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(51) INT CL<sup>6</sup>

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**A4B B7CX B7C1 B7E3 B7E4**

(56) Documents Cited

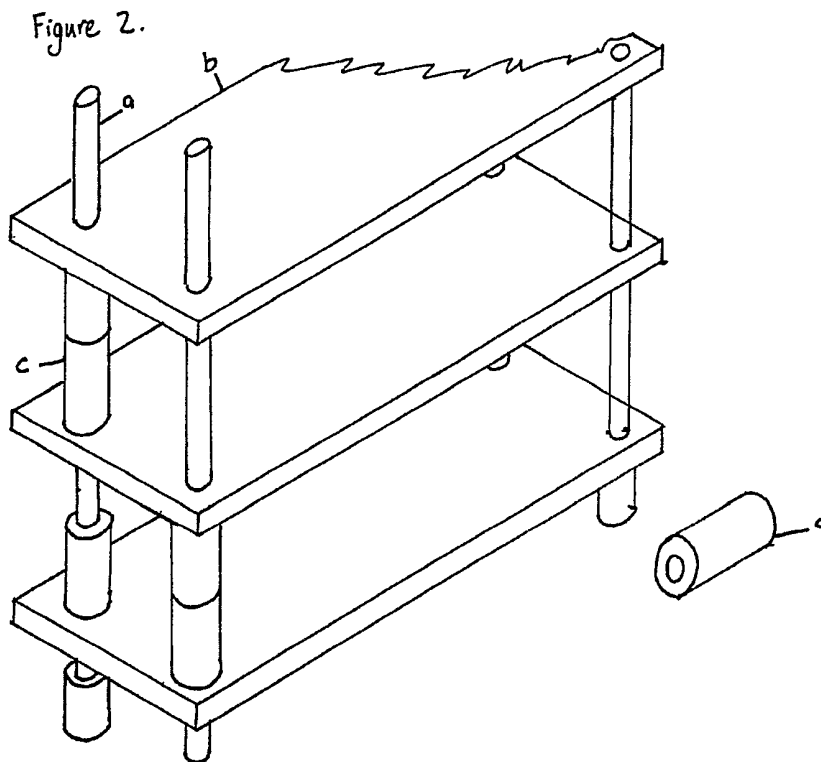
**GB 2237183 A GB 1319737 A GB 1096727 A**  
**US 4345526 A US 4025212 A**

(58) Field of Search

UK CL (Edition M ) **A4B**  
INT CL<sup>5</sup> **A47B**  
**ONLINE DATABASE: WPI**

(54) **Free-standing shelving system**

(57) A shelving system comprises vertical rods a, shelves b threaded onto the rods and spacer tubs c threaded onto the rods to spare the shelves. By using spacers of different sizes and providing multiple holes in the shelves complex shelving arrangements can be constructed. Spacers split along their length are also provided so that they can be snap fitted on the vertical rods and the shelf spacing thereby adjusted without dismantling the system.



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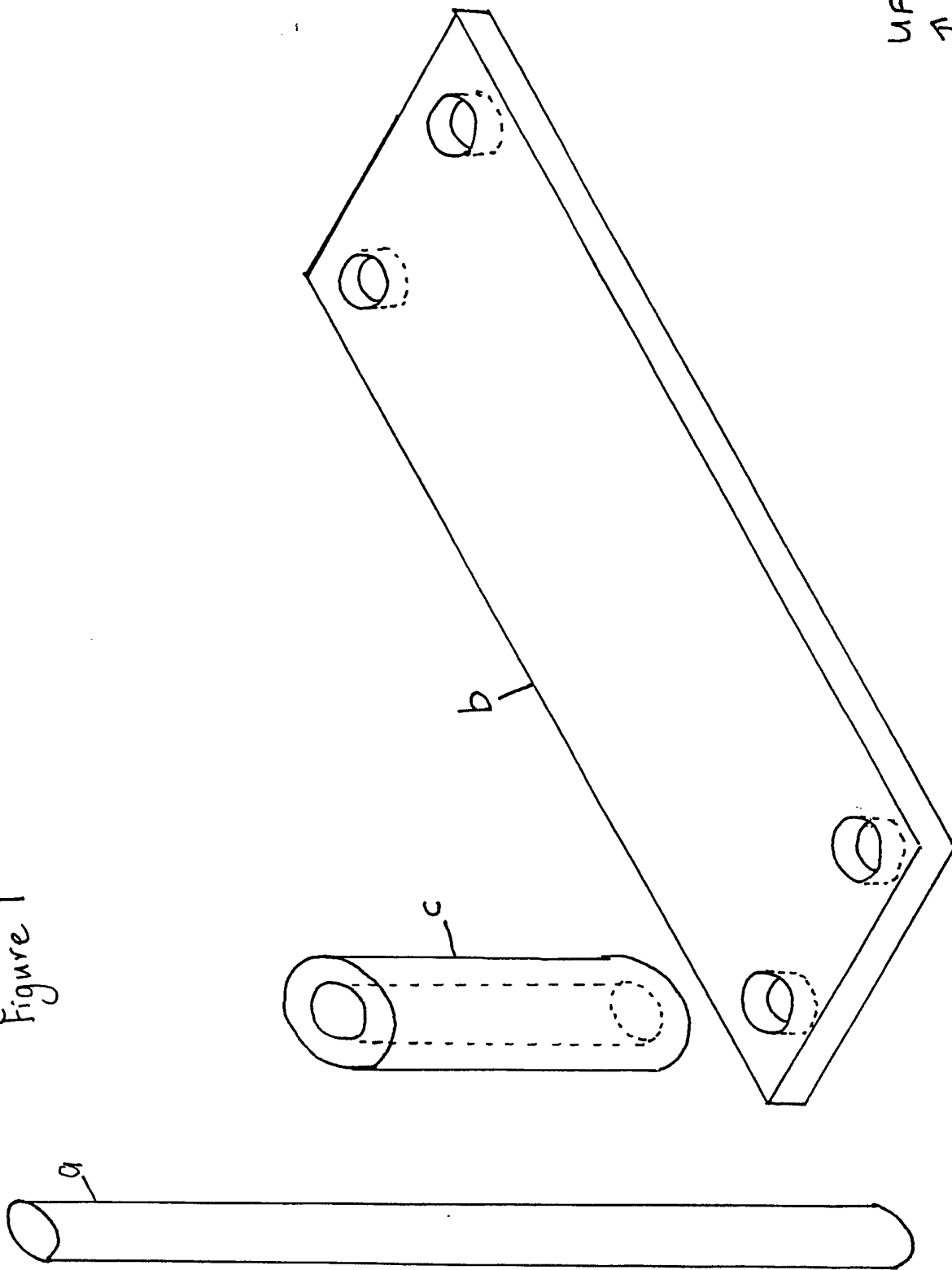


