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LOUVRE WINDOW

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BACKGROUND OF THE INVENTION

This invention relates to improvements in louvre windows.

10 A louvre window typically consists of a pair of opposed
mullions each mounting a plurality of blade mounts between
which extend louvre blades usually made of glass. One louvre
assembly is controlled, ie a handle operatively connected
with control bars connected with the blade mounts is provided
for movement of the blade mounts between open and closed
15 positions. The other louvre assembly is non controlled, ie
the louvre mounts are simply mounted for movement between
open and closed positions, such movement being effected by
movement of the louvre blades as controlled by the controlled
louvre assembly.

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Louvre blade mounts can become damaged as a result of, for
example, abuse or vandalism thereby requiring replacement of
the blade mount. Replacement of the blade mount in the non-
controlled louvre assembly can be carried out relatively
25 easily by simply removing the louvre blade adjacent the
damaged mount. The damaged blade mount can then be simply
pulled out and a new mount snapped into place.

However, when a blade mount needs to be replaced in the controlled louvre assembly this requires all of the louvre blades to be removed and then the complete mullion with blade mounts taken out of position for dismantling. At the
5 completion of dismantling of the assembly the replacement blade mount can be fitted and the reverse procedure then followed to complete reinstallation.

Quite often it is difficult to remove the controlled louvre
10 assembly. This is due, for example, to the mullion having been embedded in cementitious or plaster material or other structural material during finishing of the building structure. Therefore, not only is removal of the controlled louvre assembly time-consuming, it can necessitate structural
15 work in order to achieve removal of the mullion to permit dismantling of the assembly to take place.

SUMMARY OF THE INVENTION

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An object of the present invention is thus to provide a louvre blade mount assembly whereby a blade mount can be removed without dismantling of the assembly being necessary.

25 According to one broad aspect of the invention, there is provided a louvre blade assembly including a mullion and a plurality of blade mounts rotatably mounted therewith, there

being control bars within the mullion operably connected to the blade mounts, said control bars being operable by an externally accessible handle, the blade mount assembly being characterised by the control bars being selectively movable
5 to cause the blade mounts to be moved to a removal position which is beyond the extremes of normal extent of movement between open and closed positions whereby one or more of the blade mounts can be removed from the mullion.

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BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an isometric view of the louvre blade mount assembly with the blade mounts being located in a
15 removal position whereby the blade mounts can be removed from the mullion,

Figure 2 is a front elevation view of the mullion,

20 Figure 3 is a rear elevation view of a blade mount,

Figure 4 is an end elevation view of a blade mount,

Figure 5 is a front elevation view of the louvre blade
25 mount assembly in the removal position where removal of blade mounts is possible,

Figure 6 is a rear elevation view of the assembly as shown in Figure 5, and

Figure 7 is a rear elevation view of the assembly with the handle and control bars removed and showing the blade mounts in different positions with the uppermost blade mount in the fully closed position, the middle blade mount in the fully open position and the lowermost blade mount in the removal position.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The louvre blade assembly as illustrated in the drawings is generally of the type disclosed and claimed in our New Zealand patent specification 195283 with the louvre blade mounts being of the type disclosed and claimed in our New Zealand patent specification 248949. The content of the aforementioned patent specifications is therefore incorporated herein by way of specific reference.

As shown in Figure 1, the louvre blade mount assembly comprises a mullion 10 having a handle 11 projecting through a slot 12 extending longitudinally along part of one wall 13 of the channel shaped mullion 10. As illustrated in Figure 6 and described in the aforesaid patent specifications, the handle 11 is operatively coupled to a pair of control bars 14

which extend longitudinally within the channel shaped mullion 10. These control bars 14 are substantially L-shaped with one leg having a plurality of openings 15 and the other leg slidably engaging with or terminating adjacent to the return 16 extending inwardly from each wall 13 of the channel-shaped mullion 10.

As mentioned previously, the blade mount is preferably of a general type disclosed in our New Zealand patent specification 248949 and therefore includes a pair of bosses 17 which rotatably engage in openings 15 in control bars 14. These bosses 17 project from a pivoting boss 18 which rotatably locates in opening 19 in the mullion 10.

With handle 11 located at one end of slot 12 (for ease of reference, this being the lower end of slot 12 when the assembly is viewed as shown in the drawings) the control bars 14 are moved to their closest approach. A louvre mount 20 can thus be installed by inserting pivoting boss 18 through opening 19 so that the driving bosses 17 push into location in openings 15. As illustrated, the length of the louvre blade mounting channel 21 of the blade mount 20 is substantially at right angles to the length of the mullion 10.

