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GB 2117228 A GB 1596499 A GB 1352008 A
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(54) Abstract Title
Display shelving

(57) In a display system in which shelves 31 are suspended from a support wall 1 by way of vertically spaced, horizontally extending channels 9, the wall 1 is of modular construction whereby a plurality of wall sections may be joined side-by-side. Upper male and lower female dovetail parts 13,15 allow vertical connection of the panels. A clip 29 engaging in slots 17 in laterally adjacent panels allows horizontal connection. The shelves may have grooves 67,69 for locating a product holder 71. All parts may be of moulded plastics.

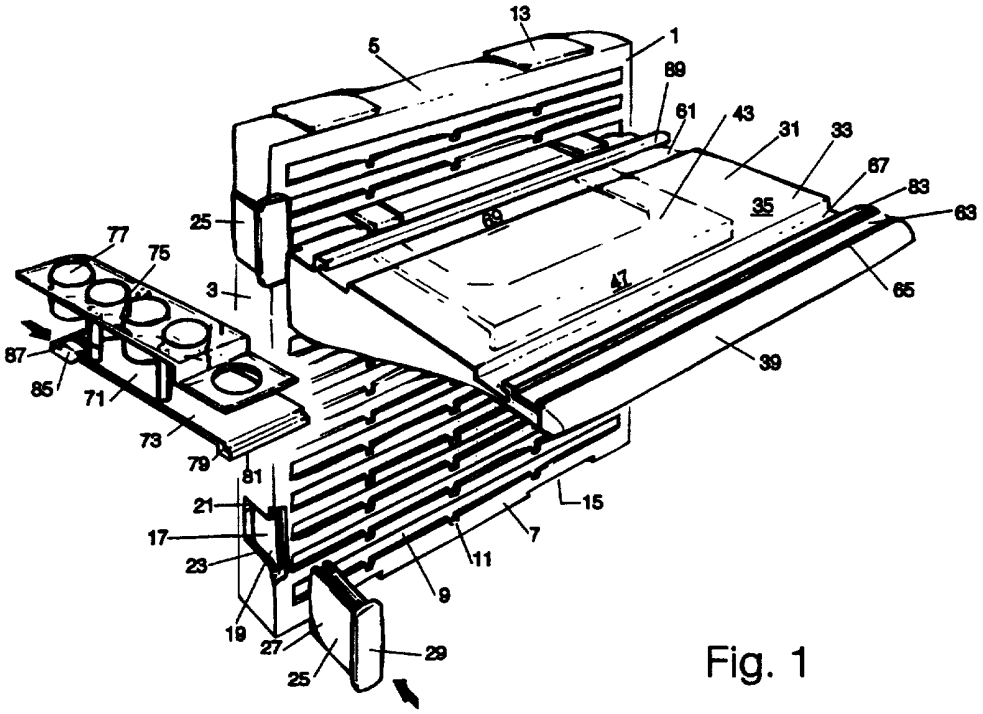

Fig. 1

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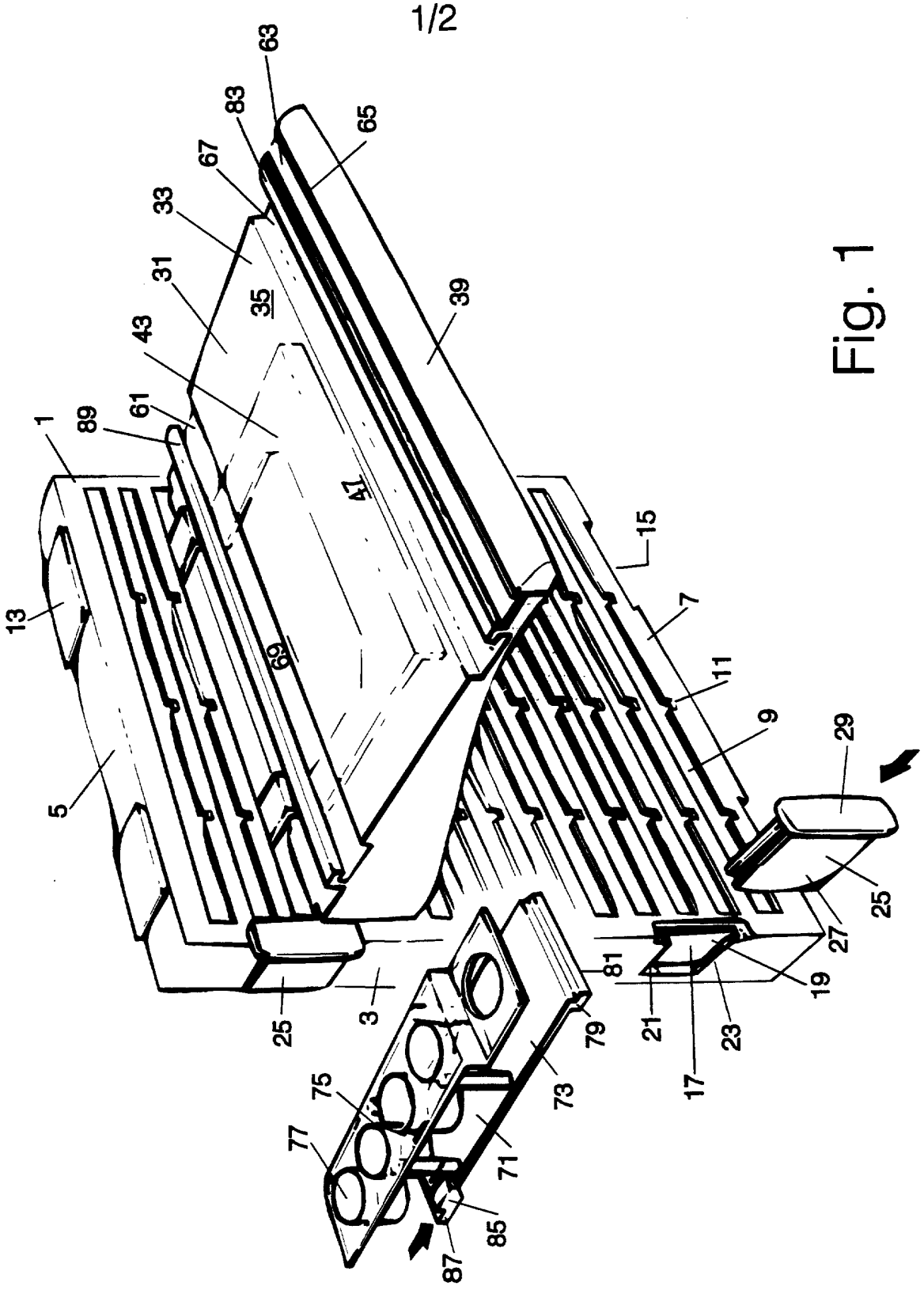
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Fig. 1

