

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN JAMES **McNAMARA**,
MERVIN GALE WOOD and YING DONG

Appeal 2007-3373
Application 10/477,363
Patent Application Publication 200/0156933
Technology Center 1700

Decided: 12 September 2007

Before: FRED E. McKELVEY, *Senior Administrative Patent Judge*,
and RICHARD TORCZON and JAMES T. MOORE, *Administrative Patent
Judges.*

Opinion for the Board filed by *Senior Administrative Patent Judge*
McKELVEY.

DECISION ON APPEAL

1 **A. Statement of the case**

2 John James McNamara, Mervin Gale Wood and Ying Dong (hereafter
3 "**Ciba**") seek review under 35 U.S.C. § 134(a) of a rejection of claims 2 and
4 4-11, the only claims remaining in the application on appeal.

5 We have jurisdiction under 35 U.S.C. § 6(b).

6 The application on appeal was filed on 12 November 2003.

7 Ciba claims benefit of an earlier filing date based on (1) PCT
8 application PCT/EP02/05195, filed 10 May 2002 and (2) provisional
9 application 60/291,346, filed 17 May 2001.

10 The real party in interest is Ciba Specialty Chemicals Corp. ("**Ciba**").

11 The Examiner rejected all of the claims under 35 U.S.C. § 102(b) as
12 anticipated by a U.S. patent issued to Ellen Marleen M. de Brahander-van
13 den Berg ("**Berg**") (The reader should know that no references to *et al.* are
14 made in this opinion.)

15 The following prior art was relied upon by the Examiner.

16

17 <u>Name</u>	18 <u>Patent Number</u>	19 <u>Issue Date</u>
20 Berg	21 US 5,998,565	22 07 Dec. 1999

23 Berg is prior art under 35 U.S.C. § 102(b).

24 **B. Record on appeal**

25 In deciding this appeal, we have considered *only* the following
documents:

1. Specification, including original claims.

- 1 2. U.S. Patent Application Publication 2004/0156933 A1,
- 2 published 12 August 2004.
- 3 3. Rejection entered 07 February 2006. The rejection was not a
- 4 final rejection, but was a second rejection of the claims; an appeal is
- 5 therefore proper. 35 U.S.C. § 134(a).
- 6 4. Appeal Brief received 11 September 2006.
- 7 5. The Examiner's Answer entered 28 November 2006.
- 8 6. Reply Brief filed 23 January 2007.
- 9 7. Berg (U.S. Patent 5,998,565).
- 10 8. Claims 2 and 4-11 on appeal.

11
12 **C. Issues**

13 The issue is whether Ciba has sustained its burden of showing that the
14 Examiner erred in rejecting the claims on appeal as being unpatentable under
15 35 U.S.C. § 102(b) as anticipated by Berg.

16 The issue, in large measure, turns on whether a Berg "modifying"
17 compound is chemically bound to a Berg "dendrimer."

18
19 **D. Findings of fact**

20 The following findings of fact are believed to be supported by a
21 preponderance of the evidence. To the extent that a finding of fact is a
22 conclusion of law, it may be treated as such. Additional findings as
23 necessary may appear in the Discussion portion of the opinion.

1 The patent application publication

2 The pages of the specification, as filed, do not have line numbers.
3 Accordingly, reference will be made to the U.S. Patent Application
4 Publication 2004/0156933 A1, the published version of the specification.
5 The publication has paragraph numbers to which reference will be made.

6 The invention

7 The invention relates to "additives" that are made up of (1) known
8 polymer additives having moieties which are chemically bound to (2)
9 hyperbranched or dendritic polymers (including dendritic copolymers).
10 Publication, ¶ 0001.

