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(54) **Manual collecting device for roller blinds**

(57) Manual collecting device for roller blinds basically comprising four pieces: supporting plate (1), collecting pulley (2), cord locking element (3) and cord (4). Moreover, said device can further comprise a guiding pulley (13) and a cord protector (6). The pulley (2) is attached to a supporting plate (1) by means of a pivot element (5).

A cord (4) for moving said device is used, which passes inside said lock (3), which in turn allows the mechanism to stop in any position and hinders it from moving in the opposite direction.

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Description

FIELD OF THE UTILITY MODEL

[0001] The present utility model is related to a manual collecting device for roller blinds, which can be used in building construction, and is preferably applicable in doors and windows.

BACKGROUND OF THE UTILITY MODEL

[0002] At the present moment, there are two main types of manual devices for collecting blinds in the market.

[0003] The first type has some advantages in relation to the second one, such as fast opening and collectability, as well as low producing costs. Nevertheless, it has disadvantages regarding the need of an additional profile in the whole height of the door/window structure for collecting the device which stores the belt, besides demanding more labour to install said device. Eventually, such device is located in the wall below the window and, in such case, in spite of dispensing the extra profile, it needs a box embedded in the wall and its assembly is possible only after the installation of the blind in the empty space, hindering the assembly to leave the factory completely mounted, as it happens with the so called integrated blinds or monoblocks, thereby raising the installation costs thereof.

[0004] The second type device, which uses a cord to perform the actuation, does not need any external assemblage, such as the previously mentioned device which stores the belt. This is the main advantage of said second type device. As a disadvantage, it can be pointed out the system complexity, since it has a great number of pieces, such as the internal gearing system, the brake system to prevent the involuntary closure of the blind, and a ratchet system to prevent the counter-rotation of the blind, which after the complete closure could be rolled in the opposite direction, causing damage to the same. Moreover, a great number of actions for using the system are required, since in opening or closing operations the user needs to pull the cord several times, due to the internal reduction of said system. All these disadvantages lead to a high producing cost and to a discomfort in using said device.

[0005] The Brazilian document no. BR MU8401609-4 relates to an arrangement introduced in integrated sliding doors and windows comprising slats, whose inner part consists of integrated windows or sliding doors with framed glass using aluminium profiles. The outer part consists of a blind formed by aluminium slats, which are horizontally disposed and coupled together, said blind being released or collected by means of a mechanism located in the inner part of an upper box which rolls or releases the blind with the aid of a cord, said blind sliding towards the lower part guided by lateral rails, thus promoting the opening or closure of the blind. The upper box

has a configuration which allows easy opening for cleaning and maintaining the inner mechanism of said box.

[0006] The Brazilian document no. BR MU8401609-4 describes a cord for actuating the collecting system. The disadvantage in using cords or belts is based in the need of a device to store such cord or belt, which must be installed in the door/window structure and, therefore, the use of a profile for embedding such cord or belt storage is required.

[0007] The Brazilian document no. BR 9703122-4 relates to an actuating mechanism for rolling blind axis. Said mechanism comprises a collecting system mounted in a fixed manner and by means of a flange in one of the side walls of the vertical blind conditioning box and it is geared in one end of the blind or track bobbin axis, whose opposite end consists of a free cap pivoted on the corresponding side wall which is opposite to the blind conditioning box. The collecting system incorporates in its flange a central orthogonal axis, a lock trigger blade and a ring-shaped rim with semicircular outline which is concentric to the central axis. The central axis supports a driving pulley, which is actuated by means of a manual actuating cord and a planetary gearing set. The system is also provided with a cord which when pulled downwardly makes the driving pulley to actuate a gear coupled to the axis and to the planetary gearing set, which in turn will actuate the driving flange and its tubular axis coupled to the dragging driving cap and will actuate by means of a rotational movement of the axis, thereby collecting the blind or track.

