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(11) **EP 1 413 706 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
28.04.2004 Bulletin 2004/18

(51) Int Cl.7: **E06B 9/32**

(21) Application number: **03255383.6**

(22) Date of filing: **29.08.2003**

(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 PT RO SE SI SK TR**
Designated Extension States:
AL LT LV MK

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(30) Priority: **22.10.2002 MY 0203925**

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(54) **Raising mechanism for a venetian blind**

(57) There is disclosed a venetian blind (50) having a top bar (21), a bottom bar (20) and horizontal slats (35) disposed between the top and bottom bars (21; 20). There is also a raising mechanism (30, 31) for adjusting the height of a bottom bar (20) of the venetian blind (50). The raising mechanism (30, 31) comprises a first member (11,13) attached to the top bar (21) and a second

member (10, 12) attached to the bottom bar (20). There is also a cord (1,2), which is attached at one end of the venetian blind (50) and is fed past the first and second members (11, 13; 10, 12). In such an arrangement the displacement of the free end of the cord (25) is greater than the displacement of the bottom bar (20), to adjust the height of the bottom bar (20) with a mechanical advantage.

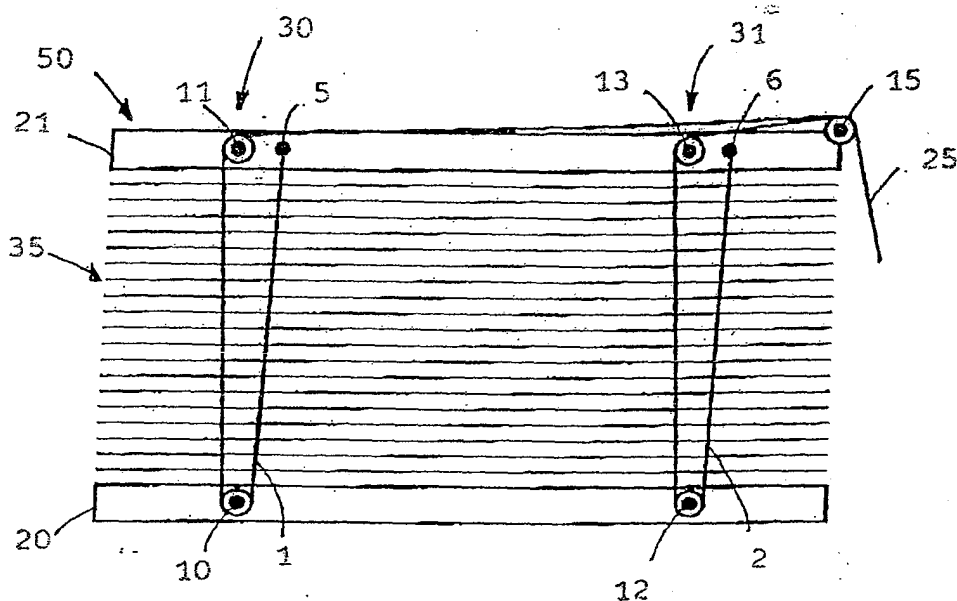


FIGURE 2

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Description

FIELD OF THE INVENTION

[0001] This invention relates to a venetian blind, and especially to a raising mechanism for a venetian blind.

BACKGROUND TO THE INVENTION

[0002] Venetian blinds have a top and bottom bar. The top bar may be attached to the upper portion of a window frame, or similar mounting point. The bottom bar is suspended beneath the top bar using the pulling cords of the raising mechanisms. Horizontal slats are suspended between the top and bottom bar. By tilting the inclination angle of the horizontal slats the amount of light passing through the window may be adjusted. If desired, the venetian blind may also be raised to allow full access to the window.

[0003] To raise a blind, an operator may pull on a cord, or a number of cords bundled together. This action raises a bottom bar of the blind towards a top bar by drawing a cord towards the top bar. The horizontal slats gather on the bottom bar as the bottom bar contacts each slat, thus opening the blind.

