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(54) A retractable screen.

(57) A retractable screen comprising a head rail, lateral profiles extending generally perpendicular from each end of the headrail, a bottom rail having end portions movable in said lateral profiles, draw-cords connected to said bottom rail, a slide mounted on one of said lateral profiles, passages formed in said slide, said passages opening into the front face of said slide, the draw-cords passing through said passages, operation of said draw-cords causing raising or lowering of said bottom rail, said draw-cords extending to the front of said slide, so that they may be manually gripped and pulled.

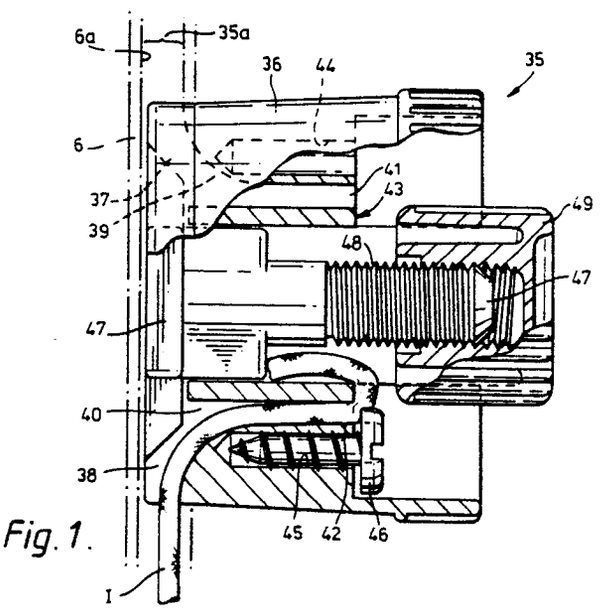

Fig. 1.

EP 0 228 198 A2

A RETRACTABLE SCREEN

The present invention relates to a retractable screen, such as a venetian blind, a folding blind or curtain or a roller blind which can be gathered together.

One known form of such screen comprises a headrail, lateral profiles extending generally perpendicular from each end of the headrail, a bottom rail having end portions movable in said lateral profiles and draw-cords connected to the bottom rail. The draw-cords may be connected to a slide which is mounted for movement along the lateral profile so that movement of this slide actuates the bottom rail via the draw-cords. The slide, however, does not permit the bottom rail to move up and down other than by means of the slide, so that, particularly in the event of failure or seizure of the slide, the blind cannot be moved up or down.

It is an object of the present invention to improve the slide of the type mentioned initially, in such a way that other means may be provided for actuating the retractable screen.

According to the present invention there is provided a retractable screen comprising a head rail, lateral profiles extending generally perpendicular from each end of the headrail, a bottom rail having end portions movable in said lateral profiles, draw-cords connected to said bottom rail, a slide mounted on one of said lateral profiles, passages formed in said slide, said passages opening into the front face of said slide, the draw-cords passing through said passages, operation of said draw-cords causing raising or lowering of said bottom rail, said draw-cords extending to the front of said slide, so that they may be manually gripped and pulled.

The movement of the bottom rail can be achieved simply by manually acting on those portions of the draw-cords which extend to the front of the slide, the slide normally then being fixed in position on one of the lateral profiles.

Preferably, however, provision is provided to clamp the draw-cords to the slide, whereby movement of the slide longitudinally of said one profile will cause movement of the draw-cords and thus of the bottom rail. With such a construction, however, it is possible preferably to release the clamping means and to adjust manually the portion of the draw-cord which is at the front of the slide. This overcomes the problem when one or more of the draw-cords is lying too loosely in the retractable screen and has to be tightened. This retightening can be readily achieved by the release of the clamping means in the slide, pulling on the cords and reclamping. This can be carried out even by an unskilled person.

In a preferred construction, the slide is generally rectangular, having two longer and two shorter sides, and possibly being rounded at the shorter sides. With such a construction, it is preferable that the passages on the two shorter sides of the side should each begin in the region of a part of the slide which extends in a longitudinal channel formed in the lateral profile. The passages may include a first arm parallel to the lateral profile and a second arm essentially perpendicular thereto.

