WINDOW BLIND STRUCTURE

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ABSTRACT

A window blind structure comprises a blind body and a set of left/right support brackets wherein the blind body is folded into a U shape with a winding shaft and a hanging rod respectively attached at both end edges thereto, and a counterweight object accommodated into the bending area for even suspension of the blind body thereby. Each left/right support bracket has a grooved area with a fixing surface at one side, and an extension portion at the other side wherein one extension portion has crosswise retaining recesses cut thereon, and the other pivoting holes disposed thereon for holding the winding shaft therebetween. Around four side corners of each extension portion are respectively disposed a thru-hole accompanied by first and second positioning blocks to match with an adjusting support member that can flexibly change the direction of assembly, achieving more versatile and convenient assembly of the left/right support brackets thereby.
WINDOW BLIND STRUCTURE

BACKGROUND OF THE INVENTION

[0001] The present invention is related to a window blind structure, comprising a blind body and a set of left and right support brackets wherein each left/right support bracket has a grooved area with a fixing surface at one side, and an extension portion at the other side; one extension portion has crosswise retaining recesses cut thereon, and the other has pivoting holes disposed thereon so as to hold a winding shaft there-between, and around four side corners of each extension portion are respectively disposed a thru-hole accompanied by a set of first and second positioning blocks to cooperatively work with an adjusting support member that can flexibly change the direction of assembly for the mounting of a hanging rod thereon, achieving more versatile and convenient assembly of the left/right support brackets thereby.

[0002] Please refer to FIG. 1 showing an assembled perspective view of a conventional blind structure. A conventional blind structure is made up of a blind body 10, and a winding shaft 11 fixed at the top edge of the blind body 10 wherein both ends of the winding shaft 11 are respectively assembled a winding device 13 controlled by an operational element 12 like a beaded chain, and a linkage member 14. The outer side of the winding device 13 and the linkage member 14 is respectively disposed a pivoting rotary post 131, 141 to be pivotally mounted to a U-shaped retaining groove 151 defining a support bracket 15 attached to both sides of a window frame thereon respectively. Therefore, the winding device 13 and the linkage member 14 can be rotated depending on the pulling direction of the operational element 12, actuating the clockwise or counterclockwise rotation of the winding shaft 11 therewith so as to control the blind body 10 either coil upwards or stretch downwards accordingly. The support bracket 15 also includes a plurality of arcuate and connected positioning cavities 152 sequentially cut thereon for the location of two rod-like clamping members 16 juxtaposed side by side on the positioning cavities 152 thereof, and a fixing surface 153 with locking holes 1531 thereon are bent in a right angle at one side to be screwed up onto a wall surface thereby. The lower section of the blind body 10 is preset an appropriate length as an extension portion 101 that is bent backward and guided upwards to go through the two clamping members 16 and cover on top of the winding shaft 11 to form a decorative shading cover 102 fixedly held in place by the two clamping members 16 thereof. A counterweight object 17 is then accommodated into the bending area of the blind body 10, permitting the front section of the blind body 10 to evenly space apart from the extension portion 101 and form a front decoration portion 103 thereby. The surface of both extension portion 101 and front decoration portion 103 is respectively made up of multiple light-permeable areas 1011, 1031 and light-shading areas 1012, 1032 that are alternatively arranged one to another. Thus, the blind body 10 can be rolled and adjusted till the light-permeable areas 1011, 1031 of the extension portion 101 and the front decoration portion 103 are correspondingly aligned one to another, permitting part of sunlight or moonlight to shine indoors through each light-permeable area 1011, 1031 thereby. Otherwise, the light-permeable areas 1031, 1011 thereof can also be adjusted to alternate with the corresponding light-shading areas 1012, 1032 so that bright sunlight blocked by the light-shading areas 1012, 1032 can become softened thereby. Moreover, the light-shading areas 1032 of the front decoration portion 103 can be so adjusted as to accurately align with the light-permeable areas 1011 of the extension portion 101 respectively for a complete sheltering effect thereby.

