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(54) **Mechanism for assembling and levelling door and window frames**

(57) This consists of a hollow body, a tongue set at one end of this and a tensioning rod fitted inside the hollow body from a lower handle pull to the end of the strip. The handle pull has two sections, one at the end with a section essentially equal to that of the inside of the hollow body and an interior smaller section, the change of section acting as a support in the upper tongue traction position.

It has a support piece at the top of the chassis and a swivelling and extendible support for the lower part.

For application in making frame-holding mechanisms.

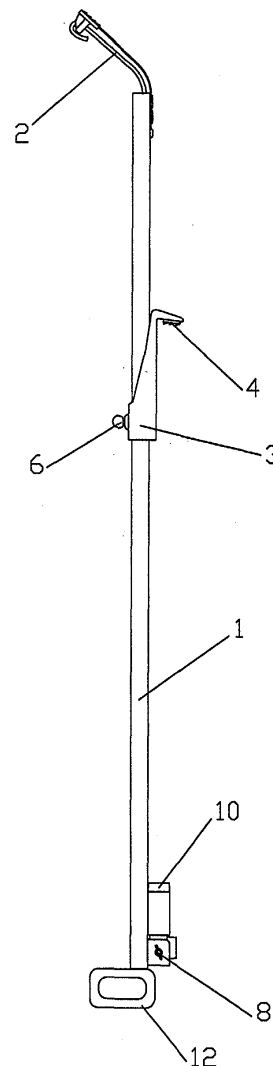


Fig. 1

EP 1 361 321 A2

Description

[0001] The object of this invention is a mechanism for fixing door and window frames in the building stage, which has a central chassis or body with a tongue at the top, a device for tensioning said tongue, set on the inside of the chassis, a height-adjustable support piece and a swivelling support at the bottom of the chassis.

[0002] The technical field involved in this utility invention is that of auxiliary apparatus and mechanisms for use in building.

[0003] The prior state of the art is given by ES 1042293U, by this same inventor, which has a tongue or leaf spring at the top, a tension rod able to be secured at the bottom and a simple mechanism for adjusting and fixing the support, at the level of the upper door or window frame.

[0004] However, the aforementioned device has problems with the unsteadiness of the tongue located at the top of the chassis, as well as this skewing to one side, due to the system used for coupling the tongue with the tension rod. There also tends to be some slight unsteadiness of the chassis. Through being metallic and having sharp edges, the claws or pawls for fixing to the frame or ceiling scratch the wood, the aluminium or the ceiling which may sometimes be already finished.

[0005] Another disadvantage of this device is as follows: since the support-separator at the base of the chassis is of a single length, when the frame on which the fixing claw is supported is wider than the length of this support, the base of the chassis tends to approach the frame, and thus move out of the vertical plane; this can be partly solved by adding supplementary pieces, but requires on the other hand greater operator involvement.

[0006] The present invention consists in an enhanced mechanism for tensioning a device, set inside a chassis, said chassis being joined at the top, in the usage position, to a tongue and at the bottom, in the usage position, a handle. A support piece moves freely along the chassis, to be fixed at the height of the upper frame of the door or window. There are claws or fixing means at both the top of the tongue and at the bottom of the runner. At the end of the chassis there is a pivoting support separating the body of the chassis from the door or window frame, allowing this support to swivel and extend, permitting different widths.

[0007] In order to make the following explanation clearer, seven sheets of drawings are adjoined to this description, in which the essence of this invention is shown in nine figures.

Brief description of the figures

[0008]

Figure 1 shows a view of the profile of the assembly covered in this invention, in a non-operative position.

tion.

Figure 2 shows a profile view set diagrammatically in a possible usage location;

Figure 3 shows a profile view of the mechanism, in which the runner is resting on the top part of the roller blind casing;

Figure 4 shows a profile section of the tube in which the coupling between the tensioning device and the handle in the non-operative position can be appreciated;

Figure 5, like the previous one, shows the coupling between the tensioning device and the handle in the usage position;

Figure 6 shows a perspective view of the support stops;

Figure 7 shows a perspective view of the tongue, in which stops have been fitted at the top where it contacts the ceiling;

Figure 8 shows a perspective view of the tongue, in which there are fixing claws at the top, and

Figure 9 shows a perspective view of the assembly, in which the runner is placed in a different position than the top part for different ceiling height.

