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BROOKS KUSHMAN P.C.
1000 TOWN CENTER
TWENTY-SECOND FLOOR
SOUTHFIELD, MI 48075

EXAMINER	
SASTRI, SATYA B	

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte WACKER CHEMIE AG
(Inventors: Reinhard Haerzschel, Thomas Bastelberger,
Ulf Dietrich and Armin Hoffmann)

Appeal 2012-000148
Application 11/686,037
Technology Center 1700

Before FRED E. McKELVEY, CHARLES F. WARREN and MARK NAGUMO, *Administrative Patent Judges*.

McKELVEY, *Administrative Patent Judge*.

DECISION ON APPEAL

Statement of the case

Wacker Chemie AG ("applicant"), the real party in interest (Brief, page 1), seeks review under 35 U.S.C. § 134(a) of a second rejection dated 17 December 2010.

The application was filed in the USPTO on 14 March 2007.

The earliest priority date claimed is based on German Patent Application 10316079.5, filed 8 April 2003.

The application has been published as U.S. Patent Application Publication 2007/0155862 A1 (5 July 2007).

In support of prior art rejections, the Examiner relies on the following evidence.

Sauer	U.S. Patent 5,703,156	30 Dec. 1997
Weitzel et al. "Weitzel"	U.S. Patent 6,127,483	03 Oct. 2000
Haerzschel et al. "Haerzschel"	U.S. Patent 6,166,113	26 Dec. 2000

Applicant does not contest the prior art status of the evidence relied upon by the Examiner.

In addition to a Rule 132 declaration of Dr. Reinhard Haerzschel (named inventor) (28 August 2009), applicant relies on the following evidence.

Taylor et al. "Taylor"	U.S. Patent 5,670,585	23 Sep. 1997
Penzel et al. "Penzel"	U.S. Patent 5,726,224	10 Mar. 1998

We have jurisdiction under 35 U.S.C. § 134(a).

Claims on appeal

Claims 16-28 and 30-38 are on appeal. Brief, page 2; Answer, page 2.

Claim 16, which we reproduce from page 1 of the Claim Appendix of the Brief, reads [matter in brackets and some indentation added; principal limitations in issue in italics]:

Claim 16

A chemical construction composition which is a self-leveling hydraulically settable flooring composition containing

[1] at least one hydraulically settable binder and

[2] at least one polyvinyl alcohol-stabilized redispersible powder having plasticizing properties,

prepared by drying

[A] *a polyvinyl alcohol-stabilized*, aqueous dispersion of at least one homopolymeric or copolymeric base polymer comprising polymerized monomers selected from the group consisting of [A1] vinyl esters of optionally branched C_{1-18} alkylcarboxylic acids, [A2] (meth)acrylic esters of optionally branched C_{1-15} alcohols, [A3] dienes, [A4] olefins, [A5] vinylaromatics and [A6] vinylhalides,

in the presence of

[B] a plasticizing copolymer comprising a copolymerisate comprising:

a) at least one monomer selected from the group consisting of [a1] acrylic acid, [a2] ethylenically unsaturated C_{4-8} monocarboxylic acids, [a3] ethylenically unsaturated C_{4-8} dicarboxylic acids, [a4] ethylenically unsaturated C_{4-8} dicarboxylic acid anhydrides, and [a5] salts thereof, in an amount of from about 10 to about 50 weight percent,

b) at least one ethylenically unsaturated monomer containing [b1] sulfonic [b2] sulfuric and/or [b3] phosphonic acid groups and/or [b4] salts thereof, in an amount of from about 10 to about 50 weight percent, and

c) at least one monomer selected from the group consisting of [c1] vinyl esters of optionally branched C_{1-18} alkylcarboxlyic acids

and [c2] (meth)acrylic esters of optionally branched C_{1-15} alcohols, in an amount of from about 20 to about 80 weight percent,

said weight percents based on the total weight of said plasticizing copolymer,

wherein the redispersible powder contains *from 5 to 20 weight percent of polyvinyl alcohol based on the weight of the redispersible powder*.

Rejections

The following rejections were made in the Examiner's non-final action dated 17 December 2010:

Rejection 1: Claims 16-17, 20-22, 24-25, and 30-38 were rejected under § 103(a) over Weitzel. Action, page 4; Answer, page 3.

Rejection 2: Claims 18-19 and 27-28 were rejected under § 103(a) over Weitzel and Haerzchel. Action, page 6; Answer, page 15 (responding to arguments).

