UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte JOSEPH B. SCHLENOFF

Appeal No. 2006-2413
Application No. 10/250,412

ON BRIEF

Before MILLS, GRIMES, and LINCK, Administrative Patent Judges.

GRIMES, Administrative Patent Judge.

DECISION ON APPEAL

This appeal involves claims to cementitious mixtures containing polyelectrolytes, and methods of making the mixtures. The examiner has rejected the claims as anticipated or obvious. We have jurisdiction under 35 U.S.C. § 134. We reverse.

Background

"Portland cement is one of the most widely used materials in the construction industry. . . . For example, conventional 'concrete' is a cementitious mixture comprising portland cement, water and aggregate, such as sand or a mixture of sand with gravel. . . . The cement is the matrix that, when mixed with water, hardens and bonds the aggregate particles into a rigid solid." Specification, page 1.

Because they behave like fluids in their working state, "cementitious mixtures tend to sag, run or slump during and immediately after application" to ceilings or sloping or vertical surfaces. Id. Also, spraying cementitious mixtures onto surfaces can be inefficient because the mixtures tend to spatter or bounce off the surfaces being coated. Id., page 2.

"Typically, the method of increasing viscosity is to add less water to the cementitious mixture." Id. However, lowering the water content "significantly decreases the working time of the cement. Decreased water premix concrete, for example, could harden before delivery." Id. Decreasing the water content of cementitious mixtures also makes pumping the mixture more difficult, and can adversely affect the mechanical properties of the final product. Id.

The specification discloses that the viscosity of a cementitious mixture can be controlled "without negatively affecting the working ability or final mechanical properties of the set and/or hardened cementitious mixture" by adding a polyelectrolyte comprising a positively charged repeat unit and a polyelectrolyte comprising a negatively charged repeat unit. Id.

Suitable polyelectrolytes comprising a positively charged repeat unit include polymers containing a quaternary ammonium group in the repeat unit, such as poly(diallyldimethylammonium chloride)(PDAD), as well as polymers containing a pyridinium group in the repeating unit, such as poly(N-methylvinylpyridine)(PMVP). Page 6. Suitable polyelectrolytes comprising a negatively charged repeat unit include polymers containing a sulfonate group in the repeat unit, such as poly(styrenesulfonic acid) (PSS), as well as sulfate-containing polymers, such as carragenin. Pages 5-6.

Discussion

1. Claim construction

Claims 3-19, 21-23, 25-40, and 52-56 are pending and on appeal. The independent claims are claims 27 and 54-56, which read as follows:

27. An aqueous cementitious mixture comprising:

a. Portland cement;

b. water;

c. a predominantly negatively-charged polyelectrolyte comprising a negatively-charged repeat unit; and

d. a predominantly positively-charged polyelectrolyte comprising a positively-charged repeat unit;

wherein the water and Portland cement are present in the aqueous cementitious mixture in a weight ratio of about 1:3 to about 3:5, respectively.

54. A process for forming an aqueous cementitious mixture with increased viscosity during its working state, the process comprising

forming an aqueous cementitious mixture comprising water, Portland cement, a predominantly negatively-charged polyelectrolyte and a predominantly positively-charged polyelectrolyte, the water and Portland cement being in a weight ratio of about 1:3 to about 3:5, respectively, wherein

(i) the water, Portland cement and, optionally, one of the predominantly negatively-charged and predominantly positively-charged polyelectrolytes are mixed to form an initial mixture, and

(ii) the viscosity of the initial mixture is increased by adding one or both of the predominantly negatively-charged polyelectrolyte and the predominantly positively-charged polyelectrolyte to the initial mixture to form the aqueous cementitious mixture.

55. A process for forming an aqueous cementitious mixture with increased viscosity, the process comprising

mixing a predominantly negatively-charged polyelectrolyte with Portland cement to form a dry mix; and

combining the dry mix with water and a predominantly positively-charged polyelectrolyte in a compressed gas spraying apparatus to form the aqueous cementitious mixture.

56. A process for forming an aqueous cementitious mixture with increased viscosity, the process comprising

mixing a predominantly positively-charged polyelectrolyte with Portland cement to form a dry mix; and

combining the dry mix with water and a predominantly negatively-charged polyelectrolyte in a compressed gas spraying apparatus to form the aqueous cementitious mixture.

