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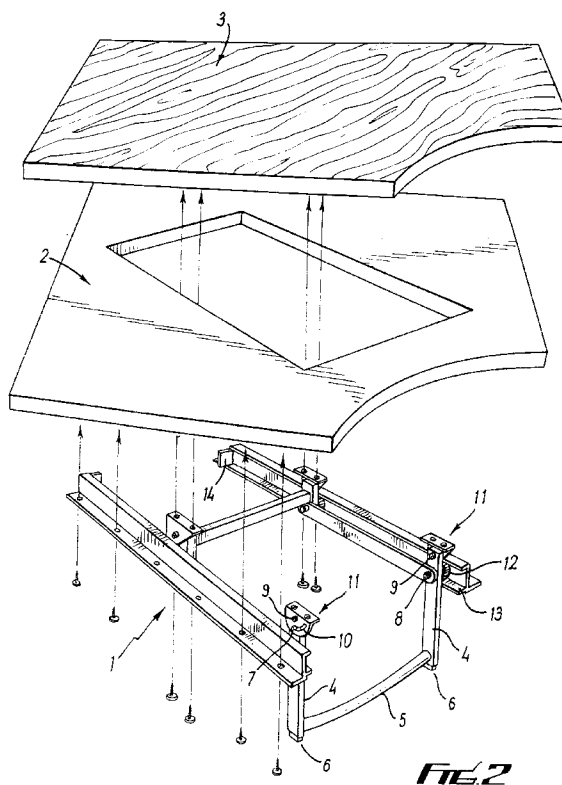
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(54) **Work station.**

(57) A work station comprising a work surface (3) and a support for the work surface (2) has a mechanism (1) to enable the work surface (3) to be raised before being slid away from its normal position. The sliding of the work surface (3) is desirable to allow access to the area just below the work surface which may contain a cable management system. The raising of the work surface (3) before sliding allows the work surface (3) to be slid above the level of other objects, such as adjoining work surfaces, which could otherwise obstruct the sliding motion. While being raised and slid the work surface remains substantially horizontal, mitigating the need to clear it before moving it.



This invention relates to work stations.

Office furniture is a field in which considerable advances have been made during the last few years. The increasing use of electrical and electronic apparatus in offices has made it desirable for modern work stations to incorporate features which were not available on simple desks. An example of this is that, in order to keep wires from office equipment conveniently out of the way and out of sight, many work stations incorporate cable management systems, such as trunking or channels to contain wires.

Configurations of office work stations have also become more complex than the traditional rectangular desk.

These advances in office furniture have led to certain difficulties which it would be desirable to overcome. One of these problems is that of access to the wires associated with desk top equipment. The cable management systems, while containing wires effectively, can impede access to them. Such systems often carry the cables just below the upper surface of the work station and well away from the user, which is ideal for keeping the wires out of the way but does make it difficult to reach them.

This problem could be solved by hinging the upper surface of the work station so that it can be lifted allowing access to the area directly below it. Another solution might be to design the upper surface of the work station so as to be able to slide away from its normal position (by slide, we mean move on rails, rollers, wheels, smooth surfaces or the like). This would also allow convenient access to the area directly below it.

Both of these methods of allowing access do, however, have inadequacies. The inadequacy of hinging the work surface and tipping it to allow access is that the surface must first be cleared of the objects which ordinarily occupy it. The objects may well be bulky or heavy items such as computers and printers, and it can be inconvenient to have to move such items. If it is necessary to adjust the wiring leading to or from objects on the work station, then having to move the objects themselves could aggravate rather than alleviate the problem.

Arranging the work surface so that it can slide away from its normal working position is often impracticable because of the configuration of many modern work stations. They are often configured so that a given surface is beside one or more other surfaces at the same height and therefore cannot slide away from its normal position because the surrounding work surfaces obstruct.

According to the present invention there is provided a work station comprising a support means and a substantially horizontal work surface mounted on the support means and having raising means for vertical displacement of the work surface and sliding means for horizontal displacement of the work sur-

face.

Preferably, the raising means and sliding means are attached to the underside of the work surface, and to the support means.

Preferably, the sliding means is in the form of at least one rail having at least one corresponding traveller, the traveller being attached to the underside of the work surface.

