the protrusion is continuous and is spaced apart from a free edge of the elongate edging.

Preferably the blind fabric is attached to and abuts the front face of the elongate edging.

In one form the protrusion includes a longitudinally extending apex. In another form the protrusion has an arcuate or curved cross-sectional lateral profile. In still another form the protrusion has a generally flat longitudinally extending upper surface that is parallel with, but spaced apart from said front face.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate an implementation of the invention and, together with the description and claims, serve to explain the advantages and principles of the invention. In the drawings,

Figure 1 is a perspective view of the track guided blind system of the present invention;

Figure 2 is a partial perspective view of the elongate edging of Figure 1;

Figure 3 is a perspective view of the elongate edging of Figure 1 illustrating the engagement with the track and attachment of the blind fabric;

Figure 4 is a side view of the elongate edging of Figure 1 engaging the track;
Figure 5 is a side view of the elongate edging stitched to the blind fabric;

Figure 6 is a top view of the elongate edging of Figure 5;

Figure 7 is a side schematic view of elongate edging wound onto the roller illustrating the nesting of the overlaying portions of the elongate edging;

Figure 8 is a partial side schematic view of the elongate edging and roller of Figure 7;

Figure 9 is a partial view of two of the overpaying portions of the elongate edging illustrating the engagement of the protrusion and overlaying groove;

Figure 10a is a second embodiment of the groove and protrusion of the elongate edging;

Figure 10b is a third embodiment of the groove and protrusion of the elongate edging; and

Figure 10c is a fourth embodiment of the groove and protrusion of the elongate edging.

DETAILED DESCRIPTION OF THE ILLUSTRATED AND EXEMPLIFIED EMBODIMENTS

Similar reference characters indicate corresponding parts throughout the drawings. Dimensions of certain parts shown in the drawings may have been deleted, modified and/or exaggerated for the purposes of clarity or illustration.

Referring to the drawings for a more detailed description, an elongate edging 10 for a track guided roller blind system 12 is illustrated, demonstrating by way of examples, arrangements in which the principles of the present invention may be employed. As illustrated in Figure 1, the blind system 12 includes guide tracks 14, 16 positioned on either side of an opening 18, such as a window, having a window frame 20. The blind system 12 further includes a roller 22 onto which a length of blind fabric 24 can be rolled.
The elongate edging 10 attached to opposite vertical sides of the blind fabric 24 slidably engages a sidewardly open longitudinally extending slot 26 in a respective track 14 or 16. The track guided roller blind system 12 includes a handle 27 that can be used to move the blind between retracted and extended positions as indicated by the arrow in Figure 1.

As illustrated in Figure 2 the elongate edging 10 includes a front face 28 and a rear face 30. A protrusion 32, which has a generally inverse V-shape cross-sectional profile, extends longitudinally along the front face 28 of the elongate edging 10, and a correspondingly shaped generally V-shaped groove 34 extends inwardly and longitudinally along the rear face 30 of the elongate edging 10.

The front face 28 of the elongate edging 10 includes a longitudinal ridge 36 that extends parallel with the longitudinally extending protrusion 32. The ridge 36 is used to align the edge 38 of the blind fabric 24, as illustrated in Figure 3.

Figure 3 illustrates one embodiment of the guide track that can be used in the blind system 12. It should be appreciated by the reader that the present invention is not limited to this configuration of track and other types of tracks could be used without departing from the scope of the invention.

The guide track 14 as illustrated in Figure 3 includes a generally C-shaped body 40 and two inwardly projecting flanges 42, 44 having ends being spaced apart to form a slot 46 therebetween. In use an outer free end 48 of the elongate edging 10 is held within a chamber 50 formed in the guide track 14 by the protrusion 32 that bears against flange 42. It should be appreciated that although not illustrated track 16 has a similar configuration and works in the same way.

As further illustrated in Figure 4 the combined thickness of the elongate edging 10 and protrusion 32 is larger than the width of the slot 46 formed by the ends of the inwardly projecting flanges 42, 44. Accordingly, once the free end 48 and protrusion 32 enter the chamber 50 from the top of the guide track 14 the elongate edging 10 is held therein.

As illustrated in Figures 5 and 6, the blind fabric 24 may be attached to the elongate edging 10 by way of stitching 52. During manufacture the edge 38 of the blind fabric 24 is aligned along ridge 36 and stitched in place. The reader should
however appreciate that the blind fabric 24 may be welded, glued or otherwise affixed to the elongate edging 10.

