

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte DAN VOIC

Appeal No. 2004-0551
Application No. 09/393,256

ON BRIEF

Before FRANKFORT, NASE, and BAHR, Administrative Patent Judges.
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 to 10, 21 to 28 and 30 to 33, which are all of the claims pending in this application.

We AFFIRM-IN-PART.

BACKGROUND

The appellant's invention relates to a method of cleaning and an associated device. In particular, the appellant's invention is related to the general field of ultrasonic cleaning. The appellant's invention is especially useful in cleaning dirt and oxides from electrical contacts. The appellant's invention is also related to the field of atomizing or spraying a liquid, and in particular ultrasonic atomization or spraying (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellant's brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Kurokawa et al. (Kurokawa)	4,844,343	July 4, 1989
Weiland	5,070,881	Dec. 10, 1991

The following rejections are before us in this appeal:¹

(1) Claims 1 to 10 and 21 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the appellant, at the time the application was filed, had possession of the claimed invention;

¹ The rejection of claims 30 and 31 under 35 U.S.C. § 112, second paragraph, made in the final rejection was withdrawn by the examiner in the answer (p. 6).

- (2) Claims 1 to 7, 10 and 21 to 28 under 35 U.S.C. § 102(b) as being anticipated by Weiland;
- (3) Claims 1 and 9 under 35 U.S.C. § 102(b) as being anticipated by Kurokawa; and
- (4) Claims 8 and 30 to 33² under 35 U.S.C. § 103 as being unpatentable over Weiland.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the answer (Paper No. 18, mailed June 3, 2003) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 17, filed March 13, 2003) and reply brief (Paper No. 19, filed August 7, 2003) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

² While the statement of this rejection recites only claims 8, 30, 32 and 33, the body of the rejection also treats claim 31. In addition, the appellant in the brief (p. 13) argued the rejection of claim 31 under 35 U.S.C. § 103. Accordingly, we consider claim 31 as being subject to this ground of rejection.

The written description rejection

We will not sustain the rejection of claims 1 to 10 and 21 under 35 U.S.C. § 112, first paragraph.

The written description requirement serves "to ensure that the inventor had possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him; how the specification accomplishes this is not material." In re Wertheim, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). In order to meet the written description requirement, the appellant does not have to utilize any particular form of disclosure to describe the subject matter claimed, but "the description must clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." In re Gosteli, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989). Put another way, "the applicant must . . . convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention." Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). In addition to an express disclosure, the written description requirement can be satisfied by showing that the disclosed subject matter, when given its "necessary and only reasonable construction," inherently (i.e., necessarily) satisfies the limitation in question. See Kennecott Corp. v. Kyocera Int'l, Inc., 835 F.2d 1419, 1423, 5 USPQ2d 1194, 1198 (Fed. Cir. 1987), cert. denied, 486 U.S. 1008 (1988).

Finally, "[p]recisely how close the original description must come to comply with the description requirement of section 112 must be determined on a case-by-case basis." Eiselstein v. Frank, 52 F.3d 1035, 1039, 34 USPQ2d 1467, 1470 (Fed. Cir. 1995) (quoting Vas-Cath, 935 F.2d at 1561, 19 USPQ2d at 1116).

The basis for this rejection (answer, p. 3) is that the disclosure, as originally filed, does not explicitly exclude electrical circuit elements from the shaft and the probe head as recited in independent claim 1. The examiner acknowledged that the appellant's specification, on page 4, lines 3-4, recites "[t]he probe has no electrical connections, and essentially constitutes a passive mechanical tool." The examiner then asserted that while the specification discloses "no electrical connections" the specification fails to disclose "said shaft and said probe head having an absence of electrical circuit elements" as recited in claim 1. The examiner goes on to (1) state that the appellant is claiming what his device is not rather than what his invention is, and (2) suggests that the appellant use the transitional phrase "consisting of" for exclusion of elements from the claimed invention.

In our opinion, the limitation in question has the necessary written description support in the original disclosure when the disclosed subject matter is given its "necessary and only reasonable construction." In that regard, the above-quoted

sentence, together with the drawings and the specification taken as a whole, unequivocally indicate to us that, at the time the application was filed, the appellant had possession of an ultrasonic probe comprising a shaft and a probe head having an absence of electrical circuit elements.

For the reasons set forth above, the decision of the examiner to reject claims 1 to 10 and 21 under 35 U.S.C. § 112, first paragraph, is reversed.

The anticipation rejection based on Weiland

We will not sustain the rejection of claims 1 to 7, 10 and 21 to 28 under 35 U.S.C. § 102(b) as being anticipated by Weiland.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Verdegaal Bros. Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987). The inquiry as to whether a reference anticipates a claim must focus on what subject matter is encompassed by the claim and what subject matter is described by the reference. As set forth by the court in Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984), it is only necessary for the claims to "'read on' something

disclosed in the reference, i.e., all limitations of the claim are found in the reference, or 'fully met' by it."