The clamping means, where provided, may comprise a screw having a portion engageable with the cord passing through the passage. This portion may be the head of the screw and the screw shank can be arranged to extend parallel to the second arm of the passage.

Simple and easy locking of the slide may be achieved if a locking member is movable in the slide substantially perpendicular to the lateral profile, and has a head part engaging in the profile so as to be moved relative to the rest of the slide in order to exert a clamping pressure on the profile. The locking member can include a thread on the front face of the slide, on which a nut is threadably engaged to exert the clamping force. A nut of this type can be actuated particularly easily by hand, on the front face of the slide, without the use of tools.

In order that the invention may more readily be understood, the following description is given, merely by way of example, reference being made to the accompanying drawings, in which:-

Figure I is a half section through one embodiment of slide shown installed in one form of retractable screen according to the invention;

Figure 2 is a front view of the slide housing; and

Figure 3 is a perspective view of a complete venetian blind constructed according to the invention, provided with a slide according to Figures I and 2.

The retractable screen on which the slide is to be used may be a venetian blind, a folding blind, a folding curtain or a roller blind. The invention is described, with reference to a venetian blind.

Figure 3 shows such a blind which can be fitted to the inside of a sloping skylight, particularly of the tiltable type. The blind has a horizontal headrail I, which is U-shaped in cross-section and from which ladder cords 2 hang down, these ladder cords being indicated in broken lines in Figure 3 and holding the individual slats, which are not shown, at the necessary distance apart from one

another. A longitudinal tilt rod (not shown) is mounted in a conventional manner in the headrail I and can be rotated by means of a tilt bar 3 in order to turn the slats by means of the ladder cords 2.

Projections formed on corner parts 4 are pushed into the end of the headrail I, these corner parts 4 forming the connection between the headrail I and lateral profiles 6. The lateral profiles 6 are fixed to the lower parts of the generally square shaped corner parts 4 and extend downwards on both sides of the window, so that in the case of a sloping skylight, the profiles 6 are parallel to the sloping window side pieces.

Two lateral profiles 6 are each formed with a front and a rear channel through which the venetian blind draw-cords can run. These channels are open to the front and rear, respectively, over their entire length.

In the front channel of the left profile 6 a handle or manually actable slide 35 can be moved up and down along the profile. This slide has a housing 36 which is approximately square as seen in Figure I, and approximately rectangular as seen in Figure 2. The bottom part 35a of the slide 35 extends to the channel, engaging underneath inturned side pieces of the channel, so that the slide cannot be lifted out forwards. Lift cords (I to IV) are arranged in the front channel are threaded into the slide 35 on both shorter sides of the housing in the region 35a. For this purpose the slide 35 has apertures 37, 38 on both shorter sides, which represent the start of passages 39,40 in the housing 36. These passages 39,40 are curved and include a first arm extending parallel to the profile 6 and ending in the passages 37,38 and a second arm extending perpendicular to the profile 6, and ending in the apertures 4l,42 on the front of the housing as seen in Figure I. In this context, the housing may have a recessed region on its front, so that part of the housing front is recessed at 43, the apertures 4l,42 being shown opening into this part 43.

Holes 44, 45 are drilled in the housing 36 from the front, parallel to the regions of the second arms of the passages 39,40 and self-tapping, clamping screws 46 are screwed into these holes, so that the screw heads clamp the cords firmly relative to the recessed housing parts 43. Alternatively, however, clamping means of other designs can also be provided to clamp the cords I to IV. For example, levers with cams can be pivoted on the housing, the cams of the levers clamping the cords firmly. This has the advantage that the cords can be released manually, without the use of tools.

