



ELASTIC SLIDER OF ARTICULATED LINKAGE MECHANISM FOR WINDOW

TECHNICAL FIELD

The present invention relates to an articulated linkage mechanism, especially to an improved structure of elastic slider of articulated linkage mechanism for window.

BACKGROUND OF THE INVENTION

The window in the prior art could be opened and closed in two ways, i.e., transitional (lateral moving) pattern and open pattern. The open pattern means to take one side (upper, lower, left or right) of the window as a pivot to push or pull the opposite side so as to make the window open outwardly or close inwardly.

As for the window which opens and closes in open pattern, there is an articulated linkage mechanism between the window frame and the window sash. The articulated linkage mechanism generally comprises a fixed pin 10 fixed to the window frame and a movable pin 11 fixed to the window sash, and the fixed pin 10 has a C-shaped guiding groove formed thereon. A linear-movable slider 12 is provided in the C-shaped guiding groove, and the fixed pin 10, the movable pin 11 and the slider 12 are connected by corresponding bars. The slider 12 of the articulated linkage mechanism in the prior art is generally a independent plastic block which slides along the C-shaped guiding groove and is worn down constantly during the process of pushing and pulling the window sash. Such abrasion would cause decreasing frictional coefficient between the slider 12 and the C-shaped guiding groove, so that the opened window sash might easily be closed automatically and thus damaged. The above-mentioned problem is especially prominent for the windows of larger dimensions. Furthermore, the slider 12 would be worn out quickly when inflexible friction occurs between the slider 12 and the C-shaped guiding groove.

For the problems in the prior art, it is necessary to further improve the existing slider 12 of articulated linkage mechanism.

SUMMARY OF THE INVENTION

An object of the present invention is to overcome the above-mentioned problems and provides an elastic slider of articulated linkage mechanism for window, wherein it is



occurred a flexible friction between the slider and the fixed pin of the articulated linkage mechanism to provide a long lifespan for use.

To realize the object of the present invention, the present invention provides an elastic slider of articulated linkage mechanism for window comprises an elastic component and a strip that coats and is fixed to the periphery of the elastic component, and the strip has at least one elastic boss.

The elastic component is selected from a spring leaf.

The elastic boss is arranged at the bottom of the slider and is formed by the elastic component being raised upwardly at its both ends and concaved downwardly in its middle to jack up the strip.

Alternatively, the at least one elastic boss could be arranged on each side of the slider and is formed by the outer wall of the strip protruding outwardly. A through-hole is formed on the inner side of each elastic boss.

The beneficial effects of the elastic slider of articulated linkage mechanism for window in the present invention are that the elastic slider comprises elastic component and strip that coats and is fixed to the periphery of the elastic component and has at least one elastic boss; the elastic boss is arranged at the bottom of the slider and is formed by the elastic component being raised upwardly at its both ends and concaved downwardly in its middle to jack up the strip; this elastic boss contacts elastically with the bottom of the C-shaped guiding groove so as to occur a flexible friction between the slider and the bottom of the C-shaped guiding groove, so that the lifespan of the slider is considerably extended. Furthermore, the at least one elastic boss could also be arranged on both sides of the slider and is formed by the outer wall of the strip protruding outwardly. A through-hole is formed on the inner side of each elastic boss and makes the elastic boss resilient. The elastic bosses on each side of the slider contacts elastically with the bottom of the both inner sides of the C-shaped guiding groove of the fixed pin, so that a flexible friction is occurred between the slider and the both inner sides of the C-shaped guiding groove and thus the lifespan of the slider is considerably extended. During the slider of the present invention works, flexible frictions occur between the at least one elastic boss and the bottom or the both sides of the C-shaped guiding groove with the elastic jacking effect of the elastic component, so that the abrasion resistance of the strip is further increased. Compared with the inflexible frictions between the slider and the C-shaped guiding groove in the prior art,

the present invention has advantages of better stability and longer lifespan.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows the structure of the traditional articulated linkage mechanism for window;

Fig. 2 shows the front view of the first embodiment of the articulated linkage mechanism for window of the present invention;

Fig. 3 shows the section A-A of Fig. 2;

Fig. 4 shows the section B-B of Fig. 2;

Fig. 5 shows the sectional view of the elastic slider of the articulated linkage mechanism of the present invention protruding upwardly;

Fig. 6 shows the front view of the articulated linkage mechanism for window of the second embodiment of the present invention;

Fig. 7 shows the A-A section of Fig 6;

Fig. 8 shows the B-B section of Fig. 6.

