

U.S. Patent No. 6,998,537:

Excerpts of Reexamination No. 95/000,476

Request for *Inter Partes* Reexamination, June 11, 2009 (Excerpts)

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Dated: July 13, 2009

Signature: _____

W. Scott Perry

Docket No. 13291.105076
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of:

Control No. 95/000,476

William T. Clark et al.

Examiner: Not Yet Assigned

Patent No.: 6,998,537

Art Unit: Not Yet Assigned

Issue Date: February 14, 2006

For: MULTI-PAIR DATA CABLE WITH
CONFIGURABLE CORE FILLING AND PAIR
SEPARATION

REPLACEMENT

REQUEST FOR *INTER PARTES* REEXAMINATION UNDER 37 C.F.R. § 1.915

Mail Stop *Inter Partes* Reexam
ATTN: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Notice of Failure to Comply with *Inter Partes* Reexamination Request Filing Requirements mailed June 11, 2009, Requesters hereby submit this Replacement Request for *Inter Partes* Reexamination Under 37 C.F.R. § 1.915.

Table 1

Claim 1 Limitation	Claim 19 Limitation
Claim limitation [1a]: “a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors.”	Claim limitation [19a]: “a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors.”
Claim limitation [1b]: “a substantially flat configurable dielectric separator disposed between the plurality of twisted pairs of conductors in the finished communications cable, that separates the first twisted pair of insulated conductors from the second twisted pair of insulated conductors.”	Claim limitation [19b]: “a substantially flat configurable dielectric separator that <i>consists of non-conductive, dielectric materials</i> 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.”
Claim limitation [1c]: “a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator.”	Claim limitation [19c]: “a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator.”
Claim limitation [1d]: “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 finished communications cable.”	Claim limitation [19d]: “wherein the substantially flat configurable dielectric separator includes a foamed polymer.”

The ‘866 patent discloses claim limitations [19a], [19b], and [19c] of the ‘537 patent as is described for claim limitations [1a], [1b], and [1c] of the ‘537 patent.

Claim limitation [19a] recites **“a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors.”** The ‘866 patent discloses a plurality of twisted pairs, including a first twisted pair and a second twisted pair. *See* Figure 5 showing four twisted pairs. Figure 5

illustrates one disclosed cable in the '866 patent. The cable contains four twisted pairs of insulated conductors (item 1). The cable also includes two substantially flat configurable pair separators (item 5). The conductors are insulated. *See* '866 patent, English trans. at 3 ("The copper conductor or cants preferably have an insulation 3 consisting of a thermoplastic, especially polyethylene, cellular polyethylene, foam-skin polyethylene, skin-foam-skin polyethylene, polypropylene or cellular polypropylene.").

Claim [19b] recites **"a substantially flat configurable dielectric separator that consists of non-conductive, dielectric materials 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."** The '866 patent discloses a cable with a plurality of twisted pairs, and a substantially flat configurable dielectric separator consisting of non-conductive materials, as it includes a plastic coated metal foil.

To the extent that the limitation that the dielectric pair separator "consist[s] of a dielectric layer" is not expressly or inherently disclosed by the '866 patent, it would have been obvious to one of ordinary skill in the art to modify the separator of the '866 patent to consist of a dielectric layer only. First, one of ordinary skill in the art would be under market pressure to reduce costs for the cable and eliminating the metal foil would likely reduce the cost of the cable. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) ("When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp."). *See also*, '866 patent, Engl. trans. at 1 (discussing the expense of prior art cables); '537 patent, col. 2, ll. 58-59 ("Accordingly, some of the problems with the above known configurations are that they are expensive, ...").

Second, as illustrated in the '683 patent and Figure 9, above, there are only a finite number of combinations of plastic and metal components for separators. The '683 patent shows four of the six possible combinations - the other two being a plastic material sandwiched in metal and an all plastic material separator. It would have been obvious for one of ordinary skill in the art to try all six of these configurations, including an all plastic separator (that is, a dielectric pair separator that "consist[s] of a dielectric layer.")⁸ Indeed, the plastic only version would be tried since the objective of the '537 patent is to reduce cross talk. *See* '537 patent, col. 2, l. 65 - col. 3, l. 2 ("Therefore, a need exists for a high-speed data cable having multiple twisted pair wires with desired cross talk performance, improved handling, and termination capabilities, that is inexpensive, flexible and has a desired size.")⁹ As such, the other electromagnetic shielding aspects of the metal foil are not as necessary for reducing cross talk since physical separation is a key factor in reducing cross talk, and, to save costs, it would be an obvious modification to one of ordinary skill in the art to remove the foil and use just a plastic separator to achieve the objectives of the '537 patent.

Claim limitation [19c] recites **"a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator."** The '866 patent discloses a cable with the twisted pairs and separator within a protective sheath (item 4 in Figure 5, above). *See also* '866 patent, English trans. at 3 ("As an outer mechanical protection, an invention-

⁸ A single layer, dielectric separator is well known in the electrical cable art area. *See, e.g.*, Exhibit 28, U.S. Patent No. 1,976,847 (disclosing a separator between the individual insulated conductors of a twisted pairs); U.S. Patent No. 2,538,019 (disclosing a flat configurable paper separator that can be folded to form channels, as shown in Figs. 2-5); U.S. Patent No. 4,832,855 (disclosing a twisted flat non-conducting strip separating two conductors). The documents in Exhibit 28 are cited as background information for the Examiner's reference.

⁹ *See also*, Exhibit 20, prosecution history of European Patent Application No. 00919342.6-2222 (EP Patent Publication No. 1157393) (where the European Patent Office held that it would have been obvious to modify the separator of the '866 patent to consist of non-conductive material in view of prior art disclosing plastic coated metal foil). The prosecution history of European Patent Application No. 00919342.6-2222 is cited herein as background information for the Examiner's reference.

specific transmission cable has a cable cover 4, which consists of customary thermoplastic cover materials.”). The cable cover of the ‘866 patent encloses the twisted pairs and dielectric pair separator.

Claim limitation [19d] recites **“wherein the substantially flat configurable dielectric separator includes a foamed polymer.”**

The ‘748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. These materials are dielectrics and are non-conductive, as they are used as insulators for copper conductors. The ‘748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. *See generally*, ‘748 patent. The ‘748 patent issued Sep. 23, 1997, qualifying it as prior art under 35 U.S.C. § 102(b).

The ‘748 patent further discloses “the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy.” *See* ‘748 patent, Table 1 and col. 3, ll. 11-25.

Although the ‘748 patent claims are directed to a composition of materials for use to insulate a conductor, the “Background of the Invention” section discusses electrical and fire retardancy properties of materials used in cables generally. One of ordinary skill in the art would have known to combine the teaching of foamed polymer disclosed in the ‘748 patent to modify the pair separator of the ‘866 patent, to achieve a pair separator with non-conductive, dielectric materials only, where the materials include a foamed polymer -- achieving the recitations of

claim limitation 19b and claim limitation 19d. In summary, by modifying the pair separator of the '866 patent with the materials disclosed in the '748 patent, one of ordinary skill in the art would arrive at a pair separator that consists of non-conductive, dielectric material, where the material includes a foamed polymer.

Please see the accompanying claim chart at Exhibit 5 for a detailed element-by-element analysis showing that claim 19 is unpatentable under 35 U.S.C. § 103(a) as being obvious over the '866 patent in view of the '683 patent and the '748 patent.

Reasons to combine the '866 patent, the '683 patent, and the '748 patent

All three patents relate to data communications cables. The '683 patent discloses multiple configurations of separators that can be used in a communications cable. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to include an appropriately configured separator in the cable of the '866 patent, based on the teachings of the '683 patent. One of ordinary skill in the art would have a reasonable expectation of success of using a different separator configuration the cable structure of the '866 patent based on the teachings of the '683 patent, because of the substantial overlap of technology and the predictable result achieved by combining the relevant teachings.

The '748 patent is specifically related to the types of materials that are optimal to meet fire and electrical standards. The '748 patent demonstrates that one of ordinary skill in the art would have known that certain materials may be used to achieve flame retardance without degrading cable transmission performance. It would have been obvious to one of ordinary skill in the art to combine the materials of the '748 patent with the cable structure of the '866 patent, as modified based on the teachings of the '683 patent, to achieve the subject matter of claim 19.

As to a configurable separator, there are a finite number of identified, predictable potential solutions as to the shape of the separator. The separator can be either less than or equal to 180° around a pair, or greater than 180 degrees around a pair. Further, Figure 2 of the '866 patent (Figure 4 above) discloses at least some of the pairs with the separator being not more than 180 degrees around the pair. One of ordinary skill in the art would have a reasonable expectation of success of using a separator that did not extend more than 180 degrees around a pair. As such, it would have been obvious to one of ordinary skill in the art to try a configuration where the separator did not extend more than 180° around any pair.

**(b) Claim 20 is unpatentable under 35 U.S.C.
§ 103(a) as being obvious over the '866 patent in
view of the '683 patent and the '748 patent**

As discussed previously, the combination of the '866 patent, the '683 patent, and the '748 patent discloses all limitations of claim 19. Claim 20, which depends directly from claim 19, recites **"[t]he communications cable as claimed in claim 19, wherein the substantially flat configurable dielectric separator includes a flame-retardant, low-dielectric constant, foamed polymer tape."** The '748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. FEP has a low dielectric constant and is flame retardant. The '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. *See generally*, '748 patent.

The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed

D. Rejections of Claims 1, 2, 4-8, 11, and 19-22 of the '537 patent in view of the '470 patent either alone or in combination with other prior art printed publications

Requesters propose the following rejections of claims 1, 2, 4-8, 11, and 19-22 of the '537 patent based on the '470 patent either alone or in combination with other prior art printed publications:

1. Claims 1 and 2 are anticipated by the '470 patent (*See Claim Chart, Exhibit 9*)
2. Claims 4 and 6-8 are obvious over the '470 patent in view of the '748 patent (*See Claim Chart, Exhibit 9*)
3. Claims 19-22 are obvious over the '470 patent in view of the '748 patent (*See Claim Chart, Exhibit 9*)
4. Claim 5 is obvious over the '470 patent in view of the '217 patent (*See Claim Chart, Exhibit 9*)
5. Claim 11 is obvious over the '470 patent (*See Claim Chart, Exhibit 9*)

Requesters provide below a concise explanation of the '470 patent, followed by its application to the claims of the '537 patent. The claim chart in Exhibit 9 provides a complete analysis of how the '470 patent renders the claims of the '537 patent as unpatentable.

a. The '470 patent (Reference at Exhibit 8; Claim Chart at Exhibit 9)

JP Patent No. Sho43(1968)-15470 published on Jun. 28, 1968, making it prior art under 35 U.S.C. §102(b). The '470 patent was not in front of the Patent Office during the prosecution of the application that matured into the '537 patent. The '470 patent anticipates Claims 1 and 2. The '470 patent also renders obvious claims 4-8, 11, and 19-22 of the '537 patent in view of U.S. Patent No. 5,670,748 and Claim 5 in view of European Patent Application EP0569217A2. Please refer to Exhibit 9 for details on how the '470 patent, in combination with other prior art printed publications, renders these claims of the '537 patent unpatentable.

The '470 patent teaches a flat dielectric separator can be configured. Figure 2 of the '470 patent, reproduced as Figure 12, below, shows the configured separator 2 separating "insulated element wire or stranded groupings of such" (that is, twisted pairs) 1. '470 patent, Engl. transl. Detailed Explanation of the Invention. The cable also includes a cable sheath 4. *See id.*

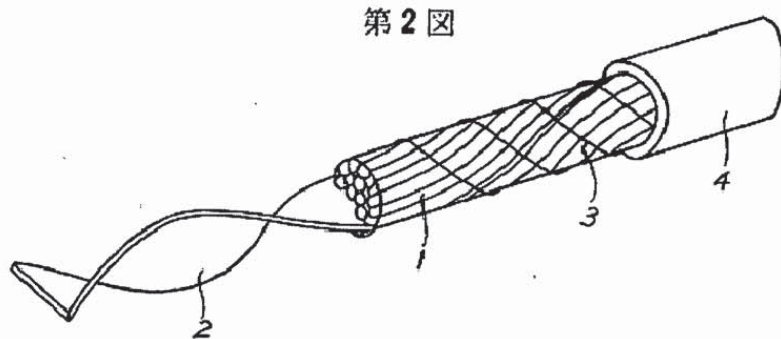


Figure 12. '470 Patent, Figure 2

b. Claims 1 and 2 are anticipated by the '470 patent

The following is a quotation of 35 U.S.C. § 102(b) that forms the basis for all of the following anticipation rejections:

A person shall be entitled to a patent unless ...

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States[.]

(1) Claim 1 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by the '470 patent

Claim limitation [1a] recites "a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors." The '470 patent discloses a cable with a plurality of twisted pairs. *See* '470 Patent Translation, Detailed Explanation of the

Invention (“As communications cable, there is a tendency to use a plurality of either insulated element wires or else stranded pairs or stranded quad of such, or otherwise to use so-called [alternately] stranded cable with which units of the wires are stranded in a manner so that the stranding direction is reversed at points in time within a fixed cycle.”) (emphasis added).

Claim limitation [1b] recites “a substantially flat configurable dielectric separator disposed between the plurality of twisted pairs of conductors in the finished communications cable, that separates the first twisted pair of insulated conductors from the second twisted pair of insulated conductors.” The ‘470 patent discloses a flat pair separator (2), as shown in Figure 2 of the patent, which is reproduced above as Figure 12:

The first twisted pair is on one side of the separator (2) and the second twisted pair is on the other side of the separator. The separator is made of rigid plastic (dielectric). *See* ‘470 Patent Translation, Detailed Explanation of the Invention.

The pair separator is configurable, at least during the cable manufacturing process. The plastic is kept at a certain temperature such that the separator can be bent into the alternatively twisting shape as the cable is twisted. *See* ‘470 Patent Translation, Detailed Explanation of the Invention (“Core material 2 is most effectively shown in Figure 2; as shown therein, the material is formed into a reciprocatingly twisted state by slowly changing the facing of both surfaces as the material moves in the longitudinal direction. This can be achieved by twisting the facing direction of the plate body to the opposing direction at fixed intervals while maintaining the rigid plastic or other material

of the horizontal plate at a prescribed temperature.”). The separator then becomes rigid once configured into its desired configuration.

Claim limitation [1c] recites **“a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator.”** The ‘470 patent discloses a cable with the twisted pairs and separator within a protective sheath (item 4 in Figure 12, above).

Claim limitation [1d] 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 finished communications cable.”** The entire ‘470 patent teaches twisting the cable about a common axis to finish the cable. The cable is alternatively twisted about its center axis. Figure 2 of the ‘470 patent, reproduced above, depicts the characteristic twist of the cable. *See* Figure 12, above.

Please see the accompanying claim chart at Exhibit 9 for a detailed element-by-element analysis showing that claim 1 is unpatentable under 35 U.S.C. § 102(b) as being anticipated the ‘470 patent.

(2) Claim 2 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by the ‘470 patent

As discussed previously, the ‘470 patent discloses all limitations of claim 1. Claim 2, which depends directly from claim 1, additionally recites **“wherein the substantially flat configurable dielectric separator is arranged to have no more than one concave surface to provide a groove extending along a longitudinal length of the communications cable.”** The ‘470 patent discloses a separator that is substantially flat, configurable, dielectric, and arranged

(3) Claim 11 is unpatentable under 35 U.S.C. § 103(a) as being obvious over the '470 patent

As discussed previously, the '470 patent discloses all limitations of claim 1. Claim 11, which depends directly from claim 1, additionally recites “further comprising a conductive shield substantially surrounding the plurality of twisted pairs of insulated conductors and the substantially flat configurable dielectric separator.” A conductive shield would be obvious to try as there are only two design choices - a conductive shield or no conductive shield. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”). Accordingly, it would have been obvious to a person of ordinary skill in the art to include a conductive shield with the cable structure of the '470 patent to satisfy a recognized design need.