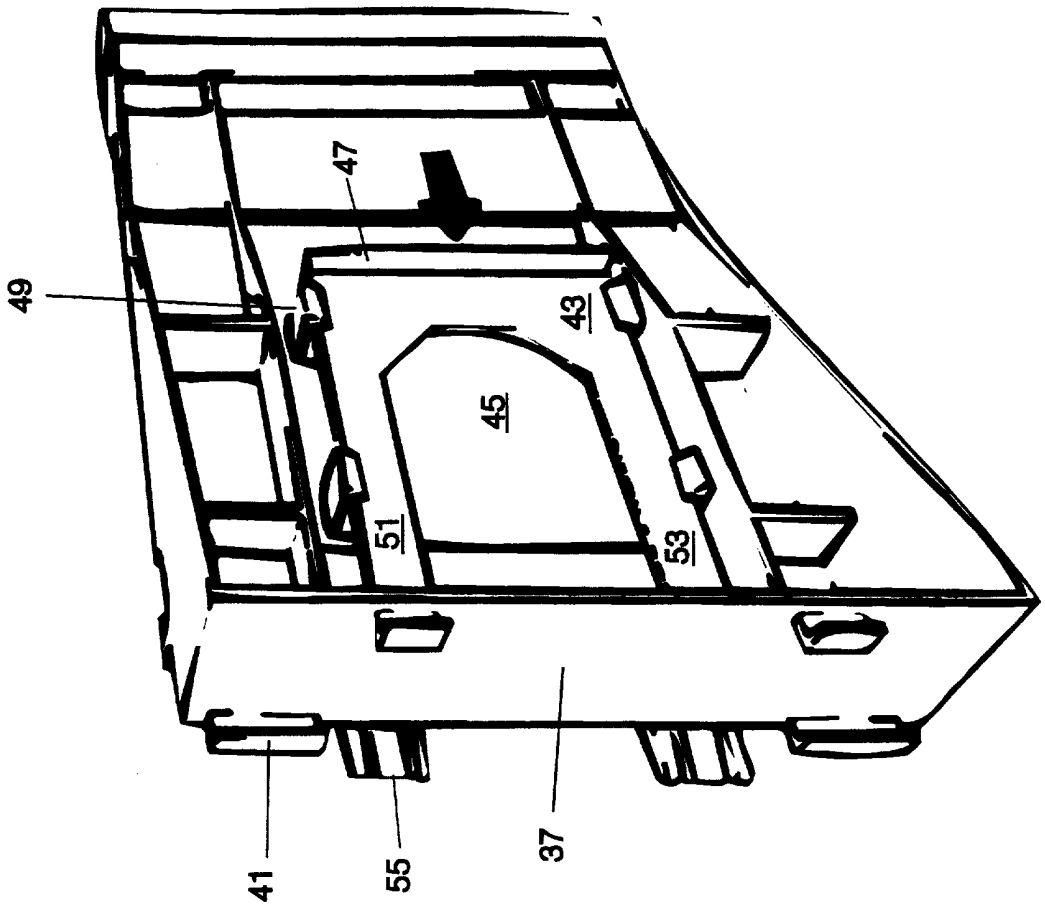

Fig. 2

DISPLAY SYSTEM

This invention relates to display systems, including shop-fitting display systems.

Traditional display systems include uprights to which brackets are attached, shelves then being hung in cantilever fashion from the bracket. In order to vary the length and depth of the shelves, a large inventory of shelving and brackets must be carried out. The shelf spacing is limited by the size of the brackets and the fixing hole spacings on the uprights.

More recently, an improved shelf suspension system has been developed, in which ribbed, extruded aluminium panels are vertically arranged on uprights, and cantilever brackets for the shelves are hooked over the horizontal ribs of the aluminium panels, these ribs being themselves hook-shaped in cross-section. This arrangement provides improved flexibility for hanging shelving from the aluminium panels, since the distance between two adjacent horizontal ribs may be, for instance, only 15mm or 16mm.

Although the above described shelf suspension system has greatly enhanced flexibility compared with traditional systems, there is still room for improvement. The aluminium panels are provided in standard sizes or else are made according to the specific dimensional requirements for its particular location. A particular panel cannot, therefore, be used in another location where there is less space nor, indeed, can it normally be used in another location where there is greater space since it would amount to an inefficient use of such space.

According to the present invention there is provided a display system comprising a support wall and a plurality of shelves, the support wall being of modular construction and comprising a plurality of side-by-side arranged rectangular or square modules, each module having a plurality of vertically separated, horizontally

extending shelf support elements, and each shelf being provided with means for engaging at least one of said shelf support elements whereby the shelf may be suspended from the support wall.

Preferably, a shelf for use with the display system of the invention has at least two pairs of means for engaging the shelf support element, a first pair for engaging one of said shelf support elements and the second pair for engaging a second shelf support element, vertically spaced from the first shelf support element.

