UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALBERT E. KETLER,
BRADLEY H. BAKER,
THAYANANTHAN NARAYANAN,
LAUREN E. SARGENT, RONALD C. SMATHERS,
AND EHREN R. GRAVER

Appeal 2008-0951
Application 10/640,384
Technology Center 2800

Decided: July 16, 2008

Before EDWARD C. KIMLIN, TERRY J. OWENS, and
ROMULO H. DELMENDO, *Administrative Patent Judges*.

KIMLIN*, Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-4 and 6-26. Claim 1 is illustrative:

1. A process for automatically calibrating gas sensors wherein a calibrating gas tube is connected to each sensor, comprising:

a. initially introducing SPAN gas into a sensor calibration tube manifold;

b. waiting a predetermined time for the SPAN gas to travel to each sensor and/or for the sensors to register the SPAN gas in a stable fashion;

c. detecting the raw digital value transmitted for each sensor and assigning calibrated values to the proper sensor configuration registers;

d. terminating the flow of SPAN gas;

e. next introducing ZERO gas into the sensor calibration tube manifold;

f. waiting a predetermined time for the ZERO gas to travel to each sensor and/or for the sensors to register the ZERO gas in a stable fashion;

g. assigning calibrated values to the sensor registers; and

h. turning off the ZERO gas flow.

The Examiner relies upon the following references as evidence of obviousness:

Swanson	3,630,437	Dec. 28, 1971
Hadden	4,489,590	Dec. 25, 1984
Leach	4,555,930	Dec. 3, 1985
Dageforde	5,804,695	Sep. 8, 1998
Moslehi	6,106,148	Aug. 22, 2000
Ketler	6,169,488 B1	Jan. 2, 2001
Ben-Oren	6,656,127 B1	Dec. 2, 2003

Appellants' claimed invention is directed to a process and apparatus for automatically calibrating gas sensors. The process comprises initially introducing SPAN gas into a sensor calibration tube manifold and detecting the raw digital value transmitted for each sensor, and next introducing

ZERO gas into the sensor calibration tube manifold. SPAN calibration gases comprise a predetermined quantity of one or more combustible gas components, whereas ZERO calibration gases have substantially no combustible gas components and, therefore, are used to establish sensor baseline response.

The appealed claims stand rejected under 35 U.S.C. § 103(a) as follows:

(a) claims 1, 2-4, 6-10, 14, 17, 19-22, and 24-26 over Leach in view of Hadden,

(b) claims 15 and 16 over Leach in view of Hadden and Ben-Oren,

(c) claims 11-13 over Leach in view of Hadden and Ketler,

(d) claim 12 over Leach in view of Hadden and Moslehi,

(e) claim 18 over Leach in view of Hadden and Dageforde, and

(f) claim 23 over Leach in view of Hadden in view of Ketler and Swanson.

Appellants have not separately argued any particular claim on appeal, nor advanced separate substantive arguments for the Examiner's separate rejections of the dependent claims. Accordingly, all the appealed claims stand or fall together.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in complete agreement with the Examiner's reasoned analysis and application of the prior art, as well as his cogent disposition of the arguments raised by Appellants. Accordingly, we will adopt the Examiner's reasoning as our own in sustaining the rejections of record, and we add the following for emphasis only.

There is no dispute that Leach, like Appellants, discloses a process and apparatus for automatically calibrating gas sensors comprising the introduction of SPAN and ZERO gases into a sensor calibration tube manifold. The principal argument presented by Appellants is that Leach and Hadden do not teach or suggest introducing the SPAN gas before the ZERO gas into the sensor calibration tube manifold. Although Hadden discloses that "it is **generally** desirable to calibrate the sensor elements first with a zero calibration gas, and subsequently with at least one span calibration gas" (col. 5, ll. 4-6, emphasis added), Appellants contend that "[o]ne skilled in the art, reading Hadden, would have no reason to introduce span gas first, because there is no suggestion in Hadden that introducing span gas first would make any difference in the process" (Br. 13, last para.).

We are not persuaded by Appellants' argument. Rather, we concur with the Examiner that one of ordinary skill in the art would have understood from the Hadden disclosure that SPAN gas may be introduced before the ZERO gas even though the reverse order of introduction is generally performed. As pointed out by the Examiner, there are only two alternative ways of introducing the SPAN and ZERO gases to the calibration manifold and, in the absence of a prior art teaching against the claimed order, it would have been prima facie obvious for one of ordinary skill in the art to select either order of introduction. It is reasonable to presume that the reason that it is generally desirable to introduce the ZERO gas first is because there are certain advantages attached thereto, and it is well settled that it is a matter of obviousness for one of ordinary skill in the art to eliminate a prior art feature along with its attendant benefit. *In re*

Thompson, 545 F.2d 1290, 1294 (CCPA 1976); *In re Kuhle*, 526 F.2d 553, 555 (CCPA 1975); *In re Porter*, 68 F.2d 971, 973 (CCPA 1934).

Appellants have submitted a Declaration of Albert E. Ketler, one of the present inventors, as evidence of commercial success. However, the Examiner has properly pointed out that the Declaration fails to establish the requisite nexus between the merits of the claimed invention and any commercial success realized by Appellants. *Vandenberg v. Dairy Equip. Co*., 740 F.2d 1560, 1567 (Fed. Cir. 1984). In the present case, the Declaration evidence fails to establish that the sales of Appellants' system was attributed to the order of introduction of the SPAN and ZERO gases. As explained by the Examiner, the Declaration indicates that the purchasers of Appellants' system were impressed with the auto-calibration aspects of the system relative to the time-consuming, labor-intensive aspects of manual calibration. Also, the Declaration does not demonstrate that the sales of systems within the scope of the appealed claims displaced prior art devices which, for example, introduced a ZERO gas first, or that Appellants' market share increased significantly after introduction of the claimed system. *See Cable Elec. Prods. Inc. v. Genmark, Inc.*, 770 F.2d 1015, 1026-27 (Fed. Cir. 1985).[1]

As a final point, we note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results attached to reversing the order of introduction of SPAN and ZERO gases from what

[1] Appellants' Brief also mentions a Ferlic Declaration but, as acknowledged by Appellants, "the Examiner refused to enter this declaration" (Br. 15, third para.). Hence, this Declaration is not before us for our consideration even though we note that the Examiner has lodged legitimate criticisms of the Declaration in the Advisory Action and the Answer.

is generally done in the art. Indeed, Appellants' Specification disclosure that "[i]t is preferred that SPAN testing be performed prior to performing ZERO testing" would seem to allay any suggestion of criticality in the order of introduction of the gases (para. [0059]). The advantage described in the Specification, namely, precluding the need to use ZERO gas to purge the tubing of SPAN gas, would seem to be readily apparent to one of ordinary skill in the art. *In re Ludwig*, 353 F.2d 241, 244 (CCPA 1965).

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

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)(effective Sept. 13, 2004).

AFFIRMED

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BROWDY AND NEIMARK, PLLC
624 NONTH STREET, N.W., SUITE 300
WASHINGTON, DC 20001-5303