

THIS OPINION IS
A PRECEDENT OF
THE TTAB

Oral Hearing: April 7, 2009

Mailed: July 16, 2009

UNITED STATES PATENT AND TRADEMARK OFFICE

Trademark Trial and Appeal Board

In re Rolf Dietrich

Serial No. 78723912

David C. Purdue of Purdue Law Offices for Rolf Dietrich.

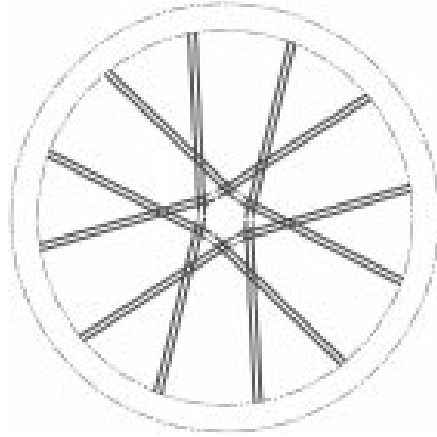
Angela Micheli, Trademark Examining Attorney, Law Office 101
(Ronald R. Sussman, Managing Attorney).

Before Holtzman, Walsh and Cataldo, Administrative Trademark
Judges.

Opinion by Holtzman, Administrative Trademark Judge:

Applicant, Rolf Dietrich, has appealed from the final
refusal to register on the Principal Register the following mark
for "bicycle wheels" in Class 12:¹

¹ Serial No. 78723912, filed September 30, 2005, asserting a date of
first use and first use in commerce on June 30, 2003.



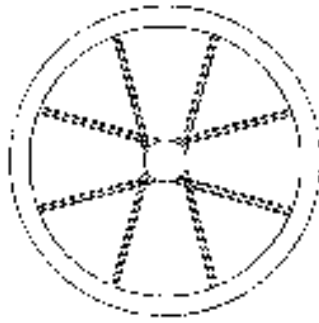
The mark is described in the application as follows:

The mark consists of a spoke pattern in a bicycle wheel comprising a hub, shown in phantom lines in the center of the drawing, and a rim, shown in phantom line around the perimeter of the drawing, as viewed from the side along the axis of rotation of the wheel. The spoke pattern appears to consist of a first set of pairs and a second set of pairs of parallel spokes that are spaced apart, wherein each pair of spokes from the first set appears to intersect an adjacent pair of spokes from the second set to define diamond shaped regions between the rim and the hub of the wheel.

Issue on appeal

The application was filed under Section 2(f) of the Trademark Act based on applicant's ownership on the Principal Register of Registration No. 2720572 for the mark shown below for "torque transmitting bicycle wheels" in Class 12.²

² Issued June 3, 2003 under Section 2(f) of the Act; Sections 8 and 15 affidavits accepted and acknowledged.



The description of the mark in the registration (as corrected), reads:

The mark consists of a spoke pattern in a bicycle wheel comprising a hub, shown in phantom lines in the center of the drawing, and a rim, shown in phantom lines around the perimeter of the drawing, as viewed from the side along the axis of rotation of the wheel. The spoke pattern appears to consist of a first set of pairs of parallel spokes that are spaced apart approximately one to two centimeters and a second set of pairs of parallel spokes that are spaced apart approximately one to two centimeters, wherein each pair of spokes from the first set appears to intersect an adjacent pair of spokes from the second set to define diamond shaped regions between the rim and the hub of the wheel.

Applicant asserts that the mark in the registration is the same basic design as the mark in the application, only with fewer pairs of spokes. According to applicant, the registered mark comprises 8 pairs of spokes (a total of 16 spokes), the crossed pairs of which create the appearance of four diamond shaped regions, while the mark in the application comprises 12 pairs of spokes (a total of 24 spokes) and six diamond shaped regions. Brief, p. 4.

The examining attorney refused registration on the ground that the configuration is functional under Section 2(e)(5) of the Trademark Act. In addition, the examining attorney rejected applicant's 2(f) evidence, correctly stating that "[t]he determination that a proposed mark is functional constitutes an absolute bar to registration" regardless of the evidence of acquired distinctiveness. Office action, January 16, 2007.

Applicant subsequently submitted additional 2(f) evidence, including a declaration of five-years' substantially exclusive and continuous use of the mark in commerce. The examining attorney rejected this evidence, as well, again stating essentially that no amount of 2(f) evidence would be sufficient to overcome a refusal based on functionality.

However, at no time during examination did the examining attorney specifically address whether the configuration, if ultimately found not functional, would be registrable with an appropriate 2(f) showing. Nor did the examining attorney ever address the sufficiency of the 2(f) evidence in this case.³ To the extent that the examining attorney attempted to refuse registration on this basis for the first time in her appeal

³ As stated in TMEP § 1202.02(c), "if the examining attorney has determined that a mark is functional and the applicant has made a claim of acquired distinctiveness, the examining attorney must determine whether the showing of acquired distinctiveness would be sufficient to warrant registration if the examining attorney's decision on the functionality issue is reversed."

brief, the refusal is untimely and cannot be considered. Thus, the sole issue on appeal is whether the mark is functional. We find that the examining attorney has effectively conceded that, assuming the mark is not functional, applicant's evidence is sufficient to establish that the mark has acquired distinctiveness.

Preliminary matter

We note applicant's statement that his existing Registration No. 2720572 is incontestable, and his claim that the registration "has substantial evidentiary significance." Reply Brief, p. 3, n.2. To the extent that applicant is arguing that the refusal to register in this case constitutes a collateral attack on this registration, the argument is not well taken.

First, we point out that a mark is subject to cancellation on the ground of functionality at any time, even if it is over five years old. See Section 14 of the Act. In addition, the incontestable status of a registered mark does not extend to a different mark for broader goods. It is settled that a "registered mark is incontestable only in the form registered and for the goods or services claimed." In re Save Venice New York Inc., 259 F.3d 1346, 59 USPQ2d 1779, 1782 (Fed. Cir. 2001), citing, inter alia, In re Merrill Lynch, Pierce, Fenner and Smith Inc. (incontestable registration for "cash management account" did not automatically entitle applicant to registration of that

mark for broader financial services); and In re Bose Corp., 772 F.2d 866, 227 USPQ 1, 7 n.5 (Fed. Cir. 1985) (incontestable status of registration for one speaker design does not establish non-functionality of another speaker design with shared feature). The two marks in this case, while visually similar, are not the same;⁴ nor are the goods the same. The identification of goods in the application, "bicycle wheels," is broader than the goods in the registration, "torque transmitting bicycle wheels."

Thus, applicant's arguments in this regard are not persuasive, and this case must be decided on its own merits.

