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(54) Method for hanging a wall with elongated strips of wallpaper, as well as devices for carrying out said methods

(57) A method for hanging a wall with elongated strips of wallpaper, wherein an adhesive is applied to the strip of wallpaper and/or to the wall. At least one spacer is positioned in front of the wall before the strip of wallpaper is glued to the wall, which spacer is provided with a stop, which is aligned with respect to a previously affixed strip of wallpaper. Then the strip of wallpaper to be glued to the wall is placed against the spacer, whereby the long sides of the strip of wallpaper are placed against the stop. Then the end of the strip of wallpaper is glued to the wall, whereby the remaining portion is kept spaced from the wall by the spacer. Subsequently the strip of wallpaper is glued to the wall, starting from said end, until a position near the spacer is reached, the spacer is removed and the portion present on a side of the spacer remote from said end is glued to the wall.

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Description

The invention relates to methods for hanging a wall with elongated strips of wallpaper, wherein an adhesive is applied to the strip of wallpaper and/or to the wall, then one long side of the strip of wallpaper is positioned with respect to a previously affixed strip of wallpaper, after which one end of said strip of wallpaper is glued to the wall, whilst the remaining portion of the strip of wallpaper, which is connected to said end, is kept spaced from the wall, and subsequently said remaining portion is gradually glued to said wall, starting from said end.

The invention also relates to devices which are suitable for hanging a wall with elongated strips of wallpaper by using a method as defined in the claims.

The term affixation of elongated strips of wallpaper to a wall which is used herein is also understood to mean the affixation of elongated strips of wallpaper to ceilings, walls or floors.

With a similar method and device known from international patent application WO 81/02548, one end of the strip of wallpaper is clamped down in a relatively complicated device, which is subsequently positioned against the wall to be hung, near the ceiling. Then the device is moved downwards along the wall, whereby the wallpaper is pressed against the wall. The operation of the known device is relatively complicated, whereby the device furthermore has the drawback that the alignment of the strip of wallpaper to be affixed with respect to previously affixed strips of wallpaper or with respect to a perpendicular drawn on the wall must take place near an edge of the wall, for example near the ceiling. A relatively small aligning error near the ceiling will result in a relatively large deviation of the wallpaper from the desired position with respect to previously affixed strips of wallpaper on a side remote from the ceiling, for example near the floor. This will be apparent in particular if the strips of wallpaper are placed with their long sides butting against each other, or if the strips of wallpaper are provided with patterns which are continued in the next strip.

The object of the invention is to provide a method wherein the alignment of a strip of wallpaper with respect to previously affixed strips of wallpaper is relatively simple.

This objective is accomplished with the method according to the invention in that at least one spacer is positioned in front of the wall before the strip of wallpaper is glued to the wall, which spacer is provided with a stop, which is aligned with respect to the previously affixed strip of wallpaper, then the strip of wallpaper to be glued to the wall is placed against the spacer, whereby the long side of the strip of wallpaper is placed against the stop, the end of the strip of wallpaper is glued to the wall, whereby the remaining portion is kept spaced from the wall by the spacer, then the strip of wallpaper is glued to the wall, starting from said end, until a position near the spacer is reached, after which the spacer is removed and the portion present on a side of the spacer remote from said end is glued to the wall.

The spacer can be precisely aligned with respect to the previously affixed strip of wallpaper or to the perpendicular, in such a manner that a side of the stop facing towards the spacer will for example coincide with the long side of the previously affixed strip of wallpaper, or be spaced from said long side by a predetermined distance. When the strip of wallpaper is being affixed, the strip of wallpaper is placed against the stop, and then the end of the strip of wallpaper is glued to the wall, whereby said end is aligned with respect to the previously affixed strip of wallpaper. The strip of wallpaper is now precisely positioned with respect to the previously affixed strip of wallpaper in two places, namely near the end and near the stop. Then the strip of wallpaper can be glued to the wall. Once the strip of wallpaper has been connected to the wall over a sufficiently long distance, the spacer is removed and the remaining portion of the strip of wallpaper can be glued to the wall. Since the portion of the strip of wallpaper that is already glued to the wall is precisely aligned with respect to the previously affixed strip of wallpaper, also the remaining portion will be precisely aligned with respect to the previously affixed strip of wallpaper.

The precision with which the strip of wallpaper is aligned with the previously affixed strip of wallpaper may be enhanced by using a number of spaced-apart spacers comprising stops.

The invention will be explained in more detail hereafter with reference to the drawings, in which:

Figure 1 shows a number of embodiments of a device according to the invention;
Figure 2 shows another embodiment of a device according to the invention;
Figure 3 shows a detail of the device shown in Figure 2;
Figure 4 shows the device of Figure 2, which is being used for papering a sloping surface;
Figure 5 shows a detail of the device of Figure 2, which is being used for papering an inside corner;
Figure 6 shows another use of the device shown in Figure 2;
Figure 7 shows a detail of the device of Figure 6;
Figures 8A-8E are various views of a detail of the device of Figure 2;
Figure 9 shows a detail of the device of Figure 6;
Figures 10A-10H show various aspects of the use of another device according to the invention.

Parts that correspond with each other are indicated by the same numerals in the figures.

Figure 1 shows a number of embodiments of spacers 1, 2 and stop elements 3, 4, 5 of devices according to the invention. Spacer 1 comprises a plate 8 extending parallel to a wall 7 to be provided with strips of wallpaper 6, which plate is provided with two clamping brackets 9

extending transversely to plate 8. An elongated strip 10, which extends transversely to plate 8, parallel to wall 7, is detachably attached in clamping brackets 9. Strip 10 has a greater length than plate 8, and it extends beyond ends 11 of plate 8 on either side of plate 8. Strip 10 is provided with a slot 12, which extends in the longitudinal direction of the strip. A stop element 3 extending transversely to plate 8 and to strip 10 is disposed near slot 12, which stop element is provided with a plate 13 extending transversely to plate 8 and to strip 10, which plate extends beyond a long side 14 of strip 10. Plate 13 is provided with a slot 15 extending in the longitudinal direction of plate 13, whereby a bolt 16, which is provided with a nut 17 at one end, extends through slots 12, 15. Plate 13 is movable with respect to strip 10 in a direction indicated by arrow P1 and in a direction opposite thereto, as well as in a direction indicated by arrow P2 and in a direction opposite thereto, said direction P2 extending parallel to the longitudinal direction of strip 10. Plate 13 comprises a long side 18 facing towards the plate 8 and the strip 10, which forms a stop element for a strip of wallpaper to be affixed, as will be explained in more detail hereafter.

Instead of using stop element 3, it is also possible to provide plate 8 with a stop element 4 comprising a U-shaped bracket 19, whereby each leg 20, 21 of said bracket is provided near one end with a plate 22, 23 extending in a direction away from the other leg, and with plate members 24, 25 extending parallel to legs 20, 21, which are connected to ends of plates 22, 23. Legs 20, 21 of U-shaped bracket 19 bound a recess 26, in which strip 10 is clamped down, whereby plate members 24, 25 extend beyond long sides 27, 28 of plate 8.

Spacer 2 comprises an elongated plate 30 extending parallel to wall 7, which comprises a relatively narrow strip 31, which faces towards wall 7, and a relatively wide strip 32, which is present on a side of strip 31 that faces away from wall 7. Strip 32 is provided on a side remote from strip 31 with pins 33 extending transversely to plate 30.

Stop element 5 is provided with a plate 35, which comprises a recess 34 which is open to one side, which plate 35 is connected near the open side of recess 34 to a plate 36 extending transversely to plate 35. Plates 35 and 36 bound a slotted opening 37, which extends parallel to plate 36. Plate 5 is capable of sliding movement over plate 32 via slotted opening 37.

It is also possible to clamp stop element 4 on pins 33 by means of U-shaped bracket 19.

The operation of a spacer 1 and a device comprising a stop element 3 will now be briefly explained.

The starting point is a situation wherein one strip of wallpaper 6' has already been affixed to wall 7. It is also possible to draw a perpendicular on the wall first. A plate 8 is temporarily affixed to wall 7 by means of the adhesive with which the strips of wallpaper are affixed to wall 7. Strip 8 is affixed to that part of the wall to which a strip of wallpaper 6 is to be affixed. Strip 10 thereby overlaps the already affixed strip of wallpaper 6'. Before plate 8 is affixed to wall 7, plate 13 is moved in a direction indicated by arrow P1, so that the rear side located near plate 8 will be clear of the already affixed strip of wallpaper 6'. Once plate 8 has been affixed to wall 7, plate 13 will be moved in the direction indicated by arrow P2, until the long side 18 of plate 13 extends parallel to a long side 38 of the already affixed strip of wallpaper 6', which is positioned near the strip of wallpaper 6 that is to be affixed. In order to obtain an accurate positioning of plate 13, said plate 13 is moved in a direction opposed to the direction indicated by arrow P1, until plate 13 abuts against the already affixed strip of wallpaper 6'. Preferably said movement in a direction indicated by arrow P2, or in a direction opposite thereto only takes place if plate 13 does not abut against the strip of wallpaper, in order to prevent the already affixed strip of wallpaper 6' from being damaged.

