AUSTRALIA
Patents Act 1990

PATENT REQUEST : STANDARD PATENT

We, being the person identified below as the Applicant, request the grant of a patent to the person identified below as the Nominated Person, for an invention described in the accompanying standard complete specification.

Applicant: PANDUIT CORP,
Address: 17301 Ridgeland Avenue, Tinley Park, Illinois 60477-3091, United States of America

Nominated Person: As above
Address: As above

Invention Title: EXPANDABLE CONNECTOR JUNCTION BOX

Names of actual Inventors: Russell A. Vanderhoof and Michael J. McGrath

BASIC CONVENTION APPLICATION DETAILS

Applicants Names: Russell A. Vanderhoof and Michael J. McGrath
Application Number: 08/623,274
Country: United States of America
Code: US
Date of Application: 28 March 1996

Address for service in Australia: CARTER SMITH & BEADLE, 2 Railway Parade, Camberwell, Victoria, 3124, Australia. (Attorney Code CD)

Dated : 13 March 1997

CARTER SMITH & BEADLE
Patent Attorneys for the Applicant

TO: The Commissioner of Patents
Fee: $280.00
Our Ref: #24715 DCC:JL:GM10
NOTICE OF ENTITLEMENT

We PANDUIT CORP.,

of 17301 Ridgeland Avenue, Tinley Park, Illinois 60477-3091, United States of America,

being the Applicant in respect of the accompanying application,

entitled: EXPANDABLE CONNECTOR JUNCTION BOX

state the following:

We are the nominated person to whom we request the patent be granted.

The Nominated Person is entitled to the grant of a patent by virtue of the following facts:

The Nominated Person is the assignee of the inventors in respect of the invention.

The basic application identified in the Patent Request was the first application made in a Convention country in respect of the invention the subject of this application. Priority is claimed under Part 2 of Chapter 8 of the Patents Act from the basic application and we are entitled to claim such priority since:

We are the assignee of rights from the basic Applicants including the right to file patent applications in Australia claiming priority of the basic application.

Address for service in Australia: CARTER SMITH & BEADLE, 2 Railway Parade, Camberwell, Victoria, 3124, Australia. (Attorney Code CD)

Dated: 13 March 1997

CARTER SMITH & BEADLE
Patent Attorneys for the Applicant

TO: The Commissioner of Patents
Our Ref: #24715 DCC:JL:GM10
An expandable junction box (10) includes a base (11) having connector module (16) mounting latches (14,15) disposed to independently latch a plurality of connector modules (16) along an edge of the base (11) and a bridge (12) having connector module (16) mounting latches (14,15) disposed to independently latch additional connector modules (16) to the bridge (12) where the bridge (12) can be attached to the base (11) directly above the modules (16) latched to the base (11) to provide an expandable junction box (10).
COMPLETE SPECIFICATION
FOR A STANDARD PATENT

ORIGINAL

Name of Applicant: PANDUIT CORP.
Actual Inventors: Russell A. Vanderhoof and Michael J. McGrath
Address for service in Australia: CARTER SMITH & BEADLE
2 Railway Parade
Camberwell Victoria 3124
Australia
Invention Title: EXPANDABLE CONNECTOR JUNCTION BOX

The following statement is a full description of this invention, including the best method of performing it known to us.
Description

Expandable Connector Junction Box

Technical Field

The present invention relates generally to assemblies for releasably mounting modular electrical or fiber optic connectors.

Background Art

A prior communication box assembly is illustrated in U.S. Patent No. 4,875,881 to Caveney et al. which discloses a base having a plurality of independently releasable connector module latches that latch a variety of connector modules along a lateral edge of the base. The base disclosed in this patent can only mount a limited number of connector modules for a given base width. Thus, there is a need for improvement in the art for a junction box that can accommodate additional connectors without increasing the width of the junction box.

Summary of the Invention

It is the object of the present invention to provide a junction box that can accommodate additional connector modules without increasing the width of the junction box.

In general a junction box includes a base including connector module mounting means for attaching a plurality of connector modules to the base, a bridge including connector module mounting means for attaching a plurality of connector modules to the bridge and bridge latch means for attaching the bridge to the base.
Brief Description of the Drawings

Fig. 1 is a perspective view of a expandable junction box embodying the concept of the present invention;

Fig. 2 is a fragmentary exploded assembly view of the junction box of Fig. 1 showing a bridge disposed above a base of the junction box;

Fig. 3 is sectional view taken along line 3-3 of Fig. 1;

Fig. 4 is fragmentary view of Fig. 3 showing a cantilever latch arm of the connector bridge entering a latch slot formed in a wall of the base of the junction box;

Fig. 5 is a fragmentary sectional view taken along line 5-5 of Fig. 3;

Fig. 6 is a sectional view taken along line 6-6 of Fig. 3;

Fig. 7 is a fragmentary sectional view showing the insertion of a connector module into the base of the junction box; and

Fig. 8 is a fragmentary sectional top view of a connector module latched in the base of the junction box.

