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(52) UK CL (Edition S)
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US 5544593 A

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UK CL (Edition S) A4L
INT CL[7] A47B 21/00 21/02
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(54) Abstract Title
Modular desk with cantilever top or tops attachable to slotted uprights via bracket ends / end formations

(57) A modular desk comprises two spaced apart uprights 10, 11 on which are mounted at least one cantilevered desk top 3 via mounting bracket 4 inner ends / end formations engaged in complementary slots 14 in the uprights 10, 11. Desk tops may be engaged with the uprights in opposites direction to form a surface extending in both directions from the uprights 10, 11 in which configuration the uprights 10, 11 are central in relation to the support surface. A number of desks may be joined end to end to provide a multiple desk configuration (fig.10). The desk features a ground engaging support frame with feet 12, 13, and possibly an additional upright 16 therebewteen. Upper and lower bracing members 18, 19 interconnect the uprights 10, 11, 16 and are formed by a rectangular lower bracing frame 18 mounted between lower ends of an adjacent pair of uprights 10, 11, 16.

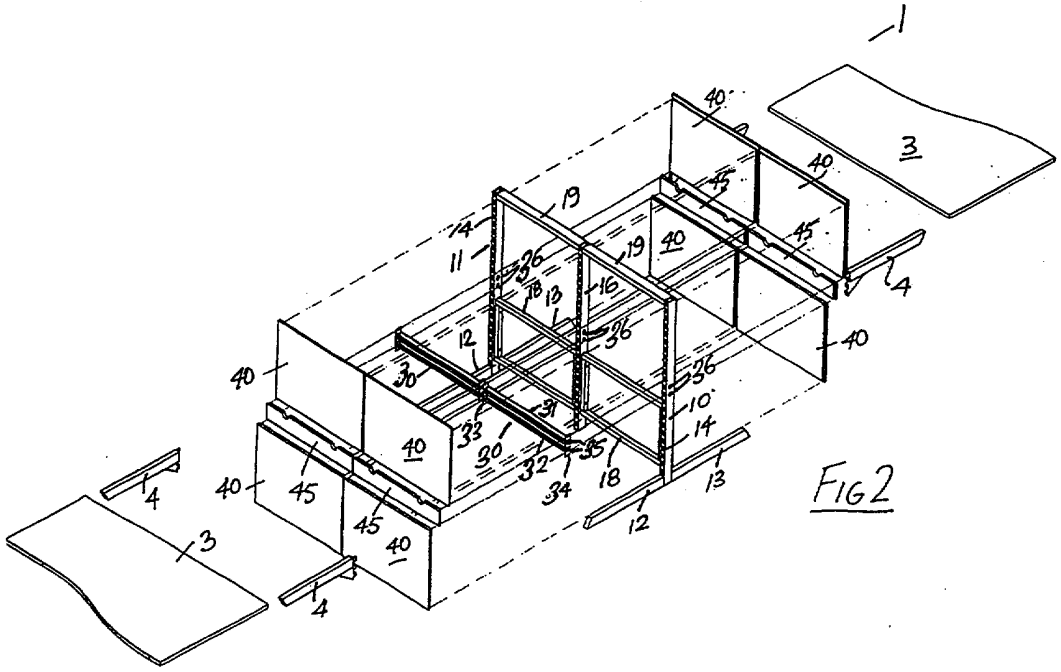

FIG 2

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

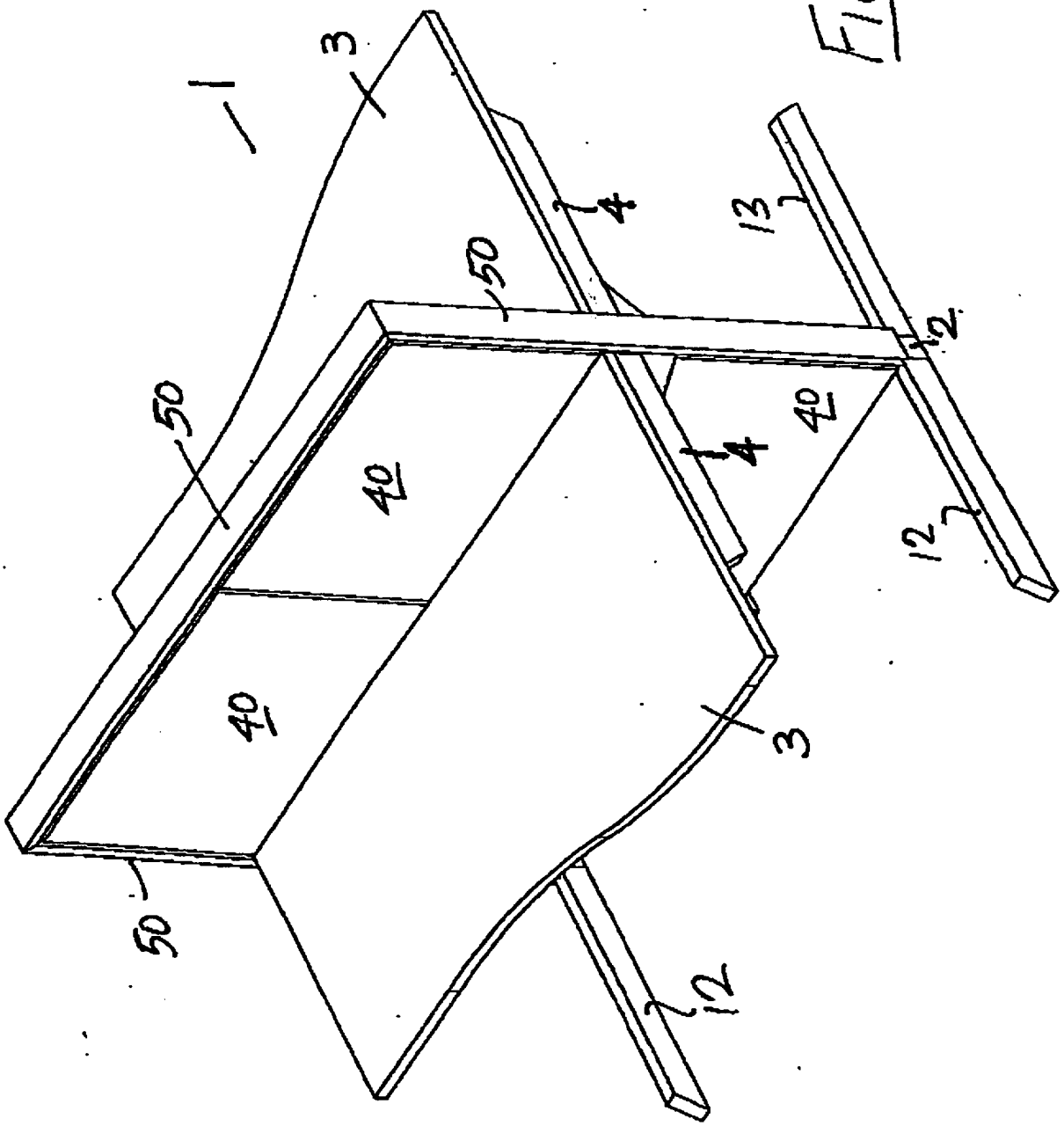

FIG1

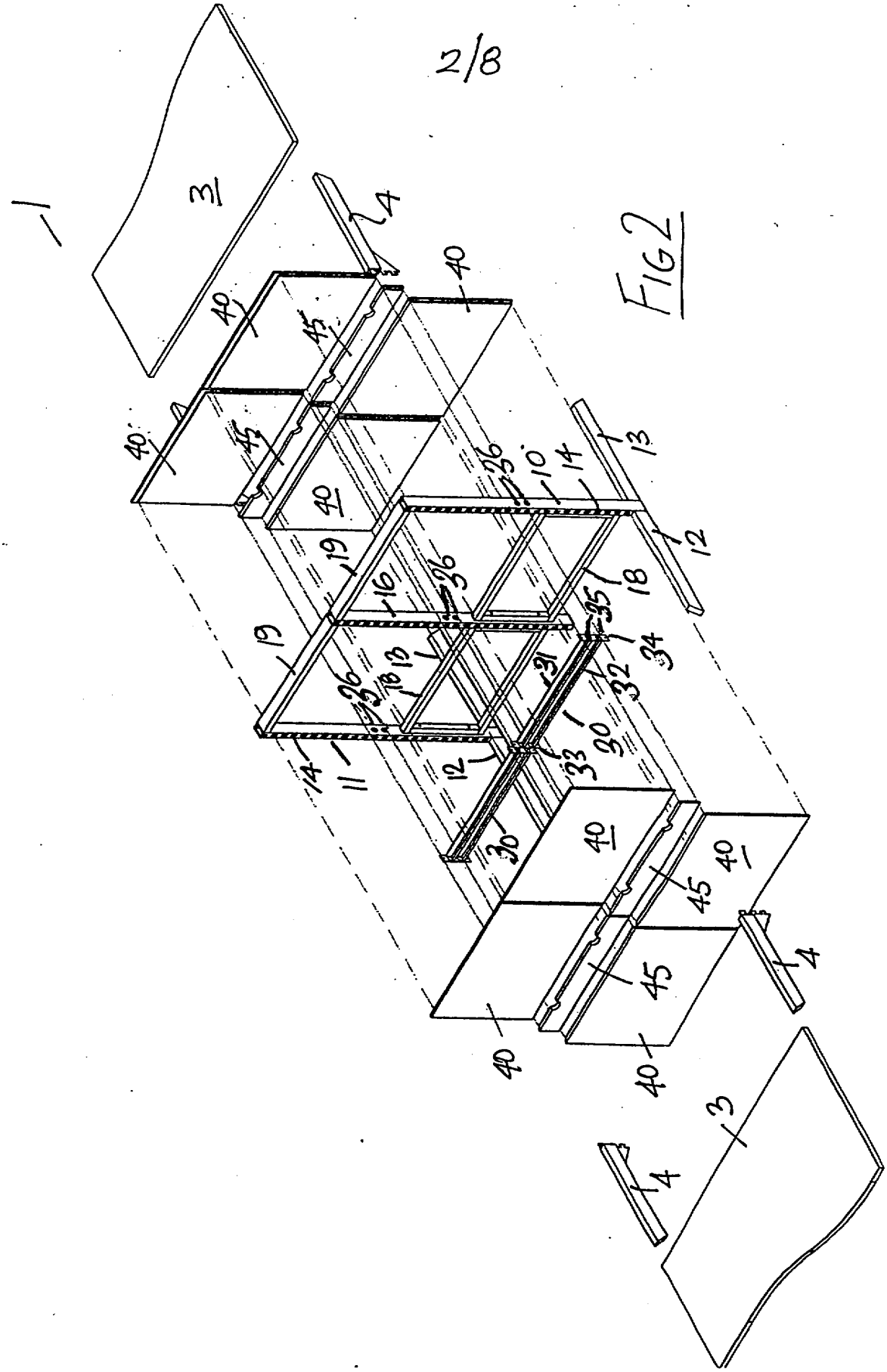

FIG 2

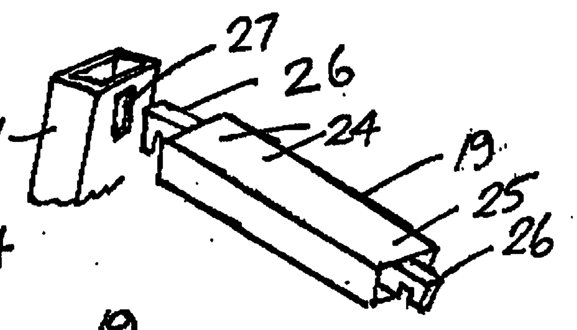
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FIG 8