The raising means may be in the form of vertically adjustable attachment means which attach the travellers to the underside of the work surface.

Preferably, the sliding means is in the form of two parallel rails each having two corresponding travellers.

Preferably, the support means is in the form of a panel extending beneath the work surface and configured to allow access to the area under the panel.

The panel may have an opening with two parallel sides to which the rails are attached.

Preferably, operating means are provided in the form of a handle connected to the travellers of the two rails to allow operation of the raising and sliding means.

Preferably, the raising means vertically displaces the work surface a sufficient distance to allow the work surface to slide over adjacent work surfaces or other obstacles.

Preferably, at least one traveller is attached pivotally to a member which is pivotally attached to a point fixed to the work surface.

The handle may also have a locking means for selectively locking the raising means; said locking means may comprise a curved slot in the attachment means which is engaged by a projection of the handle.

Preferably the work surface is a corner unit.

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

Fig. 1 is a schematic representation of two typical work station configurations showing both the normal working positions, (solid lines), and the positions of the surfaces when they have been raised and slid aside for a work station in accordance with the present invention (broken lines). The electric cable position is also shown (dotted lines).

Fig. 2 shows a perspective exploded view of an embodiment of a work station according to the present invention.

Fig. 3 shows a detail of the raising and sliding mechanism of the work station illustrated in Fig. 2, with the work surface in the raised position.

Fig. 4 shows the detail as illustrated in Fig. 3 but with the work surface in the lowered position.

With reference to the accompanying drawings, Fig. 1 shows the benefits of a work station according to the present invention.

Fig. 1(a) shows a work station comprising a five

sided corner unit 101 with two sides forming a right angle so as to be able to align with two walls at right angles and the surface being shaped like a square with one corner missing, with the fifth side created by the truncation of the square. Said fifth side being opposite the right angle which will fit into a corner, and being the side which will be facing a user of the work station.

Two rectangular units 102 and 103 with their shorter sides of a length substantially equal to that of the shorter pair of sides of the five sided surface have said shorter sides adjoining the shorter sides of the corner unit so that the three units form an approximately 'L' shaped configuration.

In use the work surface of the corner unit 101 would have its longer pair of sides adjoining walls or office furniture, partitions etc and its shorter pair of sides adjoining the sides of the work surfaces of the rectangular units 102 and 103. Thus the work surface of the corner unit could not be slid away from its normal position (shown in solid lines).

The work surface of a work station according to the present invention could, however, be slid away from its normal position into a position (shown by broken lines) which would facilitate access to the area directly below the work surface, because it can be raised before sliding. The work surface of the corner unit 101, once raised, could slide above the adjoining work surfaces into the desired position. Thus allowing access to electric cables 100 which are positioned below the normal working position of the work surface.

The work surfaces of the rectangular units 102, 103 could also be configured according to the present invention, and their normal and raised slid forward positions are shown by solid and broken lines respectively.

Fig. 1(b) shows an alternative work station configuration which benefits from the present invention.

The work station comprises two rectangular work stations 104 and 105, of different dimensions, at right angles to each other. The configuration is such that the smaller of the work surfaces 105 has one of its shorter sides adjoining a portion of one of the longer sides of the larger surface 104, to form an 'L'-shaped work station. This style of work station is quite common but does suffer from the disadvantage that the larger work surface 104 cannot be slid forward (that is, in the direction parallel to its shorter sides). If the work station is configured in accordance with the present invention this disadvantage is overcome, as the raised work surface can be slid forward above the adjoining work surface 105. Thus enabling access to the electric cables 100 which are positioned below the normal working position of the work surface.

Fig. 2 shows a perspective view of a first embodiment according to the present invention. A lift and slide mechanism 1 fixes, via two rails 13, to a mechanism support panel 2 which also acts as a support

for a desk top 3 when said desk top 3 is in its normal, that is non-raised, position. Each rail 13 terminates with a backstop 14. The mechanism 1 also fixes via fixing plates 11 to the desk top 3.

The two rails 13 remain fixed rigidly to the support panel 2. The panel 2 being supported at a convenient height for office use by legs, brackets or some other supporting means (not shown).