[0003] However, there are some drawbacks to such conventional blind structure. First, the fixing surface 153 of the support bracket 15, except being mounted to a vertical wall surface, cannot be flexibly assembled another kind of wall surface like a horizontal one, which makes it rather limited and inconvenient in terms of application and assembly thereof. Second, the bottommost end of the blind body 10 is clamped and held in place by the two clamping members 16. In case the blind body 10 is not accurately mounted between the two clamping members 16, the blind body 10 unstably located will slide and jump awkwardly in operation, which renders the conventional blind structure rather complicated and inconvenient in assembly as well as in application.

SUMMARY OF THE PRESENT INVENTION

[0004] It is, therefore, the primary purpose of the present invention to provide a window blind structure, comprising a blind body and a set of left and right support brackets wherein around four side corners of each extension portion of the left/right support brackets are respectively disposed a thru-hole accompanied by a set of first and second positioning blocks to match with an adjusting support member that, depending on the position of the left/right support brackets fixed to a vertical/horizontal wall surface, can flexibly change the direction of assembly for the mounting of a hanging rod thereon accordingly, achieving more versatile and convenient assembly of the left/right support brackets without being limited by the circumstances.

[0005] It is, therefore, the second purpose of the present invention to provide a window blind structure wherein the bottommost end edge of the blind body is directly fixed to the hanging rod having a support fitting mounted at both ends therein respectively to be located onto a retaining cavity of the adjusting support member thereby, economically omitting the two clamping members of the above-mentioned conventional blind structure for easier assembly thereof as well as ensuring a smooth and stable winding operation of the blind body to achieve the best state of application.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIG. 1 is an assembled perspective view of a conventional window blind structure.

[0007] FIG. 2 is an exploded perspective view of the present invention.

[0008] FIG. 3 is a diagram showing the application of the present invention assembled onto a vertical wall surface thereon.

[0009] FIG. 4 is an assembled enlarged view of the present invention as shown in FIG. 3.

[0010] FIG. 5 is a diagram showing the operation of the present invention in application.

[0011] FIG. 6 is an assembled perspective view of the present invention in another state of application.
FIG. 7 is an assembled and partially enlarged view of the present invention assembled onto a horizontal wall surface thereon.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please refer to FIG. 2 showing an exploded perspective view of the present invention. The present invention is related to a window blind structure, comprising a blind body 20 and a set of left and right support brackets 30. The blind body 20 is extended and folded into a U-shaped configuration to provide a first shade section 21 and a second shade section 22 each made up of a plurality of light-permeable areas 211, 221 and light-shading areas 212, 222 alternatively arranged one to another at the surface thereon respectively. At both end edges of the blind body 20 are respectively attached a winding shaft 23 and a hanging rod 24, and a rod-like counterweight object 25 is accommodated into the bending area of the blind body 20. A covering 231 with a positioning rib 2311 protruding thereon, and a linkage body 232 with a pivoting post 2321 extending thereon are respectively mounted to both end edges of the winding shaft 23 thereof. An operational element 233 like a beaded chain is provided to actuate the rotation of the winding shaft 23 thereby. The hanging rod 24 can be made of a hollow tube with both ends defined by a coupling port 241 for the association of a support fitting 26 thereof respectively. The support fitting 26 is made up of one end having a coupling section 261 of smaller diameter to be engaged with the coupling port 241 of the hanging rod 24, and the other end having a support section 262 of identical diameter to the hanging rod 24 and an annular coupling groove 263 defining the middle section of the support section 262 thereon. Each of the left/right support brackets 30 is made up of a U-shaped grooved area 31 with one sidewall defined by a fixing surface 32 and multiple locking holes 321 disposed thereon, and an extension portion 33 stretching outwards in perpendicular to the other sidewall of the U-shaped grooved area 31 thereof. One extension portion 33 of the left/right support brackets 30 is defined by a plurality of U-shaped retaining recesses 331 that are reciprocally connected to each other to form a crosswise configuration, and the other extension portion 33 of the left/right support brackets 30 is provided with multiple pivoting holes 3311 each correspondingly matched to the end edge section of one retaining recess 3311 thereof. Around the four side corners of the extension portion 33 thereof are respectively disposed a thru-hole 332 accompanied by a first positioning block 333 aligned horizontally at one adjacent side and a second positioning block 334 aligned vertically at another adjacent side to cooperatively work with an adjusting support member 34 for flexible assembly thereby. The adjusting support member 34 has an oval-shaped adjustment slot 341 disposed at one side and a U-shaped retaining cavity 342 indented at the other side edge thereon.

