UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JONATHAN N. SIMON and GARY B. GORDON

Appeal 2007-2493
Application 10/146,512
Technology Center 2800

Decided: December 4, 2007

Before: KENNETH W. HAIRSTON, ROBERT E. NAPPI, and KARL D. EASTHOM, *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 (2002) from a final rejection of claims 1-3, 5, and 8-11. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

We AFFIRM.

Appellants claim a combined optical and electrical transmission line that can transmit optical and electrical signals. The transmission line comprises what is essentially the claimed optical fiber in place of the normal

prior art dielectric layer typically found in coaxial cables. The claimed optical layer comprises a core and a cladding. In one embodiment, the cladding is the same layer as the electrically-conductive sleeve of the coaxial cable. Another embodiment requires the cladding to be in contact with the electrically-conductive sleeve. Still other embodiments include a connector, and also comprise the core and cladding in what is essentially a triaxial structure. Methods related to using some of the above described embodiments or structures similar thereto are also claimed.

The claims representative on appeal read as follows:

> 1. A combined optical and electrical transmission line, comprising:
>
> an optical fiber comprising a core and a cladding, the cladding surrounding the core;
>
> an inner conductor surrounded by the core of the optical fiber; and
>
> an electrically–conductive sleeve surrounding the optical fiber the inner conductor, the optical fiber and the conductive sleeve constituting a coaxial electrical transmission line having a characteristic impedance.
>
> 2. The combined optical and electrical transmission line of claim 1, in which the electrically-conductive sleeve is in contact with the cladding.
>
> 3. The combined optical and electrical transmission line of claim 1, in which:
>
> the conductive sleeve is an inner conductive sleeve; and
>
> the combined optical and electrical transmission line additionally comprises:
>
> a dielectric sleeve surrounding the inner conductive sleeve, and

> an outer conductive sleeve surrounding the dielectric sleeve, the inner conductive sleeve, the dielectric sleeve and the outer conductive sleeve constituting a second coaxial electrical transmission line having a second characteristic impedance.
>
> 5. The combined optical and electrical transmission line of claim 1, in which the conductive sleeve constitutes the cladding of the optical fiber.
>
> 8. The combined optical and electrical transmission line of claim 1, additionally comprising a conductive optical fiber connector half in optical communication with the optical fiber and electrically connected to the conductive sleeve.

The Examiner rejected claims 1-3, 5, and 8-11 under 35 U.S.C. § 103(a) (2004).

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Wolf	US 3,844,801	Oct. 29, 1974
Gleim	US 5,146,528	Sept. 8, 1992

ISSUE

The central issue is whether the Examiner has established a prima facie case that one skilled in the art would have replaced Gleim's optical fiber with Wolf's cladded optical fiber. Other obviousness issues also exist.

PRINCIPLES OF LAW

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If that burden is met, then the burden shifts to the Appellants to overcome the prima facie case with argument and/or evidence. *Id*. On appeal, Appellants

bear the burden of showing that the Examiner has not established a legally sufficient basis for combining the teachings. Appellants may sustain this burden by showing that, where the Examiner relies on a combination of disclosures, the Examiner failed to provide sufficient evidence to show that one having ordinary skill in the art would have done what Appellants did. *United States v. Adams*, 383 U.S. 39 (1966); *In re Kahn*, 441 F.3d 977, 987-988 (Fed. Cir. 2006); *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick, Co.*, 464 F.3d 1356, 1360-1361 (Fed. Cir. 2006).

The Examiner's articulated reasoning in the rejection must possess a rational underpinning to support the legal conclusion of obviousness. *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

"[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *KSR Int'l Co. v. Teleflex Inc.,* 127 S.Ct. 1727, 1740 (2007).

> For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* and *Anderson's-Black Rock* are illustrative – a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Id.