If desired, a number of spacers 1 and stop elements 3 attached thereto are affixed to the wall 7 in vertically spaced-apart relationship, in the same manner as described above. The number of plates 8 that is required depends, among other things, on the length of the strip of wallpaper 6 to be affixed and on the skill of the person engaged in papering the wall 7. Once the desired number of plates 8 have been affixed to wall 7, a strip of wallpaper 6 provided with wallpaper paste is taken hold of by an upper side 39 and positioned against the ceiling (not shown), whereby a long side 40 facing towards the already affixed strip of wallpaper 6' is positioned against long side 38. The strip of wallpaper 6 is affixed to the wall 7 in such a manner that the long side 40 also abuts against each long side 18 of stop elements 3. The strip of wallpaper 6 is kept spaced from wall 7 by strips 10 thereby, so that the part of the strip of wallpaper 6 that faces away from the upper end 39 is prevented from being affixed to the wall at a premature stage. Once the strip of wallpaper 6 has been positioned against long side 18, the end 39 will be pressed firmly against wall 7. Then the strip of wallpaper is pressed against wall 7 in a direction indicated by arrow P3. When work has proceeded as far as a location near the uppermost spacer 1, said spacer will be removed, after which the strip of wallpaper 6 is kept spaced from the wall by the spacers 1 that may be positioned thereunder. Once the part of the strip of wallpaper 6 present below the removed spacer 1 has been pressed against wall 7, the other spacers will be successively removed, starting from the top. The removal of spacer 1 is relatively simple, because the drying of the adhesive by means of which plate 8 has been affixed to wall 7 takes place relatively slowly.

It is also possible to use stop element 4 instead of stop element 3, in which case plate 8 must partially overlap the already affixed strip of wallpaper 6'. Plates 24, 25 are then clamped round long sides 27, 28 of plate 8, whereby the long side 41 of stop element 4 that faces towards plate 8 and strip 10 forms the stop for the long

side 40 of the strip of wallpaper 6 that is to be affixed.

When spacer 2 is used, plate 30 will likewise overlap the already affixed strip of wallpaper 6', whereby stop 5 has been slid over strip 32 via slotted recess 37. The presence of the relatively narrow strip 31 ensures that the spacing between plate 36 and the already affixed strip of wallpaper 6' is maintained.

Spacers 1, 2 and stop elements 3, 4, 5 may be made of various types of materials, such as plastic, paper, cardboard, wood or metal. It is also possible to manufacture the spacer and/or the stop from a box in which a roll of wallpaper is packed. In that case the box may for example be provided with perforations, which function to facilitate the detaching of the parts that are required.

Figure 2 shows a device 50 according to the invention, which comprises a rod 53, which extends vertically between a floor 51 and a ceiling 52, and three blocks 54, which is capable of sliding movement in the longitudinal direction of rod 53, whereby each block 54 is provided with a spacer pin 55 extending transversely to rod 53, which is capable of sliding movement in a direction indicated by arrow P4, and in a direction opposite thereto, and with a stop element 56, which is capable of sliding movement over pin 55 in a direction indicated by arrow P2, and in a direction opposite thereto. Rod 53 comprises a number of telescopically interconnected parts 53', 53", 53"', whereby the individual parts can be fixed in position relative to each other by means of screws 57. Part 53' is provided near floor 51 with a part 59, which is movable against the spring force of a spring 58. Each block 54 is slidably mounted on rod 53, and each block 54 can be fixed in position with respect to rod 53 by means of a screw 60. Preferably at least one block 54 is provided with a level 61, by means of which the rod can be set up vertically between a floor 51 and a ceiling 52. A spacer pin 55 is slidably mounted in each block 54, whereby spacer pin 55 can be fixed in position with respect to the associated block 54 by means of a screw 62. Each spacer pin 55 is provided on one side with a portion 63 bent through 90°, , which forms a handle. It is also possible to provide spacer pin 55 with a knob or the like. Spacer pin 55 is provided with a stop element 56 on a side remote from portion 63. Stop element 56 is provided with a block 64, which is slidably mounted on spacer pin 55, which block can be fixed in position with respect to spacer pin 55 by means of a screw 65. Stop element 56 is furthermore provided with a plate 67 comprising a slot 66, which is movable with respect to block 64 in a direction indicated by arrow P1 and in a direction opposite thereto. Plate 67 can be fixed in position with respect to block 64 by means of a screw 68. Block 64 is furthermore provided with a slot 69 extending parallel to wall 7, which is open towards floor 51, whose function will be explained in more detail with reference to Figure 9.

The operation of the device 50 shown in Figure 2 is as follows. The telescopically interconnected parts 53', 53", 53"' are moved with respect to each other until the total length of rod 53 is slightly larger than the distance between ceiling 52 and floor 51. Then part 59 is urged against spring force in a direction indicated by arrow P5, after which the rod is positioned vertically between the floor and the ceiling, and part 59 is released, as a result of which part 59 will be moved by the spring force of spring 58 in a direction opposed to the direction indicated by arrow P5, so that rod 53 will be clamped in position between floor 51 and ceiling 52. Rod 53 is set up exactly vertically by means of level 61. The blocks 54 are set up in the desired positions with respect to rod 53, and spacer pins 55 are moved in a direction opposed to the direction indicated by arrow P4, so that portions 63 will be positioned near blocks 54. Then the stop elements 56 are moved with respect to spacer pins 55 in a direction indicated by arrow P2 and in a direction opposite thereto, and slide 67 is moved with respect to block 64 in a direction indicated by arrow P1 and in a direction opposite thereto, until a long side 70 of each slide 67 facing towards block 54 extends parallel to an already affixed strip of wallpaper 6'. Then the strip of wallpaper 6, to which an adhesive has already been applied, can be affixed to wall 7, whereby long side 40 of the strip of wallpaper 6 to be affixed is positioned against the long sides 70 of the stop elements 56. Then the upper end 39 is first affixed to wall 7, after which the spacer pins 55 are moved in the direction indicated by arrow P4 in the order indicated by arrow P3, whereby the stop element 56 is also moved in the direction indicated by arrow P4 or slid off the pin 55 in a direction indicated by arrow P2. After the upper spacer pin 55 has been removed, the wallpaper is kept spaced from the wall 7 by means of the spacer pins 55 present thereunder. It is possible by means of device 50 to affix strip of wallpaper 6 to wall 7 in a gradual manner, whereby the lower portions of strip 6 are prevented from prematurely coming into contact with wall 7.

Figure 3 shows the spacer pin 55 and the stop element 56 that is slidably mounted thereon.

Figure 4 shows the device of Figure 2, wherein rod 53 is connected, via a flexible coupling 71, to a rod 72, which is mounted in a base 73 on a side remote from flexible coupling 71. Base 73 is provided with a baseplate 74, a tubular element 75 extending transversely to baseplate 74, and a stiffening rod 76, which is secured to baseplate 74 with one end and to an end of tube 75 remote from baseplate 74 with its other end. Rod 72 has been slid into tube 75. Rod 53 can be disposed at an angle by means of flexible coupling 71, so that rod 53 will extend parallel to a sloping wall 77 of an attic room, for example. The affixation of a strip of wallpaper to sloping wall 77 takes place in substantially the same manner as already described with reference to Figure 2. In this case the strip of wallpaper is not placed in abutment with a side of spacer pins 55 remote from wall 7, however, but on a side of spacer pins 55 that faces towards wall 77, whereby the spacer pins 55 support

the strip of wallpaper 6 to be affixed and prevent strip of wallpaper 6 from falling downwards.

Figure 5 shows how the device 50 of Figure 2 is used in affixing a strip of wallpaper to an inside corner 80 made up of two walls 7, 7' extending at right angles to each other. In this case stop element 56 is disposed near block 54, in such a manner that a long side 81 of slide 67 remote from stop block 54 coincides with the long side of an already affixed strip of wallpaper 6'. Spacer pin 55 extends to a position near corner 80, and it is provided near corner 80 with a coupling piece 82, by means of which a further spacer pin 83 can be attached to spacer pin 55, in such a manner that spacer pin 83 extends parallel to wall 7', albeit in spaced-apart relationship therewith. The affixation of a strip of wallpaper 6 furthermore takes place in a similar manner as already described with reference to Figure 2.

