

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
Judge William J. Martínez**

Civil Action No. 19-cv-1669-WJM-SKC

KAMSTRUP A/S,

Plaintiff,

v.

AXIØMA METERING UAB,

Defendant.

ORDER DENYING PLAINTIFF’S MOTION FOR PRELIMINARY INJUNCTION

Plaintiff Kamstrup A/S (“Kamstrup”) holds U.S. Patent No. 8,806,957 (“957 Patent” or “Patent”), which relates to an ultrasonic flow meter, *i.e.*, a meter that uses ultrasound to measure consumption of something flowing through the meter, such as water. Defendant Axioma Metering UAB (“Axioma”)¹ manufactures an ultrasound-based water meter known as the “Qualcosonic W1,” which Kamstrup alleges to infringe certain claims of the 957 Patent.

Presently before the Court is Kamstrup’s Motion for Preliminary Injunction. (ECF No. 24.) No party has requested a hearing and the Court finds that no hearing is necessary in any event because, on this record, the dispositive issue—likelihood of success on the merits—may be resolved on the papers alone. For the reasons explained below, the Court finds that Kamstrup is not likely to succeed on the merits

¹ Strictly speaking, Axioma is spelled with a slashed-o character, *i.e.*, “Axiøma.” But Axioma itself does not use this spelling in its briefing. For simplicity, then, the Court will use the spelling “Axioma.”

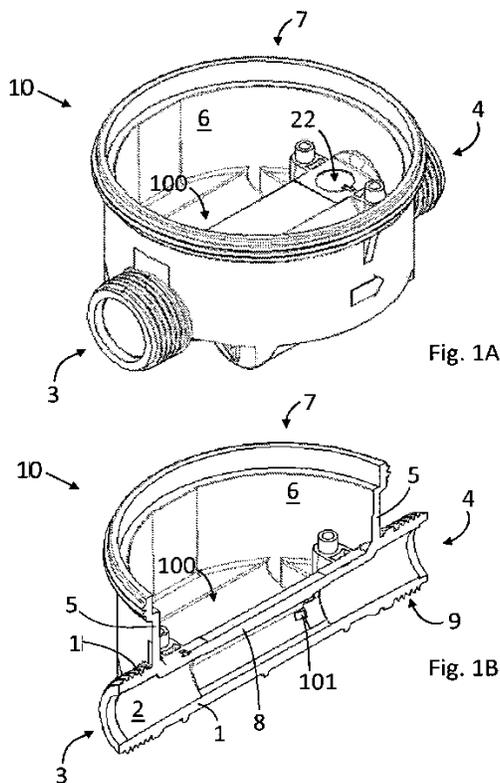
because Axioma has itself shown a likelihood of success that the relevant claims of the 957 Patent will be deemed invalid. Kamstrup’s motion is therefore denied.

I. BACKGROUND

A. Kamstrup’s Patent

The 957 Patent traces to a European patent application filed on December 15, 2009. See 957 Patent, cover page, field (30). The U.S. patent issued on August 19, 2014. *Id.*, field (45).

Figures 1A and 1B from the 957 Patent help to illustrate the sort of invention it claims:



The basic idea behind the claimed invention is that water (or some other flowing substance) enters the flow passage **2** at opening **3** and exits at opening **4**, and

electronics housed in the associated cup-shaped area **6** (dubbed the “cavity”) use ultrasound pulses and associated gadgetry to measure the amount of water that has passed through the meter over time. Moreover, preferably the flow passage is sealed off from the cavity, so that the upper wall of the passage forms part of the lower wall of the cavity. See 957 Patent at 2:21–26. Yet, duplex-like, the flow passage and the cavity are still a single object, just separated into exclusive chambers with a shared wall.

Although exclusive chambers with a shared wall is a preferred embodiment, the single-object arrangement is a requirement. Using ultrasound to measure fluid flow had been known in the art for many years before Kamstrup’s December 2009 patent application, so the 957 Patent seeks to distinguish itself with a “monolithic polymer structure” that has been “cast in one piece.” 957 Patent at 1:59–60. The Patent frames this as innovative over prior art that allegedly “suffers from the problem that a number of moulding steps are required in order to produce the assembly.” *Id.* at 1:49–51. Interestingly, however, the Patent’s claims never limit or even discuss the “number of moulding steps” required to make the device, nor does the Patent claim any molding process. Instead, it claims only “monolithic polymer structure [that has been] cast in one piece.” *Id.* at 6:42, 7:20.

The embodiment of the 957 Patent that Kamstrup offers for sale in the United States, the “flowIQ 2100,” looks like this:



(ECF No. 1 ¶ 11.)²

B. Axioma’s Qualcosonic W1

The accused product, Axioma’s Qualcosonic W1, looks similar to the flowIQ 2100:



(ECF No. 1 ¶ 16.) But visual similarity is ultimately irrelevant—this is not a design patent or trade dress case. The question is whether the Qualcosonic W1 infringes any claim of the 957 Patent.

Kamstrup’s Motion for Preliminary Injunction argues that the Qualcosonic W1 infringes Patent claims 1–7, 10–13, and 15. (ECF No. 24 at 8–9; ECF No. 24-8.) The Court will analyze these claims in detail below. For present purposes, it is important to note that Axioma’s response brief nowhere contests Kamstrup’s *infringement* allegations, instead focusing entirely on *invalidity*. (See *generally* ECF No. 33.) The Court thus deems Axioma to concede for present purposes that the Qualcosonic W1 infringes claims 1–7, 10–13, and 15 of the 957 Patent.