Figure 1

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up ↑

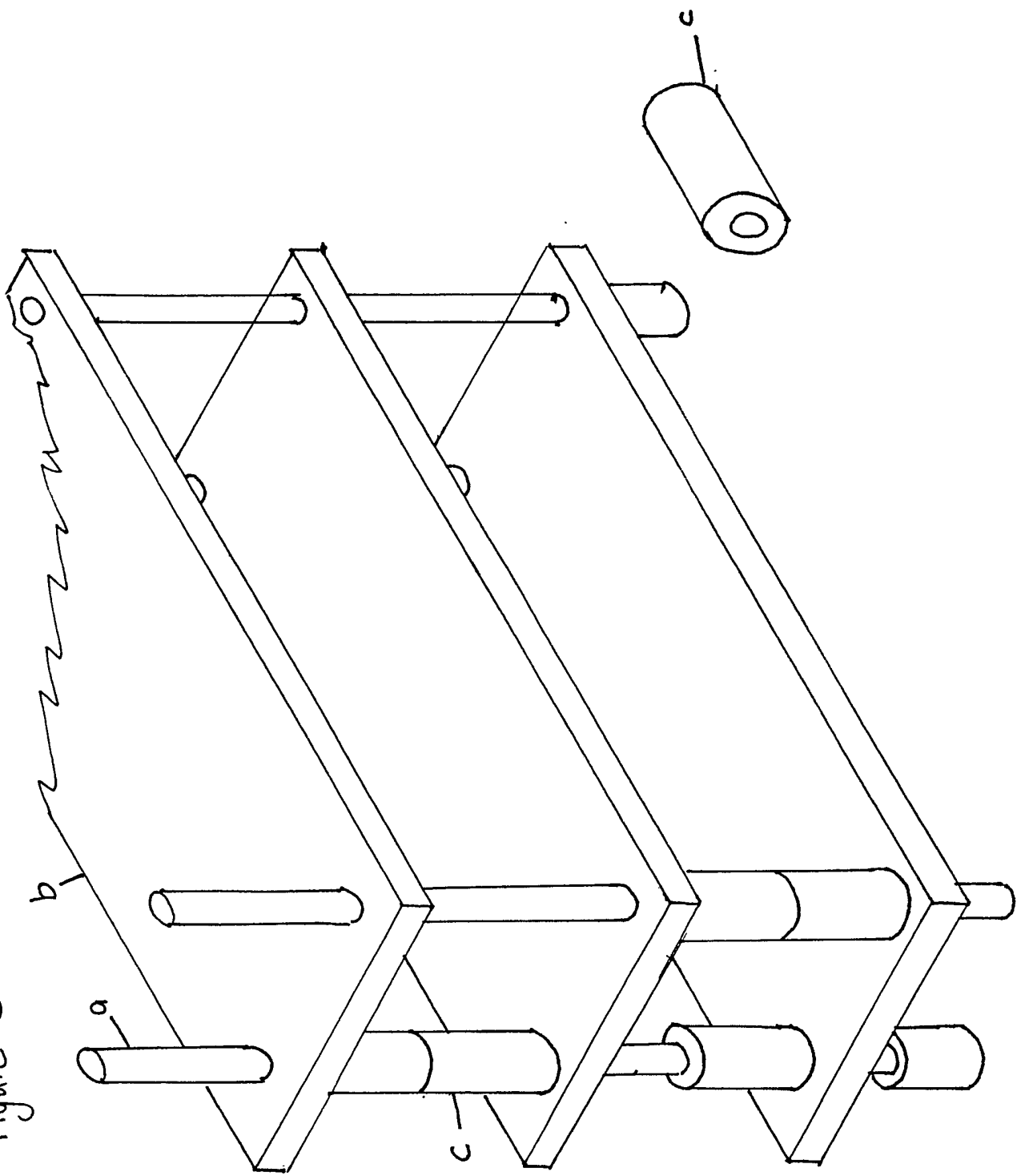


Figure 2.

