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⑤④ **Cord locking device for a sun-blind or the like.**

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⑤⑥ References cited:
DE-C- 206 020
FR-A- 363 952
GB-A-1 129 997
US-A-1 964 205
US-A-2 547 370
US-A-2 731 111
US-A-4 180 118

⑦⑧ Proprietor: **VEROSOL B.V.**
Oosterstraat 2
NL-7514 DZ Enschede (NL)

⑦② Inventor: **Niemeijer, Remmelt Cornelis**
Koenderinklanden 43
NL-7542 WC Enschede (NL)

⑦④ Representative: **van der Beek, George Frans**
et al
Nederlandsch Octrooibureau Johan de Wittlaan
15 P.O. Box 29720
NL-2502 LS 's-Gravenhage (NL)

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Description

The invention relates to a locking device for the cords of a sun-blind or the like provided with an upper beam and one or more webs from sun-blinding material connected thereto, preferably material folded in a zigzag line, in which the cords are introduced through holes in the upper beam, extend through the inner space of the upper beam to one end of the upper beam and therefrom to the outside for opening or closing the sun-blind, the locking device comprising a U-shaped portion having legs between which a tumbler having a pivot shaft near its upper end is pivotally mounted.

Such a sun-blind is known from NL—A 7307075 laid out to public inspection.

In said known sun-blind at both ends of the upper beam an endstop is provided, one of said endstops is provided with a hole for introducing a number of cords. In the practically used embodiment said cords, sometimes as much as nine pieces, are connected to one single cord by means of which the sun-blind may be pulled up and dropped. The fastening of said cord is carried out by means of a toggle affixed to the window-frame.

A need of a locking device exists which automatically locks the cords when they are not pulled anymore.

Such automatically operating locking devices are known indeed for sun-blinds provided with tilting lamellae. These blinds have a rather robust upper beam and the locking device may be built in therein, or affixed at its outside, see US—A—2.731.111.

The mounting of the known locking device in the modest upper beam of the sun-blind according to the NL—A—730705 is impossible because of lack of space.

When one should affix the known locking device against a headend of the upper beam the effective length for the upper beam is lost and the sun blinding material will not cover the entire window.

When one should provide the known locking device against the bottom of the one end of the upper beam similar objection is in force.

When one should provide the known locking device against the front of the one end of the upper beam the relative large housing of the locking device defaces the modest upper beam.

Therefore, it was aimed to invent an automatically operating cord locking device being small such that it may be built in at the location of the one endstop or in a little defacing way against the external side of the one end of the upper beam.

According to the invention, this is achieved because the locking device consist of a U-shaped portion having a flat bottom and legs, which portion is provided at its one end with a cross-plate in which an aperture for a number of cords is provided and of a tumbler having a pivot shaft near its upper end, which pivot shaft is journalled

in the legs of the U-shaped portion near the tops of the legs, in which in its lowermost position the tumbler substantially fills up the space between the legs and the bottom under the pivot axis and the lower edge of the tumbler is spaced from the bottom by a distance smaller than the thickness of the cords, which should extend between the bottom and the lower edge, said tumbler is loaded by a member which is slidable in the cross-plate in vertical direction, carrying a flange or the like, the free end of which cooperates with the adjacent face of the tumbler, whereby in the portion of the slidable member, which is lying in the cross-plate an aperture for the cords is provided substantially coinciding with the aperture in the cross-plate, whereby the bottoms of the aperture at least in part are sloping in opposite directions.

Owing to the opposite slope of the bottoms of both apertures, at horizontal displacement of the cords towards one side away from the slope in the slidable member this member is freed, so that it does not urge longer the tumbler downwards.

The cords can pass below the tumbler to drop the blind. At horizontal displacement of the cords in the opposite direction the cords are urging the slidable member and thus the tumbler downwards, so that the cords are maintained in each desired position of the blind.

It will be apparent that the locking device according to the invention is not only suitable for sun-blinds in zigzag lines. Also for so-called "Venetian blinds" it can be used, or for other foldable or windable screens which may be closed or opened by means of cords.

The locking device according to said US—A—2,731,111 comprises also a U-shaped portion having legs between which a tumbler having a pivot shaft near its upper end is mounted. However, nevertheless this device is not suitable for a sun-blind or the like with a very modest upper beam.

The invention will be further explained with reference to the drawing, in which:

Fig. 1 is a perspective view of a portion of the upper beam for a zigzag-folded sun-blind with the locking device according to the invention spaced slightly therefrom;

Fig. 2 shows a section along the axis of the locking device in the locked position;

Fig. 3 is a top view of figure 2; and

Fig. 4 is a front view thereof.

In fig. 1 the upper beam comprising two parts is referenced by 1 and 2. The external beam 1 consists in the known way of aluminium and the inner beam 2 in the known way of plastic. The web folded in a zigzag line is referenced by 3. The upper end of said web 3 is fastened to the inner beam 2.

Although, in fig. 1 the external beam 1 is partly cut away, it will be obvious that the ends of the external beam 1 and of the inner beam 2 terminate in one plane.

