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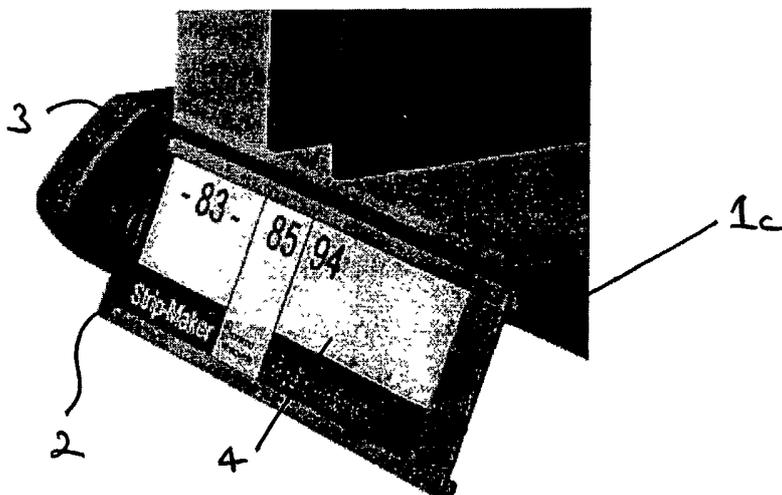
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A LABELLING SYSTEM FOR A SHELF, RACK OR BIN SYSTEM



(57) Abstract: A shelf, rack or bin system including a number of rows (1a-1d) positioned above each other at different heights has associated with each of one or more rows or part rows a longitudinally extending multi-sided display member (2) extending along or part way along the row and which is mounted so that the label display member (2) may be rotated about its longitudinal axis to display a selected side of the label display member (2). Recesses (5, 6, 7) are provided in a slot (8) in a mounting means (3) to hold the label display member (2) at discrete angular positions. Typically the label display member (2) displays information in a postal sorting system.

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## **A LABELLING SYSTEM FOR A SHELF, RACK OR BIN SYSTEM**

### **FIELD OF INVENTION**

The invention relates to labelling systems for use in association with shelf, rack, or bin systems such as for example postal sorting systems.

### **BACKGROUND**

Traditional equipment used in postal sorting rooms comprises rows of shelves positioned above each other at different heights and which are divided by partitions into compartments along each row. The compartments or rows are usually labelled with self-adhesive stickers or filing cabinet-type label holders into which are slotted paper or cardboard labels identifying delivery addresses or locations.

Typical postal sorting shelves are used once a day for sorting mail for a particular postal round, and then may remain unused until mail sorting for that round is again required the next day.

### **SUMMARY OF INVENTION**

The system of the invention enables the same postal sorting shelves, racks or bins to be used for sorting mail for a number of postal rounds with a different set of addresses during the same day or period.

In broad terms in one aspect the invention comprises a shelf, rack or bin system including a number of rows of shelves, racks or bins positioned above each other at different heights and associated with each of one or more of the rows or part rows a longitudinally extending multi-sided label display member extending along or part way along the row and which is mounted so that the label display member may be rotated about its longitudinal axis to display at any time a selected side of the label display member.

The label display member may be two sided in which case the label display member is rotated through about 180° to display information on either one or its other side. In another form the label display member may have a greater number of sides such as for example three or four sides, in which case the label display member is mounted so that it may be rotated about its longitudinal axis through about 120° or 90° respectively to change the side of the display member which is visible to a user standing (or sitting) beside the shelf, rack or bin system and which will therefore display information to the user. In the case of a letter or parcel sorting shelf, rack, or bin system in a post sorting room in which shift mail sorters work each day, a double sided label display member may be rotatable through about 180° to show address information required by one or other of the two shifts for example.

Typically a label display member will extend along each row and each display member is mounted at either end of each row, but as indicated label display members may extend only part way along one or more rows, or two or more label display members may be provided along the length of a single row, each associated with a sub-group of compartments or areas on or in shelves, racks or bins, or alternatively with a single compartment or the shelf area, or rack or bin.

Typically the rotatable display members will be arranged to support removable and replaceable label strips, of cardboard, paper or similar, one on each side of the display member.

In broad terms in another aspect the invention comprises a shelf, rack, or bin system including a number of rows of shelves, racks or bins positioned above each other at different heights on the floor and associated with a number of rows or part rows a longitudinally extending display member which is mounted such that the angle of display of each label display member may be varied between a predetermined number of angular positions relative to the row or part row with which the label display member is associated.

