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(54) **Supporting element for orientable louver boards for shutters with simplified assembly**

Stützelement für einstellbare Jalousielamellen von Läden mit vereinfachtem Zusammenbau

Elément de support pour lamelles orientables de persiennes de volets avec montage simplifié

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(56) References cited:
AU-B- 532 274 **CH-A- 425 165**
DE-U- 1 897 147

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Description

The present invention relates to a supporting element for orientatable louver boards for shutters with simplified assembly.

As is known, the installation of a shutter with orientatable louver boards usually initially entails the insertion of the louver board supporting elements into the ends of said louver boards along a direction which is substantially parallel to the axis of the louver boards and subsequently the association of the supporting elements, with the respective assembled louver boards, with the uprights of the frame of the shutter.

This assembly system has considerable disadvantages, the first of which is the fact that if the dimension of the frame of the shutter do not perfectly match the dimensions of the seat in which said shutter is to be mounted it is necessary to dismantle all the louver boards from their supports in order to replace them with longer louver boards or possibly shorten them to the required size.

Secondly, it can be easily understood that such an assembly of a shutter requires a certain skill and necessarily entails the use of specialized labor.

CH-A-425165 discloses a supporting element for louver boards. This supporting element has not guiding means and retention means for associating the louver board with the supporting element along a direction substantially orthogonal to the axis of the louver board.

IT-U-214651 discloses another supporting element for louver boards.

This supporting element has means for guiding the louver board along an assembly direction which is substantially orthogonal to the axis of the louver board, and retention means for retaining the louver board with the supporting element.

Said retaining means, which are constituted by a resiliently movable tab, comprise a raised portion extending from the supporting element to retain the louver board along the assembly direction and allowing the release of the louver board along a direction substantially parallel to said axis of said louver board.

The present invention aims to provide a supporting element for orientatable louver boards for shutters with simplified assembly which effectively retains the louver boards once they are associated therewith.

Another object of the present invention is to provide a supporting element for orientatable louver boards which has no play once it is assembled to the louver boards.

Not least object is to provide a supporting element for orientatable louver boards for shutters in which, when the louver boards are in closed position, the regions of contact with the other louver boards define a perfect barrier to the passage of light.

This is achieved by a supporting element for orientatable louver boards for shutters with simplified assembly, having the features disclosed in claim 1.

The dependent claims outline advantageous forms of embodiment of the invention.

Other features and advantages of the invention will become apparent from the description of a preferred but not exclusive embodiment of the supporting element for orientatable louver boards for shutters with simplified assembly according to the invention, illustrated only by way of a non-limiting example in the accompanying drawings, wherein:

- figure 1 is a cross-section of a louver board according to the invention;
- figure 2 is another cross-section of the association of two louver boards according to the invention in a closed position;
- figure 3 is an enlarged view of the region of coupling of the opposite ends of two adjacent louver boards and of the related sealing gasket;
- figure 4 is a plan view showing the insertion of an end of a louver board, along a direction which is substantially perpendicular to the axis of said louver board, into the supporting element;
- figure 5 is a plan view showing the final coupling of the louver board to the related supporting element;
- figure 6 is a plan view of a further embodiment of the supporting element according to the invention;
- figure 7 is a partial side elevation view of the louver board, with the coupling element according to the invention inserted; and
- figure 8 is a plan view of the coupling element according to the invention.

Referring to the above figures, an orientatable louver board for shutters with simplified assembly comprises a hollow body 2 which has, on its two longer sides, which are arranged to the right and to the left of the hollow body in the drawing, variously shaped seats, generally indicated by the reference signs 3 and 4, adapted to cooperate with conjugated parts belonging to another orientatable louver board of the shutter, as illustrated in figure 2.

A supporting element 5 according to the invention is mounted at each end of the louver boards and is rotatably coupled to the lateral uprights of the shutter, which are not illustrated in the drawings.

Each supporting element 5 has guiding means, generally indicated by the reference sign 6, and retention means, indicated by 7, to allow the valid retention of the louver board to the supporting element along a direction which is substantially perpendicular to the axis of said louver board.

