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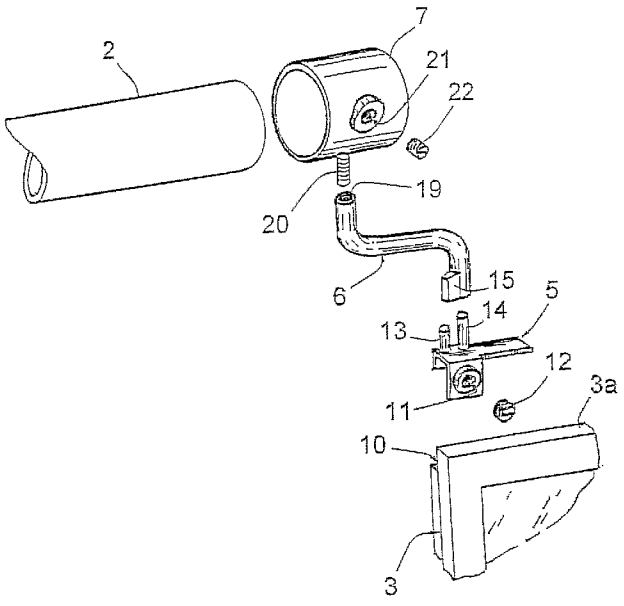
(54) Title: DEVICE FOR HANGING A CURTAIN IN FRONT OF A WINDOW



(57) Abstract: According to the invention, this device comprises two sub-assemblies (1) for mounting the rail (2) for supporting the curtain on the leaves (3) of the window, each sub-assembly (1) comprising a plate (5) and an offset arm (6); the plate (5) is formed so as to be able to be fixed to the upper edge of a leaf (3), in the vicinity of the pivot axis thereof, and comprises mounting means (14) for the pivotable mounting of the offset arm (6) thereon, along an axis extending, after mounting on the leaf (3), parallel to the pivot axis of the leaf (3); the offset arm (6) is formed to offset the rail (2) relative to the wall; it is pivotably mounted on the plate (5) by means of said mounting means and is pivotably connected to the rail (2) at a point thereof which is longitudinally fixed, also along an axis parallel to the pivot axis of the leaf (3).

WO 2007/129192 A2

DEVICE FOR HANGING A CURTAIN IN FRONT OF A WINDOW

The present invention relates to a device for hanging a curtain in front of a window.

The term "curtain" has to be understood in the widest sense, i.e. as referring to any type of means allowing a window to be blacked out, including for example a blind. The same applies to the term "window" which has to be understood as referring to a window with two actual leaves, or to similar openings on one window such as French windows, for example.

In the same manner, the "rail" mentioned below has to be understood as including a rail, a bar or a supporting rail for one or more curtains, or the like.

To hang a curtain in front of a window, it is currently necessary to fix the rail for supporting the curtain to the wall which necessitates carrying out sufficient drilling and screwing operations. These fixing operations are relatively complex to carry out and have the drawback of requiring holes to be made in the wall.

The present invention aims to alleviate this fundamental drawback.

To this end, the device to which it relates comprises two sub-assemblies for mounting the rail for supporting the curtain on the leaves of the window, each sub-assembly comprising a plate and an offset arm; the plate is formed so as to be able to be fixed to the upper edge of a leaf, in the vicinity of the pivot axis thereof, and comprises mounting means for the pivotable mounting of the offset arm thereon, along an axis extending, after mounting on the leaf, parallel to the pivot axis of the leaf; the offset arm is formed to offset the rail relative to

the wall; it is pivotably mounted on the plate by means of said mounting means and is pivotably connected to the rail at a point thereof which is longitudinally fixed, also along an axis parallel to the pivot axis of the leaf.

The plate of each sub-assembly is thus fixed onto the upper edge of a leaf of the window, in the vicinity of the pivot axis of this leaf, and each offset arm is pivotably mounted on the corresponding plate, the two offset arms supporting the rail having the possibility of pivoting relative to this rail.

The rail is thus directly mounted onto the leaves of the window and not onto the wall. By means of the mounting of the plates onto the upper edge of the leaves, said sub-assemblies extend upwards relative to the leaves, and by means of the pivotable mounting of the offset arms relative to the plates and the rail, these sub-assemblies do not provide an obstacle to opening one leaf or the two leaves over a large width, which is able to reach 180 degrees, or even further.

