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(54) Device for fixing the position of a roof window wing

(57) According to the invention, the frame of a window wing (1) is provided with a roll (2), which is supported on a raceway (3) of a window frame (4) and on the face of a nut (5) connected with a rod (6) slidingly disposed within a guide rail (9). On the rod (6), between adjusting nut (7) screwed into the transverse wall (8) of the guide rail (9), and the nut (5), a spiral spring (10) is provided. On the internal surface of the top wall of the guide rail (9) there is a flat spring (12). disposed above the roll (2), against which it presses with its offset part.

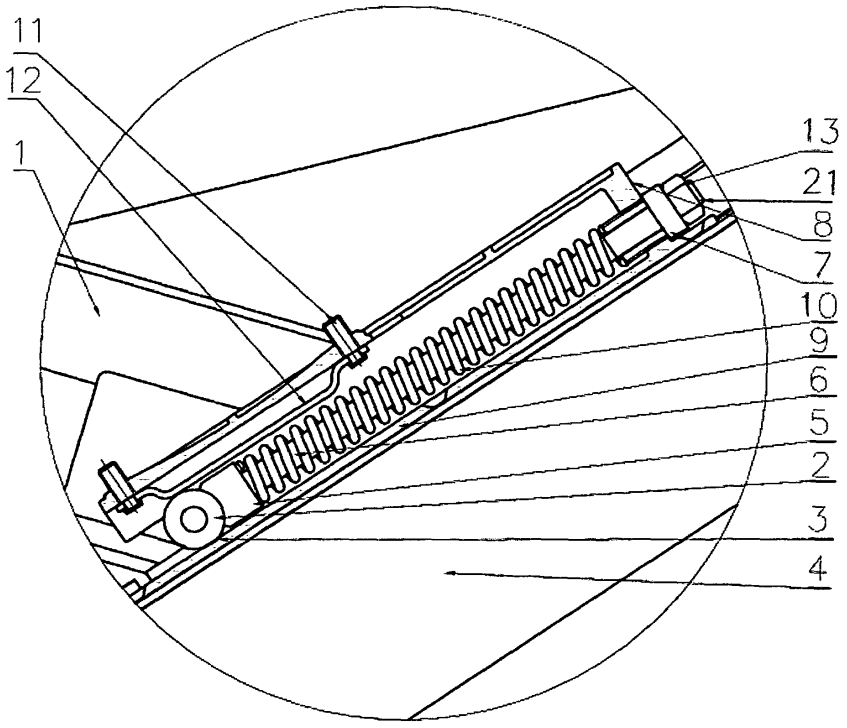

Fig. 2

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Description

[0001] The subject of the present invention is a device for fixing the position of a roof window wing.

[0002] Polish patent no. PL-177697 discloses a roof window with a fixing device for blocking opening positions, comprising a support in a form of a flexible arm, angularly movable with respect to the window frame, which is connected to a window frame and to a window wing, whereas the ending of the arm is provided with a roll actuated by a spring located in a window frame guide.

[0003] Also, European patent application EP 0 872 610 discloses a roof window having a movable wing, which is connected to the window frame by means of an arm supported rotationally in the window frame, and an axle located in a window frame guide, The frame of the window wing is also connected to the window frame via a telescopic device, which is mounted pivotally in the window wing frame and the window frame guide. The telescopic device comprises a main spring and an auxiliary spring.

[0004] According to the present invention, the window wing is provided with a roll which is supported on a raceway of a window frame and, at the same time, on the face of a nut screwed onto an end of a rod slidingly disposed within a guide rail by means of an adjusting nut, whereas a spiral spring is pulled onto the rod, with the spring end faces butting up against the adjusting nut and a nut located on the other end of the rod. Lock nuts are disposed on a tip of the rod that protrudes beyond the guide rail. On the internal surface of the top wall of the guide rail a flat spring is mounted with screws, located above the roll it presses against with its offset part parallel to the raceway. The screws fixing the flat spring are rotationally mounted at the flat spring ends. At the corners of the window frame there are beds mounted in which sliders are placed, said sliders having keys which are inserted into bed grooves, whereas arm ends are pivotally mounted to the sliders by means of pins. The other arm ends are pivotally mounted in the window wing frame. The sliders are provided with locking screws to lock the sliders within the beds, whereas the beds are provided with adjusting screws whose faces butt up against the walls of the sliders.