More particularly, guiding means 6 comprise a first wall 8 and a second wall 9 which define between them a region 10 for the accommodation of the louver board; the configuration and width of said accommodation re-

gion are substantially equal to those of the cross section of the hollow body of the louver board.

The second wall 9 is furthermore inclined with respect to the first wall 8 by the same angle by which the corresponding surface 11 of the louver board is inclined.

The retention means 7 comprise at least one raised portion and, according to this form of embodiment, two raised portions 12 and 13 which extend perpendicularly from the accommodation region 10.

Each raised portion 12, 13 has an upper wall 29 which is inclined so as to facilitate the insertion of the louver board in the supporting element and a wall 30 which is perpendicular to the accommodation region so as to provide a final locking to the supporting element by virtue of its engagement with the inner surface thereof.

In particular, the raised portion 12 engages within hollow body 2, whereas the raised portion 13 engages within seat 4 or, according to another form of embodiment, the raised portion 12 engages within the seat 3.

Furthermore, said second wall 9 has, on the opposite side with respect to the two raised portions 12 and 13, a curved end portion 14, the function of which is to cooperate with the raised portions 12 and 13 to retain the louver board to the supporting element.

Finally, as can be seen in figure 2, when seats 3, 4 are mutually coupled during the closure of the louver boards, each seat has recessed parts 18 on one which are located at protruding parts 17 of the other, so as to define a labyrinth-like path which has at least two barrier regions and, more precisely, three barrier regions against the passage of light when the louver boards are in closed position.

A recess 15 for accommodating a sealing gasket 16 is furthermore advantageously provided within seat 3; said gasket has an arrow-like shape defined by a first rod 19 from which a second rod 20 extends vertically; two wings 21 divergently extend from said second rod.

Wings 21 are simultaneously in contact with shoulders 22 of two contiguous louver boards so as to provide a perfect seal, preventing the passage of dust or water as well as light.

In a different embodiment, the retention means comprise at least one coupling element 40 which has, on one side, a raised portion 41 adapted to be inserted within each louver board 2 and, on the opposite side with respect to the raised portion 41, at least one pin, two pins 42 in the illustrated example, suitable for engaging snap-together in respective holes 43 provided in the supporting element when the louver board is associated therewith.

Pins 42 are conveniently associated with respective tabs 44 which are elastically yielding since they are coupled to the accommodation region 10 of the supporting element only with one of their sides.

In a further form of embodiment, the coupling element can also be provided without the two end portions 45 and 46 and therefore its exact placement on the sup-

porting element is obtained by providing there on two steps 47 and 48 which abut on the end portions 45 and 46 of the coupling element which are indicated in broken lines in figure 7.

The association of the louver board with the respective supporting element according to the invention is apparent from the preceding description; in particular, with reference to figures 4 and 5, it can be seen that by moving the louver board along a direction which is substantially perpendicular to its longitudinal axis, also by virtue of the presence of the second wall 9, said louver board is guided until it is proximate to the raised portions 12 and 13 or to the holes 43 if the coupling element 40 is associated with the louver board.

By subsequently exerting a slight pressure, raised portions 12, 13, by virtue of the presence of an inclined wall on their face, respectively insert in seat 4 and within hollow body 2 or seat 3 of the louver board, locking said louver board to supporting element 5.

In the same manner, pins 42 insert in respective holes 43 if the coupling element 40 is associated with the louver board.

The curved end portion 14 of second wall 6 furthermore co-operates to retain in place the louver board within its accommodation region in the supporting element.

In practice it has been observed that the orientable louver board for shutters with simplified assembly according to the invention is particularly advantageous in that it allows the casement installer for example to couple a specimen louver board to the respective supporting element after mounting the shutter's frame, to check if the length of the louver board is exactly the preset one and thus confidently mount all the remaining louver boards on the respective supporting elements.

If instead the length of the louver board is not the preset one, it is possible to already preset the other louver boards with the right measurements without the disadvantage of having rejects.

