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(54) Security spear locking system for shop fitting.

(57) A security shop-fitting system comprises one or more spears (1) having a hoop-like hanger member with a free end (17) and mounted in frame members (2a, 2b) by a shank part (15). A retention member (3) disposed between the frame members and able to slide vertically relative to them has tapered apertures (29) with the larger ends accepting the full diameter shank (5) and the narrower ends dimensioned to fit at least one reduced diameter portion (7) of the shank as it moves axially in the mounting (2). The spear (1), has open and closed positions. In the open position the free end is spaced from its mounting so that items to be displayed can be fitted onto the spear from the free end, whilst in the closed position the end (17) is entrant into a bore (24) and the retention member (3) serves to lock the spear in this position to provide a secure hanging means for the merchandise.

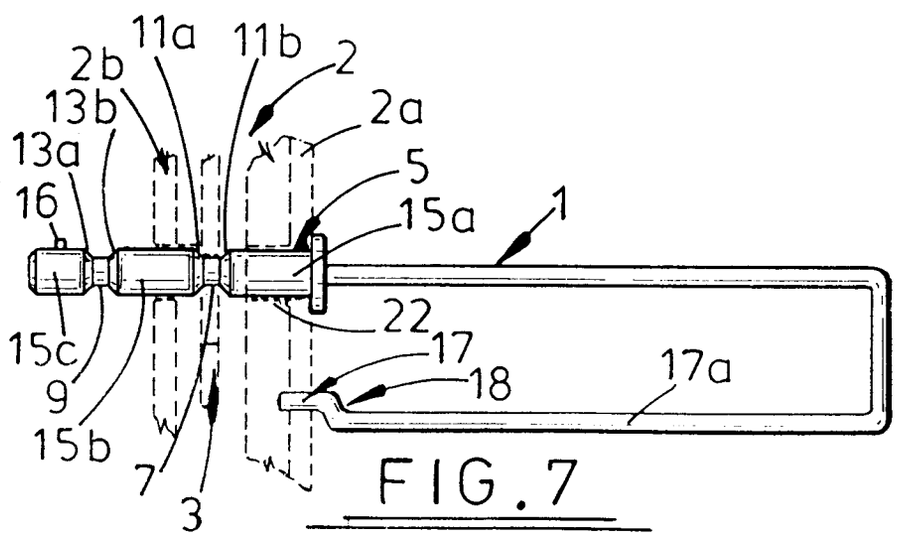

FIG.7

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The present invention relates to a spear locking system with application as a shop fitting for displaying articles.

Shopkeepers find it advantageous to be able to display articles for sale in a manner which allows examination by the potential customer and it is well known to hang items on spears projecting outwardly from a mounting member. The items to be displayed are placed one after the other on to the free end of the spear which is convenient for the shopkeeper for replenishing stocks and for the customer in selecting purchases. However, the system poses difficulties for the retailer in achieving adequate security especially where high value items are concerned.

One solution to this problem has been to provided a chain physically connecting the free ends of a series of loop type spears so that the items cannot be removed off the free end of the spears. Another solution replaces the chain with a wire forming part of an electronic alarm system or alternatively the wire could be threaded through the actual items. These options are not aesthetically pleasing and in either case the threading and unthreading of the security system is time consuming and can expose the stocks to undue risk for example from failure to rethread all the items.

The present invention aims to overcome the above difficulties.

Accordingly, the present invention provides a security shop fitting system comprising at least one spear and a mounting member having at least one aperture to receive a mating part of the spear, the spear extending from said mating part and returned on itself (in the manner of a loop) to present an end part to the mounting member, and means for locating the spear relative to the mounting member with said end part entrant into an opening of the mounting member or terminating in adjacent relation thereto to retain captive on the spear items to be displayed and originally fitted from said end.

Said means may comprise a member which is movable between a retention position in which movement of the spear is blocked and a release position in which the spear can be moved, either completely released or partially withdrawn, to space said end from the mounting member so that display items can be placed on or removed from the spear. A particularly convenient arrangement arises where the spear has two positions of engagement with the mounting member and is selectably movable between those two positions. In a first (open) position the mating part is in cooperating engagement with the mounting member but with its end part spaced from the mounting member so that items to be displayed can be threaded on to the spear, and thereafter the spear is moved into its second (closed) position in which the end part is received in the said opening so that the items can no longer be removed.