Detailed description of the invention

[0009] In these figures number 1 represents a chassis, across which a tensioning device 2 is set, which makes an elastic tongue 17, with the corresponding claw fixing 5 fitted at one end of this elastic tongue, bend against the ceiling 16. The tensioning device 2 and the elastic tongue 17 are linked by means of a ring 18, set at the end of said elastic tongue and open towards the tensioning device 2. The chassis has a recess 19 at its upper (in the usage position) end to facilitate the movement of the tensioning device 2 when being moved by the chassis 1.

[0010] As the distance between the ceiling and level of the upper frame of the door or window is variable, the mechanism of the invention has a support piece 3, which is height-adjustable by sliding, and is fixed to the chassis 1 by means of a fixing mechanism 6, like a pressure screw, set in the support part 3. At one of its ends this support part has a pawl 4 made of plastic or rubber, or metal with blunt ends for fixing at level 15 of the door or window or door or window frame.

[0011] At the bottom (in the usage position) of the mechanism of the invention, there is a handle or pull 11, connected to the tensioning device and consisting of a ring 12 joined to a body in the form of a prism which is

divided into two parts, one of which consists of a part 14 housed inside the body of the chassis 1, and the other part of the body having a recess in respect of this by means of a notch 13 which allows the handle 11 to be fixed at the bottom end of the chassis, consequently securing the mechanism of the invention.

[0012] The handle 12 preferentially has an anatomical form.

[0013] Depending on the distance between the door or window frame and the mechanism involved in this invention, a support 7 can be swivelled or not around an articulation axle 8, set in the base of the chassis 1, by means of a simple manual turn, so that this mechanism is set in parallel to the wall in which the door or window is located, by extension lengthening this support 7, if this is required in the operation. This support is fitted with two support stops, a first stop 9 set on the side opposite the chassis and a second stop 10 set at the end furthest from the articulation axle 8, so that the first of these acts when the upper level of the door or window is approximately lined up with said support, while the second will be swivelled out where applicable when the pawl 4 of part 3 is located over the edge of a window 20 fitted for example with a roller blind casing.

[0014] The body of support part 3 has an inner recess which allows on one hand the movement by one or more rivets or screws for coupling the tongue to the hollow body of the chassis, and also forms an end support in upward movement, when making contact with the bottom end of the tongue.

[0015] Part 11 holding the handle and support notch has a preferentially metal part 21 firmly joined to said part 11, being the part that rests on the edge of the body of the chassis in tensioning position.

[0016] 22 indicates a lower recess made in the handle 11, so as to allow the presence of rivets or securing screws for the support part 7.

[0017] The upper end 5 of the tongue for support against the ceiling or upper surface has a set of support items which may be a number of fixing claws or a set of soft retaining pieces, such as rubber blocks, for preferential use on finished ceilings.

[0018] The end of the tongue also has a stop 23 which prevents the rod 2 coming out of its securing position when pulled, for example, towards the ground in the tensioning operation.

[0019] It has also been allowed for the fixing part 24 to be self-fixing, having a pitch section designed in such a way that when the pawl connected to it bends through the effect of the securing force, the pitch section reduces through the part tilting and prevents it from sliding.

[0020] The tongue is fixed to the chassis 1 by means of screws or rivets, preventing any welding from spoiling the tempering the material of which this is made and thus limiting its flexibility.

[0021] The coupling between the tongue 17 and the rod 2 is by means of a ring 18 set under the toothed head fitted at the end of the tongue 14, perpendicular to

said tongue and open towards the tensioning device 2.

[0022] It is stated for the relevant purposes that both the drawings and the explanations given in the content of this descriptive report are given as examples, not altering any modifications that do not affect the essence as expressed herein and relating to this patent.

[0023] This is for industrial application in the manufacturing of devices for assistance in construction and alterations of buildings.

Claims

1. Mechanism for assembling and levelling door and window frames, which comprises:

- a chassis (1) formed of a hollow tubular body;
- an elastic tongue (17) set in one end of this body, this tongue (17) being fitted at the free end with a claw (5) for fixing to an upper surface or support (16);
- a pawl (4) for fixing to the body of the door or window, or door or window frame to be held (15);
- and a means for tensioning the fixing tongue, which comprises a rod for connecting the end of a tongue to a handle;

characterised in that the handle plays the role of guide over the hollow formed by the chassis, and has a double section;

- a first section in the inner body (14) close to the holding ring or handle pull (12) essentially identical to the inner section of the hollow body forming the chassis;
- a second section further away from the holding ring, which has a recess in the section of the first section;
- a notch between these sections which is able to be supported on one edge of the bottom end of the chassis (1).

