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(54) Fly screen for a tiltable window

(57) An insect screen for a tilt window comprises an accordion-shaped wire gauze 9, three first profiles 11 which are fixed to the frame jambs 14 and the head jamb 15, and three second profiles 13 which are connected to the glazing bars 17 and the cross connection 19.

The wire gauze 9 is connected with a first edge 21 to the first profiles 11 and with a second edge 23 to the second profiles 13.

The insect screen further includes two accessories 25 which are fixed to the first profiles 11, and two second accessories 27 which are hingedly connected to the first accessories 25 and are fixed to the second profiles 13.

Since the accessories prevent the second profiles 13 from moving in vertical direction, the second profiles slide along the glazing bars. In consequence, the wire gauze 9 will unfold purely in an accordion-like pattern.

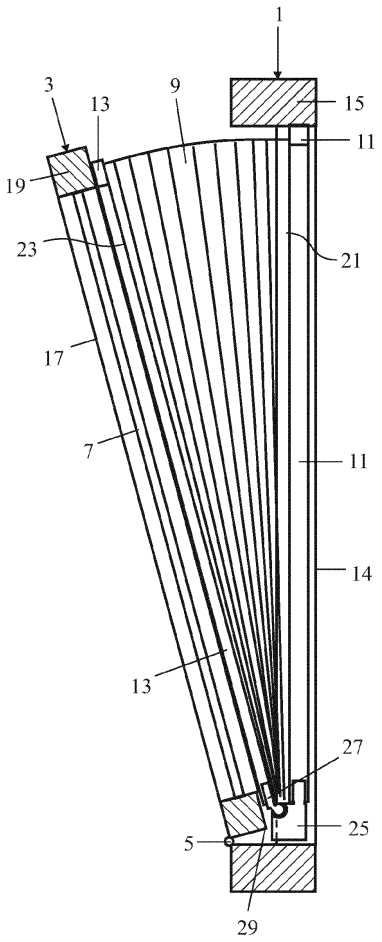

FIG. 2

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Description

Field of the invention

[0001] The invention relates to an insect screen for a tilt window comprising a window frame and a window panel accommodated in it and hingedly connected to it by means of a horizontal tilting shaft, which insect screen comprises an accordion-shaped wire gauze which can be connected with parts of a first edge to frame jambs and with parts of an opposite, second edge to glazing bars, which first and second edges can be moved towards each other and away from each other, during which action the wire gauze folds or unfolds in an accordion-like fashion.

State of the art

[0002] A tilt window generally tilts inwards. As a result, no wire gauze can be installed against the inside of the window frame. For this reason the insect screen for the tilt window is to be present on the outside of the window frame. Since this outside is generally not accessible, the wire gauze is to be present permanently and cannot be removed when the window is closed, so that the view is always obstructed by the permanently present wire gauze.

[0003] An insect screen that is not visibly present is generally known. The wire gauze is then attached in an accordion-like fashion to the jambs and head jamb of the window frame and the window panel. When the window panel is opened, the outside lower edge of the window panel moves upwards. In consequence, the wire gauze is not folded out properly in an accordion shape and will start to bulge.

Summary of the invention

[0004] It is an object of the invention to provide an insect screen of the type defined in the opening paragraph in which the wire gauze is unfolded in a proper accordion shape. To this end the insect screen according to the invention is **characterized in that** the insect screen further includes at least two elongated first profiles for attachment to the frame jambs, as well as at least two elongated second profiles which can be coupled to the glazing bars while the wire gauze with the parts of the first edge is connected to the first profiles and with the parts of the second edge is fixed to the second profiles, and in that the insect screen further includes two first accessories which are attached to the ends of the first profiles located near the tilting shaft, as well as two second accessories which are hingedly connected to the first accessories and which are attached to the ends of the second profiles located near the tilting shaft, where the second profiles are slidably connected in longitudinal direction with the glazing bars. Since the wire gauze is not rigidly attached to the window panel, but the profiles to which the wire gauze is fixed can move in vertical direction along the glazing bars and are retained by the accessories so that the profiles are not moved upwards along with the glazing bars, the wire gauze will not bulge and will unfold in a purely accordion-like fashion.

