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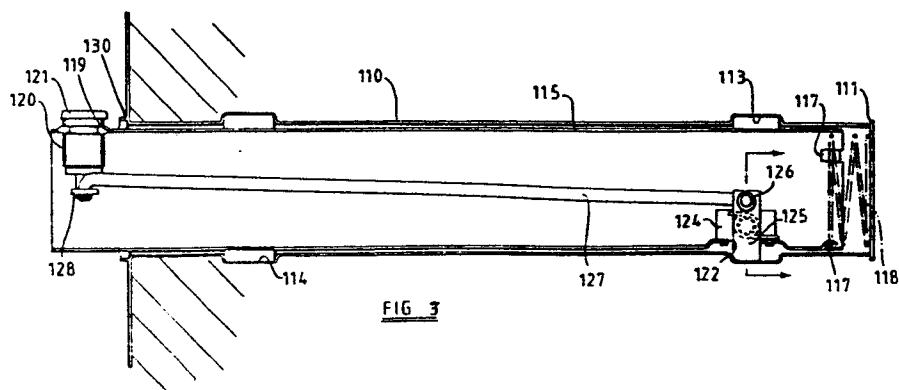
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54 **Parking post.**

57 A parking post 115 comprising a container 110 having an opening 111 in a second position when a portion of the post 115 projects upwardly from the opening in the container 110, the container 110 being moveable between a first position when substantially the whole of the post 115 resides within the container 110 and a second position when the opening 111 is approximately level with the surface of the ground.



PARKING POST

The present invention relates to parking posts, i.e posts which are sited at the entrances of parking areas and which may be moved to prevent access to the parking area by unauthorised persons.

Conventional arrangements comprise a post which lies horizontally along the ground and is attached to a hinge which is firmly secured to the ground. The post can be raised to a vertical position and locked there to prevent access to the parking area.

The type of post described above suffers from the disadvantage that in order for it to be effective, it must be high enough when raised to stop vehicles with high ground clearance from passing over, and also be strong enough to withstand the impact of a vehicle. Consequently, even when lying along the ground, these posts provide an obstruction and can cause damage to the tyres of vehicles and make manouevering of the vehicles difficult.

Other types of post which have been recessed below the ground also suffer from the problem that the recessions fill with mud or water which freezes in winter making operation impossible

It is an object of the present invention to overcome these problems and provide a parking post which provides little obstruction when not in use but which can be raised to an effective height when required.

It is a further object of the present invention to provide a post which can be recessed below ground level without encountering any of the problems outlined above.

5 According to the present invention, a parking post comprising a container having an opening therein and a post located in said opening and moveable between a lowered position where substantially the whole of the post resides within the container and a raised position where a portion of the post projects upwardly from the opening in the container, the container being located
10 in use in the ground such that the opening is approximately level with the surface of the ground, means being provided to secure the post in the raised position.

15 Preferably, the post is secured in the raised position by means of a projection attached to the post which engages with corresponding formation in the wall of the container.

The post can comprise a telescopic member which is
20 extended when the post is in the raised position and is contracted when the post is in the position.

Preferably, the post is provided with operable locking means for preventing movement of the post between the raised and lowered positions, typically by means of a
25 locking mechanism provided in the post and engageable with formations in the casing.

In a preferred embodiment, said locking mechanism and projection together comprise a lockable pivoted lever mounted on the post and engaging formations in the
30 casing.

In an alternative embodiment, said locking mechanism comprises at least one spring biased lockable member which can be locked while projecting from the post, and which, when locked, is free to move over the formations
5 against outward biasing of the spring.

Conveniently, resilient means are provided to urge the post upwardly with respect to the container. Suitable resilient means comprise a compression spring housed within the container beneath the lower end of the post
10 and typically, the spring is held in the compressed state when the post is locked in the first position.

Embodiments of the present invention will now be described by way of example with reference to the accompanying drawings in which:-

15 Figure 1 is an isometric view of a parking post according to one embodiment of the present invention, and

Figure 2 is a detailed, part cut away view of the container and lower part of the post shown in Figure 1.

