

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BELDEN TECHNOLOGIES, INC. and
BELDEN CDT (CANADA) INC.,

Plaintiffs

v.

SUPERIOR ESSEX INC. and
SUPERIOR ESSEX COMMUNICATIONS LP,

Defendants.

Civil Action No. 08-063-SLR

**BELDEN'S SUPPLEMENTAL RESPONSE TO
INTERROGATORIES 6, 7 & 23 OF SUPERIOR ESSEX COMMUNICATIONS LP**

Plaintiffs Belden Technologies, Inc. and Belden CDT (Canada) Inc. (collectively "Belden"), hereby provide the following supplemental responses to Interrogatories Nos. 6, 7 and 23 of Defendant Superior Essex Communications LP ("Superior Essex Communications").

Original Objections to Definitions and Instructions

Belden objects to the Definitions and Instructions insofar as they attempt to impose requirements beyond what is permitted under the Federal Rules of Civil Procedure and the Local Rules.

Original General Objections

Belden objects to Superior Essex Communications' requests insofar as they attempt to impose requirements beyond those permitted under the Federal Rules of Civil Procedure and the Local Rules. Belden further objects to Superior Essex Communications' requests insofar as they seek information protected from discovery under the work product doctrine, the attorney-client privilege or other applicable protections. Belden further objects to Superior Essex

Communications' requests as unduly burdensome insofar as they seek the production of documents already in Superior Essex Communications' possession. Belden further objects to Superior Essex Communications' requests as unduly burdensome insofar as they request the production of "all" documents where the production of representative documents would be sufficient. Belden further objects to Superior Essex Communications' requests insofar as they seek documents that are not in Belden's possession, custody or control.

Supplemental Responses to Interrogatories

Belden's Objections to the Instructions and Definitions and Belden's General Objections are incorporated into each of the specific objections recited herein.

INTERROGATORY NO.6:

For each of the asserted claims of the Patents-in-suit, identify and describe in detail all facts and Documents upon which Plaintiffs intend to rely upon for proof of nonobviousness of the claimed invention, including any secondary considerations under 35 U.S.C. § 103, such as commercial success, failure of others, long-felt need, commercial acquiescence, unexpected results, improved result and new result.

ORIGINAL OBJECTION (Sept. 29, 2008):

Belden objects to the interrogatory as premature, because it seeks Belden's contentions in this case. Responses to contention interrogatories are to be provided in accordance with procedures established by the Court. Belden further objects to the interrogatory, because a response depends upon the construction of the claims of the patents-in-suit, a matter that is subject to a procedure established by the Court.

SUPPLEMENTAL OBJECTION (Feb. 23, 2009):

Belden maintains and reasserts the foregoing objections and, in particular, notes that it still is without the necessary predicate response from Defendants and/or production of

information regarding Defendants' products and/or activities, required for Belden's response to the interrogatory. To date, Defendants have not produced a single document in this litigation. Belden will provide a supplemental response within a reasonable time after having received such predicate documentation and/or information and any *prima facie* showing of obviousness – an issue on which the Defendants bear the burden of proof.

The undersigned counsel believes that the parties had understood and agreed that the party with the burden of proof on the subjects of contention interrogatories would provide such contentions within thirty days of receiving the production documents of the opposing party. Accordingly, Belden does not believe that it is required to provide this supplemental objection, but does so in the event that there is any misunderstanding on this matter.

SUPPLEMENTAL RESPONSE (April 6, 2009):

In view of Defendants' supplemental interrogatory responses of March 9, 2009, Belden objects to this interrogatory as overly broad and unduly burdensome, insofar as it seeks information that is not relevant to any issue in this lawsuit because Defendants' have not established a *prima facie* case of obviousness for the asserted claims of the patents-in-suit. Belden further objects to the interrogatory as duplicative of Defendants' other discovery requests. Belden further objects to the interrogatory as seeking information that will be determined through ongoing fact and expert discovery in this lawsuit. Subject to and without waiving any of the foregoing general or specific objections, Belden states that it presently intends to rely upon objective indicia of non-obviousness relating to the patents-in-suit. Objective indicia supporting the non-obviousness of the patents-in-suit include evidence of commercial success of the claimed inventions (including the commercial success of infringing products – or methods, with regard to the '503 patent – such as the infringing Superior Essex

products, as well as authorized products, such as Belden's products), the failure of others to achieve the claimed invention (which reveals the existence of a long-felt but unmet need for the invention), copying or and/or praise for the claimed invention by others (including, but not limited to, copying by Defendants), as well as the achievement of unexpected or improved or new results (including but not limited to reduced manufacturing and/or product costs, improved performance). Other specific evidence of non-obviousness includes recently obtained data (to be timely produced in a supplemental production of documents) showing the improved performance of cables incorporating the inventions claimed in the '999, '095 and '537 patents (which employ unshielded cables with dielectric tape separators), relative to shielded cables – the latter of which were believed, at the time of the inventions, to be superior designs and that were indicative of the industry trend. Thus, the patented inventions offered surprising and unexpected results. Belden's position may also be supported by the opinion(s) of expert witness(es). Further evidence supporting the non-obviousness of the patents-in-suit are addressed in Belden's response to Defendants' Interrogatory No. 23. In addition, as fact and expert discovery proceeds, Belden will further articulate the bases for its reliance upon objective indicia to demonstrate the non-obviousness of the asserted claims of the patents-in-suit and Belden reserves the right to supplement its response to this interrogatory.

INTERROGATORY NO.7:

For the subject matter claimed in the Patents-in-suit, identify and describe in detail the pertinent art and the level of ordinary skill in that art as of the earliest date Plaintiffs assert the inventions disclosed by the claims of the Patents-in-suit were either conceived or reduced to practice.

ORIGINAL OBJECTION (Sept. 29, 2008):

Belden objects to the interrogatory as premature, because it seeks Belden's contentions in this case. Responses to contention interrogatories are to be provided in accordance with

procedures established by the Court. Belden further objects to the interrogatory, because it calls for the disclosure of information that will be the subject of one or more expert disclosures in this case. Expert disclosures are to be provided according to procedures established by the Court.

Belden further objects to the interrogatory, because a response depends upon the construction of the claims of the patents-in-suit, a matter that is subject to a procedure established by the Court.

SUPPLEMENTAL OBJECTION (Feb. 23, 2009):

Belden maintains and reasserts the foregoing objections. Belden will provide a supplemental response within a reasonable time after Defendants make a predicate *prima facie* showing of any alleged obviousness – an issue on which the Defendants have the burden of proof.

The undersigned counsel believes that the parties had understood and agreed that the party with the burden of proof on the subjects of contention interrogatories would provide such contentions within thirty days of receiving the production documents of the opposing party. Accordingly, Belden does not believe that it is required to provide this supplemental objection, but does so in the event that there is any misunderstanding on this matter.

SUPPLEMENTAL RESPONSE (April 6, 2009):

In view of Defendants' supplemental interrogatory responses of March 9, 2009, Belden objects to this interrogatory as overly broad and unduly burdensome, insofar as it requests Belden to "identify and describe in detail the pertinent art" and insofar as the interrogatory information that is not relevant to any issue in this lawsuit because Defendants have not demonstrated any need to determine the date(s) on which any of "the inventions disclosed by the claims of the Patents-in-suit were either conceived or reduced to practice." Belden further objects to the interrogatory as seeking information that will be determined through ongoing fact

and expert discovery in this lawsuit. Belden further objects to the interrogatory as duplicative of Defendants' other discovery requests. Furthermore, Defendants' March 9, 2009, Response to Belden's Interrogatory No. 10 fails to address, in a meaningful way, the question of the "level of ordinary skill in the art" relating to the patents-in-suit. Defendants repeatedly rely upon vague phrases, such as: "The type of problem addressed by the ... patent had been encountered numerous times before"; "The approaches to the solutions in the prior art are consistent"; and "Innovation in this field moves at a moderate pace, typically spurred on by changing technical standards." The Defendants have not established a meaningful basis for distinguishing the levels of skill applicable to the patents-in-suit and have not satisfied their burden to demonstrate a level of ordinary skill in the art by clear and convincing evidence. Subject to and without waiving any of the foregoing general or specific objections, Belden refers to its response to Defendants' Interrogatory No. 23.

INTERROGATORY NO. 23:

Identify and describe in detail Plaintiffs' contentions, including all facts and Documents that Plaintiffs intend to rely upon to support such contentions, as to why each ground presented in Superior Essex's Response To Interrogatory No. 10, and any supplements or amendments thereto, does not render the claims of the Patents-in-suit invalid. In answering this interrogatory, identify each and every element or limitation in each claim that Plaintiffs contend is not present in the prior art identified by Superior Essex, and identify the construction of any claim term that Belden relies upon to support its contention.

ORIGINAL RESPONSE (March 30, 2009):

Belden objects to the interrogatory as premature, because it seeks Belden's rebuttal contentions in this case. Rebuttal responses to contention interrogatories are to be provided in accordance with procedures established by the Court. Belden further objects to the interrogatory

as imposing burdens that exceed those required by the applicable Federal Rules and Local Rules, or by the Court. Belden objects to the interrogatory as unduly burdensome, insofar as it seeks information not relevant to any issue in this case and not necessary to either party's proofs on the matters pleaded and insofar as it is duplicative of other discovery requests served by defendants in this case. Belden further objects to the interrogatory, because a response depends upon the construction of the claims of the patents-in-suit, a matter – including any party's construction of any claim terms – that is subject to a procedure established by the Court.

SUPPLEMENTAL RESPONSE (April 6, 2009):

Because Defendants' Response to Belden's Interrogatory No. 10 is voluminous, Belden may supplement this rebuttal response, in view of further analysis and fact and expert discovery. Accordingly, Belden's present response is necessarily preliminary in nature and subject to modification and supplementation. Belden will continue to develop and refine its understanding of the positions expressed by Defendants, during the course of ongoing discovery. Belden specifically reserves the right to supplement its response as the litigation progresses. Additionally, Belden's contentions may be revised, in view of claim construction procedures in this case. Belden's position regarding the subject matter of this interrogatory is expected to be the subject of one or more expert witness opinions. The procedure for disclosing such opinions is subject to a schedule set by the Court. Should Defendants supplement their response to Belden's Interrogatory No. 10, Belden would object to any reliance, by Defendants, on any materials identified in its March 9, 2009, Response that are not relied upon in Defendants' specific element-by-element explanations of its patent validity contentions set forth in Defendants' Exhibits 1-37. For example, Belden would object to any reliance, by Defendants, of

any materials listed on Exhibit 38 of Defendants' March 9, 2009, Response, except for any such references that are relied upon in the element-by-element analyses of Defendants' Exhibits 1-37.

Subject to and without waiving its general and specific objections, Belden responds to this interrogatory, and addresses the statements of Defendants, as follows.

The Defendants' contentions regarding the validity of the patents-in-suit rely substantially on prior art already considered by the Patent and Trademark Office in its decisions to allow the asserted claims. The Defendants also fail to recognize the unpredictable nature of cable design, such that various performance characteristics of a cable product cannot be discerned without undergoing the painstaking process of research and development, such as what has led to the inventions claimed in the patents-in-suit. In response to Defendants' contentions, Belden addresses, herein, the specific issues relating to each of the patents-in-suit.

Rebuttal To Defendants' Contentions
Regarding the Validity of U.S. Patent No. 6,074,503

Claim 1 of U.S. Patent No. 6,074,503 ("the '503 patent") recites:

1. A method of producing a cable, comprising steps of:

passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core and prevents twisting motion of the core;

bunching the aligned plurality of transmission media and core using a second die which forces each of the plurality of transmission media into contact with the surface features of the core which maintain a spatial relationship between each of the plurality of transmission media;

twisting the bunched plurality of transmission media and core to close the cable;
and

jacketing the closed cable.

Although Belden reserves the right to contend that Defendants have not satisfied their burden of proof to demonstrate the level of ordinary skill in the art by clear and convincing evidence, Belden responds that the level of ordinary skill in the art relating to the '503 patent at the time of the invention would have been that of a person having an undergraduate degree in mechanical engineering and approximately two years of industry experience

A. Rebuttal to Defendants' Contentions Regarding Sho56(1981)-7307

JP Sho56 (1981)-7307 (hereinafter "JP '307") is directed to a method for making overall insulation clad communications cables. JP '307 teaches passing a cruciform core through a "hole" in a branching board, which also serves to "position" the conductors that will form a part of the cables.

Claims 1-4 Of The '503 Patent Are Novel Over JP '307

JP '307 does not anticipate claims 1-4 of the '503 patent, for at least the reasons provided herein. Independent claim 1, from which each of claims 2-4 depend, recites "passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core and prevents twisting motion of the core." Defendants contend that the branching board of JP '307 forms the first die. The JP '307 branching board does not, however, disclose the claimed features. The JP '307 branching board has a featureless "hole" through which the core passes. There is no disclosure or suggestion that the "hole" through which the core passes interacts in any fashion with the core, much less in a way that would prevent the core from twisting. By disclosing a featureless hole, JP '307 in fact teaches away from the prevention of twisting motion by the first die. Also, the "holes" through which the conductors pass are described simply as being "provided in the area surrounding the center." There is no disclosure or suggestion that the "holes" through which the transmission wires pass

are aligned with a surface feature of the core.

Claims 2 and 3 further recite “passing the transmission media and the core through a third die which generally centers the core relative to the plurality of transmission media.” Defendants’ contention that the system of guide rollers constitutes a die is without merit; one of skill in the art would not understand this loose arrangement of separate structures to constitute a “die.” Further, to the extent that these features could be considered a die (which they cannot), it is clear from Fig. 1 of JP ‘307 that this structure does not generally center the core relative to the plurality of conductors. Instead, the core is directed via guide rollers above the conductors. To the extent that the core is ever centered relative to the guide wires (which JP ‘307 does not disclose), any such centering does not occur prior to the branching board.

Likewise, the limitation of claim 3 that “the step of passing the transmission media and the core through the third die further comprises: extruding the core at a center position relative to the plurality of transmission media” is not disclosed by JP ‘307. As is illustrated in its Fig. 1, the JP ‘307 core is extruded at a position *above* the conductors.

Claim 4 of the ‘503 patent recites: “wherein the step of passing further comprises: extruding the core so that the surface features thereof align with the plurality of transmission media.” As noted above, JP ‘307 does not disclose the alignment of the conductors with any surface features of the core by the branching board. Further, JP ‘307 also does not disclose the extrusion of the core so that it has surface features. Instead, JP ‘307 teaches away from the extrusion of a core having surface features, because it discloses extruding a featureless linear core and subsequently imparting a cruciform shape by means of forming rollers.

B. Rebuttal to Defendants’ Contentions Regarding JP Sho57(1982) - 19910

JP Sho57 (1982)-19910 (hereinafter “JP ‘910”) discloses the formation of a featureless

core, which then has grooves pressed into it by heated rollers or the like. This is then passed through a “hole” in a wire splitting board. Four communication cable conductors are also passed through the wire splitting board. Then, the communication cable conductors are inserted into the grooves, and the cable is stranded.

Claims 1-4 of the ‘503 Patent are Novel Over JP ‘910

JP ‘910 does not anticipate claims 1-4 of the ‘503 patent, for at least the reasons provided herein. Independent claim 1, from which each of claims 2-4 depend, recites “passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core and prevents twisting motion of the core.” Defendants contend that the wire splitting board of JP ‘910 forms the first die. The JP ‘910 wire splitting board, however, does not disclose the prevention of twisting motion by the core. The JP ‘910 wire splitting board is described as having a hole through which the core passes. There is no disclosure that the hole through which the core passes interacts in any fashion with the core or has any features or structures that could interact with surface features of a core, much less in a way that would prevent the core from twisting.

Defendants suggest that, because the wires are inserted into the grooves at the location where the communication cable conductors converge (the entrance of the left-right alternating stranding device), the wires will act to prevent the core from twisting. The JP ‘910 patent does not disclose this as being the case; Defendants’ suggestion to this effect is simply conjecture, based on the guidance provided by the ‘503 patent. Further, to the extent that the wires might be capable of preventing the core from twisting, it would only occur at the point in which the wires are pressed into the core, the entrance to stranding device 8. The core would still be capable of twisting at points prior to the entrance to stranding device 8 (e.g., at the wire splitting board).

Thus, even were Defendants' characterizations correct (which they are not), the JP '910 patent does not anticipate this limitation.

There is also no disclosure or suggestion that the holes through which the transmission wires pass are aligned with a surface feature of the core.

Claim 1 further recites "bunching the aligned plurality of transmission media and core using a second die which forces each of the plurality of transmission media into contact with the surface features of the core." JP '910 does not disclose a second die of any sort. Instead, JP '910 merely described that "each of the 4 communication cable conductors is inserted into each of the grooves on the thread-like object 1 at the location where the communication cable conductors converge (the entrance of the left-right alternating stranding device described below)." There is no disclosure of how these wires are inserted and no discussion of a die being involved. Defendants contend that the stranding device is a die that maintains the conductors in the proper spatial relationship with the core surface features as it forces the conductors into the groove. Yet, Defendants' assertion is simply conjecture, as there is no such disclosure or suggestion in JP '910.

Claims 2 and 3 of the '503 patent require "passing the transmission media and the core through a third die which generally centers the core relative to the plurality of transmission media." Defendants' contention that the combination of the four spools that hold the communication cable conductors and the heating die with heating rolls 2a, 2b, 2c and 2d constitutes a die is without merit; one of skill in the art would not understand this loose arrangement of separate components to constitute a "die." Further, JP '910 does not disclose that the spools are arranged in any particular fashion around the core, much less that these spools serve to generally center the core relative to the communication cable conductors.

Claim 4 recites “wherein the step of passing further comprises: extruding the core so that the surface features thereof align with the plurality of transmission media.” JP ‘910 does not disclose this element because, for the reasons discussed above, JP ‘910 does not disclose that the core is extruded such that surface features thereof are aligned with the plurality of transmission media.

C. Rebuttal to Defendants’ Contentions Regarding U.S. Patent No. 4,385,485

U.S. 4,385,485 (hereinafter the “’485 patent”) discloses placing optical fibers in loosely-fitting fashion into grooves formed by folded splicing tape.

Claims 1 and 2 of the ‘503 Patent Are Novel Over the ‘485 Patent

Defendants contend that the ‘485 patent anticipates claims 1 and 2 of the ‘503 patent. The ‘485 patent does not anticipate claims 1-2 of the ‘503 patent, for at least the reasons provided herein. Independent claim 1, from which claim 2 depends, recites “passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core and prevents twisting motion of the core.” Defendants erroneously contend that the tape disclosed in the ‘485 patent is the “core” and that the folds in the tape are the “surface features” of the “core.” The ‘485 patent does not consider this tape to be a “core,” and in fact distinguishes the tape from being a core. The ‘485 patent notes that a conventional core “is usually fabricated from a material that exhibits a high tensile strength.” (Col. 1, 18-20 of the ‘485 patent). Indeed, the ‘485 patent specifically distinguishes “a rigid or semi-rigid support member disposed within the outer covering of the cable” which “is provided with a plurality of extruded ribs which extend radially outwardly from the center-line of the cable” (col. 1, 47-53) as creating “several major deficiencies.” (Col. 1, 63-64). The use of tape in lieu of a core is the way in which the ‘485 patent purports to overcome these deficiencies.

Finally, the '485 patent teaches the use of a core *in addition to* the tape. (See, e.g., col. 4, 36-43 and Fig. 4.) Thus, the '485 patent explicitly discloses that its folded tape is *not* a core.

The core actually identified and described in the '485 patent has no surface features. Fig. 9 shows the guide plate, which is asserted by Defendants to be the first die, that includes a simple round hole 64 through which the core can pass. There is nothing in this featureless hole that could interact with the core to prevent twisting motion of the core. Nor does the '485 patent disclose that its core passes through “a first die” (as the '503 patent requires) that aligns transmission media with any particular features of the core.

Claim 1 further recites “bunching the aligned plurality of transmission media and core using a second die which forces each of the plurality of transmission media into contact with the surface features of the core.” The '485 patent does not disclose this step. Rather, the '485 patent discloses that “[t]he folded splicing tapes 11 together with optical fibers 10 disposed therein are gathered and stranded in an assemblage die 70.” (Col. 6, 24-28). Far from suggesting bunching and forcing contact between the optical fibers and the core, the '485 patent expressly emphasizes that any compression or lateral force has a deleterious effect on the optical fibers, and that the fibers are thus placed only in “loosely fitting” fashion into the grooves of the folded tape. (Col. 3, lines 14-20; see also col. 1, 37-40). Thus, the '485 patent does not disclose, and indeed teaches against, forcing transmission media into contact with the surface features of the core. Further, to the extent that any forcing of contact occurs, it occurs between the optical fibers and the splicing tape, which separates the fibers from the core of the '485 patent.

Claim 2 requires “passing the transmission media and the core through a third die which generally centers the core relative to the plurality of transmission media.” Defendants contend that the rotary cage, spools of optical fibers, and four tape rolls found in FIG. 8 of the '485 patent

constitute the third die. This loose collection of parts is not a die and would not be understood by one of skill in the art to constitute a die.

Claims 2-4 of the '503 Patent are Non-Obvious Over the '485 Patent

Defendants contend that the '485 patent renders claim 2 of the '503 patent obvious over JP 58-103710 ("JP '710"), and claims 3 and 4 of the '503 patent obvious in view of U.S. 4,205,899 (the "'899 patent") or JP '307. These contentions are erroneous for at least the reasons identified herein.

First, as discussed above, the '485 patent does not disclose each and every element of claim 1, from which claims 2-4 depend. Defendants does not assert that any other reference cures the deficiencies in the '485 patent with regard to claim 1, and has thus failed to state even a *prima facie* case of obviousness of dependant claims 2-4.

Claim 2 requires "passing the transmission media and the core through a third die which generally centers the core relative to the plurality of transmission media." Defendants contend, without proper explanation, that JP '710 somehow provides the missing third die. JP '710 provides a series of dies for bunching twisted wire pairs; JP '710 does not, however, teach formation of cables having a core, or include even a single die through which a core passes. Accordingly, JP '710 does not provide the disclosure missing from the '485 patent.

Additionally, Defendants offer no reason why one of ordinary skill in the art might have modified the teachings of the '485 patent or combined them with those of JP '710. Thus, Defendants have failed, for this separate reason, to articulate a *prima facie* case of obviousness.

Claim 3 of the '503 patent requires "extruding the core at a center position relative to the plurality of transmission media" as a part of the step of passing the core and transmission media through a third die. Claim 4 recites "wherein the step of passing further comprises: extruding the

core so that the surface features thereof align with the plurality of transmission media” as part of passing the core and transmission media through the first die.

With regard to claim 3, as discussed elsewhere herein, none of the ‘485 patent, the ‘899 patent, or JP ‘307 disclose a third die. In each case, Defendants contend that the claimed third die may be found in a collection of disparate components that, either alone or in combination, would not be understood by one of skill in the art to constitute a die. Additionally, as discussed above, JP ‘307 does not in any event extrude a core at a center position relative to a plurality of transmission media at the structure identified by Defendants as the third die. With regard to claim 4, the core of the ‘485 patent has no surface features; accordingly, it cannot be extruded such that any transmission media are aligned with surface features, and in fact teaches away from this type of aligning. Further, given that the ‘485 patent teaches placing the optical fibers in folded tape that is interspersed between the fibers and the core, one would not be motivated to add surface features to the core, as these features would necessarily increase the cost and complexity of manufacturing the cable while providing no additional benefits.

Defendants contend that one of skill in the art would combine the ‘485 patent and the ‘899 patent merely because both relate to the manufacture of fiber optic cables. No other reason is identified. Further Defendants contend that there would be a reasonable expectation of success in combining these references “because of the substantial overlap of technology and the predictable result of combining such features.” These unsubstantiated recitations fall far short of establishing a *prima facie* case of obviousness with regard to the ‘899 patent. Further, as discussed below, because the ‘899 patent requires helical grooves in the core, the ‘899 patent teaches away from a method in which a first die aligns transmission media with groove in the core while simultaneously preventing twisting motion of the core.

Defendants offer no reasons at all as to why one of skill in the art would modify the teachings of the '485 patent with that of JP '307, and thus have failed to state a *prima facie* case of obviousness with regard to this combination.

