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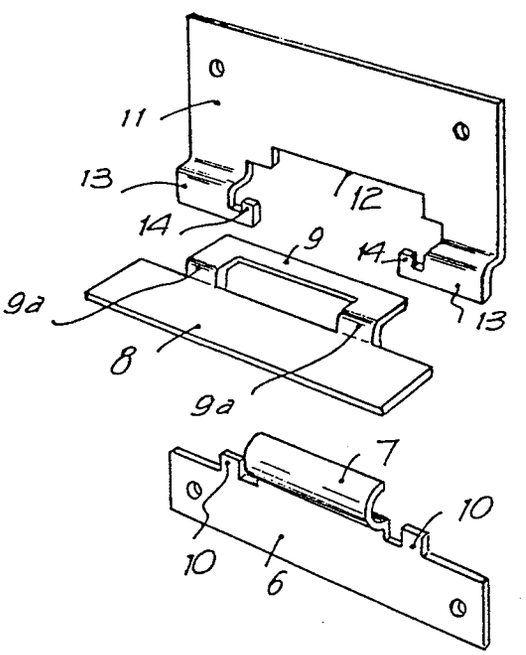
(54) Locking device for blinds and the like.

(57) The locking device for blinds and the like comprises a fixed stop (1,4,5) secured to an upright (2) of a door or window to be closed by the blind and a movable part (8) in the manner of a catch, mounted on one of the slats (3a) of the said blind and adapted to assume a protruding position (Fig. 3) in which it may be blocked by the stop (5) when the blind is pry opened from its lower side, and a withdrawn position (Fig. 5) in which it can surmount the stop (5) when the blind is raised by rolling it up, the catch-like movable part (8) having its gravity center point offset towards a side and upwards of the plane where the articulation axis (7) thereof is located, such that the said movable part (8) tends to assume a blocking, protruding position under the action of gravity.



EP 0 242 317 A2

LOCKING DEVICE FOR BLINDS AND THE LIKE

The present invention relates to a locking device for blinds and the like of the kind formed of a series of horizontal slats with their ends mounted sliding within vertical channeled guides secured to the uprights of a window or door to be closed therewith, and connected with one another by a hook and socket device, or by at least one flexible or articulated pulling strut which can be drawn from an upper winding up device for moving upwards the lowermost slat thereby raising the other superimposed slats, both instances providing for a small clearance between the slats when the blind is rolled up from above. The locking device according to the invention, which will be described thereafter, is very simple and effective.

BACKGROUND OF THE INVENTION

Locking devices for preventing opening of blinds of the above kind by means of prying up, based on a catch fixed to a lateral post or upright, as may be one of the vertical channeled guides into which the blind slats are adapted to slide, and a movable, lock-shaped part mounted on one of the slats and adapted to assume a protruding position in which it can be blocked by the stop when an attempt is made of raising the blind by force moving upwards its lower slat, and a withdrawn position in which it can surpass the stop when the blind is raised by being rolled up, are well known.

This kind of known locking devices have the drawback that in order of obtaining the movements of the lock-shaped part, it is necessary to use cables or struts connected to one of the slats, and biasing springs, which complicates the development of the closure and raises the

costs thereof, as well as it makes easier the outcome of breakdowns.

DESCRIPTION OF THE INVENTION

With the aim of giving a solution to the above drawbacks, the locking device subject of the invention, of the above type, has been devised and is essentially characterized by the fact that the lock-shaped oscillating member is freely articulated on a part fixed to one of the slats about an articulation axis located such that the gravity center point of the member is offset outwardly, as regards the blind, from the said articulation axis and placed over this latter, so that the lock-shaped oscillating member has a tendency to be kept by its own weight in a protruding blocking position as regards the fixed catch.

On the other hand, it is provided that the inner end, as regards the blind, of the lock-shaped oscillating member in question has a projection against which a plate fixed to an upper slat placed above of a lower slat bearing the said oscillating member may bear when the first cited, upper, slat moves downwards nearer to its downwards next, lower, slat and pushes the oscillating member to its blocking position.

More particularly, the lock-shaped oscillating member consists of a plate having a frame-shaped extension forming a staggering that protrudes towards the reverse side of the blind, the extension being articulated to a channeled wing protruding from another plate fixed to the said lower slat, while the next upper slat carries a third plate with outwardly protruding, as regards the blind, staggered wings having tongues which rest under the oscillating member, outwardly of its articulation axis, thus forcing this member to assume its withdrawn position when the blind raises by being rolled up.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of what is described in the present specification, the enclosed drawings show, only by way of non restrictive example, a practical embodiment of the locking device according to the invention. In the said drawings:

Figure 1 is an exploded perspective view of the locking device components, except for the fixed stop;

figure 2 is a perspective view of the ensemble of the device as mounted on a blind;

figure 3 is a transversal cross-section view of the ensemble of the device in rest position, with the blind slats resting the ones over the other;

figure 4 shows how the locking device is blocked when the blind is pry opened from under the lower slats, and

figure 5 is a cross section through a plane parallel to that of the previous figures, showing how the locking device is released when the blind is rolled up upwards.