20 Figure 3 is a section of a side view of an alternative embodiment of the present invention.

Figure 4 is a view on line A-A of Figure 3;

Figure 5 is a perspective view of the top of a post as shown in Figure 3 wherein in the lowered position,

25 Figure 6 an alternative casing to that shown in Figure 3.

Figure 7 is a diagrammatic view of a post including an alternative locking mechanism with parts omitted for clarity,

5 Figure 8 shows a pair of locking members for use in the mechanism shown in Figure 7, and

Figure 9 shows parts of the mechanism shown in Figure 7 and 8 in locked and unlocked positions.

10 The post shown in Figures 1 and 2 comprises a container in the form of an elongate box 10 which is normally concreted into a hole in the ground in a vertical position with its upper end 11 approximately level with the surface of the ground. One side 15 of the box 10 has the upper edge 16 thereof cut back to form a cut out 17 which extends approximately half way across the edge 16 and terminates at the centre thereof in a short, axially extending slot 18.

A lid 12, in the form of a flat plate having upturned edges is fixed over the upper end 11 of the box 10.

20 The lid 12 is provided with a circular hole 19 in the centre thereof and also has an arcuate cut out 20 adjoining the hole 19. One edge 21 of the cut out 20 is aligned with the slot 18 and the cut out 20 is positioned in the portion of the lid 12 adjacent the cut out 17. A lock 22 is located in the lid 12 adjacent the edge 16 which is not cut back.

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A post projects through the hole 19 and in the present case, the post comprises a telescopic arrangement comprising a lower part 23 and an upper part 24. The lower part comprises a circular tube which projects
5 through the hole 19 and is movable in an axial direction with respect to the box 10. An inverted J shaped slot (not shown) is provided in the side of the lower part 23 and extends axially for the whole length of the part 23 but terminates short of the ends
10 thereof. An arm 25 overlies the straight part of the inverted J shaped slot and is pivotally attached at one end to the part 23 by means of a spindle 26 which engages two support arms (only one shown) located either side of the inverted J shaped slot near the
15 lower end of the part 23. The arm 25 terminates at the curved portion of the inverted J shaped slot.

A U shaped stirrup 28 is located over the arm 25 and is attached to the part 23 on either side of the inverted J shaped slot at a location which is approximately one
20 third of the way down the part 23.

An outwardly projecting peg 29 is provided on the arm 25 intermediate the hinge and the stirrup 28 and a transverse slot 30 is provided in the part 23 approximately level with the peg 29.

25 The upper part 24 comprises a circular tube of narrower diameter than the lower part 23, and which is located coaxially within the lower part 23 and is axially slidable relative thereto.

A circular cap 31 is fixed to the upper end of the upper part 24, the diameter of the cap being greater than the outside diameter of the lower part 23. An outwardly extending peg 32 is provided near the lower end of the upper part 24 and in use, this peg projects into the inverted J shaped slot in the lower part 23.

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The above described post can be moved between a lowered position and a raised position. In the lowered position, the upper part 24 resides within the lower part 23 with the peg 32 at the bottom of the inverted J shaped slot therein. The cap 31 projects beyond the outer extent of the lower part 23. The lower part 23 resides mainly within the box 10, the base of the lower part 23 resting on the bottom of the box 10 and a short length projecting above the lid 12. The lower part 23 is positioned so that the arm 25 and peg 29 are directed towards the corner of the box 10 formed by the side 15 and the side adjacent the cut out 17. In this position, the cap 31 is substantially flush with the surface of the ground.

