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(54) **Shower screen**

Duschabtrennung

Ecran de douche

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(56) References cited:
EP-A- 0 553 466 **FR-A- 2 683 441**
FR-A- 2 718 630 **FR-A- 2 804 857**

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Description

[0001] The present invention relates to a screen for a shower above a shower tray or bath.

[0002] Shower screens are well known to prevent egress of water from a shower area, whether above a shower tray or above a bath. Designs range from simple curtain arrangements to solid, usually glass, panels which sit upon the upper surface of the tray or bath with a compressible seal therebetween. Simple designs merely pivot away from the shower area about a wall-mounted axis. More complicated designs enable the panel to be lifted prior to pivoting so that the panel may be stowed out of the user's way, such as above the taps of the bath. The present invention seeks to provide an alternative arrangement for lifting a shower screen.

[0003] FR 2 683 441-A describes a shower guard for a wash unit which comprises a shower head mounted on a wall against which the wash unit is positioned, characterised in that it comprises a first component attached to the wall so as to rest on the top edge of the wash unit, relative to which it cannot move, the first component being provided with a hinge mechanism for at least one second component resting in a first position on the top edge of the wash unit and extending in a second position, transversely with respect to said top edge, at a distance from the wall past the plumbing.

[0004] FR 2 718 630-A discloses wall for a bath, including at least one liftable panel pivotably mounted on a frame, and a spring for assisting lifting of the panel. The wall is provided with portions for deflecting the force of the spring from its point of engagement with the panel to an abutment on the frame when the wall is lowered onto the rim of the shower tray.

[0005] EP 0 553 466-A describes a shower panel comprising at least one pivoting leaf which is mounted pivotably relative to a profiled rail, and a compensating device which is connected to the profiled rail, and which is arranged so as to be vertically displaceable relative to a guide profile.

[0006] In its broadest sense, the present invention provides a shower screen including a panel and means to lift the panel out of contact with a surface, such as the edge of a shower tray or bath. The panel is mounted for vertical movement between upper and lower positions upon an element including a spindle having an annular collar towards the upper end thereof and wherein the spindle engages a pivot mount through a vertical spindle shroud. An actuating member is slidably mounted upon the spindle shroud and includes adjacent upper and lower internal communicating annular chambers, the upper chamber being of greater diameter than the lower chamber. The spindle shroud includes at least a pair of equally spaced apertures for receipt of respective engagement means. In the lower panel position, each engagement means engages the annular collar of the spindle, a respective aperture of the spindle shroud and the lower annular chamber of the actuating member. In the upper

panel position, the engagement means is disengaged from the annular collar of the spindle. The panel is biased into the upper position by means of a biasing means and the engagement means are retained in the lower panel configuration by means of a spring member

[0007] Typically, each engagement means comprises a ball bearing or race of ball bearings.

[0008] Typically, the biasing means is a spring or a gas strut.

[0009] The above and other aspects of the present invention will now be described in further detail, by way of example only, with reference to the accompanying drawings in which:

- 15 Figure 1 is a perspective view of a shower screen around and in contact with a shower tray;
- Figure 2 is a perspective view of the shower screen of Figure 1 in an elevated configuration;
- Figure 3 is a partial cross-section of an embodiment of a shower screen lifting apparatus in accordance with the present invention in a lowered configuration, and Figure 3A is an enlarged partial detail thereof;
- 20 Figure 4 is a partial cross-section of the apparatus of Figure 3 in an elevated configuration, and Figure 4A is an enlarged partial detail thereof;
- 25 Figure 5 shows in further detail in cross-section the bottom section of the apparatus of Figures 3 and 4; and
- 30 Figure 6 shows an enlarged partial cross-section of the head of a slight modification of the shower screen lifting apparatus of Figure 3.

[0010] Referring to Figures 1 and 2, there is shown a shower screen 10 comprising a main panel 11 alongside which is slidably mounted a sliding panel 12 to which is pivotally mounted a door panel 13. In the lowered position shown in Figure 1, the shower screen is held against the upper surface of the periphery of a shower tray compressing a seal (not shown) provided therebetween to prevent the egress of water from the shower area. In order to move the screen, sliding the sliding panel 12 and opening door panel 13, the screen is raised on a mount 14 secured to a wall 15 adjacent the shower area. Whether panels 12 and 13 slide or pivot will be dependent upon the installation in question and is irrelevant for the purposes of the present invention.

