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(52) UK CL (Edition T)
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A4L LABB L115 L119 L130 L145 L150

(56) Documents Cited

GB 2204479 A	**GB 2114873 A**
GB 0550273 A	**EP 0988813 A1**
US 6119992 A	**US 5938158 A**
US 5590607 A	**US 3697033 A**
US 3647078 A	**US 3289615 A**

WPI Abstract Acc No 1999-627023 & JP11-276277A
WPI Abstract Acc No 1999-470414 & DE29810689U

(58) Field of Search
UK CL (Edition S) **A4B , A4L LABB**
INT CL[7] **A47B 96/02 96/06 , A47F 5/00**
Online : EPODOC,WPI,JAPIO

(54) Abstract Title
Removable shelf bracket

(57) A bracket 18 for supporting an additional shelf or panel is fixed to an existing shelf, desk top or sill using a screw clamp. The bracket may be a single piece (eg Fig 4) or may include means such as screw holes (eg Figs 1,3) or sockets (as shown) to which additional brackets can be mounted for supporting a yet further shelf. The additional panel may form a working top extension (Fig 5) or a vertical back panel (Fig 12) for a desk. In one form the main support element of the bracket is mounted to the clamping element via a socket (Fig 16).

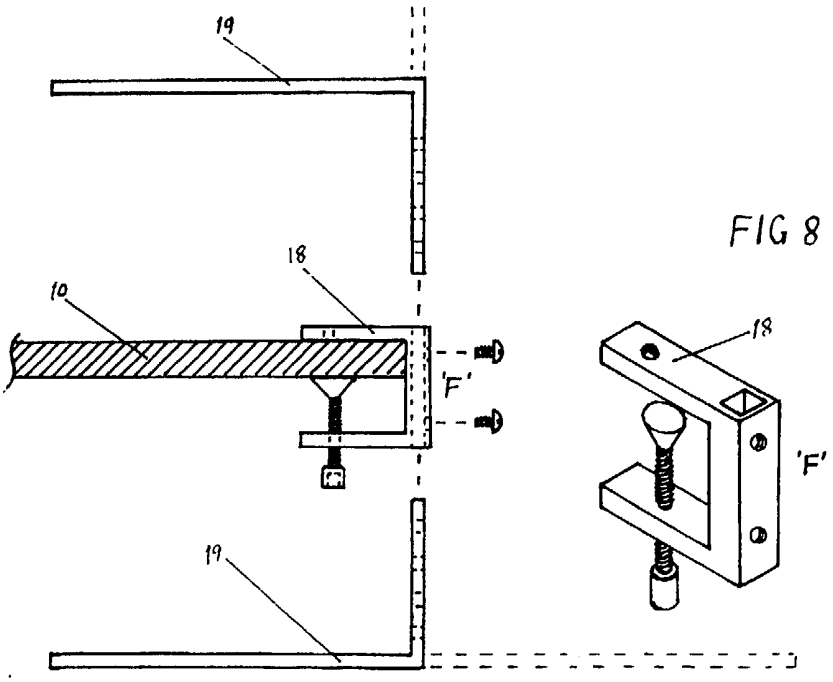

FIG 8

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The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