² All ECF page citations are to the page number in the CM/ECF header, which does not always match the document’s internal pagination, particularly in briefs with unnumbered or separately numbered prefatory material, and in exhibits.

II. LEGAL STANDARD

A. Preliminary Injunctions Generally

A preliminary injunction is an extraordinary remedy; accordingly, the right to relief must be clear and unequivocal. *See, e.g., Flood v. ClearOne Commc'ns, Inc.*, 618 F.3d 1110, 1117 (10th Cir. 2010). A movant must show: (1) a likelihood of success on the merits, (2) a threat of irreparable harm, which (3) outweighs any harm to the non-moving party, and (4) that the injunction would not adversely affect the public interest. *See, e.g., Awad v. Ziriix*, 670 F.3d 1111, 1125 (10th Cir. 2012).

B. Preliminary Injunctions Involving Patent Invalidity Arguments

When a defendant in a patent infringement case opposes a preliminary injunction on invalidity grounds, the defendant bears its own burden under the likelihood-of-success element. That burden is tied to the clear-and-convincing burden that the defendant would ultimately need to meet at trial to prove invalidity, but adapted to the preponderance-of-the-evidence standard that applies in preliminary injunction proceedings:

[W]hen analyzing the likelihood of success factor, the trial court, after considering all the evidence available at this early stage of the litigation, must determine whether it is more likely than not that the challenger will be able to prove at trial, by clear and convincing evidence, that the patent is invalid. . . .

If the trial court is persuaded, then it follows that the patentee by definition has not been able to show a likelihood of success at trial on the merits of the validity issue, at least not at this stage. This decision process, which requires the court to assess the potential of a “clear and convincing” showing in the future, but in terms of what is “more likely than not” presently, rests initially in the capable hands and sound judgment of the trial court.

Titan Tire Corp. v. Case New Holland, Inc., 566 F.3d 1372, 1379–80 (Fed. Cir. 2009)

(footnote omitted).

III. SCOPE OF THE RECORD

On September 23, 2019, Axioma petitioned the Patent Trial and Appeal Board for *inter partes* review of the 957 Patent (“IPR petition”). (See ECF No. 34-1 at 2.)

Axioma’s response brief in these preliminary injunction proceedings includes, as an attachment, its 70-page IPR petition and many exhibits to that petition. (See ECF Nos. 34-1 through 34-38.) Kamstrup’s reply brief criticizes Axioma for attaching the IPR petition: “Axioma’s IPR petition (ECF 34-1) is not evidence and should not be considered by the Court. It is nothing more than extended attorney argument in a brief to another tribunal. A party should not evade the page limits by simply attaching more briefing as an exhibit.” (ECF No. 40 at 4 n.3.)

In general, the Court agrees with Kamstrup’s position. However, Kamstrup itself is guilty of the same infraction. The body of Kamstrup’s Motion for Preliminary Injunction argues that Axioma’s water meter infringes multiple claims of the 957 Patent, but Kamstrup only *supports* that argument as to claim 1. (See ECF No. 24 at 8–9.) As to the remaining claims, Kamstrup directs the Court to a 19-page claim comparison chart attached as an exhibit. (See ECF No. 24-8.)

Regardless, the Court, in its discretion, elects not review Axioma’s IPR petition. However, the Court has reviewed the other exhibits, including Kamstrup’s comparison chart and the materials designated as exhibits to Axioma’s IPR petition. The Court finds these materials relevant and admissible under the circumstances, and no party has objected to any of them save the IPR petition itself (ECF No. 34-1).

IV. ANALYSIS

As discussed above, there is presently no question that the Qualcosonic W1 infringes claims 1–7, 10–13, and 15 of the 957 Patent. The only question is whether Axioma is likely to succeed in proving that those claims are invalid. The Court will first discuss the Patent’s two independent claims (claims 1 and 11). The Court will then discuss the dependent claims.

A. Independent Claims (Claims 1 & 11)

1. The Claims Themselves

Claim 1 reads as follows:

An ultrasonic flow meter housing comprising:

a monolithic polymer structure being cast in one piece, the monolithic structure includes a flow tube and a cavity separated from the flow tube, wherein the flow tube defines a through-going straight flow section arranged for passage of a fluid between an inlet and an outlet, wherein a part of a wall of the flow section is part of an inside surface of the cavity, so that the flow section and the cavity has a shared wall area;

wherein the cavity is arranged for housing

at least one ultrasonic transducer, at the shared wall area; and

a measurement circuit operationally connected to the at least one ultrasonic transducer so as to allow measurement of a flow rate of the fluid.

957 Patent at 6:41–55.

Claim 11 describes something very similar, save that the apparatus is actually a flow meter, not just a flow meter housing:

An ultrasonic flow meter comprising:

a flow meter housing in the form of a monolithic polymer structure being cast in one piece, the monolithic structure

includes a flow tube and a cavity separated from the flow tube, wherein the flow tube defines a through-going straight flow section arranged for passage of a fluid between an inlet and an outlet, and wherein a part of a wall of the flow section is part of an inside surface of the cavity, so that the flow section and the cavity has a shared wall area;

at least one ultrasonic transducer, positioned at the shared wall area inside the cavity; and

a measurement circuit operationally connected to the at least one ultrasonic transducer so as to allow measurement of a flow rate of the fluid flowing through the through-going opening, the measurement circuit being housed inside the cavity.

Id. at 7:18–8:3.

