

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

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PIERRE REBREYEND,  
DANIEL DERICQUEBOURG and DAVID FACOMPRE

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Appeal No. 2006-0316  
Application 10/428,930

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ON BRIEF

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Before GARRIS, WARREN and WALTZ, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

*Decision on Appeal and Opinion*

We have carefully considered the record in this appeal under 35 U.S.C. § 134, and based on our review, find that we cannot sustain the grounds of rejection advanced on appeal: claims 2 through 4 and 6 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention (answer, pages 4 and 10-11); claims 2 and 9 under 35 U.S.C. § 102(b) as anticipated by Nath et al. (Nath) (answer, pages 5-9 and 11-17); claims 3, 6, 10 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Nath (answer, pages 9 and 17-18); and claims 4 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Nath as applied to claim 2 above and further in view of Mori, Okamoto et al. and Shintani (answer, pages 10 and 18-19).<sup>1,2</sup>

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<sup>1</sup> See the appendix to the brief. Claims 1, 5, 7, 8 and 12 are also of record and have been withdrawn from consideration by the examiner under 37 CFR § 1.142(b).

We refer to the answer and to the brief and reply brief for a complete exposition of the positions advanced by the examiner and appellants.

The issues in this appeal entail the interpretation of representative independent claims 2 and 9. We interpret these claims by giving the terms thereof the broadest reasonable interpretation in their ordinary usage in context as they would be understood by one of ordinary skill in the art in light of the written description in the specification, including the drawings, unless another meaning is intended by appellants as established in the written description of the specification, and without reading into the claims any limitation or particular embodiment disclosed in the specification. *See, e.g., In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004); *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Donaldson Co.*, 16 F.3d 1189, 1192-95, 29 USPQ2d 1845, 1848-50 (Fed. Cir. 1994) (*en banc*); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); *see also In re Wright*, 866 F.2d 422, 423-25, 9 USPQ2d 1649, 1650-51 (Fed. Cir. 1988) (the claimed method was “disclosed in both words and drawings”).

The plain language of each of claims 2 and 9 encompasses any method of fabricating any optical preform including at least any “operation of glazing the outside surface” thereof using “a plasma torch” for “localized heating of the preform” by producing a plasma which “is substantially free of injected silica particles,” the method further including at least “the step of injecting” any gas, “which is substantially free of silica particles,”

between the plasma torch and said preform during said glazing operation in the area of an outside surface of said preform on which said plasma impinges during said glazing operation, to thereby reduced the power of said plasma in said area during said glazing operation.

Claim 2 specifies that the “plasma torch includes means for injecting a gas which is substantially free of silica particles between the plasma torch and said preform in the area of said preform to be heated so as to reduce the power of said plasma in said area.” Claim 9 does not limit the “plasma torch.” We consider the terms “including” and “includes” to be open-ended terms

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<sup>2</sup> We find from the final rejection mailed August 20, 2004 (e.g., pages 4 and 5), the brief (page 9) and the answer (pages 17 and 18), that the last two grounds include claims 10 and 13 and claim 11, respectively, and thus, the failure to include these claims in the statement of the grounds of rejection in the answer (pages 9 and 10) is harmless error.

synonymous with the open-ended term “comprising.” *See generally, In re Bertsch*, 132 F.2d 1014, 1019, 56 USPQ 379, 384 (CCPA 1942); *cf. 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.”).

The arguments with respect to the interpretation of the term “glazing” advanced by appellants and the examiner notwithstanding, we determine that the claim language specifies at least the step of localized heating of an outer area of an outside surface of a preform to any extent with any plasma impinging thereon, the plasma being substantially free of injected silica particles and produced by a plasma torch, with a gas, which is substantially free of silica particles, injected at any point between the plasma torch and said locally heated outer area of the outside surface of the preform, thereby reducing the power of the plasma in this area. The terms “injected” and “injecting” and the term “impinging” are used in the written description in the specification and in the claims in their ordinary, dictionary meaning in context of “[t]o force or drive” or “[t]o introduce into” and of “[t]o collide or strike,” respectively.<sup>3</sup>

The term “substantially free” is a term of degree with respect to “silica particles” in the “plasma” and “gas,” which is not defined or described by general guidelines and examples in the written description in the specification. In the absence of such guidance to enable one of ordinary skill in the art to determine the extent to which a plasma or a gas can contain silica particles and be still “substantially free” thereof, we give the term “substantially free” its broadest reasonable ordinary meaning of from free to largely but not wholly free. Thus, the claim language specifies that the “plasma” and the “gas” are largely but not wholly free of silica particles. *See Morris*, 127 F.3d at 1054-55, 44 USPQ2d at 1027; *York Prods., Inc. v.*

*Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572-73, 40 USPQ2d 1619, 1622-23 (Fed. Cir. 1996) (“In this case, the patent discloses no novel use of claim words. Ordinarily, therefore, ‘substantially’ means ‘considerable in . . . extent,’ *American Heritage Dictionary Second College Edition* 1213 (2d ed. 1982), or ‘largely but not wholly that which is specified,’

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<sup>3</sup> *See The American Heritage Dictionary Of The English Language* 880, 902 (4th ed., Boston, Houghton Mifflin Company, 2000); *see also The American Heritage Dictionary, Second College Edition* 766 (Boston, Houghton Mifflin Company, 1982).

*Webster's Ninth New Collegiate Dictionary* 1176 (9th ed. 1983)."); *see also Seattle Box Co., Inc. v. Industrial Crating & Packing Inc.*, 731 F.2d 818, 826, 221 USPQ 568, 573-74 (Fed. Cir. 1984) ("When a word of degree is used . . . [it] must [be determined] whether the patent's specification provides some standard for measuring that degree."); *In re Mattison*, 509 F.2d 563, 564-65, 184 USPQ 484, 486 (CCPA 1975) ("substantially increase the efficiency of the compound as a copper extractant"); *cf. In re Marosi*, 710 F.2d 799, 802-03, 218 USPQ 289, 292 (Fed. Cir. 1983) ("essentially free of alkali metal").

We find that the limitation "plasma torch includes means for" the function of "injecting a gas which is substantially free of silica particles between the plasma torch and said preform in the area of said preform to be heated so as to reduce the power of said plasma in said area" specified in claim 2 does not define structure which satisfies that function, and thus, the strictures of 35 U. S. C. § 112, sixth paragraph, apply. *See Texas Digital Systems, Inc. v. Telegenx, Inc.*, 308 F.3d 1193, 1208, 64 USPQ2d 1812, 1822-23 (Fed. Cir 2002), and cases cited therein. Therefore, the "means" language in this limitation must be construed as limited to the "corresponding structure" disclosed in the written description in the specification and "equivalents" thereof. *Donaldson*, 16 F.3d at 1192-95, 29 USPQ2d at 1848-50.

The "corresponding structure" is that "structure in the written description necessary to perform that function [citation omitted]," that is, "'the specification . . . clearly links or associates that structure to the function recited in the claims.' [Citation omitted.]" *Texas Digital Systems*, 308 F.3d at 1208, 64 USPQ2d at 1822-23. "[A] section 112, paragraph 6 'equivalent[]' . . . [must] (1) preform the identical function and (2) be otherwise insubstantially different with respect to structure. [Citations omitted.]" *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1364, 54 USPQ2d 1308, 1315-16 (Fed. Cir. 2000). "[T]wo structures may be 'equivalent' for purposes of section 112, paragraph 6 if they perform the identical function, in substantially the same way, with substantially the same result. [Citations omitted.]" *Kemco Sales*, 208 F.3d at 1364, 54 USPQ2d at 1315. "[T]he 'broadest reasonable interpretation' that an examiner may give means-plus-function language is that statutorily mandated in [35 U.S.C. § 112,] paragraph six," and in this respect, the examiner should not confuse "impermissibly imputing limitations from the specification into a claim with properly referring to the specification to determine the meaning of a particular word or phrase recited in a claim.

[Citations omitted.]” *Donaldson*, 16 F.3d at 1195, 29 USPQ2d at 1850; *see also Morris*, 127 F.3d 1048, 1055-56, 44 USPQ2d 1023, 1028 (explaining *Donaldson*).

We find that the “corresponding structure” to the “plasma torch” specified in claim 2 disclosed in the written description in the specification is plasma torch **5** with nozzle **9** as shown in specification **FIGs. 1 and 2** and explained in the written description at pages 5-6 of the specification. There it is disclosed that, as shown in **FIG. 2**,

[t]he nozzle 9 is mechanically fixed relative to the mouth of the conduit 10 through which the plasma is ejected from the torch 5, at a distance determined so that the gas ejected by the nozzle is between the preform on which the end of the plasma impinges and the flame 12 of the latter when the torch is in operation. [Specification, page 6, ll. 3-6.]

