

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WHITEWATER WEST INDUSTRIES, LTD.,
Petitioner,

v.

AMERICAN WAVE MACHINES, INC.,
Patent Owner.

IPR2022-01034
Patent 9,279,263 B2

Before BENJAMIN D. M. WOOD, CARL M. DeFRANCO, and
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

FINAMORE, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

ORDER

Dismissing Petitioner's Motion to Exclude Evidence
37 C.F.R. § 42.64(c)

I. INTRODUCTION

WhiteWater West Industries, Ltd. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–19 of U.S. Patent No. 9,279,263 B2 (“the ’263 patent”) (Ex. 1001). We issued a Decision (Paper 8) granting institution of an *inter partes* review.

During trial, American Wave Machines, Inc. (“Patent Owner”) filed a Response (Paper 14, “PO Resp.”). Petitioner filed a Reply (Paper 20, “Reply”), and Patent Owner filed a Sur-reply (Paper 26, “Sur-reply”).

Petitioner filed a Motion to Exclude Evidence (Paper 24, “Mot.”). Patent Owner filed an Opposition (Paper 25), and Petitioner filed a Reply (Paper 28).

Oral argument took place July 12, 2023. We entered the transcript (Paper 34, “Tr.”) into the record.

This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we conclude Petitioner has not proven, by a preponderance of the evidence, that claims 1–19 of the ’263 patent are unpatentable. Furthermore, we dismiss as moot Petitioner’s Motion to Exclude Evidence.

II. BACKGROUND

A. *Real Parties in Interest*

Petitioner identifies the real parties in interest as: itself, Murphy’s Waves, Ltd., Surf Loch, LLC, and Aquatic Development Group. Pet 1. Patent Owner identifies itself as the real party in interest. Paper 5, 1; *see also* Paper 31 (Patent Owner confirming the real party interest remains unchanged).

B. Related Matters

Petitioner identifies as related matters the following three Board proceedings between Petitioner and Patent Owner: IPR2022-001032 (challenging U.S. Patent No. 10,662,663 B2), IPR2022-01033 (challenging U.S. Patent No. 8,434,966 B1, which is in the same family as the '263 patent), and IPR2022-01035 (challenging U.S. Patent No. 10,738,492 B1). Pet. 1. Patent Owner identifies as related matters *Whitewater West Industries, Ltd. v. American Wave Machines, Inc.*, No. 3:22-cv-00729 (S.D. Cal. filed May 20, 2022) and U.S. Patent Application No. 16/876,076, which a continuation of the application from which the '263 patent issued. Paper 5, 2; *see also* Paper 31 (Patent Owner confirming the related matter remains unchanged).

C. The '263 Patent

The '263 patent, titled “Sequenced Chamber Wave Generator Apparatus and Method,” is directed to “wave generators for making waves in pools for recreational purposes.” Ex. 1001, code (54), 1:17–18. According to the '263 patent, waves that are created from known wave generators can be ridden for only a short period of time and distance because the waves quickly decrease in amplitude. *Id.* at 1:44–47. The invention described in the '263 patent purports to overcome this shortcoming by using “sequenced chambers adapted to create a rideable wave that changes the breaking characteristics of a wave by creating a surging motion in the pool that causes the wave to pitch further out into the pool, creating a more hollow barrel.” *Id.* at 2:36–39.

A wave generator apparatus is shown in Figure 1, reproduced below.

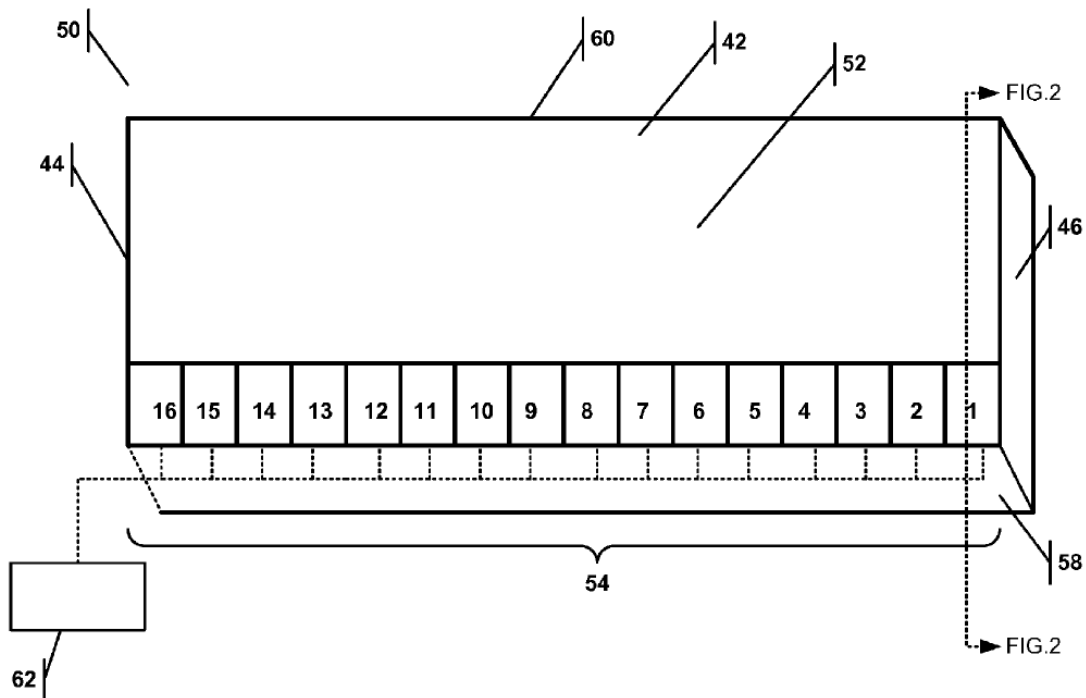


FIGURE 1

Figure 1 is a top view of a wave generator apparatus in a wave pool with sixteen chambers. Ex. 1001, 3:6–7. Pool 50 contains water 52 and includes a plurality of wave generating chambers 54, individually numbered 1–16, and controller 62 to operate chambers 54. *Id.* at 3:53–57.