A particularly convenient embodiment results where said mating part is constructed as a shank provided with at least one shoulder conveniently defined by a reduced diameter portion, which shoulder is engageable by said means in the form of a slidable locking bar in said second (closed) position. Optionally, said shank has a further shoulder axially spaced from said first shoulder and conveniently defined by a further reduced diameter portion. This is particularly convenient where a plurality of spears are provided and said means is provided by a common retention member which is cooperable with one or other of said shoulders whereby the retention member can move into the lock position when one or more of the spears are moved to their first position. It is preferred that each spear carries abutment means to determine its said first position for alignment of the retention member with the respective recessing.

The preferred mounting means comprises two axially spaced frame parts with the retention member disposed in between and with the spear being cooperable with apertures in both the spaced frame members and passing through aperturing in the retention member. The aperturing in the retention member is configured so that one end allows passage therethrough of the spear whilst its other end is configured to be received in said reduced diameter portion. Conveniently the aperturing is tapered between the two end positions and the recessing has shoulders which are tapered towards the reduced diameter to draw the parts into cooperating engagement. It is preferred that the retaining member be disposed vertically and in one embodiment is arranged such that gravity and/or spring action urges the retaining member into its locking position which is downwardly.

Actuating means is provided for displacing the retention member from its locking position i.e. upwardly in said one embodiment and is by way of a lever projecting through the mounting means and acting on the retention member by way of pivotable links.

A locking member is provided which engages with the retaining member in its locating position (ie. downwardly in the example) and this is preferably of key operated type say of self latching yale type with key operation to release. This gives rise to automatic locking under the action of gravity.

The frame parts may be strip-like members having a plurality of spaced holes in one or more rows and carried by a mounting board. Alternatively, according to another embodiment, each frame part comprises a panel member, say of metal or other convenient sheet material, having a plurality of spaced holes disposed in rows and columns, or otherwise, to receive a plurality of spears in desired positions. The retention member is disposed between the spaced panels and is also preferably in the form of a panel member with appropriately positioned apertures to retain the spears or permitting movement to a release position according to the position of the retaining panel. The

weight of the retaining panel member is counteracted by springs acting on it. This makes it easier to move to the release position.

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

Figure 1 is a front view of one embodiment displayed system according to the present invention,

Figure 2 is a rear view showing the mounting frame the embodiment of Figure 1,

Figure 3 is a rear elevation of the retaining frame the embodiments of Figures 1 and 2,

Figure 4 is a side view showing the actuation system for the retaining frame to a larger scale,

Figure 5 is a perspective view showing detail A of Figure 1,

Figure 6 is a perspective view of detail B of Figure 3 and part of the mating spear,

Figure 7 is a side view of the spear and showing the disposition of the mounting frame and locking frame,

Figure 8 is a fragmentary perspective view of another embodiment, and

Figure 9 is a detail fragmentary side view of another embodiment of locking spear.

The basic elements of the security spear shop fitting system are identified in Figure 7 and comprise the spear 1, mounting means 2 which in the illustrative embodiment comprises spaced frame parts 2a, 2b and a retention frame 3. The spear, its mounting and the locking system may be supplied as a single unit but is more practical to multiple spear applications where the mounting means is configured to accept a plurality of spears in order that the shop fitting can be configured to the customers requirements. The present invention is described with reference to one possible embodiment in which the spears can be disposed vertically one above the other in horizontally spaced columns.

The spear 1 has a shank part 5 which is cylindrical and with two axially spaced reduced diameter portions 7, 9 defined by tapered shoulders 11a, 11b and 13a,13b. The relieved section defines shank portions 15a, 15b and 15c, with portion 15c carrying a radially projecting pin 16 whose purpose will be described further hereinafter.

Extending from the shank portion is a hanger member formed in the appropriate shape to suit the merchandise to be displayed and generally comprises a hoop-like part with an end 17 disposed parallel to the shank and spaced therefrom. In the illustration the hanger part is configured from such as steel rod and comprises an upper part and lower part 17a returning to said end. The items to be displayed will hang from said lower part and the end is shown as cranked upwardly to provide a retention shoulder 18 which avoids items hanging on the lower part sliding off.