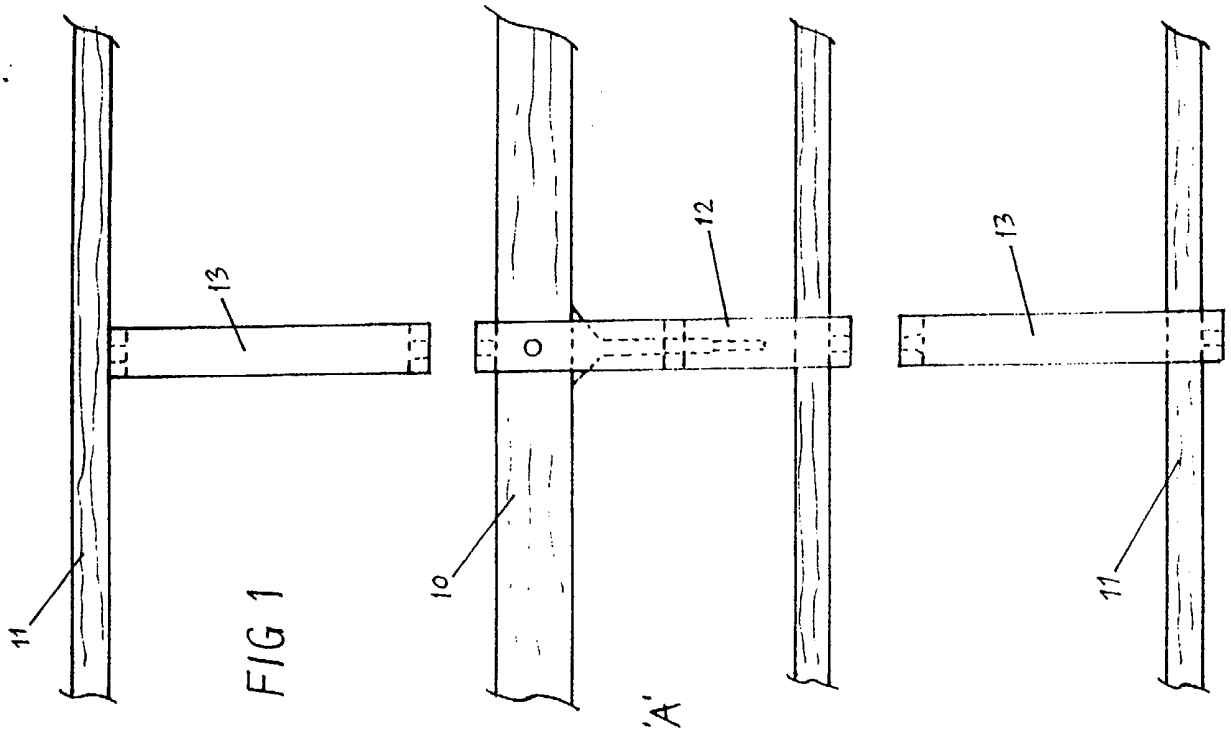


FIG 1

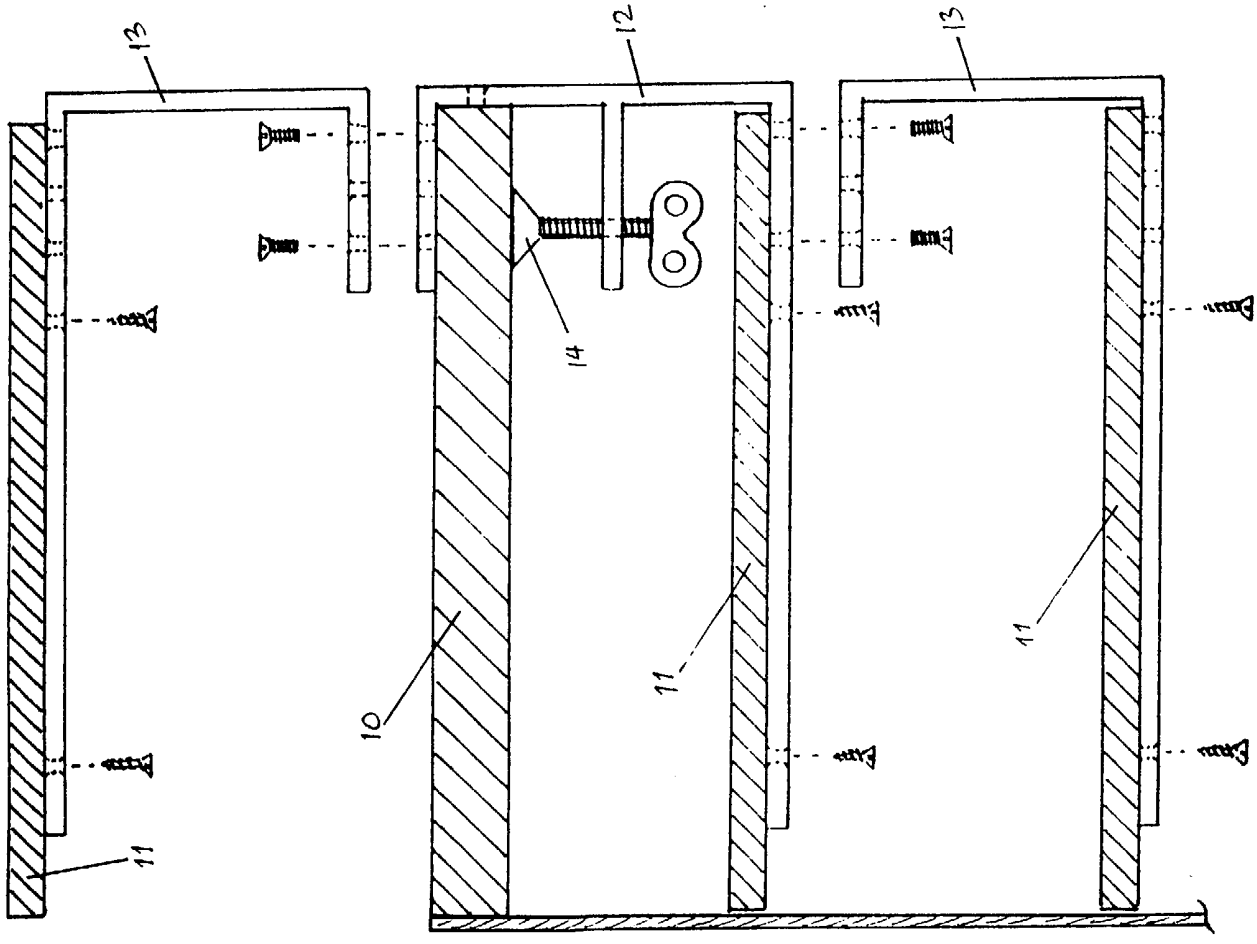
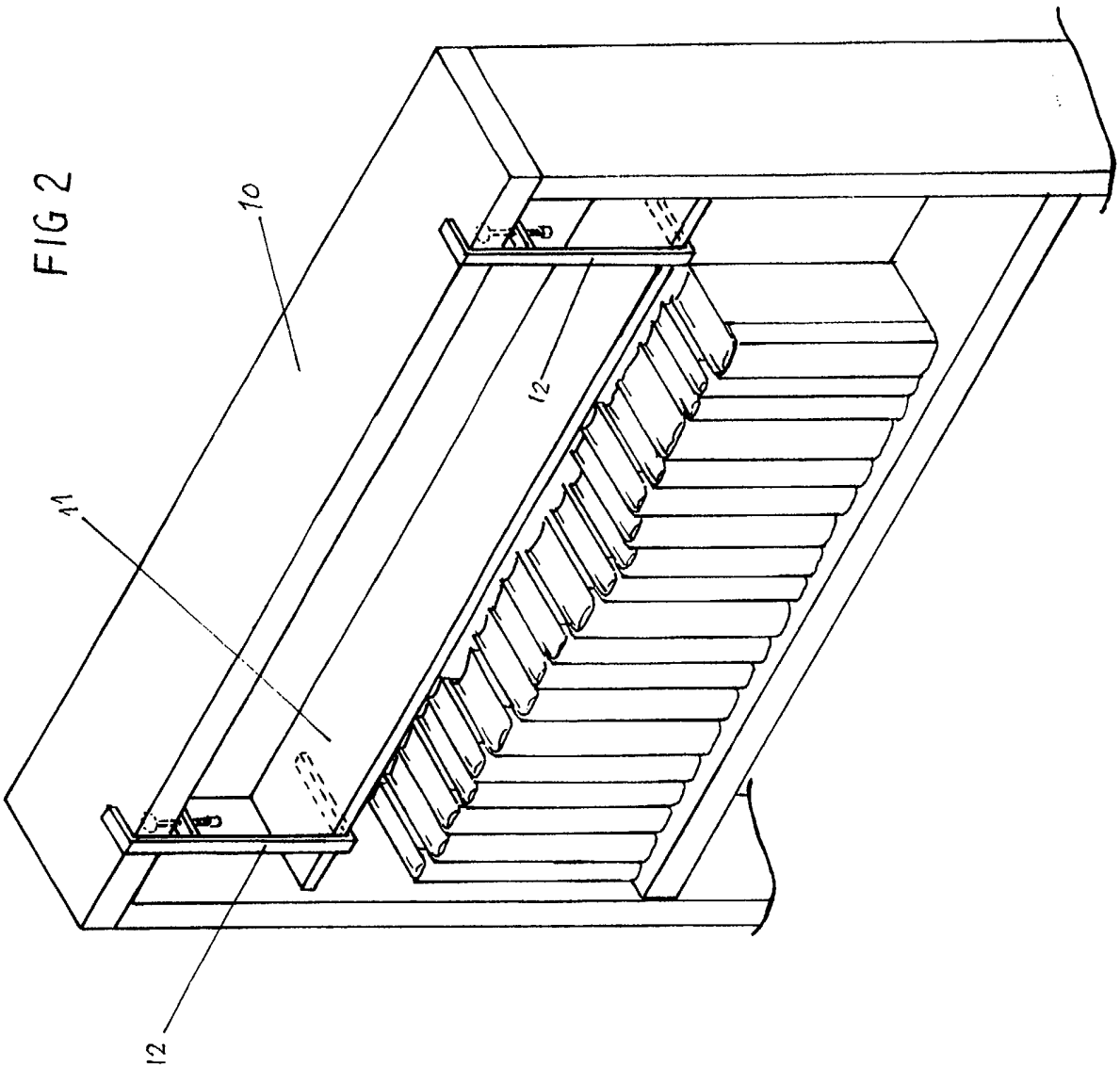