> [A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the "improvement" is technology-independent and the combination of references results in a product or process that is more desirable for example because it is stronger, cheaper,

> cleaner, faster, lighter, smaller, more durable, or more efficient. Because the desire to enhance commercial opportunities by improving a product or process is universal – and even common-sensical – we have held that there exists in these situations a motivation to combine prior art references even absent any hint of a suggestion in the references themselves. In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him *capable* of combining the prior art references.

Dystar Textilfarben GhbH & Co. Deutschland KG v. C.H. Patrick Co., 464 F.3d 1356, 1368 (Fed. Cir. 2006).

> A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. The degree of teaching away will of course depend on the particular facts; in general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant.

In re Gurley, 27 F.3d 551, 553 (Fed. Cir. 1994).

DISCUSSION

Claim 1

FINDINGS OF FACT (FF)

1. The Examiner finds and Appellants do not contest that Gleim discloses all of the limitations of claim 1 except the cladding element (col. 4, ll. 19-29, 42-47; col. 3, ll. 4-30; Figs. 1-2 and 4, Ans. 3-4; Brief 6-8).

2. Wolf discloses a cladding for an optical fiber (col. 1, ll. 7-13) and teaches that "[i]ndividual optical fibers or filaments used in

light pipes are composed of two essential parts, namely a central core and an outer cladding or sheath" (col. 1, ll. 54-56).

3. Wolf teaches that it is known to employ a cladding surrounding the fiber core in which the cladding has a lower refractive index than the core to ensure that the light entering one end of the fiber is internally reflected along the length of the fiber due to the principle of "total internal reflections" (Wolf, col. 1, ll. 56-68).

4. Citing Wolf's teachings regarding the principal of "total internal reflection" as suggesting to one of ordinary skill in the art that a cladding layer surrounding an optical fiber core avoids transmission loss otherwise occurring in a "naked core", thereby resulting in "greater transmission distances", the Examiner combines Wolf and Gleim (Wolf, col. 1, ll. 54-68, Ans. 5-6, 11).

ANALYSIS

The central issue involved with claim 1 is whether the Examiner properly combined the teachings of Gleim and Wolf. The Examiner's reason for the combination is that due to the principle of "total internal reflection" described in Wolf, a cladding layer surrounding an optical core reduces loss resulting in "greater transmission distances" as compared to a "naked [fiber optic] core" (FF 4). Appellants counter that cable loss is not disclosed in the Gleim reference as a problem (Brief 7).

There is no requirement that the Examiner's rationale underpinning the rejection be disclosed as a problem in any one reference. *KSR Int'l Co. v. Teleflex Inc.,* 127 S.Ct. 1727, 1740-41 (2007) ("Often, it will be necessary for a court to look at the interrelated teaching of multiple

patents…As our precedents make clear, however, the analysis need not seek out precise teaching directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.") (citing and quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)("[T]here must be some rational underpinning to support the legal conclusion of obviousness.").

The Examiner carefully articulated his rationale, founded on the teaching of Wolf, regarding the benefits of cladding (i.e., less loss and consequent greater transmission distances) (FF 4). Wolf teaches a cladding and a core as essential for fiber optics due to the principal of "total internal reflection" at the section cited by the Examiner (FF 2, 4). We consider the Examiner's reason to be sufficient to explain why one of ordinary skill would have surrounded Gleim's optical fiber core with Wolf's cladding layer, or equivalently, replaced Gleim's optical fiber core with Wolf's "essential" optical fiber core and cladding layer.

Similarly, the argument that a teaching or suggestion to support motivation or a reasonable expectation of success must be found in the prior art and cannot be found in the Appellants' disclosure is not persuasive (Brief 5)[1]. The inference flowing from the principal of "total internal reflection," as enunciated by Wolf (col. 1, ll. 54-68), supports the Examiner's finding

[1] Appellants' arguments concerning combining the references are not persuasive as they rely upon a strict application of the TSM test. The Supreme Court has recently stated that "the obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007).

that Wolf suggests the benefits of less loss and consequent greater transmission distances occurring as a result of an "essential" cladding layer surrounding an optical fiber core as compared to a naked core. In other words, Wolf's teachings imply transmitted light that is totally internally reflected does not exit cladded optical fibers through the cladding but exits naked optical fiber cores due to the lack of internal reflection. Wolf's teachings also imply a reasonable expectation of success because without the essential cladding layer failure likely occurs in longer transmission lines due to loss.[2] The Examiner's reasoning is founded on evidence cited in the prior art reference to Wolf (FF 2-4).