The reader will now appreciate that as the blind fabric 24 is rolled onto the roller 22 the blind fabric 24 and attached elongate edging 10 progressively overlays itself. Accordingly, a portion of the rear face 30 of the elongate edging 10 will overlay a portion of the front face 28 of the elongate edging 10. In this way a portion of the groove 34 will engage with a portion of the protrusion 32 on the elongate edging 10. Figures 7 and 8 illustrate six portions of the elongate edging 10 and blind fabric 24 overlaying one another. For ease of reference the portion has been given the reference numbers 10a to 10f and 24a to 24f in the figures. As can be seen in Figure 8 the protrusion 32 of portion 10d engages with the groove 34 of the overlaying portion 10e. Similarly the groove 34 of portion 10d engages with the protrusion 32 of the underlying portion 10c.

In this way the groove 34 of each of the illustrated portions 10b to 10f, engage with the protrusion 32 of an overlaying portion of the elongate edging 10.

The reader should appreciate that although the present embodiment includes a protrusion 32 that extends upwardly from the front face 28 and a groove 34 that extends inwardly of the rear face 30, the protrusion 32 may adjoin the rear face 30 and the groove 34 may adjoin the front face 28.

The skilled addressee will appreciate that the engagement of the protrusion 32 with the correspondingly shaped groove 34 as the blind fabric 24 is wound onto the roller 22 results in a smaller diameter compared to conventional blinds that include a cord contained within a folded edge.

Furthermore, as illustrated in Figure 9 the engagement between the protrusion 32 and groove 34 inhibits the axial displacement of the elongate edging 10 along the arrow as illustrated, which would otherwise cause misalignment of the edges of the blind as it is wound onto a roller 22.

This reduction in the overall diameter of the retracted blind and engagement between the protrusion and groove of different portions of the elongate edging 10 inhibits warping and ripping of the blind fabric 24 as can occur with existing blind systems.
Figures 10a to 10c illustrate alternate embodiments of the protrusion 32 and groove 34, although the reader should appreciate that other configurations are possible without departing from the scope of the invention.

Although a manual roller blind is illustrated in the figures the reader should also appreciate that the blind system may be gearbox operated, chain operated or comprise a motorised roller.

The illustrated invention provides advantages over the prior art by providing a track guided blind that includes an edging that minimises the overall diameter of the rolled blind and also inhibits axial displacement that would result in misalignment of the edges of the blind fabric.

Various features of the invention have been particularly shown and described in connection with the exemplified embodiments of the invention, however it must be understood that these particular arrangements merely illustrate the invention and it is not limited thereto. Accordingly, the invention can include various modifications, which fall within the spirit and scope of the invention.
CLAIMS

1. A roller blind including, a roller, a length of blind fabric attached to and rollable onto said roller, a first track positioned adjacent a vertical side of the blind fabric and a second track positioned adjacent an opposite vertical side of the blind fabric, a respective flexible elongate edging being attached to and extending down each of said vertical sides of the blind fabric to retain said blind in slidable engagement with said first and second tracks, the elongate edging including a front face and a rear face, wherein a protrusion extends longitudinally along the front face of the elongate edging, and a groove extends longitudinally along the rear face of the elongate edging, whereby when said length of blind fabric is wound onto the roller the groove of an overlaying portion of the elongate edging engages with the protrusion of any underlying portion of the elongate edging, or the groove extends along the front face and the protrusion extends along the rear face whereby the groove of an underlying portion of the elongate edging engages with the protrusion of any overlaying portion of the elongate edging.

2. The roller blind in accordance with claim 1 wherein the engagement between the protrusion and groove of different portions of the elongate edging inhibits the axial displacement of the elongate edging as it is wound onto said roller.

3. The roller blind in accordance with claim 1 wherein each said respective track includes an internal longitudinal chamber and a longitudinal slot opening towards a corresponding side of the blind forming a keyway being open at a top end of said respective track to thereby receive a portion of the elongate edging therein, wherein the respective elongate edging attached to a corresponding side of the blind fabric passes through the slot whereby the protrusion is captured within the track chamber.

4. An elongate edging for attachment to a blind fabric of a roller blind, wherein a protrusion extends longitudinally along a first face of the elongate edging, and a groove extends longitudinally along an opposite second face of the elongate edging, such that when the blind fabric is wound onto a roller the protrusion and groove of the overlaying portions engage to inhibit axial displacement of the blind fabric.

5. A track guided blind system including the elongate edging in accordance with any one of claims 1 to 4.
Figure 7

Figure 8