Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS C. KOWALSKI
and ROBERT W. PIKE

Appeal No. 95-0562
Application 07/878,940[1]

ON BRIEF

Before JOHN D. SMITH, PAK and ELLIS, Administrative Patent Judges.

JOHN D. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 3, and 5 through 24. Copies of representative claims 1 and 23 are reproduced in an attached appendix.

The references of record relied upon by the examiner are:

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[1] Application for patent filed May 5, 1992.

Mosier	3,676,363	Jul. 11, 1972
Hen	5,068,042	Nov. 26, 1991
Jacobs et al. (Jacobs)	5,112,505 (filed Sep. 13, 1990)	May 12, 1992

The appealed claims stand rejected for obviousness (35 USC § 103) over Mosier in view of either Hen or Jacobs.

The subject matter on appeal is directed to oil field chemical microcapsules having a gelatin wall stabilized by a strong chelating agent such as EDTA. The microcapsules contain oil well chemicals such as scale inhibitors or corrosion agents. Appellants allegedly have discovered that premature microcapsule destruction by brine solutions containing 20,000 mg/ml of chloride ion (as commonly found in oil wells) may be avoided by incorporation of certain classes of strong chelating agents which stabilize the capsule wall and thus allegedly provide for an extended time release of the oil well chemical.

As evidence of obviousness, the examiner principally relies on Mosier. This reference discloses a microcapsule with a gelatin wall containing droplets of an oil well chemical treating agent such as a corrosion inhibitor. An

important aspect of Mosier's microcapsules is that they contain a weighting agent such as barium sulfate[2] which enables the control and positioning of the microcapsule as a deposit at the bottom of a gas producing well (column 6, lines 53 through 62 and Figure 2). The examiner has accurately characterized the claimed invention as an alleged improvement over Mosier in that the claimed invention requires the incorporation of a strong chelating agent in the microcapsule, a feature not expressly described in Mosier.

Appellants argue that the combined teachings of the relied upon references do not raise a prima facie case of obviousness for the claimed subject matter. Thus appellants contend that the solution to the problem of premature microcapsule destruction via incorporation of strong chelating agents into the microcapsule ?would not have been suggested by any logic taught in any reference? (Brief, page 1). This argument, however, overlooks the principle that the motivation in the prior art to combine the references does not have to be identical to that of an applicant to establish obviousness.

[2] Compare appealed dependent claim 3 and dependent claim 15 respectively.

In re Kemps, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996). Here, contrary to appellants' arguments that infer that Mosier's disclosure is limited to the encapsulation of basic amine compounds, we observe that, Mosier teaches that ?a wide variety of treating agents? may be incorporated into the prior art weighted microcapsules (column 5, lines 18 through 20). Hen, a secondary reference relied upon by the examiner, discloses that strong chelating agents such as EDTA or salts thereof are useful as sulfate scale removing agents for scale typically found or produced on subsurface oil well equipment (column 1, lines 26 through 31; column 4, lines 9 through 54). Invited by Mosier's broad disclosure regarding the use of a ?wide variety? of treating agents, a person of ordinary skill in this art would have been led to incorporate a scale removing agent such as EDTA, a strong chelating agent, in the weighted microcapsules of Mosier with a reasonable expectation of producing a microcapsule having the additional capability of effecting efficient scale removal at a desired and specific downhole location.

Appellants argue that the Hen invention requires prompt removal of the treating solution and any dissolved scale.

Thus appellants contend that the Hen process is incompatible with the slow dissolving characteristics of the presently claimed microcapsules. Like the examiner, we see no inconsistency in the two operations. As the examiner points out, Hen envisions the scale removing process as one in which the composition is allowed to remain in place for significant periods of time at high temperature downhole locations. Specifically see Hen at column 4, lines 19 through 24. Accordingly, under these circumstances, a slow release microcapsule mechanism as disclosed by Mosier would be a desirable option.