DESCRIPTION OF A PREFERRED EMBODIMENT

The locking device for blinds consists, in the drawings, of a stop formed of a plate 1 fixed to one of the channeled guides 2 along which the slats 3,3a of the blind are running. This stop extends in a wing 4 directed towards the center of the opening to be closed by the blind, parallel to the slats 3,3a of this latter and somewhat outwardly spaced apart therefrom, with a downwards directed channeled fin 5 constituting the stop proper.

This stop could be secured to an upper lath of the window frame as well.

The locking device comprises also a plate 6 secured to a lower slat 3a, to advantage the lowermost

slat of the blind, and having a channeled wing 7 forming an articulation bearing for an oscillating member 8 such that this member can oscillate about an horizontal axis parallel to the slats between two different angular positions which may be easily retrieved from a comparison of figures 3 and 5. The oscillating member 8 is provided with an extension in the shape of an oblong frame 9 which is threaded onto the wing 7. Small fins 10 protrude upwards of the plate 6 at a little distance of both lateral sides of the channeled wing 7.

The slat 3 which is next upper to the slat 3a carrying the plate 6, has secured another plate 11 with an ample central cut out 12 in its lower edge, and two small outwardly and downwards angled fins 13 formed with small tongues 14 directed to one another and resting under the outer face of the sides of the frame 9, are formed protruding at both sides of the said cut out.

When the blind is in its closed, rest position, with its slats resting the ones over the other with their adjacent edges, the plate 8 slants to a protruding position because it has its gravity center point offset upwards and outwards, as regards the plane of the blind, of its articulation axis, due to the elbowed construction 9a of the frame 9. The stop wing 4 prevents the plate 6 from falling down beyond this position (Fig. 3). With the plate 8 in this position, if the blind is lever opened from its underside, the slat 3a pushes upwards the slat 3 and the plate 8, but when this latter comes under the channeled fin 5, further upwards motion of the blind becomes blocked (Fig. 4).

In the contrary, when the blind is raised by rolling it up from above and the upper slat 3 draws upwards the lower slat 3a, the angled fins 14 resting under the sides of the frame 9, forces this latter to oscillate

so that the ensemble of the movable plate 8 comes closer to the plate 11 and thus it is able of surmounting with no problem the stop constituted by the channeled wing 5 (Fig. 5).

While descending of the blind, when the lower slat 3a reaches its lowermost closing position and the upper slat 3 further moves downwards, the edge of the cutout 12 rests onto the elbowing 9a and contributes to the oscillation movement of plate 8 under the action of gravity forces towards its blocking position, as shown in the already mentioned figure 3.

Provision has been made such that the oscillating member or catch 8 is connected to flexible straps secured to the support 11 in order to ensure the oscillation of the catch towards the releasing position when the blind is rolled up upwards.

As it may be observed, the described locking device is very simple and has no straps, wires or springs in order to force the movable catch 8 to oscillate, which implies a simplification of the locking device and a safer operation of the same.

C L A I M S

1. Locking device for blinds and the like of the kind having a plurality of horizontal slats (3,3a) with their ends sliding in vertical guides (2) and connected with one another by upwards pulling means providing for a small relative movement between adjacent slats, the locking device comprising a fixed catch or stop (1,4,5) secured to a lateral upright of the opening to be closed by the blind and a movable oscillating lock part or member (8) mounted on one of the slats (3a) and adapted to assume a protruding position in which it can be blocked by the fixed stop when the blind is opened by force moving upwards its lower slat, characterized in that the lock-shaped oscillating member (8) is freely articulated on a part (6) fixed to one of the slats (3a) about an articulation axis (7) located such that the gravity center point of the member is offset outwardly, as regards the blind, from the said articulation axis and placed over this latter, so that the lock-shaped oscillating member (8) has a tendency to be kept by its own weight in a protruding, blocking position as regards the fixed catch (1,4,5).

2. Locking device as in claim 1, characterized in that the movable part (8) constituting the oscillating member rests onto protrusions (14) of a part (11) secured to a slat (3) placed over the slat (3a) in which the said oscillating member (8) is articulated.