Teachings of Weiland

Weiland's invention concerns ultrasound apparatus for determining whether a female large animal, especially a cow or a mare, is gravid. The ultrasound apparatus, as shown in Figures 1-2, consists essentially of an ultrasonic head 1, a handle 2, an extension 3 of the handle and equipment 4.

The ultrasonic head 1 consists of a circular cylinder 5 with a piezo-oxide disk 6. On each side of the disk are the active components of an ultrasound transmitter 7 and an ultrasound receiver 8, and between piezo-oxide disk 6 and the free end of cylinder 5 is an intermediate 10 with an area equaling the open cross-section of the cylinder 5. The surface of intermediate 10 facing disk 6 fits tight inside cylinder 5. There is a filler 11 on the side of piezo-oxide disk 6 facing away from intermediate 10. An electric cable 12 that connects to ultrasound transmitter 7 and receiver 8 extends through filler 11. The bottom of cylinder 5 is closed off with a circular plate 13.

A narrower threaded section 14 of handle 2 extends through a bore 15 in the surface of cylinder 5 and into space 16 between filler 11 and plate 13. Screwed onto

threaded section 14 is a nut 17, tightly securing handle 2 to cylinder 5. Handle 2 has a central bore 18 extending through it longitudinally and accommodating electric cable 12. The end remote from threaded section 14 has a negative plug component 19 connected to cable 12. Extension 3 is, like handle 2, shaped like a rod, with one end having a positive plug component 20 that fits into the negative component on handle 2. The other end of extension 3 has another negative plug component 21. When handle 2 and extension 3 are connected, a union nut 22 that moves back and forth axially between two stops on handle 2 engages a threaded section 23 on extension 3.

Extension 3 also has a central bore 24 extending through it longitudinally and accommodating an electric cable 25 that connects plug components 20 and 21. A subassembly with the negative plug component 21 in extension 3 constitutes a positive plug component 26 that is connected by way of another electric cable 27 to equipment 4. The essential elements of equipment 4 are, as schematically illustrated in Figure 1, an electric signal generator 28, an audio alarm and a battery 29 that powers the apparatus. All these components are of course electrically connected to electric cable 27. The other essential components needed to operate conventional ultrasound apparatus can be accommodated in equipment 4.

The outer surface of cylinder 5 is provided at its free end 9 with a resilient annular structure 30 that projects above that end. This structure is a shallow and soft rubber ring that is cemented to cylinder 5 where it comes into contact with it. The section of resilient annular structure 30 that projects beyond the free end 9 of cylinder 5 is slightly larger than the section cemented to the cylinder. A contacting agent 32, a gel for example, is introduced into the space between free end 9 and the free end 31 of resilient annular structure 30 and surrounded by that structure. In addition, ultrasonic head 1 and handle 2 are provided with a protective rubber coating 33 and that the coated area is shaped more or less like a tobacco pipe. Protective coating 33 covers resilient annular structure 30 up to the level of the free end 9 of cylinder 5.

The ultrasonic head 1 with the resilient annular structure 30 surrounding the contacting agent 32 and with the cylinder 5 secured to the handle 2 and extension 3 can be used to determine whether if a female animal, that might constitute some danger to an examiner, is gravid. Handle 2 and extension 3 make it possible to extend ultrasonic head 1 over wide distances, and resilient annular structure 30 prevents rubbing off the contacting agent when the head is moved over the animal's skin or hair, leaving a cushion of air between the ultrasonic head and the air to contaminate or prevent results.

Claims 1 to 7, 10 and 21

Independent claim 1 reads as follows:

An ultrasonic probe comprising:
a shaft for transmitting ultrasonic mechanical vibrations from a source of ultrasonic vibrations; and
a probe head at an end of said shaft, said probe head being provided on at least one lateral side with a recess, said shaft and said probe head having an absence of electrical circuit elements, said recess being an open container for holding an aliquot of liquid.

On page 6 of the answer, the examiner acknowledges that Weiland provides electrical circuit elements in the shaft and probe head. Since claim 1 recites "said shaft and said probe head having an absence of electrical circuit elements," claim 1 is not anticipated by Weiland. Accordingly, the decision of the examiner to reject claim 1, and claims 2 to 7, 10 and 21 dependent thereon, under 35 U.S.C. § 102(b) as being anticipated by Weiland is reversed.

Claims 22 to 28

Independent claim 22 reads as follows:

An ultrasonic probe comprising:
a shaft for transmitting ultrasonic mechanical vibrations from a source of ultrasonic vibrations, said shaft having a longitudinally extending channel for guiding liquid from a fluid source; and
a probe head at an end of said shaft, said probe head being provided on at least one lateral side with an open recess communicating with said channel to enable a filling of said recess with liquid conducted through said channel.