The record

Applicant submitted copies of 10 utility patents in response to the examining attorney's inquiry regarding the existence of any patents relating to the configuration. The most relevant of these patents are: Patent Nos. 5,445,439 (issued August 29, 1995); 5,931,544 (issued August 3, 1999); and 6,428,113 (issued August 6, 2002); all owned by applicant and active, except for 5,445,439;⁵ and all relating generally to paired spoked bicycle

⁴ We also note that the description of the mark in the application, stating that the pairs of spokes are "spaced apart" is broader than the mark described in the registration which specifies that pairs of spokes are "spaced apart one to two centimeters."

⁵ Applicant disclaimed all claims (nos. 1-10) in the '439 patent, and the disclaimer was published in the Official Gazette on June 12, 2001. The disclaimer effectively nullifies the patent and the patent is "treated as though the disclaimed claims never existed." Vectra Fitness Inc. v. TNWK Corp., 162 F.3d 1379, 49 USPQ2d 1144, 1147 (Fed. Cir. 1998). We recognize that expired patents and abandoned patent

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wheels. Patent No. 6,679,561 (issued January 20, 2004) is owned by a third party, Trek Bicycle Corporation ("Trek") and this patent also relates to paired spoke wheels. Applicant has also submitted three patents relating to hub assemblies and flanges, Nos. 5,947,565 (issued September 7, 1999); 6,024,414 (issued February 15, 2000); 6,244,667 (issued June 12, 2001); and 6,145,938 (issued November 14, 2000), which relates to both spoked wheels and hub flanges.⁶

The record also includes the declaration of Rolf Dietrich with exhibits including examples of applicant's print and website advertisements by his licensee, Rolf Prima, for various models of bicycle wheels having the subject spoking pattern or different spoking patterns, as well as examples of advertisements for bicycle wheels made by others with spoking arrangements that do

applications have evidentiary value in determining functionality. See *Valu Engineering Inc. v. Rexnord Corp.*, 278 F.3d 1268, 61 USPQ2d 1422, 1429 (Fed. Cir. 2002). However, the evidentiary value of this patent is questionable. We note that in previous litigation between applicant and Trek Bicycle Corporation (*Dietrich v. Trek Bicycle Corp.* 297 F.Supp.2d 1122, 1125 [BNA cite not available] (W.D. Wis. 2003)), the plaintiff, Rolf Dietrich (applicant herein) admitted that the '439 patent "is invalid." Under the circumstances, and although the examining attorney focused her arguments on this patent and applicant discussed it as well, we rely instead on the remaining active patents which, in any event, as applicant notes, have disclosures regarding paired spoking that correspond with the disclosures of the '439 patent, and they also include additional disclosures, descriptions and drawings. Brief, p. 13; Resp., October 13, 2006, p. 5.

⁶ The remaining patents of record, Nos. 6,497,042; 6,715,844; and 6,846,047, relate to certain functional aspects of the wheel, such as the method for connecting a spoke and a rim in the '844 patent, but for the most part, do not affect appearance of the involved design. Brief, pp. 18-19; Resp., October 13, 2006, pp. 7-8.

not have the appearance of applicant's pattern design; and additional pages from the Rolf Prima website submitted by the examining attorney. Bicycle wheels produced by applicant, and discussed infra, which feature the applied-for design include the Elan (also referred to by applicant as Élan Aero), Aspin and Apex.

Functionality

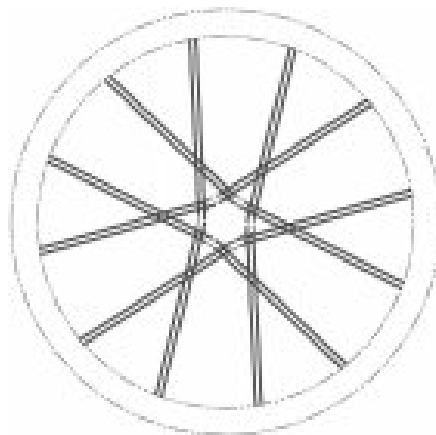
A product feature is functional and cannot serve as a trademark "if the feature is essential to the use or purpose of the article or if it affects the cost or quality of the article." *TrafFix Devices Inc. v. Marketing Displays Inc.*, 532 U.S. 23, 58 USPQ2d 1001, 1006 (2001) citing *Qualitex Co. v. Jacobson Products Co.*, 514 U.S. 159, 34 USPQ2d 1161 (1995) quoting *Inwood Laboratories, Inc. v. Ives Laboratories, Inc.*, 456 U.S. 844, 214 USPQ 1, 4 n.10 (1982).

The Court in *In re Morton-Norwich Products, Inc.*, 671 F.2d 1332, 213 USPQ 9 (CCPA 1982), set forth four factors to be considered in determining whether a product design is functional:

- (1) the existence of a utility patent that discloses the utilitarian advantages of the design;
- (2) the touting by the originator of the design in advertising material of the utilitarian advantages of the design;
- (3) facts showing the unavailability to competitors of alternative designs; and

(4) facts indicating that the design results from a relatively simple or cheap method of manufacturing the product.

Applicant explains that the subject mark "is the appearance of a bicycle wheel design feature and, specifically, a particular configuration of spokes in a torque transmitting bicycle wheel such as a rear wheel or a wheel [such as a front wheel] with a disk brake." Resp., October 13, 2006, p. 3. As set forth in applicant's description of the applied-for design, the wheel consists of pairs of spokes, where the two spokes in each pair appear to be parallel when the wheel is viewed from the side, and cross the spokes in the adjacent pair, as shown below. The "diamond" shaped regions claimed by applicant as part of the mark are formed at the tip of each point of what appears to be a six-pointed star.⁷



⁷ Although the examining attorney, in her analysis, refers to the star pattern formed by the design in the drawing, it is the diamond shaped areas, not the star shape, that are claimed in the application as features of the applied-for design.

Before discussing the utility patents, we believe some background discussion is necessary for context and to aid understanding of how the applied-for spoking pattern is formed.

A bicycle wheel generally comprises a tire, a metal rim to retain the tire, and spokes under tension supporting the rim and connecting the rim to a hub in the center of the wheel. The spokes are laced, either radially or tangentially,⁸ around the rim to corresponding holes around the perimeter of flanges on opposing sides of the hub. "In order for a spoke wheel to work, spokes connected to one hub flange have to pull the rim to the left with the same force that spokes connected to the [other] hub flange pull the rim to the right -- when this condition prevails, you have a tensioned spoked wheel that works." Resp., July 16, 2007, p. 3.

