



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/356,825	03/18/2019	Andrew John Wehrli	096001-1249(BEL-001USCN3)	1328
48329	7590	01/08/2020	EXAMINER	
FOLEY & LARDNER LLP 3000 K STREET N.W. SUITE 600 WASHINGTON, DC 20007-5109			MAYO III, WILLIAM H	
			ART UNIT	PAPER NUMBER
			2847	
			NOTIFICATION DATE	DELIVERY MODE
			01/08/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipdocketing@foley.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Terminal Disclaimer

2. The terminal disclaimer filed on September 27, 2019 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of United States Patent Number 10,236,099 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

4. Claim(s) 10-53 are is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Nordin (Pub Num 2012/0222883). Nordin discloses a high performance data cable (Figs 1-5) that reduces electromagnetic interference between pairs of conductors in the cable (Paragraph 5). With respect to claim 10, Nordin discloses a high performance data cable (22, Fig 2) comprising a first plurality of twisted pairs of insulated conductors

(left top 26), a second plurality of twisted pairs of conductors (right top 26); a non-conductive filler member (28) configured to non-conductively separate the first plurality of twisted pairs of insulated conductors (left top 26) from the second plurality of twisted pairs of conductors (right top 26) so as to reduces electromagnetic interference between pairs of conductors during operation of the cable (Paragraph 5), a multi-layer barrier tape (32) surrounding the filler (28) and the first plurality of twisted pairs of insulated conductors (left top 26) from the second plurality of twisted pairs of conductors (right top 26), wherein the non-conductive filler member (28) includes a first and second terminal portions (portion extending away from arms; one located at numerical 23), wherein the non-filler member (28) and the multi-layer barrier tape (32) are configured so as to reduces electromagnetic interference between first and second pairs of conductors (left and right top 26) of the cable by shielding the first and second pairs of conductors from being electrically coupled to each other (Paragraph 5). With respect to claim 11, Nordin discloses a high performance data cable (22, Fig 2) comprising a first plurality of twisted pairs of insulated conductors (left top 26), a second plurality of twisted pairs of conductors (right top 26). With respect to claim 12, Nordin discloses that the filler member (28) is a single unitary component of the cable (22) and the second pair of conductors (right top 26) are located adjacent to the first pair of conductors (left top 26). With respect to claim 13, Nordin discloses that the cable (22) further comprises a jacket (33). With respect to claim 14, Nordin discloses that the filler (28) has four arms (four portions extending from the center, Fig 2), wherein each twisted pair of insulated conductors (26) is positioned in the center of a channel (i.e. open space) formed by two adjacent arms (portions extending from the center) and corresponding terminal portions

(portion extending away from the arms) of the filler (28). With respect to claims 15-17, Nordin discloses that barrier tape (32) comprises a conductive material (34) contained between two outer layers of a dielectric material (35, Fig 4). With respect to claim 18, Nordin discloses that the filler member (28) is configured to extend longitudinal portion of the cable (22) so as to shield the first and second pairs of conductors along the longitudinal portion of the cable (22). With respect to claims 19-21, Nordin discloses that the first and second conductors (left and right top 26) are configured in a helical twist at a first angle along a longitudinal portion (Fig 5), wherein barrier tape (32) and the filler member (28) are configured to extend longitudinal portion of the cable (22) so as to shield the first and second helically twisted pairs of conductors along the longitudinal portion of the cable (22). With respect to claim 22, Nordin discloses that the filler member (28) and the barrier tape (32) are configured to extend along a longitudinal portion of the cable (22), and configured so as to reduces electromagnetic interference between first and second pairs of conductors (left and right top 26) of the cable by shielding the first and second pairs of conductors from being electrically coupled to each other (Paragraph 5). With respect to claim 23, Nordin discloses a high performance data cable (22, Fig 2) comprising a non-conductive filler member (28) configured to non-conductively separate the first plurality of twisted pairs of insulated conductors (left top 26) from the second plurality of twisted pairs of conductors (right top 26) so as to reduces electromagnetic interference between pairs of conductors during operation of the cable (Paragraph 5), a barrier tape (32) surrounding the filler (28) and the first plurality of twisted pairs of insulated conductors (left top 26) from the second plurality of twisted pairs of conductors (right top 26), to shield the first and second pairs of