Considering now claims 2 and 9, interpreted above, compared to the teachings that one of ordinary skill in this art would have found in Nath, we find with respect to claim 2 that the examiner has not made a determination whether plasma torch **1** illustrated in Nath **FIGs. 1 and 2** as described at cols. 6-7 of the reference, is a structure that is “equivalent” for purposes of section 112, paragraph 6, to the “corresponding structure” torch **5** having nozzle **9** to which claim 2 is limited (*see answer*, e.g., pages 6-9 and page 16, second full paragraph, to page 17, second full paragraph). We find that outer tubular element **9** and its tubular extension **19** with end portion **20** bounding passage **12** into and through deposition chamber **6** of plasma torch **1** illustrated in Nath **FIGs. 1 and 2**, which conducts a “shielding gas” (e.g., col. 6, ll. 33-36, 41-49 and 54-64), does not identically perform the function of “injecting a gas which is substantially free of silica particles between the plasma torch and said preform in the area of said preform to be heated” specified in claim 2, in substantially the same way, with substantially the same result. Indeed, Nath explains that “outer tubular element **9** at least partially bounds a heating zone **16** in which the annular plasma **2** is formed” and “[t]he enlarged diameter of the end portion **20** results in reduction of speed of the gaseous medium flowing through the chamber **6** and thus an improvement of the cooling action of such a gaseous medium” (col. 6, ll. 44-46 and 61-64; *see also* col. 5, ll. 1-30). We find that Nath **FIG. 1** would have disclosed to one of ordinary skill in this art that the shielding gas indeed flows outside of the plasma sustaining intermediate gas and the plasma. Thus, the written description and **FIG. 1** of Nath would not have disclosed to one of ordinary skill in this art that the “shielding gas” is injected “between the plasma torch and the

preform in the area of the preform to be heated,” which is the function of the “means” included with the plasma torch. Therefore, we determine that plasma torch 1 of Nath would not have performed the specified step of “injecting a gas which is substantially free of silica particles between the plasma torch and said preform . . . in the area of an outside surface of said preform on which said plasma impinges . . . to thereby reduce the power of said plasma in said area” as required in claim 2 (emphasis supplied) (*see* brief, pages 14-15; reply brief, pages 7-8).

Accordingly, in view of our finding that the written description in the specification, including the drawings, describes “corresponding structure” to the “plasma torch” specified in claim 2 within the meaning of 35 U.S.C. § 112, sixth paragraph, we determine that the examiner has not established a *prima facie* case of the failure of claims 2 through 4 and 6 to comply with this statutory provision and thus, reverse this ground of rejection. Further, because Nath does not describe a structure that is “equivalent” to said “corresponding structure” to the “plasma torch” specified in claim 2, we determine that the examiner has not established a *prima facie* case of anticipation of claim 2 under 35 U.S.C. § 102(b) over this reference, and a *prima facie* case of obviousness of claims 3, 4 and 6 under 35 U.S.C. § 103(a) over this reference alone and as combined with the other applied references, and thus, reverse these grounds of rejection.

Claim 9 does not contain the same limitation on the structure of the plasma torch as claim 2 but does specify “the step of injecting a gas which is substantially free of silica particles *between* the plasma torch *and* said preform . . . in the area of an outside surface of said preform on which said plasma impinges . . . to thereby reduce the power of said plasma in said area” (emphasis supplied). We found above that the written description and **Fig. 1** of Nath would not have disclosed injecting a gas in said position to one of ordinary skill in this art (*see* answer, page 6, seventh full paragraph, to page 9, l. 2, and page 16, second full paragraph, to page 17, second full paragraph; *see* brief, pages 14-15; reply brief, pages 7-8). Accordingly, we determine that the examiner has not established a *prima facie* case of anticipation of claim 9 under 35 U.S.C. § 102(b) over this reference, and a *prima facie* case of obviousness of claims 10, 11 and 13 under 35 U.S.C. § 103(a) over this reference alone and as combined with the other applied references, and thus, reverse these grounds of rejection.

The examiner’s decision is reversed.

Appeal No. 2006-0316  
Application 10/428,930

*Reversed*

BRADLEY R. GARRIS Administrative Patent Judge	) ) ) ) )	BOARD OF PATENT APPEALS AND INTERFERENCES
CHARLES F. WARREN Administrative Patent Judge	) )	)
THOMAS A. WALTZ Administrative Patent Judge	)	)

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