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In order to move the post to its raised position the cap 31 is grasped and lifted vertically upwards. This action raises the upper part 24 relative to the lower part 23 until the peg 32 reaches the highest point of the inverted J shaped slot therein. When this position is reached, the continued lifting of the upper part 24 causes the lower part 23 to be raised relative to the box 10. As the lower part 23 is raised, the arm 25 and stirrup 28 pass through the cut out 20. The whole telescopic assembly is lifted until the peg 29 is above the cut out 17. At this point, the assembly is rotated

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(in a clockwise direction) causing the peg 29 to be moved over the cut out 17 into the slot 18 at which time further rotation of the lower part 23 is prevented. The upper part 24 is rotated a little further until the peg 32 in the upper part 23 reaches the end of the inverted J shaped slot. The whole assembly is then lowered until the peg 29 engages the end of the slot 18. At this point, the lock may be operated to insert a lockable member into the transverse slot 30. In this position, the weight of the assembly is taken by the peg 29 which causes the arm 25 to be urged against the inverted J shaped slot and so prevent movement of the peg 32 in the inverted J shaped slot and hence prevent rotation of the upper part 24.

To return the post to its lowered position, the lock is released and the assembly is lifted to disengage the peg 29 from the slot 18. The assembly is then rotated

in an anti-clockwise direction until the peg 29 clears the cut out 17 and the lower part 23 can be lowered. When the lower part 23 is resting on the bottom of the box 10, the upper part 24 can be rotated in an anti-clockwise direction relative to the lower part 23 as the arm 25 is now free to move away from the inverted J shaped slot and so allow the peg 32 to enter the straight portion of the inverted J shaped slot. Hence the upper part may be lowered.

The provision of the stirrup 28 both prevents the arm from falling away from the lower part 23 into the

corner of the box previously described and so preventing the lower member from being raised by fouling the lid; and acts as further security means as it makes it difficult to lever the arm 25 away from the inverted J shaped slot when the assembly is locked in the raised position.

The telescopic arrangement has the advantage that it is possible to have a post of useful height without the requirement of having an equally deep hole.

It will be appreciated that in an alternative embodiment, an inwardly projecting peg could be provided in the box which engages a J shaped slot in the lower part 23 and likewise the peg and slot arrangement in the upper and lower parts could be similarly modified.

Referring now Figures 3 - 6, the alternative parking post shown therein comprises a container 110 in the

form of a cylindrical tube having a end plate 111 closing a lower end thereof and a top plate 112 forming a flange around the upper end of the container while leaving the end of the tube open. An annular groove 113 is provided near the lower end of the container, said groove 113 being formed by outward deformation of the wall of the container. A further groove 114 is similarly formed near the upper end of the container 110.

A post 115 is slidably located within the container 110. The post 115 comprises a cylindrical tube of

smaller diameter and the container 110 and is provided with a cap 116 (not shown in Figure 3) closing the upper end thereof and the lower end thereof being open with three inwardly and downwardly projecting tongues 117 (only two shown) being provided around said open end.

A compression spring 118 is provided within the container 110, one end of the spring 118 bearing against the end plate 111 and the other end engaging the tongues 117 on the post 115.

A first aperture 119 is provided in the post 115 adjacent its upper end a short length of circular sleeve 120 projecting inwardly in therefrom and housing a lock 121. A second aperture 122 is provided on the diametrically opposite side of the post 115 to the first aperture 119 but near the open lower end of the post 115.

The wall of the post 115 around the second aperture 122 is deformed inwards to form a flattened portion 123, the second aperture 122 lying in the centre of the said flattened portion. A mounting plate 124 is attached to the inner wall of the post 115 adjacent to the second aperture 122 and a lever 125 is pivotally attached at the centre thereof to the plate 124. The lever 125 is connected pivotally at its inner end 126 to an elongated arm 127 which extends axially through the post 115. The upper end of the link 127 is attached to the lock 121 via a radially extending cam 128, the arm 127 being pivotally attached to the cam 128 and the cam being attached to the lock in such a way that operation

of the lock causes the cam 128 to move in an arc in the vertical plane. It will be appreciated that operation of the lock 121 will cause movement of the cam 128 which will be transmitted via the link arm 127 to the lever 125. A spring 129 is provided on the lever 125 to bias the lever towards a position when it extends radially outwardly from the aperture 122. A sealing ring 130 is provided around the upper end of the container, said ring 130 engaging the outer surface of the post 115.