Thus, claim 27 is directed to a composition comprising four ingredients: Portland cement, water, and two polyelectrolytes: a "predominantly negatively-charged polyelectrolyte comprising a negatively-charged repeat unit" and "predominantly positively-charged polyelectrolyte comprising a positively-charged repeat unit." The specification states that "[t]he polyelectrolytes of the present invention are water soluble polymers which comprise a repeat unit that is positively or negatively charged." Page 4, lines 29-30. This definition is consistent with the art-recognized meaning of "polyelectrolyte." See Hawley's Condensed Chemical Dictionary 893 (14th ed. 2001) (a polyelectrolyte is a "high-polymer substance, either natural (protein, gum arabic) or synthetic (polyethyleneimine, polyacrylic acid salts), containing ionic constituents; may be either cationic or anionic"). Thus, one of skill in the art would have recognized that a "polyelectrolyte" is a polymeric substance having more than one ionic group.

The plain meaning of a "repeat unit" in a polymer is a chemical structure that is repeated (present in at least two copies) in the polymer. The claimed composition comprises a polymer having an overall negative charge and including a repeat unit having a negative charge and a second polymer having an overall positive charge and including a repeat unit having a positive charge. The claim also requires a Portland cement to water ratio of about 1:3 to about 3:5.

Claim 54 is directed to a process of preparing an aqueous cementitious mixture having an increased viscosity. The final mixture contains water and Portland cement,

again in a ratio of about 1:3 to 3:5, as well as a predominantly negatively charged polyelectrolyte and a predominantly positively charged polyelectrolyte. In the first step, water is mixed with Portland cement. One or the other of the polyelectrolytes may also be included in this initial mixture. In the second step, the final mixture is formed by adding the remaining polyelectrolyte or both polyelectrolytes to the initial mixture.

Claims 55 and 56 are also directed to processes of preparing aqueous cementitious mixtures having increased viscosities. In both of claims 55 and 56 an initial dry mix is prepared with Portland cement and a polyelectrolyte. In claim 55 the initial dry mixture is a combination of Portland cement and a predominantly negatively charged polyelectrolyte. In claim 56 the initial dry mix contains Portland cement and a predominantly positively charged polyelectrolyte. Claims 55 and 56 then require the dry mix to be combined with water and the other polyelectrolyte. The claims also require the ingredients to be combined in a compressed gas spraying apparatus.

2. Anticipation

The examiner has rejected claims 3-19, 21-23, 25-40, and 52-56, all of the pending claims, under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Izumi '807,[1] Nadolsky,[2] or Pomerhn.[3] Answer, pages 4-10. We agree with Appellant that the examiner has not established a prima facie case of anticipation based on the cited references.

In rejecting the claims over Izumi '807 the examiner urges that "Izumi et al. teach forming an aqueous mixture comprising Portland cement, predominantly negatively

[1] Izumi et al., U.S. Patent 5,720,807, issued February 24, 1998.
[2] Nadolsky et al., U.S. Patent 5,112,603, issued May 12, 1992.
[3] Pomerhn et al., U.S. Patent 3,985,610, issued October 12, 1976.

charged polyelectrolyte, predominantly positively charged polyelectrolyte and a water/Portland cement ratio in appellants' [sic] claimed range which leads to an increase in viscosity of the cement mixture." Id. at page 7(citation omitted).

We do not agree that Izumi '807 meets the limitation in claims 27 and 54-56 requiring the cementitious mixture to contain "a predominantly positively-charged polyelectrolyte."

In addressing this limitation, the examiner points out that Izumi '807 teaches that the disclosed cementitious mixtures may contain a "thickening accelerator" which "can be at least one member selected from the group consisting of an anionic, a cationic, an ampholytic and a non-ionic surfactant (see claim 3 in column 12)." Answer, page 5 (emphases in original). The examiner notes that "Izumi teaches their cationic surfactants can be compounds such as alkyltrimethylammonium chlorides, alkylbenzyldimeth[y]lammonium chlorides, and alkylamine acetates (col. 4, lines 18-20)." Id. at page 6.