Please refer to FIG. 3 showing the present invention mounted to a vertical wall surface in application. In assembly, two adjusting support members 34 are applied, each adjustment slot 341 of which being correspondingly joined to the thru-hole 332 at one side corner and the adjacent first positioning block 333 to abut against the inner wall of the extension portion 33, permitting one side of the adjusting support member 34 to extend towards the grooved area 31 and the other side to precisely abut against the first positioning block 333. Screws are then applied to secure the adjusting support members 34 onto the extension portions 33 thereof respectively. And, depending on the size and position of the winding shaft 23, the fixing surfaces 32 of the left and right support brackets 30 are correspondingly guided to contact and abut against the vertical side wall and fixedly screwed up thereto via the locking holes 321 thereof respectively, permitting one retaining recess 331 to reciprocally align and match with one pivoting hole 3311 of the left/right support brackets 30. Then, the positioning rib 2311 of the covering 231 is engaged with the retaining recess 331, and the pivoting post 2321 of linkage body 232 joined to the pivoting hole 3311 thereof respectively, permitting the winding shaft 23 to precisely suspend between the two extension portions 33 thereof. The coupling grooves 263 of the support fittings 26 attached at both end edges of the hanging rod 24 are respectively guided to engage with each retaining cavity 342 of the adjusting support member 34 to mount the hanging rod 24 onto the adjusting support member 34 thereby. Therefore, the winding shaft 23 and the hanging rod 24 are precisely separated in an appropriate spacing so as to provide secure support to the blind body 20 suspending downwards in a U-shaped configuration as shown in FIG. 4 and stretched by the gravity force of the counterweight object 25 to keep the first and second shade sections 21, 22 in an even and neat condition respectively.

In application, when the first and the second shade sections 21, 22 of the blind body 20 are rolled and adjusted till the light-permeable areas 211, 221 thereof are correspondingly aligned one to another, part of the sunlight or moonlight is allowed to shine through each light-permeable area 211, 221 and come indoors. Otherwise, when the light-permeable areas 211, 221 and the light-shading areas 212, 222 are so adjusted as to partially alternate one to another, bright light blocked by the light-shading areas 212, 222 will become softened thereby. Furthermore, the blind body 20 can also be adjusted in arrangement with the light-shading areas 212 of the first shade section 21 precisely aligned with the light-permeable areas 222 of the second shade section 22 as shown in FIG. 5 so as to form a complete sheltering effect thereby.

Please refer to FIG. 6 showing the present invention in another state of assembly. The adjustment slot 341 of the adjusting support member 34 can also be secured to the thru-hole 332 disposed at the outer side corner of the extension portion 33 of the left/right support bracket 30 and restrained in position by the adjacent first positioning block 333 thereof, permitting the adjusting support member 34 to extend forwards at the outer side of extension portion 33 thereof. Therefore, when the hanging rod 24 is mounted to the adjusting support members 34, the second shade section 22 will be precisely located and hanged in front of the winding shaft 23 and the first shade section 22 to form another state of application thereby.

