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54 **Locking device for blinds and the like.**

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Description

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.

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, latch-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can be blocked by the stop when an attempt is made of raising the blind by force moving upwards its lower slat, and a withdrawn position in which it can surpass the stop when the blind is raised by being rolled up, are well known.

Patent FR—A—2.332.410 and application DE—A—31.08.983 relate to the locking devices of this kind.

More particularly the patent FR—A—2.332.410 relates to a locking device mounted on two top slats. The latch part is joined to the lower of two slats and in its protruding position it is blocked by the crosspiece of the opening (window or door) where the blind is mounted. The latch part is withdrawn by a part joined to the upper of the two slats.

Patent application DE—A—31.08.983 relates to a locking device also mounted on two top slats. In this case the latch part is also mounted to the lower of the two slats and blocked by the crosspiece of the opening, but the latch part is withdrawn by means of struts connected to the upper slat.

In both cases the latch part is moved to the protruding position by its own weight and it is blocked by the crosspiece of the opening where the blind is mounted.

This kind of known locking devices have the drawback that they must be blocked by the opening and therefore placed on top slats. This arrangement does not assure a good closure of the blind since the bottom slats can be separated even if the top slats are joined. Moreover the use of struts or the like complicates the development of the closure and raises the costs thereof, as well as it makes easier the outcome of breakdowns.

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 it comprises an upper support plate fixed to a slat placed above the slat carrying the latch-shaped oscillating member, which plate has a cut out and staggered wings having protrusions in which the latch-shaped oscillating member is supported; and comprises also a lower plate fixed to the lower slat and having a channeled wing; the latch-shaped oscillating member having a frame-like extension forming a staggered offset that protrudes towards the reverse side of the blind, the frame-like extension being articulated into the channeled wing, the protrusions of the upper support plate acting as uprighting means of the latch-shaped oscillating member, when the blind is raised by being rolled up and the latch-shaped oscillating member being released when the edge of the cut out rests on the staggered offset.

The locking device can be mounted on two slats placed in any position of the blind, that is they can be two top slats and also two bottom slats. When mounted on two bottom slats a good closure is obtained.

Preferably, the latch-shaped oscillating member (8) is connected to flexible straps secured to a support fixed to the slat (3) located over the slat (3a) carrying the latch-shaped oscillating member (8).

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.

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 latch-shape 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 latch-shape oscillating member 8 is provided with a frame-like extension 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 an upper support plate 11 with an ample central cut-out 12 in its lower edge, and two small outwardly and downwards staggered wings 13 formed with small tongues 14 directed to one another and resting under the outer face of the sides of the frame-like extension 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 latch-shape oscillating member 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 staggered offset 9a of the frame-like extension 9. The stop wing 4 prevents the plate 6 from falling down beyond this position (Fig. 3). With the latch-shape oscillating member 8 in this position, if the blind is lever opened from its underside, the slat 3a pushes upwards the slat 3 and the latch-shape oscillating member 8, but when this latter comes under the channeled fin 5, further upwards motion of the blind becomes blocked (Fig. 4).

On 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-like extension 9, forces this latter to oscillate so that the ensemble of the movable latch-shape oscillating member 8 comes closer to the upper support 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 staggered offset 9a and contributes to the oscillation movement of latch-shape oscillating member 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 latch-shape oscillating member 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 latch 8 to oscillate, which implies a simplification of the locking device and a safer operation of the same.

Claims

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 latch 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, the latch-shaped oscillating member (8) being 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 latch-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) and said latch-shaped oscillating member (8) having uprighting means acting when the blind is raised from the upper slats (3), characterized in that it comprises an upper support plate (11) fixed to a slat (3) placed above the slat (3a) carrying the latch-shaped oscillating member (8), which plate (11) has a cut out (12) and staggered wings (13) having protrusions (14) in which the latch-shaped oscillating member (8) is supported; and comprises also a lower plate (6) fixed to the lower slat (3a) and having a channeled wing (7); the latchshaped oscillating member having a frame-like extension (9) forming a staggered offset (9a) that protrudes towards the reverse side of the blind, the frame-like extension (9) being articulated into the channeled wing (7), the protrusions (14) of the upper support plate (11) acting as uprighting means of the latch-shaped oscillating member (8), when the blind is raised by being rolled up and the latch-shaped oscillating member (8) being released when the edge of the cut out (12) rests on the staggered offset (9a).

2. Locking device as in claim 1, characterized in that the latch-shaped oscillating member (8) is connected to flexible straps secured to a support fixed to the slat (3) located over the slat (3a) carrying the latch-shaped oscillating member (8).

