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Date: November 27, 2013 Name: Ralph J. Gabric, (Reg. No. 34,167)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Czupich, et al.

U.S. Patent No. 7,335,157 B2

Issued: February 26, 2008

Based on U.S. App. No: 10/493,168

Filed: April 20, 2004

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) Attorney Docket No: 13850-8
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For: HUMIDIFIER MODULE

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Atom Medical International, Inc.

Petitioner

v.

Draeger Medical Systems, Inc.

Patent Owner

Patent No. 7,335,157
Issue Date: February 26, 2008

Title: HUMIDIFIER MODULE

**PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 7,335,157
PURSUANT TO 35 U.S.C. § 312 AND 37 C.F.R. § 42.104**

Case No. IPR2014-00194

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I. INTRODUCTION

Pursuant to 35 U.S.C. §§ 311-319 and 37 C.F.R. Part 42, Atom Medical International, Inc. (“Atom”) (“Petitioner”) respectfully requests *Inter Partes* Review (“IPR”) of claims 1-3, 6-9, 11-14, 18, and 23-25 of U.S. Patent No. 7,335,157 (“the 157 patent”), filed April 20, 2004, and issued February 26, 2008, to Ted W. Czupich and Felix J. Gryn, and currently assigned to Draeger Medical Systems, Inc. (“Draeger”) (“Patent Owner”) according to the U.S. Patent and Trademark Office (“the USPTO”) assignment records. For the reasons set forth below, there is a reasonable likelihood that Petitioner will prevail with respect to at least one claim challenged in this Petition.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8

A. REAL PARTY IN INTEREST (37 C.F.R. § 42.8(B)(1))

Petitioner Atom is the real party-in-interest.

B. RELATED MATTERS (37 C.F.R. § 42.8(B)(2))

The 157 patent is currently one of seven patents that are the subject of the following litigation brought by Draeger: *Draeger Med. Sys., Inc. v. Atom Med. Int’l, Inc. and Philips Elecs. N. Am. Corp., d/b/a Philips Healthcare*, Case No. 2:12-cv-00512-UA-DNF, filed in the U.S. District Court for the Middle

District of Florida on September 17, 2013 (hereinafter “district court litigation”).¹

Service of the complaint was effective on Atom no earlier than January 2, 2013, and on Phillips no earlier than January 8, 2013. Draeger’s original complaint did not include the 157 patent. Draeger first alleged infringement of the 157 patent in an Amended Complaint that was filed on March 15, 2013. Also, on August 29, 2013, Draeger filed a complaint with the U.S. International Trade Commission (“ITC”) seeking to commence an investigation of incubators manufactured by Atom pursuant to Section 337 of the Tariff Act of 1930 styled “*In the Matter of Certain Thermal Support Devices, Infant Incubators, Infant Warmers, and Components Thereof.*” Draeger’s ITC complaint alleges infringement of two of the patents at issue in the district court litigation, the 157 and 080 patents. The ITC instituted an investigation on October 3, 2013, which was assigned Investigation No. 337-TA-896 (hereinafter “the ITC Investigation”). Pursuant to the mandatory stay provision of 28 U.S.C. § 1659(a), the district court litigation is currently stayed with respect to the 157 and 080 patents in view of the co-pending ITC

¹ The seven patents currently at issue in the district court litigation are U.S Patent Nos. 6,296,606; 6,345,402; 6,483,080; 6,540,660; 6,746,394; 6,761,683; and 7,335,157. Petitioner filed a request for *inter partes* review of the 080 patent on October 25, 2013, Case IPR 2014-00095.

Investigation.

Other than the above-referenced district court litigation and the ITC Investigation, the Petitioner is unaware of any other pending judicial or administrative matter that would affect, or be affected by, a decision in this proceeding.

In the district court litigation, Draeger has asserted infringement of claims 1-3, 6-9, 11-14, 18, and 23-25. Draeger only alleges infringement of claims 9 and 25 in the ITC Investigation. Accordingly, and in reliance upon Draeger's acquiescence that none of the other claims of the 157 patent are allegedly infringed, Atom seeks *inter partes* review of asserted claims 1-3, 6-9, 11-14, 18, and 23-25 of the 157 patent.

C. NOTICE OF LEAD AND BACKUP COUNSEL

Pursuant to 37 C.F.R. §§ 42.8(b)(3) and 42.10(a), Petitioner provides the following designation of counsel.

Lead Counsel	Back-up Counsel
Ralph J. Gabric, Reg. No. 34,167 rgabric@brinksgilson.com <u>Postal and Hand-Delivery Address:</u> Brinks Gilson and Lione NBC Tower, Suite 3600 455 North Cityfront Plaza Drive Chicago, IL 60611-5599 Telephone: (312) 321-4253 Fax: (312) 321-4299	Tadashi Horie, Reg. No. 40,437 thorie@brinksgilson.com Manish K. Mehta, Reg. No. 64,570 mmehta@brinksgilson.com <u>Postal and Hand-Delivery Address:</u> Brinks Gilson and Lione NBC Tower, Suite 3600 455 North Cityfront Plaza Drive Chicago, IL 60611-5599 Telephone: (312) 321-4200 Fax: (312) 321-4299

Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney accompanies this Petition.

D. SERVICE INFORMATION (37 C.F.R. § 42.8(B)(4))

Service information for lead and back-up counsel is provided above in the designation of lead and back-up counsel. Service of any document via hand-delivery or mail may be made at the postal mailing address of the respective lead or back-up counsel designated above. Electronic service may be made at the above-designated email addresses.

III. PAYMENT OF FEES (37 C.F.R. § 42.15(A))

The undersigned authorizes the Office to charge the filing fee for this Petition, as well as any other fees that may be required in connection with this Petition or these proceedings on behalf of Petitioner, to the deposit account of Brinks Gilson & Lione, Deposit Account No. 23-1925.

IV. GROUND FOR STANDING (37 C.F.R. § 42.104(A))

Pursuant to 37 C.F.R. § 42.104(a), Petitioner hereby certifies that the 157 patent (Ex. 1001) is available for IPR and that Petitioner is not barred or estopped from requesting an IPR challenging the claims of the 157 patent on any of the grounds identified in this Petition.

V. IDENTIFICATION OF CHALLENGE (37 C.F.R. § 42.104(B))

A. The Claims (37 C.F.R. § 42.104(B)(1))

Pursuant to 37 C.F.R. § 42.104(b), the precise relief sought by Petitioner is that the Patent Trial and Appeal Board (“PTAB”) review and invalidate claims 1-3, 6-9, 11-14, 18, and 23-25 of the 157 patent under 35 U.S.C. § 102 and/or § 103.

B. The Specific Art and Statutory Ground(s) on Which Challenge Is Based (37 C.F.R. § 42.104(B)(2))

This IPR of the 157 patent is requested in view of the following prior art references on the following grounds:

1. The Specific Art

Inter Partes Review of the 157 patent is requested in view of the following prior art references:

Exhibit	Description	Publication or Filing Date	Type of Prior Art
Ex. 1002 Ex. 1003	Japanese Publication No. 2001-70368 to M. Ohsone et al. (“Ohsone”) and Certified English language translation	March 21, 2001	§ 102(a)
Ex. 1004 Ex. 1005	Japanese Publication No. H11-76325 to S. Kobayashi et al. (“Kobayashi”) and	March 23, 1999	§ 102(b)

	Certified English language translation		
Ex. 1006	U.S. Patent No. 6,024,694 to C. Goldberg et al. (“Goldberg”)	February 15, 2000	§ 102(b)

2. Grounds On Which Challenge Is Based

This IPR of the 157 patent is requested based on the following grounds:

a. Ground 1

Claims 1-3, 6-9, 11-14, 18, and 23-25 of the 157 patent are invalid under 35 U.S.C. § 102(a) as anticipated by Ohzone.

b. Ground 2

Claims 1-3, 6-9, 11-14, 18, and 23-25 of the 157 patent are invalid under 35 U.S.C. § 102(b) as anticipated by Kobayashi or alternatively invalid under 35 U.S.C. § 103(a) as obvious over Kobayashi in combination with Goldberg and and/or Ohzone.

C. How The Challenged Claims Are To Be Construed (37 C.F.R. § 42.104(B)(3))

A claim subject to IPR receives the “broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b). This interpretation should control regardless of how a court may eventually interpret the claims.

The following discussion proposes constructions of certain terms for

purposes of this proceeding only. Any claim term not included in the following discussion is to be given its broadest reasonable interpretation in light of the specification as commonly understood by those of ordinary skill in the art. In determining the broadest reasonable construction, the Patent Office should take into account the patentee's prior statements concerning the scope of the claims. 77 Fed. Reg. 48698 (Aug. 14, 2012). "Only through use of the broadest reasonable claims construction standard can the Office ensure that uncertainties of claim scope are removed or clarified." *Id.* at 48764.

In both the district court litigation and the ITC Investigation, the Patent Owner submitted infringement contentions for the 157 patent. (Ex. 1008, Infringement Contentions for U.S. Patent No. 7,335,157). Although Petitioner disagrees that the claims of the 157 patent are entitled to the scope alleged by the Patent Owner in its infringement contentions, if the Patent Owner's apparent construction of the asserted claims is accepted, then these claims are necessarily invalid over the prior art. In other words, the asserted claims cannot cover Petitioner's accused products without also covering the prior art. Accordingly, and for purposes of this petition only, the Petitioner will adopt the Patent Owner's apparent construction of the asserted claims.

Moreover, should the Patent Owner contend that the claim has a construction different from its broadest reasonable interpretation, the appropriate

course is for the Patent Owner to seek to amend the claim to expressly correspond to its contentions in this proceeding. *See* 77 Fed. Reg. 48764 (Aug. 14, 2012).

Any such amendment would only be permissible if the proposed amended claim complies with 35 U.S.C. § 112.

Further, any construction presented below, either implicitly or explicitly, should not be viewed as constituting, in whole or part, Petitioner's own interpretation or construction of such claims. Petitioner does not agree with the Patent Owner's interpretation of the claim scope of the 157 and expressly reserves the right to present its own constructions, which may differ, in whole or part, from those reflected herein and in other proceedings.

1. "Interior Wall"

Independent claims 1, 23, and 25 recite an "interior wall" that "divid[es] the housing into a first interior chamber and a second interior chamber." Under the Patent Owner's construction as set forth in its infringement contentions, the "interior wall" limitation is allegedly met by any structure that divides the interior of the housing into two separate chambers, and the interior wall need not extend from one exterior wall of the housing to another. The Patent Owner has adopted this construction even though the specification of the 157 patent discloses interior walls or panels that extend from one exterior wall of the housing to another. For example, the 157 patent explains with reference to Fig. 4 that "first and second

upstanding interior walls 46, 48 extend[] from bottom 42 . . . [where the] [f]irst interior wall 46 is illustratively L-shaped and separates container 45 into a first chamber or water reservoir 50 and a second chamber 52.” (Ex. 1001, 4:7-15). Similarly, “[s]econd interior wall, also illustratively L-shaped and parallel to the first interior wall 46, is spaced apart from first wall 46, and separates second chamber 52 into first and second sub chambers 54, 56.” *Id.*

Notwithstanding the disclosure of the 157 patent, the Patent Owner contends that the “interior wall” limitation is met by a conical structure which, in Petitioner’s accused device, allegedly forms three interior chambers within the interior of the housing, namely two concentric chambers formed within a conical piece and a third chamber outside of the conical piece of the accused device. (Ex. 1008, pp. 3, 11).

2. “Passageway”

Independent claims 1, 23, and 25 recite a “passageway” that “extend[s] between the first and second interior chambers.” Under the Patent Owner’s apparent construction of the “passageway” limitation in alleging infringement, this limitation is allegedly met by a slit that does not extend between the alleged first and second interior chambers, and which merely allows for fluid to pass from the first chamber to an intermediate chamber that separates the alleged first and second chambers of the accused device. *Id.*

The specification, however, describes the passageway as an enclosed tunnel structure that extends between two spaced-apart interior chambers and which allows fluid to flow from one interior chamber to the other, spaced-apart chamber while preventing the fluid from occupying the air-space between the two interior chambers. (Ex. 1001, 4:22-24). More specifically, the specification of the 157 patent explains that “a passageway 58 extends from water reservoir 50 to vapor chamber 54, extending through first and second interior walls 46, 48.” *Id.* at 4:22-24. The “passageway 58 permits water to pass from water reservoir 50 into vapor chamber 54 without filling air chamber 56 with water or vapor.” *Id.* at 4:29-32. The specification contemplates that “[o]ther known methods or structures to route fluid from water reservoir 50 to vapor chamber 54 are within the scope of this disclosure, such as providing passageway in bottom 42 of container 45 or by including, for example, a separate tube routed at least partially outside of container.” *Id.* at 4:29-36.

D. Summary Of The 157 Patent

1. Summary of the Alleged Invention

As explained in the 157 patent, the alleged invention is directed to a “self-contained” humidifier module that can be removably inserted into a thermal support apparatus, such as an infant incubator. (Ex. 1001, 1:21:26). The alleged benefits of a “self-contained” humidifier module relate to the ability of the module

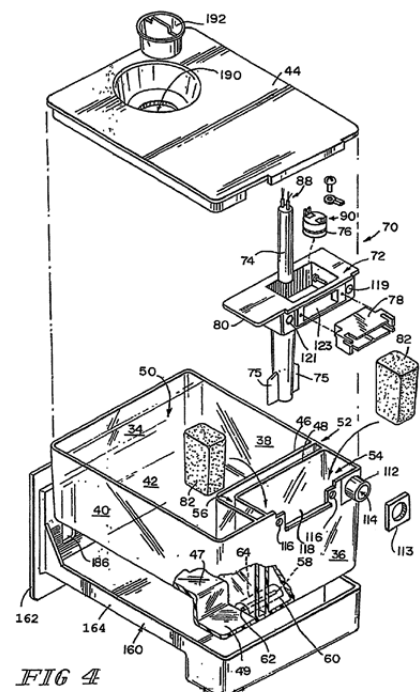
to be completely removed from the thermal support apparatus. *Id.* at 1:55-63.