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According to the present invention and referring to Figures 1 and 2, opening 19 is basically circular but has a plurality

of spaced arcuate recesses or notches 22. As can be seen in Figure 2, the notches are symmetrical about a centre line, however, the angles between the notches are not the same. The pivoting boss 18 of the louvre mount 20 has a similar
5 plurality of identically spaced lugs 23. These lugs 23 (which preferably are of a shape commensurate with notches 22) engage through notches 22 when the driving boss 18 is inserted into opening 19. As can be seen in Figure 4, the lugs 23 are each spaced from the underside of pivoting boss
10 18 by a distance slightly greater than the thickness of the floor of the channel-shaped mullion 10.

When all blade mounts 20 are located in position, handle 11 can be moved along slot 12 so that once it approaches the
15 other or upper end of the slot 12, the louvre blades are moved into a closed position, ie the position shown in dotted detail in the upper blade mount 20 illustrated in Figure 7.

Once handle 11 has moved slightly from its lower position the
20 plurality of lugs 23 are rotated from their alignment with notches 22 so that the lugs 23 are located in sliding engagement with the inner surface of the floor of the channel 10. This initial non-alignment of the lugs 23 with notches 22 corresponds with the fully open position of the blade
25 mount 20 as shown by the middle blade mount 20 in Figure 7.

During rotation of the blade mount 20 to the fully closed position, all four of the lugs 23 never again become aligned with the four notches 22. It will be seen, for example, that in the fully closed position each lug 23 approaches or exceeds but does not overlap the notches 22. Accordingly, during normal movement of the blade mounts between the fully open and fully closed positions only two lugs 23 and two notches 22 ever become aligned. Consequently, during normal operation of the louvre assembly a blade mount 20 cannot be removed from the assembly.

Figure 5 shows the louvre blade assembly in a mounted position where top and bottom fixing screws 24 are engaged through openings 25 in the floor of the channel 10 to fix the mullion to the window frame. Normally, a further fixing screw (not shown) would be inserted through intermediate opening or openings 26. The presence of the shank of such a screw 26 extending through the opening 26 and into the frame structure to which the channel 10 is mounted will prevent the control bars 14 being moved by handle 11 to their closest approach, ie with the blade mounts located substantially at right angles to the length of the channel 10.

However, once the fixing screw or screws through opening(s) 26 has/have been removed (see Figure 5) the handle 11 can be pushed fully down to the bottom of the slot 12 thereby bringing the control bars 14 to their closest approach

resulting in the blade mounts 20 being moved to a position slightly beyond the fully open position, ie the removal position. In this position all four of the lugs 23 and all four of the notches 22 are aligned thereby permitting one or more of the blade mounts 20 to be removed without any other dismantling of the louvre blade assembly and more particularly removal of the mullion from its structural mounting.

Consequently, if a blade mount becomes damaged all but the top and bottom mullion fixing screws 25 are removed and the handle 11 pushed down to its lowermost position thereby allowing the blade mounts to become horizontal to the vertical mullion. With the louvre blade having been removed, it is then a simple matter of pulling the damaged blade mount away from the mullion and replacing it with a new blade mount. The handle is then pushed up just enough to allow the fixing screws to be refitted and replacement of the louvre blade to take place.

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The invention is open to modification. For example, separate limit means can be used to limit the movement of the control bars so that the removal position cannot be readily achieved. This could be a removal or adjustable abutment which engages with handle 11 so that it cannot normally reach the lowermost position in slot 12. The abutment could equally engage with one or other of control bars 14. In one form a plug could be

inserted through an opening 26 to perform the same limiting function as a fixing screw or fastener.

Also, other means of retaining the pivoting boss 18 in
5 opening 19 other than at the removal position could be employed.

The present invention therefore provides ease of blade mount replacement without removal and dismantling of the louvre
10 blade mount assembly.

**CLAIMS:-**

1. A louvre blade assembly including a mullion and a plurality of blade mounts rotatably mounted therewith,
5 there being control bars within the mullion operably connected to the blade mounts, said control bars being operable by an externally accessible handle, the blade mount assembly being characterised by the control bars being selectively movable to cause the blade mounts to
10 be moved to a removal position which is beyond the extremes of normal extent of movement between open and closed positions whereby one or more of the blade mounts can be removed from the mullion.
- 15 2. A louvre blade assembly as claimed in claim 1 wherein there is provided limiting means to limit the movement of the blade mounts to said normal extent of movement.
3. A louvre blade assembly as claimed in claim 2 wherein
20 the limit means and at least one control bar are arranged to contact at the open position.
4. A louvre blade assembly as claimed in claim 2 or 3
25 wherein the limit means extends from within the mullion to an externally accessible release means to release the limit means from limiting the extent of movement.



