

A&amp;C FOLIO: 230P69701

WANGDOC: 1865f

SLIDING WINDOW UNIT

The present invention relates to a sliding window unit having removable windows which slide along runners and to a sliding window unit including an engaging device to achieve the above. Such an engaging device may be connected to sliding window units as a cheap and simple way of preventing the window from becoming derailed when the sliding window is agitated.

Conventional sliding window units comprise a removable window within a frame. The removable window is provided with grooves or runners on its underside. The frame has upper and lower rails. The removable window slides back and forth within the frame on the rails by means of the grooves or runners provided on the underside of the removable window. The removable window is slightly smaller than the frame so that it can be inserted into the frame when a sliding window unit is assembled. Obviously, when the sliding window is mounted within the frame, some play exists between the frame and the removable window (i.e. the window has some freedom to move because the frame is slightly larger than the removable window).

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There is, however, a drawback with sliding window units of this type. That is, when the removable window is agitated, for example when it is being cleaned, the removable window can become derailed on account of above-mentioned play.

Therefore, according to the present invention, there is provided a sliding window unit comprising a frame having a track and a removable window arranged to slide on the track, wherein the removable window and the track are adapted to mutually engage so that one captures the other.

The present invention also provides an engaging device for sliding window units, which engaging device is capable of being attached to or incorporated in the removable window to removably engage the track so that one captures the other.

Further features of the present invention are set forth in the following description and accompanying claims.

For example, the engaging device can capture the track by means of a grub screw, the removable window being prevented from disengagement with the track by inserting the grub screw in the side of the engaging device.

In an alternative embodiment, the engaging device is incorporated in or even replaces the track attached to



the frame.

The invention will be further described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is an exploded perspective view of a frame and a removable window according to the present invention.

Figure 2 is a perspective view of a portion of the underside of the removable window according to the present invention.

Figure 3 is a cross-section of the removable window through the line A-A shown in figure 2.

Figure 4 is a cross-section of the removable window through the line A-A shown in figure 2, when the removable window engages the lower rail of the frame in accordance with the present invention.

Figure 1 shows the sliding window unit of the present invention comprising a removable window 3 and a frame 2 having rails 7 (only one shown). As can be seen in figure 2, the underside 4 of the removable window 3 has runners 5 (only one shown) and engaging portions 6 (only one shown) at the ends of the underside 4.

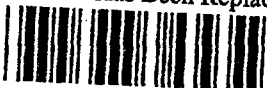


The engaging portions 6 are disposed within hollow vertical tubes or box sections 11 (only one shown) of the frame 2. Each of the engaging portions 6 are held in position by frame screws 12 (only one shown) used to hold the frame together. The frame screws 12 pass through the engaging portions 6.

The runners 5 communicate with the rails 7 so that the removable window moves in a straight line along the length of the frame. The engaging portions 6 are made from a resiliently deformable material 10 and capture the rails 7 by a snap fit.

Figure 3 shows a cross-sectional view of the engaging portions 6 (on their own) along A-A in figure 2. The cross section of the engaging portions 6 are rectangular with a partly-closed central tubular region 8 to accomodate the rails 7 upon engagement. A slot 9 is provided as an opening to allow the rail to enter into the central tubular region 8.

Figure 4 shows one of the engaging portions 6 in engagement with one of the rails 7. This is achieved by aligning the underside 4 of the removable window 3 having runners 5 and engaging portions 6 above the rail 7 and then pushing the removable window 3 down onto the rail 7 so that the engaging portions 6 snap fit onto the rails 7.





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CLAIMS:

1. A sliding window unit comprising a frame having a track and a removable window arranged to slide on the track, wherein the removable window and the track are adapted to mutually engage so that one captures the other.
2. A sliding window unit according to claim 1, wherein the window removably engages the track so that one captures the other by means of a snap fit.
3. A sliding window unit according to claim 1 or 2, wherein the snap fit is achieved by means of a resiliently deformable material.
4. An engaging device for a sliding window unit according to claim 1, which engaging device is capable of being attached to or incorporated in the window to removably engage the track so that one captures the other.
5. An engaging device according to claim 4, wherein the engaging device mutually engages the track so that one captures the other by means of a snap fit.
6. A engaging device according to claim 4 or 5, wherein the engaging device is made from a resiliently deformable material.