Claims

1. Element (5) for supporting and retaining a louver board, said louver board being constituted by an elongate hollow body (2) having a cross section defining on the two longer sides a respective pair of variously shaped opposed seats (3, 4) provided with recessed parts (18) suitable for cooperating, when the louver board is coupled to other louver boards of a shutter in a closed position, with corresponding protruding parts (17) of said other louver boards, said hollow body (2) comprising a first portion including a first flat surface and two curved surfaces, and a second portion including a second flat surface (11), inclined in respect of said first flat surface, and a curved surface, said element (5) comprising a first wall (8) including a flat surface and a

curved surface and a second wall (9) including a flat surface, said first and second walls (8, 9) defining between them a region (10) for housing and retaining said louver board, characterised in that said element (5) further comprises at least one raised portion (12, 13, 41) for retaining said louver board in said region once said louver board is inserted into said region, and a second retaining means constituted by a curved portion (14) of said second wall (9), said curved portion (14) being suitable for cooperating with said first retaining means (12, 13, 43) and firmly holding with no play said louver board when the latter is assembled on said element (5), in order to allow said protruding parts (17) to be joined to said recessed parts (18) when the elements (5) of said shutter are rotated by means of said mechanism from an open to a closed position.

2. Element (5) according to claim 1, characterised in that said at least one raised portion (12, 13) extends towards the hollow body (2) of said louver board.

3. Element (5) according to claim 1, characterised in that said raised portion (41) for retaining said louver board is included in a coupling element (40) and is, at one side thereof, placed inside of the hollow body of said louver board and the coupling element comprises, on the opposed side, at least one pin (42) which is resiliently engageable in a corresponding hole (43) provided on said region (10).

4. Element (5) according to claim 3, characterised in that said pin (42) is supported by an elastic tab (44) which is integral to said coupling element (40).

5. Element (5) according to claim 1, characterised in that said opposed seats (3, 4) define a region (15, 18) for accommodating a sealing gasket (19).

6. Element (5) according to claim 5, characterised in that said sealing gasket has an arrow-like cross-section.

Patentansprüche

1. Stützungs- und Halterungselement (5) für eine Lamelle von Ladenjalousien, die aus einem verlängerten Hohlkörper (2) mit einem Querschnitt besteht, der auf beiden längeren Seiten ein entsprechendes Paar verschiedenartig gestalteter entgegengesetzter Sitze (3, 4) definiert, die mit Aussparungen (18) vorgesehen sind, wenn die Lamelle mit anderen Lamellen einer Jalousie in geschlossener Position gekuppelt ist, mit entsprechenden Vorsprüngen (17) dieser anderen Lamellen mitwirken, wobei der Hohlkörper (2) einen ersten Teil, der eine erste ebene Fläche und zwei gekrümmte Flächen ein-

schließt, und einen zweiten Teil umfaßt, der eine zweite ebene Fläche (11), die zur ersten ebenen Fläche geneigt ist, und eine zweite gekrümmte Fläche einschließt, wobei das Element (5) eine erste Wand (8), die eine ebene Fläche und eine gekrümmte Fläche einschließt, sowie eine zweite Wand (9) umfaßt, die eine ebene Fläche einschließt, wobei die erste und die zweite Wand (8, 9) einen Raum (10) zur Aufnahme und zur Halterung der Lamelle bilden, dadurch gekennzeichnet, daß das Element (5) ferner mindestens einen erhöhten Teil (12, 13, 41), um die Lamelle aufzunehmen und zu halten, wenn diese in diesen Raum eingefügt wird, und ein zweites Halterungsmittel umfaßt, das aus einem gekrümmten Teil (14) der zweiten Wand (9) gebildet wird, wobei dieser gekrümmte Teil (14) dazu geeignet ist, mit den ersten Halterungsmitteln (12, 13, 43) zusammenzuwirken und die Lamelle völlig ohne Spiel eng zu halten, wenn diese auf dem Element (5) montiert ist, um die Kupplung der Vorsprünge (17) mit den Aussparungen (18) zu ermöglichen, wenn die Elemente (5) der Jalousie durch die Einrichtung aus einer geöffneten Lage in eine geschlossene Lage gedreht werden.