conductors from being electrically coupled to each other (Paragraph 5), wherein the filler member (28) and the barrier tape (32) are configured to extend along a longitudinal portion of the cable (22), and configured so as to reduces electromagnetic interference between first and second pairs of conductors (left and right top 26) of the cable by shielding the first and second pairs of conductors from being electrically coupled to each other (Paragraph 5). With respect to claims 24 & 27-28, Nordin discloses a high performance data cable (22, Fig 2) comprising filler member (28) and a barrier tape (32), a first plurality of twisted pairs of insulated conductors (left top 26) comprising a first side portion and first outwardly facing portion (Fig 2), and a second plurality of twisted pairs of conductors (right top 26) comprising a second side portion and first outwardly facing portion (Fig 2). With respect to claim 25, Nordin discloses that the filler member (28) is a single unitary component of the cable (22) and the second pair of conductors (right top 26) are located adjacent to the first pair of conductors (left top 26). With respect to claim 26, Nordin discloses that the barrier tape (32) is a multi-layer tape (Fig 4). With respect to claim 29, Nordin discloses that the second conductor pair (right top 26) is adjacent to the first conductor pair (left top 26). With respect to claim 30, Nordin discloses that the cable (22) further comprises a jacket (33) that surrounds the barrier tape (32, Fig 2). With respect to claim 31, Nordin discloses that the filler (28) has four arms (four portions extending from the center, Fig 2), wherein each twisted pair of insulated conductors (26) is positioned in the center of a channel (i.e. open space) formed by two adjacent arms (portions extending from the center) and corresponding terminal portions (portion extending away from the arms) of the filler (28). With respect to claims 32-34, Nordin discloses that barrier tape (32) comprises a conductive material

(34) contained between two outer layers of a dielectric material (35, Fig 4). With respect to claim 35, Nordin discloses that the filler member (28) is configured to extend longitudinal portion of the cable (22) so as to shield the first and second pairs of conductors along the longitudinal portion of the cable (22). With respect to claim 36, Nordin discloses that the first and second conductors (left and right top 26) are configured in a helical twist at a first angle along a longitudinal portion (Fig 5), wherein barrier tape (32) and the filler member (28) are configured to extend longitudinal portion of the cable (22) so as to shield the first and second helically twisted pairs of conductors along the longitudinal portion of the cable (22). With respect to claim 37, Nordin discloses that the filler member (28) is configured in a helical twist at a first angle relative to a longitudinal direction of the cable (22, Fig 5) and wherein the conductive barrier tape (32) is configured in a helical twist at the second angle (Paragraph 25, Fig 5) relative to a longitudinal direction of the cable (Fig 5). With respect to claim 38, Nordin discloses a high performance data cable (22, Fig 2) comprising a non-conductive filler member (28) configured to non-conductively separate the first plurality of twisted pairs of insulated conductors (left top 26) from the second plurality of twisted pairs of conductors (right top 26) so as to reduces electromagnetic interference between pairs of conductors during operation of the cable (Paragraph 5), a barrier tape (32) surrounding the filler (28) and the first plurality of twisted pairs of insulated conductors (left top 26) from the second plurality of twisted pairs of conductors (right top 26), to shield the first and second pairs of conductors from being electrically coupled to each other (Paragraph 5), wherein the filler member (28) and the barrier tape (32) are configured to extend along a longitudinal portion of the cable (22), and configured so as to reduces

electromagnetic interference between first and second pairs of conductors (left and right top 26) of the cable by shielding the first and second pairs of conductors from being electrically coupled to each other (Paragraph 5). With respect to claim 39, Nordin discloses a high performance data cable (22, Fig 2) comprising filler member (28) and a barrier tape (32). With respect to claim 40, Nordin discloses that the filler member (28) is a single unitary component of the cable (22) and the second pair of conductors (right top 26) are located adjacent to the first pair of conductors (left top 26). With respect to claim 41, Nordin discloses that the barrier tape (32) is a multi-layer tape (Fig 4). With respect to claim 42, Nordin discloses that the second conductor pair (right top 26) is adjacent to the first conductor pair (left top 26). With respect to claim 43, Nordin discloses that the cable (22) further comprises a jacket (33) that surrounds the barrier tape (32, Fig 2). With respect to claim 44, Nordin discloses that the filler (28) has four arms (four portions extending from the center, Fig 2), wherein each twisted pair of insulated conductors (26) is positioned in the center of a channel (i.e. open space) formed by two adjacent arms (portions extending from the center) and corresponding terminal portions (portion extending away from the arms) of the filler (28). With respect to claims 45-47, Nordin discloses that barrier tape (32) comprises a conductive material (34) contained between two outer layers of a dielectric material (35, Fig 4). With respect to claims 48-49, Nordin discloses that the first and second conductors (left and right top 26) are configured in a helical twist at a first angle along a longitudinal portion (Fig 5), wherein barrier tape (32) and the filler member (28) are configured to extend longitudinal portion of the cable (22) so as to shield the first and second helically twisted pairs of conductors along the longitudinal portion of the cable (22). With respect to

