

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte OLIVER C. MULLINS, XU WU
and PHILIP RABBITO

Appeal No. 96-3109
Application 08/445,121¹

HEARD: August 03, 1999

Before KRASS, FLEMING, and HECKER, Administrative Patent
Judges.

HECKER, Administrative Patent Judge.

¹Application for patent filed May 19, 1995. According to
the appellants this application is a continuation of
08/249,430 filed May 26, 1994.

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DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 12, 45, 47, 50, 52 and 60². Claims 1, 6, 7, 8, 11, 13 through 17, 19 through 24, 26 through 44, 46, 48, 49, 51 and 53 through 59 have been indicated as allowable. Claims 2 through 5, 9, 10, 18 and 25 have been canceled.

Appellant's invention relates to a method and apparatus for fluorescence logging of underground formations surrounding a bore hole. In particular, the invention relates to the detection of hydrocarbons in pore fluid from the underground formations. Representative claims 15 and 45 are reproduced as follows:

15. A method of locating in situ hydrocarbons in underground formations surrounding a borehole during drilling with a bottom hole assembly including a drill bit comprising:

² An amendment after final rejection, paper no. 12, was entered. This effectively replaced claim 10 with claim 60 and canceled claims 2-5,9,10, 18 and 25. In doing so, the dependency of claims 11, 12 and 13 was overlooked and should be adjusted. Also, a typographical error in claims 1 and 17 should be corrected, where "greater the the" should be -- greater than the--.

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a) illuminating a wall of the borehole with light from a source in the drill bit,

c) detecting any fluorescence from the wall with a detector in the bottom hole assembly, and

d) analyzing the detected fluorescence to determine the presence of hydrocarbon in the formation.

45. A method as claimed in claim 15, comprising illuminating the wall using a light source selected from the group consisting of visible light sources, infrared light sources, ultraviolet light sources and combinations thereof.

No references are relied on by the Examiner.

Claims 12, 45, 47, 50, 52 and 60 stand rejected under 35 U.S.C. § 112, first paragraph, in that the specification fails to provide an enabling disclosure for the embodiment using an infrared source or for the embodiment using a visible/infrared source to illuminate the wall of the borehole.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the brief and the answer for the respective details thereof.

OPINION

After a careful review of the evidence before us, we do not agree with the Examiner that claims 12, 45, 47, 50, 52 and

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60 are not enabled by the specification as required under 35
U.S.C.

§ 112, first paragraph.

The Examiner asserts that:

The specification fails to teach suitable wavelengths in the infrared for causing fluorescence of hydrocarbons in a borehole. On page 7, of the specification is disclosure for using an LED source producing light of about 450nm, a laser diode producing light of about 674nm, and a tungsten halogen lamp with a bandpass filter of 400-500nm. None of these wavelengths are in the infrared. (Answer-page 3.)

Additionally the Examiner states:

The near infrared wavelength range is very broad, and while one could conceivably use hundreds of laser diodes of differing wavelengths to determine a suitable wavelength to induce hydrocarbon fluorescence, it is unlikely that an experimenter would conclude that undue experimentation was not involved. Appellants do not even give a "ball park" range that would at least direct the practitioner to the most appropriate part of the near infrared spectrum. They do suggest filtering light from a tungsten halogen lamp, but the only specific filter that is disclosed is one that eliminates the infrared component from the source light. (Answer-page 6.)

Appellants argue:

The Examiner's position is contrary to that of the court in *In re Gaffe*. To summarize the general case here, the following general points are to be borne in mind:

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(i) There is no suggestion, either in the specification, the prior art or in the Examiner's comments, that the area of technology is particularly complex or unpredictable. The Examiner has not provided one single piece of evidence to support the position that the selection of wavelengths requires undue or unreasonable experimentation nor any evidence to refute the Applicants' assertion and showing that this would not require a worker of ordinary skill to depart from what is considered normal in this art.

(ii) The examples given indicate that there is a wide choice of wavelengths available to the user and that the user is not to be bound to any one wavelength. By the Examiner's logic, any wavelength not specifically recited in the specification could not be validly claimed.

(iii) The specification gives the preferred, and best mode examples sufficient [to] place the invention clearly in the hands of a worker of ordinary skill in the art and to indicate where changes might be made.

(iv) The Examiner is seeking to limit the claims to the specific sources and wavelengths given in the specification and as the court stated in *In re Gaffe*, "To demand that the first to disclose shall limit his claim to what he has found will work...would not serve the purpose of promoting the progress of the useful arts." (Brief-page 6.)

Practice of the invention must not require undue experimentation. The key word is "undue" not "experimentation". Whether undue experimentation is required is a conclusion reached by weighing many factual considerations. The only fact presented by the Examiner is that the particular examples recited in the specification do

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not include infrared wavelengths. We see no evidence of the quantity of experimentation necessary, the state of the prior art, the relative skill of those in the art, or the predictability or unpredictability of the art. Each of these considerations and others could be shown by technical publications and/or patents issued in the relevant art, all of which are available to the Examiner. In the absence of such evidence, we find the Examiner has failed to establish a prima facie case. Therefore we will not sustain the rejection of claims 12, 45, 47, 50, 52 and 60.

In view of the foregoing, the decision of the Examiner rejecting claim 12, 45, 47, 50, 52 and 60 under 35 U.S.C. § 112, first paragraph is reversed.

REVERSED

