EQUILIBRIUM DEVICE FOR A BLIND WITHOUT PULL CORDS

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Appl. No.: 11/195,716

Filed: Aug. 3, 2005

Publication Classification

Int. Cl. A47H 5/00 (2006.01)

U.S. Cl. ............................................................ 160/84.05

ABSTRACT

An equilibrium device for a blind without pull cords includes at least one movable weight-balancing member installed at a proper location in the interior of the lower rod of a blind. The weight-balancing member is provided for increasing and adjusting the weight of the blind so as to keep the weight of the blind and the elastic force produced by an elastic force mechanism in a force balanced condition after the blind is cut in width and lightened, enabling the blind to be collapsed upward and stretched downward normally.
EQUILIBRIUM DEVICE FOR A BLIND WITHOUT PULL CORDS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] This invention relates to an equilibrium device for a blind without pull cords, particularly to one provided with movable weight-balancing members for keeping the weight of a blind and the elastic force of an elastic force mechanism in a force balanced condition after the blind is cut in length or in width and lightened.

[0003] 2. Description of the Prior Art

[0004] Most conventional blinds are controlled to be collapsed upward or stretched downward by pull cords. However, these circle-shaped pull cords are likely to entwine a child's neck and make him suffocate in case the child plays with the pull cords carelessly. In view of this drawback, a kind of blind without pull cords is developed and employed. A blind without pull cords is provided with an elastic force mechanism in the interior of an upper rod to actuate the blind to move up and down through a winding shaft and linking cords. Since the elastic force of the elastic force mechanism is designed in accordance with the total weight of a blind, the elastic force and the weight of the blind can be kept in a force-balanced condition. By so designing, a user can directly apply a force on the blind to collapse or stretch the blind at any level.

[0005] Substantially, common windows are not standardized in size; therefore, a blind without pull cords usually has to be cut in width so as to match with the real size of a window. However, once a blind is cut in width, the blind will be lightened and, consequently, the elastic force of the elastic force mechanism, which is originally set according to the weight of the blind, will surpass the total weight of the blind. As a result, the elastic force of the elastic force mechanism and the weight of the blind cannot be maintained in a force-balanced condition and the blind cannot be moved to any level as a user wishes.

SUMMARY OF THE INVENTION

[0006] The objective of the invention is to offer an equilibrium device for a blind without pull cords, provided with at least one weight-balancing members in the interior of the lower rod of a blind to increase and adjust the weight of the blind for keeping the elastic force of an elastic force mechanism and the weight of the blind in a force-balanced condition after the blind is cut in width and lightened, enabling the blind to be collapsed upward or stretched downward normally.

BRIEF DESCRIPTION OF DRAWINGS

[0007] This invention will be better understood by referring to the accompanying drawings, wherein:

[0008] FIG. 1 is a perspective view of a blind without pull cords in the present invention;

[0009] FIG. 2 is a partial exploded perspective view of the blind without pull cords in the present invention: and

[0010] FIG. 3 is a partial side cross-sectional view of the blind without pull cords in the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0011] A preferred embodiment of an equilibrium device for a blind without pull cords in the present invention, as shown in FIGS. 1, 2 and 3, includes an upper rod 10, a blind 20, linking cords 30, at least one elastic force mechanism 40, a lower rod 50 and at least one weight-balancing member 60 combined together.

[0012] The upper rod 10 is provided in the interior with a winding shaft 11 and the elastic force mechanism 40.

[0013] The blind 20 assembled at the underside of the upper rod 10 is a transverse honeycomb blind or a common Venetian blind.

[0014] The linking cords 30 are longitudinally threaded through the blind 20 to be actuated by the winding shaft 11 in the upper rod 10 to be drawn upward for collapsing or be released downward for stretching the blind 20.

[0015] The elastic force mechanism 40 installed in the interior of the upper rod 10 can be turned to actuate the winding shaft 11 to rotate and draw upward the linking cords 30 together with the blind 20. The elastic force produced by the elastic force mechanism 40 and the weight of the blind 20 are maintained in a balanced condition.

[0016] The lower rod 50 made of plastic and drawn in shape has its topside formed with a transverse slide groove 51 for the lowestmost slot 21 of the blind 20 to slideably positioned therein. The transverse slide groove 51 has its underside formed with a transverse through slot 52 having the opposite ends respectively fitted with a sealing cover 53 for holding and caging the opposite sides of the lowestmost slot 21 of the blind 20.