FIG 2



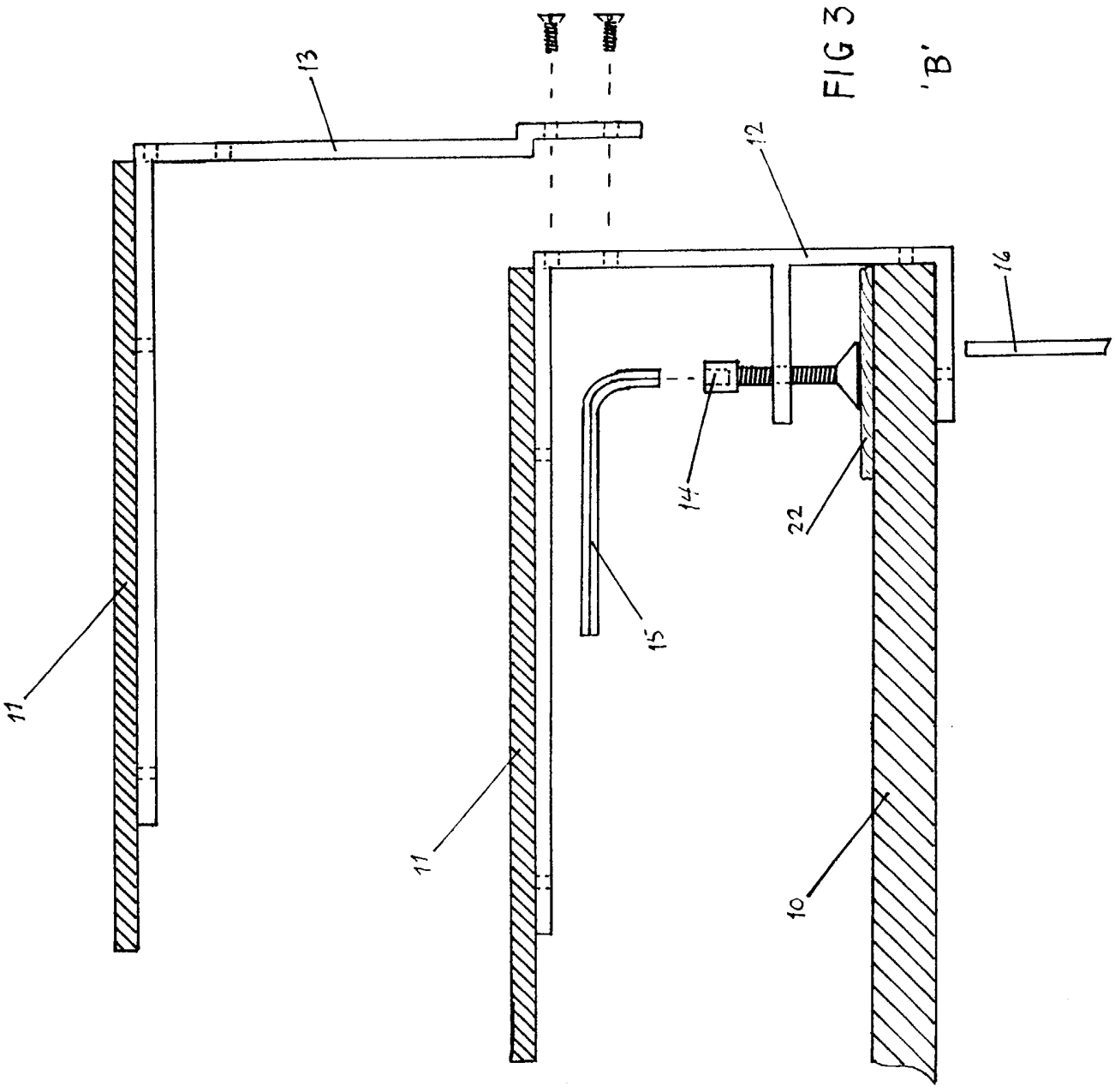


FIG 3

'B'

FIG 4

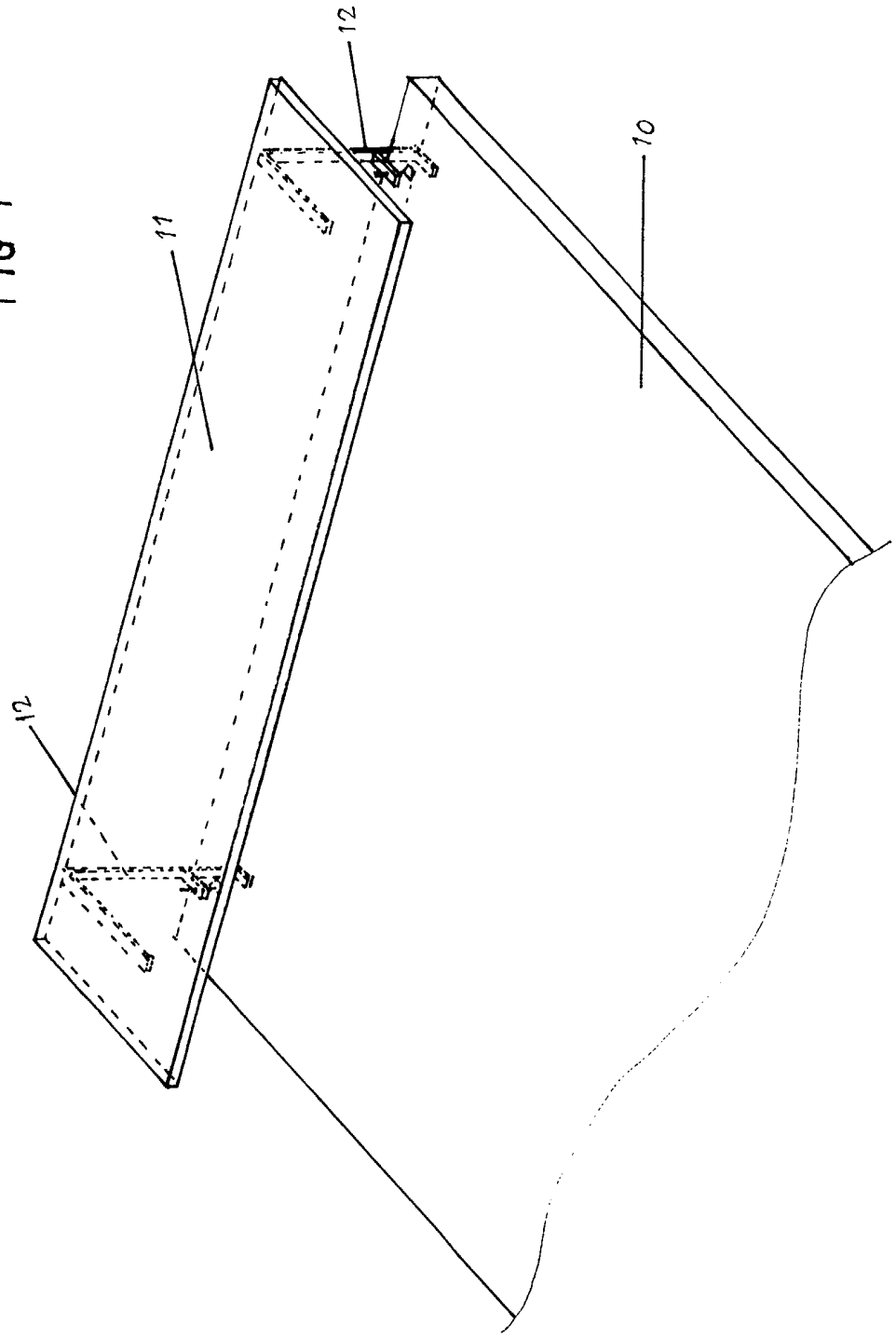
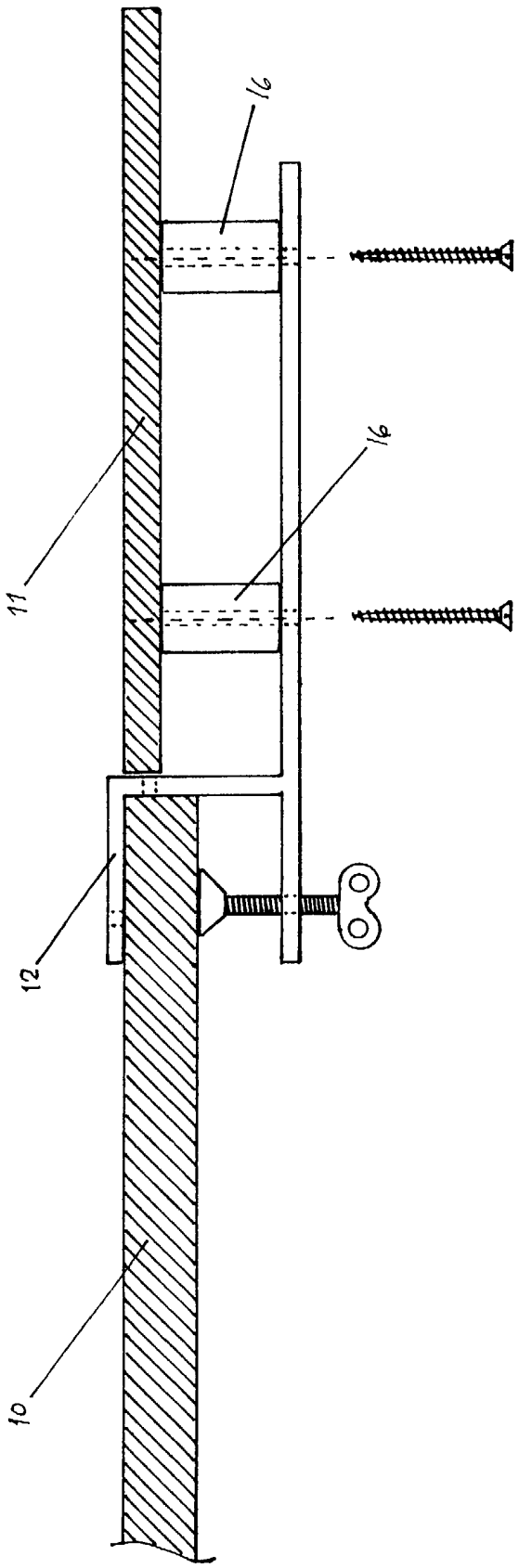