2. “Will”

The 957 Patent says that it is an improvement on “international patent application WO 2009/129885.” *Id.* at 1: 43–51. The parties refer to that international application as “Will,” for its first-named inventor, Thomas Will. (See ECF No. 34-7 (original document, in German); ECF No. 34-8 (certified English translation of the original).) The parties’ major point of dispute is whether claim 1 or claim 11 discloses anything patentably different from Will. Axioma argues that Will anticipates these claims, *i.e.*, that Will discloses every element of both claim 1 and claim 11. See *Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir. 1992) (“A party asserting that a patent claim is anticipated under 35 U.S.C. § 102 must demonstrate . . . that each element of the claim in issue is found, either expressly or under principles of inherency, in a single prior art reference, or that the claimed invention was previously known or embodied in a single prior art device or practice.” (internal quotation marks omitted)).

Will, like the 957 Patent, discloses “an ultrasonic measuring assembly for measuring the flow, speed of sound, density, viscosity and/or temperature of flowing media.” (ECF No. 34-8 at 4.) The Will assembly contains a tube through which the “media” flows, and through which ultrasound signals are emitted and then reabsorbed. (*Id.* at 5–6.) The tube is itself inside “a measurement housing” (*id.* at 4) that can be sealed with a lid (*id.* at 9), and which houses the “ultrasound transmitter/receivers” (*id.* at 4) and potentially “at least one signal processing unit for generating, recording, evaluating and/or further processing the signals generated or recorded by the sensors” (*id.* at 9). The tube and measurement housing are manufactured in two steps, with the tube being formed first, followed by “a second injection molding process” where “the plastic of the measurement tube . . . bonds to the plastic of the measurement housing . . . such that no capillaries or seams are formed.” (*Id.* at 5–6.)

The major difference between Will and the 957 Patent is that Will is designed so that fluid flowing through it must make a turn of some sort to enter and exit the measurement tube, as shown in Will’s figure 3:

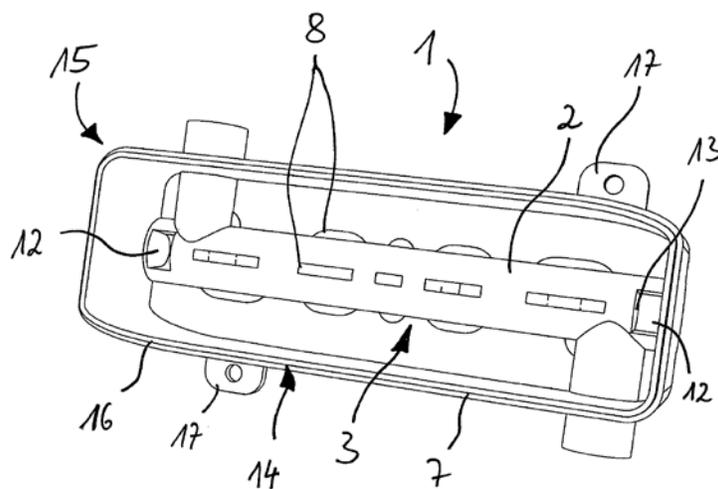


Fig. 3

(ECF No. 34-7 at 20.) Will calls this “a Z-shape or a U-shape, or a ‘double L.’” (ECF No. 34-8 at 7.) The advantage, according to Will, is that the ultrasound transducers may be placed at either end of the measurement tube, facing each other, as if capping the two ends of the measurement tube (*id.* at 5), show at the two features labeled **12** in the illustration above (the “1” character being in the European style). This allows the ultrasound signals to travel from one transducer to the other without relying on reflection within the tube, meaning that the ultrasound signal can be weaker as compared to embodiments that rely on reflection, yet still be accurately measurable at the receiving end. (*Id.* at 5, 11.)

Axioma asserts that the following comparison table demonstrates that Will fully anticipates claim 1 of the 957 Patent:

<p>[1] An ultrasonic flow meter housing comprising:</p>	<p>“The invention relates to an ultrasonic measuring arrangement (1) for the flow, speed of sound, density, viscosity and/or temperature measurement of flowing media...” [ECF No. 34-8 at 2.]</p>
<p>[2] a monolithic polymer structure being cast in one piece,</p>	<p>“...measurement tubes and measurement housings, or the components thereof, are made of a plastic, in particular a plastic suitable for food and/or that is highly resistant, e.g. made of polyethylene (PE) or some other polyolefin, or a suitable polymer fluorocarbon, e.g. perfluoroalkoxy alkane (PFA).” [<i>Id.</i> at 8.]</p> <p>“The problem addressed by the invention is therefore to create an ultrasonic measuring assembly that can be easily and economically produced, and which avoids the disadvantages of components of the assembly that have to be joined subsequently...” [<i>Id.</i> at 5.]</p> <p>“...the measurement housing is injection molded onto the measurement tube, and connected thereto without seals or seams... In the second injection molding process, the plastic of the measurement tube that has been placed therein bonds to the plastic of the</p>