Approximately at the centre of the housing 36, at right angles to the profile 6, a bolt shaped clamping member 47 is inserted in the housing 36, its bottom engaging in the channel 6aunder the side piece of the profile 6, in the same manner as the region 25 a of the housing. At its front, the clamping part 47 has a thread 48 on which is screwed a cap nut 49. If this nut 49 is tightened, its lower surface rests on recess part 43 of the housing, and thus pulls the clamping member 47 outwardly so that the head of the clamping member is stretched relative to the housing and exerts a clamping pressure on the profile 6 effectively to lock the slide 35.

In this position, it may be advantageous to release the clamping means 46 and to bring the cords I to IV sufficiently far forward out of the slide 35 to enable them to be pulled manually, to move carriage 5 slidably in the side profiles 6 in order to raise or lower the bottom rail 7 of the blind, which is carried by the carriage 5. Normal raising or lowering of the bottom rail 6 is achieved by the cords being clamped by screws 46 and by the slide 35 being lowered or raised respectively.

The clamping means 46 can be temporarily slackened off and any looseness in the cords I to IV can be removed by pulling on the portion of the cords I to IV which extend to the front of the slide housing.

In the alternative, one can release or indeed remove the screws 46 and adjustment of the blind can be achieved be pulling on the free part of the draw cords which extend to the front of the slide housing. This could be done if, by some chance, the slide housing should become jammed, or one could do it deliberately, by tightening the nut 49.

Claims

I. A retractable screen comprising a head rail - (I), lateral profiles (6) extending generally perpendicular from each end of the headrail (I), a bottom rail (7) having end portions (5) movable in said lateral profiles, draw-cords (I-IV) connected to said bottom rail and, a slide (35) mounted on one of said lateral profiles characterised in that passages - (39,40) are formed in said slide (35), said passages opening into the front face (43) of said slide (at 4l,42), the draw-cords passing through said passages, operation of said draw-cords causing raising or lowering of said bottom rail, said draw-cords extending to the front of said slide (35), so that they may be manually gripped and pulled.

2. A retractable screen according to claim I, characterised in that means (46) are provided to clamp said draw cords to said slide, whereby movement of said slide (35) longitudinally of said one profile (6) will cause movement of said draw-cords and thus of said bottom rail (7).

3. A retractable screen according to claim 2, characterised in that said clamping means (46) comprises a screw threaded into said slide and having a part positioned to clamp a draw cord (I-IV).

4. A retractable screen according to claim I, 2 or 3, characterised in that the lateral profiles (6) each include longitudinal channels therein, in that the slide (35) includes a portion (35a) engaged in the longitudinal channel of one of said profiles, the slide (35) being generally rectangular, having two longer and two shorter sides, and in that the passages on the two shorter sides of the slide each begin in the portion (35a) engageable in the longitudinal channel of the lateral profile (6).

5. A retractable screen according to claim 4, characterised in that the passages each have a first arm parallel to the longitudinal channels in the lateral profiles, and a second arm substantially perpendicular thereto.

6. A retractable screen according to claim 5, when appendant on claim 3, characterised in that said screw is screwed into a bore (44) in said slide (35) parallel to the second arm of said passage.

7. A retractable screen according to any preceding claim, characterised in that it further comprises a clamping member (47) which is displaceable relative to said slide (35), generally perpendicular to the lateral profile (6), said clamping member including a head portion (47) engageable in the channel of said one lateral profile, said head portion being engageable with said profile so as to be lockable thereto.

8. A retractable screen according to claim 7, characterised in that the clamping member (47) includes a thread (48) on the front face of the slide (35), and a locking nut (49) is threadable onto said thread (48) whereby tightening of said locking nut locks the head part and thus the slide relative to said profile.