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Figure 3

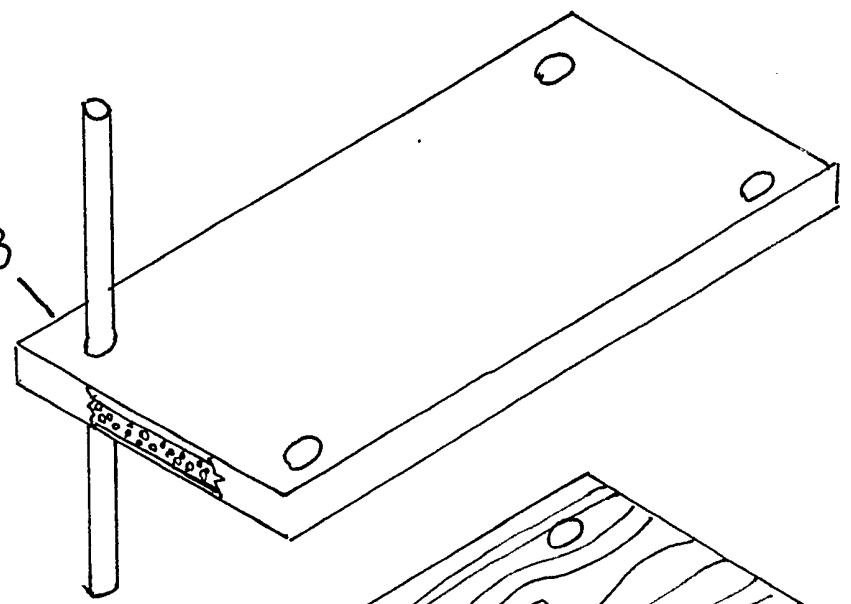


Figure 4

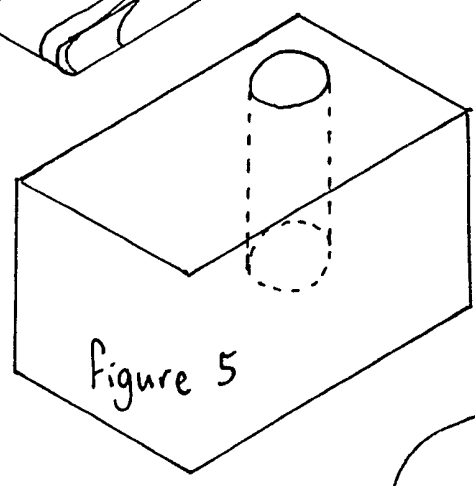
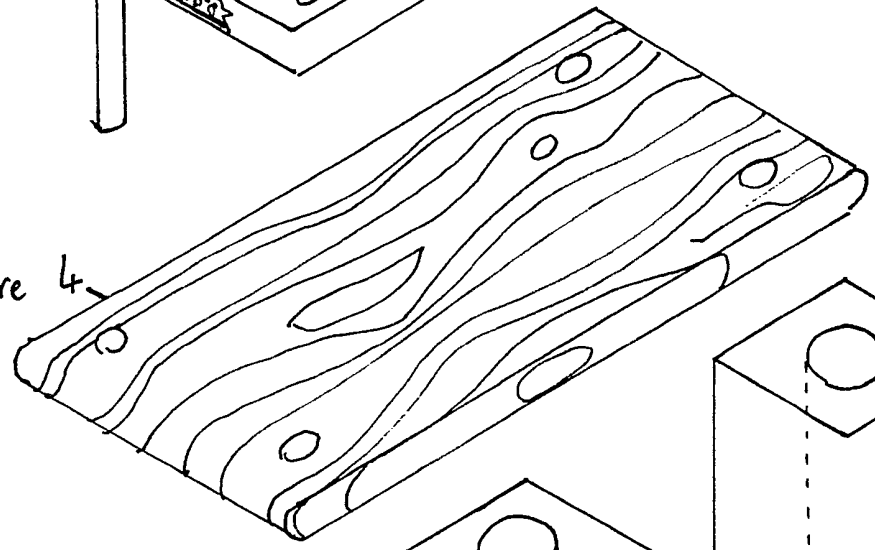