The spear is mounted by way of mounting means comprising spaced frame parts 2a, 2b conveniently arranged as strips of metal with the first part 2a secured to the front face of a mounting board 20 and the second part 2b secured to the rear of the mounting board by way of mounting brackets 32. In the illustrative embodiment two such frame parts are disposed in side by side relation. The frame 2a and mounting board 20 has a through bore 22 dimensioned to receive shank portions of the spear and aligned with a correspondingly shaped bore 22′ in the frame part 2b. The mounting frame also has a bore 24 spaced from bore 22 to receive the end 17 of the spear. Bore 22 has an axially extending slot 26 to allow passage therethrough of the pin 16 on initial insertion of the spear which is done with the spear inverted. It will be seen that the frame parts 2a and 2b have a plurality of bores 22 and 22′ along the length for receiving the spears. Also shown are fixing bores 25. Alternatively, especially where the mounting board is a metal sheet, the mounting bores 22 may be provided directly therein dispensing with the need for part 2a.

Referring to Figure 3, the retention member 3 is illustrated and has a plurality of tapered slotted holes 29 spaced at intervals to correspond with the spacing of holes 20 and with the larger diameter end accepting the shank of the spears, and similarly axially slotted at 26′ for passage therethrough of the pin on initial insertion of the spear in its inverted position. The narrower end of the slotted holes, as will be seen uppermost in the illustration is dimensioned to correspond to the diameter of the reduced portion of the spear shank. In the illustrated embodiment two strips containing the holes 29 are secured together by transverse bars 32. The retaining member is disposed between the frame member 2b and the rear of the mounting board and is mounted for vertical sliding movement. Sliding movement of the retention member is controlled by way of an actuating member mechanism shown with reference to Figure 4 and comprising two pivotable link members 34, 36 connecting with a push pull operated knob 38 and having their opposite ends connected to a static pivot block 40 and to a link 42 extending from the retention member by way of a bracket 44. Also acting on the retention member is a spring 46 which serves to urge the retention member downwardly supplementing the natural action of gravity. The retention member is moved upwardly by extending the length of the link by pulling the knob to the right as illustrated in the drawing of Figure 4.

It will be understood that the mounting board is part of a shop fitting display and that several of such mounting boards can be mounted as part of an overall larger display. Once the basic display is assembled the shopkeeper positions the spears in the desired location by presenting the shank to the appropriate bore 20 with the spear inverted to present the pin downwardly to pass through axially slot 26 and with

the retention member in its raised position whereby the shank can be passed through the tapered slot 29 in the retention member and then through the corresponding bore 22′ in the mounting frame 26. The spear is then rotated through 180 degrees and moved axially to engage the end 17 in the bore 24. This is repeated until all the desired spears are fitted into the mounting whereupon the knob 38 is pushed and the retention member returns to its locking position with the locking member then in cooperating engagement with the first reduced portion 7 of the spear. In this position a self latching lock 50 engages with an abutment on the retention member preventing upward displacement of the retention member by operation of the knob until the latching mechanism is released by use of a key, for example when it is required to place items to be displayed onto the spears. Thus, operation of the key to release the latch and pulling the knob moves the retention member to its upper position and any one or more of the spears may then be moved axially outwardly to an extent limited by contact of the pin with the rear of mounting frame 2b which corresponds to the further recessing being aligned with the retaining member and with the end 17 spaced from the mounting so that items to be displayed can be slipped over the end to locate on the lower part of the spear. If desired the retaining mechanism could be released to locate some of the spears in their second position and others in the extended position.

By means of the present invention items to be displayed can be held captive and yet there is ready access to any selected spear with only minimal exposure to the other spears when the locating mechanism is momentarily released.