5. A louvre blade assembly as claimed in claim 4 wherein the limit means is a headed fastener located through an opening in the mullion to engage between the control bars and into a structure with which the mullion is to be mounted.
6. A louvre blade assembly as claimed in any one of claims 1 to 5 wherein the blade mount includes a pivot boss rotatably engaged in an opening in the mullion, and restriction means which restrict the pivot boss to substantially only rotational movement relative to the mullion but permits a movement other than rotational movement when the blade mount is at an angular disposition to the mullion beyond the extremes of said normal extent of movement.
7. A louvre blade assembly as claimed in claim 6 wherein said restriction means includes a lateral projection from said pivot boss which is engageable through a recess in the mullion at said angular disposition.
8. A louvre blade assembly as claimed in claim 6 or 7 wherein the pivot boss has a pair of bosses which project in an axial direction relative to the pivot boss and a freely and pivotally engaged in openings in respective of said control bars.



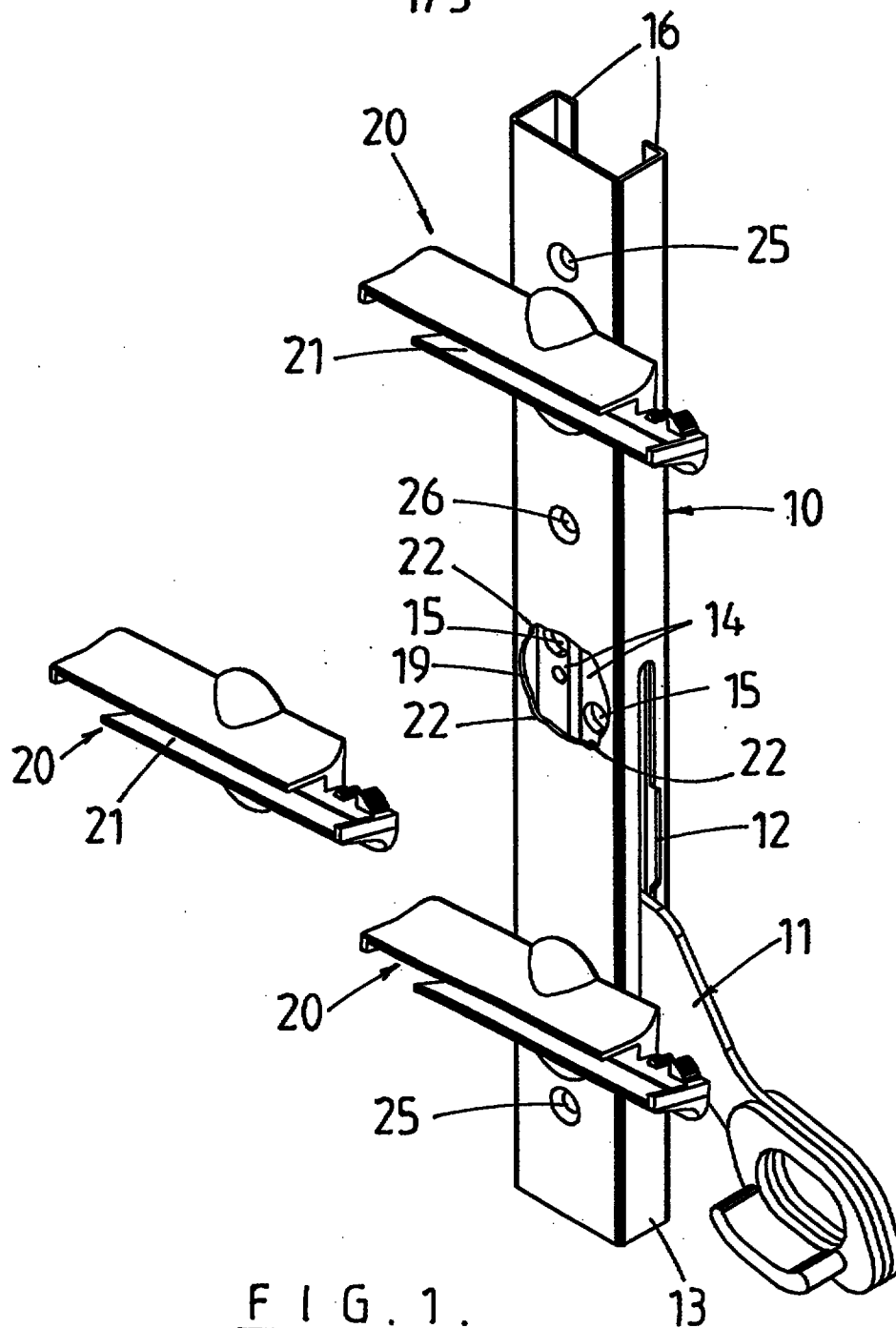
9. A louvre blade assembly as claimed in claim 7 wherein there are a plurality of lateral projections and corresponding recesses in the mullion.
- 5 10. A louvre blade assembly substantially as herein described with reference to the accompanying drawings.