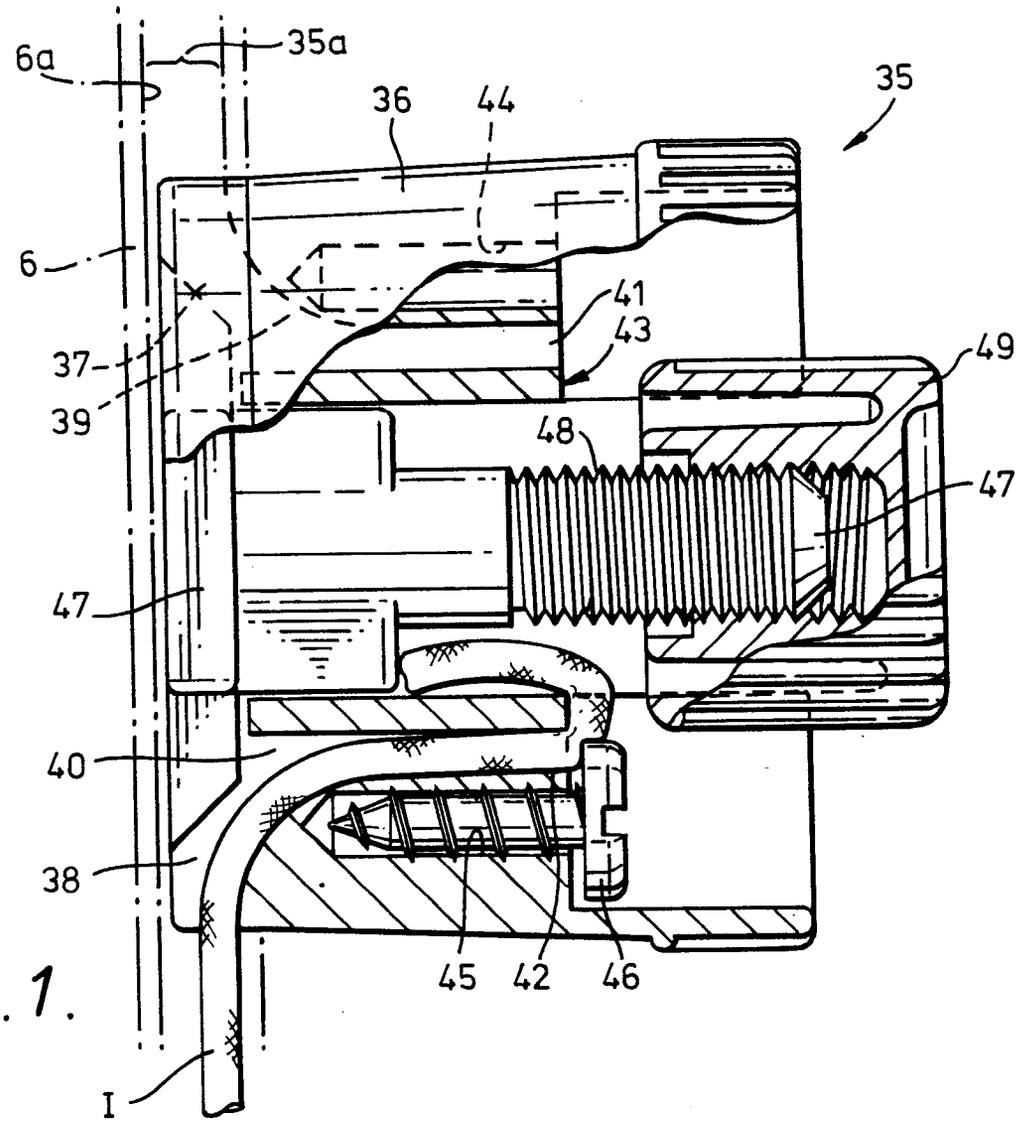

Fig. 1.

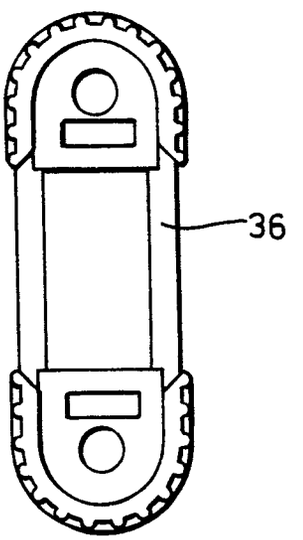

Fig. 2.