Reference is now made to Figure 8 in which the afore-described mounting means comprises a pair of panel members 102a, 102b only part of which are shown in the illustration and which are for incorporation into a display system by suitable legs and/or frameworking. The panels are conveniently of sheet metal and are spaced apart as were the frame parts described previously. Each of the panels 102a, 102b is provided with a plurality of holes 122 arranged in rows and columns in the illustration and configured as previously described to allow insertion of the shank part of the security spear. Disposed between the panels 102a, 102b is a corresponding retainer member which in this embodiment also takes the form of a panel member 103 and which is arranged to be movable slidably upwardly and downwardly in the direction indicated by arrow A relative to the panels 102a, 102b. The means for moving the retaining member panel is substantially as described previously and therefore the mechanism is not described in further detail. Its actuating handle is shown at 138. A modification concerns the provision of springs (not shown) which act on the retaining member panel 103 to counteract its weight and therefore assist in moving it upwardly to its release position. Slots 126 to bores 122 are now uppermost.

An alternative embodiment of locking spear is shown in Figure 3 and has parts corresponding to those described in Figure 7 save for the omission of the second reduced diameter portion (9 in the previous embodiment) and modification of the first reduced diameter portion 107 to have one tapered shoulder 111a and one shoulder 111b which is perpendicular to the shank axis. In the locking position cooperation of the retaining member (eg. panel 103) with the shoulder 111b, and engagement of flange 115a with the outer panel 102a, holds the spear positively.

Claims

1. A security shop fitting system comprising at least one spear (1) and a mounting member (2) having at least one aperture (22) to receive a mating part (5) of the spear, characterised in that the spear (1) extends from said mating part and is returned on itself to present an end part (17) to the mounting member (2), and in that means (3) are provided for locating the spear relative to the mounting member (2) with end part (17) positioned to retain captive on the spear (1) items to be displayed and originally fitted from said end (17).

2. A system as claimed in claim 1, wherein the end part (17) is positionable entrant into an opening (24) of the mounting member (2) to retain items on the spear (1).

3. A system as claimed in either claim 1 or 2, wherein the means for locating the spear (1) comprises a member (3) moveable between a retention position blocking movement of the spear (1) and a release position in which the spear can be moved to space end part (17) from the mounting member (2).

4. A system as claimed in any one of claims 1, 2 or 3, wherein the spear has two positions of engagement with the mounting member (2), and is selectably movable between these two positions.

5. A system as claimed in any previous claim, wherein the mounting means (2) comprises two axially spaced frame members (2a, 2b) with the location means (3) disposed in between and with the spear (1) being cooperable with apertures (22, 22′) in both the spaced frame members (2a, 2b) and passing through aperturing (29) in the location means (3).

6. A system as claimed in claim 5, wherein the aperturing (29) in the location means (3) is configured

so that one end allows passage therethrough of the shank (5) whilst its other end is configured for locating engagement with the spear.

7. A system as claimed in any one of claims 1 to 6, wherein the mating part (5) is a shank provided with at least one shoulder (11a, 11b) defined by a reduced diameter portion (7) and engageable by the locating means (3).

8. A system as claimed in claim 7, wherein the shank (5) has a further shoulder (13a, 13b) axially spaced from said first shoulder (11a, 11b) and defined by a reduced diameter portion (9) whereby the locking means (3) is cooperable with one or other of said shoulders according to the position of the spear (1) and serves to secure the spear in either of two positions.

9. A system as claimed in claim 7 or 8, when appendant to claim 6 in which the aperturing (29) is tapered between two end positions and the recessing (7, 9) has shoulders (11a, 11b, 13a, 13b) tapered towards the reduced diameter to draw the parts (3 and 5) into cooperating engagement.

10. A systems as claimed in any one of the preceding claims in which the locating means comprises a slidable locking bar.

11. A system as claimed in any one of the preceding claims wherein actuating means is provided for displacing the location means (3) from a locking position by way of a lever (38) projecting through the mounting member (2) and acting on the retention member (3) by way of pivotable links (34, 36).

12. A system as claimed in claim 5 or any preceding claim appendant thereto wherein the spaced frame members comprise spaced panel members having a plurality of aligned bores, and the location means comprises a panel member having a plurality of said apertures.

13. A system as claimed in any one of the preceding claims in which the mounting member (2) has a plurality of spear receiving apertures (22) and in which release and location of the spears (1) relative to the mounting means is controlled simultaneously by operation of said means (3).