[0017] The weight-balancing member 60 in this preferred embodiment is to be glued at a proper location of the underside of the lowestmost slot 21 of the blind 20 and received in the transverse slide groove 51 of the lower rod 50.

[0018] Referring to FIGS. 1 and 2, the weight-balancing member 60 of this invention is standardized in weight; therefore, when the blind 20 is cut in width and lightened, the weight-balancing member 60 of a proper size or plural number of it can be correctly and quickly chosen and added to the blind 20 in accordance with the reduced weight after the blind 20 is cut in width. In assembling, the weight-balancing member(s) 60 is (are) (one by one) glued at the underside of the lowestmost slot 21 of the blind 20. During assembling of the weight-balancing member(s) 60, the relative error between the weight of the blind 20 and the elastic force of the elastic force mechanism 40 has to be examined and adjusted anytime until they attain to a force-balanced condition. By so designing, after the blind 20 is cut in width, the weight of the blind 20 and the elastic force of the elastic force mechanism 40 can be kept in a force-balanced condition by adding the weight-balancing member(s) 60 to the blind 20.

[0019] To sum up, this invention has the following advantages.

[0020] 1. By additionally installing the weight-balancing members 60, the blind 20, after cut in width, can always maintain a force balanced condition with the elastic force
produced by the elastic force mechanism 40, enabling the blind 20 to be collapsed upward and stretched downward normally.

[0021] 2. The weight-balancing member(s) 60 of this invention is(are) applicable to various transverse blinds without pull cords.

[0022] 3. The weight-balancing member(s) 60 of this invention is(are) standardized in weight so it(they) can be installed and adjusted precisely and quickly.

[0023] 4. The weight-balancing member(s) 60 of this invention can be stored in a hardware bag together with other spare parts of blinds without pull cords so that the weight-balancing member(s) 60 can be conveniently employed for adjustment in weight after a blind is cut in width.

[0024] While the preferred embodiment of the invention has been described above, it will be recognized and understood that various modifications may be made therein and the appended claims are intended to cover such modifications that may fall within the spirit and scope of the invention.

I claim:

1. An equilibrium device for a blind without pull cords comprising an upper rod, said upper rod installed with at least one elastic force mechanism in the interior, a blind assembled under said upper rod and having a plurality of linking cords longitudinally threaded therethrough, the elastic force of said elastic force mechanism and the weight of said blind maintained in a force balanced condition, said blind able to be stretched downward or collapsed upward at a required level: and characterized by,

A lower rod assembled at the underside of said blind; and

At least one weight-balancing member movably installed at a proper location in the interior of said lower rod, said weight-balancing member employed for increasing and adjusting the weight of said blind after said blind is cut in width and lightened, said weight-balancing member enabling the weight of said blind kept at a force-balanced condition with the elastic force of said elastic force mechanism.

2. The equilibrium device for a blind without pull cords as claimed in claim 1, wherein said lower rod has its topside formed with a transverse slide groove for receiving therein the lowermost slat of said blind, and said weight-balancing member is to be fixed on the underside of said lowermost slat of said blind, said weight-balancing member fixed with said lowermost slat of said blind slidably positioned in said transverse slide groove of said lower rod.

3. The equilibrium device for a blind without pull cords as claimed in claim 2, wherein said blind is a honeycomb blind having its lowermost slat slidably positioned in said transverse slide groove of said lower rod, and said weight-balancing member is fixed on the underside of said lowermost slat of said honeycomb blind.

4. The equilibrium device for a blind without pull cords as claimed in claim 2, wherein said blind is a Venetian blind having its lowermost slat slidably received in said transverse slide groove of said lower rod, and said weight-balancing member is fixed on the underside of said lowermost slat of said Venetian blind.

5. The equilibrium device for a blind without pull cords as claimed in claim 2, wherein said lower rod has its lower side bored with a transverse through slot having its opposite ends respectively fitted with a sealing cover for holding and caging the opposite lower sides of said blind.

6. The equilibrium device for a blind without pull cords as claimed in claim 1, wherein a winding shaft is assembled between said elastic force mechanism and said linking cords so that the elastic torsion of said elastic force mechanism can actuate said linking cords to draw upward said blind through said winding shaft.

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