Description of the Preferred Embodiment

An expandable junction box embodying the concept of the present invention is designated generally by the numeral 10 in the accompanying drawings.

Junction box 10 includes a base 11 and a connector bridge 12 each preferably integrally molded of plastic. Base 11 and bridge 12 are each formed with a plurality of adjacent connector module mounting positions 13 disposed along the length of base 11 and bridge 12, each position 13 including a fixed tooth 14 and a resilient latch tooth 15 that are spaced apart to independently latch a connector module to base 11 or bridge 12. A blank module 16, depicted in Fig. 1, is used to fill positions in the
junction box where an electrical or optical connector is not desired and is used herein to be representative of any of the varied electrical, fiber optic or coaxial connector modules that could be latched to base 11 or bridge 12 of junction box 10. The variety of connector modules and a similar latching system is illustrated in U.S. Patent No. 4,875,881 which is incorporated herein by reference.

As best seen in Fig. 2, bridge 12 and base 11 include planar module positioning surfaces 18. Bridge 12 includes module mounting features formed along opposite longitudinal edges to form a plurality of connector module mounting positions 13 and bridge mounting walls 19 disposed at opposite distal ends of positioning surface 18 and formed perpendicular thereto. Bridge mounting walls 19 include medially disposed cantilever resilient latch arms 20 formed by slots 21 in walls 19. Latching barbs 22 are disposed at distal ends of arms 20.

Base 11 includes L-shaped internal walls 24 that in conjunction with forward portions of lateral walls 25 of base 11 form bridge mounting slots 26 disposed to accept and contain bridge mounting walls 19 to prevent inadvertent movement of bridge mounting walls 19 relative to base 11 that may be induced by insertion of modules onto bridge 12. As seen in Fig. 4, resilient latch arms 20 are disposed outwardly with respect to lateral walls 25 such that translation of arms 20 past walls 25 resiliently biases arms 20 inwardly. A latch slot 27 is formed in each of lateral walls 25 in a position to allow latching barbs 22 to move outwardly and engage an edge of lateral walls 25 to latch bridge 12 to base 11 when bridge 12 is fully inserted into bridge mounting slots 26.

Base 11 can be used either alone or, if a greater number of modules is needed in the junction box, bridge 12 can be latched to base 11 to double the number of modules 16 that can be mounted to the base 11.
Typically, base 11 and bridge 12 are both first filled with modules 16 and then bridge 12 is latched to base 11 with bridge 12 attached to base 11 disposed above base 11 such that the connector module mounting positions 13 of bridge 12 are disposed directly above connector module mounting positions of base 11.

Base 11 can be supplied with two different covers (not shown), if desired, to enclose either the base 11 alone or base 11 and bridge 12.

As seen in Figs. 6-8, modules 16 include a forward slot 28 to engage fixed tooth 14 and a slot 29 that engages a resilient latch tooth 15 after a module 16 is latched to base 11 or bridge 12. Cable positioning walls 30 are formed in base 11 to allow excess cable (not shown) to be positioned in the junction box.

While the particular preferred embodiment of the present invention has been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from the teachings of the invention.
THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An expandable junction box, comprising:
   a base including connector module mounting means for attaching a plurality of connector modules to the base;
   a bridge including connector module mounting means for attaching a plurality of connector modules to the bridge; and
   bridge latch means for attaching the bridge to the base.

2. An expandable junction box as set forth in claim 1, wherein the bridge when attached to the base is disposed above the base such that the connector module mounting means of the bridge is disposed directly above the connector module mounting means of the base.

3. An expandable junction box as set forth in claim 2, wherein the bridge latch means includes bridge mounting walls formed at the distal ends of the bridge disposed to resiliently engage the base.

4. An expandable junction box as set forth in claim 3, wherein the base includes bridge mounting slots formed by walls on the base disposed to contain the bridge mounting walls and prevent inadvertent disengagement of the bridge from the base.

5. An expandable junction box substantially as hereinbefore described with reference to the accompanying drawings or incorporating any one or more of the novel features herein disclosed.

DATED: 13 March 1997

CARTER SMITH & BEADLE
Patent Attorneys for the Applicant:
PANDUIT CORP.
ABSTRACT
An expandable junction box (10) includes a base (11) having connector module (16) mounting latches (14,15) disposed to independently latch a plurality of connector modules (16) along an edge of the base (11) and a bridge (12) having connector module (16) mounting latches (14,15) disposed to independently latch additional connector modules (16) to the bridge (12) where the bridge (12) can be attached to the base (11) directly above the modules (16) latched to the base (11) to provide an expandable junction box (10).