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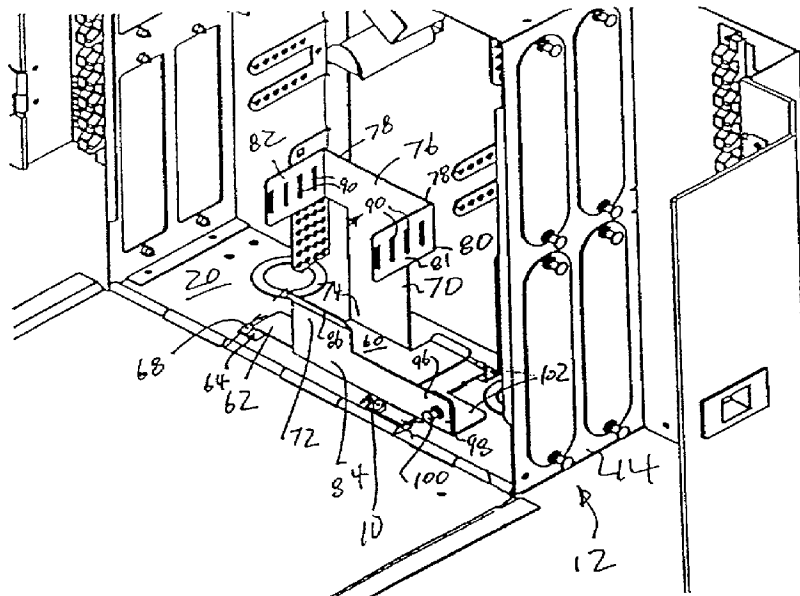
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(54) **ARMOIRE DE CABLES OPTIQUES AVEC TABLEAU DE
RACCORDEMENT PIVOTANT**

(54) **FIBER OPTIC CABINET WITH PIVOTING SPLICE TRAY
HOLDER**



(57) Cette invention concerne une armoire de câbles optiques renfermant un tableau de raccordement pivotant facilitant l'accès aux raccordements. Cette armoire est constituée d'un boîtier définissant un volume et dont le devant est fermé par une porte. Le tableau, qui porte plusieurs raccordements, est d'une épaisseur inférieure à la profondeur du boîtier, de sorte qu'il reste de l'espace pour ranger des spires de fibres optiques entre le tableau et la paroi arrière du boîtier.

(57) A fiber optic cabinet is provided with a pivotable splice tray holder to provide easier access to the splice trays. The cabinet has a housing defining an interior with an open front that is closed by a door to define a depth of the interior between the door and the back of the housing. The holder holds a plurality of splice trays and has a depth less than the depth of the interior to provide a space for location of coils of slack optical fiber between the holder and the back of the housing.

FIBER OPTIC CABINET WITH PIVOTING SPLICE TRAY HOLDER

ABSTRACT OF THE INVENTION

- A fiber optic cabinet is provided with a pivotable splice tray holder to provide easier access to the splice trays. The cabinet has a housing defining an interior with an open front that is closed by a door to define a depth of the interior between the door and the back of the housing. The holder holds a plurality of splice trays and has a depth less than the depth of the interior to provide a space for location of coils of slack optical fiber between the holder and the back of the housing.

FIBER OPTIC CABINET WITH PIVOTING SPLICE TRAY HOLDER

FIELD OF THE INVENTION

The present invention relates to a pivoting splice tray holder for a fiber optic cabinet.

BACKGROUND OF THE INVENTION

Various types of fiber optic hardware such as cabinets and distribution frames are used to interconnect fiber optic cables. Typically the item of hardware will have an array of connectors for connection of jumpers to the cable. Additionally, sometimes the piece of hardware has pigtails
5 extending from the opposite side of the array of connectors than where the jumpers are connected and the cable is spliced to the pigtails in the hardware. These splices are typically packaged in a splice tray to protect and organize the splices. How to accommodate the splice trays in the hardware is a concern because the trays take up space that is at a premium in optical hardware and can interfere with the routing of optical fibers that require space so that the minimum bend
10 radius of optical fiber is not violated. Another concern is maintaining ready access to the splice trays without interfering or excessively moving fibers in the hardware. Therefore a need exists for an improved means for storing splice trays in fiber optic hardware.