Figure 5

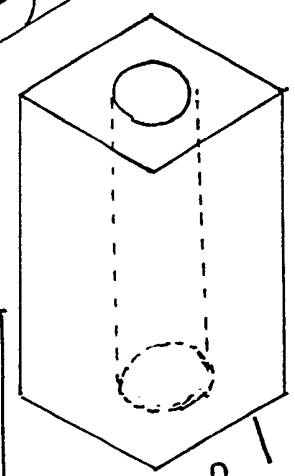


Figure 6

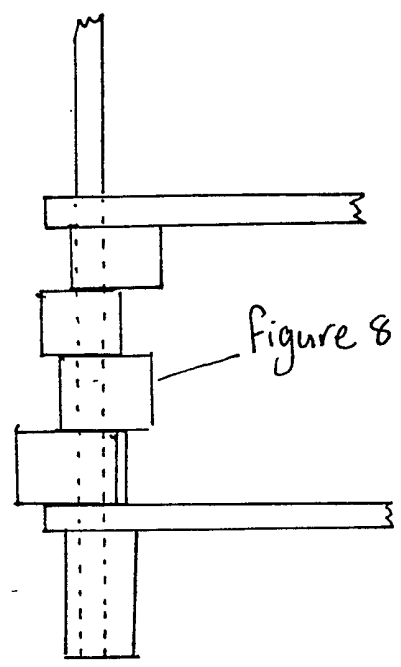