In use, the container 110 is concreted into a hole in the ground such that the top plate 112 is level with the ground surface. In a first position of the post, the post 115 is completely enclosed by the container 110 apart from the portion containing the lock 121 which projects from the open end thereof above the ground. In this position, the spring 118 is compressed and so urges the post 115 upwards. However, the lever 125 engages in the groove 113 and prevents upward movement of the post 115. Thus the post 115 is locked in the first or "down" position. Operation of the lock causes the cam 128 to move upwards and so lift the inner end 126 of the lever 125 via the link arm 127. The outer end of the lever 125 moves arcuately downwardly and this disengages from the groove 113 and allows the post 115 to be moved upwardly. When the post is moved upwardly and the lock 121 released the spring 129 urges the lever towards its normal position. However, the lever contacts the inner wall of the container 110 and is prevented from assuming this position until the lever 125 reaches the further groove 114. The lever 125 can then return to its

normal position and further operation of the lock 121 will lock the post against further upward or downward movement. When this second or "up" position is reached, the post projects above the ground. The post 5 115 may be returned to the down position by operation of the lock and applying downward pressure to the post 115 to move it against the face of the spring 118 until the lever 125 engages the groove 113. The post may be completely removed by operating the lock when the post 10 is in the up position and drawing the post out of the container.

The provision of the seal 130 prevents the ingress of the dirt or water which may effect the operation of the post. An annular ramped resilient collar 131 may be 15 provided around the upper end of the container to protect the exposed portion of the post 115 when in the down position from damage and also to prevent the exposed part from tripping pedestrians. The collar is provided with cut-outs 132 to allow the post to be 20 gripped and raised and also to allow access to the lock 121.

An alternative form of the casing 210 is shown in Figure 6 comprising a simple tube having portions deformed inwardly to form annular ridges 213 and 214 as 25 opposed to the outward deformations 113 and 114 described previously. In this case, the cam 125 does not project from the casing 210 but is always enclosed within it.

An alternative locking mechanism is shown in Figures 7 30 to 9. In this embodiment, the single pivoting lever

125 is replaced by a pair of members 340, 341 which are movable radially with respect to the post 310 and are also movable relative to each other. The members 340, 341 project through holes 342, 343 provided in a pair of diametrically opposed flattened regions 344, 345. The members 340, 341 comprise a pair of mirror image steel pressings. These pressings comprise a generally flat elongate base 352 and have up-turned flanges 346, 347 provided at one end and along an adjacent part of one of the sides thereof. Holes 348, 349 are provided in the flanges and a pair of cut outs 350, 351 are provided in the base 352, one adjacent the side flange 347 and adjoining the hole 349 therein and a second in the opposite edge of the base from said first hole. In use, the free end of each member 340, 341 is passed through the hole 348 in the end flange 346 of the other member such that the two members 340, 341 may slide relative to each other. A spring 353 is placed over the free end of each member 340, 341 such that it engages the inner wall of the post 310 and the end flange 346 of the other member and so urges the same radially outwardly.

The arm 127 is replaced by a locking bar 360 having an up-turned end portion 361. In a lock position, the bar 360 passes through the hole in the flange of the first member 340 and the up turned end 361 is passed through the hole 349 and associated cut out 350 in the second member 341 and a free cut out 351 in the first member. Consequently, the relative movement of the member 340, 341 is prevented. In the unlocked position, the up turned end 361 of the bar 360 is lowered so that only the free end of this portion projects through the hole

349, no part of the bar being in the cut out 349, 350. The bar is free to pivot and the members 340, 341 can slide relative to each other. The free ends of the member 340, 341 are radiussed so that when they contact formations in the tube 310 (e.g., 213 or 214 in Figure 5 6) the members may move radially inwards against the effect of the spring 353. However, when the bar 360 is in a lock position this is not possible and the members 340, 341 cannot pass the formations, thus locking the post in a given position.