Such benefits include: (a) replacement of the module in the event of a failure; (b) easy cleaning and repair; and (c) the ability to easily refill the module with water without having to remove the module entirely from the thermal support apparatus. *Id.* at 1:51-63.

The design of the humidifier module disclosed in the 157 patent includes “a housing internally divided into a water reservoir to receive water . . . and a vapor chamber in communication through a passageway with the water reservoir.” *Id.* at 1:64-67. The 157 patent teaches that the vapor chamber is smaller in size than the water reservoir, which will result in a reduction of evaporative losses, power usage, and the time required to heat the water within the vapor chamber. *Id.* at 2:10-18. The 157 patent teaches that “a thermally insulative wall separates the vapor chamber and the water reservoir . . . [and] includes a double walled barrier with a dead air space therebetween.” *Id.* at 2:16-19. The dead air space acts as an insulator to help reduce the amount of heat loss from the vapor chamber and heat required to convert the water contained inside the vapor chamber into steam. *Id.* at 7:26-29.

The alleged invention of the 157 patent is illustrated in Figure 4. The humidifier module 20 includes a container 45 having a first chamber or water reservoir 50 and a second chamber 52 that are separated by a first interior wall 46. *Id.* at 4:7-11. A second interior wall 48 that is spaced apart from the first interior wall 46 separates the second chamber 52 into a first sub-chamber 54 and a second sub-chamber 56. *Id.* at 4:11-15. The first sub-chamber 54 is also referred to as a “vapor chamber,” and the second sub-chamber 56 is also known as an “air chamber.” *Id.* at 15-21. Dead air space is present within the air chamber 56 that acts as a thermal insulation around the vapor chamber 54. *Id.* at 7:26-29.

A passageway 58 extends from the water reservoir 50 to the vapor chamber 54 that permits water to pass from the water reservoir 50 to the vapor chamber 54. *Id.* at 4:22-24, 4:29-31. A heater assembly 70 includes a mount 72 that receives a heater unit 74 to engage a thermally conductive radiator 75 that extends from the mount 72. *Id.* at 4:37-40. The mount 72 also has an electrical coupling assembly 78 to energize the heater unit 74. *Id.* at 4:37-43. The thermally conductive radiator 75 is disposed in the vapor chamber 54 and is configured to generate vapor (steam) that is used to



humidify the air within the support apparatus 10. *Id.* at 4:53-59, 7:30-37.

When the humidifier module 20 is in the use position, it is in fluid communication with the thermal support apparatus 10. *Id.* at 5:26-36. Specifically, the steam generated by the vapor chamber 54 flows out of the humidifier via a vapor outlet port 110. *Id.* at 7:31-37. As shown in Figures 3 and 5, the thermal support apparatus 10 has a manifold assembly 120 that includes a vapor connector 122 and a valve 130 that is configured to receive the outlet port 110. *Id.* at 5:10-15, 5:37-41, 5:51-6:5. A vapor extension 112 extends from the vapor outlet port 110 and is inserted into a passageway 124 formed by the vapor connector 122. *Id.* The passageway 124 feeds into the air passageway 18 to allow the vapor generated from the vapor chamber 54 to supply humidified air to the patient support apparatus 10. *Id.* at 3:50-55, 5:41-45.

In the use position, the humidifier module 20 and the thermal support apparatus 10 are also in electrical communication with one another. *Id.* at 5:29-36. As shown in Figure 4, the heater assembly 70 of the humidifier module 20 includes an electrical coupling assembly 78. *Id.* at 4:37-42. The electrical coupling assembly 78 and the vapor outlet port 110 of the module 20 are configured to couple with a manifold assembly 120 that is disposed within the thermal support apparatus 10. *Id.* at 5:37-41, 6:18-28, and 7:30-36. The manifold assembly 120 “engages humidifier module 20 to provide fluid communication between

humidifier module 20 and air passageway 18 in thermal support apparatus 10, and electrical communication between humidifier module 20 and external electrical equipment (not shown), such as a power supply, control system, or the like.” *Id.* at 5:26-36; Ex. 1009, Declaration of Michael D. Leshner, P.E., ¶¶ 43-48 (hereinafter “Leshner Decl.”).²

2. Summary of Prosecution History of the 157 patent

The 157 patent claims priority to PCT/US02/36566, which was filed on November 13, 2002. The Applicants filed a preliminary amendment on April 20, 2004 cancelling claims 1-159 and adding new claims 160-192. (Ex. 1007, File History, Preliminary Amendment dated April 20, 2004). The Examiner issued an office action on September 19, 2006, rejecting of all of the then-pending claims as being anticipated by U.S. Patent No. 6,024,694 to Goldberg et al. (“Goldberg”). (Ex. 1007, File History, Office Action dated April 20, 2004 at p. 6).

Applicants filed an amendment on February 5, 2007, in which independent claim 160 was amended to require that, among other things, “said first and second interior chambers in constant fluid communication via said passageway”

² In support of this Petition for *Inter Partes* Review of the 157 Patent, the Petitioner submits the Declaration of Michael D. Leshner, P.E. herewith as Exhibit 1009.

(Ex. 1007, File History, Reply to Office Action of September 19, 2006, dated February 5, 2007 at 4). The Applicants argued that “Goldberg does not disclose first and second interior chambers in constant fluid communication via said passageway” as required by claim 160. *Id.* at 14.

A final office action issued on June 13, 2007, in which independent claim 160 and dependent claims 161-167, 173, 175, 178, 182, 185-187, and 193 were rejected as being obvious over U.S. Patent No. 5,343,551 to Glucksman in view of U.S. Patent No. 5,453,077 to Donnelly et al. and further in view of U.S. Patent No. 5,336,156 to Miller et al., and claims 174 and 176-177 were rejected as being obvious in view of this combination and further in view of U.S. Patent No. 3,873,806 to Schossow. (Ex. 1007, File History, Office Action dated June 13, 2007 at 3, 6-7). The Examiner found that certain dependent claims – claims 169-172, 179-181, 183-184, and 188-192 – if rewritten in independent form would be allowable. *Id.* at 7.

In an amendment dated September 12, 2007, the Applicants did not contest the prior art rejections but instead amended the then-pending claims by incorporating the allegedly novel features identified by the Examiner into the rejected claims. (Ex. 1007, Reply to Office Action dated September 12, 2007 at 2-12). The Examiner issued a Notice of Allowance on October 22, 2007. (Ex. 1007, Notice of Allowance dated October 22, 2007).

With respect to the claims at issue in this Petition, the following limitations were identified in the June 13, 2007 Final Office Action as being allegedly novel:

- Issued independent claim 1 (then-pending claim 179): “the first mount portion includes the outlet port and the second mount portion includes a vapor passageway in fluid communication with the air passageway and the outlet port”
- Issued independent claim 23 (then-pending claim 180): “the first mount portion includes an electrical connector and the second mount includes an electrical coupling, the electrical coupling in electrical communication with the electrical connector and the heat source when the humidifier module is in the use position”
- Issued dependent claim 24 (then-pending claim 181): “the electrical connector and the electrical coupling are spaced apart when the humidifier is in the second, non-use position to prevent electrical communication between the electrical connector and the electrical coupling.”
- Issued independent claim 25 (then-pending claim 183): “at least a portion of the humidifier module is in the recess when the humidifier module is in the second position.”

As explained herein, each of these features are disclosed in the prior art cited in this Petition.

E. The Exhibit Number Of The Supporting Evidence Relied Upon To Support The Challenge And The Relevance Of The Evidence To The Challenge Raised, Including Identifying Specific Portions Of The Evidence That Support The Challenge

1. Japanese Patent Application No. H11-250418

Japanese Patent Application No. H11-250418 was filed on September 3, 1999, published on March 21, 2001, and identifies Michio Ohsone and Toshio Ohtomo as the named inventors (“Ohsone”). Ohsone is attached as Exhibit 1002 and its English language translation is attached as Exhibit 1003. Ohsone qualifies as prior art against the 157 patent under 35 U.S.C. § 102(a). Ohsone was cited in an Information Disclosure Statement filed by the Applicants *after* the Examiner had indicated the allowability of certain dependent claims if rewritten in independent form. (Ex. 1007, Information Disclosure Statement dated October 5, 2007). Applicants merely submitted a one-page English language abstract of Ohsone that did not provide any detail as to the structure of the removable humidifier disclosed therein. *Id.*

2. Japanese Patent Application No. H09-260920

Japanese Patent Application No. H09-260920, was filed on September 9, 1997, published on March 23, 1999, and identifies Shinichi Kobayashi and Kazuo

Matsubara as the named inventors (“Kobayashi”). Kobayashi is attached as Exhibit 1004 and its English language translation is attached as Exhibit 1005. Kobayashi qualifies as prior art against the 157 patent under 35 U.S.C. § 102(b). Kobayashi was not considered by the Examiner during the prosecution of the 157 patent.

3. U.S. Patent No. 6,024,694

United States Patent No. 6,024,694 issued to Goldberg et al. on February 15, 2000 (“Goldberg” attached as Exhibit 1006). Goldberg was filed on September 9, 1997, and qualifies as prior art against the 157 patent under 35 U.S.C. § 102(b). Goldberg was incorporated by reference into the 157 patent (Ex. 1001, 1:38-41), and was of record during the prosecution of the 157 patent.

**F. How The Construed Claims Are Unpatentable under The
Statutory Grounds Identified in Paragraph (b)(2) of
37 C.F.R. § 42.104**

Unpatentability is proven by a preponderance of evidence. 35 U.S.C. § 316. The level of ordinary skill in the art applicable to this Petition is set forth by Michael D. Leshner at ¶ 49 of his Declaration. (Ex. 1009, Leshner Decl., ¶ 49).

1. Ground 1: Claims 1-3, 6-9, 11-14, 18, and 23-25

Claims 1-3, 6-9, 11-14, 18, and 23-25 of the 157 patent are invalid under 35 U.S.C. § 102(a) as anticipated by Ohstone.

Ohstone discloses an infant incubator 11 that is configured to receive a

heating-type humidifier 26 within a space 27 formed within the infant incubator.

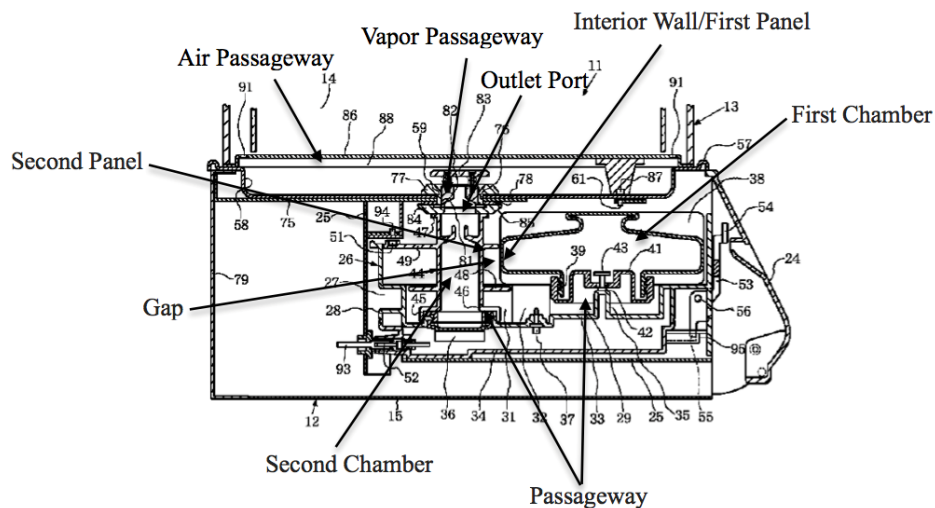
(Ex. 1003, ¶ 10). As shown in Figure 1, the humidifier 26 includes a water tank 28 having circular portions 29 and 31 that are connected via a connecting portion 32.

Id. at ¶ 11. Disposed within the water tank 28 is a water storage tank 38 having a cap 41 that is configured to fit within the circular portion 29 when mounted within the water tank 28. *Id.* at ¶ 12. Water can flow out of the water storage tank 38 once it is inserted into the water tank 28.

A heating-type humidifier 26 having a steam column 44 is disposed within the circular portion 31 of the lower bottom 34 of the water tank 28. *Id.* at ¶ 13, Fig. 1. As shown in annotated Figure 3 below, the outer wall of the water storage tank 38 facing the steam column 44 forms part of the “interior wall” that separates the interior of water storage tank 38 (“first chamber”) and the interior of steam column 44 (“second chamber”). The outer wall of the water storage tank 38 forms a first panel and the outer wall of the steam column 44 forms a second panel that is spaced apart from the first panel. Between the first and second panels is dead air space that provides an insulative layer to prevent heat loss from the interior of steam column 44. Using dead air space as an insulator to prevent heat loss in heating systems was a well-known concept at the time of the alleged invention of the 157 patent. (Ex. 1009, Leshner Decl., ¶ 59).

