

(19)



(11)

EP 1 689 964 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
02.03.2011 Bulletin 2011/09

(21) Application number: **04716307.6**

(22) Date of filing: **02.03.2004**

(51) Int Cl.:
E06B 9/78 (2006.01)

(86) International application number:
PCT/IT2004/000099

(87) International publication number:
WO 2005/049953 (02.06.2005 Gazette 2005/22)

(54) **WITHDRAWABLE PULLING SYSTEM FOR ROLLER SCREEN**

ZURÜCKZIEHBARES ZUGSYSTEM FÜR ROLLBLENDE

SYSTEME DE TRACTION RETRACTABLE POUR ECRAN ESCAMOTABLE

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PL PT RO SE SI SK TR**

(30) Priority: **20.11.2003 IT TO20030917**

(43) Date of publication of application:
16.08.2006 Bulletin 2006/33

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Description

[0001] The present invention refers to a withdrawable pulling system for roller screen.

[0002] The prior art provides that roller screens for closing windows (such as curtains or mosquito nets) are designed in order to be wound onto a tube placed on the upper edge of the window.

[0003] If however such upper edge is particularly high, it becomes impossible to be able to easily reach the screen to actuate its closure.

[0004] In the further case in which these are screens with spring return lacking a braking device, it becomes dangerous even opening them without duly keeping them.

[0005] For these reasons, the prior art has several arrangements in order to overcome these inconveniences:

- system with small chain: it is a system in which a small chain (typically with small balls) rotates a pulley placed on the axis of the screen winding roller. In this way, through the small chain traction, the roller is made rotate with consequent screen winding or unwinding. In this type of device, the torsion spring inside the tube is used only for balancing the weight of screen and handle bar, while *de facto* the system should remain in an indifferent balance, in order to minimise the driving effort. This system in practice is cumbersome, not always easy to drive, slightly noisy and the constant presence of the small chain cannot be aesthetically pleasant. Moreover, this system, while it can be good for carrying out small screen adjustments (as in case of sun curtains, for example), becomes particularly uncomfortable when one has to always operate between the all closed and all open conditions, such as in case of a mosquito net;
- hooked rod: it is a system that, for driving the screen, provides for using a rod with a suitable length equipped at one end with a suitable hook adapted to be anchored to the handle bar in order to lower it at a height that is adapted for a manual grip. The main defect of this system is that, once used, the rod, being separate from the screen, either remains in sight with a dubious aesthetic effect or has the problem of having to be stored and, above all, found again when further using it;
- pulling system: it is the system adopted in the majority of cases, since, without any doubt, is the most inexpensive and practical one. Such system consists in a wire with a suitable length, equipped at its lower end with a small tassel in order to facilitate its grip, that is hanged at the handle bar centre. By pulling the small tassel the bar itself is approached till one is able to grasp it and thereby conclude the screen closure. This system, though appearing as the ideal solution, has several inconveniences: in fact, when the screen is closed, the small tassel typically is

hanging from the window sill impairing the window frame closure, or even damaging it when it is inadvertently pinched between the swing-doors. It further has a small safety problem, in particular when it is applied to the screens with spring return that are not braked when opening: in fact, when closing such screens, the so-called "whip stroke" is not infrequent, and it occurs when, by unhooking the screen by mistake, it snaps upwards making the small hard plastic tassel bump against the window sill, projecting it with maximum probability against the user face.

[0006] FR 2 769 339 shows a pulling system with a storable strand.

[0007] Object of the present invention is solving the above prior-art problems by providing a withdrawable pulling system for roller screen that is easily and practically used.

[0008] The above and other objects and advantages of the invention, as will appear from the following description, are obtained by a withdrawable pulling system for roller screen as claimed in Claim 1.

[0009] The present invention will be better described by some preferred embodiments thereof, given as a non-limiting example, with reference to the enclosed drawings, in which:

- FIG. 1 is a front sectional view of an embodiment of the withdrawable pulling system for roller screen according to the present invention.

