

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte CHRIS E. SHUCHART  
and  
RICK D. GDANSKI

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Appeal No. 2000-0316  
Application No. 08/587,821

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HEARD: APRIL 23, 2002

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Before LIEBERMAN, DELMENDO, and PAWLIKOWSKI, Administrative Patent Judges.  
LIEBERMAN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner refusing to allow claims 26, 27, 72 through 78, and 82. Claims 35-42, and 68 through 71, 79 through 81 and 83 through 85 have been allowed. Claims 1 through 25, 28 through 35 and 43 through 67 have been canceled.

THE INVENTION

The invention is directed to a method for acidizing an aluminum containing

sandstone in the absence of substantial precipitation of aluminum fluoride complexes. An acidizing composition comprising water, at least one hydroxy carboxylic acid in a specific amount and hydrofluoric acid is contacted with an aluminum containing sandstone formation. Additional limitations are disclosed in the following illustrative claim.

### THE CLAIM

Claim 26 is illustrative of appellants' invention and is reproduced below:

26. A method of acidizing an aluminum containing sandstone formation without substantial aluminum fluoride complexes precipitation comprising contacting the formation with an acidizing composition including:

water;

hydrofluoric acid; and

at least one hydroxy carboxylic acid present in an amount in the range of from 2.1% to about 10% by weight of said acidizing composition.

### THE REFERENCES OF RECORD

As evidence of obviousness, the examiner relies upon the following references:

Stoesser	2,175,095	Oct. 3, 1939
Kalfayan et al. (Kalfayan)	4,479,543	Oct. 30, 1984

### THE REJECTION

Claims 26, 27, 72 through 78, and 82 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalfayan in view of Stoesser.

### OPINION

We have carefully considered all of the arguments advanced by the appellants and

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the examiner, and agree with the appellants that the rejection of claims 72 through 78, are

not well founded. Accordingly, we reverse this rejection. We agree with the examiner that the rejection of claims 26, 27, and 82 are well founded. Accordingly, we affirm this rejection.

The Rejections under § 103(a)

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability." See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The examiner relies upon a combination of two references to reject the claimed subject matter and establish a prima facie case of obviousness. It is the examiner's position that, "[i]t would therefore have been obvious to a person of ordinary skill in the art at the time of Appellant's [sic, Appellants'] invention, in view of the teaching of Stoesser '095, to use lactic and/or hydroxyacetic acid, of for that matter malic acid (C<sub>4</sub>), which is also a C<sub>1</sub>-C<sub>6</sub> acid after the teaching of Kalfayan '543, in the amounts such as are now claimed, to produce the expected results of increasing penetration and reducing formation of aluminum fluoride precipitates." See Answer page 7. We disagree as to the examiner's conclusion, but find sufficient basis in Kalfayan alone to sustain the rejection of claims 26, 27, and 82.

Kalfayan is directed to a method for acidizing siliceous materials in subterranean formations penetrated by a well. See column 2, lines 23-25. The well is treated with an acidizing solution comprising an aqueous solution of an acid component and a second component comprising a fluorine containing acid or salt. We find that, "[t]he acidizing

solution which is injected following the injection of the silane material can be any of the well known fluorine-containing acidizing solutions comprising a mixture of (1) a first acidizing component comprising a non-oxidizing mineral acid, an acid precursor, or a low molecular weight organic acid or halogenated derivative thereof, and (2) a second acidizing component comprising a fluorine-containing acid or salt.” See column 6, lines 58-65. We find that the low molecular weight acids disclosed by Kalfayan include hydroxy carboxylic acids within the scope of the composition. Kalfayan states that, “from 1 to about 6 carbon atoms, such as formic, acetic, citric, propionic, and tartaric acids and mixtures thereof,” are present in the composition. See column 7, lines 37-40. We further find that the organic acid may be used in concentrations of 10 to 80% by weight. See column 7, lines 45-48. We conclude that the proportion of 10% organic acid falls within the scope of the claimed subject matter. We find that suitable fluorine containing acid includes hydrofluoric acid and fluorine containing salts. See column 7, lines 49-50. We find that hydrofluoric acid is present in an amount of 3% by weight which is within the scope of claim 82. See Examples 1 and 2.

Accordingly, there is a general disclosure for combining a low molecular weight organic acid with hydrofluoric acid in the amount required by the claimed subject matter of claims 26, 27, and 82.

In our view the presence of each of the requisite components, i.e., water, hydrofluoric acid and a hydroxy carboxylic acid in amounts falling within the scope of

claims 26, 27, and 82 are sufficient to meet the requirements of the claimed subject matter. We further find that the acidizing of siliceous subterranean formation includes the treatment of sandstone formation in view of the definition of sandstone as “a sedimentary rock consisting of usu. quartz sand united by some cement (as silica or calcium carbonate.)”<sup>1</sup> As the composition of Kalfayan is contacted with sandstone in the same manner as that of the claimed subject matter, we conclude that the method of Kalfayan meets the requirements of claims 26, 27, and 82. It is well settled that when a claimed process reasonably appears to be substantially the same as a process disclosed in the prior art, the burden of proof is on the applicants to prove that the prior art process does not inherently or necessarily possess the characteristics attributed to the claimed process. In re Spada, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Accordingly, we conclude based on the totality of the record before us, that the disclosure of Kalfayan in and of itself is sufficient to establish a prima facie case of obviousness. The burden accordingly shifts to appellants to overcome the presumption of obviousness that has been created. Having reviewed the data present, we conclude that appellants have not met their burden of showing unexpected results. In re Klosak, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972). It is not sufficient to assert that the results obtained are unusual or unexpected. The burden of showing unexpected

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<sup>1</sup>Webster’s Ninth New Collegiate Dictionary, p. 1041 (Springfield, MA., Merriam-Webster, Inc., 1986). Copy attached.