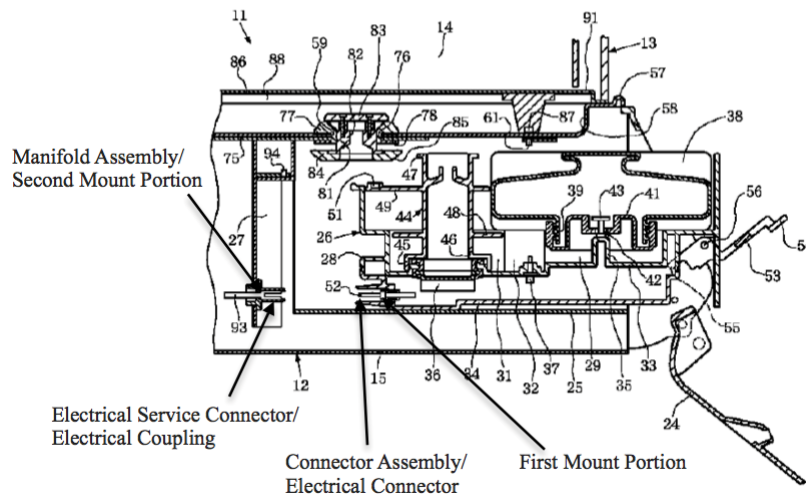
The steam column 44 has a slit 46 formed at the bottom that allows fluid to

pass into the interior of the steam column 44. (Ex. 1003, ¶¶ 13, 23). Water flows from the water tank 38 (“first chamber”) through the connecting portion 32 and slit 46 (collectively a “passageway”) into the interior of the steam column 44 (“second chamber”). *Id.* The lower end 45 of the steam column 44 includes heater unit 36, which is configured to heat the water that flows into the interior of the steam column 44. *Id.*



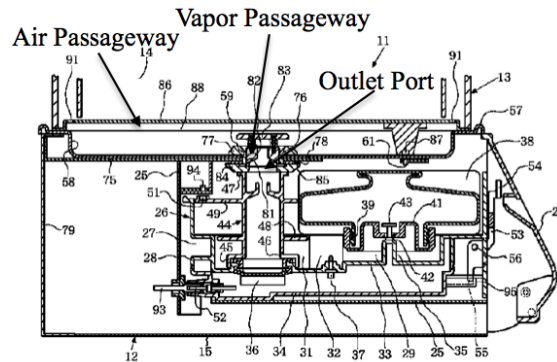
Ohsonone discloses an incubator and humidifier system that are in electrical connection with one another and include a vapor passageway when in the use position as shown in Figure 3. Specifically, as shown in annotated Figure 5 (below), the humidifier 26 includes a plurality of pin-shaped plugs 52 that are electrically connected to the heater unit 36 and water level sensor 37 when in the use position. *Id.* at ¶ 14. The plurality of plugs 52 (“connector assembly”/ “electrical connector”) are configured to electrically connect with a plurality of jacks 93 (“electrical service connector” / “electrical coupling”) that are attached on

the inner wall 25 of the base 12 of the incubator to power these devices. *Id.* at ¶¶ 21, 25. The plurality of plugs 52 is a “first mount portion” is inserted into the plurality jacks 93, which forms a “second mount portion” / “manifold assembly”, such that these components are in electrical communication when the humidifier 26 is fully disposed within the space 27 within the incubator 11 as shown in Figure 3. *Id.* at ¶ 26. These components are electrically disconnected (i.e. spaced apart from one another) when the humidifier 26 is at least partially withdrawn from the space 27 formed within the incubator as shown in annotated Figure 5. *Id.* at ¶¶ 25, 26.



The vapor connection is formed when the humidifier 26 is fully disposed within the space 27 as shown in annotated Figure 3 below. Along the surface of the outer casing 15 of the incubator 11 is a valve 82 that is capable of sliding in the axial direction and is displaced upwardly as the humidifier 26 is disposed within the space 27. *Id.* at ¶¶ 19, 27. As shown in the figure below, the top cover part of

the valve 82 is the “second mount portion” and is pushed upward as the upper end 47 (“first mount portion”) of the steam column 44 makes contact with the lower flange 84 of the valve 82. *Id.* at ¶ 27. In this configuration, the steam generated by the steam column 44 exits the upper end 47 (“outlet port”) and is directed through the valve 82 (“vapor passageway”) and into the space 88 (“air passageway”) of the incubator and is circulated within the incubator. *Id.* at ¶¶ 27, 29; *see generally* Ex. 1009, Leshner Decl., ¶¶ 58-63.



As shown in the claim chart below, Ohstone discloses each limitation of claims 1-3, 6-9, 11-14, 18, and 23-25. (Ex. 1009, Leshner Decl., ¶ 63).

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1. A humidifier module for use with a thermal support apparatus including an air passageway, the humidifier module comprising:	<p>Ohstone discloses “a humidifier for an incubator which is set up with an incubator [that] supplies humidified air to a space inside an infant chamber.” (Ex. 1003, ¶ 1).</p> <p>Ohstone describes an air passageway that allows for the heated and humidified air to circulate within the infant incubator. As shown in Figures 6-8, a space is formed between an aluminum central floor 86 that is arranged on top of a bottom plate 57 of the incubator. <i>Id.</i> at ¶ 20. This space is divided by a wall 74 into a space 88 formed on the outside of the wall 74 and a space 89 that is surrounded by</p>

	<p>the wall 74. <i>Id.</i> The humidifier supplies steam to the outer space 88 via a valve 82. <i>Id.</i> at ¶¶ 19, 27, 29. A heater element 63 is also disposed in the space 88 and heats the air provided in the outer space 88. <i>Id.</i> at ¶ 30.</p> <p>The heated and humidified air within the outer space 88 travels through a series of openings 91 formed within the central floor 86 and rises between the double walls of the first surface and back surface of the hood 13 of the incubator. <i>Id.</i> at ¶ 31. The heated and humidified air eventually reaches the top surface of the hood 13 and is supplied to the space 14 that accommodates an infant's body. <i>Id.</i> Next, the air flows into an elongated opening 92 in the central floor 86 and into the inner space 89. <i>Id.</i> An opening 71 is formed between the outer and inner spaces 88, 89 to allow the air to travel back into the outer space 88 for recirculation. <i>Id.</i> at ¶¶ 30, 31. Thus, "the spaces 88, 89 form a passageway for the heated and humidified air." <i>Id.</i></p>
a housing movable between a use position coupled to the thermal support apparatus and a second position spaced apart from the thermal support apparatus,	<p>Ohsonone discloses that the humidifier 26 includes a rectangular water tank 28 that forms the bottom and sides of the heating-type humidifier 26. <i>Id.</i> at ¶ 11. A cassette-type water storage tank 38 fits inside of the water tank 28 and has a top surface that forms part the top of the humidifier 26. <i>Id.</i> at ¶ 12. A steam column 44 is also disposed within the water tank 28 and has a flange portion 49 that forms the other part of the top portion of heating-type humidifier 26. <i>Id.</i> at ¶ 13. These components form the "housing" of the humidifier 26.</p> <p>One advantage of Ohsonone is the ability of the water storage tank 38 to be removed from the incubator and humidifier 26 so it can be easily filled with water. <i>Id.</i> at ¶¶ 4, 5. To accomplish this task, the humidifier 26 and therefore the housing is movable from a use position as shown in Figure 3, to a second position that is spaced apart from the incubator, as shown in Figure 5.</p> <p>When in the use position, the humidifier 26, which includes the housing, is coupled to the thermal support</p>

	<p>apparatus. Ohnone teaches an incubator having an inner wall 25 that forms a recessed space 27 within the incubator. <i>Id.</i> at ¶ 10. The recessed space 27 is configured to slidably receive a “heating-type humidifier 26”. <i>Id.</i> Figure 3 illustrates the humidifier in the use position where it is fully inserted within the space 27 and secured by the door 24. <i>Id.</i> at ¶¶ 10, 27. In this configuration, the humidifier is “activated” and configured to provide humidified air to the incubator. <i>Id.</i> at ¶¶ 27, 31. Therefore, the humidifier 26 and housing is coupled to the incubator in the use position.</p> <p>The humidifier 26 can be removed from the space 27 formed within the incubator. <i>Id.</i> at ¶¶ 37, 38. Figure 5 illustrates the humidifier 26, and housing, in a second position, where the humidifier 26 is spaced apart from the vertical portion of the inner wall 25 such that it is no longer in fluid or electrical communication with the incubator. <i>Id.</i> at ¶¶ 37, 38. The humidifier 26 is spaced apart from the incubator, in the configuration shown in Figure 5 and when the humidifier 26 is in the second position.</p>
the housing comprising exterior walls, at least one interior wall dividing the housing into a first interior chamber and a second interior chamber,	<p>As discussed above, the humidifier 26 includes a rectangular water tank 28 that forms the bottom and sides of the heating-type humidifier 26. <i>Id.</i> at ¶ 11. A cassette-type water storage tank 38 fits inside of the water tank 28 and has a top surface that forms part the top of the humidifier 26. <i>Id.</i> at ¶ 13. A steam column 44 is also disposed within the water tank 28 and has a flange portion 49 that forms the other part of the top portion of heating-type humidifier 26. <i>Id.</i> The bottom and the sides of the rectangular water tank 28 and the top portion of the water storage tank 38 and flange portion 49 of the steam column 44 form the “exterior walls” of the housing. <i>Id.</i> at Figs. 3-5.</p> <p>The bottom of the water tank 28 is a “double-bottomed structure” having an upper bottom 33 and a lower bottom 34. <i>Id.</i> at ¶ 11. The upper bottom 33 has a cylindrical member 35 that is disposed within a circular portion 29,</p>

	<p>and the lower bottom 34 has a heater unit 36 that is disposed within a circular portion 31. <i>Id.</i> The circular portions 29, 31 are connected via a connecting portion 32. <i>Id.</i> at ¶ 23. The heater unit 36 is coupled to a lower end 45 of the steam column 44, as shown in Figure 3. <i>Id.</i> at ¶ 13.</p> <p>As shown in annotated Figure 3, when cassette-type water storage tank 38 is inserted into the water tank 28, it divides the humidifier 26 (housing) into a first interior chamber, which is the area that holds the water in the water storage tank 38 and a second interior chamber, which is the area within the steam column 44. <i>Id.</i> at Fig. 3. The side wall of the water storage tank 38 adjacent to the steam column 44 forms the at least one interior wall dividing the water tank 28 into a first interior chamber and a second interior chamber. <i>Id.</i> The side wall of the water storage tank 38 is spaced apart from the steam column 44 so as to create an insulating air gap to reduce the amount of heat transferred from the steam column 44 to the water storage tank 38. This reduces the amount of energy required to heat the water contained within the steam column 44. <i>Id.</i> at Fig. 3.</p>
a passageway extending between the first and second interior chambers,	<p>Ohsonone discloses that the water storage tank 38 (first interior chamber) includes a valve 43 that allows water to flow from the water storage tank 38. <i>Id.</i> at ¶ 23. When the water storage tank 38 is disposed in the water tank 28, the valve 43 is “pressed by the cylindrical member 35” formed in the bottom of the water tank 28 to allow the water to flow out of the water storage tank 38. <i>Id.</i> This allows “water [to be] injected onto the cylindrical member 35 from the water storage tank 38 through opening 42, and this water flows onto the heater unit 36 via the circular portions 29, the connecting portion 32, the circular portion 31, and the slit 46.” <i>Id.</i> The slit 46 is an opening in the wall of the steam column 44 that “connects inside and the outside of the of the steam column 44” <i>Id.</i> at ¶ 13.</p> <p>As shown in Figure 3, “the circular portions 29, 31 and the connecting portion 32 [, and slit 44] form a passageway for the water” that extends between the water storage tank 38 (first chamber) and heater unit 36 that is within the</p>

	steam column 44 (second chamber). <i>Id.</i> at ¶¶ 23, 29.
said first and second interior chambers in constant fluid communication via said passageway, and	<p>Ohstone discloses that when the water storage tank 38 is inserted into the water tank 28, the valve 43 of the water storage tank 38 is “pressed by the cylindrical member 35” formed in the bottom of the water tank 28 to allow the water to flow out of the water storage tank 38. <i>Id.</i> at ¶ 23. This allows water to continuously flow from the water storage tank 38 into the circular portion 29, through connecting portion 32, and into the circular portion 31. <i>Id.</i> The water then flows from the circular portion 31 into the steam column 44 via the slit 46. <i>Id.</i> In this configuration, the circular portion 29, connecting portion 32, the circular portion 31, and slit 46 (collectively the passageway) allow the water storage tank 38 and steam column 44 to be in constant fluid communication. <i>Id.</i></p>
an outlet port in fluid communication with the second chamber and the air passageway when the housing is in the use position, and	<p>Ohstone discloses that the heater unit 36 converts the water that flows into the steam column 44 via the slit 46 into steam. <i>Id.</i> at ¶ 29. The steam flows up the steam column 44 and through an opening formed by the upper end 47 of the steam column 44. <i>Id.</i> at ¶¶ 13, 27, 32. The opening at the upper end 47 of the steam column 44 (second chamber) forms the outlet port.</p> <p>The upper end 47 of the steam column 44 (second chamber) is in fluid communication with the air passageway of the incubator in the following manner. The incubator includes a bottom plate 57 and heat sink 75, that have openings 59 and 76, respectively, that align with one another. <i>Id.</i> at ¶¶ 15, 18. The openings 59, 76 are located between the space 88 (which forms part of the air passageway) and the space 27 that is configured to receive the humidifier. <i>Id.</i> at Fig. 5. A bolt 77 and nut 78 are secured to each other via the openings 59 and 76. <i>Id.</i> at ¶ 18. The bolt 77 has a center hole 81 and a valve 82 is inserted therein. <i>Id.</i> at ¶ 19. The valve 82 has a top cover part 83 with a diameter greater than the center hole 81 and the lower end of the valve 82 includes a lower flange 84 with a sloped surface 85 that is beneath openings 59, 76. <i>Id.</i> at ¶ 27.</p>

