



Docket No.: M0506-7026

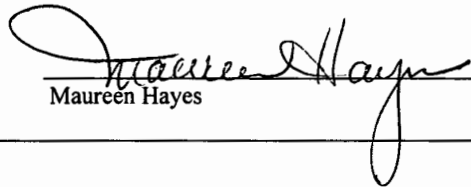
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Clark et al.
Serial No: 10/336,535
Confirmation No: 9466
Filed: January 3, 2003
For: MULTI-PAIR DATA CABLE WITH CONFIGURABLE
CORE FILLING AND PAIR SEPARATION

Examiner: Chau N. Nguyen
Art Unit: 2831

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the 14th day of May, 2004.


Maureen Hayes

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Sir:

In response to the Office Action mailed March 3, 2004, please amend the above-identified application as follows. Changes to the Claims are shown by strike through (for deleted matter) and underlining (for added matter).

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 6 of this paper.

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) A communications cable comprising:
 - a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors;
 - a substantially flat configurable dielectric separator disposed between the plurality of twisted pairs of conductors that separates the first twisted pair of insulated conductors from the second twisted pair of insulated conductors; and
 - a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator;

wherein the plurality of twisted pairs of insulated conductors and the substantially flat configurable dielectric separator are twisted about a common axis to form the communications cable.
2. canceled.
3. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator is arranged to provide a plurality of grooves extending along a longitudinal length of the communications cable.
4. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator is arranged within the jacket to provide at least two grooves, at least one twisted pair of insulated conductors being disposed within each of the at least two grooves.

5. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator includes a foamed polymer.
6. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator includes a woven fiberglass tape.
7. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator includes a flame-retardant, low-dielectric constant, foamed polymer tape.
8. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator includes a foamed fluorinated ethylene propylene material.
9. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator is a flame-retardant, foamed polymer tape.
10. (original) The communications cable as claimed in claim 1, further comprising a central core filling material disposed in a core of the communications cable between the first and second twisted pairs of insulated conductors.
11. (original) The communications cable as claimed in claim 10, wherein the central core filling is made of a same material as the substantially flat configurable dielectric separator.
12. canceled
13. (original) The communications cable as claimed in claim 1, further comprising a conductive shield substantially surrounding the plurality of twisted pairs of insulated conductors and the substantially flat configurable dielectric separator.

14. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator is arranged so as to separate each twisted pair of insulated conductors from every other twisted pair of insulated conductors.
- 15 (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator comprises a conductive layer and is arranged so that the conductive layer faces each of the plurality of twisted pairs of insulated conductors.
16. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator comprises an aluminum/mylar tape, an aluminum layer of the aluminum/mylar tape facing the plurality of twisted pairs of insulated conductors.
17. (original) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator is arranged to provide a sufficient spacing between the first twisted pair of insulated conductors and the second twisted pair of insulated conductors so as to provide a desired crosstalk isolation between the first twisted pair of insulated conductors and the second twisted pair of insulated conductors.
18. (newly added) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator is arranged so as to prevent the first twisted pair from contacting the jacket.
19. (newly added) The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator has a concave shape.
20. (newly added) The communication cable as claimed in claim 19, wherein the substantially flat configurable dielectric separator does not extend more than 180 around any one of the plurality of twisted pairs of insulated conductors.
21. (newly added) A communications cable comprising:

a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors;

a substantially flat configurable dielectric separator disposed between the plurality of twisted pairs of conductors that separates the first twisted pair of insulated conductors from the second twisted pair of insulated conductors; and

a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator;

wherein the substantially flat configurable dielectric separator includes a foamed polymer.

22. (newly added) The communications cable as claimed in claim 21, wherein the substantially flat configurable dielectric separator includes a flame-retardant, low-dielectric constant, foamed polymer tape.

23. (newly added) The communications cable as claimed in claim 21, wherein the substantially flat configurable dielectric separator includes a foamed fluorinated ethylene propylene material.

24. (newly added) The communications cable as claimed in claim 21, wherein the substantially flat configurable dielectric separator is a flame-retardant, foamed polymer tape.

REMARKS

Claims 1-17 were previously pending in this application. By this amendment, Applicants are canceling claims 2 and 12 without prejudice or disclaimer. Claim 1 has been amended. New claims 18-24 have been added. As a result claims 1, 3-11 and 13-24 are pending for examination with claims 1 and 21 being independent claims. No new matter has been added.