[0005] In an advantageous embodiment the insect screen further includes an elongated third first profile in which the wire gauze is present with a further part of the first edge and which can be fixed to the head jamb of the window frame. This causes the wire gauze to be tautly arranged against the head jamb.

[0006] In an advantageous further embodiment the insect screen further includes an elongated third second profile to which the wire gauze is fastened with a further part of the second edge and which can be connected to a cross connection between the two glazing bars. This causes the wire gauze to rest tautly against the top of the window panel.

[0007] A still further advantageous embodiment is **characterized in that** the first accessory comprises a fixed member as well as a slidable member which is slidable relative to the fixed member and in which the second accessory is hingedly present while a spring is present in between the two members.

Brief description of the drawings

[0008] Hereinbelow the invention will be further explained with reference to the embodiment of the insect screen according to the invention, in which:

Fig. 1 shows a vertical section of an embodiment of the insect screen applied to a window in a closed state of the window;
Fig. 2 shows a vertical section of the window plus insect screen in an open state of the window;
Fig. 3 shows a horizontal section of the window plus insect screen in the closed state of the window;
Fig. 4 shows a horizontal section of the window plus insect screen in the open state of the window;
Fig. 5 shows a fixed part of an alternative embodiment of the first accessory; and
Fig. 6 shows a slidable part of the first accessory shown in Fig. 5.

Detailed description of the drawings

[0009] The drawing figures show an embodiment of the insect screen according to the invention used in a tilt window. Figs. 1 and 3 show a vertical and a horizontal section respectively of the tilt window in a closed state and Figs. 2 and 4 again show a vertical and a horizontal section respectively of the tilt window but now in an open state.

[0010] The tilt window comprises a window frame 1 and a window panel 3 plus window pane 7 which window panel is accommodated in the window frame and is hingedly around a horizontal tilting shaft connected to

the window frame. The insect screen has an accordion-shaped wire gauze 9, three first profiles 11 and three second profiles 13. Two of the first profiles 11 are fixed to the frame jambs 14 and one is fixed to the head jamb 15. These first profiles 11 have a U-shaped cross section. Two of the second profiles 13, which are strip-shaped, are connected to the glazing bars 17 and one is connected to the upper cross connection 19 between these two glazing bars. These cross connections are formed by magnets (not shown) present in the second profiles 13 and metal plates (not shown) which are fixed to the glazing bars. The magnetic connection is such that in longitudinal direction the second profiles are slidable over a small distance along the glazing bars and the cross connection. The second profiles 13 are preferably also mutually linked to each other.

[0011] With the two vertical sections of a first edge 21 the wire gauze 9 is attached to two strips (not shown in the figures) which are connected by means of for example Velcro to the first profiles 11 attached to the frame jambs. The horizontal section of the first edge 21 present between the two vertical sections of the first edge is present in the first profile 11 attached to the head jamb of the window frame but not connected to this first profile 11. The wire gauze 9 is attached with a second edge 23 to the second profiles 13. The first and the second edge can be moved towards and away from each other while the wire gauze then folds up or folds out in an accordion-like pattern.

[0012] The insect screen further includes two accessories 25 which are attached to the ends of the first profiles 11 fixed to the frame jambs, which ends are located near the tilting shaft 5 of the window, as well as two second accessories 27 which are hingedly connected to the first accessories 25 and which are attached to the ends of the second profiles 13 connected to the glazing bars, which ends are also located near the tilting shaft 5 of the window.