2. Mechanism for assembling and levelling door and window frames according to claim 1, **characterised in that** the body of the handle has a metal piece joined to this and adapted to the notch, at the same time as having at the inner end a housing for the rod which forms the means for tensioning the upper tongue.

3. Mechanism for assembling and levelling door and window frames according to claim 1, **characterised in that** it has a means for support to the lower part of the window, door or door or window frame, this support swivelling by turning from a proximate support position and a distal support position.

4. Mechanism for assembling and levelling door and window frames according to claim 3, **characterised in that** the support device is extendible in at least one of the support positions. 5
5. Mechanism for assembling and levelling door and window frames according to claim 4, **characterised in that** the support device is extendible by means of a threaded core. 10
6. Mechanism for assembling and levelling door and window frames according to claim 4, **characterised in that** the support device is extendible by means of an eccentric mechanism. 15
7. Mechanism for assembling and levelling door and window frames according to claim 1, **characterised in that** the fixing pawl (4) is firmly joined to a part (3) surrounding the tubular chassis, this surrounding part (3) being able to be moved along said chassis (1) and held by means of a pressure screw, the fixing pawl being held to one end of said surrounding part, on one of its sides, not fully surrounding at said end. 20 25
8. Mechanism for assembling and levelling door and window frames according to claim 7, **characterised in that** the pawl slopes slightly in respect of a plane perpendicular to the chassis axis. 30
9. Mechanism for assembling and levelling door and window frames according to claim 7, **characterised in that** the part surrounding the chassis has ribs on one of its inner sides which act as a stop for upward movement at the same time as allowing the tongue fixing rivets or screws to get by. 35
10. Mechanism for assembling and levelling door and window frames according to claim 1, **characterised in that** the pawl is firmly linked to a swinging device with a pitch section essentially identical to that of the chassis body (1). 40
11. Mechanism for assembling and levelling door and window frames according to claim 1, **characterised in that** the end of the tongue consists of a set of regularly distributed claws. 45
12. Mechanism for assembling and levelling door and window frames according to claim 1, **characterised in that** the end of the tongue is formed by a set of rubber blocks or similar material. 50
13. Mechanism for assembling and levelling door and window frames according to claim 1, **characterised in that** the end of the tongue is fitted with a stop for preventing the rod from getting through in its manual tensioning. 55
14. Mechanism for assembling and levelling door and window frames according to claim 1, **characterised in that** the tongue is fixed to the chassis (1) by means of screws or rivets.
15. Mechanism according to claim 1, **characterised in that** the coupling between the tongue (17) and the rod (2) is performed by means of a ring (18) set under the toothed head (5) fitted at the end of the tongue (14), perpendicular to said tongue and open towards the tensioning device (2).