## BRIEF DESCRIPTION OF THE DRAWINGS

A preferred form system of the invention is shown by way of example in the accompanying drawings wherein:

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Figs 1A to 1D show one end of each of four rows of a mail sorting shelf system of the invention including a double sided rotatable address display member associated with each shelf,

10 Fig 2 shows close up detail of the mounting of one end of an end cap fitted to a shelf end and part of the rotatable display member of the preferred form system, generally in the direction of arrow A in Fig 1A, and

Figs 3A and 3B are inner side and plan views of a preferred form shelf end cap.

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## DESCRIPTION OF PREFERRED FORM

Referring to the drawings, Figs 1A-D show the ends of four shelves 1a-1d positioned above each other. Shelf 1a is the highest shelf, shelf Fig 1b is a mid-level shelf, and shelves 1c and 1d are shelves closest to the floor, respectively (Fig. 1A also shows how the label display member may be removed and is referred to further below).

20 A label display member 2 extends along of each shelf, so that the longitudinal axis of each label display member extends adjacent the front edge of the shelf. Alternatively the label display members could extend above each shelf instead of adjacent but below the front edges of the shelves for example. In the preferred form the label display members are two sided display members, and are formed as aluminium or plastic extrusions as more particularly shown in Fig 2.

30 Each display member 2 is pivotally mounted at its either end, so that it may be rotated about its longitudinal axis. In the preferred form an axle end extends from either end of

each display member 2 into mounting means in the form of end caps mounted at either end of each shelf.

Labels or label strips may be attached to each side of the label display member 2 by any suitable means, but in the preferred form the label display members include opposing frame edges 2a on each side which enable a strip label 4 (see Fig 1) to be slid into each label display member 2 on each side, typically when a label display member has been temporarily removed from its associated shelf. The label display members 2 may be rotated through about 180° to display the address (or other) information on either one or the other side of the display member. When used in a postal sorting room partitions on each shelf divide each shelf into a number of compartments each associated with a particular address and the label strips carried by the display member will display address information for each compartment. By rotating the label display member through 180° the same shelf system may be used by two different shifts of mail sorters for two different sets of streets or other locations.

In an alternative form the label display members may have three or four sides for example, so that by rotating a label display members about their longitudinal axis through about 120° or 90° respectively the side of the display member which is visible to a user can be changed. This may enable the same shelf system to be used by three or four shifts for example.

In the preferred form a series of recesses 5, 6, and 7 are provided along the length of a slot 8 formed in each plastic moulded end cap 3, as shown most particularly in Fig. 3A. The axle ends of each label display member at its either end may be moved between each matching pair of recesses 5, 6 and 7 to change the angular position at which the display member 2 is mounted, between for example an about vertical position when the display member is retained in the recesses 7 (as shown in Fig 1B), an angular position of about 30° to the vertical when the display member 2 is retained in the recesses 6 and which may be suitable for a shelf closer to the floor, (as shown in Fig. 1C) and the front most recess to position the label member an angle of approximately 60° (as shown in Fig 1D), which may be appropriate for the lowermost shelf row closest to the ground.

This arrangement allows the top edge of the label members 2 to always be as close as possible to the lower edge of the shelves. This allows the angular mounting position of any label display member to be changed by shifting the display member between the recesses 5, 6 and 7 in the end caps 3. This may be achieved by the axle end 9 of the mounting member being “snap fit” movable between the different recess pairs or alternatively in the preferred form the axle ends 9 are asymmetrically shaped so that moving of a label member between recess pairs is enabled by rotating the label member through 90° which allows the asymmetrically shaped axle end 9 to then slide along the slot 8 from one recess pair to another. Also by rotating a label member 90° the label extrusion may be slid out and removed altogether (as shown in Fig. 1A) to change label strips, or an alternative pre-labelled extrusion can then be fitted quickly to allow the equipment to be used for other delivery tasks or different delivery configurations.

With the arrangement as described the angle of the label display member relative to a user standing facing the shelves, such as a mail sorter for example, may be varied so that the highest label display member such as that adjacent shelf 1a in Fig 1, which may be positioned at or slightly above head height, faces down towards the user or the users eye line, the label display members of mid-level shelves such as shelf 1b in Fig 1 faces directly towards the user, and the label display members of lower shelves such as lower shelf 1c and lower most shelf 1d adjacent the floor in Fig 1 face upwardly towards the user.