More preferably, a shelf for a display system of the invention includes a further means for engaging a shelf support element which provides a locking engagement between a shelf and the support wall.

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

Figure 1 is a perspective view of part of a display system in accordance with the present invention; and

Figure 2 is an underneath view of the shelf forming an element of the part display system shown in Figure 1.

Referring to the accompanying drawings, a display system of the invention includes a support wall made up of a plurality of square modules 1 which are connected together in a side-by-side horizontal and vertical arrangement.

Each module 1 is an integral, moulded plastics element having sides 3, a top 5 and a corresponding bottom. Between the sides, the top and the bottom, there is a front wall 7 across which runs a plurality of parallel, horizontal slots 9. As illustrated in Figure 1 each slots 9 extends downwardly into wall 7 to provide three, equally spaced apart cut-outs 11.

Each of the slots 9 provides a shelf support element, as will be described below.

Extending upwardly from top 5 of module 1 are two dovetail-shaped male elements 13. The bottom of the module is provided with corresponding two dovetail-shaped female elements 15. These elements 13 and 15 allow modules 1 to be connected together vertically.

Located in sides 3 of each module 1 are two cut-out connecting elements 17. Each element 17 includes an elongate entry slot 19, the full length of which is accessible from the front but access from the side is restricted by ridges 21 and 23 formed by the side wall 3. This arrangement allows two modules 1 to be abutted together in a side-by-side horizontal arrangement with corresponding upper and lower connecting elements 17 being aligned together. Separate "H"-connectors 25 are then used to fasten the two side-by-side modules together. Each "H"-connector 25 includes two square or rectangular side pieces 27 each of which is of dimensions such as to fit within and fill the corresponding slot in connector elements 17. The two side pieces 17 are spaced apart and interconnected by a spacing piece of smaller vertical extension such that it will fit within the more restricted space defined by the ridges 21 and 23 of side wall 3. The front of "H"-connector 25 is provided with an integral front piece 29 which, as illustrated in Figure 1 in connection with the upper "H"-connector 25, fills the entire front of the space created by cut-out connector 17.