[0008] Since the document no. BR 9703122-4 has a cord actuating system, it has many advantages in comparison with the belt system, as previously mentioned. One of these advantages is the locking system, which hinders the involuntary movement of the cord if the user releases it. Nevertheless, this kind of system presents high producing costs mainly due to the number of pieces required for composing the same. Moreover, said system also presents the disadvantage of having a very slow handling due to the mechanical reduction of the rotation provided by the planetary gears, besides the need of a ratchet to avoid counter-rotation, which would cause irreversible damage to the blind.

[0009] In view of the above-mentioned documents, a configuration applied to a device which is able to provide a solution in face of the problems presented by the aforementioned prior art was developed.

OBJECT OF THE UTILITY MODEL

[0010] The main object of the present utility model is to provide a blind collecting device which is able to provide a homogeneous and safe actuating mechanism for said blinds without the use of complex ratchet and gear mechanisms and devices for storing the belt, as it is observed in the state of the art.

[0011] The present utility model presents many improvements in comparison with the state of the art, thus

rendering more practicality to such model, as follows:

- fast door/window opening and collecting;
- low producing cost;
- less amount of pieces in the assembly, thereby creating a simpler, practical and cost-effective structure for the user, with easier maintenance, lighter weight and lower raw material expenses;
- does not contain a belt storage system, being free of the extra profile generally used in this kind of system; and
- easy and safe locking device in order to avoid accidents, since the cord is locked when it is released, thereby stopping the movement of the blind track.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The device of the present utility model consists basically of four pieces:

- Supporting plate (1);
- Collecting pulley (2);
- Cord locking element (3); and
- Cord (4).

[0013] For a better understanding of the device of the present model, it will be hereinafter described with reference to the attached drawings, wherein:

- Figure 1 shows a side view of the collecting set;
- Figure 2 shows an exploded perspective view of the collecting set; and
- Figure 3 shows a side view of an optional embodiment of the collecting set.

DETAILED DESCRIPTION OF THE MODEL

[0014] In accordance with Figure 1, the blind collecting device subject of the present model comprises a pulley (2), which is attachable to a supporting plate (1) by means of a pivot element (5). Said element (5) is mutual to the supporting plate (1), the pulley/axis connecting elements (8) being attached to the pulley (2) in order to connect said pulley (2) to the octagonal axis (9). As can be observed in Figure 2, said octagonal axis (9) has another pivot connection element (10) in its opposed end which leans on a bearing element (11), which in turn is fixed to the door/window structure. It is preferably used a continuous cord (4) with connected ends for moving the system, which can be associated with a cord protector (6) that surrounds said pulley (2) and hinders voids and the exit of said cord (4) from inside the pulley (2). The rigid supporting plate (1) of the collecting device of the present model comprises a pivot (5) wherein said pulley (2) is located. Said plate (1), in turn, will serve as a fixing base of said device in the door/window. Moreover, the pulley (2) of the present model presents grooves along its channel, which provide a greater friction in relation to the cord

(4), thus preventing free sliding thereof. Said grooves prevent the cord (4) from sliding either when actuating the track uprising or when the track is partially motionless or completely opened, and further when the user releases said cord (4) in an unexpectedly manner.

[0015] In order to promote the connection between the pulley (2) and the octagonal axis (9), a connecting element (8) supports and sustains said axis (9). The option of an octagonal axis (9) is already known in the state of the art as presenting advantages if compared with other types of axis, such as cylindrical axes.

[0016] The locking element (3) of the cord (4) of the present model is an element whose function is to lock the cord (4), preventing it to freely release and slide through the device of the present model. Said element (3) is fixed to the inner lid of the box where the track is located. The cord (4) passes through the lower aperture of the cord locking element (3) and lays on the pulley channel (2) from which it returns through the higher part of the pulley (2), passing through the higher aperture of said element (3), which has inner diagonal grooves with conical shape, thus preventing the cord (4) to be involuntarily moved in the opposite direction. The part of the cord (4) which is in the higher part of the pulley (2) is called moving part and the part of the cord (4) which is in the lower part of the pulley (2) is called moved part.

[0017] For guiding the cord (4) between the pulley (2) and the cord locking element (3) and to avoid the twisting of the same during the movement, two guiding elements (7) are disposed in the supporting plate (1), which can be fixed or rollers.