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7. A sliding window unit according to any of claims 4 to 6, wherein the engaging device is incorporated in or replaces the track.

8. A sliding window unit substantially as hereinbefore described with reference to the accompanying drawings.

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ABSTRACT

SLIDING WINDOW UNIT

A sliding window unit comprises a removable window and a frame having tracks (7). On the underside (4) of the removable window are engaging portions (6) to enable the removable window to removably capture the tracks (7) to prevent the window being accidentally derailed.



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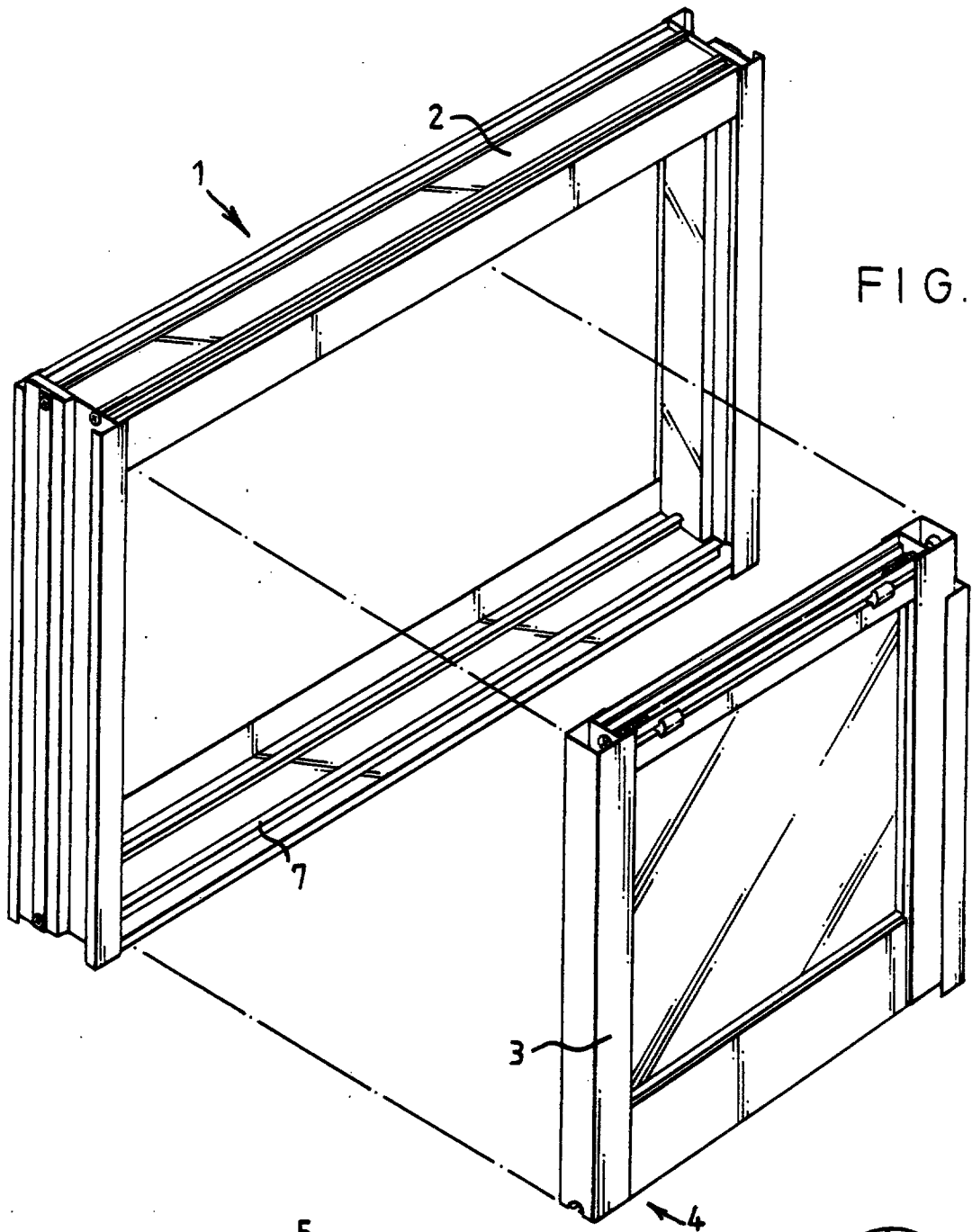