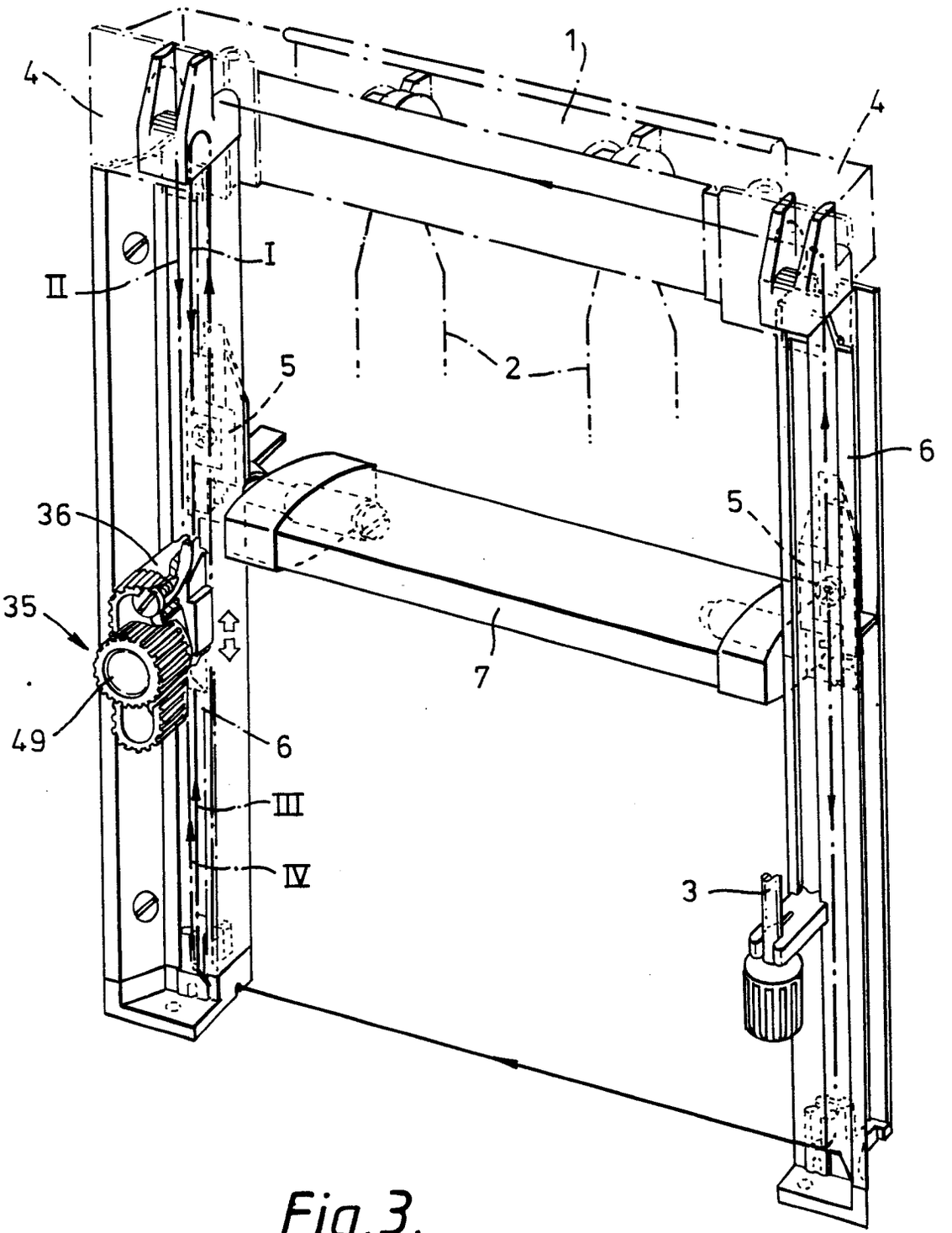

Fig.3.