

United States Patent

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 [31] **68-13456**

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[54] **DEVICE FOR OPERATING A VENETIAN BLIND**
 1 Claim, 4 Drawing Figs.

[52] U.S. Cl. **160/168,**
 160/176

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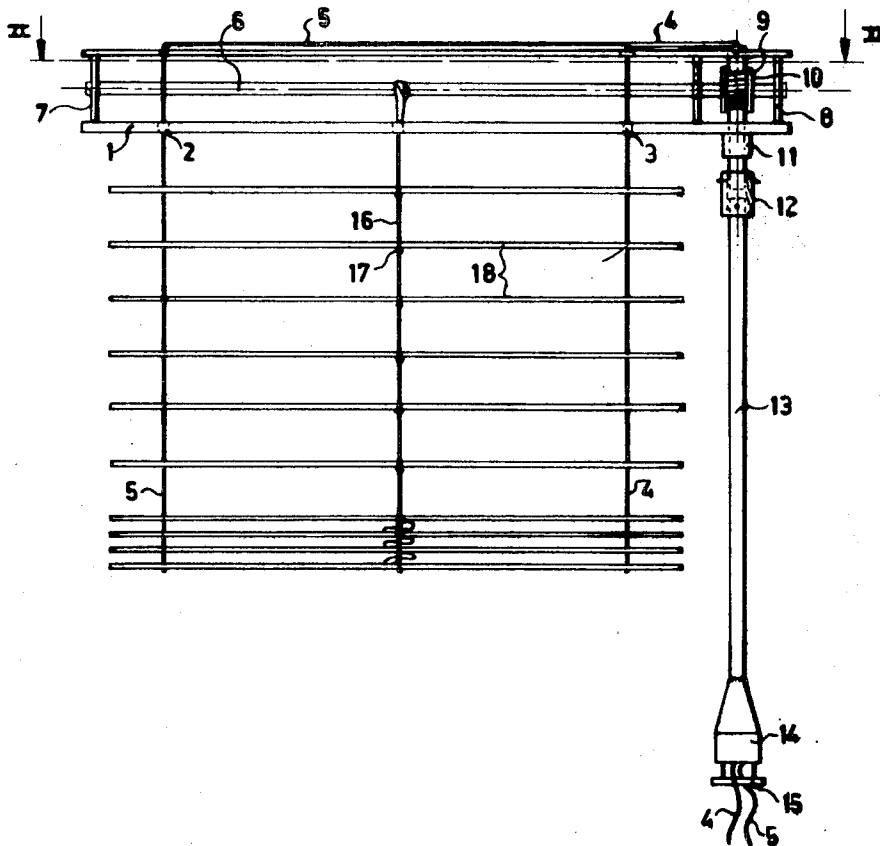
[50] Field of Search..... 160/168-178,
 309; 24/126 L, 136 L

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ABSTRACT: Venetian blind having pulling cords for lifting and lowering its lamellae, an oblong member through which the pulling cords pass, a brake device for the pulling cords and a device for tilting the lamellae coupled to said oblong member in which the oblong member hangs down freely and supports at its lower side the cord brake.