[0004] There is a problem with venetian blinds where the weight of blind assembly (ie. the bottom bar and the gathered slats) makes the operating effort overly demanding. This is especially a problem with wooden venetian blinds, which may weigh in excess of 10 kg.

[0005] There is a need for a system which provides an operator with means to operate a venetian blind with ease.

SUMMARY OF THE INVENTION

[0006] According to the invention, there is provided a venetian blind having a top bar, a bottom bar, horizontal slats disposed between said top and bottom bars, a raising mechanism for adjusting the height of a bottom bar of said venetian blind, wherein said raising mechanism comprises:

a first member attached to said top bar,
a second member attached to said bottom bar, and
a cord, which is attached at one end to said venetian blind and is fed past said first and second members,

wherein displacement of the free end of said cord is greater than the displacement of said bottom bar, to adjust the height of said bottom bar with a mechanical advantage.

[0007] The first and second member may be any element which allows cord to pass over the element, without undue frictional resistance.

[0008] Preferably, the cord is attached to the top bar of the blind assembly. Even more preferably the cord is attached adjacent to the first member attached to the

top bar.

[0009] Optionally, the first member may be one of a plurality of like members attached to the top bar and the cord is fed past the members attached to the top bar. In a further option, the second member may be one of a plurality of like members attached to the bottom bar, and the cord is fed past the members attached to the bottom bar.

[0010] Preferably, the members are rotatable members. Thus, the members rotate with the motion of the cord passing thereover. Even more preferably, the members are pulleys.

[0011] Preferably, the venetian blind is provided with at least two raising mechanisms.

[0012] Preferably, the venetian blind is provided with a further member for receiving the cords of the raising mechanisms.

[0013] Preferably, the further member is a rotatable member. Thus, the further member rotates with the motion of the cords passing thereover. Even more preferably, the further member is a pulley.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] In order that the present invention be more clearly ascertained, an embodiment will now be described, by way of example only, with reference to the accompanying drawings, in which:

- Figure 1 is a schematic front view of a venetian blind of the prior art;
- Figure 2 is a schematic front view of a venetian blind in accordance with an embodiment of the present invention with the blind in the lowest position;
- Figure 3 is the venetian blind of figure 2, with the blind partially raised; and
- Figure 4 is a schematic axonometric view of a venetian blind in accordance with another embodiment of the present invention with the blind in the lowest position.

DETAILED DESCRIPTION

[0015] Figure 1 depicts a conventional venetian blind assembly 150, having a top bar 121 and a bottom bar 120, horizontal slats 135, an aggregate cord 125 and raising mechanisms 130, 131. The raising mechanisms 130, 131 have a pulley 111, 113, and a pulling cords 160, 161 attached to bottom bar 120. The pulling cords 160, 161 both pass the secondary pulley 115, and form the aggregate cord 125. In the raising mechanisms 130, 131 of this blind assembly 150, displacement of the aggregate cord 125 translates to equal displacement of the bottom bar 120.

[0016] Figure 2 depicts a blind assembly 50 with the bottom bar 20 in the lowest position. The top bar 21 of the blind assembly 50 may be attached above a window

(not shown). Horizontal slats 35 are distributed between the bottom bar 20 and the top bar 21. By altering the length of aggregate cord 25, the position of the bottom bar 20, and consequently the blind assembly 50, may be adjusted.

[0017] Figure 3 depicts the blind assembly 50 in figure 2 in a partially open position, with the bottom bar 20 located between the highest position and the lowest position. As the bottom bar 20 is raised, the slats 35 are progressively gathered on the bottom bar 20. Thus the slats 35 are raised with the bottom bar 20.

[0018] The aggregate cord 25 is made up of pulling cords 1 and 2, which are respectively associated with raising mechanisms 30 and 31. Both pulling cords 1, 2 are attached to the top bar 21 at the attachment points 5 and 6. The attachment points 5, 6 are located adjacent to the corresponding upper primary pulleys 11, 13. From attachment point 5, pulling cord 1 first passes around lower primary pulley 10, which is fixed to the bottom bar 20. Pulling cord 1 then passes around upper primary pulley 11 fixed to the top bar 21.