Double Patenting Rejection

In the Office Action, the Examiner has rejected claims 1-15 and 17 under the judicially created doctrine of double-patenting over claims 3-12 of U.S. Patent No. 6,248,954. In addition, the Examiner has rejected claims 1-17 under the judicially created doctrine of double-patenting over claims 2-9 and 26 of U.S. Patent No. 6,570,095. However, the Office Action stated that a timely filed Terminal Disclaimer in compliance with 37 C.F.R. 1.321(c) may be used to overcome these rejections. Without acceding to the correctness of this rejection, enclosed herewith is a Terminal Disclaimer with respect to U.S. Patent Nos. 6,248,954 and 6,570,095 in compliance with 37 C.F.R. 1.321(c) to overcome this rejection. In view of this Terminal Disclaimer, claims 1, 3-11 and 13-17 are believed to be in allowable condition.

Rejections Under 35 U.S.C. §103

Claims 1-4 and 14-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,969,295 to Boucino et al. (hereinafter Boucino) in view of U.S. Patent No. 3,911,200 to Simons et al. (hereinafter Simons). Applicants respectfully traverse this rejection.

Claim 2 has been canceled. Therefore, this rejection is moot with respect to claim 2.

Boucino discloses a twisted pair cable comprising several (e.g., four) twisted pairs of insulated conductors separated from one another by a spacer. The spacer includes a longitudinally extending center portion and a plurality of wall portions radiating from the center portion, thereby defining a plurality of compartments within the cable jacket, each twisted pair being disposed in one of the compartments (col. 1, lines 4-65; see Fig. 2).

Simon discloses a multi-finned shielding tape formed of a metal and plastic laminate that can be disposed between insulated conductors in a cable to shield the conductors from one another.

The Examiner asserts that it would have been obvious to use the separator as taught by Simons for the separator of Boucino “since the separator of Simons not only separates the pairs, but also provides a shielding for the pairs.” Applicants respectfully disagree. Furthermore, even if one were to combine Boucino and Simons as suggested in the Office Action, the combination fails to teach or suggest Applicants’ claimed invention.

Applicants assert that the proposed combination of Boucino and Simons suggested in the Office Action is improper for lack of motivation to combine the references. Boucino discloses an unshielded twisted pair cable and makes absolutely no mention of any shield, not around the individual twisted pairs, nor around the entire cable. Therefore, as is known in the art, it is appropriate to use a non-conductive spacer, as is disclosed by Boucino. By contrast, Simons discloses a conductive multi-finned shielding tape. Generally in the art, it is not appropriate to use a conductive spacer in an unshielded twisted pair cable. Therefore, one of ordinary skill in the art would not be motivated to use the conductive spacer of Simons in the unshielded twisted pair cable disclosed by Boucino. Accordingly, the suggested combination of Boucino and Simons is improper.

Furthermore, neither Boucino nor Simons discloses a “substantially flat configurable dielectric separator” as is recited in Applicants’ claim 1. The Examiner, in the Office Action, asserts that Simons discloses a “substantially flat configurable dielectric separator which is arranged to provide a plurality of grooves.” Applicants respectfully disagree. Simons discloses a “multifinned separator.” Although the separator disclosed in Simons is formed as a tape laminate, the separator is not substantially flat when it is disposed inside the cable jacket, as shown in Figs. 11 and 12. Simons states that “as the tape is fed into the cable it opens as in Fig. 7 to a system having four fins forming four longitudinal parallel shielding compartments (col. 3, lines 22-24). Therefore, even if one were to use the separator of Simons for the separator of Boucino, one does not arrive at a cable comprising a substantially flat separator. Rather, the cable resulting from the combination includes a finned separator positioned between the twisted pairs.

As discussed above, neither Boucino nor Simon, whether taken alone or in combination, disclose or suggest each and every limitation recited in claim 1. Therefore, claim 1 is patentable over the art of record. Accordingly, withdrawal of the rejection of claim 1 is respectfully requested.

Each of dependent claims 3, 4 and 14-17 depends from claim 1 and is therefore allowable for at least the same reasons as claim 1.

Claims 5 and 7-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Boucino in view of Simons as applied to claim 1 above and in further view of C&M Corporation (C&M). Applicants respectfully traverse this rejection.

