

Device for operating blinds with assisted force

The present invention refers to the building field, in particular to the closing of glazed openings by means of windows with blind, and has as its object a device for operating blinds with assisted force.

Windows with blinds are windows provided with parallel slats, transparent or not, overlapping by their longitudinal edges and mounted at their ends in a pivoting way around a horizontal axis, these slats or blinds being actuated individually or in groups by means of a corresponding operating device, with a lever, with conical gears or with a wheel and endless screw, so as to enable the adjustment of the circulation of air and/or penetration of light.

At present, the operation of blinds is generally carried out by means of devices with a lever, with conical gears or with a wheel and endless screw, or possibly by means of small chains mounted on said slats, etc... Such devices give effective and reliable operating solutions. However, these devices are of direct force transmission type, so that they require a major expenditure of energy for operating the pivoting slats mounted in overhanging relationship. This force becomes greater as the number of slats increases.

The pivotal mounting of blinds is generally carried out by means of devices acting in conjunction with the ends of the slats forming the blinds and consisting in a gripping part of each end of the slats associated with a pivoting means in a corresponding bearing or by means of at least one actuating element for pivoting said slat.

Generally, the gripping part of each end of the slats is constituted by a reception and holding part for the said end of the slat, extending on opposite sides of the latter, over all or a part of its surface and possibly gripping it. This gripping part of each end is connected to its pivoting means in the corresponding bearing by being made of one piece with the latter or by an assembly that can either be dismantled or not, and the pivoting actuating element of the slat is in the form of a lever firmly attached to one of the gripping parts of one end.

These mounting devices pivoting the blinds of course permit a correct operation of the latter, however, generally they do not give any adaptation flexibility, for example

by different means of operation, especially by modification of the connection between the gripping part of the end of the slat acting in conjunction the actuating element for corresponding pivoting, for example in the form of a lever. This has the result that a modification to the mounting of the blinds, after their installation, for example a change in the arrangement of the actuating means, and therefore of the connection position of the latter on the pivoting actuating element, is impossible without additional adaptation work, the lever forming the pivoting actuating element being indexed in an unchangeable manner.

The present invention has the aim of overcoming these disadvantages by proposing an operating device for blinds with assisted force enabling an easy operation of the blinds whatever their number and their size, as well as an easy adaptation of the blinds to different operating devices by modification of the assembly of its component elements.

According to the invention, the device for operating blinds, which includes a centralized control means and a means of actuating the latter, these means being housed in a casing fixed in or on an upright of the window with blinds, is characterized in that the means of actuating the blinds is equipped with a device for compensating the weight of the slats constituting the blinds.

The invention will be better understood from the following description, which refers to preferred embodiments. given by way of non-limiting examples, and explained with reference to the accompanying schematic drawings, in which:

Figure 1 is a cross section and lateral elevation view of the device according to the invention;

Figure 2 is a cross section view on A-A of Figure 1;

Figure 3 is a cross section view of a variation of the embodiment of the compensation device of the actuating means of the slats according to Figure 1;

Figures 4 to 6 are views similar views to that of figure 1 of other variations of embodiment of the device;

Figure 7 is a cross section view on B-B of Figure 6;

Figure 8 is a partial plan and cross section view of a mounting device pivoting the blind;

Figure 9 is a cross section view on C-C of Figure 8;

Figure 10 is a cross section view on D-D of Figure 8, and

Figure 11 is a partial cross section view on E-E of Figure 9.

Figures 1 and 2 of the accompanying drawings show, by way of example a device for operating blinds 1, which includes a centralized control means 2 of the blinds 1 and a means 3 of actuating the latter. The means 2 and 3 are housed in a casing 4 fixed in or on an upright 5 of the window with blinds. In the embodiment shown in figures 1 to 3, as well as those in figures 4 to 6, the casing 4 is fixed in the upright 5, however, it can also be fixed on said upright 5 or offset, especially for remote control, according to technical and/or aesthetic requirements. The means 3 of actuating the slats constituting the blinds 1 is constituted, in a known way, by a rod 6 joining the centralized control means 2 to individual levers 7 each firmly attached to a pivoting axis 8 of a slat of a blind 1.

According to the invention, the means 3 of actuating the blinds 1 is equipped with a device 10 for compensating the weight of the slats constituting the blinds 1. Thus, the operating force for said slats of the blinds can be limited solely to the force required to overcome the friction force, so that the control means used can be of very direct action, i.e. without an additional device for reducing the force.