An exemplary wave generating chamber 54 is depicted in Figure 2, reproduced below.

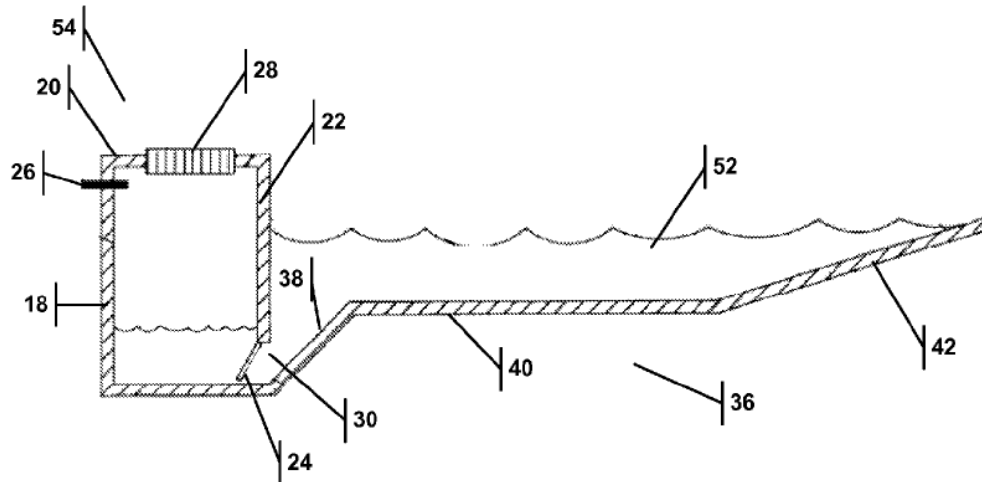


FIGURE 2

Figure 2 is a cross-sectional view of a wave generating chamber in a wave pool. Ex. 1001, 3:8–9. In operation, chamber 54 is first filled with air through inlet valve 26 to displace water into pool 50. *Id.* at 4:36–38. Vent valve 26 is then closed, and the chamber air is vented through vent valve 28, causing water 52 to flow from pool 50 through passageway 30 into the now empty space 56 in chamber 54. *Id.* at 4:38–41. This causes the water level in pool 50 to quickly drop, creating a depression or trough in the water that reflects against wave reflecting wall 22 of pool 50, which creates a circulating motion of the water. *Id.* at 4:41–45. Vent valve 28 is then shut to prevent water resurgence back into the pool. *Id.* at 4:46–47. Mechanical two-way valve 24 can also be used to prevent resurgence and may be closed during the initial air fill phase to create a larger air volume in the chamber which, when released, creates a larger depression in pool 50. *Id.* at 4:48–53.

Electronic controller 62 is connected to valves 24, 26, 28 to control the operation for each chamber and actuates each of the chambers in sequence. *Id.* at 4:61–66. More specifically, controller 62 actuates the first chamber and controls its valves and, after a delay, actuates the second chamber and controls its valves. *Id.* at 5:8–13. Actuating the chambers in sequence creates a surging effect in pool 50, which in turn creates a considerably hollow barreling wave. *Id.* at 5:24–35.

The flow of water in pool 50 created by the sequenced actuation of chambers 54 resembles a diamond pattern, which is shown in Figure 7, reproduced below.

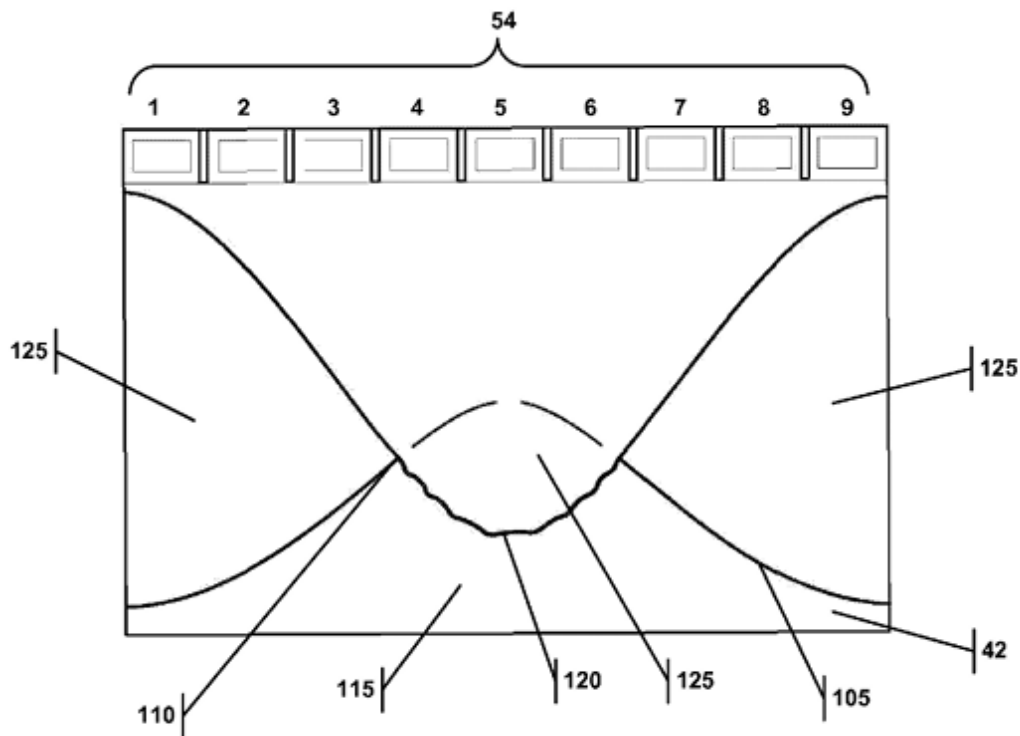


FIGURE 7

Figure 7 is a top view of the wave generator apparatus showing the diamond pattern created during sequenced actuation of the wave generating chambers. Ex. 1001, 3:19–22. The sequence for creating the diamond pattern, which