11 According to Ciba, highly branched dendritic polymers are well
12 known. Publication, ¶ 0009.

13 Apart from Ciba's discussion of dendritic polymers in the
14 specification, we have found the following discussion in Stevens,
15 *Polymer Chemistry*, Oxford University Press, pages 9-10 (3d ed. 1999)
16 (ISBN 0-19-51244408) [footnotes and some other material omitted]:

17 *Dendrimers*, also known as dendritic, Starburst ..., or cascade
18 polymers, resemble star polymers except that each leg of the
19 star exhibits repetitive branching in the manner of a tree (Greek,
20 *dendron*, tree). Certain extremely branched polymers, termed
21 *hyperbranched polymers*, are related to dendrimers in that they
22 exhibit dendritic branching, but the branches do not emanate
23 from a central core, nor is the branching necessarily regular as it
24 is in dendrimers. Dendrimers ... [and] hyperbranched polymers
25 ... represent new and rapidly developing areas of polymer
26 chemistry with potentially useful industrial applications.
27

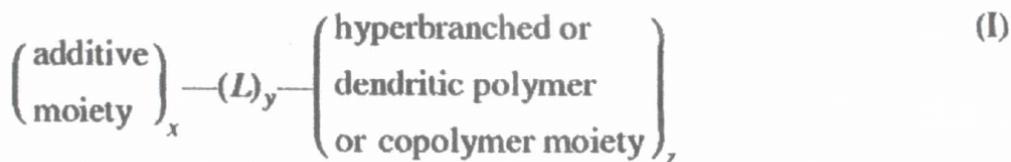
1 Polymer additives are known to those skilled in the art. Publication,
2 ¶ 0030.

3 Examples are (1) antioxidants, such as hindered phenolic antioxidants,
4 (2) ultraviolet light absorbers (UVA's), such as hydroxyphenylbenzo-
5 triazoles, (3) hindered amine light stabilizers (HALS), (4) hydroxylamine
6 stabilizers, (5) amine oxide stabilizers, (6) benzofuranone stabilizers, and
7 (7) organic phosphorus stabilizers. Publication, ¶ 0030.

8 According to the invention, compounds containing known polymer
9 additive moieties (*i.e.*, polymer additives) and appropriate reactive sites are
10 bound to hyperbranched or dendritic polymers through condensation or other
11 chemical reactions. Publication, ¶ 0031.

12 The invention comprises at least one polymer additive moiety and at
13 least one hyperbranched or dendritic polymer moiety. Publication, ¶ 0034.

14 Specifically, the invention relates to hyperbranched or dendritic
15 stabilizers of the formula:



16
17

where:

18 x and y are each independently greater than or equal to 1;

19 z is 1 to 5; and

20 L is independently of each other a direct bond or a chemical

21 linking group [what this means is that if y is greater

22 than 1, *e.g.*, 2, then there are two L's each of which can

1 be different, *e.g.*, one can be a direct bond and the other a
2 chemical linking group].

3
4 Ciba defines an "additive compound" as having the formula:



6 where:

7 p and q are 1 or more and

8 G is a reactive functional group (RFG).

9 Publication, ¶¶ 0055-0057 and 0063-0064.

10 The RFG group may be, for example, —OH (hydroxy), —NH₂
11 (amino) or —CO₂H (carboxyl). Publication, ¶ 0067.

12 Numerous compounds are described as suitable additives.

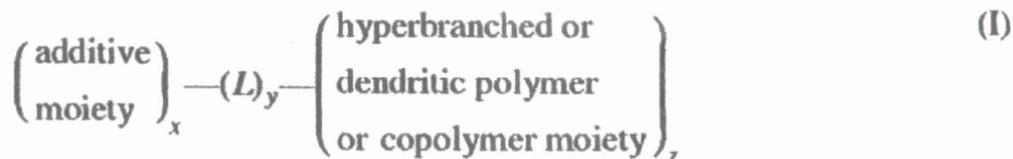
13 Publication, ¶¶ 0066-0070.