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results rests on those who assert them.

The appellants rely on the examples in the specification and particularly Table II of Example 2 as reproduced on page 8 of the Shuchart Declaration, an executed Rule 132 Declaration of record and argue that the Declaration shows that, "the hydroxy group of the hydroxy carboxylic acid provides additional coordination to aluminum and aluminum fluoride cations thereby maintaining the cations in solution and reducing the precipitation." See Brief, pages 7 and 8. We find however that the examples and Declaration under 37 CFR §1.132, and the accompanying Table II of the specification as not being commensurate in scope with the claimed subject matter. See In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983); In re Tiffin, 448 F.2d 791, 792, 171 USPQ 294, 294 (CCPA 1971). It is well settled that "objective evidence of nonobviousness must be commensurate in scope with the claims." In re Lindner, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972); In re Dill, 604 F.2d 1356, 1361, 202 USPQ 805, 808 (CCPA 1979) ("The evidence presented to rebut a prima facie case of obviousness must be commensurate in scope with the claims to which it pertains.")

Table II of the Declaration is based upon Table II of the specification adding only additional calculated data. We find that each of Examples 1 and 2 are directed to compositions wherein the aluminum concentration and the fluoride concentration are each 0.58 molar which is a ratio of 1:1. In contrast the subject matter of claim 26 contains no limitations directed to the concentration of aluminum or hydrofluoric acid present in the acidizing composition utilized in the claimed method. Based solely on the single

concentration of aluminum ion and fluoride ion, it cannot be concluded that the presence of hydroxy carboxylic acids would be affected in the same manner and to the same extent were the concentration of each of the ions to substantially vary within the scope of the claimed subject matter.

Based upon the above reasons and those set forth in the Answer, we have determined that the examiner has established a prima facie case of obviousness. Upon reconsideration of all the evidence and argument submitted by appellants, we have determined from the totality of the record that the preponderance of the evidence weighs in favor of obviousness within the meaning of 35 U.S.C. § 103. Accordingly, the decision of the examiner is sustained with respect to claims 26, 27, and 82.

Moreover, we do not consider the rejections over Kalfayan alone in the absence of the additional secondary reference to constitute a "new ground" of rejection. The issue, in this respect, is whether appellants have had a fair opportunity to react to the thrust of the rejection. In re Kronig, 539 F.2d 1300, 1302-03, 190 USPQ 425, 426-27 (CCPA 1976). Limiting the discussion to the evidence contained in Kalfayan while using the same basis and teachings as the examiner relied upon does not constitute a new ground of rejection. See Kronig, 539 F.2d at 1303, 190 USPQ at 427; In re Bush, 296 F.2d 491, 496, 131 USPQ 263, 266-67 (CCPA 1961).

As for the balance of the rejection of the claimed subject matter, the examiner reads the disclosure as providing for the presence of a hydroxy carboxylic acid, a mineral

acid and a fluorine-containing acid. See Answer, page 5. We find that this is contrary to the language of column 7, relied upon above. Furthermore, in accordance with our previous findings, we do however have a disclosure of low molecular weight acids having 1 to about 6 carbon atoms in conjunction with specific mention of hydroxy carboxylic acids. However, none of the acids disclosed are within the scope of the claimed subject matter of claims 72 through 78. Furthermore, there is no motivation to utilize the specific acids of the claimed subject matter based upon the teachings of the primary reference alone. In addition, as to the presence of hydrochloric acid disclosed by Kalfayan, there is no suggestion for combining a low molecular weight organic acid with hydrochloric acid, the specific language of the specification being in the alternative, i.e., "or." See our discussion supra.

As to the secondary reference, Stoesser is likewise directed to the treatment of deep wells. See column 1, lines 1-2. Stoesser discloses that when the well is acidized with hydrochloric acid soluble compounds of iron, aluminum or both are first dissolved by the acid, but as the acid is spent, the pH rises and the compounds remain dissolved only as long as the pH value is less than that at which precipitation occurs. See column 1, lines 30-54. We find that to prevent aluminum from precipitating, an agent is added to the hydrochloric acid solution. See column 2, lines 33-38. We find that specific examples of the agent include "lactic acid, ammonium acetate, glycine, glycollic [sic, glycolic] acid, citric acid, and the like." See column 2, lines 45-54. There is however, no discussion or

disclosure in Stoesser of the presence of hydrofluoric acid or fluoride salts. Nonetheless, it is the examiner's position that the combination would have been obvious. See our discussion supra. We disagree.

Although, the processes of both references are directed to increasing the penetration of subterranean oil well formations, the processes are otherwise unrelated. Kalfayan is directed to a silane or silane ester treatment followed by the addition of either mineral acid or organic acid together with hydrofluoric acid. When hydrochloric acid is present, there is no low molecular weight acid present. In contrast, the disclosure of Stoesser, discloses neither fluoride ion nor hydrofluoric acid as being present in the composition. Accordingly, we conclude that the disclosure of Stoesser is unrelated to the teachings and disclosure of Kalfayan.

Based upon the above analysis, we conclude that the examiner has failed to establish a prima facie case of obviousness, there being no reason to combine the references to Kalfayan and Stoesser. The combination of the references is viable only in view of the disclosure presented by the appellants. See In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("[T]he best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references").

DECISION

The rejection of claims 26, 27, and 82 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalfayan is affirmed.

The rejection of claims 26, 27, 72 through 78, and 82 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalfayan in view of Stoesser is reversed.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

PAUL LIEBERMAN	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
ROMULO H. DELMENDO	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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BEVERLY A. PAWLIKOWSKI	)	
Administrative Patent Judge	)	

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