FIG. 1

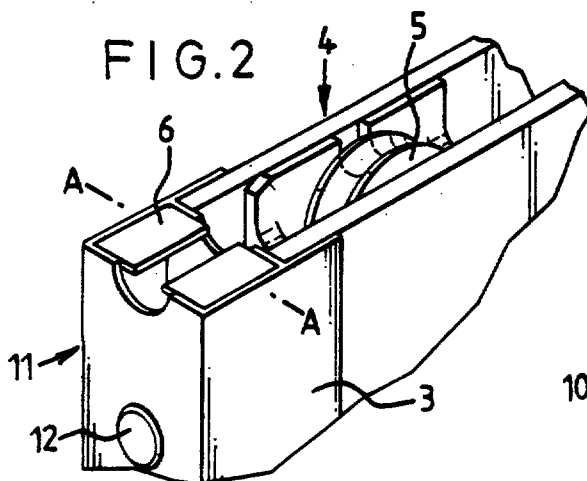


FIG. 2

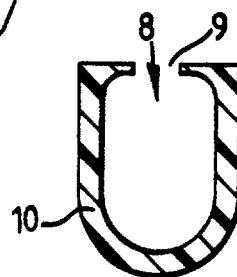


FIG. 3

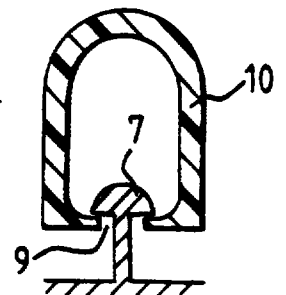


FIG. 4



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### SLIDING WINDOW UNIT

The present invention relates to a sliding window unit having removable windows which slide along runners and to a sliding window unit including an engaging device to achieve the above. Such an engaging device may be connected to sliding window units as a cheap and simple way of preventing the window from becoming derailed when the sliding window is agitated.

Conventional sliding window units comprise a removable window within a frame. The removable window is provided with grooves or runners on its underside. The frame has upper and lower rails. The removable window slides back and forth within the frame on the rails by means of the grooves or runners provided on the underside of the removable window. The removable window is slightly smaller than the frame so that it can be inserted into the frame when a sliding window unit is assembled. Obviously, when the sliding window is mounted within the frame, some play exists between the frame and the removable window (i.e. the window has some freedom to move because the frame is slightly larger than the removable window).

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There is, however, a drawback with sliding window units of this type. That is, when the removable window is agitated, for example when it is being cleaned, the removable window can become derailed on account of above-mentioned play.

Therefore, according to the present invention, there is provided a sliding window unit comprising a frame having a track and a removable window arranged to slide on the track, wherein the removable window and the track are adapted to mutually engage so that one captures the other.

The present invention also provides an engaging device for sliding window units, which engaging device is capable of being attached to or incorporated in the removable window to removably engage the track so that one captures the other.

Further features of the present invention are set forth in the following description and accompanying claims.

For example, the engaging device can capture the track by means of a grub screw, the removable window being prevented from disengagement with the track by inserting the grub screw in the side of the engaging device.

In an alternative embodiment, the engaging device is incorporated in or even replaces the track attached to



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the frame.

The invention will be further described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is an exploded perspective view of a frame and a removable window according to the present invention.

Figure 2 is a perspective view of a portion of the underside of the removable window according to the present invention.

Figure 3 is a cross-section of the removable window through the line A-A shown in figure 2.

Figure 4 is a cross-section of the removable window through the line A-A shown in figure 2, when the removable window engages the lower rail of the frame in accordance with the present invention.

Figure 1 shows the sliding window unit of the present invention comprising a removable window 3 and a frame 2 having rails 7 (only one shown). As can be seen in figure 2, the underside 4 of the removable window 3 has runners 5 (only one shown) and engaging portions 6 (only one shown) at the ends of the underside 4.



