

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte HAROLD J. VINEGAR and SCOTT LEE WELLINGTON

Appeal No. 2002-0836
Application No. 09/264,437

ON BRIEF

Before COHEN, STAAB and BAHR, Administrative Patent Judges.
BAHR, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-7, which are all of the claims pending in this application.

We REVERSE.

BACKGROUND

The appellants' invention relates to an electrical heating apparatus for a borehole wherein a casing is not required. Independent claim 1 is illustrative of the invention and reads as follows:

1. A wellbore heater comprising:

a plurality of electrically conductive heater elements within the wellbore, each element spaced from the other elements and located around the circumference of the wellbore; and

an electrically insulating filler surrounding the elements within the wellbore; wherein a metal casing around the heater is not present and the heater elements are not individually electrically insulated.

The examiner relied upon the following prior art references in rejecting the appealed claims:

Stegemeier	2,932,252	Apr. 12, 1960
Carpenter	4,199,025	Apr. 22, 1980

The following is the sole rejection before us on appeal.

Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carpenter in view of Stegemeier.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejection, we make reference to the answer (Paper No. 13) for the examiner's complete reasoning in support of the rejection and to the brief (Paper No. 12) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the Carpenter and Stegemeier patents, and to the respective positions articulated by the appellants and the examiner. For the

reasons which follow, we conclude that the combined teachings of the applied references are insufficient to establish a prima facie case of obviousness of the subject matter of the claims.

Before turning to the prior art, it is critical that we understand the scope of the claimed subject matter. In this regard, our understanding of claim 1 is that the wellbore forms part of the claimed "wellbore heater," with the other recited elements of the heater disposed within the wellbore as set forth in the claim.

Carpenter discloses an apparatus for tertiary recovery of oil comprising a plurality of electrodes extending into a plurality of boreholes. Electrical current from an electrical power source is passed through the electrodes and then through salt water which is part of the earth formation from which oil is to be recovered. The flow of current through the salt water causes the salt water to be heated, the salt water then acting as a heating element to heat up the oil in the formation, thereby lowering its viscosity and improving the flow characteristics of the formation (column 6, lines 41-59). As explained by Carpenter in column 8, lines 39-55, it is very desirable that the resistance of the salt water providing the conductive path between electrodes have a high resistance compared to the total series resistance of the electrodes, so that power is dissipated primarily through the salt water rather than across the electrodes. Accordingly, Carpenter teaches that it may be desirable to use electrodes formed of aluminum or similar material having a lower resistivity than steel.

According to the examiner, who refers in particular to Figure 14, Carpenter's electrode (conductor) 204 is broadly interpreted as an electrically conductive heater element (answer, page 5). Appellants (brief, page 3) contest the examiner's position in this regard.

While it is true that the claims in a patent application are to be given their broadest reasonable interpretation consistent with the specification during prosecution of a patent application (see, for example, In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)), it is also well settled that terms in a claim should be construed as those skilled in the art would construe them (see Specialty Composites v. Cabot Corp., 845 F.2d 981, 986, 6 USPQ2d 1601, 1604 (Fed. Cir. 1988) and In re Johnson, 558 F.2d 1008, 1016, 194 USPQ 187, 194 (CCPA 1977)). In this case, while the examiner is correct that Carpenter's electrodes (e.g., conductor 204 in Figure 14 alluded to by the examiner) do conduct electricity and will incidentally give off some degree of heat as the result of the passage of current therethrough, one of ordinary skill in the art would have understood from Carpenter's disclosure with regard to the relative resistivities of the electrodes and the salt water that Carpenter seeks to minimize the dissipation of power through the electrodes and would not have considered the electrodes themselves to be "heater elements." Accordingly, we find ourselves in agreement with appellants that Carpenter's electrodes do not respond to the heater elements recited in claim 1.

Moreover, even if Carpenter's electrodes were considered to be heater elements as used in claim 1, we cannot overlook the fact that claim 1 also requires that the heater elements be surrounded by electrically insulating filler and not be individually electrically insulated. Carpenter's electrode or conductor 204 (Figure 14) does not meet these limitations, as the portion of the electrode surrounded by electrically insulating filler (insulating cement 201) is also individually electrically insulated with an electrically insulating jacket 203. The only portion of the electrode which is not covered with electrically insulating jacket 203, namely, the conductor 204, is surrounded by gravel or other porous material, which cannot serve as an electrically insulating filler in order to perform as disclosed by Carpenter.

We must point out, however, that appellants' statement on page 3 of the brief to the effect that Carpenter's "process is not described as heating the formations" is incorrect. As pointed out above, the passage of current through the salt water in the formations causes the salt water to be heated, the heated salt water in turn heating the oil in the formations. Nevertheless, according to Carpenter, the heating of the salt water is not caused by dissipation of power in the electrodes but, rather, by dissipation of power by passage of current through the salt water itself. In other words, while the

salt water acts as a heater element¹, the electrodes themselves effectively act as conductors rather than heater elements.

For the foregoing reasons, even if Carpenter's apparatus were modified as proposed by the examiner in view of the teachings of Stegemeier by providing a plurality of electrodes or conductors 204 in each wellbore, this would still not result in appellants' claimed invention. It is elementary that to support an obviousness rejection, all of the claim limitations must be taught or suggested by the prior art applied (see In re Royka, 490 F.2d 981, 984-85, 180 USPQ 580, 582-83 (CCPA 1974)) and that all words in a claim must be considered in judging the patentability of that claim against the prior art (In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). Thus, we shall not sustain the examiner's rejection of claim 1, or claims 2-7 which depend therefrom, as being unpatentable over Carpenter in view of Stegemeier.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-7 under 35 U.S.C. § 103(a) is reversed.

¹ Even if the salt water were considered to be an electrically conductive heater element as used in claim 1, the salt water is certainly not surrounded by electrically insulating filler as required by claim 1. In fact, the disclosed current flow from the electrodes to the salt water could not occur if the salt water were surrounded by electrically insulating filler.

REVERSED

IRWIN CHARLES COHEN
Administrative Patent Judge

LAWRENCE J. STAAB
Administrative Patent Judge

JENNIFER D. BAHR
Administrative Patent Judge

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