[0018] The blind collecting device of the present application is actuated by a user to open the blind track as he pulls the cord (4) downwardly by the moving part to collect said blind. Said cord (4) moves the pulley (2), which will rotate the octagonal axis (9) in the blind collecting direction until the user stops moving the cord (4), which automatically is locked in the diagonal grooves of the locking element (3) when released by the user. As was previously explained, even if said user accidentally releases the cord (4), it will be locked by the locking element (3) since said cord (4) crosses over said element (3) which in turn, due to its inner grooves, fixes said cord (4) among the grooves. In order to close the blind track, the user only have to unlock the moving part of the cord (4) by simply displacing said cord (4) in order to separate it from the window/door. This simple movement will release the cord (4) from the inner grooves of the locking element (3), thereby releasing the lock and closing the blind track by means of its own weight, which must be controlled by the user who is holding said cord (4). When the ideal position of the blind track is reached, the user must only release the cord (4), since the locking element (3) will immediately lock the cord (4) and stop the movement of the blind track.

[0019] As can be observed in Figure 3, an optional embodiment for the cord locking element (12) comprises only one aperture whereby the moving part of the cord (4) passes through, the moved part of said cord (4) having

free exit below the collecting device. The guiding pulley (13) is an optional element which is very similar to the collecting pulley (2) but it has reduced dimensions in comparison with said collecting pulley. Said guiding pulley (13) is also attachable to the supporting plate (1) of the collecting device immediately below the pulley (2), and has the following functions: directing the cord (4), making the exit of the cord (4) from the pulley (2) easier and reducing friction between the cord (4) and the cord protector (6), according to the movement thereof.

[0020] Although the present specification describes and illustrates a preferred embodiment of the device of the present utility model, it should be emphasized that it is possible to make structural modifications, which are possible within the scope of said model.

Claims

1. Manual collecting device for roller blinds, **characterized by** comprising a pulley (2), which is attachable to a supporting plate (1) by means of a pivot element (5), the pulley/axis connecting elements (8) being attached to said pulley (2) in order to connect said pulley (2) to an octagonal axis (9), so that the cord (4) surrounds said pulley (2) and passes through the locking element (3), thus preventing said cord (4) from freely sliding in the opposite direction.
2. Manual collecting device, according to claim 1, **characterized in that** said pivot element (5) is located close to said pulley (2) or close to the supporting plate (1).
3. Manual collecting device, according to claim 1, **characterized by** comprising a cord protector (6) which surrounds said pulley (2), thereby preventing voids or the exit of said cord (4) from inside the pulley (2).
4. Manual collecting device, according to claim 1, **characterized by** comprising a guiding pulley (13) which acts in the alignment of the cord (4).
5. Manual collecting device, according to claim 1, **characterized in that** said pulley (2) presents grooves in the inner faces of the channel of said pulley (2).
6. Manual collecting device, according to claim 1, **characterized in that** said locking element (3) of the cord (4) is fixed to the lid of the box where the track is located.
7. Manual collecting device, according to claim 1, **characterized in that** said locking element (3) of the cord (4) has inner diagonal grooves with conical shape.