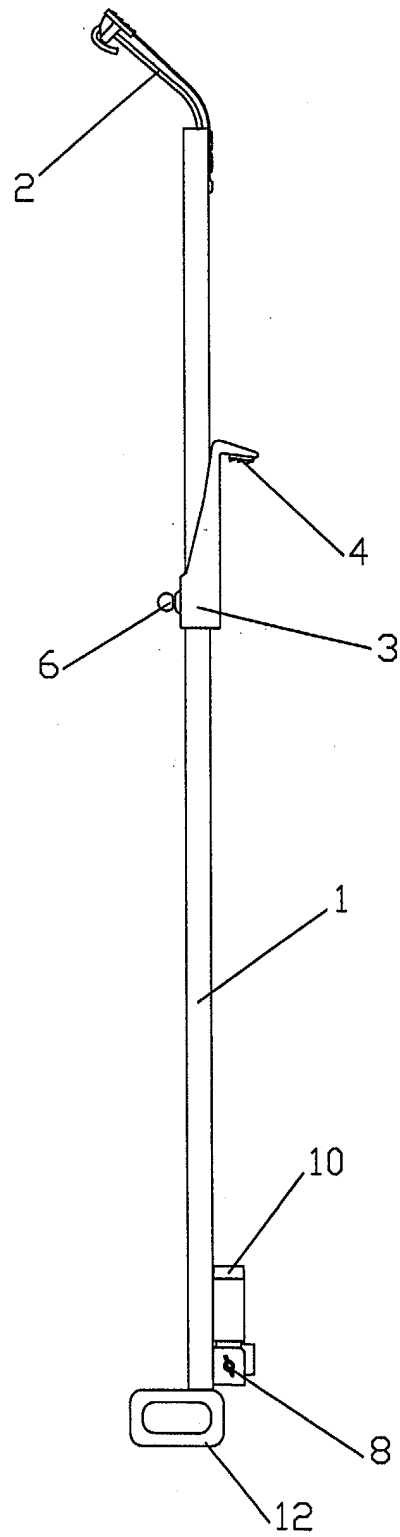


Fig. 1

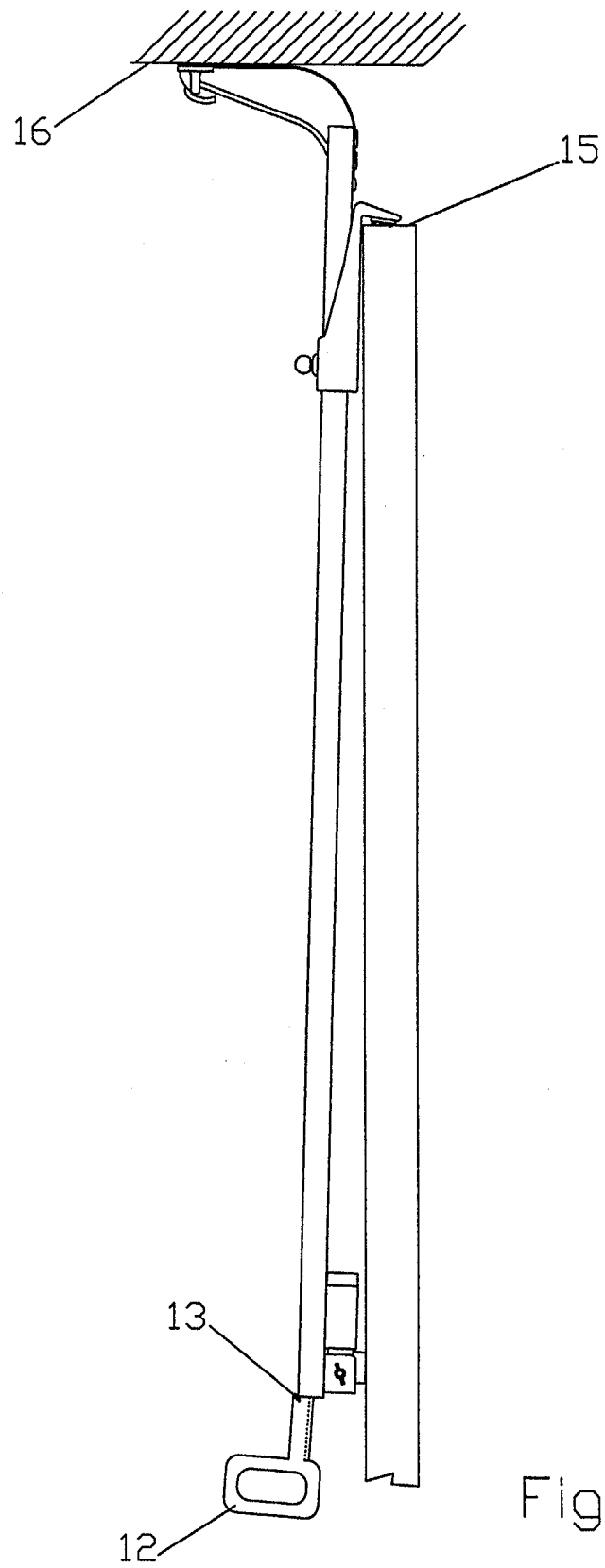


Fig. 2