As noted earlier, the subject spoke pattern is embodied in several models of applicant's (rear) bicycle wheels, the Elan (also referred to by applicant as Élan Aero), Aspin and Apex. A

⁸ Radial spokes run directly from the hub of the wheel to the rim in a straight line, and are only used on a front wheel; tangential spokes connect the hub and the rim at a slight angle, i.e., at a tangent, to the hub, and cross one or more other spokes around the wheel. '565 pat., col. 1, ll. 59-60. Tangentially spoked wheels (which are stronger) are used on a rear wheel or a front wheel with a disk brake. '414 pat., col. 1; '565 pat., col. 1. ("Rear wheels and front wheels with disk brakes are tangentially laced..."). We will focus our discussion on tangentially laced spokes which cross one or more other spokes and which therefore contribute to what appear to be the diamond shaped areas that form part of applicant's applied-for design, although, where necessary, radially spoked wheels may be used as visual examples.

portion of a print advertisement for the Elan wheel is reproduced on the left below. Another part of the same advertisement appears on the right, and it displays applicant's Vigor model wheel which embodies the similar spoke pattern appearing in applicant's Registration No. 2720572.

Rolf
PRIMA
WHEEL SYSTEMS

Introducing the Elan!

A pound or more lighter than competing wheels, Elan wheels climb faster and accelerate more quickly than any other wheel in its class.

ELAN

performance
wheel systems from the
inventor of paired spoke
technology.

VIGOR

1425g/pair 14 spoke wheel

It's the only wheel which offers you both lightweight and aerodynamic performance in one model.

www.rolforprima.com

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A perspective view of the Elan (rear) wheel is shown in the photograph below.⁹



It can be seen in the above photograph that the pairs of spokes in the wheel are not actually parallel, which accounts for the description of the mark that says the wheel appears to utilize pairs of parallel, intersecting spokes. They only appear to be parallel when the wheel is viewed from the side, as in the

⁹ We obtained this photograph directly from the Rolf Prima website (rolfprima.com), since, as applicant notes, the submissions of record did not reproduce well enough to display.

print advertisement for the Elan wheel. The subject design is actually formed by a combination of features, i.e., tangentially laced, offset "paired" spokes, that are connected to paired groups of flange holes on the hub. Each feature falls within one or more of the utility patents relating to spoking and those relating to hub flanges.

(1) Utility patents⁽¹⁰⁾

As stated by the Supreme Court in *TrafFix Devices Inc.*, 58 USPQ2d at 1005, "[a] utility patent is strong evidence that the features therein claimed are functional" and "[w]here the...patent claimed the features in question, one who seeks to establish trade dress protection must carry the heavy burden of showing that the feature is not functional, for instance by showing that it is merely an ornamental, incidental, or arbitrary aspect of the device."

We turn then to the utility patents. In considering the patents, we keep in mind that third-party patents may be relied upon as evidence; a patent is potentially relevant if it covers the feature at issue, regardless of the owner. See, e.g., *In re Virshup*, 42 USPQ2d 1402, 1405 (TTAB 1997). Furthermore, we are not limited to review of the claims in a patent in determining

¹⁰ As discussed *infra*, applicant asserts in certain advertising material that it owns design patents. Whether or not this is so, applicant did not make information regarding any such patents of record.

functionality, but we may also consider the disclosures in the patent. See *In re Bose*, 772 F.2d 866, 227 USPQ 1 (Fed. Cir. 1985); and *In re Howard Leight Industries LLC*, 80 USPQ2d 1507, 1511 (TTAB 2006), quoting J. Thomas McCarthy, *McCarthy on Trademarks and Unfair Competition*, §7:89.1 (4th ed. 2006) that "[i]t is proper to look to the disclosure (as distinguished from the claims) in a utility patent as evidence of the functionality of a shape. The Trademark Board has held that each embodiment of the invention described in a utility patent is equally functional for purposes of trademark law," citing, inter alia, *In re Bose*, supra.

Paired spoking
Patent Nos. 5,931,544; 6,428,113; and 6,679,561

As general background for these inventions, a conventional bicycle wheel typically has 32 to 48 spokes that are spaced evenly, either radially or tangentially, along the circumference of the rim around the wheel. '544 pat., col. 1, l. 47; Trek '561 pat., col. 2. The spokes are connected at the rim on one end to alternating sides of the hub flanges attached to each end of the hub. Examples of this conventional spoking arrangement, from applicant's '544 patent, are shown as Figs. 8 and 9 below. The two figures are different views of the same tangentially spoked wheel.

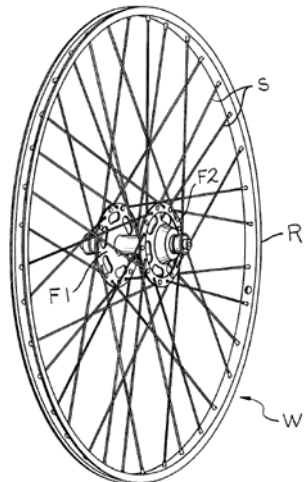


FIG. 8

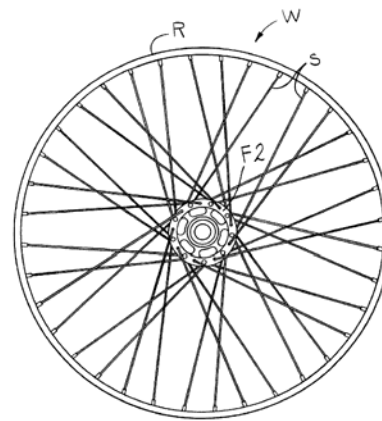


FIG. 9
PRIOR ART

The problem with this conventional, single spoke arrangement, according to the patents, is that a high number of spokes is required for stability of the bike and for support of the rim. However, the more spokes the wheel has, the heavier and slower the bike. '544 pat., col. 5, l. 5, et. seq. Fewer spokes make for a lighter, more aerodynamic bike, but a reduced spoke count can result in an unstable bike. Id. As stated in the '544 patent, col. 2, "[c]onventional tensioned wheels with spoke counts below [16] have poor structural characteristics and become dangerously unstable...." As the spoke count is reduced, steering vibrations at high speed increase.¹¹ Id., col. 41. Moreover, as the number of spokes per wheel is reduced, eventually "a point is reached at which conventional rims simply can't hold up." A stronger, and thus heavier, rim can be used,

¹¹ Steering vibrations "limit the lean angle which a cyclist can achieve in a high speed turn...." Id., col. 3, ll. 21-24.

"but this almost necessarily involves additional mass, however, and the goal of a reduced weight wheel is subverted in the process." Id., col. 5, l. 5, et seq.

Of particular concern with conventional spoking is the "extremely dangerous" condition known as speed wobble or shimmy which occurs during high speed in bicycles having front wheels that are conventionally spoked. Id., cols., 3, 10.