[0011] Mount 14 will now be described in further detail. The main panel 11 of the screen is mounted upon a tubular sleeve 20. Sleeve 20 fits at its lower end over a piston mount 21 secured to a lower pivot plate 22. At its upper end sleeve 20 slides within a shroud 23 secured to an upper pivot plate 24. Upper and lower pivot plates 22, 24 form a part of a wall mounting plate 25. The sleeve 20 moves between a lower position in which its lower end is adjacent the lower pivot plate 22 and an upper position in which its upper end is substantially adjacent the upper

pivot plate 24.

[0012] Upper and lower pivot plates are secured to the wall by means of a suitable bracket (not shown). Mounted axially within the top end of the sleeve 20 and projecting upwardly therefrom is a spindle 30. Spindle 30 slides within a spindle bush 31' and spindle shroud 31" mounted within the upper pivot plate 24 and shroud 23 with the spindle shroud 31" extending upwardly therefrom. As shown, spindle bush 31' and spindle shroud 31" are suitably formed as a unitary component. A collar 33 of reduced diameter is formed in the spindle 30 towards the upper end thereof.

[0013] An actuating member in the form of a release knob 32 is slidably mounted upon the spindle shroud 31" above the upper pivot plate 24. Release knob 32 comprises two spaced concentric cylindrical formations, an inner cylindrical formation 32A and an outer cylindrical formation 32B. Inner formation 32A has a lower circular edge 35 which does not extend down as far as the corresponding lower edge 36 of outer formation 32B. A spring shroud 40 comprising a cylinder projecting upwardly from the outer edge of a base having the form of a washer, is provided above the upper pivot plate 24 with the spindle shroud 31" projecting through the aperture of the base. The cylindrical portion of the spring shroud is received within the space between the concentric formations 32A, 32B of the release knob 32. Release knob 32 is biased into an extended position wherein the knob is spaced from the upper pivot plate 24 by means of a spring 34. The spring 34 acts between the base of spring shroud 40 and the lower circular edge 35 of inner release knob formation 32A to bias the knob upwardly (as viewed in the Figures).

[0014] Inner cylindrical formation 32A of release knob 32 is provided with upper 41 and lower 42 communication annular chambers. Upper annular chamber 41 is of greater diameter than lower annular chamber 42. At least two equally spaced apertures 43 are provided in the cylindrical wall of spindle shroud 31" at a point which allows communication with both upper and lower annular chambers 41,42 as release knob 32 is depressed.

[0015] Spindle 30 is biased into an upper position within the head of the release knob 32 by means of a gas strut 50 mounted within tubular sleeve 20 acting against a plug 51 secured within the sleeve 20. Gas strut 50 is conventional and comprises a piston having a piston rod which piston acts against a chamber (not shown) containing a compressible gas. A compression spring is equally suitable. With the spindle 30 in the upper position, the shower screen panel 11 is in the raised position.

[0016] The panel 11 is lowered by pushing downwardly upon its upper edge. In the lowered position, the panel is held in place by means of ball bearings 53,54 associated with the annular chambers 41,42 of the release knob 32. With reference to Figure 3 it can be seen that in the lowered position, engagement means in the form of ball bearings 53,54 are located in the lower, smaller diameter annular chamber 42 of the inner cylindrical formation 32A

of release knob 32, penetrate apertures 43 of spindle shroud 31" and are received in annular recess in the form of collar 33 of spindle 30. Spring 34 acts to retain the ball bearings 53,54 in this engaged position.

[0017] Gentle depression of the release knob 32 against the force of spring 34 allows alignment of the apertures 43 of spindle shroud 31" with larger upper annular chamber 41. The biasing effect of gas strut 50 causes spindle 30 to push upwards, thus pushing ball bearings 53,54 out of engagement with spindle annular recess 33 and into upper annular chamber 41. As will be seen from Figure 4 which illustrates this position, the diameters of the upper annular chambers 41 and the ball bearings 53,54 are chosen such that in this position, the ball bearings remain within the apertures 43 of the spindle shroud 31".