Please see the accompanying claim chart at Exhibit 9 for a detailed element-by-element analysis showing that claim 5 is unpatentable under 35 U.S.C. § 103(a) as being obvious over the '470 patent.

(4) Claims 19-22 are obvious over the '470 patent in view of the '748 patent

(a) Claim 19 is unpatentable under 35 U.S.C. § 103(a) as being obvious over the '470 patent in view of the '748 patent

As seen in Table 2, above, claims 1 and 19 have corresponding claim limitations -- claim limitations [19a], [19b], and [19c] of the '537 patent correspond to claim limitations [1a], [1b], and [1c] of the '537 patent. The '470 patent discloses claim limitations [19a], [19b], and [19c] of the '537 patent as is described for claim limitations [1a], [1b], and [1c] of the '537 patent, above.

Claim limitation [19b] recites a non-conductive separator. As described above in connection with claim 1, the '470 patent discloses a separator made of rigid plastic, which is non-conductive. *See* '470 Patent Translation, Detailed Explanation of the Invention.

As for claim limitation [19d]: **"wherein the substantially flat configurable dielectric separator includes a foamed polymer,"** the '470 patent discloses a plastic separator. To the extent that this material of the '470 patent is not "foamed," the '748 patent teaches the benefits of foaming. It discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. FEP has a low dielectric constant (that is, is a dielectric material) and is a flame retardant polymer. The '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. *See generally*, '748 patent.

The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." *See* '748 patent, Table 1 and col. 3, ll. 11-25. In other words, the '748 patent teaches that a foamed polymer, such as foamed FEP, can be used as materials in data communications cables to achieve flame retardancy and smoke suppression while meeting electrical performance.

Although the '748 patent claims are directed to a composition of materials for use to insulate a conductor, the "Background of the Invention" section discusses electrical and fire retardancy properties of materials used in cables generally. One of ordinary skill in the art would

REPLACEMENT

Exhibit 5

DE 297 19 866 U1 alone or in combination with other prior art anticipates or renders obvious U.S. Patent No. 6,998,537 under 35 U.S.C. §§ 102(b) and 103(a)

All cited text is taken from the following documents:

DE 297 19 866 U1, to NK Networks, GmbH, entitled "Data transmission cable," published Feb. 5, 1998 (prior art under 35 U.S.C. 102(b))

U.S. Patent No. 3,622,683, to Roberts et al., entitled "Telephone cable with improved crosstalk properties," filed on Nov. 22, 1968, and issued on Nov. 23, 1971 (prior art under 35 U.S.C. 102(b))

U.S. Patent No. 5,670,748, to Gingue et al., entitled "Flame retardant and smoke suppressant composite electrical insulation, insulated electrical conductors, and jacketed plenum cable formed therefrom," filed on Feb. 15, 1995, and issued on Sep. 23, 1997 (prior art under 35 U.S.C. 102(b)).

European Patent Application EP0569217A2, to Martin J. Weinberg, entitled "Fiberglass cloth resin tape insulation," and published on Oct. 11, 1993 (prior art under 35 U.S.C. 102(b))

U.S. Patent No. 5,789,711, to Gaeris et al., entitled "High-performance data cable," filed on Apr. 9, 1996, and issued on Aug. 4, 1998 (prior art under 35 U.S.C. 102(e))

U.S. Patent No. 3,888,710, to William R. Burk, entitled "Processing cable filling compounds," filed on May 10, 1974, and issued on June 10, 1975 (prior art under 35 U.S.C. 102(b))

U.S. Patent No. 4,096,346, to Stine et al., entitled "Wire and cable," filed on Jan. 24, 1975, and issued on Jun. 20, 1978 (prior art under 35 U.S.C. 102(b))

U. S. Patent No. 5,969,295, to Boucino et al., entitled “Twisted pair communications cable,” filed on Jan. 9, 1998, and issued on Oct. 19, 1999 (prior art under 35 U.S.C. 102(e))

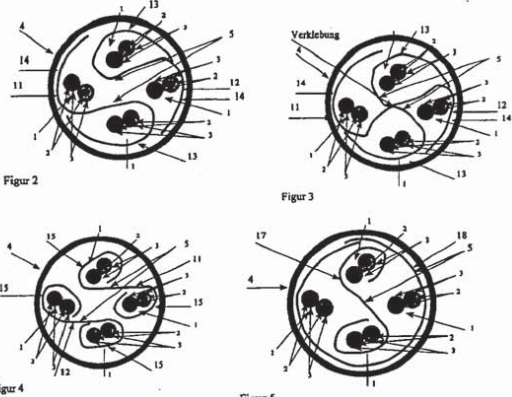
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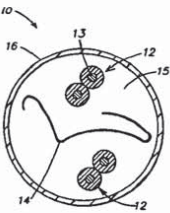
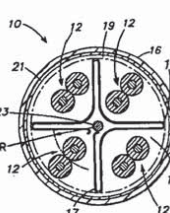
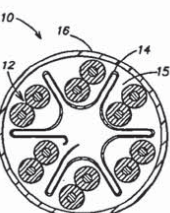
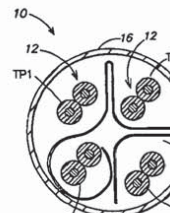
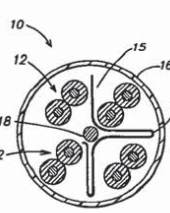
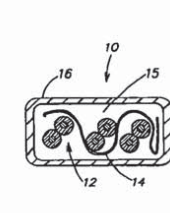
1. Claims 1-3, 11-13, and 15-17 are anticipated by the ‘866 patent
2. Claims 1-3, 11-13 and 15-17 are obvious over the ‘866 patent in view of the ‘683 patent
3. Claims 1-3, 11-13 and 15-17 are obvious over the ‘866 patent in view of the ‘683 patent and further in view of the ‘295 patent
4. Claims 4 and 6-8 are obvious over the ‘866 patent in view of the ‘683 patent and further in view of the ‘748 patent
5. Claim 5 is obvious over the ‘866 patent in view of the ‘683 patent and further in view of the ‘217 patent
6. Claims 9 and 10 are obvious over the ‘866 patent in view of the ‘683 patent and further in view of the ‘711 patent
7. Claims 9 and 10 are obvious over the ‘866 patent in view of the ‘683 patent and further in view of the ‘710 patent
8. Claims 13 and 14 are obvious over the ‘866 patent in view of the ‘683 patent and further in view of the ‘346 patent
9. Claim 18 is obvious over the ‘866 patent in view of the ‘683 patent
10. Claims 19-22 are obvious over the ‘866 patent in view of the ‘683 patent and the ‘748 patent

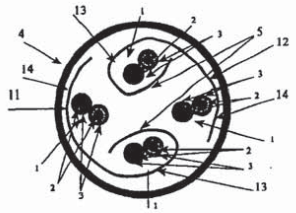
Claim Chart for U.S. Patent No. 6,998,537

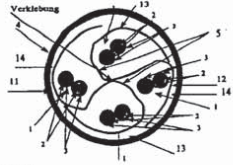
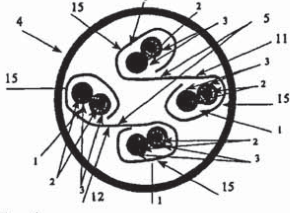
Based on DE 297 19 866 U1

Claim Element	Disclosure of DE 297 19 866 U1
Claim 1. A finished communications cable comprising:	The '866 patent discloses a finished communications cable: "An invention-specific data transmission cable depicted in figure 1 has four pairs 1 of insulated, stranded copper conductors . . ."; p. 3;
a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors;	Page 3 of the '866 patent discloses a cable with 4 pairs of conductors. <i>See also</i> Figure 1, where the four items marked "1" represent twisted pairs. As can be seen in the figure, the conductors (item "2") are insulated (item "3"). Figur 1
a substantially flat configurable dielectric separator disposed between the plurality of twisted pairs of conductors in the finished communications cable, that separates the first twisted	Page 5 of the '866 patent discloses the separator as either aluminum foil or aluminum foil covered in plastic. "The shielding 5 or the partial shielding 11, 12 preferably consists of metal foils, especially aluminum foils or aluminum foils laminated by plastic." '866 patent, Eng. transl. specification p. 5. This second embodiment is a dielectric pair separator. U.S. Patent 3,622,683 ('683 patent) discloses that the plastic covering can be on one side of the separator, both sides of the separator, with the metal component

Claim Element	Disclosure of DE 297 19 866 U1
pair of insulated conductors from the second twisted pair of insulated conductors;	sandwiched inside, or totally encase the metal component. Col. 4, ll. 48-60 and Figs. 5-8. The separator of the '866 patent is configurable. See the configurations in Figures 2-5 below.  Compare the configurable separators of the '866 patent to the configurable separators in the disclosed embodiments of the '537 patent shown below in Figures 5-10:

Claim Element	Disclosure of DE 297 19 866 U1
	 FIG. 5  FIG. 6  FIG. 7  FIG. 8  FIG. 9  FIG. 10
and a jacket enclosing the plurality of twisted pairs of	The '866 patent discloses a cable with the wires within a protective sheath (item 4 in Figure 1). <i>See also</i> '866 patent, English trans. at 3 ("As an outer

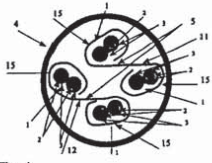
Claim Element	Disclosure of DE 297 19 866 U1
insulated conductors and the configurable dielectric separator;	mechanical protection, an invention-specific transmission cable has a cable cover 4, which consists of customary thermoplastic cover materials.”). The cable cover of the ‘866 patent encloses the twisted pairs and dielectric pair separator.  Figur 1
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 finished communications cable.	The ‘866 patent discloses stranding, such as SZ stranding, the cable comprising twisted pairs and the configurable tape separator. SZ stranding is a form of twisting to close a cable where the cable is alternatively twisted to the right and left about the central axis of the cable. “11. Data transmission cable according to one or more of claims 1 to 10, characterized in that the conductor pairs (1) are stranded to form helixes or are SZ-like.” ‘866 patent, Eng. transl. claim 11. Alternatively, the ‘295 patent discloses twisting the pairs about a common axis. ‘295 patent. col. 4, ll. 10-22. The Patent Office identified the ‘295 patent as satisfying this limitation for claim 1 of the ‘537 patent. See discussion above in connection with DE ‘484 (Section II.A).
Claim 2. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric	Figure 1 above of the ‘866 patent discloses a single concave groove in the separator. See also Figure 3 of the ‘866 patent showing a channel formed by tape with a concave surface.

Claim Element	Disclosure of DE 297 19 866 U1
separator is arranged to have no more than one concave surface to provide a groove extending along a longitudinal length of the communications cable.	 Figure 3
Claim 3. 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.	See Figure 4 of the '866 patent. The embodiment of the '866 patent in Figure 4 shows a configuration where a pair separator has two grooves, with a twisted pair in each of the two grooves.  Figure 4
Claim 4. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator includes a foamed polymer.	U.S. Patent No. 5,670,748 discloses at col. 2, ll. 28-31 fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. The '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably

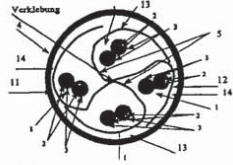
Claim Element	Disclosure of DE 297 19 866 U1
	employed to achieve a favorable balance of electrical properties and flame retardancy.” See ‘748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed polymer disclosed in the ‘748 patent with the pair separator of the ‘866 patent, to arrive at the recitation of Claim 4.
Claim 5. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator includes a woven fiberglass tape.	European patent EP0569217A2 discloses the use of woven fiberglass as an insulating material. The woven fiberglass is cut into tape and used as insulating material. See, e.g., ‘217 patent, Abstract (“The composite sheet is then slit into tapes with substantially no unraveling of the fiberglass component at the slit edges of the tapes. The resultant tapes are easily wrapped on, and adhered to, conductors, such as magnet wire, or the like, by remelting and resolidifying the thermoplastic layer. The tape possesses excellent dielectric properties”). One of ordinary skill in the art would have known to combine the woven fiberglass material disclosed in the ‘217 patent with the pair separator of the ‘866 patent, to arrive at the recitation of Claim 5.
Claim 6. 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.	The ‘748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. See ‘748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the ‘748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. See generally, ‘748 patent. The ‘748 patent further discloses “the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy.” See ‘748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the ‘748 patent with the configurable tape separator of the

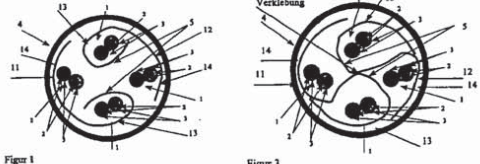
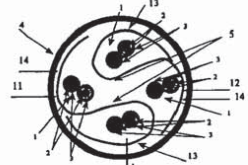
Claim Element	Disclosure of DE 297 19 866 U1
	'866 patent to arrive at the recitations of Claim 6.
Claim 7. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator includes a foamed fluorinated ethylene propylene material.	The '748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> '748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." <i>See</i> '748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the '748 patent with the configurable tape separator of the '866 patent to arrive at the recitations of Claim 7.
Claim 8. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator is a flame-retardant, foamed polymer tape.	The '748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> '748 patent, Table 1. Indeed, the '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." <i>See</i> '748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the '748 patent with the configurable tape separator of the

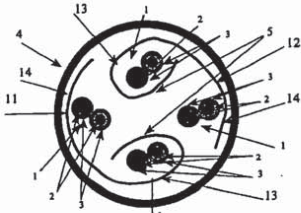
Claim Element	Disclosure of DE 297 19 866 U1
	'866 patent to arrive at the recitations of Claim 8.
Claim 9. The communications cable as claimed in claim 1, further comprising a central core filling material disposed in a core of the communications cable between the first and second twisted pairs of insulated conductors.	U.S. Patent No. 5,789,711 discloses central core fillers at col. 1, ll. 5-6: "The data cable has an interior support or star separator around which the twisted pairs are disposed." The '711 patent is admitted prior art to the '537 patent. The applicants of the '537 patent admitted that the central core filler of the '711 patent can be used to keep the pairs at fixed positions to each other. '537 patent, col. 2, ll. 28-29. U.S. Patent No. 3,888,710 discloses at col. 1, ll. 8-16 using a filling compound to fill interstitial voids in a cable: "In the art of designing and constructing electrical cables, especially telecommunication cables such as telephone cables, it is known to assemble insulated conductors in a core surrounded by wrapping, shield and jacket components and to fill or flood the otherwise empty interstitial spaces within the core and elsewhere within the cable with an insulating oil, grease or plastic composition known generically as cable filling compound or filler." One of ordinary skill in the art would have known to combine the central core fillers of the '711 patent or '710 patent with the '866 patent to achieve the recitation of claim 9.
Claim 10. The communications cable as claimed in claim 9, wherein the central core filling is made of a same material as the substantially flat configurable dielectric separator.	The '711 patent discloses at col. 4, ll. 53-58: "the specific material for the star separator also depends on the needs of the user such as crush resistance, breaking strengths, the need to use gel fillings, the need for safety, and the need for flame and smoke resistance." The '710 patent discloses at col. 1, ll. 23-32: "Among the general requirements for a suitable cable filling compound are certain physical, chemical and electrical properties. It should have low dielectric constant and high chemical stability under conditions of cable use. It should not soften or weaken the plastic insulation or jacket of the cable. It should be capable of fluid flow into the cable spaces during manufacture but resist flowing out of the cable ends of settling from relatively high elevated portions of the cable into portions at lower