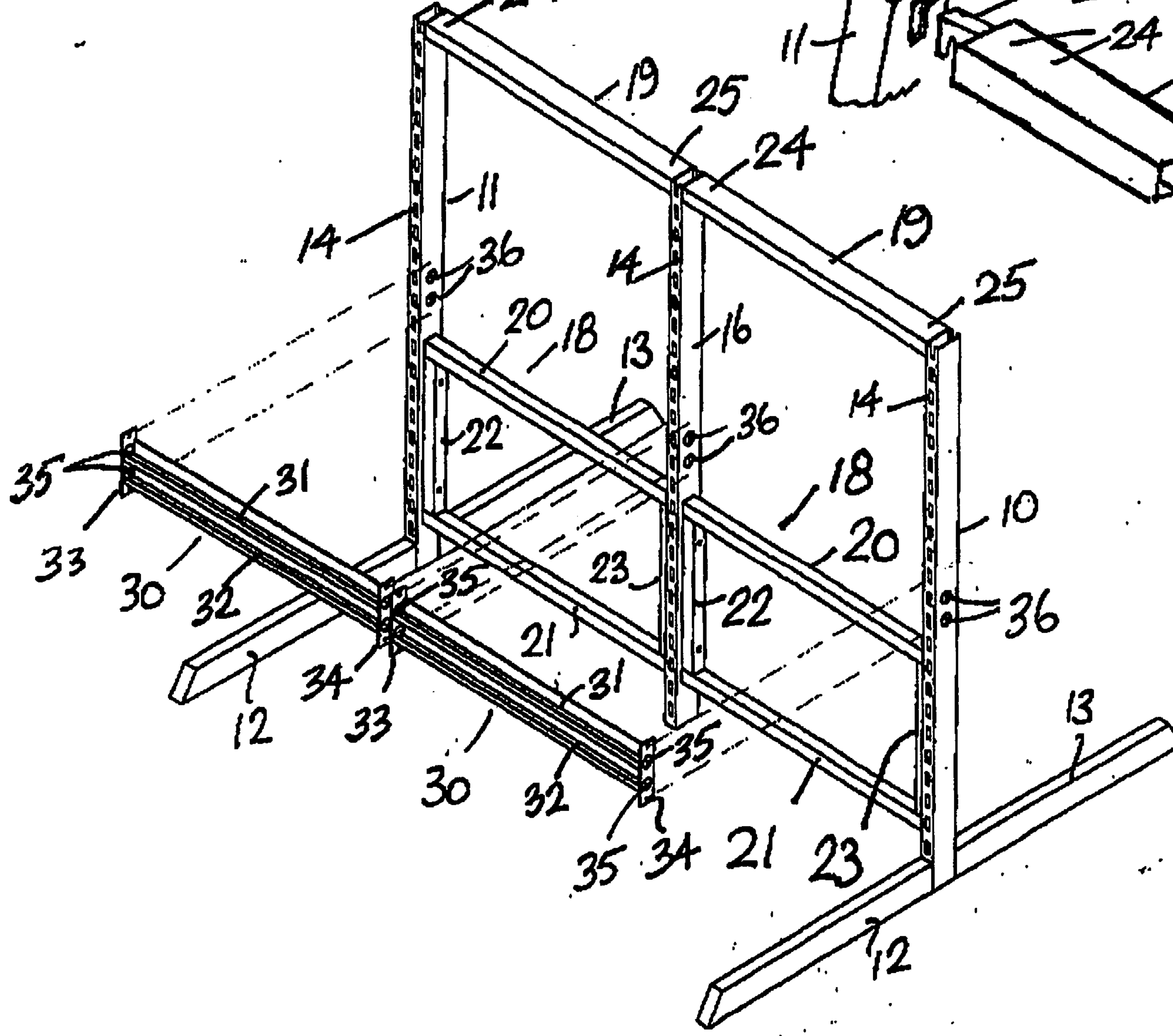
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FIG 3