[0018] Thus, the shower panel 11 can be raised by a slight depression on release knob 32 and lowered by downward pressure on the panel itself. It will be appreciated that the biasing force of the gas strut 50 need exceed that of the spring 34. It will also be appreciated that the cylindrical nature of sleeve 20 to which the panel is mounted, piston mount 21 and shroud 23 means that the panel 11 can be swung away from the bath or shower area by pivoting about the axis of the mount 14. In contrast to many prior art assemblies, the lifting and pivoting of the shower screen is, in the present invention, achieved about the same axis. Thus the present invention provides a more compact assembly than has hitherto been available.

[0019] The height by which the shower screen is lifted depends upon a number of factors, primarily the balance between the downwardly acting weight of the screen and the upward force provided by the gas strut 50. The mechanism of the present invention is primarily intended to raise the panel by 3-5cm, sufficient to release contact between the shower tray and the seal along the bottom edge of the panel.

Claims

1. A shower screen (10) comprising a panel (11) and including means to lift the panel (11) out of contact with a surface said means comprising a pivot mount (14), the panel (11) being mounted for vertical movement between upper and lower positions upon a tubular sleeve (20), said tubular sleeve (20) including a spindle (30) having an annular collar (33) towards the upper end of the spindle (30) and wherein the spindle (30) engages the pivot mount (14) through a vertical spindle shroud (31"); wherein an actuating member (32) is slidably mounted upon the spindle shroud (31") and includes adjacent upper and lower internal communicating annular chambers (41,42), the upper chamber (41) being of greater diameter than the lower chamber (42) and wherein the spindle shroud (31") includes at least a

pair of equally spaced apertures (43) for receipt of respective engagement means (53, 54); wherein in the lower panel position, each engagement means (53, 54) engages the annular collar (33) of the spindle (30), a respective aperture (43) of the spindle shroud (31") and the lower annular chamber (42) of the actuating member (32) and in the upper panel position, the engagement means (53, 54) is disengaged from the annular collar (33) of the spindle (30); and wherein the panel (11) is biased into the upper position by means of a biasing means (50) and the engagement means (53, 54) are retained in the lower panel configuration by means of a spring (34).

2. A shower screen as claimed in Claim 1 wherein each engagement means comprises a ball bearing or a race of ball bearings.
3. A shower screen as claimed in Claim 1 or Claim 2 wherein the biasing means is a spring.
4. A shower screen as claimed in Claim 1 or Claim 2 wherein the biasing means is a gas strut.

Patentansprüche

1. Duschabtrennung (10) mit einem Wandteil (11) und einer Einrichtung zum Heben des Wandteils (11) außer Kontakt mit einer Fläche, wobei die Einrichtung ein Schwenkbefestigungsteil (14) aufweist, und der Wandteil (11) zum vertikalen Bewegen zwischen oberen und unteren Positionen auf einer rohrförmigen Hülse (20) montiert ist, welche eine Spindel (30) mit einem ringförmigen, in Richtung des oberen Endes der Spindel (30) verlaufenden Kragen (33) aufweist, wobei die Spindel (30) durch eine vertikale Spindelummantelung (31") verlaufend an dem Schwenkbefestigungsteil (14) angreift; wobei ein Aktuatorelement (32) gleitbar an der Spindelummantelung (31") angebracht ist und einander benachbarte obere und untere interne, miteinander in Verbindung stehende ringförmige Kammern (41,42) aufweist, wobei die obere Kammer (41) einen größeren Durchmesser hat als die untere Kammer (42), und die Spindelummantelung (31") mindestens ein Paar gleichmäßig voneinander beabstandete Öffnungen (43) zum Aufnehmen jeweils einer Angreifeinrichtung (53,54) aufweist; wobei in der unteren Wandteil-Position jede Angreifeinrichtung (53,54) in den ringförmigen Kragen (33) der Spindel (30), eine jeweilige Öffnung (43) der Spindelummantelung (31") und die untere ringförmige Kammer (42) des Aktuatorelements (32) eingreift, und in der oberen Wandteil-Position die Angreifeinrichtung (53,54) von dem ringförmigen Kragen (33) der Spindel (30) gelöst ist; und

wobei der Wandteil (11) von einer Vorspanneinrichtung (50) in die obere Position vorgespannt ist, und die Angreifeinrichtungen (53,54) von einer Feder (34) in der unteren Wandteil-Konfiguration gehalten sind.