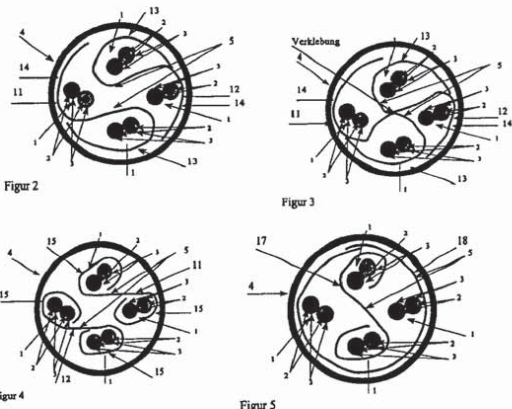
Claim Element	Disclosure of DE 297 19 866 U1
	levels.” It would be obvious to one of ordinary skill in the art to make the central core filler of the same material as the dielectric pair separator because one of ordinary skill in the art would want to minimize the number of different materials in the cable.
Claim 11. 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.	The ‘866 patent discloses that a foil shield below the cable cover can be added to the cable to serve as a shield for the conductors. <i>See</i> ‘866 patent, English transl. at 3 (“As an outer mechanical protection, an invention-specific transmission cable has a cable cover 4, which consists of customary thermoplastic cover materials. Especially EMC protective measures can additionally be taken by the application of metal foils and/or shielding plaits below the cable cover.”). The shield surrounds the twisted pairs and the dielectric pair separator.
Claim 12. 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.	See Figure 4 of the ‘866 patent reproduced below. The embodiment shown discloses all pairs being separately contained in channels.  Figure 4
Claim 13. The communications cable as claimed in claim 1, wherein the substantially flat	The ‘866 patent discloses a configurable dielectric pair separator with a conductive layer. <i>See</i> ‘866 patent, English transl. at 5 (“The shielding 5 or the partial shielding 11, 12 preferably consists of metal foils, especially aluminum foils or aluminum foils laminated by plastic. The metal layer preferably is

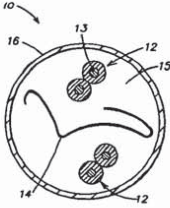
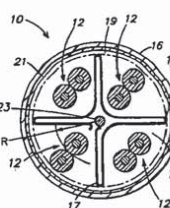
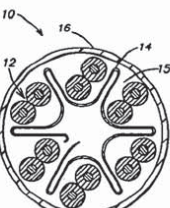
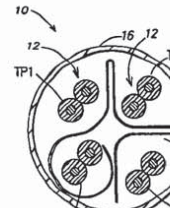
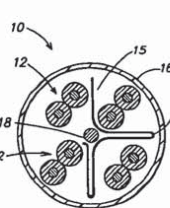
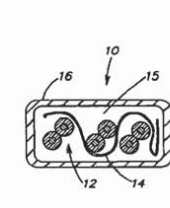
Claim Element	Disclosure of DE 297 19 866 U1
configurable dielectric separator comprises a conductive layer and is arranged so that the conductive layer faces each of the plurality of twisted pairs of insulated conductors.	several 10s of μm thick"). One of ordinary skill in the art would know, based on the disclosure of the '866 patent, that the conductive layer, rather than the dielectric layer, is placed facing the twisted pairs. To the extent that the '866 patent does not expressly or inherently disclose that the conductive layer would be facing the twisted pairs, then the additional claim limitation of Claim 13 would be obvious to try. A finite number of options exist for the configuration - two to be exact, the conductive layer facing the twisted pairs or the conductive layer not facing the twisted pairs. <i>See KSR Int'l Co. v. Teleflex Inc.</i>, 550 U.S. 398, 421 (2007) ("When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp."). U.S. Patent No. 4,096,346 discloses using an aluminum/MYLAR tape as a binder. Col. 2, l. 62 - col. 3, l. 6. ("Turning now to FIGS. 4 and 5, a cable having two conductors similar to the conductor of FIG. 1 . . . is wrapped in a composite tape having a first aluminum layer 12 next to insulating layers 11 and a second poly(ethylene terephthalate) polyester layer 13 bonded to layer 12. Layers 12 and 13 may be an Aluminum-Mylar laminated tape about 0.85 mils thick . . ."). Fig. 7 of the '346 patent below discloses the conductive layer facing each of the plurality of twisted pairs of conductors Layer 12 (next to the plurality of twisted pairs) is aluminum. One of ordinary skill in the art would have known to combine the '346 patent with the '866 patent to arrive at the claimed subject matter of Claim 13.

Claim Element	Disclosure of DE 297 19 866 U1
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.	and a second twisted pair of insulated conductors. <i>See</i> '866 patent, English transl. at 1 ("These cables serve in particular for use in communication networks that require optimized transmission characteristics, especially a defined wave resistance and low coupling resistance, low damping and low crosstalk."). The '866 patent discloses spacing to reduce cross talk. "According to the invention, this is achieved by the electrical shielding subdividing the cable cross section into at least two shielding sectors, and a conductor pair running in each shielding sector, so that the two conductor pairs are shielded against each other and externally." '866 patent, Eng. transl. specification p. 2.
Claim 16. 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.	See Figure 3 of the '866 patent disclosing the separator being arranged to prevent the first twisted pair from contacting the jacket. 
Claim 17. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator has a concave	See Figure 1 of the '866 patent below disclosing two separators, each with a single concave shape. Also see Figure 3 of the '866 patent below disclosing each separator having two concave shapes.

Claim Element	Disclosure of DE 297 19 866 U1
shape.	 Figure 1 Figure 3
Claim 18. The communication cable as claimed in claim 17, 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.	To the extent that this limitation is not expressly or inherently disclosed, it would have been obvious to try. At the time of the invention, there had been a recognized problem or need in the art, which may include a design need or market pressure to solve a problem - in this case, a need to improve cross talk performance. As to a separator, there is a finite number of identified, predictable potential solutions to the recognized need or problem - the separator can either be less than or equal to 180 around a pair, or greater than 180 around the twisted pair. Given that only two choices existed, one of ordinary skill in the art could have pursued the cable with less than 180 degrees with a reasonable expectation of success. See Figure 2, where for some of the pairs, the separator does not go more than 180 degrees around the pair.  Figure 2 Alternatively, it would have been obvious to one of ordinary skill in the art in view of, for example, DE '484, which discloses a separator not extending more than 180 degrees around any one of the plurality of paired conductors. '537 patent Office Action, Mar. 25, 2005, p. 4.
Claim 19. An unshielded	The '866 patent discloses an unshielded communications cable: "An invention-

Claim Element	Disclosure of DE 297 19 866 U1
communications cable comprising:	specific data transmission cable depicted in figure 1 has four pairs 1 of insulated, stranded copper conductors . . .”; p. 3; “As an outer mechanical protection, an invention-specific transmission cable has a cable cover 4, which consists of customary thermoplastic cover materials. Especially EMC protective measures can <i>additionally</i> be taken by the application of metal foils and/or shielding plaits below the cable cover, <i>which, however, is not depicted.</i> ” pp. 3-4 (emphasis added).
a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors;	Page 3 of the ‘866 patent discloses a cable with 4 pairs of conductors. <i>See also</i> Figure 1, where the four items marked “1” represent twisted pairs. As can be seen in the figure, the conductors (item “2”) are insulated (item “3”).  Figur 1
a substantially flat configurable dielectric separator that consists of non-conductive, dielectric materials disposed between the plurality of twisted pairs of conductors that separates the first twisted pair of insulated conductors from the second twisted pair of	Page 5 of the ‘866 patent discloses the separator as either aluminum foil or aluminum foil covered in plastic. “The shielding 5 or the partial shielding 11, 12 preferably consists of metal foils, especially aluminum foils or aluminum foils laminated by plastic.” ‘866 patent, Eng. transl. specification p. 5. This second embodiment is a dielectric pair separator. U.S. Patent 3,622,683 (‘683 patent) discloses the plastic covering can be on one side of the separator, both sides of the separator, with the metal component sandwiched inside, or totally encase the metal component. As the metal foil is coating in plastic, it is non-conductive unless the plastic coating is breached.

Claim Element	Disclosure of DE 297 19 866 U1
insulated conductors;	Col. 4, ll. 48-60 and Figs. 5-8. <i>See also</i>, Exhibit 20, prosecution history of European Patent Application No. 00919342.6-2222 (EP Patent Publication No. 1157393), Interlocutory Decision in Opposition Proceedings, dated August 20, 2008, at 9-10 (where the European Patent Office held that it would have been obvious to modify the separator of the '866 patent to consist of non-conductive material in view of prior art disclosing plastic coated metal foil). The prosecution history of European Patent Application No. 00919342.6-2222 is cited herein as background information for the Examiner's reference. The separator of the '866 patent is configurable and substantially flat. See the configurations below in Figures 1-5 of the '866 patent.  Figure 2 Figure 3 Figure 4 Figure 5 Compare Figure 1 of the '866 patent to the disclosed embodiments depicted in Figures 5-10 of the '537 patent (reproduced below):

Claim Element	Disclosure of DE 297 19 866 U1
	 FIG. 5  FIG. 6  FIG. 7  FIG. 8  FIG. 9  FIG. 10
and a jacket enclosing the plurality of twisted pairs of	The '866 patent discloses a cable with the wires within a protective sheath (item

Claim Element	Disclosure of DE 297 19 866 U1
insulated conductors and the configurable dielectric separator;	4 in Figure 1).
wherein the substantially flat configurable dielectric separator includes a foamed polymer.	U.S. Patent No. 5,670,748 discloses at col. 2, ll. 28-31 fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. The '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." <i>See</i> '748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed polymer disclosed in the '748 patent with the pair separator of the '866 patent, to arrive at the recitation of Claim 19.
Claim 20. The communications cable as claimed in claim 19, wherein the substantially flat configurable dielectric separator includes a flame-retardant, low-dielectric constant, foamed polymer tape.	The '748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> '748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." <i>See</i> '748 patent, Table 1 and col. 3, ll. 11-25.

Claim Element	Disclosure of DE 297 19 866 U1
	One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the '748 patent with the configurable tape separator of the '866 patent to arrive at the recitations of Claim 20.
Claim 21. The communications cable as claimed in claim 19, wherein the substantially flat configurable dielectric separator includes a foamed fluorinated ethylene propylene material.	The '748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> '748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." <i>See</i> '748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the '748 patent with the configurable tape separator of the '866 patent to arrive at the recitations of Claim 21.
Claim 22. The communications cable as claimed in claim 19, wherein the substantially flat configurable dielectric separator is a flame-retardant, foamed polymer tape.	The '748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> '748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame

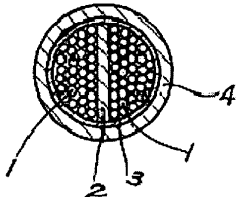
Claim Element	Disclosure of DE 297 19 866 U1
	retardancy.” See ‘748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the ‘748 patent with the configurable tape separator of the ‘866 patent to arrive at the recitations of Claim 22.

Claim Chart for U.S. Patent No. 6,998,537

Based on JP Patent No. Sho43(1968)-15470

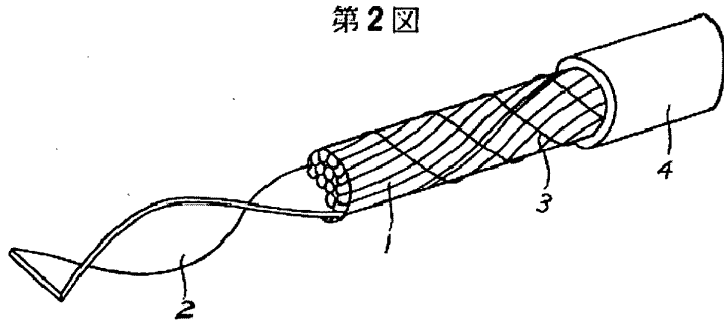
Claim Element	Disclosure of JP Patent No. Sho43(1968)-15470
Claim 1. A finished communications cable comprising:	The '470 patent discloses an "alternately stranded cable." Abstract.
a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors;	The '470 patent discloses a cable with a plurality of twisted pairs. <i>See</i> '470 Patent Translation, Detailed Explanation of the Invention ("As communications cable, there is a tendency to use a plurality of either insulated element wires or else <u>stranded pairs</u> or stranded quad of such, or otherwise to use so-called [alternately] stranded cable with which units of the wires are stranded in a manner so that the stranding direction is reversed at points in time within a fixed cycle.") (emphasis added).
a substantially flat configurable dielectric separator disposed between the plurality of twisted pairs of conductors in the finished communications cable, that separates the first twisted pair of insulated conductors from the second twisted pair of insulated conductors;	The '470 patent discloses a flat pair separator (2), as shown in Figure 2 of the patent, which is reproduced below: 第 2 図 The first twisted pair is on one side of the separator (2) and the second twisted pair is on the other side of the separator. The separator is made of rigid plastic (dielectric). <i>See</i>

Claim Element	Disclosure of JP Patent No. Sho43(1968)-15470
	'470 Patent Translation, Detailed Explanation of the Invention. The pair separator is configurable. The plastic is kept at a certain temperature such that the separator can be bent into the alternatively twisting shape as the cable is twisted. See '470 Patent Translation, Detailed Explanation of the Invention ("Core material 2 is most effectively shown in Figure 2; as shown therein, the material is formed into a reciprocatingly twisted state by slowly changing the facing of both surfaces as the material moves in the longitudinal direction. This can be achieved by twisting the facing direction of the plate body to the opposing direction at fixed intervals while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature.").
and a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator;	The '470 patent discloses a cable with a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator (the jacket is item 4 in Figure 2, above).
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 finished communications cable.	The '470 patent teaches twisting the cable about a common axis to finish the cable. The cable is alternatively twisted about its center axis. Figure 2 of the '470 patent, reproduced above, depicts the characteristic twist of the cable. "This can be achieved by twisting the facing direction of the plate body to the opposing direction at fixed intervals while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature." '470 patent translation, Detailed Explanation of the Invention.
Claim 2. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator is arranged to have	The '470 patent discloses a separator that is substantially flat, configurable, dielectric, and arranged to have no more than one concave surface to provide a groove extending longitudinally. Figure 1 of the '470 patent, reproduced below, shows that the separator 2 is flat. Figure 1 shows a cross section of a groove extending along the length of the cable. The separator 2 is configured through the application of twist: "Core material 2 . . . is formed into a reciprocatingly twisted state by slowly changing the facing of both

Claim Element	Disclosure of JP Patent No. Sho43(1968)-15470
no more than one concave surface to provide a groove extending along a longitudinal length of the communications cable.	surfaces as the material moves in the longitudinal direction.” English translation, Detailed Explanation of the Invention. The separator is dielectric: in one embodiment the material of the separator is “rigid plastic.” English translation, Detailed Explanation of the Invention. 第 1 図 
Claim 4. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator includes a foamed polymer.	U.S. Patent No. 5,670,748 discloses at col. 2, ll. 28-31 fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. The ‘748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, ‘748 patent. The ‘748 patent further discloses “the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy.” <i>See</i> ‘748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed polymer disclosed in the ‘748 patent with the pair separator of the ‘470 patent, to arrive at the

Claim Element	Disclosure of JP Patent No. Sho43(1968)-15470
	recitation of Claim 4.
Claim 5. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator includes a woven fiberglass tape.	European patent EP0569217A2 discloses the use of woven fiberglass as an insulating material. The woven fiberglass is cut into tape and used as insulating material. <i>See, e.g.,</i> ‘217 patent, Abstract (“The composite sheet is then slit into tapes with substantially no unraveling of the fiberglass component at the slit edges of the tapes. The resultant tapes are easily wrapped on, and adhered to, conductors, such as magnet wire, or the like, by remelting and resolidifying the thermoplastic layer. The tape possesses excellent dielectric properties”). One of ordinary skill in the art would have known to combine the woven fiberglass material disclosed in the ‘217 patent with the pair separator of the ‘470 patent, to arrive at the recitation of Claim 5.
Claim 6. 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.	The ‘748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> ‘748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the ‘748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally,</i> ‘748 patent. The ‘748 patent further discloses “the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy.” <i>See</i> ‘748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the ‘748 patent with the configurable tape separator of the ‘470 patent to arrive at the recitations of Claim 6.
Claim 7. The communications cable as claimed in claim 1, wherein the substantially flat	The ‘748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> ‘748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the ‘748 patent is directly related to materials used for flame retardancy and

Claim Element	Disclosure of JP Patent No. Sho43(1968)-15470
configurable dielectric separator includes a foamed fluorinated ethylene propylene material.	smoke suppression in data communications cables. <i>See generally</i>, ‘748 patent. The ‘748 patent further discloses “the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy.” <i>See</i> ‘748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the ‘748 patent with the configurable tape separator of the ‘470 patent to arrive at the recitations of Claim 7.
Claim 8. The communications cable as claimed in claim 1, wherein the substantially flat configurable dielectric separator is a flame-retardant, foamed polymer tape.	The ‘748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> ‘748 patent, Table 1. Indeed, the ‘748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, ‘748 patent. The ‘748 patent further discloses “the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy.” <i>See</i> ‘748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the ‘748 patent with the configurable tape separator of the ‘470 patent to arrive at the recitations of Claim 8.
Claim 11. The communications cable as claimed in claim 1, further comprising a conductive shield substantially	A conductive shield would be obvious to try as there are only two choices - a conductive shield or no conductive shield. <i>See KSR Int’l Co. v. Teleflex Inc.</i>, 550 U.S. 398, 421 (2007) (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”).