Applicants do not agree that the proposed combination of Boucino, Simons and C&M is proper. As discussed above, the proposed combination of Boucino and Simons is improper for lack of motivation to combine the references. Therefore, it is also improper to add a third reference, namely C&M, to the already improper combination of Boucino and Simons. In addition, as discussed above, even if one were to combine Boucino and Simons as suggested in the Office Action, the combination does not disclose or suggest a cable comprising "a substantially flat configurable dielectric separator." C&M fails to cure the deficiencies of Boucino and Simons because C&M also fails to disclose or suggest a cable comprising "a substantially flat configurable dielectric separator." Therefore, even if one were to combine Boucino, Simons and C&M, as suggested in the Office Action, the proposed combination does not disclose or suggest each and every limitation recited in Applicants' claim 1. Therefore, the art of record, whether taken alone or in combination, does not anticipate or render obvious Applicants' independent claim 1. Claims 5 and 7-9 depend from claim 1 and are therefore allowable for at least the same reasons as discussed for claim 1. Accordingly, withdrawal of the rejection of claims 5 and 7-9 is respectfully requested.

Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Boucino in view of Simons as applied to claim 1 above and in further view of U.S. Patent No. 3,649,744 to Coleman (hereinafter Coleman). In addition, claims 10 and 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Boucino in view of Simons as applied to claim 1 above and in further view of U.S. Patent No. 5,789,711 to Gareis et al. (hereinafter Gareis). Applicants respectfully traverse these rejections.

Claim 6 depends from claim 1 and includes all the limitations recited in claim 1. As discussed above, the suggested combination of Boucino and Simons fails to disclose or suggest all the limitations recited in claim 1. Gareis fails to cure the deficiencies of Boucino and Simons because Gareis fails to disclose or suggest. Therefore, although Applicants do not agree that the proposed combination of Boucino, Simons and Gareis is proper, the combination does not disclose or suggest each and every limitation recited in claim 1. Therefore, claim 1 is patentable over the art of record. Accordingly, claim 6, which depends from claim 1, is allowable for at least the same reasons as claim 1. Therefore, withdrawal of the rejection of claim 6 is respectfully requested.

In the Office Action, the Examiner has also rejected claims 1, 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,034,148 to Lang (hereinafter Lang) in view of U.S. Patent No. 5,900,588 to Springer et al. (hereinafter Springer). Applicants have amended claim 1 to recite the limitation previously recited in claim 2 and to obviate this rejection.

Lang discloses a multi-conductor, flat ribbon cable. Likewise, Springer discloses a flat, ribbon cable. Applicants' claim 1, as amended, recites "wherein the plurality of twisted pairs of insulated conductors and the substantially flat configurable dielectric separator are twisted about a common axis to form the communications cable." Applicants do not agree that the proposed combination of Lang and Springer is proper. However, whether taken alone or combination, Lang and/or Springer do not disclose or suggest a cable wherein the plurality of insulated conductors and the substantially flat configurable dielectric separator are twisted about a common axis. Rather, Lang and Springer each disclose a flat ribbon cable wherein the insulated conductors are disposed parallel, side-by-side. Therefore, withdrawal of the rejection of claim 1 is respectfully requested.

Claims 12 and 13 depend from claim 1 and are therefore allowable for at least the same reasons as claim 1. Accordingly, withdrawal of the rejection of claims 12 and 13 is respectfully requested.

Newly Added Claims

New dependent claims 18-24 have been added to further define Applicants' contribution to the art.

Each of dependent claims 18-20 depends from claim 1 and is therefore allowable for at least the same reasons as claim 1.

New independent claim 21 recites "a communications cable comprising a plurality of twisted pairs ... a substantially flat configurable dielectric separator disposed between the plurality of twisted pairs of conductors that separates the first twisted pair of insulated conductors from the second twisted pair of insulated conductors...wherein the substantially flat configurable dielectric separator includes a foamed polymer." As discussed above in reference to claim 1, the prior art of record does not disclose or suggest a cable comprising "a substantially flat configurable dielectric separator disposed between the plurality of twisted pairs of conductors." Therefore, claim 21 is allowable.

Each of newly added dependent claims 22-24 depends from claim 21 and is therefore allowable for at least the same reasons as claim 21.

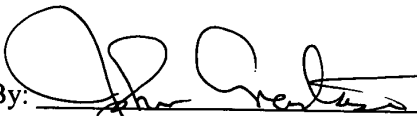
CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a

fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,
William Clark et al., Applicants

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