The one end at the side not shown is closed by a plastic endstop, as shown in the Dutch Patent

Application 7307075. At the other end shown in fig. 1, in the known construction also a plastic endstop is provided having an inlet hole for the cords indicated by 4.

The locking device according to the invention substituting the known endstop consists of a U-shaped portion having a bottom 5 and upstanding walls 6. Both the bottom 5 and the walls 6 are flat and are perpendicular to each other. At the right hand end a cross-plate 7 is provided in which an aperture 8 for the cords 4 is present.

As it appears from fig. 2 and 3 between the legs 6 a tumbler 9 is arranged being connected pivotably to the legs 6 at its upper end, for example this may be implemented by a thin shaft 10 inserted through holes in the legs 6 and through a through-going hole in the tumbler 9. In transverse direction the tumbler 9 fits between the legs 6 and may be moved freely with respect to them. The lower edge of the tumbler 9 is slightly spaced from the upper side of the bottom 5. Said distance is smaller than the diameter of the cords 4 for which the locking device is intended. This means that the tumbler 9 inclines with respect to the vertical plane, when cords 4 are at the upper side of the bottom 5.

It will be apparent that the tumbler 9 will try to adopt a vertical position by own weight so that the end position with provided cords 4 is represented by the position according to fig. 2. In order to promote the movement into said end position a slidable member 14 is provided.

This member 14 consists of a rectangular vertical portion 14a and a rectangular horizontal flange 14b, perpendicular to each other.

The member 14 is preferably made as a unit from stainless steel.

The vertical portion 14a is slidably received in a slot 15 in the thick cross-plate 7.

From fig. 2 it appears that when the member 14 is moving downwards, the free end of the flange 14b urges the tumbler 9 downwards and frees the tumbler when moving upwards.

These movements are carried out positively by moving the cords in the aperture 8 in the cross-plate 7 to the right resp. to the left.

To make this possible in the portion 14a of the member 14 also an inlet hole for the cords 4 is provided. This inlet hole corresponds completely to the aperture 8 in the cross-plate 7 with a bottom part 8a, inclining upwards to the left, but is turned over 180°. This means that the bottom part 8b of the inlet hole in the portion 14a is inclining upwards to the right.

In the rest position the cords 4 are in the valley between the slopes 8a and 8b. When the cords in fig. 6 are moved to the left, they do not press longer on the slope 8b of the member 14. This member 14 is made free. Moreover, the cords 4 are moving upwards along the slope 8a and swing the tumbler 9 away from the cords 4. The blind can be dropped.

When after that the cords 4 are moved to the right in fig. 2 they urge the member 14 and thus the tumbler 9 downwards.

The U-shaped portion 5, 6 and the cross-plate 7 may be manufactured integrally from plastics material.

5 Claims

1. Locking device for cords of a sun-blind or the like provided with an upper beam (1, 2) and one or more webs of sun-blinding material (3) connected thereto, preferably material folded in a zigzag line, in which the cords (4) are introduced in the upper beam through holes, extend through the internal space of the upper beam to one end of the upper beam and therefrom to the outside for opening or closing the sun-blind, the locking device comprising a U-shaped portion having legs (6) between which a tumbler (9) having a pivot shaft (10) near its upper end is pivotally mounted characterized in that the locking device consists of a U-shaped portion having a flat bottom (5) and legs (6), which portion is provided at its one end with a cross-plate (7) in which an aperture (8) for a number of cords (4) is provided and of a tumbler (9) having a pivot shaft (10) near its upper end, which pivot shaft (10) is journaled in the legs (6) of the U-shaped portion near the tops of the legs (6), in which in its lowermost position the tumbler (9) substantially fills up the space between the legs (6) and the bottom (5) under the pivot axis (10) and the lower edge of the tumbler (9) is spaced from the bottom (5) by a distance smaller than the thickness of the cords (4), which should extend between the bottom (5) and the lower edge, said tumbler (9) is loaded by a member (14) which is slidable in the cross-plate (7) in vertical direction, carrying a flange (14b) or the like, the free end of which cooperates with the adjacent face of the tumbler (9), whereby in the portion (14a) of the slidable member (14), which is lying in the cross-plate (7) an aperture for the cords (4) is provided substantially coinciding with the aperture (8) in the cross-plate (7), whereby the bottoms (8a, 8b) of the apertures (8) at least in part are sloping in opposite directions.

2. Locking device according to claim 1, characterized in that the U-shaped portion and the cross-plate (7) are made of plastics material as an integral unit and that the tumbler (9) and the slidable member (14) consist of a stainless steel.