Claim Element	Disclosure of JP Patent No. Sho43(1968)-15470
surrounding the plurality of twisted pairs of insulated conductors and the substantially flat configurable dielectric separator.	
Claim 19. An unshielded communications cable comprising:	The '470 patent discloses an unshielded communications cable: See Figure 1 above disclosing elements 1, twisted pairs; 2, flat separator; 3, binder thread and 4, cable sheath. No shield is disclosed. English translation, Detailed Explanation of the Invention.
a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors;	The '470 patent discloses a cable with a plurality of twisted pairs. <i>See</i> '470 Patent Translation, Detailed Explanation of the Invention ("As communications cable, there is a tendency to use a plurality of either insulated element wires or else <u>stranded pairs</u> or stranded quad of such, or otherwise to use so-called [alternately] stranded cable with which units of the wires are stranded in a manner so that the stranding direction is reversed at points in time within a fixed cycle.") (emphasis added).
a substantially flat configurable dielectric separator that consists of non-conductive, dielectric materials 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;	The '470 patent discloses a flat pair separator (2), as shown in Figure 2 of the patent, which is reproduced below: 

Claim Element	Disclosure of JP Patent No. Sho43(1968)-15470
	The first twisted pair is on one side of the separator (2) and the second twisted pair is on the other side of the separator. The separator is made of rigid plastic (dielectric). <i>See</i> '470 Patent Translation, Detailed Explanation of the Invention. The pair separator is configurable. The plastic is kept at a certain temperature such that the separator can be bent into the alternatively twisting shape as the cable is twisted. <i>See</i> '470 Patent Translation, Detailed Explanation of the Invention ("Core material 2 is most effectively shown in Figure 2; as shown therein, the material is formed into a reciprocatingly twisted state by slowly changing the facing of both surfaces as the material moves in the longitudinal direction. This can be achieved by twisting the facing direction of the plate body to the opposing direction at fixed intervals while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature.").
and a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator;	The '470 patent discloses a cable with the twisted pairs and separator within a protective sheath (item 4 in Figure 2, above).
wherein the substantially flat configurable dielectric separator includes a foamed polymer.	U.S. Patent No. 5,670,748 discloses at col. 2, ll. 28-31 fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. The '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." <i>See</i> '748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed polymer disclosed in the '748 patent with the pair separator of the '470 patent, to arrive at the

Claim Element	Disclosure of JP Patent No. Sho43(1968)-15470
	recitation of Claim 19.
Claim 20. The communications cable as claimed in claim 19, wherein the substantially flat configurable dielectric separator includes a flame-retardant, low-dielectric constant, foamed polymer tape.	The '748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> '748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." <i>See</i> '748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the '748 patent with the configurable tape separator of the '470 patent to arrive at the recitations of Claim 20.
Claim 21. The communications cable as claimed in claim 19, wherein the substantially flat configurable dielectric separator includes a foamed fluorinated ethylene propylene material.	The '748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> '748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." <i>See</i> '748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the '748 patent with the configurable tape separator of the '470 patent to arrive at the recitations of Claim 21.

Claim Element	Disclosure of JP Patent No. Sho43(1968)-15470
Claim 22. The communications cable as claimed in claim 19, wherein the substantially flat configurable dielectric separator is a flame-retardant, foamed polymer tape.	The '748 patent discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. <i>See</i> '748 patent, Table 1. FEP has a low dielectric constant and is flame retardant. <i>Id.</i> Indeed, the '748 patent is directly related to materials used for flame retardancy and smoke suppression in data communications cables. <i>See generally</i>, '748 patent. The '748 patent further discloses “the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy.” <i>See</i> '748 patent, Table 1 and col. 3, ll. 11-25. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in the '748 patent with the configurable tape separator of the '470 patent to arrive at the recitations of Claim 22.

Decision Granting *Inter Partes* Reexamination, Sept. 28, 2009 (Excerpts)

ORDER GRANTING/DENYING REQUEST FOR INTER PARTES REEXAMINATION	Control No.	Patent Under Reexamination	
	95/000,476	6998537	
	Examiner	Art Unit	
	MINH NGUYEN	3992	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

The request for *inter partes* reexamination has been considered. Identification of the claims, the references relied on, and the rationale supporting the determination are attached.

Attachment(s): ☐ PTO-892 ☒ PTO/SB/08 ☐ Other: _____

1. ☒ The request for *inter partes* reexamination is GRANTED.

☒ An Office action is attached with this order.

☐ An Office action will follow in due course.

2. ☐ The request for *inter partes* reexamination is DENIED.

This decision is not appealable. 35 U.S.C. 312(c). Requester may seek review of a denial by petition to the Director of the USPTO within ONE MONTH from the mailing date hereof. 37 CFR 1.927. EXTENSIONS OF TIME ONLY UNDER 37 CFR 1.183. In due course, a refund under 37 CFR 1.26(c) will be made to requester.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Order.

DECISION GRANTING *INTER PARTES* REEXAMINATION

Reexamination has been requested for claims 1-22 of the United States Patent Number 6,998,537 to Clark et al., entitled "MULTI-PAIR DATA CABLE WITH CONFIGURABLE CORE FILLING AND PAIR SEPARATION".

A substantial new question of patentability affecting claims 1-22 of the United States Patent Number 6,998,537 to Clark et al. (the '537 patent, hereafter) is raised by the request for *inter parte* reexamination.

Service of Papers

After the filing of a request for reexamination by a third party requester, any document filed by either the patent owner or the third party requester must be served on the other party (or parties where two or more third party requester proceedings are merged) in the reexamination proceeding in the manner provided in 37 CFR 1.248. See 37 CFR 1.550(f).

Extensions of Time

Extensions of time under 37 CFR 1.136(a) will not be permitted in *inter partes* reexamination proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 314(c) requires that *inter partes* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.937). Patent owner extensions of time in *inter partes* reexamination proceedings are provided for in 37 CFR 1.956. Extensions of time are not available for third party requester comments,

Analysis of some the Prior Art Provided in the Request

1. Regarding GmbH '866 reference:

It is agreed that the consideration of GmbH '866 raises a substantial new question of patentability to claims 1-3, 11-13 and 15-17 of the '537 patent. As pointed out by the Requester in the Request for Reexamination at pages 56-65, GmbH '866 teaches a data communications cable having four twisted pairs of insulated conductors 1, including a first twisted pair and a second twisted pair. The cable disclosed in GmbH '866 includes substantially flat two dielectric pair separators 5. In the configuration shown in Fig. 3, each pair separator has two folds that form grooves for the twisted pairs. As can be seen from Fig. 3, the separator is disposed between the twisted pairs and jacket 4 encloses the plurality of twisted pairs of insulated conductors and the configurable dielectric separator. GmbH further discloses stranding the cable, such as SZ stranding (GmbH '866 at page 6) and the pair separator may be made of a metal foil, such as aluminum, or a metal foil laminated by plastic. There is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claims are patentable. However, the prosecution history of the base application, US Serial No. 10/336,535, does not indicate that GmbH '866 was included for consideration by the Examiner in charge of the base application. Accordingly, GmbH '866 raises a substantial new question of patentability as to claims 1-3, 11-13 and 15-17 which question has not been decided in the previous examination of the '537 patent.

2. Regarding GmbH '866 and Roberts '683 references:

It is agreed that the consideration of the combination of GmbH '866 and Roberts '683 raises a substantial new question of patentability to claims 1-3, 11-13 and 15-17 of the 537

Office Action, Sept. 28, 2009 (Excerpts)



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/000,476	07/13/2009	6998537	M0506-702650	8496
37462 7590 09/28/2009 LANDO & ANASTASI, LLP ONE MAIN STREET, SUITE 1100 CAMBRIDGE, MA 02142			EXAMINER NGUYEN, MINH T	
			ART UNIT 3992	PAPER NUMBER
			MAIL DATE 09/28/2009	DELIVERY MODE PAPER

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.



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THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS

Scott Petty
KING & SPALDING
1180 Peachtree Street, NE
Atlanta, GA 30309-3521

Date: 9-28-09

**Transmittal of Communication to Third Party Requester
Inter Partes Reexamination**

REEXAMINATION CONTROL NO. : 95000476
PATENT NO. : 6998537
TECHNOLOGY CENTER : 3999
ART UNIT : 3992

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified Reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the inter partes reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an ex parte reexamination has been merged with the inter partes reexamination, no responsive submission by any ex parte third party requester is permitted.

All correspondence relating to this inter partes reexamination proceeding should be directed to the Central Reexamination Unit at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

PTOL-2070(Rev.07-04)

OFFICE ACTION IN INTER PARTES REEXAMINATION	Control No.	Patent Under Reexamination	
	95/000,476	6998537	
	Examiner	Art Unit	
	MINH NGUYEN	3992	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Responsive to the communication(s) filed by:
 Patent Owner on _____
 Third Party(ies) on 13 July 2009

RESPONSE TIMES ARE SET TO EXPIRE AS FOLLOWS:

For Patent Owner's Response:
2 MONTH(S) from the mailing date of this action. 37 CFR 1.945. EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.956.

For Third Party Requester's Comments on the Patent Owner Response:
 30 DAYS from the date of service of any patent owner's response. 37 CFR 1.947. NO EXTENSIONS OF TIME ARE PERMITTED. 35 U.S.C. 314(b)(2).

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

This action is not an Action Closing Prosecution under 37 CFR 1.949, nor is it a Right of Appeal Notice under 37 CFR 1.953.

PART I. THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892
2. ☐ Information Disclosure Citation, PTO/SB/08
3. ☐ _____

PART II. SUMMARY OF ACTION:

- 1a. ☒ Claims 1-22 are subject to reexamination.
- 1b. ☐ Claims _____ are not subject to reexamination.
2. ☐ Claims _____ have been canceled.
3. ☐ Claims _____ are confirmed. [Unamended patent claims]
4. ☐ Claims _____ are patentable. [Amended or new claims]
5. ☒ Claims 1-22 are rejected.
6. ☐ Claims _____ are objected to.
7. ☐ The drawings filed on _____ ☐ are acceptable ☐ are not acceptable.
8. ☐ The drawing correction request filed on _____ is: ☐ approved. ☐ disapproved.
9. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d). The certified copy has:
☐ been received. ☐ not been received. ☐ been filed in Application/Control No 95000476.
10. ☐ Other _____

INTER PARTES REEXAMINATION INITIAL OFFICE ACTION

This first Office action on the merits is being mailed together with the order granting reexamination. 37 CFR 1.935.

Service of Papers

After the filing of a request for reexamination by a third party requester, any document filed by either the patent owner or the third party requester must be served on the other party (or parties where two or more third party requester proceedings are merged) in the reexamination proceeding in the manner provided in 37 CFR 1.248. See 37 CFR 1.550(f).

Extensions of Time

Extensions of time under 37 CFR 1.136(a) will not be permitted in *inter partes* reexamination proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 314(c) requires that inter partes reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.937). Patent owner extensions of time in inter partes reexamination proceedings are provided for in 37 CFR 1.956. Extensions of time are not available for third party requester comments, because a comment period of 30 days from service of patent owner's response is set by statute 35 U.S.C. 314(b)(3). Time periods may be extended only upon a strong showing of sufficient cause.

Requester's proposed rejection: Ground 5

Requester's proposed anticipation rejection of claims 1-3, 11-13, and 15-18 under 35 USC 102(b) by GmbH '866 is adopted.

The proposed anticipation rejection of claims 1-3, 11-13, and 15-17 is adopted for the same reasons provided by the Requester in the Request for Reexamination at pages 56-66.

The proposed rejection of claim 18 at pages 87-88 is adopted with modification.

Claim 1 recites:

A finished communications cable comprising:

- (1a) a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors;
- (1b) a substantially flat configurable dielectric separator disposed between the plurality of twisted pairs of conductors in the finished communications cable, that separates the first twisted pair of insulated conductors from the second twisted pair of insulated conductors; and
- (1c) a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator;
- (1d) 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 finished communications cable.

Regarding 1a, GmbH '866 discloses a plurality of twisted pairs, including a first twisted pair and a second twisted pair. Fig. 3 of GmbH shows four twisted pairs. The cable contains four twisted pairs of insulated conductors (item 1). The cable also includes two substantially flat configurable pair separators (item 5). The conductors are insulated. See '866 patent, English trans, at 3 ("The copper conductor or cants preferably have an insulation 3 consisting of a

Requester's proposed rejection: Ground 14

Requester's proposed obviousness rejection of claims 19-22 under 35 USC 103(a) over GmbH '866 in view of Roberts '683 and further in view of Gingue '748 **is adopted**.

The proposed obviousness rejection of claims 19-22 is adopted for the same reasons and motivations provided by the Requester in the Request for Reexamination at pages 88-99, and repeated below.

Claims 19-22 are rejected under 35 USC 103(a) over GmbH '866 in view of Roberts '683 and further in view of Gingue '748.

Claim 19 recites:

An unshielded communications cable comprising:

- (19a) a plurality of twisted pairs of insulated conductors comprising a first twisted pair of insulated conductors and a second twisted pair of insulated conductors;
- (19b) a substantially flat configurable dielectric separator that consists of non-conductive, dielectric materials 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
- (19c) a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable dielectric separator;
- (19d) wherein the substantially flat configurable dielectric separator includes a foamed polymer.

Regarding 19a and 19c, because these limitations are the same as 1a and 1c discussed in Ground 5, these discussions are incorporated herein by reference.

Requester's proposed rejection: Ground 23

Requester's proposed anticipation rejection of claims 1-2 under 35 USC 102(b) by JP '470 is adopted.