Rejection 3: Claims 16-17 and 20-26 were rejected under § 103(a) over Sauer. Action, page 7; Answer, page 6.

Analysis

Rejection 1

Weitzel relates to "dispersion powder compositions which are [described as being] redispersible in water . . ." Col. 1:40-41.

The Weitzel powders are described as being useful in "modification of hydraulically setting compositions such as concrete . . ." Col. 4:53-55.

Examples 1 and 2, reproduced below, describe an embodiment of the Weitzel invention.

EXAMPLE 1

Preparation of the Water-Soluble Polymer

330 g of water were placed in a 2 l [liter] polymerization vessel and heated to 70 ºC. The following feed streams were subsequently metered in over a period of 3 hours:

Feed stream 1: 75 g of sodium styrenesulfonate in 600 g of water.

Feed stream 2: 50 g of methacrylic acid.

Feed stream 3: 75 g of ethyl acrylate.

Feed stream 4: 2 g of potassium peroxodisulfate in 70 g of water.

Polymerization was then continued for another 2 hours. This [polymerization] gave a solution having a solids content of 20.1%.

EXAMPLE 2

Production of the Dispersion Powder Composition

> 10000 g of a commercial 50% strength vinyl acetate-ethylene copolymer dispersion having an ethylene content of 12% by weight, stabilized with polyvinyl alcohol as protective colloid, was admixed with 5000 g of the aqueous solution from Example 1, homogeneously mixed and adjusted to a solids content of 30% by addition of water. This mixture was spray dried in a customary spray dryer using a two-fluid nozzle and an inlet temperature of 120 ºC. The drying gas used was air. To prevent conglutination of the powder, a mixture of talc and dolomite was introduced via a second nozzle in such an amount that the end product had a mineral content of 10% by weight. The powder obtained was free-flowing, blocking resistant and could easily be stirred into water to give a stable dispersion.

Weitzel does not describe the amount of polyvinyl alcohol present during spray drying step of Example 2.

Weitzel can be argued to differ from the subject matter of Claim 16 in that Weitzel does not explicitly describe a redispersible powder which contains *from 5 to 20 weight percent of polyvinyl alcohol based on the weight of the redispersible powder*.

However, the Examiner found that Weitzel describes the use of polyvinyl alcohol protective colloids in amounts of from 0.1 to 30%. Action, page 5.

Given the amount of protective colloid described by Weitzel, the Examiner concluded that it would have been obvious, absent an unexpected result, to use an

amount of polyvinyl alcohol to obtain a redispersible power containing the claimed amount of polyvinyl alcohol.

Applicant while conceding that polyvinyl alcohol is a well-known spray assistant (Brief, page 7), maintains that Weitzel, by providing new spray assistants, "teaches away" from the use of conventional spray assistants such as polyvinyl alcohol (*id.*). Explicit disclosure in Weitzel teaches otherwise. *See* (1) col. 4:42 describing polyvinyl alcohol as a dispersant in emulsion polymerization and (2) col. 5:11 (Example 2) describing the use of polyvinyl alcohol as a stabilizing protective colloid. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (("The prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed in the . . . application . . . [M]ere disclosure of alternative designs does not teach away.").

Applicant maintains that the rejection based on Weitzel "appears to be premised upon principles of inherency." Brief, page 8. The Examiner's rationale in support of the rejection belies any notion that the rejection is based solely on inherency. Example 2 describes the use of a vinyl acetate-ethylene copolymer stabilized with polyvinyl alcohol. Col. 5:9-11. Earlier, Weitzel describes making vinyl ester-ethylene copolymers. *See* (1) Col. 1:43-49, (item a); (2) col. 2:46-48 (describing inter alia vinyl acetate-ethylene copolymers); (3) col. 3:21-23 (stating a preference for making the polymers via emulsion polymerization; (4) col. 3:35-47 (describing protective colloids to stabilize dispersions); (5) col. 3:42 (describing use of polyvinyl alcohol as a dispersant) and (6) col. 3:45 (describing a preferable

use of from 0.1 to 30% of the dispersant). The "from 0.1 to 30%" range overlaps applicant's claimed range of "5 to 20 weight percent of polyvinyl alcohol . . ."