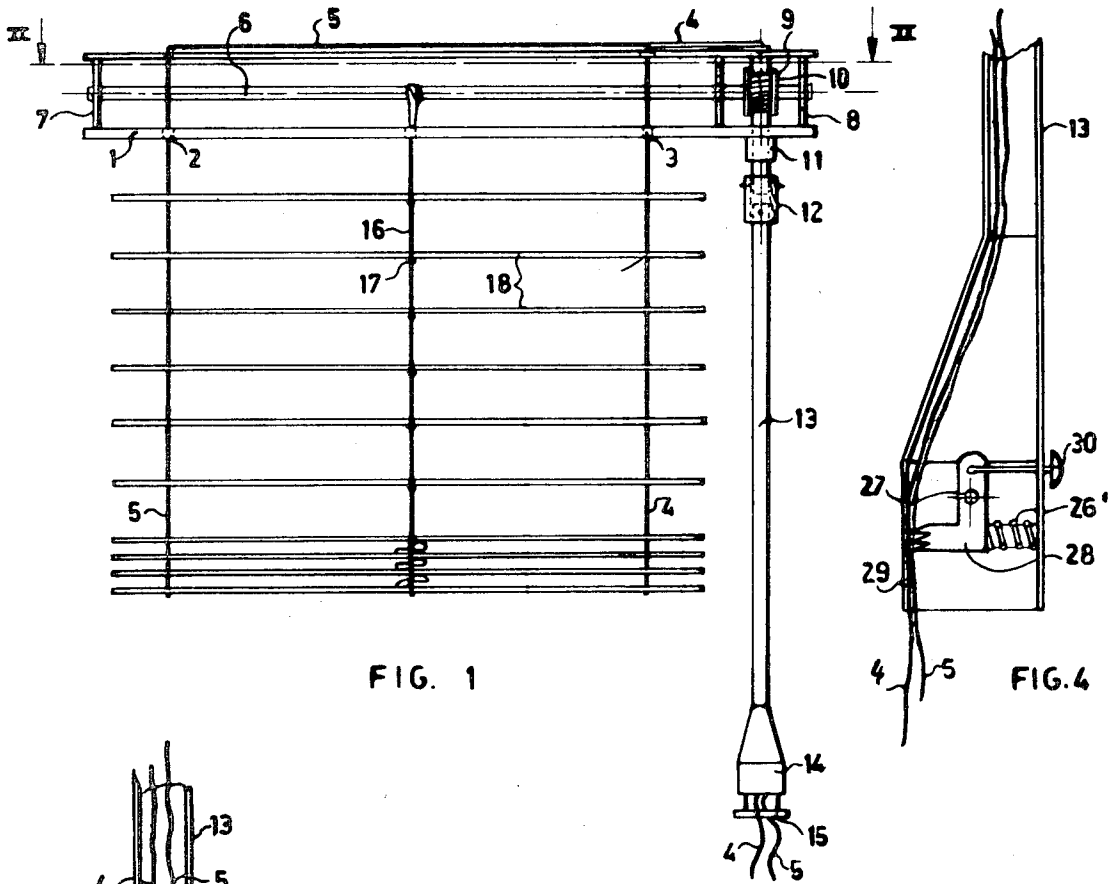


FIG. 1

FIG. 4

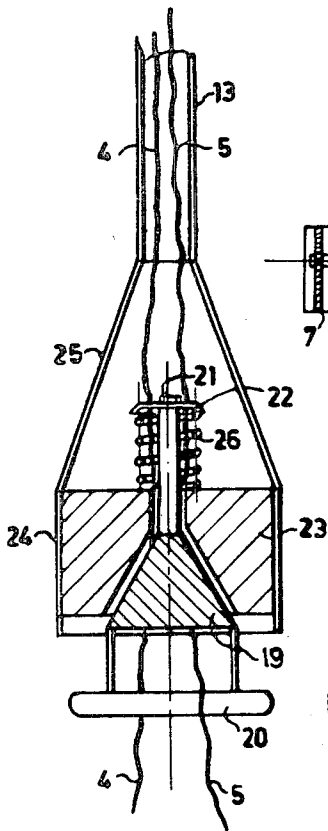


FIG. 3

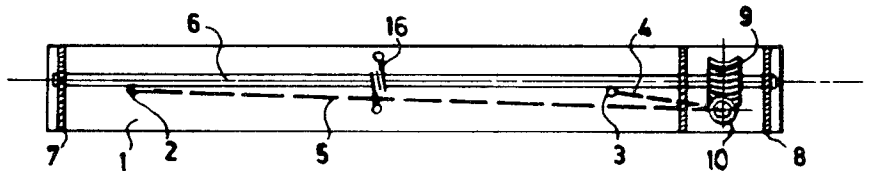


FIG. 2

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DEVICE FOR OPERATING A VENETIAN BLIND

The invention relates to a device for operating a venetian blind provided with lamellae that can be pulled up and are tiltable, a number of cord-shaped members for pulling up and letting down the lamellae and a device for operating the tilting of the lamellae. So far such operating devices had been executed such, that the cord-shaped members hung down from the venetian blinds and that a separate operating member, that was spatially separated therefrom, was present for the tilting mechanism, e.g., in the shape of a pair of cords. This led to it, that the operation of the venetian blind was unsurveyable and often had to take place at two sides of the venetian blind.

Further a venetian blind is known, with which the operating member of the tilting mechanism comprises a hollow rod, which is rotatable about its longitudinal axis and the rotation thereof controls the tilting of the lamellae. Herewith said hollow rod has fixedly been attached to a window frame or the like and the cords for pulling up the venetian blind are fed through the hollow rod and from there to a cord brake that has fixedly been connected with the window frame. This has the disadvantage that, when mounting the venetian blind, a fastening has to be fitted to the window frame or the like for the hollow rod and the cord brake.

The invention aims at removing this disadvantage and at providing an extremely simple device, which is very surveyable and with which the venetian blind, at the same location, which lies under the upper side of the venetian blind, with extremely small chances of faulty operation, can easily be pulled up or let down and be brought into the desired tilting position of the lamellae.

The above-mentioned aims are attained according to the invention in that the oblong member freely hangs down and bears the cord brake.

For facilitating the operation it is provided according to a further elaboration of the invention that the oblong member has been attached by means of a flexible coupling which allows a limited swinging movement of said member.