14. A system as claimed in any one of the preceding claims in which said means further comprises locking means.

15. A system as claimed in any one of the preceding claims in which the spears are releasable from the mounting member.

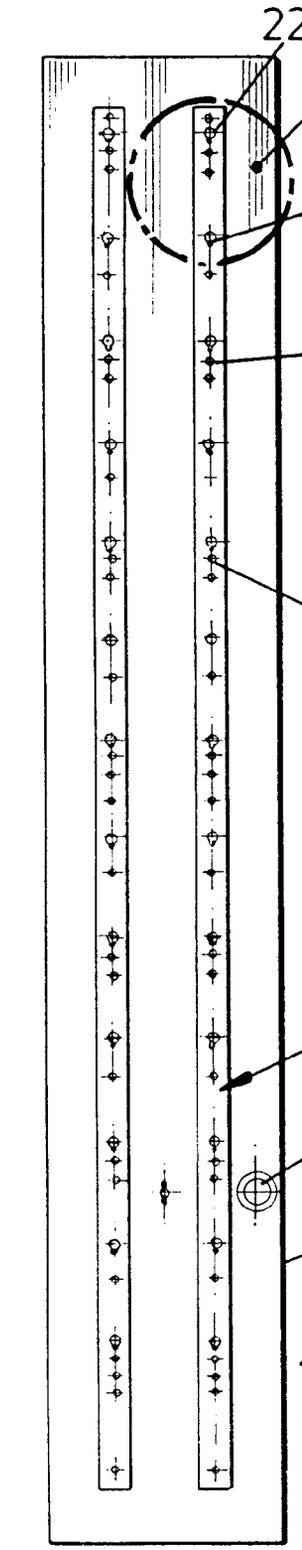

FIG. 1

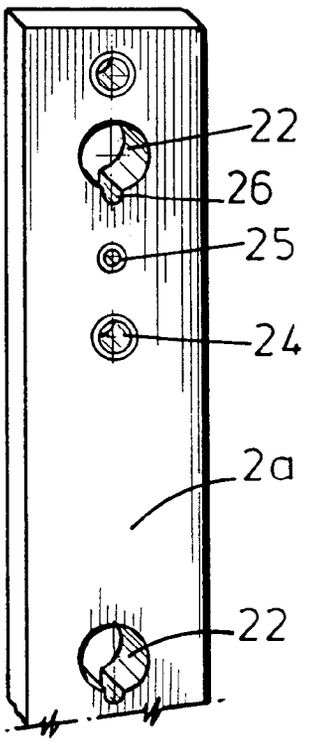