This device 10 for compensating the weight of the slats constituting the blinds 1 can be, either in the form of a centralized device integrated with the means 3 of actuating the blinds 1 (figures 1 to 4), or in the form of a decentralized device acting at the level of each slat of the blind 1 (figures 5 and 6).

The device 10 is preferably constituted by an elastic prestressed means 11 acting on a means of force transfer and is actuated by the centralized control means 2, either directly, in the case of an embodiment in the form of a centralized compensation device (figures 1 to 4), or by means of the rod 6 of the means 3 of actuating of the blinds 1, in the case of an embodiment in the form of a decentralized compensation device (figures 5 and 6).

The prestressed elastic means 11 is preferably constituted of a fixed spring, in the casing 4 enclosing the centralized control means 2, in the case of an embodiment in the form of a centralized compensation device, or directly in the upright 5 of the window; one of the ends of this spring bearing on an abutment 12 of the casing 4 or against the

corresponding face of the upright 5, in the case of an embodiment in the form of a decentralized compensation device, whilst the other end acts on the means of force transfer. Thus, the means 11 balances the couple exerted in each position of the slats 1.

According to one characteristic of the invention; the spring constituting the prestressed elastic means 11 has a load corresponding to the balancing couple to be exerted, respectively to maintain the slats of the blind 1 in all positions of balance, in the case of an embodiment in the form of a centralized compensation device, or to maintain each slat of the blind 1 individually in its positions of opening in the case of an embodiment of a decentralized compensation device; the force of the opening or closing movement being supplied by the centralized control means 2, so that the control of the slats of the blind 1 is of non-returning type ensuring their blocking in all positions. Thus, an actuation of the slats of the blind 1, by means of the means 2, will only require the exertion of a force on this means 2 corresponding to that of the forces of friction in the different bearings.

According to a first embodiment of the invention, corresponding to a centralized control, the means of force transfer is in the form of an eccentric operating plate 13, guided in a pivoting way in casing 4, equipped with a drive lug 14 and articulated on the rod 6 by means of an axle 16. In this embodiment, the spring constituting the prestressed elastic means 11 acts on the means of force transfer constituted by the eccentric operating plate 12, by means of a control lever 17 acting in conjunction at its free end with the means of force transfer by means of the drive lug 14 firmly attached to the operating plate 13 and guided in a guide slot 18 of the lever. Thus, during pivoting to the left of the lever 17, the eccentric operating plate 13 forming the means of force transfer is driven in a pivoting way around its articulation axis in the casing 4, so that the rod 6 is moved downwards and to the right, which corresponds to the trajectory of the drive lug 20 of the arm 7, as per figures 1 and 4, in the direction of opening of the slats of the blinds 1.

Figure 4 of the accompanying drawings shows a variation of embodiment of the device for compensating the means 3 of actuating the slats forming the blinds 1, in which the means of force transfer, constituted by the eccentric operating means, is connected with articulation to the control lever 17 by means of a link 19. In a case such as this, pivoting of the lever 17 will have the effect of a substantially linear movement of the link

19, bringing about a corresponding pivoting of the plate and a movement in the same direction of the rod 6.

Figures 5 and 6 of the accompanying drawings show two variations of embodiment of the invention, in which the device 10 for compensation of the weight of the slats constituting the blinds 1 is decentralized and is constituted, for each blind 1, by a prestressed elastic means 11, in the form of a spring, and by a lever 7, attached firmly to the corresponding pivoting axis 8 of the slat of the blind 1, articulated by a drive lug 20 on the rod 6 and connected in an articulated way to the spring forming the prestressed elastic means 11 by means of a connection link 21.

According to one characteristic of the invention, the lever 7, attached firmly to the pivoting axis 8 of the slat of the blind 1, is equipped with several holes 22 destined to act in conjunction with a lug firmly attached to the corresponding end of the connection link 21, these holes 22 extending radially from the pivoting axis 8 of the slat of the blind 1 and in an offset manner in relation to a straight line connecting the pivoting axis 8 to the drive lug 20 of the lever 7. Thus, it is possible to carry out an adjustment of the couple exerted by the link 21 on the lever 7 and therefore on the axis 8, according to the force needed to ensure the maintaining in position of the slats of the blind 1 and which takes into account the weight of the latter.