Figure 6 shows how the device 50 of Figure 2 may be used for affixing a strip of wallpaper 6 behind radiator pipes 90, for example. For this purpose rod 53 is attached to a baseplate 91 near its bottom end, which baseplate will be explained in more detail with reference to Figure 7. In this case device 50 is not provided with spacer pins 55, but with plate-shaped strips 92 extending parallel to wall 7, which are slidably mounted in blocks 54, and which are movable in a direction indicated by arrow P5 and in a direction opposite thereto. Plate-shaped strips 92 are provided on one side with handles 93, by means of which plates 92 can readily be taken hold of. The following procedure is followed for affixing strip of wallpaper 6 behind radiator pipes 90. An adhesive is applied to strip of wallpaper 6, and then strip of wallpaper 6 is affixed to strips 92 by means of said adhesive. Then device 50 is placed against wall 7, after which the entire device 50 is moved in a direction indicated by arrow P6, and strips 92 and the strip of wallpaper 6 adhered thereto are moved behind radiator pipes 90. Then the strip of wallpaper is pressed against wall 7, starting from the upper end 39, whereby the strips 92 are moved away from behind strip of wallpaper 6 in a direction indicated by arrow P5, with arrow P3 indicating the order in which this takes place. Once strip of wallpaper 6 has been adhered to strips 92, and device 50 has been placed partially behind radiator pipes 92, the stop elements 56 are placed on plate-shaped strips 92, if possible, in the manner shown in Figure 9. Plate 92 extends through the slot 69 provided in block 64, and block 64 is fixed in position with respect to strip 92 by means of screw 65. It is also possible to mount the stop elements 56 near blocks 54 in advance, and to align the strip of wallpaper with respect thereto.

Figure 7 shows the attachment of rod 53 to baseplate 91, which comprises a sleeve 94 secured to a plate, and a sleeve 95 which is positioned above sleeve 94, parallel thereto, which sleeve 95 is connected to the baseplate by means of a flange 96 attached to a plate. Baseplate 91 is furthermore provided with screws 97, by means of which the plates are fixed in position on baseplate 91. The baseplate is furthermore provided with adjusting screws (not shown), by means of which the baseplate 91 can be set up horizontally with respect to floor 51.

Figures 8A-8E are a perspective front view, a perspective rear view, a front view, a side view and a rear view respectively of a block 54. Block 54 is provided with a horizontally extending through bore 100 for spacer pin 55, and with an elongated, horizontally extending slotted passage 101 for plate-shaped strip 92.

Figures 10A-10H show various aspects of another embodiment of the device shown in Figure 2, wherein Figure 10A shows the mounting of rod 53 between a ceiling and a floor, Figure 10B shows the positioning of a strip of wallpaper 6 and the subsequent pressing of the strip of wallpaper on wall 7 by means of a pressure block 102, and Figure 10C shows the moving in a direction indicated by arrow P4 of the uppermost spacer pin 55 and the subsequent pressing down of a further portion of strip of wallpaper 6 by means of pressure block 102. Figure 10D shows the part of rod 53 that is provided with a level 61. Figure 10E shows the cutting of strip of wallpaper 6 over a desired length by means of scissors 103, whereby the end 39 is temporarily hung of spacer 55.

Figure 10F shows the affixation of a strip of wallpaper 6 behind radiators 104 in a similar manner as described with reference to Figure 6. Figure 10G shows the affixation of wallpaper 6 in an inside corner 80.

The various parts of the illustrated devices may be made of plastic material, wood, metal, etc. It is also possible to use two parallel rods 53 instead of one rod 53, whereby cords may be tensioned between the parallel rods 53 instead of using spacer pins 55.

It is also possible to make the spacer pins of a flexible material, whereby the spacer pins can be bent aside.

Claims

1. A method for hanging a wall with elongated strips of wallpaper, wherein an adhesive is applied to the strip of wallpaper and/or to the wall, then one long side of the strip of wallpaper is positioned with respect to a previously affixed strip of wallpaper, after which one end of said strip of wallpaper is glued to the wall, whilst the remaining portion of the strip of wallpaper, which is connected to said end, is kept spaced from the wall, and subsequently said remaining portion is gradually glued to said wall, starting from said end, characterized in that at least one spacer is positioned in front of the wall before the strip of wallpaper is glued to the wall, which spacer is provided with a stop, which is aligned with respect to the previously affixed strip of wallpaper, then the strip of wallpaper to be glued to the wall is placed against the spacer, whereby the long side of the strip of wallpaper is placed against the stop, the

end of the strip of wallpaper is glued to the wall, whereby the remaining portion is kept spaced from the wall by the spacer, then the strip of wallpaper is glued to the wall, starting from said end, until a position near the spacer is reached, after which the spacer is removed and the portion present on a side of the spacer remote from said end is glued to the wall.

2. A method according to claim 1, characterized in that a number of spacers are disposed in front of the wall in the longitudinal direction of the elongated strip of wallpaper to be affixed, wherein the spacer positioned near the strip of wallpaper is removed first upon glueing the strip of wallpaper to the wall, after which the other spacers are successively removed.

3. A method according to claim 1 or 2, characterized in that the spacer is temporarily affixed to the wall by means of an adhesive.

4. A method for hanging a wall with elongated strips of wallpaper, wherein an adhesive is applied to the strip of wallpaper and/or to the wall, after which a long side of the strip of wallpaper is positioned relative to a previously affixed strip of wallpaper, then one end of the strip of wallpaper is glued to the wall, whilst the other part of the strip, which is connected to said end, is kept spaced from the wall, and subsequently said other part is gradually glued to the wall, starting from said end, characterized in that, prior to glueing the strip of wallpaper to the wall, the strip of wallpaper is glued to a number of spacers, the spacers and the strip of wallpaper affixed thereto are moved to a position near the wall, and subsequently they are moved along the wall, parallel thereto, so that the strip of wallpaper will be positioned opposite the desired position on the wall, after which one end of the strip of wallpaper is glued to the wall, whereupon the spacer positioned near the end is removed first, and subsequently the other spacers are removed.

5. A device suitable for hanging a wall with elongated strips of wallpaper by using a method according to any one of the preceding claims, characterized in that the device comprises at least one spacer, which can be temporarily attached to a wall, and which comprises a supporting element which is spaced from the wall during operation, the device furthermore comprises a stop extending transversely to the wall, which stop is positioned near one end of the spacer, and which extends in a direction away from the wall, beyond the supporting element.

6. A device suitable for hanging a wall with elongated strips of wallpaper by using a method according to any one of the preceding claims, characterized in that the device comprises at least one elongated rod, which can be positioned on the ground, and at least one spacer extending substantially transversely to the rod, which spacer is provided with a supporting element, which is spaced from the wall during operation, the device furthermore comprises a stop extending transversely to the wall, which is positioned near one end of said spacer, and which extends in a direction away from the wall, beyond the supporting element.

7. A device according to any one of the preceding claims 5 or 6, characterized in that said stop is movable with respect to said spacer.

8. A device according to any one of the preceding claims 6 - 7, characterized in that said spacer is movable with respect to said rod, together with said stop.

9. A device according to any one of the preceding claims 5 - 8, characterized in that said spacer is plate-shaped or bar-shaped.

10. A device according to any one of the preceding claims 5 - 9, characterized in that said spacer comprises a first plate, and a second plate extending transversely to said first plate, which second plate extends beyond ends of said first plate, whereby said stop comprises a plate-shaped element, which is slidably attached to said second plate.

11. A device according to any one of the preceding claims 5 - 9, characterized in that said spacer comprises a plate and pins extending transversely to said plate, whereby said stop is provided with a flange which is capable of movement over said plate, and which comprises a passage for said pins.