Thus, to address the problems associated with conventional spoking, applicant invented the concept of pairing spokes at the rim, where the outer end of a spoke from the left side of a bicycle wheel hub is paired together with the outer end of a spoke from the right side of the hub where the ends are attached to the rim. Brief, p. 1. The '544 patent provides for a reduced spoke count wheel (such as nine spokes) "which does not require a super strong rim, and which provides for improved stability," including a front wheel that "is not susceptible to speed wobble or shimmy." '544 pat., cols. 5, 10.

The pairing of spokes at the rim can be "exact" or "offset." In exact pairing, each spoke pair is "exactly circumferentially coincident" (Id., col. 15, l. 8) and is connected, at its outer end, to the rim at two points, one on either side of the center plane, that is, the holes in the rim are in a line that is perpendicular to the center plane. Id., col. 7, ll. 28-30.

An example of a perspective and a side view of the same tangentially spoked wheel with exact pairing is shown below in Figs. 3 and 4, respectively, both from the '544 patent. Also below (but not included in the patent) is an enlarged portion of Fig. 3 to more clearly show the placement of the spoke holes in the rim.

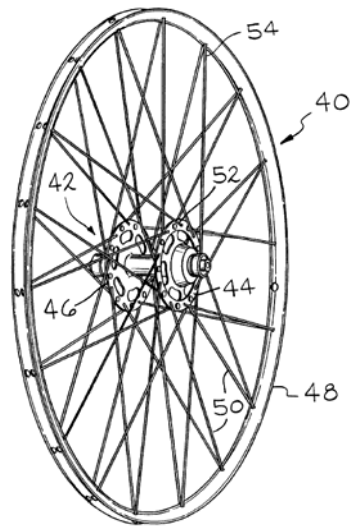


FIG. 3

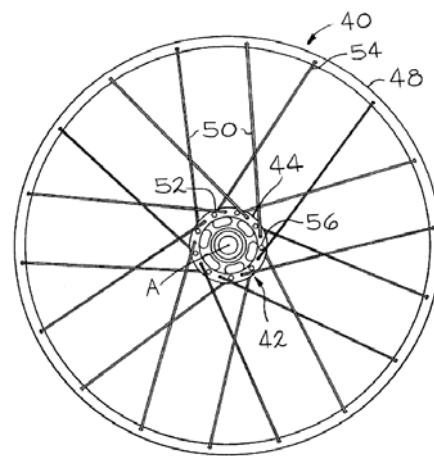


FIG 4

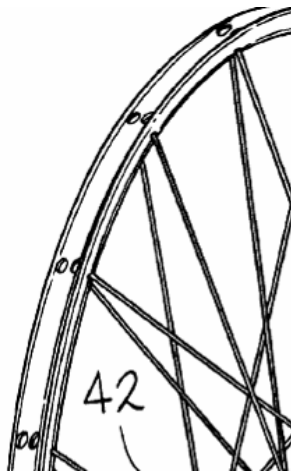


Fig. 3, detail

It can be seen in Fig. 4 above that "exact pairing" of spokes results in the appearance of a single spoke when the wheel is viewed from the side. In order for both spokes in the pair to be visible from the side, the holes in the rim for each member of the pair must be offset from one another.¹² Significantly, there is a functional advantage to offset pairing of spokes.

The Trek '561 patent explains that "[t]he arrangement of spokes [in exact pairing] cannot conveniently be applied to a narrower rim, as there is not room for the spokes to be placed [directly] opposite each other." *Id.*, col. 2. Furthermore, the '544 invention notes that prior experience with "exact" pairing of spokes at the rim of commercially available rims "can exceed the capacity of such rims." '544 pat., col. 16, lines 22-25. Again, a heavier rim could be used, but that would make the wheel and ultimately the bicycle heavier.

An example of offset paired spoking in a radially laced wheel from the '544 patent is shown in Fig. 19 below, with an enlarged view of the spoke holes (not included in the patent) on the right. As seen in this example, the two holes for each pair

¹² We glean from the '544 and '561 patents, that pairs of holes in the rim are either offset in the sense that they are placed a short distance apart aligned along the center plane of the wheel (e.g., '544 pat., col. 16, ll. 49-51), or offset in the sense that they are placed at a slight angle to the center plane, (e.g., *id.*, col. 16, ll. 58-60; '561 pat., col. 8, ll. 6-9). In any case, the two holes are not perpendicular to the center plane as they would be in exact pairing, discussed *supra*.

are "placed a short distance apart" (Id., col. 16, l. 26, et seq.) and they are aligned along the center plane of the rim rather than at the same point or on opposing sides of the center plane as in the exact paired pattern in Fig. 3 above.

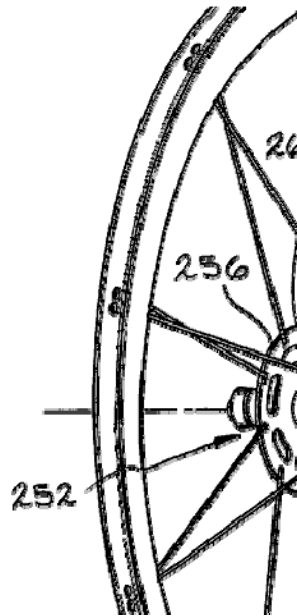
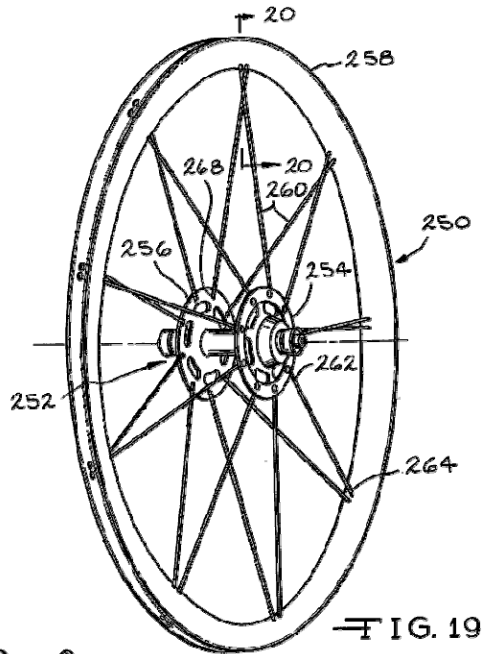


Fig. 19, detail

As explained in the summary of the invention in the '544 patent, "the [offset] spoking pattern [shown in Fig. 19] affords virtually the same resistance to speed wobble and shimmy as the [exact pairing] spoking pattern [shown in Figs. 3 and 4 above], but is much easier to produce and puts far less strain on the rim and the connection between the rim and the spokes. Accordingly, in terms of wheels according to the present invention incorporating commercially available rims, the embodiment illustrated in [Fig. 19] is preferred." Id., col. 16, ll. 29-37. (Emphasis added.)

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The concept of offset paired spoking is embodied in, for example, Claims 5 and 7 of the '544 patent which are set out in part below.