	<p>measurement housing that is injection molded thereon, such that no capillaries or seams are formed." [<i>Id.</i> at 5–6.]</p> <p>"...inserting the measurement tube with the molds in a second casting mold, and injection molding a housing component onto the measurement tube, in particular an open housing component, wherein the measurement tube is bonded to the housing component during the injection molding process without seams or capillaries..." [<i>Id.</i> at 8.]</p>
<p>[3] the monolithic structure includes a flow tube and a cavity separated from the flow tube,</p>	<p>"The measurement tube 2 shown in Figs. 1 and 2 can be seen therein, which is located in a region of the measurement housing 7 that is likewise made of plastic, that forms a housing component 15." [<i>Id.</i> at 10; ECF No. 34-7 at 20.]</p> <p>"...the region of the measurement housing that contains the measurement tube forms a first, open housing component, which can be connected to a second housing component, preferably in the form of a lid. The two housing components form an installation space in this manner..." [ECF No. 34-8 at 7.]</p>
<p>[4] wherein the flow tube defines a through-going straight flow section arranged for passage of a fluid between an inlet and an outlet,</p>	<p>"The measurement tube 2 has connectors 5 at each end 4, which form the intake and discharge for the flowing medium that is to be transported and measured..." [<i>Id.</i> at 10; ECF No. 34-7 at 19.]</p>
<p>[5] wherein a part of a wall of the flow section is part of an inside surface of the cavity, so that the flow section and the cavity has a shared wall area;</p>	<p>"The part of the tapered end of the positive mold 10 facing away from the measurement path 3 is cut away such that a flattened region 11 is obtained, at which the wall section 13 of the measurement housing that is applied later is located (cf. Fig. 3)..." [ECF No. 34-8 at 10; ECF No. 34-7 at 19.]</p> <p>"...the wall region 13 of the measurement housing 7 that is formed by the flattened region of the positive mold during the injection molding process can be seen in the retainers 12." [ECF No. 34-8 at 11; ECF No. 34-7 at 20.]</p>

<p>[6] and wherein the cavity is arranged for housing at least one ultrasonic transducer, at the shared wall area;</p>	<p>"...at which the wall section 13 of the measurement housing that is applied later is located (cf. Fig. 3), behind which one of the ultrasound sensors is located." [ECF No. 34-8 at 10; ECF No. 34-7 at 20.]</p> <p>"This sound path can be discerned by the positions of the retainers 12, which can be propagated with sensors after the casting process, which can be secured in place with adhesive, by injection molding, or some other means..." [ECF No. 34-8 at 11.]</p>
<p>[7] a measurement circuit operationally connected to the at least one ultrasonic transducer so as to allow measurement of a flow rate of the fluid.</p>	<p>"The housing component 15 can be connected at the rim 14 to a second housing component in the form of a lid, which is not shown, such that the measurement tube 2 is encompassed in this assembly, and is located in the immediate vicinity of a signal processing unit located in the installation space formed by the joined housing components." [<i>Id.</i>]</p> <p>"...the second housing component forms a lid for the first, wherein in either case, one of the housing components contains at least one signal processing unit for generating, recording, evaluating and/or further processing the signals generated or recorded by the sensors." [<i>Id.</i> at 9.]</p> <p>"...at least one signal processing unit connected to the sensors in the second housing component of the assembly." [<i>Id.</i> at 14.]</p>

(ECF No. 33 at 12–14 (ellipses in original).)

Kamstrup challenges Axioma's comparison in only two respects: "Will fails to disclose, and in fact teaches away from, 1) a housing and flow tube cast in one piece [element '[2]' in the table above]; and 2) a through-going straight flow section arranged for passage of a fluid between an inlet and an outlet [element '[4]' above]." (ECF No. 40 at 4.) However, Kamstrup never develops the first argument, and so the Court disregards it. See *SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1320 (Fed. Cir. 2006) (mere assertions, without development, are deemed forfeited); *Stender*

v. Archstone-Smith Operating Tr., 910 F.3d 1107, 1117 (10th Cir. 2018) (same).³ Thus, whether Will anticipates the 957 Patent turns on whether Will discloses a through-going straight flow section.

3. Anticipation of “Through-Going Straight Flow Section”

Kamstrup emphasizes “the motivation for Will’s design,” which was “to avoid reflecting ultrasonic signals between the transducers.” (*Id.* at 3.) “To accomplish this goal, Will used a bent path flow tube that ‘forms a Z-shape or a U-shape, or a “double L[.]”’” (*Id.* (quoting ECF No. 34-8 at 7).) Kamstrup claims this contrasts significantly with the “through-going straight flow section” required in claim 1 of the 957 Patent. (*Id.*)

Axioma counters that this is irrelevant in light of the 957 Patent’s claim language, which requires a “flow tube [that] defines a through-going straight flow section.” 957 Patent at 6:44–45. According to Axioma, “flow tube” and “flow section” must mean different things, and only the “flow section” must be straight. From this perspective, Will has both a “flow tube” (the entire Z-shaped component, which happens not to be straight) and “a through-going straight flow section” (the portion of the tube in between

³ Even if the Court were to address it, Will discloses an apparatus cast in one piece (*i.e.*, “without seals or seams,” ECF No. 34-8 at 5), even if the casting process takes two steps. Kamstrup may be conflating its attempt to distinguish Will (“[Will] nevertheless suffers from the problem that a number of moulding steps are required in order to produce the assembly,” 957 Patent at 1:49–51) with what the 957 Patent actually claims (“a monolithic polymer structure being cast in one piece,” *id.* at 6:42). There is no necessary connection between the number of steps required for casting and the ultimate result of a “one piece” apparatus, as shown by Kamstrup’s European patent application for the same apparatus claimed in the 957 Patent. There, Kamstrup amended “cast in one piece” to “cast in a single step” in light of pushback from the European Patent Office regarding Will. (ECF No. 34-5 at 6; see *also* ECF No. 33 at 8.)