Appellants also argue that Wolf sets forth technical difficulties involved in making optical fibers so that Wolf involves "teaching away" (Brief 7). Such technical difficulties do not rise to "teaching away" where Wolf discloses overcoming any difficulties by carefully selecting core and cladding glass compositions thereby encouraging others to follow the same path (col. 2, ll. 25-28). *Cf. In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994)

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[2] In arguments repeated for each claim on appeal, Appellants cite *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991) as requiring the Examiner to indicate in the cited documents where a teaching regarding a reasonable expectation of success may be found (Ans. 5, 6, 7, 11, 13, 14, 16, 18). As noted above in n.1, former requirements regarding specific references in cited references have been supplanted by less rigid and formulistic approaches. Further, a reasonable expectation of success can be implicit in the suggestion to combine. *In re Nunberg*, 33 USPQ2d 1953, 1955 (Fed. Cir. 1994) (unpublished opinion)(distinguishing *In re Vaeck* where the court found a lack of suggestion, recognizing "significant unpredictability in the field of molecular biology", and stating "obviousness does not require absolute predictability of success").

("A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.").

Accordingly, the Examiner has established a prima facie case. Appellants have failed to rebut the prima facie case with evidence or argument. Appellant has failed to show that the claimed combination, met by substituting the known prior art Wolf optical fiber comprising the "essential" core and cladding for the naked fiber core of Gleim, yields more than the predictable result of lower transmission loss and consequent longer transmission distances.

We sustain the rejection of claim 1.

Claim 2

FINDINGS OF FACT

5. We find as the Examiner does that claim 5 of Gleim discloses an electrically-conductive sleeve in contact with the optical fiber (Ans. 6, 13, 14).

6. We find that since in Gleim's claim 5, the "electrically conducting layer … being an outer electrical conductor" (corresponding to the conductive sleeve of Appellants' claim 2), is claimed as "spaced" from the "electrically conducting core" (corresponding to the inner conductor of Appellants' claim 1) by the layer of insulation (corresponding to the optical fiber core of Appellants' claim 1), then the conducting layer (corresponding to the electrically-conductive sleeve of Appellants' claim 1) must be in

contact with the layer of insulation (corresponding to the optical fiber core of Appellants' claim 1) (Ans. 6-7, 13-14) [3].

ANALYSIS

The claimed element at issue for claim 2 is whether the "electrically-conductive sleeve is in contact with the cladding" (Ans. 8). Appellants argue that the combination of the references do not teach this limitation. Appellants support this argument by stating that Gleim does not explicitly mention nor depict the conductive sleeve of the coaxial cable (Ans. 9). Any support from the latter statement must fail since we find that Gleim discloses the conductive sleeve of the coaxial cable (FF 5). Appellants' also support their argument by stating that Gleim does not disclose any structural relationship between the conductive sleeve and the cladding (Ans. 8-9). The statement is factually accurate but does not address any error in the Examiner's action since the Examiner states that Wolf teaches the cladding (FF 1). Appellants' argument that Gleim does not suggest the limitation is addressed next.

The Examiner reasons that since Gleim's fiber core is in contact with the conductive sleeve (FF 5), and since Wolf's cladding layer is taught to surround the outside of the optical fiber core to avoid loss (FF 2-4), the combination of Wolf and Gleim would yield the cladding layer in contact with the conductive sleeve (Ans. 6-7, 13-14). We conclude that surrounding

[3] The Examiner cites Gleim claim 5, which depends from independent claim 2. Gleim's claim 5 "layer of insulation" is "comprised of optically conductive material for conducting light thererhrough" from claim 2. Similarly, "said core" of Gleim claim 5 refers to the "electrically conducting core" of claim 2. (Col. 2, ll. 19-29, 42-47).

