

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN S. VOGEL, TED J. OGNIBENE,
GRAHAM S. BENCH, and GRAHAM F. PEASLEE

Appeal 2008-5921
Application 10/241,301
Technology Center 1700

Decided: January 15, 2009

Before BRADLEY R. GARRIS, TERRY J. OWENS, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-14 and 16-19. Claims 20-41, which are all of the other pending claims, stand withdrawn from consideration by the Examiner. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim an apparatus for chemical reduction of oxide gases. Claim 1 is illustrative:

1. An apparatus for quantitatively reducing oxide gases, comprising:

- a vial, said vial having an upper section and a lower section;
- a pre-selected amount of reductant in said lower section of said vial;
- a tube in said lower section of said vial;
- a multiplicity of glass beads in said lower section of said vial located above said reductant and below said tube, said glass beads separating said reductant and said tube;
- a pre-selected amount of a catalyst in said tube;
- a closure for said vial that allows gas transfer in and out of said vial;
- means for trapping said oxide gases in said vial; and
- a heater for heating said lower section of said vial, said tube, said reductant, said catalyst, and said oxide gases, said heater surrounding said lower section of said vial, said heater comprising
 - a first copper block,
 - a second copper block with
 - a hole in said first copper block and said second copper block with said hole having a depth to receive said lower section of said vial so that said first copper block together with said second copper block surrounds said lower section of said vial wherein said upper section of said vial extends above said hole and said first copper block and said second copper block, and said lower section of said vial extends into said hole, and

a heating element between said first copper block and said second copper block for heating said first copper block, said second copper block, and said lower section of said vial, said tube, said reductant, said catalyst, and said oxide gases.

The References

Kallies	4,248,830	Feb. 03, 1981
Turteltaub	5,209,919	May 11, 1993
McGowan	6,238,627 B1	May 29, 2001
Brockwell	2002/0066712 A1	Jun. 06, 2002

The Rejections

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 1-14, 16 and 18 over Turteltaub in view of McGowan and Kallies; and claims 17 and 19 over Turteltaub in view of McGowan, Kallies, and Brockwell.

OPINION

We reverse the Examiner's rejections. We need to address only the sole independent claim, i.e., claim 1.¹

Issue

Have the Appellants shown reversible error in the Examiner's determination that the applied references would have rendered prima facie obvious, to one of ordinary skill in the art, an apparatus comprising the heater and multiplicity of glass beads recited in the Appellants' claim 1?

¹ The Examiner does not rely upon Brockwell for any disclosure that remedies the deficiency in the references applied to the independent claim (Ans. 8).

Findings of Fact

Turteltaub discloses an apparatus comprising a closed end borosilicate tube (42) (which corresponds to the Appellants' vial) having in its wall an inwardly projecting dimple (52) that prevents a smaller tube (50) placed in tube 42 and containing iron (which corresponds to the Appellants' catalyst) from reaching zinc (which corresponds to the Appellants' reductant) in the bottom of tube 42 (col. 21, ll. 18-19; col. 22, ll. 32-39; Fig. 6). Turteltaub discloses that tube 42 is heated in an oven (col. 22, ll. 39-41), but Turteltaub does not describe the oven.

McGowan discloses a reaction vial (12) heater comprising a heating block (50) having thereon a base (16) made of high thermal conductivity material such as copper and containing holes into which vials 12 are placed (col. 4, ll. 9-24; col. 5, ll. 22-25; Fig. 2). "Alternatively, base **16** can include electrical resistance heaters or other means of heating, so that base **16** can be heated independently and without the need for additional parts such as a heating block" (col. 5, ll. 25-28).

Kallies discloses a micro test tube (2) having at its end a capillary forming a flow passage (col. 2, ll. 20-22). The micro test tube contains a glass bead (5) having a diameter larger than the capillary for sealing off the flow passage (col. 2, ll. 24-29; Fig. 2).

Analysis

The Appellants argue that Turteltaub and McGowan do not disclose the Appellants' heater comprising first and second copper blocks having a heating element between them and a hole therein for receiving the lower section of a vial such that the first and second blocks together surround the lower section of the vial (Br. 19). The Appellants argue that Kallies does

not disclose or suggest separating a reductant and a tube, and that the Examiner has not explained how or why a glass bead, which is used to seal off the passageway between a sample tube and a capillary, could be used in Turteltaub's apparatus (Br. 16).

The Examiner argues that one of ordinary skill in the art would have replaced McGowan's heater with two copper blocks having a heater between them, and located around the lower part of a vial, because the centrally located heater would transfer heat in both the upward and downward directions and thereby heat more quickly and evenly than a heater below a single copper block and would speed up the reaction of chemicals in the vial (Ans. 6-7).

The Examiner has the initial burden of establishing a prima facie case of obviousness. *See In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984); *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976). The reasoning relied upon by the Examiner must not come solely from the description of the Appellants' invention in their Specification. If it does, the Examiner used impermissible hindsight when rejecting the claims. *See W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984); *In re Rothermel*, 276 F.2d 393, 396 (CCPA 1960).

McGowan's reaction block base 16 reasonably can be considered a copper heater that surrounds the lower section of a vial (Fig. 2). In one embodiment, McGowan's reaction block base 16 and heater 50 reasonably can be considered a two piece heater (col. 5, ll. 22-25). In another embodiment, McGowan's reaction block base 16 can be heated using electrical resistance heaters without the need for heater 50 (col. 5, ll. 25-26).

The Examiner's argument that McGowan would have led one of ordinary skill in the art to place a heater between two blocks to provide the benefit of transferring heat both upwardly and downwardly and speeding up chemical reactions in the vial (Ans. 6-7) does not appear to have support in McGowan's disclosure. Instead, the Examiner appears to be merely proposing a modification of McGowan's apparatus based upon the Examiner's perceived benefits of the Appellants' heater. Hence, the record indicates that the Examiner's rationale for modifying McGowan's heater to arrive at the Appellants' heater is based upon impermissible hindsight.

Kallies does not disclose a multiplicity of beads or the use of beads to separate one thing from another. Kallies merely discloses a single bead used to seal a flow passage (col. 2, ll. 24-29). Thus, the Examiner's argument that a multiplicity of beads is an equivalent of a dimple for holding a small tube off of zinc powder (Ans. 11) also appears to be based upon impermissible hindsight in view of the Appellants' disclosure.

Conclusion of Law

The Appellants have shown reversible error in the Examiner's determination that the applied references would have rendered prima facie obvious, to one of ordinary skill in the art, an apparatus comprising the heater and multiplicity of glass beads recited in the Appellants' claim 1.

DECISION/ORDER

The rejections under 35 U.S.C. § 103 of claims 1-14, 16 and 18 over Turteltaub in view of McGowan and Kallies, and claims 17 and 19 over Turteltaub in view of McGowan, Kallies and Brockwell are reversed.

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It is ordered that the Examiner's decision is reversed.

REVERSED

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EDDIE E. SCOTT
ASSISTANT LABORATORY COUNSEL
LAWRENCE LIVERMORE NATIONAL LABORATORY
P.O. BOX 808, L-703
LIVERMORE, CA 94551