Moreover, Kamstrup has *not* argued that “cast in one piece” must be construed as something like “cast in a single step” to avoid redundancy in the phrase “monolithic polymer structure being cast in one piece.” If Kamstrup had argued as much, the Court would find that the uncontroverted opinion of Axioma’s expert, Dr. Michael C. Johnson, is persuasive to the extent that going from two steps down to one would be an obvious innovation under the circumstances. (See discussion of Dr. Johnson’s opinions, below.)

the 90-degree bends, which is straight). Thus, as Axioma interprets the 957 Patent, the shape of “flow tube” is immaterial as long as the “flow section” is straight. (ECF No. 44 at 4.)

The Court is not convinced. The Court recognizes that “different claim terms are presumed to have different meanings.” *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008). So, “flow tube” and “flow section” should normally not be construed to refer to the same thing. But this presumption may be overcome by “evidence to the contrary.” *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000). Here, the claim language says the that the “flow tube *defines* [not *includes*] a through-going straight flow section arranged for passage of the fluid *between an inlet and an outlet.*” 957 Patent at 6:44–46 (emphasis added). The specification equates “inlet” and “outlet” with the two openings of the “flow tube.” *Id.* at 3:16–18. Accordingly, although the claim language could have been clearer, both “flow tube” and “flow section” become senseless if the latter is treated as a mere component of the former.

Even so, Will might still anticipate the 957 Patent if it discloses a through-going straight flow tube/section, *e.g.*, to contrast it with the advantages of the Z shape. “A reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. Thus, the question whether a reference ‘teaches away’ from the invention is inapplicable to an anticipation analysis.” *Celeritas Techs., Ltd. v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998). On this point, however, the record is insufficient. Will says that its Z-shaped tube is an improvement over three German patents that rely on ultrasound reflection to measure flow (specifically, DE10120355, DE3911408, and

DE3941546). (ECF No. 34-8 at 5.) If any of these three patents discloses reflection through a through-going straight flow tube/section, Will would anticipate the 957 Patent. But no party has put any of these patents, much less a certified translation, into the record. It thus appears that Will discloses every limitation of the 957 Patent, claim 1, *except* the through-going straight flow tube/section. Will therefore does not *anticipate* claim 1 of the 957 Patent.

4. Obviousness of “Through-Going Straight Flow Section”

Will’s apparent failure to fully anticipate claims 1 and 11 does not foreclose the possibility that those claims are *obvious*: “Though an invention is not anticipated by 35 U.S.C. § 102, a patent should not issue if the differences between the claimed invention and prior art are such that the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made.” *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569, 1574 (Fed. Cir. 1984).

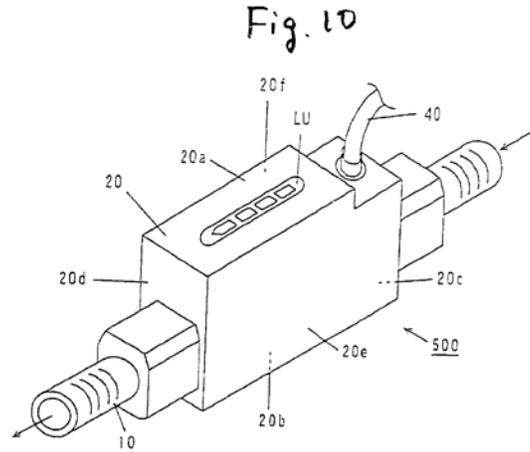
Axioma submits an expert report from Michael C. Johnson, PhD, PE (“Dr. Johnson”) regarding obviousness (among other things). (See ECF No. 34-38.) Although Kamstrup obviously would not agree with Dr. Johnson’s conclusion that the 957 Patent claims are obvious, Kamstrup nowhere directly challenges anything in Dr. Johnson’s report (his qualifications, his opinions about what sort of person would have ordinary skill in the art at the relevant time, his substantive opinions, etc.). Nor does Kamstrup offer a rebuttal expert.

Dr. Johnson’s obviousness opinions are tailored to what the 957 Patent asserts as innovative over Will, *i.e.*, the ability “to provide an ultrasonic flow meter which can be produced and assembled with a limited number of steps.” 957 Patent at 1:55–57. As previously noted, the 957 Patent does not go on to *claim* any minimum or maximum

number of steps, but instead only requires a “structure being cast in one piece.” *Id.* at 6:42, 7:20. Although molded in a two-step process, Will is also cast in one piece.⁴ Recognizing this incongruity, Dr. Johnson opines that both Will and the 957 Patent are cast in one piece, but he goes on to offer an alternative opinion that assumes “being cast in one piece” is somehow an awkward reference to being cast in “a single molding step.” (ECF No. 34-38 ¶¶ 27–30, 35 (emphasis removed).) Under that assumption, he opines that reducing the molding steps from two to one would have been obvious to one of skill in the art as of December 15, 2009, not only because it would have been inherently obvious, but also because single-step moldings are disclosed in the relevant prior art. (*Id.* ¶¶ 35–46.)