[0005] This solution allows for freely opening and closing the window while it is easily possible to adjust the braking of the window wings in opening positions and it gives the possibility to adjust the tension of the spiral springs that amortise the window wing.

[0006] This device makes it possible to lock a window open ajar in a fixed position without the necessity to make other operations. Additionally, by exerting a stronger pressure on a window wing, one can flip it to a reverse position or close it. The mounting of the arm to the window frame by means of the slider makes it possible to adjust the position of the window wing with respect to the window frame, which is particularly important for keeping the window seat-tight.

[0007] The invention is disclosed in an embodiment illustrated in a drawing, where fig. 1 depicts the window in a side view with partial cross-section, fig.2 shows the details of the wing-to-window frame connection, fig. 3 shows the details of the ann-to-window frame connection, fig.4 shows the bed in an axonometric view, and fig. 5 is the view of a slider.

[0008] As shown in the drawing, in window wing frame I a roll 2 is mounted, which is supported on raceway 3 mounted on window frame 4 and on the face of a nut 5 screwed onto an end of rod 6 slidingly disposed within adjusting nut 7 screwed into a vertical wall 8 of the raceway 9, which is formed by the final part of the raceway 3 in the shape of a tube of rectangular cross-section. On rod 6, between nut 5 and adjusting nut 7, there is a spiral spring 10 mounted. Fixed with screws 11 to the top wall of raceway 9, a flat spring 12 is located at the initial section of the track of the roll 2 it presses against with its offset part parallel to the raceway 3. The screws 11 are rotationally mounted to the ends of the flat spring 12. On the threaded end of the rod 6, which protrudes beyond the guide rail 9, there are lock nuts 13.

[0009] The window wing I is connected to the window frame 4 by means of arms 14, one end of which is rotationally mounted on pivots 15 of wing 1, and the other end of arms 14 is rotationally mounted on pins 16 located within sliders 17. The sliders 17 have keys 18 located in grooves 19 of beds 20, which are fixed with screws to two corners of window frame 4. Within the transverse wall of beds 20 there are adjusting screws 21 whose faces butt up against sliders 17, and within the sliders 17 there are screws 22 whose faces are pressed against the base of beds 20.

[0010] When the wing 1 is being opened, the roll 2, being pushed by spiral spring 10, moves between the raceway 3 and the flat spring 12, to the place where the offset part of the flat spring 12 ends. Then, the roll 2 moves away from the raceway 3 and jumps down along the slope of the flat spring 12, thus fixing the window wing 1 in such a position. To close the window wing 1. an adequate force is required.

Claims

1. Device for fixing the position of a roof window wing, which is connected to a window frame by means of an arm pivotally mounted within the wing and the window frame, while a roll mounted to the window wing frame is placed in a guide rail of the window frame, **characterised in that** said roll (2) is supported on raceway (3) of guide rail (9) and at the same time butts up against the face of a nut (5) screwed onto an end of rod (6) disposed slidingly within said guide rail (9) by means of adjusting nut (7), whereas on said rod (6), between adjusting nut (7) and nut (5) a spiral spring (10) is disposed, while on the internal top wall of said guide rail (9) a flat spring (12) is fixed with screws (11) and disposed above the

said roll (2) it presses against with its offset middle part parallel to said raceway (3), and additionally within the final part of the longer sides of said window frame (4), there are beds (20) into which sliders (17) are inserted, said sliders having an opening for a pin (16) to which there is mounted the end of arms (14), the other end of said arms being pivotally mounted in the window wing frame (1).

2. The device according to claim 1, **characterised in that** said sliders (17) have keys (18) placed within the grooves (19) of said beds (20), and in the base of the slides (17) there are locking screws (22).