CLAIMS

1. A parking post comprising a container having an opening therein and a post located in said opening and moveable between a lowered position where substantially the whole of the post resides within the container and a raised position where a portion of the post projects upwardly from the opening in the container, the container being located in use in the ground such that the opening is approximately level with the surface of the ground, means being provided to secure the post in the raised portion.

2. A parking post as claimed in Claim 1, wherein the post is secured in said raised position by means of a projection attached to the post which engages with a corresponding formation in the container.

3. A parking post as claimed in Claim 2 wherein operable locking means are provided to prevent disengagement of the projection and formation.

4. A parking post as claimed in Claim 3, wherein the locking means is provided in the post.

5. A parking post as claimed in either of Claims 3 or 4 wherein the post can also be locked in the lowered position.

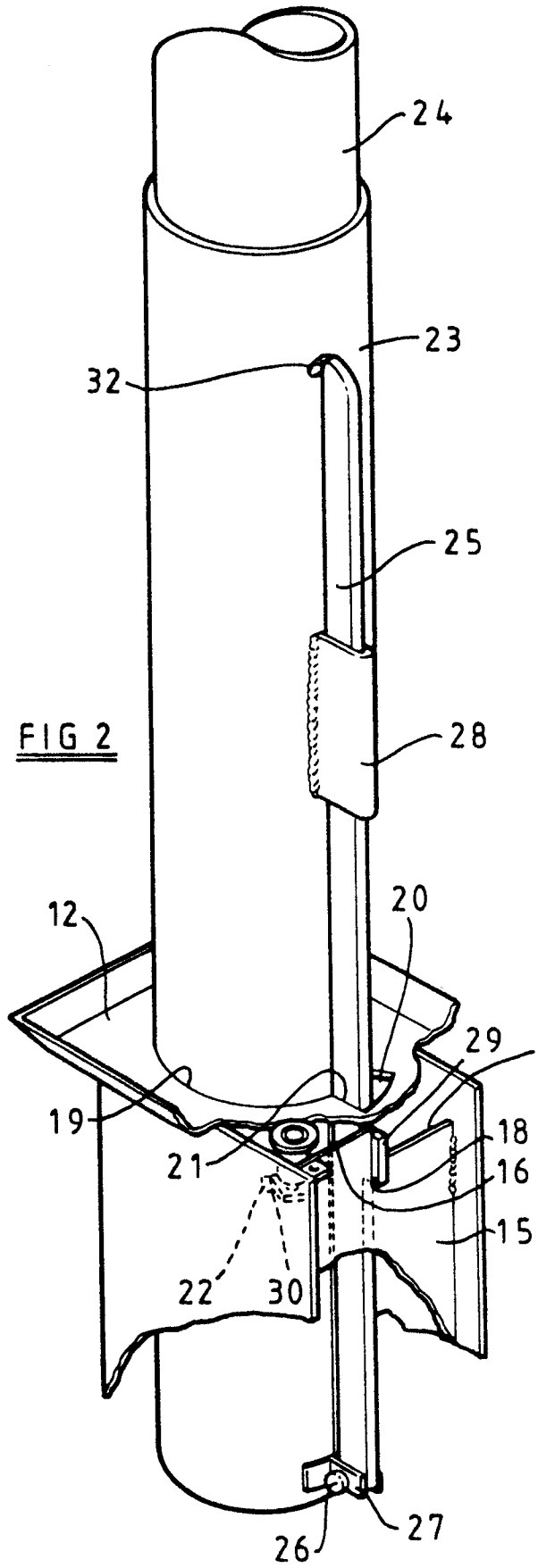
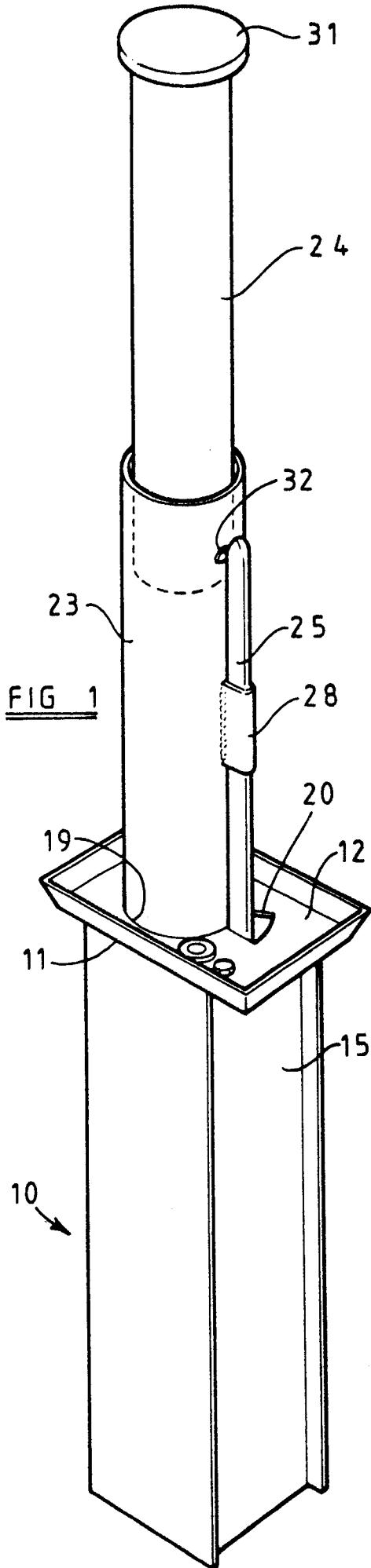
6. A parking post as claimed in any preceding claim wherein the post comprises a telescopic member.