[0013] When the window panel 3 is turned open, the exterior bottom edge 29 in essence moves upwards. If the second profiles 13 were attached to the glazing bars, the second edge 23 at the bottom of the wire gauze 9 would move in vertical direction relative to the first edge, causing the wire gauze to bulge or crumple up. Since the accessories prevent the two profiles 13 from moving in vertical direction, the second profiles slide along the glazing bars and the lower side of the second edge 23 remains at the same level as that of the first edge 21. This causes the wire gauze 9 to be taut and unfold just like an accordion.

[0014] The whole works even better if the hinge shaft around which the two accessories rotate can move in the first accessories. For this purpose the first accessories are divided into a fixed part 25a and a slidable part 25b slidable in it, which slidable part accommodates the hinge shaft, see Figs. 5 and 6. The slidable part 25b has a chamber 29 and the fixed part 25a has a lip 28. The chamber houses a pressure spring which is in contact with one end to the end of the chamber and with the other end is in contact with the lip. When the window is closed the spring pushes the slidable part 25b into the first profile. When the window is open the slidable part 25b is slightly pulled out of the profile against the force of the spring.

[0015] Albeit the invention has been described in the foregoing with reference to the drawings, it should be pointed out that the invention is not by any manner or means restricted to the embodiments shown in the drawings. The invention also extends over any embodiments deviating from the embodiments shown in the drawing Figures within the spirit and scope defined by the claims.

Claims

1. An insect screen for a tilt window comprising a window frame (1) and a window panel (3) accommodated in it and hingedly connected to it by means of a horizontal tilting shaft (5), which insect screen comprises an accordion-shaped wire gauze (9) which can be connected with parts of a first edge (21) to frame jambs (14) and with parts of an opposite, second edge (23) to glazing bars (17), which first and second edges can be moved towards each other and away from each other, during which action the wire gauze folds or unfolds in an accordion-like fashion, **characterized in that** the insect screen further includes at least two elongated first profiles (11) for attachment to the frame jambs (14), as well as at least two elongated second profiles (13) which can be coupled to the glazing bars (17) while the wire gauze (9) with the parts of the first edge (21) is connected to the first profiles (11) and with the parts of the second edge (23) is fixed to the second profiles (13), and **in that** the insect screen further includes two first accessories (25) which are attached to the ends of the first profiles (11) located near the tilting shaft (5), as well as two second accessories (27) which are hingedly connected to the first accessories (25) and which are attached to the ends of the second profiles (13) located near the tilting shaft (5), where the second profiles are slidably connected in longitudinal direction with the glazing bars (17).

2. An insect screen as claimed in claim 1, **characterized in that** the insect screen comprises an elongated third first profile (11) in which the wire gauze (9) is present with a further part of the first edge (21) and which can be fixed to the head jamb (15) of the window frame (1).

3. An insect screen as claimed in claim 1 or 2, **characterized in that** the insect screen further includes an elongated third second profile (13) to which the wire gauze (9) is fastened with a further part of the second edge (23) and which can be connected to a cross connection (19) between the two glazing bars (17).

4. An insect screen as claimed in claim 1, 2 or 3, **characterized in that** the first accessory (25) comprises a fixed member (25a) as well as a slidable member (25b) which is slidable relative to the fixed member and in which the second accessory (27) is hingedly present while a spring is present in between the two members.

