UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JASON A. STIPES

Appeal 2006-3339
Application 10/869,805
Technology Center 2800

HEARD: January 11, 2007

Before TERRY J. OWENS, ANITA PELLMAN GROSS, and HOWARD B. BLANKENSHIP, *Administrative Patent Judges*.

GROSS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal from the Examiner's final rejection of claims 1 through 10, which are all of the claims pending in this application.

Appellant's invention relates to a high speed data cable with plural individual twisted pairs of conductors. Each pair includes a shield wrapped around the pair of conductors and overlapping itself along the length of the

conductors. Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A high speed data cable comprising:

a plurality of individual twisted pairs, each individual twisted pair includes a first insulated conductor twisted about a second insulated conductor;

a jacket surrounding said plurality of individual twisted pairs,

at least two of said twisted pairs each being laterally wrapped with a metal composite shield having a polymer layer and a metal layer, and said metal layer having a thickness of from about 0.0003 inches to 0.001 inches,

each of said shields has an inner surface and an outer surface opposite the inner surface and said outer surface facing said jacket,

each shield has a first overlapping longitudinal side and a second overlapping longitudinal side, and

said first and second overlapping sides being bonded together by a bonding agent and wherein bonding of each of said shields affects improved resistance to deformation and impedance stability.

The prior art references of record relied upon by the Examiner in rejecting the appealed claims are:

Dembiak	3,703,605	Nov. 21, 1972
Krabek	4,477,693	Oct. 16, 1984
Gareis	5,486,649	Jan. 23, 1996
Deitz	5,956,445	Sep. 21, 1999

Claims 1 and 7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Deitz in view of Dembiak.

Claims 2 and 3 stand rejected under 35 U.S.C. § 103 as being unpatentable over Deitz in view of Dembiak and Gareis.

Claims 4 through 6 and 8 through 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Deitz in view of Dembiak and Krabec.

We refer to the Examiner's Answer (mailed May 30, 2006) for the Examiner's complete reasoning in support of the rejections, and to Appellant's Brief (filed March 16, 2006) and Reply Brief (filed June 30, 2006) for Appellant's arguments thereagainst.

OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by Appellant and the Examiner. As a consequence of our review, we will affirm the obviousness rejections of claims 1 through 10.

Appellant argues (Br. 7) that Deitz fails to disclose that each individual shield is overlapped and bonded along its longitudinal length, as recited in claim 1. The figures of Deitz show the seam for the shield two different ways – as two edges meeting but not overlapping, for shields 36 and 36A in Figures 4 and 5, and as two edges overlapping, for shields 16 and 16A in Figures 1 and 6. Thus, we find that Deitz at least suggests overlapping the two edges of the shield along the longitudinal length of the individual shield. However, we agree that Deitz does not disclose bonding the overlapped edges. The Examiner, recognizing that Deitz does not teach bonding the overlapped edges, relies on Dembiak for bonding.

Appellant contends (Br. 7-8) that voice type communication cables, the type of cable disclosed by Dembiak, are not concerned with the same problems that arise in high speed data cables, like those of Deitz. In other words, Dembiak, being directed to voice type communication cables, "does

not disclose using a composite shield for twisted pair cables nor does it even suggest that their invention could or should be used as a shield for individual twisted pairs." Appellant continues (Br. 8) that Dembiak's metal shield is not equivalent to that of Deitz. Further, Appellant argues that Deitz does not suggest that individual composite shields should be bonded, and Dembiak does not suggest shielding individually twisted pairs. Accordingly, Appellant concludes that the combination would not have been obvious.

First, if Deitz taught that individual composite shields should be bonded and Dembiak taught shielding individually twisted pairs, the references each would have anticipated the claimed invention. Since neither does anticipate the claimed invention, the question is whether the combined teachings would have rendered the claims obvious. We find that they would have.

Second, Appellant is reading the teachings of the two references, but mostly of Dembiak, too narrowly. Dembiak discloses (col. 1, ll. 51-55 and 60-64) that communications cables require electrically conductive metal shields, generally formed of a metallic strip such as aluminum, to protect against external electrical signals. Dembiak further discloses (col. 1, ll. 55-59) that wrinkling or rupturing of the shield should be avoided. Also, Dembiak teaches (col. 2, ll. 12-15) that the edges of the metal shield should be overlapped and bonded to avoid slippage along the seam to enhance the effectiveness as a shield (as well as to create a more effective moisture barrier). Dembiak (col. 2, ll. 32-37) uses adhesive to form the seal. Since the foil shield around an individually twisted pair in a high speed data cable (like that disclosed by Deitz) is to prevent electronic interference (see Appellant's specification, page 1, lines 11-17) and the shield of Dembiak is

to protect against external electrical signals, it would appear that the two types of cables are concerned, at least in part, with the same problems. Also, since both shields are to prevent electronic interference and are formed of aluminum, the metal shields of Dembiak and Deitz are sufficiently equivalent that the skilled artisan would have expected the overlapping and bonding of the edges of the shield in Deitz to improve the shielding in Deitz the same as it does in Dembiak.

Appellant (Br. 8) relies on the declaration of Galen Gareis as evidence that the skilled artisan would not find claim 1 obvious over Deitz in view of Dembiak. Gareis states (Declaration, page 3) that

> A skilled artisan in view of Dembiak 3,703,605 and Dietz [sic] 5,956,445 would not be motivated in order to prevent slippage or water penetration into Dietz's [sic] twisted pairs to bond the individual shields shown in Dietz. One, rather, following the teachings of Dembiak, would utilize an overall shield and perhaps an additional overall binder.