Finally, the '485 patent issued on May 31, 1983; the '899 patent on June 3, 1980; and JP '307 published on January 26, 1981. These references had been publicly available for nearly 14 years as of the April 22, 1997 filing date of the '503 patent. Yet over that 14 year period of time, no one combined these references in the manner suggested by Defendant. This factors strongly against a finding of obviousness.

D. Rebuttal to Defendants' Contentions Regarding U.S. Patent No. 4,205,899

The '899 patent discloses optical cables having a core with a series of helical grooves cut therein for accepting optical fibers. According to the '899 patent, the helical nature of the grooves is necessary to avoid damages from tensile and compressive forces put on the cable when it is bent. Col. 1, lines 12-18.

Claims 1-4 of the '503 Patent are Non-Obvious Over the '899 Patent

Defendants contend that the '899 patent anticipates claims 1-4 of the '503 patent and renders claims 1-4 of the '503 patent obvious in view of background information from the '503 patent. These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 of the '503 patent recites "passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core and prevents twisting motion of the core." Defendants contend that rotatable plate 22, found in Fig. 5 of the '899 patent, serves as the first die and aligns dielectric optical waveguides 11 with the helical grooves 3 of the core. Fig. 5 makes clear, however, that the waveguides exit rotatable plate 22 in a linear fashion, whereas the grooves 3 leave the plate in a

helical fashion, meaning that the waveguides are not aligned with the surface features (the grooves) of the core by the rotatable plate.

Defendants generally refer, with regard to this element, to U.S. Patent No. 4,645, 628 (the “‘628 patent”), without comment as to which element it is intended to provide, what reason might exist for one of ordinary skill in the art to combine these references, or what the likelihood of success might be upon making this combination. Accordingly, Defendants have not stated a *prima facie* case of obviousness with regard to this combination, and Belden does not consider Defendants to have presented a contention with regard to the ‘899 and ‘628 combination. To the extent that the ‘628 patent is combined with the ‘899 patent, there remains no disclosure of a first die that aligns a transmission media with the parallel channels and that prevents rotation of the core. The rotatable plate of the ‘899 patent has a featureless hole through which the core passes – there is nothing to prevent rotation of the core even were the core to have surface features. Finally, the ‘899 patent identifies the helical nature of the grooves as necessary to overcome deficiencies with non-helical grooves, thus teaching away from any combination with the ‘628 patent. Defendants do not assert that this limitation is met by the background section of the ‘503 patent; the sole limitation that Defendants assert is found in the background section of the ‘503 patent is that of jacketing the closed cable.

Claim 1 further recites “bunching the aligned plurality of transmission media and core using a second die which forces each of the plurality of transmission media into contact with the surface features of the core.” Defendants contend that rotatable plate 23, in combination with tubes 26, of Fig. 5 is the claimed second die. This plate does not, however, bunch the media and core. Instead, this plate merely lays the optical waveguides into the helical grooves. As can be clearly seen in Fig. 6, the waveguides 11, on exiting the tubes 26, are not in contact with the

core, and are thus not forced into contact by the rotatable plate/tube combination. Any purported similarity in the shape of the plate/tube combination of the '899 patent with the second die of the '503 patent has no significance because, unlike in the '503 patent, the waveguides of the '899 patent do not contact the core until *after* each leaves the (purported) second die. While in the plate/tube combination, the waveguides, rather than being forced into contact with the core, are *physically separated* from the core by the tubes. Accordingly, not only is this limitation not disclosed or suggested, the '899 patent teaches away from this limitation. Further, Defendants do not assert that this limitation is met by the background section of the '503 patent.

Claims 2 and 3 of the '503 patent require "passing the transmission media and the core through a third die which generally centers the core relative to the plurality of transmission media." The '899 patent lacks a third die. The collection of four spools found in the '899 patent do not constitute a die and would not be recognized or considered by one of skill in the art to form a die. Defendants do not assert that this limitation is met by the background section of the '503 patent.

Claim 4 of the '503 patent adds the limitation that "the step of passing further comprises: extruding the core so that the surface features thereof align with the plurality of transmission media." The '899 patent does not disclose or suggest this step; the helical nature of the grooves on the core prevent their being extruded in alignment with the waveguides. Defendants do not assert that this limitation is met by the background section of the '503 patent.

E. Rebuttal to Defendants' Contentions Regarding JP Hei(1996)-96635

JP Hei(1996)-96635 (hereinafter "JP '635") discloses separating wires by metal shielding tape, which is ultimately folded into an "S"-like shape when formed into a cable.

Claims 1-4 of the '503 Patent are Novel and Non-Obvious Over the '635 Patent

Defendants contend that JP '635 patent anticipates claims 1 and 2 of the '503 patent and renders claims 3 and 4 of the '503 patent obvious (in view of JP '307 or the '899 patent). These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 of the '503 patent recites “passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core and prevents twisting motion of the core.” Defendants contend that a component identified in JP '635 as a “butt strap” forms the first die, and that the metal shielding tape is the core. As discussed above, tape would not be recognized by one of skill in the art as being a “core.” Indeed, tape and core are often used simultaneously; *see, e.g.*, the '485 patent discussed above. Further, to the extent that tape can generally be thought of as a core, the tape of JP '635 does not so function. Instead, as illustrated in Fig. 6 of JP '635, the tape 2 extends along the diameter of the cable and back around at least a portion of the wire groups 3 to remain under any shielding or outer jacket, while the center of the cable remains unoccupied.

Additionally, this tape, when it passes through the butt strap, is flat; the configuration just described is imparted to the tape at the assembling component (element 8 in Fig. 7). Thus, even if the metal shielding tape of JP '635 were considered to be a core, the tape lacks surface features when it exits the purported “first die” (the butt strap). Accordingly, the wire groups are not aligned by the first die with surface features of the core.

Claim 1 of the '503 patent further recites “bunching the aligned plurality of transmission media and core using a second die which forces each of the plurality of transmission media into contact with the surface features of the core which maintain a spatial relationship between each of the transmission media.” As can be seen in Fig. 6, at least some of the wire groups 3 cannot

be said to be in contact with surface features of the metal shielding tape. (At least wire group 3a is not in contact with the folded feature of the metal shielding tape.) Additionally, the metal shielding tape does not maintain a spatial relationship between each of the plurality of transmission media, as each of the three wire groups per side of the bisected cable remain in contact with one another.

Claim 2 of the '503 patent recites "passing the transmission media and the core through a third die which generally centers the core relative to the plurality of transmission media." The rotating cage in which wire and tape are housed are not a die.

Claim 3 of the '503 patent depends from claim 2, and thus requires the same third die. Defendants contend that this claim is obvious over JP '635 in view of either the '899 patent or JP '307. Each of these patents likewise does not disclose, teach or suggest the claimed third die. Accordingly, no *prima facie* case of obviousness exists with regard to these combinations.

Claim 4 of the '503 patent depends from claim 1 and adds the limitation that "the step of passing further comprises: extruding the core so that the surface features thereof align with the plurality of transmission media." The '899 patent does not disclose or suggest this step, and in fact the helical nature of the grooves on the core prevents their being extruded in alignment with the waveguides, thus teaching away from this limitation. JP '307 also does not disclose the alignment of the conductors with any surface features of the core by the JP '307 branching board. Further, JP '307 also does not disclose the extrusion of the core so that it has surface features. Instead, JP '307 teaches extruding a featureless linear core, and subsequently imparting a cruciform shape by means of forming rollers.

Finally, Defendants wrongly contend that there would have been a reason to combine the references at issue here. One of ordinary skill in the art would not have been motivated to

combine JP '635 with either the '899 patent or JP '307 because the cable of JP '635 lacks any type of extruded core. Thus, their combination would have resulted in the extrusion of an unused component. Defendants have provided no reason why a person of ordinary skill might have sought to place a core into the JP '635 cable.

F. Rebuttal to Defendants' Contentions Regarding U.S. Patent No. 4,600,268

U.S. Patent 4,600,268 (the "'268 patent'") discloses a cable formed by moving a core having a deformable outer layer through a die which partially embeds conductors in the deformable outer layer of the core by pressing them into the layer.

Claims 1-4 of the '503 Patent are Novel and Non-Obvious Over the '268 Patent

Defendants contend that the '268 patent renders claims 1-4 of the '503 patent obvious, in view of purported admissions made during prosecution of the '503 patent. This contention is erroneous for at least the reasons identified herein.

Independent claim 1 of the '503 patent recites "passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core and prevents twisting motion of the core." Defendants contend that the two-part die arrangement of Figs. 3 and 4 of the '268 patent prevents twisting of the core, because the conductors are embedded into the deformable surface of the core and will prevent rotation of the core. This assertion is both insufficient to meet this claim limitation and factually incorrect. First, the claim requires the first die prevent twisting motion of the core, but the '268 first die does not embed the wires into the surface of the core. At the first die, the wires are kept separate from the core by the die itself. To the extent, therefore, that any prevention of twisting of the core occurs in the '268 patent, the first die is not doing any of the prevention.

Second, the ‘268 patent makes clear that the first die 12 is mounted for rotation about its longitudinal axis while the second die 13 is fixed. The holes 15 extend at an angle both inwardly (as depicted in Fig. 4) and with respect to the axis of bore 14 (as depicted in Fig. 3). As acknowledged by Defendants, the first die 12 can rotate freely around the core because the central bore 14 of the first die is larger than the diameter of the core. In other words, the first die does not itself interact with the core. The first die therefore *cannot* prevent twisting motion of the core. Further evidence of this is that, upon exiting the first die, the core has no surface features with which the die can interact to prevent twisting of the core. Given the requirement that hole 14 be able to rotate freely about the core, the ‘268 patent expressly teaches away from this limitation.

Additionally, as the core has no surface features upon exiting the first die, the first die necessarily cannot align a plurality of transmission media with surface features of the core.

Defendants generally refers, with regard to this element, to U.S. Patent No. 4,645, 628 (the “‘628 patent”), again without comment as to which element it is intended to provide, what reason one of skill in the art would have to combine these references, or what the likelihood of success might be upon making this combination. Accordingly, Defendants have failed to state a *prima facie* case of obviousness with regard to this combination, and Belden does not consider Defendants to have presented a contention with regard to the ‘899 and ‘628 combination. Further, to the extent that the ‘628 patent is identified as disclosing a core with parallel channels for optical fibers of a cable, there remains no disclosure of a first die that aligns a transmission media with these parallel channels and that prevents rotation of the core. The first die of the ‘268 patent has a featureless hole through which the core passes – there is nothing to prevent rotation of the core even were the core to have surface features.

Claim 1 of the '503 patent further recites “twisting the bunched plurality of transmission media and core to close the cable.” Defendants acknowledges that this element is lacking in this reference. The Defendant asserts that, because the first die can rotate, this rotation imparts a twist on the cable. This assertion is incorrect, and is at odds with Defendants’ previous assertion that the first die can rotate freely around the core because the central bore of the first die is larger than the diameter of the core. Because the central bore of the first die does not touch the core (by virtue of being larger than the diameter of the core), the first die cannot bunch and/or twist the cable. Were it otherwise, the first die would be actively twisting the cable, which the first limitation of the claim prohibits.

Defendants assert that bunching and twisting of a cable were known, citing to the prosecution history of the '503 patent, and that “the timing of the twisting operation is merely a design implementation,” while providing no information as to why this is so. In the case of the '268 patent, the timing of the twisting is not merely a design consideration, however; the second die 13 lacks the ability to twist the core/conductor combination as it passes through, and were the twisting not to occur by means of rotatable die 12, the cable would be formed with linear, non-twisting conductors. The '268 patent indicates that such an arrangement is disfavored: “The helical lay of the conductors ensures that the relative conductor position is maintained when a quad sub-assembly of FIG. 1 is wound on a take-up bobbin prior to sheath extrusion.” Thus, the '268 patent teaches away from the proposed modification.

Claims 2 and 3 of the '503 patent each require “passing the transmission media and the core through a third die which generally centers the core relative to the plurality of transmission media.” Defendants here point to a linear series of core and conductor spools, illustrated in Fig. 5, that in no way indicate any type of centering of the core with respect to the conductors, and

that in any event do not disclose a die. Claim 3 further requires, when passing the transmission media and the core through the third die, “extruding the core at a center position relative to the plurality of transmission media.” The ‘268 patent does not disclose a third die; the core in Fig. 5 is wound on spool 24 mounted on a conventional wire strander. (Col. 3, line 10). That the table in Example 1 indicates that the compressible layer 9 may be extruded onto monofilament 8 says nothing about the timing or location of the extrusion of the compressible layer. Fig. 5 and its description make clear that this extrusion occurs in a prior, unrelated step.

Claim 4 of the ‘503 patent depends from claim 1 and adds the limitation that “the step of passing further comprises: extruding the core so that the surface features thereof align with the plurality of transmission media.” Even if the ‘268 patent’s extrusion of the coating 9 on the monofilament 8 were sufficient to meet the “extruding the core” limitation, the core nevertheless has no surface features when it is extruded that could be aligned with transmission media. Thus, the Defendants’ obviousness argument based upon the ‘268 patent must fail.

Rebuttal To Defendants’ Contentions
Regarding the Validity of U.S. Patent No. 5,424,491

Belden’s U.S. Patent No. 5,424,491 (“the ‘491 patent”) issued on June 13, 1995, from an application filed on October 8, 1993. The Defendants contend that the ‘491 patent is invalid under §103, based on various combinations of references, all of which include U.S. Patent No. 2,792,442 to Parc   (“Parc  ”), which issued on May 14, 1957. The Defendants also rely upon – in various combinations with Parc   – U.S. Patent No. 4,697,051 to Beggs (“Beggs”), which issued on September 29, 1987, U.S. Patent No. 5,010,210 to Sidi (“Sidi”), which issued on April 23, 1991, and U.S. Patent No. 4,773,867 to Keller (“Keller”), which issued on September 27,

1988.¹ Both Beggs and Sidi were of record during the prosecution of the application that issued as the '491 patent.

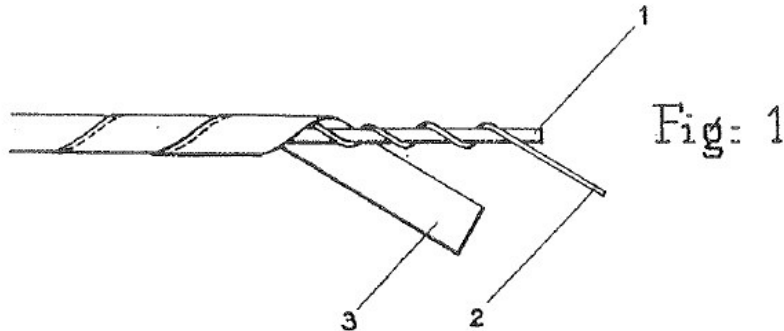
The Defendants fail to establish a *prima facie* case of obviousness, at least because none of the prior art references relied upon – whether alone or in combination – shows a cable comprising multiple twisted pairs of conductors, wherein such twisted pairs differ both with regard to their respective ranges of twist lay lengths and with regard to the thickness of the insulation on their respective conductors. Such features are set forth in claim 1, the sole independent claim of the '491 patent:

1. A telecommunications cable comprising a core having a plurality of pairs of twisted together individually insulated conductors with all of the conductors being of the same gauge and the maximum twist lay of the plurality of pairs being 2.00 inches with a first group of the plurality of conductor pairs having twist lays within a first range, the conductors of the first group having the same insulation thickness which is consistent with providing a nominal characteristic impedance for each conductor pair of the first group within desirable limits and an acceptable signal attenuation, and at least a second group of the plurality of conductor pairs having twist lays within a second range, the conductors of the second group having the same insulation thickness which is different from that for the first group and which is consistent with providing a nominal characteristic impedance for each conductor pair of the second group which is also within the desirable limits and an acceptable signal attenuation.

Contrary to Defendants' assertions, Parc  does not teach or suggest the use of twisted pairs having different twist lays. Parc 's references to "twist pitch" do not relate to the "twist length" or "twist lay" of modern cables. Parc 's only descriptions of "pitch" as a parameter in cable structure relate to the application of insulation materials (col. 2, lines 43-46; Fig. 1):

¹ The Defendants' element-by-element analyses regarding the '491 patent (Defendants' Exhibits 15-17) do not rely upon or articulate any arguments based upon any of the additional materials identified in Defendants' summary of its position (Defs. Supp. Resps., Mar. 9, 2009, p. 107 fn.6, p. 111 fn.7, and p. 112). Because Defendants are not relying on these materials, Belden does not address them here, but reserves the right to do so, should Defendants be permitted to rely on such references in an articulated argument.

In the insulated conductor represented on Fig. 1, 1 is the copper conductor, 2 an insulating wire with a diameter d , laid over 1 with a winding pitch p , and 3 is an insulating layer made of an insulating tape with a width L , a thickness e and laid with a pitch P .



Indeed, all of the techniques described in Parc  relate to the manipulation of the dielectric constants of cables, by adjusting the physical spacing between conductors and/or the amount of insulation between them. (See Parc , col. 1, line 69 – col. 2, line 27; col. 2, line 50 – col. 3, line 2).

Contrary to Defendants’ suggestion (*e.g.*, Defs.’ Exhibit 17, p. 8), Beggs does not teach the use of different ranges of twist lays within a particular cable. Defendants quote Beggs’ remark (col. 6, ll. 16-17) describing the twist lengths that exist in 26 gauge copper conductors: “For a 26 gauge copper conductor, the twist length falls in the range of about 0.25 to 1.6 inches”; however, Beggs does not suggest using a plurality of twist lay ranges within one cable. Indeed, Defendants omit the next sentence in Beggs (col. 6, ll. 17-19), which demonstrates that the reference actually teaches away from using twisted pairs that have more than a single twist lay: “ In a preferred embodiment, the twist of each conductor pair is a constant value, which is 0.5 inch.”

Aside from these purported teachings of Parc  and Beggs, which are not actually shown in those references, Defendants do not propose that any reference teaches the use of twisted pairs

having different twist lay ranges within a particular cable. Nor does such a teaching follow from the equations concerning “the relationship between insulation thickness and the dielectric constant as it affects characteristic impedance” (Defs. Supp. Resps., Mar. 9, 2009, p. 111).

Accordingly, the Defendants do not cite any prior art reference that teaches or suggests the features of claim 2 of the '491 patent, wherein each conductor pair has a twist lay that differs from the twist lay of each other pair:

2. A telecommunications cable according to claim 1 wherein the twist lay of each conductor pair is different from each other pair.

Furthermore, even based upon Defendants' interpretation of *Parcé*, there is no suggestion of the particular relationships between twist lay ranges and insulation thicknesses that are set forth in claims 4 and 5 of the '491 patent:

4. A telecommunications cable according to claim 1 wherein the conductors are each of 24 AWG and have different twist lays from 0.25 to 0.86 inches with the conductors in a plurality of conductor pairs with twist lays within a lower range each having an insulation thickness which is greater than an insulation thickness of the other conductor pairs with twist lays within an upper range.

5. A telecommunications cable according to claim 4 wherein each conductor of a pair within the lower range of twist lays has an insulation thickness of 0.0095 inches, the lower range being from 0.25 to 0.35 inches, and each conductor of a pair within the upper range of twist lays has an insulation thickness of 0.0085 inches.

Indeed, even if one were to accept Defendants' reading of *Parcé*, which supposes that *Parcé*'s “twist pitches” relate to the “twist lays” claimed in the '491 patent, *Parcé* teaches away from the relationships claimed in claims 4 and 5 of the '491 patent. Whereas claims 4 and 5 recite cables in which the twisted pairs with twist lays in the lower range have thicker insulation than the pairs with twist lays in the higher range, Defendants' interpretation of *Parcé* would show just the opposite. (*See, e.g.*, Defs. Supp. Resps., Mar. 9, 2009, pp. 119, 128). Accordingly, leaving aside

the incorrectness of Defendants' reading of Parcé, it is not logical for Defendants to suggest that "it would have been obvious to one of ordinary skill in the art to try" (Defs. Supp. Resps., Mar. 9, 2009, pp. 119, 128) the very opposite of what Defendants contend that Parcé taught.

Furthermore, Defendants incorrectly contend that Parcé, which issued in 1957, may be combined with any of the teachings of Beggs, Sidi, or Keller. The Defendants have failed to establish a reason why the antiquated techniques and materials taught in Parcé could be combinable with any references that date from approximately thirty years afterward, such as Beggs, Sidi and Keller. Furthermore, a person of ordinary skill in the art would not have had a reason to combine Parcé with Beggs, Sidi or Keller, and the Defendants have not articulated such a reason. Although Belden reserves the right to contend that Defendants have not satisfied their burden of proof to demonstrate the level of ordinary skill in the art by clear and convincing evidence, Belden responds that the level of ordinary skill in the art relating to the '491 patent at the time of the invention would have been that of a person having an undergraduate degree in electrical engineering and approximately two years of industry experience. Because there is no reason to combine any of Beggs, Sidi and Keller with Parcé, none of Defendants' arguments regarding the validity of any of claims 1-5 of the '491 patent can be viable.

Rebuttal to Defendants' Contentions
Regarding The Validity of U.S. Patent No. 6,570,095

Although Belden reserves the right to contend that Defendants have not satisfied their burden of proof to demonstrate the level of ordinary skill in the art by clear and convincing evidence, Belden responds that the level of ordinary skill in the art relating to the '095 patent at the time of the invention would have been that of a person having an undergraduate degree in electrical engineering and approximately two years of industry experience

A. Rebuttal to Defendants' Contentions Regarding DE 297 19 866

DE 297 19 866 (hereinafter “the ’866 patent”) is directed to a data communication cable that uses electrical screens to provide outward electromagnetic shielding and electromagnetic shielding between wire pairs in the cable. The ’866 patent discloses that the electrical screens are “preferably metal foils, in particular aluminum foils” or “plastic covered aluminum foils.”

Claims 1, 8-13, 19-21 and 27-29 are Novel and Non-Obvious Over the ’866 Patent

Defendants contend that the ’866 patent anticipates claims 1, 9-13, 20 and 27-29 of the ’095 patent and renders claims 1, 10 and 21 of the ’095 patent obvious. Defendants further contend that claims 8 and 19 are rendered obvious by the ’866 patent in combination with U.S. Patent No. 4,644,099 (hereinafter “the ’099 patent”), and that claim 22 is rendered obvious by the ’866 patent in combination with U.S. Patent No. 4,755,629 (hereinafter “the ’629 patent”). Defendants also contend that claim 23 is rendered obvious by the ’866 patent in combination with either U.S. Patent No. 5,574,250 (hereinafter “the ’250 patent”) or U.S. Patent No. 4,385,485 (hereinafter “the ’485 patent”). These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 recites that the cable comprises “a dielectric pair separator consisting of a dielectric layer disposed between the first twisted pair and the second twisted pair.” Similarly, independent claim 10 recites a cable comprising “a dielectric pair separator consisting of a dielectric layer.” The ’866 patent does not disclose a dielectric pair separator consisting of a dielectric layer. As discussed above, the ’866 patent discloses that the electrical screens are metal foils, or plastic coated metal foils. These foils do not constitute a “dielectric pair separator consisting of a dielectric layer,” as recited in independent claims 1 and 10 of the ’095 patent.

Contrary to Defendants' contentions, it would not have been obvious to try a separator consisting of a dielectric layer only in the cable of the '866 patent because the '866 patent specifically discloses that the purpose of the electrical screens is to provide electromagnetic shielding, which requires the presence of a metal, or at least electrically conductive, layer. Replacing a conductive or metal shielding foil with a purely dielectric tape would destroy the shielding function, and therefore would not have been obvious, nor obvious to try.

Claims 8, 9, 11-13 and 19-23 depend from one of claims 1 and 10 and therefore patentably distinguish over the '866 patent for at least the same reasons as do claims 1 and 10. In addition, with regard to claims 8 and 19, the '099 does not disclose a separator and thus fails to cure the deficiencies of the '866 patent. Accordingly, for at least this reason, claims 8 and 19 patentably distinguish over the proposed combination of the '866 patent and the '099 patent. The Defendants also have provided no evidence that the combination of the '866 patent and the '629 patent discloses or suggests each and every limitation recited in the claim 22, or that the combination of the '866 patent and either the '250 patent or the '485 patent discloses or suggests each and every limitation recited in the claim 23.