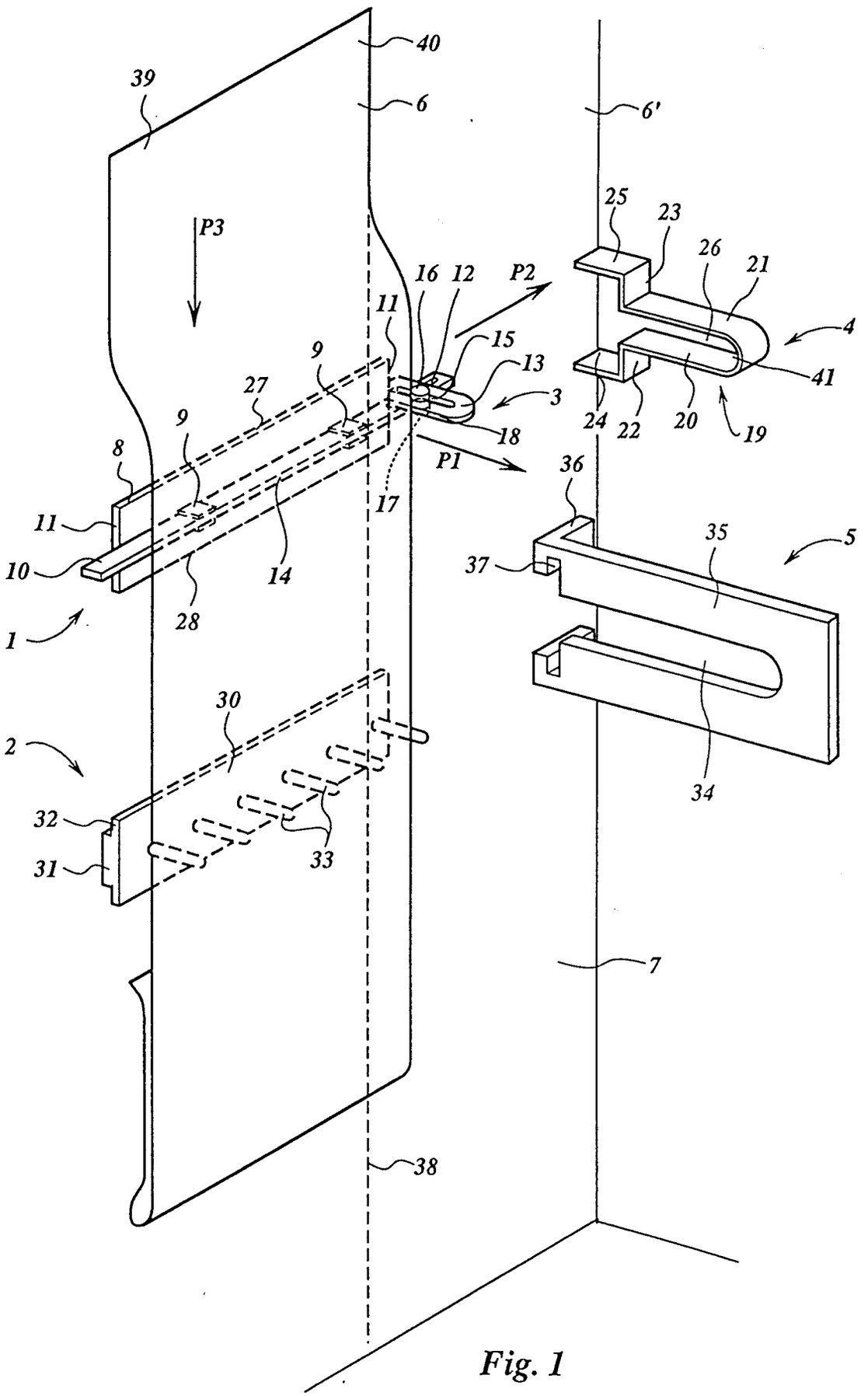
12. A device according to claim 6, characterized in that said rod can be clamped against spring force between walls extending transversely to said wall.

13. A device according to claim 6, characterized in that said device is provided with a level for aligning said rod in vertical direction and/or for aligning said spacer in horizontal direction.

14. A device according to claim 6, characterized in that said device comprises a bar supported by a base, which is pivotally connected to said rod.

15. A device according to any one of the preceding claims 5 - 14, characterized in that said device comprises a further spacer, which can be attached at an angle to one end of said spacer.

16. A device according to claim 16, characterized in that said device comprises at least two rods extending parallel to each other, whereby said spacer comprises a cord which extends between said rods.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P1
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Fig. 1

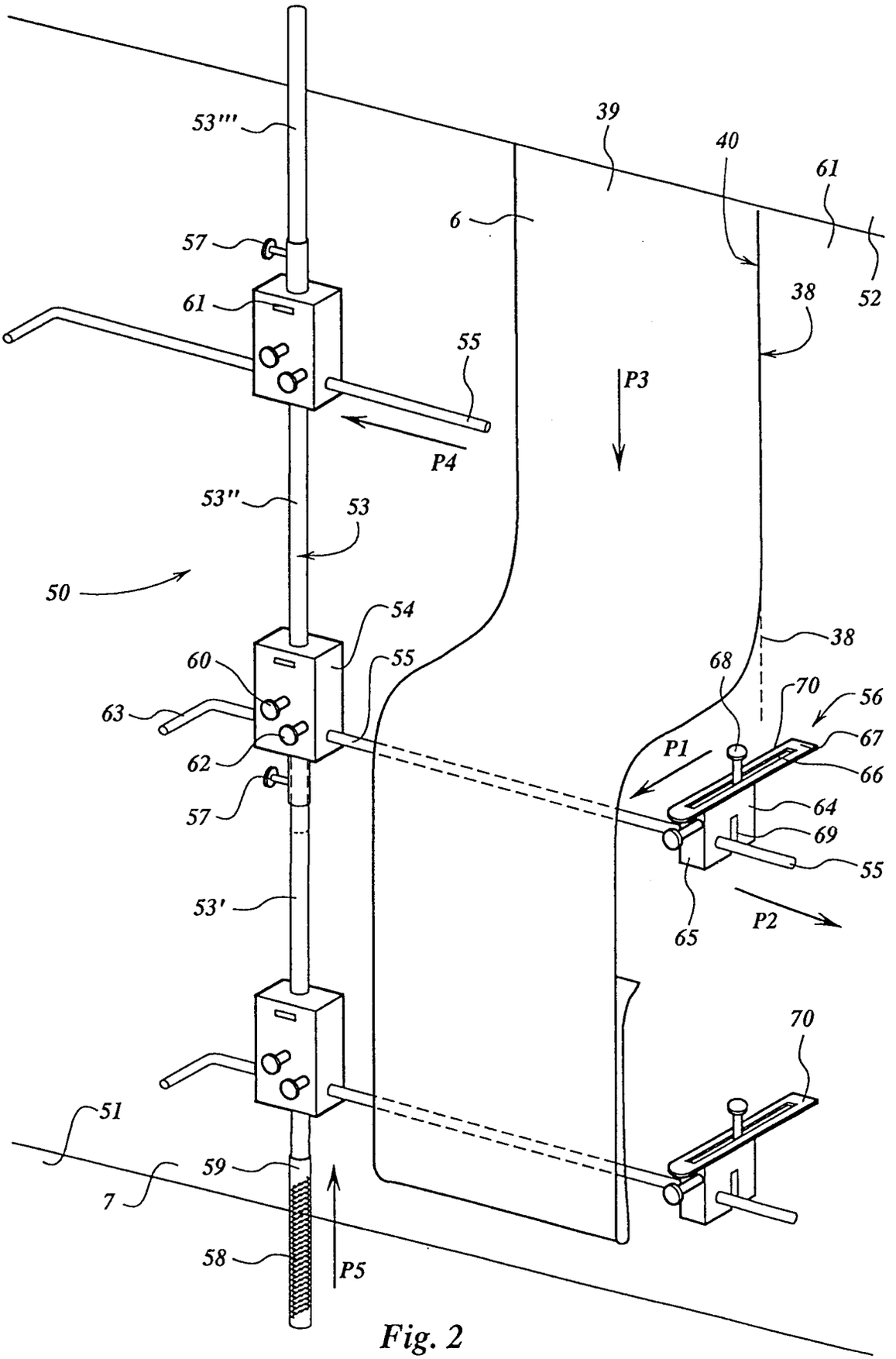
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Fig. 2