Gleim's optical fiber core with Wolf's "essential" cladding layer suggests a cladding layer in contact with the electrically-conductive sleeve, for several reasons. First, the result would serve the Gleim requirement of spacing the sleeve from the inner conductor. A similar spacing by a dielectric existing between the sleeve and inner conductor of coaxial conductors is typical as the Examiner indicates (Ans. 14).

Second, in addition to the spacing rationale, as a matter of commercial expediency, logic and common sense dictate that the simplest manner to space the layers is not to add unnecessary and expensive layers. The combination as proposed results in a product that functions as an efficient or low loss electrical and optical transmission line while having the universally desirable properties of being cleaner, cheaper, smaller, and lighter. "[A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the 'improvement' is technology-independent and the combination of references results in a product or process that is more desirable for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient." *Dystar*, 464 F.3d at 1368 (stating the commercial desire to improve products in such a manner is "universal" and "common-sensical"). No further layers are explicitly taught as necessary or preferred in Gleim or Wolf. Appellants have not argued that any intervening layers are suggested in the prior art.

The Examiner's modification reasonably explains why the cladding layer is suggested to be in contact with the conductive sleeve. Accordingly, the Examiner has established a prima facie case that has not been rebutted.

We sustain the rejection of claim 2.

Claim 3.

The limitation in dispute is "a dielectric sleeve surrounding the inner conductive sleeve, and an outer conductive sleeve surrounding the dielectric sleeve, the inner conductive sleeve, the dielectric sleeve and the outer conductive sleeve constituting a second coaxial electrical transmission line having a second characteristic impedance." The Examiner provides a trade dictionary definition of a triaxial cable to modify the combination of Gleim and Wolf, finding that Claim 3 characterizes a cable that is structurally similar to a well-known triaxial cable and that the proposed modification would have been obvious in order to provide more data carrying capability (Ans. 7). Appellants dispute the triaxial cable characterization, stating that the prior art triaxial cables carry control signals and power rather than data (Brief 11). Appellants further argue that the dictionary definition provides no indication of a second coaxial transmission line having a second characteristic impedance. Appellants further argue that the Examiner has failed to establish a prima facie case of obviousness because the cited references do not suggest adding the second coaxial (outer) transmission line (Brief 9-11). After careful consideration, we agree with the Examiner.

Claim 3 essentially describes a triaxial cable structure – albeit one having an optical fiber core and cladding in place of the typical internal dielectric in the innermost coaxial cable of the triaxial structure. Appellants' argument that prior art triaxial structures carry power or control signals rather than data does not refute the structural characterization, but refutes only the purpose or function of the cable (Brief 11). Further, this

characterization does not delineate a difference as control signals are a specific form of data.

The triaxial definition cited by the Examiner describes a "specialized form of coaxial cable, circular in cross-section and consisting of (a) a center conductor … separated by an insulating material from (b) a concentric … conductor which is in turn separated by an insulating material from (c) a third ... conductor … concentric with the first two" (Ans. 7). The Examiner explains that elements (b) and (c) comprise a structure that is a second coaxial transmission line having a second characteristic impedance (Ans. 7). The Examiner further explains that a triaxial structure comprises two separate coaxial cables each having its own characteristic impedance (Ans. 7, 16). The Examiner also states that "[e]very coaxial cable has a characteristic impedance", defined by the "sizes of the ratios of the inner and outer conductors and in inverse relation to the dielectric constant of the insulator." (Ans. 16). The Examiners' explanation, buttressed by the dictionary definition is logically sound, and comports with common knowledge in the electrical engineering arts. The separate impedances of each separate coaxial cable of the triaxial cable meet the limitation of a first and second characteristic impedance[4].