Furthermore, with regard to claim 21, the '866 patent does not disclose that "the plurality of twisted pairs or insulated conductors and the dielectric pair separator are twisted together in a helical manner along the longitudinal length of the data communications cable," as recited in claim 21. The '866 patent discloses that the individual conductors making up each pair are twisted or stranded using a helix stranding or SP stranding, but does not disclose or suggest helically twisting together the plurality of twisted pairs and the dielectric pair separator along the longitudinal length of the cable.

Independent claim 27 recites "a configurable dielectric pair separator that separates the

first and second twisted pairs of conductors” and “wherein the 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 discussed above, the electrical screens disclosed in the ’866 patent, which necessarily require a metal, or at least electrically conductive, portion do not constitute a dielectric pair separator. In addition, as also discussed above, the ’866 patent discloses stranding the individual conductors of each pair, to form the pair, but does not disclose that the 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. Accordingly, claim 27 distinguishes over the ’866 patent for at least these reasons.

Claims 28 and 29 depend from claim 27 and therefore distinguish over the ’866 patent for at least the same reasons as does claim 27.

Claims 2, 4, 5, 14, 16 and 30-33 are Non-Obvious Over the ’866 Patent

Contrary to Defendants’ contentions, claims 2, 4, 5, 14, 16 and 30-33 are not rendered obvious by the ’866 patent in combination with U.S. Patent No. 5,670,748 (hereinafter “the ’748 patent”).

Each of claims 2, 4, 5, 14, 16 and 30 depends from one of independent claims 1 and 10, and therefore patentably distinguishes for at least the same reasons as their respective base claims.

The ’748 patent does not disclose a pair separator. The ’748 patent discloses an electrical insulation composition for an electrical conductor comprising an inner layer and an outer layer. The inner layer, which contacts and surrounds the conductor comprises a foamed polymeric material and the outer layer comprises a halogenated polymeric material with at least one

additive to render the outer layer flame retardant and smoke suppressant. Contrary to Defendant's contentions, it would not have been obvious to "combine the foamed polymer of the '748 patent with the pair separator of the '866 patent" because the '748 patent discloses insulation materials and does not disclose a separator. Insulation layers and pair separators are completely different structures subject to different requirements and conditions, and fulfilling different purposes. Therefore, disclosure of a particular material used for an insulation layer does not provide any reason to use that material to form a pair separator.

Furthermore, even if one were to combine the '866 patent and the '748 patent, the '748 patent does not cure the deficiencies of the '866 patent because the '748 patent does not disclose or suggest a dielectric pair separator as recited in the claims of the '095 patent. In addition, as discussed above, to the extent that the '748 may disclose any of the materials recited in claims 2, 4, 5, 14, 16 and 30, it does so in the context of material used for the insulation layer surrounding the conductors of a twisted pair and not for use in a pair separator. There is no indication in the '748 patent that one of ordinary skill in the art would have found it obvious to use any of the materials in a pair separator.

Independent claim 31 recites a data communications cable comprising "a configurable dielectric pair separator disposed between at least two of the plurality of twisted pairs of insulated conductors, the configurable dielectric pair separator including a substantially flat dielectric tape formed of a foamed polymer," and "wherein the plurality of twisted pairs of insulated conductors and the configurable dielectric pair separator are twisted about a common axis to form a twisted pair cable." As discussed above, one of ordinary skill in the art would not have found it obvious to combine the '866 patent and the '748 patent, and furthermore, neither the '866 patent nor the '748 patent, whether considered alone or in combination, discloses or

suggests a configurable dielectric pair separator or that the plurality of twisted pairs of insulated conductors and the configurable dielectric pair separator are twisted about a common axis to form a twisted pair cable. In addition, as discussed above, to the extent that the '748 patent discloses a foamed polymer, it does so in the context of the insulation layer for the conductors of a twisted pair, and not in the context of a pair separator. For at least these reasons, independent claim 31 patentably distinguishes over the proposed combination of the '866 patent and the '748 patent.

Claims 32 and 33 depend from claim 31 and therefore patentably distinguish over the references for at least the same reasons as claim 31.

Claims 3 and 15 are Non-Obvious Over the '866 Patent

Contrary to Defendants' contentions, claims 3 and 15 are not rendered obvious by the '866 patent in combination with European Patent Application No. EP 0569217 (hereinafter EP '217).

Claims 3 and 15 depend from independent claims 1 and 10, respectively, and therefore patentably distinguish for at least the same reasons as their respective base claims.

EP '217 does not disclose a twisted pair cable, and does not disclose a separator. Indeed, EP '217 is not even directed to a data communications cable. Accordingly, contrary to the Defendant's contentions, it would not have been obvious to combine EP '217 with the '866 patent because the two references are directed to wholly different cables used for different purposes. However, even considered in combination with the '866 patent, EP '217 does not cure the deficiencies of the '866 patent because EP '217 does not disclose a dielectric pair separator. In addition, to the extent that EP '217 discloses a woven fiberglass tape, it does so in the context of an insulation material for magnet wire, and not in the context of a dielectric pair separator for

use in a twisted pair data communications cable. EP '217 provides no reason to use a woven fiberglass tape as a dielectric pair separator in a twisted pair data communications cable. Accordingly, for at least these reasons, claims 3 and 15 patentably distinguish over the proposed combination of the '866 patent and EP '217.

Claims 6, 7, 17 and 18 are Non-Obvious Over the '866 Patent

Contrary to Defendants' contentions, claims 6, 7, 17 and 18 are not rendered obvious by the '866 patent in combination with U.S. Patent No. 5,789,711 (hereinafter "the '711 patent").

As discussed above, the '866 patent fails to disclose or suggest several limitations recited in independent claims 1 and 10, from which claims 6, 7, 17 and 18 depend, and the Defendants have provided no evidence that the proposed combination of the '866 patent and the '711 patent discloses or suggests each and every limitation recited in the claims. Accordingly, claims 6, 7, 17 and 18 patentably distinguish for at least the same reasons as claims 1 and 10. In addition, contrary to Defendant's contentions, it would not have been obvious to combine the '711 patent with the '866 patent since neither reference provides any suggestion to use both the foils of the '866 patent and the star separator (or internal support) of the '711 patent in a single cable. Indeed, because it would be illogical to combine these two features, the '711 patent and the '866 patent teach away the combination that the Defendants propose. The Defendants' contention thus impermissibly uses the '095 patent claims as a blueprint for selecting and piecing together unrelated elements from the prior art.

Claims 24-26 are Non-Obvious Over the '866 Patent

Contrary to Defendants' contentions, claims 24-26 are not rendered obvious by the '866 patent in combination with U.S. Patent No. 4,096,346 (hereinafter "the '346 patent").

Independent claim 24 recites a data communications cable comprising "a dielectric pair

separator consisting of a dielectric layer and a conductive layer” and “a binder enclosing the plurality of twisted pairs of insulated conductors and the dielectric pair separator, the binder having a conductive layer that faces each of the plurality of twisted pairs of insulated conductors so that the binder in combination with the dielectric pair separator provides a plurality of enclosed channels extending along a longitudinal length of the data communications cable.”

The '346 patent discloses individually shielded pairs of conductors. The '866 patent discloses that “individual shielding of the conductor pairs is relatively complex to manufacture and data transmission cables of this type are relatively expensive.” The '866 patent further discloses that it is an objective of the patented cable to “take a data transmission cable of the type outlined above and configure it so that production costs can be reduced,” by sub-dividing the cable using the metal screening foils. Accordingly, contrary to Defendants’ contentions, it would not have been obvious to combine the '866 patent and the '346 patent because the '866 patent specifically teaches away from the type of individual shielding shown in the '346 patent. In addition, whether considered alone or in combination, the '866 patent and the '346 patent do not disclose or suggest a data communications cable in which the “binder in combination with the dielectric pair separator provides a plurality of enclosed channels extending along a longitudinal length of the data communications cable,” as recited in claim 24. For at least this reason, claim 24 patentably distinguishes over the proposed combination of the '866 patent and the '346 patent.

Claims 25 and 26 depend from claim 24 and therefore patentably distinguish over the '866 patent and the '346 patent for at least the same reason as does claim 24. In addition, neither the '866 patent nor the '346 patent, whether considered alone or in combination, disclose or suggest that the conductive layer of the pair separator faces the twisted pairs of insulated

conductors, as recited in claims 25 and 26.

B. Rebuttal to Defendants' Contentions Regarding JP 05-290645

JP 05-290645 (hereinafter) discloses a cable comprising a plurality of twisted wire pairs that are fused or bonded to a sheet with an adhesive, wound into a coil-like shape, and covered with a casing. The fusing sheet is used for aligning and fixing the twisted wire pairs and includes a base material and a fusing agent or an adhesive. The base material is generally “superior in low-temperature-resistance and mechanical strength,” such as nylon or polyester. A shield, for example, an aluminum tape, can also be included to provide electromagnetic shielding.

Claims 1, 9-12, 20-23 and 27-29 are Novel and Non-Obvious Over JP '645

Defendants contend that JP '645 anticipates claims 1, 9-12, 20, 21 and 27-29 of the '095 patent. Defendants also contend that claim 22 is rendered obvious by JP '645 in combination with the '629 patent, and that claim 23 is rendered obvious by JP '645 in combination with either the '250 patent or the '485 patent. These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 recites a dielectric pair separator that is “folded and arranged to provide a plurality of grooves extending along a longitudinal length of the dielectric pair separator.” Similarly, independent claim 10 recites “a dielectric pair separator...formed with a plurality of folds to provide a plurality of grooves extending along a longitudinal length of the dielectric pair separator.” These limitations are not disclosed by JP '645. JP '645 discloses that the sheet is rolled into a coil-like shape, but not that the sheet is “folded and arranged to provide a plurality of grooves” nor “formed with a plurality of folds.” To the extent JP '645 might be considered to disclose any grooves, there is only one groove formed by the coiled sheet, not a

plurality of grooves. Claims 1 and 10 each further recites “wherein the plurality of grooves do not form completely enclosed channels.” To the extent that JP ’645 might be considered to disclose a “groove,” the “groove” forms a completely enclosed channel, since the wire pairs toward the center of the cable are completely surrounded by the coiled sheet. Claim 10 further recites “each twisted pair of insulated conductors of the plurality of twisted pairs of insulated conductors being disposed within a corresponding groove of the dielectric pair separator.” This limitation is clearly not disclosed by JP ’645. For at least these reasons, independent claims 1 and 10 patentably distinguish over JP ’645.

Dependent claims 9 and 20 depend from claims 1 and 10, respectively, and therefore patentably distinguish over JP ’645 for at least the same reasons as do their respective base claims. In addition, claim 9 recites that the cable further comprises “a conductive shield surrounding the combination of the first twisted pair of insulated conductors, the second twisted pair of insulated conductors, and the dielectric pair separator.” Similarly, claim 20 recites that the cable further comprises “a conductive shield surrounding the plurality of twisted pairs of insulated conductors and the dielectric pair separator.” These limitations are not disclosed by JP ’645. JP ’645 discloses that the shield layer is part of the sheet. Thus, to the extent that JP ’645 might be considered to disclose a pair separator, the shield would be part of that pair separator and therefore does not surround the twisted pairs of insulated conductors and the dielectric pair separator, as recited in claims 9 and 20. Thus, claims 9 and 20 patentably distinguish over JP ’645 also for this additional reason.

Claims 11, 12 and 21 depend from claim 10 and therefore patentably distinguish over JP ’645 for at least the same reasons as does claim 10. In addition, claim 11 recites “wherein the dielectric pair separator is folded so as to separate each twisted pair of insulated conductors from

every other twisted pair of insulated conductors” (emphasis added). This limitation is clearly not disclosed by JP ’645 as the showing the relative positioning of the wire pairs and the sheet, namely Figures 1 and 6, clearly show wire pairs that are not separated from one another by the sheet. Thus, claim 11 patentably distinguishes over JP ’645 also for this additional reason.

Dependent claim 21 further recites that “the plurality of twisted pairs of insulated conductors and the dielectric pair separator are twisted together in a helical manner along the longitudinal length of the data communications cable.” This limitation is not disclosed by JP ’645. As discussed above, JP ’645 discloses rolling the sheet into a coil-like shape and cladding it with a casing. However, JP ’645 does not disclose helically twisting the sheet. There is no indication in JP ’645 that it would even be possible or desirable to helically twist the sheet once it has been wound into the coil-like shape. Accordingly, claim 21 patentably distinguishes over JP ’645 also for this additional reason.

Dependent claims 22 and 23 depend from claim 10 and therefore patentably distinguish over JP ’645 for at least the same reasons as does claim 10. In addition, Defendants have provided no evidence that the combination of JP ’645 and the ’629 patent discloses or suggests each and every limitation recited in the claim 22, or that the combination of JP ’645 and either the ’250 patent or the ’485 patent discloses or suggests each and every limitation recited in the claim 23.

Independent claim 27 recites that the “configurable dielectric pair separator, the first twisted pair of insulated conductors and the second pair of insulated conductors are twisted about a common central axis to form a twisted pair cable,” and that “the configurable dielectric pair separator is arranged within the jacket to form at least two grooves.” These limitations are not disclosed by JP ’645. As discussed above, JP ’645 discloses that the sheet with the adhered wire

pairs is wound into a coil-like shape, but does not disclose that the sheet and wire pairs are twisted about a common central axis to form a twisted pair cable. As also discussed above, JP '645 does not disclose that the sheet is arranged “to form at least two grooves.” For at least these reasons, claim 27 patentably distinguishes over JP '645.

Dependent claims 28 and 29 depend from claim 27 and therefore patentably distinguish over JP '645 for at least the same reasons as does claim 27. In addition, claim 29 recites that “the at least two grooves do not form completely enclosed channels.” As discussed above with respect to claims 1 and 10, JP '645 does not disclose this limitation. Accordingly, claim 29 patentably distinguishes over JP '645 for this additional reason also.

Claims 2, 4, 5, 14, 16 and 30-33 are Non-Obvious Over JP '645

Defendants contend that claims 2, 4, 5, 14, 16 and 30-33 are rendered obvious by JP '645 in combination with the '748 patent. These contentions are erroneous for at least the reasons identified herein.

JP '645 fails to disclose several limitations recited in independent claims 1, 10 and 27 from which claims 2, 4, 5, 14, 16 and 30 depend. Thus, each of claims 2, 4, 5, 14, 16 and 30 depends from one of independent claims 1 and 10, and therefore patentably distinguishes for at least the same reasons as its respective base claim.

As discussed above, contrary to Defendant's contentions, it would not have been obvious to “combine the foamed polymer of the '748 patent with the pair separator of JP '645” because the '748 patent discloses insulation materials and does not disclose a separator. Insulation layers and pair separators are completely different structures subject to different requirements and conditions, and fulfilling different purposes. Therefore, disclosure of a particular material used for an insulation layer does not provide any reason to use that material to form a pair separator.

However, even if one were to combine JP '645 and the '748 patent, the '748 patent does not cure the deficiencies of JP '645 because the '748 patent does not disclose or suggest a dielectric pair separator as recited in the claims of the '095 patent. In addition, as discussed above, to the extent that the '748 may disclose any of the materials recited in claims 2, 4, 5, 14, 16 and 30, it does so in the context of material used for the insulation layer surrounding the conductors of a twisted pair and not for use in a pair separator. There is no indication in the '748 patent that any of the materials would be suitable for use the sheet disclosed by JP '645 or that one of ordinary skill in the art would have found it obvious to use any of the materials in the sheet. Accordingly, even in combination JP '645 and the '748 patent fail to render claims 2, 4, 5, 14, 16 and 30 obvious.

Independent claim 31 recites a data communications cable comprising “a configurable dielectric pair separator disposed between at least two of the plurality of twisted pairs of insulated conductors, the configurable dielectric pair separator including a substantially flat dielectric tape formed of a foamed polymer,” and “wherein the plurality of twisted pairs of insulated conductors and the configurable dielectric pair separator are twisted about a common axis to form a twisted pair cable.” As discussed above, neither JP '645 nor the '748 patent, whether considered alone or in combination, discloses or suggests a configurable dielectric pair separator or that the plurality of twisted pairs of insulated conductors and the configurable dielectric pair separator are twisted about a common axis to form a twisted pair cable. In addition, to the extent that the '748 patent discloses a foamed polymer, it does so in the context of the insulation layer for the conductors of a twisted pair, and not in the context of a pair separator. For at least these reasons, independent claim 31 patentably distinguishes over the proposed combination of JP '645 and the '748 patent.

Claims 32 and 33 depend from claim 31 and therefore patentably distinguish over the references for at least the same reasons as claim 31.

Claims 3 and 15 are Non-Obvious Over JP '645

Contrary to Defendants' contentions, claims 3 and 15 are not rendered obvious by the '866 patent in combination with EP '217.

Claims 3 and 15 depend from independent claims 1 and 10, respectively, and therefore patentably distinguish for at least the same reasons as their respective base claims.

As discussed above, EP '217 does not disclose a twisted pair cable and does not disclose a separator. Contrary to the Defendant's contentions, it would not have been obvious to combine EP '217 with JP '645 because the two references are directed to wholly different cables used for different purposes. However, even considered in combination with JP '645, EP '217 does not cure the deficiencies of JP '645 because EP '217 does not disclose a dielectric pair separator. In addition, to the extent that EP '217 discloses a woven fiberglass tape, it does so in the context of an insulation material for magnet wire, and not in the context of a dielectric pair separator for use in a twisted pair data communications cable. Accordingly, for at least these reasons, claims 3 and 15 patentably distinguish over the proposed combination of JP '645 and EP '217.

Claims 6, 7, 17 and 18 are Non-Obvious Over JP '645

Contrary to Defendants' contentions, claims 6, 7, 17 and 18 are not rendered obvious by JP '645 in combination with the '711 patent.

As discussed above, JP '645 fails to disclose or suggest several limitations recited in independent claims 1 and 10, from which claims 6, 7, 17, 18 depend, and the Defendants have provided no evidence that the proposed combination of JP '645 and the '711 patent discloses or

suggests each and every limitation recited in the claims. Accordingly, claims 6, 7, 17 and 18 patentably distinguish for at least the same reasons as claims 1 and 10. In addition, contrary to Defendant's contentions, it would not have been obvious to combine the '711 patent with JP '645 since neither reference provides any reason to use both the coiled sheet of JP '645 and the star separator (or internal support) of the '711 patent in a single cable. Indeed, it would be illogical to do so. Accordingly, the JP '645 and the '711 patent teach away from the Defendants' proposed combination. The Defendants' contention thus impermissibly uses the '095 patent claims as a blueprint for selecting and piecing together unrelated elements from the prior art.

Claims 8 and 19 are Non-Obvious Over JP '645

Contrary to Defendants' contentions, claims 8 and 9 are not rendered obvious by JP '645 in combination with the '099 patent.

JP '645 discloses that the sheet and the adhered wire pairs are wound into a round, coil-like shape. One of ordinary skill in the art would not have found it obvious to modify JP '645 to completely change the shape of the coiled sheet so that it would have an appropriate shape to be used in a flat cable. Thus, contrary to Defendant's contentions, it would not have been obvious to combine JP '645 and the '099 patent because JP '645 is specifically directed to a round cable and not a flat cable. Furthermore, as discussed above, JP '645 fails to disclose or suggest several limitations recited in claims 1 and 10, from which claims 8 and 19 respectively depend. Thus, each of claims 8 and 19 patentably distinguishes for the same reasons as claims 1 and 10. In addition, even if one were to combine the '099 patent and JP '645, the '099 patent fails to cure the deficiencies of JP '645. Accordingly, for at least these reasons, claims 8 and 19 patentably distinguish over the proposed combination of JP '645 and the '099 patent.

Claims 24-26 are Non-Obvious Over JP '645

Contrary to Defendants' contentions, claims 24-26 are not rendered obvious by JP '645 in combination with the '346 patent.

Independent claim 24 recites a data communications cable comprising "a dielectric pair separator consisting of a dielectric layer and a conductive layer" and "a binder enclosing the plurality of twisted pairs of insulated conductors and the dielectric pair separator, the binder having a conductive layer that faces each of the plurality of twisted pairs of insulated conductors so that the binder in combination with the dielectric pair separator provides a plurality of enclosed channels extending along a longitudinal length of the data communications cable."

As discussed above, the '346 patent discloses individually shielded pairs of conductors. Individual shielding of the pairs may not even be possible in the cable of JP '645 since the wire pairs are adhered to the sheet. Certainly, neither JP '645 nor the '346 patent provides any indication of how or why one would apply the shielding of the '346 patent to JP '645. Since JP '645 and the '346 patent disclose cables with very different structures, one of ordinary skill in the art would not have found it obvious to combine the '346 patent with JP '645. Furthermore, whether considered alone or in combination, JP '645 and the '346 patent do not disclose or suggest a data communications cable in which the "binder in combination with the dielectric pair separator provides a plurality of enclosed channels extending along a longitudinal length of the data communications cable," as recited in claim 24. For at least this reason, claim 24 patentably distinguishes over the proposed combination of JP '645 and the '346 patent.

Claims 25 and 26 depend from claim 24 and therefore patentably distinguish over JP '645 and the '346 patent for at least the same reason as claim 24. In addition, neither JP '645 nor the '346 patent, whether considered alone or in combination, disclose or suggest that the conductive layer of the pair separator faces the twisted pairs of insulated conductors, as recited in claims 25

and 26. In particular, in JP '645, the layer of the sheet that faces the wire pairs must be the adhesive layer, in order to fix the wire pairs to the sheet, and thus cannot be the conductive layer.

Rebuttal to Defendants' Contentions
Relating to the Validity of U.S. Patent No. 6,998,537 (Claims 19-22)

Although Belden reserves the right to contend that Defendants have not satisfied their burden of proof to demonstrate the level of ordinary skill in the art by clear and convincing evidence, Belden responds that the level of ordinary skill in the art relating to the '537 patent at the time of the invention would have been that of a person having an undergraduate degree in electrical engineering and approximately two years of industry experience

A. Rebuttal to Defendants' Contentions Regarding the '866 Patent

Defendants contend that claims 19-22 are rendered obvious by the '866 patent in combination with the '748 patent. These contentions are erroneous for at least the reasons identified herein.

Independent claim 19 recites an unshielded communications cable comprising “a substantially flat configurable dielectric separator that consists of non-conductive, dielectric materials disposed between the plurality of twisted pairs of conductors,” and wherein “the substantially flat configurable dielectric separator includes a foamed polymer.” As discussed above, the '866 patent does not disclose or suggest a configurable dielectric separator that consists of non-conductive, dielectric materials. To the contrary, the '866 patent discloses that the electrical screen(s) is or includes a metal foil/layer to provide electromagnetic screening. Furthermore, contrary to Defendants' contentions, it would not have been obvious to modify the pair separator of the '866 patent to use non-conductive, dielectric materials only because the '866 patent specifically discloses that the purpose of the electrical screens is to provide

electromagnetic shielding, which requires the presence of a metal, or at least electrically conductive, layer. Replacing a conductive or metal shielding foil with a purely dielectric separator would destroy the shielding function, and therefore would not have been obvious, nor obvious to try.

As discussed above, the '748 patent does not disclose a pair separator. The '748 patent discloses an electrical insulation composition for an electrical conductor comprising an inner layer and an outer layer. The inner layer, which contacts and surrounds the conductor comprises a foamed polymeric material and the outer layer comprises a halogenated polymeric material with at least one additive to render the outer layer flame retardant and smoke suppressant. Contrary to Defendant's contentions, it would not have been obvious to "combine the foamed polymer of the '748 patent with the pair separator of the '866 patent" because the '748 patent discloses insulation materials and does not disclose a separator. Insulation layers and pair separators are completely different structures subject to different requirements and conditions, and fulfilling different purposes. Therefore, disclosure of a particular material used for an insulation layer does not provide any reason to use that material to form a pair separator.

Furthermore, even if one were to combine the '866 patent and the '748 patent, the '748 patent does not cure the deficiencies of the '866 patent because the '748 patent does not disclose or suggest a dielectric pair separator as recited in claims 19-22 of the '537 patent. In addition, as discussed above, to the extent that the '748 patent may disclose a foamed polymer, or any of the materials recited in dependent claims 20-22, it does so in the context of material used for the insulation layer surrounding the conductors of a twisted pair and not for use in a pair separator.

Accordingly, each of claims 19-22 patentably distinguishes over the proposed combination of the '866 patent and the '748 patent for at least these reasons.

B. Rebuttal to Defendants' Contentions Regarding the '485 Patent

Defendants contend that claims 19-22 are rendered obvious by the '485 patent in combination with the Refi reference and the '748 patent. These contentions are erroneous for at least the reasons identified herein.