includes diamonds linked at the vertices, begins with chambers 54 on the edges of the pool, i.e., chambers 1–2 and 8–9, initiating first wave segment 105. *Id.* at 5:35–38, 42–45. After a delay, second wave segment 110 is initiated from chambers 54 in the center of the pool, i.e., chambers 3–7. *Id.* at 5:45–48. Resulting diamond pattern 125 creates surging motion 115 in the pool, which changes the breaking characteristic of the wave’s natural flow. *Id.* at 6:20–23. Specifically, diamond pattern 125 reduces the depth of water between first wave segment 105 and second wave segment 110 because first wave segment 105 will push the water away from chambers 54. *Id.* at 6:23–27. The reduced depth causes the wave to pitch away from chambers 54 and creates a considerably hollow barrel 120. *Id.* at 6:27–28. Additionally, surge 115 interacts with second wave segment 110 near the end of its break, which increases wave height, similar to how backwash interacts with waves in the ocean. *Id.* at 6:29–32.

D. Challenged Claims

Petitioner challenges claims 1–19 of the ’263 patent. Pet. 1. Claims 1 and 13 are independent. Ex. 1001, 7:38–54, 8:63–9:13. Independent claim 1 is illustrative and reproduced below with Petitioner’s labels for the claim limitations.

[1.Preamble] 1. An aquatic sports amusement apparatus, comprising:

[1.A] a pool which holds a body of water;

[1.B] a plurality of wave generating chambers that communicate with the body of water so as to release water into the pool, the chambers located adjacent to each other on an edge of the pool; and

[1.C] a controller connected to the chamber, wherein the connection is constructed to actuate the release of water from

each chamber to create waves independently of the release of water from the other chambers;

[1.D] the controller operation of the chambers comprises the following steps:

[1.D.1] a. actuating a first chamber or first set of chambers in the plurality to release water into the pool; and

b. after a delay, actuating a second chamber or second set of chambers in the plurality to release water into the pool.

Id. at 7:38–54; *see also* Pet. 10–11, 60 (Claim Listing Appendix).¹

As to the remaining challenged claims, independent claim 13 recites a method of generating waves in a pool of water and includes limitations that are similar to the limitations of independent claim 1. *Compare* Ex. 1001, 8:63–9:13, *with id.* at 7:38–54. Petitioner annotates independent claim 13 to include labels for the limitations similar to those for independent claim 1. Pet. 63–64 (Claim Listing Appendix).

Claims 2–12 depend from independent claim 1. Ex. 1001, 7:55–8:62. Claims 14–19 depend from independent claim 13. *Id.* at 9:13–10:21.

¹ In identifying independent claim 1 as illustrative, Petitioner labels the recited steps of actuating the first and second chambers as claim limitations [1.D.1] and [1.D.2], respectively. Pet. 10–11. However, in its application of independent claim 1 to the cited references, as well as in the Claims Listing Appendix, Petitioner refers to both steps as limitation [1.D.1]. Pet. 24–25, 44–45, 56, 60. We adopt the labeling Petitioner uses when applying independent claim 1 to the cited references, and, thus, label the recited steps together as limitation [1.D.1].

E. Asserted Grounds of Unpatentability

Petitioner asserts the following six grounds of unpatentability for claims 1–19 of the '263 patent:

Claim(s) Challenged	35 U.S.C. §²	Basis
1–6, 8–19	102(b)	Raike ³
1–6, 8–19	103(a)	Raike
7	103(a)	Raike, Schuster ⁴
1–4, 6, 7, 10, 13–15	102(b)	Bastenhof ⁵
1–4, 6, 7, 10, 13–15	103(a)	Bastenhof
1, 5, 8, 9, 11–13, 16–19	103(a)	Bastenhof, Raike

Pet. 3–4. In support of these asserted grounds, Petitioner submits declarations by Glen Stevick, Ph.D. (Ex. 1009; Ex. 1016). Patent Owner deposed and cross-examined Dr. Stevick and submits transcripts of Dr. Stevick's depositions (Ex. 2008; Ex. 2010).

Patent Owner relies on a declaration of Charles Alexander Garriss, Jr., Ph.D. (Ex. 2006). Petitioner deposed and cross-examined Dr. Garriss and submits transcripts of Dr. Garriss's depositions (Ex. 1013; Ex. 1014).

² The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended certain sections of this statute, including §§ 102 and 103, and the effective date of the relevant amendment is March 16, 2013. The filing date of the '263 patent, September 4, 2012, is before the effective date of the amendment. Ex. 1001, code (22). We, therefore, apply the pre-AIA version of the statute.

³ Raike, US 4,812,077, issued Mar. 14, 1989 ("Raike") (Ex. 1004).

⁴ Schuster et al., US 3,629,877, issued Dec. 28, 1971 ("Schuster") (Ex. 1005).

⁵ Bastenhof, US 4,558,474, issued Dec. 17, 1985 ("Bastenhof") (Ex. 1006).

III. ANALYSIS OF ASSERTED GROUNDS OF UNPATENTABILITY

A. Principles of Law

1. Anticipation

Anticipation requires that “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). Whether a reference discloses the claimed subject matter is assessed from the perspective of an ordinarily skilled artisan. *See Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003).

2. Obviousness

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the claimed subject matter as a whole would have been obvious at the pertinent time to a person having ordinary skill in the art to which the claimed subject matter pertains. The question of obviousness under 35 U.S.C. § 103 is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of non-obviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). “To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)).