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The engaging portions 6 are disposed within hollow vertical tubes or box sections 11 (only one shown) of the frame 2. Each of the engaging portions 6 are held in position by frame screws 12 (only one shown) used to hold the frame together. The frame screws 12 pass through the engaging portions 6.

The runners 5 communicate with the rails 7 so that the removable window moves in a straight line along the length of the frame. The engaging portions 6 are made from a resiliently deformable material 10 and capture the rails 7 by a snap fit.

Figure 3 shows a cross-sectional view of the engaging portions 6 (on their own) along A-A in figure 2. The cross section of the engaging portions 6 are rectangular with a partly-closed central tubular region 8 to accomodate the rails 7 upon engagement. A slot 9 is provided as an opening to allow the rail to enter into the central tubular region 8.

Figure 4 shows one of the engaging portions 6 in engagement with one of the rails 7. This is achieved by aligning the underside 4 of the removable window 3 having runners 5 and engaging portions 6 above the rail 7 and then pushing the removable window 3 down onto the rail 7 so that the engaging portions 6 snap fit onto the rails 7.

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CLAIMS:

1. A sliding window unit comprising a frame having a track and a removable window arranged to slide on the track, wherein the removable window and the track are adapted to mutually engage so that one captures the other.
2. A sliding window unit according to claim 1, wherein the window removably engages the track so that one captures the other by means of a snap fit.
3. A sliding window unit according to claim 1 or 2, wherein the snap fit is achieved by means of a resiliently deformable material.
4. An engaging device for a sliding window unit according to claim 1, which engaging device is capable of being attached to or incorporated in the window to removably engage the track so that one captures the other.
5. An engaging device according to claim 4, wherein the engaging device mutually engages the track so that one captures the other by means of a snap fit.
6. A engaging device according to claim 4 or 5, wherein the engaging device is made from a resiliently deformable material.

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7. A sliding window unit according to any of claims 4 to 6, wherein the engaging device is incorporated in or replaces the track.

8. A sliding window unit substantially as hereinbefore described with reference to the accompanying drawings.

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ABSTRACTSLIDING WINDOW UNIT

A sliding window unit comprises a removable window and a frame having tracks (7). On the underside (4) of the removable window are engaging portions (6) to enable the removable window to removably capture the tracks (7) to prevent the window being accidentally derailed.

