



- (51) International Patent Classification:
G02B 6/44 (2006.01)
- (21) International Application Number:
PCT/EP2015/071196
- (22) International Filing Date:
16 September 2015 (16.09.2015)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/051,093 16 September 2014 (16.09.2014) US
62/170,571 3 June 2015 (03.06.2015) US
62/186,034 29 June 2015 (29.06.2015) US
- (71) Applicant: **TYCO ELECTRONICS RAYCHEM BVBA**
[BE/BE]; Diestsesteenweg 692, B-3010 Kessel-Lo (BE).
- (72) Inventors: **GEENS, Johan**; Walmersumstraat 32, B-3380 Bunsbeek (BE). **VERMEULEN, Pieter**; Guido Gezellestraat 3, B-2260 Westerlo (BE). **KEUSTER-MANS, Eric Marcel M.**; Haldertstraat 5, B-3390 Houwaart (BE).
- (74) Agent: **FASSIO, Valeria**; Piazza Borromeo12, I-20123 Milan (IT).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,

BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

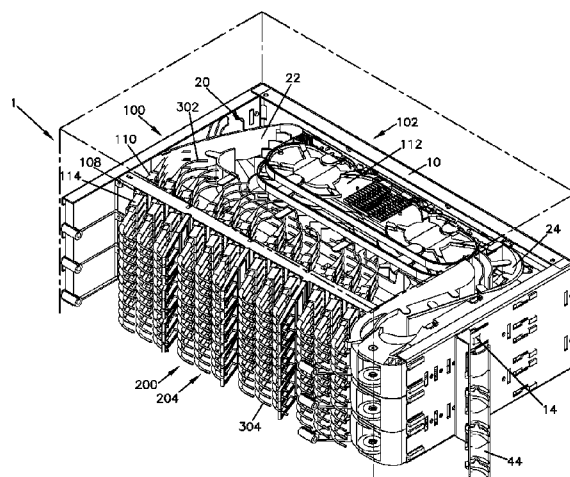
Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

- (88) Date of publication of the international search report:
26 May 2016

(54) Title: TELECOMMUNICATIONS TRAY ASSEMBLY

FIG. 1



(57) Abstract: A modular multi-positionable tray assembly (420) for mounting within a chassis (10) of a telecommunications panel (100) is disclosed. The multi-positionable tray assembly (420) may include support arm structure (423) having a first support arm (424) and a second support arm (480) that pivotally supports a tray (422) and that allows the tray assembly (420) to be installed and removed from the chassis (10). The tray (422) and the support arm structure (423) cooperatively define a cable routing pathway (208) that extends through a pivot axis (A1) defined by the tray and the support arm. To protect the cables (300) and to increase accessibility of cables (300) within the portion of the cable routing pathway (208) defined by the tray (422), a bend radius limiter (460) can be provided that is rotatably mounted to the tray (422). The tray (422) can also be provided with attachment features for allowing the tray (422) to accept various telecommunications components, such as splice trays and splitter trays.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2015/071196

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/071196

A. CLASSIFICATION OF SUBJECT MATTER
INV. G02B6/44
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006/275008 A1 (XIN XIN [US]) 7 December 2006 (2006-12-07) figures 3,2	1-20
X	----- US 5 946 440 A (PUETZ CURTIS LEE [US]) 31 August 1999 (1999-08-31) figures 1,27,34,8,29	1,2, 9-11,16 3-8, 12-15, 17-20
Y	----- US 2014/248028 A1 (CAMPBELL BRENT [US] ET AL) 4 September 2014 (2014-09-04) figure 1	3-8, 12-15, 17-20
	----- -/-	



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

17 March 2016

Date of mailing of the international search report

29/03/2016

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Jones, Julian

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/071196

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2008/149131 A2 (TYCO ELECTRONICS RAYCHEM NV [BE]; TYCO ELECTRONICS LTD UK [GB]; VASTMA) 11 December 2008 (2008-12-11) figure 1	3-8, 12-15, 17-20
X	----- FR 2 959 383 A1 (IDEA OPTICAL [FR]) 28 October 2011 (2011-10-28) figures 1,3,5,4 -----	21-41

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2015/071196

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006275008	A1	07-12-2006	CA 2547487 A1 03-12-2006 US 2006275008 A1 07-12-2006
US 5946440	A	31-08-1999	NONE
US 2014248028	A1	04-09-2014	AU 2014215059 A1 20-08-2015 CN 105074526 A 18-11-2015 EP 2954363 A2 16-12-2015 JP 2016505175 A 18-02-2016 KR 20150114990 A 13-10-2015 US 2014248028 A1 04-09-2014 WO 2014124001 A2 14-08-2014
WO 2008149131	A2	11-12-2008	EP 2156234 A2 24-02-2010 US 2010178021 A1 15-07-2010 WO 2008149131 A2 11-12-2008
FR 2959383	A1	28-10-2011	NONE

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-20

A cable organiser tray providing limited cable bend stresses

2. claims: 21-41

Removable cable tray.