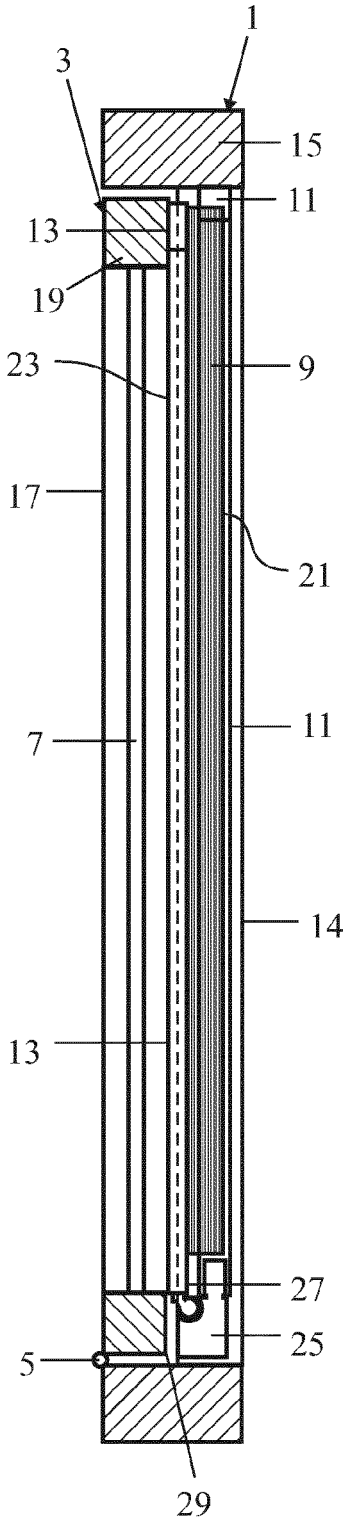
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FIG. 1

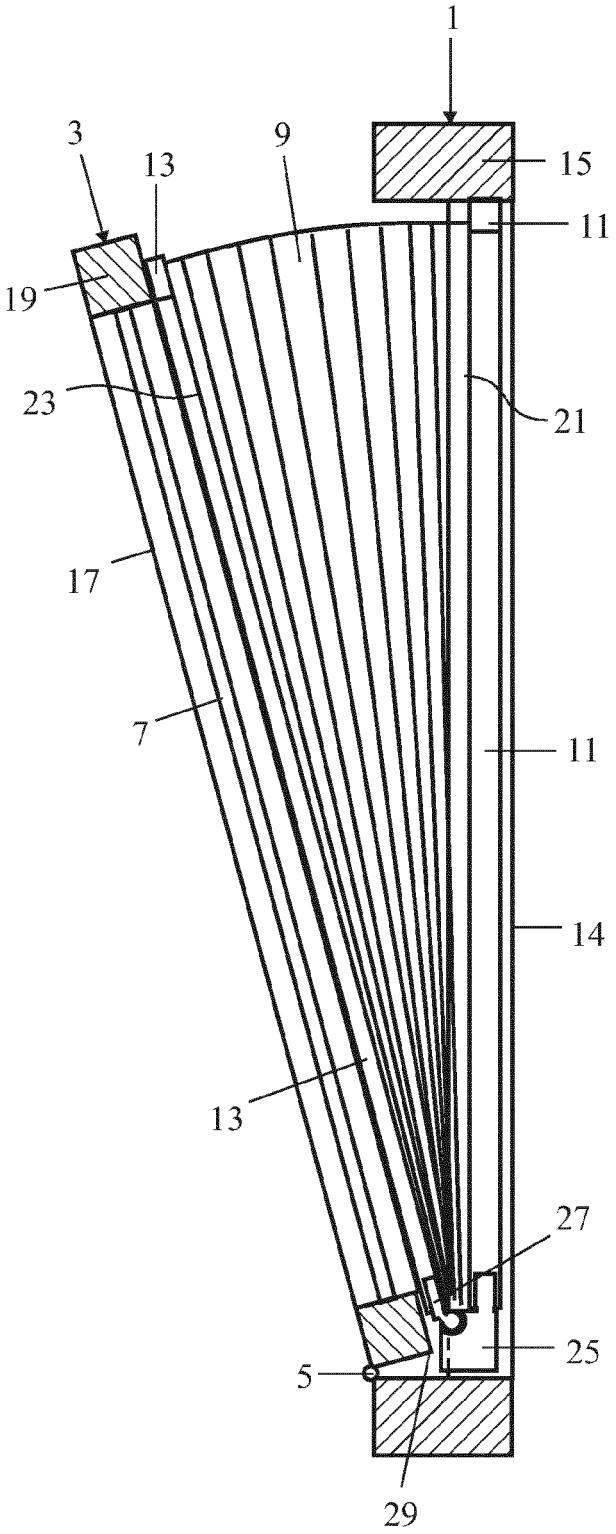
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FIG. 2