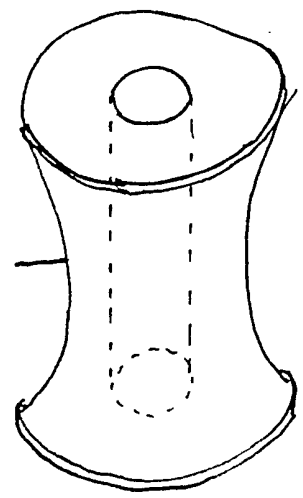
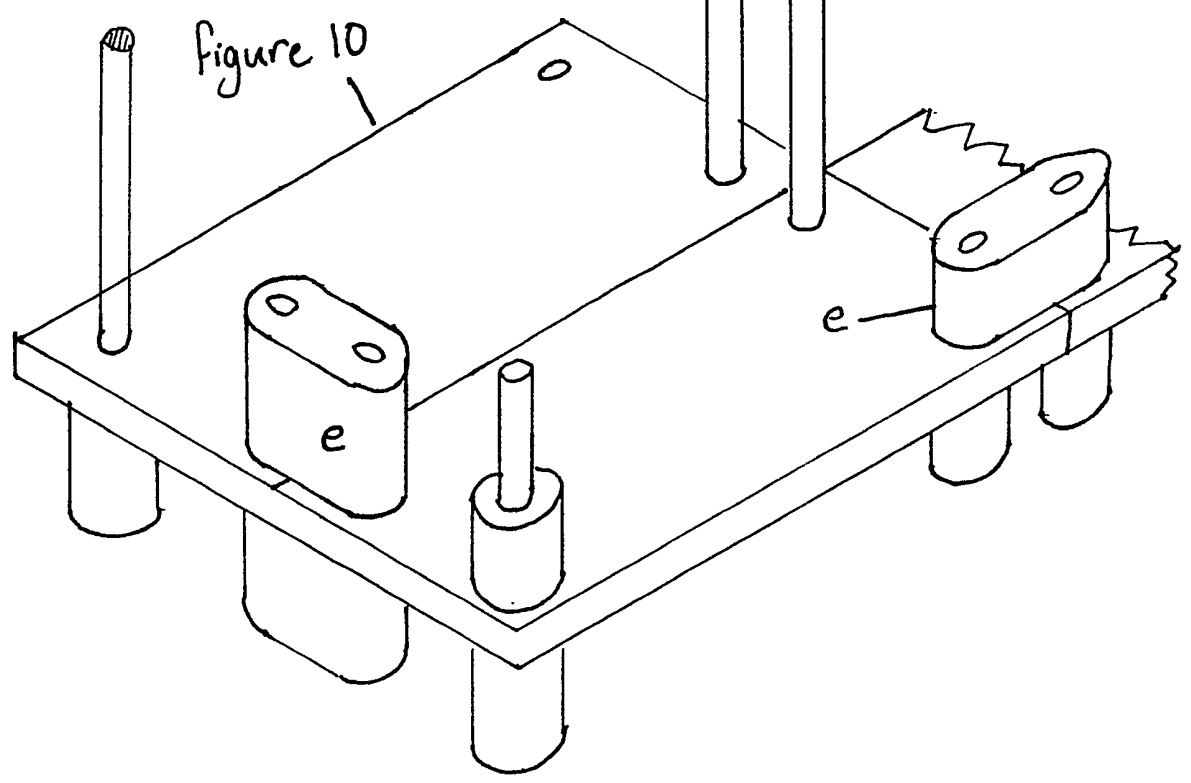
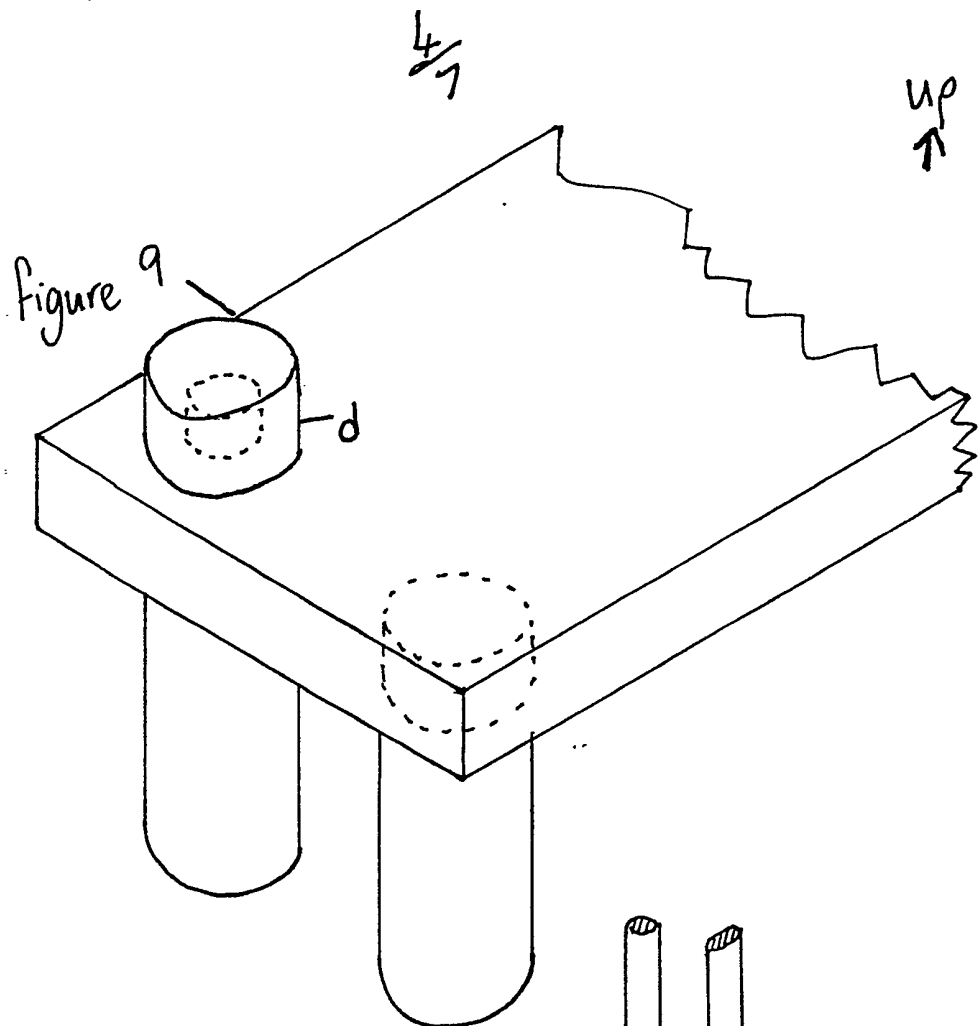