FIG 5

'C'



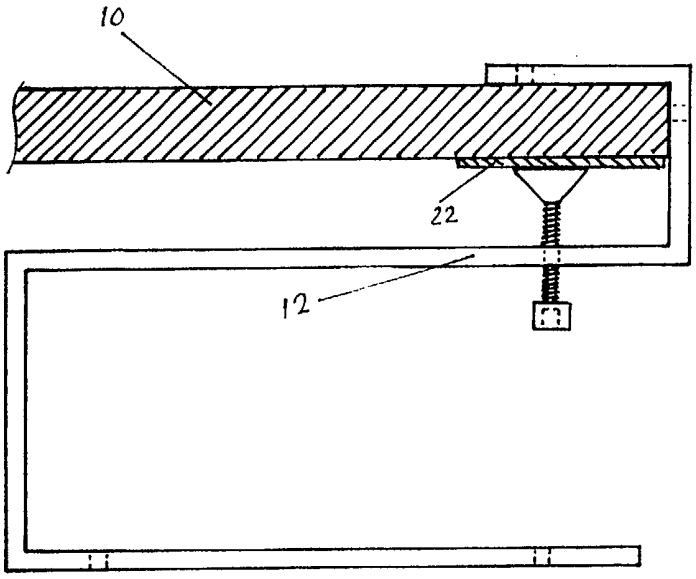


FIG 6

'D'

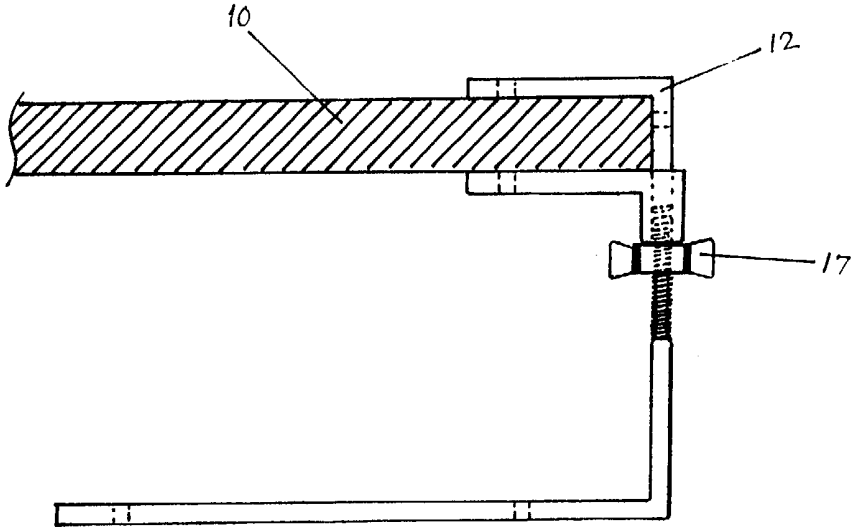


FIG 7

'E'

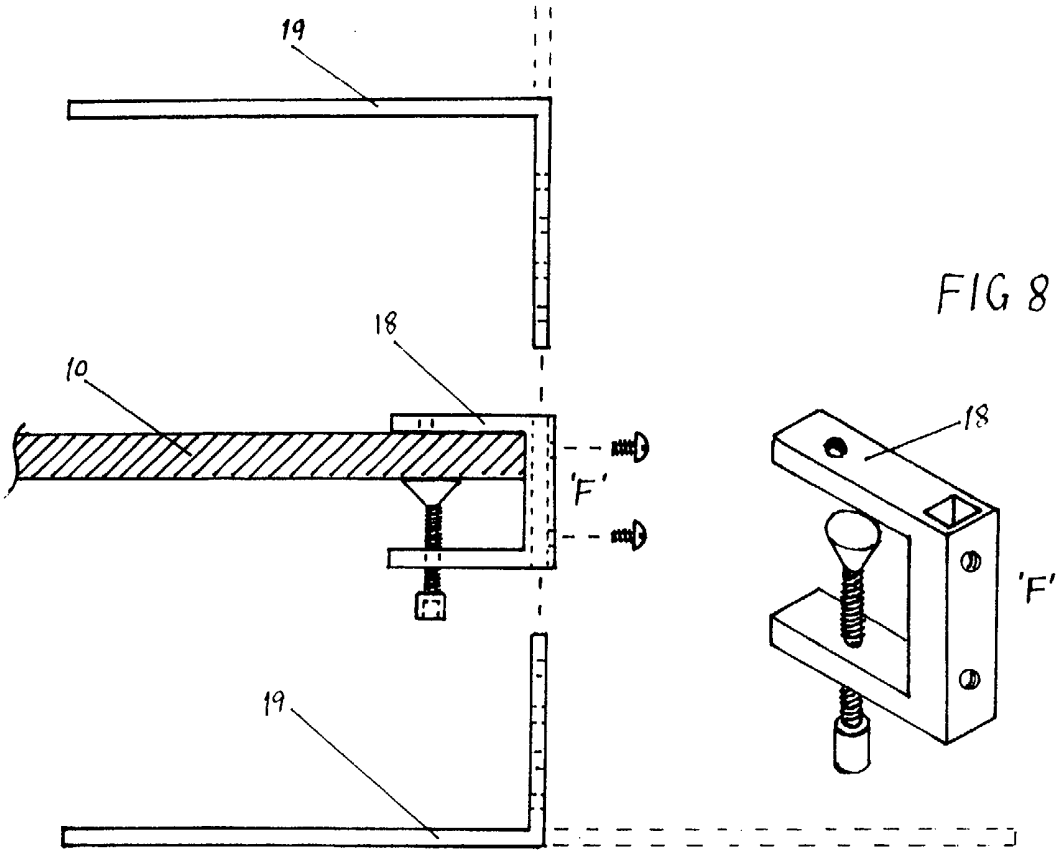


FIG 8

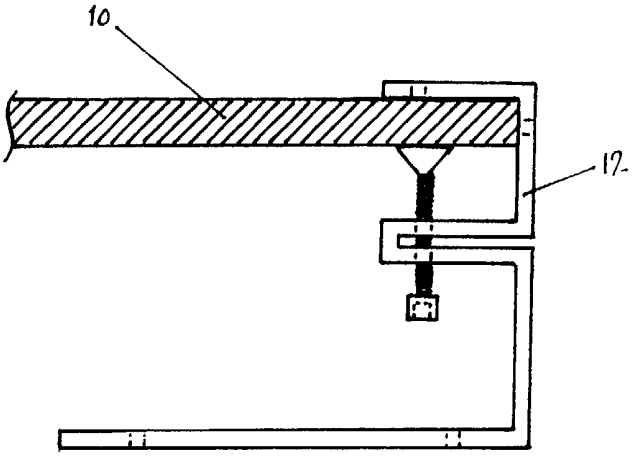


FIG 9

'G'