As noted in Defendants' contentions, the '485 patent is directed to an optical fiber cable and not to a twisted pair cable. Defendants references the specification of the '537 patent where it is stated that "it is to be appreciated that other high-speed data communications media can be used instead of twisted pairs of conductors in the constructions of the cable according to the invention, such as, for example, optical media." This reference to the specification of the '537 patent is wholly irrelevant to the validity analysis of claims 19-22. Claims 19-22 recite twisted pairs, not optical media. The specification of the '537 patent certainly cannot be used to provide the reason to modify the '485 patent to replace the optical fibers with twisted pairs. Furthermore, Defendants have provided no reasoning as to why one of ordinary skill in the art would have found it obvious to modify the '485 patent based on the Refi reference (showing a hybrid cable, having both copper pairs and optical fibers) to replace the optical fibers with twisted pairs. However, Refi does not teach the proposed substitution and there would be no reason to do so, based on Refi. Because optical fibers are fundamentally different from copper wires, such a substitution would be illogical in the present context and would provide no justification for one of ordinary skill in the art to modify the '485 patent to replace the optical fibers with copper pairs.

Furthermore, it would not have been obvious to combine the '748 patent with the '485 patent so as to modify the splicing tapes to include a foamed polymer. First, the '748 patent is directed to a twisted pair cable and the '485 patent is directed to an optical cable. These cables

are different, have different design constraints, and are required to meet different specifications. There is thus no reason that one of ordinary skill in the art would have found it obvious to modify an optical cable based on a reference dealing with twisted pairs. Furthermore, benefits of foaming such as improved electrical performance are not relevant to optical cables. In addition, the '485 patent specifically states that splicing tape should be a "rather rigid material," such as polyester or aluminum. Defendants have provided no evidence that one of ordinary skill in the art would have considered a foamed polymer, or any of the foamed materials recited in dependent claims 20-22, to have sufficient rigidity and be otherwise suitable to be used as the splicing tapes in the cable of the '485 patent.

Accordingly, for at least the above-stated reasons, claims 19-22 patentably distinguish over the proposed combination of the '485 patent, the '748 patent and the Refi reference.

C. Rebuttal to Defendants' Contentions Regarding JP Sho43(1968)-1570

Contrary to Defendants' contentions, claims 19-22 are not rendered obvious JP Sho43(1968)-15470 (hereinafter "JP 15470") in combination with the '748 patent.

JP 15470 discloses an alternately stranded cable comprising stranded pairs and a core material of which a plate body is formed such that the facing of its surface becomes changed into a reciprocatingly twisted state, as shown in Figure 2. A cable sheath surrounds the stranded pairs and the plate body, as shown in Figure 1. JP 15470 discloses that the core material from which the plate body is formed is a rigid plastic.

JP 15470 does not disclose a "substantially flat configurable dielectric separator" as recited in claims 19-22. According to JP 15470, the plate body is formed into the twisted state by "twisting the facing direction of the plate body...while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature." Thus, the plate body is formed into

a specific shape during manufacture of the cable. JP 15470 does not disclose and provides no indication whatsoever that, once formed into the twisted shape, the plate body could be “configurable.” Rather, the plate body would retain its defined shape and is therefore not “configurable.” In addition, the plate body is not “substantially flat,” since it is formed into the “corkscrew” twisted shape.

JP 15470 also does not disclose that the core material includes a foamed polymer. Contrary to Defendants’ contentions, it would not have been obvious to modify JP 15470 based on the ’748 patent such that the plate body comprises a foamed polymer. As discussed above, the ’748 patent does not disclose a separator, and to the extent that the ’748 may disclose a foamed polymer, as recited in claim 19, or any of the materials recited in dependent claims 20-22, it does so in the context of material used for the insulation layer surrounding the conductors of a twisted pair and not for use in a pair separator. Specifically, neither JP 15470 nor the ’748 patent, whether considered alone or in combination, provides any indication that a foamed polymer would be a suitable material for the plate body, or that one of ordinary skill in the art would have found it obvious to modify the “rigid plastic” plate body to include a foamed polymer, as recited in independent claim 19; particularly when the ’748 patent discusses the use of foam-skin insulation and does not disclose a separator.

For at least these reasons, claims 19-22 patentably distinguish over the proposed combination of JP 15470 and the ’748 patent.

D. Rebuttal to Defendants’ Contentions Regarding the ’629 Patent

Defendants contend that the ’629 patent anticipates claim 19 and that the ’629 patent in combination with the ’748 patent renders claims 20-22 obvious. These contentions are erroneous for at least the reasons identified herein.

Claim 19 is Novel Over the '629 Patent

Claim 19 recites “a substantially flat configurable dielectric pair separator that consists of non-conductive, dielectric materials disposed between the plurality of twisted pairs.” This limitation is not disclosed by the '629 patent. The '629 patent discloses a cable in which each pair of individually insulated conductors is enclosed individually in its own tubular member. A metallic shield encloses the tubular members. The '629 patent also discloses that the tubular members can be replaced with an S-shaped “pre-form.” Contrary to Defendants’ contentions, this “pre-form” is not a “substantially flat configurable dielectric pair separator.” The '629 patent discloses that the pre-form may be replaced with “a tape which is made of a dielectric material and wrapped about the conductor pairs to cause each pair to be enclosed substantially in a dielectric portion of the buffer system.” However, there is nothing in the reference showing that the tape identified in this passage of the '629 patent is a “substantially flat configurable dielectric pair separator.” Nor does the '629 patent show that its “tape” might include a “foamed polymer,” as recited in claim 19. For at least these reasons, claim 19 patentably distinguishes over the '629 patent.

Claims 20-22 are Non-Obvious Over the '629 Patent

Contrary to Defendants’ contentions, claims 20-22 are not rendered obvious by the '629 patent in combination with the '748 patent.

As discussed above, the '748 patent discloses an electrical insulation composition for an electrical conductor comprising an inner layer and an outer layer. The inner layer, which contacts and surrounds the conductor comprises a foamed polymeric material and the outer layer comprises a halogenated polymeric material with at least one additive to render the outer layer flame retardant and smoke suppressant. Thus, contrary to Defendant’s contentions, it would not

have been obvious to combine the '748 patent with the '629 patent because the '748 patent discloses insulation materials and does not disclose a separator. Insulation layers and pair separators are completely different structures subject to different requirements and conditions, and fulfilling different purposes. Therefore, disclosure of a particular material used for an insulation layer does not provide any reason to use that material to form a pair separator.

Furthermore, even if one were to combine the '629 patent and the '748 patent, the '748 patent does not cure the deficiencies of the '629 patent because the '748 patent does not disclose or suggest a substantially flat configurable dielectric pair separator, as recited in claims 20-22 of the '537 patent. In addition, as discussed above, to the extent that the '748 patent may disclose any of the materials recited in dependent claims 20-22, it does so in the context of material used for the insulation layer surrounding the conductors of a twisted pair and not for use in a pair separator.

Accordingly, each of claims 20-22 patentably distinguishes over the proposed combination of the '629 patent and the '748 patent for at least these reasons.

Rebuttal To Defendants' Contentions
Regarding the Validity of U.S. Patent No. 7,179,999

Although Belden reserves the right to contend that Defendants have not satisfied their burden of proof to demonstrate the level of ordinary skill in the art by clear and convincing evidence, Belden responds that the level of ordinary skill in the art relating to the '999 patent at the time of the invention would have been that of a person having an undergraduate degree in electrical engineering and approximately two years of industry experience

A. Rebuttal to Defendants' Contentions Regarding the '866 Patent

Claims 1-7, 13-16 and 20 are Novel and Non-Obvious Over the '866 Patent

Defendants contend that the '866 patent anticipates claims 1-6, 13-16 and 20, and that claim 7 is rendered obvious by the '866 patent. These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 recites “a configurable tape separator disposed between the plurality of twisted pairs of conductors...wherein the plurality of twisted pairs of insulated conductors and the configurable tape separator are cabled about a common axis to form the unshielded twisted pair communications cable; and wherein the configurable tape separator is substantially non-conductive.” These limitations are not disclosed by the '866 patent. As discussed above, the '866 patent discloses that the individual conductors making up each pair are twisted or stranded using a helix stranding or SP stranding, but does not disclose that the plurality of twisted pairs and the configurable tape separator are cabled about a common axis to form the unshielded twisted pair communications cable. In addition, the '866 patent discloses that the electrical screens are metal foils, or plastic coated metal foils. Contrary to Defendants' contentions, the plastic coated metal foil is not “substantially non-conductive,” but in fact must contain a conductive (namely metal) component in order to function as an electrical screen and provide the electromagnetic shielding which is the purpose disclosed in the '866 patent of the screen.

Furthermore, it would not have been obvious to try a separator consisting of a dielectric layer only in the cable of the '866 patent because the '866 patent specifically discloses that the purpose of the electrical screens is to provide electromagnetic shielding, which requires the presence of a metal, or at least electrically conductive, layer. Replacing a conductive or metal shielding foil with a purely dielectric tape would destroy the shielding function, and therefore would not have been obvious, nor obvious to try.

For at least these reasons, claim 1 patentably distinguishes over the '866 patent.

Claims 2-7 and 13 depend from claim 1 and therefore patentably distinguish over the '866 patent for at least the same reasons as does claim 1.

In addition, with regard to claim 3, the '866 patent does not disclose that “prior to cabling, the configurable tape separator comprises a substantially flat tape,” as recited in claim 3; particularly since the '866 patent does not even disclose cabling, as discussed above with respect to claim 1. Similarly, the '866 patent does not disclose that “the separator is constructed such that when a portion of the jacket is removed from an end of the cable to expose the plurality of twisted pairs and the separator, the exposed separator is substantially flat,” as recited in claim 5. Defendants compares the figures of the '866 patent with figures of the '999 patent in an attempt to show that these limitations are met; however, this approach is improper. It is well established that there is no requirement for any claim to cover all of the features shown in the drawings of a patent application. Accordingly, the '999 patent may show some embodiments in which the tape separator is not flat; however, this has no bearing on the proper interpretation of the claim language.

With regard to claim 5, Defendants have provided no evidence or reasoning as to why one of ordinary skill in the art would have found it obvious to apply the manufacturing method of JP Hei8(1996)-96635 (hereinafter “JP 96635”) to the '866 patent. However, even in combination, JP 96635 fails to cure the deficiencies of the '866 patent with respect to claim 1, and thus to claim 5, which depends from claim 1. Furthermore, Defendants have provided no evidence to support its contention that “when the cover is removed” (on the cable formed by the apparatus shown in JP 96635) “and the cable untwisted, the “S” shaped tape would flatten out.” Thus, for at least these reasons, claim 5 is not rendered obvious by the proposed combination the '866 patent with JP 96635.

Independent claim 14 recites an unshielded twisted pair communications cable comprising “a configurable pair separator that, prior to cabling, comprises a substantially flat, non-conductive tape” and “wherein the plurality of twisted pairs of insulated conductors and the configurable pair separator are cabled about a common axis to form the unshielded twisted pair communications cable.” As discussed above, the ’866 patent does not disclose or suggest these limitations since the ’866 patent discloses only a separator with a conductive (metal) element, and does not discuss cabling of the plurality of twisted pairs and the pair separator. For at least these reasons, claim 14 patentably distinguishes over the ’866 patent.

Claims 15 and 16 depend from claim 14 and therefore patentably distinguish over the ’866 patent for at least the same reasons as does claim 14.

Independent claim 20 recites an unshielded twisted pair communications cable, wherein “the separator is substantially non-conductive and is constructed such that, when a portion of the jacket is removed from an end of the cable to expose the plurality of twisted pairs and the separator, the exposed separator is substantially flat.” As discussed above with respect to claims 1 and 5, these limitations are not disclosed or suggested by the ’866 patent, whether considered alone or in combination with JP 96635. Accordingly, for at least these reasons, claim 20 patentably distinguishes over the ’866 patent and JP 96635.

Claims 8, 10-12, 17 and 19 are Non-Obvious Over the ’866 Patent

Contrary to Defendants’ contentions, claims 8, 10-12, 17 and 19 are not rendered obvious by the ’866 patent in combination with the ’748 patent.

As discussed above, the ’748 patent does not disclose a pair separator. The ’748 patent discloses an electrical insulation composition for an electrical conductor comprising an inner layer and an outer layer. The inner layer, which contacts and surrounds the conductor comprises

a foamed polymeric material and the outer layer comprises a halogenated polymeric material with at least one additive to render the outer layer flame retardant and smoke suppressant. Contrary to Defendant's contentions, it would not have been obvious to combine the foamed polymer of the '748 patent with the pair separator of the '866 patent because the '748 patent discloses insulation materials and does not disclose a separator. Insulation layers and pair separators are completely different structures subject to different requirements and conditions, and fulfilling different purposes. Therefore, disclosure of a particular material used for an insulation layer does not provide any reason to use that material to form a pair separator.

Furthermore, even if one were to combine the '866 patent and the '748 patent, the '748 patent does not cure the deficiencies of the '866 patent because the '748 patent does not disclose or suggest a configurable tape separator as recited the claims of the '999 patent. Therefore, 8, 10-12, 17 and 19 patentably distinguish for at least the same reasons as do independent claims 1 and 14. In addition, as discussed above, to the extent that the '748 patent may disclose a foamed polymer, or any of the materials recited in dependent claims 20-22, it does so in the context of material used for the insulation layer surrounding the conductors of a twisted pair and not for use in a pair separator.

For at least these reasons, claims 8, 10-12, 17 and 19 patentably distinguish over the proposed combination of the '866 patent and the '748 patent.

Claims 9 and 18 are Non-Obvious Over the '866 Patent

Contrary to Defendants' contentions, claims 9 and 18 are not rendered obvious by the '866 patent in combination with EP '217.

Claims 9 and 18 depend from independent claims 1 and 14, respectively, and therefore patentably distinguish for at least the same reasons as their respective base claims.

EP '217 does not disclose a twisted pair cable, and does not disclose a separator. Indeed, EP '217 is not even directed to a data communications cable. Accordingly, contrary to the Defendant's contentions, it would not have been obvious to combine EP '217 with the '866 patent because the two references are directed to wholly different cables used for different purposes. However, even considered in combination with the '866 patent, EP '217 does not cure the deficiencies of the '866 patent because EP '217 does not disclose a dielectric pair separator. In addition, to the extent that EP '217 discloses a woven fiberglass tape, it does so in the context of an insulation material for magnet wire, and not in the context of a dielectric pair separator for use in a twisted pair data communications cable. EP '217 provides no reason to use a woven fiberglass tape as a dielectric pair separator in a twisted pair data communications cable. Accordingly, for at least these reasons, claims 9 and 18 patentably distinguish over the proposed combination of the '866 patent and EP '217.

B. Rebuttal to Defendants' Contentions Regarding International Publication No. WO93/20563

International Publication No. WO93/20563 (hereinafter "WO93/20563") is directed to a flat cable comprising a series of parallel electrical conductors each carrying a spiral-wound tape insulation layer and held together by braiding formed of a plurality of tapes or fibers interwoven between the conductors. WO93/20563 discloses that the conductors may comprise twisted pairs.

Claims 1-7, 10, 14, 16 and 20 are Novel and Non-Obvious Over WO93/20563

Defendants contend that WO93/20563 anticipates or renders obvious claims 1-7, 10 and 20. Defendants also contend that WO93/20563 in combination with JP '645 renders claims 1, 14 and 16 obvious. These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 recites "a configurable tape separator disposed between the plurality of twisted pairs of conductors in the unshielded twisted pair communications cable and arranged

so as to separate the first twisted pair of insulated conductors from the second twisted pair of insulated conductors.” The term “separator” in the field of twisted pair communications cables has a known meaning to those skilled in the art. The braiding filaments disclosed in WO93/20563 are not “separators.” Thus, WO93/20563 does not disclose “a configurable tape separator disposed between the plurality of twisted pairs of conductors in the unshielded twisted pair communications cable and arranged so as to separate the first twisted pair of insulated conductors from the second twisted pair of insulated conductors,” as recited in claim 1.

WO93/20563 also does not disclose a “jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable tape separator,” as recited in claim 1. Defendants contend that the braiding material is also the jacket. Those skilled in the art recognize that a pair separator and a jacket are different elements in the cable, serving different purposes. The braiding material cannot be both the separator and the jacket. Furthermore, claim 1 specifies that the jacket encloses the configurable tape separator. Even if one could consider the braiding material a jacket, it does not enclose the configurable tape separator. In addition, WO93/20563 does not disclose or suggest that the “plurality of twisted pairs of insulated conductors and the configurable tape separator are cabled about a common axis.” To the contrary, since the cable of WO93/20563 is formed by braiding the conductors together, there is no need for cabling, and Defendants have provided no evidence that cabling the WO93/20563 cable would have been obvious, or even possible. In addition, contrary to Defendants’ contentions, JP ’645 does not disclose twisting or cabling of the plurality of twisted pairs of insulated conductors and the configurable tape separator about a common axis, but rather discloses that the sheet is wound or rolled into a coil-like shape. Furthermore, since JP ’645 and WO93/20563 are directed to completely different cables with different structures, one of ordinary skill in the art would not

have found it obvious to modify WO93/20563 based on JP '645. Even if one were to combine WO93/20563 and JP '645, the combination does not disclose or suggest several limitations recited in claim 1.

For at least these reasons, independent claim 1 patentably distinguishes over WO93/20563.

Claims 2-7 and 10 depend from claim 1 and therefore patentably distinguish over WO93/20563 for at least the same reasons as claim 1. In addition, WO93/20563 does not disclose the separator being arranged to form or define channels, as recited in claims 2 and 4.

Independent claim 14 recites “a configurable pair separator that, prior to cabling, comprises a substantially flat, non-conductive tape disposed between the plurality of twisted pairs of conductors and that is arranged so as to separate the first twisted pair of insulated conductors from the second twisted pair of insulated conductors; a jacket enclosing the plurality of twisted pairs of insulated conductors and the configurable pair separator; wherein the plurality of twisted pairs of insulated conductors and the configurable pair separator are cabled about a common axis to form the unshielded twisted pair communications cable.” As discussed above, WO93/20563 does not disclose or suggest these limitations. Furthermore, JP '645 does not disclose that the configurable pair separator are cabled about a common axis to form the unshielded twisted pair communications cable. As discussed above, one of ordinary skill in the art would not have found it obvious to combine WO93/20563 and JP '645; however, even in combination, JP '645 does not cure the deficiencies of WO93/20563. For at least these reasons, claim 14 patentably distinguishes over WO 92/20563, whether considered alone or in combination with JP '645.

Claims 16 depends from claim 14 and therefore patentably distinguishes for at least the

same reasons as does claim 14.

Independent claim 20 recites “a separator disposed among the plurality of twisted pairs of insulated conductors so as to separate the first twisted pair from the second twisted pair; and a jacket enclosing the plurality of twisted pairs of insulated conductors and the separator.” As discussed above, WO93/20563 does not disclose these limitations. Accordingly, claim 20 patentably distinguishes over WO93/20563 for at least these reasons.

Claims 8, 11, 12, 17 and 19 are Non-Obvious Over WO93/20563

Contrary to Defendants’ contentions, claims 8, 11, 12, 17 and 19 are not rendered obvious by WO93/20563 in combination with the ’748 patent.

As discussed above, the ’748 patent does not disclose a pair separator. WO93/20563 and the ’748 patent are directed to very different types of cables having completely different structures. Therefore, one of ordinary skill in the art would not have found it obvious to combine WO93/20563 with the ’748 patent. However, even if one were to combine the ’748 patent with WO93/20563, the ’748 patent does not cure the deficiencies of WO93/20563 because the ’748 patent does not disclose or suggest a configurable tape separator as recited in the claims of the ’999 patent. Thus, claims 8, 11, 12, 17 and 19 patentably distinguish for at least the same reasons as their respective base claims (i.e., claims 1 and 14). In addition, to the extent that the ’748 may disclose any of the materials recited in claims 8, 11, 12, 17 and 19, it does so in the context of material used for the insulation layer surrounding the conductors of a twisted pair and not for use in a pair separator. There is no indication in the ’748 patent or WO93/20563 that any of the materials would have been obvious to use in a pair separator, particularly since neither reference discloses a separator.

For at least these reasons, claims 8, 11, 12, 17 and 19 patentably distinguish over the

proposed combination of WO93/20563 and the '748 patent.

Claims 9 and 18 are Non-Obvious Over WO93/20563

Contrary to Defendants' contentions, claims 9 and 18 are not rendered obvious by WO93/20563 in combination with EP '217.

As discussed above, EP '217 does not disclose a twisted pair cable, does not disclose a separator, and is not directed to a data communications cable. Furthermore, WO93/20563 and EP '217 are directed to cables with very different structures and that are used for different purposes. Therefore, one of ordinary skill in the art would not have found it obvious to combine WO93/20563 and EP '217. However, even considered in combination, EP '217 does not cure the deficiencies of WO93/20563 because EP '217 does not disclose or suggest a pair separator. Thus, claims 9 and 18 patentably distinguish for at least the same reasons as claims 1 and 14, from they respectively depend. In addition, to the extent that EP '217 discloses a woven fiberglass tape, it does so in the context of an insulation material for magnet wire, and not in the context of a dielectric pair separator for use in a twisted pair data communications cable. EP '217 provides no reason to use a woven fiberglass tape as a dielectric pair separator in a twisted pair data communications cable. Accordingly, for at least these reasons, claims 9 and 18 patentably distinguish over the proposed combination of WO93/20563 and EP '217.

C. Rebuttal to Defendants' Contentions Regarding JP 15470

Claims 1, 3, 5-7, 14, 16 and 20 are Novel Over JP 15470

Defendants contend that claims 1, 3, 5-7, 14, 16 and 20 are anticipated by JP 15470. These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 recites "a configurable tape separator." Independent claim 14

recites “a configurable pair separator that, prior to cabling, comprises a substantially flat, non-conductive tape.” As discussed above, JP 15470 discloses a plate body formed of a rigid plastic, not a configurable tape separator. Furthermore, JP 15470 does not disclose that the plate body, prior to cabling, is a tape. For at least these reasons, JP 15470 does not anticipate independent claims 1 and 14.

Each of claims 3, 5-7 and 16 depends from one of independent claims 1 and 14 and therefore patentably distinguishes over JP 15470 for at least the same reasons as do claims 1 and 14. In addition, with regard to claim 5, JP 15470 does not that the separator is constructed such that when a portion of the jacket is removed from an end of the cable to expose the plurality of twisted pairs and the separator, the exposed separator is substantially flat. To the contrary, as discussed above, JP 15470 discloses that the plate body is formed into the twisted state by “twisting the facing direction of the plate body...while maintaining the rigid plastic or other material of the horizontal plate at a prescribed temperature.” Thus, the plate body is formed into a specific shape, namely a “corkscrew” shape, during manufacture of the cable. When the jacket is removed from an end of the cable of JP 15470, the plate body would retain its “corkscrew” shape, and therefore would not be substantially flat.

Independent claim 20 recites that the separator “is constructed such that, when a portion of the jacket is removed from an end of the cable to expose the plurality of twisted pairs and the separator, the exposed separator is substantially flat.” As discussed above, JP 15470 does not disclose this limitation, but rather discloses a “corkscrew” shaped plate body that would retain its shape when the jacket is removed, and therefore would not be substantially flat. For at least these reasons, JP 15470 does not anticipate claim 20.

Claims 8, 10-12, 17 and 19 are Non-Obvious Over JP 15470

Contrary to Defendants' contentions, claims 8, 10-12, 17 and 19 are not rendered obvious by JP 15470 in combination with the '748 patent.

As discussed above, the '748 patent does not disclose a pair separator. The '748 patent discloses an electrical insulation composition for an electrical conductor comprising an inner layer and an outer layer. The inner layer, which contacts and surrounds the conductor comprises a foamed polymeric material and the outer layer comprises a halogenated polymeric material with at least one additive to render the outer layer flame retardant and smoke suppressant.

Contrary to Defendant's contentions, it would not have been obvious to combine the '748 patent with JP 15470 because the '748 patent discloses insulation materials and does not disclose a separator. Insulation layers and pair separators are completely different structures subject to different requirements and conditions, and fulfilling different purposes. Therefore, disclosure of a particular material used for an insulation layer does not provide any reason to use that material to form a pair separator.