B. Level of Ordinary Skill in the Art

Petitioner proffers that a person of ordinary skill in the art (“POSITA”) would have “knowledge and familiarity with: (i) design of mechanical structures and (ii) fluid characteristics and the interaction of fluid forces upon mechanical structures” and that this knowledge and familiarity “could be obtained by: (i) successfully completing a Master’s degree in Mechanical Engineering or (ii) at least 5 years of experience in a job working with control systems, including designing or implementing such wave generation machines.” Pet. 13 (citing Ex. 1009 ¶¶ 32–33). Patent Owner does not contest Petitioner’s definition for the level of ordinary skill in the art. PO Resp. 8–9 (Patent Owner asserting “it will be assumed that a [POSITA] has a background and the level of skill described in Petitioner’s definition”).

We see no reason to deviate from Petitioner’s proffered level of ordinary skill in the art. We apply Petitioner’s level of ordinary skill in the art in this decision.

C. Claim Construction

We interpret a claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2019). Under this standard, we construe the claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.* Furthermore, we expressly construe the claims to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and

only to the extent necessary to resolve the controversy.” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

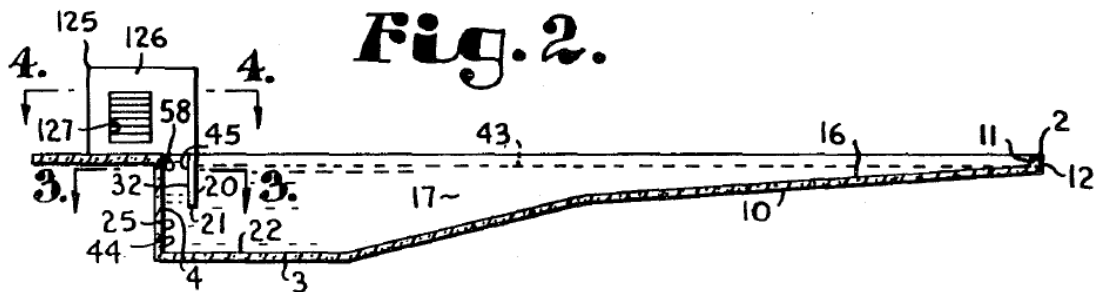
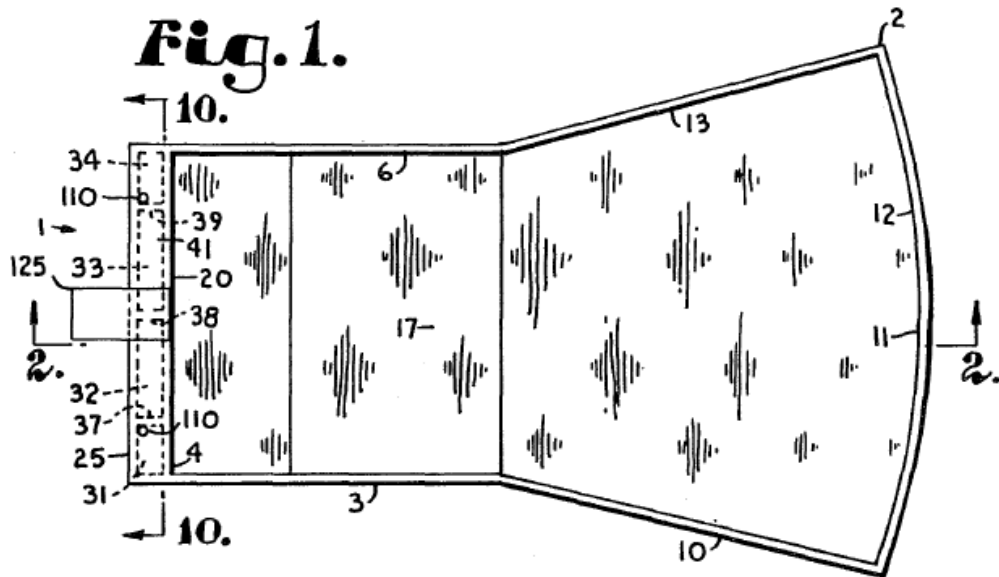
Petitioner and Patent Owner dispute the meaning of the term “a controller connected to the chambers” recited in independent claims 1 and 13. PO Resp. 10–13; Reply 2–3; Sur-reply 1–3. Patent Owner argues “a [POSITA] would understand, from the face of the claim language itself, that “*a controller connected to the chambers*” means “***a single common controller having a connection to the chambers***,” (PO Resp. 10 citing Ex. 2006 ¶ 27)), whereas Petitioner contends “the plain and ordinary meaning of ‘a controller’ should not be limited to a ‘single common controller’ but should be ‘a device that has the ability to offer commands or control another device’” (Reply 3 (citing Ex. 1016 ¶¶ 11–20)). The parties also dispute the meaning of the term “the delay . . . is . . . a fraction of the chamber period” recited in claims 8, 9, 11, and 17. For the reasons set forth below in our discussion of the asserted grounds of unpatentability, we determine that no term requires an express construction for us to ascertain whether Petitioner has shown the challenged claims are unpatentable.

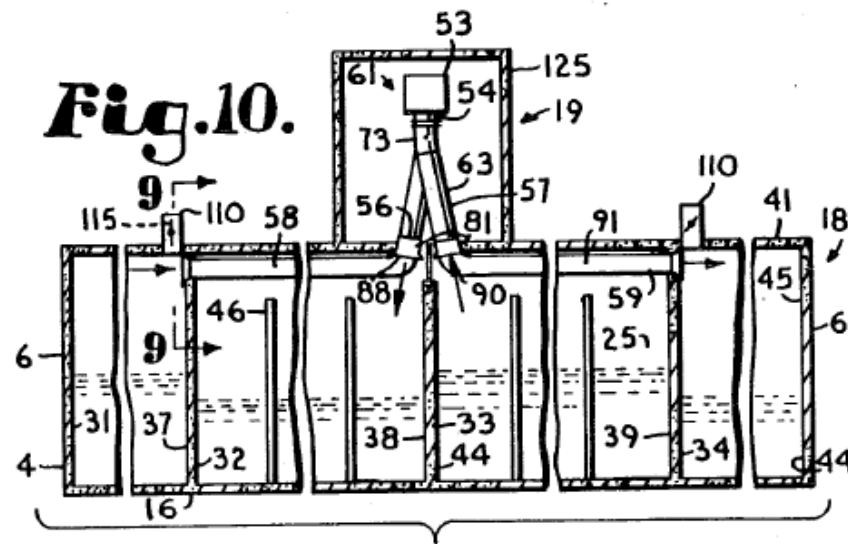
D. Anticipation and Obviousness Based on Raike