SUMMARY OF THE INVENTION

The present invention provides a splice tray holder that pivotally mounts in an optical fiber cabinet and is pivotable from a closed position to a position where the splice trays are more readily accessed and removed from the holder. One aspect of the present invention is a fiber optic cabinet comprising a housing having a back panel and side walls extending generally perpendicular therefrom defining an interior with an open front and a height and width sufficient to accommodate a coil of slack optical fiber. The housing has a door that closes over the front defining a depth of the interior from the door to the back panel. The cabinet has a splice tray holder pivotally mounted relative to the housing and disposed in the interior toward the front.

10 The holder is sized to receive a plurality of splice trays therein, and the holder has a depth less than the depth of the interior to allow the coil of slack optical fiber to be disposed between the holder and the back panel. The holder is pivotable between a closed position where the door can be closed over the interior and, when the door is open, an access position where at least a portion of the holder is disposed outside the housing to facilitate insertion or removal of a splice tray from

15 the holder.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of a cabinet for use with the splice tray holder of the present invention;

Figure 2 is a front view of the preferred embodiment of the cabinet and splice tray holder of the
5 present invention;

Figure 3 is a perspective view of the splice tray holder of the present invention installed in the cabinet; and

Figure 4 is a perspective view of the splice tray holder of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to Figures 2-4, the preferred embodiment of splice tray holder 10 and cabinet 12 of the present invention is shown. With further reference to Figure 1, cabinet 12 has housing 14 with back panel 16 and top wall 18, bottom wall 20 and side walls 22 defining interior 24. Door 26 closes over interior 24. When door 26 is closed, interior has depth D1 from door 26 to back panel 16. Cabinet 12 also has connector adapter panels 28 mounted to side walls 22 for the connection of jumpers (not shown) on the outside and pigtails 32 on the inside. In the particular optical hardware application shown, pigtails 32 from one adapter panel 28 are coiled into first slack storage coil 42 and routed into one of a plurality of splice trays 43 where second ends (not shown) of pigtails 32 are disposed for splicing to cable fibers 44 that are grouped in common sheath 46 that enters grommet 48 in bottom wall 20. Cable fibers 44 are coiled in second slack storage coil 50. First and second slack storage coils 42, 50 are coiled with a large diameter occupying a substantial portion of the width and height of interior 24 so as to not violate the minimum bend radius requirements for fiber optic cable. Coils 42, 50 are coiled around routing guides 51 that extend from back panel 16.

Holder 10 is pivotally attached to bottom wall 20 and holder 10 has depth D2 which is sufficiently less than D1 of interior 24 to allow space for first slack storage coil 42 and second slack storage coil 50 behind holder 10. Splice trays 43 are substantially planar trays with sufficient thickness to house splices. Any of a wide variety of splice trays may be used and the structure or type of the splice tray forms no part of the present invention.

In the preferred embodiment, holder 10 has generally planar bottom 60 that is spaced from and parallel with bottom wall 20. Footer portion 62 extends out from bottom 60 to form

mounting surface 64 in a plane spaced below and generally parallel with bottom 60. Mounting surface 64 defines hole 66 for receiving bolt 68 tapped therethrough into bottom wall 20. The center line of bolt 68 defines the pivot axis of holder 10. Mounting surface 64 and bolt 68 are mounted to allow ready pivoting of holder 10.

5 First arm 70 and second arm 72 extend up from bottom 60 generally opposite from and parallel to each other to define tray space 74 for receiving splice trays 43 therein between first arm 70 and second arm 72. First arm 70 has base 75 at bottom 60 and free end 76 opposite thereto with laterally extending portions 78 that extend in a plane generally parallel with back panel 16 and then turn to extend in a plane generally perpendicular to back panel 18 to define
10 generally c-shaped bracket 80 with first extension 81 and second extension 82 disposed opposite each other. C-shaped bracket 80 is sized to receive splice trays 43 therein. Second arm 72 has base 84 and free end 86 opposite thereto. Second arm is flexible and extends generally upward and angled toward first arm 70 such that when splice trays are filled between the bases of first arm 70 and second arm 72, free end 86 of second arm 72 is flexed away from first arm 70 and bears
15 against the splice trays to help contain the splice trays in holder 10.