	<p>During the installation process of the humidifier, the upper end 47 of the steam column 44 comes into contact with the lower flange 84 of the valve 82, thereby pushing the top cover part 83 of the valve 82 in the upward direction. <i>Id.</i> at ¶ 27. This causes the top cover part 83 to separate from the bolt 77, and the center hole 81 of the bolt 77 is released, “thereby connecting the interior of the steam column 44 and the space 88,” which forms part of the air passageway. <i>Id.</i> In this configuration, as shown in annotated Figure 3, the upper end 47 of the steam column 44 is in fluid communication with the steam column 44 (second chamber) and space 88 that forms part of the air passageway when in the use position.</p>
a heat source positioned in the second chamber to heat the fluid in the second chamber;	<p>Ohsonone discloses a “saucer-shaped heater unit 36,” where the lower portion of the steam column 44 (second chamber) is press-fitted around the heater unit 36. <i>Id.</i> at ¶¶ 11, 13. The heater unit 36 converts the water that flows into the steam column 44 via the slit 46 into steam. <i>Id.</i> at ¶ 29.</p>
said humidifier further comprising a first mount portion configured to engage a second mount portion coupled to the thermal support apparatus,	<p>Ohsonone discloses that the upper end 47 of the steam column 44 forms the first mount portion of the humidifier 26. <i>Id.</i> at ¶ 27.</p> <p>The second mount portion is the valve 82, top cover part 83, and lower flange 84 that is coupled to the incubator. <i>Id.</i> at ¶ 19. As discussed above, the upper end 47 of the steam column 44 engages the lower flange 84 of the valve 82 when the humidifier is in the use position. <i>Id.</i> at ¶ 27.</p>
the first and second mount portions in communication with the humidifier module and the thermal support apparatus when the humidifier module is in the use position,	<p>As discussed above, the upper end 47 (first mount portion) of steam column 44 of the humidifier is engaged with the lower flange 84 of the valve 82 (second mount portion) when the humidifier is in the use position. <i>Id.</i> at ¶ 27, Fig. 3. In this configuration (shown in Figure 3), the upper end 47 of the steam column 44 and lower flange 84 of the valve 82 are in fluid communication with the humidifier 26 and incubator 11. <i>Id.</i></p>

<p>wherein the first mount portion includes the outlet port and the second mount portion includes a vapor passageway in fluid communication with the air passageway and the outlet port.</p>	<p>Ohsonone discloses that the upper end 47 (first mount portion) of the steam column 44 has an opening (outlet port) that allows the steam to exit the steam column 44. <i>Id.</i> at ¶¶ 13, 27, 29, Fig. 3.</p> <p>When the humidifier 26 is in the use position, the valve 82 (second mount portion) is pushed upward, which allows the top cover part 83 to become separated from the bolt 77. <i>Id.</i> at ¶ 27. The center hole 81 of the bolt 77 is then released, “thereby connecting the interior of the steam column 44 and the space 88.” <i>Id.</i> The center hole 81 forms the “vapor passageway” of the valve 82 (second mount portion) that is in fluid communication with the space 88 (which forms part of the air passageway) and the opening formed by the upper end 47 of the steam column 44 (outlet port). <i>Id.</i></p>
<p>2. The humidifier module of claim 1 in combination with the thermal-support apparatus comprising a base and a patient support supported by the base, the base including the air passageway to permit circulation of air through the thermal support apparatus.</p>	<p>Ohsonone discloses that the heating-type humidifier is installed in an “incubator 11 ha[ving] a base 12 and a hood 13, and a space 14 (FIGS. 3-5) for accommodating an infant’s body is formed above the base 12 and inside the hood 13.” <i>Id.</i> at ¶ 8.</p> <p>Ohsonone describes an air passageway that allows for the heated and humidified air to circulate within the infant incubator. As shown in Figures 6-8, a space is formed between an aluminum central floor 86 that is arranged on top of a bottom plate 57 within the base 12 of the incubator. <i>Id.</i> at ¶ 20. This space is divided by a wall 74 into a space 88 formed on the outside of the wall 74 and a space 89 that is surrounded by the wall 74. <i>Id.</i> The humidifier supplies steam to the outer space 88 via a valve 82. <i>Id.</i> at ¶¶ 19, 27, 29. A heater element 63 is also disposed in the space 88 and heats the air provided in the outer space 88. <i>Id.</i> at ¶ 30.</p> <p>The heated and humidified air within the outer space 88 travels through a series of openings 91 formed within the central floor 86 of the base 12 and rises between the double walls of the first surface and back surface of the hood 13 of the incubator. <i>Id.</i> at ¶ 31. The heated and</p>

	<p>humidified air eventually reaches the top surface of the hood 13 and is supplied to the space 14 that accommodates an infant's body. <i>Id.</i> Next, the air flows into an elongated opening 92 in the central floor 86 and into the inner space 89. <i>Id.</i> An opening 71 is formed between the outer and inner spaces 88, 89 to allow the air to travel back into the outer space 88 for recirculation. <i>Id.</i> Thus, "the spaces 88, 89 form a passageway for the heated and humidified air." <i>Id.</i></p> <p>The circulation of air is driven by a sirocco fan 66 that creates a positive pressure in the space 88 and a negative pressure in the space 89 that causes the air to continue to circulate throughout the incubator. <i>Id.</i> at ¶ 30.</p>
3. The humidifier module of claim 2 wherein the interior wall includes a first panel and a second panel spaced apart from the first panel to define a gap therebetween.	<p>Ohsonone discloses that the side wall of the water storage tank 38 adjacent to the steam column 44 forms the interior wall. <i>Id.</i> at Fig. 3. As shown in Figure 3, the panel of the wall of the water storage tank 38 facing the steam column 44 forms the first panel and the corresponding wall of the steam column 44 forms the second panel. <i>Id.</i> The wall of the steam column 44 is spaced apart from the wall of the water storage tank 38 to define a gap therebetween. <i>Id.</i></p>
6. The humidifier module of claim 1 wherein the first chamber has a volume greater than the volume of the second chamber.	<p>As shown in Figure 3, the water storage tank 38 has a larger volume than the interior of steam column 44. <i>Id.</i></p>
7. The humidifier module of claim 6 wherein the heat source is movable with the housing when the housing moves between the use position and the second position.	<p>Ohsonone discloses that the heater unit 36 (heat source) is disposed within the lower bottom 34 portion of the water tank 28. <i>Id.</i> at ¶ 11, Fig. 3. As discussed above, the water tank 28 forms part of the housing that can be moved from a use position, as shown in Figure 3, to a second position, as shown in Figure 5. <i>Id.</i> at Figs. 3, 5.</p>

8. The humidifier module of claim 7 in combination with the thermal support apparatus comprising a base and a patient support supported by the base, the base including the air passageway to permit circulation of air through the thermal support apparatus.	<i>See supra</i> claim 2.
9. The humidifier module of claim 7 further comprising an interior wall separating the first and second chambers and including a first panel and a second panel spaced apart from the first panel to define a gap therebetween.	Ohsonone discloses that the side wall of the water storage tank 38 adjacent to the steam column 44 forms the interior wall. <i>Id.</i> at Fig. 3. As shown in Figure 3, the panel of the wall facing the steam column 44 forms the first panel and the corresponding outer panel of the steam column 44 forms the second panel. <i>Id.</i> The outer panel of the steam column 44 is spaced apart from the panel of the outer wall of the water storage tank 38 to define a gap therebetween. <i>Id.</i>

<p>11. The humidifier module of claim 6 in combination with the thermal support apparatus including the air passageway and a manifold assembly including an electrical service connector, and a connector assembly configured to mate with the manifold assembly and establish electrical communication between the heat source and the electrical service connector when the humidifier module is in the use position.</p>	<p>Ohstone discloses that the humidifier module 26 and incubator 11 that includes an air passageway as discussed above with respect to claim 1.</p> <p>Ohstone further discloses that the incubator 11 has “[a] plurality of jacks 93 [that] are loosely attached on the inner wall 25 of the base 12 in a position facing the plugs 52 of the heating-type humidifier 26” as shown in Figure 4, below. <i>Id.</i> at ¶ 21. The plurality of jacks 93 face plugs 52 of the humidifier 26 and are configured to provide an electrical connection for the humidifier 26 to energize the heater unit 36 when the humidifier 26 is in the use position. <i>Id.</i> at ¶ 27. The plurality of jacks 93 forms a manifold assembly that includes an electrical service connector to energize the heater unit 36. <i>Id.</i> at Fig. 4.</p> <p>Ohstone discloses that the humidifier includes “[a] plurality of pin-shaped plugs 52 [that] are somewhat loosely attached between the upper bottom 33 and the lower bottom 34 on a side opposite to the door 24 of the heating-type humidifier 26, and these plugs 52 are electrically connected to the heater unit 36 and the water level sensor 37.” <i>Id.</i> at ¶ 14. The plugs 52 form the connector assembly.</p> <p>The plugs 52 (connector assembly) are configured to mate with the jacks 93 (manifold assembly/ electrical service connector) in the following manner: “Because the plugs 52 and the jacks 93 are attached somewhat loosely, they automatically align themselves when the heating-type humidifier 26 is installed, . . . with the result that the plugs 52 are normally inserted into the jacks 93.” <i>Id.</i> at ¶ 25. The heater unit 36 (heat source) is disposed within the humidifier 26 and an electrical communication is established between the heater unit 36 and the jacks 93 when the humidifier 26 is in the use position. <i>Id.</i> at ¶¶ 26, 27.</p>
<p>12. The humidifier module of claim 11 in combination with the thermal-support apparatus comprising a base and a</p>	<p><i>See supra</i> claim 2.</p>

patient support supported by the base, the base including the air passageway to permit circulation of air through the thermal support apparatus.	
13. The humidifier module of claim 1 wherein the housing further includes a second interior wall cooperating with the first interior wall to define a space therebetween and between the first and second interior chambers.	Ohstone discloses that the wall of the steam column 44 forms a second interior wall. <i>Id.</i> at Fig. 3. A space is created between the wall of the steam column 44 and the side wall of the water storage tank 38 adjacent to the steam column 44. <i>Id.</i> at Fig. 3. This space is between the storage tank 38 (first interior chamber) and the interior of steam column 44 (second interior chamber) so as to provide an air insulation gap (i.e., space) between the water that is heated within the steam column 44 and the water stored in the water storage tank 38.
14. The humidifier module of claim 13 in combination with a thermal support apparatus comprising a base and a patient support supported by the base, the base including the air passageway to permit circulation of air through the thermal support apparatus,	<i>See supra</i> claim 2.
the humidifier module comprising a plurality of exterior walls defining the housing,	Ohstone discloses that the humidifier 26 includes a rectangular water tank 28 that forms the bottom and sides of the heating-type humidifier 26. <i>Id.</i> at ¶ 11. A cassette-type water storage tank 38 fits inside of the water tank 28 and has a top surface that forms part the top of the humidifier 26. <i>Id.</i> at ¶ 12. A steam column 44 is also disposed within the water tank 28 and has a flange portion 49 that forms the other part of the top portion of heating-type humidifier 26. <i>Id.</i> at ¶ 13. These components form the housing of the humidifier 26. The outer walls of the water tank 28 and the top surfaces of the water storage tank 38 and flange portion 49 form the plurality of exterior walls that define the housing.
the housing configured to be removably coupled to the thermal support apparatus, the heat source	One advantage of Ohstone is the ability of the water storage tank 38 to be removed from the incubator and humidifier 26 so it can be easily filled with water. <i>Id.</i> at ¶¶ 4, 5. To accomplish this task, the humidifier 26 and therefore the housing is movable from a use position as shown in Figure 3, to a second position that is spaced apart