The examiner also urges that while Appellant's specification discloses at page 4 that the preferred polyelectrolytes are water soluble polymers, the claims do not require the polyelectrolytes to be polymeric, because "it is improper to read the limitations of the specification into the claims." Answer, page 6. Thus, urges the examiner, "the polyelectrolytes can be inclusive of other polyelectrolytes such as those within the teaching of Izumi that may not be water soluble polymers." Id.

However, contrary to the examiner's argument, claim 27 explicitly requires the polyelectrolyte to be polymeric by requiring it to comprise a "positively-charged repeat unit." Moreover, although claims 54-56 do not use the term "repeat unit," they do recite

"polyelectrolytes." As discussed supra, the term "polyelectrolyte" is defined in the specification and understood in the art to mean a polymer having a charged repeat unit; i.e., having more than one ionic group. In our view, because they are not polymeric and have only a single positive charge, the cationic surfactants listed by Izumi '807 do not meet the limitation in claims 27 and 54-56 requiring "a predominantly positively-charged polyelectrolyte" in the cementitious mixture. In addition, the examiner has not pointed to any composition disclosed by Izumi '807 that contains both a positively charged polyelectrolyte and a negatively charged polylelectrolyte, as required by claims 27 and 54-56.

The examiner points out that "Izumi can include water soluble polymers of negative or positive charge (anionic or cationic) because he teaches up to a molecular weight of 5000 for his cationic and anionic surfactants." Answer, page 6. We note that Izumi '807 states at column 4, lines 6-9, that "any of anionic, cationic, ampholytic and nonionic surfactants can be used as the thickening accelerator having a weight-average molecular weight of at most 5,000."

However, while Izumi '807 lists a number of polymeric surfactants which can be used as thickening accelerators, none of the cationic surfactants in that list are polymeric. See Izumi '807, column 4, lines 6-28. Further, there is no disclosure of a surfactant with charged repeat units. Thus, taken in context, Izumi '807's molecular weight limitation on the surfactant component of the cementitious mixture does not adequately describe a predominantly positively charged polyelectrolyte, within the meaning of 35 U.S.C. § 102. See Gechter v. Davidson, 116 F.3d 1454, 1457, 43 USPQ2d 1030, 1032 (Fed. Cir. 1997) ("Under 35 U.S.C. § 102, every limitation of a

claim must identically appear in a single prior art reference for it to anticipate the claim.").

Because Izumi '807 does not describe an aqueous cementitious mixture comprising a predominantly positively charged polyelectrolyte and a predominantly negatively charged polyelectrolyte, it does not anticipate claims 27 and 54-56, or their dependent claims.

In rejecting the claims over Nadolsky, the examiner states that "[i]t is because Nadolsky teaches adding a cationic polymer and potentially an anionic surfactant that Nadolsky anticipates the instantly claimed invention. Nadolsky does not limit his addition of an anionic surfactant to only cleaning compositions because anionic surfactants are notoriously known conventional cement additive[s]." Answer, pages 7-8.

We do not agree that Nadolsky meets the limitation requiring the cementitious mixture to contain a predominantly negatively charged polyelectrolyte.

We note that Nadolsky discloses the use of polyquaternary compounds combined with smectite clays as thickening agents for aqueous compositions including "concrete additives," and that "these complexes could serve to decrease the concrete's density and prolong the drying time, thus decreasing the tendency to form cracks." Nadolsky, column 5, lines 17-27. We also note that Nadolsky discloses that the polycationic thickening agents, "together with an anionic . . . detergent . . . may be employed in cleansing compositions such as shampoos and cleansing creams and lotions, for example, skin care creams, liquid soaps and facial makeup removal lotions." Nadolsky, column 9, lines 61-66.

However, while the genus "anionic . . . detergent" (Nadolsky, column 9, lines 62-63), may encompass some predominantly negatively charged polyelectrolytes, it also encompasses a large number of other possible compounds. Therefore, in our view, the examiner has not adequately explained how Nadolsky's "anionic detergent" genus would have suggested the predominantly negatively charged polyelectrolyte recited in claims 27 and 54-56.