First extension 81 and second extension 82 of c-shaped bracket 80 each define a series of slots 90 for threading of strap 92 therethrough for retaining a plurality of splice trays that may be less than the amount needed to flex against second arm 72 and be retained by the bias force of second arm 72. Strap 92 can be of any suitable construction and is preferably a commonly
20 available Velcro® strap for ease of use.

Holder 10 also has locking portion 96 which extends from holder 10 on a side generally opposite the side from which footer portion 62 extends. Locking portion 96 defines first lug 98 through which fastener 100 is located. Bottom wall 20 has second lug 102 extending generally

upward at a point spaced from back panel 16 and is located to be disposed adjacent first lug 98. Second lug 102 defines hole 104 for receiving fastener 100 therethrough to lock holder 10 in place within interior 24 of housing 14.

In operation, as an installer completes the splices for a splice tray, the tray is placed in holder 10 generally between the opposed arms. To provide easier access to holder 10, fastener 100 is released from second lug 102 and holder 10 is pivoted to a point where a portion of holder 10 is outside of interior 24. As each successive tray is completed it is placed in a stacked arrangement with the other splice trays in holder 10. When the holder is filled with splice trays, second arm 72 will press against the stack of splice trays to help retain them in place. For further retention or if less than a complete stack of splice trays is use, strap 92 may then be threaded through the appropriate slots 90 to secure the splice trays in the holder. Then holder 10 is pivoted back to be completely within interior 24 and fastener 100 is secured to second lug 102.

Although the present invention has been described with respect to a preferred embodiment, it should be understood that various changes, substitutions and modifications may be suggested to one skilled in the art and its is intended that the present invention encompass such changes, substitutions and modifications as fall within the scope of the appended claims.

THAT WHICH IS CLAIMED IS:

1. A fiber optic cabinet, comprising:

(a) a housing having a back panel and side walls extending generally perpendicular therefrom defining an interior with an open front and a height and width sufficient to accommodate a coil of slack optical fiber, the housing having a door that closes over the front defining a depth of the interior from the door to the back panel;

(b) a splice tray holder pivotally mounted relative to the housing and disposed in the interior toward the front, the holder sized to receive a plurality of splice trays therein, the holder having a depth less than the depth of the interior to allow the coil of slack optical fiber to be disposed between the holder and the back panel, the holder pivotable between a closed position where the door can be closed over the interior and, when the door is open, an access position where at least a portion of the holder is disposed outside the housing to facilitate insertion or removal of a splice tray from the holder.

