

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JIM S. HOGAN

Appeal 2007-3525
Reexamination Control 90/007,149
(U.S. Patent 5,523,060)
Technology Center 3900

Hearing: January 16, 2008

Decided: 25 January 2008

Before TEDDY S. GRON, ADRIENE LEPIANE HANLON, and
CAROL A. SPIEGEL, *Administrative Patent Judges*.

GRON, *Administrative Patent Judge*.

DECISION ON APPEAL

Introduction

This is an appeal under 35 U.S.C. § 134 from an Examiner's final rejection of Claim 8 of Reexamination Control 90/007,149, filed July 30, 2004, for reexamination of U.S. Patent 5,523,060 ('060 patent) which issued June 4, 1996, from Application 08/407,762, filed March 21, 1995. The patentability of none of Claims 1-7 and 9-12 of the '060 patent is at issue.

Claim 8 stands finally rejected under 35 U.S.C. § 102(b) because an apparatus encompassed by Appellant's Claim 8 is said to be described by Hogan, U.S. 4,872,954, issued October 10, 1989 (hereafter Hogan). Claim 8 is reproduced below (Appeal Brief dated September 7, 2006 (App. Br.), Claims Appendix (App'x)):

8. An apparatus, comprising:

a rotatable drum having first and second ends and a heating section therebetween;

means for feeding a waste stream containing solids and liquids into said first end;

a heater including a heater in thermal contact with said heating section for heating said waste stream such that at least some of the liquids in said waste stream are vaporized, leaving solids;

means for removing said solids from said second end of said drum separately from said vapors;

means for removing said vapors from said first end of said drum separately from said solids; and

an oil spray chamber in communication with said drum and including an oil spray head therein, for receiving said vapors from said drum and contacting said vapors with an oil mist in order to remove solid particulate matter from said vapors and collecting said oil mist as a solid-containing liquid, said chamber further including means for maintaining said chamber at a temperature sufficient to prevent water vapor included in said vapors from condensing in said collected oil mist.

We find that no apparatus of Claim 8 is described by Hogan.

Accordingly, the Examiner's final rejection of Claim 8 under 35 U.S.C. § 102(b) over Hogan is REVERSED.

Discussion

To sustain a rejection under 35 U.S.C. § 102, a single prior art reference must describe every element of the claimed subject matter. *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990). Appellant argues that Hogan does not describe any of three distinct limitations of the Claim 8 apparatus. According to Appellant (App. Br., p. 7, VII. Argument), the three limitations are (App. Br. App'x, Claim 8):

1. “means for removing . . . vapors from [the] . . . first end of [the] . . . drum separately from [the] . . . solids”;
- 2(a). “an oil spray chamber in communication with [the] . . . drum and including an oil spray head therein, for receiving . . . vapors from [the] . . . drum and contacting [the] . . . vapors with an oil mist in order to remove solid particulate matter from [the] . . . vapors”; and
- 2(b). “an oil spray chamber in communication with [the] . . . drum and including . . . means for maintaining [the] chamber at a temperature sufficient to prevent water vapor included in [the] . . . vapors from condensing in [the] . . . collected oil mist.”

Appellant argues that limitations 1 and 2(b) broadly define “means . . . for performing a specified function without the recital of structure, material, or acts in support thereof” in a 35 U.S.C. § 112, 6th para., format (App. Br., p. 7). If 35 U.S.C. § 112, 6th para., applies, limitations 1 and 2(b) “shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” *Id.*

On the other hand, limitation 2(a) is defined in terms of structure, material, and/or acts. More specifically, limitation 2(a) is directed to an oil spray chamber in communication with a rotatable drum. The oil spray

chamber includes an oil spray head positioned so that vapors received into the oil spray chamber from the drum come in contact with an oil mist in order to remove solid particulate matter from the vapors. We must give the language defining limitation 2(a) its broadest reasonable interpretation consistent with the teaching of Appellant's specification. *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984).

Hereafter, when we refer to Appellant's specification and drawings, we cite U.S. 5,523,060 ('060 patent). When we refer to the applied prior art, we cite Hogan, U.S. 4,872,954 (Hogan). We agree with Appellant's position that, if we find that Hogan does not describe any one of limitations 1, 2(a), and 2(b) of Claim 8, the Examiner's final rejection of the Claim 8 subject matter under 35 U.S.C. § 102(b) must be reversed (App. Br., p. 7).

