

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NOEL A. SHENOI

Appeal No. 2007-0161
Application No. 09/797,287

ON BRIEF

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

MILLS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1, 3, 5-8, 10, 12, 13, 15, 18-20, 22, and 30-37.

Claim 1 reads as follows.

1. A method for removing contaminant from groundwater, the method comprising the steps of:
 - (a) extracting groundwater including contaminant from the ground;
 - (b) placing the extracted groundwater into a tank;
 - (c) applying a vacuum to the tank;
 - (d) heating the extracted groundwater to a temperature at which at least a portion of the contaminant vaporizes and separates from the extracted groundwater, thereby forming cleaned water;

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- (e) removing the vaporized contaminant from the tank; and
- (f) removing the cleaned water from the tank; and
- (g) burning the separated, vaporized contaminant.

10. The method of claim 1 wherein the temperature is 60° F to 200° F.

22. A method for removing a contaminate from groundwater, the method comprising:

- (a) placing ground water containing the contaminate into a tank, wherein the tank is on a vehicle;
- (b) applying a vacuum to the tank to create a pressure at which the contaminate vaporizes and separates from the groundwater; and
- (c) agitating the groundwater to assist in separating the contaminate.

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The prior art cited by the examiner is:

Rentschler et al. (Rentschler)	5,352,276	Oct. 4, 1994
O'Brien	4,544,488	Oct. 1, 1985

Grounds of Rejection

Claims 1, 3, 6-8, 18, 19, 22, 30-33 and 35 stand rejected under 35 U.S.C.

§ 102(b) over Rentschler.

Claim 10 stands rejected under 35 U.S.C. § 103(a) over Rentschler.

Claims 5, 12, 13, 18, 34, 36 and 37 stand rejected under 35 U.S.C. § 103(a) over Rentschler in view of Applicant's admitted prior art.

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Claims 5, 12, 13, 34, 36 and 37 stand rejected under 35 U.S.C. § 103(a) over Rentschler in view of O'Brien.

We affirm these rejections.

Claim Grouping

Appellant argues individual claims 1, 10 and 22 separately. Therefore, we select claims 1, 10 and 22, as representative of the rejected claims. 37 C.F.R. § 41.37(c)(1)(vii) (September 13, 2004).

DISCUSSION

Anticipation

Claims 1, 3, 6-8, 18, 19, 22, 30-33 and 35 stand rejected under 35 U.S.C. § 102(b) over Rentschler.

The standard under § 102 is one of strict identity. 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. Gechter v. Davidson, 116 F.3d 1454, 1457, 43 USPQ2d 1030, 1032 (Fed. Cir. 1997). Every element of the claimed invention must be literally present, arranged as in the claim. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

According to the examiner, Rentschler teaches each of the steps of the claimed

method. Answer, pages 3-4.

Appellant contends that Rentschler fails to teach steps (c) applying a vacuum to the tank and (d) heating the extracted groundwater to a temperature at which at least a portion of the contaminant vaporizes and separates from the extracted groundwater, thereby forming cleaned water. Brief, page 9.

However, the examiner finds that the "structure containing the stripper (16) is seen to meet the limitation of a 'tank,'" as claimed. Answer, page 7. According to the examiner, Rentschler teaches, "[e]ach tank of enclosure wall 32, stripper base 66, or even the individual trays, is seen to constitute a tank." Id. The vacuum pump (20) is applied to the tank (column 6, lines 35-39). A "tank" is a "large container for holding or storing liquids or gases, or a pool or reservoir". Webster's II, New Riverside Dictionary, Riverside Pub. Co., Boston, Massachusetts, p. 1183 (1994). We agree with the examiner that a tray as described in Rentschler meets the definition of a reservoir for storing liquids or a tank. Thus, contrary to appellant's contention, Rentschler teaches step (c) as claimed, applying a vacuum to the tank. We find the examiner has provided sufficient evidence to support a *prima facie* case of anticipation.

As to the heating step, the examiner finds that column 15, line 10, states that "this arrangement advantageously may provide slight heating of the stripping air which should facilitate water to air transfer of volatile contaminants." Answer, page 8. In addition, Rentschler, column 7, lines 15-35, describes that "[h]eated, VOC-carrying air flows upwardly from a preheater in to a catalytic converter containing a catalyst... through which

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contaminant carrying air is caused to flow for conversion of the contaminant molecules into carbon dioxide and water." Id.

Appellant acknowledges that Rentschler teaches heating air but argues that Rentschler does not teach heating the groundwater. Brief, page 10.

The examiner responds, arguing that the heating of the stripping air in the apparatus of Rentschler is a form of indirect heating of the groundwater. Answer, page 8. Thus, contrary to appellant's contention, Rentschler teaches step (d) as claimed, heating the extracted groundwater to a temperature at which at least a portion of the contaminant vaporizes and separates from the extracted groundwater, thereby forming cleaned water. We agree with the examiner that although the heating may be indirect, the groundwater is heated, meeting the limitations of the claim.

With respect to claim 22, appellant further argues that Rentschler fails to "teach a step of applying a vacuum to the tank to create a pressure at which the contaminant vaporizes and separates from the groundwater." Brief, page 11.

Rentschler discloses the application of a vacuum to a tank or reservoir and a final result of removal of groundwater contaminants. Appellant has provided no evidence to show that the vacuum of Rentschler does not create a pressure at which the contaminant vaporizes and separates from the groundwater.