FIG10

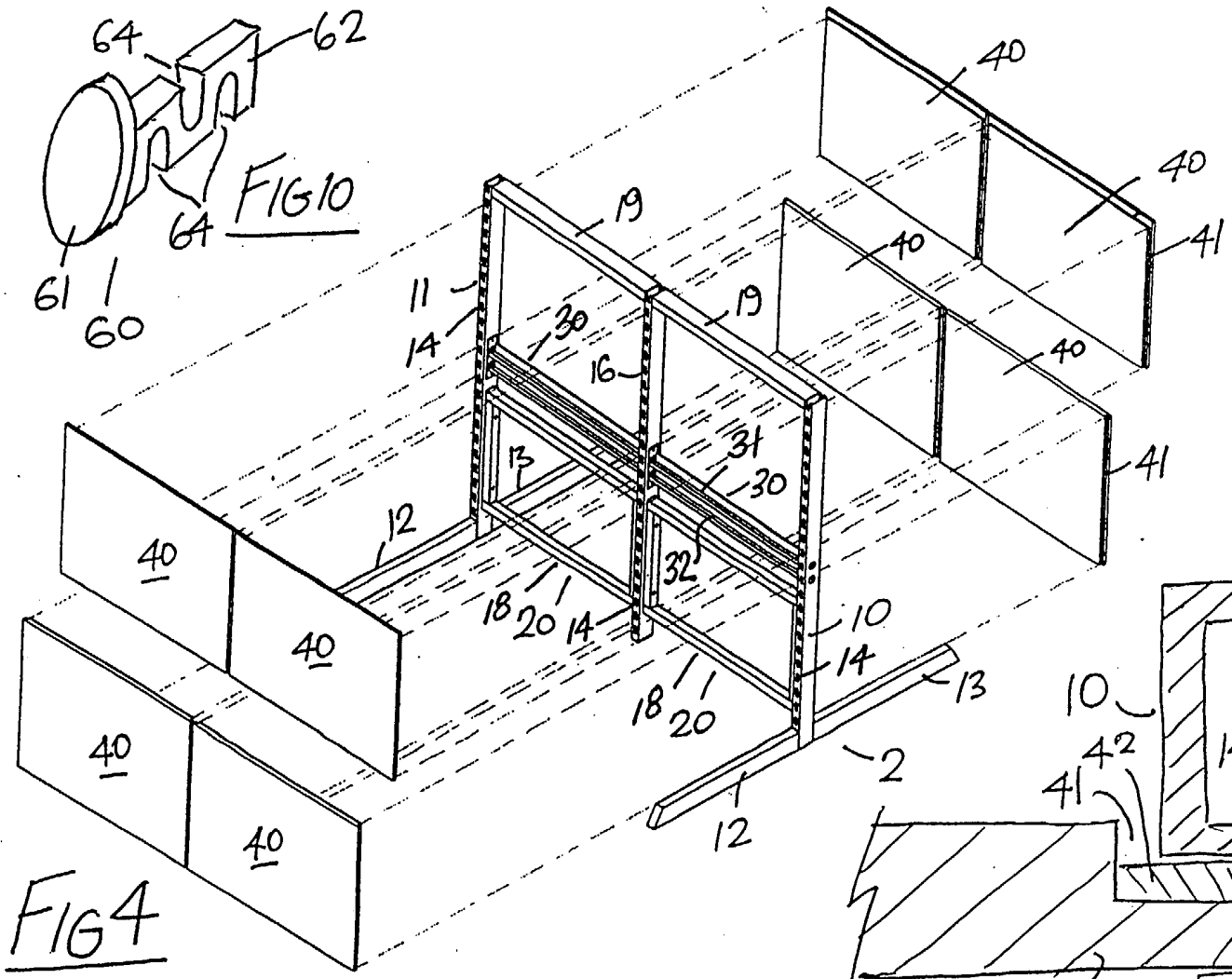

FIG4

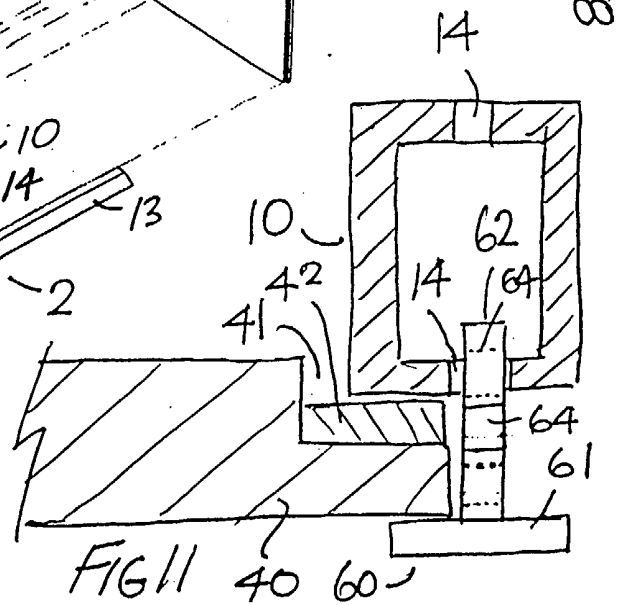

FIG11

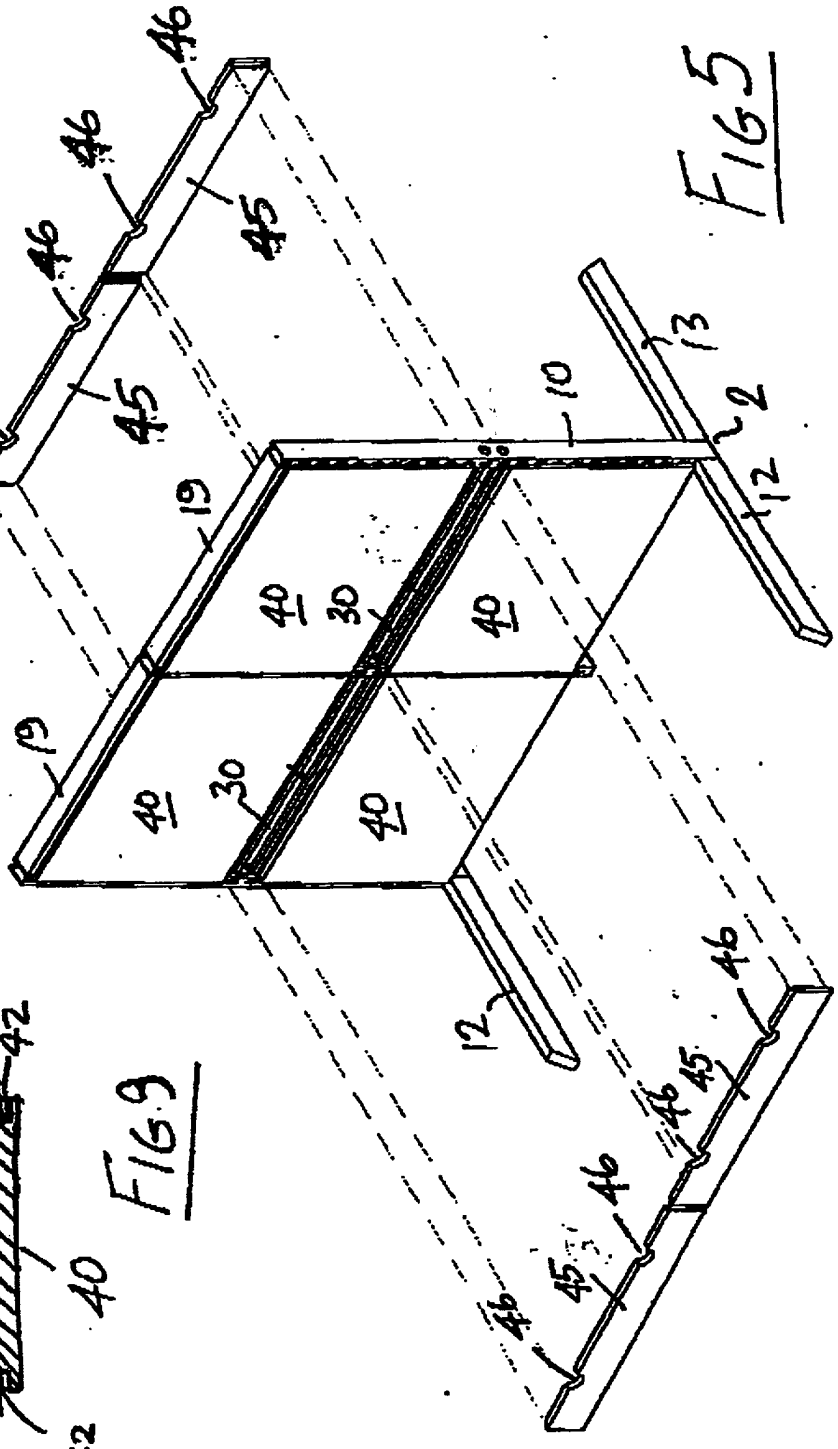
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FIG 5

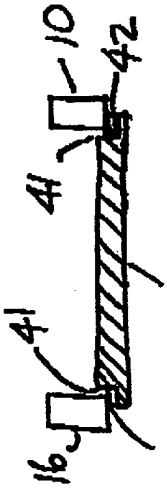
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FIG 9

