

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHARLES THEODORE ORLESKIE
and TERRY XEN BEACHEY

Appeal No. 2005-2404
Application No. 10/119,283

ON BRIEF

Before HAIRSTON, KRASS, and OWENS, *Administrative Patent Judges*.
OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from the final rejection of claims 1-15 and 17-21, which are all of the pending claims.

THE INVENTION

The appellants claim differential pressure flow measurement devices. Claims 1 and 21 are illustrative:

1. An averaging differential pressure primary flow measuring element for insertion between sections of a fluid carrying conduit, comprising,

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first and second annular mounting flanges having circumferential outside surfaces and interior openings that correspond in shape and size to the inside cross section of the conduit,

planar flow impedance means having a center point, said means being disposed between the first and second annular mounting flanges, where the center point is coaxial with the longitudinal axes of the interior openings of the flanges, and said means having

a plurality of circular apertures eccentrically disposed with respect to the center point of the impedance means.

21. A differential pressure flow meter for determining the volumetric rate of fluid flow in a circular fluid conducting conduit, comprising,

an annulus having,

a central opening that corresponds in shape and size to the inside fluid conducting section of the circular conduit, and

a pitot tube type of fluid flow meter having a body that includes upstream and downstream facing surfaces carried by and mounted diametrically across the central opening of the annulus.

THE REFERENCES

Nowacki et al. (Nowacki)	4,884,460	Dec. 5, 1989
Wiklund et al. (Wiklund)	5,817,950	Oct. 6, 1998
Kleven (Kleven '568)	6,311,568	Nov. 6, 2001
Kleven (Kleven '297)	6,543,297	Apr. 8, 2003

(filed Sep. 13, 1999)

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THE REJECTIONS

The claims stand rejected as obvious under 35 U.S.C. § 103 as follows: claims 1-15 over Kleven '297 in view of Nowacki, claims 17 and 21 over Kleven '297 in view of Wiklund, claims 18 and 19 over Kleven '297 in view of Wiklund and Kleven '568, and claim 20 over Kleven '297 in view of Nowacki and Kleven '568.

OPINION

We affirm the rejections of claims 1-15 and 20, and reverse the rejections of claims 17-19 and 21.

Claims 1-15 and 20

The appellants state that claims 1-15 and 20 stand or fall together (brief, page 8). We therefore limit our discussion to one claim in this group, i.e., claim 1. See *In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c)(7)(1997).

Kleven '297 discloses a differential pressure flow plate (102) which has a central opening (112) and is insertable between pipe flanges (54, 56).

Nowacki discloses an air flow sensing venturi device having a flow restriction with four axially extending cylindrical bores (40) which, Nowacki states, "have been found to produce

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superior results as compared with a conventional single large bore" (col. 1, lines 45-48; col. 2, lines 50-56). Nowacki discloses (col. 3, lines 54-62):

As compared with a single large hole or bore of substantially equal area, there is 30% less restriction to flow. Therefore, a stronger signal is obtained. Air volume of approximately 5 to 120 liters/minute can now be measured, as contrasted with a range of 20-120 liters/minute with a single hole. This is due to better control of air flow without molecules of air collecting in the flow path. There is also less tumbling of the air.

The appellants acknowledge that Kleven '297 discloses all aspects of claim 1 except the plurality of circular apertures eccentrically disposed with respect to the center point of the impedance means (brief, page 5).

The appellants argue that Nowacki's bore (40) cannot reasonably be substituted for the single flow opening (112) of Kleven '297 because a bore is not a substitute for an aperture which, the appellants argue, is a hole or opening in an otherwise solid wall or surface (brief, page 7; reply brief, pages 4-6). The test for obviousness is not whether the features of one reference may be bodily incorporated into the structure of another reference, or whether one or all of the references must expressly suggest the claimed invention but, rather, is what the