In view of the above, the rejection of the claims for anticipation over Rentschler is affirmed.

35 U.S.C. § 103(a)

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Claim 10 stands rejected under 35 U.S.C. § 103(a) over Rentschler.

Claim 10 recites a method wherein the groundwater is heated to a temperature of 60°F to 200°F. The examiner argues that this temperature range is inherently described by the "slight heating" of air in Rentshler. According to the examiner, one of ordinary skill in the art at the time of the invention would understand that below ground temperatures are essentially constant for a given depth of ground and at a depth at which MTBE (methyl tert-butyl ether) is found the groundwater would be 50-60°F.

Appellant contends that the examiner cites no evidence in Rentschler that temperatures in this range would be met by the slight heating of air performed in Rentshler. Reply Brief, page 4. We are not persuaded by appellant's arguments.

The examiner relies on the knowledge of one of ordinary skill in the relevant art as a basis for this rejection, i.e., that below ground temperatures are essentially constant for a given depth of ground and at a depth at which MTBE (methyl tert-butyl ether) is found the groundwater would be 50-60°F. To reach a non-hindsight driven conclusion as to whether a person having ordinary skill in the art at the time of the invention would have viewed the subject matter as a whole to have been obvious in view of multiple references, the Examiner must provide some rationale, articulation, or reasoned basis to explain why the conclusion of obviousness is correct. The requirement of such an explanation is consistent with governing obviousness law and helps ensure predictable patentability determinations. In re Kahn, 441 F. 3d 977,

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987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). In the present case the examiner has articulated a reasonable rationale as to why one of ordinary skill in the art at the time of the invention would have understood the temperature limitation of the claims to be met. Appellant does not take issue with the specifics of the articulated rationale, they merely argue that Rentschler does not evidence this temperature range.

Thus, this rejection is affirmed.

35 U.S.C. § 103(a)

Claims 5, 12, 13, 34, 36 and 37 stand rejected under 35 U.S.C. § 103(a) over Rentschler in view of Applicant's admitted prior art.

Claims 5 and 34 specify a filtration step to remove additional contaminant. Claims 12 and 36 further indicate that such a filter may be a carbon filter, while claims 13 and 37 indicate that the carbon filter is a tank containing activated carbon. Answer, page 5.

Applicant's admitted prior art statement follows. Specification, pages 1-2.

In a known treatment method, a vehicle, such as a truck, or a trailer, on which extraction and filtering equipment is mounted, is brought to a site to be cleaned. Among the equipment are a groundwater holding tank, carbon filter tanks, and a groundwater extraction device. The groundwater extraction device is generally a series of connected pipes attached at one end to the holding tank. The end opposite the holding tank is perforated and is inserted into the ground.

A vacuum is applied to the pipes to draw contaminated water into the perforated end, through the pipes and into the holding tank. The groundwater is then transferred from the holding tank through a series of carbon filter tanks to remove contaminant thereby cleaning the water to an acceptable standard, which is normally determined by a government agency. When too much contaminant accumulates in the carbon filter tank "break through" occurs.

Break through means that the quantity of contaminant in the water exiting the carbon filter tanks is above the acceptable threshold. At that point the system is shut down and one or more of the carbon filter tanks is replaced with a new tank, wherein each tank costs about \$500. The cost of new tanks and the lost operational time to change the tanks adds to the cost of cleaning the groundwater.

The examiner concludes that (Answer, page 5)

[o]ne skilled in the art would have readily appreciated the use of these known filters as a precautionary step and/or polishing filter to address any residual contaminants that may pass the other purification measures. Additionally it would have been obvious to employ a vacuum extraction technique to extract liquid from the ground, with vacuum being a known technique for accomplishing this, as taught by applicant [in the specification, page 1, paragraph 3.]

Appellant does not specifically respond to this rejection but relies on their indicated failings of Rentschler to overcome this rejection. Brief, page 12. In view of our findings regarding the disclosure of Rentschler, herein, this rejection is affirmed.

35 U.S.C. § 103(a)

Claims 5, 12, 13, 34, 36 and 37 stand rejected under 35 U.S.C. § 103(a) over Rentschler in view of O'Brien.

The examiner relies on O'Brien for the disclosure of the use of activated carbon to treat effluent water that has passed through a stripper, in order to reduce volatiles to nondetectable levels. Column 1, lines 20-45.

Based on this evidence, the examiner concludes it would have been obvious to incorporate activated carbon into the system of Rentschler in order to reduce volatiles to

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nondetectable levels, as taught by O'Brien. Answer, page 6.

Appellant does not specifically respond to this rejection but relies on their indicated failings of Rentschler to overcome this rejection. Brief, page 12. In view of our findings regarding the disclosure of Rentschler, herein, this rejection is affirmed.

CONCLUSION

The rejection of claims 1, 3, 6-8, 18, 19, 22, 30-33, and 35 under 35 U.S.C. § 102(b) over Rentschler is affirmed.

The rejection of claim 10 under 35 U.S.C. § 103(a) over Rentschler is affirmed.

The rejection of claims 5, 12, 13, 34, 36, and 37 under 35 U.S.C. § 103(a) over Rentschler in view of Applicant's admitted prior art is affirmed.

The rejection of claims 5, 12, 13, 34, 36, and 37 under 35 U.S.C. § 103(a) over Rentschler in view of O'Brien is affirmed.

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

AFFIRMED

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Administrative Patent Judge)
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