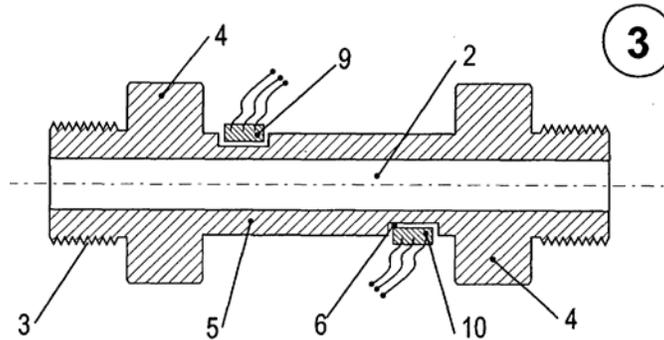
If the question were one-step versus two-step molding processes, the Court would find that Dr. Johnson’s uncontroverted opinion would be enough to sustain Axioma’s burden at this stage. However, the parties’ briefing has flushed out the real dispute, namely, the “through-going straight flow section” element. Here, the obviousness inquiry is even simpler. Numerous prior art specimens that Dr. Johnson compares to claim 1 of the 957 Patent plainly disclose a through-going straight flow section. The earliest of these is European patent application EP1482284A1, dated December 1, 2004 (“Ueki”), which discloses an ultrasonic flow meter with a through-going straight flow section as illustrated by the following figure, among others:

⁴ See n.3, above.



(ECF No. 34-13 at 20.)

The next relevant specimen is German patent DE10051534A1, first published on April 25, 2002 (“Hiss”), which discloses an ultrasonic flow meter with a through-going straight flow section as illustrated by the following figure, among others:



(ECF No. 34-10 at 5; see *a/so* ECF No. 34-11 (English translation).)

The third relevant specimen is international patent application WO 2008/053193A1, dated May 8, 2008 (“Buckberry”), which discloses an ultrasonic flow meter with a through-going straight flow section as illustrated by the following figure, among others:

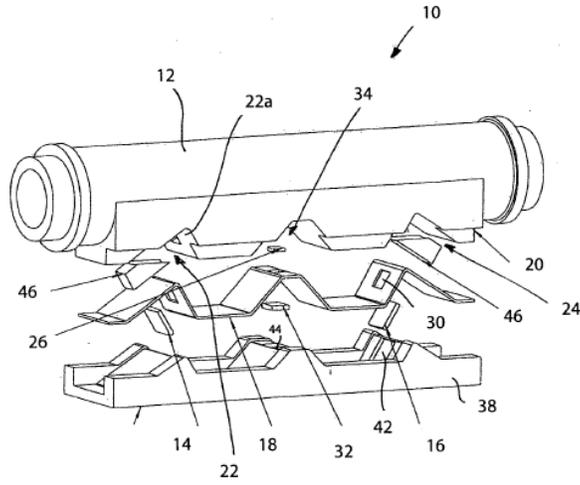


Fig 4

(ECF No. 34-15 at 38.)

Finally, one of Kamstrup's own European patent applications, with a publication date of July 29, 2009, discloses a flow meter (including with an ultrasonic embodiment) featuring a through-going straight flow section as illustrated by the following figure, among others:

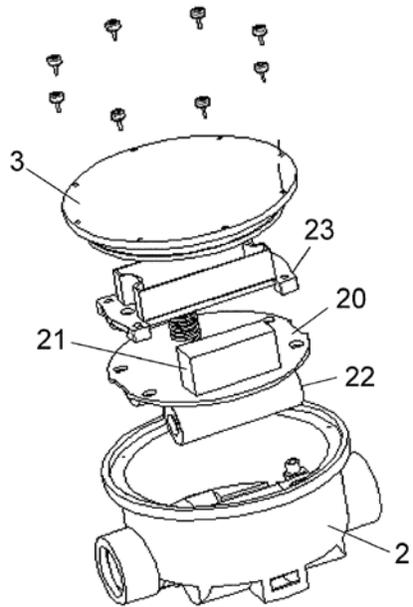


FIG. 2

(ECF No. 34-33 at 10 (EP2083250A1 (“Drachmann”)).)⁵

In short, through-going straight flow sections were the norm for ultrasonic flow meters in December 2009, when Kamstrup filed the application that became the 957 Patent. Will (as published in October 2009) distinguishes itself from that norm by proposing a Z-shaped flow tube, but Kamstrup cannot claim that it is innovative over Will by sticking with the normal straight design. Simply reverting to a previously known embodiment is not inventive. *Cf. In re Metoprolol Succinate Patent Litig.*, 494 F.3d 1011, 1017 & n.2 (Fed. Cir. 2007); *Westinghouse Elec. Corp. v. Titanium Metals Corp.*, 454 F.2d 515, 518 (9th Cir. 1971).

Accordingly, the Court finds it more likely than not that Axioma will prove at trial, by clear and convincing evidence, that claims 1 and 11 of the 957 Patent are invalid as obvious.

B. Dependent Claims (Claims 2–7, 10, 12–13, and 15)

Even if claims 1 and 11 are invalid as obvious, Kamstrup might still have a case under the dependent claims it asserts against Axioma. The question is whether any one of those dependent claims, when added to the obvious invention in claims 1 or 11, results in something nonobvious.

1. Claims Also Rendered Obvious in Light of Will

The Court finds that each of the following dependent claims was also disclosed by Will, so they cannot be nonobvious as compared to Will when combined with any of the references noted above disclosing a through-going straight flow section:⁶

⁵ The claimed innovation in Drachmann is a transparent lid manufactured such that it is particularly impervious to water seepage over time. (*Id.* at 3–4.)

⁶ All bracketed “¶” cites in this block quotation are to Dr. Johnson’s declaration (ECF No.