The appellant argues (brief, p. 11) that Weiland does not disclose an open recess in the probe head communicating with a channel in the shaft. Instead, the appellant points out that Weiland's channel or bore 18 communicates with a closed cavity or space 16. The examiner's response to this argument (answer, p. 8) is that Weiland's shaft 2 with channel 18 communicates with recess 16.

In our view, the claimed "open recess" which communicates with the channel of the shaft to enable a filling of the open recess with liquid conducted through the channel is not readable on Weiland's space 16 since space 16 is closed not open as shown in Figure 1 of Weiland.

Since all the limitations of claim 22 are not disclosed in Weiland for the reasons set forth above, the decision of the examiner to reject claim 22, and claims 23 to 28 dependent thereon, under 35 U.S.C. § 102(b) as being anticipated by Weiland is reversed.

The anticipation rejection based on Kurokawa

We sustain the rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Kurokawa but not the rejection of claim 9.

Teachings of Kurokawa

Kurokawa's invention relates generally to an ultrasonic vibrator horn, and particularly to an ultrasonic vibrator horn for use with ultrasonic atomizing apparatus for atomizing liquid, such atomizing apparatus including industrial and non-industrial liquid atomizing apparatus employed with gasoline engines, diesel engines, gas turbines and various combustors such as industrial, commercial and domestic boilers. One embodiment of the ultrasonic vibrator horn for an ultrasonic atomizer is illustrated in Figure 1A. As shown, the ultrasonic vibrator horn 9 is connected at its one axial end to an electroacoustic transducer 1 which forms part of an ultrasonic vibration generating means. The other axially forward end portion 5 of the horn at which atomization of liquid fuel fed from a fuel feed pipe 3 to the horn takes place when the horn is driven by the vibration generating means is formed into a conical shape. The horn further has one or more circumferentially spaced longitudinal grooves 7 formed in its outer periphery. The groove 7 communicates with the forward end portion 5 for receiving liquid fuel from the feed pipe 3 and directing the same to the end portion 5. The groove 7 is shown as being inclined progressively towards the central axis of the horn as it proceeds towards the forward end 5, but the groove may extend parallel to the central axis of the horn 9 and there may be provided a plurality of grooves. The groove 7 may be either V-shaped in cross-section as shown in Figure 1B, or U-shaped as shown in Figure 1C, or channel-shaped as shown in Figure 1D.

Claim 1

Claim 1 is readable on Kurokawa as follows: An ultrasonic probe (Kurokawa's ultrasonic vibrator horn 9) comprising: a shaft for transmitting ultrasonic mechanical vibrations from a source of ultrasonic vibrations (the portion of Kurokawa's ultrasonic vibrator horn 9 which extends from the electroacoustic transducer 1 to where groove 7 starts); and a probe head at an end of said shaft (the portion of Kurokawa's ultrasonic vibrator horn 9 which extends from axially forward end portion 5 to where groove 7 starts), said probe head being provided on at least one lateral side with a recess (Kurokawa's groove 7), said shaft and said probe head having an absence of electrical circuit elements (Kurokawa's ultrasonic vibrator horn 9 does not include any electrical circuit elements), said recess being an open container for holding an aliquot of liquid (Kurokawa's groove is an open container for holding an aliquot of liquid).

The appellant argues (brief, p. 9) that Kurokawa does not disclose the claimed open container since Kurokawa's groove 7 is a guide for running fluid and is specifically designed not to hold liquid. The examiner's response to this argument (answer, p. 7) is that Kurokawa's groove 7 is an open container for holding liquid since the groove 7 contains liquid.

The United States Patent and Trademark Office (USPTO) applies to the verbiage of the claims before it the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the appellant's specification. In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). See also In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983).

Webster's Third New International Dictionary, (1971) defines "container" as "one which contains." The appellant's specification provides no definition or enlightenment as to the meaning of the term "container." Accordingly, it is our determination that "container" as used in claim 1 means "one which contains." Since Kurokawa's groove 7 does contain liquid during use, it is our conclusion that the claimed open container is readable on Kurokawa's groove 7.

Since all the limitations of claim 1 are disclosed in Kurokawa for the reasons set forth above, the decision of the examiner to reject claim 1 under 35 U.S.C. § 102(b) as being anticipated by Kurokawa is affirmed.

Claim 9

Claim 9 reads as follows:

The probe defined in claim 1 wherein said recess is parabolic in cross section.

Since the groove 7 of Kurokawa is not parabolic in cross section³ for the reasons set forth in the brief (p. 11) and reply brief (p. 4), all the limitations of claim 9 are not disclosed in Kurokawa. Accordingly, the decision of the examiner to reject claim 9 under 35 U.S.C. § 102(b) as being anticipated by Kurokawa is reversed.