[0019] Similarly, from attachment point 6, pulling cord 2 first passes around lower primary pulley 12 fixed to the bottom bar 20 and then passes upper primary pulley 13 fixed to the top bar 21. Both pulling cords 1, 2 then pass around the secondary pulley 15, at which point aggregate cord 25 is formed.

[0020] Between the attachment points 5, 6 and the lower primary pulleys 10, 12, and between the lower primary pulleys 10, 12 and the upper primary pulleys 11, 13 the pulling cords 1, 2 have a generally vertical orientation. Thus, the bottom bar 20 is suspended from the attachment points 5, 6 and the upper primary pulleys 11, 13.

[0021] The suspended mass of the gathered slats and the bottom bar 20 is supported by four suspension points (the fixed points 5, 6 and the upper primary pulleys 11, 13).

Pulling cords 1, 2 transfer the weight force of the suspended mass applied to the respective upper primary pulleys 11, 13 to the secondary pulley 15, and ultimately to aggregate cord 25. As the weight force of the suspended mass is evenly distributed between the suspension points, the force required on aggregate cord 25 to hold the blind in position is half the weight force of the suspended mass. Displacement of the aggregate cord 25 is greater than the displacement of the bottom bar 20.

[0022] Thus, a mechanical advantage is gained when raising the bottom bar 20.

[0023] Figure 4 shows a blind assembly 50 with two raising mechanisms. The top bar 21 has upper primary pulleys 11, 13 which also provide attachment points 5, 6 for the pulling cords 1, 2. The secondary pulley 15 is attached near the end of the top bar 21, such that an operator may operate aggregate cord 25 remotely from the raising mechanisms.

[0024] Modifications within the scope of the invention may be readily effected by those skilled in the art. It is

to be understood, therefore, that this invention is not limited to the particular embodiments described by way of example hereinabove.

Claims

1. A venetian blind (50) having a top bar (21), a bottom bar (20), horizontal slats (35) disposed between said top and bottom bars (21; 20), a raising mechanism (30, 31) for adjusting the height of a bottom bar (20) of said venetian blind (50), wherein said raising mechanism (30, 31) comprises:

a first member (11, 13) attached to said top bar (21),
a second member (10, 12) attached to said bottom bar (20), and
a cord (1,2), which is attached at one end to said venetian blind (50) and is fed past said first and second members (11, 13; 10, 12),

wherein displacement of the free end of said cord (25) is greater than the displacement of said bottom bar (20), to adjust the height of said bottom bar (20) with a mechanical advantage.

2. The venetian blind (50) as claimed in claim 1, wherein said cord (1,2) is attached to said top bar (21).
3. The venetian blind (50) as claimed in either claim 1 or 2, wherein said cord (1,2) is attached adjacent first member (11, 13).
4. The venetian blind (50) as claimed in any one of the preceding claims, wherein said first member (11, 13) is one of a plurality of members attached to said top bar (21) and said cord (1,2) is fed past all of said members (11, 13; 10, 12) attached to said top bar (21).
5. The venetian blind (50) as claimed in any one of the preceding claims, wherein said second member (10, 12) is one of a plurality of members attached to said bottom bar (20) and said cord (1,2) is fed past all of said members (11, 13; 10, 12) attached to said bottom bar (20).
6. The venetian blind (50) as claimed in any one of the preceding claims, wherein said members (11, 13; 10, 12) are rotatable.
7. The venetian blind (50) as claimed in any one of the preceding claims, wherein said members (11, 13; 10, 12) are pulleys.
8. The venetian blind (50) as claimed in any one of the

preceding claims, wherein said raising mechanism (30, 31) is one of a plurality of like raising mechanisms.

9. The venetian blind (50) as claimed in claim 8, comprising a further member (15) for receiving said cords (1, 2) of said raising mechanisms (30, 31). 5
10. The venetian blind (50) as claimed in claim 9, wherein said further member (15) is rotatable. 10
11. The venetian blind (50) as claimed in either claim 9 or 10, wherein said further member (15) is a pulley.