7. A parking post as claimed in any of Claims 3-5, wherein the projection and locking mechanism together comprise a lockable pivoted lever mounted on the post engaging formations in the casing.

5 8. A parking post as claimed in any of Claims 3-5, wherein the projection and locking mechanism together comprise at least one spring biased lockable member which engages said formations.

10 9. A parking post as claimed in Claim 8 wherein said lockable member is urged into engagement with said formations by a spring and when unlocked can be disengaged by movement of the post.

15 10. A parking post as claimed in any preceding claim, wherein resilient means are provided to urge the post upwardly with respect to the casing.



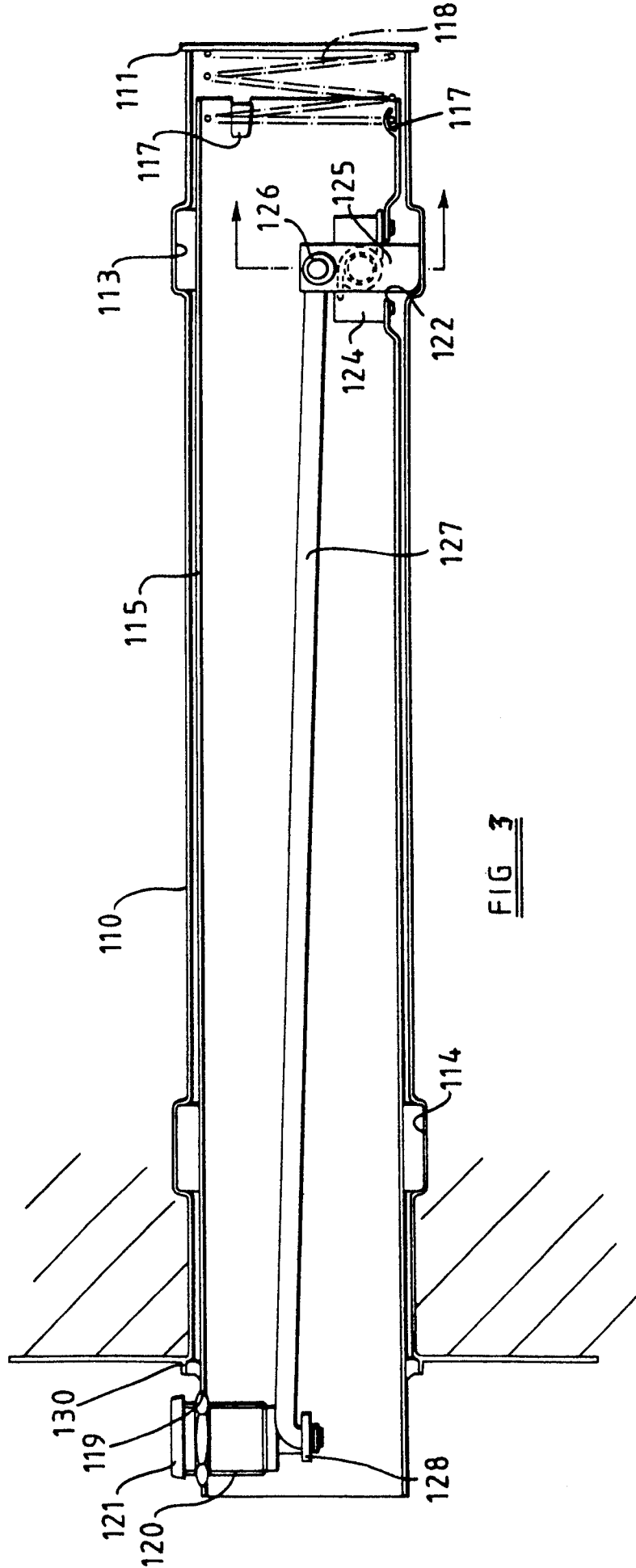
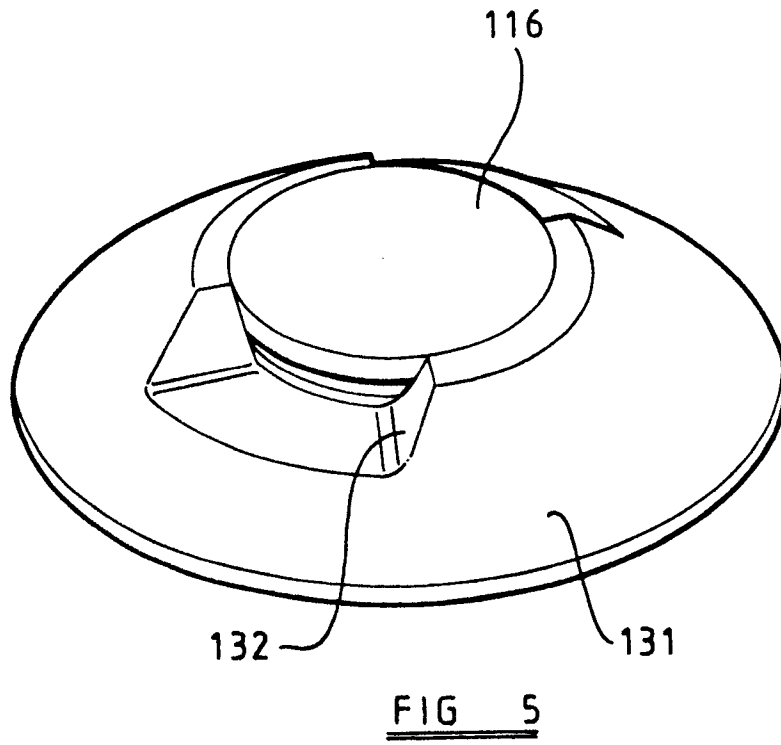
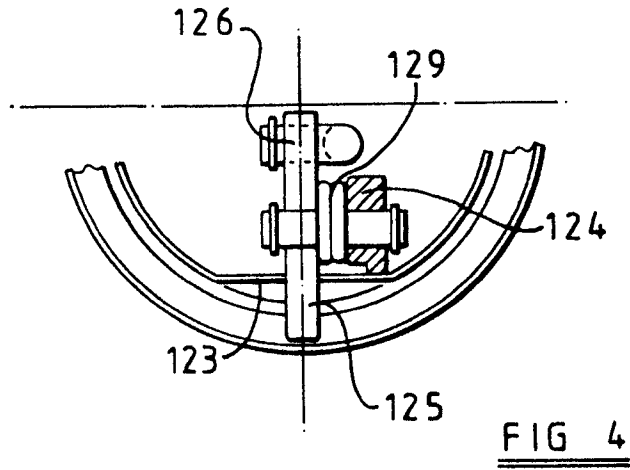


