

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL J. POLLACK

Appeal 2007-2988
Application 10/058,658
Technology Center 2600

Decided: December 31, 2007

Before ANITA PELLMAN GROSS, ROBERT E. NAPPI, and SCOTT R.
BOALICK, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 6(b) of the final rejection of claims 1 through 31.

We reverse the Examiner's rejections of these claims.

INVENTION

The invention is directed to a system for monitoring a parameter of a hostile environment within the interior of a sealed chamber. See page 2 of

Appellant's Specification. Claim 1 is representative of the invention and reproduced below:

1. An optical monitoring system for transmitting images from a hostile environment within the interior of a sealed chamber to the chamber exterior, the chamber having a wall and an access port extending through the wall, the monitoring system comprising:
a flexible, generally tubular, elongated, hermetically sealed housing having a distal end, a proximal end and an interior,
the housing being made of a non-porous, corrosive resistant material,
the distal end of the housing including a sealed window,
the proximal end of the housing being rigidly secured to the chamber wall at the access port to form a hermetic seal between the proximal end of the housing and the chamber,
the interior of the housing being accessible through the access port,
the interior of the housing including a transmission media for transmitting images of the interior of the chamber obtained through the window from the distal end of the housing to the proximal end of the housing and through the access port; and
a monitor located outside of the chamber and connected to the transmission media for receiving and displaying the images of the interior of the chamber.

REFERENCES

Howell	US 3,778,170	Dec. 11, 1973
Chiodo	US 4,540,258	Sep. 10, 1985
Shattuck	US 4,591,794	May 27, 1986
Qureshi	US 5,956,077	Sep. 21, 1999
Heid	US 5,993,902	Nov. 30, 1999
Nance	US 6,111,599	Aug. 29, 2000
Braithwaite	US 2002/0116987 A1	Aug. 29, 2002

REJECTIONS AT ISSUE

Claims 1, 4, 5, 9, 10, 13, 14, 23, 27, 28, 30, and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Qureshi in view of Nance and Heid. The Examiner's rejection is on pages 3 through 6 of the Answer.

Claims 2, 11, and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Qureshi in view of Nance, Heid, and Shattuck. The Examiner's rejection is on page 6 of the Answer.

Claims 3, 12, and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Qureshi in view of Nance, Heid, and Chiodo. The Examiner's rejection is on page 7 of the Answer.

Claims 6, 7, 17, 20, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Qureshi in view of Nance, Heid, and Howell. The Examiner's rejection is on pages 7 and 8 of the Answer.

Claims 8, 15, 16, 24, and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Qureshi in view of Nance, Heid, and Braithwaite. The Examiner's rejection is on pages 9 through 10 of the Answer.

Claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Qureshi in view of Nance, Heid, Howell and Shattuck. The Examiner's rejection is on page 10 of the Answer.

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Qureshi in view of Nance, Heid, Howell, and Chiodo. The Examiner's rejection is on page 11 of the Answer.

Claim 22 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Qureshi in view of Nance, Heid, Howell, and Braithwaite. The Examiner's rejection is on pages 11 and 12 of the Answer.

Throughout the opinion, we make reference to the Brief (received October 16, 2006) and the Answer (mailed January 5, 2007) for the respective details thereof.

ISSUES

Appellant contends that the Examiner's rejection of claims 1, 4, 5, 9, 10, 13, 14, 23, 27, 28, 30, and 31 under 35 U.S.C. § 103(a) is in error. On pages 9 through 18 of the Brief, Appellant presents several arguments directed to the combination of Qureshi in view of Nance and Heid. On page 9 of the Brief, Appellant asserts that the cited art does not disclose “(i) a hermetically sealed housing, and (ii) a hermetic seal between the proximal end of the housing and the chamber, as claimed.” Appellant reasons that Nance, the reference the Examiner relies upon for teaching a hermetic seal, is directed to a housing formed in the shape of a test tube with an opening at one end and that the camera is not in the hermetically sealed chamber.

On pages 11 through 18 of the Brief, Appellant argues that the Examiner has failed to establish a prima facie case of obviousness. Appellant reasons “one of ordinary skill in the art reviewing the portable, non-hermetically sealed inspection system of Qureshi would not be motivated to seek hermetic sealing of a rigidly secured housing and so would not look to Nance or Heid.”

Thus, Appellant's contentions present us with two issues. The first issue is whether the combination of the references teaches a hermetically sealed housing and a hermetic seal between the housing and the chamber. The second issue is whether the Examiner has established a prima facie case of obviousness.

FINDINGS OF FACT

1. Qureshi teaches an inspection system for train cars which includes an articulated arm that has a camera on the end of the arm.
Abstract.
2. Nance teaches an apparatus for viewing hostile environments which makes use of a camera mounted in a housing. Abstract.
3. Nance's camera housing is shaped like a test tube and is constructed such that it has a double wall. The two walls are hermetically sealed and a vacuum is formed between the walls. A camera is inserted into the inner part of the test tube shaped housing. Abstract, col. 2, ll. 63-65, col. 4, ll. 29-37, and fig. 2.
4. The double wall protects the camera in the housing from the high heat in the hostile environment outside the housing. The housing is inserted into an opening in a chamber containing a hostile environment such as a furnace. The open end of the test tube shaped housing remains outside the chamber. Nance, col. 3, ll. 59-63, col. 4, ll. 63-65, col. 5, ll. 1-4, and fig. 1.
5. The housing is transparent and made of quartz. Nance, col. 4, ll. 17-19, 60-61.

