A lift cord anchor clip for securement to a shade roller of a roman shade assembly is described. The clip comprises a spring metal band having a partly spherical shape and defining a throat opening which is narrower than the diameter of the spherical shape band. At least one clamping formation is integrally formed with the band and projects inwardly of an inner surface of the band. At least one end flange extends outwardly of the band below the clamping formation and is adapted for engagement by a tool to cause disengagement of the clamping formation. A cord attaching formation is also formed integral with the band for attaching a free end of a lift cord of a roman blind thereto.
LIFT CORD ANCHOR CLIP FOR ROMAN SHADE

TECHNICAL FIELD

[0001] The present invention related to a lift cord anchor clip for securement about an actuation roller of a roman shade assembly whereby to attach the free ends of lift cords of the roman shade thereto to cause the shade to lift in a pleated form and to be lowered.

BACKGROUND ART

[0002] There are several methods to cause roman shades to lift in a pleated manner wherein the panels of the roman shade are lifted in a stacking fashion overlapping one behind the other to place it in an open or partly open position and to then lower the shade to a closed fully extended position. Some of these known systems utilize a pair of pulleys about which each of the lift cords are guided and then the cords are passed through a cord lock which engages the lift cords with the shade at a desired position. It is also known to use aluminum shade rollers wherein a groove is provided along the length of the roller and a plastic button is fitted within the groove whereby to attach the lift cords thereto at a desired position. A clutch is provided at the end of the roller whereby to cause rotation of the roller and to lock it at a desired position. As the clutch mechanism is rotated the roller rotates and the cord rolls around the roller lifting the shade. The system uses an aluminum roller and a plastic locking component.

[0003] Another known system is to provide an aluminum roller with holes drilled into the roller with metal screws secured in the holes. The lift cords are attached to the screws.

SUMMARY OF THE INVENTION

[0004] It is a feature of the present invention to provide a lift cord anchor clip for a roman shade and of the type which is securable to a shade roller and which substantially overcomes the above-mentioned disadvantages of the prior art and provides the above-mentioned need.

[0005] Another feature of the present invention is to provide a lift cord anchor clip for a shade roller of a roman shade and wherein the clip is symmetrical in construction and adjustable on the shade roller for positioning same at a desired location around the roller and at a desired position along the roller.

[0006] A further feature of the present invention is to provide a lift cord anchor clip which is inexpensive to produce, easy to install and remove from a shade roller and versatile and which can be adapted to several types of shade rollers including existing shade rollers which may be provided with different type lift cord connectors.

[0007] Another feature of the present invention is to provide a lift cord anchor clip in combination with an elongated shade roller of the type having support pins at opposed ends thereof and a clutch mechanism at an end to impart axial rotation to the shade roller and wherein two or more of the anchor clips are secured about the shade roller at any desired location thereon.

[0008] According to the above features, from a broad aspect, the present invention provides a lift cord anchor clip for securement to a roman shade roller. The clip comprises a spring metal band having a partly spherical shape. The band defines a throat opening which is narrower than the diameter of the spherical shape band. At least one clamping means is formed integrally with the band and projects inwardly of an inner surface of the band. Engageable means is spaced in relation to the clamping means and adapted for engagement by a tool to cause disengagement of the clamping means. A cord attachment means is provided for securing a lift cord to the anchor clip.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] A preferred embodiment of the present invention will now be described with reference to the accompanying drawings in which:

[0010] FIG. 1 is a side view of the lift cord anchor clip constructed in accordance with the present invention;

[0011] FIG. 2 is a side view of FIG. 1, the opposite side being identical;

[0012] FIG. 3 is a top view of FIG. 1;

[0013] FIG. 4 is a fragmented section view showing the clamping tooth formed on opposite sides of the anchor clip adjacent the throat opening thereof;

[0014] FIG. 5 is a fragmented section view showing the construction of one of the cord attaching formations;

[0015] FIG. 6 is an end section view showing the construction of the cord attaching formations;

[0016] FIG. 7 is a rear schematic view illustrating the construction of a roman blind attaching system using a shade roller and a pair of lift cord anchor clips constructed in accordance with the present invention; and

[0017] FIG. 8 is a cross section view showing how the lift cord anchor clip of the present invention is displaceable about the shade roller to adjust its position thereabout or removable from the shade roller.

DESCRIPTION OF PREFERRED EMBODIMENTS

[0018] Referring now to the drawings and more particularly to FIGS. 1 to 3 there is shown generally at 10 the lift cord anchor clip of the present invention. The clip is comprised of a spring metal band 11 having a partly spherical shape which defines a throat opening 12 which is narrower than the diameter 13 of the spherical shaped band 11. The free ends 14 of the anchor clip are outwardly turned to provide an end flange to provide a smooth surface for ease of placement of the band about a shade roller, and to further provide an engageable means 16, as will be described later. The band is also of a width as illustrated in FIG. 2, but this can vary.

