

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YOICHI MIZUNO,
MASATO KAWASE,
MAMORU UCHIDA and
NAOHIKA KIKUCHI

Appeal 2006-0886
Application 10/151,093
Technology Center 1700

Decided: December 13, 2006

Before PETER F. KRATZ, CATHERINE TIMM, and JEFFREY T. SMITH,
Administrative Patent Judges.

TIMM, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants appeal the rejection of claims 1-17, the only claims pending in this application. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 134.

INTRODUCTION

The claims are directed to a breaker and a pneumatic tire including the breaker. According to the Specification, a breaker layer or a belt layer is formed by covering a cord such as steel cord with a rubber composition (Specification 7:11-12). This breaker layer or belt layer is then laminated with other tire materials and vulcanized to form the pneumatic tire (Specification 7:13-15). The Specification focuses on the rubber composition of the breaker. According to the Specification, in conventional rubber compounds, large amounts of sulfur were added to increase the adhesion of the rubber to the steel cord and to improve heat build-up characteristics (Specification 2:12-14). Appellants reduce the amount of sulfur to enhance other properties while adding resorcinol resin and a methylene donor to maintain the required adhesive properties (Specification 2:19-24).

Claim 1 is illustrative of the subject matter on appeal:

1. A breaker comprising a rubber composition comprising 55 to 65 parts by weight of carbon black, 5 to 13 parts by weight of silica, 3.5 to 4.5 parts by weight of sulfur, at least 0.08 part by weight of cobalt, a resorcinol resin and a methylene donor based on 100 parts by weight of a rubber component containing a natural rubber and/or an isoprene rubber as a main component.

The Examiner maintains a rejection under 35 U.S.C. § 103(a). As evidence of obviousness, the Examiner relies upon the following prior art:

Lickes	US 6,533,008 B1	Mar. 18, 2003
Nguyen	US 6,814,120 B1	Nov. 9, 2004

Specifically, the Examiner rejects claims 1-17 under 35 U.S.C. § 103(a) as unpatentable over Lickes alone or in view of Nguyen.

For the reasons presented by the Examiner in the Answer and the reasons provided below, we affirm.

OPINION

We first focus on claim 1. This claim requires a rubber composition including a number of additives in particular concentration ranges along with a resorcinol resin and a methylene donor. There is no dispute that, as found by the Examiner, Lickes suggests forming a rubber composition having the claimed ingredients in concentrations within the claimed ranges or in overlapping amounts. Lickes specifically suggests adding 0-250 phr carbon black (col. 7, l. 57 to col. 8, l. 2), 10-250 phr silica filler (col. 5, ll. 23-27), 0.5-8 phr sulfur vulcanizing agent (col. 8, ll. 25-29), and about 0.01 to about 0.35 wt.% of an organo-cobalt compound rubber-to-metal adhesion promoter (col. 9, l. 61 to col. 10, l. 33).¹ The addition of resorcinol as a methylene acceptor and the addition of a methylene donor are also suggested (col. 9, ll. 13-18). Natural rubber is a preferred rubber for the rubber component (col. 2, ll. 40-41). We emphasize that while Appellants state that conventionally more sulfur is used in such rubber compositions and that they are able to lower the amount of sulfur by adding resorcinol and methylene donor, Lickes suggests using sulfur in amounts encompassing the claimed amounts and also suggests adding resorcinol and methylene donor.

Claim 1 is directed to a breaker comprising the rubber composition. Lickes suggests using the rubber composition in various components of a

¹ As acknowledged by Appellants, the term “phr” is defined by Lickes as “the parts by weight of a respective material per 100 parts by weight of rubber, or elastomer.” (Br. 5; Lickes, col. 3, ll. 37-39). The concentrations are thus directly comparable to those claimed.

tire including the belt structure of a tire (col. 3, ll. 39-55) and as evidenced by Nguyen, and not disputed by Appellants, this was known as the breaker of the tire (Nguyen, col. 4, ll. 32-33).

The Examiner has established a *prima facie* case of obviousness based on Lickes alone as well as Lickes in combination with Nguyen. We note that it is well settled that it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Geisler*, 116 F.3d 1465, 1470, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997)(quoting *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)). Where the difference between the claimed invention and the prior art is some range or other variable within the claims, the applicants must show that the particular range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Appellants argue that the Examiner has provided no motivation within the prior art to select the combination of additives claimed (Br. 7). This is because, according to Appellants, Lickes only mentions the possible use of a very large number of additives in combination with a polysulfide composition and does not contain any specific teaching or working example which would direct a skilled artisan to the presently claimed combinations (Br. 6). According to Appellants, they have discovered that resorcinol and a methylene donor are critically important breaker rubber additives and are essential to the compositions of the present invention (Br. 6).

We do not agree that there is no “motivation” as that word is used in the legalistic sense in the obviousness analysis. Here, each of the claimed additives is suggested by Lickes for use in a rubber composition for

formulation of a breaker and in concentrations overlapping the claimed concentrations. That the prior art discloses a multitude of effective combinations does not render any particular formulation less obvious.