Patentansprüche

1. Verriegelungseinrichtung für Blenden und dgl. mit einer Vielzahl horizontaler Leisten bzw. Stäbe (3, 3a), deren Enden in senkrechten Führungen (2) gleiten und die miteinander durch aufwärtsziehende Mittel verbunden sind, welche für eine geringe Relativbewegung zwischen benachbarten Leisten sorgen, wobei die Verriegelungseinrichtung eine fest angebrachte Sperre oder Anschlag (1, 4, 5), welche an einem seitlichen

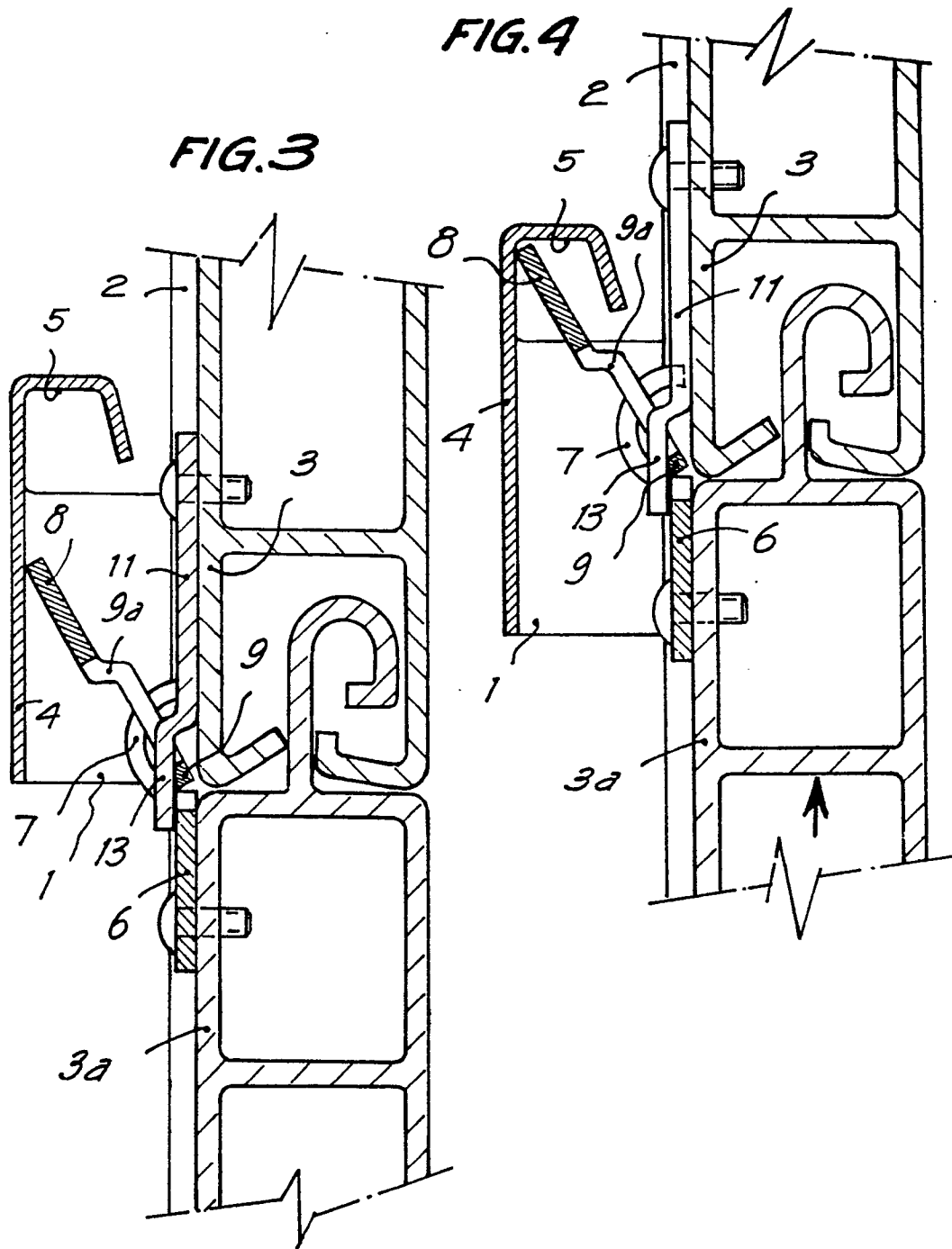
Ständer der durch die Blende zu schließenden
 Öffnung sicher befestigt ist, und ein hin- und
 herbewegbares Einklinkenteil oder Bauteil (8) auf-
 weist, welches an einem der Leisten (3a) befestigt
 und derart ausgebildet ist, daß es eine hervorste-
 hende Stellung einnimmt, in welche es durch den
 fest angebrachten Anschlag blockiert werden
 kann, wenn die Blende durch eine auf ihre unteren
 Leiste aufgebrachte nach oben bewegende
 Kraft geöffnet wird, wobei das klinkenförmige
 hin- und herbewegbare Bauteil (8) frei drehbar an
 einem Teilstück (6) gelenkig angeordnet und an
 einem der Leisten (3a) um eine Gelenkachse (7)
 derart angeordnet ist, daß der Schwerpunkt des
 Bauteils bezüglich der Blende von der Gelen-
 achse nach außen versetzt ist und über letzterer
 liegt, so daß das klinkenförmige bewegbare Bau-
 teil (8) dazu neigt, durch sein eigenes Gewicht in
 einer hervorstehenden, blockierenden Stellung