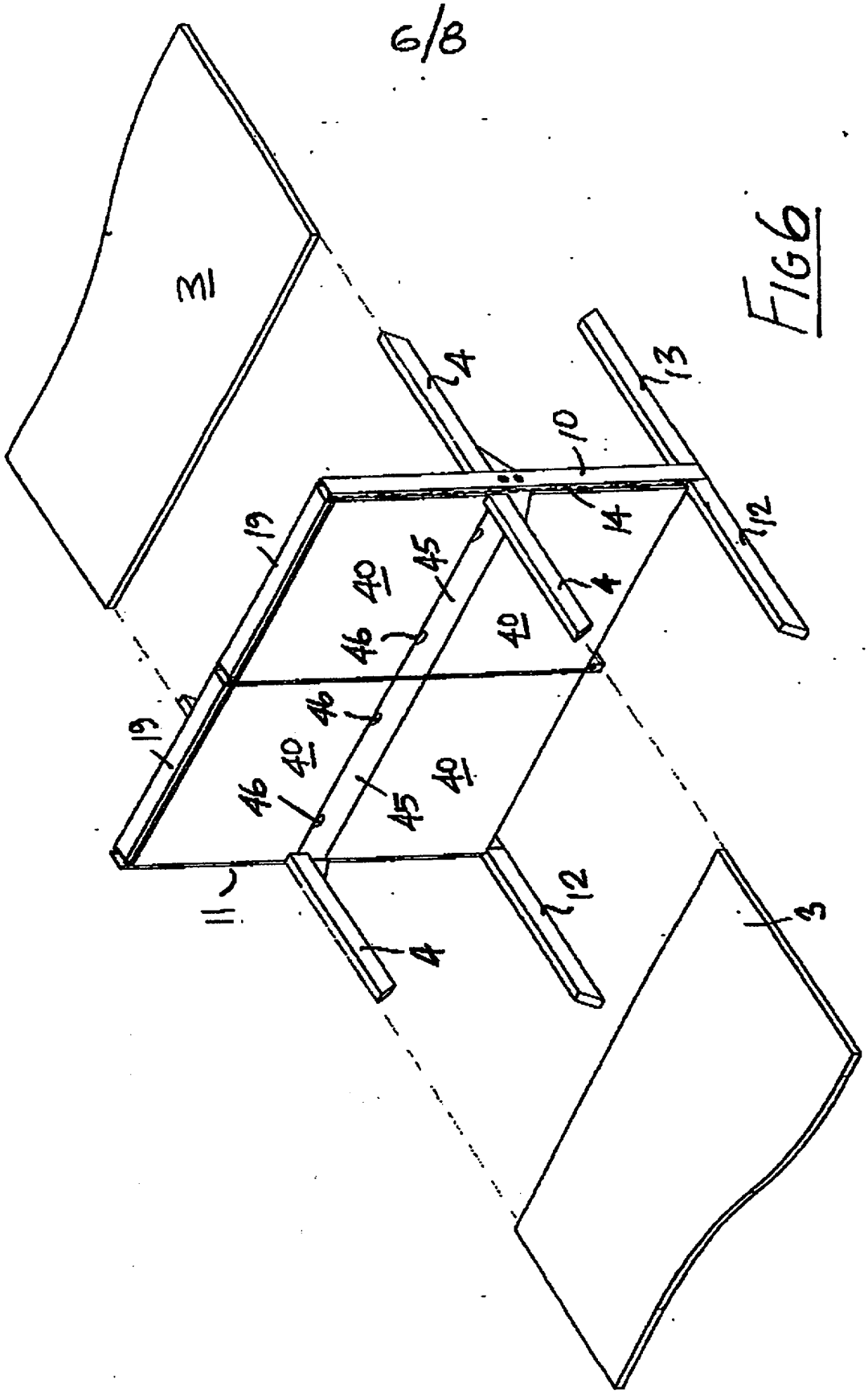

FIG 6

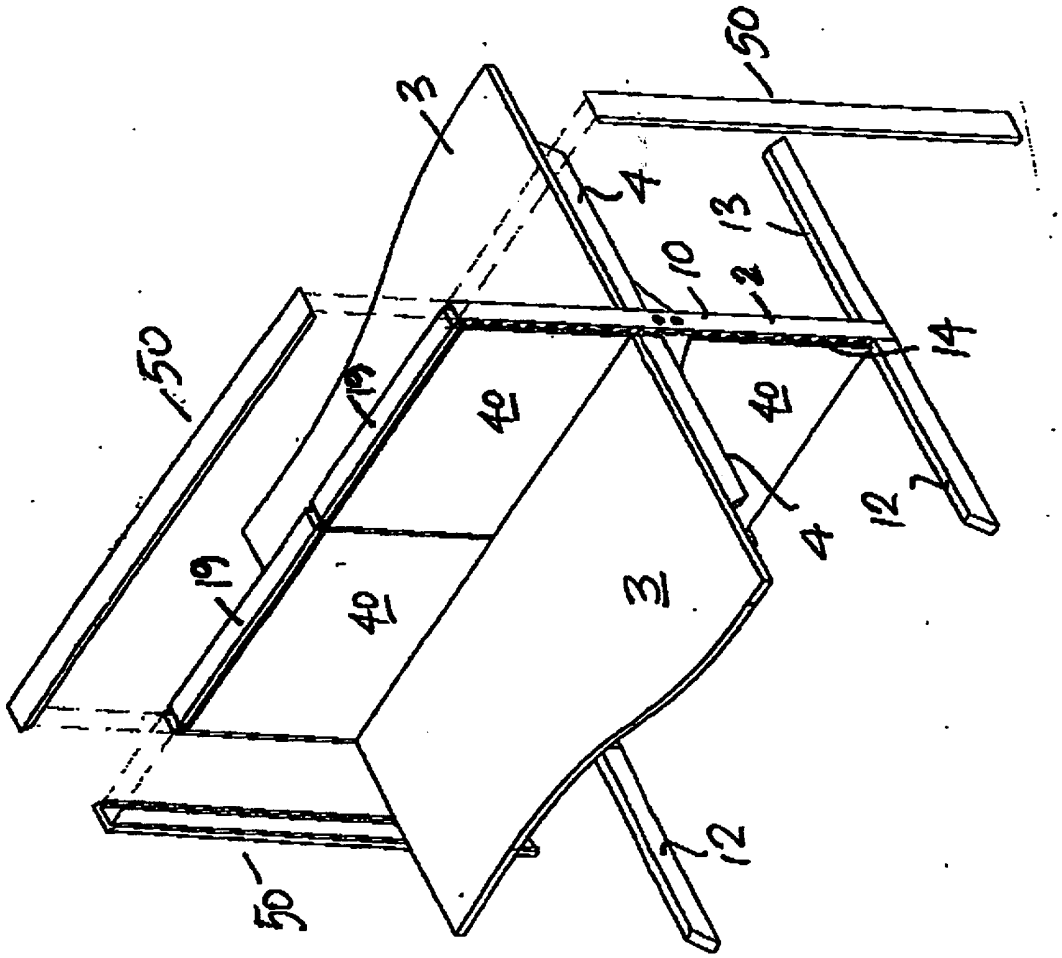

FIG 7

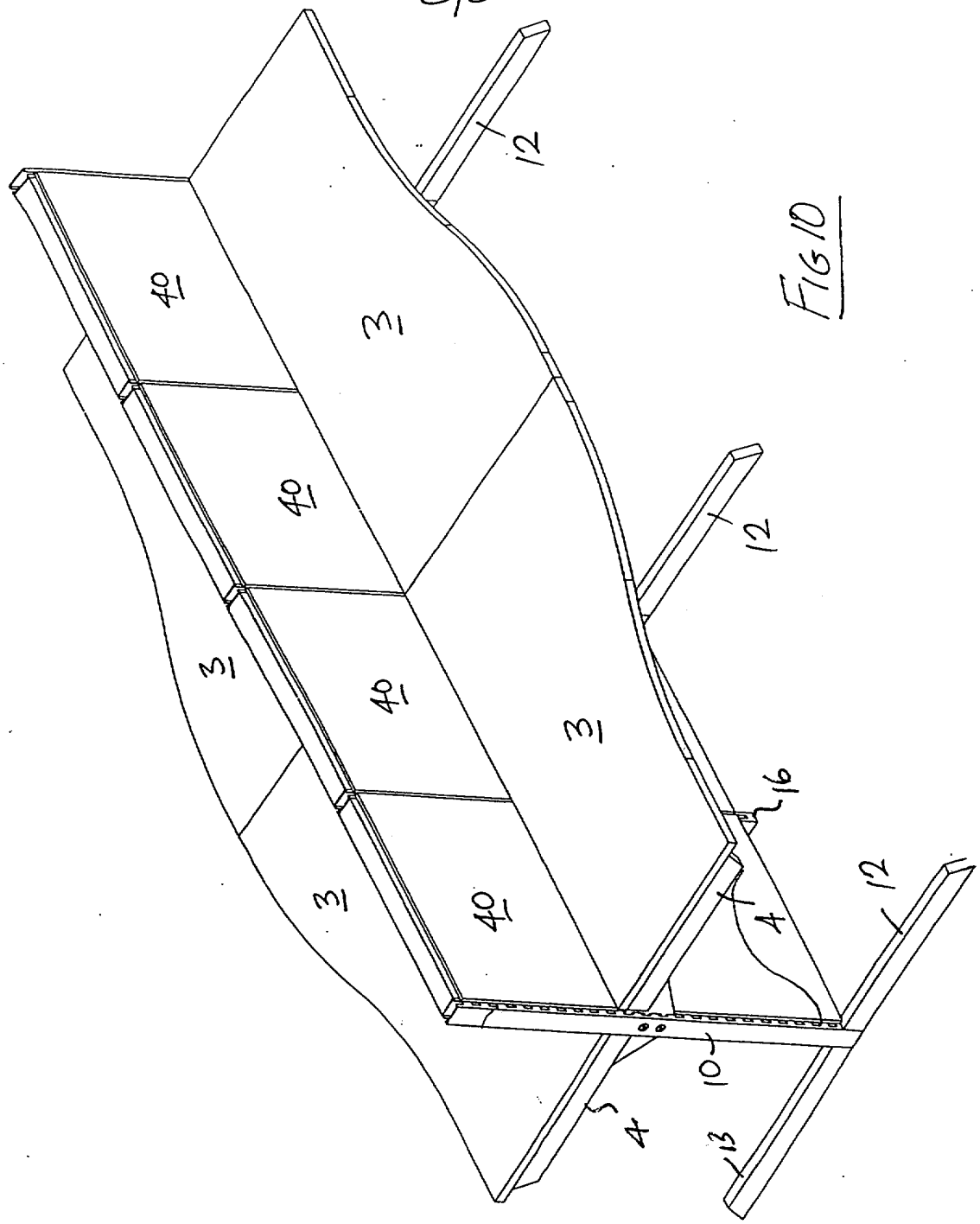

FIG 10

"A Desk System"

This invention relates to a modular cantilever desk system for office furniture.

Statements of Invention

According to the invention, there is provided a modular desk system comprising a ground-engaging upstanding support frame on which at least one cantilevered desktop panel is mounted. Preferably, the upstanding support frame has two or more spaced-apart uprights, said uprights being interconnected by upper and lower bracing members, an upper bracing member extending between each adjacent pair of uprights at an upper end of the uprights, and a lower bracing member being mounted between each adjacent pair of uprights at a lower end of the uprights. The bracing members are arranged to provide a required rigidity to the frame. To this end, the lower bracing member may be of rectangular configuration having a top, a bottom and substantially vertical sides extending between the top and the bottom, the sides engaging and secured to the uprights.

In a particularly preferred embodiment, each upper bracing member comprises a bracing bar of box section material with each end of the bracing bar abutting the side wall of one of the uprights, a hook being provided at each end of the bracing bar which engages within a complementary receiver slot in the side wall of the upright. Ideally, the lower bracing member comprises a tubular bracing frame of box section material having a top element, a bottom element and a pair of side elements extending between opposite ends of the top element and the bottom element. Conveniently, the side elements may be secured by fasteners such as screws or bolts to side walls of the uprights.