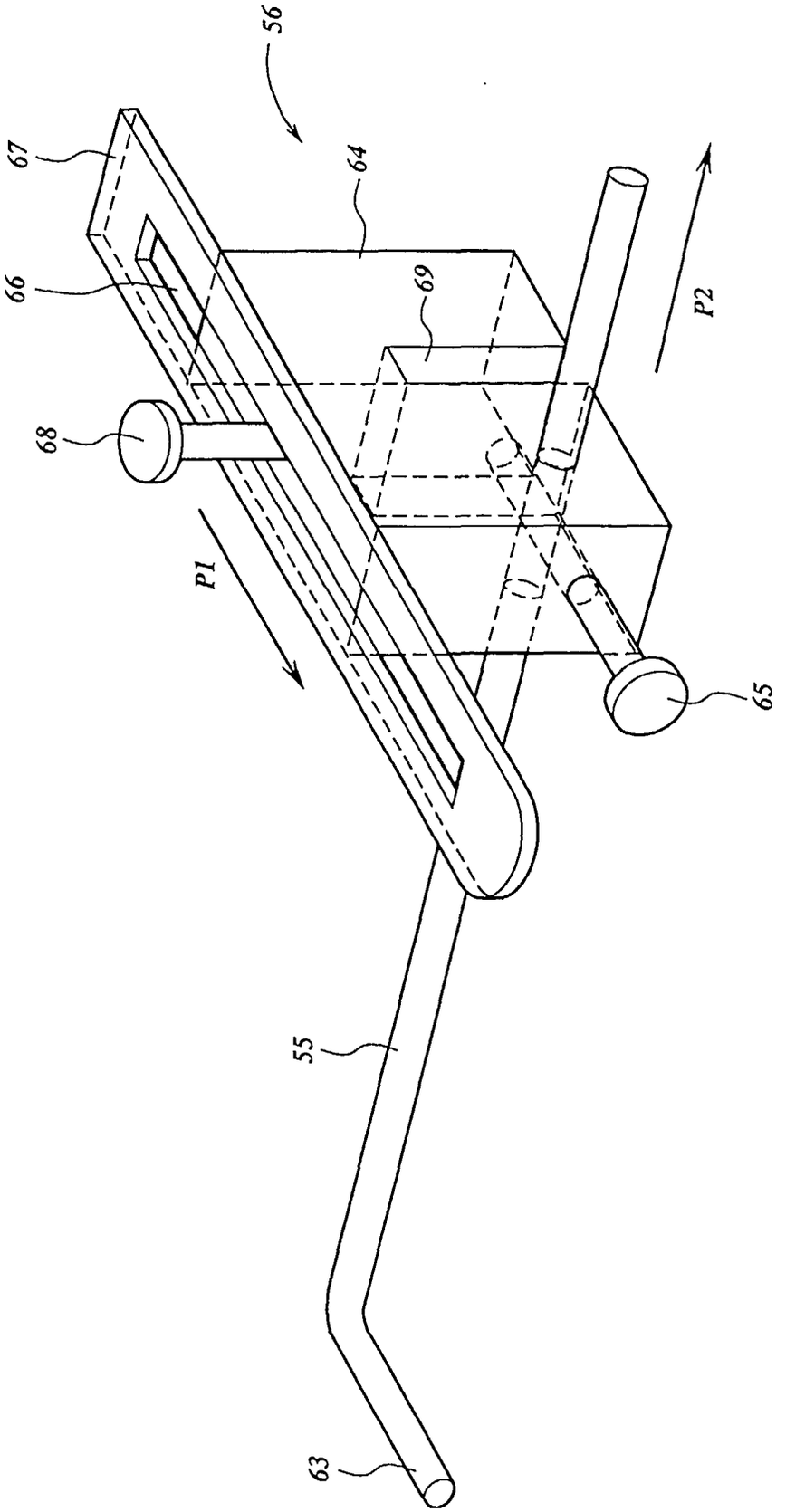

Fig. 3

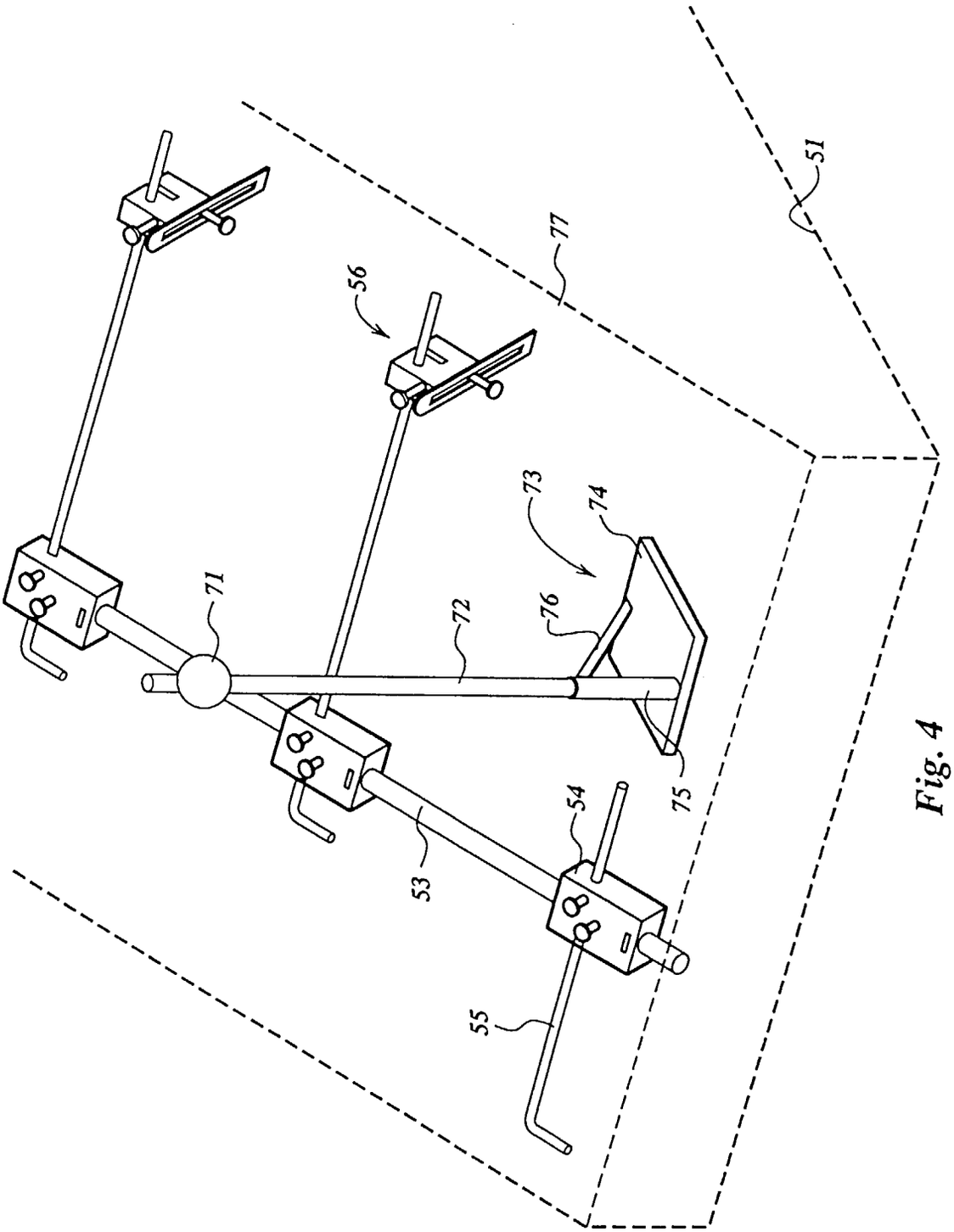

Fig. 4

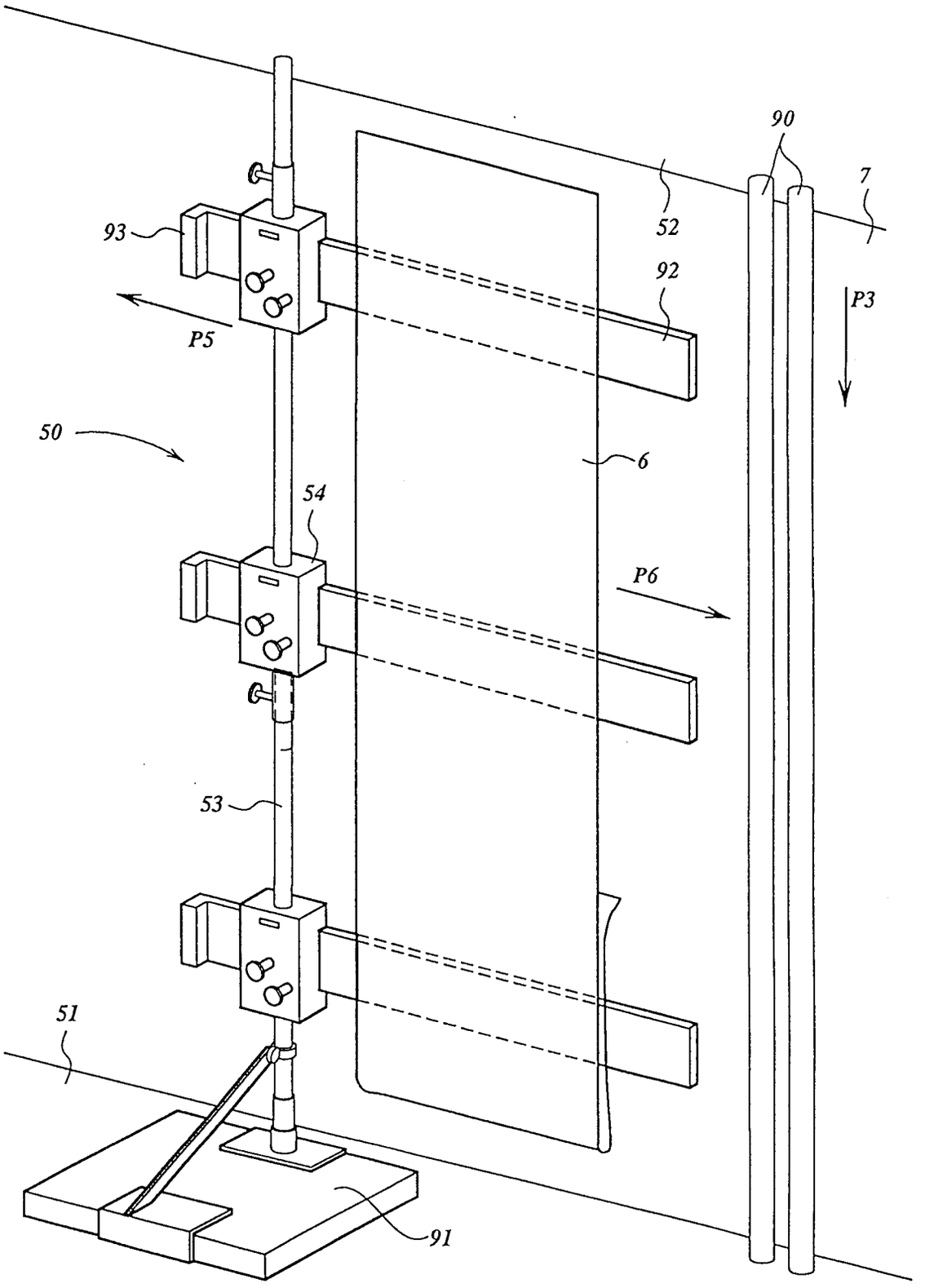

Fig. 6

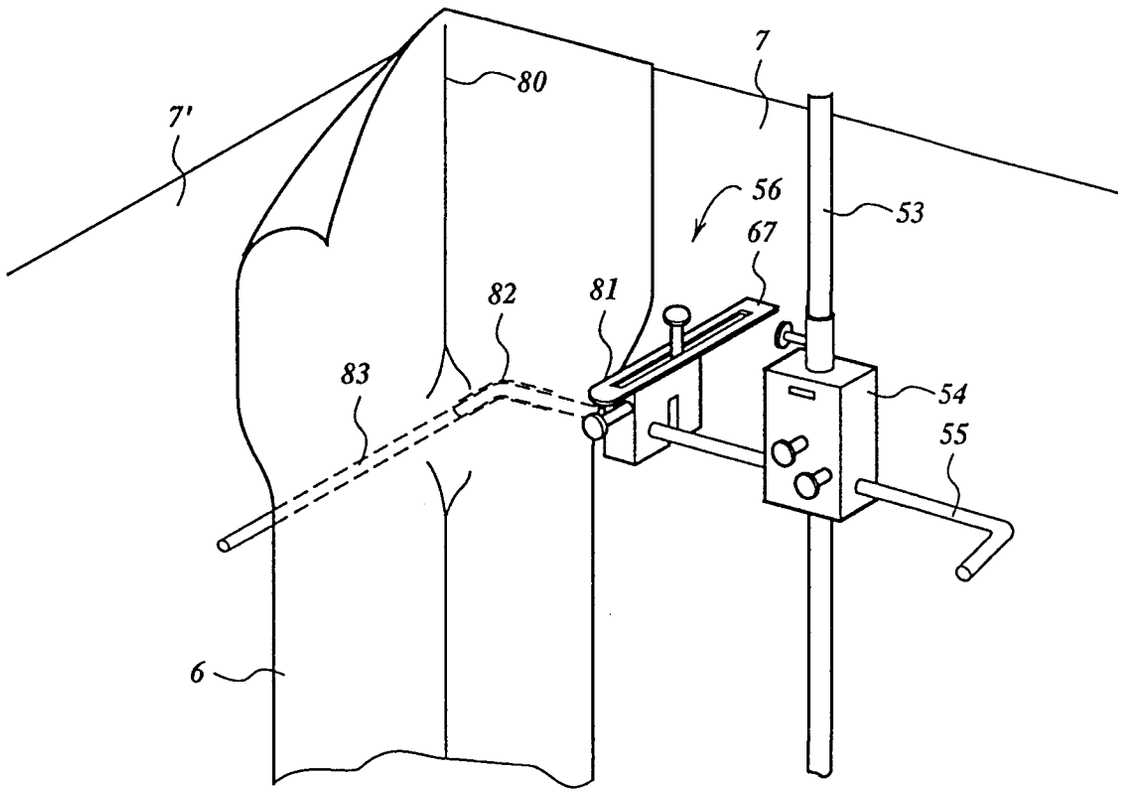

Fig. 5

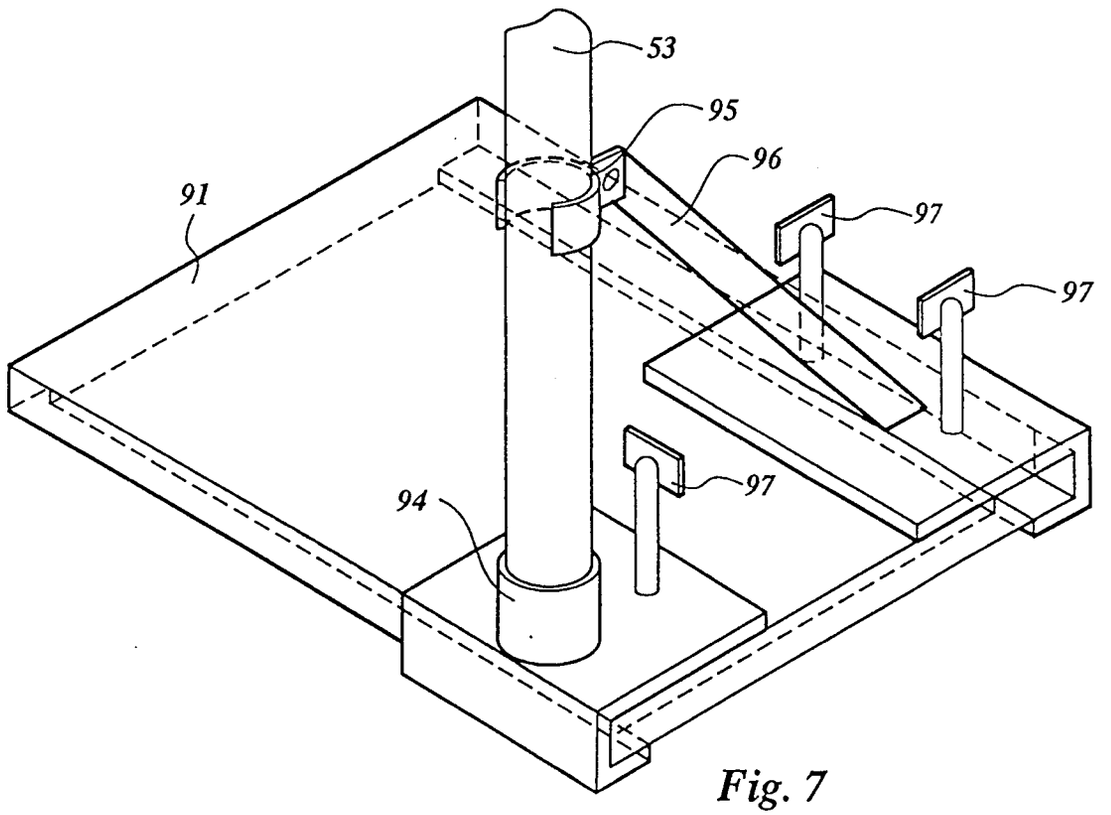

Fig. 7

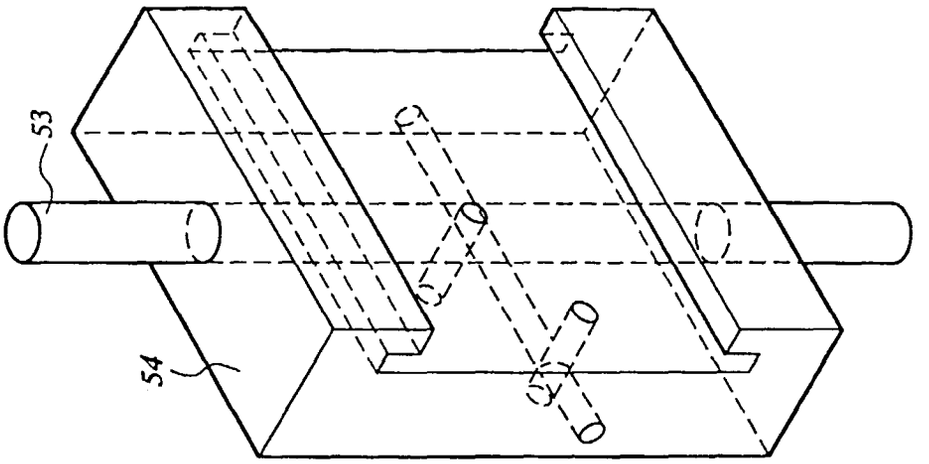

Fig. 8b

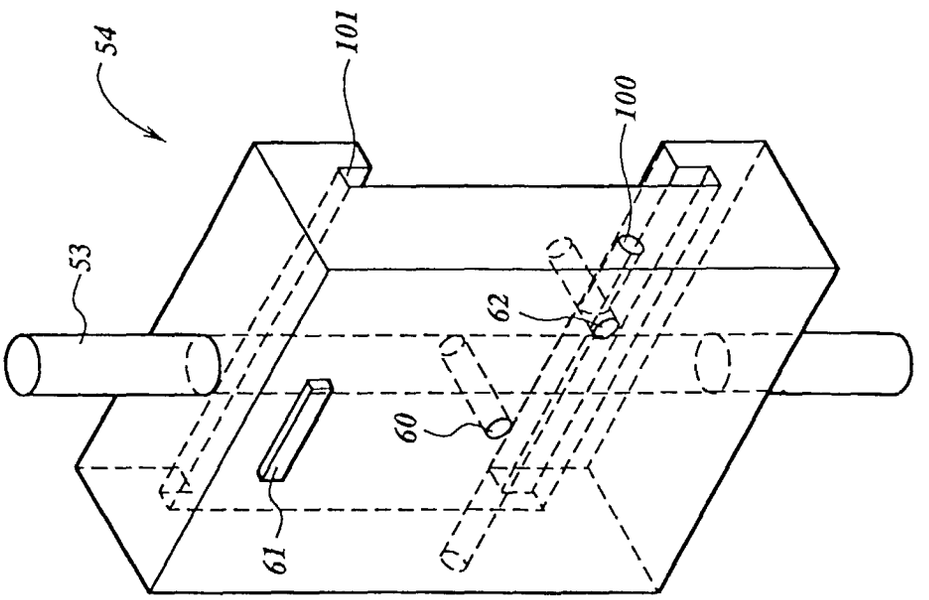

Fig. 8a