During operation of the centralized control means 2 of the slats of the blind 1, for example in the direction of a downwards movement of the rod 6, each lever 7 is driven in a pivoting way around the axis 8 of the blind 1 and the traction exerted by the spring forming the prestressed elastic means 11 on the link 21 and on the lever 7 carries out a lifting couple for the slat of the corresponding blind, the actuation of the means 2 requiring simply the exertion of a force corresponding to the forces of friction in the different mechanisms. During the actuation in the closing direction, the force needed to operate the means 2 is identical, the couple exerted by the spring then serving to ensure only a maintaining of the slat of the blind and avoiding any sudden movement due to the weight of the latter.

Naturally, in the case of operation with centralized compensation, the prestressed elastic means will have the same effect.

According to a further characteristic of the invention, the centralized control means 2 of the slats of the blind 1 is preferably constituted by a sliding handle 23 guided in the casing 4 and acting on the control lever 17 acting in conjunction with the means 3 of actuating the slats of the blind 1 by means of a cam 24 acting in conjunction with at least one roller 25 of a pivot plate 26 articulated on said lever 17 (figure 1). Thus a vertical movement of the handle 23 will bring about a corresponding movement of the pivot plate 26 and the lever 17 along the curve of the cam 24, so that the device 10 for compensation of the weight of the slats constituting the blinds 1 will be actuated and the rod 6 will be moved in the corresponding direction. A rectilinear profile of the cam 24 at the end of its movement ensures the blocking of the slats forming the blinds 1 in open and closed positions.

Figure 3 of the accompanying drawings shows a further variation of the embodiment of the invention, in which the centralized control means 2 of the slats of the blind 1 is in the form of a turning handle 27, guided in the casing 4 and acting in conjunction with an operating axle 28 by means of a nut and screw connection, the operating axle 28 being connected in an articulated way with the lever 17 by means of a drive lug 29, the lever 17 being connected to its articulation in the casing 4 by a guide slot 3'. The operation of the turning handle 27 brings about a linear movement of the operating axle 28 and a corresponding pivoting of the lever 17, simultaneously to the actuating of the device 10 for compensation of the weight of the slats constituting the blinds 1.

Figures 5 and 6 show the application of sliding handles 23 and turning handles 27 to the embodiments of the device relating to the application with a decentralized compensation. In these embodiments, the composition of the means 2 is identical to that described above.

According to a further variation of the embodiment of the invention, not shown in the accompanying drawings, the centralized control means 2 for the slats of the blinds 1 may also be constituted in the form of a small chain acting directly or indirectly on the control lever 17, this small chain being guided out of the casing 4 and/or the upright 5 by return rollers or similar. In the case of indirect actuation of the control lever 17, this can for example be carried out by a cam, an eccentric lever or similar.

According to a further variation of the embodiment of the invention, not shown in the accompanying drawings, the centralized control means 2 for the slats of the blinds 1 may also be constituted by a motor, either whose output shaft engages with a pinion acting in conjunction with the rod 6 for connecting the individual levers 7 each firmly attached to a pivoting axis 8 of a slat of a blind 1, this rod 6 being equipped with a corresponding rack; or whose output shaft is equipped with a cam or an actuating link for the control lever 17. Due to the compensation of weight of the slats of the blind 1, an operating motor of lower power may be used, it only being necessary to overcome the mechanical resistance of friction.

According to a further characteristic of the invention, the centralized control means 2 of the slats of the blind 1 may be equipped with a device for connecting in parallel of two means 3 of actuating the slats constituting the blinds 1 of adjacent windows with blinds, from a single casing 4, this device (not shown) being, for example, in the form of connecting cross pieces firmly attached to the rods 6 of each window and passing through the corresponding uprights by grooves provided in the latter, or directly axle to axle of at least one blind. This embodiment is also made possible by the provision of compensation for the weight of the slats.

It is also possible, according to a further variation of embodiment of the invention, not shown in the accompanying drawings, to provide the centralized control means 2 for the slats of the blinds 1 in the form of two or more controls, of which each element is associated to a part of the window with blinds and acts independently on the slats of the corresponding blinds. Thus one part of the slats could for example be open, whilst the other will be closed or simply half open.

Finally, the control means 2 can also be constituted by a crank (not shown) acting on the operating axle 28 connected to the lever 17 or directly on the lever 17. A means such as this in the form of a crank enables for example an actuation of the blinds in the closing or opening direction by a slight rotation of the crank, namely a quarter turn or a half turn.