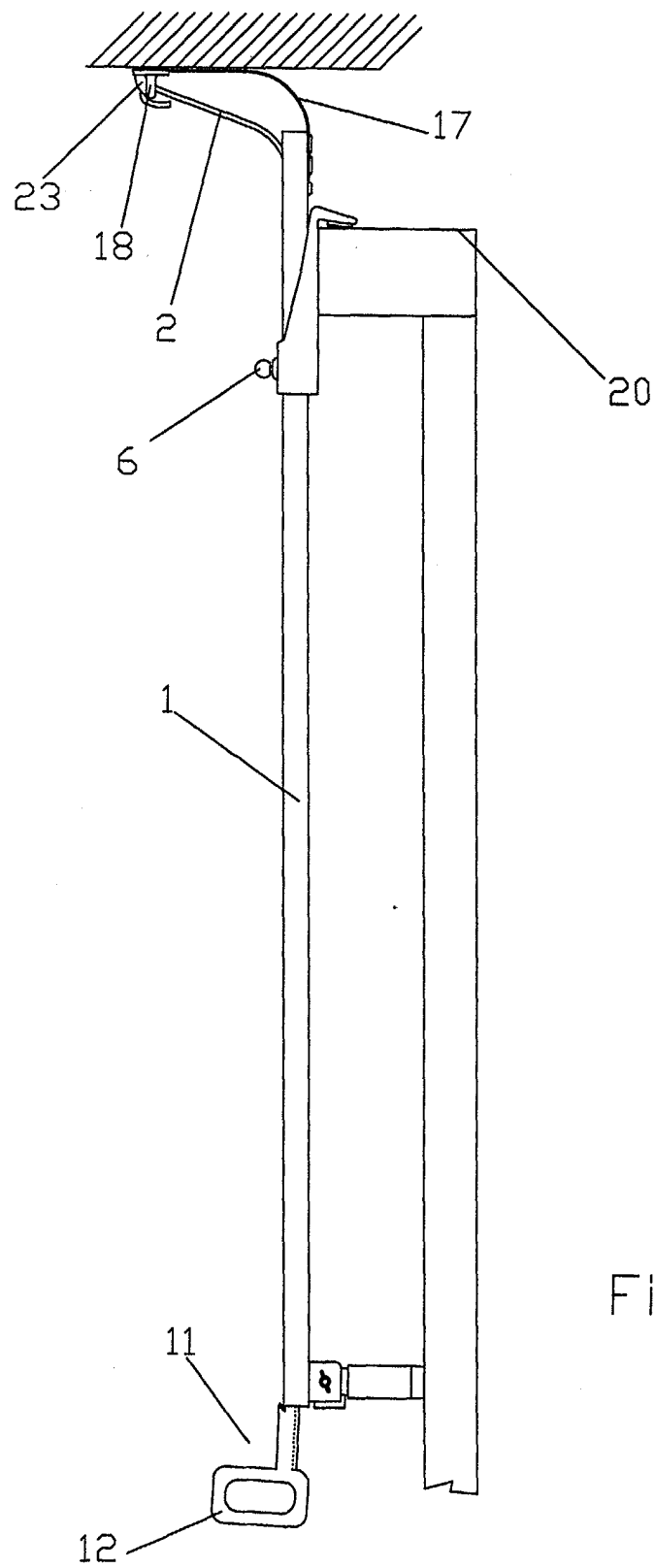


Fig. 3

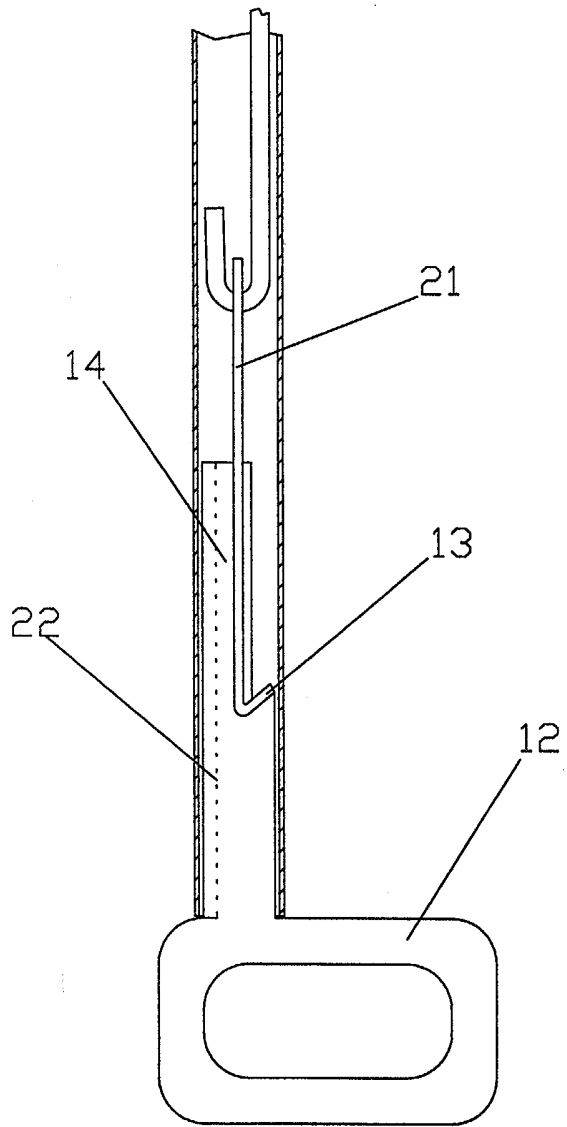


Fig. 4