3. The device according to claim 1, **characterised in that** in the transverse wall of said bed (20) there is an adjusting screw (21), whose face is supported on the transverse wall of said slider (17).

4. The device according to claim 1, **characterised in that** the screws (11) are rotationally mounted at the ends of the flat spring (12).

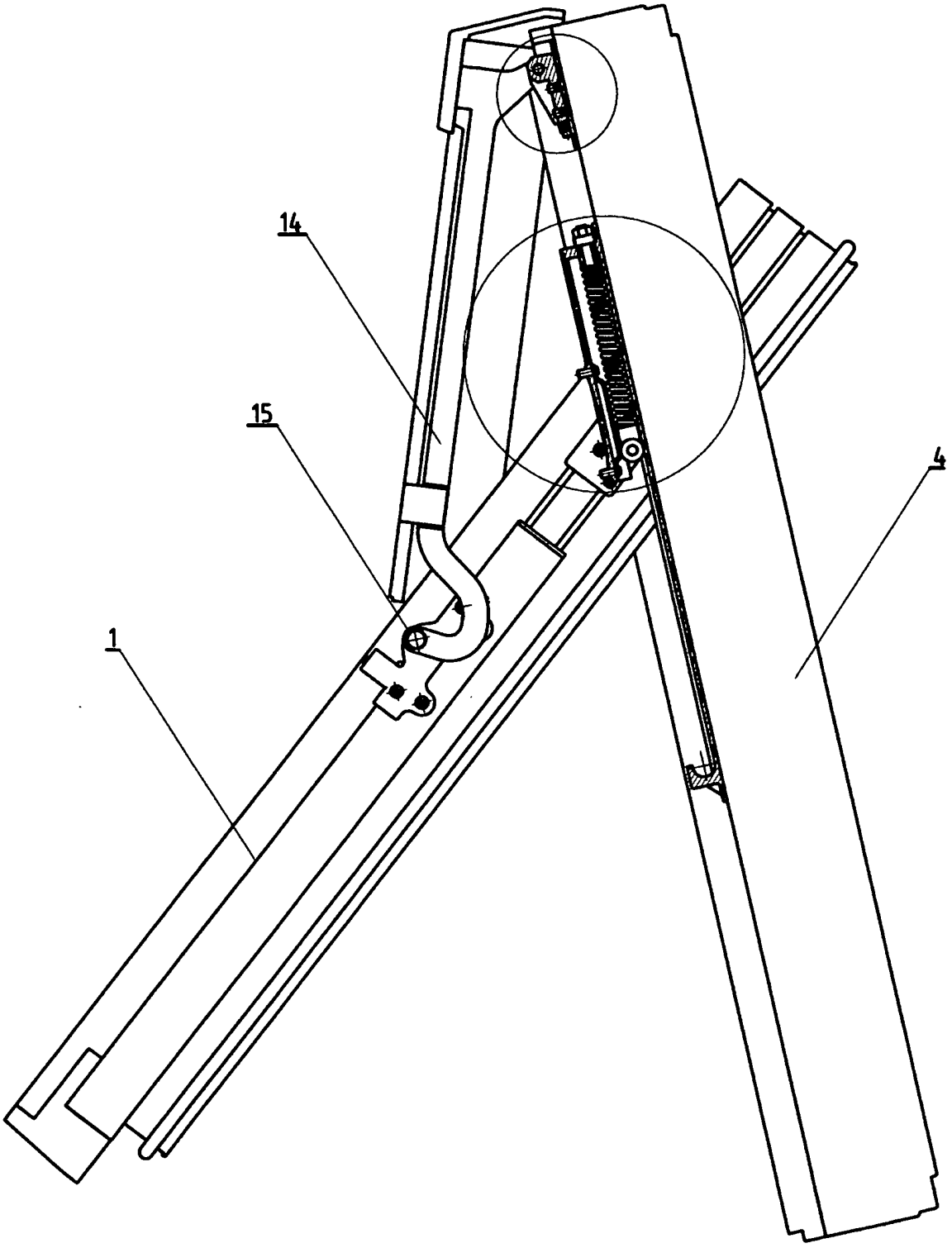

Fig. 1

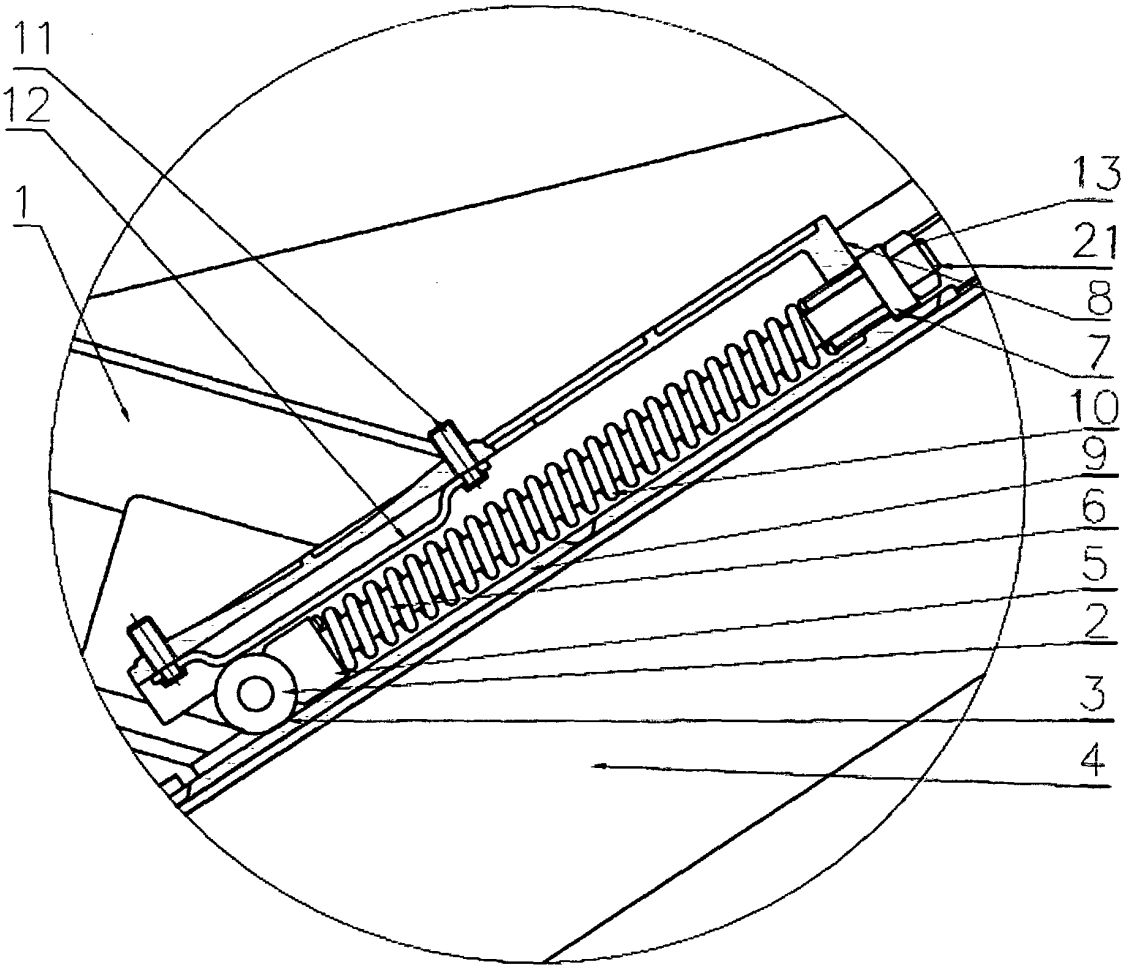

Fig. 2

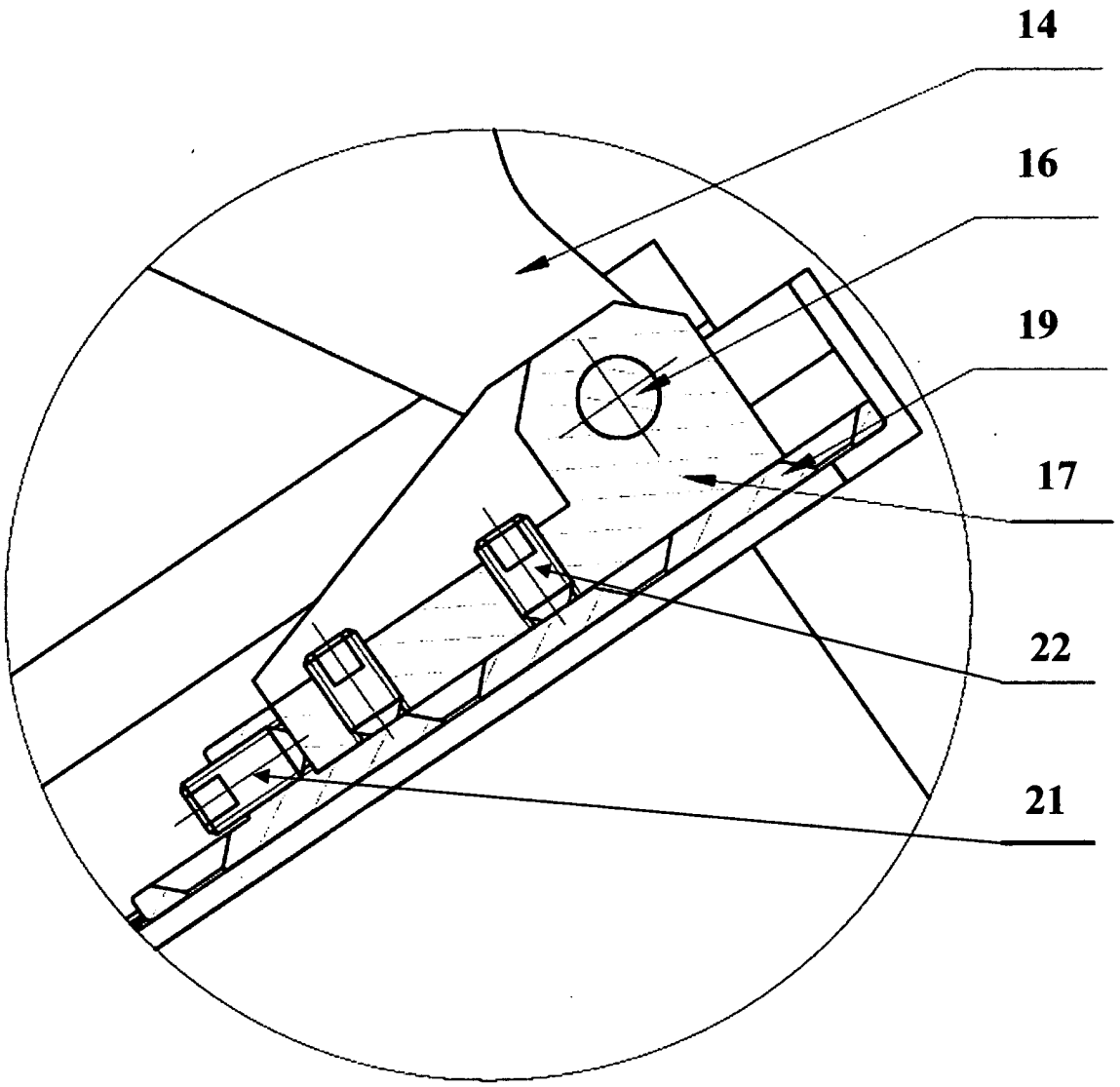

Fig. 3