[0019] Formed on opposed sides of the anchor clip 10 and above the outwardly turned free ends 14 is a clamping means constituted by a punched out formation which forms a clamping tooth 15 as better illustrated in FIG. 4. This clamping tooth 15 has a pointed end 15' which projects inwardly from the inner surface 17 of the band 11 and upwards from the opening 12 to provide for engagement with a shade roller as will be described later. It is also contemplated that a single clamping means can be provided with teeth pointing in opposite directions on one side only of the anchor clip.

[0020] The engageable means 16 is in the form of a slot 16 punched out of the end flange spring metal band 11 on opposed sides of the anchor clip below the clamping teeth 15. This slot 16 permits the insertion of a screwdriver tip 50 (see FIG. 8) for a purpose as will be described later. If a
single clamping means is provided, then only one metal flange 16 would be required. The engageable means may also be constituted by the extension of the free ends 14 wherein to provide gripping thereof by a pair of pliers (not shown) to disengage the clamping tooth 15.

[0021] With additional reference to FIGS. 5 and 6, it can be seen that located centrally on the top of the anchor clip 10 is a cord attachment means constituted by a cord attaching formation 20 which is formed integral with the band. This cord attaching formation 20 is illustrated in top view in FIG. 3 and side view in FIGS. 1 and 6. It is formed from a single elongated flat rectangular spring metal band which is stamped to define an elevated transverse wall 21 having opposed outwardly curved guide walls 22. A pair of cylindrical through bores 23 are formed by punching a sleeve adjacent a respective side edge 24 of the clips and then punching it outwardly downwards over the elevated transverse wall 21 to form a pair of spaced-apart tunnel-like through bore formations 23. These hollow cylindrical through bores provide for the passage of a string therethrough. The cylinders have an inner rounded surface 231 to provide low friction with the string. As well, the curved guide walls 22 provide low friction with the string attached through one of the hollow cylinders, as will be described later, and in functional contact with the guide walls 22.

[0022] The clamping teeth 15 may have a slightly different configuration than that illustrated and could be jagged or rounded instead of pointed as long as it can bite within a shade roller. FIG. 4 illustrates the position of the teeth 15 which is punched inwardly and wherein the free end or pointed 15 end projects inwardly upward from the bottom opening 12, as shown in FIG. 1.

[0023] As shown in FIG. 7 the roman blind attaching system is comprised of an elongated shade roller 31 which is supported between a pair of support brackets 32. Support pins 33 are provided at opposed ends of the roller to secure the roller to the brackets and to permit rotation of the roller. The support brackets 32 are secured to a header board 34 by the use of screws 35, and this is well known in the art. A clutch mechanism 36, having a pull chain 37, imparts rotation to the roller 31. Such clutch mechanism is also well known in the art. As herein shown the roman shade 38 consists of panels 39 and cord guide rings 40 secured to each panel pleat function 41 in the rear of the roman shade 38. The guide rings 40 guide the lift cords 42 therethrough. There are two lift cords 42 and 42' each secured at a lower end 43 and 43' of the roman shade 38 with the guide rings positioned in vertical alignment.

[0024] Two lift cord anchor clips 10 and 10' are secured about the shade roller 31 at desired locations offset with respect to an associated one of the lift cords 42 and 42' such that the cords will wind about the roller 31 to a side of the clips 10 and 10', as shown in phantom lines at 42 and 42'. It should be noted that the clip 10 is of symmetrical design, and therefore it can be clipped to any side of the roller, either the right side or the left side. Because the clip is symmetrical the user person cannot make a mistake in the installation.

[0025] As shown in FIG. 8 a free end portion 45 of each of the lift cords 42, 42', herein lift cord 42, is secured to one of the through bores 23 by passing the free end 45 of the cord through one of the through bores 23, the one facing inside the roller, while holding the lift cord taut. A knot or several knots 46 are formed adjacent the exit end of the through bore 23 whereby to secure the lift cord to the anchor clip 10. The lift cord abuts against the curved guide wall 22 under the elevated wall 21 and is thus not exposed to any sharp edges. In fact the clip is also formed with rounded edges, such as shown at 25 in FIG. 5.

[0026] Because these shade rollers 31 are provided with different diameters, depending on their application and manufacturers, the lift cord anchor clip 10 of the present invention is also fabricated of different diameter sizes so that these clips may be secured to these different diameter size shade rollers. The spring metal clip 10 has a diameter which is slightly smaller than the diameter of the shade roller 31 and sufficient to permit clamping engagement of the anchor clip 10 about the shade roller 31 with the clamping teeth 15 biased against and biting into the outer surface 31' of the shade roller to prevent rotational displacement of the anchor clips 10 and 10' about the shade roller 31.

[0027] As also shown in FIG. 8, in order to adjust the position of the anchor clip 10 about the outer surface of the roller 31, it is necessary to disengage one clamping tooth 15 from the outer surface 31' of the roller 31 and this is done by placing a tool, herein a screwdriver tip 50, in the slot 16 in the free end 14 below the tooth 15 and pulling the screwdriver outwardly in the direction of arrow 51 whereby to draw out the lower portion 53 of the anchor clip to disengage the tooth 15 from the outer surface 31'. The anchor clip 10 can then be adjusted by rotating it in the direction of arrow 54 which is counter to the projection of the opposite clamping tooth 15' which can then slide over the outer surface 31' of the roller. When the retracting action of a screwdriver is removed, the section 53 of the anchor clip will snap back into position about the outer surface 31' of the roller 31 with both clamping teeth 15 and 15' biting into the outer surface 31' of the roller and preventing rotation of the clip. This adjustment is made after the cord 42 is secured thereto whereby to make the cord taut. By retracting the anchor clip 10, as shown in FIG. 8, the clip can also be removed from its engagement with the roller 31 by pushing the clip in an upward direction.