2. The flow meter housing according to claim 1, wherein the flow tube and the cavity are separated by a water-tight wall, the shared wall area being part of the water-tight wall. [¶ 48; also disclosed by Hiss, ¶ 87, and Buckberry, ¶ 156]

3. The flow meter housing according to claim 1, wherein the cavity only has a single opening. [¶ 49; also disclosed by Drachmann, ¶ 77]

4. The flow meter housing according to claim 3, wherein a rim of the cavity is arranged for sealed connection with a cover, so that the cover and the cavity define an enclosure with only a single sealing area. [¶ 50; also disclosed by Drachmann, ¶ 77]

5. The flow meter housing according to claim 1, wherein the shared wall area comprises at least one area arranged to receive the at least one ultrasonic transducer, the at least one area having a wall thickness adapted to allow transmission of the emitted ultrasonic wave of the ultrasonic transducer. [¶ 51; also disclosed by Hiss, ¶ 92, and Ueki, ¶ 127]

* * *

7. The flow meter housing according to claim 1, wherein both ends of the flow tube comprise engagement means for connection to a piping system. [¶ 52; also disclosed in all prior art discussed in Part IV.A.4, above]

* * *

12. The flow meter according to claim 11, wherein the flow tube and the cavity are separated by a water-tight wall, and wherein the at least one ultrasonic transducer is arranged to transmit ultrasonic signals through the wall of the monolithic polymer structure separating the flow tube and the cavity. [¶ 56]

13. The flow meter according to claim 11, wherein the flow meter comprises at least two ultrasonic transducers positioned at the shared wall area. [¶ 57]

34-38). The Court has independently reviewed Dr. Johnson's comparisons and has found the cited paragraphs to be inherently persuasive, not persuasive simply because they are uncontroverted on this record.

* * *

15. The flow meter according to claim 11, wherein the cavity further comprises one or more of:

a calculation circuit arranged to calculate a consumed quantity of the flowing fluid based on the measured flow rate of the fluid [¶ 75; also disclosed by Drachmann, ¶ 77]

957 Patent at 6:56–7:2, 7:8–10, 8:4–11, 8:16–21.

The foregoing analysis disposes of all asserted dependent claims save for 6, 10, and the remainder of 15. The Court will address those claims in turn.

2. Claim 6

Claim 6 reads: “The flow meter housing according to claim 1, wherein the flow section has one or more protrusions or indentions at the inside of the flow section serving to engage with an associated measurement tube element or an ultrasonic reflector arrangement.” 957 Patent at 7:3–7. Dr. Johnson opines—and Kamstrup does not dispute—that this language at least refers to a protrusion in the form of a thermowell (a casing for a thermometer) so that the temperature of the flowing media may be measured. (ECF No. 34-38 ¶ 67.) Measuring temperature is a stated objective of embodiments described in both the 957 Patent (see 957 Patent at 5:39–41 (“In order to provide an energy meter, i.e. a flow meter which can measure the consumed amount of energy, a temperature measurement needs to be performed.”)), and Will (see ECF No. 34-8 at 4 (“The invention relates to an ultrasonic measuring assembly for measuring the flow, speed of sound, density, viscosity and/or temperature of flowing media”)).

Dr. Johnson further opines that at least two prior art references—U.S. Patent No. 4,476,877, issued October 16, 1984 (“Barker”), and U.S. Patent No. 6,248,077, issued June 19, 2001 (“Elson”)—disclose use of a thermowell protruding into a flow path to

measure temperature. (ECF No. 34-38 ¶¶ 63–66.) Having reviewed Barker and Elson in light of Dr. Johnson’s opinion, the Court is persuaded that Axioma is likely to carry its burden at trial to convince a jury that claim 6 adds nothing nonobvious to claim 1.⁷

3. Claim 10

Claim 10 reads: “The flow meter housing according to claim 1, wherein the shared area comprises a flat section.” 957 Patent at 7:16–17. “Shared area” refers to what claim 1 describes as “the shared wall area.” *Id.* at 6:49. Making the shared wall area flat “is advantageous in that it can serve as an [*sic*] resting or bearing surface of electronic components” *Id.* at 4:48–50.

Dr. Johnson opines that Will discloses the innovation of claim 10 because Will recites that the portion of the shared wall area to which the ultrasound transducers are attached is flat. (ECF No. 34-38 ¶¶ 32, 54.) In other words, Dr. Johnson reads claim 10 as if it said “wherein the shared area *includes* a flat section.” However, claim 10 says “comprises,” not “includes.” “Comprise” means “to be made up of,” most commonly denoting the entire contents or structure of the thing being discussed. See Merriam-Webster Online, s.v. “comprise,” at <https://www.merriam-webster.com/dictionary/comprise> (last accessed Nov. 19, 2019). Thus, without more, it appears that claim 10

⁷ Even if claim 6 is valid, Kamstrup fails to sustain its burden under the irreparable harm element of the preliminary injunction test to show a causal nexus between the patented feature and anticipated harm. See *Apple, Inc. v. Samsung Elecs. Co.*, 678 F.3d 1314, 1324 (Fed. Cir. 2012) (“Sales lost to an infringing product cannot irreparably harm a patentee if consumers buy that product for reasons other than the patented feature. If the patented feature does not drive the demand for the product, sales would be lost even if the offending feature were absent from the accused product. Thus, a likelihood of irreparable harm cannot be shown if sales would be lost regardless of the infringing conduct.”). Depending on the complexity of the device in question, the movant’s burden may only be “to show some connection between the patented features and the demand for the infringing products.” *Apple Inc. v. Samsung Elecs. Co.*, 809 F.3d 633, 641 (Fed. Cir. 2015) (internal quotation marks omitted). Regardless, Kamstrup has made no effort to demonstrate any connection between claim 6 and demand for the Qualcosonic W1. (See ECF No. 24 at 14–15; ECF No. 40 at 10–11.)

requires more than just one or two flat regions on the shared wall area, as in Will.