Preferably the brake is mounted at the lower side of the oblong member.

The above mentioned and further particulars of the invention will appear from the specification which now is given on hand of the accompanying drawings, in which:

FIG. 1 schematically shows a venetian blind according to the invention;

FIG. 2 shows a top view of the operating mechanism;

FIG. 3 shows a first embodiment of the brake; and

FIG. 4 shows a further embodiment of the brake.

In FIG. 1, 1 indicates a supporting plate, which is provided at 2 and 3 with openings for allowing the passage of the pulling cords 4 and 5. Further a rotatable shaft 6 is supported in lips 7 and 8 above the plate 1. Said shaft contains a worm wheel 9, cooperating with a worm 10. The parts 6, 9 and 10 form the mechanism for operating the tilting of the lamellae. The worm 10 is supported in a bush 11, which is mounted to the plate 1. The worm 10 is, via an universal joint 12, connected with a hollow oblong member 13, which at its lower side bears a cord brake 14 with a brake operating member 15. The cords 4 and 5 are fed through the hollow worm 10 and the member 13 and leave these members at its lower side.

By releasing the brake, the construction of which will be discussed later on, the venetian blind is let down. Pulling up the venetian blind takes place by pulling the parts of the cords 4 and 5 protruding from the brake 14. The adjustment of the tiltable movement takes place, by rotating the member 13 about its longitudinal axis, owing to which via coupling 12 the worm 10 is also rotated which acts upon the worm wheel 9, by which the shaft 6 is rotated. Cords 16 have been wrapped round said shaft, said cords being interconnected by supporting members 17 forming a ladder, supporting the lamellae, so that the rotation of shaft 6 leads to it that the one supporting member goes downwardly and the other goes upwardly, owing

to which the lamellae 18 are tilted.

FIG. 2 shows a top view in which the same references have been used as in FIG. 1.

The brake, drawn in section in FIG. 3, contains a first conical member 19 with a protruding grip 20 at the lower side and rod 21 with a disc 22 at the upper side. A second member 23 is secured at the lower end of the brake by the casing 24. This second member 23 has a bore which substantially mates the external configuration of the conical member 19. The casing 24 is secured to the tubular member 13 by the portion 25 of the brake. The cords 4 and 5 are fed through openings in the disc 22 into the transitional part 25 and between the rod 21 and the hollow bore of the member 23 and further pass through holes in the grip 20 at the lower side to the conical member 19. Spring 26, mounted between disc 22 and the upper side of the conical member 23 about the rod 21, pulls rod 21 and by this the member 19 normally upward with respect to the member 23. By pulling the grip 20 downward the conical walls of the members 19 and 23 are further spaced from each other and the cords 4 and 5 under the influence of the gravity of the lamellae between the members 19 and 23 can move upwardly. When one pulls the cords the conical member 19 is moved somewhat downward and the cords can move downward owing to which the venetian blind is pulled up.

FIG. 4 schematically shows another embodiment of the brake, in which use has been made of a rotatable member 28, having a center of rotation 27. A spring 26' biases member 28 to rotate clockwise, owing to which its left side urges the cords 4 and 5 against a stop wall 29. By pressing a button 30 the member 26 is rotated counterclockwise and the brake is released. When one pulls the cords, the member also rotates a little bit counterclockwise and the cords can freely be pulled down.

In the shown embodiment two pulling cords 4 and 5 have been drawn, but it will be clear that also another number of cords, e.g., four, can be used.

What I claim is:

1. In a venetian blind having a plurality of lamellae and cord means for raising and lowering said lamellae, the improvement which comprises: an integral control means for both controlling the length of the venetian blind and the angle of the tilt of the lamellae, said control means being comprised of a rod member rotatably mounted above said lamellae, connecting means engaged with said lamellae and being engaged with said rod member, whereby when said rod member is rotated the relative position of the connecting means is altered changing the angle of the tilt of the lamellae, said control means further including a downward extended elongated hollow tubular member having an open upper terminal end and having secured at its lower terminal end a spring biased cord brake means; said tubular member further including a universal joint intermediate upper and lower portions thereof permitting the lower portion of the tubular member to be moved relative to said lamellae and rotational movement of the upper portions of said tubular member in response to rotational movement of the lower portion of the tubular member independent of the relative position of the lower portion to said lamellae, said rod member and said upper portion of said tubular member being engaged with each other through a rotary transmission means; and said cord means for raising and lowering said lamellae passing through the upper open terminal end of said tubular member and extending downwardly through said tubular member and being engaged by said spring biased cord means at the lower terminal end whereby when said tubular member is rotated about its lengthwise axis the rotary transmission means rotates the rod causing the angle of tilt to be changed and whereby when said brake means is released the cord means is released allowing the length of the venetian blind to be altered.

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