In the preferred form slots in the ends of extruded or folded metal shelves are formed to allow the injection moulded end caps 3 to be fitted securely to each shelf without the need for fasteners or adhesive. Any other mounting means for mounting the label display members for rotation about their longitudinal axis may be employed however, such as any other suitable form of bracket or similar.

As indicated previously the label display members may extend along the whole length of each shelf in which case the end caps 3 or other mounting means will be positioned at either end of each shelf, or may extend only part way along each shelf. For example in the case of a long row two or more label display members may be provided in series

along the length of the single long row, each associated with a sub-group of compartments or areas on or in shelves, racks or bins in or supported by the rows.

The foregoing describes the invention including a preferred form thereof. Alterations  
5 and modifications as will be obvious to those skilled in the art are intended to be incorporated in the scope thereof as defined in the accompanying claims.

**CLAIMS:**

1. A shelf, rack or bin system including a number of rows of shelves, racks or bins positioned above each other at different heights and associated with each of one or more rows or part rows a longitudinally extending multi-sided label display member extending along or part way along the row and which is mounted so that the label display member may be rotated about its longitudinal axis to display at any time a selected side of the label display member.
2. A system according to claim 1 wherein the label display member(s) is/are two sided so that rotation of the label display member(s) through about 180° changes the selected side of the label display member from one to its other side.
3. A system according to claim 1 wherein the label display member(s) is/are three sided so that rotation of the label display member(s) through about 120° changes the selected side of the label display member from one to another side.
4. A system according to any one of claims 1 to 3 wherein the label display member(s) is/are arranged to support a removable and replaceable label strip on each side of the display member(s).
5. A system according to claim 4 wherein the label display member(s) is/are removable from the row(s) for removal and replacement of the label strip(s).
6. A system according to either one of claims 4 and 5 wherein the label display member(s) include(s) edge parts providing opposing recesses at either longitudinal edge of each side of the label display member(s) for retaining a label strip.
7. A system according to any one of claims 1 to 6 wherein a mounting means at each end of a label display member can hold the label display member in two or more discrete angular positions of the label display member relative to the adjacent row, in

each of which discrete angular positions the label display member may be rotated about its longitudinal axis to display at any time a selected side of the label display member.

8. A system according to any one of claims 1 to 6 wherein a mounting means at each end of each of a number of label display members can hold each of the label display members in two or more discrete angular positions of the label display member relative to the adjacent row, in each of which discrete angular positions the label display member may be rotated about its longitudinal axis to display at any time a selected side of the label display member.

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9. A system according to either one of claims 7 and 8 wherein the discrete angular positions are provided by pairs of opposed recesses provided one of each pair in the mounting means at either end of the label display member(s) and each adapted to retain an axle end of the label display member(s) to mount the label display member(s) for rotation about its/their longitudinal axis/axes.

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10. A system according to either one of claims 7 and 8 wherein the label display member(s) may be moved between one and another pair of recesses in the mounting means at either end of the label display member(s) without removing the label display member(s) completely from the mounting means, in order to change the angular position of a label display member(s) relative to the adjacent row.

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11. A system according to either one of claims 7 and 8 wherein in each mounting means at either end of the label display member(s) a passage between the adjacent recesses is provided enabling the axle ends of the label display member(s) to be shifted between adjacent recesses.

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12. A system according to either one of claims 9 and 10 wherein the axle ends of the label display member(s) are snap fit movable between adjacent pairs of recesses.

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13. A system according to either one of claims 9 and 10 wherein the axle ends of the label display member(s) are asymmetrically shaped so that the label display member(s)

can only be moved between adjacent pairs of recesses when rotated part way through the rotational movement about the longitudinal axis of the label display member required to change the selected side of a label display member from one to another side.

5 14. A system according to any one of claims 7 to 12 wherein the said mounting means comprise plastic moulded end caps provided one at either end of each row to mount the label display member(s).

15 15. A system according to any one of claims 1 to 13 wherein said shelf, rack or bin system forms part of a postal sorting system providing rows of shelves partitioned into compartments along the rows.

15 16. A system according to claim 15 wherein the label display members carry address information for addresses associated with compartments on the rows of partitioned shelves.

17. A system according to either one of claims 14 and 15 wherein the label display members extend along a lower region of each row.