The proposed anticipation rejection of these claims 1-2 is adopted for the same reasons provided by the Requester in the Request for Reexamination at pages 141-144, and repeated below.

Claim 1:

Regarding 1a, JP '470 discloses a cable with a plurality of twisted pairs. See JP '470 Translation, Detailed Explanation of the Invention ("As communications cable, there is a tendency to use a plurality of either insulated element wires or else stranded pairs or stranded quad of such, or otherwise to use so-called [alternately] stranded cable with which units of the wires are stranded in a manner so that the stranding direction is reversed at points in time within a fixed cycle.") (emphasis added).

Regarding 1b, JP '470 discloses a fiat pair separator (2), as shown in Fig. 2. The first twisted pair is on one side of the separator (2) and the second twisted pair is on the other side of the separator. The separator is made of rigid plastic (dielectric). See JP '470 Translation, Detailed Explanation of the Invention. The pair separator is configurable, at least during the cable manufacturing process. The plastic is kept at a certain temperature such that the separator can be bent into the alliteratively twisting shape as the cable is twisted. See JP '470 Translation, Detailed Explanation of the Invention ("Core material 2 is most effectively shown in Figure 2; as shown therein, the material is formed into a reciprocatingly twisted state by slowly changing the facing of both surfaces as the material moves in the longitudinal direction. This

can be achieved by twisting the facing direction of the plate body to the opposing direction at fixed intervals while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature.") The separator then becomes rigid once configured into its desired configuration.

Regarding 1c, JP '470 discloses a cable with the twisted pairs and separator within a protective sheath (item 4 in Fig. 2).

Regarding 1d, the entire JP '470 teaches twisting the cable about a common axis to finish the cable. The cable is alternatively twisted about its center axis. Fig. 2 of JP '470 depicts the characteristic twist of the cable.

Claim 2:

JP '470 discloses a separator that is substantially flat, configurable, dielectric, and arranged to have no more than one concave surface to provide a groove extending longitudinally. Fig. 1 of JP '470 shows that the separator 2 is flat and a cross section of a groove extending along the length of the cable. The separator 2 is configured through the application of twist: "Core material 2...is formed into a reciprocatingly twisted state by slowly changing the facing of both surfaces as the material moves in the longitudinal direction." English translation, Detailed Explanation of the Invention. The separator is dielectric: in one embodiment the material of the separator is "rigid plastic." English translation, Detailed Explanation of the Invention. Thus, JP the '470 also discloses the limitation of claim 2.

Requester's proposed rejection: Ground 24

Requester's proposed obviousness rejection of claims 4 and 6-8 under 35 USC 103(a) over JP '470 in view of Gingue '748 is adopted.

The proposed obviousness rejection of claims 4 and 6-8 is adopted for the same reasons and motivations provided by the Requester in the Request for Reexamination at pages 145-151.

The reasons and motivations are discussed in Ground 8 above and they are incorporated herein by reference.

Requester's proposed rejection: Ground 25

Requester's proposed obviousness rejection of claim 5 under 35 USC 103(a) over JP '470 in view of Martin '217 is adopted.

The proposed obviousness rejection of claim 5 is adopted for the same reason and motivation provided by the Requester in the Request for Reexamination at pages 151-152.

The reason and motivation are discussed in Ground 9 above and they are incorporated herein by reference.

Requester's proposed rejection: Ground 26

Requester's proposed obviousness rejection of claim 11 under 35 USC 103(a) over JP '470 **is adopted**.

The proposed obviousness rejection of claim 11 is adopted for the same reason and motivation provided by the Requester in the Request for Reexamination at page 153, and repeated below.

JP '470 does not disclose a conductive shield as called for in the claim. However, adding a conductive shield would be obvious to try as there are only two design choices - a conductive shield or no conductive shield. See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) ("When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp."). Accordingly, it would have been obvious to a person of ordinary skill in the art to include a conductive shield with the cable structure of JP '470 to satisfy a recognized design need.

Requester's proposed rejection: Ground 27

Requester's proposed obviousness rejection of claims 19-22 under 35 USC 103(a) over JP '470 in view of Gingue '748 is adopted.

The proposed obviousness rejection of claims 19-22 is adopted for the same reasons and motivations provided by the Requester in the Request for Reexamination at pages 153-160, and repeated below.

Claim 19:

Claim limitations 19a, 19b and 19c of the '537 patent correspond to claims limitations 1a, 1b and 1c, respectively. JP '470 discloses claim limitations 19a, 19b and 19c as discussed in Ground 23 regarding 1a, 1b and 1c, respectively, which are incorporated herein by reference. Further, JP '470 discloses that the separator consists of rigid plastic which is non-conductive. See JP '470 Translation, Detailed Explanation of the Invention.

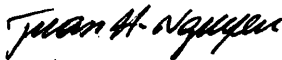
Regarding 19d, JP '470 discloses a plastic separator. To the extent that this material is not "foamed," Gaeris '748 teaches the benefits of foaming a polymer for use in a communication cable. It discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. FEP has a low dielectric constant (that is, is a dielectric material) and is a flame retardant polymer. Gaeris '748 is directly related to materials used for flame retardancy and smoke suppression in data communications cables. Gaeris '748 further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." Gaeris '748, Table 1 and col. 3:11-25. In other words, Gaeris '748

Application/Control Number: 95/000,476
Art Unit: 3992

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Any inquiry concerning this communication or earlier communications from the Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.


Conferee # 1


Conferee # 2



Minh Nguyen
Primary Examiner
571-272-1748
Art Unit 3992

Amendment and Response to Office Action, Dec. 12, 2009 (Excerpts)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.: 6,998,537
Re-examination Control No.: 95/000,476
Re-examination Filing Date: July 13, 2009
Re-examination Confirmation No.: 8496
Examiner: NGUYEN; Minh T.
Art Unit: 3992

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

The undersigned hereby certifies that this document is being electronically filed in accordance with § 1.6(a)(4), on the 23rd day of December, 2009.

/Sarah M. Gates/
Sarah M. Gates

Mail Stop *Inter Partes Reexam*
Attn: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AND RESPONSE TO OFFICE ACTION IN *INTER PARTES*
REEXAMINATION

Sir:

In response to the Office Action mailed September 28, 2009, please amend the above-identified application as follows. Changes to the Claims are shown by 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.

REMARKS

This Amendment and Response is filed in response to the Office Action mailed September 28, 2009. The Patent Owner presents the following remarks in support of the patentability of the claims.

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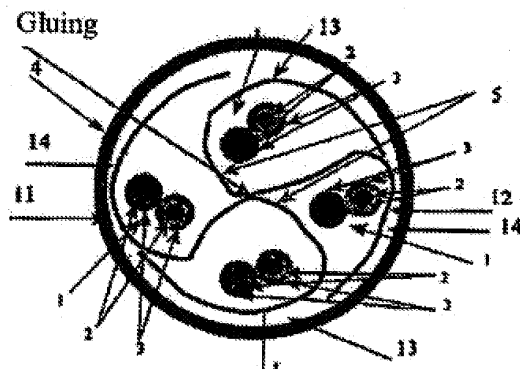


Figure 3

A. Claims 1, 11, 15, 17 and 18 are Not Anticipated by the '866 Patent

Claims 1-3, 11-13 and 15-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the '866 patent. The Patent Owner has amended the claims, overcoming this rejection.

As discussed below, the '866 patent does not disclose or suggest several limitations recited in claim 1. Accordingly, and in view of the following, withdrawal of the rejection of claim 1 is respectfully requested. Claims 11, 15, 17 and 18 depend from claim 1 and are therefore allowable for at least the same reasons as claim 1. Accordingly, and in view of the following, withdrawal of the rejection of claims 11, 15, 17 and 18 is respectfully requested.

1. No Teaching of Flat Separator

Independent claim 1 recites a finished communications cable comprising “a substantially flat configurable dielectric pair separator disposed between the plurality of twisted pairs of conductors in the finished communications cable, and arranged...so as to be substantially flat in a radial cross-section taken through the finished communications cable.” In the Office Action it is stated that the '866 patent discloses a cable that includes a substantially flat configurable separator (item 5). The Patent Owner respectfully disagrees. The shielding foils (item 5) disclosed in the '866 patent are described and illustrated in the figures of the '866 patent (reproduced above) as being wrapped around the conductors. Thus, as clearly seen in the cross-sectional view of the cable of the '866 patent, the shielding foils are not substantially flat, but rather are shaped into various shapes, such as, for example, a figure 8 or figure 6. (*See, page 5, 4th paragraph of English translation of the '866 patent*). Independent claim 1 recites that the separator is substantially flat in a radial cross-section taken through the finished communications

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cable. As can be clearly seen with reference to Figures 1-3 of the '866 patent, which illustrate cross-sectional views of the cable, the shielding foils are not substantially flat in a radial cross-section taken through the cable, but instead are arranged in various shapes and wrapped around the conductors. Thus, the '866 patent does not disclose or suggest a finished communications cable comprising a substantially flat configurable dielectric separator, as recited in claim 1.

2. No Teaching of Cabling

Claim 1 further recites that “the plurality of twisted pairs of insulated conductors and the substantially configurable dielectric separator are twisted about a common axis to form the finished communications cable.” In the Office Action, it is stated that the '866 patent “discloses stranding the cable, such as SZ stranding.” The Patent Owner respectfully disagrees. The '866 patent discloses stranding of the individual conductors to form each twisted pair, and specifically discloses using “SZ” stranding to do so. The '866 patent states that “the stranding of pair 1 can consist of a so-called helix stranding or an SZ stranding.” (*See page 3, 3rd paragraph of English translation of the '866 patent*). However, the '866 patent does not disclose or suggest cabling, i.e. twisting together the entire cable core, the plurality of twisted pairs and the configurable dielectric pair separator about a common axis to form the twisted pair cable. Rather, the '866 patent discloses only twisting of the conductor pairs to form helixes, not twisting/cabling of the cable as a whole. Cabling of the cable including the shielding foils disclosed in the '866 patent would be complex, would likely result in inoperable cables, and so would have been avoided. (*Gareis Dec. at 14-17*). Thus, the '866 patent does not disclose or suggest a data communications cable in which the configurable dielectric pair separator, the first twisted pair of insulated conductors and the second twisted pair of insulated conductors are twisted about a common central axis to form a twisted pair cable, as recited in claim 1.

3. No Teaching of Dielectric Separator

Claim 1 recites a “substantially flat configurable dielectric separator.” In the Office Action, it is stated that the “separator” of the '866 patent “is dielectric because...[it] may be made of...a metal foil laminated by plastic.” The Patent Owner respectfully disagrees. As discussed above, the term “dielectric” means “a non-conducting substance” or “a non-conductor of electricity.” The shielding foils of the '866 patent are not “dielectric” separators since in every embodiment they include a metal foil (which is electrically conductive” and their primary function is electromagnetic screening, which requires the electrically conductive metal foil.

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used for an insulation layer does not provide any teaching or suggestion to use that material to form a pair separator.

H. New Claims 23-34 are Patentable Over the Yonechi '485 Patent

New claims 23-25 depend from independent claim 1, and are therefore allowable for at least the same reasons discussed above with regard to claim 1.

New independent claim 26 recites a “finished twisted pair data communications cable comprising: four twisted pairs of insulated conductors...a substantially flat configurable non-conductive pair separator disposed between the four twisted pairs of insulated conductors and arranged to separate the first twisted pair from the second twisted pair, the substantially flat configurable non-conductive pair separator being substantially flat in a radial cross-section taken through the finished twisted pair data communications cable.”

As discussed above, the Yonechi '485 patent whether considered alone or in any of the combinations proposed in the Office Action, does not disclose or suggest a cable comprising four twisted pairs and a substantially flat configurable separator that is substantially flat in radial cross-section taken through the cable. For at least these reasons, new claim 26 patentably distinguishes over the Yonechi '485 patent and over the various combinations including the Yonechi '485 patent proposed in the Office Action, and is believed to be in condition for allowance.

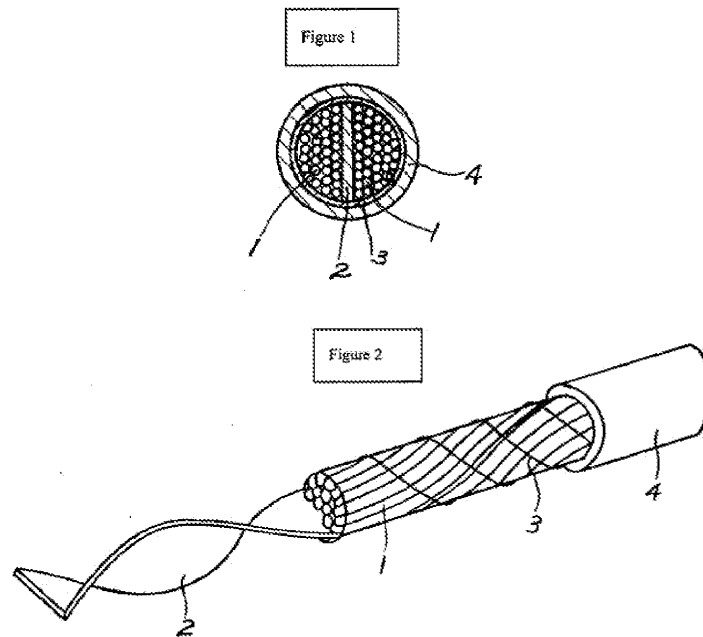
New claims 27-34 depend from independent claim 26 and are therefore allowable for at least the same reasons as claim 26.

IX. REJECTIONS IN VIEW OF JP SHO43(1968)-15470

Japanese Patent No. Sho43(1968)-15470 to Yanagida (hereinafter “JP-15470”) is directed to an alternately stranded cable in which the units of wires are stranded in a manner so that the stranding direction is reversed at points in time within a fixed cycle. JP-15470 discloses a cable “composed of a core material of which a plate body is formed so that the facing of its surface slowly becomes changed into a reciprocatingly twisted state; onto both surfaces of the core material, a plurality of either element wire or else stranded wire groupings of such are vertically run along the surfaces while being twisted.” (*See detailed description of the invention, second paragraph*). According to JP-15470, the twisted plate body prevents unraveling of the wire twisting. JP-15470 further discloses that the plate body is formed into the reciprocatingly

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twisted state by twisting the facing direction of the plate body to the opposing direction at fixed intervals while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature.



A. Claim 1 is Patentable Over JP-15470

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(b) as being anticipated by JP-15470. Claim 1 has been amended, as discussed above, and to the extent that the rejection applies to amended claim 1, the Patent Owner respectfully traverses the rejection.

Independent claim 1 recites a “finished communications cable comprising...a substantially flat configurable dielectric separator.” JP-15470 does not disclose or suggest that the plate body, once inside the finished cable, is configurable. To the contrary, as discussed above, JP-15470 discloses that the “plate body is formed into the reciprocatingly twisted state by twisting the facing direction of the plate body to the opposing direction at fixed intervals while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature.” However, there is absolutely no indication that once the rigid plastic material is no longer “at a prescribe temperature” and the cable is finished, that the plate body is configurable. Rather, JP-15470 discloses the opposite, namely that the plate body is not configurable in the

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cable, since JP-15470 states that the plate body is formed so that the facing of its surface slowly becomes changed into a reciprocatingly twisted state, and then maintains its shape to prevent the cable from becoming unraveled. Since claim 1 recites a finished communications cable comprising a configurable dielectric separator, the separator must retain its configurable nature inside the cable. By contrast, the plate body of JP-15470, in the finished cable, has a fixed, pre-formed shape, and is not configurable. Thus, JP-15470 does not disclose or suggest at least one limitation recited in claim 1, and accordingly, withdrawal of the rejection of claim 1 is respectfully requested.