<p>being movable with the housing.</p>	<p>from the space 27 formed in the incubator 11, as shown in Figure 5.</p> <p>When in the use position, the humidifier 26 is coupled to the incubator 11. Ohson teaches an incubator 11 having an inner wall 25 that forms a recessed space 27 within the incubator. <i>Id.</i> at ¶ 10. The recessed space 27 is configured to slidably receive a “heating-type humidifier 26.” <i>Id.</i> Figure 3 illustrates the humidifier in the use position where it is fully inserted within the space 27 and secured by the door 24. <i>Id.</i> at ¶¶ 10, 27. In this configuration, the humidifier is “activated” and configured to provide humidified air to the incubator. <i>Id.</i> at ¶ 27. Therefore, the humidifier 26 is coupled to the incubator 11 in the use position.</p> <p>The humidifier 26 can be completely removed from the space 27 formed within the incubator. <i>Id.</i> at ¶¶ 37, 38. Figure 5 illustrates the humidifier 26 in a second position, where the humidifier 26 is spaced apart from the vertical portion of the inner wall 25 such that it is no longer in fluid or electrical communication with the incubator. <i>Id.</i> The humidifier 26 is spaced apart from the incubator 11 in the configuration shown in Figure 5.</p> <p>Ohson teaches that the heater unit 36 is disposed within the lower bottom 34 portion of the water tank 28 and therefore is movable with the housing. <i>Id.</i> at ¶ 11.</p>
<p>18. The humidifier module of claim 1, the second interior chamber further comprising a container bottom, wherein said passageway providing constant fluid communication between said first</p>	<p>Ohson discloses that the heater unit 36 is disposed at the lower end 45 of the steam column 44. <i>Id.</i> at ¶¶ 11, 13. The heater unit 36 forms the container bottom of the steam column 44. <i>Id.</i> at ¶ 13, Fig. 3.</p> <p>“The inside and the outside of the of the steam column 44 are connected via the slit 46.” <i>Id.</i> at ¶ 13. The slit 46, connecting portion 32, and circular portions 29 and 31 form a passageway between the interior of the steam column 44 and water tank 38 as shown in Figure 3 that provides constant fluid communication and allows fluid to pass from the first interior chamber (water tank 38) onto</p>

and second interior chambers continuously permits fluid to pass from said first interior chamber onto the container bottom of said second interior chamber.	the container bottom of the interior portion of the steam column 44, which is where the water is heated by the heater unit 36. <i>Id.</i> at ¶¶ 13, 23, Fig. 3; <i>see also supra</i> claim 1.
23. A humidifier module for use with a thermal support apparatus including an air passageway, the humidifier module comprising:	<i>See supra</i> claim 1.
a housing movable between a use position coupled to the thermal support apparatus and a second position spaced apart from the thermal support apparatus,	<i>See supra</i> claim 1.
the housing comprising exterior walls, at least one interior wall dividing the housing into a first interior chamber and a second interior chamber,	<i>See supra</i> claim 1.
a passageway extending between the first and second interior chambers,	<i>See supra</i> claim 1.
said first and second interior chambers in constant fluid communication via said passageway, and	<i>See supra</i> claim 1.
an outlet port in fluid communication with the second chamber and the air passageway when the housing is in the use position, and	<i>See supra</i> claim 1.
a heat source positioned in the second chamber to heat the fluid in the second chamber;	<i>See supra</i> claim 1.
said humidifier further comprising a first mount portion configured to engage a second mount portion coupled to the thermal support apparatus,	<p>Ohsonone discloses that the humidifier module 26 includes a “plurality of pin-shaped plugs 52 [that] are somewhat loosely attached between the upper bottom 33 and the lower bottom 34 on a side opposite to the door 24 of the heating-type humidifier 26, and these plugs are electrically connected to the heater unit 36 and the water level sensor 37.” <i>Id.</i> at ¶ 14. The plurality of pin-shaped plugs 52 form the “first mount portion.”</p> <p>The incubator 11 includes “[a] plurality of jacks 93 are loosely attached on the inner wall 25 of the base 12 [of the</p>

	<p>incubator 11] in a position facing the plugs 52 of the heating-type humidifier 26.” <i>Id.</i> at ¶ 21. The jacks 93 form the second mount portion.</p> <p>The plugs 52 and jacks 93, which form the first mount portion and second mount portion, respectively, are configured to engage each other by “automatically align[ing] themselves when the heating-type humidifier 26 is installed” and the “the plugs 52 are reliably inserted into the jacks 93 at the final stage of the operation of installing the heating type humidifier 26 into the space 27, by pressing one end 54 of the lever 53” <i>Id.</i> at ¶¶ 25, 26.</p>
the first and second mount portions in communication with the humidifier module and the thermal support apparatus when the humidifier module is in the use position,	<p>Ohsonone discloses that at the end of the operation of inserting humidifier 26 into space 27, as shown in Figure 4, “the plugs 52 are reliably inserted into the jacks 93 at the final stage of the operation of installing the heating type humidifier 26 into the space 27, by pressing one end 54 of the lever 53” <i>Id.</i> In this position, the plugs 52 and jacks 93 are in electrical communication with the humidifier 26 and incubator 11 so as to energize the heater unit 36 when the humidifier 26 is in the use position. <i>Id.</i> at ¶¶ 25-27.</p>
wherein the first mount portion includes an electrical connector and the second mount includes an electrical coupling, the electrical coupling in electrical communication with the electrical connector and the heat source when the humidifier module is in the use position.	<p>Ohsonone discloses that the “plurality of pin-shaped plugs 52” that forms part of the first mount portion is an “electrical connector.” <i>Id.</i> at ¶ 14. The “plurality of jacks 93 are loosely attached on the inner wall 25 of the base 12 in a position facing the plugs 52 of the heating-type humidifier 26” forms part of the second mount portion and is an “electrical coupling.” <i>Id.</i> at ¶ 21. This configuration is illustrated in Figure 3. <i>Id.</i> at Fig. 3.</p> <p>Ohsonone discloses that at the end of the operation of inserting humidifier 26 into space 27, as shown in Figure 4, “the plugs 52 are reliably inserted into the jacks 93 at the final stage of the operation of installing the heating type humidifier 26 into the space 27, by pressing one end 54 of the lever 53” <i>Id.</i> at ¶¶ 25, 26. The plugs 52 are “electrically connected to the heater unit 36,” which means that the plurality of jacks 93 are electrical communication with both the plugs 52 and heater unit 36 when the</p>

	humidifier 26 is in its use position. <i>Id.</i> at ¶¶ 14, 27.
24. The humidifier module of claim 23 wherein the electrical connector and the electrical coupling are spaced apart when the humidifier is in the second, non-use position to prevent electrical communication between the electrical connector and the electrical coupling.	Ohsonone discloses that when the humidifier module 26 is in the non-use position, it is spaced apart from the back wall 25 of the incubator, as shown in Figure 5. <i>Id.</i> at Fig. 5. In this position, the plugs 52 of the humidifier module 26 are separated from the jacks 93 that are disposed in the back wall 25 of the incubator 11. <i>Id.</i> at ¶¶ 37, 38, Fig. 5. The non-use position prevents electrical communication between the plugs 52 (electrical connector) and the jacks 93 (electrical coupling). <i>Id.</i>
25. A humidifier module for use with a thermal support apparatus including an air passageway, the humidifier module comprising:	<i>See supra</i> claim 1.
a housing movable between a use position coupled to the thermal support apparatus and a second position spaced apart from the thermal support apparatus,	<i>See supra</i> claim 1.
the housing comprising exterior walls, at least one interior wall dividing the housing into a first interior chamber and a second interior chamber,	<i>See supra</i> claim 1.
a passageway extending between the first and second interior chambers,	<i>See supra</i> claim 1.
said first and second interior chambers in constant fluid communication via said passageway, and	<i>See supra</i> claim 1.
an outlet port in fluid communication with the second chamber and the air passageway when the housing is in the use position, and	<i>See supra</i> claim 1.
a heat source positioned in the second chamber to heat the fluid in the second chamber;	<i>See supra</i> claim 1.
wherein the thermal support apparatus is formed to include a recess configured to	Ohsonone discloses an incubator having an inner wall 25 that forms a recessed space 27 within the incubator. <i>Id.</i> at ¶ 10. The recessed space 27 is configured to slidably receive a “heating-type humidifier 26.” <i>Id.</i> Figure 3

receive the humidifier module in the use position, and	illustrates the humidifier in the use position where it is fully inserted within the space 27 and secured by the door 24. <i>Id.</i> at ¶¶ 10, 27. In this configuration, the humidifier is “activated” and configured to provide humidified air to the incubator. <i>Id.</i> at ¶ 27.
at least a portion of the humidifier module is in the recess when the humidifier module is in the second position.	Figure 5 of Ohzone discloses that the humidifier 26 is in a second position, where the humidifier 26 is spaced apart from the vertical portion of the inner wall 25 such that it is no longer in fluid or electrical communication with the incubator. <i>Id.</i> at ¶ 37. At least a portion of the humidifier 26 still remains in the space 27 formed within the incubator 11 in this position. <i>Id.</i> at Fig. 5.

2. Ground 2: Claims 1-3, 6-9, 11-14, 18, and 23-25

Claims 1-3, 6, 13, 18, and 25 of the 157 patent are invalid under 35 U.S.C. § 102(b) as anticipated by Kobayashi, and claims 7-9, 11-12, 14, and 23-24 of the 157 patent are invalid under 35 U.S.C. § 103(a) as obvious over Kobayashi in view of Goldberg and/or Ohzone.

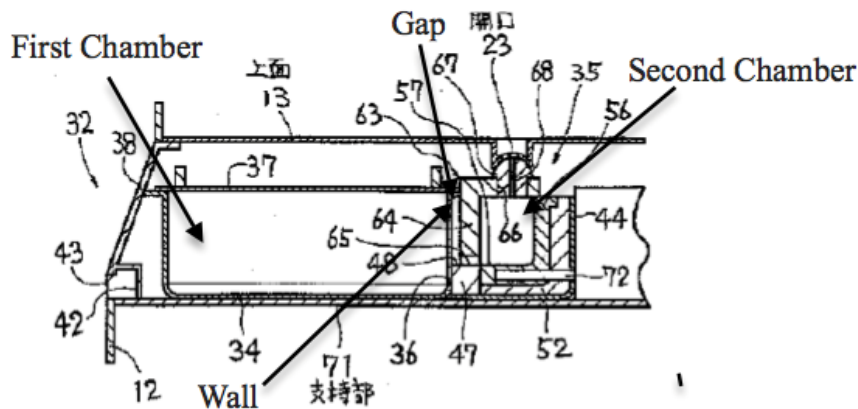
a. Claims 1-3, 6, 13, 18, and 25 are anticipated under 35 U.S.C. § 102(b) by Kobayashi

Kobayashi is directed towards an incubator 11 having a removable humidifying mechanism 32 that is disposed within a portion of the incubator 11 that can be removed for easy filling and cleaning. (Ex. 1005, ¶¶ 7, 23). The humidifying mechanism 32 is comprised of a water reservoir 34 that is coupled to a heater unit 35. *Id.* at ¶¶ 17-18.

As shown in annotated Figure 3 below, the water reservoir 34 is a water tank

(“first interior chamber”) that includes an opening 36 that faces the heater unit 35.

Id. A recessed portion 57 (“second interior chamber”) is formed within the heater unit 35, and which is where the steam is generated. *Id.* at ¶¶ 20, 26. Kobayashi recognizes the benefits of insulating the recessed portion 57 to allow for minimal heat loss and to limit its volume to allow for a small amount of water to be rapidly heated and converted into steam. *Id.* at ¶¶ 28, 29; Ex. 1009, Leshner Decl. ¶ 66.



Specifically, the heater unit 35 includes a frame 44 that has a heat insulating wall 47 that faces the opening 36 formed in the water reservoir 34. *Id.* at ¶ 19. The heat insulating wall 47 is made out of bakelite, a heat insulating material, having a notched portion 48 that corresponds with the opening 36 of the water reservoir 34. *Id.* at ¶¶ 17-19. The recessed portion 57 is formed within a metallic member 56 which is located within a heat insulating member 52 that is also disposed within the frame 44. *Id.* at ¶¶ 20-21. A cover 63 formed of heat-resistant and steam resistant synthetic rubber and integral sealing member 64 is provided around the recessed portion 57. *Id.* The sealing member 64 fits within the notched

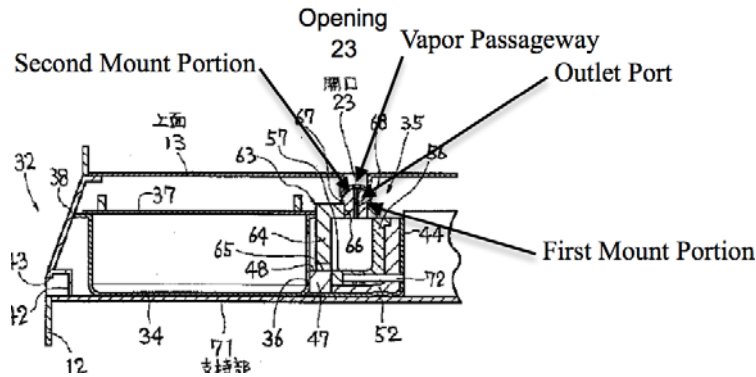
portion of the heat insulating wall 47 of the frame 44. *Id.* The sealing member 64 and heat insulating wall 47 that face the water reservoir 34 form part of an “interior wall” as shown in annotated Figure 3, above. *Id.* at ¶¶ 19-21. A groove 65, which is formed in the bottom portion of the sealing member 64, and the notched portion 48 of the frame 44 collectively form a “passageway” that allows water to pass from the water reservoir 34 to the recessed portion 57 where the water is heated into steam. *Id.* at ¶ 24. As further shown in Figure 3, a gap is present between sealing member 64 (“first panel”) and the top portion of the opposing exterior wall (“second panel”) above the opening 36 of the water reservoir 34. (Ex. 1009, Leshner Decl. ¶ 67).

The incubator 11 includes a cartridge heater 72 that is used to heat the water contained in the recessed portion 57. (Ex. 1005, ¶ 23). The cartridge heater 72 and overheat sensor 73 protrude from an interior side wall of the supporting part 71 of the incubator as shown in Figure 1. *Id.* The cartridge heater 72 is received by the heater unit 35 in the following manner. The frame 44 includes two through holes 45, 46 on the side opposite to the side of the water reservoir 34. *Id.* at ¶ 19. The bottom of the metallic chamber 56 also includes two holes 61, 62 that correspond to the through holes 45, 46 of the frame 44. *Id.* at ¶¶ 19, 20. The cartridge heater 72 and overheat sensor 73 are inserted through the through holes 45, 46 and into the holes 61, 62. *Id.* at ¶¶ 25, 26. The heater cartridge 72 heats metallic member

56, which in turn heats the water in the recessed portion 57. *Id.*

In operation, water from the water reservoir 34 travels into the recessed portion 57 via the passageway, after which the water is heated and converted into steam. *Id.* at ¶ 24. Specifically, water travels from the opening 36 of the water reservoir 34 through the notched portion 48 and groove 65 of the cover 63 (collectively “passageway”) and into the recessed portion 57 of the metallic member 56. *Id.* at ¶¶ 21, 24.