Claim 5:

A bicycle wheel having a center plane and comprising:

...

a given number of pairs of first and second spokes...
circumferentially offset at least about 0.3 inch

...

Wherein each of said pairs of first and second points on said rim are sufficiently close to each other so that, when said wheel is mounted on a bicycle, that bicycle wheel will have improved resistance to speed shimmy or wobble or wheel induced steering inputs or axle deflection by comparison with that bicycle with a conventional wheel....

Claim 7:

The wheel claimed in claim 5 wherein said spokes are oriented tangentially relative to said hub flanges.

Thus, the '544 patent covers, inter alia, tangentially oriented, offset paired spokes, where the result is both spokes are visible when viewed from the side, as in the applied-for design.

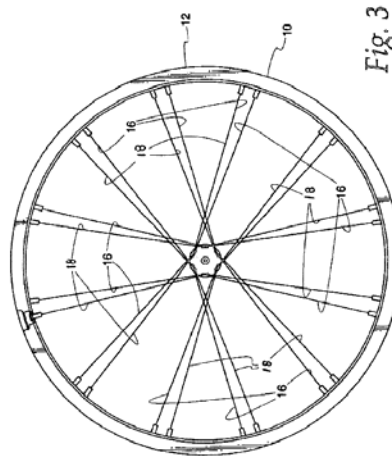
Claim 1 of Trek's '561 patent contains similar claims, as set forth in part below. The primary difference here, it seems, is the amount of offset between each spoke in the pair.

A bicycle wheel having a center plane and comprising:

...

a given number of pairs of first and second spokes...
circumferentially offset from between 0.76 inch and less than 1.1 inch....

Referring back to Fig. 19 above for purposes of comparison, the Trek '561 patent includes an example of offset paired spoking in a tangentially laced wheel in side view, as shown in Fig. 3 below.¹³



It can be seen in this drawing that when the wheel is viewed from the side, each spoke in the pair is visible, in contrast to the appearance of the spokes in Fig. 4 above. However, the lines of the paired spokes do not appear parallel, as in the applied-for design, but instead appear to converge as they approach the hub. This is because the parallel spoke design in the applied-for design is also created by the way in which the tangential pairs of spokes are laced and connected to the hub flanges, that

¹³ This design is identified by applicant as a Bontrager model wheel sold by Trek under a patent license from applicant. Req. for Recon, April 15, 2008, Decl. ¶ 5. As stated in applicant's October 13, 2006 response, p. 6, "Drawings that are representative of rear wheels in the Bontrager/Trek wheel line can be found in the ['561 patent]." See also *id.*, pp. 9, 11.

is, at holes which are "grouped into pairs."¹⁴ This feature is also covered by one or more of applicant's patents, as discussed below.

Hub flanges

Patent Nos. 5,947,565; 6,024,414; 6,244,667; and 6,145,938

Applicant's '565 patent, for example, explains that "[r]ear wheels and front wheels with disk brakes are tangentially laced so that, between the hub flange and the rim, the spokes will cross at least one or two and usually three other spokes, depending on the number of spokes and the lacing geometry." The patent notes, however, that in conventional wheels, where spoke bores are evenly spaced around the flange, "there is contact between the spokes where they cross and this can lead to problems ranging from noise to spoke failure." *Id.*, col. 1, ll. 57-63.

The '565 patent discloses that the holes in the hub flange are "grouped into pairs" which, in comparison with a conventionally laced wheel, results in "reduced spoke bending" and "reduced spoke stress" at the cross-over points in a rear

¹⁴ The involved patents also contemplate hubs with either equal-sized flanges or, as embodied in the Elan wheel, flanges of differing size, (i.e., a left hub flange that is larger in diameter than the right hub flange). It is clear that the paired flange holes contribute to the applied-for design; however, the different size hub flanges is not claimed by applicant as part of the subject spoke pattern (Brief, p. 15), and this feature apparently has no affect on the pattern. According to applicant, the Trek patent, which we note does not require different size flanges, could create the subject pattern. Brief, p. 14.

wheel, and results in "reduced dish"¹⁵ in a rear wheel or in a front wheel with a disk brake. '565 pat., col. 2, ll. 24, 50-53, 57-59; col. 3, ll. 4-11, 16-18; abstract, ll. 1-5. (Emphasis added.) "[T]his spoke bore pairing is preferably combined with a spoke orientation which is nearly tangential, relative to the hub flanges, for increased torque transmission." '565 pat., col. 2, ll. 54-57. (Emphasis added.)

The paired arrangement of spoke holes in the flange is shown in Fig. 1 of the '565 patent (at points 18 and 22) below.

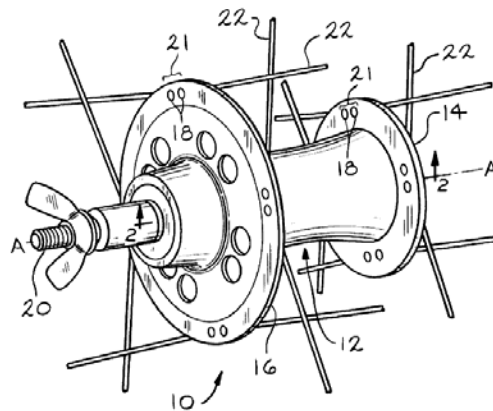


FIG. 1

According to this aspect of the invention, as described in the "Preferred Embodiments" section of the patent, and as shown

¹⁵ "Dish" is defined generally as "the state of being concave or the degree of concavity." *Merriam-Webster Online Dictionary* (2009) from www.merriam-webster.com. The Board may take judicial notice of online reference works which exist in printed format or have regular fixed editions. See *Boston Red Sox Baseball Club LP v. Sherman*, 88 USPQ2d 1581, 1590 n. 8 (TTAB 2008). Dish in a bicycle wheel is necessary to provide clearance, for example, for a cogset on a rear wheel and brake disks on a front wheel. See, e.g., '561 pat., col. 4, l. 29.

in Fig. 1 above, "spoke bores in each of the hub flanges [18] are grouped into pairs [21] and the distance between adjacent pairs is greater than the distance between bores in a given pair."

Id., col. 4, ll. 42-45. As shown in Fig. 1, "[t]he spokes 22 associated with a given pair 21 of spoke bores 18 on a given hub flange do not cross each other but extend away from each other in generally opposite directions, almost parallel to a tangent drawn on the outer edge of the hub flange, at a point mid-way between the spoke bores 18 in the spoke bore pair 21." Id., col. 4, ll. 7-12. (Emphasis added.)