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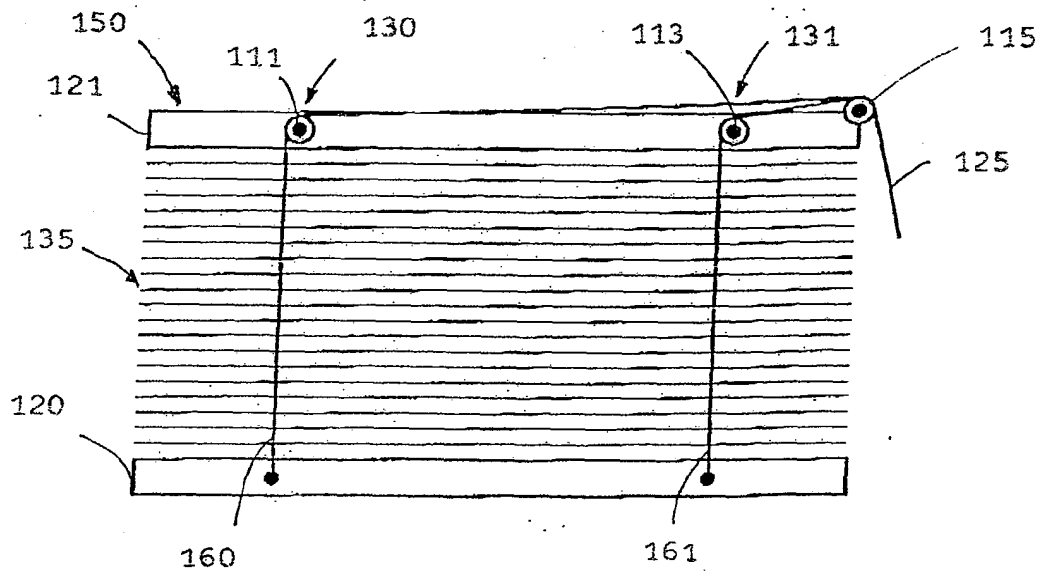
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PRIOR ART