As it is shown in Fig. 2, the mechanism is in the position which corresponds to the desk top 3 being raised and slid away from its normal position. The desk top 3 can be moved, via rollers 12 which engage the rails 13, by lateral pressure on a handle 5. The handle 5 is attached to two lifting arms 4, in which there are locking mechanisms which engage automatically when the desktop 3 is in the fully raised or fully lowered positions and may be released by pressure on a button 6.

When not locked in position the raising arms 4 can pivot about a lower pivot 8 and a higher pivot 9 attached to the fixing plate 11 and it is this action which raises or lowers the desktop 3. The distance between the lower pivot 8 and the handle 5 is considerably larger than the distance between the lower pivot 8 and the upper pivot 9, giving a lever advantage which allows the desktop 3 to be raised or lowered, even if laden, without undue effort.

The operation which would be used to return the desktop 3 from the position associated with the configuration of the mechanism 1 shown in Fig. 2, to its normal working position, will now be described by way of illustration. Pushing the handle 5 in the direction parallel to the rails 13 towards the backstops 14 would cause the desk top 3, via the rollers 12 and the rails 13, to slide back towards its normal position. Once the desk top 3 is in the desired horizontal position the raising members 4 would be unlocked by pressure upwards on buttons 6, and the arms 4 would then be pivoted about pivot 8, preferably in a controlled movement, by the application of force on the handle 5, thus lowering the desktop 3 into its normal working position.

Once the desk top 3 is in the lowered position the locking mechanism activates and the desk top 3 cannot then be raised without unlocking said mechanism by pressure on buttons 6. The locking mechanism, raising arm 4 and pivots 8, 9 are illustrated in more detail in Figs. 3 and 4.

Fig. 3 shows one raising arm 4 which attaches pivotally to the roller 12 at a lower pivot 8 and to the desktop 3 via fixing plates 11 at an upper pivot 9. Fig. 3 shows the configuration with the desk top raised. To lower the desk top the arm 4 would have to be rotated clockwise about pivot 8.

The locking mechanism comprises a bar 16 inside the raising arm 4. The bar 16 is attached to a pin 7 which protrudes through a slot or aperture 17 in the raising arm 4 and through a groove 10 in the fixing

plate 11. A spring or other restoring means 15 applies a force to the pin 7 tending to force it away from the upper pivot 9 towards the lower pivot 8. Said force is sufficient to move the pin 7 into the vertical or horizontal parts of the groove 10 when the arm 4 is substantially vertical or horizontal, respectively, and to secure the pin in said position providing there is no opposing force applied to the bar 16 where it protrudes from the arm 4, as the button 6.

The whole thus provides a locking mechanism which automatically engages when the desk top 3 is either fully raised or fully lowered and may be released by pressure on the button 6 which is an extension of the bar 16, at the end of the raising arm 4.

Fig. 4 shows the same part of the mechanism as Fig. 3 but in the configuration which corresponds to the desk top 3 being in its lowered position. In this configuration the raising arm 4 is horizontal and the locking pin 7 engages the horizontal part of the groove 10 in the fixing plate 11.