According to a further characteristic of the invention, and as is shown more particularly in Figures 8 to 11 of the accompanying drawings, the connection of each individual lever 7 to the pivoting axis 8 of a slat of a blind 1 is carried out by means of a

mounting device, which includes bearing means 30 each arranged in one end of a longitudinal housing 30' of a frame 31 for receiving the slat of the blind 1, and a means 32 for firmly attaching each lever 7 to the corresponding bearing means 30. The bearing means 30 are presented in a known manner in the form of parts which are expansible or not, mounted in the corresponding ends of the frame 31 for receiving the slat of the blind 1 and attached in the latter by gluing, by force fitting or by expansion under the effect of a mounting screw or similar forming the means of attachment 32.

According to the invention each bearing means 30 is equipped, in an extension of its part penetrating into the end of the housing 30', with a bearing shoulder 33 on the corresponding end of the frame 31, this shoulder 33 being extended by a hollow indexing device 35 destined to act in conjunction with a corresponding means 34 of the lever 7 (figures 8 and 10). thus, it is possible to carry out a precise and rapid positioning of the lever 7 in relation to the slat of the blind 1, being able to be perfectly reproduced from one slat to the other.

Preferably, the hollow indexing device 35 and the means 34 are presented respectively in the form of a hole and a grooved hub.

According to a further characteristic of the invention, the housing 30' of the frame 31 is provided with an internal longitudinal rib 30'', protruding from one of its walls and destined to act in conjunction, on one hand, with a corresponding groove of the bearing means 30 and, on the other hand, with the means of attachment 32, in the form of a screw or similar (figures 9 and 10). This embodiment has the result of the possibility on one hand, of indexing the bearing means 30, thus facilitating its mounting and, on the other hand, of obtaining partial engagement, by tapping, of the screw forming the means 32 with the upper surface of the rib 30''. As a result, the connection between the lever 7 and the slat of the blind 1 is further improved.

To improve the attachment of the bearing means 30 in the housing 30'' of the frame 31, it is possible to provide, according to a further characteristic of the invention, for equipping the bearing means 30 with a complementary blocking means by anchoring in at least one side of the internal wall of the housing 30' of the frame 31.

According to one characteristic of the invention, this complementary blocking means is in the form of a sliding blocking plate 36, of a length more or less equal to half

the height of the bearing means 30 and guided in a slot 37 inclined in relation to the longitudinal axis of the bearing means 30 opposite that including the groove acting in conjunction with the rib 30'' of the housing 30' of the frame 31 and the plate being equipped in its edge turned towards the middle of the bearing means 30 with a recess of small diameter (not shown) destined to act in conjunction with an endpoint of the screw of similar forming the attachment means 32. Thus, when putting in the screw forming the attachment means 32, the latter penetrates, by its endpoint, into the recess of the plate 36 and tends to move the latter in its slot 37 in the direction of the corresponding wall of the housing 30'. As a result, the external edge of the plate 36 is held tight against the wall of the housing 30' and penetrates into the constituent material by buttressing.

According to further variation of embodiment of the invention, not shown in the accompanying drawings, the complimentary blocking means can also be constituted in the form of an independent part for deformable elastic hooking, for example with partially bent wings, useable under traction or pressure on the support body off these wings by means of the means of attachment 32. By such an embodiment it is also possible to obtain a very firm connection between the frame 31 of the blind and the lever 7.

Due to the invention, it is possible to carry out an easy operation of the blinds of a window, whatever the number and the size of the latter. This result is obtained by compensation of the weight of the slats of the blind by use of a prestressed elastic means 11 enabling the required operating effort to be limited to only the exertion of force corresponding to the mechanical resistances of friction at the joints between the different parts and the bearings of the slats forming the blinds 1.

Naturally, the invention is not limited to the embodiments described and shown in the accompanying drawing. Modifications are possible, especially from the point of view of the components of the various elements or by substitution of technical equivalents, without departing from the scope of protection of the invention.