Figure 8

Figure 7

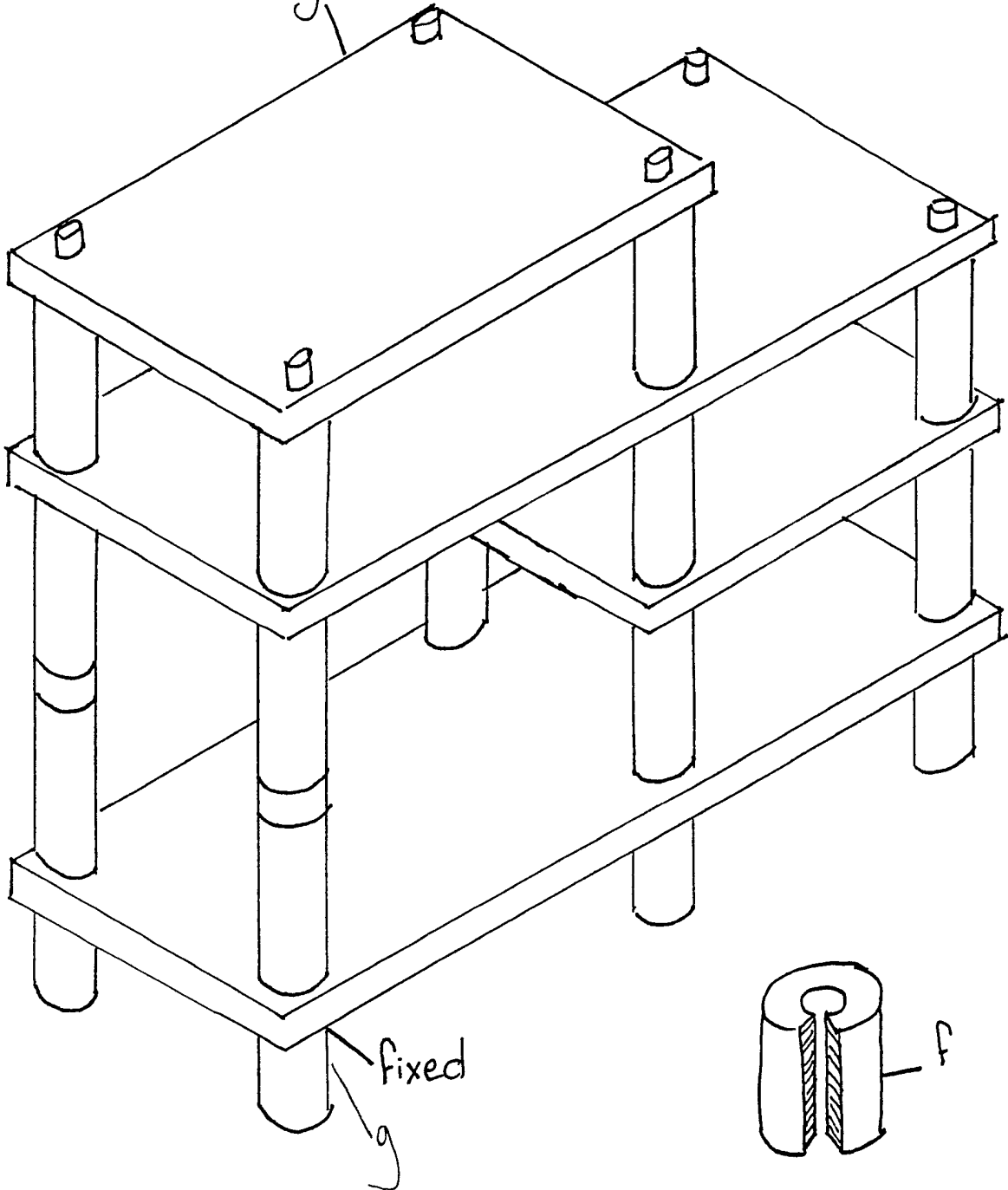




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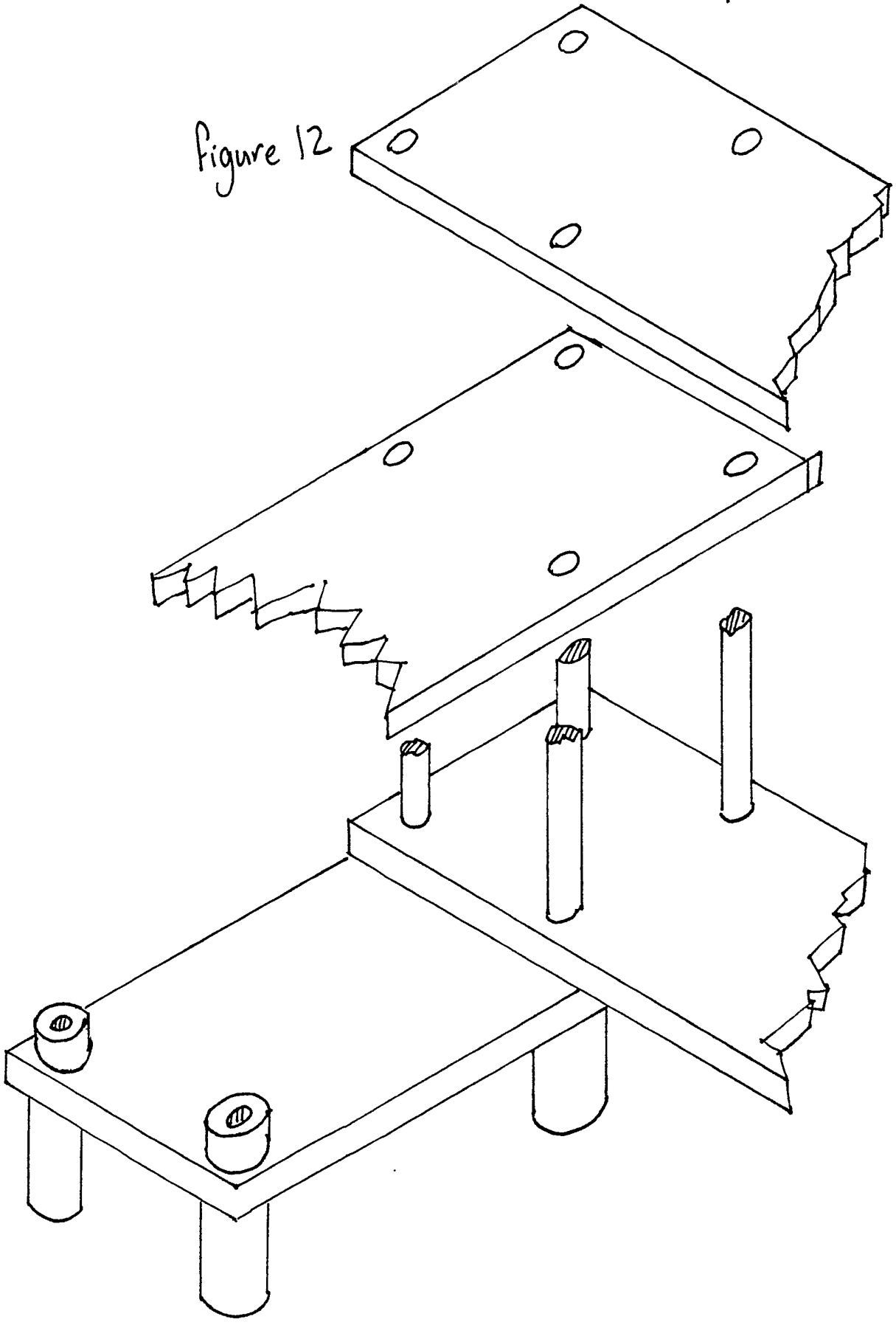
Fig 11