The applied-for wheel design has 24 spokes, which is included as a preferred embodiment in the '565 patent. As stated in the patent, "A preferred wheel, according to this embodiment [Fig. 1] of the present invention has no more than twenty-four spokes." Id., cols. 4-5, ll. 63-69. "In the case of a twenty-four spoke wheel (not shown), including a hub with six pairs of spoke bores per hub flange and conventionally sized hub flanges, and laced so that spokes in a pair of spoke bores extend in opposite direction, each spoke will intersect another spoke just twice between the hub and the rim." Id., col. 4, ll. 45-50.

As shown in the photograph of the Elan rear wheel, supra, one of applicant's wheels that embodies the applied-for design, the spokes are laced at the hub flanges in accordance with the '565 patent. The spokes in each pair of spoke holes extend in

opposite directions, and are oriented almost at a parallel tangent to the flange, with each spoke intersecting another spoke just twice. In other words, the design of the Elan rear wheel minimizes spoke intersection, bending and stress.

There are a number of advantages to spoke bore pairing and spoke lacing in accordance with the '565 invention, including the following: "the (rear) wheel has reduced dish by comparison with the same wheel laced in a conventional manner"; "cross-over points for the spokes are further from the wheel axis of rotation than they are in a [conventional] wheel with evenly spaced spoke bores"; rear wheels have "reduced bending and spoked stresses at spoke cross-over points [22]"; and a "front, tangentially laced wheel including a disk [brake]" has "reduced dish and reduced tension differential as between the proximate spokes and the opposition spokes." '565 pat., cols. 2, ll. 57-68; col. 3, ll. 1-20. (Emphasis added.)

Discussion

Based on the foregoing, it is clear that each of the features which combine to produce the design of the applied-for wheel design, in particular, offset, tangentially laced, paired spokes, and paired flange holes, are covered by one or more utility patents, and that these features clearly "affect...the quality" of applicant's bicycle wheel. Indeed, applicant admits that a Rolf Prima wheel having the subject spoke pattern, such as

the Elan wheel, is covered by a claim in one or more of his patents (Brief, p. 9); and also that Claim 1 in the Trek '561 patent covers applicant's design, along with other possible design effects.¹⁶ Brief, p. 14. Further, Mr. Dietrich expressly states in his declaration that the subject spoke pattern is "within the scope of [his] patents." Recon., April 15, 2008, Decl., ¶ 10. In fact, Mr. Dietrich acknowledges in his declaration that one company, Shimano, at one time produced paired spoke wheels "that had appearance, when viewed from the side, that corresponded the appearance [sic] which is the subject of this application or my registration no. 2720572." Id. Mr. Dietrich "challenged" Shimano, and he "then granted it a patent license." Id.

While admitting that the subject spoke pattern is covered by a claim in one or more of the patents, applicant nonetheless argues that there is no patent claim based on or reciting or requiring that two spokes appear to be parallel when viewed along the axis of rotation (Brief, p. 9); and that "the subject trade

¹⁶ In describing possible design variations covered by the Trek patent, applicant notes that "As the spokes in a pair approach the center in a wheel having this claimed feature, the spokes, when viewed along the axis of the wheel, could (a) appear to converge as they approach the hub at the center of the wheel, (b) appear to cross each other, (c) appear to diverge as they approach the hub at the center of the wheel, or (d) appear to be parallel, as in the subject design." (Brief, p. 14, emphasis added). Applicant states that "Claim 1 of the Trek patent covers all four possibilities and probably others that have not yet been imagined."

dress is not identically disclosed in any of applicant's patents, each of which is required to disclose the best mode known to [applicant] for carrying out his various inventions." Reply Brief, p. 6. Noting that all of the various drawing figures of the patents "disclose spoke patterns that are different from [the applied-for] spoke pattern" (Brief, p. 12), applicant contends that, in fact, the preferred embodiment requires exact pairing, where the design would appear as a single spoke when viewed from the side. Resp., October 13, 2006, p. 5. According to applicant, the applied-for design "stands in contrast to this preferred embodiment because, in the subject spoke pattern, the spokes in a given pair are spaced apart where they connect to the rim." Id.

These arguments are not persuasive. First, the claims of a patent are not limited in scope to the best mode for practicing the invention or to any particular mode for practicing the invention that is described in the specification or drawings. *Lockheed Aircraft Corp. v. United States*, 553 F.2d 69, 193 USPQ 449, 458 (Ct. Cl. 1977) (*en banc*). See also, e.g., *Ortloff Corp. v. Gulsby Engineering Inc.*, 8 USPQ2d 1873 (S.D. Tex. 1988) ("A patent is not limited to the preferred embodiments shown in the examples or drawings."), and cases cited therein.

Moreover, as stated in the '544 patent, it is "offset" pairing (which refers to the spokes spaced "a short distance

apart" as shown in Fig. 19 above), rather than exact pairing that is preferred for use on commercially available rims. '544 pat., col. 16, ll. 34-36. The patent states that this arrangement "affords virtually the same resistance to speed wobble and shimmy as the spoking pattern disclosed in ['544 Fig. 3 above, showing exact pairing] but is much easier to produce and puts far less strain on the rim and the connection between the rim and the spokes." '544 pat., col. 16, ll. 26-37 (exact pairing "can exceed the capacity of the rim."). See also Trek '561 pat., col. 2 ("there is not room [on the rim] for the spokes to be placed [directly] opposite each other.")

Further, applicant's argument that "there may be innumerable spoke patterns which are distinct from the [applied-for] spoke pattern, which also fall within the scope of some of the claims of some of the applicant's patents, just as there are infinite spoke patterns which are not covered by any claim in any of applicant's patents" is not compelling. The fact that the patents may encompass a wide variety of spoking patterns means only that the patents are broad in scope, not that applicant's particular applied-for design is not functional.¹⁷

¹⁷ In this regard, applicant points out that the degree of pairing, or circumferential offset, at the rim can vary widely from exact pairing "to spacing in excess of 1 inch as in the Bontrager/Trek wheel as shown in '561 patent." Resp., October 13, 2006, p. 6. Applicant also notes that claim 1 in the '561 patent requires spacing from the other spoke in the pair of at least .76 inch and not more than 1.1 inch. However, the description of the mark in the involved application states only

Applicant also contends that while spokes are essential to the use and purpose of a spoked bicycle wheel, and pairing spokes together at the rim is essential to the use and purpose of a paired spoke bicycle wheel, "constructing a bicycle wheel by arranging the spokes so that, when the wheel is viewed from the side, '...[t]he spoke pattern appears to consist of a first set of pairs and a second set of pairs of *parallel* spokes that are spaced apart...' (emphasis added) is not essential to anything having to do with building a wheel for a bicycle or to how that wheel will perform." Recon., April 15, 2008, p. 1. Applicant maintains that the design is an arbitrary flourish "on the broad concept of a paired spoke bicycle wheel, and the [visual] effect is not the reason the wheel works."

