

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD B. PHILIPS and ROBERT KUKLINSKI

Appeal No. 1998-1736
Application 08/282,847

ON BRIEF

Before CALVERT, ABRAMS and STAAB, Administrative Patent Judges.

CALVERT, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 to 11, all the claims in the application.

Claim 1, the only independent claim, defines the subject matter in issue as follows (emphasis added):

1. Apparatus for separating gas bubbles from a moving fluid comprising:

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a conduit for constraining the fluid to flow in a first direction;

wall means cooperating with said conduit to define a chamber on at least one side of said conduit and located alongside the fluid flowing in said first direction, said chamber being in communication with the interior of said conduit, said conduit having another side opposite said one side;

an ultrasonic generating means provided in part in said wall means and in part in said another side of said conduit, said generating means being oriented to create standing ultrasonic waves in said conduit, said standing ultrasonic waves having planar node and antinode regions oriented at an angle to the flow of said fluid; and

a bubble permeable window in said wall means to withdraw bubbles reaching said window.

The references applied in the final rejection are:

1963	Zenner et al (Zenner)	3,109,721	Nov. 5,
1966	Snaper	3,266,631	Aug. 16,
1982	Faulkner et al (Faulkner)	4,339,247	Jul. 13,
	Magill et al (Magill)	92/093354(WIPO)	Jun. 6, 1992

The appealed claims stand finally rejected on the following grounds:

- (1) Claims 1 to 11, for failure to comply with the "written description" requirement of 35 U.S.C. § 112, first paragraph;
- (2) Claims 1 to 5, unpatentable over Snaper in view of Zenner,

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under 35 U.S.C. § 103(a);

(3) Claims 7 and 11, unpatentable over Snaper in view of
Zenner and Faulkner, under 35 U.S.C. § 103(a);

(4) Claims 6 and 8 to 10, unpatentable over Snaper in view of
Zenner and Magill (claim 6), or Snaper in view of Zenner,
Faulkner and Magill (claims 8 to 10), under 35 U.S.C. §
103(a).¹

Rejection (1)

The basis for this rejection, as stated by the examiner
on page 4 of the answer, is that there is no clear support in
the specification for the portion of claim 1 underlined above.
The examiner also notes on page 6 of the answer that the
specification as filed failed to describe manipulation of the
frequency and phase of the variable driver sound wave creation

¹This is our interpretation of the ground of rejection,
the examiner having stated on page 6 of the answer only that
claims 6 and 8 to 10 "stand rejected under 35 U.S.C. § 103(a)
as being unpatentable over the prior art as applied to claims
1 and 7, respectively above, and further in view of Magill et
al."

means to achieve the recited arrangement of node and antinode regions.

In describing the embodiment of Figure 1, the instant application discloses at page 5, lines 14 to 23, with respect to standing ultrasonic waves:

An ultrasonic transducer 16 is provided in one side of the conduit 10. The transducer 16 is directed at a angle to the horizontal axis 10b of the conduit to create acoustic standing waves 20 in fluid 17 between the transducer 16 and a reflective surface 18 provided in the wall means 12. These standing waves 20 are preferably emitted at an acute angle with respect to the horizontal axis 10b of the conduit. The angle is preferably in the range of 30E - 60E. The ultrasonic generating means in the form of a transducer 16 and the reflecting surface 18 are provided for creating these standing waves.

Likewise, as to the embodiment of Figure 2 (page 7, lines 13 to

18):

Transducers 16a and 16b generate a plurality of standing waves 20 at an angle to fluid flow 21. Standing waves 20 urge gas bubbles 15 upward and out of the fluid flow region. Control means 26a and 26b allow the number of standing waves 20 to be adjusted to separate gas bubbles 15 having various sizes from fluid 17.

In Figures 1 and 2, the standing waves 20 are shown as lines which appear to be perpendicular to the common axis of the transducer(s) 16 and reflector 18, and are at an angle % to

the horizontal axis 10b of the conduit.²

The examiner is certainly correct in that the claim language in question does not expressly appear in the application as filed, either in the above-quoted portions of the specification or elsewhere. However, the claimed subject matter need not be described in haec verba in the specification in order for the specification to satisfy the "written description"

requirement of § 112, first paragraph, In re Smith, 481 F.2d 910, 914, 178 USPQ 620, 624 (CCPA 1973), and all new language added by amendment is not ipso facto new matter. In re Wright, 343 F.2d 761, 767, 145 USPQ 182, 188 (CCPA 1965).

Where, as here, the specification contains a written description of the claimed invention, but not in ipsis verbis, the examiner, in making a rejection under the "written description" requirement of § 112, first paragraph, must meet the requisite burden of proof by providing reasons why one of ordinary skill in the art would not consider the description

²We do not find the symbol "%" in the specification.

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sufficient. Once the examiner has carried the burden of making out a prima facie case of unpatentability, the burden of coming forward with evidence or argument shifts to the applicant to show that the invention as claimed is adequately described to one skilled in the art. In re Alton, 76 F.3d 1168, 1175, 37 USPQ2d 1578, 1583-84 (Fed. Cir. 1996). If a person of ordinary skill in the art would have understood the inventor to have been in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate written description requirement is met. Id., 76 F.3d at 1175, 37 USPQ2d at 1584.

In this case we do not consider the reasons given by the examiner sufficient to make out a prima facie case of noncompliance with the "written description" requirement, but even assuming that a prima facie case were established, it has been overcome by appellants. As appellants assert on pages 5 and 6 of their brief,³ referring to a text submitted by them

³All references herein to appellants' brief are to the brief filed on August 4, 1997 (Paper No. 15).