The steam generated within the recessed portion 57 exits the humidifier 26 via a through-hole 66 that is formed in the top portion of the cover 63, as shown in annotated Figure 3, below. *Id.* at ¶ 22. A steam blower 67 is disposed into the through hole 66 and includes a semi-spherical top portion (“first mount portion”) that protrudes above the cover 63, as shown in Figure 3. *Id.* The steam blower 67 includes a through hole 68 (“outlet port”) that is aligned with the through hole 66 formed within the cover 63. *Id.* The steam blower 67 fits into a rounded shell member (“second mount portion”) of an opening 23 (“vapor passageway”) formed within a top surface 13 of the incubator 11. *Id.* at ¶¶ 13-15, 22. The steam 33 mixes with heated air and is blown into the infant chamber 15 via the notched portions 25-27 that are formed within a plate 24 that rests on top of the top portion 13. *Id.* at ¶¶ 15, 16. Once the humidified air circulates within the infant chamber 15, it is sucked into an opening 16 via notched portion 28. *Id.*



Kobayashi contemplates that the humidifying mechanism 32 can be pulled out of the supporting part 71 formed in the main body 12 of the incubator to allow for easy replacement, cleaning, and refilling of water. *Id.* at ¶¶ 23, 30, 31. The humidifying mechanism 32 need not be entirely withdrawn from the supporting part 71 to allow the water reservoir 34 to be refilled. *Id.*; *see generally* Ex. 1009, Leshner Decl., ¶¶ 65-71.

b. Claims 7-9, 11-12, 14, 23-24 of the 157 patent are invalid under 35 U.S.C. § 103(a) as obvious over Kobayashi in view of Goldberg and/or Ohsone.

Claims 7-9, 11-12, 14, and 23-24 recite various features that are not expressly disclosed in Kobayashi, but are disclosed in Goldberg and/or Ohsone.

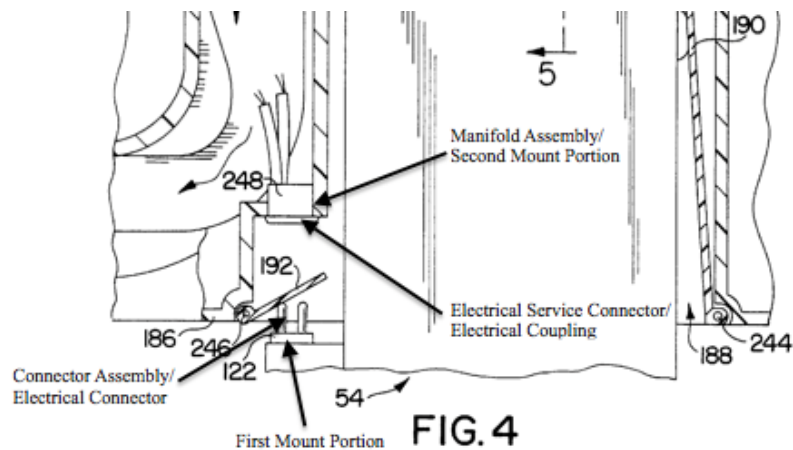
These claims recite a variety of obvious modifications, including having the heat source movable with the housing, locating circulating air passageways in the base of the thermal support apparatus, and/or including an electrical service connector on the thermal support apparatus for providing power to the heat source when the humidifier module is coupled to the thermal support apparatus when in

the use position. Each of these features are disclosed in Goldberg and/or Ohson, and providing these various features in the humidifier module and thermal support apparatus of Kobayashi amounts to nothing more than a matter of routine design choice leading to predictable results. (Ex. 1009, Leshner Decl. ¶¶ 72-75). There is nothing unexpected in the functionality or properties of the proposed combination of Kobayashi with Goldberg and/or Ohson. *Id.*

Goldberg discloses a removable humidifier module for a patient support apparatus, such as an infant incubator, where the apparatus has a compartment for “accepting a removable self-contained humidifier module, an air inlet in fluid communication with the compartment, an air outlet in fluid communication with the compartment, and an electrical service connector positioned to lie in the compartment.” (Ex. 1006, 2:14-20). With reference to figure 6, the humidifier module 54 can be slidingly inserted into the patient-support apparatus 20, and has an electrical connector 122 that is engaged with the electrical service connector 248. *Id.* at 9:30-36. As shown in figures 6 and 7, the module 54 also includes an inlet port that is in fluid communication with the patient-support apparatus 20, such that the heated air 184 flows into the chamber 80 of the module 54, is transformed into heated and humidified air 266, and exits the module to provide humidified air to the patient support apparatus 20. *Id.* at 10:29-58.

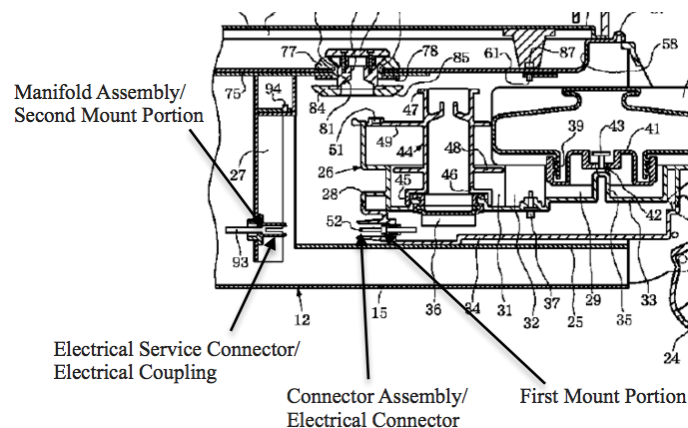
With reference to Figure 2, the humidifier module 54 includes a heater pad

120 disposed entirely within the module that heats the water 76 in the water filled portion 82 of the chamber 80. *Id.* at 6:20-30. As shown in annotated Figure 4 the humidifier module 54 further includes an electrical connector 122 (“connector assembly”), which is configured to be aligned and automatically connect to the electrical service connector 248 (“electrical coupling”) when the humidifier module 54 is fully inserted into compartment 140 as shown in Figure 6. *Id.* at 9:30-35. As shown in Figure 4 below, the electrical connector 122 has a rectangular protrusion that forms the “first mount portion” and is configured to be received by a receptacle (“second mount portion”) of the electrical service connector 248. The receptacle also forms the “manifold assembly” that is configured to receive the electrical connector 122. *Id.*



Similarly, and as discussed above, Ohsonne discloses a “saucer-shaped heater unit 36,” where the lower portion of the steam column 44 is press-fitted around the heater unit 36. (Ex. 1003, ¶¶ 11, 13). The heater unit 36 converts the water that

flows into the steam column 44 via the slit 46 into steam. *Id.* at ¶ 23, 29. Ohsonone further discloses a plurality of pin-shaped plugs 52 (connector assembly/electrical service connector) that form part of the first mount portion. *Id.* at ¶ 14. The pin-shape plugs 52 are electrically connected to the heater unit 36 and water level sensor 37. *Id.* As shown in annotated Figure 3 below, the plurality of plugs 52 are configured to electrically connect with a plurality of jacks 93 (electrical service connector/electrical coupling) that form part of the second mount portion and manifold assembly. *Id.* at ¶ 21. The plurality of jacks 93 are attached on the inner wall 25 of the base 12 of the incubator to power these devices. *Id.*; *see generally*, Ex. 1009, Leshner Decl. ¶¶ 72-80.



As shown in the claim chart below, claims 1-3, 6, 13, 18, and 25 of the 157 patent are invalid under 35 U.S.C. § 102(b) as anticipated by Kobayashi, and claims 7-9, 11-12, 14, and 23-24 of the 157 patent are invalid under 35 U.S.C. § 103(a) as obvious over Kobayashi in view of Goldberg and/or Ohsonone. (Ex. 1009, Leshner Decl. ¶ 80).

157 Patent	Kobayashi (Ex. 1005) in combination with Goldberg (Ex. 1006) and/or Ohson (Ex. 1003)
1. A humidifier module for use with a thermal support apparatus including an air passageway, the humidifier module comprising:	<p>Kobayashi discloses an incubator having a “humidifying mechanism 32 . . . [and] a supporting part 71, which serves as a platform for supporting the humidifying mechanism 32 in a freely attaching and detaching manner.” (Ex. 1005, ¶ 23).</p> <p>Kobayashi further discloses that the “steam 33 which is generated by a humidifying mechanism 32 is blown at a predetermined volume from the opening 23 to the space between the top surface 13 and the plate 24” where it mixes with warm air 31. <i>Id.</i> at ¶ 15. The steam 33 and air 31 mixture then blows into the infant chamber 15, circulates therein, and flows out of chamber 15 through opening 16. <i>Id.</i> at ¶ 16.</p>
a housing movable between a use position coupled to the thermal support apparatus and a second position spaced apart from the thermal support apparatus,	<p>The water reservoir 34 and heater unit 35 of the humidifier mechanism 32 form the housing. Kobayashi discloses that the “humidifying mechanism 32 has a water reservoir 34 and a heater unit 35 which are connected to each other with machine screws.” <i>Id.</i> at ¶ 17. Kobayashi discloses that “it is possible to insert and pull out the humidifying mechanism 32 [from the incubator 11], and therefore, there is provided to the main body 12 a supporting part 71, which serves as a platform for supporting the humidifying mechanism 32 in a freely attaching and detaching manner.” <i>Id.</i> at ¶¶ 23, 24. When the humidifying mechanism 32 is “insert[ed]” into the supporting part 71, it is in the “use position.” <i>Id.</i> The humidifying mechanism 32 is in the “second position” when it is “pulled[ed] out from” the main body 12 of the incubator 11. <i>Id.</i></p>
the housing comprising exterior walls, at least one interior wall dividing the housing into a first interior chamber and a second interior chamber,	<p>Kobayashi discloses that the “humidifying mechanism 32 has a water reservoir 34 and a heater unit 35 which are connected to each other with machine screws.” <i>Id.</i> at ¶ 17. The outer walls of the water reservoir 34 and heater unit 35 of the humidifying mechanism 32 form the exterior walls of the housing.</p> <p>As shown in Figures 1 and 3, the water reservoir 34 is a</p>

	<p>first interior chamber. The recessed portion 57 of the heater unit 35 is the second interior chamber. The water reservoir 34 includes an opening 36 that faces the heater unit 35. <i>Id.</i> The heater unit 35 includes a frame 44 having a notched portion 48 that corresponds with the opening 36 of the water reservoir 34. <i>Id.</i> at ¶¶ 17-19. The side surface of the frame 44 that faces the water reservoir 34 is a heat-insulating wall 47 formed from bakelite, and a portion of this heat insulating wall 47 has a notched portion 48 that corresponds to the opening 36 formed within the water reservoir 34. <i>Id.</i> at ¶ 19. A metallic member 56 having a recessed portion 57 where the water is heated is located within a heat insulating member 52 that is also disposed within the frame 44. <i>Id.</i> at ¶¶ 20-21.</p> <p>Kobayashi further discloses that “[t]he metallic member 56 is provided with a cover 63 formed from heat-resistant and steam-resistant synthetic rubber. A sealing member 64 is provided integrally with the cover 63 and inserted into the notched portion 48 to thereby seal most of the notched portion 48.” <i>Id.</i> at ¶ 21. The heat-insulating wall 47 and the vertical portion of the sealing member 64 form an interior wall that divides the housing into a first interior chamber (the water reservoir 34) and a second interior chamber (the recessed portion 57). <i>Id.</i> at Fig. 3</p>
a passageway extending between the first and second interior chambers,	<p>Kobayashi discloses that “the lower end of the sealing member 64 is provided with a groove 65 which has a narrow cross-sectional surface area, and the notched portion 48 is not sealed at the portion where the groove 65 is disposed. <i>Id.</i> at ¶ 21. Kobayashi contemplates that “if the cover 63 is installed on the metallic member 56, water is supplied to the recessed portion 57 from the water reservoir 34 via the opening 36, the notched portion 48, and the groove 65. <i>Id.</i> at ¶ 24. The combination of opening 36, notched portion 48, and groove 65 provides a passageway extending between the first and second interior chambers as shown in Figure 3.</p>
said first and second interior chambers in	<p>Kobayashi discloses that “to generate the steam 33 using the humidifying mechanism 32 as described above, first,</p>

<p>constant fluid communication via said passageway, and</p>	<p>water is poured into the water reservoir 34. Even if water is not poured into the recessed portion 57, and even if the cover 63 is installed on the metallic member 56, water is supplied to the recessed portion 57 from the water reservoir 34 via the opening 36, the notched portion 48, and the groove 65.” <i>Id.</i> at ¶ 24. The water reservoir 34 and recessed portion 57 are in constant fluid communication with each other via the opening 36, notched portion 48, and the groove 65.</p>
<p>an outlet port in fluid communication with the second chamber and the air passageway when the housing is in the use position, and</p>	<p>Kobayashi discloses that the cover 63 of the recessed portion 57 is provided with a through-hole 66. <i>Id.</i> at ¶ 22. A steam blower 67 is formed from steam-resistant synthetic rubber is inserted into the through-hole 66 and protrudes above the cover 63. <i>Id.</i> The steam blower 67 has a through-hole 68 that passes into the recessed portion 57. <i>Id.</i></p> <p>When the humidifier mechanism 32 is in the use position, the steam 33 which is generated inside the recessed portion 57 (second chamber) is blown through the through-hole 68 (outlet port) of the steam blower 67, and through the opening 23 into the space between the top surface 13 and the plate 24 (air passageway). <i>Id.</i> at ¶ 27, Figs. 3 and 4.</p>
<p>a heat source positioned in the second chamber to heat the fluid in the second chamber;</p>	<p>Kobayashi discloses that the incubator 11 includes a cartridge heater 72 that is used to heat the water contained in the recessed portion 57 (second chamber). <i>Id.</i> at ¶¶ 23, 26. The cartridge heater 72 and overheat sensor 73 protrude from an interior side wall of the supporting part 71 of the incubator as shown in Figure 1. <i>Id.</i> The cartridge heater 72 is received by the heater unit 35 in the following manner. The frame 44 includes two through holes 45, 46 on the side opposite to the side of the water reservoir 34. <i>Id.</i> at ¶ 19. The bottom of the metallic chamber 56 also includes two holes 61, 62 that correspond to the through holes 45, 46 of the frame 44. <i>Id.</i> at ¶¶ 19, 20. The cartridge heater 72 and overheat sensor 73 are inserted through the two sets of holes and into the holes 61 and 62 in metallic member 56. <i>Id.</i> at ¶¶ 25, 26.</p>