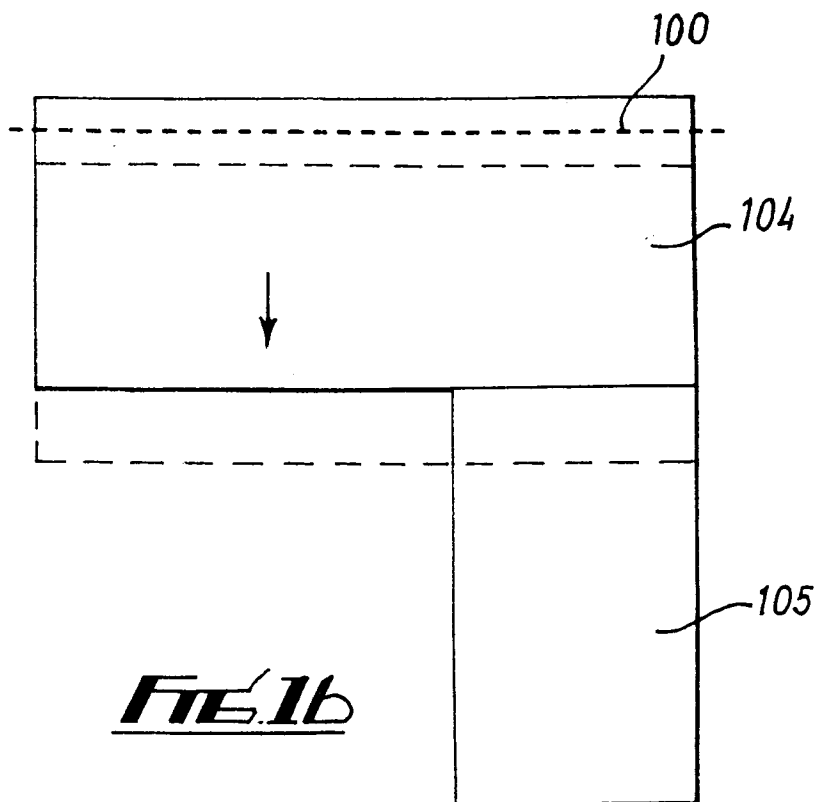
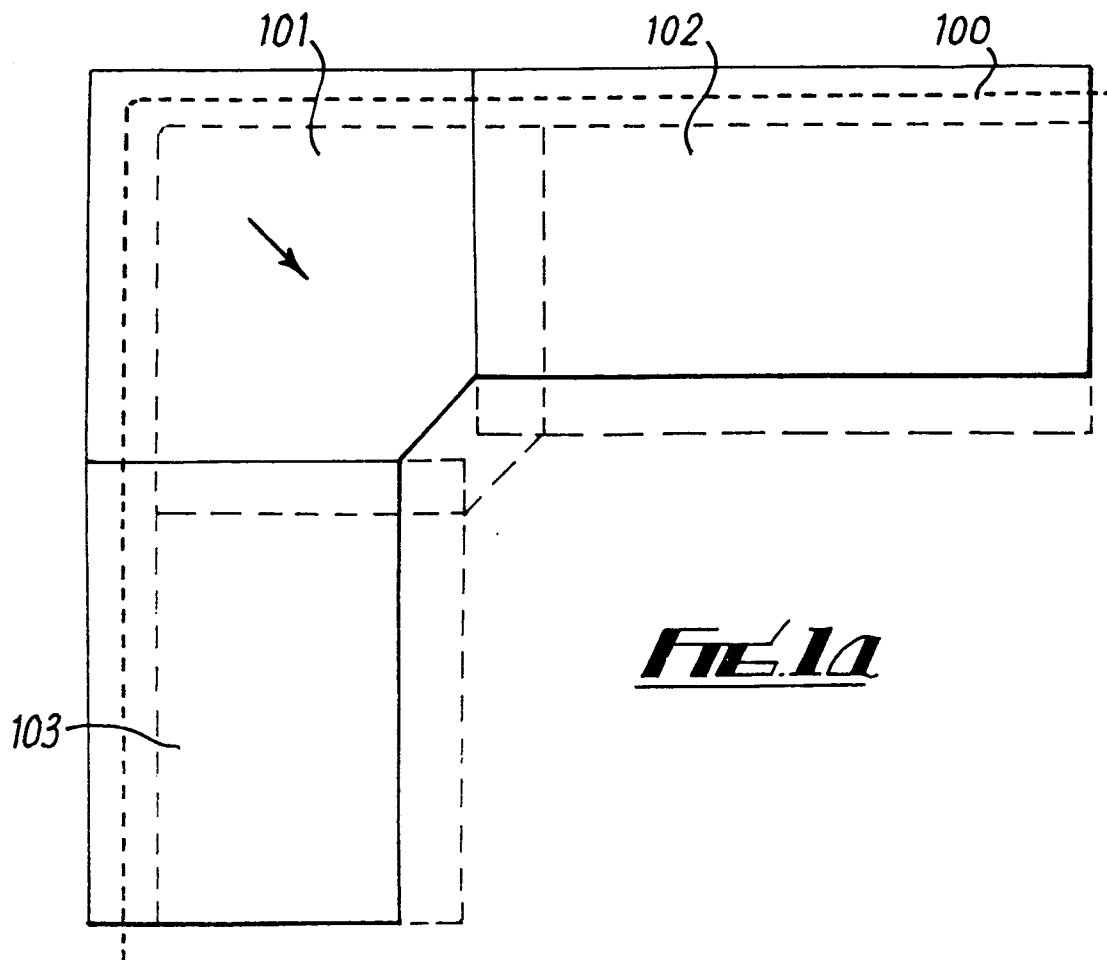
Modifications and improvements may be incorporated without departing from the scope of the invention.