However, we do not agree that limitations 2(a) and 2(b) should be independently considered. Rather, we shall consider limitations 2(a) and 2(b) as unsegregated parts of the oil spray chamber of the claimed apparatus. The 2(a) and 2(b) limitations together define a critical element of the claimed apparatus.

1. Does Hogan describe limitation 2(a)?

Claim interpretation is a matter of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996). During reexamination, claim language is given its broadest reasonable interpretation. *In re Yamamoto*, 740 F.2d at 1571. However, it is fundamental patent law that the claim language must be construed in a manner consistent with the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315-16 (Fed. Cir. 2005)(*en banc*).

To interpret the full scope and content of the apparatus Appellant claims, we look first to the claim language itself. *Phillips v. AWH Corp.*,

415 F.3d at 1312-13. Should we conclude that the claim language is ambiguous, we look to the specification for enlightenment, clarification, and definition. *Id.* at 1313-16. The specification is the primary aid in deciphering the claim language. *Id.* at 1315.

The oil spray head included in the oil spray chamber of the Claim 8 apparatus is positioned in the oil spray chamber so as to be in communication with a rotatable drum. In operation, the oil spray chamber receives vapors carrying solid particulate matter from the rotatable drum. The drum vapors received into the oil spray chamber come in contact with oil mist sprayed from the oil spray head in the oil spray chamber “in order to remove solid particulate matter from said vapors” (App. Br. App’x, Claim 8).

To describe the 2(a) limitation of the apparatus defined by Appellant’s Claim 8, Hogan must describe an apparatus having an oil spray head positioned in an oil spray chamber in communication with a rotatable drum. Hogan does. Hogan’s Figures I and III depict an oil spray head 88 (Fig. III) inside an oil spray scrubber 80 (Fig. III). The oil spray scrubber 80 (Fig. III) is in communication with a rotatable drum 1 (Fig. I). To describe the 2(a) limitation of the apparatus defined by Appellant’s Claim 8, Hogan’s oil spray scrubber 80 (Fig. III) must be an oil spray chamber which receives vapors from rotatable drum 1 (Fig. I). It is. Hogan’s oil spray scrubber 80 (Fig. III) receives drum vapor effluent stream 22 (Hogan, Figs. I and III; col. 10, ll. 40-44). To describe the 2(a) limitation of the apparatus defined by Appellant’s Claim 8, Hogan’s drum vapor effluent stream 22 (Figs. I and III) must come in contact with oil mist sprayed from the oil spray head 88 in order to remove solid particulate matter from drum vapor effluent stream 22.

We find that Hogan does not depict an apparatus wherein drum vapor effluent stream 22 comes in contact with oil mist sprayed from the oil spray head 88 in order to remove solid particulate matter from the drum vapor effluent stream 22 received from the drum 80 in either Figure I or Figure III and does not otherwise depict an apparatus wherein drum vapor effluent stream 22 comes in contact with oil mist sprayed from the oil spray head 88 in order to remove solid particulate matter from drum vapor effluent stream 22.

Hogan's Figure III shows that there is a mesh 81 (Fig. III) positioned between oil spray head 88 (Fig. III) and vapor pipe 19 (Figs. I and III) through which the oil spray scrubber 80 (Fig. III) receives drum vapor effluent stream 22 (Figs. I and III) from drum 1 (Fig. I). According to Hogan, Figure III shows a scrubber for removing ash or other solids from drum vapor effluent stream 22 which operates in the following manner (Hogan, col. 11, ll. 29-55; emphasis added):

A scrubber 80 is added to pipe 19 Scrubber 80 has a sprayer head 88, a mesh 81, and trays 87. A heavy oil pump 82, an air cooler 83, a liquid level control valve 85, and a level controller 86 are also included. In operation, pump 82 circulates heavy oil 79 from the bottom of scrubber 80 through air cooler 83, a temperature control valve 84, sprayer head 88, and onto mesh 81. . . . When drum vapor effluent stream 22 comes in contact with the recirculated cold oil 79 on mesh 81, high boiling point components of stream 22 condense, flow over trays 87, and accumulate in the bottom of scrubber 80 as heavy oil 79 for further recirculation. Excess heavy oil 79 is pumped off through control valve 85 which is controlled by level controller 86. The uncondensed portion of stream 22 which contains light oil and water vapors exits scrubber 80 at the top for further downstream condensation and recovery. The use of scrubber 80 accomplishes two main objectives. First, scrubber 80 removes solids from the stream 22 by wetting them with cold oil sprayed by sprayer head 88 onto mesh