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↑

Figure 12



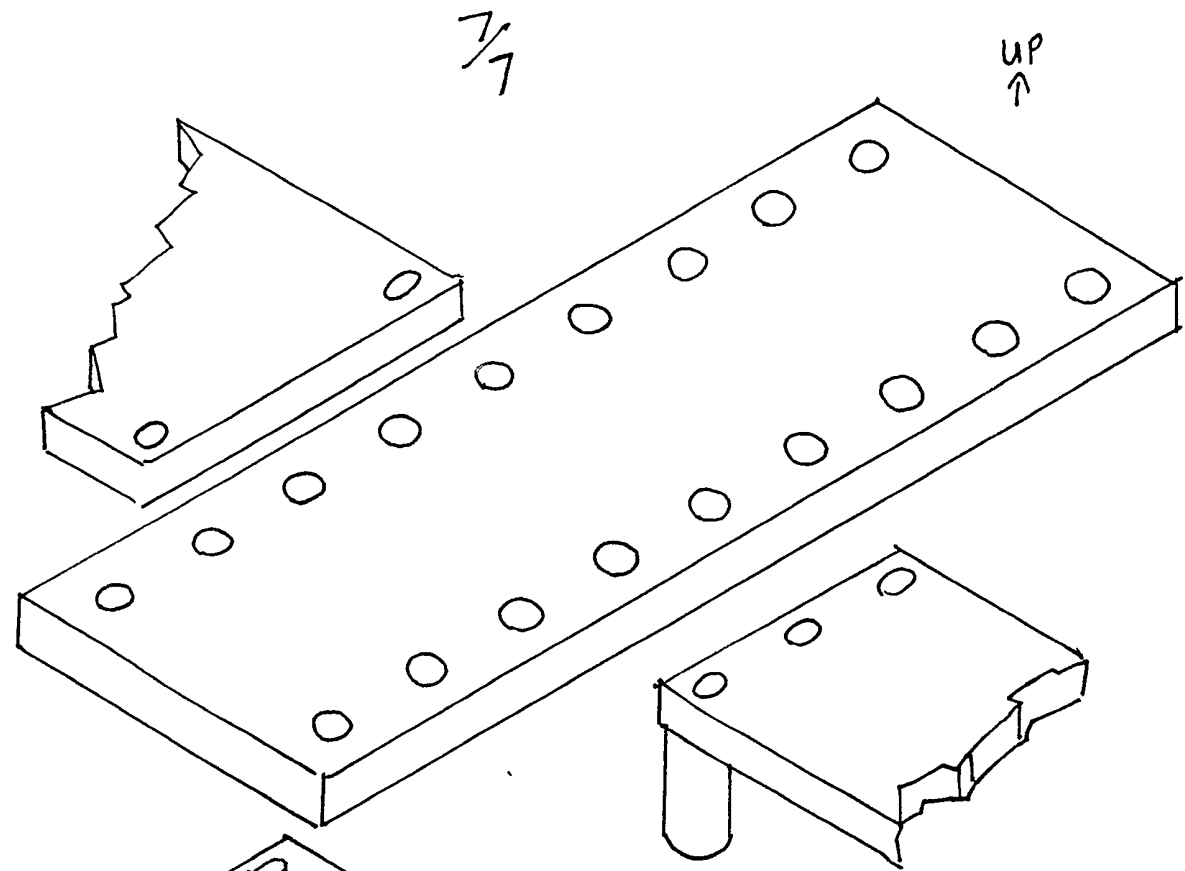
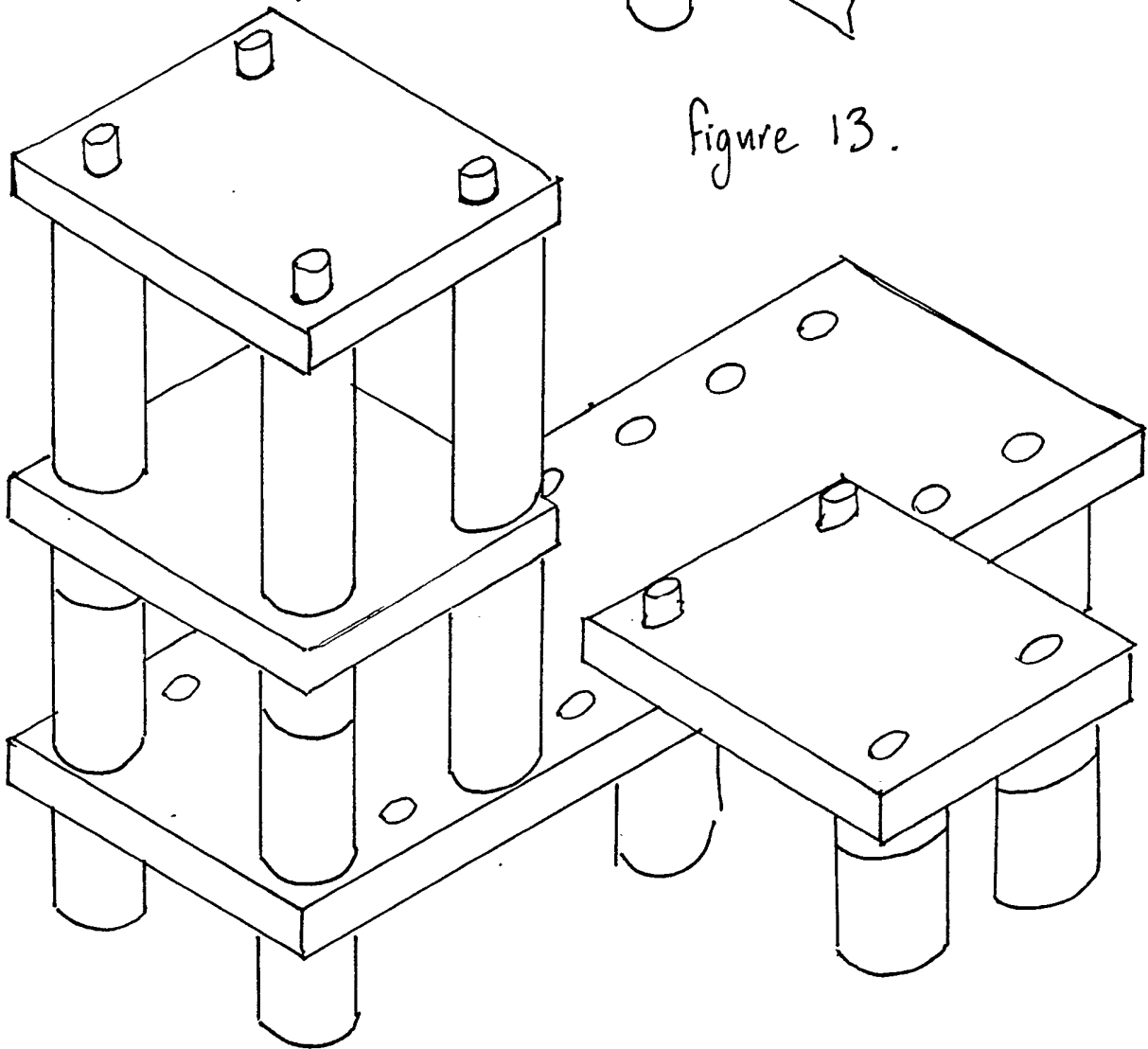