2. Element (5) nach Anspruch 1, dadurch gekennzeichnet, daß der mindestens eine erhöhte Teil (12, 13) sich in Richtung Hohlkörper (2) der Lamelle erstreckt.

3. Element (5) nach Anspruch 1, dadurch gekennzeichnet, daß der erhöhte Teil (41) zur Halterung der Lamelle in einem Kupplungselement (40) eingeschlossen und, an einer Seite, im Innern des Hohlkörpers der Lamelle angeordnet ist, und daß das Kupplungselement auf der entgegengesetzten Seite mindestens einen Stift (42) umfaßt, der in eine entsprechende Öffnung (43), die im Raum (10) vorgesehen ist, elastisch einfügbar ist.

4. Element (5) nach Anspruch 3, dadurch gekennzeichnet, daß der Stift (42) von einer elastischen Zunge (44) getragen wird, die mit dem Kupplungselement (40) ein einziges Stück bildet.

5. Element (5) nach Anspruch 1, dadurch gekennzeichnet, daß die gegenüberliegenden Sitze (3, 4) einen Raum (15, 18) zur Aufnahme eines Dichtungselementes (19) bilden.

6. Element (5) nach Anspruch 5, dadurch gekennzeichnet, daß das Dichtungselement einen pfeilförmigen Querschnitt hat.

Revendications

1. Elément (5) de support et maintien d'une lamelle de persienne, ladite lamelle étant constituée par un corps creux allongé (2) ayant une section transversale définissant, sur ses ailes, une paire respective de sièges différemment conformées opposées (3, 4) dotées de parties en retrait (18) coopérant, lorsque la lamelle est accouplée avec d'autres lamelles d'une persienne dans une position fermée, avec parties correspondantes saillantes (17) desdites autres lamelles, ledit corps creux (2) comportant une première portion ayant une première surface plane et deux surfaces incurvées, ainsi qu'une deuxième portion ayant une deuxième surface plane (11), inclinée par rapport à ladite première surface plane, et une surface incurvée, ledit élément (5) comportant une première paroi (8) ayant une surface plane et une surface incurvée, ainsi qu'une deuxième paroi (9) ayant une surface plane, lesdites première et deuxième parois (8, 9) définissant entre elles une région (10) pour recevoir et retenir ladite lamelle, caractérisé en ce que ledit élément (5) comporte de plus au moins une portion relevée (12, 13, 41) pour retenir ladite lamelle à l'intérieur de ladite région lorsque la lamelle est insérée dans ladite région, et un deuxième moyen de rétention constitué par une portion incurvée (14) de ladite deuxième paroi (9), ladite portion incurvée (14) coopérant avec lesdits premiers moyens de rétention (12, 13, 43) et retenant strictement, sans jeu, ladite lamelle lorsque celle-ci est assemblée sur ledit élément (5), au but d'autoriser l'accouplement desdites parties saillantes (17) avec lesdites parties en retrait (18) lorsque les éléments (5) de ladite persienne sont tournés au moyen dudit mécanisme d'une position ouverte vers une position fermée.

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2. Elément (5) selon la revendication 1, caractérisé en ce que ladite au moins une portion relevée (12, 13) s'étend en direction du corps creux (2) de ladite lamelle.

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3. Elément (5) selon la revendication 1, caractérisé en ce que ladite portion relevée (41) pour retenir ladite lamelle est ménagée dans un élément d'accouplement (40) et elle est disposée, d'un côté, à l'intérieur du corps creux de ladite lamelle, et l'élément d'accouplement comporte, du côté opposé, au moins une cheville (42) qui peut être insérée élastiquement dans un trou correspondant (43) prévu dans ladite région (10).

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4. Elément (5) selon la revendication 3, caractérisé en ce que ladite cheville (42) est supportée par une languette élastique (44) intégrale dudit élément d'accouplement (40).

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5. Elément (5) selon la revendication 1, caractérisé en ce que lesdites sièges opposées (3, 4) définissent une région (15, 18) recevant un joint d'étanchéité (19).

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6. Elément (5) selon la revendication 5, caractérisé en ce que la section transversale dudit joint d'étanchéité est conformée à flèche.

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