Moreover, Nadolsky discloses that the anionic surfactant can be combined with the polyquaternary thickening agent in personal care compositions, not cementitious compositions. The fact that "anionic surfactants are notoriously known conventional cement additive[s]" (Answer, page 8) does not amount to a disclosure in Nadolsky describing the use of a predominantly negatively charged polyelectrolyte in a cementitious mixture. As noted supra, for a reference to anticipate, "every limitation of a claim must identically appear in a single prior art reference." Gechter, 116 F.3d at 1457, 43 USPQ2d at 1032.

To summarize, because Nadolsky does not describe a cementitious mixture comprising a predominantly negatively charged polyelectrolyte, Nadolsky does not anticipate claims 27 and 54-56, or their dependent claims.

In rejecting the claims as being anticipated by Pomerhn, the examiner states that "Pomerhn anticipates the . . . claimed invention because he adds a cationic polyelectrolyte and anionic polyelectrolyte which leads to an increase in viscosity of the cement slurry." Answer, page 9. The examiner concedes, however, that "Pomerhn may potentially not anticipate" the claims because it does not describe the claimed water to Portland cement ratio. Id.

In our view, the examiner's concession is correct. That is, the examiner has not demonstrated that Pomerhn explicitly or inherently describes a water to Portland cement ratio of about 1:3 to 3:5, as required in claims 27 and 54 and their dependent claims.

Pomerhn discloses preparing asbestos-containing cement sheets using "[s]ufficient water as required in the well-known cylinder method of wet forming." Pomerhn, column 1, lines 66-68; column 3, lines 49-51. Thus, the precise amount of water used is not clear from the reference's disclosure. The reference therefore does not explicitly disclose the water:cement ratio recited in claims 27 and 54.

In establishing the inherent disclosure of a reference, the examiner may refer to extrinsic evidence demonstrating that the descriptive matter missing from the reference is necessarily present in the reference's disclosure. Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991) ("To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence.").

However, the examiner has not explained why the water:cement ratio used in Pomerhn's "well-known cylinder method of wet forming" inherently falls within the amount recited in claims 27 and 54. Because the examiner has not explained why Pomerhn explicitly or inherently describes the water:cement ratio recited in claims 27 and 54, the examiner has, in our view, failed to make out a prima facie case of anticipation with respect to those claims.

With respect to claims 55 and 56, the examiner does not point to, and we do not see, where Pomerhn discloses preparing a cementitious mixture in a compressed gas

spraying apparatus. We therefore reverse the anticipation rejection of claims 55 and 56 over Pomerhn.

To summarize, because the examiner has not established that Izumi '807 describes a cementitious mixture comprising a predominantly positively charged polyelectrolyte, we reverse the anticipation rejection over Izumi '807. Because the examiner has not established that Nadolsky describes a cementitious mixture comprising a negatively charged polyelectrolyte, we reverse the anticipation rejection over Nadolsky.

Moreover, because the examiner has not established that Pomerhn explicitly or inherently discloses a water:cement ratio of about 1:3 to 3:5, we reverse the anticipation rejection of claims 27 and 54, and their dependents, over Pomerhn. Lastly, because the examiner failed to establish that Pomerhn discloses preparing a cementitious mixture in a compressed gas spraying apparatus, we reverse the anticipation rejection of claims 55 and 56 over Pomerhn.

3. Obviousness

As noted supra, the examiner has alternatively rejected claims 3-19, 21-23, 25-40, and 52-56 under 35 U.S.C. § 103(a) as obvious over Izumi '807, Nadolsky, or Pomerhn. Answer, pages 4-10.

In addition to these references, the examiner relies on Izumi '316[4] "to show surfactants are notoriously known and conventional additives to cement/concrete compositions," and relies on Burge[5] to show that it "is notoriously known in the art that

[4] Izumi et al., U.S. Patent 5,674,316, issued October 7, 1997.
[5] Burge et al., U.S. Patent 5,389,144, issued February 14, 1995.

concrete or mortar can be sprayed." Id.

"In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. '[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.'" In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (citations omitted, bracketed material in original).

We agree with Appellant that the examiner has not established a prima facie case of obviousness based on the cited references.

