COMMONWEALTH of AUSTRALIA
Patents Act 1952

APPLICATION FOR A STANDARD PATENT

I/We

David Stephen Hobday

of

12 Onedin Place, Titirangi, Auckland, New Zealand

hereby apply for the grant of a Standard Patent for an invention entitled:

A stackable housing

which is described in the accompanying complete specification.

Details of basic application(s):

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<th>Number</th>
<th>Convention Country</th>
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<tr>
<td>230590</td>
<td>New Zealand</td>
<td>7 September 1989</td>
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The address for service is care of DAVIES & COLLISON, Patent Attorneys, of 1 Little Collins Street, Melbourne, in the State of Victoria, Commonwealth of Australia.

DATED this SEVENTH day of SEPTEMBER 1990

To: THE COMMISSIONER OF PATENTS

Keith Holman

a member of the firm of DAVIES & COLLISON for and on behalf of the applicant(s)

Davies & Collison, Melbourne
(57) Claim

1. According to one aspect of the present invention there is thus provided a housing (10) comprising a base panel (12), two opposed side panels (14) and a top panel (16), said base (12) and top panels (16) being releasably connectable with said side panels (14) by respective mounting means (33), removal of said base or top panels exposing respective mounting means (33) on said side panels (14) to enable a further one such housing with its top or bottom panel removed to be secured to said exposed mounting means (33) of said side panels such that two or more of said housings (10) can be stacked together to provide a single enlarged internal cavity.
COMMONWEALTH OF AUSTRALIA
PATENTS ACT 1952
COMPLETE SPECIFICATION

NAME AND ADDRESS
OF APPLICANT:

David Stephen Hobday
12 Onedin Place
Titirangi
Auckland
New Zealand

NAME(S) OF INVENTOR(S):

David Stephen Hobday

ADDRESS FOR SERVICE:

DAVIES & COLLISON
Patent Attorneys
1 Little Collins Street, Melbourne, 3000.

COMPLETE SPECIFICATION FOR THE INVENTION ENTITLED:

A stackable housing

The following statement is a full description of this invention, including the best method of performing it known to me/us:-
BACKGROUND OF THE INVENTION

The present invention relates particularly but not exclusively to housings known as wall frames. Such wall frames are used in data and telecommunication distribution systems to accommodate distribution panels and associated wiring. To the present time, when expansion of such systems becomes necessary, this can cause major problems if such expansion is not able to be accommodated within the existing wall frames.

It is an object of the present invention to provide a stackable housing which allows for an expansion of its internal space to be readily accommodated.

SUMMARY OF THE INVENTION

According to one aspect of the present invention there is thus provided a housing (10) comprising a base panel (12), two opposed side panels (14) and a top panel (16), said base (12) and top panels (16) being releasably connectable with said side panels (14) by respective mounting means (33), removal of said base or top panels exposing respective mounting means (33) on said side panels (14) to enable a further one such housing with its top or bottom panel removed to be secured to said exposed mounting means (33) of said side panels such that two or more of said housings (10) can be stacked together to provide a single enlarged internal cavity.
Further aspects of this invention which should be considered all its novel aspects will become apparent from the following description given by way of example of possible embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1: Shows very diagrammatically a front perspective view of a single housing according to a possible embodiment of the invention; and

Figure 2: Shows very diagrammatically a front perspective view of three stacked housings according to an embodiment of the invention.

DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

Referring to Figure 1 of the accompanying drawings, a single housing 10, is illustrated very diagrammatically, and is shown having a base panel 12, two opposed side panels 14 and a top panel 16. These panels, together with a rear panel 18, are shown defining a substantially rectangular enclosure. The top and bottom panels 16 and 12 respectively, are both shown secured to the respective side panels 14 by releasable screws, bolt, or other fasteners, a pair of fasteners 31, being shown by way of example.

The top and bottom panels 16 and 12 are also shown connected with the rear panel 18 by means of fasteners 32, again only a pair of fasteners 32 being shown by way of example.
These fasteners 31, 32 extend through respective flanges 33 provided for each of the panels, 12, 14, 16, 18.

The top and bottom panels 16 and 12 are shown provided with slots, shown as key-hole slots, 36 enabling access of cabling into the interior of the housing 10 for connection with the equipment controls, connectors and patch panels and the like (not shown) or such other equipment as may be provided for a particular data and telecommunications system.

A cover 20 is shown with front panel 50, a base panel 22, side panels 24 and a top panel 26 and hinged at 37 to one side of the housing 10. The top and bottom panels 26 and 22 are also shown connected with the side and front panels 20 and 24 by suitable fasteners, indicated generally by 38, again utilising respective flanges 33. The basic single housing 10, may be of any required size but suitably would be 3U, 5U, 10U or 15U size based on the standard American Equipment Discipline, typically with a standard width of 520mm but with variable depth and height at least for certain of the sizes.