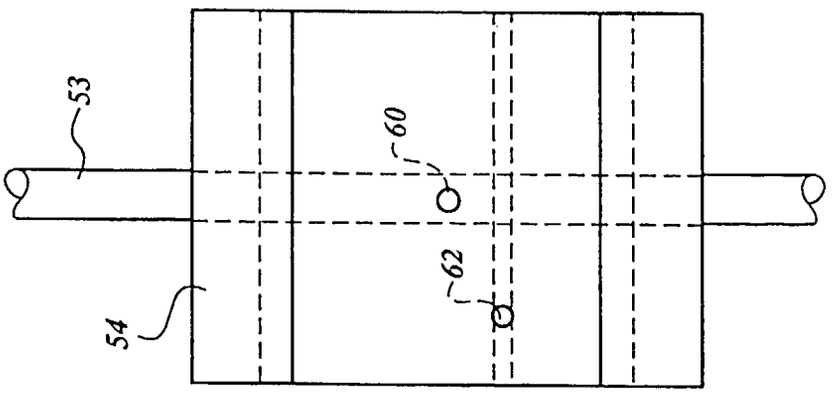

Fig. 8e

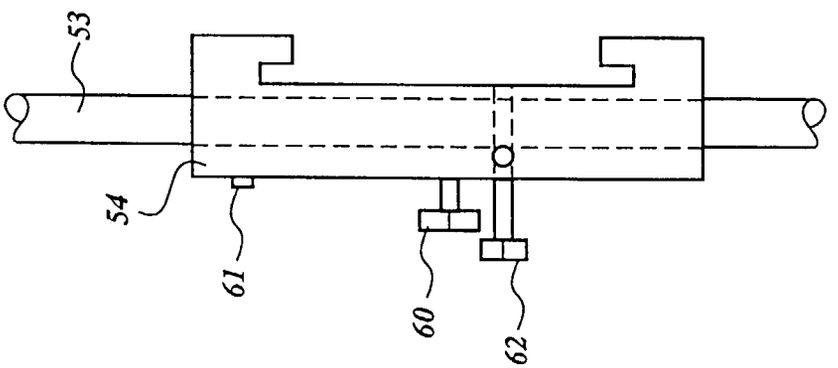

Fig. 8d

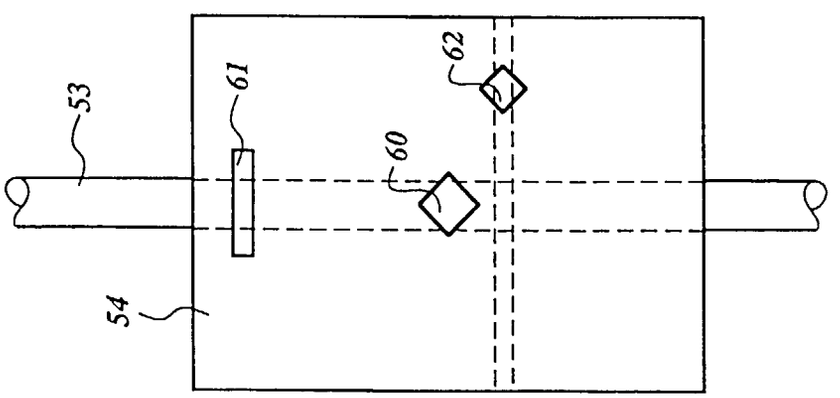

Fig. 8c

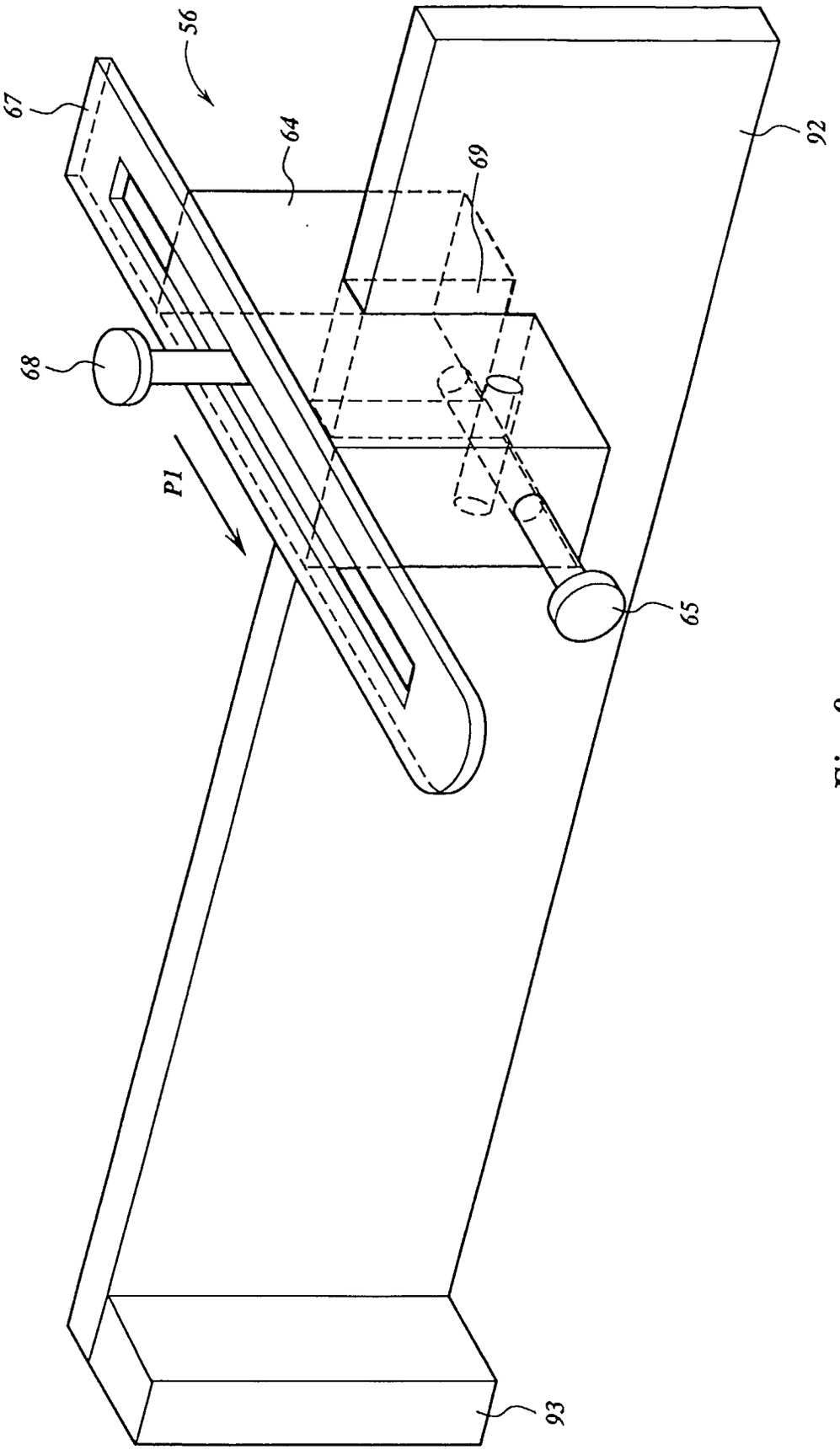

Fig. 9

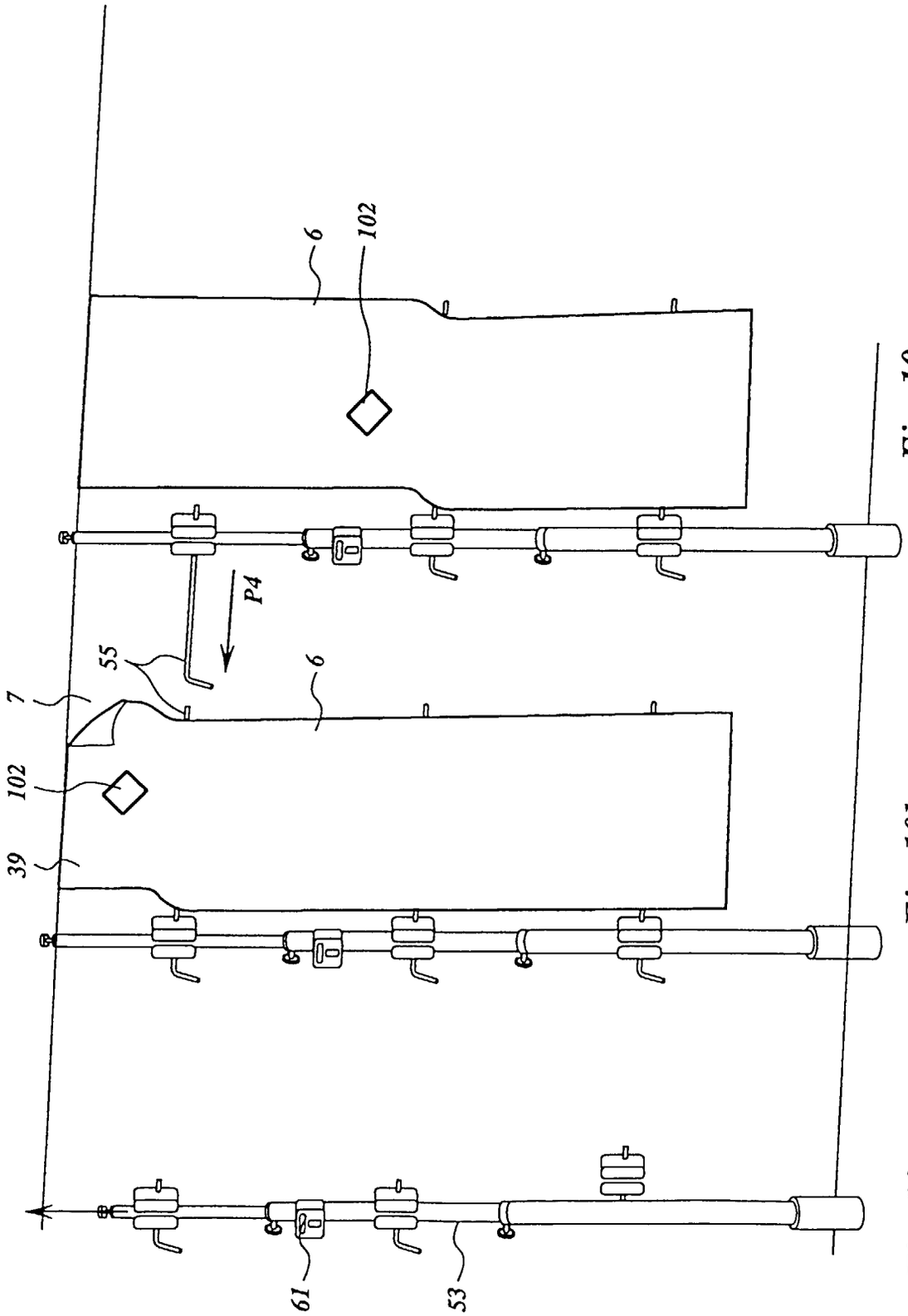

Fig. 10c

Fig. 10b

Fig. 10a

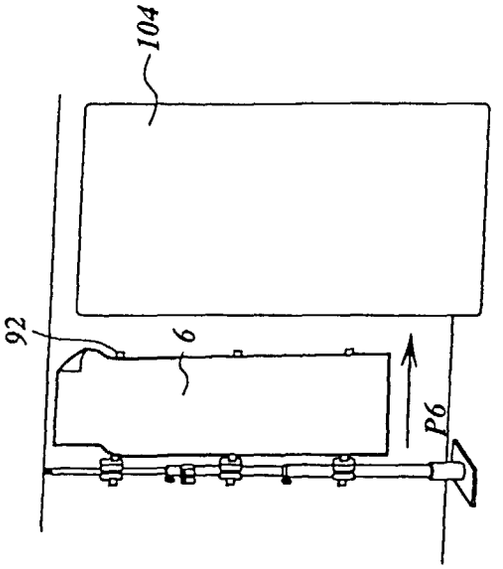

Fig. 10f

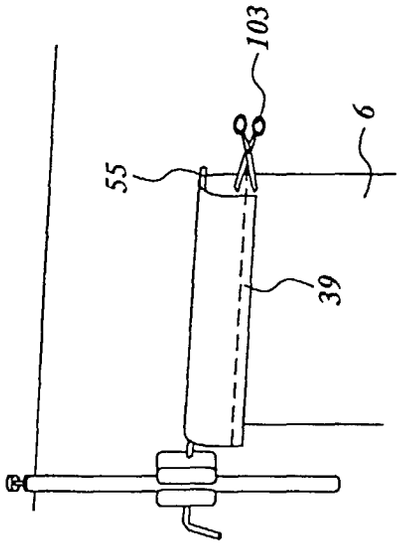

Fig. 10e