FIGURE 2

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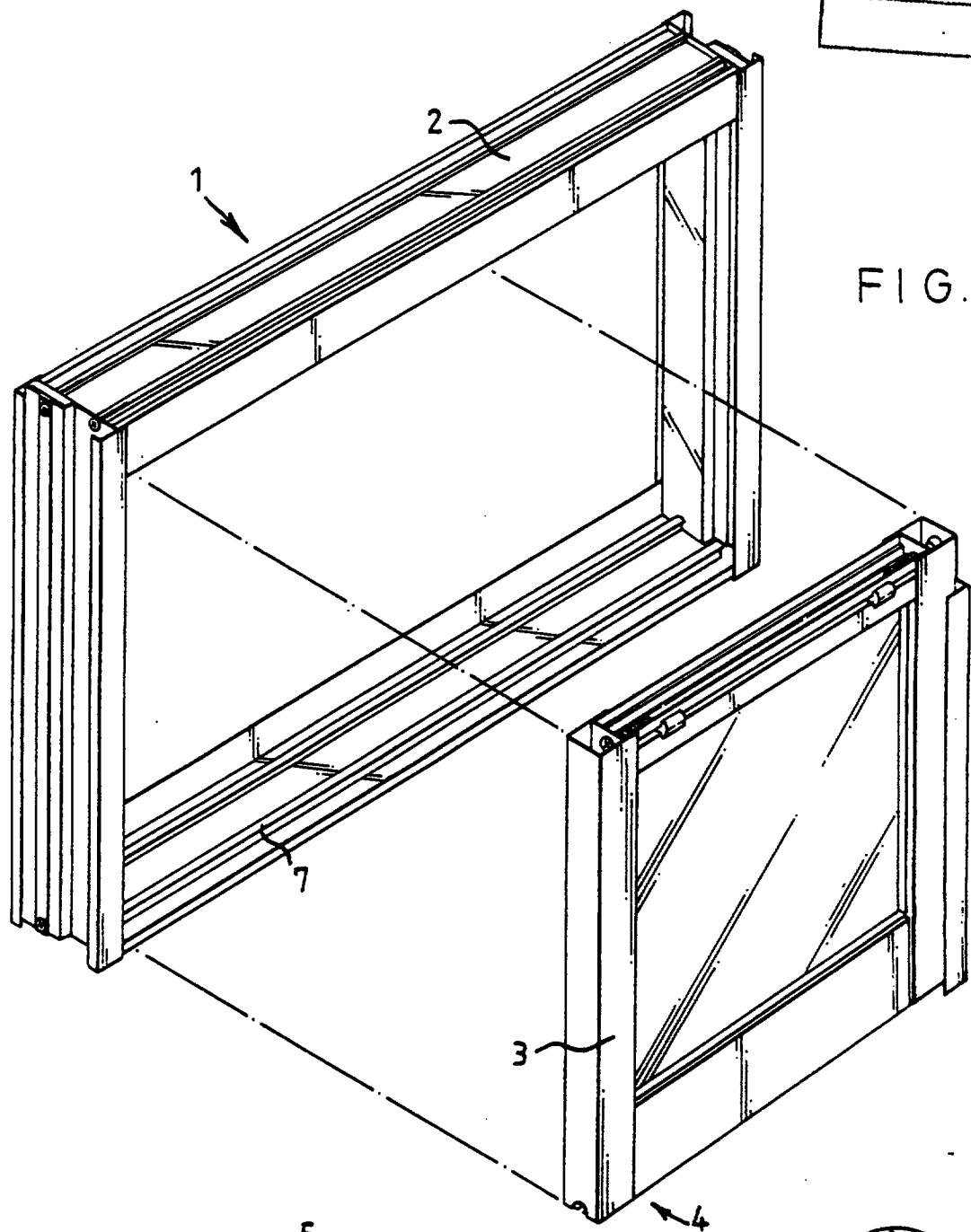


FIG. 1

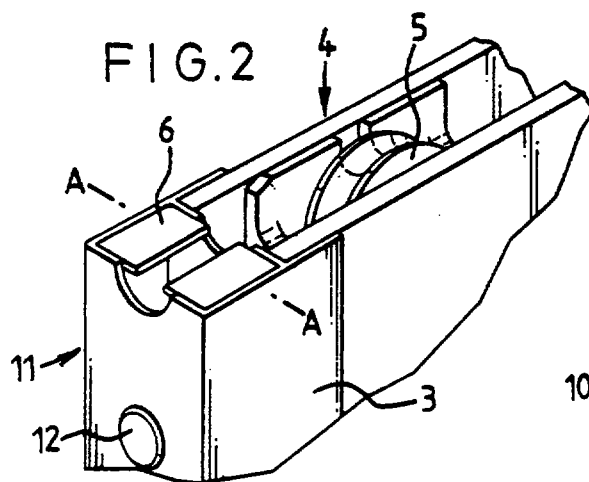


FIG. 2

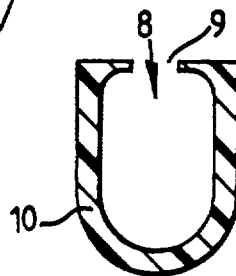


FIG. 3

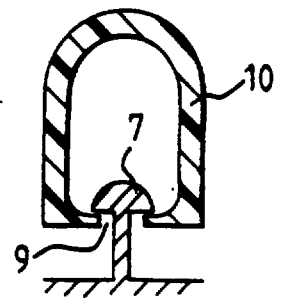


FIG. 4

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### SLIDING WINDOW UNIT

The present invention relates to a sliding window unit having removable windows which slide along runners and to a sliding window unit including an engaging device to achieve the above. Such an engaging device may be connected to sliding window units as a cheap and simple way of preventing the window from becoming derailed when the sliding window is agitated.