FIG. 5

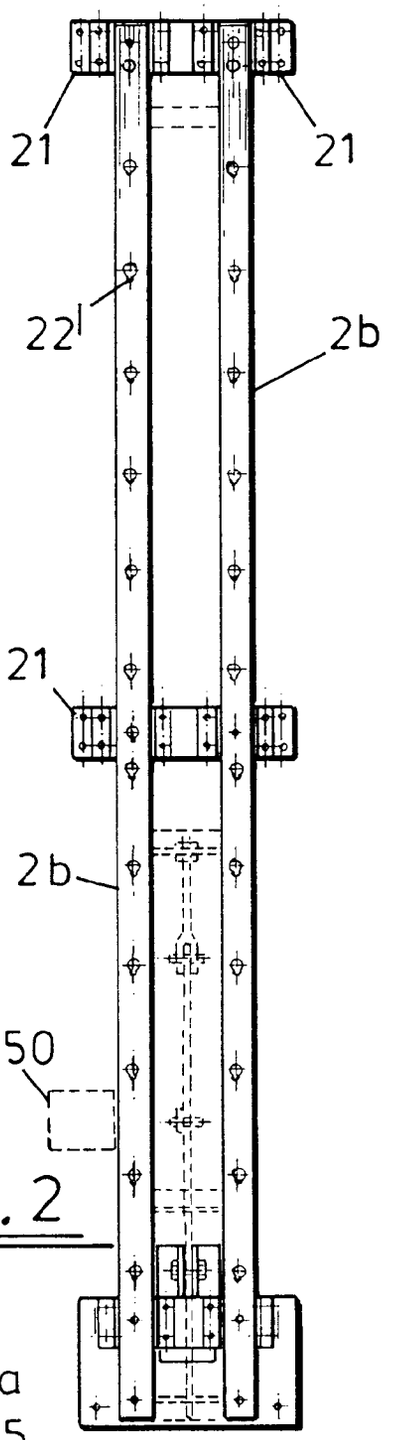

FIG. 2

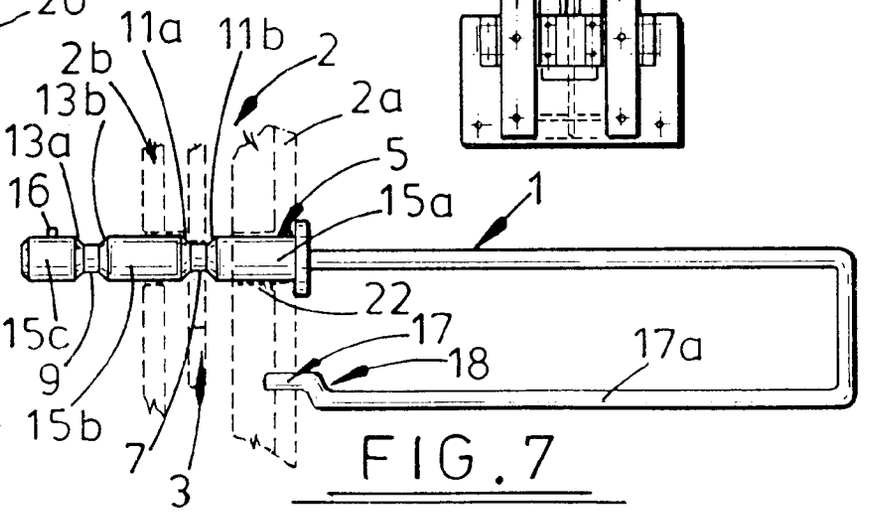

FIG. 7

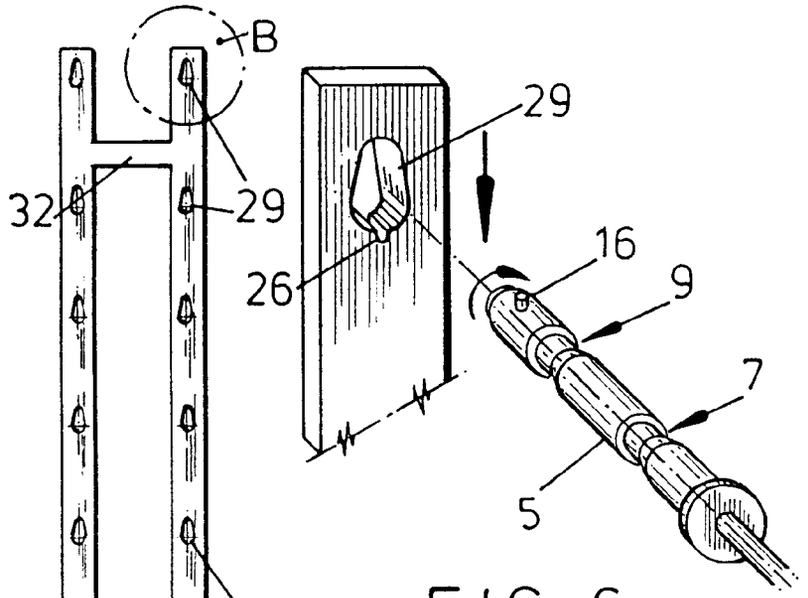

FIG. 6

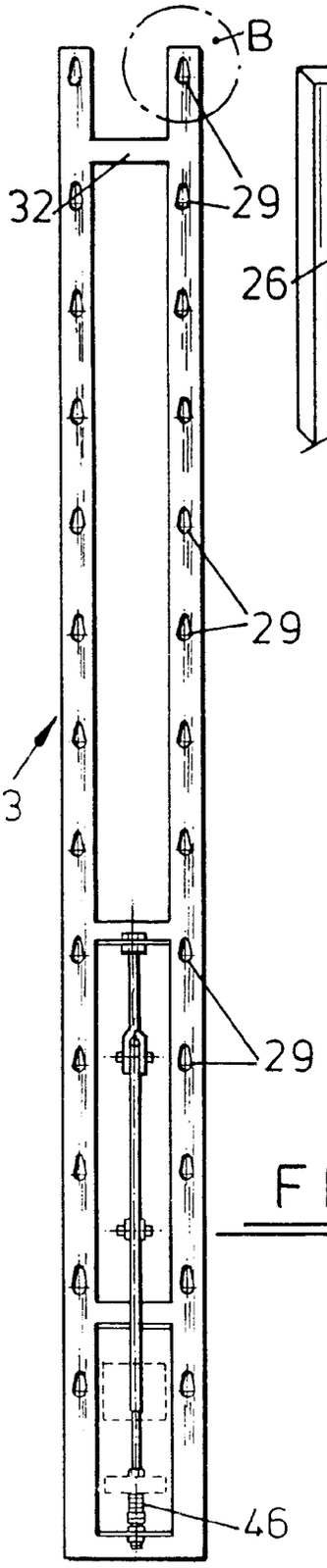

FIG. 3

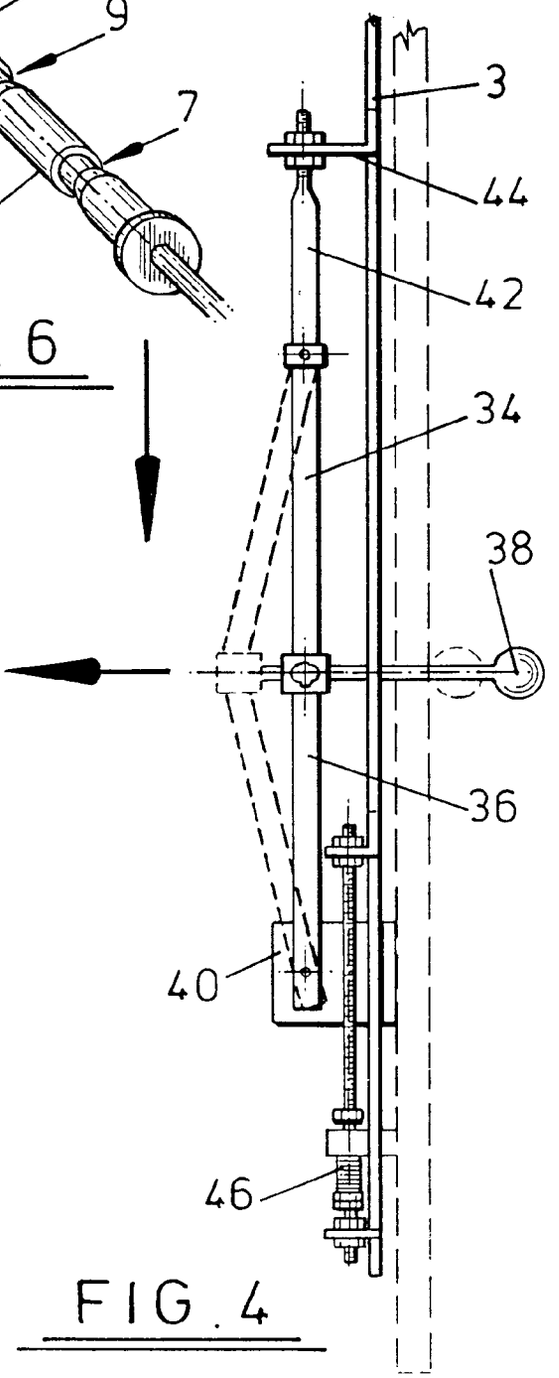

FIG. 4

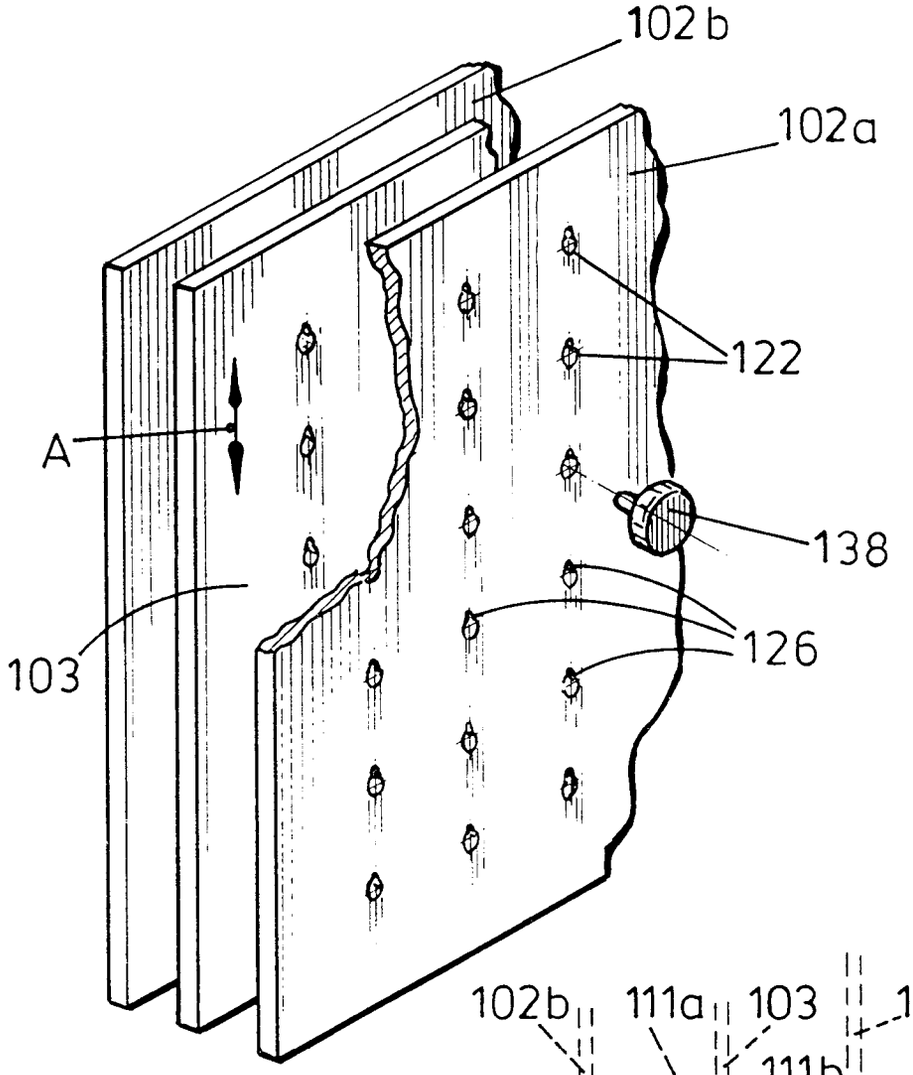

FIG. 8