Claims

1. A work station comprising support means and a substantially horizontal work surface mounted on the support means characterised in that the work station includes raising means for vertical displacement of the work surface and sliding means for horizontal displacement of the work surface.
2. A work station as claimed in Claim 1 wherein the raising means and sliding means are attached to the underside of the work surface and to the support means.
3. A work station as claimed in either of the preceding Claims wherein the sliding means is in the form of at least one rail having at least one corresponding traveller, the traveller being attached to the underside of the work surface.
4. A work station as claimed in Claim 3 wherein the raising means is in the form of vertically adjustable attachment means which attach the travellers to the underside of the work surface.
5. A work station as claimed in either of Claims 3 or 4 wherein the sliding means is in the form of two parallel rails each having two corresponding travellers.
6. A work station as claimed in any one of Claims 3 to 5 wherein the support means comprises a panel extending beneath the work surface and con-

figured to allow access to the area below the panel.

7. A work station as claimed in Claim 6 wherein the panel has an opening with two parallel sides to which said rails are attached.
8. A work station as claimed in any one of Claims 3 to 7 wherein operating means are provided, comprising a handle connected to at least one of the travellers which run on the rails.
9. A work station as claimed in any one of Claims 3 to 8 in which at least one traveller is pivotally attached to a member which is pivotally attached to a point fixed to the work surface.
10. A work station as claimed in any one of the preceding Claims including a means for securing the work surface in raised and lowered positions.
11. A work station as claimed in any one of the preceding claims which is a corner unit.