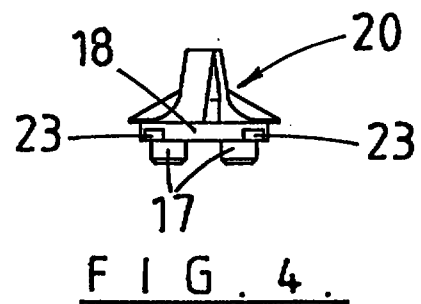
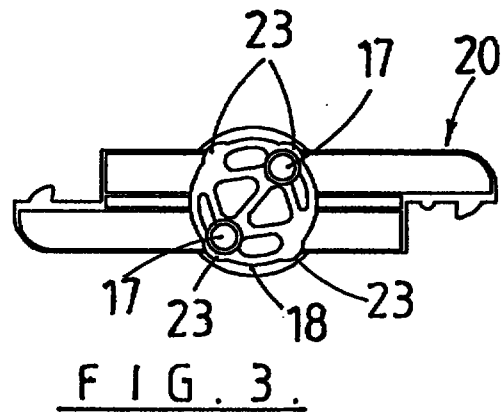
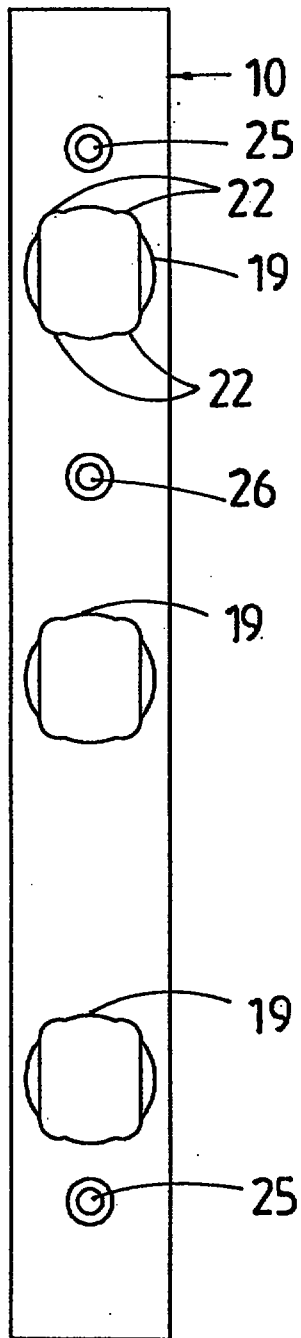
ABSTRACT**"LOUVRE BLADE ASSEMBLY"**

5 A louvre blade assembly of a louvre window. A plurality of
louvre blade mounts (20) are rotatably mounted to a mullion
(10). Control bars (14) within the mullion are operable by a
handle (11). The control bars (14) are selectively movable
to be moved to a removal position which is beyond the
10 extremes of the normal extent of movement between open and
closed positions so that one or more of the blade mounts (20)
can be removed from the mullion (10). The control bars (14)
can be prevented from moving to the removal position by a
limit device located in an opening (26) in the mullion (10).