[0010] With reference to FIG. 1, it can be noted that the withdrawable pulling system 1 according to the present invention is composed of:

- a roller screen system that, as known, is composed of a roller screen 3 constrained on one of its sides to an handle bar 4 and on its opposite side typically to a tube equipped with a torsion spring, the handle bar 4 being adapted to slide inside two side guides 20;
- a small tassel 2 projecting from a hole 30 of the handle bar 4 and connected to an actuating tie rod 6 passing inside the handle bar 4, said actuating tie rod 6 being equipped with a first stop block 7 and a second stop block 10 placed at one end of said tie rod 6;
- transmission means 5 adapted to transmit the actuating tie rod 6 along a parallel direction to a longitudinal axis of the handle bar 4;
- a guiding element 11 parallel to the guides 20 adapted to allow the second stop block 10 to slide;
- a first stop element 12 placed at the end of the handle bar 4 from which the tie rod 6 projects and adapted to stop the sliding of the first stop block 7 and to transmit the tie rod 6 along a parallel direction to said guides 20; and
- a second stop element 9 of the second stop block 10.

[0011] The operation of the withdrawable pulling system according to the present invention will be described below starting from the complete opening position of the screen 3. At the beginning of the manoeuvre, the handle bar 4 is in a high position that can usually be unreachable or can be reached with discomfort by the operator hand; in order to solve this inconvenience, it is possible for the operator to operate on the small tassel 2 by pulling it downwards; by pulling the small tassel 2, and consequently the actuating tie rod 6 connected thereto, downwards, the first stop block 7 of the tie rod 6 abuts against the locking element 12, while the second stop block 10 freely slides along the guiding element 11. Consequently, by pulling the small tassel downwards, the handle bar 4 too will be dragged downwards.

[0012] The handle bar 4 is lowered till the operator is able to comfortably reach it with his hand, and at that time he can leave the small tassel 2 and go on lowering the screen 3 by operating on the handle bar 4; the small tassel 2 goes on integral with the handle bar 4 till the second stop block 10 abuts against the stop element 9, upon which the tie rod 6, blocked in its sliding, starts approaching the small tassel 2 towards the hole 30 while the handle bar 4 goes on in its descending movement. The tie rod 6 length and the positions of the second stop block 10 and of the stop element 9 are defined so that, when the handle bar 4 reaches the complete closure position of the screen 3, the small tassel 2 has completely approached the hole 30, thereby avoiding the previously-mentioned problems regarding the known pulling systems.

[0013] In another preferred embodiment of the present invention, the second stop block 9 can slide, but with a high friction coefficient, along the guiding element 11: in this way upon firstly lowering the handle bar 4, after laying the roller screen 3, one is able to adjust the starting approach point of the small tassel 2 to the handle bar 4 by strongly pulling the small tassel 2 itself from when the second stop block 10 abuts against the second stop element 9, consequently pulling also the second stop element 9 downwards along the guiding element 11, till the position in which one wants that the small tassel 2 starts approaching the handle bar 4; at that time the second stop element 9 will remain in the desired position on the guiding element 11 due to the high friction and upon every following lowering of the screen 3, it will proceed as described in the previous preferred embodiment, having however the position of the second stop element 9 perfectly adjusted depending on the opening length.

[0014] In the operation of the system 1 according to the present invention, during the screen 3 closing step, by lifting the handle bar 4, the small tassel 2, dragged by its own weight, starts going out of the hole 30 till the first stop block 7 abuts against the locking element 12: at that time, the small tassel 2 is again integral with the handle bar 4 and the operator, in case the screen is not equipped with a rise braking system, can check its rise by operating on the small tassel 2. It is important to note that, during

the first rising step of the handle bar 4, the one in which the small tassel has still not gone out of the hole 30, the operator, with the system according to the present invention, does not run any more the risk of a "whip stroke" in case the handle bar 4 escapes from his hand.