Furthermore, even if one were to combine the '866 patent and the '748 patent, the '748 patent does not cure the deficiencies of the '866 patent because the '748 patent does not disclose or suggest a dielectric pair separator as recited in the claims of the '095 patent. Accordingly, each of claims 8, 10-12, 17 and 19 patentably distinguishes for at least the same reasons as its base claim. In addition, as discussed above, to the extent that the '748 may disclose any of the materials recited in claims 2, 4, 5, 14, 16 and 30, it does so in the context of material used for the insulation layer surrounding the conductors of a twisted pair and not for use in a pair separator. There is no indication in the '748 patent that one of ordinary skill in the art would have found it obvious to use any of the materials in a pair separator.

For at least these reasons, claims 8, 10-12, 17 and 19 patentably distinguish over the

proposed combination of JP 15470 and the '748 patent.

Claims 9 and 18 are Non-Obvious Over JP 15470

Contrary to Defendants' contentions, claims 9 and 18 are not rendered obvious by JP 15470 in combination with EP '217.

Claims 9 and 18 depend from independent claims 1 and 14, respectively, and therefore patentably distinguish for at least the same reasons as their respective base claims.

As discussed above, EP '217 does not disclose a twisted pair cable, does not disclose a separator, and is not even directed to a data communications cable. Accordingly, contrary to the Defendant's contentions, it would not have been obvious to combine EP '217 with JP 15470 because the two references are directed to wholly different cables used for different purposes. However, even considered in combination with JP15470, EP '217 does not cure the deficiencies of JP 15470 because EP '217 does not disclose a pair separator. In addition, to the extent that EP '217 discloses a woven fiberglass tape, it does so in the context of an insulation material for magnet wire, and not in the context of a pair separator for use in a twisted pair data communications cable. EP '217 provides no reason to use a woven fiberglass tape as a pair separator in a twisted pair data communications cable. Accordingly, for at least these reasons, claims 9 and 18 patentably distinguish over the proposed combination of JP 15470 and EP '217.

D. Rebuttal to Defendants' Contentions Regarding the '629 Patent

Claims 1-5, 13-15 and 20 are Novel and Non-Obvious Over the '629 Patent

Defendants contend that the '629 patent anticipates or renders obvious claims 1, 3-5, 13-15 and 20. These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 recites "a configurable tape separator" that is "substantially non-

conductive” and wherein “the plurality of twisted pairs of insulated conductors and the configurable tape separator are cabled about a common axis.” The “S” shaped pre-form disclosed in the ‘629 patent is not a “configurable tape separator. The ‘629 patent discloses that the pre-form may be replaced with “a tape which is made of a dielectric material and wrapped about the conductor pairs to cause each pair to be enclosed substantially in a dielectric portion of the buffer system.” However, the ‘629 patent fails to show that its “tape” is “configurable,” as the asserted ‘999 patent requires. As discussed above, the ‘629 patent does not disclose that the plurality of twisted pairs of insulated conductors and the configurable tape separator are cabled about a common axis, as recited in claim 1. To the contrary, the ‘629 patent is inconsistent with cabling, since the ‘629 patent discloses “a buffer system” that includes the tubular members or pre-form, neither of which appear to allow for cabling of the cable. Thus, the ‘629 patent teaches away from the invention of claim 1. For at least these reasons, claim 1 patentably distinguishes over the ‘629 patent.

Claims 2-5 and 12 depend from claim 1 and therefore patentably distinguish over the ‘629 patent for at least the same reasons as does claim 1. In addition, with respect to claim 5, the ‘629 patent does not disclose that the separator is constructed such that when a portion of the jacket is removed from an end of the cable to expose the plurality of twisted pairs and the separator, the exposed separator is substantially flat. To the contrary, the tubular members and the pre-form would retain their non-flat shapes, even were the jacket removed.

Claim 14 recites a configurable pair separator that, prior to cabling comprises a substantially flat, non-conductive tape disposed between the plurality of twisted pairs of conductors,” and “wherein the plurality of twisted pairs of insulated conductors and the configurable pair separator are cabled about a common axis to form the unshielded twisted pair

communications cable.” As discussed above, the “S” shaped pre-form disclosed by the ’629 patent is not a configurable pair separator. In addition, as also discussed above, the ’629 patent does disclose that the separator and the plurality of twisted pairs are cabled together about a common axis, but rather is inconsistent with cabling of the cable. For at least these reasons, claim 14 patentably distinguishes over the ’629 patent.

Claim 15 depends from claim 14 and therefore patentably distinguishes for at least the same reasons as does claim 14.

Independent claim 20 recites that the recites that the separator “is constructed such that, when a portion of the jacket is removed from an end of the cable to expose the plurality of twisted pairs and the separator, the exposed separator is substantially flat.” As discussed above, the ’629 patent does not disclose this limitation, but rather discloses separators with defined shapes that would be retained when the jacket is removed, and therefore would not be substantially flat. For at least these reasons, the ’629 patent does not anticipate claim 20.

Claims 8, 10-12, 17 and 19 are Non-Obvious Over the ’629 Patent

Contrary to Defendants’ contentions, claims 8, 10-12, 17 and 19 are not rendered obvious by the ’629 patent in combination with the ’748 patent. Each of claims 8, 10-12, 17 and 19 depends from one of claims 1 and 14 discussed above and therefore patentably distinguishes for at least the same reasons as its respective base claim.

As discussed above, the ’748 patent discloses an electrical insulation composition for an electrical conductor comprising an inner layer and an outer layer. The inner layer, which contacts and surrounds the conductor comprises a foamed polymeric material and the outer layer comprises a halogenated polymeric material with at least one additive to render the outer layer

flame retardant and smoke suppressant. Thus, contrary to Defendant's contentions, it would not have been obvious to combine the '748 patent with the '629 patent because the '748 patent discloses insulation materials and does not disclose a separator. Insulation layers and pair separators are completely different structures subject to different requirements and conditions, and fulfilling different purposes. Therefore, disclosure of a particular material used for an insulation layer does not provide any reason to use that material to form a pair separator.

Furthermore, even in combination, these references fail to disclose or suggest several limitations recited in claims 8, 10-12, 17 and 19. In particular, as discussed above, to the extent that the '748 may disclose any of the materials recited in claims 8, 10-12, 17 and 19, it does so in the context of material used for the insulation layer surrounding the conductors of a twisted pair and not for use in a pair separator. There is no indication in the '748 patent that any of the materials would have been obvious to use in a pair separator.

For at least these reasons, claims 8, 10-12, 17 and 19 patentably distinguish over the proposed combination of the '629 patent and either the '748 patent or the '748 patent and the '866 patent.

Rebuttal To Defendants' Contentions
Regarding the Validity of U.S. Patent No. 6,596,944

Although Belden reserves the right to contend that Defendants have not satisfied their burden of proof to demonstrate the level of ordinary skill in the art by clear and convincing evidence, Belden responds that the level of ordinary skill in the art relating to the '944 patent at the time of the invention would have been that of a person having an undergraduate degree in electrical engineering and approximately two years of industry experience

Rebuttal Contentions Regarding JP Sho(1981)-7307 (“the ‘307 patent”)

The ‘307 patent discloses a “[d]evice for manufacturing overall insulation clad communications cables, comprising a linear-shaped extruding component . . . [and] a conductor feeding component for feeding out bare conductor or conductor clad with insulator . . .”

Claims 1-3 and 6-8 of the ‘944 Patent Are Novel and Non-Obvious over JP Sho(1981)-7307 (“the ‘307 patent”)

Defendants contend that pursuant to 35 U.S.C. § 102(b) the claims 1-3 and 6-8 of ‘944 patent are anticipated by the ‘307 patent. These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 of the ‘944 patent recites “[a]n unshielded data cable comprising: a plurality of twisted pairs of conductors” The ‘307 patent does not disclose a data communications cable with twisted pairs of conductors. The ‘307 patent instead discloses only a cable with single bare conductors or conductors clad with insulation. The ‘307 patent makes brief mention of “paired” cables to refer to a cable that contains two stranded conductors, but does not disclose twisting those conductors or forming a cable with a plurality of twisted conductor pairs. Therefore, the ‘307 patent fails to disclose or suggest a limitation of claim 1 of the ‘944 patent from which claims 2, 3 and 6-8 depend.

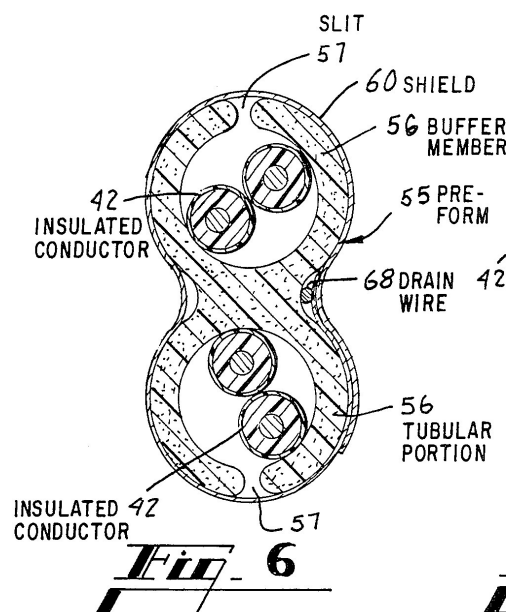
Furthermore, Defendants have failed to demonstrate that it would have been obvious to substitute the single conductor strands for twisted conductor pairs, because Defendants have failed to present a reason why one skilled in the art would perform such a substitution.

Claim 4, 10 and 12 the ‘944 Patent Are Non-Obvious over the ‘307 patent in view of U.S. Patent No. 4,755,629

Defendants contend that the ‘307 patent in view of U.S. Patent No. 4,755,629 (“the ‘629 patent”) renders claim 4 of the ‘944 patent obvious. Initially, the ‘629 patent does not provide or

suggest the disclosure of claim 1 identified above as missing from the '307 patent, and thus cannot render claims 4, 10 and 12, each of which depend from claim 1, obvious.

In addition, the '629 patent does not disclose a central core "wherein each of the fins is bent at a tip by the outer jacket" as recited by claim 4. The '629 patent discloses "dual tubular buffer portions or members which are joined together." These tubular buffer portions disclosed in the '629 patent are preformed and therefore do not bend when contacting the outer jacket. See Figure 6 of the '629 patent. In fact, the preformed tubular portions of the '629 patent teach away from the pliable finned core disclosed in claim 4 of the '629 patent.



Claim 10 of the '944 patent recites "[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises a cavity." Claim 12 of the '944 patent recites "[t]he unshielded data cable of claim 10, further comprising a drain wire disposed within the cavity." The '629 patent does not disclose a central core with a cavity or a central core with a cavity in which a drain wire is disposed. The '629 patent does not have a central core at all, or a core that encloses a cavity or a drain wire disposed in a central core's cavity. The '629 patent teaches

away from disposing a drain wire within a central core because it discloses placing the drain wire under the cable jacket. See Figure 6 of the '629 patent. Furthermore, Defendants have failed to present a valid reason that one of ordinary skill in the art would combine the '307 patent and the '629 patent.

Claims 5 and 9 the '944 Patent Are Non-Obvious over the '307 patent in view of the G. Hawley, The Condensed Chemical Dictionary (10th ed. 1981)

Defendants contend that, pursuant to 35 U.S.C. § 103, claims 5 and 9 of the '944 patent are invalid as obvious over the '307 patent further in view of the G. Hawley, The Condensed Chemical Dictionary (10th ed. 1981) ("the Hawley Reference"). The Hawley reference does not provide or suggest the disclosure of claim 1 identified above as missing from the '307 patent, and thus cannot render claims 5 and 9, each of which depend from claim 1, obvious.

Claim 5 of the '944 patent recites the "unshielded data cable of claim 1, wherein the non-conductive central core comprising the plurality of fins is made of a fire resistant plastic." Claim 9 of the '944 patent recites "[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises: at least one of a solid fluoropolymer, a foamed fluoropolymer, foamed polyvinyl chloride, and solid polyvinyl chloride."

The Hawley Reference is an excerpt from a dictionary that pertains to "fluorocarbon polymer[s]" and indicates that some "[u]ses" include generally, "[h]igh-temperature wire and cable insulation." The Hawley Reference does not disclose or teach using such compounds to construct a central core with a plurality of fins. Furthermore Defendants have failed to meet their burden to demonstrate that there would have been a reason for one of ordinary skill in the art to combine the '307 patent and the Hawley Reference.

Claims 5 and 9 the '944 Patent Are Non-Obvious over the '307 patent in view of U.S. Patent 5,670,748

Defendants contend that pursuant to 35 U.S.C. § 103 claims 5 and 9 of the ‘944 patent are invalid as obvious over the ‘307 patent in view of U.S. Patent 5,670,748 (“the ‘748 patent”). The ‘748 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the ‘307 patent, and thus cannot render claims 5 and 9, each of which depend from claim 1, obvious.

Claim 5 of the ‘944 patent recites the “unshielded data cable of claim 1, wherein the non-conductive central core comprising the plurality of fins is made of a fire resistant plastic.” Claim 9 of the ‘944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises: at least one of a solid fluoropolymer, a foamed fluoropolymer, foamed polyvinyl chloride, and solid polyvinyl chloride.”

The ‘748 patent discloses a “composite electrical insulation exhibiting reduced flame spread.” The ‘748 patent does not disclose or teach using such a compound to construct a central core with a plurality of fins. Furthermore Defendants have failed to meet their burden to demonstrate that there would have been a reason for one of ordinary skill in the art to combine the ‘307 patent and the ‘748 patent.

Claims 10 and 12 the ‘944 Patent Are Non-Obvious over the ‘307 patent in view of U. S. Patent No. 5,789,711

Defendants further argue that claims 10 and 12 of the ‘944 patent are rendered obvious by the combination of the ‘307 patent and U. S. Patent No. 5,789,711 (“the ‘711 patent). The ‘711 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the ‘307 patent, and thus cannot render claims 10 and 12, each of which depend from claim 1, obvious.

Claim 10 of the ‘944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises a cavity.” Claim 12 of the ‘944 patent recites “[t]he

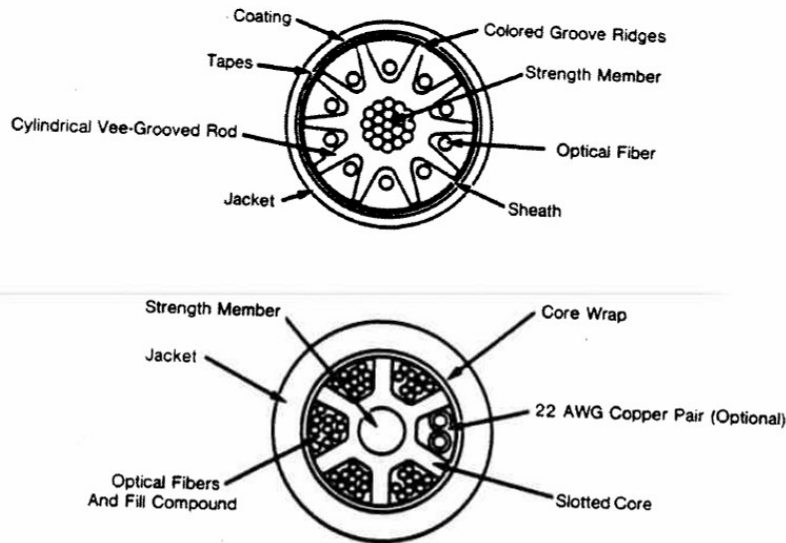
unshielded data cable of claim 10, further comprising a drain wire disposed within the cavity.”

The ‘711 patent describes placing a “strength member” within a shielded cable’s separator. However, the ‘711 patent does not disclose a cable with a central core that has a cavity. Furthermore, the cable disclosed by the ‘711 patent does not have a drain wire disposed within a cavity that is enclosed by a central core. Ultimately, the ‘711 does not teach the limitations of claims 10 and 12 of the ‘944 patent. Additionally, Defendants have failed to present a valid reason that one of ordinary skill in the art would combine the ‘307 patent and the ‘711 patent.

Alternatively, Defendants contend that claims 10 and 12 of the ‘944 patent are rendered obvious by the combination of the ‘307 patent, the ‘711 patent and either the ‘629 patent or Bell Communications Research, TA-000020, Issue 5 (August 1986) (“the Bell Reference”). None of the ‘629 patent, the ‘711 patent, or the Bell Reference provide or suggest the disclosure of claim 1 identified above as missing from the ‘307 patent, and thus cannot render claims 10 and 12, each of which depend from claim 1, obvious.

Also, as discussed above, the ‘629 patent does not disclose a cable that has a central core, a central core with a cavity, or a central core with a cavity that has a drain wire within a central core’s cavity. Furthermore, Defendants have failed to present a valid reason why one of ordinary skill in the art would combine the ‘307 patent, the ‘711 patent, and the ‘629 patent.

The Bell Reference describes disposing a metallic “strength member” within the separator of an *optical* cable. See Figure 2-2 of the Bell Reference.



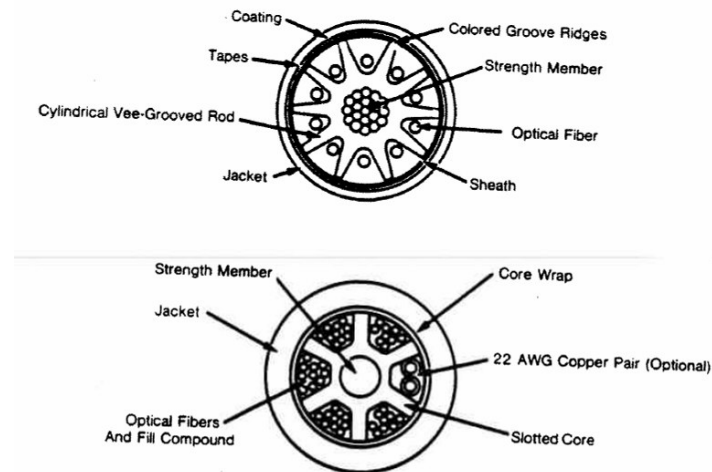
The cable disclosed by the Bell Reference does not have a central core with a cavity and a drain wire disposed in that cavity, and therefore does not correct the deficiencies in the primary references. Further, the cable described in the Bell Reference uses optical fibers as the transmission means and therefore occupies different field of cable design art. Defendant has provided no valid reason why one of ordinary skill in the art relevant to the '944 patent would combine the '307 patent, the '711 patent and the Bell Reference.

Claim 11 of the '944 Patent is Novel and Non-Obvious over the '307 patent in view of the Bell Reference

Defendants contend that pursuant to 35 U.S.C. § 103 Claim 11 of the '944 patent is invalid as obvious over the '307 patent in view of the Bell Reference. The Bell Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the '307 patent, and thus cannot render claim 11, which depends from claim 1, obvious.

Claim 11 recites “[t]he unshielded data cable of claim 10, further comprising a fiber optic element disposed within the cavity.” The Bell Reference describes disposing a metallic “strength member” within the separator of an optical cable. However, the Bell Reference does not disclose

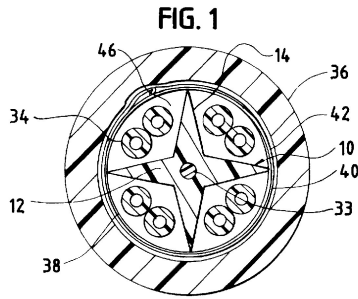
placing an optical fiber within a cavity formed by a central core. In fact, the Bell Reference teaches away from placing an optical fiber within the separator as each the cable disclosed by the Bell Reference has optical fibers positioned around a separator, not inside it. See Figure 2-2 of the Bell Reference.



Additionally, because the cable described in the Bell Reference uses optical fibers as the transmission means, it occupies different field of cable design art. Defendant has presented no valid reason why one of ordinary skill in the art relevant to the '944 patent would combine the '307 patent, the '307 patent and the Bell Reference.

Rebuttal Contentions Regarding U. S. Patent No. 5,789,711

The '711 patent describes a shielded data communications cable that has a star-shaped separator. See Figure 1 of the '711 patent.



Claims 1, 2, 5, 6-8 and 10 of the ‘944 Patent Are Novel and Non-Obvious over the ‘711 patent

Defendants contend that pursuant to 35 U.S.C. § 102(b) the claims 1, 2, 5, 6-8 and 10 of ‘944 patent are anticipated by the ‘711 patent. These contentions are erroneous for at least the reasons identified herein.

Independent claim 1 of the ‘944 patent recites “[a]n unshielded data cable comprising: a plurality of twisted pairs of conductors” and further recites “wherein the unshielded data cable does not include a shield that encloses any of the plurality of conductors and the non-conductive core.” The ‘711 describes a shielded data communications cable, and thus does not disclose this limitation. The ‘711 patent was before the examiner during prosecution of the ‘944 patent, and the examiner ultimately determined that the ‘711 patent did not disclose, teach or suggest an unshielded data communications cable having a non-conductive central core and surface features that define a plurality of channels in which a plurality of twisted conductor pairs reside. Thus, Defendants attack on claims 2, 5, 6, 6-8 and 10 are deficient, because the ‘711 patent fails to disclose or suggest a limitation of claim 1 of the ‘944 patent from which claims 2, 5, 6-8 and 10 depend.

Claim 3 of the ‘944 Patent is Novel and Non-Obvious over the ‘711 patent in view of the ‘307 Patent or U.S. Patent No. 5,952,615

Defendants further argue that claims 10 and 12 of the ‘944 patent are rendered obvious by the combination of the ‘307 patent or U. S. Patent No. 5,952,615 (“the ‘615 patent). The ‘615

and '307 patents do not provide or suggest the disclosure of claim 1 identified above as missing from the '711 patent, and thus cannot render claim 3, which depends from claim 1, obvious.

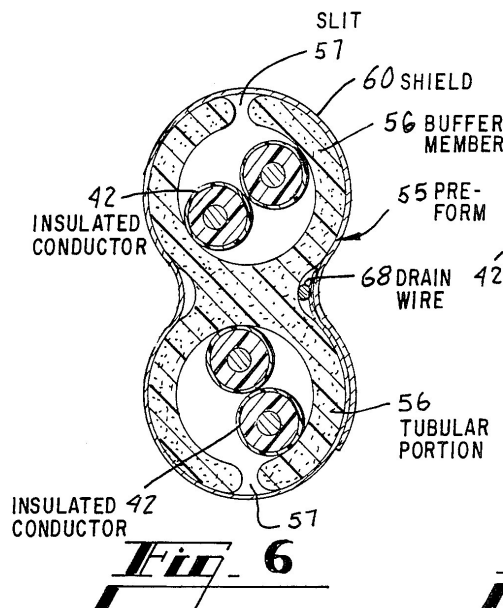
Claim 3 of the '944 patent recites "[t]he unshielded data cable of claim 2, wherein each of the plurality of fins has substantially parallel sides." The '615 patent describes "a multiple pair cable with individually shielded pairs . . . and including a plurality of individually insulated conductor pairs and an electrical shield around each pair, wherein the electrical shields of the various pairs comprise a central rod with radial fins . . . and a peripheral shield around the rod" Thus, the cable disclosed by the '615 patent is shielded whereas the cable embodied by the claims of the '944 patent is explicitly unshielded. Furthermore, Defendants have failed to present a valid reason that one of ordinary skill in the art would combine the '711 patent and the '615 patent. In fact the '307 patent discloses using single wires rather than twisted pair conductors, and thus teaches away from the combination, while the '615 patent uses shielding and also teaches away from the combination.

Claims 4 and 12 of the '944 Patent is Novel and Non-Obvious over the '711 patent in view of the '629 patent

Defendants contend that pursuant to 35 U.S.C. § 103 Claims 4 and 12 of the '944 patent are invalid as obvious over the '711 patent in view of the '629 patent. The '629 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the '711 patent, and thus cannot render claims 4 and 12, which depend from claim 1, obvious.

Claim 4 recites "[t]he cable as claimed in claim 2, wherein each of the fins is bent at a tip by the outer jacket." The '629 patent does not disclose a central core with fins that bend upon contact with the outer jacket. The '629 patent discloses "dual tubular buffer portions or members which are joined together." These tubular buffer portions disclosed in the '629 patent are preformed and therefore do not bend when contacting the outer jacket. See Figure 6 of the '629

patent. In fact, the preformed tubular portions of the ‘629 patent teach away from the pliable finned core disclosed in claim 4 of the ‘629 patent.