CLAIMS

1. Device for operating blinds, comprising a centralized control means (2) for the blinds (1) and a means (3) of actuating the latter, these means (2 and 3) being housed in a casing (4) fixed in or on an upright (5) of the window with blinds, the means (3) of actuating the blinds (1) being comprised of a rod (6) connecting the centralized control means (2) to the individual levers (7) each firmly attached to a pivoting axis (8) of a slat of the blind (1), characterized in that the means (3) of actuating the blinds (1) equipped with a device (10) for compensation of the weight of the slats comprising the blinds (1).
2. Device according to claim 1, characterised in that the device (10) for compensation of the weight of the slats constituting the blinds (1) is in the form of a centralised device integrated with the means (3) of actuating the blinds (1).
3. Device according to claim 1, characterised in that the device (10) for compensation of the weight of the slats constituting the blinds (1) is in the form of a decentralised device acting on each slat of the blind (1).
4. Device according to any one of claims 1 and 2, characterized in that the device (10) for compensation of the weight of the slats constituting the blinds (1) is in the form of a prestressed elastic means (11) acting on a means of force transfer and is actuated by the centralized control means (2).
5. Device according to any one of claims 1 and 3 characterized in that the device (10) for compensation of the weight of the slats constituting the blinds (1) is constituted by a prestressed elastic means (11) acting on a means of force transfer and is actuated by the rod (6) of the means (3) of actuating the blind (1).
6. Device according to any one of claims 1, 2 and 4 characterized in that the prestressed elastic means (11) is constituted by a spring fixed in the casing (4) enclosing the centralized control means (2), one of the ends of the spring bearing down on an



This Sheet Has Been Replaced





- abutment (12) of the casing (4), or directly onto the casing (4), while the other end acts on the means of force transfer.
7. Device according to any one of claims 1, 3 and 5 characterized in that the prestressed elastic means (11) is constituted of a spring fixed directly on the upright (5) of the window, one of the ends of this spring bearing against the corresponding surface of the upright (5), while the other end acts on the means of force transfer.
 8. Device according to any one of claims 4 to 7, characterized in that the spring constituting the prestressed elastic means (11) has a setting corresponding to the couple to be exerted, respectively for maintaining the slats of the blinds (1) in all positions of balance, in the case of an embodiment in the form of a centralized compensation device, or for individually maintaining each of the slats of the blind (1) in each of their different opening positions, in the case of an embodiment in the form of a decentralized compensation device, the force of opening or closing movement being supplied by the centralized control means (2).
 9. Device, according to any one of claims 2 to 4, 6 and 8, characterized in that the means of force transfer is in the form of an eccentric operating plate (13), guided in a pivoting way in the casing (4), provided with a drive lug (14) and articulated on the rod (6) by means of an axle (16).
 10. Device according to any one of claims 2 to 4, 6, 8 and 9, characterized in that the spring constituting the prestressed elastic means (11) acts on the means of force transfer constituted by the eccentric operating plate (13), by means of a control lever (17) acting in conjunction at its free end with the means of force transfer by means of the drive lug (14) firmly attached to the eccentric operating plate (13) and guided in a guide slot (18) of the lever (17).
 11. Device according to any one of claims 2 to 4, 6, 8 and 9, characterized in that the means of force transfer, constituted by the eccentric operating plate (13) is connected in an articulated way to the control lever (17) by means of a link (19).
 12. Device according to any one of claims 1, 3, 5, 7 and 8, characterized in that the device (10) for compensation of the weight of the slats constituting the blinds (1) is decentralized and is constituted, for each blind (1), of a prestressed elastic means (11), in the form of a spring, and of a lever (7), firmly attached to the corresponding

This Sheet Has Been Replaced



THIS SHEET HAS BEEN
REPLACED



- pivoting axis (8) of the slat of the blind (1), articulated by a drive lug (20) on the rod (6) and connected in an articulated way to the torsion spring forming the prestressed elastic means (11) by a connection link (21).
13. Device, according to any one of claims 1 and 12, characterized in that the lever (7) firmly attached to the pivoting axis (8) of the slat of the blind (1), is provided with several holes (22) destined to act in conjunction with a lug firmly attached to the corresponding end of the connection link (21), these holes (22) extending radially from the pivoting axis (8) of the slat of the blind (1) and in an offset manner in relation to a straight line joining the pivoting axis (8) to the drive lug (20) of the lever (7).
14. Device according to any one of claims 1 and 10, characterized in that the control means (2) of the slats of the blind (1) is constituted of a sliding handle (23) guided in the casing (4) and acting on the control lever (17) acting in conjunction with the means (3) of actuating the slats of the blinds (1) by means of a cam (24) acting in conjunction with at least one roller (25) of a pivot plate (26) articulated on said lever (17).
15. Device according to any one of claims 1 and 10, characterized in that the control means (2) of the slats of the blind (1) is in the form of a turning handle (27), guided on the casing (4) and acting in conjunction with an operating axle (28) by means of a nut and screw connection, this operating axle (28) being connected in an articulated way with the lever 17 by means of a drive lug (29), the lever (17) being connected to its articulation in the casing (4) by a guide slot (3').
16. Device according to any one of claims 1 and 10, characterized in that the control means (2) of the slats of the blind (1) is constituted of a small chain acting directly or indirectly on the control lever (17), this small chain being guided, on coming out of the casing (4) and/or the upright (5) by return rollers or similar.
17. Device according to claim 16, characterized in that the indirect actuation of the control lever (17), is carried out by means of a cam, an eccentric lever or similar.
18. Device, according to any one of claims 1 and 10, characterized in that the control means (2) of the slats of the blind (1) is constituted by a motor, the output shaft of which engages with a pinion acting in conjunction with the rod (6) for connecting the