Preferably, at least one plate comprises an abutment member and the corresponding offset arm also comprises an abutment member, these two abutment members being arranged so as to come into abutment against one another in the closed position of the leaf.

This coming into abutment allows, in the closed position of the leaf, the pivoting of the offset arm to be blocked relative to the plate in a pivoting direction, and thus to limit the displacement of the rail relative to the leaves.

Preferably, the plates and the offset arms of the two sub-assemblies each comprise abutment members as mentioned above.

Thus, in the closed position of the two leaves, the pivoting of the two offset arms relative to the plates is blocked, making it

possible to ensure the positioning of the rail parallel to the wall and making it possible to ensure a longitudinal immobilization of the rail relative to this wall.

During the opening movement of the two leaves, and in the completely open position of these leaves, the mounting of the plates in the vicinity of the pivot axes of the leaves allows a limited displacement of the rail relative to the wall.

In the event of opening a single leaf, the abutment members of the sub-assembly of the leaf remaining closed allows the displacement of the rail to be blocked in a longitudinal direction and thus the centering of this rail to be substantially maintained relative to the window.

The means for the pivotable mounting of an offset arm on the corresponding plate are preferably formed by a pin integral with the plate and by a bore made in each offset arm, this bore allowing the pivotable engagement of the offset arm on the pin.

The abutment member of each plate is preferably formed by a pin integral with each plate, and the abutment member of the corresponding offset arm is formed by a projection projecting radially from this offset arm, this projection preferably being integral with this offset arm.

Preferably each plate comprises means for adjusting the position of the pivotable mounting means of the offset arm, these adjusting means being able to be adjusted such that the pivot axis of the offset arm is merged with the pivot axis of the leaf on which the plate is mounted.

These adjusting means allow the rail to be held substantially parallel to the wall whatever the positions of the leaves.

To ensure the perfect maintenance of this rail parallel to the wall, it is useful to provide means for limiting the pivoting of each offset arm relative to the rail. This limitation may, for example, be in the order of 5° on both sides of a nominal position.

When a leaf comprises an upper rebate, the plate intended to be fixed to this leaf is preferably formed and dimensioned to be able to be engaged to overlap, in a close-fitting manner, the projecting edge of the leaf which defines the rebate.

A rigid mounting of the sub-assembly relative to the leaf is thus obtained.

Advantageously, in this case, each plate comprises a tapped bore being able to receive an adjusting screw capable of bearing against the leaf without penetrating the material thereof.

The immobilization of the plate relative to the leaf is thus obtained without it being necessary to drill into the leaf.

Advantageously, each sub-assembly comprises means for adjusting the height of the rail relative to the leaf. These means may, in particular, be in the form of a tapped bore made in each offset arm and a threaded pin being able to be screwed to a greater or lesser extent into this tapped bore. In this case, the threaded pin may, in particular, be integral with a part for mounting the rail; when said rail is in the form of a bar, said mounting part may be formed by a sleeve through which this bar is engaged, this sleeve being fitted with a radial adjusting screw to create the immobilization of the sleeve relative to the bar.

The invention will be easily understood and further features and advantages thereof will become apparent by referring to the accompanying schematic drawings, showing by way of non-limiting

example two possible embodiments of the device to which it relates.

Figure 1 is a general view thereof, from the side, according to a first embodiment, when it is installed on two leaves of a window, the right-hand leaf being in the closed position whilst the left-hand leaf is shown in the closed position in dotted lines and in the open position in solid lines;

Figure 2 is an exploded perspective view of one of the two sub-assemblies which this device comprises;

Figure 3 is a view of this sub-assembly similar to Figure 2, after mounting;

Figure 4 is a view of the device from above, the two leaves of the window being closed;

Figure 5 is a view similar to Figure 4, the two leaves of the window being open;

Figure 6 is a similar view to Figure 4, one of the two leaves of the window being open whilst the other is closed;

Figure 7 is an exploded perspective view of one of the sub-assemblies of the device according to a second embodiment;

Figure 8 is a detailed view, in enlarged scale, and

Figure 9 is a general view of the device after mounting on the leaves of a window.