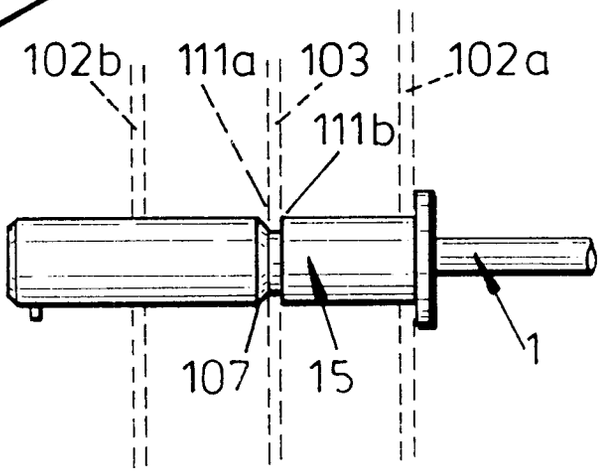

FIG. 9

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 30 7515

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.5)
X	DE-A-283 264 (SAGER) * page 1, line 59 - page 2, line 19 *	1,3,4	A47F5/08
A	---	2	
A	US-A-2 527 879 (FRIEDMAN) * claim 1; figures *	1-2	
P,A	---	2	
	DE-U-9 012 756 (WOHLFAHRT) * figures 1-3 *		
A	---		
	FR-A-2 581 304 (RASKIN)		

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A47F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	09 OCTOBER 1991	DE GROOT R.K.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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