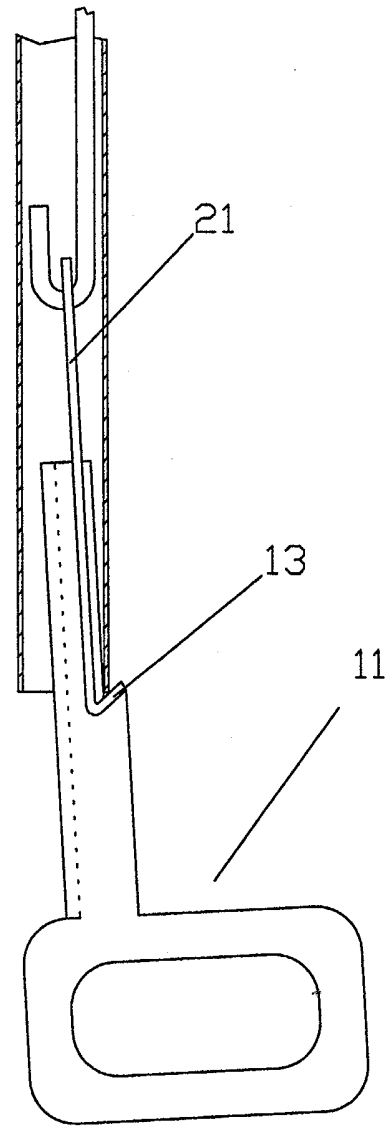


Fig. 5

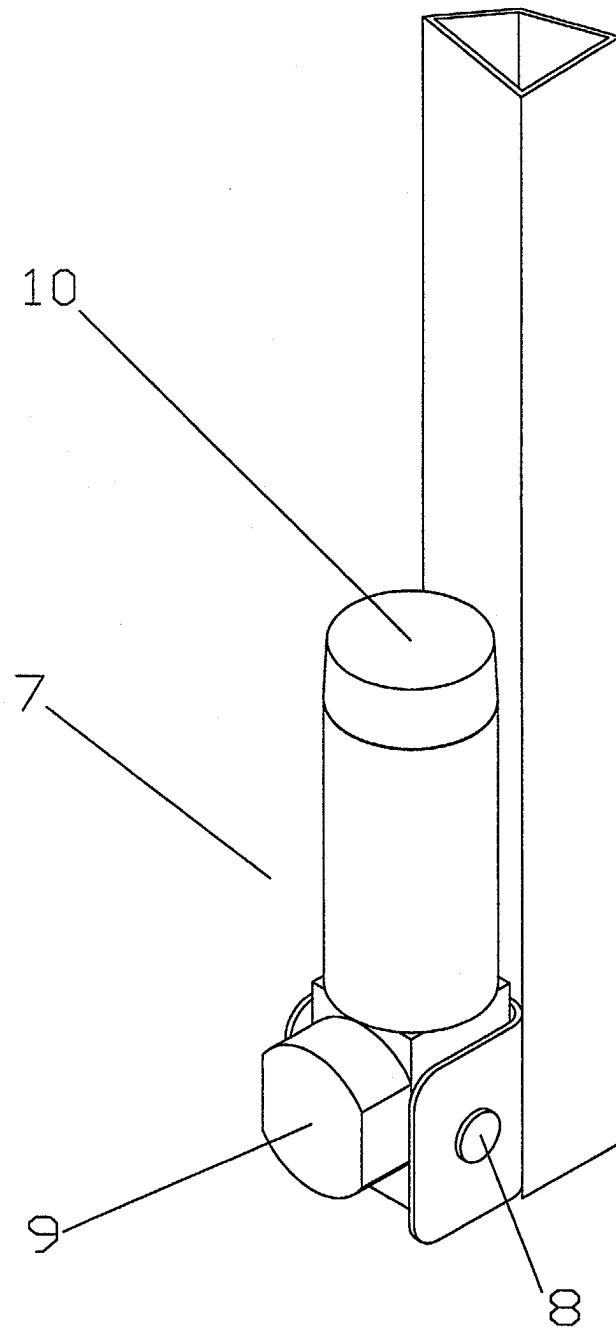


Fig. 6