2. Duschabtrennung nach Anspruch 1, bei der jede Angreifeinrichtung ein Kugellager oder einen Kugellaugerlaufring aufweist.
3. Duschabtrennung nach Anspruch 1 oder 2, bei der die Vorspanneinrichtung eine Feder ist.
4. Duschabtrennung nach Anspruch 1 oder 2, bei der die Vorspanneinrichtung eine Gasdruckfeder ist.

Revendications

1. Ecran de douche (10) comprenant un panneau (11) et incluant des moyens pour lever le panneau (11) hors de contact avec une surface, lesdits moyens comprenant un montant de pivotement (14), le panneau (11) étant disposé en vue d'un déplacement vertical entre des positions supérieure et inférieure sur un manchon tubulaire (20), ledit manchon tubulaire (20) comportant une broche (30) ayant une embase annulaire (33) sur l'extrémité supérieure de ladite broche (30) et dans lequel la broche (30) s'engage dans le montant de pivotement (14) à travers une gaine de protection de broche verticale (31"); dans lequel un élément d'actionnement (32) est monté à coulissement sur la gaine de protection de broche (31") et comprend des chambres adjacentes annulaires internes, supérieure et inférieure, communicantes (41, 42), la chambre supérieure (41) étant d'un diamètre plus grand que la chambre inférieure (42) et dans lequel la gaine de protection de broche (31") comporte une paire d'ouvertures équidistantes (43) destinées à recevoir des moyens d'engagement respectifs (53, 54) ; dans lequel, dans la position inférieure de panneau, chaque moyen d'engagement (53, 54) s'engage dans l'embase annulaire (33) de la broche (30), avec une ouverture respective (43) de la gaine de protection de broche (31") et avec la chambre annulaire inférieure (42) de l'élément d'actionnement (32) et dans la position supérieure de panneau, le moyen d'engagement (53, 54) est désengagé de l'embase annulaire (33) de la broche (30) ; et dans lequel le panneau (11) est rappelé élastiquement dans la position supérieure par des moyens de rappel (50) et les moyens d'engagement (53, 54) sont retenus dans la configuration inférieure de panneau au moyen d'un ressort (34).
2. Ecran de douche selon la revendication 1 dans lequel chaque moyen d'engagement comprend un pa-

lier à billes ou un chemin de roulement à billes.

3. Ecran de douche selon la revendication 1 ou la revendication 2 dans lequel le moyen de rappel est un ressort.

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4. Ecran de douche selon la revendication 1 ou la revendication 2 dans lequel le moyen de rappel est une pièce comprimée par un gaz.