3. Locking device as in claims 1 and 2, characterized in that a lower slat (3a) carries the lock-shaped oscillating member (8), the inner end of this latter, as regards the blind, has a projection (9), and an upper slat (3) placed above of the lower one (3a) carries a plate (11) adapted to bear on the projection (9) when the upper slat (3) moves downwards nearer to its downwards

next, lower slat (3a) and pushes the oscillating member (8) to its blocking position (Fig. 3,4).

4. Locking device as in claims 1 to 3, characterized in that the lock-shaped oscillating member (8) consists of a plate having a frame-shaped extension (9) forming a staggering (9a) that protrudes towards the reverse side of the blind, the extension being articulated to a channeled wing (7) protruding from another plate (6) fixed to the said lower slat (3a), while the next upper slat (3) carries a third plate (11) with outwardly protruding, as regards the blind, staggered wings (13) formed with tongues (14) which rest under the oscillating member (8), outwardly of its articulation axis (7), thus forcing this member to assume its withdrawn position (Fig. 5) when the blind raises by being rolled up, whereas the third plate (11) has a cut out (12) in its lower border, the edge of the cut out resting onto the staggering (9a) of the frame (9) when the blind is in its closing position (Fig. 3).

5. Locking device as in claim 1, characterized by the fact that the catch shaped movable part (8) is connected to flexible straps secured to a support fixed to the slat (3) located over the slat (3a) carrying the catch.

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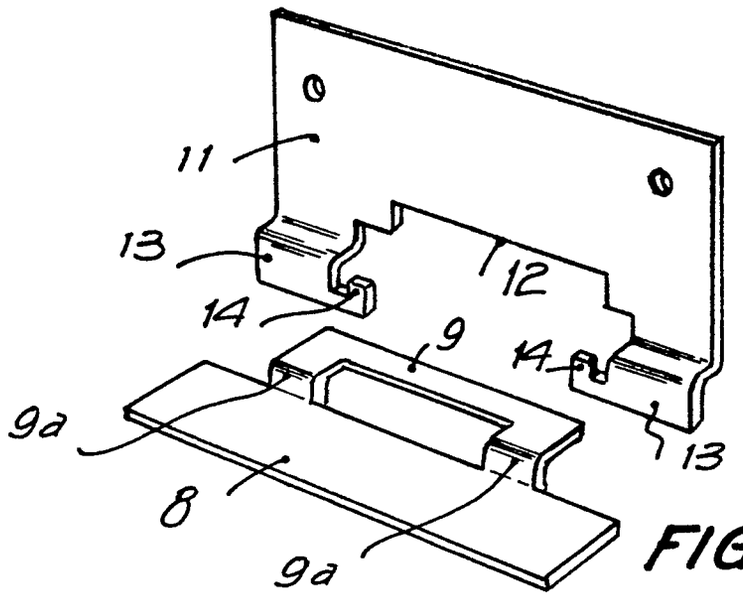