20 18. A shelf, rack, or bin system including a number of rows of shelves, racks or bins positioned above each other at different heights and associated with a number of rows or part rows a longitudinally extending display member which is mounted such that the angle of display of each label display member may be varied relative to the row or part row with which the label display member is associated.

25 19. A system according to claim 17 wherein the angle of display of each label display member may be varied between two or more discrete angular positions relative to the adjacent row.

30 20. A system according to claim 19 wherein the discrete angular positions for each label display member are provided by pairs of opposed recesses provided one in each of a pair of mounting means at each end of the label display member, and each adapted to

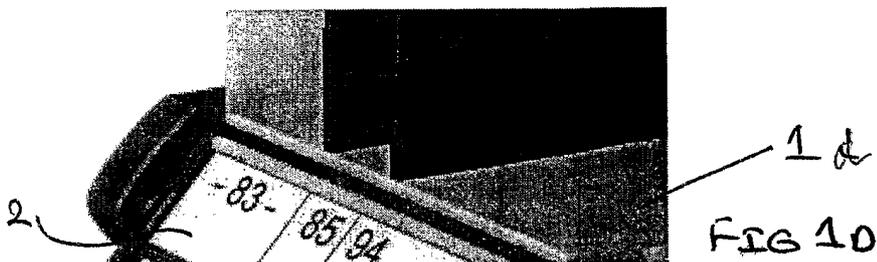
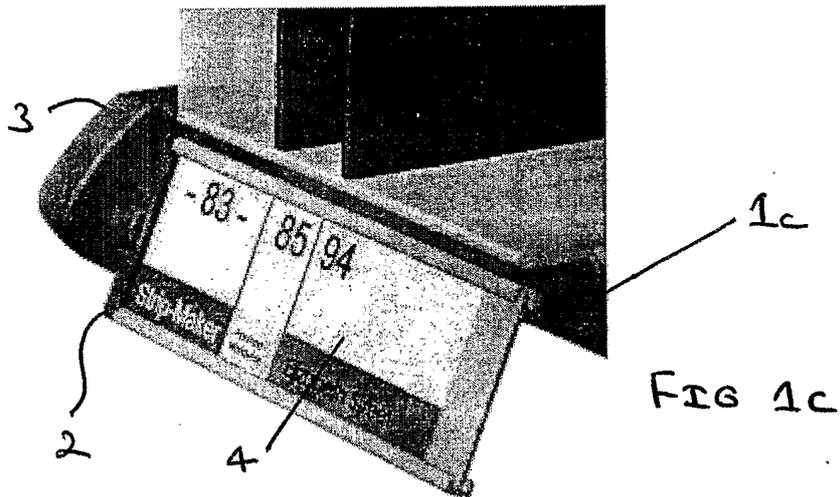
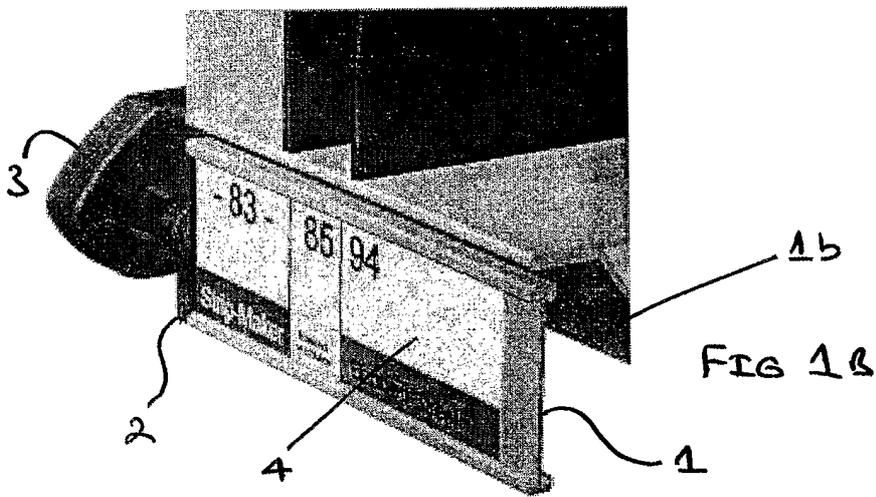
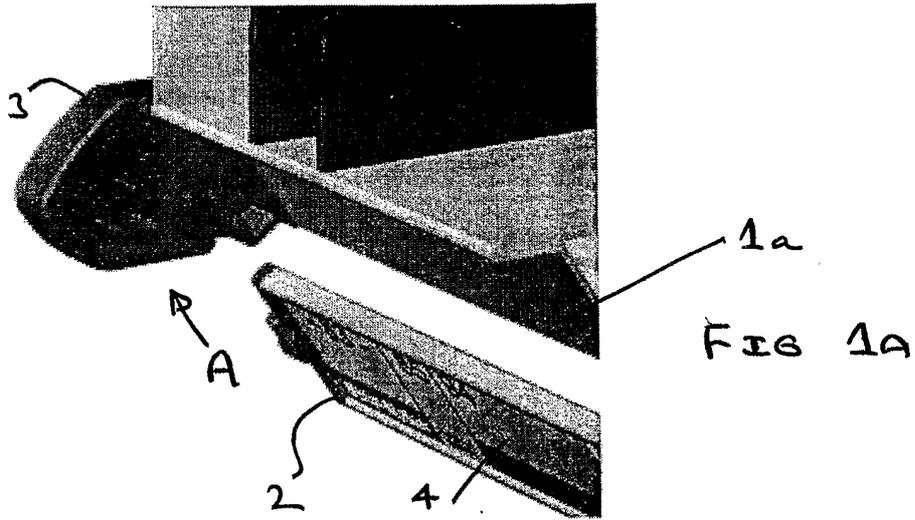
retain an axle end of the label display member to mount the label display member for rotation about its longitudinal axis.