On the basis of the above-mentioned portions of Weitzel, the Examiner had a more than adequate reason for concluding that it would have been obvious to use polyvinyl alcohol in the amounts described by Weitzel absent convincing evidence of an unexpected result based on the use of applicant's amounts. Action, page 5. *In re Heyna*, 360 F.2d 222, 228 (CCPA 1966) ("It was incumbent upon appellants to submit clear and convincing evidence to support their allegation of unexpected property."). *See also McClain v. Ortmayer*, 141 U.S. 419, 429 (1891) (conclusive evidence needed to establish new function)

Applicant argues that Weitzel does not teach that its final composition contains 5-20% of protective colloid and therefore the Weitzel composition is not a "self-leveling hydraulically settable compositions." Brief, page 9. There is no indication in Example 2 that polyvinyl alcohol (in whatever amount used) is removed from the "mixture" which is spray dried. Moreover, we have not found in Weitzel any other discussion suggesting that the polyvinyl alcohol should be removed. Since Weitzel teaches the use of from 0.1 to 30% of protective colloids, Weitzel suggests that its final compositions contain a significant amount of protective colloid. The Weitzel product can be used to modify hydraulically setting compositions such as concrete. Col. 4:54-55. Applicant's Specification reveals that the "binder" of Claim 16 can be "hydraulically setting compounds such as Portland cement" (page 9:6-8). Based on the evidence called to our attention by applicant in addressing the rejection based on Weitzel, we are unable to find how the use described by Weitzel differs from that described and claimed

by applicant. Since the Weitzel compositions can have the same ingredients in the same amounts, the Examiner had a sufficient basis for finding that the Weitzel composition "must necessarily be self-leveling." Action, page 5; *In re Best*, 562 F.2d 1252, 1254-55 (CCPA 1970) ("[w]here, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product"). *See also In re Spada*, 911 F.2d 705, 708-9 (Fed. Cir. 1990) (same) and *In re Fitzgerald*, 619 F.2d 67, 70 (CCPA 1980) (same).

Applicant further argues that there is "absolutely no need for polyvinyl alcohol" in the Weitzel environment. Brief, page 10. Weitzel's description of a use of polyvinyl alcohol is a complete answer applicant's further argument.

Rejection 1 is *affirmed*.

Rejection 2

Claims 18-19

Claims 18-19 call for the use of partially or fully hydrolyzed polyvinyl alcohols.

Weitzel does not explicitly describe the use of partially or fully hydrolyzed polyvinyl alcohol.

To overcome the difference, the Examiner turned to Haerzschel. Action, page 6.

Haerzschel describes the use of the hydrolyzed polyvinyl alcohols called for by Claims 18-19 as dispersants for stabilizing polymerization mixtures. Col. 3:47-67.

The Examiner reasoned that it would have been obvious to use the known Haerzschel dispersants in the Weitzer process given that such a use would have been of a known material for its intended purpose, citing *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327 (1945). The combination of familiar elements (Haerzschel's hydrolyzed polyvinyl alcohol) according to known methods (those of both Weitzel and Haerzschel) is likely to be obvious when it does no more than yield predictable results. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

Applicant acknowledges that Haerzschel describes the use of hydrolyzed polyvinyl alcohol as protective colloid. Brief, page 10. Applicant argues, however, that Weitzel does not require the use of a protective colloid. *Id*. at pages 10-11. Applicant apparently has overlooked the teachings of Weitzel at col. 3:37 and col. 3:44.

Applicant maintains that Penzel "motivates against the use of polyvinyl alcohol in RDP's [redispersible polymer powders] for use in cement . . . compositions." *See* Brief, page 11, relying on col. 3:20-37 of Penzel, which reads (italics added):

> This problem of water resistance is of a general nature and presumably due to the fact that, in order to ensure satisfactory redispersibility in an aqueous medium, a spray assistant must have a certain hydrophilic character, which is in virtually insoluble contradiction to the requirement of satisfactory water resistance of the corresponding synthetic resin render and leads to the fact that the water resistance of the render based on the spray assistant-free aqueous polymer dispersion is usually higher than the water resistance

> of the render based on the redispersed spray-dried polymer powder containing spray assistant.
>
> This also applies to the spray assistants based on vinylpyrrolidone/vinyl acetate (EP-A 78 449) or *on polyvinyl alcohol* (DE-A 22 14 410).
>
> A further disadvantage of the prior art spray assistants is that they are not neutral with regard to the time of solidification of the modified mortars or concretes but, as a rule, greatly retard the solidification.