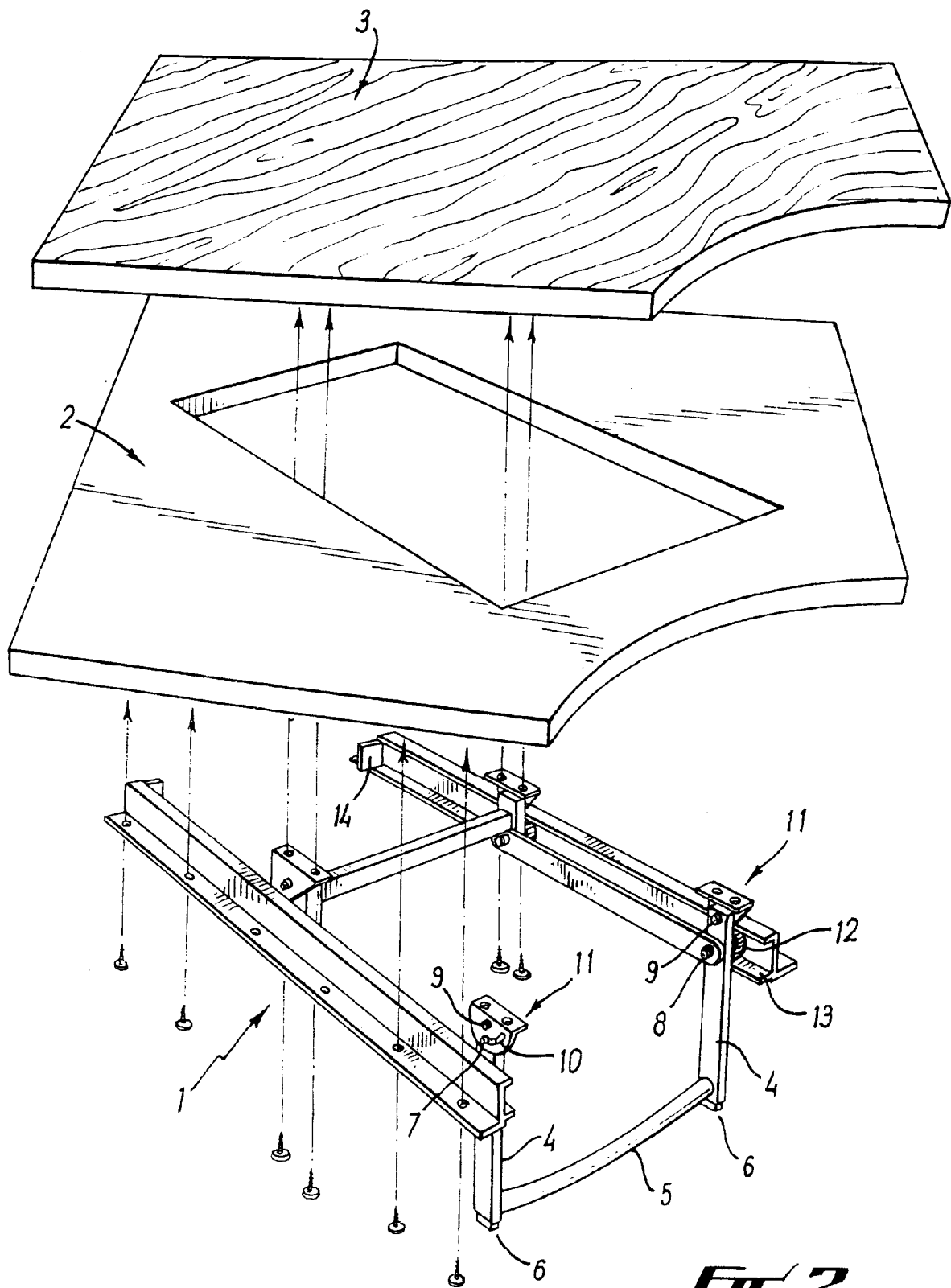
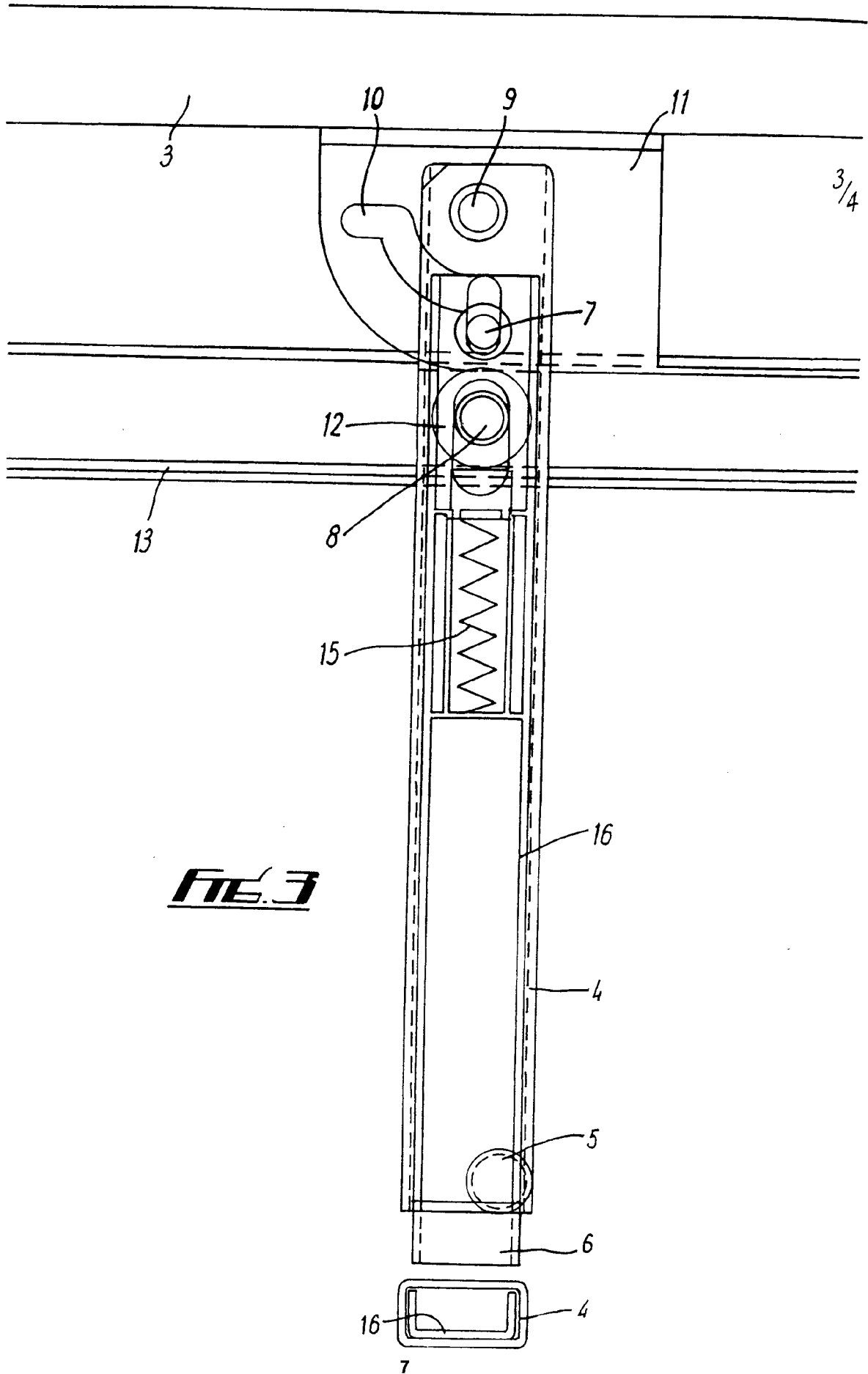