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combined teachings of the references would have fairly suggested to one of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981); *In re Wood*, 599 F.2d 1032, 1036-37, 202 USPQ 171, 174 (CCPA 1979); *In re Van Beckum*, 438 F.2d 1001, 1005, 169 USPQ 47, 50 (CCPA 1971); *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549-50 (CCPA 1969); *In re Cochran*, 374 F.2d 1017, 1023, 153 USPQ 195, 201 (CCPA 1967). Nowacki's disclosure that, compared to a single large hole or bore of substantially equal area, a plurality of small bores provides 1) less restriction to flow and, therefore, a stronger signal, 2) better control of air flow without molecules of air collecting in the flow path, and 3) less tumbling of air (col. 3, lines 53-62), would have fairly suggested, to one of ordinary skill in the art, the use of a plurality of small holes instead of the Kleven '297 single large hole to obtain those benefits.

The appellants argue that one of ordinary skill in the art, in combining the references, would not have had a reasonable expectation of success when seeking to average pressures produced by a non-symmetrical fluid profile (brief, pages 9-10; rely brief, pages 7-8). This argument is not well taken because to establish a *prima facie* case of obviousness, references need not

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be combined for the purpose of solving the problem solved by the appellants. See *In re Kemps*, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996); *In re Beattie*, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992); *In re Dillon*, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (*en banc*), *cert. denied*, 500 U.S. 904 (1991); *In re Lintner*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). One of ordinary skill in the art would have combined the references to improve the air flow control and reduce the flow restriction and air tumbling in the Kleven '297 device as discussed above.

We therefore conclude that the flow measuring element claimed in the appellants' claim 1 would have been obvious to one of ordinary skill in the art over the applied references. Accordingly, we affirm the rejection of that claim and claims 2-15 and 20 that stand or fall therewith.

Claims 17-19 and 21

The appellants' claim 21 requires a pitot tube type flow meter having a body that includes upstream and downstream facing surfaces carried by and mounted diametrically across the central opening of an annulus.

Wiklund discloses an averaging pitot tube type primary

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element (14) that penetrates into a pipe (12) and has forward (30B) and downstream (30C) facing pitot tubes that connect to a sensor body (22) of a transmitter (10) (col. 4, lines 4-13).

The examiner argues (answer, pages 6-7):

Wiklund discloses a flow measurement apparatus comprising a pitot tube type of fluid flow meter having a body that includes upstream and downstream facing surfaces 30B, 30C for the purpose of measuring pressure across a fixed restriction in a pipe (column 3, line 35 - column 4, line 3). Kleven '297 and Wiklund are both from the same field of endeavor, the purpose disclosed by Wiklund would have been recognized in the pertinent art of Kleven '297. Therefore, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to include in Kleven '297, the teachings of Wiklund, for the purpose of measuring pressure proximate a fixed restriction in a pipe.

Perhaps, because the devices of both Kleven '297 and Wiklund are flow measurement devices, those references would have fairly suggested, to one of ordinary skill in the art, using the devices together to measure flow. The examiner, however, has not explained how those references would have fairly suggested, to one of ordinary skill in the art, the appellants' pitot tube type flow meter having upstream and downstream facing surfaces carried

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by and mounted diametrically across the central opening of an annulus.

The examiner, therefore, has not carried the burden of establishing a prima facie case of obviousness of the flow meter claimed in the appellants' claim 21. Consequently, we reverse the rejection of that claim and claims 17-19 that depend directly or indirectly therefrom.¹

DECISION

The rejections under 35 U.S.C. § 103 of claims 1-15 over Kleven '297 in view of Nowacki, and claim 20 over Kleven '297 in view of Nowacki and Kleven '568, are affirmed. The rejections of claims 17 and 21 over Kleven '297 in view of Wiklund, and claims 18 and 19 over Kleven '297 in view of Wiklund and Kleven '568, are reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR §

¹ The examiner does not rely upon Kleven '568 for any disclosure that remedies the above-discussed deficiency in Kleven '297 and Wiklund.

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1.136(a)(1)(iv) (effective Sep. 13, 2004; 69 Fed. Reg. 49960
(Aug. 12, 2004); 1286 Off. Gaz. Pat. Office 21 (Sep. 7, 2004)).

AFFIRMED-IN-PART

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