Each module 1 forming part of the support wall for the display system is capable of carrying shelves such as product tray 31 which, as illustrated in Figure 1, extends horizontally across the full width of module 1 when fitted in position on the module. Product tray 31 extends horizontally across the entire width of module 1. Product tray 31 includes a main body 33 including a central portion 35 which provides the upper support surface for the tray, a rear portion 37 and a front edge portion 39.

Product tray 31 is adapted to be supported from module 1 by means of downwardly depending hooked projections 41 which are arranged in upper and lower pairs on the

rear portion 37 of the tray 31. The vertical spacing between the upper and lower pairs of projections 41 is such that the tray may be pushed into engagement with the module 1 with the upper pair of projections extending into one of the slots 9 and the lower pair of the projections 41 extending into one of the other slots 9 located below the first mentioned slot. It would be appreciated that product tray 31 can be readily suspended in this way at any desired height on the module 1. Once the product tray has been inserted as described above it may be allowed to move downwardly until the hooks 41 engage the front wall 7 below each of the slots penetrated by the projections 41.

Product tray 31 is provided with an arrangement for locking the tray in position once it is positioned on the module 1 as described above. This locking arrangement is in the form of a slider 43, the main body of which is carried below the central portion 33 of the tray 31. Slider 43 is of substantially rectangular shape with a large central cut-out 45. It has a front, downwardly depending flange 47 and is located within two opposed pairs of hook shaped guide members 49 which extend downwardly from the underside of central portion 33 of tray 31. At its rear end the arms 51, 53 of slider 43 (these arms 51, 53 being defined by the outer edge of slider 43 and the cut-out 45) extend upwardly through central portion 33 of tray 31 and then rearwardly terminating at rearward edges 55.

Once the product tray 31 is in position on module 1, as illustrated in Figure 1, flange 47 may be gripped from underneath tray 31 and pushed in a direction towards module 1 thereby causing the rearward ends of arms 51 and 53 to enter one of the slots 9 of module 1 as illustrated in Figure 1. With the slider 43 in this position, product tray 31 is locked in position on module 1. If it is subjected to, for instance, an accidental jolting, the product tray will not be dislodged from module 1.

As illustrated in Figure 1, the upper surface of central portion 33 of tray 31 is provided with three widthwise extending grooves 61. Front groove 63 is lined with resilient rubber-like or sponge-like material which may provide a grip for a display,

descriptive or other element located within this grove. The two rearward groves 67 and 69 are for location of a product carrying unit such as unit 71 illustrated in Figure 1. Unit 71 has a base 73 and, extending upwardly therefrom, a support structure 75 for carrying, for instance, cosmetic or perfume bottles which may be located in holes 77. The support structure 75 will not be further described and it will be understood that it may vary substantially depending on the purpose of the unit 71.

Base 73 of unit 71 is dimensioned and shaped so that the unit may be firmly located on product tray 31. Unit 71 is provided with a front flange 79, this flange, being of stepped construction having a downwardly depending portion extending from the main body of base 73 and a forwardly extending front edge portion 81. This front flange 79 is for location within groove 67 with the portion 81 of flange 79 located below the rearwardly extending overhang 83 of groove 67.

Spaced rearwardly from front flange 79 is a groove engaging member 85 which is for engagement with rearward groove 69 of product tray 31. As illustrated in Figure 1 groove engaging member 85 includes a rearward stepped portion 87 which is for location under forwardly extending overhang 89 of groove 69. Member 85 is mounted on base 73 of unit 71 for limited sliding movement relative thereto. A spring arrangement (not shown) urges member 85 in a rearward direction relative to base 73. Unit 71 may be located in position on product tray 31 by locating member 85 in groove 69 and then pushing unit 71 in a direction towards module 1 and then fitting front flange 79 into groove 67. Once in position, the spring urged member 85 will ensure that the unit is locked into position on the product tray 31.

It will be appreciated that the above described display system includes a support wall which may be made of virtually any shape and size depending upon the number and arrangement of the modules 1. The whole system therefore provides a very flexible arrangement which can be delivered to a site of use in an unassembled condition and then easily assembled on site. Furthermore, it may then be easily disassembled and moved to a different location using as many of the module 1 from the original

arrangement as are desired. Additionally modules may easily be added or removed from an existing arrangement.

The support wall formed by the module 1 may be bounded by upright struts which may be fastened to vertically adjacent edge modules 1 by means of screws interconnecting the upright struts with the modules by means of connector elements which are somewhat similar to the connectors 25 described above. However, in this case the connectors engage with a single cut-out element 17 and are provided with centrally located threaded holes which may be engaged by the screws. The use of the upright struts enables the entire support wall to be made into a very stable structure.