Defendants further argue that claims 10 and 12 of the ‘944 patent are rendered obvious by the combination of the ‘711 patent and the ‘629 patent. Claim 10 of the ‘944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises a cavity.” Claim 12 of the ‘944 patent recites “[t]he unshielded data cable of claim 10, further comprising a drain wire disposed within the cavity.”

Defendants incorrectly assert that the ‘629 patent discloses a central core with a cavity or a central core with a cavity in which a drain wire is disposed. The ‘629 patent does not have a central core, or a core that encloses a cavity or a drain wire disposed in a central core’s cavity. The ‘629 patent teaches away from disposing a drain wire within a central core because it discloses placing the drain wire under the cable jacket. See Figure 6 of the ‘629 patent. Furthermore, Defendants have failed to present a valid reason that one of ordinary skill in the art would combine the ‘711 patent and the ‘629 patent.

Claim 9 of the ‘944 Patent is Novel and Non-Obvious over the ‘711 patent in view of the Hawley Reference

Defendants contend that pursuant to 35 U.S.C. § 103 Claim 9 of the ‘944 patent is invalid as obvious over the ‘711 patent in view of the Hawley Reference. The Hawley Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the ‘711 patent, and thus cannot render claim 9, which depends from claim 1, obvious.

Claim 9 of the ‘944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises: at least one of a solid fluoropolymer, a foamed fluoropolymer, foamed polyvinyl chloride, and solid polyvinyl chloride.” The Hawley Reference is an excerpt from a dictionary that pertains to “fluorocarbon polymer[s]” and indicates that some “[u]ses” include generally, “[h]igh-temperature wire and cable insulation.” The Hawley Reference does not disclose or teach using such compounds to construct a central core with a plurality of fins. Furthermore Defendants have failed to meet their burden to demonstrate that there would have been a reason for one of ordinary skill in the art to combine the ‘711 patent and the Hawley Reference.

Claim 9 of the ‘944 Patent is Novel and Non-Obvious over the ‘711 patent in view of the ‘748 patent

Defendants contend that pursuant to 35 U.S.C. § 103 claims 5 and 9 of the ‘944 patent are invalid as obvious over the ‘711 patent in view of U.S. Patent 5,670,748 (“the ‘748 patent”). The ‘748 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the ‘711 patent, and thus cannot render claim 9, which depends from claim 1, obvious.

Claim 9 of the ‘944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises: at least one of a solid fluoropolymer, a foamed

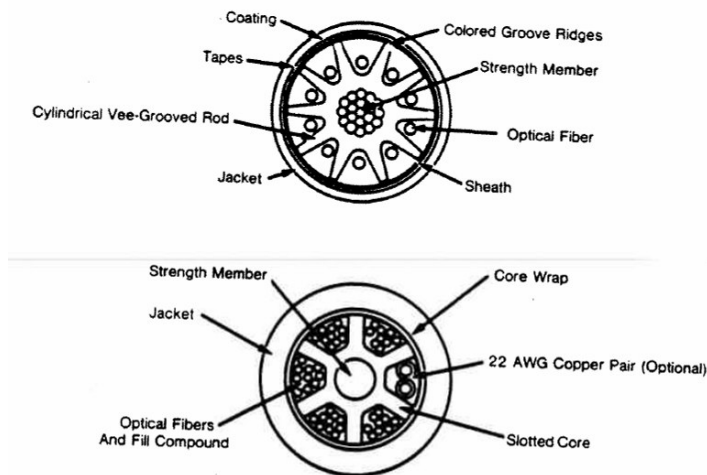
fluoropolymer, foamed polyvinyl chloride, and solid polyvinyl chloride.”

The ‘748 patent discloses a “composite electrical insulation exhibiting reduced flame spread.” The ‘748 patent does not disclose or teach using such a compound to construct a central core with a plurality of fins. Furthermore Defendants have failed to meet their burden to demonstrate that there would have been a reason for one of ordinary skill in the art to combine the ‘711 patent and the ‘748.

Claim 11 of the ‘944 Patent is Novel and Non-Obvious over the ‘711 patent in view of the Bell Reference

Defendants contend that pursuant to 35 U.S.C. § 103 Claim 11 of the ‘944 patent is invalid as obvious over the ‘711 patent in view of the Bell Reference. The Bell Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the ‘711 patent, and thus cannot render claim 11, which depends from claim 1, obvious.

Claim 11 recites “[t]he unshielded data cable of claim 10, further comprising a fiber optic element disposed within the cavity.” The Bell Reference describes disposing a metallic “strength member” within the separator of an optical cable. See Figure 2-2 of the Bell Reference. However, the Bell Reference does not disclose placing an optical fiber within a cavity formed by a central core. In fact, the Bell Reference teaches away from placing an optical fiber within the separator as each the cable disclosed by the Bell Reference has optical fibers positioned around a separator not inside it. See Figure 2-2 of the Bell Reference.



Furthermore, the cable disclosed by the Bell Reference does not have a central core with a cavity and a drain wire disposed in that cavity.

Also, because the cable described in the Bell Reference uses optical fibers as the transmission means, it occupies different field of cable design art. Therefore, there is no valid reason why one of ordinary skill in the art relevant to the '944 patent would combine the '307 patent, the '711 patent and the Bell Reference.

Claim 3 of the '944 Patent is Novel and Non-Obvious over the '711 patent in view of the '307 patent

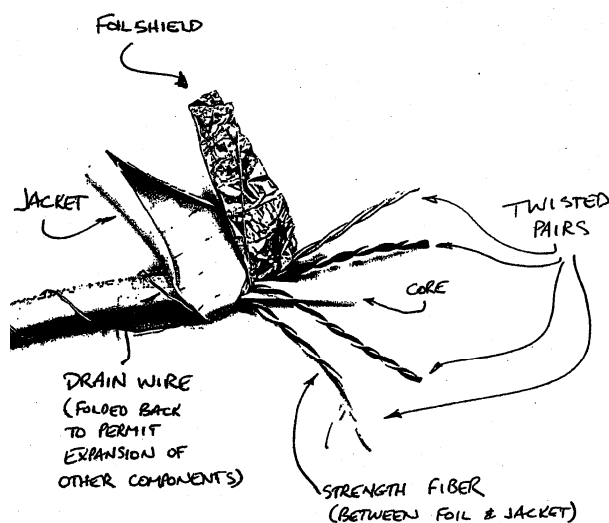
Defendants contend that pursuant to 35 U.S.C. § 103 Claim 3 of the '944 patent is invalid as obvious over the '711 patent in view of the '307 patent. The '307 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the '711 patent, and thus cannot render claim 3, which depends from claim 1, obvious.

Claim 3 of the '944 patent recites “[t]he unshielded data cable of claim 2, wherein each of the plurality of fins has substantially parallel sides” and relates to a cable with a plurality of twisted pairs of conductors. The '307 patent discloses a “[d]evice for manufacturing overall insulation clad communications cables, comprising a linear-shaped extruding component . . .

[and] a conductor feeding component for feeding out bare conductor or conductor clad with insulator . . .” Thus, the cable described by the ‘307 patent does not have a plurality of twisted pairs of conductors, and teaches against the suggested combination. Defendants have failed to present a valid reason why one of ordinary skill in the art would combine the ‘711 patent and the ‘307 patent and apply any of disclosures of the ‘307 patent to a cable with twisted conductor pairs.

Rebuttal Contentions Regarding the “Belden 1711A Cable”

The Belden 1711A Cable is a shielded data communications cable that has four twisted conductor pairs and a star-shaped separator.



Claims 1-3 and 5-9 of the ‘944 Patent Are Novel and Non-Obvious over the Belden 1711A Cable

Defendants contend that pursuant to 35 U.S.C. § 103 claims 1-3 and 5-9 of the ‘944 patent are rendered obvious by the Belden 1711A Cable. Independent claim 1 of the ‘944 patent

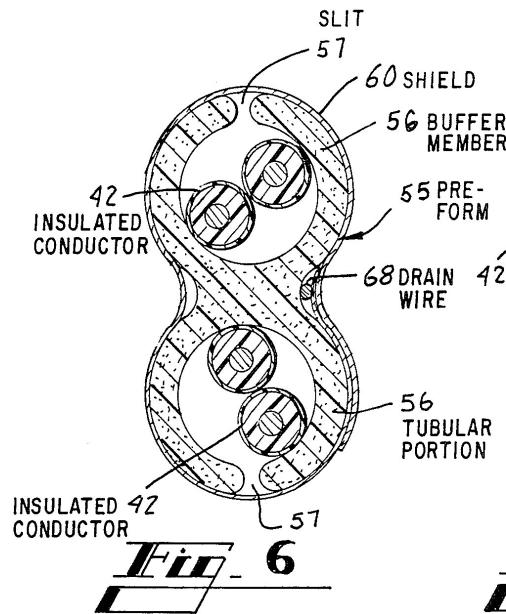
recites “[a]n unshielded data cable comprising: a plurality of twisted pairs of conductors” and “wherein the unshielded data cable does not include a shield that encloses any of the plurality of conductors and the nonconductive central core.” Claim 3 of the ‘944 patent recites “[t]he unshielded data cable of claim 2, wherein each of the plurality of fins has substantially parallel sides.”

The Belden 1711A Cable is a shielded data communications cable, and thus cannot render claim 1 (and, necessarily, each of the claims depending from claim 1) non-novel or obvious. Furthermore, the Belden 1711A Cable’s core is a star shape with projections having opposing sides that slope towards a common point (the apex of the projection), and therefore does not disclose each of the plurality of fins having substantially parallel sides.

The Belden 1711A Cable is cited in the text of the ‘944 patent and did not prevent issue of the ‘944 patent. Moreover, where asserting obviousness, Defendants have failed to present any valid reason why one of skill in the art would modify the Belden 1711A Cable to meet the claimed limitations.

Rebuttal Contentions Regarding U.S. Patent No. 4,755,629

The ‘629 patent discloses a data communications cable with “dual tubular buffer portions or members which are joined together.” See Figure 6 of the ‘629 patent.



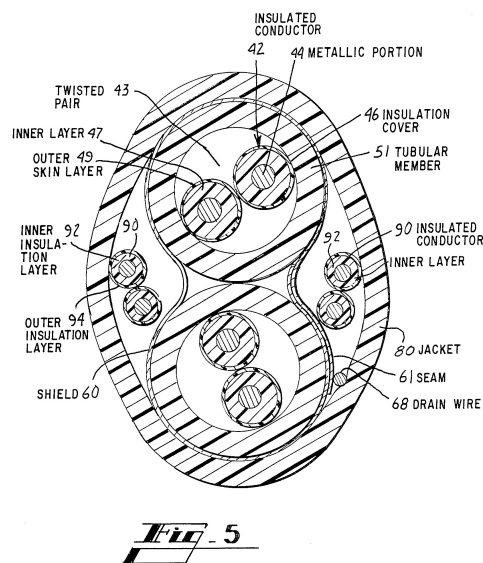
Claims 1-10 and 12 of the '944 Patent Are Novel and Non-Obvious over the '629 patent

Defendants contend that claims 1-10 and 12 of the '944 patent are anticipated by and rendered obvious by the '629 patent. Independent claim 1 of the '944 patent recites “[a]n unshielded data cable comprising: a plurality of twisted pairs of conductors; a non-conductive central core having a surface that defines a plurality of channels within which the plurality of twisted pairs of conductors are individually disposed”

The '629 patent does not disclose a central core with fins that bend upon contact with the outer jacket. The '629 patent discloses a cable that does not have a central core; it discloses a cable with “dual tubular buffer portions or members which are joined together.” These tubular buffer portions disclosed in the '629 patent are preformed and therefore do not bend when contacting the outer jacket. See Figure 6 of the '629 patent. Accordingly, the '629 patent cannot anticipate or render obvious claim 1, or claims 2-10 and 12, each of which depend from claim 1.

Claim 4 of the '944 patent recites the “cable as claimed in claim 2, wherein each of the fins is bent at a tip by the outer jacket.” The preformed tubular portions of the '629 patent teach

away from the pliable finned core disclosed in claim 4 of the ‘629 patent. Also, claim 2 of the ‘944 patent (from which claim 4 depends) recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises a plurality of fins extending radially outward from a center of the core to at least an outer boundary defined by an outer dimension of the twisted pairs of conductors.” The ‘629 patent does not disclose a central core with fins that extend radially from the center of the cable. In fact, the joined tubular portions disclosed by the ‘629 patent teach away from a central core with radial projections. See Figure 5 of the ‘629 patent.



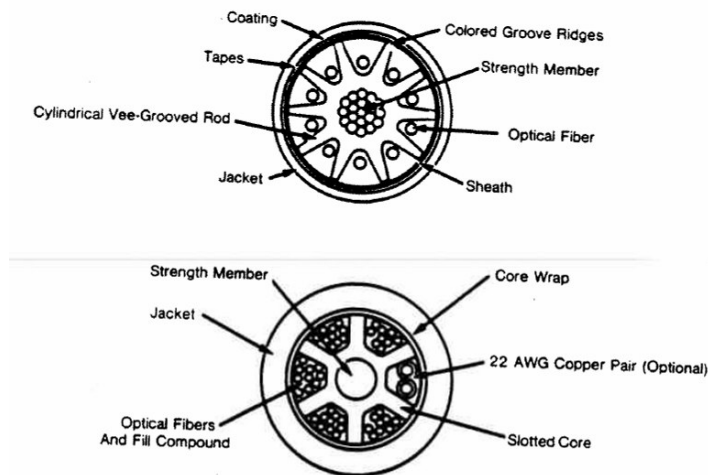
Defendants further argue that claims 10 and 12 of the ‘944 patent are anticipated by the combination of the ‘307 patent and the ‘629 patent. Claim 10 of the ‘944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises a cavity.” Claim 12 of the ‘944 patent recites “[t]he unshielded data cable of claim 10, further comprising a drain wire disposed within the cavity.” The ‘629 patent does not disclose a central core with a cavity or a central core with a cavity in which a drain wire is disposed. The ‘629 patent does not

have a central core, or a core that encloses a cavity or a drain wire disposed in a central core's cavity. The '629 patent teaches away from disposing a drain wire within a central core because it discloses placing the drain wire under the cable jacket. See Figure 6 of the '629 patent. The '307 patent does not correct this deficiency – the '307 patent also lacks a central core or drain wire. Finally, no reasons are provided as to why one of skill in the art would modify the '629 disclosure with the '307 disclosure to achieve the patented subject matter.

Claim 11 of the '944 Patent Are Novel and Non-Obvious over the '629 patent in view of the Bell Reference

Defendants contend that pursuant to 35 U.S.C. § 103 claim 11 of the '944 patent is rendered obvious by the '629 patent in view of the Bell Reference. The Bell Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the '629 patent, and thus cannot render claim 11, which depends from claim 1, obvious.

Claim 11 of the '944 patent recites “[t]he unshielded data cable of claim 10, further comprising a fiber optic element disposed within the cavity.” The Bell Reference describes disposing a metallic “strength member” within the separator of an optical cable. See Figure 2-2 of the Bell Reference. However, the Bell Reference does not disclose placing an optical fiber within a cavity formed by a central core. In fact, the Bell Reference teaches away from placing an optical fiber within the separator as each the cable disclosed by the Bell Reference has optical fibers positioned around a separator not inside it. See Figure 2-2 of the Bell Reference.



Furthermore, the cable disclosed by the Bell Reference does not have a central core with a cavity and a drain wire disposed in that cavity.

Because the cable described in the Bell Reference uses optical fibers as the transmission means, it occupies different field of cable design art. Defendants have offered no valid reason why one of ordinary skill in the art relevant to the '944 patent would combine the '629 patent and the Bell Reference.

Rebuttal Contentions Regarding U.S. Patent No. 5,132,488

U.S. Patent No. 5,132,488 ("the '488 patent") describes a data communications cable with projections that extend from the jacket towards the center of the cable as a means to partially isolate conductor pairs. See Figures 1, 2 and 3 of the '488 patent.

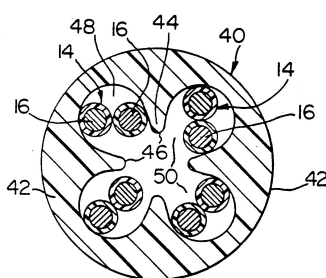


FIG. 1

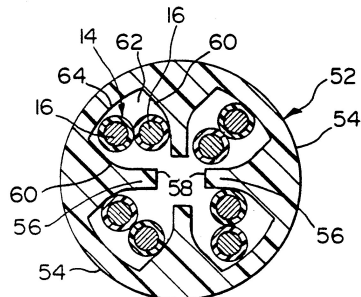


FIG. 2

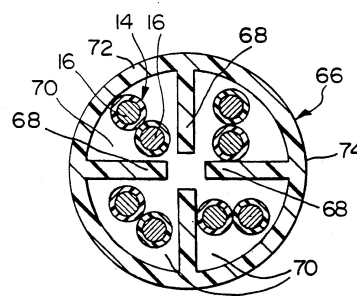


FIG. 3

Claims 1-3, 6-8 and 10 of the '944 Patent Are Novel and Non-Obvious over the '488 patent

Defendants contend that pursuant to 35 U.S.C. § 103 claims 1-3, 6-8 and 10 of the '944 patent are rendered obvious by the '488 patent. Independent Claim 1 of the '944 patent recites “a non-conductive central core.” The '488 patent does not disclose that its spacer means is unshielded. Defendants refer to the jacket material being formed of a suitable polymeric material, and the spacer means of an embodiment being provided by projections of the jacket. This section is referring to a different embodiment in which the spacers extend unitarily from the jacket itself. There is no disclosure, however, that the spacer means of the embodiment initially referred to by Defendants is formed of the same material. Further, it is not disclosed that the spacer means itself is unshielded – it is a simple matter to add, for example by coating, shielding material to an unshielded component to render it shielded. Claim 1 also recites “wherein the unshielded data cable does not include a shield that encloses any of the plurality of conductors and the non-conductive central core.” The '488 patent discloses nothing with respect to the shielding or lack thereof of this embodiment.

Claim 3 recites “wherein each of the plurality of fins has substantially parallel sides.” The '488 patent does not disclose fins extending from the core and having substantially parallel sides. Claim 7 recites “wherein the plurality of fins position the plurality of twisted pairs in a substantially 90 degree relationship.” The '488 patent does not disclose that this embodiment has fins that position wires in a substantially 90 degree relationship. Similarly, the '488 patent does not a nonconductive central core having four fins, each fin extending radially outward from a center of the core at substantially right angles to at least one other of the four fins, as required by claim 8. Finally, the embodiment referred to by Defendants with respect to claim 10 lacks a central core of any sort, and the '488 patent does not disclose a non-conductive central core that

comprises a cavity, as required by claim 10.

Defendants argue that pursuant to 35 U.S.C. § 103 claims 7 and 8 of the '944 patent are invalid as obvious over the '488 patent. These claims depend from claim 1 and contain the limitations described above as missing from the '488 patent. Further, the '488 patent describes these embodiments as distinct and alternative, and nowhere suggests that they can be mixed and matched as Defendants seek to do. Defendants have provided no reason, other than their appearing in this patent, why one of skill in the art would modify one embodiment with the teachings of another, and have thus failed to state a *prima facie* case of obviousness.

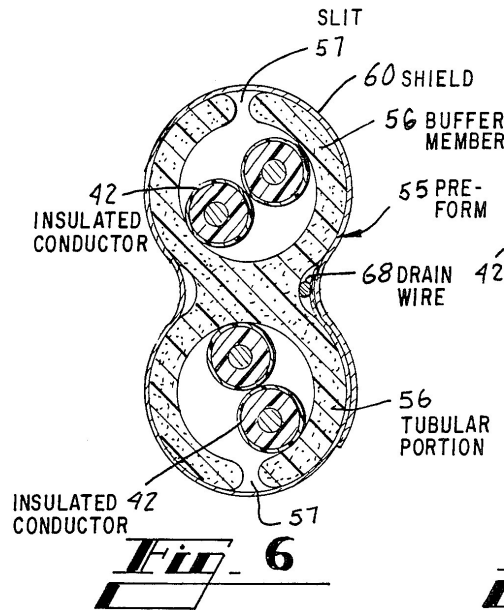
Claims 4 and 12 of the '944 Patent Are Novel and Non-Obvious over the '488 patent in view of the '629 patent

Defendants contend that pursuant to 35 U.S.C. § 103 Claims 4 and 12 of the '944 patent are invalid as obvious over the '488 patent in view of the '629 patent. The '629 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the '488 patent, and thus cannot render claims 4 and 12, which depends from claim 1, obvious.

Claim 4 recites “[t]he cable as claimed in claim 2, wherein each of the fins is bent at a tip by the outer jacket.” The '629 patent does not disclose a central core with fins that bend upon contact with the outer jacket. The '629 patent discloses “dual tubular buffer portions or members which are joined together.” These tubular buffer portions disclosed in the '629 patent are preformed and therefore do not bend when contacting the outer jacket. See Figure 6 of the '629 patent. In fact, the preformed tubular portions of the '629 patent teach away from the pliable finned core disclosed in claim 4 of the '629 patent.

Claim 12 of the '944 patent recites “[t]he unshielded data cable of claim 10, further comprising a drain wire disposed within the cavity.” The '629 patent does not disclose a central core with a cavity or a central core with a cavity in which a drain wire is disposed. The '629

patent does not have a central core, or a core that encloses a cavity or a drain wire disposed in a central core's cavity. The '629 patent teaches away from disposing a drain wire within a central core because it discloses placing the drain wire under the cable jacket. See Figure 6 of the '629 patent. Furthermore, Defendants have failed to present a valid reason that one of ordinary skill in the art would combine the '488 patent and the '629 patent.



Claims 5 and 9 of the '944 Patent Are Novel and Non-Obvious over the '488 patent in view of the Hawley Reference

Defendants contend that pursuant to 35 U.S.C. § 103 Claims 5 and 9 of the '944 patent are invalid as obvious over the '488 patent in view of the G. Hawley, The Condensed Chemical Dictionary (10th ed. 1981) ("the Hawley Reference"). The Hawley Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the '488 patent, and thus cannot render claims 5 and 9, which depend from claim 1, obvious.

Claim 5 of the '944 patent recites the "unshielded data cable of claim 1, wherein the non-conductive central core comprising the plurality of fins is made of a fire resistant plastic." Claim 9 of the '944 patent recites "[t]he unshielded data cable of claim 1, wherein the non-conductive

central core comprises: at least one of a solid fluoropolymer, a foamed fluoropolymer, foamed polyvinyl chloride, and solid polyvinyl chloride.”

The Hawley Reference is an excerpt from a dictionary that pertains to “fluorocarbon polymer[s]” and indicates that some “[u]ses” include generally, “[h]igh-temperature wire and cable insulation.” The Hawley Reference does not disclose or teach using such compounds to construct a central core with a plurality of fins. Furthermore Defendants have failed to meet their burden to demonstrate that there would have been a reason for one of ordinary skill in the art to combine the ‘488 patent and the Hawley Reference.

Claims 5 and 9 of the ‘944 Patent Are Novel and Non-Obvious over the ‘488 patent in view of the ‘748 patent

Defendants contend that pursuant to 35 U.S.C. § 103 claims 5 and 9 of the ‘944 patent are invalid as obvious over the ‘488 patent in view of U.S. Patent 5,670,748 (“the ‘748 patent”). The ‘748 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the ‘488 patent, and thus cannot render claims 5 and 9, which depend from claim 1, obvious.

Claim 5 of the ‘944 patent recites “[t]he unshielded data cable of claim 2, wherein the non-conductive central core comprising the plurality of fins is made of a fire resistant plastic.” Claim 9 of the ‘944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises: at least one of a solid fluoropolymer, a foamed fluoropolymer, foamed polyvinyl chloride, and solid polyvinyl chloride.”