Moreover, we consider the Examiner's explanation and statement that the claimed structure is similar to the defined triaxial cable (Office Action

[4] Whether the first characteristic impedance is different than or the same as the second characteristic impedance is not argued (see Brief 11). As explained by the Examiner, and unchallenged, different characteristic impedances result from different ratios (of the radii of the conductors) and/or different dielectric properties (Ans. 16).

mailed June 15, 2005, page 5; Ans. 7) sufficient to shift the burden to Appellants to explain why the triaxial cable does not possess a second coaxial cable having a second characteristic impedance. *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977)("Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of [the] claimed product.").

Turning to the obviousness argument, we also consider the Examiner's articulated reasons for the combination to be sufficient. A triaxial cable structure is so well known as to be defined in a dictionary (Ans. 7). The Examiner states that in view of the well-known triaxial structure, that adding another transmission line (to the modified coaxial transmission line of Gleim with Wolf)[5] would have been obvious in order to increase the data carrying capacity (Ans. 7-8).

The Examiner's articulated reason must possess a rational underpinning to support the legal conclusion of obviousness. *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Adding another transmission line to form a resulting overall structure of a triaxial cable predictably results in more data capacity as articulated by the Examiner. The similar resulting structure of a triaxial cable is so well known as to be defined in a dictionary as a triaxial cable. The definition specifies that a triaxial cable is a specialized form of a coaxial cable. A coaxial cable is disclosed by Gleim. The Examiner has established that the combination results in a known

[5] The portion in parenthesis is implicit in the Examiner's rationale.

triaxial structure having a predictable result. Appellants' have failed to rebut the prima facie case. Appellants' assertions do not rebut the prima facie case of the Examiner. Appellants assert that motivation must come from the cited references (Ans. 11). This is not correct. *Dystar*, 464 F.3d at 1368 ("[T]here exists in these situations a motivation to combine prior art references even absent any hint of a suggestion in the references themselves", stating that the motivation stemming from a commercial desire to improve products is "universal" and "common-sensical"); see also n. 1 above. Hence, the Examiner's reason that an added transmission line carries more data need not be found in the references themselves. *Id*. Such a finding is "common-sensical" and logical. More lines carry more data. The motivation to make cheaper, more efficient, and smaller products is universally driven. *Id*. The Examiner's proposed combination results in a product that is similar to a structure so well known as to be defined in a trade dictionary. Such a known product carries implicit advantages, some of which include a smaller, more compact product of enhanced data capacity as compared to separate coaxial transmission lines[6].

We sustain the rejection of claim 3.

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[6] The Examiner's articulated reason to combine regarding increased data capacity is further supported by Gleim. Gleim discloses a desire to increase transmission capacity by adding the optical fiber to conventional prior art cables "to provide optical channels without increasing the cross-section of the cable." (Col. 3, ll. 41-62). A triaxial cable having such an optical fiber as suggested by the Examiner would also have enhanced transmission capacity as compared to a conventional triaxial transmission line without increasing its cross-section.

Claim 5.

At issue in claim 5 is whether "the conductive sleeve constitutes the cladding of the optical fiber." The Examiner asserts that this limitation is met by the conductive sleeve of Gleim (Ans. 8). Appellants argue that Gleim does not disclose a conductive sleeve (Brief 12-13). We find otherwise as indicated above (FF 5). Consequently, we conclude that Gleim's conductive sleeve (FF 5 constitutes the cladding layer of claim 5 because it is a conductive sleeve that surrounds the optical fiber.

We sustain the rejection of claim 5.

Claim 8.

The limitation at issue for claim 8 is "comprising a conductive optical fiber connector half in optical communication with the optical fiber and electrically connected to the conductive sleeve." The narrow issue in dispute is whether the connector is "electrically connected to the conductive sleeve."[7] The Examiner argues that Gleim discloses the connector at Fig. 2, and cites claims 3-4 of Gleim as further support (Ans. 8). Appellants argue there is no electrical connection disclosed or suggested by Gleim. Appellants repeat the argument that Gleim does not disclose a conductive sleeve (Ans. 14). We find otherwise (FF 5). Whether the conductive sleeve is disclosed or suggested as electrically connected to the connector remains at issue.