But there is “more.” Kamstrup itself is not precise when it comes to the difference between “comprises” and “includes.” Claim 5 calls for “[t]he flow meter housing according to claim 1, wherein the shared wall area comprises at least one area arranged to receive the at least one ultrasonic transducer.” 957 Patent at 6:65–67. Here, Kamstrup almost certainly means “includes,” not “comprises.” Otherwise, “at least one area” is senseless. Similarly, claim 15 calls for “[t]he flow meter according to claim 11, wherein the cavity further comprises one or more of” a number of components, such as a battery, a wireless transmitter, and so forth. 957 Patent at 8:16–30. Surely Kamstrup did not intend to claim that the *entire cavity* is *also* a battery or a wireless transmitter. Thus, when Kamstrup says “comprises,” it likely means “includes.”

Finally, none of the illustrated embodiments in the 957 Patent display a shared wall area that literally “comprises” a flat section. To be sure, the Patent says that item 8 from the illustration reproduced below “comprises a flat section.” 957 Patent at 4:48.

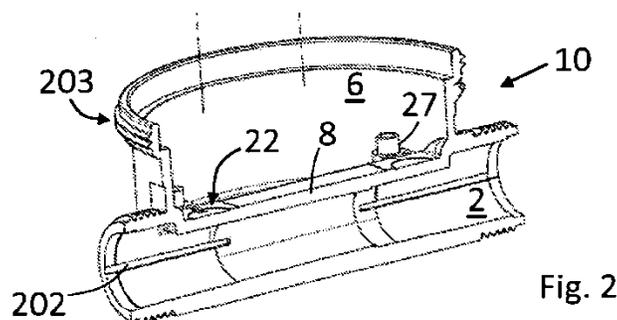


Fig. 2

Excerpt from 957 Patent, fig. 2. And item 8 *is* flat—but it does *not* “comprise” the shared wall. It is plain from the illustration (and every other illustrated embodiment) that the flat section forms only part of the circumference of the shared wall, or in other words, that the flat section ends and the shared wall then follows the natural curving

(i.e., non-flat) contour of the flow tube.

In short, Kamstrup's use of "comprises" supports Dr. Johnson's treatment of that word as potentially equivalent with "includes." In that light, Dr. Johnson's comparison to Will is appropriate and establishes obviousness for the same reasons already discussed.

However, even if "comprises" cannot mean "includes" in the context of claim 10, the Court is further persuaded by Dr. Johnson's additional opinion that making the shared wall area flat was nonetheless an obvious design choice: "One of ordinary skill in the art [prior to December 2009] would understand this to be an available design choice, as it would provide easier, more secure mounting of the [ultrasound] transducers." (ECF No. 34-38 ¶ 108.)

For these reasons, Axioma is likely to carry its burden at trial to convince a jury that claim 10 adds nothing nonobvious to claim 1.⁸

4. Remainder of Claim 15

Claim 15 reads:

The flow meter according to claim 11, wherein the cavity further comprises one or more of:

[1] a calculation circuit arranged to calculate a consumed quantity of the flowing fluid based on the measured flow rate of the fluid;

[2] at least one battery for driving at least the measurement circuit;

[3] a display arranged for displaying at least the consumed quantity of the flowing fluid;

⁸ As with claim 6, even if claim 10 is valid, Kamstrup has failed to show irreparable harm because it has made no showing of a causal nexus between claim 10 and demand for the Qualcosonic W1. See n.7, above.

[4] a signal transmitter for wireless transmission of at least the consumed quantity of the flowing fluid; or

[5] a temperature sensor arranged to measure the temperature of the flowing fluid.

957 Patent at 8:16–30. Because any one of the five possible additions to claim 11 satisfies claim 15, claim 15 is effectively five claims in one, which the Court will refer to as 15[1], 15[2], and so on.

The Court has already explained that claim 15[1] is disclosed in Will and so the 957 Patent cannot avoid obviousness on that account. (See Part IV.B.1, above.) As for 15[2], [3], and [4], the Court agrees with Dr. Johnson that Drachmann discloses each and all of these elements as part of a flow meter. (ECF No. 34-38 ¶ 77.) Moreover, an additional reference, European patent EP0972171B1, dating to October 29, 2003 (“Goertz”), discloses the advantages of including all of the relevant electronics within a measurement meter housing. (See *id.* ¶ 78.) Axioma is therefore likely to carry its burden at trial to convince a jury that claims 15[2], [3], and [4] add nothing nonobvious to claim 11.

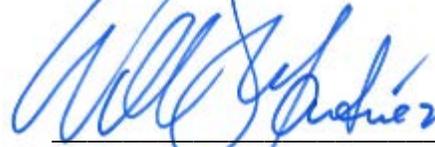
Finally, as for claim 15[5], the Court finds that Axioma is likely to prove obviousness for the same reasons already discussed in Part IV.B.2, above, regarding Barker and Elson.

V. CONCLUSION

For the reasons set forth above, Kamstrup’s Motion for Preliminary Injunction (ECF No. 24) is DENIED.

Dated this 25th day of November, 2019.

BY THE COURT:

A handwritten signature in blue ink, appearing to read "William J. Martinez", written over a horizontal line.

William J. Martinez
United States District Judge