Reference numerals:

1 – elastic component 2 – strip 3 – elastic boss 4 – through-hole
10 – fixed pin 11 – movable pin 12 – slider

DETAILED DESCRIPTION

The following are preferred embodiments of the articulated linkage mechanism for window of the present invention, rather than a limitation to the protection scope of the present invention.

The first embodiment as shown in the Fig. 2, 3 and 4 provides an elastic slide of the articulated linkage mechanism for window that comprises elastic component 1 and strip 2 which coats and is fixed to the periphery of the elastic component 1. The strip 2 has an elastic boss 3 that is arranged at the bottom of the elastic slider and is formed by the elastic component 1 being raised upwardly at its two ends and concaved downwardly in its middle. The elastic component is formed of a spring leaf, which could be metal spring leaf that made of metal materials or other elastic materials as well. The elastic component 1 is concaved downwardly in its middle to jack up the strip 2 so as to form the elastic boss 3 that contacts with the bottom of the C-shaped guiding groove of the fixed pin, so that a

flexible friction occurs between the slider and the bottom of the C-shaped guiding groove.

The elastic component 1 could be fixed to the upper part, the middle part or the lower part of the strip 2.

As shown in Fig. 5, the elastic boss 3 is arranged on the upper part of the slider and formed by the elastic component 1 bending downwardly at its two ends and protruding upwardly in its middle to jack up the strip 2. When assembled, both sides of the strip 2 are inserted between the sliding channels on both sides of the C-shaped guiding groove.

The second embodiment as shown in the Fig. 7, 8, and 9 provides an elastic slider of articulated linkage mechanism for window that comprises elastic component 1 and strip 2 which coats and is fixed to the periphery of the elastic component 1, wherein the strip 2 has several elastic bosses 3. The elastic bosses 3 are arranged on both sides of the slider and are formed by the outer wall of the strip 2 protruding outwardly. A through-hole 4 is formed on the inner side of each elastic boss 3, which make the elastic bosses 3 on the both sides of the slider resilient. The elastic bosses 3 on the both sides of the slider contact elastically with the inner sides of the C-shaped guiding groove of the fixed pin respectively, so that flexible frictions occur between the slider and the both sides of C-shaped guiding groove of the fixed pin.

The above embodiments are only for the preferred embodiments of the present invention, rather than for limiting purpose. Any other modification, addition, alternation, combination or simplification without violation of the spirit or the theory of the present invention should be seen as the equivalent substitutions within the protection scope of the invention.

CLAIMS

1. An elastic slider of the articulated linkage mechanism for window comprises an elastic component (1) and a strip (2) that coats and is fixed to the periphery of the elastic component (1), wherein said strip (2) has at least one elastic boss (3).

2. The elastic slider of the articulated linkage mechanism for window as claimed in claim 1, wherein said at least one elastic boss (3) is arranged at the bottom of the slider and is formed by the elastic component (1) being raised upwardly at its both ends and concaved downwardly in its middle to jack up the strip (2).

3. The elastic slider of the articulated linkage mechanism for window as claimed in claim 1, wherein the said elastic boss (3) is set on the upper part of the slider and is formed by the elastic component (1) bending downwardly at its two ends and protruding upwardly in its middle to jack up the strip (2).

4. The elastic slider of the articulated linkage mechanism for window as claimed in claim 1, wherein said elastic boss (3) is set on each side of the slider and is formed by the outer wall of the strip (2) protruding outwardly, and a through-hole (4) is formed on the inner side of each elastic boss (3).

5. The elastic slider of the articulated linkage mechanism for window as claimed in claim 1, wherein said elastic component (1) is fixed to the upper part, the middle part or the lower part of the strip (2).