81. Second, scrubber 80 removes the higher boiling point, i.e., higher flash point, oil 79 from stream 22.

We find that Hogan's Figures I and III and Hogan's Column 11 together reasonably describe a scrubber wherein cold oil is sprayed from sprayer head 88 onto mesh 81 in order to "remove . . . solids from the stream 22 by wetting them with cold oil sprayed by sprayer head 88 onto mesh 81" (Hogan, col. 11, ll. 51-53). We find that Hogan does not state at Column 11 that drum vapor effluent stream 22 contacts a cold oil mist from spray head 88 in order to remove solid particulate matter therefrom. In Column 11, Hogan states that cold oil sprayed from spray head 88 onto a mesh 81 removes solid particulate matter from the drum vapor effluent stream 22. At Column 11, lines 21-65, Hogan does not state that a cold oil mist sprayed from spray head 88 removes the solid particulate matter from drum vapor effluent stream 22. Rather, Hogan instructs that cold oil deposited onto mesh 81 by cold oil spray head 88 removes the solid particulate matter from drum vapor effluent stream 22 before drum vapor effluent 22 contacts the cold oil sprayed from spray head 88.

Aside from Hogan's description of a preferred embodiment at Column 11 and Figure III, however, Hogan broadly states at Column 3, lines 55-61; emphasis added):

In another modification, a cyclone may be used to remove ashes or other solids from the vapor effluent of the drum. Still in another modification, a scrubber may be used to remove such material from the vapor effluent by spraying the vapor effluent with cold oil which is generated and recirculated in the process.

Therefore, considering Hogan's disclosure as a whole, we ask whether Hogan's broad statement that cold oil sprayed from the spray head of its

scrubber may be used to remove solid particulate matter from the drum vapor effluent adequately describes a scrubber wherein drum vapor effluent carrying solid particulate matter is contacted with a cold oil mist in order to remove solid particulate matter from the drum vapor effluent in conjunction with a means for maintaining the scrubber “at a temperature sufficient to prevent water vapor included in said vapors from condensing in said collected oil mist” (App. Br. App’x, Claim 8).

2. Does Hogan describe limitation 2(b)?

Limitation 2(b) of Claim 8 requires that the claimed apparatus comprises “an oil spray chamber in communication with [the] . . . drum and including . . . means for maintaining [the] chamber at a temperature sufficient to prevent water vapor included in [the drum] . . . vapors from condensing in [the] . . . collected oil mist” (App. Br., App’x, Claim 8). Hogan does not expressly state that the cold oil to be sprayed onto the vapor effluent in the scrubber is an oil mist. However, Appellant has not shown that the oil mist with which Appellant contacts the drum vapor in its spray chamber, given its broadest reasonable interpretation, may not be a cold oil spray.

In support of limitation 2(b), Appellant’s ‘060 patent teaches that the “oil spray for wetting the solids and removing the solids” from the vapor effluent in the chamber is a hot oil spray (‘060 patent, col. 2, ll. 45-51), more particularly “a fine mist spray of hot oil” (‘060 patent, col. 5, ll. 63). “The vapors . . . enter a spray chamber that includes a hot oil spray for wetting and removing solids carried over with the vapors” (‘060 patent, col. 3, ll. 29-32). “The hot oil spray serves to remove any solid particulate matter that may be

present in the vapor stream” (‘060 patent, col. 5, ll. 63-65). Even more particularly, Appellant’s ‘060 patent teaches (‘060 patent, col. 4, ll. 50-59):

As shown in the Figure, the left end of drum 152 opens into an oil spray chamber 300. . . . Oil spray chamber 300 preferably operates at 350° to 400° F. It has been found that oil at this temperature achieves optimal solids removal. Water does not remove solids as well as oil in the spray application, as it tends to vaporize on contact with hot vapors entering chamber 300. Oil spray chamber 300 is important to the operation of the whole system.

The ‘060 patent specification describes “a fine mist spray of hot oil” (‘060 patent, col. 5, l. 63). However, we find no basis in the ‘060 patent upon which to conclude that an oil mist can only be a spray of hot oil. Accordingly, our inquiry will focus on the “means for maintaining [the] chamber at a temperature sufficient to prevent water vapor included in [the drum] . . . vapors from condensing in [the] . . . collected oil mist” (App. Br., App’x, Claim 8).