14 Claims on appeal

15 Claim 1 on appeal reads:

16 A permanent or surface-active hyperbranched or dendritic
17 stabilizer comprised of at least one polymer additive moiety and
18 at least one hyperbranched or dendritic polymer moiety,

19 where said stabilizer is a polymer or copolymer of the
20 formula (I)



21 where

22 x and y are each independently greater than or equal to 1,

1 z is 1 to 5, and
2 L is independently of each other a direct bond or a chemical
3 linking group,
4 with the proviso that the reaction product of the self-
5 condensation product of 3,5-dihydroxybenzoic acid and
6 4-hydroxyphenylmethyl carbinol benzotriazole is excluded.

7
8 According to Ciba, WO 97/012282 describes self-condensation
9 product of 3,5-dihydroxybenzoic acid and 4-hydroxyphenylmethyl carbinol
10 benzotriazole (Publication, ¶ 0028) and therefore a negative limitation is
11 apparently necessary to define subject matter which is novel.

12
13 Other claims argued separately are claims 4-5, 7 and 9.

14 Claims 4-5, 7 and 9 read:

15 4. A stabilizer according to claim 2 in which x is greater than
16 one and comprising two different additive moieties.

17
18 5. A stabilizer according to claim 4 in which the two different
19 additive moieties are ... ultraviolet light absorber and hindered
20 amine light stabilizer moieties.

21
22 7. A stabilizer according to claim 2 in which the linking group
23 L is —OCO— or —COO— or is a hydrocarbylene comprising
24 the groups —OCO— or —COO—.

1 Claim 8 is directed to a process for making the compound (actually
2 the polymer or copolymer) of formula I which basically comprises reacting
3 the additive with the dendritic polymer. Claim 9 reads:

4
5 9. A process according to claim 8 which comprises reacting a
6 carboxy-functional additive with poly(ethylene glycol)-
7 monomethyl ether and dimethylolpropionic acid.

8
9 Berg

10 Berg's invention relates to a composition comprising a plastic and an
11 "additive." Col. 1:6-7.

12 As will become apparent, the additive is prepared by reacting an
13 "modifying group" with a dendritic polymer.

14 Suitable dendritic polymers include polyesters and polyethers.
15 Col. 3:4-5.

16 A compound, which Berg calls a "modifying" compound, is reacted
17 with the dendritic polymer (col. 3:20-31):

18 Within the scope of the invention, a compound which
19 contains at least one reactive group which can enter into a
20 chemical bond with the functional end groups of a dendrimer, is
21 called a modifying compound. That part of the modifying
22 compound which, after the reaction, remains attached to the
23 dendrimer is here and hereinafter referred to as the modifying
24 group. In the course of the reaction between reactive group and
25 functional end group, molecules may be eliminated. The
26 modifying group can be both polar and apolar. The modifying
27 group can be bound to the dendrimer in various ways, for
28 example via a covalent bond, via a hydrogen bridge or via an
29 ionogenic bond.

1
2 One skilled in the art knows that hydroxyl and amino containing
3 compounds will react with acid groups to covalently bond. For example, a
4 Berg alcohol with a hydroxyl group (R_1) would be expected to be bonded to
5 the acid group of a Berg dendrimer (R_2) to form an ester group:



7 A Berg amine with an amino group (R_3) would be expected to be
8 bonded to the acid group of a Berg dendrimer (R_2) to form an amido group:



10 Suitable modifying compounds include aliphatic alcohols, phenols,
11 and fatty acids. Col. 3:42-46.

12 Berg tells one skilled in the art that additives can be present in the
13 dendrimer. Col. 5:21.

14 The additive may enter into an interaction with groups which are
15 present in the dendrimer. Col. 5:13-14.

16 Additives include benzophenones, phenols and amines, *e.g.*, 2,6-di-*t*-
17 butyl-4-methylphenol (col. 5:43), 2-hydroxy-4-*n*-octoxybenzophenone
18 (col. 5:47) and *N,N*-di(2,2,6,6-tetramethyl)-4-piperidyl)-hexamethylene-
19 diamine (col. 5:54).

20 The dendrimer can have more than one additive. Col. 5:29-30.

21 Berg does not describe a reaction product of a carboxy-functional
22 additive with poly(ethylene glycol)-monomethyl ether and
23 dimethylolpropionic acid.