[7] The claimed connector is not depicted in the Specification. Appellants admit that optical connector halves are known in the art, describing that a connector half on the transmission line mates to the other half on an optical element to establish an optical connection (Spec. 4: par. 11).

Gleim's connector VS at Fig. 2 cited by the Examiner discloses cable inner conductor A connected to the connector VS pin S (col. 2, ll. 15-17). Figure 4 of Gleim discloses a television F connected to a video recorder V using the plug and cable of Fig. 2 with jacks VB that match the plugs VS (col. 3, ll. 4-12). Gleim discloses that the television and video recorder are connected "electrically and …optically" with a "single cable", eliminating the "need for two different cables to transmit information, each with a plug at each end and a jack on each component" (col. 3, ll. 24-30). Gleim also discloses that the cable can be secured in the jack VB or plug VS "by known, *threaded*, tension, or *soldered connections*" (col. 2, ll. 47-48)(emphasis supplied).

Gleim's disclosure of an electrically-conductive sleeve, a single cable with a single jack and plug on each end electrically (and optically) connecting two electrical components, and threaded or soldered connections, implies or suggests that the connector plug or jack is electrically connected by soldering to the sleeve of the coaxial cable so that the electrical signal between the two components has a return path. We infer a typical coaxial connection where no other manner of electrical connection for the disclosed coaxial cables is disclosed.[8] One of skill in the art would have recognized that the connector VS is implied or suggested to be connected to the sleeve of the coaxial cable of Gleim because electricity requires a return path, and prior art coaxial cables typically employ the outer electrically conductive

[8] Gleim discloses prior art video signals are transmitted from a recorder to a television set over a coaxial cable (col. 1, ll. 21-42). It is well known that coaxial cables have connectors connected to an electrically-conductive outer sleeve. The Examiner argues similarly (Ans. 18).

sleeve for the return path (see n. 7). Gleim discloses one connection as the connection to the inner conductor A at Fig. 2. If not implicit in Gleim, we conclude it would have been obvious in view of Gleim to connect the cable sleeve to the connector by soldering or otherwise in the typical prior art fashion to ensure a return electrical path since only one coaxial cable is disclosed in Gleim as a desirable feature[9].

We sustain the rejection of claim 8.

Claims 9-11

The issue involved in claims 9-11is whether the Examiner's reasoning that the recited method steps are met by the prior art structure of Gleim with Wolf constitutes a prima facie case of obviousness (Brief 14-15, Ans. 9). We consider the Examiner's assertion to be legally sufficient to shift the burden to Appellants to rebut by pointing out error in the Examiner's reasoning. The Examiner indicated that the prior art structure of claims 1 and 8 meet the providing steps of claim 9, the structure of claim 3 meets claim 11, and that the sleeve[10] claim 3 meets the coating step of claim 10. We also agree with the Examiner's explanation that an apparatus meets the element of "providing" (Ans. 9), because a disclosed apparatus conveys it has been provided. Similarly an element that surrounds has been provided by "surrounding." An element that is a sleeve, or coat, meets the "coating"

[9] While we recognize it is possible that another electrical path could be employed, we do not find that possibility disclosed or suggested because it would entail modifying a normal coaxial cable to eliminate the return connection and also defeat the stated purpose of Gleim of employing only one cable (col. 3, ll. 24-30).

[10] Since only one sleeve is discussed in the Answer, the sleeve of Gleim is implied.

step. Appellants do not refute the contentions directly asserted by the Examiner (Brief 18). The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If that burden is met, then the burden shifts to the Appellants to overcome the prima facie case with argument and/or evidence. *Id.* Appellants failed to overcome the prima facie case because they failed to point out why the particular structure cited by the Examiner did not meet the recited process steps of claims 9-11.