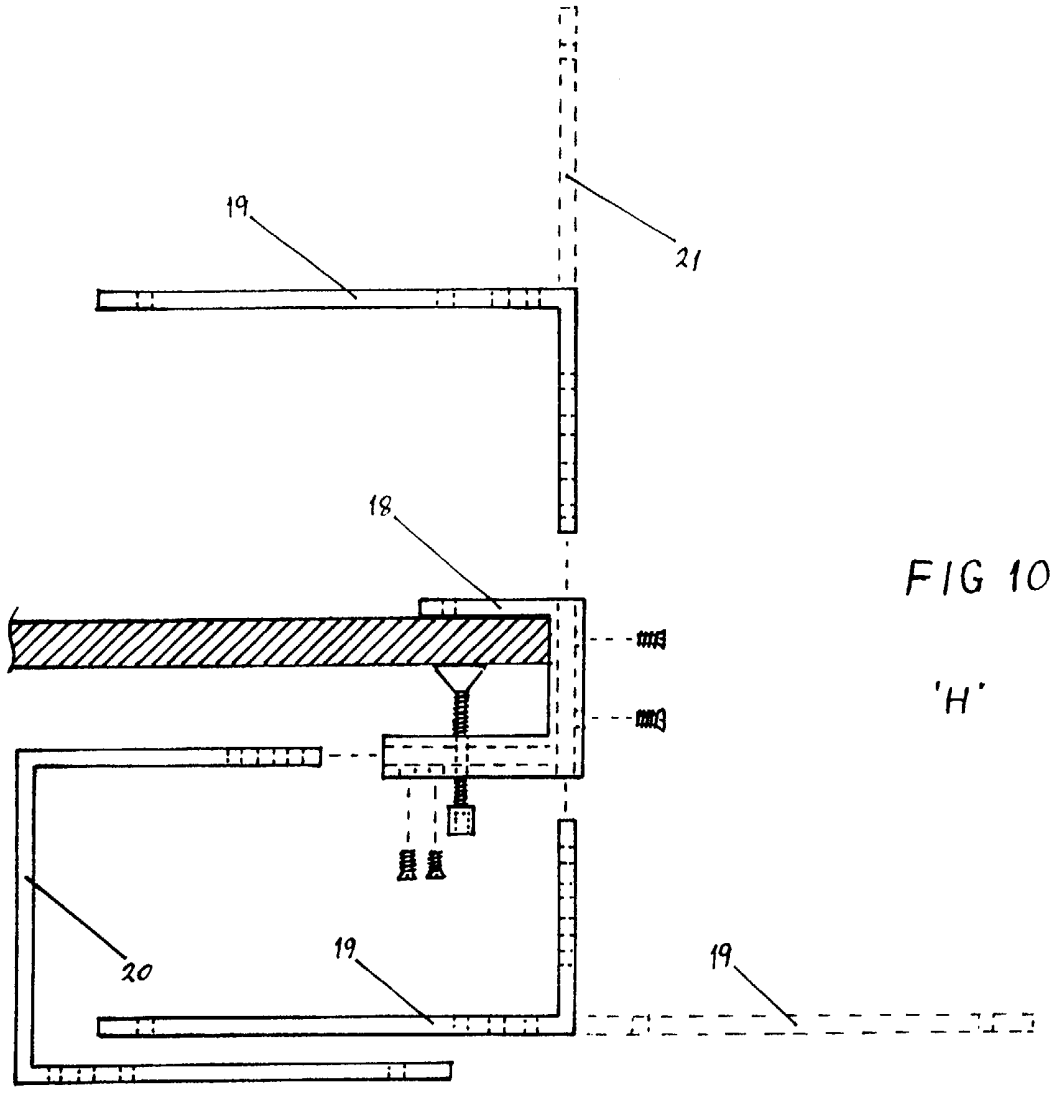
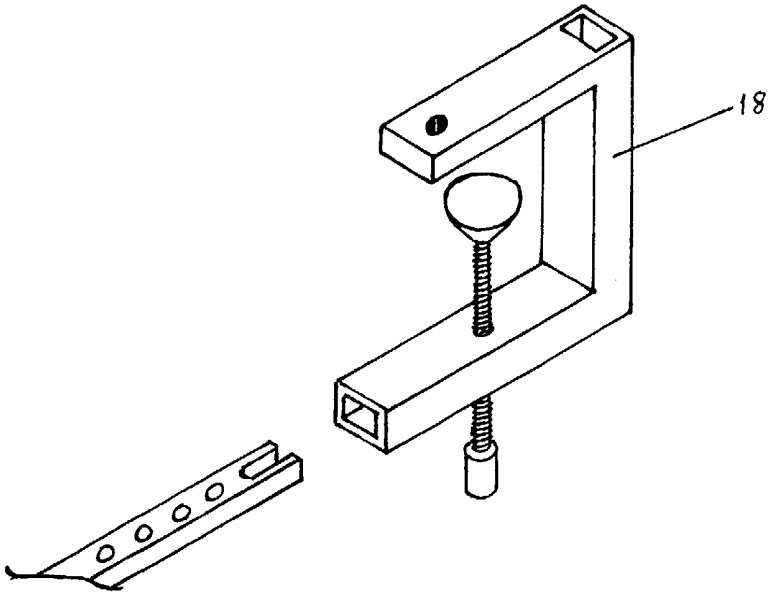


FIG 10

'H'



'H'

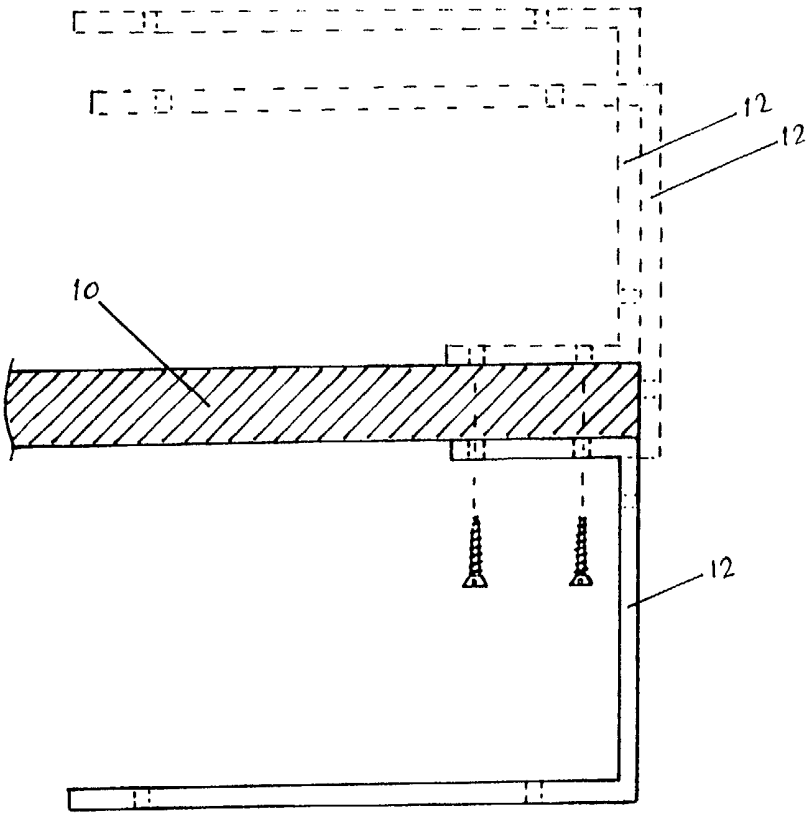


FIG 11

'J'