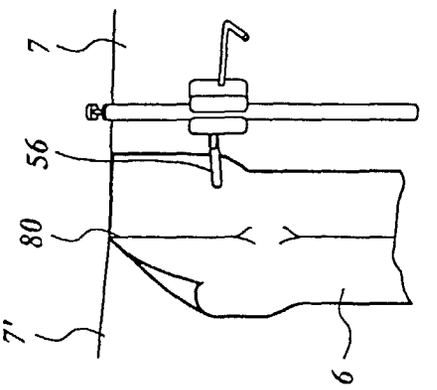

Fig. 10g

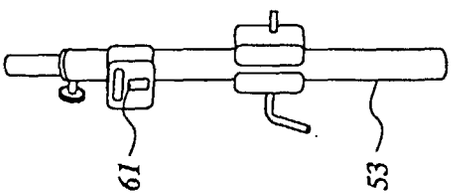

Fig. 10d

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 20 1339

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	US 5 445 704 A (C. DIZON) 29 August 1995 * column 1, line 33 - column 3, line 36 *	1,5,9,13	B44C7/06 B44C7/02
A	GB 2 275 448 A (D. WARD) 31 August 1994 * page 2, line 11 - page 8, line 10 *	1,4-6,8,12	
A	US 4 806 184 A (B. P. SHANNON) 21 February 1989 * column 4, line 4 - column 7, line 60 *	1,13	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

B44C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	3 July 1998	Doolan, G

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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