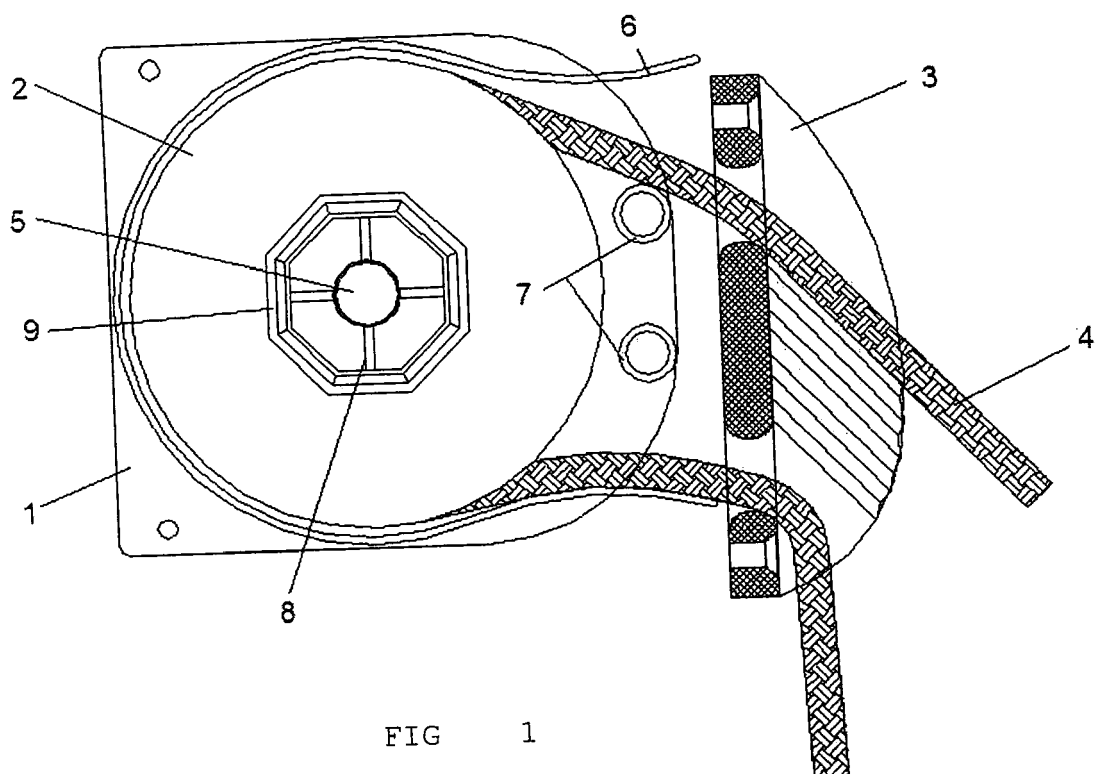


FIG 1

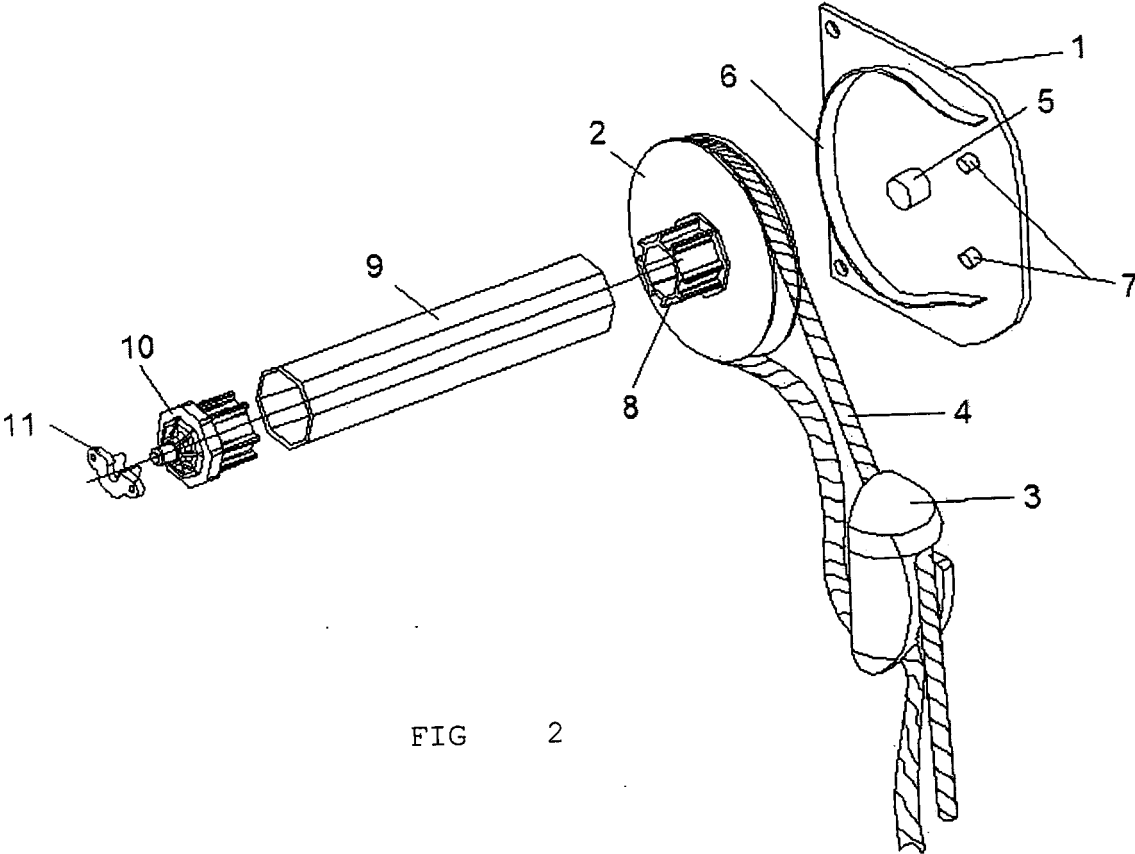


FIG 2

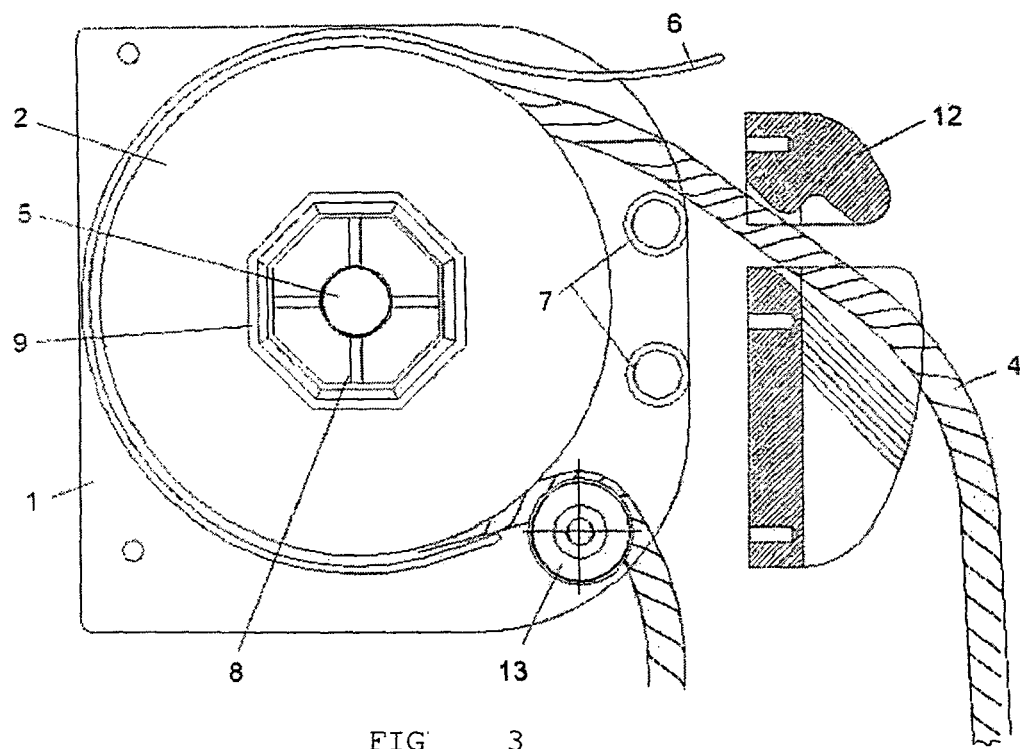


FIG 3



EUROPEAN SEARCH REPORT

Application Number
EP 09 15 2708

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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Y	US 193 239 A (FONTAINE ALBERT) 17 July 1877 (1877-07-17) * figure 5 *	4	
Y	BR 9 703 122 A (ALU SERVICE COMERCIAL E SERVIC [BR]) 22 December 1998 (1998-12-22) * abstract; figure 2 *	4	
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
Place of search		Date of completion of the search	Examiner
Munich		29 April 2009	Kofoed, Peter
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EPO FORM 1503 03.82 (P04C01)

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

EP 09 15 2708

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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29-04-2009

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