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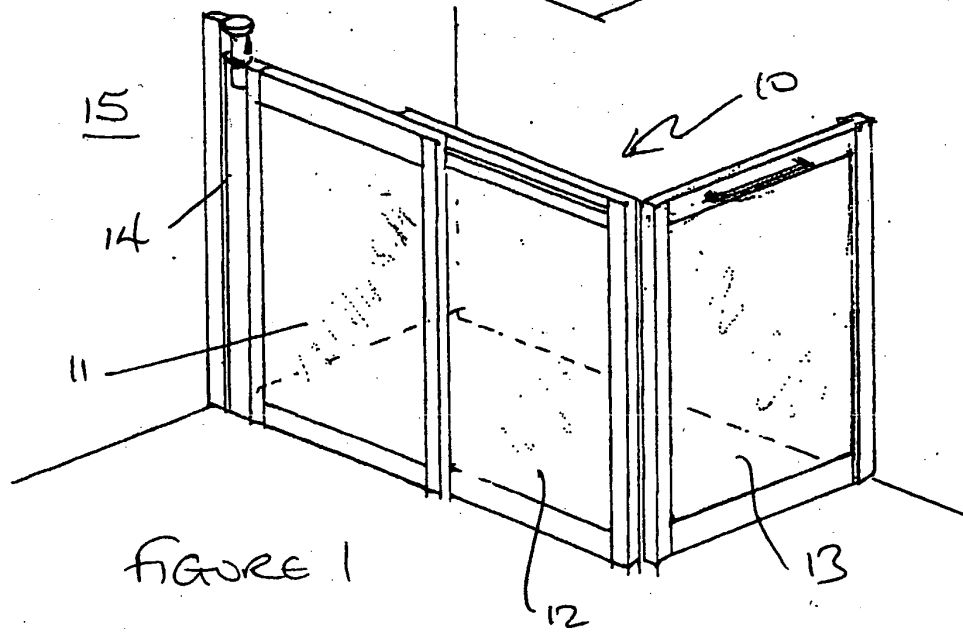
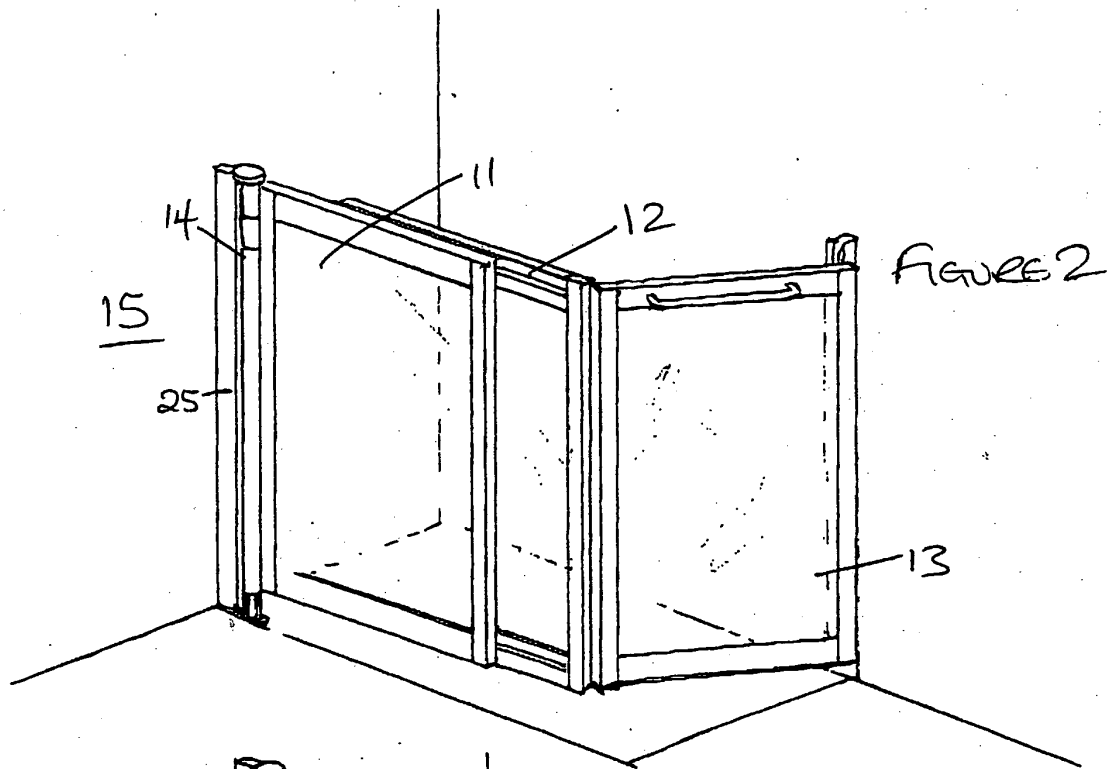
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