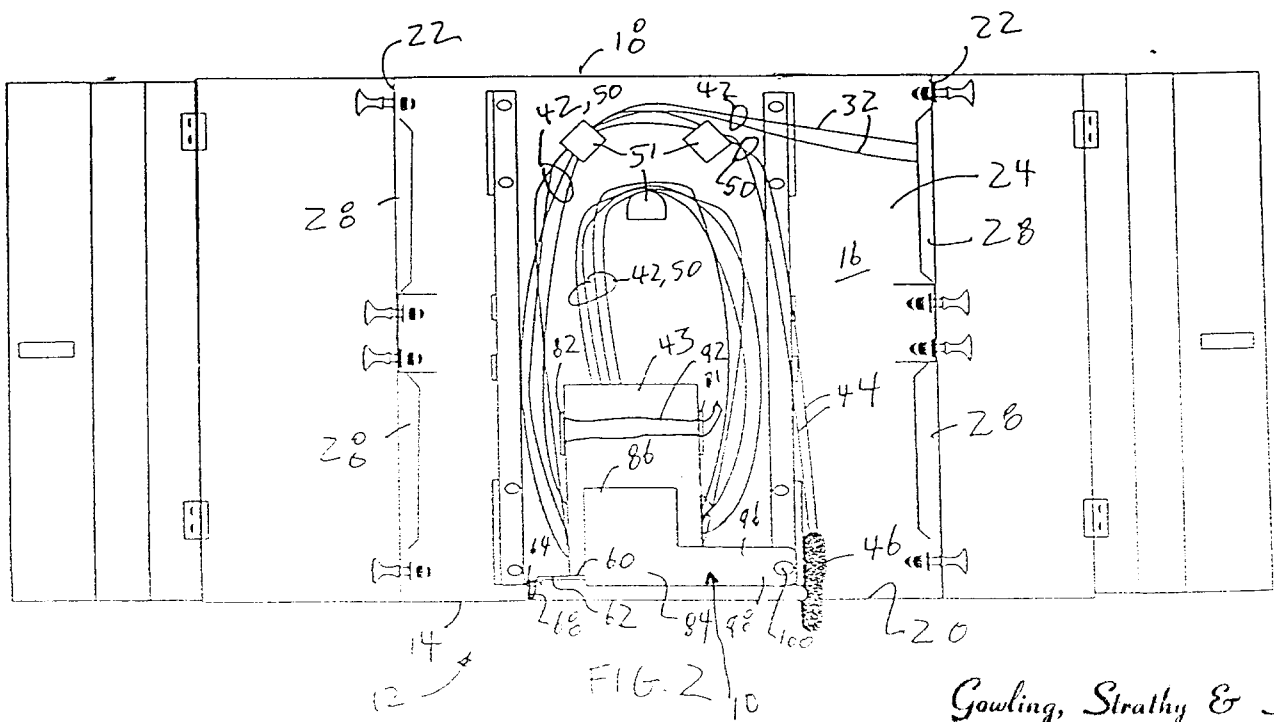
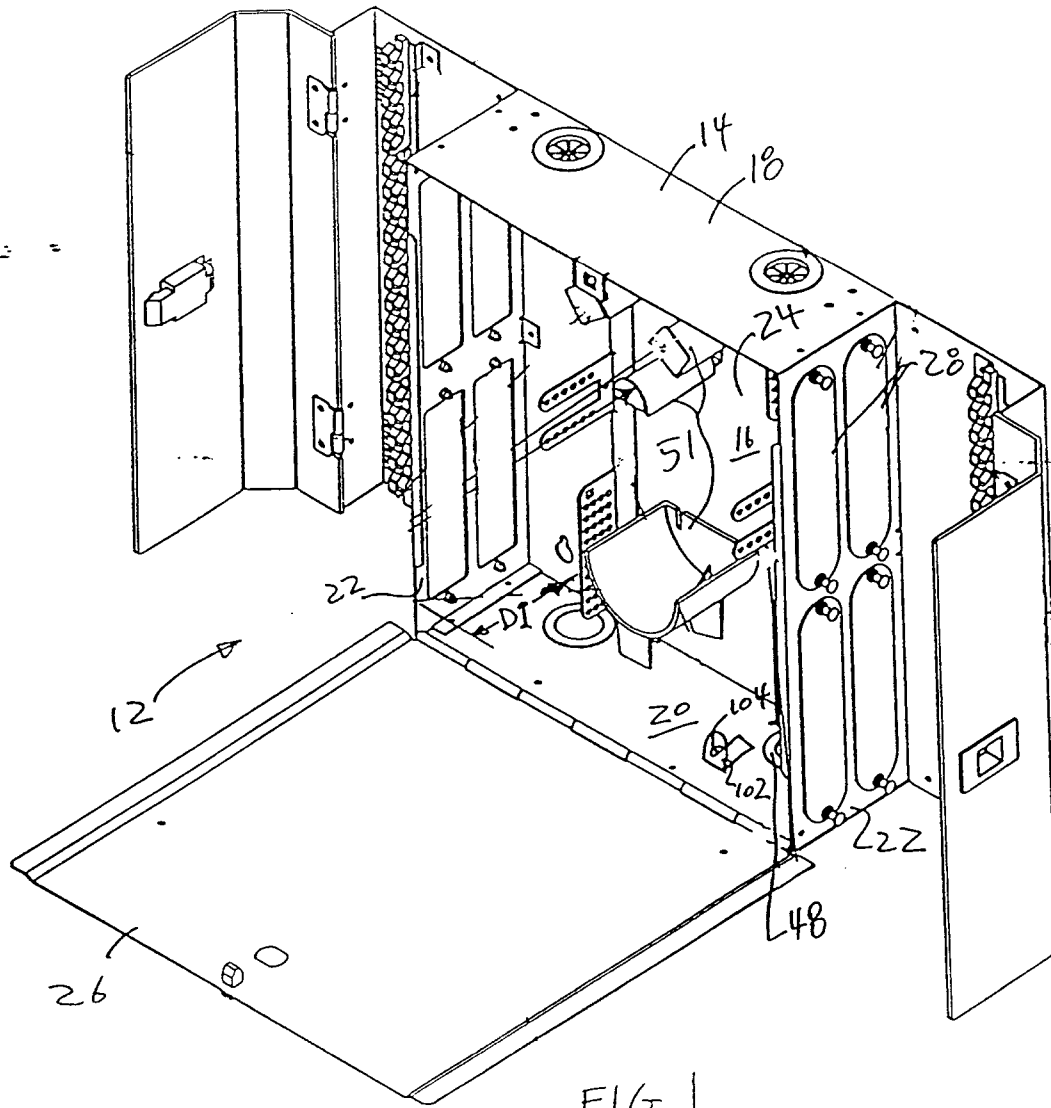
2. The cabinet of Claim 1 wherein the holder is pivotally mounted to one of the side walls.