Petitioner challenges claims 1–6 and 8–19 under 35 U.S.C. § 102(b) and § 103, contending that Raike anticipates and renders obvious the subject matter of these claims. Pet. 21–38; Reply 6–18. Patent Owner asserts Petitioner has not shown, by a preponderance of the evidence, that Raike anticipates or renders obvious the claimed subject matter. PO Resp. 16–39; Sur-reply 4–19. We begin our analysis of this asserted ground of unpatentability with an overview of Raike and then turn to the parties’ contentions for each of the claims.

1. *Raika*

Raike relates to “a system for pneumatically generating waves in a pool of liquid.” Ex. 1004, 1:7–8. Raike’s system is shown in Figures 1, 2, and 10, reproduced below.





Figures 1, 2, and 10 are a top plan view, a longitudinal cross-sectional view, and a vertical cross-sectional view, respectively, of a pneumatic/hydraulic wave generator associated with a swimming pool. *Id.* at 3:3–7, 32–34.

Pneumatic/hydraulic wave generator 1 is associated with deep end 4 of pool 2 and comprises hydraulic system 18 and pneumatic system 19. *Id.* at 3:50–57, Fig. 1.

Hydraulic system 18 includes caissons 31–34 that communicate with pool 2 through submerged passage 22. Ex. 1004, 4:5–14. Caissons 31, 34 are outer caissons, and caissons 32, 33 are inner caissons. *Id.* at 4:14–15.

Pneumatic system 19 includes fan 51 (Figure 4) operably connected to manifold 53 having front and back outlet ports 54, 55. Ex. 1004, 4:35–38. Front and back outlet ports 54, 55 are respectively connected to front and back air directional valve assemblies 61, 62, and each of the air directional valve assemblies 61, 62 includes pendulum duct section 63 suspended from hinge assembly 69 having a longitudinally extending pivotal axis that is centered with respect to pneumatic/hydraulic wave generator 1. *Id.* at 4:38–49. Front air directional valve assembly 61 selectively

communicates with inner caissons 32, 33 via front duct lines 56, 57, and back air directional valve assembly 62 selectively communicates with outer caissons 31, 34 via back duct lines 58, 59. *Id.* at 4:54–59. Fan house 125 is provided over fan 51 and air directional valve assemblies 61, 62. *Id.* at 5:37–39.

To create a diamond wave pattern, as shown in Figure 1, caissons 31, 33 are alternatively actuated relative to caissons 32, 34 such that adjacent caissons are not actuated together. Ex. 1004, 5:47–52. Caissons 31, 33 are actuated by blowing large volumes of air thereinto through duct lines 57, 58 so that the water levels in the respective submerged portions 44 are lowered. *Id.* at 5:53–57. The displaced volume of water emerges in front of caisson front wall 20 as a wave above quiescent water level 43. *Id.* at 5:57–59. Air directional valve assemblies 61, 62 are then switched to actuate caissons 32, 34 via duct lines 56, 59, thereby opening duct lines 57, 58 from caissons 31, 33 to the interior of fan house 125. *Id.* at 5:60–65. With the air pressure source removed, the water displaced from submerged portions 44 of caissons 31, 33 will be replaced by water rushing through submerged passage 22, causing air displaced from upper portions 45 to vent to the interior of fan house 125. *Id.* at 5:65–6:7. The momentum of the resurging water will carry the water level in caissons 31, 33 slightly above quiescent water level 43 while water is being expelled from actuated caissons 32, 34. *Id.* at 6:7–11. Air directional valve assemblies 61, 62 are then switched again, and the cycle repeats itself. *Id.* at 6:11–13.

Air directional valve assemblies 61, 62 are actuated by an electrical control system, which is not shown in the drawings. Ex. 1004, 6:28–31. The control system can sequence the shifting of air directional valve

assemblies 61, 62 to create various wave patterns. *Id.* at 6:52–54. All of caissons 31–34 “can be actuated at different times in a predetermined or random sequence.” *Id.* at 6:62–64.

2. *Independent Claims 1 and 13*

Petitioner maps the limitations of independent claims 1 and 13 to Raike’s disclosure and contends that Raike discloses and renders obvious every limitation of the independent claims. Pet. 21–25; Reply 6–14. Patent Owner maintains Raike does not disclose or render obvious the controller recited in limitations [1.C] and [13.C]. PO Resp. 17–28; Sur-reply 4–15.

For the controller recited in limitations [1.C] and [13.C], Petitioner relies on Raike’s electrical control system. Pet. 23–24. According to Petitioner, Raike’s control system can sequence the shifting of air directional valve assemblies 61, 62 to create wave patterns and actuate caissons 31–34 at different times in a predetermined or random sequence. *Id.* (citing Ex. 1004, 6:28–36, 53–64, Figs. 5–7).