 bezüglich der fest angebrachten Sperre (1, 4, 5) zu
 bleiben und wobei dieses klinkenförmige bewege-
 liche Bauteil (8) aufrichtende Mittel aufweist,
 welche wirksam werden, wenn die Blende von
 den oberen Leisten (3) angehoben wird, dadurch
 gekennzeichnet, daß sie eine obere Stützplatte
 (11) aufweist, die an einer Leiste (3) befestigt ist,
 welche oberhalb der Leiste (3a) angeordnet ist
 und die das klinkenförmige hin- und herbewe-
 gbare Bauteil (8) trägt, daß die Platte (11) eine
 Aussparung (12) und versetzte Flügel (13) auf-
 weist, die Vorsprünge (14) aufweisen, durch
 welche das klinkenförmige oszillierende Bauteil
 (8) abgestützt wird, und daß sie auch eine untere
 Platte (6) aufweist, die an der unteren Leiste (3a)
 befestigt ist und einen rillenförmigen Flügel (7)
 aufweist; daß das klinkenförmige hin- und herbe-
 wegbare Bauteil einen rahmenförmigen Fortsatz
 (9) aufweist, der einen versetzten Vorsprung (9a)
 bildet, der in Richtung der Rückseite der Blende
 hervorsteht, daß der rahmenförmige Fortsatz (9)
 drehbar in dem rillenförmigen Flügel (7) ange-
 ordnet ist, daß die Vorsprünge (14) der oberen
 Stützplatte (11) als Aufrichtungsmittel des klinken-
 förmigen oszillierenden Bauteils (8) wirken,
 wenn die Blende durch Aufrollen angehoben wird
 und daß das klinkenförmige bewegbare Bauteil
 (8) gelöst wird, wenn die Kante der Aussparung
 (12) an dem versetzten Fortsatz (9a) anliegt.