21. A system according to claim 20 wherein each label display member may be moved between one and another pair of recesses in the mounting means at either end of the label display member without removing the label display member completely from the mounting means in order to change the angular position of the label display member relative to the adjacent row.

22. A system according to claim 21 wherein in each mounting means at either end of the label display member a passage between the adjacent recesses is provided enabling the axle ends of the label display member to be shifted between adjacent recesses.

23. A system according to claim 22 wherein the axle ends of the label display member are snap fit movable between adjacent pairs of recesses.

24. A system according to any one of claims 20 to 23 wherein the said mounting means comprise plastic moulded end caps provided one at either of each row to mount the label display members.



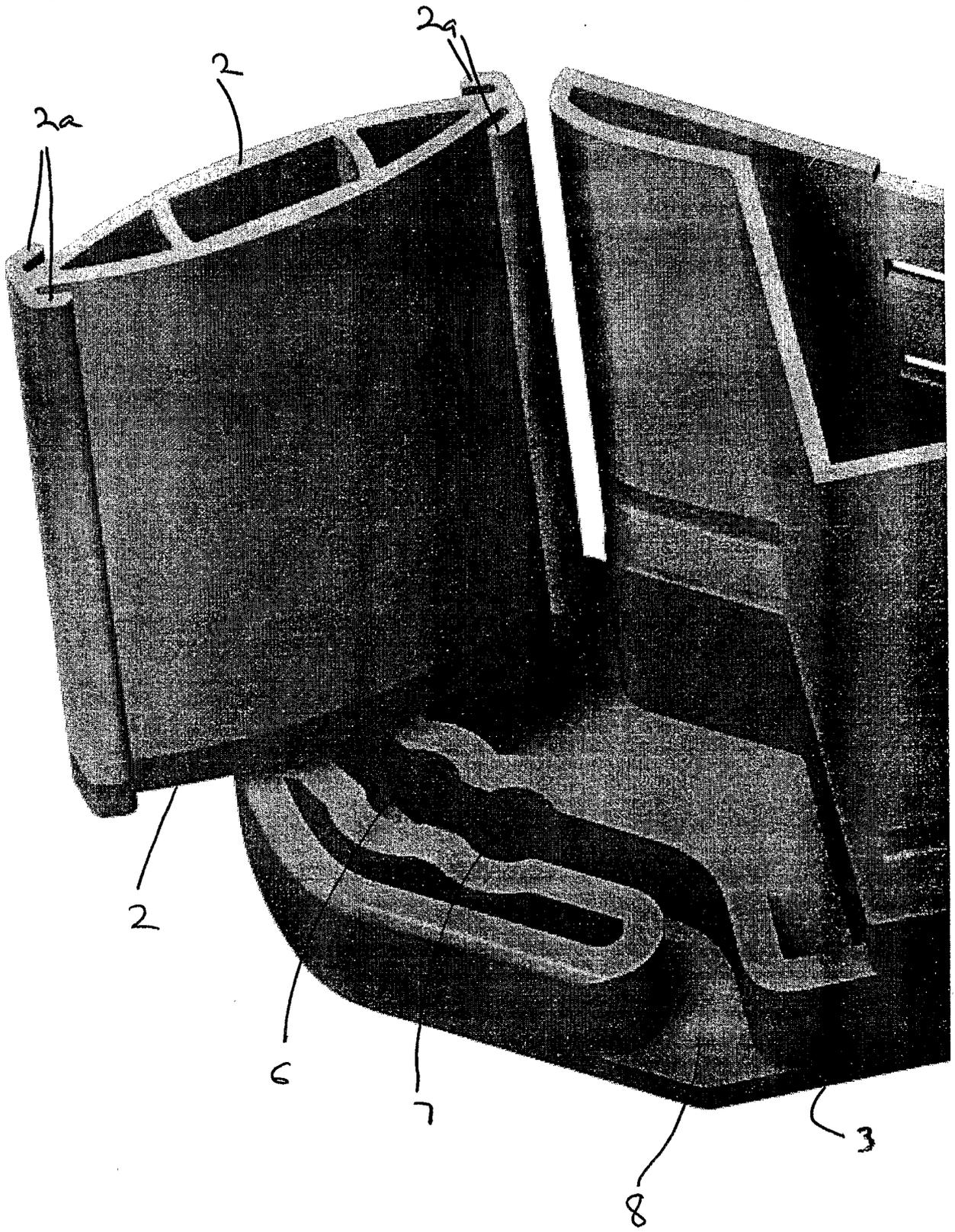
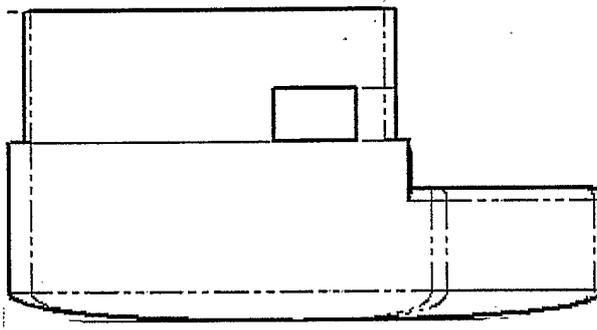
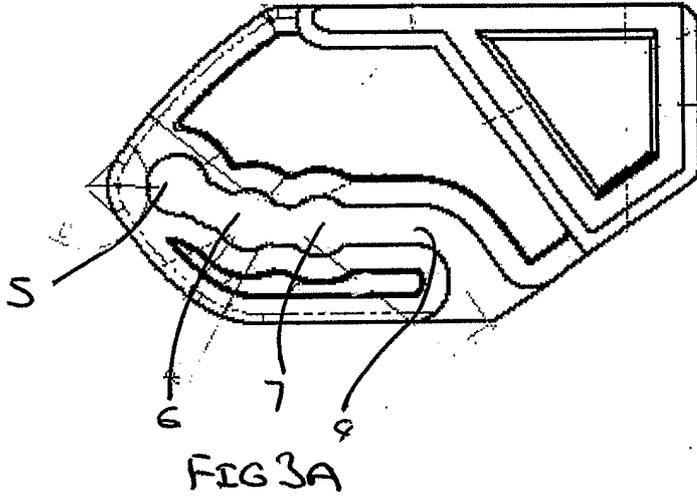


FIG 2



## INTERNATIONAL SEARCH REPORT

International application No.  
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A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl. <sup>7</sup> : G09F 3/20		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DWPI and keywords: label and rotate and shelving and similar terms		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5185948 A (MARKSON) 16 February 1993 Column 3 lines 21 to 44 Column 4 lines 12 to 33	1-11,14-22,24
X	US 6256912 B1 (GIBSON et al.) 10 July 2001 Column 4 lines 17 to 35	1-8,15-19
X	WO 97/48862 A1 (FASTENERS FOR RETAIL, INC.) 24 December 1997 Page 2 line 32 to page 3 line 8 Page 11 lines 13 to 18	18,19
<input type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
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Date of the actual completion of the international search 12 November 2002		Date of mailing of the international search report 15 NOV 2002
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929		Authorized officer <i>D. Melhuish</i> DAVID MELHUIH Telephone No : (02) 6283 2426

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/NZ02/00162

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
US	5185948	NONE					
US	6256912	AU	200077384	GB	2372137	WO	200126078
WO	9748862	AU	36544/97	CA	2247909	EP	906481
		US	6119990				
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