B. Claims 4 and 6-8 are Patentable Over JP-15470 and the Gingue '748 Patent

Claims 4 and 6-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-15470 in view of the Gingue '748 patent. The Patent Owner has amended the claims, to the extent the rejection applies to the amended claims, respectfully traverses this rejection.

The proposed combination of JP-15470 and the Gingue '748 patent is improper. JP-15470 discloses that the plate body is formed of a rigid plastic or other material that can be formed into a reciprocatingly twisted shape and retains that shape. As discussed above, the Gingue '748 patent discloses materials used for insulation of electrical conductors, and does not disclose or suggest any type of separator. In particular, the Gingue '748 patent does not provide any teaching or suggestion that the materials it discloses would be suitable for use as the plate body described in JP-15470. Therefore, contrary to the assertions in the Office Action, one of ordinary skill in the art would not have found it obvious to modify JP-15470 based on the Gingue '748 patent.

Claims 4 and 6-8 depend from claim 1. As discussed above, JP-15470 does not disclose or suggest at least one limitation recited in independent claim 1. Even if one were to combine the Gingue '748 patent with JP-15470, as proposed in the Office Action, the Gingue '748 patent fails to cure the deficiencies of JP-15470 because the Gingue '748 patent, whether considered alone or in combination with JP-15470, does not disclose or suggest a substantially flat configurable dielectric separator, as recited in claim 1. Accordingly, claims 4 and 6-8 are allowable for at least the same reasons as claim 1, and withdrawal of the rejection of claims 4 and 6-8 is respectfully requested.

C. Claim 5 is Patentable Over JP-15470 and EP-217

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-15470 in view of EP-217. The Patent Owner has amended the claims, to the extent the rejection applies to the amended claims, respectfully traverses this rejection.

The proposed combination of JP-15470 and EP-217 is improper. JP-15470 discloses that the plate body is formed of a rigid plastic or other material that can be formed into a reciprocatingly twisted shape and retains that shape. As discussed above, EP-217 discloses a woven fiberglass tape used for insulating of electrical conductors, such as magnet wire, and does not disclose or suggest any type of separator. In particular, EP-217 does not provide any teaching or suggestion that the materials it discloses would be suitable for use as the plate body described in JP-15470. Therefore, contrary to the assertions in the Office Action, one of ordinary skill in the art would not have found it obvious to modify JP-15470 based on EP-217.

Claim 5 depends from independent claim 1. As discussed above JP-15470 does not disclose or suggest at least one limitation recited in claim 1. Even if one were to combine EP-217 with JP-15470, as proposed in the Office Action, EP-217 fails to cure the deficiencies of JP-15470 because EP-217, whether considered alone or in combination with JP-15470, does not disclose or suggest a substantially flat configurable dielectric separator, as recited in claim 1. Accordingly, claim 5 is allowable for at least the same reasons as claim 1, and withdrawal of the rejection of claim 5 is respectfully requested.

D. Claim 11 is Patentable Over JP-15470

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-15470. The Patent Owner has amended the claims, and to the extent the rejection applies to the amended claims, respectfully traverses this rejection.

Claim 11 depends from independent claim 10. As discussed above, JP-15470 does not disclose or suggest at least one limitation recited in claim 1 because JP-15470 does not disclose or suggest a “finished communications cable comprising...a substantially flat configurable dielectric separator,” as recited in claim 1. Claim 11 is therefore allowable for at least the same reasons as claim 1, and withdrawal of the rejection of claim 11 is respectfully requested.

E. Claims 19-22 are Patentable Over JP-15470 and the Gingue '748 Patent

Claims 19-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-15470 in view of the Gingue '748 patent. The Patent Owner has amended the claims, to the extent the rejection applies to the amended claims, respectfully traverses this rejection.

Independent claim 19 recites an “unshielded communications cable comprising...a substantially flat configurable dielectric separator...wherein the substantially flat configurable dielectric separator includes a foamed polymer.” In the Office Action it is asserted that it would have been obvious to one of skill in the art to modify JP-15470 to have the plate body formed of a foamed polymer, based on the disclosure of the Gingue '748 patent. The Patent Owner respectfully disagrees.

As discussed above, JP-15470 discloses that the plate body is formed of a rigid plastic or other material that can be formed into a reciprocatingly twisted shape and which retains that shape. There is no indication in either JP-15470 or the Gingue '748 patent, whether considered alone or in combination, that a foamed polymer would be a suitable rigid plastic or other material that can be formed into a stable reciprocatingly twisted shape, as required to form the plate body disclosed in JP-15470. As discussed above, the Gingue '748 patent discloses materials used for insulation of electrical conductors, and does not disclose or suggest any type of separator. Insulation layers and pair separators are completely different structures subject to different requirements and conditions, and fulfilling different purposes. In particular, the Gingue '748 patent does not provide any teaching or suggestion that the materials it discloses would have the properties necessary to be suitable for use as the plate body described in JP-15470. Therefore, contrary to the assertions in the Office Action, one of ordinary skill in the art would not have found it obvious to modify JP-15470 based on the Gingue '748 patent, and the proposed combination is improper.

Furthermore, even if one were to combine JP-15470 and Gingue '748 patent, as proposed in the Office Action, the references, whether considered alone or in combination, do not disclose or suggest a substantially flat configurable dielectric separator, as recited in claim 19. Furthermore, to the extent that the Gingue '748 patent discloses any of the materials recited in claims 19-22, it does so in the context of insulation materials, not materials for use in a separator.

In view of the foregoing, withdrawal of the rejection of claims 19-22 is respectfully requested.

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New independent claim 26 recites a “finished twisted pair data communications cable” comprising “four twisted pairs of insulated conductors” and “a substantially flat configurable non-conductive pair separator disposed between the four twisted pairs of insulated conductors and arranged to separate the first twisted pair from the second twisted pair.”

As discussed above, JP-7307 whether considered alone or in any of the combinations proposed in the Office Action, does not disclose or suggest a cable that includes four twisted pairs of insulated conductors, nor a substantially flat configurable separator. For at least these reasons, new claim 26 patentably distinguishes over JP-7307 and over the various combinations including JP-7307 proposed in the Office Action, and is believed to be in condition for allowance.

New claims 27-34 depend from independent claim 26 and are therefore allowable for at least the same reasons as claim 26.

XII. CONCLUSION

In view of the foregoing amendments and remarks, reconsideration is respectfully requested. This reexamination application should now be in condition for allowance; a notice to this effect is respectfully requested.

If there is a fee occasioned by this response, which is not covered by an accompanying payment, please charge any deficiency to Deposit Account No. 50/2762, Ref. I0181-9048(095).

Respectfully submitted,

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Docket No.: M0506-702650

Office Action Closing Prosecution, March 30, 2010 (Excerpts)



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/000,476	07/13/2009	6998537	M0506-702650	8496
37462 7590 03/30/2010 LANDO & ANASTASI, LLP ONE MAIN STREET, SUITE 1100 CAMBRIDGE, MA 02142			EXAMINER NGUYEN, MINH T	
			ART UNIT	PAPER NUMBER
			3992	
			MAIL DATE	DELIVERY MODE
			03/30/2010	PAPER

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.

PTOL-90A (Rev. 04/07)



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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

KING & SPALDING

1180 PEACHTREE STREET, NE

ATLANTA, GA 30309-3521

**Transmittal of Communication to Third Party Requester
Inter Partes Reexamination**

REEXAMINATION CONTROL NUMBER 95/000,476.

PATENT NUMBER 6998537.

TECHNOLOGY CENTER 3999.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

PTOL-2070 (Rev.07-04)

ACTION CLOSING PROSECUTION (37 CFR 1.949)	Control No.	Patent Under Reexamination	
	95/000,476	6998537	
	Examiner	Art Unit	
	MINH NGUYEN	3992	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Responsive to the communication(s) filed by:

Patent Owner on 23 December 2009

Third Party(ies) on 22 January 2010

Patent owner may once file a submission under 37 CFR 1.951(a) within 1 month(s) from the mailing date of this Office action. Where a submission is filed, third party requester may file responsive comments under 37 CFR 1.951(b) within 30-days (not extendable- 35 U.S.C. § 314(b)(2)) from the date of service of the initial submission on the requester. **Appeal cannot be taken from this action.** Appeal can only be taken from a Right of Appeal Notice under 37 CFR 1.953.

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

PART I. THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892
2. ☒ Information Disclosure Citation, PTO/SB/08
3. ☐ _____

PART II. SUMMARY OF ACTION:

- 1a. ☒ Claims 1-34 are subject to reexamination.
- 1b. ☐ Claims _____ are not subject to reexamination.
2. ☒ Claims 2,3,12-14 and 16 have been canceled.
3. ☐ Claims _____ are confirmed. [Unamended patent claims]
4. ☐ Claims _____ are patentable. [Amended or new claims]
5. ☒ Claims 1,4-11,15 and 17-34 are rejected.
6. ☐ Claims _____ are objected to.
7. ☐ The drawings filed on _____ ☐ are acceptable ☐ are not acceptable.
8. ☐ The drawing correction request filed on _____ is: ☐ approved. ☐ disapproved.
9. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d). The certified copy has:
☐ been received. ☐ not been received. ☐ been filed in Application/Control No _____
10. ☐ Other _____

INTER PARTES REEXAMINATION ACTION CLOSING PROSECUTION

This Action Closing Prosecution (ACP) is in response to Patent owner's response and amendment filed on 12/23/09 and Requester's comments filed on 1/22/10.

Status of the Claims

Claim 1 has been amended and claims 2-3, 12-14 and 16 have been canceled. New claims 23-34 are added. Claims 1, 4-11, 15 and 17-34 are pending.

Service of Papers

After the filing of a request for reexamination by a third party requester, any document filed by either the patent owner or the third party requester must be served on the other party (or parties where two or more third party requester proceedings are merged) in the reexamination proceeding in the manner provided in 37 CFR 1.248. See 37 CFR 1.550(f).

Extensions of Time

Extensions of time under 37 CFR 1.136(a) will not be permitted in *inter partes* reexamination proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 314(c) requires that *inter partes* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.937). Patent owner extensions of time in *inter partes* reexamination proceedings are provided for in 37 CFR 1.956. Extensions of time are not available for third party requester comments, because a comment period of 30 days from service of patent owner's response is set by statute.

Requester's proposed rejection: Ground 23

Requester's proposed anticipation rejection of claims 1-2, 23, 25 and 32 under 35 USC 102(b) by JP '470 is adopted in part.

The rejection of claim 2 is withdrawn because the claim is canceled. The rejection of claim 1 is maintained.

Patent owner's argument at pages 42-43 in the response filed on 12/23/09 is incorporated herein by reference.

Requester's comment at pages 26-27 in the response filed on 12/21/09 is incorporated herein by reference.

For the same reasons provided by the Requester, the anticipation rejection of claim 1 is maintained and repeated below.

The proposed anticipation rejection of claim 1 is adopted for the same reasons provided by the Requester in the Request for Reexamination at pages 141-144, and repeated below.

Claim 1:

Regarding 1a, JP '470 discloses a cable with a plurality of twisted pairs. See JP '470 Translation, Detailed Explanation of the Invention ("As communications cable, there is a tendency to use a plurality of either insulated element wires or else stranded pairs or stranded quad of such, or otherwise to use so-called [alternately] stranded cable with which units of the wires are stranded in a manner so that the stranding direction is reversed at points in time within a fixed cycle.") (emphasis added).

Regarding 1b, JP '470 discloses a fiat pair separator (2), as shown in Fig. 2. The first twisted pair is on one side of the separator (2) and the second twisted pair is on the other side of the separator. The separator is made of rigid plastic (dielectric). See JP '470 Translation, Detailed Explanation of the Invention. The pair separator is configurable, at least during the cable manufacturing process. The plastic is kept at a certain temperature such that the separator can be bent into the alliteratively twisting shape as the cable is twisted. See JP '470 Translation, Detailed Explanation of the Invention ("Core material 2 is most effectively shown in Figure 2; as shown therein, the material is formed into a reciprocatingly twisted state by slowly changing the facing of both surfaces as the material moves in the longitudinal direction. This can be achieved by twisting the facing direction of the plate body to the opposing direction at fixed intervals while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature.") The separator then becomes rigid once configured into its desired configuration.

Regarding 1c, JP '470 discloses a cable with the twisted pairs and separator within a protective sheath (item 4 in Fig. 2).

Regarding 1d, the entire JP '470 teaches twisting the cable about a common axis to finish the cable. The cable is alternatively twisted about its center axis. Fig. 2 of JP '470 depicts the characteristic twist of the cable.

New claim 23:

JP '470 discloses "[c]ore material 2 is most effectively shown in Figure 2; as shown therein, the material is formed into a reciprocatingly twisted state by slowly changing the facing of both surfaces as the material moves in the longitudinal direction. This can be achieved by twisting the facing direction of the plate body to the opposing direction at fixed intervals while

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maintaining the rigid **plastic** or other material of the horizontal plate at a prescribed temperature.") Emphasis added. English translation at page 1.

New claims 25 and 32:

As shown in Fig. 1, half of the pairs lie on one side of the separator and half of the pairs lie on the other. The pairs on one side of the separator are not separated by the separator of the cable.

Requester's proposed rejection: Ground 27

Requester's proposed obviousness rejection of claims 19-22 under 35 USC 103(a) over JP '470 in view of Gingue '748 is adopted.

Patent owner's argument at page 45 in the response filed on 12/23/09 is incorporated herein by reference.

Requester's comment at pages 26-28 in the response filed on 12/21/09 is incorporated herein by reference.

For the same reasons provided by the Requester, the obviousness rejection is maintained and repeated below.

The proposed obviousness rejection of claims 19-22 is adopted for the same reasons and motivations provided by the Requester in the Request for Reexamination at pages 153-160, and repeated below.

Claim 19:

Claim limitations 19a, 19b and 19c of the '537 patent correspond to claims limitations 1a, 1b and 1c, respectively. JP '470 discloses claim limitations 19a, 19b and 19c as discussed in Ground 23 regarding 1a, 1b and 1c, respectively, which are incorporated herein by reference. Further, JP '470 discloses that the separator consists of rigid plastic which is non-conductive. See JP '470 Translation, Detailed Explanation of the Invention.

Regarding 19d, JP '470 discloses a plastic separator. To the extent that this material is not "foamed," Gaeris '748 teaches the benefits of foaming a polymer for use in a communication cable. It discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. FEP has a low dielectric constant (that is, is a dielectric material) and is a flame retardant polymer. Gaeris '748 is directly

related to materials used for flame retardancy and smoke suppression in data communications cables. Gaeris '748 further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." Gaeris '748, Table 1 and col. 3:11-25. In other words, Gaeris '748 teaches that a foamed polymer, such as foamed FEP, can be used as a material in data communications cables to achieve flame retardancy and smoke suppression while meeting electrical performance.

Although Gaeris '748 claims are directed to a composition of materials for use to insulate a conductor, the "Background of the Invention" section discusses electrical and fire retardancy properties of materials used in cables generally. One of ordinary skill in the art would have known to combine the foamed FEP polymer disclosed in Gaeris '748 with the pair separator of JP '470 to arrive at the recitations of claim 19.

Because both references relate to data communications cables, Gaeris '748 is specifically related to the types of materials that are optimal to meet fire and electrical standards for copper twisted pair communications cables. Gaeris '748 demonstrates that one of ordinary skill in the art would have known that certain foamed polymers may be used to achieve flame retardance without degrading cable transmission performance. It would have been obvious to one of ordinary skill in the art to combine the materials of Gaeris '748 with the cable structure of JP '470 to achieve the subject matter of claim 19. One of ordinary skill in the art would have a reasonable expectation of success of using the materials of Gaeris '748 with the modified cable structure of JP '470 because of the substantial overlap of technology and the predictable result achieved by combining the relevant teachings. The combination of familiar elements according

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to known methods is likely to be obvious when it does no more than yield predictable results.