1 Examiner's Answer

2 The Examiner found, pointing to various portions of Berg, that Berg
3 describes the subject matter of the claims on appeal. Examiner's Answer,
4 pages 3-7.

5 Other findings

6 The subject matter of claim 1 is anticipated by Berg.

7 The subject matter of claim 9 is not anticipated by Berg.

8

9 **E. Principles of law**

10 An anticipation requires a prior art reference to describe every
11 limitation in a claim. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d
12 1429, 1431 (Fed. Cir. 1997).

13 Anticipation is a question of fact. *In re Baxter Travenol*
14 *Laboratories.*, 952 F.2d 388, 390, 21 USPQ2d 1281, 1283 (Fed. Cir. 1991).

15 What a reference describes is a question of fact. *In re Trans Texas*
16 *Holdings Corp.*, Nos. 2006-1599, -1600, slip op. at 18 (Fed. Cir. Aug. 22,
17 2007).

18 When multiple claims subject to the same ground of rejection are
19 argued as a group by appellant, the Board may select a single claim from the
20 group and decide the appeal with respect to the group of claims as to the
21 ground or rejection on the basis of the selected claim alone. 37 C.F.R.
22 § 41.67(c)(1)(vii) (2006).

23 A statement which merely points out what a claim recites will not be
24 considered an argument for separate patentability of the claims. *Id.*

25

1 Further, Appellants argue that dependent claims 4, 5 and 7
2 contain further limitations that clearly render them novel over
3 ... Berg.
4

5 The argument is not an acceptable argument. Claim 4 has two
6 limitations. The argument fails to say which limitation is not described by
7 Berg. In any event, we believe the Examiner has a complete answer to
8 Ciba's "argument." *See* Examiner's Answer, page 9.

9 Claim 9

10 The following argument appears on page 7 of the Appeal Brief:

11 Further, claim 9 contains a further limitation of containing a
12 poly(ethylene glycol)monomethyl ether which is clearly not
13 anticipated by the cited art.
14

15 Unlike the argument with respect to claims 4-5 and 7, Ciba addresses
16 a specific limitation in claim 9. The Examiner's response to the argument
17 was (Examiner's Answer, pages 9-10):

18 Since dendrimers can include polyether and polyester and the
19 modifier compound can include esters of aliphatic carboxylic
20 acids, the limitation in the present claim 9 is obtained.
21

22 We have to agree with Ciba that the subject matter of claim 9 is not
23 described by Berg. A description of a genus is not a description of a
24 subgenus or species. Whether the subject matter of claim 9 would have been
25 obvious over Berg is a matter we leave for further consideration by the
26 Examiner.

1 We have considered Ciba's remaining arguments and find none that
2 warrant reversal of the Examiner's rejection of claims 2, 4-8 and 10-11.
3 *Cf. Hartman v. Nicholson*, 483 F.3d 1311, 1315 (Fed. Cir. 2007).

4
5 **G. Conclusions of law**

6 Ciba has *not* sustained its burden on appeal of showing that the
7 Examiner erred in rejecting claims 2, 4-8 and 10-11 on appeal as being
8 unpatentable under 35 U.S.C. § 102(b) over Berg.

9 Ciba has sustained its burden on appeal of showing that the Examiner
10 erred in rejecting claim 9 on appeal as being unpatentable under 35 U.S.C.
11 § 102(b) over Berg.

12 On the record before us, Ciba is not entitled to a patent containing
13 claims 2, 4-8 and 10-11.

14
15 **H. Decision**

16 ORDERED that the decision of the Examiner rejecting
17 claims 2, 4-8 and 10-11 over the prior art is *affirmed*.

18 FURTHER ORDERED that the decision of the Examiner
19 rejecting claim 9 over the prior art is *reversed*.

20 FURTHER ORDERED that no time period for taking any
21 subsequent action in connection with this appeal may be extended under
22 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED-IN-PART

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cc (via First Class mail)

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