In the following description, the parts or elements which are found from one embodiment to the other will be denoted by the same reference numerals and will not be described further.

Figure 1 shows a device for hanging one or two curtains in front of a window, comprising two sub-assemblies 1 for mounting a rail 2 for supporting the curtain(s) (not shown) on the leaves 3 of the window.

One of the two sub-assemblies 1 is visible in enlarged scale on Figures 2 and 3. The two sub-assemblies 1 have identical structures, except that they are symmetrical relative to the vertical median plane of the window.

As appears on these Figures 2 and 3, each sub-assembly 1 comprises, in the example shown, a plate 5 for mounting on the leaf 3, an offset arm 6 and a sleeve 7 receiving the rail 2.

The plate 5 comprises a planar and rectangular central part, and two flanges folded at right angles relative to this central part projecting from two opposing longitudinal edges of this central part. As is understood by comparing Figures 2 and 3, the plate 5 may be engaged to overlap, in a close-fitting manner, the projecting edge 3a of the leaf 3 which defines the rebate 10 which this leaf 3 comprises.

One of the folded flanges of the plate 5 comprises a tapped bore 11 receiving an adjusting screw 12, in the form of a threaded metal cylinder. This adjusting screw 12 is capable of bearing against the leaf 3 without penetrating the material thereof, allowing an immobilization of the plate 5 to be carried out relative to the leaf 3 without it being necessary to drill into the leaf 3.

Said central part of the plate 5 comprises, moreover, two parallel pins 13, 14 fixed thereto, projecting from the side opposing the direction according to which said folded flanges themselves project from this central part.

The pin 13, after mounting, being located closest to the pivot axis of the leaf 3 forms an abutment member, and the pin 14 forms a pivot on which the offset arm 6 may be pivotably mounted.

Said offset arm has the shape of a double bend, defining a slightly inclined central part and two end portions in opposing directions with axes parallel to one another. This shape allows the offset arm 6, as visible in Figures 1 and 4 to 6, when this arm is mounted on a plate 5, itself mounted on a leaf 3, to offset the rail 2 relative to the wall in which the window is built.

The lower end portion of the arm 6 comprises a bore allowing the pivotable mounting of the arm 6 on the pin 14 and a projection 15 projecting radially relative thereto, this projection 15 being integral with the arm 6. As Figures 3 and 4 show, the pin 13 and the projection 15 are arranged so as to abut against one another in the closed position of the leaf 3, thus immobilizing the pivoting of the arm 6 relative to the plate 5 in a pivoting direction.

In its upper end portion, the arm 6 comprises a threaded bore 19 in which, before engaging the rail 2 in the sleeve 7, a threaded pin 20 fixed radially on the sleeve 7 may be screwed to a greater or lesser extent. This more or less pronounced screwing allows the height of the sleeve 7 to be adjusted relative to the arm 6 and, as a result, the height of the rail 2 relative to the rail 3.

The sleeve 7 also comprises an axial tapped bore 21 in which an adjusting screw 22 may be engaged, allowing the longitudinal immobilization of the rail 2 relative to the sleeve 7.

After the engagement of the rail 2 in the sleeve 7, the pivoting of the pin 20 in the bore 19 of the arm 6 remains possible, such that the arm 6 is also pivotably mounted relative to the sleeve 7.

As Figures 1 and 4 show, when the leaves 3 are closed, the pins 13 of the two plates 5 are in abutment against the projections 15 of the arms 6, such that the pivoting of the two arms 6 relative to the plates 5 is blocked. This blocking makes it possible to ensure the positioning of the rail 2 parallel to the wall and also allows a longitudinal immobilization of the rail 2 relative to this wall, for a movement of the curtain(s) along this rail 2 without displacing said rail.

Figure 5 shows that, taking account of the mounting of the plates 5 in the vicinity of the pivot axes of the leaves 3 and on the upper edge thereof, it is possible to open the leaves 3 over a very large width, reaching 180 degrees, or even more, without substantial displacement of the rail 2 relative to the wall.