2. Verriegelungseinrichtung nach Anspruch 1,
 dadurch gekennzeichnet, daß das klinkenförmige
 hin- und herbewegbare Bauteil (8) mit flexiblen
 Riemen verbunden ist, die an einer Stütze,
 die an der Leiste (3), die über der das klinkenför-
 mige oszillierende Bauteil (8) tragenden Leiste
 (3a) angeordnet ist, sicher befestigt sind.

Revendications

1. Dispositif de verrouillage pour store ou ana-
 logue du type comportant plusieurs lames hori-
 zontales (3, 3a) ayant leurs extrémités qui coulissent
 dans des guides verticaux (2) et reliées les
 unes aux autres par des moyens de traction vers
 le haut assurant un faible déplacement relatif
 entre des lames adjacentes, ce dispositif de ver-
 rouillage comprenant un arrêtoir fixe ou butée (1,
 4, 5) fixé à un montant latéral de l'ouverture à
 fermer par le store, et un organe mobile oscillant
 ou loquet (8) monté sur l'une des lames (3a) et
 adapté pour prendre une position en saillie dans
 laquelle il peut être bloqué par la butée fixe
 lorsque le store est ouvert de force en déplaçant
 sa lame inférieure vers le haut, l'organe oscillant
 (8) en forme de loquet étant articulé librement sur
 une pièce (6) fixée à l'une des lames (3a) autour
 d'un axe d'articulation (7) situé de manière que le
 centre de gravité de l'organe soit décalé vers
 l'extérieur, par rapport au store, à partir dudit axe
 d'articulation et soit situé au-dessus de ce dernier,
 de sorte que l'organe oscillant (8) en forme de
 loquet a une tendance à être maintenu par son
 propre poids dans une position en saillie, de
 blocage par rapport à l'arrêtoir fixe (1, 4, 5), et
 ledit organe oscillant (8) en forme de loquet
 présentant un moyen de redressement agissant
 lorsque le store est relevé depuis la lame supé-
 rieure (3), dispositif caractérisé en ce qu'il com-
 prend une plaque de support supérieure (11) fixée
 à une lame (3) située au-dessus de la lame (3a)
 portant l'organe oscillant (8) en forme de loquet,
 ladite plaque (11) présentant une découpe (12)
 et des ailes décalées (13) ayant des saillies (14)
 dans lesquelles est soutenu l'organe oscillant (8)
 en forme de loquet; et en ce qu'il comprend
 également une plaque inférieure (6) fixée à la
 lame plus basse (3a) et comportant une aile (7) en
 gouttière; l'organe oscillant en forme de loquet
 présentant un appendice (9) en forme de cadre
 formant un étagement décalé (9a) qui fait saillie
 vers la face arrière du store, ledit appendice (9)
 étant articulé dans l'aile (7) en gouttière, les
 saillies (14) de la plaque de support supérieure
 (11) agissant comme moyens de redressement de
 l'organe oscillant (8) lorsque le store est relevé
 par enroulement, et l'organe oscillant (8) en
 forme de loquet étant libéré lorsque le bord de la
 découpe (12) repose sur l'étagement décalé
 (9a).

2. Dispositif de verrouillage suivant la reven-
 dication 1, caractérisé en ce que l'organe oscillant
 (8) en forme de loquet est relié à des attaches
 souples fixées à un support monté sur la lame (3)
 située au-dessus de la lame (3a) portant l'organe
 oscillant (8) en forme de loquet.



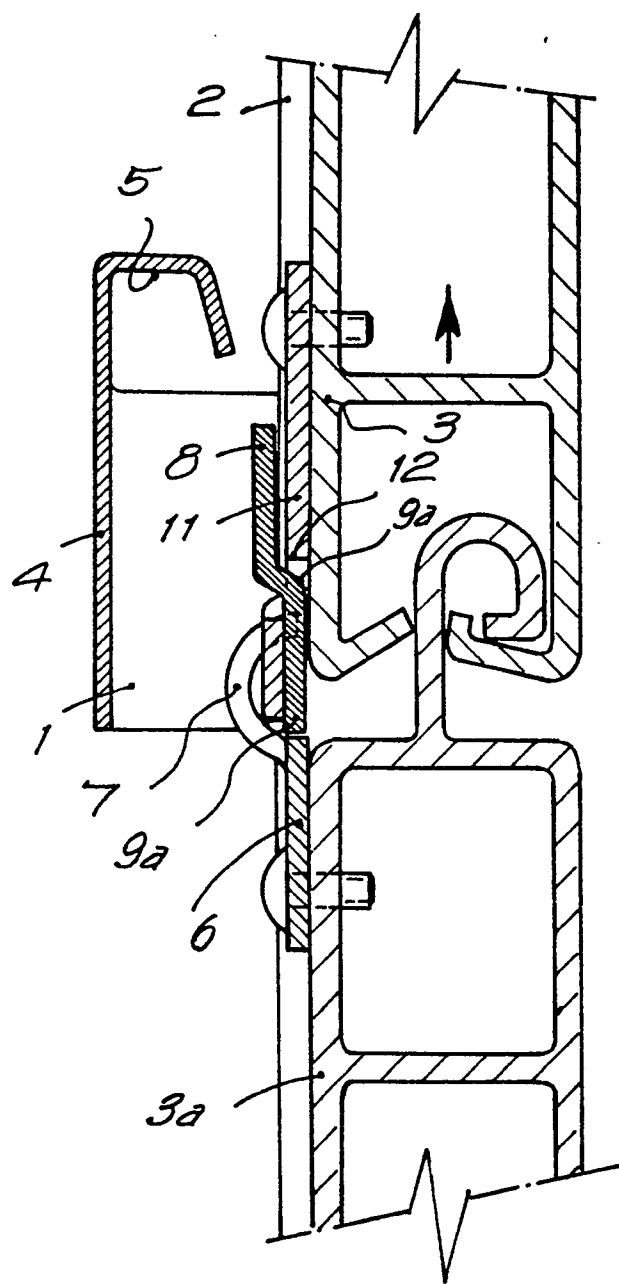


FIG. 5