

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

Paper No. 41

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BIN CHUNG,
JOHN M. FUNT, BRUCE E. MACKAY
and MARK A. WILKINSON

Appeal No. 2000-1162
Application 08/967,876

ON BRIEF

Before WARREN, OWENS and PAWLIKOWSKI, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

Decision on Appeal

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 1 through 14, which are all of the claims in the application. The grounds of rejection of appealed claims 1 through 4 and 12 have been withdrawn by the examiner, leaving appealed claims 5 through 11, 13 and 14 for our consideration. Claims 5 and 8 are illustrative of the claims on appeal:

5. An ethylene-propylene-diene-monomer (EPDM) composition having a smooth high gloss finish when extruded comprising ethylene-propylene-diene-monomer (EPDM) and a carbon black having a cetyl-trimethyl ammonium bromide absorption value (CTAB) of about 10 m²/g to about 30 m²/g and a ratio of dibutyl phthalate adsorption value/cetyl-trimethyl ammonium bromide absorption value (DBP/CTAB) greater than about 4, wherein the carbon

black is present in an amount of 100 to about 300 parts by weight carbon black per 100 parts by weight ethylene-propylene-diene-monomer (EPDM).

8. An ethylene-propylene-diene-monomer (EPDM) composition having a smooth high gloss finish when extruded comprising ethylene-propylene-diene-monomer (EPDM) and a carbon black having a cetyl-trimethyl ammonium bromide absorption value (CTAB) of about 30 m²/g to about 70 m²/g and a dibutyl phthalate adsorption value (DBP) greater than about 125 cc/100g, wherein the carbon black is present in an amount of 100 to about 300 parts by weight carbon black per 100 parts by weight ethylene-propylene-diene-monomer (EPDM).

The appealed claims, as represented by claims 5 and 8, are drawn to an ethylene-propylene-diene-monomer (EPDM) composition comprising at least an ethylene-propylene-diene-monomer (EPDM) and a carbon black characterized with respect to cetyl-trimethyl ammonium bromide absorption values (CTAB) and dibutyl phthalate adsorption values (DBP) as specified in the claims, wherein the carbon black and the EPDM are present in the amounts specified in the claims, and the composition has a smooth high gloss finish when extruded. According to appellants, the compositions “are advantageous for use in applications where a high gloss . . . finish is desirable,” such as for “automotive weather stripping” (specification, page 2).

The references relied on by the examiner are:

Bush	5,236,992	Aug. 17, 1993
Joyner et al. (Joyner)	5,272,203	Dec. 21, 1993

The examiner has rejected appealed claims 5 through 11, 13 and 14 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Joyner. The examiner has further rejected appealed claims 8 through 11 and 14 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Bush.¹

Appellants state in their brief (page 3) that the appealed claims in each ground of rejection “stand together.” Thus, we decide this appeal based on appealed claims 5 and 8. 37 CFR § 1.192(c)(7) (1999).

We affirm the grounds of rejection under § 103(a) and reverse the grounds of rejection under § 102(e).

¹ The examiner has withdrawn the grounds of rejection under 35 U.S.C. § 112, second paragraph (answer, page 4).

Rather than reiterate the respective positions advanced by the examiner and appellants, we refer to the examiner's answer and to appellants' brief² and reply brief for a complete exposition thereof.