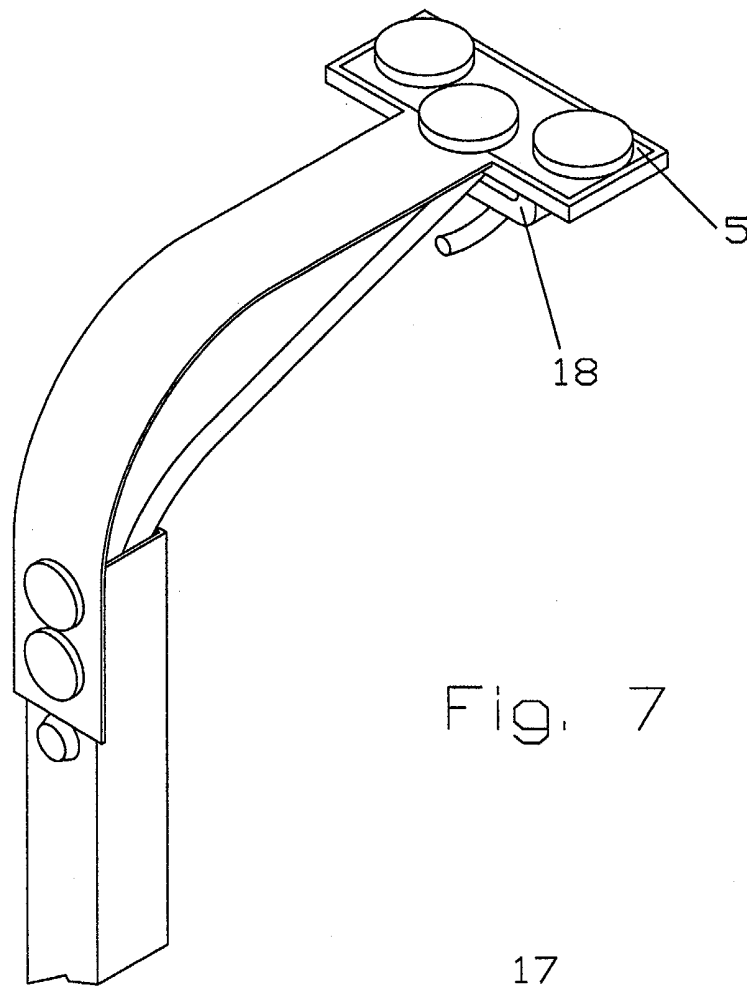


Fig. 7

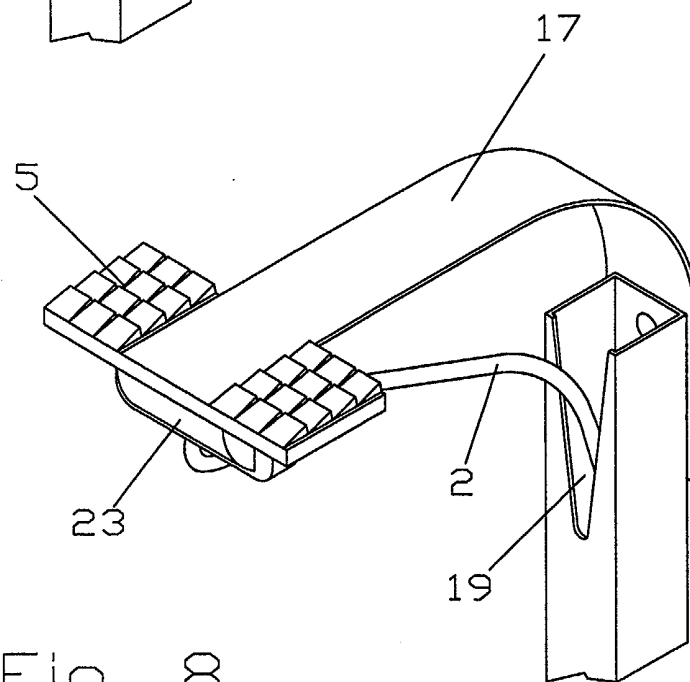


Fig. 8