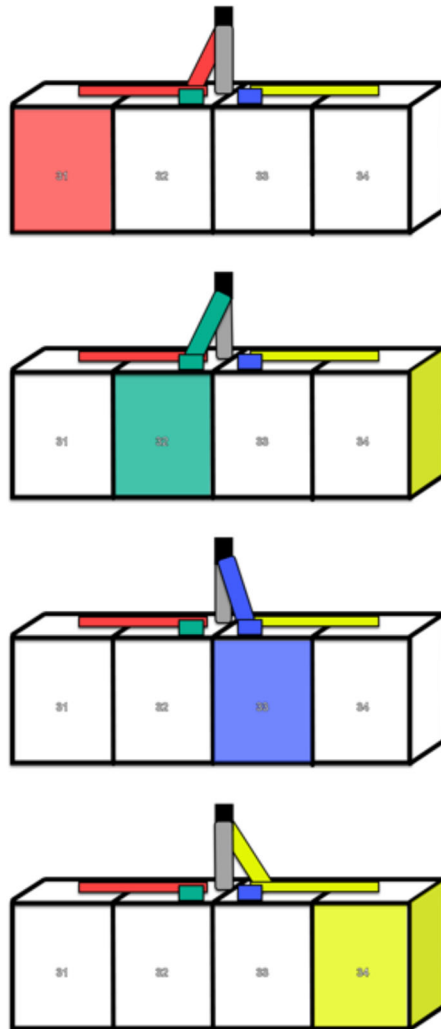
Patent Owner argues Raike fails to disclose the recited controller and its connection to the chambers to produce waves independently of the other chambers. PO Resp. 17–27. Patent Owner asserts limitations [1.C] and [13.C] require a controller connected to the chambers so that each chamber is able to actuate the release of water from the chamber independently of the release of water from the other chambers. *Id.* at 18. Patent Owner further asserts that actuating each of Raike’s caissons 31–34 independently of the other three caissons is impossible with Raike’s arrangement. *Id.* (citing Ex. 2006 ¶ 55). According to Patent Owner, in Raike’s pneumatic system, pendulum duct sections 63 of each of air directional valve assemblies 61, 62 are swung between two extreme

positions in which they engage mating duct sections 81 of a pair of duct lines 56–59 to supply blown air to the caissons such that pendulum duct sections 63 are only capable of being controlled to assume two operable positions for actuating the caissons to release water. *Id.* at 18–24 (citing Pet. 53; Ex. 1004, Abstract, 4:37–42, 49–53, 5:16–28, 47–68, Figs. 3–5, 10; Ex. 1009 ¶ 128; Ex. 2006 ¶¶ 56–60; Ex. 2008, 15:19–16:6). Patent Owner contends that, as pendulum duct sections 63 engage mating duct sections 81 of a pair of duct lines 56–59 in each operating position, Raïke’s pneumatic system is constructed such that caissons 31–34 are always alternately actuated to release water in pairs, not independently. *Id.* Patent Owner acknowledges Raïke discloses that “all of the caissons 31–34 can be actuated at different times in a predetermined or random sequence” (*id.* at 24 (citing Ex. 1004, 6:53–64)), but maintains that, given the structure of Raïke’s pneumatic system, a POSITA would not understand this portion of Raïke to be disclosing each of caissons 31–34 is capable of being actuated to release water independently of the release of water from the other caissons (*id.* at 26 (citing Ex. 2006 ¶ 63)).

In its Reply, Petitioner argues that Patent Owner incorrectly asserts Raïke does not disclose the actuation of one chamber independently of the other chambers. Reply 7–14. Petitioner avers that Patent Owner focuses on only the diamond wave pattern embodiment in which pendulum duct sections 63 move diagonally opposite each other in a scissor-like fashion to alternatively actuate caissons 31, 33 together and caissons 32, 34 together. *Id.* at 7–10 (citing Ex. 1004, 5:47–52⁶; Ex. 1016 ¶¶ 40–47). Petitioner

⁶ Petitioner cites to “Ex. 1004 at 5:57–52” for a disclosure of Raïke’s diamond wave pattern embodiment. Reply 7. Raïke’s diamond wave

further avers that Raike discloses an embodiment in which caissons 31–34 can be actuated at different times in any sequence, including one at a time in sequential order. *Id.* at 11 (citing Ex. 1004, 6:62–64). To illustrate how Raike’s system could actuate the caissons one at a time in sequential order, Petitioner points to the following four figures from Dr. Stevick’s declaration. *Id.* at 11–12 (citing Ex. 1016 ¶¶ 51–53).



pattern embodiment is disclosed at column 5, lines 47–52. Thus, we understand that Petitioner is citing to this portion of Raike and that Petitioner’s citation to “Ex. 1004 at 5:57–52” is a typographical error.

Each of the figures shows caissons 31–34 arranged left to right with front and rear pendulums and duct lines above the caissons. Caisson 31 and its respective duct line are shown in red, and caisson 32 and its respective duct line are shown in green. Caisson 33 and its respective duct line are shown in blue, and caisson 34 and its respective duct line are shown in yellow. The first figure shows the actuation of only caisson 31. In the first figure, the rear pendulum, shown in red, is swung to the left to engage the duct line communicating with caisson 31, and the front pendulum, shown in grey, is in a neutral position in which it is in a vertical orientation and situated in the middle of all the caissons without engaging any duct line to actuate a caisson. The second figure shows the actuation of only caisson 32. In the second figure, the rear pendulum, shown in grey, is located in the neutral position, and the front pendulum, shown in green, is swung to the left to engage the duct line communicating with caisson 32. The third figure shows the actuation of only caisson 33. In the third figure, the rear pendulum, shown in grey, is located in the neutral position, and the front pendulum, shown in blue, is swung to the right to engage the duct line communicating with caisson 33. The fourth figure shows the actuation of only caisson 34. In the fourth figure, the rear pendulum, shown in yellow, is swung to the right to engage the duct line communicating with caisson 34, and the front pendulum, shown in grey, is in the neutral position.

