

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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LESLEY O. BOND

Appeal No. 2006-2140
Application No. 10/269,178
Technology Center 3700

Decided: March 7, 2007

Before MURRIEL E. CRAWFORD, JENNIFER D. BAHR, and LINDA E. HORNER, *Administrative Patent Judges*.

CRAWFORD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1-40, which are all of the claims pending in this application.

We have jurisdiction under 35 U.S.C. §6(b) (2002).

Appellant invented a system and method for recovering geothermal energy found deep beneath the earth's surface and converting this thermal energy into useable power. A better understanding of the invention can be gleaned from reading exemplary claims 1 and 22 which are reproduced below:

1. A system for recovering geothermal energy and converting it to useful power, the system comprising:

an energy conversion station installed in an enclosed cavity below the earth's surface, the station adapted to convert thermal energy to useful power and having an inlet and an outlet;

a closed heat exchange conduit system comprising:

at least one feed conduit adapted to carry a heat exchange fluid from an entry level at or near the earth's surface down through a subterranean formation, so that the fluid absorbs heat energy from the formation; and

a return conduit adapted to carry the heated heat exchange fluid to the inlet of the energy conversion station; and

wherein the energy conversion station is placed below the earth's surface a distance selected to create hydrostatic pressure sufficient to circulate heat exchange fluid from the surface down the at least one feed conduit through the subterranean formation and up the return conduit to the energy conversion station; and

a power supply conduit adapted to carry power generated by the energy conversion station to the surface.

22. A method for recovering geothermal energy and converting it to useful power, the method comprising:

passing unheated heat exchange fluid from the earth's surface through a closed heat exchange conduit in a subterranean formation so that the heat exchange fluid absorbs heat energy from the formation; and

converting the heat energy absorbed by the heat exchange fluid into useful power, the conversion being carried out in an enclosed cavity a distance below the earth's surface selected to create hydrostatic pressure sufficient to circulate heat exchange fluid from the surface down the at least one feed conduit through the subterranean formation and up the return conduit to the energy conversion station.

The Examiner rejected claims 12, 13, 20, 21, 25, 30, 32, 33, 36, 38 and 39 under 35 U.S.C. § 102(b) as being anticipated by Loane. The Examiner rejected claims 1-40 under 35 U.S.C. § 103 as being unpatentable over Senanayake in view of Loane.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Loane	US 3,939,356	Feb. 17, 1976
Senanayake	US 5,058,386	Oct. 22, 1991

In each of the rejections, the Examiner relies on Loane for teaching an energy conversion station placed below the earth's surface a distance selected to create hydrostatic pressure sufficient to circulate heat exchange fluid from the surface down the at least one feed conduit through the subterranean formation and up the return conduit to the energy conversion station as recited in claim 1.

Appellant contends that Loane does not disclose a system wherein the claimed hydrostatic pressure is created.

The Examiner also relies on Loane, in each of the rejections, for disclosing a conduit adapted to carry a heat exchange fluid from an entry level at the earth's surface to a deep stable subterranean formation.

Appellant contends that Loane does not disclose a conduit adapted to carry heat exchange fluid from an entry level at the earth's surface to a deep subterranean formation.

ISSUES

Has the Appellant shown that the Examiner erred in finding that Loane discloses a system or method for creating hydrostatic pressure sufficient to circulate heat exchange fluid from the earth's surface down through a conduit to a subterranean formation and up a conduit to an energy conversion station?

Has Appellant shown that the Examiner erred in finding that Loane discloses a conduit adapted to carry heat exchange fluid from the earth's surface to a deep subterranean formation?

FINDINGS OF FACT

In Appellant's method and system, the energy conversion station is placed below the earth's surface a distance selected to create hydrostatic pressure sufficient to circulate a heat exchange fluid within a conduit down from the earth's surface to a deep subterranean formation and up a return conduit to an energy conversion station (Specification 13). The placement of the energy conversion stations at such a distance creates a pressure differential relative to the feed conduit (Specification 13). The Specification defines "deep" as a depth below the surface sufficient to heat the heat exchange fluid to the desired temperature (Specification 11). The desired temperature is 400°F and preferably 500°F (Specification 11).

Loane discloses a hydro-air storage electrical generation system which includes a conduit 22 which carries water to turbine pumps 23 (Loane, col. 3, ll.

56-68). The turning of the turbines by the water causes electrical generators 24 to produce electric power which is delivered to a surface power distributor 50 (Loane, Fig. 2, col. 3, ll 59-68). Loane does not disclose that the water circulated in the conduit is circulated down the conduit 22 to the power plant 25 by hydrostatic pressure. In fact, Loane discloses that the water is directed by pumps 23 via conduit 28 to a reservoir 26 (Fig. 2, col. 4, ll. 1-3). In addition, Loane does not disclose that the conduit carries the water to a formation that is deep enough to heat the water to at least 400°F. Loane does not disclose that the water is heated to any particular temperature.

Independent claims 1 and 22 recite that the heat exchange fluid is circulated from the earth's surface down to the subterranean formation and up to the energy conversion station by hydrostatic pressure.

Independent claims 12 and 32 recite that the heat exchange fluid is carried to a deep subterranean formation and independent claim 38 recites a method for making an underground borehole into a deep subterranean formation including boring a distance from a boring station on the surface toward a deep subterranean formation.

ANALYSIS

Loane does not disclose that the subterranean formation is deep as defined by Appellant's Specification. There is no disclosure or suggestion in Loane of the temperature to which the water in the conduit is heated. As the Specification defines the term "deep" as the depth at which the heat exchange liquid is heated to at least 400°F, Loane does not disclose a "deep" formation. Therefore, the Appellant has met the burden of establishing that the Examiner erred in rejecting

claims 12, 13, 20, 21, 25, 32, 33, 36, 38, and 39 under 35 U.S.C. § 102(b) as being anticipated by Loane.

Further, Loane does not disclose or suggest that the energy conversion station is placed at a sufficient distance below the earth's surface so that the heat exchange liquid is circulated from the subterranean formation to an energy conversion station by hydrostatic pressure only. Instead, Loane discloses that the heat exchange fluid is pumped by turbine pumps to a reservoir. Therefore, the Appellant has met the burden of establishing that the Examiner erred in rejecting claims 1-40 under 35 U.S.C. § 103 as being unpatentable over Loane in view of Senanayake and claims 25 and 30 as being anticipated by Loane.

CONCLUSION/ORDER

On the record before us, Appellant has shown that the Examiner has not established that the claims on appeal are unpatentable under 35 U.S.C. § 102 or § 103. The decision of the Examiner is reversed.

REVERSED

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