Opinion

In order to compare the claimed invention encompassed by appealed claims 5 and 8 with the applied prior art, we must first interpret the terms of this claim in light of the written description in the specification as interpreted by one of ordinary skill in this art. *See, e.g., In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000); *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997), *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). We find that the plain language of appealed claims 5 and 8 requires that the ethylene-propylene-diene-monomer (EPDM) composition comprising at least an ethylene-propylene-diene-monomer (EPDM) and a carbon black characterized with respect to cetyl-trimethyl ammonium bromide absorption values (CTAB) and dibutyl phthalate adsorption values (DBP) as specified in the claims, wherein the carbon black and the EPDM are present in the amounts specified in the claims, and the composition has a smooth high gloss finish when extruded. We determine that the transitional term "comprising" opens the claimed composition to include other ingredients in addition to the two specified ingredients, and appellants disclose that other ingredients can be present (specification, page 3). *See Exxon Chemical Patents Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555, 35 USPQ2d 1801, 1802 (Fed. Cir. 1995) ("The claimed composition is defined as comprising - meaning containing at least - five specific ingredients."); *In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981) ("As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term 'comprises' permits the *inclusion* of other steps, elements, or materials."). However, the requirement in the preamble of each claim that the composition has a smooth high gloss finish when extruded limits the claimed compositions to those ingredients in such amounts which do not preclude the composition from exhibiting this property as at least visually determined (specification, e.g., page 7). *See generally, Corning Glass Works v. Sumitomo Elect. U.S.A., Inc.*,

² We have considered the appeal brief filed August 24, 1999 (Paper No. 37).

868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989); *In re Stencel*, 828 F.2d 751, 754-55, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987). Thus, the composition as claimed exists whenever the three specified ingredients are present, regardless of the presence of other ingredients. *See Exxon Chemical Patents*, 64 F.3d at 1555-58, 35 USPQ2d at 1802-05 (“Consequently, as properly interpreted, Exxon’s claims are to a composition that contains the specified ingredients at any time from the moment at which the ingredients are mixed together.”).

We first consider the two grounds of rejection under § 102(e). It is well settled that the examiner has the burden of making out a *prima facie* case of anticipation under § 102(b) in the first instance by pointing out where each and every element of the claimed invention, arranged as required by the claim, is described identically in a single reference, either expressly or under the principles of inherency, in a manner sufficient to have placed a person of ordinary skill in the art in possession thereof. *See generally, In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990). It is also well settled that if a reference does not disclose a specific embodiment which satisfies all of the claim limitations, the reference will nonetheless describe the claimed invention within the meaning of § 102(b) if it “clearly and unequivocally . . . [directs] those skilled in the art to [the claimed invention] without *any* need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference.” *In re Arkley*, 455 F.2d 586, 587, 172 USPQ 524, 526 (CCPA 1972). Whether a reference provides clear and unequivocal direction to the claimed invention is determined on the total circumstances with respect to the disclosure of the reference, *see In re Petering*, 301 F.2d 676, 682, 133 USPQ 275, 280 (CCPA 1962), including “not only specific teachings of the reference but also the inferences which one of ordinary skill in the art would reasonably be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968). Such direction is provided to one of ordinary skill in the art where the totality of the reference provides a “pattern of preferences” which describes the claimed invention without the necessity for judicious selection from various disclosures thereof. *See In re Sivaramakrishnan*, 673 F.2d 1383, 213 USPQ 441 (CCPA 1982); *In re Schaumann*, 572 F.2d 312, 316-17, 197 USPQ 5, 9-10 (CCPA 1978); *Petering*, 301 F.2d at 681-82, 133 USPQ at 279-80.

With respect to Joyner, the examiner finds that the carbon black has a range of CTAB from “7-22,” that examples in Table V show CTAB of “35 and 42,” and that “7-200 overlaps 10-70,” the latter apparently with respect to the disclosure that “surface area (EMSA) of at least 7 m²/g and more preferably at least 35 m²/g up to 200 m²/g or higher” where the surface area is based on CTAB (col. 15, lines 15-25) (answer, page 3). The examiner further finds that the “carbon black maybe [sic, may be] incorporated into a rubber compound which may contain up to 90% EPDM (column 9, lines 4-9) [and] [t]he compound may contain up to 250 parts of carbon black (claim 18)” (answer, page 3). With respect to the carbon black, the examiner acknowledges that “it would have been obvious . . . to choose a low surface area carbon black . . . from a list of equivalents” (*id.*).