If Penzel stands for the proposition advanced by applicant, then arguably Penzel and Weitzel disagree on the use of polyvinyl alcohol as a protective colloid. Weitzel explicitly describes the use of polyvinyl alcohol as a protective colloid stabilizer. Example 2. We have no reason to doubt the objective statements made by Weitzel. *Cf. In re Spence*, 261 F.2d 244, 246 (CCPA 1958), which states that "[t]he invention disclosed in a patent is presumed to be operative because the patent enjoys a statutory presumption of validity *** and operativeness is a prerequisite to validity ***."; *In re Fried*, 329 F.2d 323, 327 (CCPA 1964) (applicant has the burden to establish that a process described in a patent to produce claimed product is inoperative and could not be made operative by the use ordinary skill in the art). *See also In re Antor Media Corp.*, 689 F.3d 1282, 1289 (Fed. Cir. 2012) (both patent and non-patent prior art publications are presumed to be enabling). To the extent that there is an inconsistency between Weitzel and Penzel as to what is described in Weitzel, we credit Weitzel over Penzel. Penzel (originally filed in 1993 in Germany) does not address the invention described by

Weitzel (first published in 1997). Weitzel does not indicate that the problems described by Penzel are a concern in the environment in which Weitzel uses its compositions.

Claims 27-28

Claim 27 calls for the binder to be among other things "cement" and Claim 28 further limits the cement to "Portland" cement. Applicant does not present any serious argument concerning this limitation. Haerzschel describes the use of Portland cement. Col. 4:44-45.

Decision on Rejection 2

Rejection 2 is *affirmed*.

Rejection 3

Rejection 3 is based on Sauer. Action, page 7; Answer, page 6.

The Examiner found that Sauer differs from Claim 16 in that Sauer does not describe the claimed amounts of polyvinyl alcohol. Answer, page 7.

Sauer describes the use of polyvinyl alcohol protective colloids in amounts of from 0.01 to 30% by weight of monomers used to make a polymer. Col. 2:62 to col. 3:11. Example 1 describes the use of polyvinyl alcohol. Col. 6:55.

Much of our discussion in support of affirmance of Rejection 1 applies with equal force to Rejection 3.

Applicant concedes that Sauer describes the use of a protective colloid. Brief, page 12. However, according to applicant, "a plethora of possible protective colloids is disclosed, of which polyvinyl alcohol is but one." *Id*. We have no reason to doubt Sauer's statement that any of the protective colloids, including polyvinyl alcohol, would be suitable. *In re Spence*, *supra*. Nor do we perceive a

reason why one skilled in the art should not be free to select any of the protective colloids described by Sauer for use in Sauer's process. *Cf. Sinclair & Carroll Co., Inc. v. Interchemical Corp.*, 325 U.S. at 335 (reading a list and selecting a known compound to meet known requirements is not more ingenious than selecting the last piece to put into the last opening in a jig-saw puzzle; it is not "invention" (i.e., non-obviousness)). Moreover, as noted earlier, Sauer describes use of polyvinyl alcohol in Example 1.

Applicant discusses other Sauer examples in what is essentially an attempt to limit Sauer's teachings to its examples. The teachings of a patent are not limited to its examples. *In re Mills*, 470 F.2d 649, 651 (CCPA 1972); *In re Chapman*, 357 F.2d 418, 424 (CCPA 1966).

Applicant notes that the claims on appeal are not directed to polymer compositions. Brief, page 13. Rather, the claims are directed to self-leveling hydraulically settable flooring compositions. Like Weitzel, Sauer teaches that its compositions are suitable for the modification of hydraulically setting compositions such as concrete. Sauer col. 6:20-22. As noted earlier, one of the binders which applicant says are useful in its invention is concrete. Specification, page 9:8. On the record, it would appear prima facie that the Sauer compositions when used with concrete would have similar properties.

Based on Rule 132 testimony of inventor Haerzschel, applicant argues that due to hydroxyl groups of polyvinyl alcohol and the presence of acid groups on the polymers esterification would be expected thereby rendering the Sauer products non-redispersible. Brief, paragraph bridging pages 13-14. In this respect,

applicant maintains based on Taylor that a catalyst is not needed for esterification to occur.