Conventional sliding window units comprise a removable window within a frame. The removable window is provided with grooves or runners on its underside. The frame has upper and lower rails. The removable window slides back and forth within the frame on the rails by means of the grooves or runners provided on the underside of the removable window. The removable window is slightly smaller than the frame so that it can be inserted into the frame when a sliding window unit is assembled. Obviously, when the sliding window is mounted within the frame, some play exists between the frame and the removable window (i.e. the window has some freedom to move because the frame is slightly larger than the removable window).

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There is, however, a drawback with sliding window units of this type. That is, when the removable window is agitated, for example when it is being cleaned, the removable window can become derailed on account of above-mentioned play.

Therefore, according to the present invention, there is provided a sliding window unit comprising a frame having a track and a removable window, and sliding means arranged to enable the window to slide on the track, the sliding window unit further comprising an engaging device which is positioned substantially in line with, but spaced apart from, said sliding means, said engaging device being adapted such that, in use, it enables the removable window and the track to mutually engage so that one captures the other.

Further features of the present invention are set forth in the following description and accompanying claims.

For example, the engaging device can capture the track by means of a grub screw, the removable window being prevented from disengagement with the track by inserting the grub screw in the side of the engaging device.

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The invention will be further described, by way of example, with reference to the accompanying drawings, in which:

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Figure 3 is a cross-section of the removable window through the line A-A shown in figure 2.

Figure 4 is a cross-section of the removable window through the line A-A shown in figure 2, when the removable window engages the lower rail of the frame in accordance with the present invention.

Figure 1 shows the sliding window unit of the present invention comprising a removable window 3 and a frame 2 having rails 7 (only one shown). As can be seen in figure 2, the underside 4 of the removable window 3 has runners 5 (only one shown) and engaging portions 6 (only one shown) at the ends of the underside 4.

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The engaging portions 6 are disposed within hollow vertical tubes or box sections 11 (only one shown) of the frame 2. Each of the engaging portions 6 are held in position by frame screws 12 (only one shown) used to hold the frame together. The frame screws 12 pass through the engaging portions 6.

The runners 5 communicate with the rails 7 so that the removable window moves in a straight line along the length of the frame. The engaging portions 6 are made from a resiliently deformable material 10 and capture the rails 7 by a snap fit.

Figure 3 shows a cross-sectional view of the engaging portions 6 (on their own) along A-A in figure 2. The cross section of the engaging portions 6 are rectangular with a partly-closed central tubular region 8 to accomodate the rails 7 upon engagement. A slot 9 is provided as an opening to allow the rail to enter into the central tubular region 8.

Figure 4 shows one of the engaging portions 6 in engagement with one of the rails 7. This is achieved by aligning the underside 4 of the removable window 3 having runners 5 and engaging portions 6 above the rail 7 and then pushing the removable window 3 down onto the rail 7 so that the engaging portions 6 snap fit onto the rails 7.

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## CLAIMS

1. A sliding window unit comprising a frame having a track and a removable window, and sliding means arranged to enable the window to slide on the track, the sliding window unit further comprising an engaging device which is positioned substantially in line with, but spaced apart from, said sliding means, said engaging device being adapted such that, in use, it enables the removable window and the track to mutually engage so that one captures the other.
2. A sliding window unit according to claim 1, wherein the window removably engages the track so that one captures the other by means of a snap fit.
3. A sliding window unit according to claim 1 or 2, wherein the snap fit is achieved by means of a resiliently deformable material.
4. A sliding window unit according to claim 1, wherein the engaging device is attached to or incorporated in the window to removably engage the track so that one captures the other.
5. A sliding window unit according to claim 4, wherein the engaging device is disposed within vertical recesses formed at the ends of the underside of the window.
6. An engaging device according to claims 4 or 5, wherein the engaging device mutually engages the track so that one captures the other by means of a snap fit.





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7. An engaging device according to any of claims 4 to 6, wherein the engaging device is made from a resiliently deformable material.

8. A sliding window unit substantially as hereinbefore described with reference to the accompanying drawings.

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SLIDING WINDOW UNIT

The present invention relates to a sliding window unit having removable windows which slide along runners and to a sliding window unit including an engaging device to achieve the above. Such an engaging device may be connected to sliding window units as a cheap and simple way of preventing the window from becoming derailed when the sliding window is agitated.