Assuming the housing 10 of Figure 1 was no longer adequate to cope with the expanded data or telecommunications distribution system, then as can be seen from Figure 2, a suitably enlarged housing referenced generally by arrow 10\(^1\) may be created. In the example shown, three basic housings 10 A,B,C have been combined together to form housing 10\(^1\).
To achieve this, the top and bottom panels 16 and 12 of, what is now, central housing 10A, have been removed, in the directions indicated by arrows A and B, as have the bottom and top panels 12 and 16 respectively of, what are now, top and bottom housings 10A and 10C.

The fasteners previously used for connecting those top and bottom panels to the single housings 10, have now been utilised in connecting the respective flanges 33 together of the cojoined panels so as to form the composite and enlarged housing 101.

Similarly, with the enlarged front cover 201, the appropriate top and bottom panels of the top, middle and bottom covers 20 have been removed in the direction indicated by arrows A and B and the respective flanges 33 of the resultant, enlarged, front cover 201, connected together by the fasteners 38.

In a typical installation, a patch panel would be provided across the front of the, or each, enclosure 10 and suitably secured thereto by means of bolts through apertures 39.

To restrict access to any one or more of the enclosures 10, one or more of the front covers 20 could be locked in position relative to its housing 10 so that for example trunk lines connected into one of the housings 10 could be secured against unauthorised access while access was allowed into other housings.

Also, the patch panels may suitably be hingeable for example on the flange 40 so that when patching of connections was required, the patch panel could be swung
open to expose its connections for patching to be done without having any interruption of the system.

In the example shown in Figure 2, the housings 10 are of the same depth. It is mentioned that if necessary, housings of different depth could be stacked together but in this case, a suitable spacing means should suitably be provided to allow for the difference in depth.

It is mentioned that the back panels 18 would suitably have "knock-outs" which can be removed depending on the cables or conduits which will be entering the housing 10. Also, the cable entries shown as key-holes 36, in the top and bottom panels, 16, 12, may suitably be replaced by a single, enlarged cable access, for example of a substantially rectangular or square cut-out extending to the panel edge.

It is to be appreciated that when expanding the distribution system, the cable entries 36, of whatever shape, enable the top or bottom panels 16 and 12 to be removed without disturbing the cabling. Once the enlarged system has been assembled, the cable entries 36 enable the new top and bottom panels to be replaced, being slotted over the cables.

Where in the foregoing description reference has been made to specific components or integers of the invention having known equivalents then such equivalents are herein incorporated as if individually set forth.
Although this invention has been described by way of example and with reference to possible embodiments thereof it is to be understood that modifications or improvements may be made thereto without departing from the scope or spirit of the invention as defined in the appended claims.

The reference numerals in the following claims do not in any way limit the scope of the respective claims.
THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. According to one aspect of the present invention there is thus provided a housing (10) comprising a base panel (12), two opposed side panels (14) and a top panel (16), said base (12) and top panels (16) being releasably connectable with said side panels (14) by respective mounting means (33), removal of said base or top panels exposing respective mounting means (33) on said side panels (14) to enable a further one such housing with its top or bottom panel removed to be secured to said exposed mounting means (33) of said side panels such that two or more of said housings (10) can be stacked together to provide a single enlarged internal cavity.

2. A housing as claimed in Claim 1, including a rear panel (18) also releasably connected to said top, base and side panels (16, 12, 14) by respective mounting means (33).

3. A housing as claimed in Claim 2 wherein said side and rear panels (14, 18) each have said mounting means comprising peripheral flanges (33) therearounds on which said top and base panels (16, 12) are supported and are fastened.

4. A housing as claimed in any one of the preceding claims wherein said base and top panels (12, 16) have cable entry means (36) extending to a rear edge thereof to enable cable access through said rear edge.
5. A housing as claimed in any one of the preceding claims wherein said side panels (14) include front facing flanges (40) having securement means (39) to accommodate thereon one or more panel means.

6. A housing as claimed in any one of the preceding claims and further including a housing means (20) hingedly connected at or adjacent to one of said side panels (14), said cover means included front, side, top and base panels (50, 24, 26, 22), said top and base panels (26, 22) of said cover means (20) being removably connected with said front and side panels (50, 24) of said cover means (20) so as to be removable therefrom in accordance with the corresponding removal of the top and bottom panels (16, 25) of the stacked housing means (101).

7. A housing substantially as herein described with reference to the accompanying drawings.

8. The steps, features, compositions and compounds disclosed herein or referred to or indicated in the specification and/or claims of this application, individually or collectively, and any and all combinations of any two or more of said steps or features.

DATED this FIFTH day of OCTOBER 1990

David Stephen Hobday

by DAVIES & COLLISON
Patent Attorneys for the applicant(s)