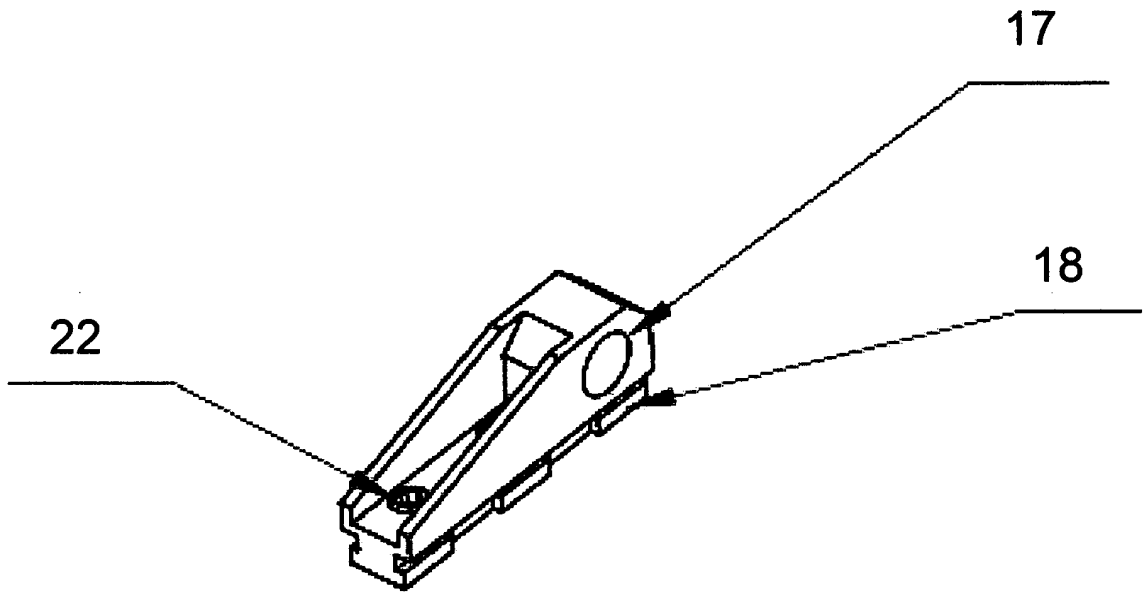

Fig. 4

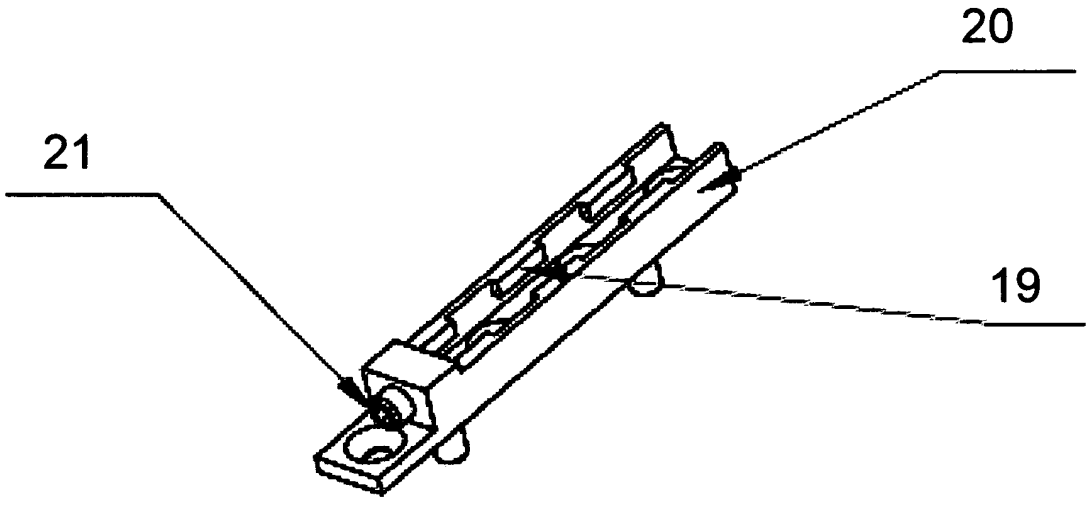

Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- PL 177697 **[0002]**
- EP 0872610 A **[0003]**