FIG. 2



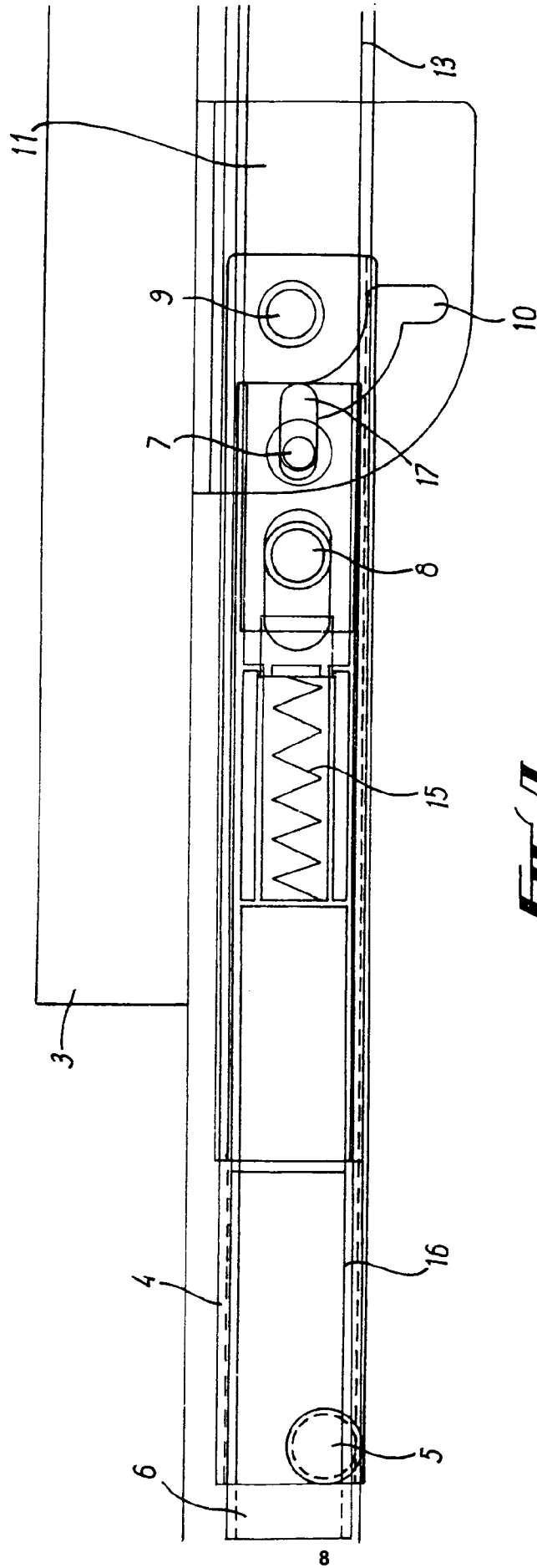


Fig. 4