We cannot find in col. 15, lines 15-68, a “CTAB of 7-22.” We find that Joyner discloses that “[u]p to 250 parts of carbon black can be included per 100 parts of copolymer (A)” with “[l]oadings of from 50 to 250 parts of carbon black per 100 parts of copolymer often used” (col. 16, lines 4-10; see also col. 3, lines 2-8). We find that “copolymer (A)” is an ultra high molecular weight copolymer as defined at col. 3, lines 12-33, which can be combined with “from zero to about 90% by weight of another rubber” such as “EPDM rubbers” (col. 13, lines 37-44, and col. 14, lines 4-9). We further find that in “[a] general and a typical recipe for preparing the vulcanizable elastomer compositions useful in preparing high performance tires” shown in Table VI, “Carbon Black” is “General” at “50-250” and “Typical” at “150,” with amounts of “Carbon Black (ISAF) at “95” in Table VII and “Carbon Black” at “80” in Table IX. We note that carbon black “ISAF” has an ASTM Designation (D-1765-82a) of “N200-N299” which corresponds to a Surface Area (m²/g) (D-3765) of about 112 to 98 based on Table V (col. 15, lines 37-57).

Based on these teachings of Joyner, we find that as a matter of fact the reference does not disclose a specific embodiment that anticipates any of the appealed claims, and the reference fails to provide clear and unequivocal direction, such as a pattern of preferences, which leads those skilled in the art to the claimed EPDM compositions, as picking and choosing among the teachings of Joyner is necessary for that purpose. Accordingly, we reverse the ground of rejection under § 102(e) over Joyner.

With respect to Bush, the examiner finds that the reference discloses a number of ranges for CTAB and DBP which fall within the ranges for the same in appealed claim 8 (answer, page 4). We find that Bush indeed discloses specific carbon blacks that meet these claim limitations. See, e.g., Table 3, “Ex. 1” and “MAF” (col. 6, lines 15-26). The examiner acknowledges that “it would have been obvious . . . to use at least 100 parts of carbon black, in spite of a especially preferred 40-80 parts” (answer, page 4). Indeed, we find no Bush embodiment which contains a carbon black and EPDM in amounts satisfying the limitations of appealed claim 8. We find, in this respect, that Bush discloses that “[g]enerally, amounts of the carbon black product ranging from about 10 to about 250 parts by weight can be used for each 100 parts by weight of rubber,” with “amounts varying from about 20 to about 100 parts by weight . . . [to] about 40 to about 40 to about 80 parts of carbon black per 100 parts of rubber” being preferred, wherein “[a]nother preferred rubber composition is . . . EPDM . . . that is particularly well suited for use in industrial rubber applications” (col. 2, lines 16-60).

Based on these teachings of Bush, we find that as a matter of fact the reference does not disclose a specific embodiment that anticipates any of the appealed claims, and the reference fails to provide clear and unequivocal direction, such as a pattern of preferences, which leads those skilled in the art to the specified amounts of carbon black per 100 parts by weight EPDM as required by the appealed claims, as picking and choosing among the teachings of the reference is necessary for that purpose. Accordingly, we reverse the ground of rejection under § 102(e) over Bush.

However, on these same facts, we agree with the examiner that, *prima facie*, one of ordinary skill in this art routinely working within the teachings of each of Joyner and Bush would have combined a carbon black having the CTAB and DBP/CTAB values required by appealed claim 5 with respect to Joyner, and the CTAB and DBP values specified in appealed claim 8 with respect to Joyner and Bush, with an amount of EPDM falling within the range specified in appealed claims 5 and 8, in the reasonable expectation of obtaining a composition falling within the teaching of each of the references. *See generally, Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807, 10 USPQ2d 1843, 1845-46 (Fed. Cir. 1989) (“That the ‘813 patent discloses a multitude of effective combinations does not render any particular formulation less obvious.”);

In re Lemin, 332 F.2d 839, 841, 141 USPQ 814, 815-16 (CCPA 1964) (“Generally speaking there is nothing unobvious in choosing ‘some’ among ‘many’ indiscriminately.”).