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CLAIMS

1. A display system comprising a support wall and a plurality of shelves, the support wall being made of modular construction and comprising a plurality of side-by-side arranged rectangular or square modules, each module having a plurality of vertically separated, horizontally extending shelf support elements, and each shelf being provided with means for engaging at least one of said shelf support elements whereby the shelf may be suspended from the support wall.

2. A display system according to claim 1 wherein each shelf has at least two pairs of means for engaging the shelf support element, a first pair for engaging one of said shelf support elements and the second pair for engaging a second shelf support element, vertically spaced from the first shelf support element.

3. A display system according to claim 1 or claim 2 and including a further means for engaging a shelf support element which provides a locking engagement between a shelf and the support wall.

4. A display system according to any of the preceding claims wherein each module is a moulded plastics element with sides, top and bottom, and a plurality of horizontal slots each of which extends downwardly into a front wall to provide three, equally spaced apart cut-outs, each cut-out providing a shelf support element.

5. A display system according to claim 4 wherein each shelf is adapted to be supported from a module by means of downwardly depending hooked projections arranged in upper and lower pairs on the rear portion of the shelf so that the shelf may be pushed into engagement with the module with the upper pair of projections extending into one of the slots and the lower pair of the projections extending into another of the slots located below the first mentioned slot.

6. A display system according to claim 5 wherein each shelf is provided with a locking arrangement in the form of a slider of substantially rectangular shape and having arms which extend to the rear of the shelf, each arm carrying one of the lower pair of projections.

7. A display system according to any of claims 4 to 6 wherein each module is provided with two dovetail-shaped male elements which extend upwardly from the top of the module and two corresponding dovetail-shaped female elements located on the bottom of the module allow modules to be connected together vertically.

8. A display system according to any of claims 4 to 7 wherein each module is provided with two cut-out connecting elements located in each of the sides of the module, each cut-out connecting element including an elongate entry slot and two ridges formed by the side wall of the module, allowing two modules to be connected together in a side-by-side horizontal arrangement by means of a connection piece.

9. A display system according to claim 8 wherein the connection piece includes two square or rectangular side pieces, each suitably dimensioned to fit within and fill an entry slot in a connecting element, and an integral front piece which fills the space created by the connecting element.

10. A display system according to any of the preceding claims wherein each shelf extends horizontally across the entire width of a module and includes a main body, a central portion providing an upper support surface, a rear portion and a front edge portion.

11. A display system according to any of the preceding claims wherein at least one shelf has an upper surface provided with two widthwise extending grooves, for location on the shelf of a product carrying unit.

12. A display system according to any of the preceding claims wherein each product carrying unit has a base shaped for its firm location on the shelf and includes a support structure extending upwardly therefrom for carrying items of display.

13. A display system according to any of the preceding claims wherein each product carrying unit is provided with a front flange of stepped construction, having a downwardly depending portion extending from the main body of the base and a forwardly extending front edge portion for location of the unit within the front widthwise extending groove on the upper surface of a shelf.

14. A display system according to any of the preceding claims wherein each product carrying unit is provided with a rearward groove engaging member including a rearward stepped portion for engagement with the rearward groove of a shelf.

15. A display system according to any of the preceding claims wherein at least one product carrying unit is provided with a spring arrangement which urges the rearward groove engaging member in a rearward direction relative to the base.

16. A display system according to claim 1 and substantially as herein described.

17. A display system substantially as described herein with reference to the accompanying drawings.

ClaimsP15254

The Patent Office

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Application No: GB 9709734.9 **Examiner:** R E Hardy
Claims searched: ALL **Date of search:** 10 August 1998

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): A4B

Int Cl (Ed.6): A47B (57/08 57/10 96/06); A47F (5/08)

Other: Online : WPI, CLAIMS

Documents considered to be relevant:

Category	Identity of document and relevant passage			Relevant to claims
Y	GB2291788	A	ARTFORM : See the Figures	2,10-15
X Y	GB2224923	A	METRIC : See the Figures noting slotted separate panels 26	1 2,10-15
X Y	GB2206035	A	EOLAS : See Figure 8	1 2,10-15
X Y	GB2117228	A	ROSE : See the Figures and note the expansibility of the system	1 2,10-15
X Y	GB1596499	A	LB PLASTICS : See especially Figure 5 and p.2 line 101 onwards	1,2 10-15
X Y	GB1352008	A	WEBER : See the Figures noting shelf 71; also see p.7 lines 71-76	1 2,10-15
X Y	WO93/00846	A1	SAMUELSONS : : See the Figures noting vertically joinable panels 2 and shelves 11	1 2,10-15

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.