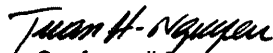
KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398,416 (2007).

Claims 20-22:

These claims are rejected for the same reasons and motivations presented in Ground 14 in the previous Office action and they are incorporated herein by reference.

Any inquiry concerning this communication or earlier communication from the examiner,
or as to the status of the proceeding, should be directed to the Central Reexamination Unit at
telephone number (571) 272-7705.


Conferee # 1


Conferee # 2



Minh Nguyen
Primary Examiner
571-272-1748
Art Unit 3992

Amendment and Response to Office Action, Dated April 28, 2010 (Excerpts)



04/28/10

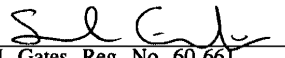
Express Mail No.: EB575685413 US
Date of Deposit: April 28, 2010
Docket No.: M0506-702650

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.: 6,998,537
Re-examination Control No.: 95/000,476
Re-examination Filing Date: July 13, 2009
Re-examination Confirmation No.: 8496
Examiner: NGUYEN, Minh T.
Art Unit: 3992

CERTIFICATE OF EXPRESS MAIL UNDER 37 C.F.R. § 1.10

The undersigned hereby certifies that this document is being transmitted via United States Express Mail with Express Mail Postage attached, addressed to the Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the 28th day of April, 2010.


Sarah M. Gates, Reg. No. 60,661

Mail Stop *Inter Partes Reexam*
Attn: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AND RESPONSE TO OFFICE ACTION IN *INTER PARTES*
REEXAMINATION

Sir:

In response to the Action Closing Prosecution mailed March 30, 2010, please amend the above-identified application as follows. Changes to the Claims are shown by 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 8 of this paper.

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proposes to modify, is a cable comprising a plate body that is formed into a reciprocatingly twisted shape and placed between the twisted pairs to prevent the unraveling of the twisting. Thus, any proposed modification that alters the material of the plate body such that it no longer can be formed into and retain that reciprocatingly twisted shape required by JP-15470 is improper since it would render the plate body unsatisfactory for its intended purpose. Since the Office Action has provided no evidence whatsoever that the woven fiberglass tape of EP-217 would be a suitable material for the plate body of JP-15407, the Office Action has failed to make a *prima facie* case of obviousness and the proposed combination is improper.

2. EP-217 Does Not Cure the Deficiencies of JP-15470

Claim 5 depends from independent claim 1. As discussed above JP-15470 does not disclose or suggest at least one limitation recited in claim 1. Even if one were to combine EP-217 with JP-15470, as proposed in the Office Action, EP-217 fails to cure the deficiencies of JP-15470 because EP-217, whether considered alone or in combination with JP-15470, does not disclose or suggest a substantially flat configurable dielectric separator, as recited in claim 1. Accordingly, claim 5 is allowable for at least the same reasons as claim 1, and withdrawal of the rejection of claim 5 is respectfully requested.

D. Claim 11 is Patentable Over JP-15470

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-15470. The Patent Owner respectfully traverses this rejection.

Claim 11 depends from independent claim 1. As discussed above, JP-15470 does not disclose or suggest at least one limitation recited in claim 1 because JP-15470 does not disclose or suggest a “finished communications cable comprising...a substantially flat configurable dielectric separator,” as recited in claim 1. Claim 11 is therefore allowable for at least the same reasons as claim 1, and withdrawal of the rejection of claim 11 is respectfully requested.

E. Claims 19-22 are Patentable Over JP-15470 and the Gingue '748 Patent

Claims 19-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-15470 in view of the Gingue '748 patent. The Patent Owner respectfully traverses this rejection. As discussed below, JP-15470 does not disclose or suggest several limitations recited in claim 19. Furthermore, the proposed combination of JP-15470 and the Gingue '748 patent is improper, and even in combination, the references do not disclose or suggest at least one

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limitation recited in claim 19. Accordingly, and in view of the following, withdrawal of the rejection of claim 19 is respectfully requested. Claims 20-22 depend from claim 19 and are therefore allowable for at least the same reasons as claim 19. Accordingly, and in view of the following, withdrawal of the rejection of claims 20-22 is respectfully requested.

1. The Proposed Combination is Improper

Independent claim 19 recites an “unshielded communications cable comprising...a substantially flat configurable dielectric separator...wherein the substantially flat configurable dielectric separator includes a foamed polymer.” In the Office Action it is asserted that it would have been obvious to one of skill in the art to modify JP-15470 to have the plate body formed of a foamed polymer, based on the disclosure of the Gingue '748 patent. The Patent Owner respectfully disagrees.

As discussed above, JP-15470 discloses that the plate body is formed of a rigid plastic or other material that can be formed into a reciprocatingly twisted shape and which retains that shape. There is no indication in either JP-15470 or the Gingue '748 patent, whether considered alone or in combination, that a foamed polymer would be a suitable “rigid plastic” or other material that can be formed into a stable reciprocatingly twisted shape, as required to form the plate body disclosed in JP-15470. As discussed above, the Gingue '748 patent discloses materials used for insulation of electrical conductors, and does not disclose or suggest any type of separator. Insulation layers and pair separators are completely different structures subject to different requirements and conditions, and fulfilling different purposes. In particular, the Gingue '748 patent does not provide any teaching or suggestion that the materials it discloses would have the properties necessary to be suitable for use as the plate body described in JP-15470. As discussed above, it is not enough that the references individually disclose elements of the claims; there must be a rational basis for making the proposed combination which must be clearly articulated in the Office Action. The Office Action (and the Requester) simply asserts that the Gingue '748 patent discloses materials suitable for a plenum communication cable and therefore it would have been obvious to one of ordinary skill in the art to use these materials to achieve flame retardance without degrading the cable transmission performance. However, these generalized assertions are insufficient to establish a proper motivation to combine the references where here JP-15470 expressly sets forth specific requirements for the material of the plate body.

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The Office Action is applying an impermissible hindsight-based combination that ignores the complete teachings of the references.

Furthermore, a proposed modification cannot render the invention of the prior art unsatisfactory for its intended purpose. (*See, MPEP 2143.01: "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification"*). The invention of JP-15470, which the Office Action proposes to modify, is a cable comprising a plate body that is formed into a reciprocatingly twisted shape and placed between the twisted pairs to prevent the unraveling of the twisting. Thus, any proposed modification that alters the material of the plate body such that it no longer can be formed into and retain that reciprocatingly twisted shape required by JP-15470 is improper since it would render the plate body unsatisfactory for its intended purpose. Any desirability of flame retardancy cannot override the fundamental principle that the proposed modification would not have been obvious if the plate body of JP-15470 is changed in way that renders it unsatisfactory for its intended purpose. Since the Office Action has provided no evidence whatsoever that a foamed polymer would be suitable for the plate body of JP-15407, the Office Action has failed to make a *prima facie* case of obviousness and the proposed combination is improper.

2. No Teaching of Configurable Separator

Even if one were to combine JP-15470 and Gingue '748 patent, as proposed in the Office Action, the references, whether considered alone or in combination, do not disclose or suggest a cable comprising a substantially flat configurable dielectric separator, as recited in claim 19. Independent claim 19 recites a "communications cable comprising...a substantially flat configurable dielectric separator." Contrary to the assertions in the Office Action, JP-15470 does not disclose or suggest a communications cable comprising a configurable separator. The Office Action acknowledges that JP-15470 discloses that the plate body is made of a rigid plastic; but asserts that the plate body is configurable "at least during the manufacturing process." The configurability, or lack thereof, of the plate body during the manufacturing process is wholly irrelevant, since claim 19 does not claim a manufacturing process, but instead claims a communications cable. Thus, since the claim recites that the cable comprises a configurable dielectric separator, the separator must retain its configurability in the cable.

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JP-15470 does not disclose or suggest that the plate body, once in the cable when the manufacturing process is complete, is configurable. To the contrary, as discussed above, JP-15470 discloses that the “plate body is formed into the reciprocatingly twisted state by twisting the facing direction of the plate body to the opposing direction at fixed intervals while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature.” There is absolutely no indication that once the rigid plastic material is no longer “at a prescribed temperature” and the cable is finished, that the plate body is configurable. Rather, JP-15470 discloses the opposite, namely that the plate body is not configurable in the cable, since JP-15470 states that the plate body is formed so that the facing of its surface slowly becomes changed into a reciprocatingly twisted state, and then maintains its shape to prevent the cable from becoming unraveled. Since claim 19 recites a cable comprising a configurable dielectric separator, the separator must retain its configurable nature inside the cable. By contrast, the plate body of JP-15470, in the cable, has a fixed, pre-formed shape, and is not configurable.

As discussed above, contrary to the assertions by the Requester, the Patent Owner’s position that a “configurable” separator must retain its configurable, or flexible, nature in the cable is completely consistent with the plain meaning of the claim language and the specification of the ’537 patent. The term configurable, as used in claim 19, describes a structural characteristic of the separator, but as discussed above, does not require any arranging process involving the separator to occur after the separator is in the cable. Specifically, claim 19 does not require that the separator be configured once inside the cable, but rather that the separator retain its configurable, and therefore flexible, nature inside the cable. By contrast, JP-15470 does not disclose a finished cable comprising a configurable separator because the plate body, once inside the finished cable, does not retain its configurable nature, but instead becomes rigid.

During reexamination, as is the case during initial prosecution, the claim terms must be given their broadest reasonable interpretation consistent with the specification as it would be understood by one of ordinary skill in the art. (*In re Icon Health & Fitness, Inc.*, 496 F.3d 1374 (Fed. Cir. 2007); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); MPEP § 2111). The broadest reasonable interpretation of a “configurable” separator necessarily excludes the rigid plate body of JP-15470 since a rigid separator is the very opposite of and wholly inconsistent

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with a configurable separator. The Requester's assertion that if configurable is interpreted to mean flexible then the plate body of JP-15470 meets the claim limitation is contrary to the express disclosure of JP-15470 and completely without basis in fact. JP-15470 states that the plate body is rigid. The term "rigid" means the opposite of flexible. (See, *MERRIAM WEBSTER ONLINE THESAURUS* (www.merriam-webster.com) - entry word: rigid, antonym: flexible; *Accord, Thesaurus.com* - entry word: rigid, antonym: flexible. (excerpts attached as Appendix I)). Therefore, even if the Examiner considers the broadest reasonable interpretation of "configurable" to mean "flexible," JP-15470 does not meet the claim limitation.

The Requester refers to the Declaration by Mr. Les Baxter which accompanied the comments filed on January 22, 2010 to support the contention that JP-15470 discloses a flexible or configurable separator; however, this Declaration is insufficient to support a position that is directly contradictory to JP-15470 for several reasons. As discussed above, Mr. Baxter opines that "Premises telecommunications cables are typically installed in buildings" and that "These cables must have some degree of flexibility to enable the cables to be installed." (See, *paragraph 22 of the Baxter Declaration that was filed with the Requester's comments on January 22, 2010*). However, JP-15470 does not disclose that the cable is a "premises telecommunications cable," and does not state where or how the cable might be installed. Furthermore, whether or not the cable has "some degree of flexibility," in itself a very vague question, does not speak to whether or not the separator is "configurable," in the context of the specification and claims of the '537 patent. Mr. Baxter further opines that the "TIA/EIA-568-A standard (1995) specifies bending radius performance for twisted pair cable." However, this statement is completely irrelevant to whether or not JP-15470 could be considered to disclose a finished cable comprising a configurable separator. First, JP-15470 does not disclose that the cable is compliant with the TIA/EIA-568-A standard, and therefore the specifications of that standard are irrelevant. Furthermore, JP-15470 was published in 1968, nearly 30 years prior to the date of the standard (1995) referred to by Mr. Baxter, and therefore there is no reason to believe that the cable of JP-15470 would comply with that standard. Accordingly, Mr. Baxter's statements should be disregarded by the Examiner since they do not apply to the issues at hand.

Thus, JP-15470 does not disclose or suggest a communications cable comprising a configurable dielectric separator, as recited in claim 19, but instead discloses the opposite,

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namely that the cable comprises a rigid and therefore not configurable separator. As discussed above, the proposed combination of JP-15470 and the Gingue '748 patent is improper; however, even if one were to combine JP-15470 and the Gingue '748 patent, as proposed in the Office Action, the Gingue '748 patent fails to cure the deficiencies of JP-15470 because the Gingue '748 patent, whether considered alone or in combination with JP-15470, does not disclose or suggest a substantially flat configurable dielectric separator, as recited in claim 19.

F. Claims 24 and 34 are Patentable Over JP-15470 and DE 297 16 866

Claims 24 and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-15470 in view of DE 297 19 866 (hereinafter "the '866 patent"). The Patent Owner respectfully traverses this rejection.

Claims 24 and 34 depend from independent claim 1. As discussed above, JP-15470 does not disclose or suggest a finished communications cable comprising a substantially flat configurable dielectric separator, as recited in claim 1. The Patent Owner does not concede that the combination of JP-15470 and the '866 patent proposed in the Office Action is proper. However, even if one were to combine the references as proposed in the Office Action, the '866 patent fails to cure the deficiencies of JP-15470 because the '866 patent does not disclose or suggest a finished communications cable comprising a substantially flat configurable dielectric separator, as recited in claim 1. Accordingly, claims 24 and 34 are allowable for at least the same reasons as claim 1, and withdrawal of the rejection of claims 24 and 34 is respectfully requested.

G. Claim 33 is Patentable Over JP-15470 and US 5,010,210

Claim 33 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-15470 in view of U.S. Patent No. 5,010,210 to Sidi et al. (hereinafter "the Sidi '210 patent"). The Patent Owner respectfully traverses this rejection.

Claim 33 depends from independent claim 1. As discussed above, JP-15470 does not disclose or suggest a cable comprising a substantially flat configurable dielectric separator as recited in claim 1. The Patent Owner does not concede that the combination of JP-15470 and the Sidi '210 patent proposed in the Office Action is proper; however, even if one were to combine the references as proposed in the Office Action, the Sidi '210 patent fails to cure the deficiencies of JP-15470 because even considered in combination, the references do not disclose or suggest a

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be made of an expanded polyvinyl chloride plastic material does not mean that the tape necessarily comprises the same material. The tubular members and the tape are very different structural elements and there is absolutely no disclosure in the Beggs '629 patent that they would be made of the same material. Therefore, the Beggs '629 patent does not disclose this additional limitation recited in claim 19.

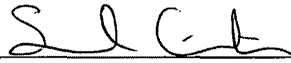
VI. CONCLUSION

In view of the foregoing amendments and remarks, reconsideration is respectfully requested. This reexamination application should now be in condition for allowance; a notice to this effect is respectfully requested.

If there is a fee occasioned by this response, which is not covered by an accompanying payment, please charge any deficiency to Deposit Account No. 50/2762, Ref. I0181-9048(537).

Respectfully submitted,

Belden Technologies, Inc., Patent Owner

By: 
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Docket No.: M0506-702650

I028156.1

Office Action Closing Prosecution, Sept. 20, 2011 (Excerpts)



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/000,476	07/13/2009	6998537	096001-0108	8496
22428 7590 09/20/2011 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER NGUYEN, MINH T	
			ART UNIT 3992	PAPER NUMBER
			MAIL DATE 09/20/2011	DELIVERY MODE PAPER

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.