According to one embodiment of the invention there is provided a modular desk system comprising a ground-engaging upstanding support frame on which at least one cantilevered desktop panel is mounted, the upstanding support frame having two or more spaced-apart uprights, at least the two outermost uprights being provided with ground engaging feet which extend outwardly from a bottom of said

uprights, said uprights being interconnected by upper and lower bracing members, an upper bracing member extending between each adjacent pair of uprights at an upper end of the uprights, and a lower bracing member being mounted between each adjacent pair of uprights at a lower end of the uprights, the lower bracing member being of rectangular configuration having a top, a bottom and substantially vertical sides extending between the top and the bottom, the sides engaging and secured to the uprights, and each upper bracing member comprises a bracing bar of box section material with each end of the bracing bar abutting a side wall of one of the uprights, a hook being provided at each end of the bracing bar which engages within a complementary receiver slot in the side wall of the upright, each cantilevered desktop panel being mounted on the uprights by means of two or more mounting brackets which engage and support an underside of the desktop panel, inner ends of said mounting brackets engaging within complementary slots in a side wall of the uprights.

In another embodiment the support frame is encased in cladding panels, the cladding panels being mounted between adjacent pairs of uprights, the cladding panels being provided with rebated edges for sealing engagement with the uprights, a sponge or flexible rubber strip being mounted in the rebate so that when the panels are mounted on the support frame, wiring can be passed between the panels and the uprights to machinery on the desktop.

In a further embodiment cladding panels are demountably secured to the support frame by means of a number of retaining clips, each retaining clip having a flanged head with an outwardly extending shank, at least one mounting slot being provided in the shank intermediate the ends of the shank, said shank engaging within one of the slots in the side wall of each upright and co-operating with a bottom edge of said slot in the upright and the flanged head engaging with an outer face of the panel to retain the panel against the upright.

For stability, at least the two outermost uprights should be provided with ground engaging feet which extend outwardly from a bottom of said uprights. These feet extend outwardly under the cantilevered desktop.

Each cantilevered desktop panel is mounted on the uprights by means of two or more mounting brackets which engage and support an underside of the desktop panel. Inner ends of said mounting brackets engage within complementary slots in a side wall of the uprights. A plurality of vertically spaced-apart slots are provided in the uprights to allow height adjustment of the desktop.

Preferably, the support frame is encased in cladding panels for aesthetic reasons and these cladding panels may be of any suitable materials and be provided with any desirable decorative finish. For example, they may be provided by wooden panels with a painted or varnished finish. Alternatively, a wooden panel may be coated in a cloth material to provide a decorative surface to the cladding panels.

In one embodiment a number of cladding strips are mounted about the sides and top of the frame, each cladding strip being a channel section member which is a push-fit onto outer side and top edges of the frame.

In a further embodiment the upper bracing bar has a box-section body with a hook element mounted at each end of the body, the hook element being a push-fit within an open end of the body.

In another embodiment the support frame has three spaced-apart uprights, namely a pair of outer uprights with an intermediate upright located centrally between the two outer uprights, each outer upright being provided with forwardly and rearwardly extending feet at a bottom of the outer upright.

In a particularly preferred embodiment, the cladding panels are mounted between adjacent pairs of uprights. The cladding panels may be provided with rebated edges for seating engagement with the uprights. If desired, a sponge or flexible rubber strip may be mounted in the rebate so that when the panels are mounted on the support frame, wiring can be passed between the panels and the uprights to machinery on the desktop.

In a further embodiment, some of the panels may comprise cable access panels which are readily demountable or pivotable on the support frame to allow access to

cabling housed within the frame behind the panels. Conveniently a cable access panel is provided with one or more slots along an edge of the cable access panel for through-passage of cables.

Conveniently, a cable management tray may be mounted between uprights for neatly feeding cabling within the support frame. Holes may also be provided in the uprights for through passage of cabling.

Detailed Description of the Invention

The invention will be more clearly understood from the following description of some embodiments thereof, given by way of example only, with reference to the accompanying drawings, in which:-

Fig. 1 is a perspective view of a desk assembly according to the invention;

Fig. 2 is an exploded perspective view of the desk;

Figs. 3 to 7 are perspective views showing stages in the assembly of the desk;

Fig. 8 is a detail view of portion of the desk assembly;

Fig. 9 is a detail sectional view showing the mounting of cladding panels of the desk assembly;

Fig. 10 is a detail perspective view of a retaining clip of the system;

Fig. 11 is a detail sectional view showing a panel mounting arrangement; and

Fig. 12 is a perspective view of another desk assembly.

Referring to the drawings, and initially to Figs. 1 to 8 thereof, there is illustrated a desk system according to the invention, indicated generally by the reference numeral

1. The desk 1 comprises an upstanding support frame 2 on which one or more desktop panels 3 are mounted in cantilevered fashion by means of mounting brackets 4 fixed to an underside of the worktop panels 3 and engageable with upright portions of the support frame 2.

The support frame 2 comprises a pair of spaced-apart steel outer uprights 10, 11 with horizontal ground engaging feet 12, 13 mounted at a lower end of each upright 10, 11. An intermediate upright 16 is mounted between the two outer uprights 10, 11. All the uprights 10, 11, 16 are interconnected by bracing members which comprise a rectangular lower bracing frame 18 mounted between lower ends of the uprights 10, 11, 16 and an associated upper bracing bar 19 mounted between upper ends of the uprights 10, 11, 16. This provides a rigid support frame of simple construction which is easily assembled.

Each lower bracing frame 18 is constructed of box-section tubular metal material and comprises a top 20, a bottom 21 and substantially vertical sides 22, 23 extending between the top 20 and bottom 22. Outer faces of each side 22, 23 abut against a side face of an upright 10, 11, 16 and is secured thereto by fasteners such as screws or bolts.

Each upper bracing bar 19 is of box-section metal material. Outer ends 24, 25 of the bracing bar 19 abut the side walls of the uprights 10, 11, 16 between which they are mounted. A hooked connector 26 is provided at each end 24, 25 of the upper bracing bar 19 for engagement within a complementary slot 27 at an upper end of the side wall of the upright 10, 11, 16. Thus, the bracing bar 19 can be readily, easily and quickly mounted and secured between a pair of adjacent uprights 10, 11, 16.