The question is not whether the design when viewed from a particular angle causes the wheel to work, but rather whether the arrangement of the spokes that produces or results in the design when viewed at that angle causes the wheel to work. The applied-for design is dictated by the underlying functional aspects of the physical design of applicant's wheels, which clearly "affect

that the spokes are "spaced apart," without specifying any particular amount of separation. In addition, the '561 patent also discloses that the spacing of each spoke in the pair is not limited except to the extent that the pairs must not be spaced so far apart as in conventional wheels, or so close together that they stress the rim. Trek pat. '561, col. 7 (requiring only "spacing neither too close, because stress [to the rim] is increased, nor too far because wobble will increase.").

the quality" of applicant's bicycle wheels. The spokes in the wheel are laced that way because the wheel works better that way, notwithstanding that the resulting pattern when viewed from a certain angle may also happen to have visual symmetry or appeal.

In further support of his contention that the subject spoke pattern is an arbitrary flourish, applicant argues that in order to make the subject design appear when the wheel is viewed from the side, it was necessary to compromise function, and that because the design "comes with a penalty, that takes it out of the realm of being functional, on the whole." Brief, p. 19; Reply Brief, p. 5. Applicant explains that the subject design is formed by a "L-L-R-R" spoking pattern rather than a "L-R-L-R" pattern. These two patterns are illustrated in applicant's exhibits "L-R-L-R" and "L-L-R-R" shown below.

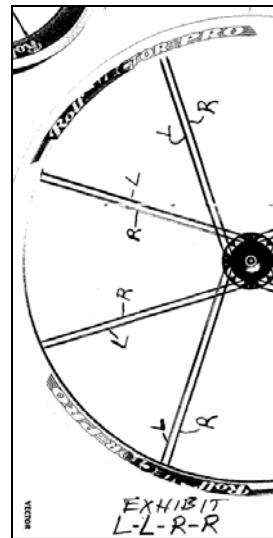
The L-R-L-R pattern (left) is embodied in the Trek paired spoke wheel as shown in Fig. 3 of the Trek '561 patent, supra, and in applicant's Rolf Propel wheel.¹⁸ The L-L-R-R lacing pattern (right) is used in the applied-for design, as well as applicant's registered design which is the example below. The registered design is embodied in applicant's Rolf Vector Pro

¹⁸ Applicant, in his declaration (¶ 4) identifies the Propel wheel as a model "introduced" by Trek, but at various points in the record refers to the model as a "Rolf Propel wheel" and also as the "Trek paired spoke wheel." It is not clear whether it is applicant's or Trek's technology that is embodied in the Trek wheel or the Propel wheel, but in any event, that question is not before us and it does not affect our decision herein.

wheel, now called Vigor, and is shown in the Rolf Prima advertisement for the Vigor model, supra.



PROPEL



VECTOR

Referring to the above exhibits, applicant describes the two patterns as follows:¹⁹

L-R-L-R (Propel)

[S]tarting with a [second] spoke [in a pair] connected to the right hub flange and moving around the wheel at the rim, the next spoke is connected to the left hub flange, the next spoke is connected to the right hub flange, and so on [in a L-R-L-R spoking pattern]. This creates a spoking pattern that is totally different from the spoking pattern that is the subject of this application AND it has a totally different appearance, when viewed from the side.

L-L-R-R (Vector)

[S]tarting with a [second] spoke [in a pair] connected to the right hub flange and moving around the wheel at the rim, the next two spokes are connected to the left hub flange, the next two spokes

¹⁹ Recon, April 15, 2008, Decl., ¶ 12.

are connected to the right hub flange, and so on, [in a L-L-R-R lacing pattern] to create the distinctive spoking pattern which is the subject of this application.

Regarding the penalty associated with the L-L-R-R pattern, applicant explains:

Frankly, the [Vector L-L-R-R] spoking pattern is technically inferior, albeit ever so slightly so, to the [Propel L-R-L-R] spoking pattern...[of applicant's other rear wheels]. The Propel rear wheel has a slight technical superiority because the spokes which are connected to the right hub flange are connected to the rim at points which are spaced evenly around the rim and the same is true of spokes that are connected to the left hub flange. In contrast, in the [Vector] rear wheel, the spokes that are connected to the right hub flange are connected to the rim at points which are not evenly spaced around the rim and the same is true of the spokes that are connected to the left hub flange.

The resulting penalty or impairment according to applicant, is that wheels with the subject spoke pattern, as in the Elan wheel, and wheels with the registered spoke pattern, as in the Vector wheel, "are more difficult to true" (i.e., to properly adjust or align) than wheels with the other spoking patterns, as in the Propel wheel. But it is not at all surprising that a superior mechanical design may be more complex than existing mechanical design and may therefore need more involved maintenance.

This paired spoke arrangement, which we have found, and applicant admits, is within the scope of one or more patents, ultimately, still has the advantage of resulting in a wheel that

provides greater stability and delivers better performance than conventionally laced wheels having the same or even more spokes. '544 pat., col. 14. Thus, this slight increase in the possible cost of maintenance is far offset by the functional benefits of the wheel's paired spoke arrangement. Further, while a wheel with this lacing pattern may be more difficult to true, there is nothing to indicate that the wheel cannot be properly trued,²⁰ or that the wheel is ultimately less stable than a Propel wheel.

We find that the patents, which as discussed above disclose and claim the utilitarian advantages of the underlying aspects of applicant's applied-for design, show that the particular design configuration clearly "affects the...quality" of applicant's wheels. Given the strong weight to be accorded such patent evidence under *TrafFix*, we find that the patents are sufficient to establish, prima facie, that the design is functional.

(2) Touting of the utilitarian advantages of the design

The Rolf Prima website (rolfprima.com) promotes applicant's paired spoke wheels, including the Elan (also referred to by applicant as Élan Aero), Aspin and Apex wheels having the design herein, in a manner that at least suggests the functional

²⁰ We note in this regard that, according to the website advertising for the Élan Aero which embodies the subject pattern, once the wheel is trued, applicant's "Self-locking thread technology ensures wheels stay true," and this may further offset any claimed disadvantage of the spoking pattern.

advantage of applicant's design. Excerpts from the website are as follows:

WELCOME TO ROLF PRIMA

Engineering icon Rolf Dietrich created the ingenious paired spoke technology that changed the way people think about bicycle wheels today. At Rolf Prima, we're committed to developing the world's most innovative wheel designs that deliver the lightest, fastest wheels available anywhere. (Emphasis added.)

ABOUT US

...By late 1997, Rolf's unique and patented paired spoke design came to fruition and rapidly gained worldwide acceptance. Rolf and the newly formed team, quickly began work on an extensive project list to advance the development of his wheel designs. The effort produced several new design patents⁽²¹⁾ that contributed to substantial improvements in strength, weight and aerodynamics. (Emphasis added.)