FIG 3



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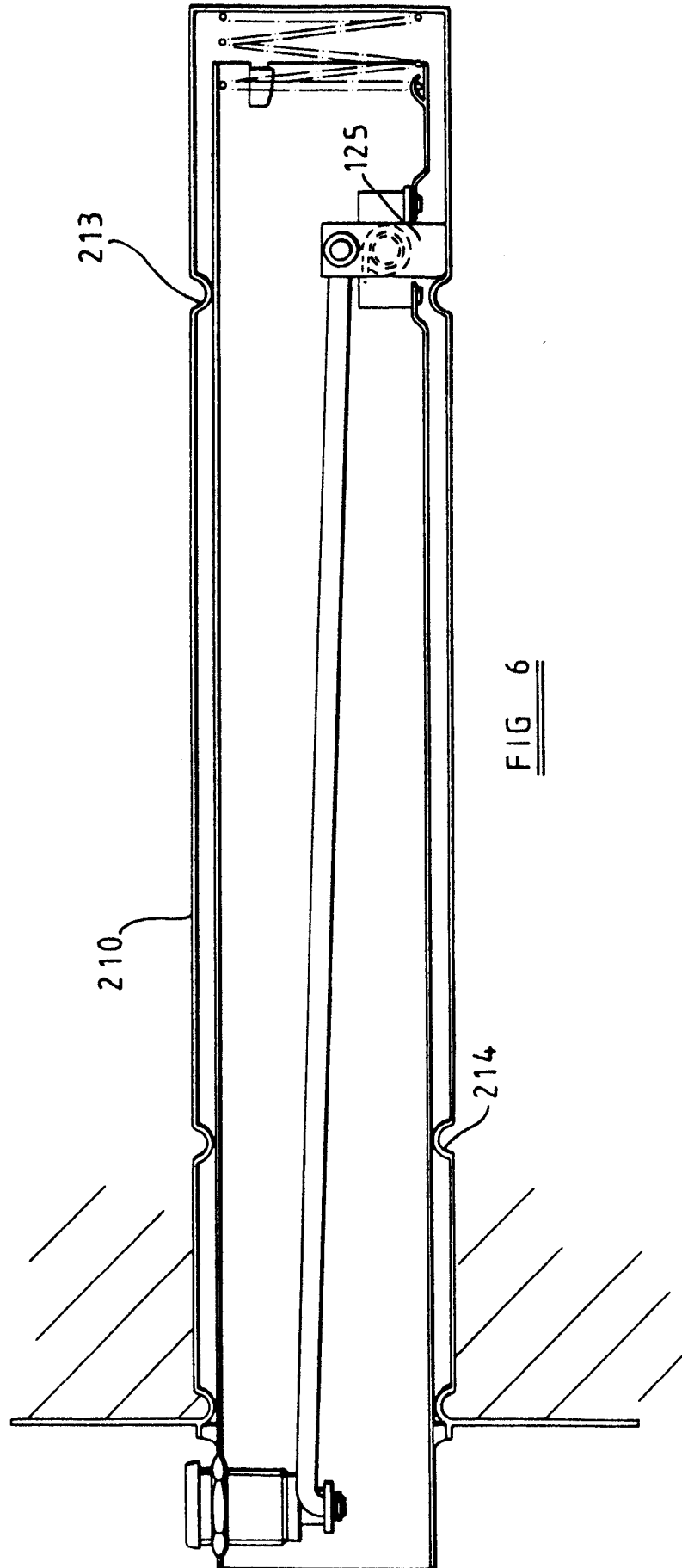


FIG 6