As discussed supra, Izumi '807 does not, in our view, disclose the limitation requiring the cementitious mixture to contain a predominantly positively charged polyelectrolyte, as required in each of the independent claims. As to the issue of obviousness, the examiner has not provided specific reasons why one of ordinary skill in the art would have added a predominantly positively charged polyelectrolyte to Izumi 807's aqueous cementitious compositions.

We recognize that claim 3 of Izumi '807 (column 12, lines 56-59) recites that the cementitious mixture can contain a thickening accelerator that "is at least one member selected from the group consisting of an anionic, a cationic, an ampholytic and a nonionic surfactant." We also note that Izumi '807 discloses (column 4, lines 6-9) that the surfactants used as thickening agents have a molecular weight of "at most 5,000."

However, as cationic surfactants Izumi '807 lists only monomeric compounds having a single positive charge. We do not see, and the examiner does not explain,

where Izumi ‘807 discloses that it would have been suitable or desirable to have substituted the predominantly positively charged polyelectrolytes required by the claims for the single charge monomeric surfactants disclosed by Izumi ‘807. Because Izumi ‘807 discloses only monomeric compounds as cationic surfactant thickening agents, the disclosure that the thickening agents may have a molecular weight of “at most 5,000” would not, in our view, have led the skilled artisan to have used positively charged polyelectrolytes in the disclosed cementitious mixtures.

Moreover, we do not see, and the examiner does not indicate, where either Izumi ‘316 or Burge teaches or suggests the suitability or desirability of including a predominantly positively charged polyelectrolyte in the aqueous cementitious mixtures of Izumi ‘807. Therefore, in our view, the examiner has not made out a case of prima facie obviousness based on Izumi ‘807, even when viewed in light of Izumi ‘316 and Burge. We reverse the obviousness rejection of claims 3-19, 21-23, 25-40, and 52-56 over Izumi ‘807, including the combination of Izumi ‘807 with Izumi ‘316 and Burge.

In rejecting the claims over Nadolsky, the examiner points out that “it is also old in the art to add a surfactant to a concrete/cement composition because it is also a conventional additive (see, for example, Izumi et al. 5,674,316, [sic, column 6?] lines 26-36).” Answer, page 7. Thus, urges the examiner, “[e]ven if not anticipated, it would have at least been obvious to one of ordinary skill in the art because it[’]s old to use an anionic surfactant . . . as a conventional additive in a thickening agent additive to increase the viscosity of aqueous systems such as cement/concrete.” Id. at page 8.

The examiner summarizes his position by stating that “the addition of conventional additives to cement can contain a negative charge and fall into the

category of a negative polyelectrolyte." Id. at pages 15-16. Thus, the examiner in effect urges that because surfactants are conventional cement additives, and because some surfactants are known to have negative charges, one of ordinary skill would have been motivated to add a negatively charged polyelectrolyte to the positively charged polyelectrolyte-containing concrete compositions disclosed by Nadolsky at column 5, lines 24-27.

We do not find the examiner's argument persuasive. The examiner does not point to, and we do not see, anywhere in Nadolsky or Izumi '316 disclosing that a negatively charged polyelectrolyte is a surfactant conventionally added to aqueous cementitious mixtures.

We note that at column 6, lines 26-36, Izumi '316 includes "surface active agents" and "other water soluble polymers" among a list of many "cement additives." However, Izumi '316 does not state that the negatively charged polyelectrolytes recited in claims 27 and 54-56 are conventional cement additives. Moreover, in reviewing Nadolsky and Izumi '316, we do not see, and the examiner does not point to, anything suggesting that it would have been suitable or desirable to have included a negatively charged polyelectrolyte in the positively charged polyelectrolyte-containing concrete compositions disclosed by Nadolsky.

As pointed out by the examiner (Answer, page 7), Nadolsky discloses (column 9, lines 62-66) that polycationic thickening agents can be combined "with an anionic . . . detergent . . . in cleansing compositions such as shampoos and cleansing creams and lotions, for example, skin care creams, liquid soaps and facial makeup removal lotions." Thus, Nadolsky's sole disclosure of combining a positively charged polyelectrolyte with

any negatively charged species is in the context of personal care products, not cementitious mixtures. Moreover, in this disclosure Nadolsky mentions nothing about the negatively charged polyelectrolytes required in claims 27 and 54-56.