[0028] It is within the ambit of the present invention to cover any obvious modifications over the preferred embodiments described herein, provided such modifications fall within the scope of the appended claims.

We claim:
1. A lift cord anchor clip for securing to a roman shade roller, said clip comprising a spring metal band having a partly spherical shape, said band defining a throat opening which is narrower than the diameter of said spherical shape band, at least one clamping means formed integrally with said band and projecting inwardly of an inner surface of said band, engageable means spaced in relation to said clamping means and adapted for engagement by a tool to cause disengagement of said clamping means, and chord attachment means for securing a lift cord to said anchor clip.
2. A lift cord anchor clip as claimed in claim 1 wherein said clamping means is provided on a respective side of said throat opening, there being two of said engageable means each of which is spaced from an associated one of said clamping means.
3. A lift cord anchor clip as claimed in claim 2 wherein said clamping means is formed by at least one clamping tooth extending inwardly upwards from said opening.
4. A lift cord anchor clip as claimed in claim 3 wherein there are two of said clamping teeth pinched inwardly from said spring metal band, each tooth having a pointed end.
5. A lift cord anchor clip as claimed in claim 2 wherein said engageable means is constituted by a slot in an outwardly turned end flange on opposed sides of said throat opening to permit insertion of a screwdriver tip constituting said tool.

6. A lift cord anchor clip as claimed in claim 2 wherein said engageable means is constituted by an outwardly turned end flange formed from said band on opposed sides of said throat opening.

7. A lift cord anchor clip as claimed in claim 2 wherein said cord attachment means is constituted by a cord attaching formation formed integral with said band and positioned between said clamping means.

8. A lift cord anchor clip as claimed in claim 7 wherein said cord attaching formation is constituted by a cord attaching formation formed integral with said band.

9. A lift cord anchor clip as claimed in claim 8 wherein there are two of said through bores, said through bores being formed by cylinder formations shaped and bent to create a pair of spaced apart tunnel-like through bore formations.

10. A lift cord anchor clip as claimed in claim 1 wherein said anchor clip is formed from a single flat rectangular spring metal band.

11. A lift cord anchor clip as claimed in claim 2 in combination with an elongated shade roller having opposed support pins at opposed ends thereof and a clutch mechanism at one of said opposed ends to impart axial rotation to said shade roller to cause same to rotate clockwise and counterclockwise, and wherein two or more of said anchor clips are secured about said shade roller at predetermined locations theeralong to provide for attachment of a free end of lift cord of a roman blind thereto.

12. A lift cord anchor clip as claimed in claim 11 wherein said clamping means is formed by at least one clamping tooth extending inwardly of an inner surface of said band and extending upwards from said opening.

13. A lift cord anchor clip as claimed in claim 12 wherein said engageable means is constituted by a slot in an outwardly turned end flange on opposed sides of said throat opening to permit insertion of a screwdriver tip constituting said tool.

14. A lift cord anchor clip as claimed in claim 13 wherein said cord attachment means is constituted by a cord attaching formation formed integral with said band and positioned between said clamping means.

15. A lift cord anchor clip as claimed in claim 14 wherein said cord attaching formation has at least one through bore formation dimensioned to receive a lift cord therethrough.

16. A lift cord anchor clip as claimed in claim 15 wherein there are two of said through bore formations, said through bore formations being formed by cylindrical formations shaped and bent to create a pair of spaced apart tunnel-like through bore formations.

17. A lift cord anchor clip as claimed in claim 16 wherein free end of each said lift cords is secured to one of said through bore formations by passing said free end through one of said through bore formations with said lift cord taut and forming a knotted end in said free end to prevent said free end from being pulled out of said through bore.

18. A lift cord anchor clip as claimed in claim 13 wherein said diameter of said spring metal band is smaller than the diameter of said shade roller sufficient to permit clamping engagement of said anchor clip about shade roller with said clamping teeth biased against an outer surface of said shade roller to prevent rotational displacement of said anchor clip about said shade roller.

19. A lift cord anchor clip as claimed in claim 18 wherein there are two of said clamping teeth punched inwardly from said spring metal band, each tooth having a pointed end and wherein one of said clamping teeth is disengageable from its clamping engagement with said shade roller outer surface by inserting a screwdriver tip in said slot of said end flange associated with said one of said clamping teeth to pull said end flange outward to cause said spring metal throat opening to widen to disengage said one of said clamping teeth to permit rotation of said anchor clip about said shade roller outer surface in a single direction forwardly of said clamping teeth to permit adjustment of said anchor clip or the removal thereof.

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