Hogan states that “[t]he uncondensed portion of stream 22 which contains light oil and water vapors exits scrubber 80 at the top” (Hogan, col. 11, ll. 46-48). However, that statement is not understood to mean that no water vapor condenses in Hogan’s scrubber. We find no teaching in Hogan that its scrubber is maintained at a temperature sufficient to prevent water vapor included in the drum vapors from condensing in the oil being sprayed from the spray head in Hogan’s scrubber.

To the contrary, Hogan broadly instructs one skilled in the art to spray cold oil onto the drum vapor effluent and depicts a scrubber which removes particulates from the drum vapor effluent by spraying cold oil onto a mesh positioned between the cold oil spray head and the drum vapor effluent intake. Hogan employs an air cooler 83 to cool the circulating oil before it is

cold oil sprayed (Hogan, col. 11, l. 33). With reference to the solids in the rotating drum, Hogan states (Hogan, col. 9, ll. 54-56), “Usually, the temperature of the dry solids should be between 225° and 400° F. At a temperature of about 300° F., substantially all . . . water is removed.” In short, Hogan’s use of a cold oil spray indicates that some portion of the water vapor in the drum vapor effluent entering the scrubber and contacting the cold oil spray will condense. Nor can we presume that the drum vapor effluent entering Hogan’s scrubber is free of water vapor. Hogan states that only “[t]he uncondensed portion of stream 22 which contains light oil and water vapors exits scrubber 80 at the top” (Hogan, col. 11, ll. 46-48). Therefore, we find that Hogan does not describe, and Hogan’s scrubber does not include, any means for maintaining the scrubber at a temperature sufficient to prevent water vapor included in the drum vapor effluent from condensing in the collected cold oil spray irrespective of how narrowly or broadly the means plus function language of limitation 2(b) of Appellant’s Claim 8 is to be interpreted in accordance with 35 U.S.C. § 112, 6th paragraph.

We find that Hogan does not describe an oil spray chamber in communication with a rotatable drum and including an oil spray head therein, for receiving vapors from the drum and contacting the vapors with an oil mist in order to remove solid particulate matter from the vapors, wherein said chamber further includes means for maintaining the chamber at a temperature sufficient to prevent water vapor included in the vapors from condensing in the collected oil mist. Thus, Hogan does not describe the subject matter Appellant claims in a manner sufficient to support the appealed rejection for unpatentability under 35 U.S.C. § 102.

It cannot be said that Hogan placed the subject matter Appellant claims in the possession of the public. *See Chester v. Miller*, 906 F.2d 1574, 1577 n.2 (Fed. Cir. 1990)(“To be prior art under section 102(b), the reference must put the anticipating subject matter at issue into the possession of the public through an enabling disclosure.”) Hogan provides no instruction, guidance, or direction which would have led persons having ordinary skill in the art to understand that Hogan invented an apparatus encompassed by Appellant’s claims. To the contrary, Hogan generally teaches one skilled in the art to make and use a cold oil spray chamber to receive vapors from a drum, to contact said vapors with a cold oil spray, and to allow “[t]he uncondensed portion” (Hogan, col. 11, ll. 46-48) of the vapors which contain light oil and water to exit the top. Preferably, Hogan sprays cold oil onto a mesh before the cold oil contacts the drum vapor (Hogan, col. 11, ll. 31-37). We find that some portion of the water vapor in the drum vapor effluent will condense when contacted with the cold oil spray. Thus, no apparatus Hogan generally describes, and certainly no apparatus Hogan depicts and/or prefers, is encompassed by Appellant’s Claim 8.

3. Does Hogan describe limitation 1?

Having otherwise found that the subject matter defined by Appellant’s Claim 8 is not described by Hogan, we need not consider whether Hogan describes and depicts means for removing drum vapors from a first end of the drum separately from the solids.

Conclusion

Because we find that Hogan does not describe every element of an apparatus defined by Appellant's Claim 8, we reverse the Examiner's final rejection of Claim 8 under 35 U.S.C. § 102(b) over Hogan.

Order

Having considered all the evidence and arguments in support of the Examiner's final rejection of Appellant's Claim 8 under 35 U.S.C. § 102(b) over Hogan, and for the reasons stated herein, it is

ORDERED THAT the final rejection of Claim 8 under 35 U.S.C. § 102(b) over Hogan is REVERSED; and

FURTHER ORDERED THAT this reexamination is returned to the Examiner in charge for action consistent with our decision to reverse the appealed final rejection and our findings and opinion in support thereof.

REVERSED

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