Accordingly, *prima facie*, one of ordinary skill in this art routinely following the teachings of each of Joyner and Bush would have arrived at claimed compositions encompassed by appealed claim 5 with respect to Joyner, and by appealed claim 8 with respect to Joyner and Bush. Indeed, as pointed out by the examiner, the claimed CTAB ranges either fall within or overlap the range disclosed by Joyner and the claimed amounts of the carbon black per 100 parts by weight of EPDM overlap with the range disclosed by each of Joyner and Bush. It is well settled that where the claimed ranges are encompassed by or overlap with the ranges for the same parameters disclosed in the applied prior art, the claimed ranges will not patentably distinguish the claimed invention from the prior art unless the claimed ranges are shown to be critical, such as by a showing of a new or unexpected result, thus shifting the burden to appellants to establish the criticality of the claimed ranges. *See generally, In re Geisler*, 116 F.3d 1465, 1470, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997), and cases cited therein; *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980); *see also In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990) (“The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. [Citations omitted.] These cases have consistently held that in such a situation, the applicant must show that the particular range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range. [Citations omitted.]”).

Accordingly, since a *prima facie* case of obviousness has been established over the applied prior art, we have again evaluated all of the evidence of obviousness and nonobviousness based on the record as a whole, giving due consideration to the weight of appellants’ arguments and the evidence in the specification. *See generally, In re Johnson*, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); *In re Rinehart*, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

We have carefully considered all of appellants’ arguments and the evidence presented in the specification as relied on by appellants in the brief and reply brief. Appellants’ principal argument is that neither Joyner nor Bush discloses the relevance of the CTAB and DBP carbon

black as specified in appealed claims 5 and 8 with respect to the “surface finish of the claimed composition when extruded or shaped” which is specified in these claims as a “smooth high gloss finish” (brief, page 13, first paragraph; *see also* brief, pages 12-16, and reply brief, pages 3-7), and that the evidence in the specification establishes “unexpected results” with respect to Joyner and the “criticality of the analytical properties of the carbon black” with respect to Bush (reply brief, pages 4-5; *see also* brief, pages 13-15). In response, the examiner finds that “[t]he finished appearance is inherent in the composition and tire treads are shiny” (answer, page 4).

We are not persuaded by appellants’ argument that the applied references do not recognize that when a composition pursuant to the teachings thereof is extruded, a “smooth high gloss finish” will result. It is well settled that the mere discovery of a new property of a composition will not, without more, be dispositive of the nonobviousness of the claimed invention over the reference. *See, e.g., In re Spada*, 911 F.2d 705, 707-08, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 782-83, 227 USPQ 773, 779 (Fed. Cir. 1985); *In re Skoner*, 517 F.2d 947, 950, 186 USPQ 80, 82 (CCPA 1975) (“Appellants have chosen to describe their invention in terms of certain physical characteristics Merely choosing to describe their invention in this manner does not render patentable their method which is clearly obvious in view of [the reference]. [Citation omitted.]”). Furthermore, the selection of ingredients for the composition must be considered based on the teachings of each reference, and not whether the selection would be made based on appellants’ invention. *See generally, See In re Kronig*, 539 F.2d 1300, 1304, 190 USPQ 425, 428, (CCPA 1976) (“[I]t is sufficient here that [the reference] clearly suggests doing what appellants have done.”).

Appellants contend that unexpected results are established by the results reported in the Table on page 7 of the specification, wherein the compositions of Joyner are alleged to be “illustrated by the control compositions” designated as “RC” and the “RD” which use “Carbon blacks C and D,” respectively, that “have analytical properties falling within the broad range disclosed by Joyner,” which compositions “when extruded have surface finishes and glossmeter readings falling outside of the scope of the present claims” (reply brief, pages 4-5).