6. Heid teaches an apparatus to manufacture silicon crystals.
Abstract.
7. Heid's apparatus includes a hermetically sealed furnace (chamber).
Col. 3, ll. 23-25.
8. There is a camera which is mounted such that it penetrates the
furnace and is able to view the furnace interior. Heid, col. 3, ll. 53-
54, item 50 fig 1.
9. As Heid's camera penetrates the furnace (fact 8) and the furnace is
hermetically sealed (fact 7), the camera is necessarily hermetically
sealed to the furnace.

PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, and (3) the level of skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S. Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”). The Court in *Graham* further noted that evidence of secondary considerations, such as commercial success, long felt but unsolved needs, failure of others, etc.,

“might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” 383 U.S. at 17-18.

In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art,” *Id.* at 1739, and discussed circumstances in which a patent might be determined to be obvious. In particular, the Supreme Court emphasized that “the principles laid down in *Graham* reaffirmed the ‘functional approach’ of *Hotchkiss*, 11 How. 248 [(1850)].” *KSR*, 127 S. Ct. at 1739 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966)), and reaffirmed principles based on its precedent that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* The operative question in this “functional approach” is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 1740. “[W]hen a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *Id.* at 1740 (citing *Sakraida v. AG Pro, Inc.*, 425 U. S. 273, 282 (1976)).

ANALYSIS

Appellant’s arguments have persuaded us of error in the Examiner’s rejection. Appellant’s arguments directed to the second issue are dispositive of our holdings directed to the Examiner’s rejections, and as such we will address the second issue first. However, as addressed *infra* in our new ground of rejection, we do not find Appellant’s arguments directed to the first issue to be persuasive.

We do not find that one skilled in the art would combine the references to arrive at the claimed invention. Independent claim 1 recites “a flexible, generally tubular, elongated, hermetically sealed housing having a distal end, a proximal end and an interior” and that one end of the housing is rigidly secured to a chamber to form a hermetic seal between the housing and the chamber. Independent claims 9, 17, 23, 30 and 31 recite similar limitations, with the notable exception that claims 30 and 31 do not recite that the housing is flexible.

Qureshi teaches an inspection device for railroad cars which includes a housing for a camera. The housing takes the form of an articulated arm. Fact 1. Nance also teaches an inspection device for a chamber wherein the camera is inside of a housing. Fact 2. The housing is double walled with a vacuum between the walls to reduce the heat transmitted from the chamber to the camera. Facts 3 and 4. The housing is made of quartz. Fact 5. Heid teaches a hermetically sealed chamber with a port to allow a camera to observe inside the chamber. Facts 7 through 9. We do not however agree with the Examiner that the collection of these elements would yield the claimed invention. We note that the hermetically sealed housing of Nance is made to provide thermal protection and is rigid, and we do not find that one skilled in the art would readily recognize that such a housing could be made to be flexible or articulated to be applied to the inspection arm of Qureshi. Thus, we do not find that Qureshi is combinable with Nance and Heid so as to render the claimed invention a predictable combination of old elements. Further, we note that while the other references relied upon in the Examiner’s rejections of the dependent claims teach features of the dependent claims, we do not find the references overcome the noted

deficiency in the rejection of the independent claims. Accordingly, we reverse the Examiner's rejections under 35 U.S.C. § 103(a) which rely upon Qureshi in combination with other references.¹

NEW GROUND OF REJECTION

We now enter a rejection of claims 30 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Nance and Heid. Claims 30 and 31 recite a monitoring system for transmitting images from within a chamber to outside a chamber. The claimed system makes use of a tubular elongated, non-porous hermetically sealed housing with an interior. The claims recite that the interior of the housing contains a transmission media. Nance describes a tubular housing for a transmission media (camera) that is used in a hostile environment. Facts 3 and 4. The tubular housing is inserted into a chamber to observe the inside of the chamber. Fact 4. Nance's housing is hermetically sealed. Fact 3. Appellant's Specification, on pages 1 and 2, discusses hermetically sealed as it relates to a material or layer being hermetically sealed (i.e. impervious). As Nance teaches that the housing contains a hermetically sealed chamber, clearly the outer layer of the housing is hermetically sealed. Further, claims 30 and 31 recite that the housing has a window and that the interior of the housing is accessible through an access port. Nance teaches that the housing is transparent, Fact 5, and that the housing has an opening to access the interior at the location where the housing meets the chamber. Facts 4 and 5. Nance does not teach

¹ Note as discussed *infra*, we find that Nance and Heid do teach that the device claimed in claims 30 and 31 is a predictable combination of old elements.

the claimed features of the housing being hermetically sealed to the chamber and of a monitor (apparatus in claim 31) being outside the chamber to receive the transmission from the transmission media. Initially, we note that though Nance does not disclose that there is a monitor to view the images captured by the camera, we consider using a monitor to view the images to be a predictable use of Nance's device. Further, Heid teaches a hermetically sealed chamber for manufacturing silicon crystals. Fact 7. Heid teaches that the chamber is heated to a high temperature and that a camera is used in the chamber (i.e. the camera housing is hermetically sealed to the chamber). Facts 8 and 9. We consider that using Nance's camera housing for high temperature chambers (such as a furnace) in the silicon manufacturing chamber (a furnace) of Heid to be a predictable result, as it will allow for viewing of the operations in the oven while preventing the camera from being subjected to the high heat in the chamber.

CONCLUSION

We consider the Examiner's rejections of claims 1 through 31 under 35 U.S.C. § 103(a) to be in error. However we enter a new rejection of claims 30 and 31 under 35 U.S.C. § 103(a).

ORDER

For the foregoing reasons, we will not sustain the Examiner's rejections under 35 U.S.C. § 103. The decision of the Examiner is reversed.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides "[a] new ground of

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rejection pursuant to this paragraph shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the Examiner, in which event the proceeding will be remanded to the Examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

REVERSED - 37 C.F.R. § 41.50(b)

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