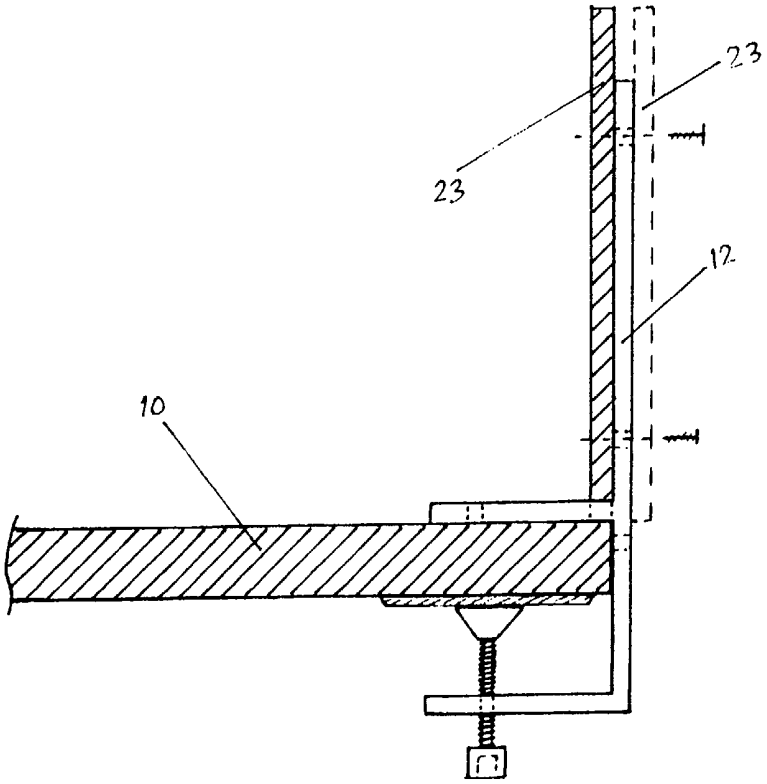


FIG 12

'K'

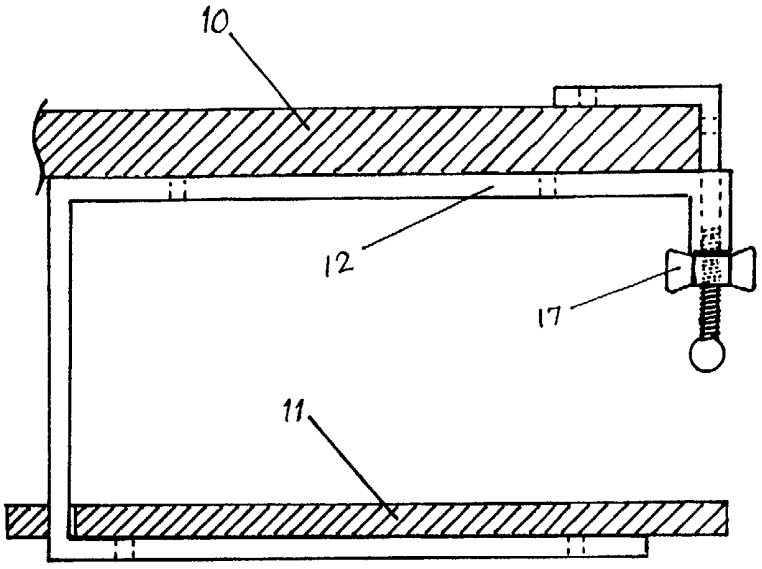


FIG 13
'L'

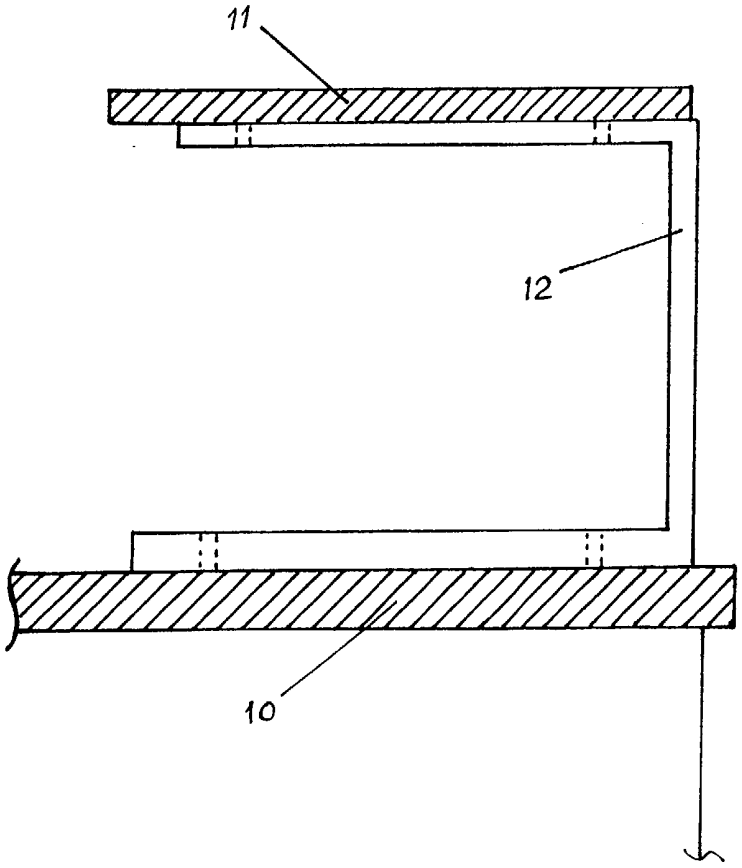


FIG 14
'M'