Appellants specifically argue that appealed claims 23 and 24, which refer to a treatment for at least about one month, involve a process which resolves a specific problem and thus are separately patentable. See the Brief at page 4. However, Mosier indicates that a corrosion inhibitor in the prior art capsules may be introduced at a desired level for from 60 to 90 days. See Mosier at column 6, lines 68 through 73. Thus we agree with the examiner that process claims 23 and 24 do not define unobvious subject matter. To the extent that dependent claims 14, 16, 19, and 22 are argued, we note that

corrosion and scale inhibitors and biocides are conventional materials contemplated by Mosier's reference to a ?wide variety? of oil field chemicals.

Based on the foregoing, we affirm the examiner's rejection of appealed claims 1-3, 5-9, and 11-24 for obviousness (35 USC § 103). Dependent appealed claim 10 stands on a different footing, however, since this claim requires specific chelating agents not taught by any of the relied upon references. Thus the examiner has failed to establish a prima facie case for the subject matter of dependent claim 10, and we therefore reverse the rejection of this claim.

We also reverse the examiner's alternative rejection under 35 USC § 103 over Mosier in view of Jacobs.

The examiner relies on Jacobs for its teaching that the chelates of the instant claims are well known commercial iron sequestrants ?in the industry?. In this regard, the examiner appears to be relying on the specific disclosure of Jacobs at column 2, lines 30 through 34 which refers to the most common iron sequestering agents ?in commercial practice?. However, with respect to the use as acidizing solutions, the object of

Jacobs, the reference reports that EDTA is ineffective under certain pH conditions. See the reference at column 2, lines 41 through 46. In our view, the relied upon disclosures in Jacobs are too speculative to have motivated a person of ordinary skill in the art to encapsulate the ?common iron sequestering agents? for the purpose of acidizing subterranean reservoir formations.

In summary, the examiner's rejection of appealed claims 1-3, 5-9, and 11-24 over Mosier combined with Hen is affirmed. The examiner's rejection of appealed claim 10 over the same references is reversed. The examiner's alternatively stated rejection under 35 USC § 103 of the appealed claims over Mosier in view of Jacobs is also reversed. Accordingly, 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

JOHN D. SMITH Administrative Patent Judge	)
CHUNG K. PAK Administrative Patent Judge	) BOARD OF PATENT)) APPEALS AND)) INTERFERENCES
JOAN ELLIS Administrative Patent Judge	)

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APPENDIX

1. Microcapsule containing from about 5% to about 80% of oil field chemical, said microcapsules having a wall comprising gelatin and said wall being formed by coacervation at a pH of from about 3.5 to about 6, and said microcapsules being stabilized in brine solution containing about 20,000 mg/l chloride ion by incorporation of from about 2% to about 14% of strong chelating agent selected from the acids and salts of the group consisting of:

(1) material having the generic formula:

$$R_5\text{-}[O\text{-}CH(COOH)CH(COOH)]_nR_5$$

wherein each R_5 is selected from the group consisting of H and OH and n is a number from about 2 to about 3 on the average;

(2) material having the formula:

$$R - N\begin{matrix} CH_2COOH \\ CH_2COOH \end{matrix}$$

wherein R is selected from the group consisting of:

$-CH_2CH_2CH_2OH$; $-CH_2CH(OH)CH_3$; $-CH_2CH(OH)CH_2OH$;

$-CH(CH_2OH)_2$; $-CH_3$; $-CH_2CH_2OCH_3$; $-\overset{O}{\overset{\|}{C}}-CH_3$; $-CH_2-\overset{O}{\overset{\|}{C}}-NH_2$;

$-CH_2CH_2CH_2OCH_3$; $-C(CH_2OH)_3$; and mixtures thereof;

(3) nitrilotriacetic acid;

(4) ethylenediamine and polyethylenediamine polyacetic acids; and

(5) mixtures thereof.

23. The process of treating an oil well with an effective amount of the microcapsule of Claim 1 capable of providing the treatment in the presence of brine solution containing about 20,000 mg/1 chloride ion for a period of time of at least about one month.