The obviousness rejection

We will not sustain the rejection of claims 8 and 30 to 33 under 35 U.S.C. § 103 as being unpatentable over Weiland.

Claim 8

Claim 8 depends indirectly from claim 1. In the rejection of claim 8 under 35 U.S.C. § 103, the examiner determined only that the added limitation set forth in claim 8 would have been obvious at the time the invention was made to a person of ordinary skill in the art. The examiner did not conclude that the limitation in claim 1 that

³ A U-shaped cross section is not a parabolic cross section. Thus, Kurokawa's U-shaped groove is not parabolic in cross section.

"said shaft and said probe head having an absence of electrical circuit elements" would have been obvious at the time the invention was made to a person of ordinary skill in the art. Thus, the examiner has not determined that the claimed subject matter of claim 8, as a whole, to have been obvious under 35 U.S.C. § 103 over the teachings of Weiland. Accordingly, the decision of the examiner to reject claim 8 under 35 U.S.C. § 103 as being unpatentable over Weiland is reversed.

Claims 30 and 31

Independent claim 30 reads as follows:

An ultrasonic probe comprising:
a shaft for transmitting ultrasonic mechanical vibrations from a source of ultrasonic vibrations; and
a probe head at an end of said shaft, said probe head being provided on at least one lateral side with a recess, said probe head being provided with a plurality of channels communicating with said recess.

In the rejection of claim 30 under appeal, the examiner (answer, p. 5) concluded that it would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided an additional through channel or bore in the device of Weiland to route additional wire.

The appellant argues (brief, p. 13) that there is no reason to provide an additional through channel or bore in the device of Weiland to route additional wire. We agree.

Evidence of a suggestion, teaching, or motivation to modify a reference may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), Para-Ordinance Mfg., Inc. v. SGS Importers Int'l., Inc., 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), cert. denied, 117 S. Ct. 80 (1996), although "the suggestion more often comes from the teachings of the pertinent references," In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998). The range of sources available, however, does not diminish the requirement for actual evidence. When an examiner relies on general knowledge to negate patentability, that knowledge must be articulated and placed on the record. See In re Lee, 277 F.3d 1338, 1342-45, 61 USPQ2d 1430, 1433-35 (Fed. Cir. 2002). See also In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). When obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference to arrive at the

claimed subject. See In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000).

In this case, the examiner has not provided any evidence providing the necessary suggestion or motivation for a person of ordinary skill in the art at the time the invention was made to have provided an additional through channel or bore in the device of Weiland to route additional wire. Accordingly, the examiner has not set forth a case of obviousness.

For the reasons set forth above, the decision of the examiner to reject claim 30, and claim 31 dependent thereon, under 35 U.S.C. § 103 as being unpatentable over Weiland is reversed.

Claims 32 and 33

Independent claim 32 reads as follows:

An ultrasonic probe comprising:
a shaft; a threaded connector at one end of said shaft for connecting said shaft to a source of ultrasonic mechanical vibrations; and
a probe head at an end of said shaft opposite said connector, said probe head being provided on at least one lateral side with an axially symmetric recess.

In the rejection of claim 32 under appeal, the examiner (answer, p. 5) stated that threaded electrical connectors are well known in the art and concluded that it would have been obvious to a person having ordinary skill in the art at the time of the invention to have replaced Weiland's electrical plugs 21 and 26 with a threaded connection.

The appellant argues (brief, p. 14) that there is no reason to replace Weiland's electrical plugs 21 and 26 with a threaded connection. We agree. The examiner has once again not provided any evidence providing the necessary suggestion or motivation for a person of ordinary skill in the art at the time the invention was made to have replaced Weiland's electrical plug 21 with a threaded connector let alone a threaded connector for connection to a source of ultrasonic mechanical vibrations. Accordingly, the examiner has not set forth a case of obviousness.

For the reasons set forth above, the decision of the examiner to reject claim 32, and claim 33 dependent thereon, under 35 U.S.C. § 103 as being unpatentable over Weiland is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1 to 10 and 21 under 35 U.S.C. § 112, first paragraph, is reversed; the decision of the examiner to reject claims 1 to 7, 10 and 21 to 28 under 35 U.S.C. § 102(b) as being anticipated by Weiland is reversed; the decision of the examiner to reject claims 1 and 9 under 35 U.S.C. § 102(b) as being anticipated by Kurokawa is affirmed with respect to claim 1 and reversed with respect to claim 9; and the decision of the examiner to reject claims 8 and 30 to 33 under 35 U.S.C. § 103 as being unpatentable over Weiland is reversed.

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

AFFIRMED-IN-PART

CHARLES E. FRANKFORT)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JEFFREY V. NASE)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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