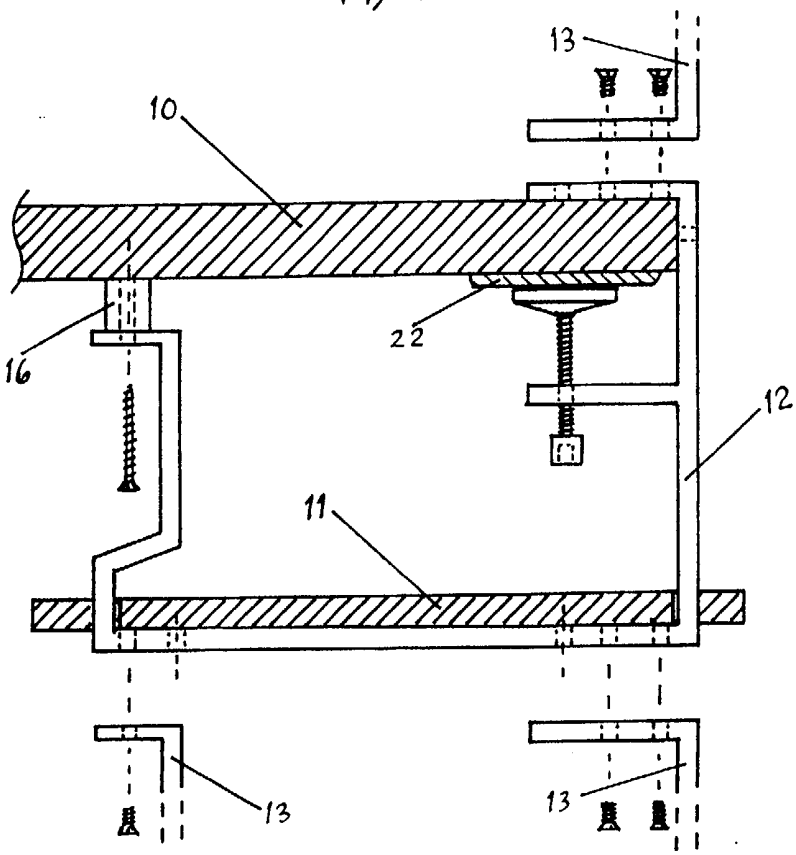
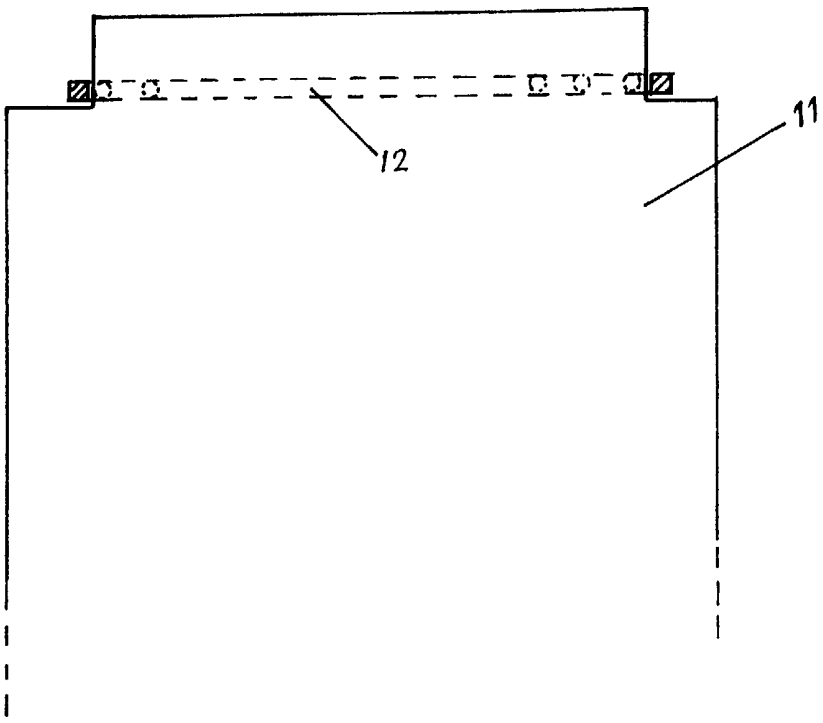


FIG 15

'N'



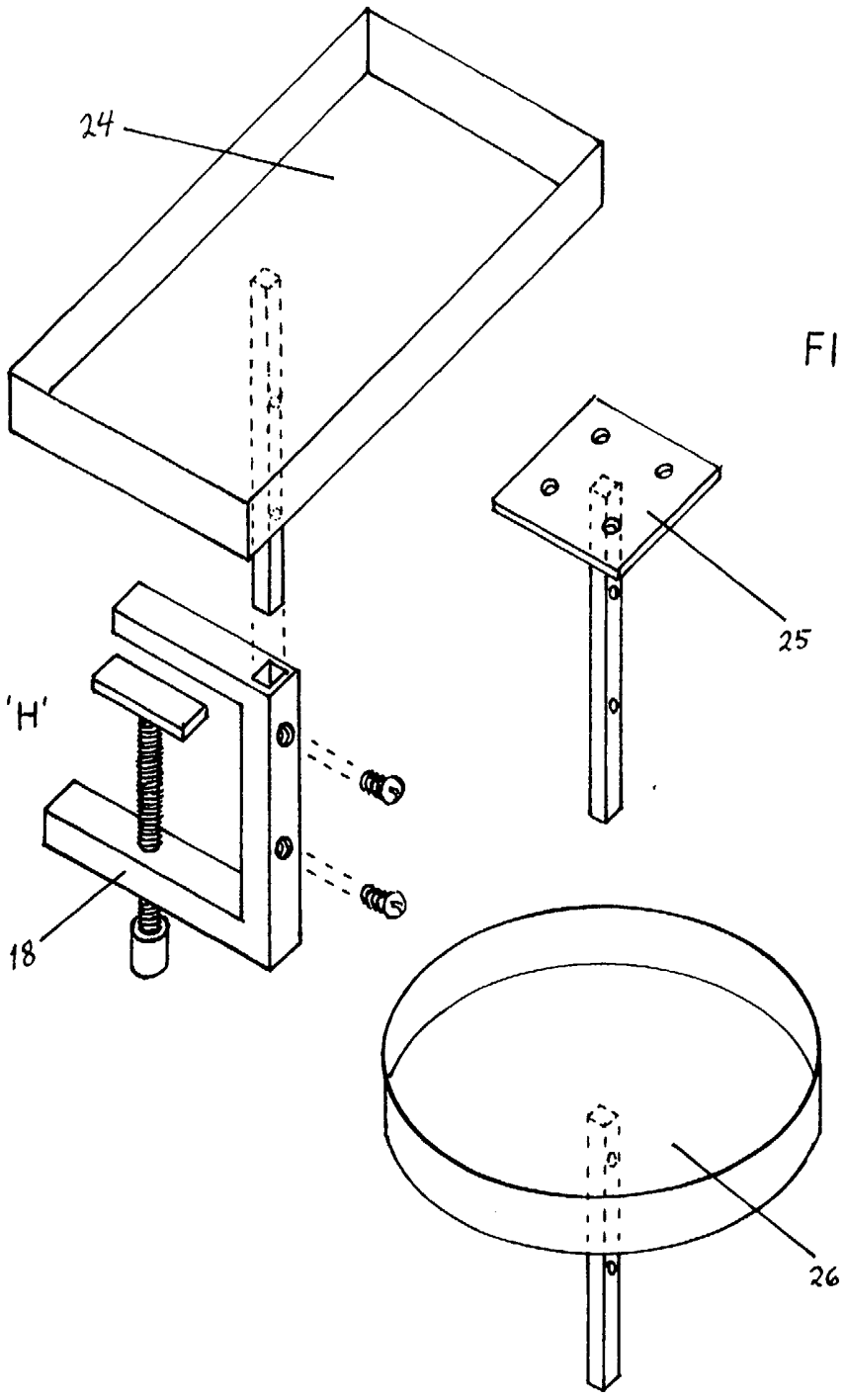


FIG 16

REMOVABLE SHELF BRACKET

This patent application relates to a system of specially shaped brackets for fixing secondary shelves to existing shelves, desks, work benches, window sills etc.

The space under a shelf is often wasted. This can be utilised with a secondary shelf for light weight use such as papers etc. Similarly it is often convenient to have a shelf at the back of a desk or workbench or an extension of a desk top or sill. All these can be achieved with clampable brackets which is easily erected or dismantled for permanent or temporary use.

The system consists of two or more brackets to allow secondary shelves to be erected under or over existing shelves, above the back of desktops, workbenches or window sills. Other versions of the bracket can be used to form a level extension to an shelf, bench, sill or desk or a back panel for a desk or bench.

The bracket can be of modular form so that the basic bracket with the necessary sub-brackets can perform all above functions or there can be special separate bracket for each function as shown in the sketches.

In either case the brackets can take extensions to form multiple shelves above one another other or simply provide larger spacing between shelves.

The fastening principle for securing the bracket to existing shelves or benches is a screw clamp with a wing handle (Alternative an Allen key system). A ratchet or friction clamp with a release button can also be used. The bracket can be made for screw fixing only to the existing shelf, i.e. not using a clamp at all. One bracket (Fig 14) can be left unsecured on a desk top.

The brackets have threaded screw holes for attachment of extensions (only shown in Fig 1, 3 and 15) and unthreaded holes for fixing secondary shelves to the bracket using wood screws or for securing the bracket to the existing shelf (with screws in addition to the clamp).

Different dimensions of the bracket will allow for different spacing between shelves and length of secondary shelf support arm.