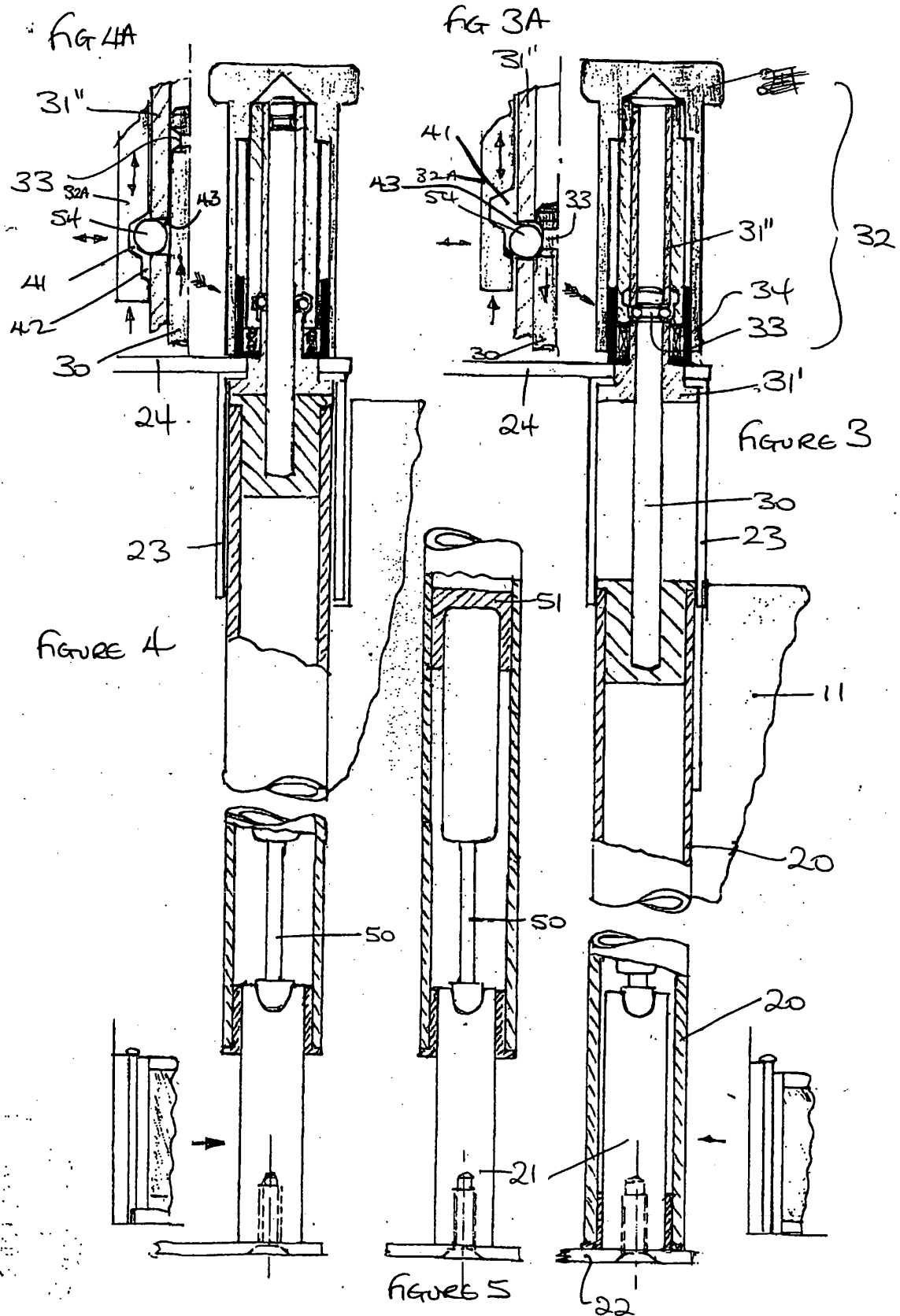
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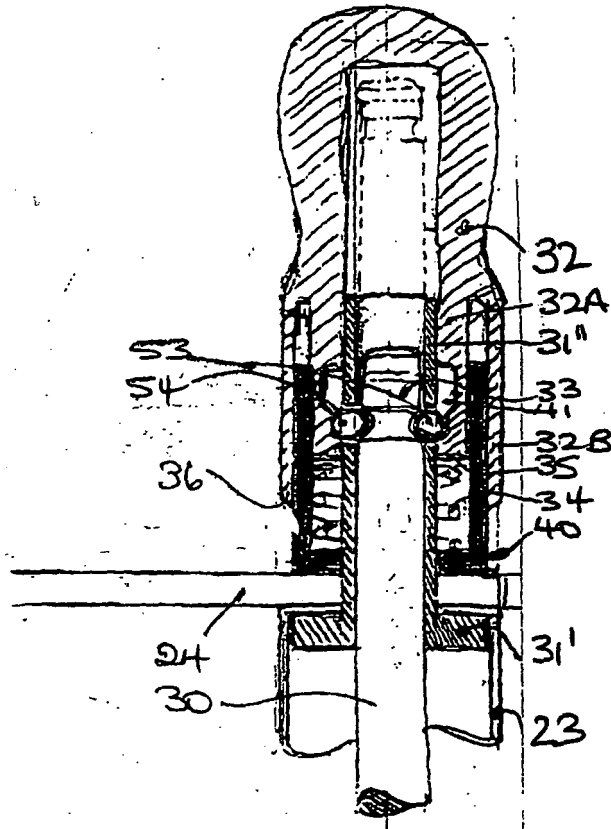


FIGURE 6.