In its Sur-reply, Patent Owner acknowledges Raike discloses three embodiments having different modes of operation. Sur-reply 5. In a first mode, pendulum duct sections 63 of each of air directional valve assemblies 61, 62 swing in a scissor-like fashion to actuate non-adjacent caissons in pairs, resulting in a diamond wave pattern. *Id.* (citing Ex. 1004,

5:47–63; Ex. 2006 ¶¶ 55, 59). In a second mode, pendulum duct sections 63 swing together in parallel to actuate adjacent caissons in pairs (*id.* (citing Ex. 1004, 6:53–62; Ex. 2006 ¶¶ 61, 63)), and, in a third mode, all of the caissons are actuated at different times (*id.* at 5–6 (citing Ex. 1004, 6:62–64; Ex. 2006 ¶¶ 61–62)). Patent Owner argues the first and second modes do not disclose the recited controller because the caissons are always actuated in pairs, not independently of each other. *Id.* at 6. Patent Owner further argues the third mode also fails to disclose the recited controller because, given the structure of Raike’s pneumatic system, a POSITA would not understand Raike to be disclosing that each caisson is capable of being actuated to release water from the caisson independently of the other caissons. *Id.* According to Patent Owner, Raike’s disclosure of the third mode does not preclude the actuation of the caissons in pairs, as Raike’s pneumatic system requires, and Dr. Garriss explains that this disclosure refers to the timing of when the caissons are actuated and whether that timing is predetermined or random. *Id.* at 6–7 (citing Ex. 1014, 45:4–48:23⁷).

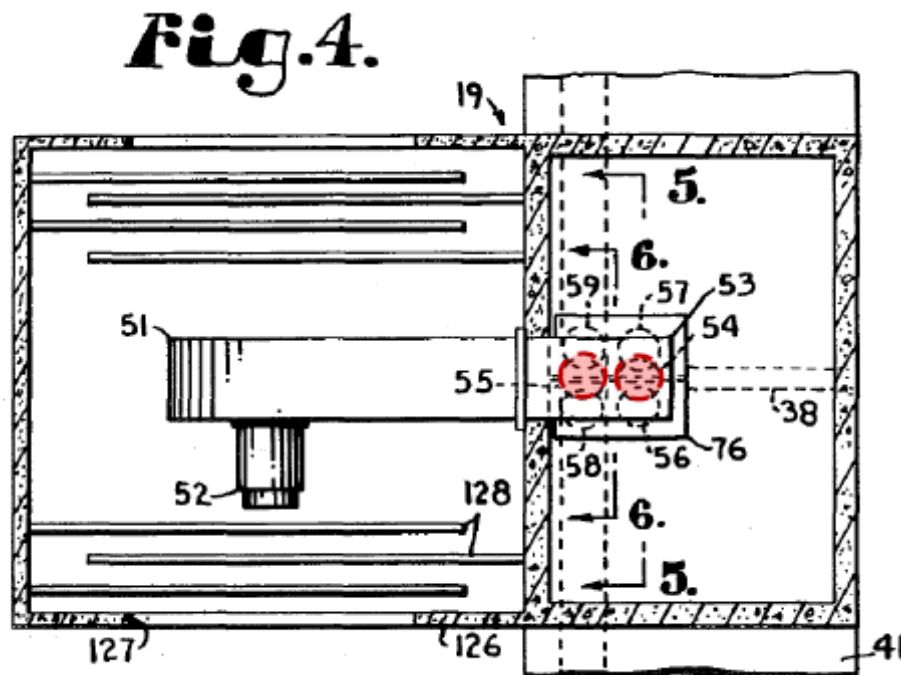
Moreover, in response to Petitioner’s explanation as to how Raike’s pneumatic system could actuate the caissons one at a time in sequential order, Patent Owner argues Raike does not disclose that its controller is configured to locate either air directional valve assembly 61, 62 in a neutral position, but rather discloses that pendulum duct sections 63 of each valve assembly 61, 62 have only two operating positions, namely the extreme

⁷ Patent Owner cites to “Ex. 1013, 45:4–48:23” for Dr. Garriss’s explanation of Raike’s third mode. Sur-reply 7. Dr. Garriss’s explanation for Raike’s third mode is in Exhibit 1014, page 45, line 4 to page 48, line 23. Thus, we understand that Patent Owner is citing to this portion of Exhibit 1014 and that Patent Owner’s citation to Exhibit 1013 is a typographical error.

positions of their arcuate paths in which they engage mating duct sections 81 of a pair of duct lines 56–59 to supply blown air to the caissons.

Sur-reply 7–8 (citing Ex. 1004, Abstract, 5:16–28; Ex. 1009 ¶¶ 48, 128; Ex. 2006 ¶ 60). Patent Owner also argues air directional valve assemblies 61, 62 cannot be located in the neutral position. *Id.* at 8–15.

According to Patent Owner, Dr. Stevick admits that the neutral position corresponds to a position in which pendulum duct sections 63 of each of air directional valve assemblies 61, 62 are in a vertical orientation and located halfway along their arcuate path of travel (*id.* at 9 (citing Ex. 2010, 23:4–17)) and that, in the neutral position, the openings at lower ends 65 of pendulum duct sections 63 align with air outlet ports 54, 55 located directly above (*id.* at 11 (citing Ex. 2010, 27:9–29:9)). To illustrate the neutral position, Patent Owner provides an annotated version of Raikes's Figure 4, reproduced below. *Id.* at 12.



Raike's Figure 4 is a horizontal cross-sectional view of Raike's wave generator, specifically pneumatic system 19. Ex. 1004, 3:12–14, 4:35–36. Figure 4 shows, in cross-section, front and back outlet ports 54, 55, which are connected to front and back air directional valve assemblies 61, 62, front duct lines 56, 57 for communicating with inner caissons 32, 33, and rear duct lines for communicating with outer caissons 31, 34. *Id.* at 4:37–40, 54–59. To illustrate the neutral position, which is when pendulum duct section 63 aligns with the respective outlet port, Patent Owner annotated Raike's Figure 4 to show outlet ports 54, 55 in red. As also shown in Patent Owner's annotated version of Raike's Figure 4, front outlet port 54 is located between front duct lines 56, 57 and partially overlaps with the locations of front duct lines 56, 57 such that, in the neutral position, lower end 65 of pendulum duct section 63 of front air directional valve assembly 61 partially overlaps with front duct lines 56, 57. Similarly, rear outlet port 55 is located between rear duct lines 58, 59 and partially overlaps with the locations of rear duct lines 58, 59 such that, in the neutral position, lower end 65 of pendulum duct section 63 of rear air directional valve assembly 62 partially overlaps with rear duct lines 58, 59. Patent Owner argues that, in view of the overlap between lower ends 65 of pendulum duct sections 63 and duct lines 56–59 in the neutral position, duct lines 56–59 are exposed to the air that is continually forced out of lower ends 65 of pendulum duct sections 63. *Id.* at 13 (citing Ex. 2008, 15:19–16:6; Ex. 2010, 15:18–16:17). Patent Owner further argues that exposing duct lines 56–59 to the forced air impedes venting and forces some of the water out of the caissons and that both of these effects run contrary to the intended