The bracket can also be used as book-ends, down from the shelf above or up from the shelf on which the books are standing. (Not shown in any of the sketches)

Mounted at the vertical side of an existing shelf unit the bracket can be used as a hanging rail (The open end fitted with a stopper).(Not shown in the sketches)

At the back of a computer desk the shelf extension bracket can be used as wire/cable support (Again the open end fitted with a stopper.) (Not shown in the sketches)

The material of the brackets would probably be steel or aluminium of sufficient strength for the purpose. They could also be made in plastic, wood or other suitable material.

Drawings

The cross section of the brackets is indicated in Fig 1 where a front and side view is shown. Since the profile is not important in principle a side view only is shown on most of the subsequent sketches.

Fig 1: Shelf bracket 'A'

Shows main bracket (12) fitted to existing shelf (10). Secondary shelf (11) is fitted to the main bracket (12) with wood screws. Several extension brackets (13) can be attached to the main bracket using machine screws. They can be attached over and/or under the main shelf and fitted with further secondary shelves. Screw clamp (14) has a cone (or foot) not rigidly fixed to the screw so that the screw can be tightened after the cone has engaged and become stationary.

Fig 2: Shelf bracket 'A'

Shows the bracket 12 fitted to a bookshelf 10. For clarity no extension brackets is shown. Secondary shelf 11.

Fig 3: Desk bracket 'B'

Shows main bracket (12) fitted to the back of a desk or workbench (10). Secondary shelf 11. Screw clamp can be wing nut or Allen key (14+15) type as shown. Extension bracket (13) can be fitted if multiple secondary shelves (11) is required. A cut-out for the bracket might have to be made in the desk back panel 16. Wood strip 22 is for protection of the desk.
The horizontal top part of the bracket can be widened to enable small light shelf or other object to be fixed to a single bracket (Similar to item 25 in Fig 16).

Fig 4: Desk bracket 'B'

Shows the brackets 12 fitted to the back of a desk or workbench 10. No extension brackets are shown.

Fig 5: Level bracket 'C'

Shows main bracket 12 fitted to the back or side of a desk or workbench, a window sill or a shelf (10). Secondary shelf is made level using distance pieces 16. The bracket can of course be made with extending part higher without the need for pieces 16, but this reduces the ability to cater for varying thickness of the secondary shelf.

The bracket can be used for a secondary shelf holding a computer keyboard or mouse mat among other things.

Fig 6: Shelf bracket 'D'

Another version of the shelf bracket. Main shelf 10. Bracket 12. Protective wood 22. Secondary shelf not shown. Extension brackets not shown, but will be similar to Fig 1. The secondary shelf can be extended backwards by making cut-out in the shelf as in Fig 13 and15.

Fig 7: Shelf bracket 'E'

Version of shelf bracket using different clamp system. Wing nut 17 forces lower jaw upwards. No secondary shelf or extension bracket shown. The clamp should be slightly narrow in the mouth to allot for slack in the cylinder.

Fig 8: Modular bracket 'F'

This uses a basic clamp unit 18 and sub-bracket 19 to perform the functions of the other desk, shelf or level brackets. Multiple screw holes in the sub-bracket (19) will allow adjustment of height.

Fig 9: Shelf bracket 'G'

Another version of the shelf bracket

Fig 10: Modular bracket 'H'

Another version of a modular bracket 18 allowing sub-brackets 19, 20, 21 to be used to perform the functions of the other brackets. Se also Fig 16. Secondary shelves or extension brackets not shown. Multiple screw holes in the sub-brackets allow for height adjustment.

Fig 11: Shelf bracket 'J'

A version of the shelf bracket that uses screw fitting only. Can be used over or under a shelf or desk top/workbench.

Fig 12: Panel bracket 'K'

This bracket 12 can be used for a vertical panel 23 at the back of a desk or workbench 10. The panel can be a tool rack etc.

Fig 13: Shelf bracket 'L'

A version of the shelf bracket using the same clamp type as in Fig 7, but the bracket arm is different. Wing nut 17 tightens jaws on to the shelf. Cut-off in the secondary shelf 11 allows for a wider shelf.

Fig 14: Desk bracket 'M'

A version of the desk bracket that does not have to be fixed to the desk and would thus be stable when a secondary shelf are fixed by screws to two such brackets. (For light loads). Holes are present for optional screw fixing to the desk or bench.
This bracket can be made by wood, metal or plastic.

Fig 15: Shelf bracket 'N'

Another version of the shelf bracket. This bracket (12) can be fixed by a screw at the opposite end to the clamp. Extension brackets 13 are indicated. They would in principle be similar to Fig 1. The bottom part of Fig 15 shows a plan view of part of the secondary shelf 11. By using cut-outs at the ends of the secondary shelf, any width can be achieved, limited only by the surroundings.

Fig 16: Modular Bracket 'H'

Shows other attachments for modular bracket 'H' (18)(Also shown in Fig 10). Item 25 shows a universal sub-bracket onto which various objects can be fixed. Item 24 shows a tray sub-bracket that can be used with bracket 'H' fitted to a desk or bench to hold various items such as pens, stapler, hole-punch, computer mouse (parking), mobile phone etc. Item 26 shows a cup-holder attachment.

There is no doubt many other used for this bracket

CLAIMS

1 A system of specially shaped brackets that clamps on to an existing shelf, desk, work bench or sill to enable secondary shelves, panels, extensions or objects to be fitted to one or more such brackets. The clamps enables the brackets to be easily removed without damage to the shelf etc.

2 A system as in claim 1 that enables extension brackets to be fitted to the main brackets thus enabling multiple secondary shelves to be fitted.

3 A system as in claim 1 that enables the brackets to be clamped to the existing shelf etc. using a screw clamp with a wing handle or Allen key system, a friction type clamp or a ratchet type clamp.

4 A system as in claim 1 and 3 above, but using screw fixing instead of a clamp for more permanent fixing.

5 A system as in claim 1, but specifically relating to a modular clamp unit that uses a common central clamp unit of any of the types mentioned in claim 3, that can accept sub-brackets that will perform all the functions of the other discrete brackets, plus will accept a multitude of special sub-brackets, examples of which are shown in fig 16, sheet 12 .

6 A bracket which will form a free standing, stable, shelf unit for use on a desktop when two such brackets are fixed with screws to a shelf . The bracket has holes for optional screw fixing.

7 A collection of brackets as described above and illustrated in Fig 1 - 16, sheets 1 - 12 in the accompanying drawings.

INVESTOR IN PEOPLE

Application No: GB 0104089.8 **Examiner:** R E Hardy
Claims searched: ALL **Date of search:** 22 May 2001

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.S): A4B; A4L (LABB)

Int Cl (Ed.7): A47B (96/02 96/06); A47F (5/00)

Other: Online : EPODOC,WPI,JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB2204479 A HANWAY : See the Figures & p.2 lines 14-15	1-6
X	GB2114873 A ALMOND & MELLOR : See the Figures	1-6
X	GB0550273 A ELLIS : See the Figures	1-6
X,P	EP0988813 A1 ROUGIER : See the Figures	1-6
X	US6119992 A STUART : See the Figures	1-6
X	US5938158 A TISBO : See especially Figures 3 & 7-10	1-6
X	US5590607 A HOWARD : See the Figures	1-6
X	US3697033 A JACOBS : See the Figures	1-6
X	US3647078 A FORTUNATO : See the Figures	1-6
X	US3289615 A MARSCHAK : See the Figures	1-6
X	WPI Abstract Acc No 1999-627023 & JP11-276277A (SHOWA) : See Abstract & Figure	1-6
X	WPI Abstract Acc No 1999-470414 & DE29810689U (NOTTBERG) : See Abstract & Figures	1-6

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.
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