This statement, however, flies in the face of the explicit teachings of Dembiak. Specifically, as explained *supra*, Dembiak teaches that to enhance the effectiveness of a metallic shield used to protect against external electrical signals, slippage should be eliminated by overlapping and adhesively bonding the edges of the shield. Deitz discloses a metallic shield for the individually twisted pair, and such shields are used to prevent electronic interference. Therefore, on its face the teachings of Dembiak appear to apply to the metallic shields of the individually twisted pair. As Gareis fails to point to any particular teachings that would suggest otherwise, or even to explain why the above-noted teachings would not have

been seen by the skilled artisan to apply to Deitz's shields for the individually twisted pairs, Gareis's conclusion is not convincing.

Appellant further argues (Br. 9) that Dembiak does not discuss impedance stability or resistance to deformation. Appellant again relies upon Gareis, who states (Declaration, page 3) that

> The teachings concerning Dietz's [sic] overall shield and its ability to reduce slippage or prevent water penetration does not suggest that bonding Dietz's [sic] individual shields could prevent deformation and reduce impedance instability.
>
> 11. One would not expect, in view of Dembiak's teachings that a bonded overall shield reduces slippage and prevents water seepage, that bonding individual shields shown in Dietz [sic] would reduce deformation and increase impedance stability.

Gareis concludes that reduced deformation and increased impedance stability are unexpected results.

Again we find Gareis's conclusions to be unpersuasive. First, Dembiak discloses (col. 3, ll. 25-27) that "[t]he use of a shielding layer with a sealed seam also has been shown to have higher strength characteristics necessary to withstand repetitious bending of the cable." Thus, Dembiak suggests that a sealed seam will prevent deformation. Further, as noted *supra*, one of Dembiak's goals is to prevent wrinkling or rupture of the shielding strip. Appellant discloses (Specification, page 2) that the impedance of an ISTP is

> influenced by the presence of the shield wrapped around its circumference. Present day shields can suffer from variations in geometry. Very small variations in the geometry and spacing of the overall shield can drastically affect the cable's impedance. The shield, commonly made of a thin metallic foil,

> can wrinkle, shift, and even open. The unwanted wrinkling, shifting, and opening can occur during manufacturing, installation, and use of the cable. The wrinkling, shifting, and opening can result in a deleterious increase in impedance variation.[1]

Since wrinkling and opening is known to cause an increase in impedance, by preventing wrinkling or rupture, Dembiak implicitly reduces impedance variation. Accordingly, the alleged unexpected results are actually quite expected. Therefore, we will sustain the obviousness rejection of claims 1 and 7 over Deitz in view of Dembiak.

Regarding the rejection of claims 2 and 3, the Examiner adds Gareis to the primary combination. Appellant argues (Br. 10-11) that the suggestion to bond the layers as in claim 2 comes from Appellant's disclosure. Further, Appellant asserts that the Examiner's rejection improperly involves making Dembiak's metal core shield a composite shield, using that modified shield around a twisted pair rather than around the core, folding the modified shield as in Gareis, though Gareis does not suggest that his fold should be used for individually twisted pairs, and then bonding the folds. For claim 3, Appellant (Br. 12) refers to the arguments for claim 2 and adds that there is no suggestion in any of the references to overlap both sides before bonding, pointing to Fig. 2d.

First, neither claim 3 nor Appellant's Fig. 2D indicates that both sides are to be overlapped before bonding. Instead, claim 3 and Fig. 2D have the

[1] Since Appellant's disclosure fails to include a "clear and persuasive assertion in the specification[. . .] that the fact relied on to support patentability was the discovery of the applicants for patent," *In re Wiseman*, 201 USPQ 658, 661 (CCPA 1979), we assume this portion represents a known problem rather than one that Appellant discovered.

outer side folded inward over itself, whereas claim 2 and Fig. 2C have the inner side folded outward over itself. Second, Appellant has completely twisted the rejection set forth by the Examiner. The Examiner's rejection suggests that the shield of Deitz should overlap and be bonded to itself for reasons suggested by Dembiak, as explained *supra*.

Gareis (col. 1, ll. 33-35) explains that prior art designs with overlaps still have a loosening of the shield where it overlaps (which in turn causes impedance instability). Gareis solves the problem of the prior art by having the longitudinal side folded as recited in claims 2 and 3 (and shown in Figures 2C and 2D, respectively). See Gareis, Figs. 3 and 7, respectively. Accordingly, Gareis improves upon the design of Dembiak in terms of slippage and opening. Therefore, it would have been obvious to combine Gareis with Deitz and Dembiak, and we will sustain the obviousness rejections of claims 2 and 3.

Appellant (Br. 13 and 14), in arguing against the Examiner's rejection of claims 4 and 8, and 5 and 9, asserts that

> [t]he Examiner now wants to take the non-bonded shielding of a multi shielded coaxial cable and somehow use an isolated portion thereof into the Examiner's modified high speed data cable's individual twisted pair cable shield for claims 4 and 8. This stretches the concept of the prior art suggesting the claimed invention and is contrary to the law and improper."

Appellant has merely concluded that the combination is improper without specifically pointing out an error in the Examiner's rejection. Therefore, we will sustain the rejection of claims 4, 5, 8, and 9.

For claims 6 and 10, Appellant (Br. 14) refers to Fig. 2d as showing both overlapping sides being folded prior to being overlapped. However, as

indicated supra, Fig. 2D shows and claim 3 recites only one side being folded prior to being overlapped. Accordingly, Appellant's argument fails to convince us of error in the Examiner's rejection, and we will sustain the rejection of claims 6 and 10.

CONCLUSION

The decision of the Examiner rejecting claims 1 through 10 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a). *See* 37 CFR § 1.136(a)(1)(iv).

AFFIRMED

TERRY J. OWENS Administrative Patent Judge	)	
ANITA PELLMAN GROSS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
HOWARD B. BLANKENSHIP Administrative Patent Judge	)	

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