	<p>The cartridge heater 72 and metallic member 56 form a “heat source” that heats the fluid in the recessed portion 57 in the following manner: “When the cartridge heater 72 operates, first, the metallic member 56 is heated, and subsequently, the metallic member 56 heats the water inside the recessed portion 57, and then the steam 33 forms.” <i>Id.</i> at ¶ 26. The heat source is positioned in the second chamber because the recessed portion 57 is formed within the metallic member 56. <i>Id.</i> at ¶ 20.</p>
<p>said humidifier further comprising a first mount portion configured to engage a second mount portion coupled to the thermal support apparatus,</p>	<p>Kobayashi discloses that at the upper half of the steam blower 67 is semi-spherical, and this semi-spherical portion protrudes from the cover 63. <i>Id.</i> at ¶ 22. The opening 23 formed within the top surface 13 of the incubator 11 also has a rounded shape that is configured to “fit[] close” to the semi-spherical top portion of the steam blower 67. <i>Id.</i> at ¶ 22, Fig. 3.</p> <p>When the humidifier mechanism 32 is fully inserted into the supporting part 71, the top portion of the steam blower 67 is “inserted into the rounded shell member in the vicinity of the opening 23 on the top surface 13, and is flexibly pressed, so as to determine the position of the humidifying mechanism 32.” <i>Id.</i> at ¶ 25.</p> <p>The top portion of the steam blower 67 constitutes a first mount portion and the rounded shell member in the vicinity of the opening 23 configured to receive the top portion of the steam blower 67 constitutes a second mount portion.</p>
<p>the first and second mount portions in communication with the humidifier module and the thermal support apparatus when the humidifier module is in the use position,</p>	<p>Figure 3 of Kobayashi discloses that when the humidifier module 32 is in the use position, “because the vicinity of the top of the steam blower 67 is flexibly pressed to the rounded shell member in the vicinity of the opening 23, the steam 33 which is generated inside the recessed portion 57 is blown through the through-hole 68 and through the opening 23 only into the space between the top surface 13 and the plate 24, and it is blown into the infant chamber 15 through the notched portions 25-27.” <i>Id.</i> at ¶ 27.</p>

	In this position, the top portion of the steam blower 67 and the rounded shell member are in communication with the humidifier module 32 and the incubator 11 via the through-hole 68 and the opening 23.
wherein the first mount portion includes the outlet port and the second mount portion includes a vapor passageway in fluid communication with the air passageway and the outlet port	The steam blower 67 includes the through-hole 68 that is in communication with the recessed portion 57 and opening 23 when the humidifier module 32 is fully inserted into the supporting part 71. <i>Id.</i> The rounded shell member that receives the upper half of the steam blower 67 includes the opening 23 that is in communication with the through-hole 68 and the air passageway of the incubator 11 as shown in Figure 3. <i>Id.</i> at ¶ 27, Fig. 3.
2. The humidifier module of claim 1 in combination with the thermal-support apparatus comprising a base and a patient support supported by the base, the base including the air passageway to permit circulation of air through the thermal support apparatus.	<p>Kobayashi discloses “an incubator 11 of the first embodiment has a top surface 13 of a main body 12 which is covered by a transparent hood 14, and an infant chamber 15 is formed within the hood 14.” <i>Id.</i> at ¶¶ 12, 23. The main body 12 supports a plate 24 that is inserted into the top surface 13. <i>Id.</i> at ¶ 14. A bed base for supporting an infant is installed on the plate 24 and a mat or the like is disposed on the bed for the infant to sleep. <i>Id.</i></p> <p>Kobayashi further discloses that the “steam 33 which is generated by a humidifying mechanism 32 is blown at a predetermined volume from the opening 23 to the space between the top surface 13 and the plate 24” that is formed in the main body 12. <i>Id.</i> at ¶ 15. Air 31 mixes with the steam 33, which is then blown into the infant chamber 15 via the notched portions 25-27 that are formed within the plate 24. <i>Id.</i> at ¶¶ 14-16. The air/steam mixture circulates within the infant chamber 14 and then is sucked into the opening 16 within the top surface 13. <i>Id.</i> at ¶ 16.</p>
3. The humidifier module of claim 2 wherein the interior wall includes a first	Kobayashi discloses that the side surface of the frame 44 of the heater unit 35 is a heat-insulating wall 47 formed of bakelite. <i>Id.</i> at ¶ 19. The insulating wall 47 has a notched portion 48 that corresponds to the opening 36 formed

panel and a second panel spaced apart from the first panel to define a gap therebetween.	<p>within the opposite wall of the water reservoir 34. <i>Id.</i> In addition, “a sealing member 64 is provided integrally with the cover 63 and inserted into the notched portion 48 to thereby seal most of the notched portion 48.” <i>Id.</i> at ¶ 21.</p> <p>As shown in Figure 3, the sealing member 64 forms a first panel and the top portion of the opposing exterior wall of the water reservoir 34 above the opening 36 forms the second panel. <i>Id.</i> at Fig. 3. A gap exists between these two panels. <i>Id.</i></p>
6. The humidifier module of claim 1 wherein the first chamber has a volume greater than the volume of the second chamber.	Kobayashi discloses that the water reservoir 34 has a volume of 1.3 L and the recessed portion 57 has volume of 50 mL. <i>Id.</i> at ¶ 28.
7. The humidifier module of claim 6 wherein the heat source is movable with the housing when the housing moves between the use position and the second position.	<p>Goldberg discloses a removable self-contained humidifier module for a patient-support apparatus. (Ex. 1006, 2:14-20). The humidifier module includes a heater pad 120 disposed entirely within the module that heats the water 76 in the water filled portion 82 of the chamber 80. <i>Id.</i> at 6:20-30. The heater pad 120 is movable with the humidifier between a use and a second position. <i>Id.</i> at 1:32-46, 2:13-19, 10:58-61.</p> <p>Ohson discloses that the heater unit 36 is disposed within the lower bottom 34 portion of the water tank 28. (Ex. 1003, at ¶ 11). The water tank 28 can moved from a use position, as shown in Figure 3, to a second position, as shown in Figure 5. <i>Id.</i> at Figs. 3, 5.</p>
8. The humidifier module of claim 7 in combination with the thermal support apparatus comprising a base and a patient support supported by the base, the base including the air passageway to permit circulation of air through the thermal support apparatus.	<i>See supra</i> claim 2.
9. The humidifier module of claim 7	Kobayashi discloses that the side surface of the frame 44 of the heater unit 35 is a heat-insulating wall 47 formed of

<p>further comprising an interior wall separating the first and second chambers and including a first panel and a second panel spaced apart from the first panel to define a gap therebetween.</p>	<p>bakelite. (Ex. 1005, ¶ 19). The insulating wall 47 has a notched portion 48 that corresponds to the opening formed within the opposite wall of the water reservoir 34. <i>Id.</i> In addition, “a sealing member 64 is provided integrally with the cover 63 and inserted into the notched portion 48 to thereby seal most of the notched portion 48.” <i>Id.</i> at ¶ 21.</p> <p>As shown in Figure 3, the sealing member 64 forms a first panel and the top portion of the opposing exterior wall of the water reservoir 34 above the opening 36 forms the second panel. <i>Id.</i> at Fig. 3. A gap exists between these two panels. <i>Id.</i></p>
<p>11. The humidifier module of claim 6 in combination with the thermal support apparatus including the air passageway and a manifold assembly including an electrical service connector, and a connector assembly configured to mate with the manifold assembly and establish electrical communication between the heat source and the electrical service connector when the humidifier module is in the use position.</p>	<p>Goldberg discloses that the “electrical service connector 248 . . . is coupled to the main control circuit of patient-support apparatus 20. Electrical connector 122 of humidifier module 54 is aligned with and automatically connects to electrical service connector 248 when humidifier module 54 is fully inserted into compartment 140 as shown in FIG. 6.” (Ex. 1006, 9:29-35). As shown in Figure 4, the electrical connector 122 is the connector assembly that is configured to mate, and establish an electrical communication, with the electrical service connector 248 and manifold assembly (which includes electrical service connector 248) of the patient support apparatus 20 to energize the heater pad 120 (heat source) that is disposed within the humidifier assembly. The mating occurs when the humidifier module 54 is fully inserted into the patient support apparatus 20 and in the use position. <i>Id.</i> at Fig. 6.</p> <p>Ohson discloses that the incubator 11 has “[a] plurality of jacks 93 [that] are loosely attached on the inner wall 25 of the base 12 in a position facing the plugs 52 of the heating-type humidifier 26” as shown in Figure 4. (Ex. 1003, ¶ 21). The plurality of jacks 93 face plugs 52 of the humidifier 26 and are configured to provide an electrical connection for the humidifier 26 to energize the heater unit 36 when the humidifier 26 is in the use position. <i>Id.</i> at ¶¶ 26, 27. The plurality of jacks 93 forms a manifold</p>

	<p>assembly that includes an electrical service connector to energize the heater unit 36. <i>Id.</i> at Fig. 4.</p> <p>Ohsonone discloses that the humidifier includes “[a] plurality of pin-shaped plugs 52 [that] are somewhat loosely attached between the upper bottom 33 and the lower bottom 34 on a side opposite to the door 24 of the heating-type humidifier 26, and these plugs 52 are electrically connected to the heater unit 36 and the water level sensor 37.” <i>Id.</i> at ¶ 14. The plugs 52 form the connector assembly.</p> <p>The plugs 52 (connector assembly) are configured to mate with the jacks 93 (manifold assembly/ electrical service connector) in the following manner: “Because the plugs 52 and the jacks 93 are attached somewhat loosely, they automatically align themselves when the heating-type humidifier 26 is installed, . . . with the result that the plugs 52 are normally inserted into the jacks 93.” <i>Id.</i> at ¶ 25. The heater unit 36 (“heat source”) is disposed within the humidifier 26 and an electrical communication is established between the heater unit 36 (“heat source”) and the jacks 93 (“electrical service connector”) when the humidifier 26 is in the use position. <i>Id.</i> at ¶¶ 26, 27.</p>
<p>12. The humidifier module of claim 11 in combination with the thermal-support apparatus comprising a base and a patient support supported by the base, the base including the air passageway to permit circulation of air through the thermal support apparatus.</p>	<p><i>See supra</i> claim 2.</p>
<p>13. The humidifier module of claim 1 wherein the housing further includes a second interior wall cooperating with the first interior wall to define a space therebetween and between the first and</p>	<p>Kobayashi discloses that the side surface of the frame 44 of the heater unit 35 is a heat-insulating wall 47 formed of bakelite. (Ex. 1005, ¶ 19). The insulating wall 47 has a notched portion 48 that corresponds to the opening 36 formed within the opposite wall of the water reservoir 34. <i>Id.</i> In addition, “a sealing member 64 is provided integrally with the cover 63 and inserted into the notched portion 48 to thereby seal most of the notched portion 48.” <i>Id.</i> at ¶ 21.</p>

second interior chambers.	As shown in Figure 3, the sealing member 64 forms a first panel and the top portion of the opposing exterior wall of the water reservoir 34 above the opening 36 forms the second panel. <i>Id.</i> at Fig. 3. The two walls cooperate with one another to define a gap (space) therebetween. <i>Id.</i>
14. The humidifier module of claim 13 in combination with a thermal support apparatus comprising a base and a patient support supported by the base, the base including the air passageway to permit circulation of air through the thermal support apparatus,	<i>See supra</i> claim 2.
the humidifier module comprising a plurality of exterior walls defining the housing,	Kobayashi discloses that the “humidifying mechanism 32 has a water reservoir 34 and a heater unit 35 which are connected to each other with machine screws.” <i>Id.</i> at ¶ 17. The water reservoir 34 and heater unit 35 form the housing and their exterior walls form a plurality of exterior walls.
the housing configured to be removably coupled to the thermal support apparatus, the heat source being movable with the housing.	<p>Kobayashi discloses that the water reservoir 34 and heater unit 35 of the humidifier mechanism 32 form the housing. Kobayashi discloses that the “humidifying mechanism 32 has a water reservoir 34 and a heater unit 35 which are connected to each other with machine screws.” <i>Id.</i> at ¶ 17. Kobayashi discloses that “it is possible to insert and pull out the humidifying mechanism 32 [from the incubator 11], and therefore, there is provided to the main body 12 a supporting part 71, which serves as a platform for supporting the humidifying mechanism 32 in a freely attaching and detaching manner.” <i>Id.</i> at ¶¶ 23, 24. When the humidifying mechanism 32 is “insert[ed]” into the supporting part 71, it is in the “use position.” <i>Id.</i> The humidifying mechanism 32 is in the “second position” when it is “pulled[ed] out from” the main body 12 of the incubator 11. <i>Id.</i></p> <p>Goldberg discloses a removable self-contained humidifier module 54 for a patient-support apparatus. (Ex. 1006, 1:32-46, 2:14-20). The humidifier module includes a heater pad 120 disposed entirely within the module that heats the water 76 in the water filled portion 82 of the chamber 80. <i>Id.</i> at 6:20-30. The humidifier module 54 is</p>