This Sheet Has Been Replaced





individual levers (7) each firmly attached to a pivoting axis (8) of a slat of a blind (1), this rod (6) being provided with a corresponding rack, or the output shaft of which is provided with a cam or an actuating link for the control lever (17).

19. Device according to any one of claims 1, 10 and 14 to 18, characterized in that the control means (2) of the slats of the blind (1) is provided with a connecting device in parallel with two means (3) of actuating the slats constituting the blinds (1) of adjacent windows with blinds, from a single casing (4), this device being, for example, in the form of connecting cross pieces firmly attached to the rods (6) of each window and passing through the corresponding uprights by grooves provided in the latter, or directly from axle to axle of at least one blind.
20. Device according to any one of claims 1 and 10, characterized in that the control means (2) of the slats of the blind (1) is in the form of two or more controls, of which each element is associated with a part of the window with blinds and acts independently on the slats of the corresponding blind.
21. Device according to any one of claims 1, 10 and 15 characterized in that the control means (2) of the slats of the blind (1) is constituted by a crank acting on the operating axle (28) connected to the lever (17) or directly on the lever (17).
22. Device, according to claim 1, in which the connection of each individual lever (7) to the pivoting axis (8) of a slat of the blind (1) is carried out by means of a mounting device, which includes bearing means (30) each arranged in one end of a longitudinal housing (30') of a frame for receiving the slat of the blind (1), and a means (32) of firmly attaching each lever (7) to the corresponding bearing means (30), the bearing means (30) being in the form of elements which may or may not be expansible, mounted in the corresponding ends of the frame (31) for receiving the slat of the blind (1) and fixed in the latter by either gluing, force-fitting or expansion by the effect of a mounting screw or similar forming the means of attachment (32), characterized in that each bearing means (30) is provided, as an extension of its part penetrating into the end of the housing (30'), with a shoulder (33) for bearing on the corresponding end of the frame (31), this shoulder (33) being extended by a hollow indexing device (35) destined to act in conjunction with a corresponding means (34) of the lever (7).

THIS SHEET HAS BEEN
REPLACED

This Sheet Has Been Replaced





23. Device according to claim 22, characterized in that the hollow indexing device (35) and the means (34) are in the form of a hole and a channeled hub respectively,
24. Device according to claim 22, characterized in that the housing (30') of the frame (31) is provided with an internal longitudinal rib (30''), protruding from one of its walls and destined to act in conjunction with, on one hand, a corresponding groove of the bearing means (3) and, on the other, with the means of attachment (32) in the form of a screw.
25. Device according to claim 22, characterized in that the bearing means (30) is equipped with a complementary blocking means by anchoring in at least one side of the internal wall of the housing (30') of the frame (31).
26. Device according to claim 25 characterized in that the complimentary blocking means is in the form of a sliding blocking plate (36), of a length more or less equal to half the height of the bearing means (30) and guided in a slot (37) inclined in relation to the longitudinal axis of the bearing means (30), said slot extending over half of said bearing means (30) opposite to the one comprising a groove acting in conjunction with the rib (30'') of the housing (30') of the frame (31) and the plate being provided at its edge turned towards the middle of the bearing means (30) with a recess of small diameter destined to act in conjunction with an end point of the screw forming the means of attachment (32).
27. Device according to claim 25, characterized in that the complimentary blocking means is constituted in the form of an independent flexible deformable hooking means for example, with partially folded back wings, deployable under traction or pressure on the body of the support of these wings by means of the means of attachment (32).

THIS SHEET HAS BEEN
REPLACED

This Sheet Has Been Replaced

