CLAIMS

What is claimed is:

1. A hinge for a window, comprising,

a sliding rail fixed on a frame of the window;

a fixing element mounted on an end of the sliding rail,

a sliding element movably mounted in the sliding rail;

a pulling bar fixed on a casement of the window, the pulling bar being driven by the sliding element to move relative to the sliding rail and rotate in a direction to do an angular movement; and

a connecting plate, the pulling bar being connected with the sliding element through the connecting plate, the sliding element comprising:

a sliding plate movably mounted in the sliding rail;

a supporter located between the sliding plate and a bottom of the sliding rail, the supporter moving simultaneously with the sliding plate; and

an elastic element mounted between the supporter and the sliding plate, the sliding element moving in the siding rail, wherein the elastic element resists on the sliding plate such that the sliding plate presses against the sliding rail,

wherein the sliding element further includes a sliding cover, the sliding cover being connected with the sliding plate and covers the sliding plate.

2. The hinge for a window of claim 1, wherein the sliding plate has at least one limiting structure, the supporter and the elastic element are located in the limiting structure.

3. The hinge for a window of claim 2, wherein the limiting structure includes a first mounting hole and a second mounting hole, the first mounting hole extends downwardly from a top surface of the sliding plate, the second mounting hole extends upwardly from a bottom surface of the sliding plate, the first mounting is connected with the second mounting hole, a diameter of the first mounting hole is smaller than a diameter of the second mounting hole; the supporter is received in the second mounting hole and passes through the first mounting hole, the elastic element is located in the second mounting hole.

4. The hinge for a window of claim 3, wherein the supporter includes a first post and a second post located at the first post, the first post and the second post are made in the same process, a diameter of the second post is smaller than a diameter of the first post, the first post is positioned in the second mounting hole, the elastic element resists on a top surface of the first post.

5. The hinge for a window of claim 1, wherein the sliding cover and two guiding grooves formed on the two opposite edges of the sliding plate 31 can cooperatively form two sliding chutes, the sliding chutes are mounted in the sliding rail.

6. The hinge for a window of claim 1, wherein the fixing element includes two vertical

surfaces and a horizontal surface, the two vertical surfaces cooperatively form an angle, the horizontal surface defines a first lug, the bottom of the sliding rail defines a second lug, the second lug is mounted in the first lug.

7. The hinge for a window of claim 6, wherein edges of the second lug perpendicular to an axis of the sliding rail have tangents, portions of the second lug near the tangents form vertical cross sections, a gap is existed between a top surface of the second lug and the bottom of the sliding rail.

8. The hinge for a window of claim 6, wherein when the pulling bar moves relative to the sliding rail until the window is closed, a first end of the pulling bar being received in the angle of the fixing element; two opposite sides of the first end have inward arcs respectively.

9. A window, comprising:

a frame, a casement and a hinge used to open or close the casement, the hinge including:

a sliding rail fixed on a frame of the window;

a fixing element mounted on an end of the sliding rail,

a sliding element movably mounted in the sliding rail;

a pulling bar fixed on a casement of the window, the pulling bar being driven by the sliding element to move relative to the sliding rail and rotate in a direction to do an angular movement; and

a connecting plate, the pulling bar being connected with the sliding element through the connecting plate, the sliding element comprising:

a sliding plate movably mounted in the sliding rail;

a supporter located between the sliding plate and a bottom of the sliding rail, the supporter moving simultaneously with the sliding plate; and

an elastic element mounted between the supporter and the sliding plate, the sliding element moving in the siding rail, wherein the elastic element resists on the sliding plate such that the sliding plate presses against the sliding rail,

wherein the sliding element further includes a sliding cover, the sliding cover being connected with the sliding plate and covers the sliding plate.

10. The window of claim 9, wherein the sliding plate has at least one limiting structure, the supporter and the elastic element are located in the limiting structure.

11. The window of claim 10, wherein the limiting structure includes a first mounting hole and a second mounting hole, the first mounting hole extends downwardly from a top surface of the sliding plate, the second mounting hole extends upwardly from a bottom surface of the sliding plate, the first mounting is connected with the second mounting hole, a diameter of the first mounting hole is smaller than a diameter of the second mounting hole; the supporter is received in the second mounting hole and passes through the first mounting hole, the elastic element is located in the second mounting hole.

12. The window of claim 11, wherein the supporter includes a first post and a second post located at the first post, the first post and the second post are made in the same process, a diameter of the second post is smaller than a diameter of the first post, the first post is positioned in the second mounting hole, the elastic element resists on a top surface of the first post.

13. The window of claim 9, wherein the sliding cover and two guiding grooves formed on the two opposite edges of the sliding plate 31 can cooperatively form two sliding chutes, the sliding chutes are mounted in the sliding rail.

14. The window of claim 9, wherein the fixing element includes two vertical surfaces and a horizontal surface, the two vertical surfaces cooperatively form an angle, the horizontal surface defines a first lug, the bottom of the sliding rail defines a second lug, the second lug is mounted in the first lug.

15. The window of claim 14, wherein edges of the second lug perpendicular to an axis of the sliding rail have tangents, portions of the second lug near the tangents form vertical cross sections, a gap is existed between a top surface of the second lug and the bottom of the sliding rail.

16. The window of claim 14, wherein when the pulling bar moves relative to the sliding rail until the window is closed, a first end of the pulling bar being received in the angle of the fixing element; two opposite sides of the first end have inward arcs respectively.