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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

KING & SPALDING
1180 PEACHTREE STREET, NE
ATLANTA, GA 30309-3521

**Transmittal of Communication to Third Party Requester
Inter Partes Reexamination**

REEXAMINATION CONTROL NUMBER 95/000,476.

PATENT NUMBER 6998537.

TECHNOLOGY CENTER 3999.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

PTOL-2070 (Rev.07-04)

ACTION CLOSING PROSECUTION (37 CFR 1.949)	Control No.	Patent Under Reexamination
	95/000,476	6998537
	Examiner	Art Unit
	MINH T. NGUYEN	3992

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Responsive to the communication(s) filed by:

Patent Owner on 28 April, 2010

Third Party(ies) on 28 May, 2010

Patent owner may once file a submission under 37 CFR 1.951(a) within 1 month(s) from the mailing date of this Office action. Where a submission is filed, third party requester may file responsive comments under 37 CFR 1.951(b) within 30-days (not extendable- 35 U.S.C. § 314(b)(2)) from the date of service of the initial submission on the requester. **Appeal cannot be taken from this action.** Appeal can only be taken from a Right of Appeal Notice under 37 CFR 1.953.

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

PART I. THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892
2. ☒ Information Disclosure Citation, PTO/SB/08
3. ☐ _____

PART II. SUMMARY OF ACTION:

- 1a. ☒ Claims 1-34 are subject to reexamination.
- 1b. ☐ Claims _____ are not subject to reexamination.
2. ☒ Claims 2,3,12-14 and 16 have been canceled.
3. ☒ Claims _____ are confirmed. [Unamended patent claims]
4. ☒ Claims 1,4-11,15,17,18,23-34 are patentable. [Amended or new claims]
5. ☒ Claims 19-22 are rejected.
6. ☐ Claims _____ are objected to.
7. ☐ The drawings filed on _____ ☐ are acceptable ☐ are not acceptable.
8. ☐ The drawing correction request filed on _____ is: ☐ approved. ☐ disapproved.
9. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d). The certified copy has:
☐ been received. ☐ not been received. ☐ been filed in Application/Control No _____
10. ☐ Other _____

INTER PARTES REEXAMINATION SECOND ACTION CLOSING PROSECUTION

This second Action Closing Prosecution (ACP) is in response to the patent owner's amendment filed on 4/28/10 and requester's comment filed on 5/28/10. In view of the requester's comment, some rejections need to be restored. The following is a detailed office action.

Status of the Claims

Claims 1-22 were subject to reexamination. By the amendment filed 12/23/2009, patent owner amended claim 1, canceled claims 2, 3, 12-14 and 16, and added new claims 23-34. As a result, claims 1, 4-11, 15 and 17-34 are pending in this reexamination application, of which claims 1, 19 and 26 are independent claims.

Prior Art

Claims 1, 4-11, 15 and 17-34 of the United States Patent Number 6,998,537 to Clark et al. ("the '537 patent") are reexamined in view of the following patents and publications:

DE 90 11 484 ("GmbH '484")

DE Patent No. 297 19 866 U1 ("GmbH '866")

U.S. Patent No. 4,385,485 to Yonechi ("Yonechi '485")

JP Patent No. Sho43(1968)-153622470 ("JP '470")

U.S. Patent No. 4,755,629 to Beggs et al. ("Beggs '629")

U.S. Patent No. 5,969,295 ("Boucino '295")

U.S. Patent No. 3,649,744 ("Coleman '744")

Requester's proposed rejection: Ground 5

Requester's proposed anticipation rejection of claims 1-3, 11-13, 15-18, 24, 25, 32 and 34 under 35 USC 102(b) by GmbH '866 is not adopted.

The proposed rejection was not adopted in the previous ACP office action and the decision for not adopting is maintained in this office action.

Patent owner does not provide any further argument regarding the decision for not adopting. However, in the arguments related to the other rejections, patent owner indicates that the term "flat separator" should be construed as shown in figure 4 of the '537 patent. See patent owner's response on 4/28/10, page 15, last two lines.

In the response filed on 12/23/09, patent owner argued that GmbH '866 does not teach limitations "flat separator", "cabling" and "dielectric separator." Regarding the limitation "flat separator" patent owner argued that shielding foils (item 5) shown in figure 1 of GmbH '866 are wrapped around the conductors, i.e., not substantially flat, whereas claim 1 requires the separator being substantially flat in a radial cross-section taken through the finished cable. Regarding the limitation "cabling" patent owner argued that GmbH '866 merely discloses stranding of the individual conductors to form a twisted pair whereas the claim requires stranding the twisted pairs and the separator about a common axis to form the finished cable. Regarding the limitation "dielectric separator" patent owner argued that the shielding folds of GmbH '866 are not dielectric because in every embodiment it includes a metal foil.

Regarding the limitation "flat separator", requester asserts that the limitation "flat separator" should be read and interpreted in light of the entire specification. Because the specification of the '537 patent identifies figure 5 as a cross-sectional view of the embodiment of figure 4, the shape of the separator shown in figure 5 of the '537 patent should be used to construe the term "substantially flat separator". Comparing the shape of the separator of the

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embodiment disclosed in figures 4 and 5 of the '537 patent to the shape of the separator disclosed in GmbH '866, the shape of the separator disclosed in GmbH '866 meets the claimed language.

The examiner agrees with the requester, the '537 patent clearly identifies figure 5 is a cross-sectional view of the embodiment of figure 4. See '537 patent, col. 3, lines 51-52. As expressly noted by the patent owner, the term "substantially flat" separator should be interpreted as the separator having the shape shown in figure 4. Thus, the shape of the separator shown in figure 5 which is a cross-sectional view of figure 4 should be used to shed light to the term "substantially flat." The figure below shows side by side of the shape of the separator in figure 1 of the separator of GmbH '866 and the shape of the separator in figure 5 of the '537 patent.



Substantially flat separator of DE 297 19 866 (on left) and '537 Patent

Comparing the separator of the embodiment disclosed in figure 5 (above right) which is a cross-sectional view of the embodiment of figure 4 of the '537 patent to the separator disclosed in GmbH '866 (above left), the separator disclosed in GmbH '866 meets the claimed language. Patent owner fails to explain why the cross-sectional view of the shape of the separator shown in figure 5 of the '537 patent (shown above, right) should be seen as "substantially flat" whereas the cross-sectional view of the shape of the separator shown in figure 1 of GmbH '866 (shown above, left) should not be seen as "substantially flat"

Because a reasonable person with ordinary skill in the art cannot consider those shapes shown above are "substantially flat" the only reasonable interpretation of the term "substantially flat" used in claim 1 must be that the shape is flat when supplied, not in a finished product.

Regarding the limitation "cabling", requester in the response filed on 1/22/10 contended that because GmbH '866 discloses "longitudinal reshaping" GmbH '866 anticipates this limitation. Requester relied on the Declaration of Mr. Baxter at paragraph 11 to support his argument.

In this regard, the examiner agrees with the patent owner that the teaching in GmbH '866 refers to the twisting of each individual conductor pairs, not the twisting of the dielectric separator and the twisted pairs as recited in claim 1. The statement at paragraph 11 in the Declaration of Mr. Baxter is merely his interpretation when reading the GmbH '866 patent, not fact. The examiner respectfully disagrees with his opinion. The phrase "longitude reshaping of the conductor pairs" should be understood as the longitudinal twisting of each individual pair of conductors, not all of the interior components of the cable, as interpreted by Mr. Baxter.

At most, the teachings in GmbH '866 regarding this matter (at page 2, ¶ 2, page 6, ¶ 3 and page 3, claim 11) are unclear and confusing. It can be interpreted in either ways, i.e., as (1) the twisting of each of conductors pairs or (2) the twisting of the dielectric pair separator and the twisted pairs to form a twisted pair cable.

Regarding the limitation "dielectric separator", requester in the response filed on 1/22/10 contended that patent owner improperly narrows the construction of this term. Requester pointed out that claim 24 of the US Patent No. 6,570,095 - a patent in the family of the '537 patent - recites "a dielectric pair separator" with "a dielectric layer and a conductive layer. Id. col. 11, lines 36-37.

The examiner agrees with the requester. The term "dielectric separator" in claim 1 should not be limited to a separator consists of dielectric. Any separator that does not provide electrical conduction would meet the claimed language. Because GmbH '866 discloses the separator being "aluminum foils laminated by plastic" which does not provide electrical conduction, GmbH '866 anticipates this limitation.

In conclusion, because GmbH '866 does not clearly teach the limitation that the twisted pairs and the dielectric separator are twisted to form a finished cable as required in claim 1, GmbH '866 cannot anticipated claim 1 and its dependent claims.

For the same reasons presented above, the proposed anticipation rejection of claim 26 and its dependent claims is not adopted.

Requester's proposed rejection: Ground 14

Requester's proposed obviousness rejection of claims 19-22 under 35 USC 103(a) over GmbH '866 in view of Roberts '683 and further in view of Gingue '748 **is adopted** with modification.

The proposed obviousness rejection of claims 19-22 was withdrawn in the previous ACP office action; however, it is restored in this office action.

Patent owner, at pages 29-32 in the response filed on 12/23/09, argued that the combination of GmbH '866 and Roberts '683 does not teach limitations "flat separator", "separator that consists of non-conductive, dielectric materials". Patent owner argued that GmbH '866 discloses that the purpose of using metal tapes is for electromagnetic shielding. Removing the metal tapes would render the prior art invention being modified unsatisfactory for its intended purpose. Because the modification would change the principle of operation and intended purpose of the metal shield in the cable of GmbH '866, it is not obvious to make the modification as suggested by the requester. Patent owner further argued that combining GmbH '866 with Gingue '748 is improper because Gingue '748 does not disclose any type of separator and provides no indication whatsoever that any of the insulation materials disclosed might be suitable for use in a separator.

Regarding the limitation "substantially flat separator", the examiner agrees with the requester's argument for the reason noted in ground 5 above which is incorporated herein by reference. Regarding the limitation that the separator consists of non-conductive, dielectric materials, the requester points out that Roberts '683 teaches elements 17a shown in figure 13 being made of plastic-only material.

Regarding the argument that removing the metal tapes would render the prior art unsatisfactory for its intended use, the requester asserts that patent owner improperly focuses on the purpose of the foil. The proper focus is on the purpose of the disclosed device – a communications cable. The examiner agrees with the requester. The focus is on the purpose and intended use of the disclosed communications cable. As pointed out by the requester, the objective of GmbH '866 is to have a cable that will operate in the frequency range of 1 to 100MHz. The test data quoted by Mr. Niemiera demonstrates that a separator that is made of only plastic material performs adequately for the disclosed purpose of GmbH '866, a telecommunications cable. Thus, modifying the separator of GmbH '866 by removing the metal part would result in a cable that operates as intended in the telecommunications field.

Regarding the combination of GmbH '866 and Gingue '748, requester asserts that Gingue '748 discloses the benefits of specific materials used in data cables and makes clear that electrical performance considerations are not limited to conductor insulation and extend to other cable applications. The examiner agrees with the requester. A person of ordinary skill in the art would consider the teaching when choosing a material for a separator used in the cable field.

For those above reasons, the rejection which was withdrawn in the previous ACP office action is restored and presented below.

Claims 19-22 are rejected under 35 USC 103(a) over GmbH '866 in view of Roberts '683 and further in view of Gingue '748.

Claim 19:

An unshielded 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;

GmbH '866 discloses a plurality of twisted pairs, including a first twisted pair and a second twisted pair. Fig. 3 of GmbH shows four twisted pairs. The cable contains four twisted pairs of insulated conductors (item 1). The cable also includes two substantially flat configurable pair separators (item 5). The conductors are insulated. See '866 patent, English trans, at 3 ("The copper conductor or cants preferably have an insulation 3 consisting of a thermoplastic, especially polyethylene, cellular polyethylene, foam-skin polyethylene, skin-foam-skin polyethylene, polypropylene or cellular polypropylene.").

a substantially flat configurable dielectric separator that consists of non-conductive, dielectric materials 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

Fig. 3 of GmbH '866 patent discloses a data transmission cable that includes a substantially flat, configurable separator that divides the cable interior into at least two sectors, separating one twisted pair from another twisted pair. GmbH '866 further discloses that the pair separator may be made of a metal foil, such as aluminum, or a metal foil laminated by plastic, the second configuration indicates that the separator is dielectric." See GmbH '866, English trans. at 5 ("The shielding 5 or the partial shielding 11, 12 preferably consists of metal foils, especially aluminum foils or aluminum foils laminated by plastic.")

GmbH '866 does not disclose that the separator consists of non-conductive, dielectric materials.

It would have been obvious to one of ordinary skill in the art to modify the separator of the cable of GmbH '866 to consist of a dielectric layer only.

First, one of ordinary skill in the art would be under market pressure to reduce costs for the cable and eliminating the metal foil would likely reduce the cost of the cable. See KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 421 (2007) ("When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp."). See also, GmbH '866 patent, Engl. trans, at 1 (discussing the expense of prior art cables).

Second, as illustrated in Roberts '683, there are only a finite number of combinations of plastic and metal components for separators. Roberts '683 shows four of the six possible combinations in figures 5-8 - the other two being a plastic material sandwiched in metal and an all plastic material separator. Figure 13 of Roberts '683 shows separator 17a being made of plastic only, i.e., "plastic tape".

It would have been obvious for one of ordinary skill in the art to try all six of these configurations, including an all plastic separator (that is, a dielectric pair separator that "consist[s] of a dielectric layer.")

A person with ordinary skill in the art would have been motivated to do so to reduce the cost of the cable. One of ordinary skill in the art would have a reasonable expectation of success of using a different separator configuration of the cable structure of GmbH '866 based on the teachings of Roberts '683, because of the substantial overlap of technology and the predictable result achieved by combining the relevant teachings. In fact, the modified cable would still be capable of operating in the frequency range of 1 to 100Mhz as the unmodified cable. See the test submitted in the Declaration of Mr. Niemiera at paragraph 7.

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

GmbH '866 discloses a cable with the twisted pairs and separator within a protective sheath (item 4 in Fig. 3). See also GmbH '866, English trans. at 3 ("As an outer mechanical protection, an invention- specific transmission cable has a cable cover 4, which consists of customary thermoplastic cover materials."). The cable cover of the '866 patent encloses the twisted pairs and dielectric pair separator.

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

GmbH does not disclose the separator includes a foamed polymer.

Gingue '748 discloses fluorinated ethylene propylene (FEP) polymer (among other materials) for use in data cables to achieve flame retardancy and minimize smoke. These materials are dielectrics and are non-conductive, as they are used as insulators for copper conductors. Gingue '748 is directly related to materials used for flame retardancy and smoke suppression in data communications cables. *See generally*, Gingue '748. Gingue '748 further discloses "the electrical performance of an insulating material is enhanced by foaming or expanding the corresponding solid material. Foaming also decreases the amount of flammable material employed for a given volume of material. Accordingly, a foamed material is preferably employed to achieve a favorable balance of electrical properties and flame retardancy." See Gingue '748 patent, Table 1 and col. 3, 11. 11-25. Although Gingue '748 claims are directed to a composition of materials for use to insulate a conductor, the "Background of the Invention" section discusses electrical and fire retardancy properties of materials used in cables generally. One of ordinary skill in the art would have known to combine the teaching of foamed polymer disclosed in Gingue '748 to modify the pair separator of GmbH '866, to achieve a pair separator with non-conductive, dielectric materials only, where the materials include a foamed polymer.

Any inquiry concerning this communication or earlier communication from the examiner,
or as to the status of the proceeding, should be directed to the Central Reexamination Unit at
telephone number (571) 272-7705.

Conferee # 1

HNT

Conferee # 2

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