3. The cabinet of Claim 1 wherein the holder can be retained in the closed position.

4. The cabinet of Claim 1 wherein the holder defines a base portion and two opposed arm portions extending therefrom between which the splice trays are inserted.

5. The cabinet of Claim 4 wherein one of the opposed arms has extensions extending opposite each other perpendicular to the arm and the extensions define a generally c-shaped bracket, the bracket sized to receive a plurality of splice trays therethrough.

6. The cabinet of Claim 5 wherein the bracket defines a plurality of slots and the holder further comprises a strap that is adjustably insertable through the plurality of slots to retain the splice trays in the holder.
7. The cabinet of Claim 3 wherein the holder has a first lug extending therefrom for
5 removably fastening the holder in the closed position.
8. The cabinet of Claim 7 wherein the housing has a second lug for being disposed opposite the first lug when the holder is in the closed position.
9. The cabinet of Claim 8 wherein the holder comprises a fastener located on the first lug for fastening to the second lug.
10. 10. The cabinet of Claim 4 wherein one of the arms is flexible and extends at an angle toward the other arm such that when splice trays are inserted between the two arms they flex the angled arm and the angled arm bears against the splice trays.



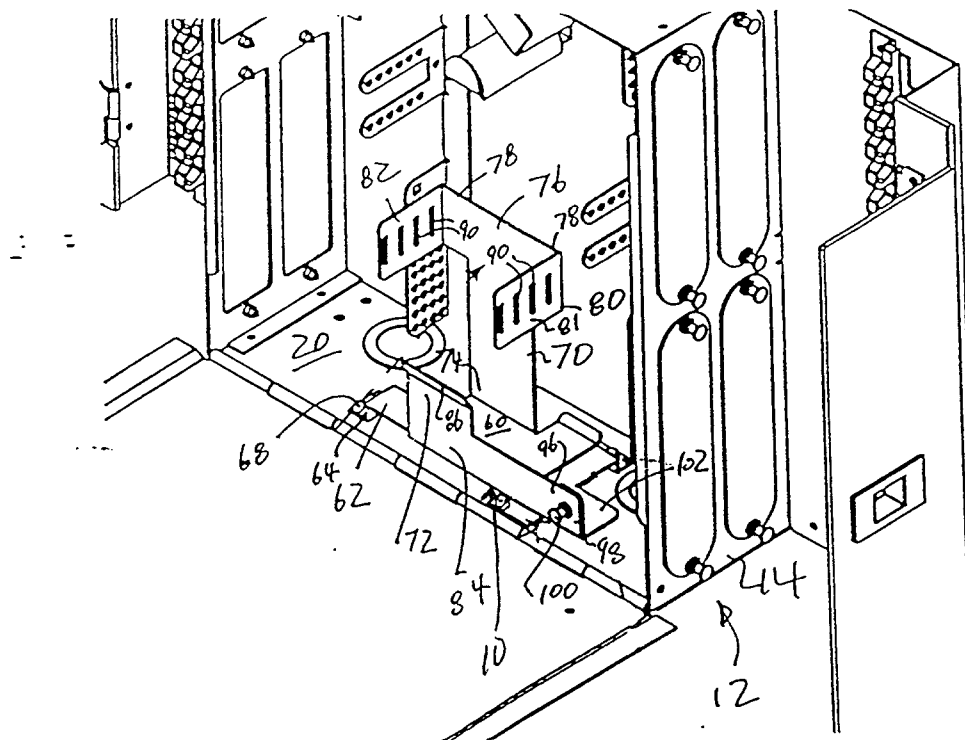


FIG. 3

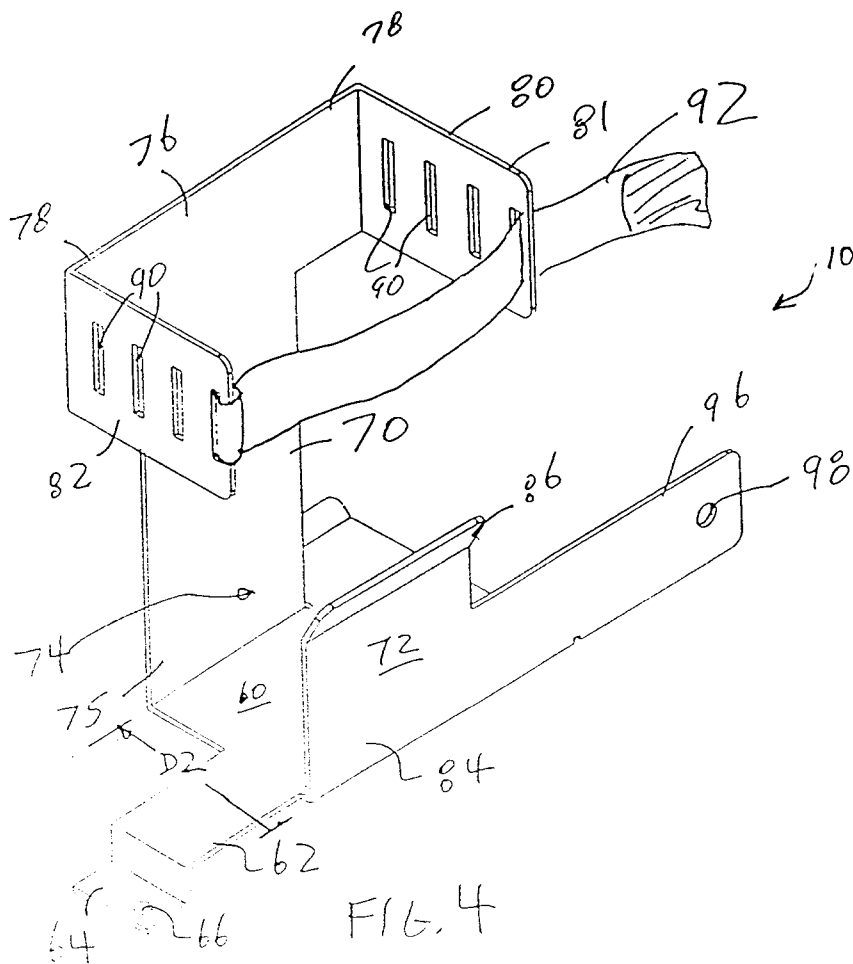


FIG. 4