50 Revendications

1. Dispositif de blocage de cordons de jalousies ou similaires, comportant une traverse supérieure (1, 2) et une ou plusieurs pièces d'une matière (3) faisant écran au soleil qui lui sont reliés, de préférence une matière pliée en zigzag, dans lequel les cordons (4) sont introduits dans la traverse supérieure par des trous, passent dans l'espace interne de la traverse supérieure jusqu'à l'une des extrémités de la traverse supérieure, et de là à l'extérieur pour ouvrir ou fermer les jalousies, le dispositif de blocage comprenant une partie en forme de U ayant des branches (6) entre lesquelles un culbuteur (9) ayant un arbre-pivot

(10) près de son extrémité supérieure est monté pivotant, caractérisé par le fait que le dispositif de blocage se compose d'une partie en forme de U ayant un fond (5) et des branches (6) plats, cette partie étant munie à l'une de ses extrémités d'une plaque transversale (7) dans laquelle est pratiquée une ouverture (8) permettant le passage d'un certain nombre de cordons (4), et d'un culbuteur (9) ayant un arbre-pivot (10) près de son extrémité supérieure, cet arbre-pivot (10) tourillonant dans les branches (6) de la partie en forme de U près des parties supérieures des branches (6), dans lequel, dans sa position la plus basse, le culbuteur (9) occupe pratiquement tout l'espace entre les branches (6) et le fond (5) sous l'arbre-pivot (10) et le bord intérieur du culbuteur (9) est séparé du fond (5) par une distance inférieure à l'épaisseur des cordons (4), qui doivent s'étendre entre le fond (5) et le bord inférieur, ledit culbuteur (9) est chargé par un élément (14) qui peut coulisser dans la plaque transversale (7) dans la direction verticale, portant un rebord (14b) ou un élément similaire, dont l'extrémité libre coopère avec la face adjacente du culbuteur (9), de telle sorte que, dans la partie (14a) de l'élément couissant (14) qui se trouve dans la plaque transversale (7), il est formé une ouverture pour les cordons (4) qui coïncide sensiblement avec l'ouverture (8) ménagée dans la plaque transversale (7), ce par quoi les fonds (8a, 8b) des ouvertures (8) sont en pente, au moins en partie, dans des directions opposées.

2. Dispositif de blocage selon la revendication 1, caractérisé par le fait que la partie en forme de U et la plaque transversale (7) sont faites d'une seule pièce en matière plastique et que le culbuteur (9) et l'élément couissant (14) sont faits en acier inoxydable.

Patentansprüche

1. Klemmvorrichtung für die Zugschnüre einer Jalousie o. dgl. mit einem oberen Träger (1, 2) und einer oder mehreren, damit verbundenen Bahnen eines Jalousiematerials (3), vorzugsweise eines zickzackförmig gefalteten Materials, wobei

die Zugschnüre (4) zum Öffnen oder Schließen der Jalousie über Bohrungen in den oberen Träger eingeführt sind, den Innenraum des oberen Trägers zu dessen einem Ende durchsetzen und sich aus dem oberen Träger zu dessen Außenseite erstrecken, wobei die Klemmvorrichtung einen U-förmigen Abschnitt mit Schenkeln (6) aufweist, zwischen denen eine nahe ihres oberen Endes eine Schwenkachse (10) aufweisende Wippe (9) schwenkbar gelagert ist, dadurch gekennzeichnet, daß die Klemmvorrichtung aus einem U-förmigen Abschnitt mit einem flachen Boden (5) und Schenkeln (6), wobei dieser Abschnitt an seinem Ende mit einer Querplatte (7) mit einer darin vorgesehenen Öffnung (8) für eine Anzahl von Zugschnüren (4) versehen ist, und einer Wippe (9) mit einer Schwenkachse (10) nahe ihres oberen Endes besteht, wobei die Schwenkachse (10) in den Schenkeln (6) des U-förmigen Abschnitts nahe der Oberseiten der Schenkel (6) gelagert ist, wobei die Wippe (9) in ihrer untersten Stellung praktisch den Raum zwischen den Schenkeln (6) und dem Boden (5) unter der Schwenkachse (10) ausfüllt und die Unterkante der Wippe (9) in einem Abstand, der kleiner ist als die Dicke der sich zwischen dem Boden (5) und der Unterkante erstreckenden Zugschnüre (4), vom Boden (5) angeordnet ist, die Wippe (9) durch ein Element (14) belastet ist, das in der Querplatte (7) in lotrechter Richtung verschiebbar ist und das einen Flansch (14b) o. dgl. trägt, dessen freies Ende mit der benachbarten Fläche der Wippe (9) zusammenwirkt, wobei in dem in der Querplatte (7) liegenden Abschnitt (14a) des verschiebbaren Elements (14) eine praktisch mit der Öffnung (8) in der Querplatte (7) koinzidierende Öffnung für die Zugschnüre (4) vorgesehen ist und wobei die Unterseiten (8a, 8b) der Öffnungen (8) zumindest teilweise in entgegengesetzte Richtungen geneigt oder schräggestellt sind.

2. Klemmvorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß der U-förmige Abschnitt und die Querplatte (7) materialeinheitlich aus Kunststoff geformt sind und daß die Wippe (9) und das verschiebbare Element (14) aus rostfreiem Stahl hergestellt sind.

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fig-1