Rolf Primawheel [sic] designs are protected by numerous patents.... ... Current patent licensees that license one or more Rolf's patents include: Trek Bontrager, Shimano,....

Advertising for the Élan Aero wheel on the website promotes the hub design and the "wheel systems" in general as protected by various patents, including the '544 and '565 patents discussed above:²²

All Rolf Prima wheel systems are protected by one or more of the following US Patents: 5,931,544;

²¹ Applicant did not identify any design patents in response to the examining attorney's inquiry regarding the existence of design or utility patents. In any event, we note that all of the patents listed in the advertisements of record are utility patents.

²² Resp., October 13, 2006. Similar language is also used in applicant's advertisements for other models embodying the present design, the Aspin and Apex.

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5,938,293; 6,024,414; 5,947,565; 6,244,667 and
6,497,042. ...

Applicant's "wheel systems" are also promoted in an advertisement for the Élan Aero wheel in the August 2003 edition of insideTRIATHLON magazine:²³

High performance wheel systems from the inventor of paired spoke technology.

We acknowledge, as applicant points out, that "none of the advertising claims has anything to do with the fact that the spokes, when viewed from the side, appear to consist of a first set of pairs and a second set of pairs of parallel spokes." Reply Brief, p. 6. However, the advertising specifically touts applicant's paired spoking technology, regardless of the particular pattern used. The clear implication of the advertising is that applicant's entire "wheel system," including the particular spoking arrangement, is covered by applicant's patents. Moreover, in contrast to promotion of spoking patterns for their functional superiority, there is no evidence of record that either applicant or any third party promotes the spoking pattern of a bicycle wheel for its visual appeal.

Thus, this factor is either neutral or it supports a finding that the design is functional.

²³ Id.

(3) Alternative designs

Applicant submitted examples of wheels made by four other companies and points to several examples of different paired spoking designs appearing in the various patents, arguing that the record "is replete" with evidence of alternative designs, i.e., paired spoke wheels that appear to have an appearance that is strikingly different from the appearance of applicant's design when viewed from the side. Applicant contends that *TrafFix* did not render the availability of alternative designs irrelevant, and that this factor can be a legitimate source of evidence to determine whether a feature is functional in the first place, citing *Valu Engineering*, supra.

Where, as here, a feature of the device is found to "affect[]...the quality of the device," the Supreme Court has said that "there is no need to proceed further to consider if there is a competitive necessity for the feature." *TrafFix*, supra at 1006, distinguishing the test as applied to cases involving *aesthetic* functionality from the test in cases involving functionality "under the *Inwood* formulation," that is, "if it is essential to the use or purpose of the article or if it affects the cost or quality of the article." See also *Valu Engineering*, supra at 1427 (because these "other considerations," i.e., the disclosures and claims of the patent, establish the functionality of the design, "there is no need to consider the

availability of alternative designs, because the feature cannot be given trade dress protection merely because there are alternative designs available.").

Thus, the fact that bicycle wheels may be produced with different spoking arrangements does not detract from the functional character of applicant's particular spoking design. See *In re Morton-Norwich Products, Inc.*, citing *In re Honeywell, Inc.*, 532 F.2d 180, 189 USPQ 343 (CCPA 1976).

That said, however, even considering this factor in our determination, ultimately we would not rule in applicant's favor.

To begin with, the fact that at least one company, Shimano, copied applicant's spoking design indicates that it provides a functional advantage. There is nothing to indicate that the design was copied by that company for its visual appeal. In fact, applicant states that it granted Shimano a patent license, not a trademark license.

Moreover, the question is not whether there are alternative designs that perform the same basic function but whether the available designs work "equally well." *Valu Engineering*, supra at 1427. While other paired spoke designs might result in a well performing wheel, applicant's design, which is protected by various patents, apparently performs better, and it is at least implicitly promoted that way. The clear import of applicant's

advertising is that applicant's "wheel designs" perform better than other wheel designs.

Finally, although there may be numerous other spoke designs, many of those designs may be functional as well. For example, applicant admits that the Trek paired arrangement of the Bontrager wheel is embodied in Trek's '561 patent. In addition, the third-party advertisements submitted by applicant show that at least one other bicycle wheel manufacturer specifically touts the functional advantages of its particular spoking arrangement. The following are excerpts of advertisements for various models of bicycle wheels produced by Campagnolo (emphasis added):²⁴

Medium-Profile Wheels: They are immediately recognizable by the unmistakable Campagnolo™ G3™ spoking that sets them apart. G3™ spoking was created to prove better transmission of driving torque, better lateral stiffness and more balanced spoke tension. Tests conducted at our laboratories have shown that compared with competitors' products, the G3™ system provides more than 46% torsion resistance and more than 34% resistance to flection.

Khamsin™ Black: The G3™ spoking optimizes transfer of the power generated by the athlete and improves the wheel's lateral rigidity. The front has 24 spokes...and the rear 27...

Pista™: ...our engineers created an extremely stiff high-profile rim and a spoking pattern that yields the utmost in power transmission.

²⁴ From the 2007 Campagnolo wheel catalog; exh. to resp., October 13, 2006.

Accordingly, this factor weighs in favor of finding that applicant's design is functional.

(4) Simple or cheap method of manufacturing

Applicant points to the statement on the Rolf Prima website that "Every Rolf Prima wheel system is hand built in our Eugene, Oregon Facility," arguing that "[t]here is simply no more expensive way to make bicycle wheels." However, applicant does not explain why he builds the wheels by hand; or why the wheels are not, or cannot, be machined. We also note, for example, the statement in the '544 patent (col. 16, ll. 29-37) that a wheel embodying the subject design, i.e., with offset pairing, "is much easier to produce" than a wheel with exact pairing.

Nevertheless, even if applicant's wheels with this design are more costly to produce, and while a lower manufacturing cost may be indicative of the functionality of a product feature, a higher cost does not detract from the functionality of that feature. As stated in *TraFFix*, supra at 1006, a product feature is functional "when it affects the cost or quality of the article." (Emphasis added.) Thus, even at a higher manufacturing cost, applicant would have a competitive advantage for what is essentially, as claimed in the patents, a superior quality wheel.

In view of the foregoing, we find that the design is functional, and is therefore not registrable.

Acquired distinctiveness

Although we have determined that the design is functional, if applicant should ultimately prevail in any appeal of this decision, we find in the alternative, as stated earlier, that the examining attorney has waived any rejection of the 2(f) evidence as insufficient, and we accordingly find that the mark is entitled to registration under Section 2(f).

Decision: The refusal to register on the ground that the configuration is functional under Section 2(e)(5) of the Trademark Act is affirmed.