In the event of opening a single leaf 3, as is shown in Figure 6, the pin 13 and the projection 15 of the sub-assembly 1 of the leaf 3 remaining closed allow the displacement of the rail 2 to be blocked in a longitudinal direction thereof and thus the centering of this rail 2 to be substantially maintained relative to the window.

Thus, with the device according to the invention, the rail 2 for supporting the curtain(s) is mounted directly on the leaves 3 of the window, and not on the wall, and the sub-assemblies 1 for

supporting the rail 2 do not provide an obstacle to opening one leaf 3 or the two leaves 3 over a large width, and this whilst maintaining the rail 2 in a substantially parallel position relative to the wall and in a substantially centered position relative to the window.

Figures 7 to 9 show a device in which the rail 2 is maintained substantially parallel to the wall whatever the positions of the leaves 3. To this end, each plate 5 is in two parts 5a, 5b, the lower part 5a allowing the mounting on the leaf 3 and the upper part 5b comprising the pivot 14 and the abutment 13. The part 5b may be adjusted in position relative to the part 5a such that the pivot axis of the offset arm 6 is merged with the pivot axis of the leaf 3 on which the plate 5 is mounted, as Figure 9 shows. This adjustment in position is, in the example shown, carried out by means of an aperture 25 made in the part 5b and a screw 26 engaged in this aperture 25, and then in a tapped bore made in the part 5a. After sufficient positioning of the parts 5a, 5b the screw 26 is tightened. A groove and a rib (not shown) parallel to the aperture 25 may be made in the parts 5a and 5b to wedge the part 5b longitudinally relative to the part 5a.

The pin 20 of each sleeve 7 and the upper end of each offset arm 6 each comprise a hole 27, 28 for receiving a cotter pin 29, the hole 27 of this pin 20 and/or the hole 28 of this arm 6 being made so that the pivoting of the arm 6 relative to the rail 2 is limited to a path in the order of 5° on both sides of a nominal position (cf. Figure 8).

By means of these arrangements, the rail 2 remains perfectly parallel to the wall whatever the positions of the leaves 3, as Figure 9 shows.

The invention provides, therefore, a device having the decided advantage of being able to be positioned according to the fixing

operations which are relatively simple and rapid to implement, without making it necessary to create holes in the wall; when the device comprises plates 5 and adjusting screws 12 such as described above, the mounting of this device does not require drilling holes into the leaves 3.

It goes without saying that the invention is not limited to the embodiment disclosed above by way of example but extends to all embodiments covered by the accompanying claims.

Patent claims

1. Device for hanging a curtain in front of a window, characterized in that it comprises two sub-assemblies (1) for mounting the rail (2) for supporting the curtain on the leaves (3) of the window, each sub-assembly (1) comprising a plate (5) and an offset arm (6); the plate (5) is formed so as to be able to be fixed to the upper edge of a leaf (3), in the vicinity of the pivot axis thereof, and comprises mounting means (14) for the pivotable mounting of the offset arm (6) thereon, along an axis extending, after mounting on the leaf (3), parallel to the pivot axis of the leaf (3); the offset arm (6) is formed to offset the rail (2) relative to the wall; it is pivotably mounted on the plate (5) by means of said mounting means and is pivotably connected to the rail (2) at a point thereof which is longitudinally fixed, also along an axis parallel to the pivot axis of the leaf (3).

2. Device according to Claim 1, characterized in that at least one plate (5) comprises an abutment member (13) and in that the corresponding offset arm (6) also comprises an abutment member (15), these two abutment members (13, 15) being arranged so as to come into abutment against one another in the closed position of the leaf (3).

3. Device according to Claim 2, characterized in that the plates (5) and the offset arms (6) of the two sub-assemblies (1) each comprise abutment members (13, 15) as mentioned above.

4. Device according to one of Claims 1 to 3, characterized in that the means for the pivotable mounting of an offset arm (6) on the corresponding plate (5) are formed by a pin (14) integral with the plate (5) and by a bore made in each offset

arm (6), this bore allowing the pivotable engagement of the offset arm on the pin (14).

5. Device according to one of Claims 2 to 4, characterized in that the abutment member of each plate (5) is formed by a pin (13) integral with each plate (5) and in that the abutment member of the corresponding offset arm (6) is formed by a projection (15) projecting radially from this offset arm (6), this projection (15) preferably being integral with this offset arm (6).