FIGURE 1

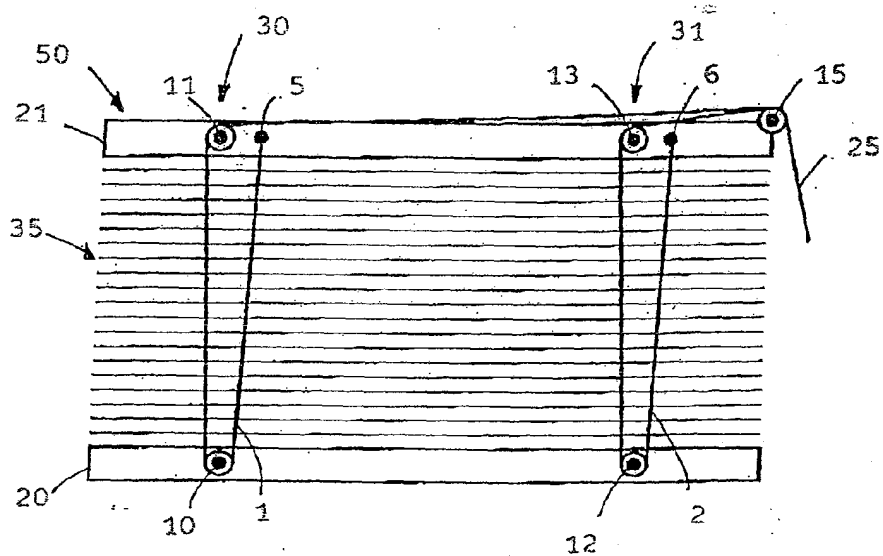


FIGURE 2

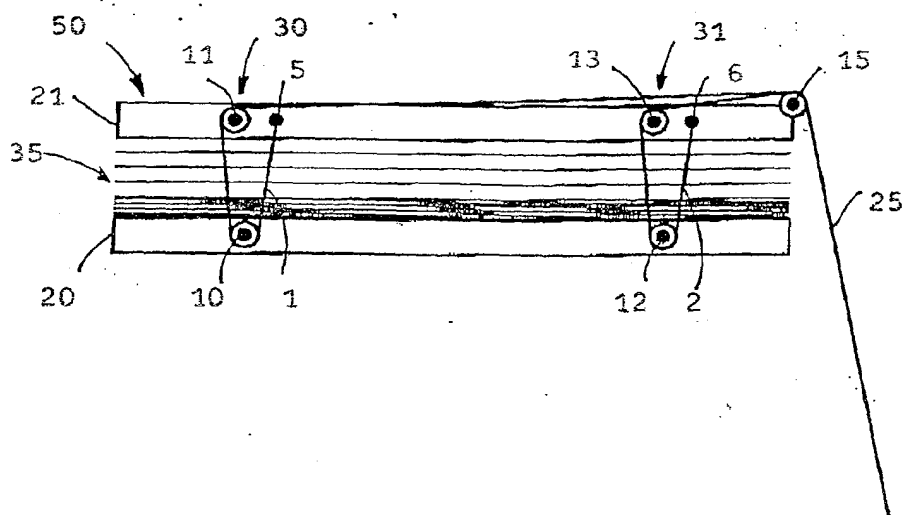


FIGURE 3

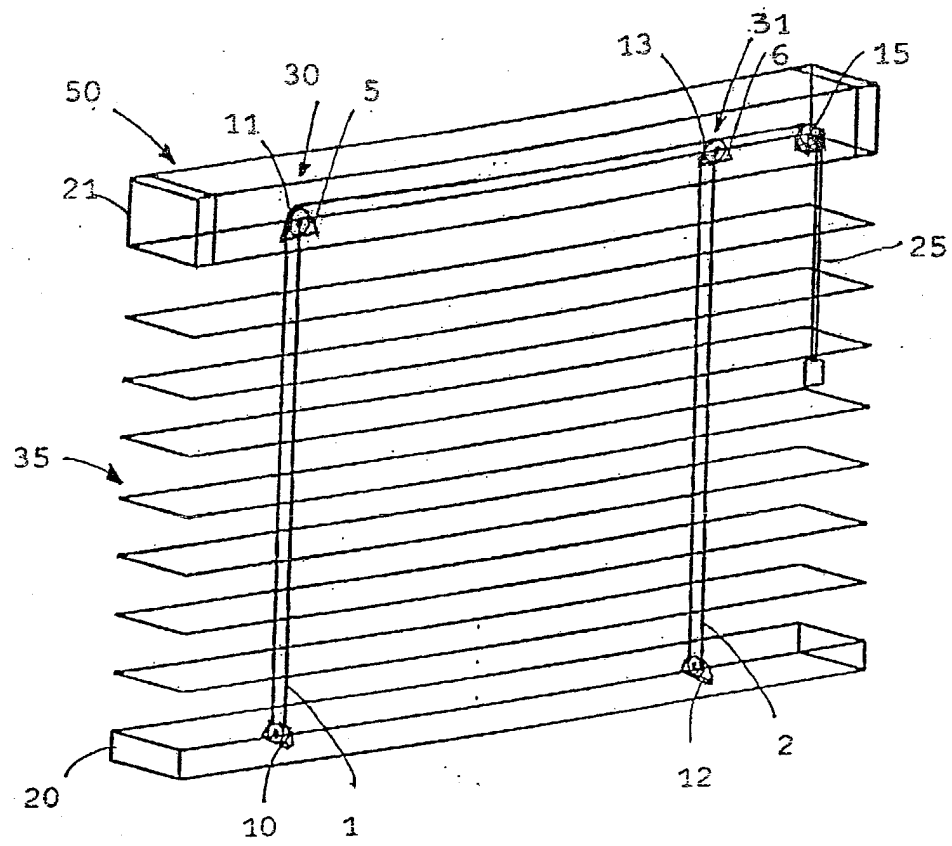


FIGURE 4