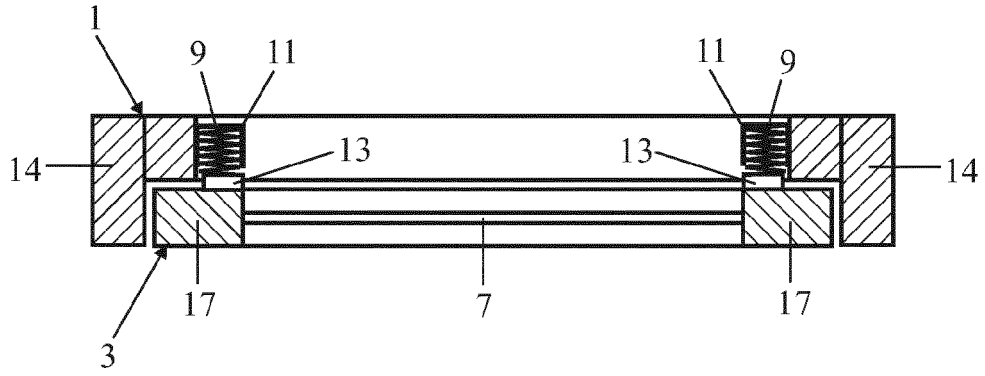

FIG. 3

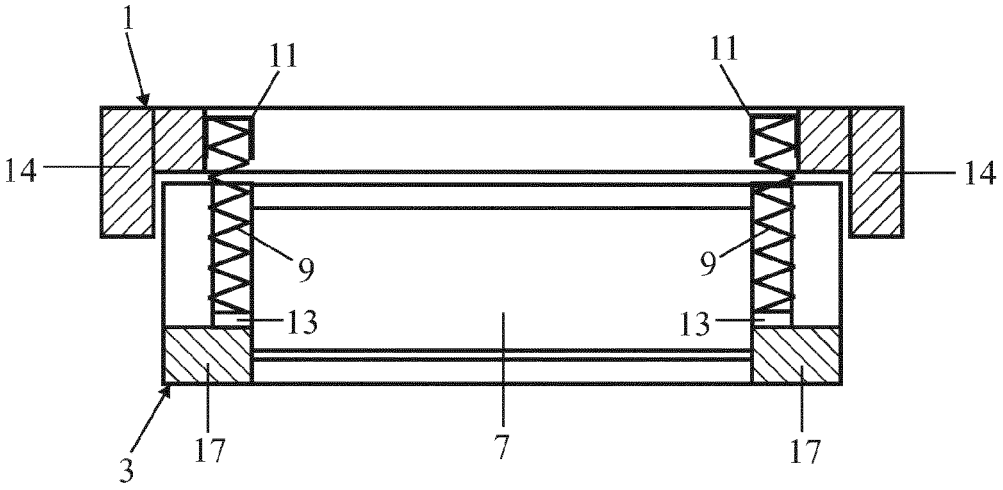

FIG. 4

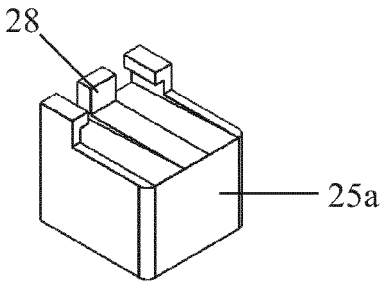

FIG. 5

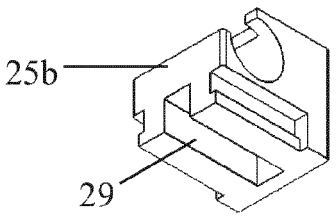

FIG. 6