With respect to Bush, appellants merely allege that “the criticality of the analytical properties of the carbon blacks utilized in the presently claimed EPDM compositions and articles

of manufacture, is clearly demonstrated by the Examples in the present specification,” and that the claimed EPDM compositions of the appealed claims “may be distinguished from the compositions disclosed by Bush on the basis of the amount and type of carbon blacks incorporated therein and their smooth glossy finishes and glossmeter readings” (reply brief, page 5).

It is well settled that the burden of establishing the significance of data in the record with respect to unexpected results, rests with appellants, which burden is not carried by mere arguments of counsel. *See generally, In re Geisler*, 116 F.3d 1465, 1470, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997); *In re Merck*, 800 F.2d 1091, 1099, 231 USPQ 375, 381 (Fed. Cir. 1986); *In re Longi*, 759 F.2d 887, 897, 225 USPQ 645, 651-52 (Fed. Cir. 1985); *In re Klosak*, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972); *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972); *In re D’Ancicco*, 439 F.2d 1244, 1248, 169 USPQ 303, 306 (1971).

On this record, appellants have not carried their burden. We have not considered the evidence in the specification to a greater extent than appellants have relied thereon in the brief and reply brief. *Cf. In re Baxter Travenol Labs.*, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991) (“It is not the function of this court to examine the claims in greater detail than argued by appellant, looking for nonobvious distinctions over the prior art.”). In this respect, appellants have merely alleged, with respect to Bush, that the results in the specification are unexpected, which allegation does not establish how the evidence in the specification provides an actual comparison of the properties of the claimed compositions with those of Bush, and such a comparison is not apparent on this record. *See In re Hoch*, 428 F.2d 1341, 1343-44, 166 USPQ 406, 409 (CCPA 1970) (evidence must provide an actual comparison of the properties of the claimed compositions with compositions of the references). Indeed, it is well settled that unsupported arguments of counsel is entitled to little, if any, weight. *Lindner, supra* (“This court has said . . . that mere lawyers’ arguments unsupported by factual evidence are insufficient to establish unexpected results. [Citations omitted.]”).

With respect to appellants contentions with respect to Joyner, in the absence of an explanation or additional objective evidence, we fail to find that either carbon black “C” or “D”

falls within the teachings of Joyner in view of the respective DBP values “69” and “91” because the only teaching in the reference with respect to this analytical point is that carbon black with “DBP absorption value of 130-160 cc/100g are preferred in ultra high performance tire treads” (col. 15, lines 64-66), and thus one of ordinary skill in this art would have employed a carbon black falling within that range. Therefore, the evidence in the specification does not establish that the EPDM compositions of Joyner would perform in the manner “illustrated by the control compositions” designated as “RC” and “RD.” See, e.g., *In re Burckel*, 592 F.2d 1175, 1179-80, 201 USPQ 67, 71 (CCPA 1979) (the claimed subject matter must be compared with the closest prior art in a manner which addresses the thrust of the rejection); *In re Merchant*, 575 F.2d 865, 868, 197 USPQ 785, 787 (CCPA 1978). Even if it can be said that an unexpected result was shown in the evidence presented in the specification with respect to Joyner, we find no assurance that the same behavior would be exhibited by other compositions contains carbon blacks having the DBP values actually taught in the reference. See *In re Kulling*, 897 F.2d 1147, 1149-50, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990); *In re Clemens*, 622 F.2d 1029, 1035-36, 206 USPQ 289, 295-96 (CCPA 1980); *Greenfield*, supra; *Lindner*, supra.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in each of Joyner and Bush with appellants’ countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 5 through 11, 13 and 14 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The examiner’s decision is affirmed.

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

AFFIRMED

CHARLES F. WARREN)	
Administrative Patent Judge)	
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TERRY J. OWENS)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
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