6. Device according to one of Claims 1 to 5, characterized in that each plate (5) comprises means for adjusting the position of the pivotable mounting means of the offset arm (6), these adjusting means being able to be adjusted such that the pivot axis of the offset arm (6) is merged with the pivot axis of the leaf (3) on which the plate (5) is mounted.

7. Device according to Claim 6, characterized in that means are provided for limiting the pivoting of each offset arm (6) relative to the rail (2).

8. Device according to one of Claims 1 to 7, characterized in that when a leaf (3) comprises an upper rebate (10), the plate (5) intended to be fixed to this leaf (3) is formed and dimensioned to be able to be engaged to overlap, in a close-fitting manner, the projecting edge (3a) of the leaf (3) which defines the rebate (10).

9. Device according to Claim 8, characterized in that each plate (5) comprises a tapped bore (11) being able to receive an adjusting screw (12) capable of bearing against the leaf (3) without penetrating the material thereof.

10. Device according to one of Claims 1 to 7, characterized in that each sub-assembly (1) comprises means (19, 20) for adjusting the height of the rail (2) relative to the leaf (3).

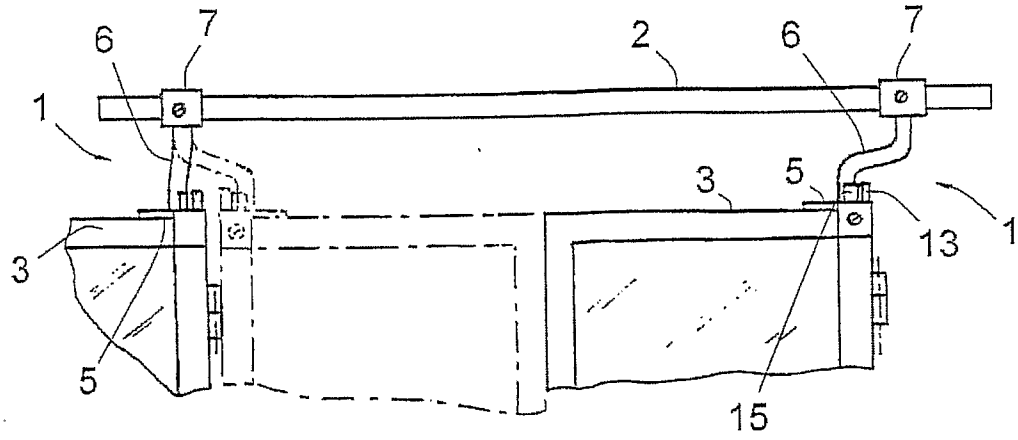


FIG. 1

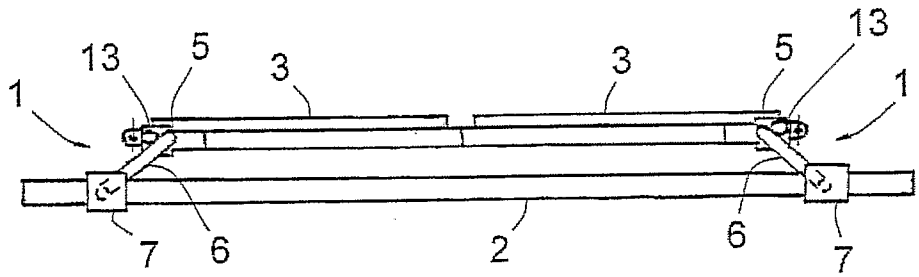


FIG. 4

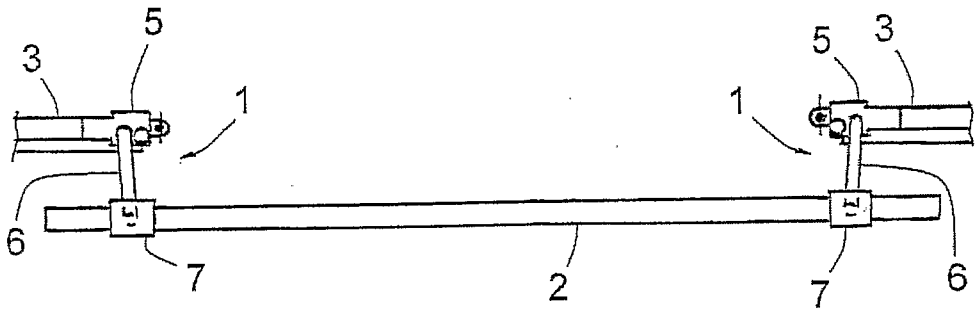


FIG. 5

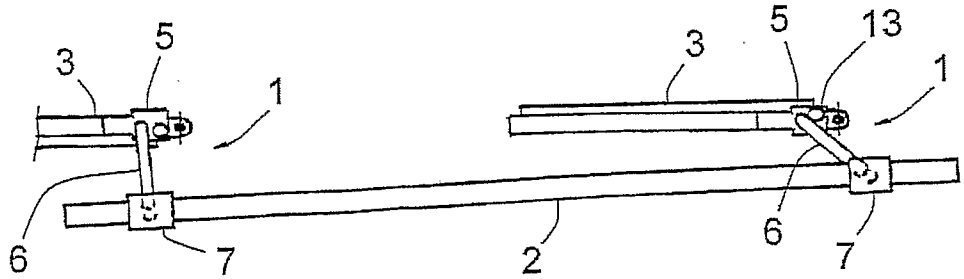


FIG. 6

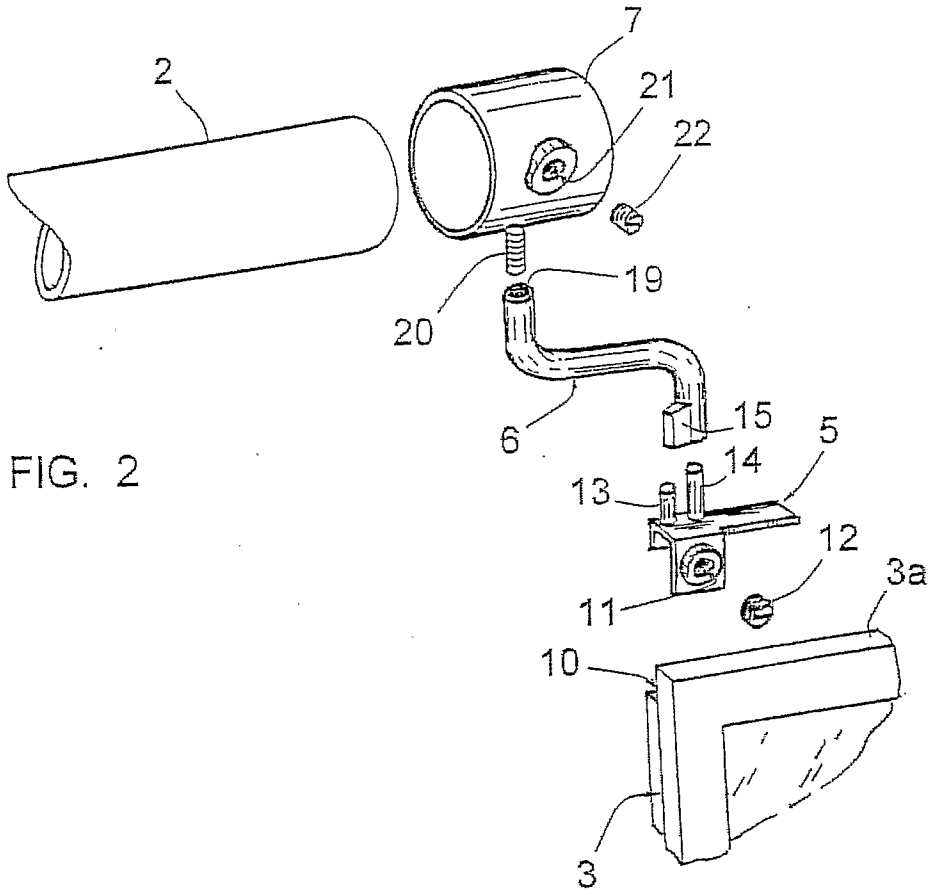


FIG. 2

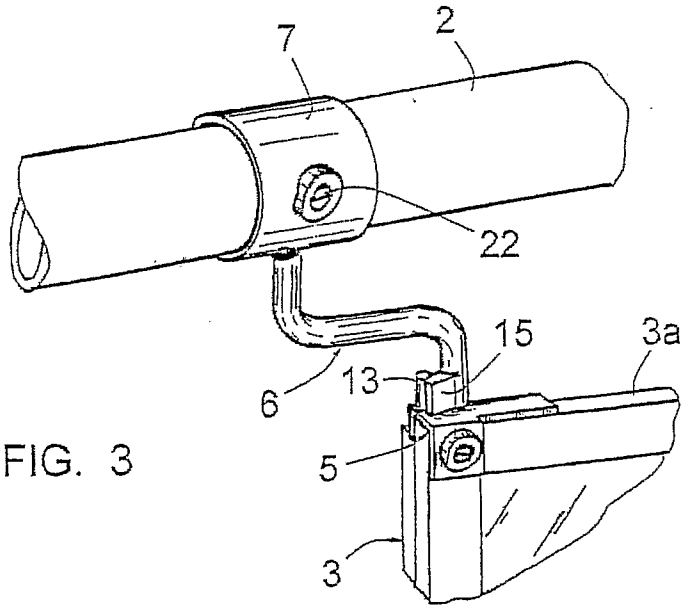


FIG. 3

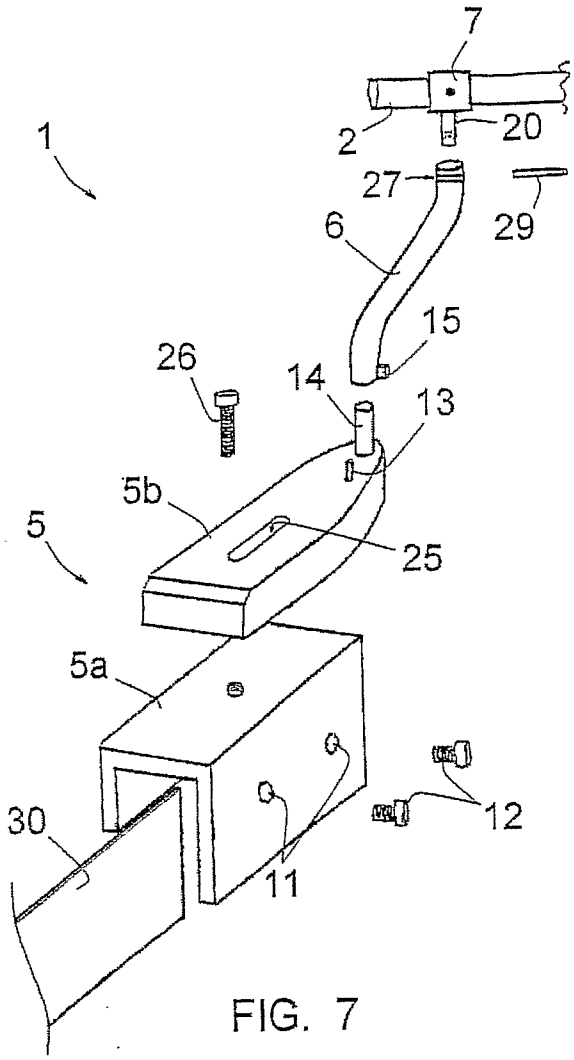


FIG. 7

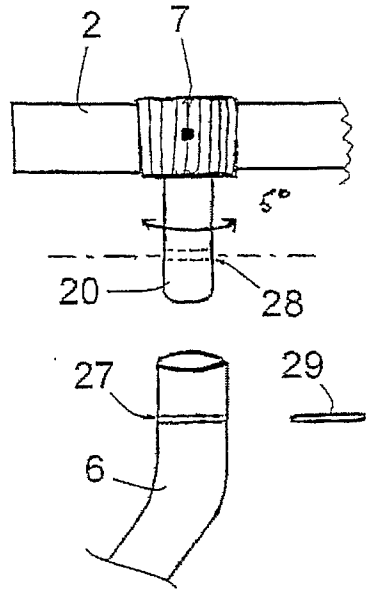


FIG. 8

FIG. 9