Merck & Co. v. Biocraft Labs., 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989). Nor is the presence of other additives such as polysulfide foreclosed by Appellants' claim 1. The word "comprising" opens claim 1 to the presence of such other additives. Nor, in the present case, is the genus of possible combinations all that much larger than the genus encompassed by the claims. The selection, for instance, of a silica filler from a list of silica, aluminosilicates, zeolites and/or carbon black is hardly unobvious. In fact, Appellants' composition may also contain a very large number of additives. Given the knowledge of those of ordinary skill in the art, such knowledge being evidenced by Lickes, it would have been obvious to select a combination of additives including those recited in claim 1 for use in a rubber composition to form a breaker.

Nor can we agree that Lickes must state that resorcinol and a methylene donor are essential additives to establish a *prima facie* case of obvious (Br. 7). It is enough that Lickes suggests the inclusion of these additives with the other additives discussed in the reference.

Nor can we agree with Appellants that the fact that the working examples of Lickes exemplify different compositions from that claimed somehow negates the teachings of the broader disclosure (Br. 8). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including non-preferred embodiments. *Merck & Co v. Biocraft Labs.*, 874 F.2d 804, 807, 10 USPQ2d 1843, 1847 (Fed. Cir. 1989). Disclosed examples and preferred embodiments do not

constitute a teaching away from a broader disclosure or non-preferred embodiments. *In re Susi*, 440 F.2d 442, 446 n.3, 169 USPQ 423, 426 n.3 (CCPA 1971).

Appellants also argue that the working examples of their specification demonstrate superior properties (Br. 8). Appellants, however, fail to point to any evidence indicating that the results were considered to be unexpected to one of ordinary skill in the art. “It is well settled that unexpected results must be established by factual evidence. Mere argument or conclusory statements in the specification does not suffice.” *In re Soni*, 54 F.3d 746, 750, 34 USPQ2d 1684, 1687 (Fed.Cir.1995) (*quoting In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed.Cir.1984)). The question here, we emphasize, is a question of evidence and the burden is on the Appellants to show unexpected results. *In re Johnson*, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984).

We also agree with the Examiner that the data relied upon by Appellants merely shows that compositions with a methylene donor and resorcinol have different properties than compositions without those additives and there is no comparison to the closest prior art (Answer 6). See *In re Freeman*, 474 F.2d 1318, 1324, 177 USPQ 139, 143 (CCPA 1973)(an applicant must at least establish that there is a difference and that the difference would not have been expected by one of ordinary skill in the art at the time of the invention); and *In re Baxter Travenol Labs.*, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991)(The difference in results must be established as being between the claimed subject matter and the closest prior art.).

Appellants argue that Lickes only identifies resorcinol and methylene donor as possible additives out of many and contains no examples of their use (Br. 11-12). Appellants also argue that the compositions of Lickes are not close prior art (Br. 12). But the fact remains that Lickes suggests the use of methylene donor and resorcinol as well as the other additives in a rubber composition for tire components such as breakers. Those of ordinary skill in the art would have expected to obtain the properties conventionally associated with these additives. Given that fact, the burden is on Appellants to show that the properties of their claimed compositions are unexpected and are not just properties that were normally associated with the additives Lickes shows to be conventional.

Moreover, the data must be commensurate-in-scope with the protection sought by the claims. *See In re Greenfield*, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978) (“Establishing that one (or a small number of) species gives unexpected results is inadequate proof, for ‘it is the view of this court that objective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.’” (quoting *In re Tiffin*, 448 F.2d 791, 792, 171 USPQ 294, 294 (CCPA 1971))). Appellants test only compositions containing one type of cobalt melt salt. The tests are also limited to resorcinol and methylene donor at only one concentration. The claims are much broader.

With regard to the dependent claims we agree with the Examiner that the compositions of these claims would have been obvious on the basis that the concentration ranges recited in these claims are encompassed by or overlap with those disclosed in Lickes (Answer 6 compared to Br 10-11). Moreover, Lickes suggests the use of carbon black of ASTM designations

Appeal 2006-0886
Application 10/151,093

N220, N326, or N351, carbon black materials having an iodine absorption level within the claimed range of claims 2, 6, and 11 (Specification 7:22-24; 8:1-6).

Appellants identify Example 1 as showing unexpected results for the range of 8-13 parts by weight silica (claims 8 and 11) as compared to Example 9. Example 1 has 10 parts by weight silica while Example 9 has 15 parts by weight silica. We agree with the Examiner that the difference in silane coupling agent prevents a meaningful comparison (Answer 6-7). Appellants have not presented any evidence that the difference in concentration does not affect the results. Appellants argue that there is nothing in the record that indicates that the amount of coupling agent used has any measurable effect (Br. 11). Again, the burden is on Appellants to establish unexpected results. We also note that while Example 1 has better elongation at break, Example 9 actually has better heat build-up characteristics and better elastic modulus. Contrary to the arguments of Appellants (Br. 9), a higher index number for heat build-up characteristics is desired (Specification 9:23-25).

Based on the totality of record, including due consideration of the Appellant's arguments, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of 35 U.S.C. § 103. Accordingly, we affirm the Examiner's decision rejecting the claims on appeal under 35 U.S.C. § 103.

Appeal 2006-0886
Application 10/151,093

CONCLUSION

In summary, we affirm with respect to the rejection of claims 1-17 under 35 U.S.C. § 103(a) as unpatentable over Lickes alone or in view of Nguyen.

No time period for taking any subsequent action in connection with this appeal maybe extended under 37 C.F.R. § 1.136(a)(1)(iv)(2005).

AFFIRMED

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