FIG.1

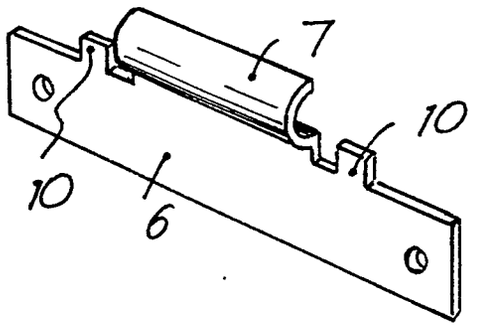

FIG.2

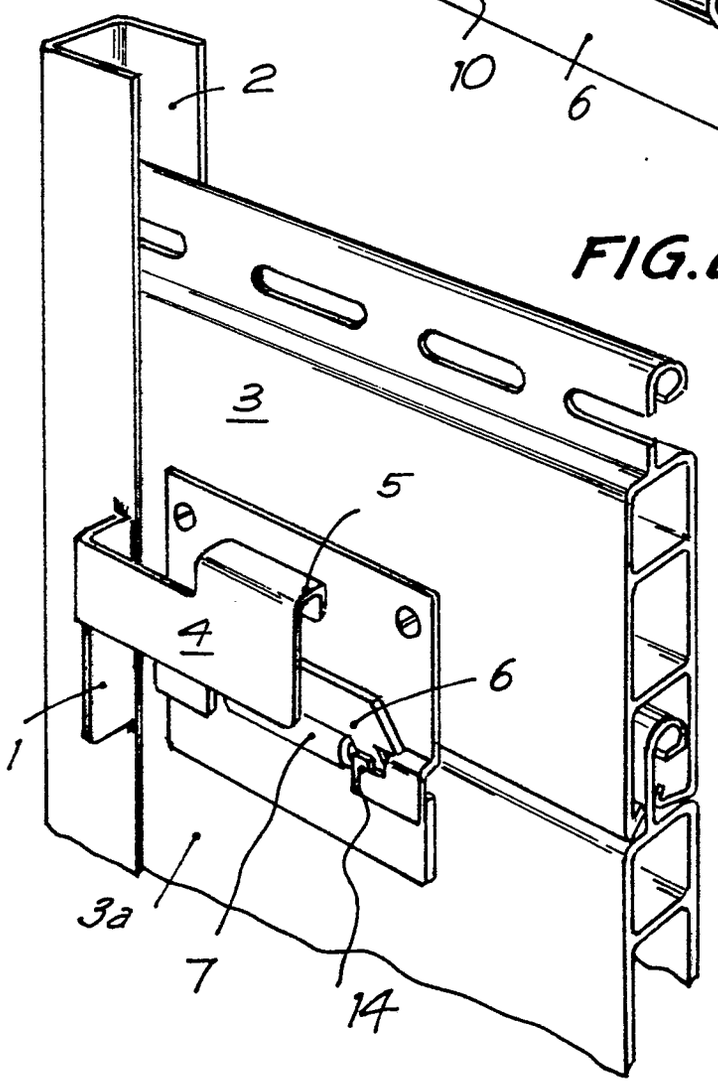

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FIG.3

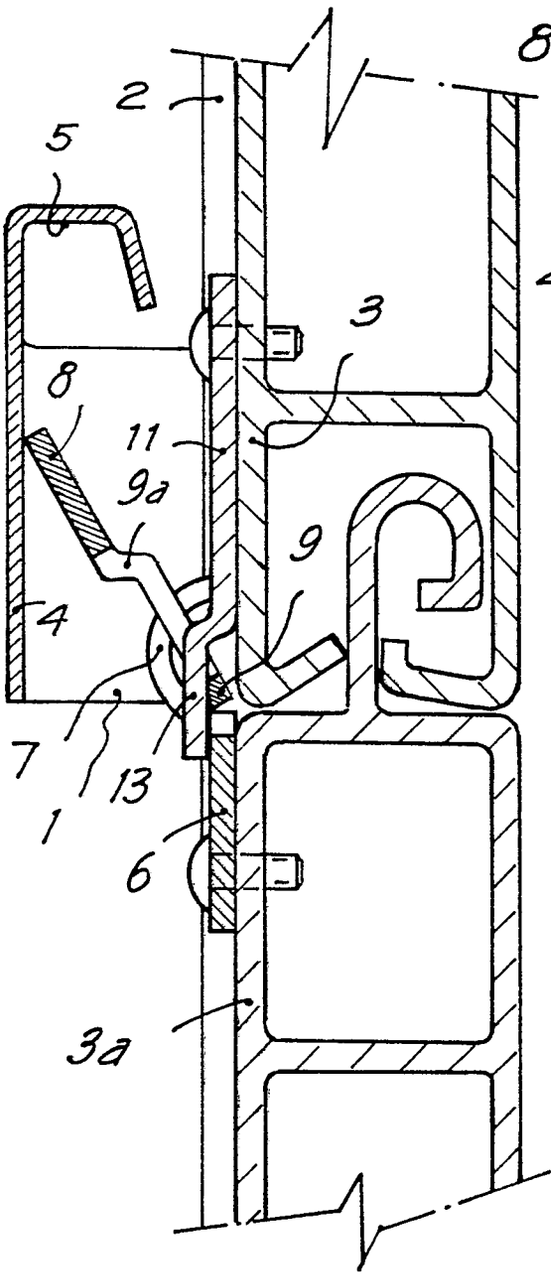
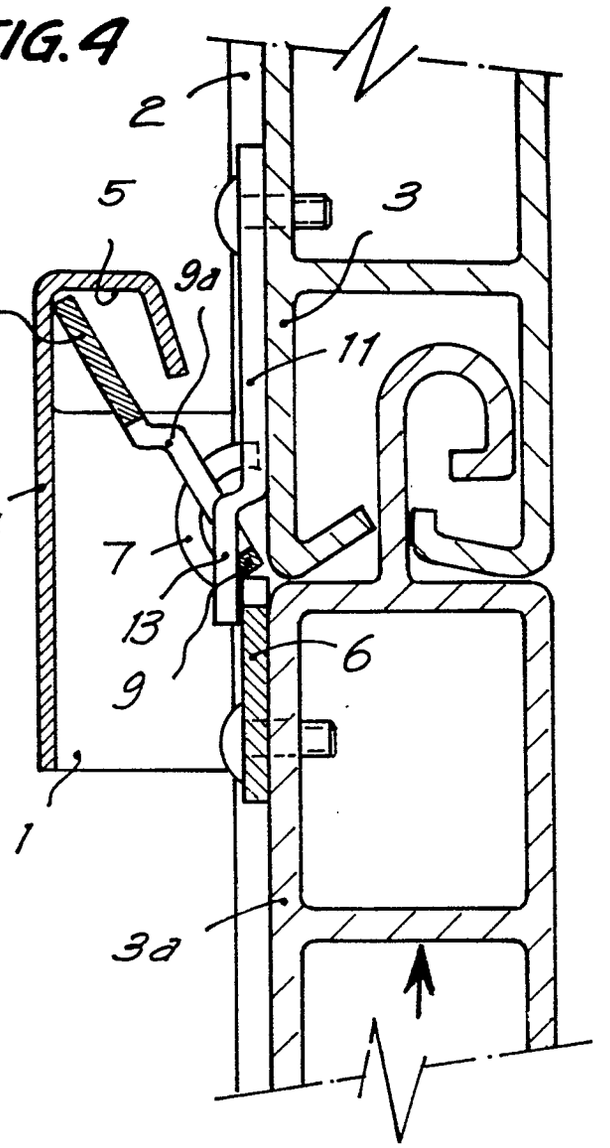