The ‘748 patent discloses a “composite electrical insulation exhibiting reduced flame spread.” The ‘748 patent does not disclose or teach using such a compound to construct a central core with a plurality of fins. Furthermore Defendants have failed to meet their burden to demonstrate that there would have been a reason for one of ordinary skill in the art to combine

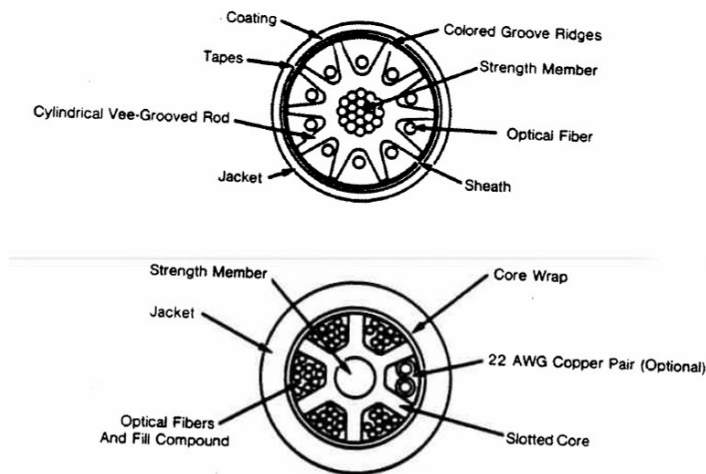
the '488 patent and the '748.

Claim 11 of the '944 Patent Are Novel and Non-Obvious over the '488 patent in view of the Bell Reference

Defendants contend that pursuant to 35 U.S.C. § 103 claim 11 of the '944 patent is rendered obvious by the '488 patent in view of the Bell Reference. The Bell Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the '488 patent, and thus cannot render claim 11, which depends from claim 1, obvious.

Claim 11 of the '944 patent recites “[t]he unshielded data cable of claim 10, further comprising a fiber optic element disposed within the cavity.”

The Bell Reference describes disposing a metallic “strength member” within the separator of an optical cable. See Figure 2-2 of the Bell Reference. However, the Bell Reference does not disclose placing an optical fiber within a cavity formed by a central core. In fact, the Bell Reference teaches away from placing an optical fiber within the separator as each the cable disclosed by the Bell Reference has optical fibers positioned around a separator not inside it. See Figure 2-2 of the Bell Reference.



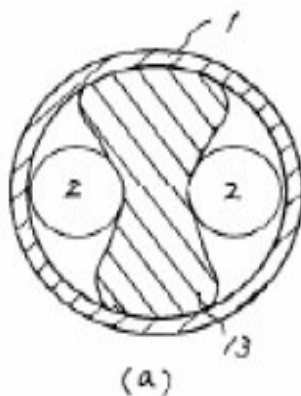
Furthermore, the cable disclosed by the Bell Reference does not have a central core with a cavity

and a drain wire disposed in that cavity.

Because the cable described in the Bell Reference uses optical fibers as the transmission means, it occupies different field of cable design art. Therefore, there is no valid reason why one of ordinary skill in the art relevant to the '944 patent would combine the '488 patent and the Bell Reference.

Rebuttal Contentions Regarding JP Sho61(1986)-13507

JP Sho61(1986)-13507 (“the ‘507 patent”) discloses a cable with a “fibrous cocoon-shaped inclusion between pairs or units.” See Figure 1(a) of the ‘507 patent.



Claim 1 of the ‘944 Patent Is Novel and Non-Obvious over the ‘507 Patent

Defendants contend that pursuant to 35 U.S.C. § 102(b) claim 1 of ‘944 patent is anticipated by the ‘507 patent, that claims 5 and 9 are obvious over the ‘507 patent in view of the Hawley Reference, that claims 10 and 12 are obvious in view of the ‘629 patent, and that claim 11 is obvious in view of the Bell Reference. Independent claim 1 of the ‘944 patent recites “a non-conductive central core having a surface that defines a plurality of channels.” The ‘507 patent does not disclose non-conductive central core having *a* surface that defines a plurality of channels; instead, the ‘507 patent discloses a “fibrous cocoon-shaped inclusion.” A fibrous

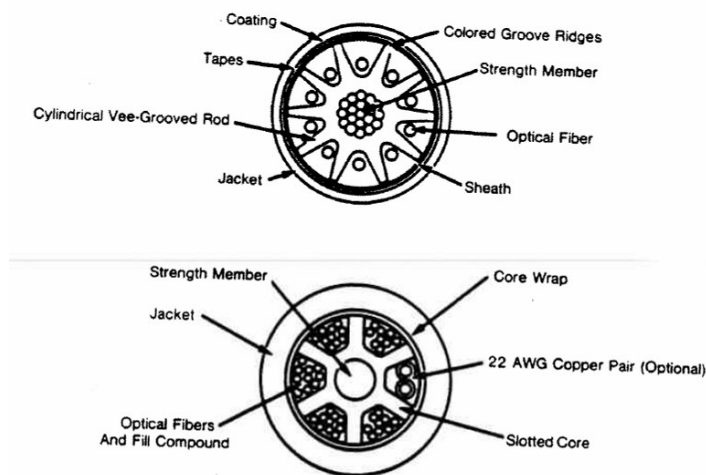
material will have multiple surfaces defining each channel, rather than the claimed single surface. Further, the inclusion of the '507 patent is not central. Instead, it extends completely from one side across the diameter to the other side, with the bulk of the fibrous material existing at the perimeter of the cable.

The Hawley Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the '507 patent, and thus cannot render claims 5 and 9, which depend from claim 1, obvious. Further, claim 5 depends from claim 2 and requires the core comprise a plurality of fins extending radially outwardly from the core. Neither the Hawley Reference nor the '507 patent disclose such fins; indeed, Defendant has not asserted that these patents invalidate claim 2 of the '944 patent. Finally, no valid reason has been identified as to why one of skill in the art would select the particular materials of Hawley to form a central core of a data cable.

The '629 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the '507 patent, and thus cannot render claims 10 and 12, which depend from claim 1, obvious. Claim 10 of the '944 patent recites "[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises a cavity." Claim 12 of the '944 patent recites "[t]he unshielded data cable of claim 10, further comprising a drain wire disposed within the cavity." The '629 patent does not disclose a central core with a cavity or a central core with a cavity in which a drain wire is disposed. The '629 patent does not have a central core, or a core that encloses a cavity or a drain wire disposed in a central core's cavity. The '629 patent teaches away from disposing a drain wire within a central core because it discloses placing the drain wire under the cable jacket. See Figure 6 of the '629 patent. The '629 patent thus does not provide the disclosure that Defendants admit is lacking in the '507 patent. Finally, no reasons are

provided as to why one of skill in the art would modify the '507 disclosure with the '629 disclosure to achieve the patented subject matter.

The Bell Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the '507 patent, and thus cannot render claim 11, which depends from claim 1, obvious. The Bell Reference describes disposing a metallic “strength member” within the separator of an optical cable. See Figure 2-2 of the Bell Reference. However, the Bell Reference does not disclose placing an optical fiber within a cavity formed by a central core. In fact, the Bell Reference teaches away from placing an optical fiber within the separator as each the cable disclosed by the Bell Reference has optical fibers positioned around a separator not inside it. See Figure 2-2 of the Bell Reference.

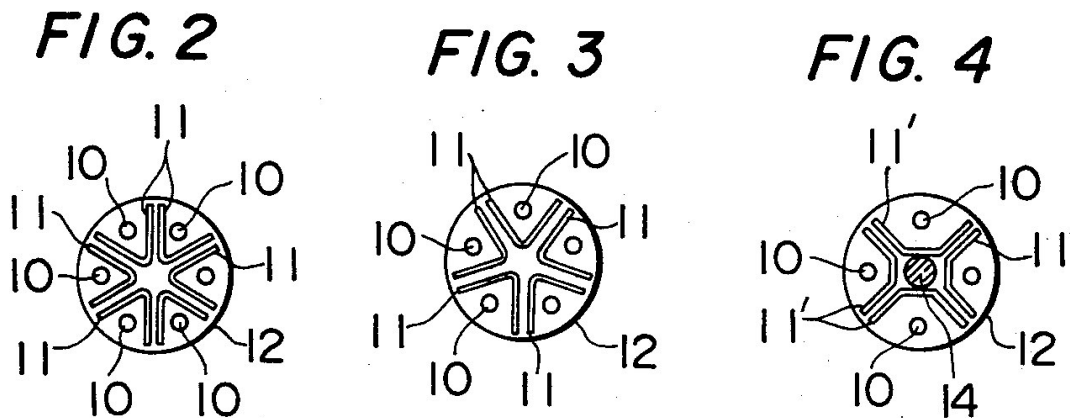


Furthermore, the cable disclosed by the Bell Reference does not have a central core with a cavity and a drain wire disposed in that cavity.

Because the cable described in the Bell Reference uses optical fibers as the transmission means, it occupies different field of cable design art. Therefore, there is no valid reason why one of ordinary skill in the art relevant to the '944 patent would combine the '507 patent and the Bell Reference.

Rebuttal Contentions Regarding U.S. Patent No. 4,385,485 (“the ‘485 patent”)

U.S. Patent No. 4,385,485 (“the ‘485 patent”) describes various “*optical fiber cable constructions*” (emphasis added). See Figures 2, 3, and 4 of the ‘485 patent. Optical fibers within the cable disclosed by the ‘485 patent are separated by multiple spliced tapes.



Claims 1-3, 6-8 and 10 of the ‘944 Patent Are Novel and Non-Obvious over the ‘485 Patent

Defendants contend that pursuant to 35 U.S.C. § 103 Claims 1-3, 6-8 and 10 of the ‘944 patent are invalid as obvious over the ‘485 patent. Independent claim 1 of the ‘944 patent recites “[a]n unshielded data cable comprising: a plurality of twisted pairs of conductors; a non-conductive central core having a surface that defines a plurality of channels within which the plurality of twisted pairs of conductors are individually disposed; an outer jacket that maintains the plurality of twisted pairs of conductors in position with respect to the non-conductive central core”

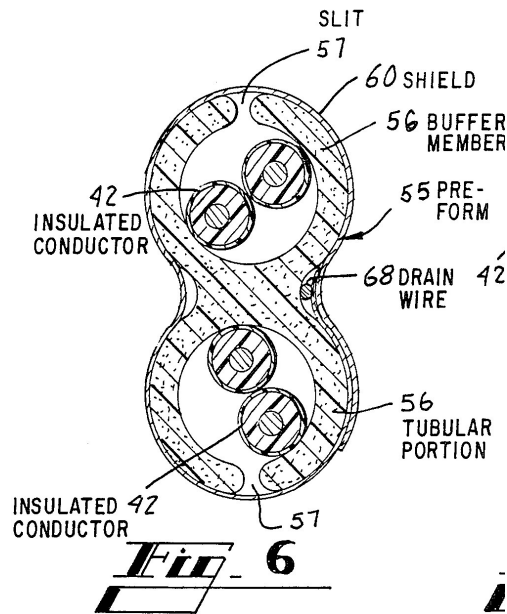
The ‘485 patent does not disclose twisted pairs of conductors; instead, the ‘485 patent includes optical fibers. Furthermore, to the extent that the ‘485 patent discloses a core, it does not disclose a core having a surface that defines a plurality of channels. Instead, the ‘485 patent has

multiple spliced tapes that are used to separate optical fibers. Further, the cable described in the '485 patent uses optical fibers as the transmission means and therefore occupies different field of cable design art. Therefore, there is no valid reason why one of ordinary skill in the art relevant to the '944 patent would view the '485 patent as teaching a cable with twisted conductor pairs and a single central core.

Claims 4 and 12 of the '944 Patent is Novel and Non-Obvious over the '485 Patent in View of the '629 Patent

Defendants contend that pursuant to 35 U.S.C. § 103 Claims 4 and 12 of the '944 patent are invalid as obvious over the '485 patent in view of the '629 patent. The '629 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the '485 patent, and thus cannot render claim 11, which depends from claim 1, obvious.

Claim 4 recites “[t]he cable as claimed in claim 2, wherein each of the fins is bent at a tip by the outer jacket.” The '629 patent does not disclose a central core with fins that bend upon contact with the outer jacket. The '629 patent discloses “dual tubular buffer portions or members which are joined together.” These tubular buffer portions disclosed in the '629 patent are preformed and therefore do not bend when contacting the outer jacket. See Figure 6 of the '629 patent. In fact, the preformed tubular portions of the '629 patent teach away from the pliable finned core disclosed in claim 4 of the '629 patent.



Defendants further argue that claims 10 and 12 of the '944 patent are rendered obvious by the combination of the '485 patent and the '629 patent. The '629 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the '485 patent, and thus cannot render claims 10 and 12, which depends from claim 1, obvious.

Claim 10 of the '944 patent recites "[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises a cavity." Claim 12 of the '944 patent recites "[t]he unshielded data cable of claim 10, further comprising a drain wire disposed within the cavity." The '629 patent does not disclose a central core with a cavity or a central core with a cavity in which a drain wire is disposed. The '629 patent does not have a central core, or a core that encloses a cavity or a drain wire disposed in a central core's cavity. The '629 patent teaches away from disposing a drain wire within a central core because it discloses placing the drain wire under the cable jacket. See Figure 6 of the '629 patent. Furthermore, Defendants have failed to present a valid reason that one of ordinary skill in the art would combine the '485 patent and the '629 patent.

Claim 9 of the ‘944 Patent is Novel and Non-Obvious over the ‘485 patent in view of the Hawley Reference

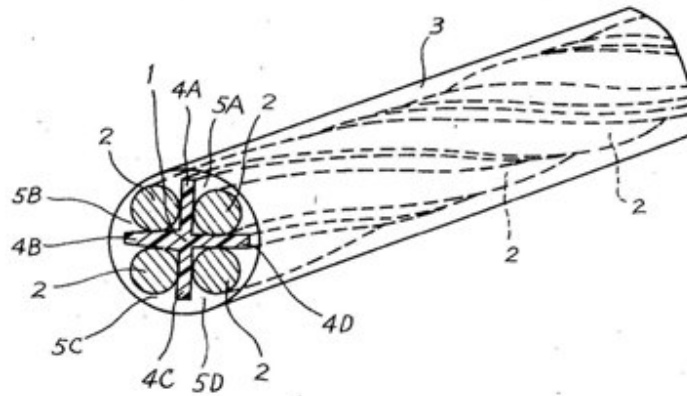
Defendants contend that pursuant to 35 U.S.C. § 103 Claim 9 of the ‘944 patent is invalid as obvious over the ‘485 patent in view of the Hawley Reference. The Hawley Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the ‘485 patent, and thus cannot render claim 9, which depends from claim 1, obvious.

Claim 9 of the ‘944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises: at least one of a solid fluoropolymer, a foamed fluoropolymer, foamed polyvinyl chloride, and solid polyvinyl chloride.”

The Hawley Reference is an excerpt from a dictionary that pertains to “fluorocarbon polymer[s]” and indicates that some “[u]ses” include generally, “[h]igh-temperature wire and cable insulation.” The Hawley Reference does not disclose or teach using such compounds to construct a central core with a plurality of fins. Furthermore Defendants have failed to meet their burden to demonstrate that there would have been a reason for one of ordinary skill in the art to combine the ‘485 patent and the Hawley Reference.

Rebuttal Contentions Regarding JP Publication No. Sho56(1981)-8011

JP Publication No. Sho56(1981)-8011 (“the ‘011 patent”) describes a cable with four individual conductors arranged about a separator. See Figure 1 of the ‘011 patent.



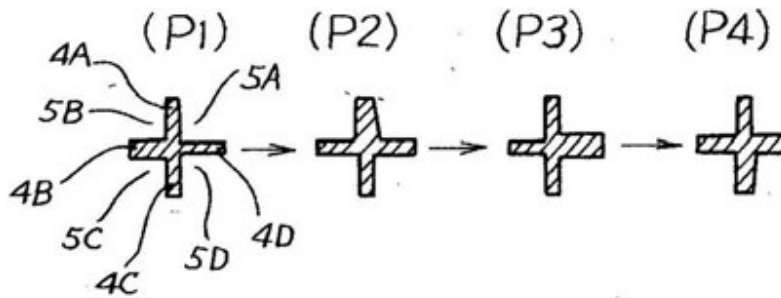
Claims 1-3 and 6-8 of the '944 Patent are Novel and Non-Obvious over the '011 Patent

Defendants contend that pursuant to 35 U.S.C. § 102(b) claim 1-3 and 6-8 of '944 patent are anticipated by the '011 patent. Independent claim 1 of the '944 patent recites “[a]n unshielded data cable comprising: a plurality of twisted pairs of conductors; a non-conductive central core having a surface that defines a plurality of channels within which the plurality of twisted pairs of conductors are individually disposed; an outer jacket that maintains the plurality of twisted pairs of conductors in position with respect to the non-conductive central core”

Defendants concede that the '011 patent does not disclose a data communications cable with a plurality of twisted conductor pairs. Furthermore, Defendants provide no basis for their alternate assertion that it would have been obvious to one of ordinary skill in the art to substitute twisted conductor pairs for the single conductors disclosed in the '011 patent. Accordingly, the '011 patent cannot anticipate or render obvious claim 1, or claims 2-3 and 6-8, which depend from claim 1.

Claim 3 of the '944 patent recites “[t]he unshielded data cable of claim 2, wherein each of the plurality of fins has substantially parallel sides.” The '011 patent does not have a separator with fins whose sides are substantially parallel. The separator disclosed in the '011 patent has projections with sides that have varied widths and relative angles. See Figure 3 (P2) and (P4) of

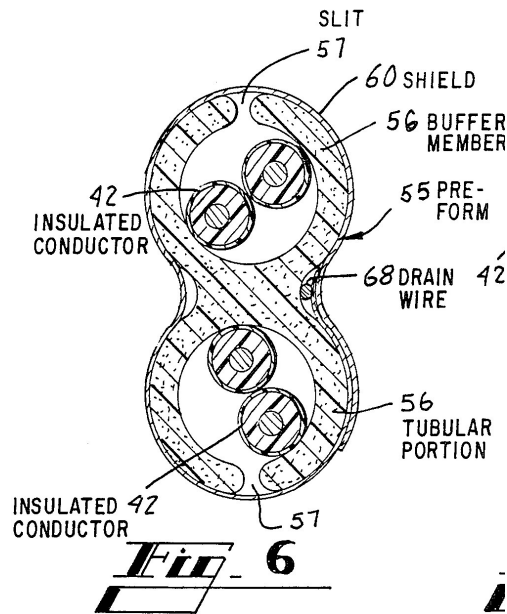
the '011 patent.



Claims 4, 10 and 12 of the '944 Patent is Novel and Non-Obvious over the '011 Patent in View of the '629 Patent

Defendants contend that pursuant to 35 U.S.C. § 103 Claims 4 and 12 of the '944 patent are invalid as obvious over the '011 patent in view of the '629 patent. The '629 patent does not provide or suggest the disclosure of claim 1 identified above as missing from the '011 patent, and thus cannot render claims 4, 10 and 12, which depend from claim 1, obvious.

Claim 4 recites “[t]he cable as claimed in claim 2, wherein each of the fins is bent at a tip by the outer jacket.” The '629 patent does not disclose a central core with fins that bend upon contact with the outer jacket. The '629 patent discloses “dual tubular buffer portions or members which are joined together.” These tubular buffer portions disclosed in the '629 patent are preformed and therefore do not bend when contacting the outer jacket. See Figure 6 of the '629 patent. In fact, the preformed tubular portions of the '629 patent teach away from the pliable finned core disclosed in claim 4 of the '629 patent.



Defendants further argue that claims 10 and 12 of the ‘944 patent are rendered obvious by the combination of the ‘011 patent and the ‘629 patent. Claim 10 of the ‘944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises a cavity.” Claim 12 of the ‘944 patent recites “[t]he unshielded data cable of claim 10, further comprising a drain wire disposed within the cavity.”

The ‘629 patent does not disclose a central core with a cavity or a central core with a cavity in which a drain wire is disposed. The ‘629 patent does not have a central core, or a core that encloses a cavity or a drain wire disposed in a central core’s cavity. The ‘629 patent teaches away from disposing a drain wire within a central core because it discloses placing the drain wire under the cable jacket. See Figure 6 of the ‘629 patent. Furthermore, Defendants have failed to present a valid reason that one of ordinary skill in the art would combine the ‘011 patent and the ‘629 patent.

Claims 5 and 9 of the ‘944 Patent are Novel and Non-Obvious over the ‘011 patent in view of the Hawley Reference

Defendants contend that pursuant to 35 U.S.C. § 103 Claim 9 of the ‘944 patent is invalid

as obvious over the '011 patent in view of the Hawley Reference. The Hawley Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the '629 patent, and thus cannot render claims 5 and 9, which depend from claim 1, obvious.

Claim 5 of the '944 patent recites “[t]he unshielded data cable of claim 2, wherein the non-conductive central core comprising the plurality of fins is made of a fire resistant plastic.”

Claim 9 of the '944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises: at least one of a solid fluoropolymer, a foamed fluoropolymer, foamed polyvinyl chloride, and solid polyvinyl chloride.”

The Hawley Reference is an excerpt from a dictionary that pertains to “fluorocarbon polymer[s]” and indicates that some “[u]ses” include generally, “[h]igh-temperature wire and cable insulation.” The Hawley Reference does not disclose or teach using such compounds to construct a central core with a plurality of fins. Furthermore Defendants have failed to meet their burden to demonstrate that there would have been a reason for one of ordinary skill in the art to combine the '011 patent and the Hawley Reference.

Claims 5 and 9 of the '944 Patent are Novel and Non-Obvious over the '011 patent in view of U.S. Patent No. 5,162,609

Defendants contend that pursuant to 35 U.S.C. § 103 claims 5 and 9 of the '944 patent are rendered obvious by the '011 patent in view of U.S. Patent No. 5,162,609 (“the '609 patent”). The '609 does not provide or suggest the disclosure of claim 1 identified above as missing from the '011 patent, and thus cannot render claims 5 and 9, which depend from claim 1, obvious.

Claim 5 of the '944 patent recites “[t]he unshielded data cable of claim 2, wherein the non-conductive central core comprising the plurality of fins is made of a fire resistant plastic.”

Claim 9 of the '944 patent recites “[t]he unshielded data cable of claim 1, wherein the non-conductive central core comprises: at least one of a solid fluoropolymer, a foamed

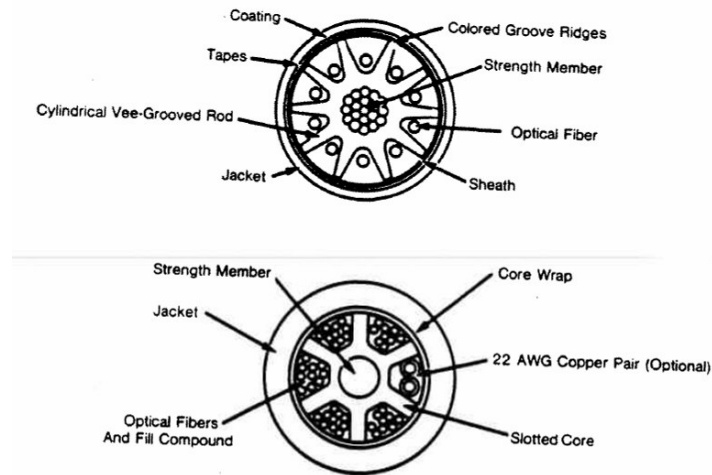
fluoropolymer, foamed polyvinyl chloride, and solid polyvinyl chloride.”

However, the ‘609 patent discloses a “fire resistant cable which is suitable for transmission of high frequency signals.” It does not address the use of a fire-resistant fluoropolymer to construct the central core of a data communications cable. Furthermore, it would not be obvious to one of ordinary skill in the art to use such materials construct a non-conductive central core.

Claim 11 of the ‘944 Patent Are Novel and Non-Obvious over the ‘011 patent in view of the Bell Reference

Defendants contend that pursuant to 35 U.S.C. § 103 claim 11 of the ‘944 patent is rendered obvious by the ‘011 patent in view of the Bell Reference. The Bell Reference does not provide or suggest the disclosure of claim 1 identified above as missing from the ‘011 patent, and thus cannot render claim 11, which depends from claim 1, obvious.

Claim 11 of the ‘944 patent recites “[t]he unshielded data cable of claim 10, further comprising a fiber optic element disposed within the cavity.” The Bell Reference describes disposing a metallic “strength member” within the separator of an optical cable. See Figure 2-2 of the Bell Reference. However, the Bell Reference does not disclose placing an optical fiber within a cavity formed by a central core. In fact, the Bell Reference teaches away from placing an optical fiber within the separator as each the cable disclosed by the Bell Reference has optical fibers positioned around a separator not inside it. See Figure 2-2 of the Bell Reference.



Furthermore, the cable disclosed by the Bell Reference does not have a central core with a cavity and a drain wire disposed in that cavity.