According to Dr. Haerzschel, "[i]t is well known that stabilization of acid-functional polymer dispersions for spray drying into redispersible powders is problematic." Declaration, ¶ 5. Dr. Haerzschel suggests that hydroxyl groups on the polyvinyl alcohol may react at spray drying temperatures with acid functional groups on a polymer being sprayed. *Id*. Further according to Dr. Haerzschel, "there was a distinct prejudice in the art for using protective colloids containing large amounts of hydroxyl groups as a protective colloid for acid-functional polymers. Dr. Haerzschel goes on to explain why: "[it is said that] [t]he polymer would not then disperse."

The Examiner considered and addressed the Haerzschel Declaration. Answer, pages 18-19; Action, pages 16-17 (which are part of ¶ 9 which begins at page 11).

The Examiner declined to give controlling weight to the Declaration. The Examiner found that much of the possible hydroxyl group/acid group reaction "is not backed up [with] evidentiary data." Answer, page 18. We will assume, without deciding, that Dr. Haerzschel is an expert in the field of chemistry. However, while opinion testimony rendered by experts is entitled to consideration, lack of factual support for expert opinion may render the testimony of little probative value. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004). *See also Rohm and Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997) (nothing in Federal Circuit jurisprudence requires a fact finder to credit the unsupported assertions of an expert witness). The Examiner had a sufficient

reason for declining to credit Dr. Haerzschel's opinions to the extent they were not supported by evidence, particularly in light of the fact that both Weitzel and Sauer arguably contradict Dr. Haerzschel's opinions.

With respect to experiments reported in the Declaration, the Examiner found that spray dried inventive Examples 3-5 outperformed inventive compositions that were merely blended. Answer, page 18. However, the Examiner noted that Sauer and Weitzel spray dry. The relevance of a data based on blends was not apparent.

The Examiner also found that "inventive example 5 demonstrates superior performance over closest comparative examples 9 and 10 that read on Sauer compositions . . ." Answer, page 18. It is not clear whether the Examiner's reference to "superior" is equivalent to "unexpected." In any event, the Examiner found that Example 5 is not commensurate in scope with the breadth of the claims. Applicant responds by maintaining that the Sauer compositions do not exhibit a "plasticizing effect" to quote Dr. Haerzschel (Declaration, page 4). Dr. Haerzschel testified (*id.*):

> [W]hen the subject invention copolymers, containing both carboxylic acid functionality and sulfonic, sulfuric, or phosphoric acid functionality are used with polyvinyl alcohol as a protective colloid, high plasticization is achieved. This result [i.e., high plasticization] is highly surprising and unexpected, and there is no satisfactory scientific explanation for this anomalous behavior

Dr. Haerzschel's discussion of "surprising and unexpected results" presumably is based on Declaration Examples 3-5. Those examples are limited to use of sulfopropyl acrylate (an acrylate with a sulfonic acid group). Dr. Haerzschel

points to no evidence showing that monomers containing sulfuric or phosphonic acid groups (Claim 16) obtain the unexpected result about which Dr. Haerzschel has testified. *In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972) (inventor must show that the results the inventor says the inventor gets with the invention are actually obtained with the invention). Hence, the Examiner has a fact-based point that the data is not commensurate in scope with the breadth of the claims.

Related to the discussion of the data is an argument by applicant that "as indicated by Comparative Examples 9 and 10 [of the Haerzschel Declaration], the polymers exemplified by *Sauer* do not have plasticizing properties." Brief, page 17 (italics and underscore in original). Applicants also argue that "[t]he *Sauer* polymers showed virtually no self-leveling ability . . ." *Id*. (italics and underscore in original). We note that in Table 2 on page 11 of the Declaration, C. Ex. 9 and C. Ex. 10 report leveling values of from 11.1 to 12.0. Unfortunately, we have not been pointed to convincing explanation in the record as to the significance of a leveling value from 11.1 to 12.0. We have no cogent basis for finding that a leveling value of 11.1 to 12.0 means "no self-leveling ability" or no plasticizing properties. Furthermore, we have no cogent basis for finding that use of sulfuric acid or phosphonic acids groups would not yield leveling values similar to those of Comparative Examples 9 and 10.

Rejection 3 is *affirmed*.

Other arguments

We have considered applicant's remaining arguments and find none that warrant reversal of the Examiner's rejections. *Cf. In re Antor Media Corp.*, 689 F.3d at 1294.

Decision

Upon consideration of the appeal, and for the reasons given herein, it is

ORDERED that the decision of the Examiner rejecting claims 16-28 and 30-38 over the prior art is *affirmed*.

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

AFFIRMED

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