Further, regarding claim 10, as Appellants' state, the Examiner asserts that "'coat' is a broad term and includes many ways of covering an optical layer with a sleeve." (Ans. 9, Brief 17). Appellants do not directly dispute the assertion, but argue that "this observation does not excuse the Examiner from indicating where in the proposed combination of references may be found a teaching or suggestion of 'coating the optical fiber with the conductive material' as recited in Claim 10". (Brief 17). We find that the Examiner asserted several times that the sleeve is disclosed in Gleim (Ans. 10, 13, 15-16, 18, FF 5). We consider the Examiner's assertion to convey to Appellants that the Gleim sleeve meets the coating step sufficient to shift the burden to Appellants to rebut. We find Appellants do not specifically rebut the Examiner's assertion (Answer 18)[11]. *Id*.

[11] Even if Appellants had argued that Gleim does not disclose the coating step, because Appellants admit the method of providing metal coatings is so well known as not to be described (Spec: par. [0010]), we would have considered a known coating step to constitute an obvious substitution of a known prior art method because it would yield a predictable known result – a conductive sleeve on a coaxial transmission line provided by coating. "The combination of familiar elements according to known methods is likely

We sustain the rejections of claims 9-11.

STATEMENT OF CONCERN

Claims 3 and 11 appear to constitute material that does not meet the written description and new matter requirements of 35 USC § 112 and 35 USC § 132, respectively. "One shows that one is 'in possession' of the invention by describing the invention, with all its claimed limitations, not that which makes it obvious. One does that by such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention." *Lockwood v. American Airlines Inc*., 107 F.3d 1565, 1572 (Fed. Cir. 1997)(citations omitted).

Current claims 3 and 11 result in what is essentially a modified[12] triaxial structure and method for using a modified triaxial structure with a center conductor, respectively. Regarding claim 3, there is no original disclosure for a triaxial structure having the combination of the inner conductor surrounded by the core of the optical fiber and electrically–conductive sleeve surrounding the optical fiber of claim 1 in combination with the second coaxial electrical transmission line of claim 3 (which depends from claim 1)[13]. The only disclosed embodiment having an inner conductor surrounded by the core of the optical fiber is either depicted in

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to be obvious when it does not more than yield a predictable result." *KSR* at 1739.

[12] "Modified" by having an optical fiber and cladding in place of the known prior art dielectric of the innermost coaxial cable of the triaxial structure.

[13] Claims 1, 3 and 9 were first presented in their current form in the Amendment filed May 25, 2004. Appellants cite Fig. 3A as providing support for claim 1, but then switches to a different embodiment, Fig. 2, for dependent claim 3 (Ans. 3).

Fig. 3A or Fig. 4, depicting center conductor 322 and 422 respectively. Neither embodiment includes a second coaxial electrical transmission line as particularly claimed in claim 3. That is, no second coaxial line is described having a dielectric sleeve surrounding the electrically-conductive sleeve of claim 1[14] and outer conductive sleeve surrounding the inner dielectric sleeve. Similar remarks apply to claim 11[15].

CONCLUSION

On the record before us, the Examiner has provided sufficient reasons why one skilled in the art would have incorporated Wolf's cladding layer into Gleim's combined optical and electrical transmission line to meet claim 1. The Examiner has also provided sufficient reasons for meeting the other claimed limitations. It follows that the Examiner properly presented a prima facie case in rejecting Claims 1-3, 5 and 8-11 under § 103(a). Appellants have not rebutted the prima facie case with sufficient argument or evidence.

DECISION

We sustain the Examiner's rejection of claims 1-3, 5, and 8-11.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(2006).

[14] The electrically-conductive sleeve of claim 1 is the inner conductive sleeve of claim 3.

[15] For claim 9, Appellants cite Figures 5A, 5B, and 5C for support of the center conductor, but these are separate embodiments (Ans. 5). Only Figure 5C supports the center conductor. For claim 11, Appellants cite Fig. 5B. (Ans. 4-5). Since claim 11 depends from claim 9, Appellants improperly cite two different embodiments for support of different elements of one embodiment.

AFFIRMED

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