FIG. 1

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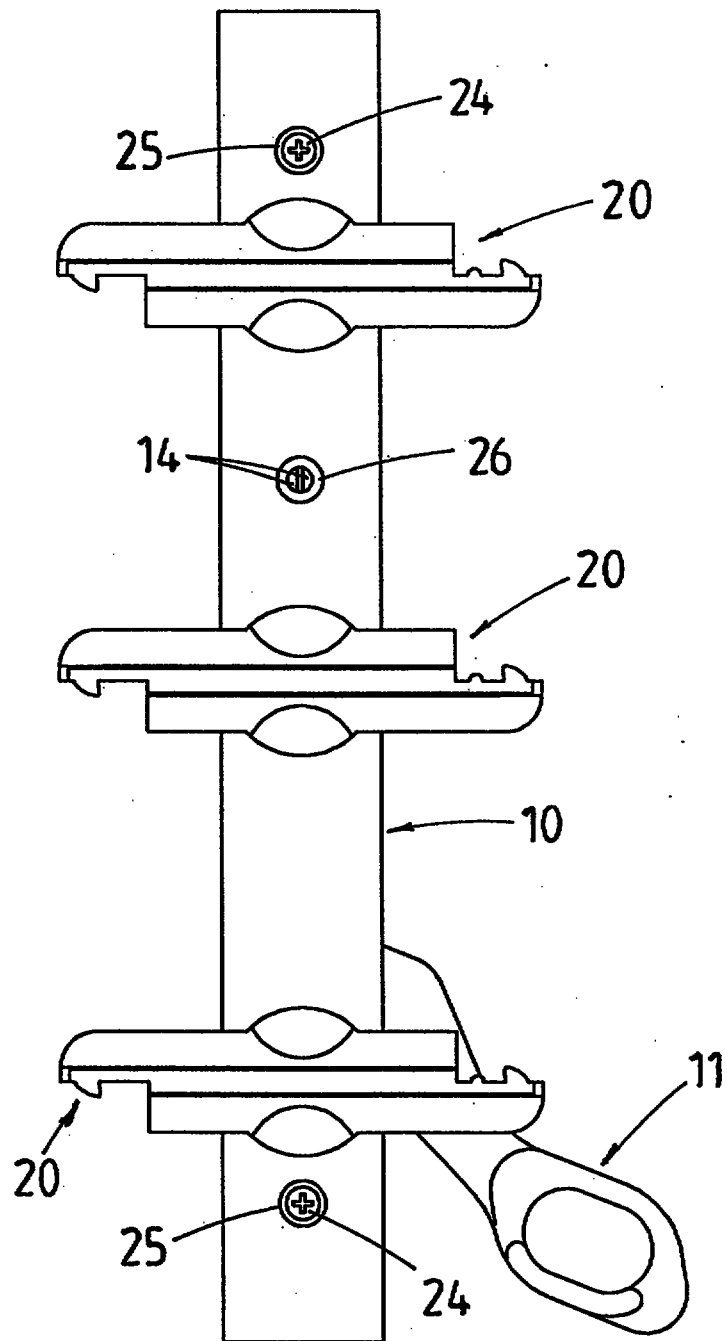
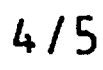


FIG. 5.



F I G . 6 .

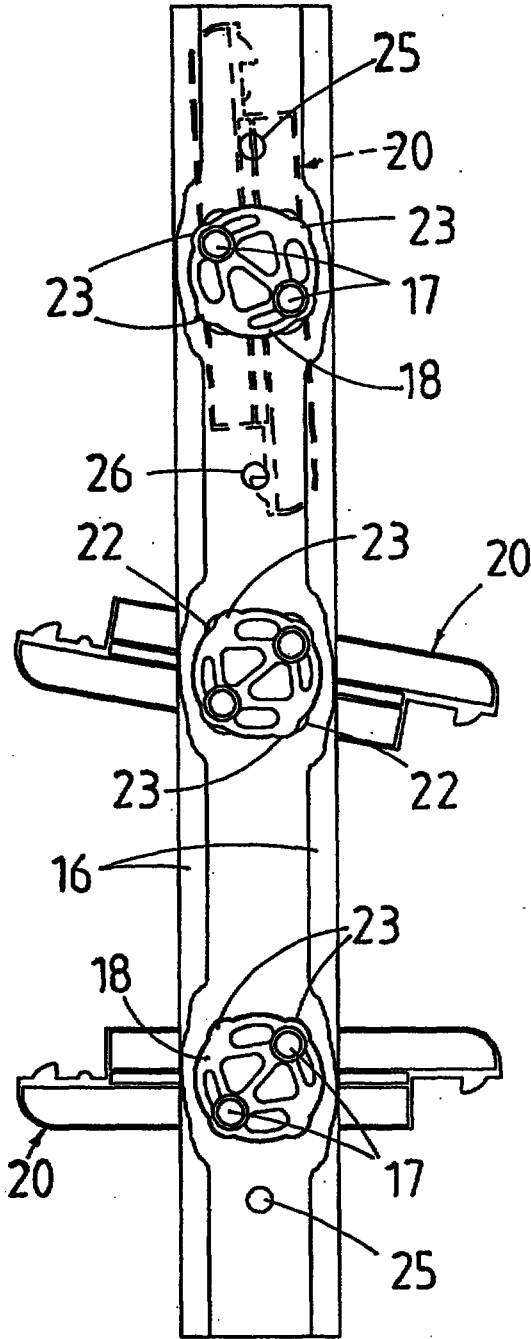


FIG. 7.