Claims

1. Withdrawable pulling system (1) for roller screen comprising:

- a roller screen (3);
 - an handle bar (4) constrained to one side of said screen (3), each end of said handle bar (4) being adapted to slide inside two side guides (20);
 - a small tassel (2) for actuating said handle bar (4);
 - an actuating tie rod (6) connected at a first end thereof to said small tassel (2), said small tassel (2) projecting from a hole (30) of said handle bar (4), said tie rod (6) passing inside said handle bar (4), said actuating tie rod (6) being equipped with a first stop block (7) and a second stop block (10), said second stop block (10) being placed at another end of said tie rod (6);
- characterised in that** it further comprises:
- transmission means (5) adapted to transmit said actuating tie rod (6) along a parallel direction to a longitudinal axis of said handle bar (4);
 - a guiding element (11) adapted to allow said second stop block (10) to slide;
 - a first stop element (12) placed at one end of said handle bar (4) from which said tie rod (6) projects and adapted to stop a sliding of said first stop block (7) and to transmit said tie rod (6) along a parallel direction to said guides (20); and
 - a second stop element (9) adapted to stop a sliding of said second stop block (10).

Patentansprüche

1. Versenkbares Zuggurtsystem (1) für Rollschirm mit:

- einem Rollschirm (3);
- einer Greifstange (4), die an einer Seite des genannten Schirms (3) befestigt ist, jedes Endstück der genannten Greifstange (4) dient dazu, zwischen den seitlichen Schienen (20) zu gleiten;
- einer Aktivierungsquaste (2) der genannten Greifstange (4);
- einer Aktivierungszugstange (6), die an ihrem ersten Endstück mit der genannten Quaste (2) verbunden ist, die genannte Quaste (2) tritt aus

einer Bohrung (30) der genannten Greifstange (4) heraus, die genannte Zugstange (6), die ganz durch die genannte Greifstange (4) geht, ist mit einer ersten Anschlagblockierung (7) und mit einer zweiten Anschlagblockierung (10) aus-

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Das System ist **dadurch gekennzeichnet, dass es** außerdem folgende Vorrichtungen enthält:

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- Umlenkvorrichtungen (5), die dazu dienen, die genannte Aktivierungszugstange (6) in eine parallele Richtung zu einer Längsachse der genannten Greifstange (4) umzulenken;
- ein Führungselement (11), das dazu dient, das Gleiten der genannten zweiten Anschlagblockierung (10) zu ermöglichen;
- ein erstes Sperrelement (12), das an einem Endstück der genannten Greifstange (4) positioniert ist, aus dem die genannte Zugstange (6) austritt, und das dazu dient, das Gleiten der genannten ersten Anschlagblockierung (7) anzuhalten und die genannte Zugstange (6) in eine parallele Richtung der genannten Schienen (20) umzulenken; und
- ein zweites Sperrelement (9), das dazu dient, das Gleiten der genannten zweiten Anschlagblockierung (10) anzuhalten.

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sens parallèle à un axe longitudinal de ladite barre de préhension (4);

- un élément de guidage (11) capable de permettre le coulisement dudit second bloc d'arrêt (10);

- un premier élément d'arrêt (12) positionné à une extrémité de ladite barre de préhension (4) hors de laquelle ressort ladite tringle (6) et capable de bloquer le coulisement dudit premier bloc d'arrêt (7) et de renvoyer ladite tringle (6) dans une direction parallèle auxdits rails de guidage (20); et

- un second élément d'arrêt (9) capable de bloquer le coulisement dudit second bloc d'arrêt (10).

Revendications

1. Système de mancelle escamotable (1) pour écran enroulable comprenant:

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- un écran enroulable (3);
- une barre de préhension (4) reliée à un côté dudit écran (3), chaque extrémité de ladite barre de préhension (4) pouvant coulisser sur deux rails latéraux (20);
- une floche (2) d'actionnement de ladite barre de préhension (4);
- une tringle d'actionnement (6) reliée à sa première extrémité à ladite floche (2), ladite floche (2) faisant saillie d'un orifice (30) de ladite barre de préhension (4), ladite tringle (6) passant à l'intérieur de ladite barre de préhension (4) et pourvue d'un premier bloc d'arrêt (7) et d'un second bloc d'arrêt (10) ledit second bloc d'arrêt (10) étant positionné à une seconde extrémité de ladite tringle (6);

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caractérisé en ce qu'il comprend en outre:

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- des moyens de renvoi (5) capables de renvoyer ladite tringle d'actionnement (6) le long d'un

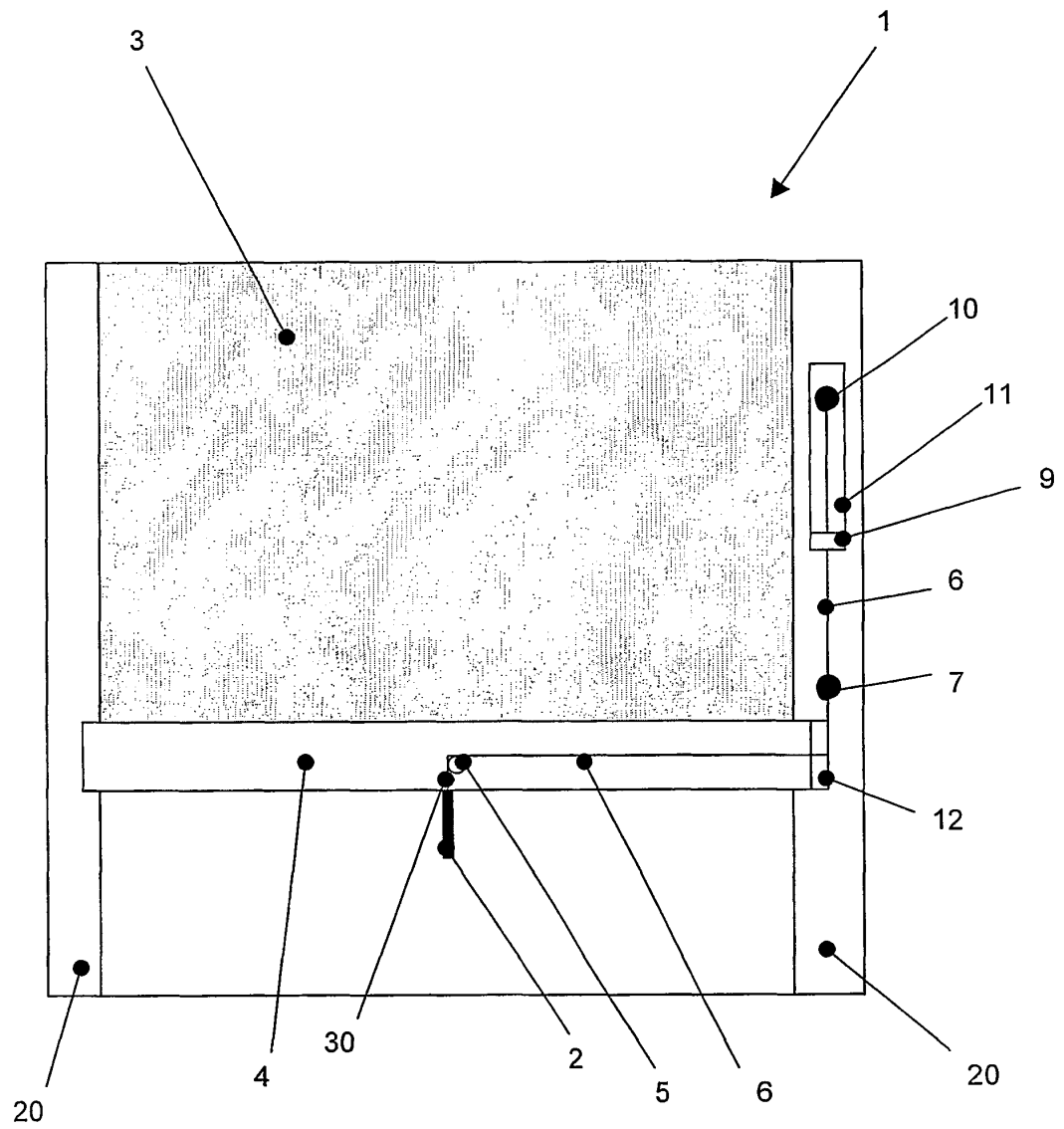


FIG. 1

REFERENCES CITED IN THE DESCRIPTION

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