claim 50, Nordin discloses that the filler member (28) is configured in a helical twist at a first angle relative to a longitudinal direction of the cable (22, Fig 5) and wherein the conductive barrier tape (32) is configured in a helical twist at the second angle (Paragraph 25, Fig 5) relative to a longitudinal direction of the cable (Fig 5). With respect to claim 51, Nordin discloses a cable (22, Fig 2) comprising a plurality of twisted pairs of insulated conductors (26); a barrier tape (32) surrounding the plurality of twisted pairs of insulated conductors (26) wherein the barrier tape (32) comprises a conductive material (34) contained between two layers of a dielectric material (35, Fig 4) and a jacket (33) surrounding the barrier tape (32). With respect to claim 52, Nordin discloses a cable (22, Fig 2) comprising a plurality of twisted pairs of insulated conductors (26) extending along a longitudinal axis (Fig 5); a barrier tape (32) surrounding the plurality of twisted pairs of insulated conductors (26) wherein the barrier tape (32) comprises a conductive material (34) contained between two layers of a dielectric material (35, Fig 4) and an outer jacket (33) comprising a non-conductive material (Fig 2). With respect to claim 53, Nordin discloses a method of manufacture of a high performance data cable (22, Fig 2) comprising surrounding the helically twisted plurality of twisted pairs with a barrier tape (32) and extending the barrier tape (32, Fig 5) with an outer jacket (33).

Allowable Subject Matter

5. Claims 1-9 are allowed.
6. The following is an examiner's statement of reasons for allowance: This invention deals with a cable for reducing alien cross-talk and return loss between adjacent twisted pairs of conductors comprising: a first twisted pair of conductors having a first side

portion and a first outwardly facing portion; a second twisted pair of conductors having a second side portion and a second outwardly facing portion; a filler member configured to non-conductively shield the first side portion of the first twisted pair of conductors from the second side portion of the second twisted pair of conductors; a barrier tape configured to encircle the filler member and the first and second outwardly facing portions of the first and second twisted pairs of conductors so as to non-conductively shield the first and second outwardly facing portions of the first and second twisted pairs of conductors; a jacket configured to encircle the barrier tape; wherein the second twisted pair of conductors is located adjacent to a portion of the filler member, and wherein the first twisted pair of conductors is located adjacent to the portion of the filler member; wherein the barrier tape includes a non-conductive layer and a conductive layer; wherein the filler member is made of a non-conductive material; wherein the filler member includes a plurality of arms that are each configured to radially extend outwardly so as to form a first channel shaped to partially enclose the first twisted pair of conductors and a second channel shaped to partially enclose the second twisted pair of conductors; wherein the first terminal portion of the filler member includes a first outwardly facing terminal surface, the second terminal portion of the filler member includes a second outwardly facing terminal surface, and the barrier tape is configured to encircle the first and second outwardly facing terminal surfaces and the first and second twisted pairs of conductors; wherein the filler member is configured to extend along a longitudinal portion of the cable and is configured to non-conductively shield the first and second twisted pairs of conductors from being electrically coupled to each other along the longitudinal portion of the cable (claim 1). The above stated claim

limitations are not taught or suggested by the prior art of record and therefore claims 1-9 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please refer to the enclosed PTO-892 form for the citation of pertinent art in the present case.

Communication

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM H MAYO III whose telephone number is (571)272-1978. The examiner can normally be reached on M-Thurs (5:30a-3:00p) Fri 5:30a-2p (w/alternating Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thompson can be reached on 571-272-2342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William H. Mayo III/

William H. Mayo III
Primary Examiner
Art Unit 2847

WHM III
January 3, 2020