Therefore, via the thru-holes 332 that, each accompanied by the adjacent first and second positioning blocks 333, 334 thereof, are disposed at four side corners of each extension portion 33 of the left/right support brackets 30, the adjusting support member 34 can flexibly change the position of assembly. In addition, each retaining recess 331 of one extension portion 33 is correspondingly matched to one pivoting hole 3311 of the other extension portion 33 thereof for the registration of the covering 231 and the...
linkage body 232 mounted at both end edges of the winding shaft 23 thereof respectively. When the adjustment slot 341 is associated with either one first positioning block 333 to extend the adjusting support member 34 backwards to the grooved area 31 therein or forwards to the outer side of the extension portion 33 thereof, the adjusting support member 34 is levelly mounted to the left/right support bracket 30 so that the fixing surface 32 of the left/right support bracket 30 can be fixedly assembled onto a vertical wall surface thereon. However, when the adjusting slot 341 is jointed to one second positioning block 334 to extend in perpendicular at one outer side of the extension portion 33 for the abutting location of the support fitting 26 attached at both end edges of the hanging rod 24 respectively, the fixing surface 32 of the left/right support bracket 30 is then turned to assemble onto a horizontal wall surface as shown in Fig. 7, and the positioning rib 2311 of the covering 231 and the pivoting post 2321 of the linkage body 232 are respectively mounted to another set of corresponding retaining recess 331 and pivoting hole 331' accordingly. Therefore, the present invention can achieve the benefit of flexibility in assembly without being restricted by any circumstances. Besides, the bottommost end edge of the blind body 20 is directly fixed to the hanging rod 24 having the coupling groove 263 of the support fitting 26 mounted at both ends therein respectively to be engaged with the retaining cavity 342 of the adjusting support member 34 thereby, economically omitting the two clamping members of the above-mentioned conventional blind structure to achieve an easier and speedier assembly thereof.

What is claimed is:

1. A window blind structure, comprising a blind body and a set of left and right support brackets wherein the blind body is extended and bent into a U-shaped configuration to form a first shade section and a second shade section each made up of a plurality of light-permeable areas and light-shading areas alternatively arranged to one another at the surface thereon respectively; at both end edges of the blind body are respectively attached a winding shaft and a hanging rod, and a counterweight object is accommodated into the bending area of the folded blind body so as to keep even and neat suspension of the first and second shade sections thereby; each of the left/right support brackets is made up of a grooved area with a fixing surface defining one sidewall to be mounted to a wall surface thereby, and an extension portion stretching outwards in perpendicular to the other sidewall of the grooved area thereof; one extension portion of the left/right support brackets is defined by a plurality of retaining recesses, and the other extension portion of the left/right support brackets is correspondingly provided with multiple pivoting holes so that a positioning rib of a covering and a pivoting post of a linkage body mounted at both end edges of the winding shaft can be respectively joined therewith; around four side corners of each extension portion thereof are respectively disposed a thru-hole accompanied at two adjacent sides by a first positioning block and a second positioning block to cooperatively work with an adjustable support member having an adjustment slot disposed thereon; therefore, depending on the position of the left/right support bracket mounted to a vertical/horizontal wall surface, the adjusting support member can flexibly change the direction of assembly onto the extension portion of the left/right support bracket, and a retaining cavity is indented at one side of the adjusting support member for the mounting of the hanging rod therein.

2. The window blind structure as claimed in claim 1 wherein the hanging rod can be made in a hollow tube.

3. The window blind structure as claimed in claim 1 wherein both end edges of the hanging rod have a coupling port disposed therein respectively to be cooperatively associated with a support fitting thereby.

4. The window blind structure as claimed in claim 3 wherein the support fitting is made up of a coupling section of smaller diameter disposed at one end, and a support section of identical diameter to the hanging rod with an annular coupling groove indented in the middle section thereon.

5. The window blind structure as claimed in claim 1 wherein the grooved area of the left/right support bracket can be formed in a U-shaped configuration.

6. The window blind structure as claimed in claim 1 wherein the fixing surface of the left/right support bracket has a plurality of locking holes disposed therein.

7. The window blind structure as claimed in claim 1 wherein each of the retaining recesses defining one extension portion of the left/right support brackets is made in a U shape and connected to each other to form a crosswise configuration thereby.

8. The window blind structure as claimed in claim 1 wherein the first positioning block of the left/right support bracket is horizontally aligned adjacent to each thru-hole thereof.

9. The window blind structure as claimed in claim 1 wherein the second positioning block of the left/right support bracket is vertically aligned adjacent to each thru-hole thereof.

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