FIG.4



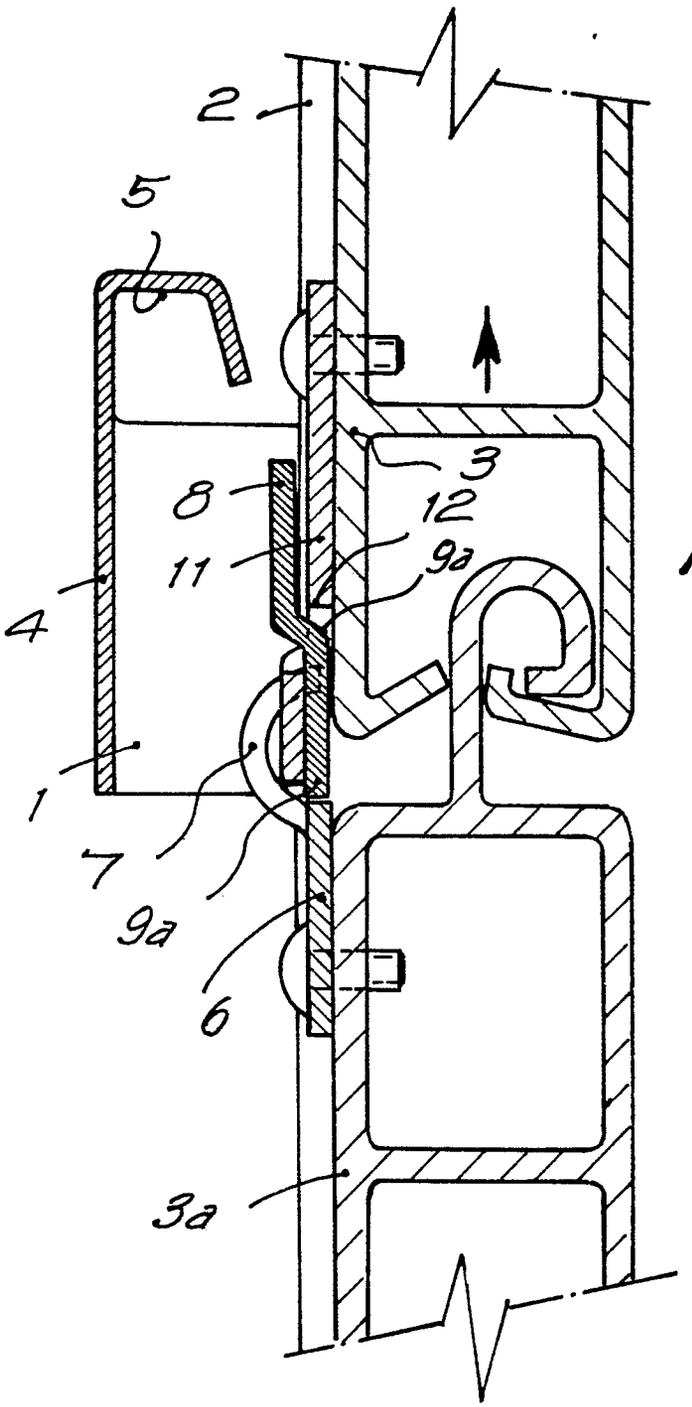


FIG.5