Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ROBERT H. MOFFETT

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Appeal No. 2003-1274
Application No. 09/802,712

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ON BRIEF

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Before KIMLIN, KRATZ and PAWLIKOWSKI, Administrative Patent Judges.
KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's refusal to allow claims 1, 3, 4, 9, 10, 14 and 16. Claims 5-8, 11-13, 15 and 17-20, which are all of the other claims pending in this application, have been indicated as allowable by the examiner.

BACKGROUND

Appellant's invention relates to a process for treating a biomaterials-containing aqueous stream by adding a cationic organic polymer thereto after several pH adjustment steps. According to appellant's specification (pages 2 through 4), the treatment process will result in the reducing the amount of soluble and insoluble biomaterials in an aqueous stream obtained from a food processing plant or other processing operation. A further understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

> 1. A process comprising in sequence (1) adjusting the pH of a substantially aqueous stream comprising biomaterials to a first pH of less than pH 3 to produce a first pH-adjusted stream; (2) adjusting the pH of the first pH-adjusted stream to a second pH greater than pH 3 to produce a second pH-adjusted stream; and (3) adding an effective amount of a flocculant which is a cationic organic polymer to the second pH-adjusted stream.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Davis	4,013,555	Mar. 22, 1977
Keys et al. (Keys)	4,966,713	Oct. 30, 1990
Chung et al. (Chung)	5,597,490	Jan. 28, 1997

Claims 1, 3, 4, 9 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Davis in view of Chung. Claims 10 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Davis in view of Chung and Keys.

We refer to the brief and reply brief and to the answer for a complete exposition of the opposing viewpoints expressed by appellant and the examiner concerning the issues before us on this appeal.

OPINION

Having carefully considered each of appellant's arguments that are presented and set forth in the brief and reply brief before us in this appeal, appellant has not persuaded us of reversible error on the part of the examiner.[1] Accordingly, we will affirm the examiner's rejections for substantially the reasons set forth by the examiner in the answer. We adopt the examiner's factual findings set forth in the answer and substantially agree with the examiner's reasoning and rebuttal of arguments as set forth in the answer. We add the following primarily for emphasis.

[1] See 37 CFR § 1.192(a).

Appellant states that the "claims on appeal shall stand or fall together" (brief, page 3). Consequently, we select claim 1 as the representative claim on which we shall decide this appeal as to the examiner's first stated rejection.

Like the process set forth in appellant's representative claim 1, appellant does not dispute the examiner's determination that Davis discloses a process including the steps of: (1) adjusting the pH of an aqueous stream comprising biomaterials to a pH less than 3; (2) adjusting the pH of that first adjusted pH stream to a pH of 6-7.5 (a pH greater than 3; and then (3) adding a flocculant to the second pH adjusted stream. As noted by appellant, Davis prefers to add an anionic acrylamide flocculant (column 2, lines 3-6 of Davis) whereas appellant's representative claim requires the addition of a cationic organic material.

As pointed out by the examiner, however, Chung discloses that using both cationic and anionic flocculants aids in coagulating and removing various biomaterials from aqueous streams containing such. The aqueous streams to be treated in Chung, like those of Davis, may be waste waters from food processing that contain fats and other biocontaminants.

Based on the combined teachings of Davis and Chung, the examiner has reasonably determined that it would have been prima

facie obvious to employ a cationic polymer in place of or in addition to the anionic polymer of Davis to aid in removing biomaterials from the waste stream of Davis.

In opposition to the examiner's rejection, appellant speculates that ". . . Davis would have disclosed that a cationic polymer could be used unless Davis discovered that a cationic polyacrylamide did not work in the system disclosed therein" (brief, page 4). Also, appellant contends that "[b]ecause Chung et al does not suggest that any polymer, anionic or cationic, other than the silicon-containing coagulant therein can be used alone, Chung et al cannot and does not suggest combining its disclosure with Davis" (brief, page 5).

We disagree with appellant's limited characterization of the combined teachings of the applied references as they would be understood by one of ordinary skill in the art. In essence, appellant seemingly argues that both Chung and Davis would have to describe all of the here claimed method steps in an anticipatory manner in order to be combinable and render the claimed subject matter unpatentable. Of course, that is not the legally mandated test for combining references. While there must be some teaching, reason, suggestion, or motivation to use the cationic polyamide flocculant of Chung in the process of Davis to

result in the claimed process, it is not necessary that the cited references specifically suggest making that particular combination. Rather, the test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

Moreover, in evaluating such references it is proper to take into account not only the specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

Here, we determine that there is ample motivation in the combined teachings of the references to have modified the process of Davis to include another flocculant comprising a cationic polymer as taught by Chung with a reasonable expectation of success in achieving a process corresponding to appellant's process. See In re O'Farrell, 853 F.2d 894, 903-904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988). This is so since it would have been well within the ordinary skill in the art to combine two well known flocculants to aid in coagulating and flocculating biomaterials in the pH adjusted aqueous stream of Davis. As

explained by the examiner, each of the flocculants which is taught by the prior art to be useful for the purpose of coagulating or flocculating a waste materials in an aqueous stream for achieving at least the additive effects of each. See In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Moreover, Chung[2] teaches that more than one flocculent may be employed and that anionic, cationic or amphoteric flocculants are interchangeable or alternatives. See, e.g., column 4, lines 22-32 and column 5, lines 27-43 of Chung. That disclosure of Chung is not inconsistent with appellant's specification at page 4, lines 24-30 wherein the use of multiple flocculants, including cationic, anionic and amphoteric flocculants are disclosed as options.

As for adding the cationic organic polymer flocculant of Chung to the second pH adjusted stream of Davis, we note that is the point in the process that Davis suggests flocculant(s) should be added.

[2] While Chung discloses the use of silicon-containing polymer compositions as part of the disclosed flocculent combination disclosed therein as argued by appellant, we note that representative claim 1 employs the open term "comprising" and is inclusive of the use of such silicon-containing materials.

For the reasons and factual findings set forth by the examiner in the answer and above, we do not find appellant's arguments persuasive. Consequently, we shall sustain the examiner's § 103(a) rejection of claims 1, 3, 4, 9 and 14 over Davis in view of Chung.

With regard to the examiner's § 103(a) rejection of dependent claims 10 and 16 over Davis in view of Chung and Keys, we agree with the examiner that one of ordinary skill in the art would have been led to adjust the pH of the first pH adjusted stream of Davis to a pH of less than 2 based on the combined teachings of the applied references. In arguing against the examiner's second § 103(a) rejection, appellant does not focus on the additional limitations of either of the dependent claims, but rather on the cationic organic polymer limitation imputed into those dependent claims by virtue of their ultimate dependency on independent claim 1. We do not find that Keys teaches away from the combination of Davis and Chung as urged by appellant. Keys does not require the exclusion of synthetic polymers or metals but merely notes the lack of necessity of such materials in the process of Keys. That disclosure does not constitute a teaching away from the combination of Davis and Chung as proposed by the examiner. Consequently, for the reasons set forth above and by

the examiner in the answer, we shall also affirm the examiner's second § 103(a) rejection.

CONCLUSION

The decision of the examiner to reject claims 1, 3, 4, 9 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Davis in view of Chung and to reject claims 10 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Davis in view of Chung and Keys 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

EDWARD C. KIMLIN Administrative Patent Judge	)
PETER F. KRATZ Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
BEVERLY A. PAWLIKOWSKI Administrative Patent Judge	)

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