	<p>slidingly inserted into the compartment 140 formed within the patient-support apparatus 20 and engages stop walls 252 to prevent insertion past the position shown in Figure 6. <i>Id.</i> at 9:37-51. Figure 3 illustrates a configuration where the humidifier module 54 is completely removed from the patient support apparatus 20. <i>Id.</i> at Fig. 3, <i>see also id.</i> at 10:58-65.</p> <p>Ohstone discloses that the heater unit 36 is disposed within the lower bottom 34 portion of the water tank 28. (Ex. 1003, ¶ 11, Fig. 3). When in the “use position,” the humidifier 26, which includes the housing, is coupled to the thermal support apparatus. Ohstone teaches an incubator having an inner wall 25 that forms a recessed space 27 within the incubator. <i>Id.</i> at ¶ 10. The recessed space 27 is configured to slidingly receive a “heating-type humidifier 26”. <i>Id.</i> Figure 3 illustrates the humidifier in the “use position” where it is fully inserted within the space 27 and secured by the door 24. <i>Id.</i> at ¶¶ 10, 27. In this configuration, the humidifier is “activated” and configured to provide humidified air to the incubator. <i>Id.</i> at ¶ 27. Therefore, the humidifier 26 and “housing” is “coupled” to the incubator in the “use position.”</p> <p>The humidifier 26 can be removed from the space 27 formed within the incubator. <i>Id.</i> at ¶¶ 37, 38. Figure 5 illustrates the humidifier 26, and “housing,” in a “second position,” where the humidifier 26 is “spaced apart” from the vertical portion of the inner wall 25 such that it is no longer in fluid or electrical communication with the incubator. <i>Id.</i> at ¶¶ 37, 38. The humidifier 26 is “spaced apart” from the incubator, in the configuration shown in Figure 5.</p> <p>Ohstone teaches that the heater unit 36 (“heat source”) is disposed within the lower bottom 34 portion of the water tank 28 and therefore is movable with the “housing.” <i>Id.</i> at ¶ 11.</p>
18. The humidifier module of claim 1,	Kobayashi discloses that “to generate the steam 33 using the humidifying mechanism 32 as described above, first,

the second interior chamber further comprising a container bottom, wherein said passageway providing constant fluid communication between said first and second interior chambers continuously permits fluid to pass from said first interior chamber onto the container bottom of said second interior chamber.	water is poured into the water reservoir 34. Even if water is not poured into the recessed portion 57, and even if the cover 63 is installed on the metallic member 56, water is supplied to the recessed portion 57 from the water reservoir 34 via the opening 36, the notched portion 48, and the groove 65.” (Ex. 1005, ¶ 24). As shown in Figure 3, at the bottom of the recessed portion 57 of the heater unit 35, the groove 65 provides a continuous passage for water to pass from the water reservoir 34 onto the bottom of the recessed portion 57. <i>Id.</i> at Fig. 3.
23. A humidifier module for use with a thermal support apparatus including an air passageway, the humidifier module comprising:	<i>See supra</i> claim 1.
a housing movable between a use position coupled to the thermal support apparatus and a second position spaced apart from the thermal support apparatus,	<i>See supra</i> claim 1.
the housing comprising exterior walls, at least one interior wall dividing the housing into a first interior chamber and a second interior chamber,	<i>See supra</i> claim 1.
a passageway extending between the first and second interior chambers,	<i>See supra</i> claim 1.
said first and second interior chambers in constant fluid communication via said passageway, and	<i>See supra</i> claim 1.
an outlet port in fluid communication with the second chamber and the air passageway when the housing is in the use position, and	<i>See supra</i> claim 1.
a heat source positioned in the second chamber to heat the fluid in the second chamber;	<i>See supra</i> claim 1.
said humidifier further comprising a	Kobayashi discloses that at the upper half of the steam blower 67 is semi-spherical, and this semi-spherical

<p>first mount portion configured to engage a second mount portion coupled to the thermal support apparatus,</p>	<p>portion protrudes from the cover 63. (Ex. 1005, ¶ 22). The opening 23 formed within the top surface 13 of the incubator 11 also has a rounded shape that is configured to “fit[] close” to the semi-spherical top portion of the steam blower 67. <i>Id.</i> at ¶ 22, Fig. 3.</p> <p>When the humidifier mechanism 32 is fully inserted into the supporting part 71, the top portion of the steam blower 67 is “inserted into the rounded shell member in the vicinity of the opening 23 on the top surface 13, and is flexibility pressed, so as to determine the position of the humidifying mechanism 32.” <i>Id.</i> at ¶ 25.</p> <p>The top portion of the steam blower 67 constitutes a “first mount” and the rounded shell member in the vicinity of the opening 23 configured to receive the top portion of the steam blower 67 constitutes a “second mount.”</p> <p>Goldberg discloses that the “electrical service connector 248 . . . is coupled to the main control circuit of patient-support apparatus 20. Electrical connector 122 of humidifier module 54 is aligned with and automatically connects to electrical service connector 248 when humidifier module 54 is fully inserted into compartment 140 as shown in FIG. 6.” (Ex. 1006, 9:29-35). As shown in Figure 4, the electrical connector 122 forms part of the “first mount portion” that is configured to engage the electrical service connector 248, which forms part of the “second mount portion”, that is part of the incubator. <i>Id.</i> at Fig. 4.</p> <p>Ohsonone discloses that the humidifier module 26 includes a “plurality of pin-shaped plugs 52 [that] are somewhat loosely attached between the upper bottom 33 and the lower bottom 34 on a side opposite to the door 24 of the heating-type humidifier 26, and these plugs are electrically connected to the heater unit 36 and the water level sensor 37.” (Ex. 1003, ¶ 14). The plurality of pin-shaped plugs 52 form the first mount portion.</p>
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	<p>The incubator 11 includes “[a] plurality of jacks 93 are loosely attached on the inner wall 25 of the base 12 [of the incubator 11] in a position facing the plugs 52 of the heating-type humidifier 26.” <i>Id.</i> at ¶ 21. The jacks 93 form the second mount portion.</p> <p>The plugs 52 and jacks 93, which form the first mount portion and second mount portion, respectively, are configured to engage each other by “automatically align[ing] themselves when the heating-type humidifier 26 is installed” and the “the plugs 52 are reliably inserted into the jacks 93 at the final stage of the operation of installing the heating type humidifier 26 into the space 27, by pressing one end 54 of the lever 53” <i>Id.</i> at ¶¶ 25-27.</p>
the first and second mount portions in communication with the humidifier module and the thermal support apparatus when the humidifier module is in the use position,	<p>Kobayashi discloses that when the humidifier mechanism 32 is fully inserted into the supporting part 71, the top portion of the steam blower 67 (“first mount”) is “inserted into the rounded shell member in the vicinity of the opening 23 [(“second mount”)] on the top surface 13, and is flexibility pressed, so as to determine the position of the humidifying mechanism 32,” such that the “first and second mount portions” are in communication with the humidifier mechanism 32 and the incubator. (Ex. 1005, ¶ 25).</p> <p>Goldberg discloses that the electrical connector 122 (first mount portion) is in electrical communication with the electrical service connector 248 (second mount portion) when the humidifier module 54 is fully inserted into compartment 140 of the incubator as shown in FIG. 6, which is the use position. (Ex. 1006, 9:29-35).</p> <p>Ohson discloses that at the end of the operation of inserting humidifier 26 into space 27, as shown in Fig. 4, “the plugs 52 are reliably inserted into the jacks 93 at the final stage of the operation of installing the heating type humidifier 26 into the space 27, by pressing one end 54 of the lever 53” (Ex. 1003, ¶¶ 25-27). In this position, the plugs 52 and jacks 93 are in electrical communication</p>

	with the humidifier 26 and incubator 11 so as to energize the heater unit 36 when the humidifier 26 is in the use position. <i>Id.</i>
wherein the first mount portion includes an electrical connector and the second mount includes an electrical coupling, the electrical coupling in electrical communication with the electrical connector and the heat source when the humidifier module is in the use position.	<p>Goldberg discloses that the electrical connector 122 (electrical connector) forms part of the first mount portion and the electrical service connector 248 (electrical coupling) forms part of the second mount portion as shown in Figure 4. (Ex. 1006, 9:29-35).</p> <p>The electrical service connector 248 (electrical coupling) is in electrical communication with the electrical connector 122 (electrical connector) and the heater pad 120 when the “the humidifier module 54 is fully inserted into compartment 140 of the incubator”, which is the use position. <i>Id.</i> at 9:29-35, Fig. 6.</p> <p>Ohsonne discloses that the “plurality of pin-shaped plugs 52” that forms part of the first mount portion is an “electrical connector.” (Ex. 1003, ¶ 14). The “plurality of jacks 93 are loosely attached on the inner wall 25 of the base 12 in a position facing the plugs 52 of the heating-type humidifier 26” forms part of the second mount portion and is an electrical coupling. <i>Id.</i> at ¶ 21. This configuration is illustrated in Figure 4. <i>Id.</i> at Fig. 4. Ohsonne further discloses that at the end of the operation of inserting humidifier 26 into space 27, as shown in Fig. 4, “the plugs 52 are reliably inserted into the jacks 93 at the final stage of the operation of installing the heating type humidifier 26 into the space 27, by pressing one end 54 of the lever 53” <i>Id.</i> at ¶¶ 25-27. The plugs 52 are “electrically connected to the heater unit 36,” which means that the plurality of jacks 93 are in electrical communication with both the plugs 52 and heater unit 36 when the humidifier 26 is in its use position. <i>Id.</i> at ¶ 14.</p>
24. The humidifier module of claim 23 wherein the electrical connector and the electrical coupling are spaced	Goldberg discloses that when the humidifier module 54 is in a non-use position, the electrical connector 122 (electrical connector) is spaced apart from the electrical service connector 248 (electrical coupling) as shown in Figure 4. (Ex. 1006, Fig. 4).

apart when the humidifier is in the second, non-use position to prevent electrical communication between the electrical connector and the electrical coupling.	Ohsonone discloses that when the humidifier module 26 is in the non-use position, it is spaced apart from the back wall 25 of the incubator, as shown in Figure 5. (Ex. 1003, Fig. 5). In this position, the plugs 52 of the humidifier module 26 are separated from the jacks 93 that are disposed in the back wall 25 of the incubator 11. <i>Id.</i> The non-use position prevents electrical communication between the plugs 52 (electrical connector) and the jacks 93 (electrical coupling). <i>Id.</i>
25. A humidifier module for use with a thermal support apparatus including an air passageway, the humidifier module comprising:	<i>See supra</i> claim 1.
a housing movable between a use position coupled to the thermal support apparatus and a second position spaced apart from the thermal support apparatus,	<i>See supra</i> claim 1.
the housing comprising exterior walls, at least one interior wall dividing the housing into a first interior chamber and a second interior chamber,	<i>See supra</i> claim 1.
a passageway extending between the first and second interior chambers,	<i>See supra</i> claim 1.
said first and second interior chambers in constant fluid communication via said passageway, and	<i>See supra</i> claim 1.
an outlet port in fluid communication with the second chamber and the air passageway when the housing is in the use position, and	<i>See supra</i> claim 1.
a heat source positioned in the second chamber to heat the fluid in the second chamber;	<i>See supra</i> claim 1.
wherein the thermal support apparatus is formed to include a recess configured to receive the humidifier module in the use position, and	Kobayashi discloses that “it is possible to insert and pull out the humidifying mechanism 32, and therefore, there is provided to the main body 12 a supporting part 71, which serves as a platform for supporting the humidifying mechanism 32 in a freely attaching and detaching manner.” (Ex. 1005, ¶ 23). The supporting part 71 forms part of the recess within the incubator to receive the humidifying mechanism 32 when in the use position as shown in Figure 4. <i>Id.</i> at Fig. 4.
at least a portion of the humidifier	Kobayashi discloses that “it is possible to insert and pull out the humidifying mechanism 32, and therefore, there is

module is in the recess when the humidifier module is in the second position.	provided to the main body 12 a supporting part 71, which serves as a platform for supporting the humidifying mechanism 32 in a freely attaching and detaching manner.” <i>Id.</i> at ¶ 23. A portion of the humidifying mechanism 32 is still supported by the supporting part 71, which forms part of the recess, when the humidifying mechanism 32 is in the second position. <i>Id.</i> at Fig. 5.
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G. SECONDARY CONSIDERATIONS

Petitioner reserves the right to address any secondary considerations that Patent Owner may assert. Petitioner is currently unaware of any secondary considerations having a nexus to the claims of the 157 patent that may overcome the showing of obviousness. Petitioner is also unaware of any long-felt, but unsatisfied need for the alleged invention of the 157 patent.

VI. CONCLUSION

Based on the above, there is a reasonable likelihood that Petitioner will prevail in its challenge of patentability for at least one of claims 1-3, 6-9, 11-14, 18, and 23-25 of the 157 patent. For the reasons set forth in this Petition, it is respectfully requested that the Petition for *Inter Partes* Review of the 157 patent be granted.

Dated: November 27, 2013

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,335,157 and supporting materials (Exhibit List, Exhibits 1001-1009, and Power of Attorney) have been served in its entirety this 27th day of November 2013, by Federal Express on:

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