In our view the examiner has not provided sufficient evidence or reasoning that would have led one skilled in the art to add a negatively charged polyelectrolyte to the positively charged polyelectrolyte-containing concrete compositions disclosed by Nadolsky. We therefore reverse the obviousness rejection of claims 3-19, 21-23, 25-40, and 52-56 over Nadolsky, even as combined with Izumi '316.

As discussed supra, we hold that Pomerhn does not anticipate claims 27 and 54 because it does not disclose the water to Portland cement ratio required by those claims. The examiner urges that even if Pomerhn does not teach the water:cement ratio recited in claims 27 and 54 "the range of W/C (water/cement) claimed by appellant[] is that which is typically and conventionally used for an aqueous cement mixture and would have been obvious to one of ordinary skill in the art." Answer, page 9.

We do not agree with the examiner's reasoning. Pomerhn discloses the production of asbestos-containing cement sheets in a process in which a cationic polyacrylamide retention aid and an anionic polyacrylamide flocculating aid are added to a cementitious mixture before it is formed into sheets. Column 2, line 37, through column 3, line 2. As discussed supra, Pomerhn uses "[s]ufficient water as required in the well-known cylinder method of wet forming." Column 1, lines 66-68; column 3, lines 49-51.

Thus, Pomerhn does not describe the amount of water used in its process as the amount "typically and conventionally used for an aqueous cement mixture." The examiner has not adequately explained why the the amount of water required to prepare asbestos-containing cementitious sheets by the cylinder method of wet forming would have understood by those skilled in the art to be the same as the amount of water "typically and conventionally used for an aqueous cement mixture." Thus, the examiner's argument fails to address the issue of why those skilled in the art would have found it obvious to use the amount of water recited in claims 27 and 54 in Pomerhn's mixture.

Moreover, we do not see, and the examiner does not point to, any other disclosure in Pomerhn or Izumi '316 that would have led one skilled in the art to prepare an aqueous cementitious mixture containing the claimed amounts of water and Portland cement.

Because the examiner has not articulated why Pomerhn would have led a skilled worker to prepare an aqueous cementitious mixture as recited in claims 27 and 54, the examiner has not established the prima facie obviousness of those claims. We therefore reverse the obviousness rejection of claims 27 and 54, and their dependents, over Pomerhn, including when applied in combination with Izumi '316.

As discussed supra, Pomerhn does not anticipate claims 55 and 56 because Pomerhn does not disclose preparing cementitious mixtures in compressed gas spraying apparatuses. The examiner has cited Burge to show that it "is notoriously known in the art that concrete or mortar can be sprayed." Answer, page 4.

As stated in In re Kotzab, 217 F.3d 1365, 1369-70, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000) (citation omitted), "identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant."

The examiner has not adequately explained why a skilled worker preparing Pomerhn's cementitious sheets would have prepared the sheet-making mixture in the spraying apparatus recited in claims 55 and 56, rather than using the sheet-making machines disclosed by Pomerhn (column 1, lines 7-16). Reviewing the references, we do not see and the examiner does not point to anything suggesting that the sheet-making cementitious mixture in Pomerhn should be prepared in the spraying apparatus recited in claims 55 and 56.

Because the examiner has not shown that the teachings of Pomerhn and Burge would have led a skilled worker to prepare the aqueous cementitious compositions of Pomerhn in a compressed gas spraying apparatus, the examiner has not established that claims 55 and 56 are prima facie obvious in view of those references. We therefore reverse the obviousness rejection of claims 55 and 56 over Pomerhn, even when viewed in light of Burge.

To summarize, in our view, the examiner has not adequately explained why each of Izumi '807, Nadolsky and Pomerhn, even when combined with Izumi '316 and Burge, would have led one skilled in the art to the compositions and processes recited in the claims. We therefore reverse the obviousness rejections of claims 3-19, 21-23, 25-40 and 52-56 over Izumi '807, Nadolsky and Pomerhn.

REVERSED

Demetra J. Mills Administrative Patent Judge	)
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Eric Grimes Administrative Patent Judge	) APPEALS AND
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EG/FP/jlb

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