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in response to the final rejection,⁴ it is well known that acoustic waves are longitudinal waves, the standing waves having nodes and antinodes. Also one of ordinary skill would know from the showing in Figures 1 and 2 that the nodes and antinodes are planar, extending into and out of the plane of the drawing. This is sufficient to show that one of ordinary skill would have understood from appellants' description and illustration of

standing waves 20 that appellants were in possession of the limitations underlined in claim 1, *supra*, at the time the instant application was filed.

Rejection (1) accordingly will not be sustained.

Rejection (2)

⁴This text, Sears et al, University Physics (6th Ed. 1982), pp. 422 to 427, was submitted as an attachment to the Amendment After Final Rejection filed on Dec. 2, 1996 (Paper No. 9). Although the examiner issued an Advisory Action on Jan 23, 1997 (Paper No. 10) denying entry of the proposed amendment to the specification, that does not preclude our consideration of the attachment, of which, in any event, we may take official notice. See In re Ahlert, 424 F.2d 1088, 1091, 165 USPQ 418, 420-21 (CCPA 1970).

Snaper, the primary reference, discloses apparatus for separating gas from a flowing liquid, there being a conduit 10b having a chamber 14 on one side with a bubble (gas) permeable valve 16, 17, 18, and two ultrasonic transducers 22a, b at the other side of the conduit, the operating frequency being "selected so as to acoustically match the cavity and fluid combination to the transducer power output unit in order to provide for optimum efficiency" (col. 3, lines 30 to 33). Zenner discloses apparatus for separating a mixture of two gases, liquids, or finally divided solids (col. 3, lines 35 to 39). In the simplest embodiment (Fig. 1), the mixture to be separated is introduced at 10 into a horn 11 having a sound generator 12 at one end and a reflector 17 at the other, the frequency and phase being adjusted to produce a standing wave (col. 2, lines 65 to 68). This causes separation of the mixture into light and heavy components, removed from the horn at 19 and 18, respectively.

The examiner takes the position that (Answer, page 5):

it would have been readily obvious to one of ordinary skill in the art to employ reflector surfaces positioned

opposite to the variable driver sound wave creation means in the Snaper gas separation apparatus in order to achieve optimum separation for the power consumed as taught by Zenner et al.

He also states on page 7 of the answer that Snaper and Zenner both treat fluids "flowing in a conduit with sound waves at an angle to fluid flow," and that appellants' comments (that the references' sound waves are not at an angle) "would also seem to be irrelevant because claims 1-5 do not recite any specific angle for the ultrasound waves produced."

Even assuming that it would have been obvious to employ a reflector on the side of the conduit opposite Snaper's transducers 22a, b,⁵ the thus-modified apparatus of Snaper would still not have ultrasonic generating means oriented to create standing waves with their planar node and antinode regions "oriented at an angle to the flow of fluid," as required by claim 1. Looking at Figure 2 of Snaper, it appears that the planar node and antinode regions of the standing waves created by transducers 22a, b would not be "at

⁵ Although not argued by appellants, we note that, in order to satisfy the language of claim 1, the reflector would have to be positioned in Snaper's chamber 14, an unlikely location.

an angle" to the fluid flowing through conduit 10b, but rather would be parallel to such flow. While claim 1 does not recite any specific angle, as the examiner notes, we do not consider that it would be reasonable to interpret "at an angle" so broadly as to include an angle of zero. In the Zenner apparatus, it appears that the components of the mixture introduced into horn 11 would, in passing from inlet 10 to the outlets 18 and 19, flow past the node and antinode planes at an angle thereto. However, we find no mention of such angular flow in Zenner, let alone any teaching or suggestion that it is necessary or desirable to orient the node and antinode planes of the standing waves at an angle to the fluid flow. Thus, Zenner would have provided no motivation for one of ordinary skill to orient the transducers and reflector of the modified Snaper apparatus so that the planar node and antinode regions of the standing waves would be at an angle to the flow of fluid through conduit 10b.

The apparatus recited in claims 1 therefore would not have been obvious over Snaper in view of Zenner, and we will not sustain rejection (2) as to that claim, or as to dependent

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claims 2 to 5.

Rejections (3) and (4)

Since Faulkner and Magill, the two additional references applied in these rejections, do not supply the deficiency of the Snaper-Zenner combination discussed above, rejections (3) and (4) likewise will not be sustained.

Rejection Pursuant to 37 CFR 1.196(b)

Pursuant to 37 CFR 1.196(b), claims 8 to 11 are rejected for failure to comply with the requirements of the second paragraph of 35 U.S.C. § 112, as follows:

(A) Claim 8 recites that the ultrasonic generating means includes a transducer and a reflector, but is dependent on claim 7, which recites that the ultrasonic generating means comprises a first transducer and a second transducer opposite thereto. Thus, claim 8 calls for apparatus which includes two opposed transducers and a reflector and is indefinite when one attempts to read it in light of the disclosure, because appellants do not appear to disclose any such apparatus in the

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specification. Cf. In re Cohn, 438 F.2d 989, 993, 169 USPQ 95, 98 (CCPA 1971).

(B) Claim 9 is indefinite in that it is not clear which of the two previously-recited (in claim 7) ultrasonic transducers is being referred to by "said ultrasonic transducer."

Conclusion

The examiner's decision to reject claims 1 to 11 is reversed. Claims 8 to 11 are rejected pursuant to 37 CFR 1.196(b).

This decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b) (amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides that, "A new ground of rejection shall not be considered final for purposes of judicial review."

37 CFR § 1.196(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

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ground of rejection to avoid termination of proceedings

(§ 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

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

REVERSED 37 CFR 1.196(b)

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