figure 13.





## FREE-STANDING SHELVING SYSTEM

This invention relates to a free-standing shelving system.

There are a range of free-standing shelving systems already available. However, they are often difficult and time consuming to assemble. Simple systems, such as those using wooden pegs to connect shelves to uprights, are easily broken. The design of many systems limit the proportions available. A unit requiring a diagonal support to prevent it collapsing has a limited shelf length; one where end supports are connected can only have a specified shelf width. The distance between shelves can also be limited. Many designs are suitable only for specific materials, and therefore have a limited aesthetic and practical range.

The present invention comprises multiples of three basic components as shown in figure 1:- vertical rods (a), shelves (b) and spacers (c). The latter two have equal sized holes through them slightly larger in diameter than the rods which will fit snugly through them.

The unit is assembled by threading the shelves and spacers onto the vertical rods (figure 2). The unit is dismantled by reversing this procedure.

The basic components can be constructed from a variety of materials such as wood, wood products, glass, metal and plastic to suit practical requirements (figures 3 and 4) The shape and finish of components can be altered to suit aesthetic requirements (figures 4, 5, 6, 7 and 8).

The height of the unit is determined by the length of the vertical rod (a). Figure 9 shows the top shelf can be finished by the addition of a part drilled 'spacer' (d) or by only drilling part way through the shelf.

Shelves of different proportions can be used with the same spacers and rods (see figure 11).

The distance between the shelves is adjusted by varying the quantity and size of spacers (c).

Figure 10 shows how the use of double holed spacers (e) can allow the unit to be extended by linking to other units.

Figures 11 and 12 show that units can be extended and shelves of different proportions combined if further holes are drilled in the shelves.

Figure 11 shows that the height of some or all spacers (c) must be equal to the thickness of shelves (b) to allow the unit to be extended.

To make a versatile unit which may need frequent changing, a series of holes may be drilled at regular distances along the shelves (figure 13).

To allow adjustment of the distance between shelves without dismantling the whole unit, additional snap-on spacers can be provided in a flexible material (figure 11 f)

To provide additional stability where necessary, the vertical rods may be fixed to the bottom spacer to provide a base support.(figure 11 g).

## Claims

- 1 A shelving system comprising multiples of three basic components as shown in figure 1 of the accompanying drawings:- vertical rods (a), shelves (b) and spacers (c), the latter two having holes in them marginally bigger than the diameter of the former, (b) and (c) being threaded onto (a) to assemble the unit (figure 2).
- 2 A shelving system as claimed in Claim 1 where the basic components are constructed of any material.
- 3 A shelving system as claimed in Claim 1 or Claim 2 where the shape of the spacers or shelves are altered.
- 4 A shelving system as claimed in any preceding claim where the proportions of components are altered.
- 5 A shelving system as claimed in any preceding claim with three or more holes in each shelf.
- 6 A shelving system as claimed in any preceding claim with snap-on spacers as described with reference to figure 11 f of the accompanying drawing.
- 7 A shelving system as claimed in any preceding claim where the vertical rods are attached to a base support as described with reference to figure 11g of the accompanying drawing.

**Relevant Technical Fields**

- (i) UK Cl (Ed.M) A4B
- (ii) Int Cl (Ed.5) A47B

**Databases (see below)**

- (i) UK Patent Office collections of GB, EP, WO and US patent specifications.
- (ii) online database: WPI

Search Examiner  
 JOHN GRAHAM

Date of completion of Search  
 26 May 1994

Documents considered relevant following a search in respect of Claims :-  
 1-7

**Categories of documents**

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

| Category | Identity of document and relevant passages                                   | Relevant to claim(s) |
|----------|--|----------------------|
| X        | GB 2237183 A (HEAL) whole document see eg the four last paragraphs on page 3 | 1-5                  |
| X        | GB 1319737 (JOURDAIN) see particularly Figure 2                              | 1-5                  |
| X        | GB 1096727 (SCHAFER) see bar 35 in Figure 12                                 | 1-5                  |
| X        | US 4345526 (TECHPLASTIC) see rod 36 and spacers 42, 44                       | 1-4                  |
| X        | US 4025212 (BLOCK) see 'rod' formed by spindles 20                           | 1-5                  |

**Databases:**The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).