Conventional sliding window units comprise a removable window within a frame. The removable window is provided with grooves or runners on its underside. The frame has upper and lower rails. The removable window slides back and forth within the frame on the rails by means of the grooves or runners provided on the underside of the removable window. The removable window is slightly smaller than the frame so that it can be inserted into the frame when a sliding window unit is assembled. Obviously, when the sliding window is mounted within the frame, some play exists between the frame and the removable window (i.e. the window has some freedom to move because the frame is slightly larger than the removable window).

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There is, however, a drawback with sliding window units of this type. That is, when the removable window is agitated, for example when it is being cleaned, the removable window can become derailed on account of above-mentioned play.

Therefore, according to the present invention, there is provided a sliding window unit comprising a frame having a track and a removable window, and sliding means arranged to enable the window to slide on the track, the sliding window unit further comprising an engaging device which is positioned substantially in line with, but spaced apart from, said sliding means, said engaging device being adapted such that, in use, it enables the removable window and the track to mutually engage so that one captures the other.

Further features of the present invention are set forth in the following description and accompanying claims.

For example, the engaging device can capture the track by means of a grub screw, the removable window being prevented from disengagement with the track by inserting the grub screw in the side of the engaging device.

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The invention will be further described, by way of example, with reference to the accompanying drawings, in which:

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Figure 4 is a cross-section of the removable window through the line A-A shown in figure 2, when the removable window engages the lower rail of the frame in accordance with the present invention.

Figure 1 shows the sliding window unit of the present invention comprising a removable window 3 and a frame 2 having rails 7 (only one shown). As can be seen in figure 2, the underside 4 of the removable window 3 has runners 5 (only one shown) and engaging portions 6 (only one shown) at the ends of the underside 4.

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The engaging portions 6 are disposed within hollow vertical tubes or box sections 11 (only one shown) of the frame 2. Each of the engaging portions 6 are held in position by frame screws 12 (only one shown) used to hold the frame together. The frame screws 12 pass through the engaging portions 6.

The runners 5 communicate with the rails 7 so that the removable window moves in a straight line along the length of the frame. The engaging portions 6 are made from a resiliently deformable material 10 and capture the rails 7 by a snap fit.

Figure 3 shows a cross-sectional view of the engaging portions 6 (on their own) along A-A in figure 2. The cross section of the engaging portions 6 are rectangular with a partly-closed central tubular region 8 to accomodate the rails 7 upon engagement. A slot 9 is provided as an opening to allow the rail to enter into the central tubular region 8.

Figure 4 shows one of the engaging portions 6 in engagement with one of the rails 7. This is achieved by aligning the underside 4 of the removable window 3 having runners 5 and engaging portions 6 above the rail 7 and then pushing the removable window 3 down onto the rail 7 so that the engaging portions 6 snap fit onto the rails 7.



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CLAIMS

1. A sliding window unit comprising a frame having a track and a removable window, and sliding means arranged to enable the window to slide on the track, the sliding window unit further comprising an engaging device which is positioned substantially in line with, but spaced apart from, said sliding means, said engaging device being adapted such that, in use, it enables the removable window and the track to mutually engage so that one captures the other.
2. A sliding window unit according to claim 1, wherein the window removably engages the track so that one captures the other by means of a snap fit.
3. A sliding window unit according to claim 1 or 2, wherein the snap fit is achieved by means of a resiliently deformable material.
4. A sliding window unit according to claim 1, wherein the engaging device is attached to or incorporated in the window to removably engage the track so that one captures the other.
5. A sliding window unit according to claim 4, wherein the engaging device is disposed within vertical recesses formed at the ends of the underside of the window.
6. An engaging device according to claims 4 or 5, wherein the engaging device mutually engages the track so that one captures the other by means of a snap fit.



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7. An engaging device according to any of claims 4 to 6, wherein the engaging device is made from a resiliently deformable material.

8. A sliding window unit substantially as hereinbefore described with reference to the accompanying drawings.