Also mounted between the uprights 10, 11, 16 are cable management trays 30, each comprising a pair of troughs 31, 32 mounted between end plates 33, 34. Through holes 35 in the end plates 33, 34 align with the troughs 31, 32 for through passage of cabling. These holes 35 align with complementary holes 36 in the uprights 10, 11, 16 for through passage of cabling if desired.

Cladding panels 40 are mounted on the support frame 2 to conceal the support frame

2. Each cladding panel 40 has a rebated inner edge 41 (Fig. 9) for snug engagement with the uprights 10, 11, 16. A sponge or flexible rubber strip 42 may conveniently be mounted in the rebate 41 to allow through passage of cabling between the panel 40 and the uprights 10, 11, 16 and to provide support for the cabling The panels 40 can be fabric covered or wood grained or any other decorative finish as required. The mounting of the cladding panels 40 is shown in more detail in Figs. 10 and 11. A cladding panel 40 is demountably secured to an upright 10 of the support frame 2, by means of a number of retaining clips 60. Each retaining clip 60 has a flanged head 61 with an outwardly extending shank 62 extending perpendicularly from the head 61. Three mounting slots are provided in the shank 62 intermediate the ends of the shank 62. As can be seen in Fig. 11, the shank 62 engages within one of the slots 14 in the upright 10 with in this case the innermost slot 64 on the shank 62 co-operating with a bottom edge of the slot 14 in the upright 10 and the flanged head 61 of the clip 60 engages with an outer face of the panel 40 to retain the panel 40 against the upright 10.

Cable access panels 45 are mounted on the frame 2 in front of the cable management trays 30 and may be arranged for snap engagement with the frame 2 or may be hingedly mounted on the frame 2. Slots 46 are provided in the access panel 45 for through passage of cabling.

Each of the desktops 3 is mounted between a pair of support brackets 4 each of which is engageable with slots 14 in the faces of the uprights 10, 11, 16. For arranging the desktop 3 at any desired height, a plurality of vertically spaced-apart slots 14 are provided in each upright 10, 11, 16.

Cladding strips 50 (Fig. 7) are mounted about a periphery of the frame 2 at the said and top of the frame 2 to conceal the frame 2 and comprise channel section members which are a push-fit onto outer side edges of the uprights, 10, 11 and the top bracing members 19.

It will be appreciated that the invention provides a modular desk assembly which can be readily easily and quickly assembled from a minimum number of component parts to provide an adjustable desk.

Fig. 12 shows a multiple desk configuration where essentially two of the desks described previously are joined end to end. In such fashion, a run of desks of any desired length may be built up from the modular desk units as required.

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The invention is not limited to the embodiments hereinbefore described which may be varied in both construction and detail within the scope of the appended claims.

CLAIMS

1. A modular desk system comprising a ground-engaging upstanding support frame on which at least one cantilevered desktop panel is mounted, the upstanding support frame having two or more spaced-apart uprights, at least the two outermost uprights being provided with ground engaging feet which extend outwardly from a bottom of said uprights, said uprights being interconnected by upper and lower bracing members, an upper bracing member extending between each adjacent pair of uprights at an upper end of the uprights, and a lower bracing member being mounted between each adjacent pair of uprights at a lower end of the uprights, the lower bracing member being of rectangular configuration having a top, a bottom and substantially vertical sides extending between the top and the bottom, the sides engaging and secured to the uprights, and each upper bracing member comprises a bracing bar of box section material with each end of the bracing bar abutting a side wall of one of the uprights, a hook being provided at each end of the bracing bar which engages within a complementary receiver slot in the side wall of the upright, each cantilevered desktop panel being mounted on the uprights by means of two or more mounting brackets which engage and support an underside of the desktop panel, inner ends of said mounting brackets engaging within complementary slots in a side wall of the uprights.

2. A modular desk system as claimed in claim 1 wherein the support frame is encased in cladding panels, the cladding panels being mounted between adjacent pairs of uprights, the cladding panels being provided with rebated edges for seating engagement with the uprights, a sponge or flexible rubber strip being mounted in the rebate so that when the panels are mounted on the support frame, wiring can be passed between the panels and the uprights to machinery on the desktop.

3. A modular desk system as claimed in claim 2 wherein cladding panels are demountably secured to the support frame by means of a number of retaining clips, each retaining clip having a flanged head with an outwardly extending shank, at least one mounting slot being provided in the shank intermediate the

ends of the shank, said shank engaging within one of the slots in the side wall of each upright and co-operating with a bottom edge of said slot in the upright and the flanged head engaging with an outer face of the panel to retain the panel against the upright.

4. A modular desk system as claimed in any preceding claim wherein cable access panels are provided on the support frame which are readily demountable or pivotable on the support frame to allow access to cabling housed within the frame behind the panels.

5. A modular desk system as claimed in claim 4 wherein a cable access panel is provided with one or more slots along an edge of the cable access panel for through-passage of cables.

6. A modular desk system as claimed in any preceding claim wherein a number of cladding strips are mounted about the sides and top of the frame, each cladding strip being a channel section member which is a push-fit onto outer side and top edges of the frame.

7. A modular desk system as claimed in any preceding claim wherein the upper bracing bar has a box-section body with a hook element mounted at each end of the body, the hook element being a push-fit within an open end of the body.

8. A modular desk system as claimed in any preceding claim wherein the support frame has three spaced-apart uprights, namely a pair of outer uprights with an intermediate upright located centrally between the two outer uprights, each outer upright being provided with forwardly and rearwardly extending feet at a bottom of the outer upright.

9. A modular desk system as claimed in any preceding claim wherein a cable management tray is mounted between uprights for neatly feeding cabling within the support frame, and preferably holes are provided in the uprights for through passage of cabling.

10. A modular desk system substantially as hereinbefore described with reference to the accompanying drawings.

The Patent Office

INVESTOR IN PEOPLE

Application No: GB 0113315.6
Claims searched: 1-10

Examiner: Michael Young
Date of search: 9 August 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): A4L

Int Cl (Ed.7): A47B 21/00, 21/02

Other: ONLINE: WPI, EPODOC, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	US 5544593	(R.O.S Inc.) whole document relevant, particularly figs.1 & 5 & corresponding passages	1 at least

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.