Because the cable described in the Bell Reference uses optical fibers as the transmission means, it occupies different field of cable design art. Therefore, there is no valid reason why one of ordinary skill in the art relevant to the '944 patent would combine the '488 patent, the '011 patent and the Bell Reference.

The '944 Patent Satisfies the “Written Description” Requirement

Defendants argues that the '944 patent is invalid for failing to meet the written description requirement of 35 U.S.C. §112. The '944 patent's specification provides an adequate written description for a data cable comprising a non-conductive central core. The specification states that “[w]hile the invention is not limited to the materials now given, the invention is advantageously practice using these materials [including a conductive core].” Not only does the specification not exclude practicing the invention using an embodiment with a non-conductive core, the specification affirmatively states that “[i]n plenum applications, the core can be any one or more of the following [non-conductive] compounds” Thus, to one of ordinary skill in art, the specification clearly discloses an embodiment with a non-conductive core. Indeed, the

examiner raised a similar issue during prosecution of the '944 patent, and determined that the written description requirement was satisfied.

Rebuttal To Defendants' Contentions
Regarding the Validity of U.S. Patent No. 7,339,116

Although Belden reserves the right to contend that Defendants have not satisfied their burden of proof to demonstrate the level of ordinary skill in the art by clear and convincing evidence, Belden responds that the level of ordinary skill in the art relating to the '116 patent at the time of the invention would have been that of a person having an undergraduate degree in electrical engineering and approximately two years of industry experience

Bell Communications Research TA-TSY-000020 ("the Bell Reference")

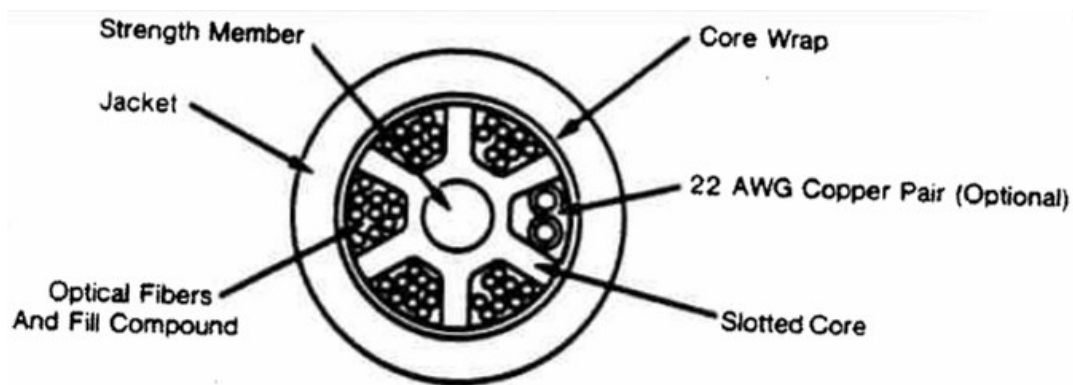
Defendants contend that the claims of the '116 patent are anticipated or rendered obvious by the Bell Reference. The Bell Reference discloses an "optical fiber cable" with a central separator that has projections that form a plurality of channels. Within these channels, the Bell Reference discloses placing multiple optical fibers to form the "optical fiber cable."

Claims 1-7 of the '116 Patent are Novel Over the Bell Reference

Because the Bell Reference is directed to an "optical fiber cable," it differs fundamentally from what is claimed in the '116 patent.

Independent claims 1, 4 and 7 each recite "a plurality of twisted pair conductors" with "only one twisted pair conductor from said plurality of twisted pair conductors disposed in each open space [defined by a plurality of adjacent projections]." The Bell Reference does not have a plurality of twisted pair conductors, let alone a twisted conductor pair in *each* channel defined by a separator. To the contrary, the Bell Reference discloses placing an "optional" conductor pair

in no more than two channels. See Figure 2-2.



Defendants have further failed to put forth a valid reason why the disclosures of the Bell Reference would render the '116 patent obvious.

Fiber Optic Cable: A Lightguide (the “Refi Reference”)

Defendants contend that the claims of the '116 patent are anticipated or rendered obvious by the Refi Reference. The Refi Reference discloses a “fiber optic cable” with a central separator that has projections that form a plurality of channels.

Claims 1-7 of the '116 Patent are Novel Over the Refi Reference

Independent claims 1, 4 and 7 each recite “a plurality of twisted pair conductors” with “only one twisted pair conductor from said plurality of twisted pair conductors disposed in each open space [defined by a plurality of adjacent projections].” The Refi Reference does not disclose a cable that utilizes a plurality of twisted conductor pairs. Defendants argues that the statement “[h]ybrid cables are constructed by substituting copper *pairs* for the fibers in a slot” suggest that the cable can contain more than one conductor pair. This argument overlooks that the plural form of “conductor pair” is only used in conjunction with the plural form of “cable,”

meaning that one can create multiple hybrid cables by substituting a corresponding number of conductor pairs in one slot of each cable. Thus, this language would not suggest to one of skill in the art that more than one conductor pair is included in any single cable.

Furthermore, to the extent that this language were to suggest multiple conductor pairs in a single cable (which it does not), this portion of the Refi Reference suggests placing the multiple conductor pairs in a single slot. See Figure 6.

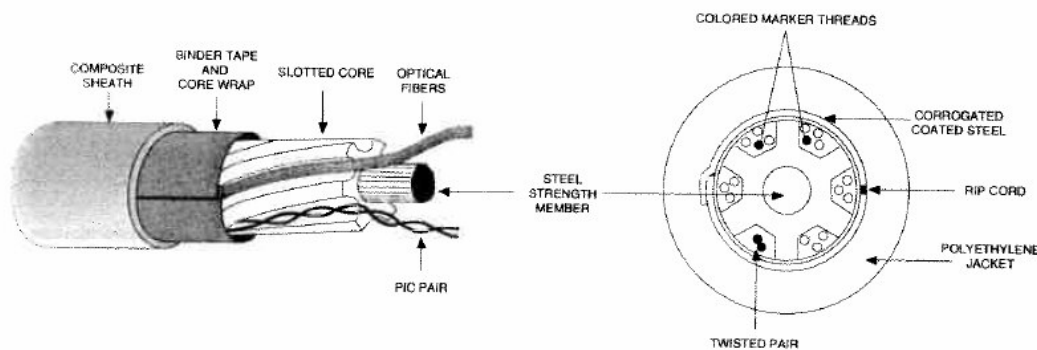


Fig. 6. Northern Telecom hybrid 15-fiber/one twisted copper pair slotted core cable with Steelpeth sheath.

The

Refi Reference does not disclose placing a twisted conductor pair in *each* channel, as is claimed in the '116 patent, and indeed, to the extent that the Refi Reference says anything about multiple conductor pairs, it teaches away from the claim by requiring the pairs be located in a single slot.

JP Patent No. 1981-7307 (“the ‘307 patent”)

Defendants contend that under 35 U.S.C. § 103 the '116 patent is invalid as obvious over the '307 patent. JP Sho56 (1981)-7307 (hereinafter “JP '307”) is directed to a method for making overall insulation clad communications cables. JP '307 teaches passing a cruciform core through a “hole” in a branching board, which also serves to “position” the conductors that will form a part of the cables.

Claims 1-7 of the '116 Patent are Non-Obvious Over the '307 Patent

Independent claims 1, 4 and 7 each recite “a plurality of twisted pair conductors” with “only one twisted pair conductor from said plurality of twisted pair conductors disposed in each open space [defined by a plurality of adjacent projections].” The ‘307 patent does not disclose a cable with twisted conductor pairs. See Figure 94.

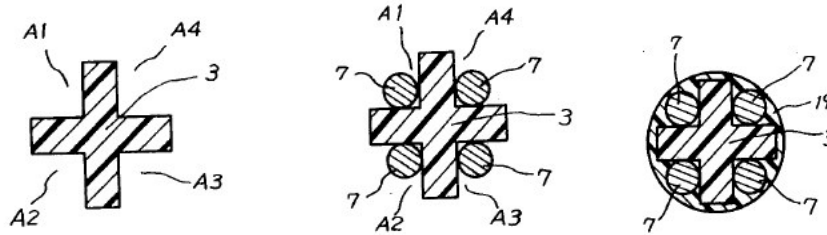


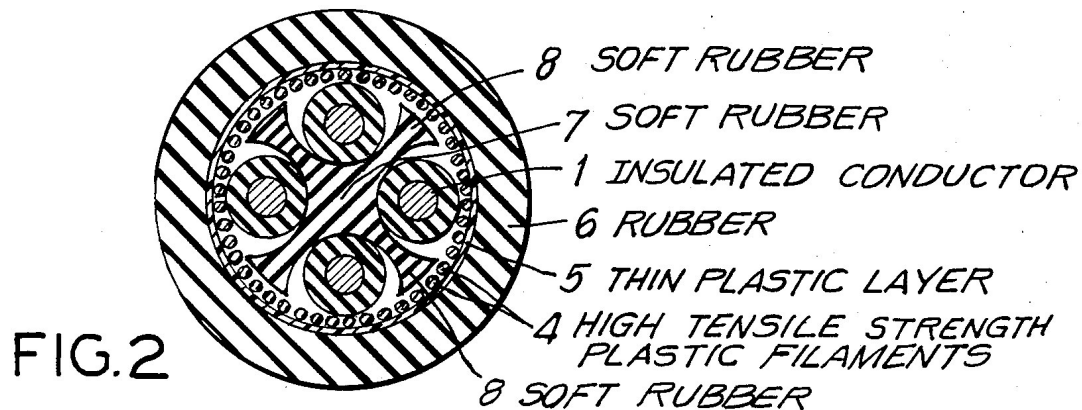
Figure 94.

The ‘307 patent states that “[t]he traditional balanced cable is formed in the following manner: first, one wire is clad with an insulator to form a core, and then, two or four of the resulting insulated wires are stranded together to form a paired or cross-shaped wire.” Section 3 of the ‘307 Patent. Defendants argues that this language teaches that conductor pairs might replace the bare conductors disclosed by the ‘307 patent. However, the ‘307 patent’s use of the term “paired” refers to the stranding of two insulated wires together to form a cable – a cable with two wires has a pair of wires. Nothing in the ‘307 patent suggests or teaches a cable with a plurality of twisted conductor pairs.

Defendants refer to U.S. Patent No. 5,486,649 (the “‘649 patent”) to provide the limitation that the cable covering includes an overall shield. Defendants do not assert that the ‘649 patent provides the missing plurality of twisted pair conductors. Accordingly, Defendants have failed to state a *prima facie* case of obviousness over these references.

U.S. Patent No. 4,654,476 (“the ‘476 patent”)

Defendants contend that under 35 U.S.C. § 103 the '116 patent is invalid as obvious over the '476 patent. The '476 patent discloses a cable with single conductors. See Figure 2.



Claims 1-7 of the '116 Patent are Novel Over the '476 Patent

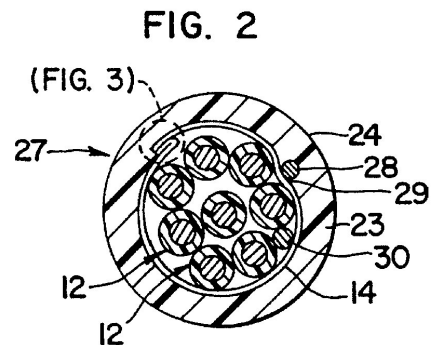
Independent claims 1, 4 and 7 each recite “a plurality of twisted pair conductors” with “only one twisted pair conductor from said plurality of twisted pair conductors disposed in each open space [defined by a plurality of adjacent projections].” The '476 patent discloses only single conductors. Defendants have failed to identify any reasons why one of skill in the art would be motivated to replace these single conductors with twisted pairs that would be more costly and difficult to manufacture. Further, Defendants have made no assertion that there would have been a reasonable expectation of success in so modifying the '476 patent.

Claim 1 further recites “said cable covering includes an overall shield.” Defendants acknowledge that the '476 patent lacks this shield, and asserts that “because there are only two options for a cable covering (shielded or non-shielded) it would be obvious to try a shielded cable covering.” This is an incorrect articulation of the obviousness standard – obvious to try is insufficient. Defendant has not identified any reason why one of skill in the art would modify the '476 cable to add a shield to the cable cover, nor whether there would be any reasonable expectation of success. Indeed, this patent issued on March 31, 1987, and Defendants were

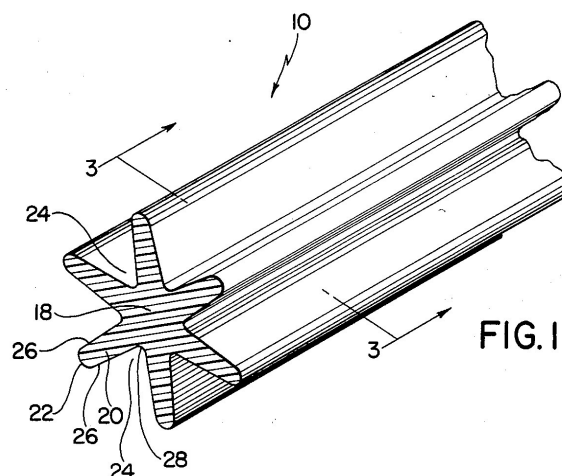
unable to find even a single example in the nine years between issuance of the '476 patent and filing of the application form which the '116 patent claims priority in which this purported "obvious" modification was made.

U.S. Patent No. 5,486,649 ("The 649 patent") in view of U.S. Patent No. 4,661,406 ("the '406 patent")

Defendants contend that under 35 U.S.C. § 103 the '116 patent is invalid as obvious over the '649 patent in view of the '406 patent. The '649 patent describes a shielded communications cable that has a plurality of twisted conductor pairs. See Figure 2.



The '406 patent describes a strength element of a fiber optic cable. See Figure 1.



Claims 1-7 of the '116 Patent are Non-Obvious Over the '649 Patent in View of the '406 patent

The '649 patent and the '406 patent each have features that differ from each other, as well as from the claims of the '116 patent. The '649 patent is shielded and is therefore completely contrary to the '116 patent, which claims an unshielded cable. The '406 patent – because it pertains to optical fiber cable – differs radically from the '116 patent, which uses electrical conductors. Moreover, Defendants concede that neither reference discloses placing one twisted conductor pair in each open space defined by a central separator like the one described in claim 1 of the '116 patent. Additionally, because the optical and electrical technologies are disparate and because the considerations that go into designing and manufacturing these different cables are unrelated, one of skill in the art would not have looked to one to modify or improve on the other. Accordingly, Defendants have failed to demonstrate that it would have been obvious to one of ordinary skill in the art to combine these two references.

U.S. Patent No. 4,784,461 (“the '461 patent”) in view of the Refi Reference

Defendants contend that under 35 U.S.C. § 103 the '116 patent is invalid as obvious over the '461 patent in view of the Refi Reference. The '461 patent discloses an “optical cable with improved strength.” See Figure 1.

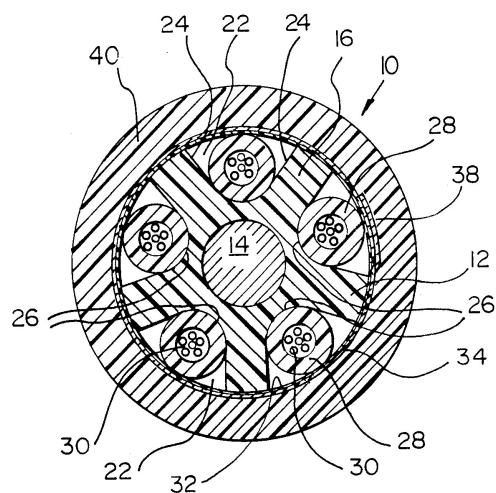


FIG. 1

Similarly, the Refi Reference discloses a “fiber optic cable.”

Claims 1-7 of the ‘116 Patent are Non-Obvious Over the ‘461 Patent in view of the Refi Reference

Independent claims 1, 4 and 7 each recite “a plurality of twisted pair conductors” with “only one twisted pair conductor from said plurality of twisted pair conductors disposed in each open space [defined by a plurality of adjacent projections].” While the Refi Reference mentions placing a single twisted conductor pair in a single open space defined by a core separator to create a “hybrid” cable, neither reference teaches or suggests placing a twisted conductor pair in each open space that is defined by the core separator. As both references describe optical fiber cables, it is not surprising that neither teach replacing the optical fibers with twisted conductor pairs or including multiple twisted conductor pairs, as there are no particular benefits to doing so. Indeed, the fact that each is directed to optical fibers teaches away from twisted conductor pairs, because such pairs would render either reference vastly different in functionality and less suitable for their intended purposes. Even adding a single twisted pair to each of the open spaces in either cable would detrimentally reduce the amount of optical fibers that could be included in the cables. Further, Defendants have failed to meet their burden to demonstrate that there would

have been some reason why one of ordinary skill in the art would combine these two references.

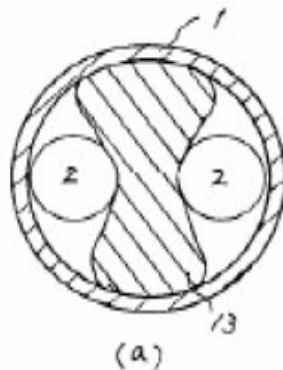
Accordingly, a prima facie case of obviousness has not been made.

JP Sho61(1986)-13507 (“the ‘507 patent”) in view of the ‘307 Patent

Defendants contend that under 35 U.S.C. § 103 the ‘116 patent is invalid as obvious over the ‘507 patent in view of the ‘307 patent. The ‘507 discloses a cable with a “fibrous cocoon-shaped inclusion between pairs or units.”

Claims 1-7 of the ‘116 Patent are Non-Obvious Over the ‘507 Patent in view of the ‘307 Patent

Independent claims 1, 4 and 7 each recite “an interior support comprising... a longitudinally extending central portion forming a portion of said support [and] a plurality of projections extending from said central portion, each projection of said plurality of projections being adjacent to two other projections of said plurality of projections.” The ‘507 discloses a cable with a “fibrous cocoon-shaped inclusion between pairs or units.” . See Figure 1(a):

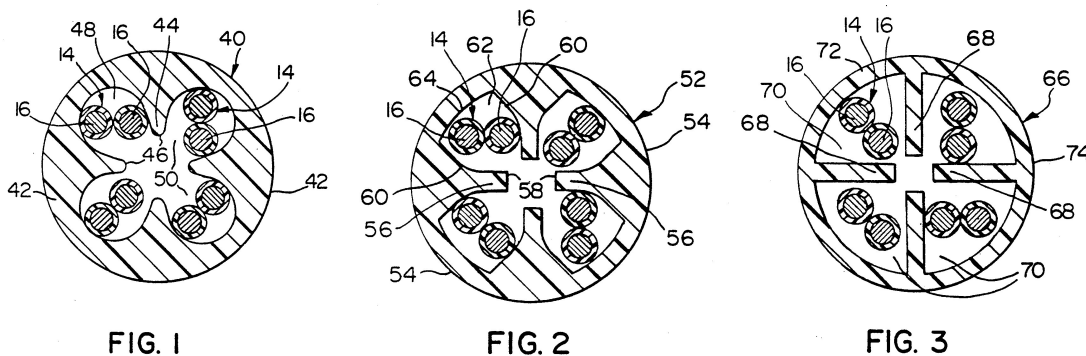


As acknowledged by Defendant, this “cocoon-shaped inclusion” does not have a plurality of projections extending from a central portion thereof that are adjacent to two other projections. Further, combination with the ‘307 patent would not result in the claimed configuration. The ‘507 patent teaches only two twisted pairs, so even were one of skill in the art to modify the ‘507

patent to incorporate elements of the '307 interior support, there would be no reason to incorporate additional projections, as there are only two twisted pair conductors to separate. Further, Defendants have provided no reasons to modify the '507 reference with the '307 reference. That the '507 patent indicates that "other combined working examples can also be conceived of with each working example in Figure 1" suggests nothing more than the combination of the examples of Figure 1 with other working examples found in the '507 patent itself, and in any event provides no specific reasons for combining with the '307 patent.

U.S. Patent 5,132,488 ("the '488 patent")

Defendants contend that the claims of the '116 patent are anticipated and rendered obvious by the '488 patent, under 35 U.S.C. § 102. The '448 patent describes a cable with projections that extend from the jacket towards the center of the cable as a means to partially isolate conductor pairs. See Figures 1, 2, and 3.



Claims 1-7 of the '116 Patent are Novel Over the '488 Patent

Initially, Defendants in the body of their contentions asserts only that "Exhibit 36 provides details, on a limitation-by-limitation basis, on how U.S. Patent No. 5,132,488 invalidates the '116 patent." No further detail is provided in the body of the contentions.

Exhibit 36, meanwhile exclusively asserts that the ‘488 patent anticipates claim 7 of the ‘116 patent. No further contentions regarding the ‘488 patent are included. Accordingly, Belden considers Defendants not to have asserted that the ‘488 patent invalidates, either alone or in combination any of claims 1-6 of the ‘488 patent.

Additionally, as noted by Defendants, the ‘488 reference was before the Patent Office, who found each of the claims of the ‘116 patent to be novel and non-obvious over this reference.

Independent claim 7 recites “an interior support.” The ‘488 patent does not disclose an interior support. A “spacer means” is briefly described at col. 1, lines 51-60, but there is no disclosure that this spacer means assumes any support functionality, or that it would be understood by one of skill in the art to be capable of support. No materials are disclosed for this embodiment from which to ascertain whether the spacer means would be capable of support.

Claim 7 further requires the interior support be unshielded. The ‘488 patent does not disclose that the spacer means is unshielded. Defendants refer to the jacket material being formed of a suitable polymeric material, and the spacer means of an embodiment being provided by projections of the jacket. This section is referring to a different embodiment in which the spacers extend unitarily from the jacket itself. There is no disclosure, however, that the spacer means of the embodiment initially referred to by Defendants is formed of the same material. Further, it is not disclosed that the spacer means itself is unshielded – it is a simple matter to add, for example by coating, shielding material to an unshielded component to render it shielded.

Claim 7 also recites “a plurality of projections extending from said central portion, each projection of said plurality of projections being adjacent to two other projections of said plurality of projections.” The embodiment of the ‘488 patent asserted by Defendants does not disclose each projection being adjacent to two other projections. There is no disclosure as to the number

of projections in this embodiment.

Finally, claim 7 recites “only one twisted pair conductor from said plurality of twisted pair conductors disposed in each open space.” The ‘488 patent does not disclose that each space of this embodiment contains a twisted pair conductor.

Conclusion

Belden continues to analyze Defendants’ contentions concerning the validity of the patents-in-suit. Accordingly, Belden reserves the right to revise, supplement, alter or change these contentions as this matter progresses.

/s/ Robert J. Silverman

Matthew B. Lowrie (admitted *pro hac vice*)
Robert J. Silverman (admitted *pro hac vice*)
LOWRIE, LANDO & ANASTASI, LLP
One Main Street, Eleventh Floor
Cambridge, MA 02142
Telephone: (617) 395-7000
mlowrie@LL-A.com
rsilverman@LL-A.com

John W. Shaw (#3362)
Karen E. Keller (#4489)
YOUNG CONAWAY STARGATT & TAYLOR, LLP
The Brandywine Building, 17th Floor
1000 West Street
Wilmington, DE 19801
kkeller@ycst.com
Telephone: (302) 571-6554

Attorneys for Plaintiffs
BELDEN TECHNOLOGIES, INC. and
BELDEN CDT (CANADA) INC.

Dated: April 6, 2009

CERTIFICATE OF SERVICE

I hereby certify that on April 6, 2009, a true and correct copy of the foregoing document was caused to be served by electronic mail on the following counsel of record for Defendants:

Holmes J. Hawkins, III
James J. Mayberry
King & Spalding LLP
1180 Peachtree Street, N.E.
Atlanta, GA 30309-3521
hhawkins@kslaw.com
jmayberry@kslaw.com

Jeffrey L. Moyer, Esquire
Anne Gaza, Esquire
Richards, Layton, & Finger
One Rodney Square
920 North King Street
Wilmington, Delaware 19801
moyer@r1f.com
gaza@r1f.com

/s/ Robert J. Silverman

Matthew B. Lowrie (admitted *pro hac vice*)
Robert J. Silverman (admitted *pro hac vice*)
LOWRIE, LANDO & ANASTASI, LLP
One Main Street, Eleventh Floor
Cambridge, MA 02142
Telephone: (617) 395-7000
mlowrie@LL-A.com
rsilverman@LL-A.com