operation of Raike's arrangement. *Id.* at 13–15 (citing Ex. 1004, 5:29–31, 5:65–6:13, 6:42–48; Ex. 2008, 83:5–16).

Having considered the parties' arguments and evidence, we are not persuaded that Raike discloses or renders obvious the controller recited in limitations [1.C] and [13.C]. There is no dispute as to limitations [1.C] and [13.C] requiring a controller connected to the chambers so that each chamber is able to actuate the release of water from the chamber independently of the release of water from the other chambers. For a disclosure of the recited controller, Petitioner relies solely on Raike's embodiment employing a third mode of operation. Tr. 18:21. Raike discloses the third mode of operation in a single sentence: "all of the caissons 31–34 can be actuated at different times in a predetermined or random sequence." Ex. 1004, 6:62–64. This sentence does not expressly disclose actuating each caisson independently of the other caissons and is ambiguous as to whether the caissons are actuated in pairs in a predetermined or random sequence or one at a time in a predetermined or random sequence. Petitioner argues a POSITA would understand Raike's disclosure of the third embodiment to be the latter, namely actuating the caissons in any sequence, including the independent actuation of each caisson one at a time in sequential order. Petitioner's argument is based on Dr. Stevick's explanation of how Raike's pneumatic system could actuate the caissons one at a time in sequential order. Dr. Stevick's explanation, however, misrepresents Raike's pneumatic system.

Dr. Stevick's explanation entails pendulum duct sections 63 being in a neutral position in which pendulum duct sections 63 are situated in a vertical orientation halfway along their arcuate path of travel. Ex. 1016 ¶¶ 52–43;

Ex. 2010, 23:4–17. Raike is silent regarding any neutral position. Moreover, Raike does not disclose situating pendulum duct sections 63 in a vertical orientation halfway along their arcuate path of travel but instead discloses swinging pendulum duct sections 63 between two extreme positions of their arcuate paths. Ex. 1004, 5:16–28.

Even if pendulum duct sections 63 could stop in a vertical orientation halfway along their arcuate paths, Dr. Stevick ignores the overlap between lower ends 65 of the pendulum duct sections 63 and the duct lines 56–59 in the neutral position. Dr. Stevick's figures for illustrating how Raike's system could actuate the caissons one at a time in sequential order, which are drawn entirely by Dr. Stevick and are not annotations of Raike's figures, incorrectly show the neutral position of pendulum duct sections 63 being entirely between duct lines 56–59. Rather, as Patent Owner correctly points out and Dr. Stevick admits, in the neutral position, pendulum duct sections 63 align with air outlet ports 54, 55 and thus partially overlap with duct lines 56–59. Sur-reply 11–13; Ex. 2010, 19:17–20:1, 27:9–29:9. We further agree with Patent Owner that the overlap exposes duct lines 56–59 to blown air from lower ends 65 of pendulum duct sections 63, which would negatively impact Raike's arrangement by impeding venting and forcing water out of some of the caissons. Sur-reply 13–15.

In view of the foregoing, Raike does not support Dr. Stevick's explanation of how Raike's pneumatic system could actuate the caissons independently in sequential order or Petitioner's argument that a POSITA would understand Raike's third mode of operation discloses independently actuating each caisson in sequential order. Rather, Raike supports Patent Owner's assertion that a POSITA would appreciate the disclosure of the

third mode refers to the timing of when pairs of caissons are actuated and whether that timing is predetermined or random. We are not persuaded a POSITA would understand Raike's third mode of operation discloses a controller connected to the chambers so that each chamber is able to actuate the release of water from the chamber independently of the release of water from the other chambers, as limitations [1.C] and [13.C] require. We are not persuaded Raike discloses the controller recited in limitations [1.C] and [13.C], and Petitioner has not shown, by a preponderance of the evidence, that Raike anticipates independent claims 1 and 13.

Petitioner also contends that Raike renders obvious the controller recited in limitations [1.C] and [13.C]. Pet. 23–24. Petitioner, however, does not provide any further argument or evidence apart from this conclusory assertion. We are not persuaded that Raike renders obvious the recited controller, and Petitioner has not shown, by a preponderance of the evidence, that Raike renders obvious the subject matter of independent claims 1 and 13.

3. *Claims 2–6, 8–12, and 14–19*

Claims 2–6, 8–12, and 14–19 depend from independent claims 1 and 13. Ex. 1001, 7:55–8:17, 20–62, 9:13–10:21. For the reasons discussed in section III.D.2, Petitioner has not persuaded us that Raike discloses or renders obvious the controller recited in independent claims 1 and 13, and, thus, Petitioner has not shown, by a preponderance of the evidence, that Raike anticipates or renders obvious the subject matter of dependent claims 2–6, 8–12, and 14–19.

E. Obviousness Based on Raike and Schuster

Petitioner challenges claim 7 under 35 U.S.C. § 103(a), contending the combined teachings of Raike and Schuster render obvious the claimed subject matter. Pet. 38–40; Reply 18. Patent Owner asserts Petitioner has not shown obviousness by a preponderance of the evidence. PO Resp. 39; Sur-reply 19. As we discuss Raike above in section III.C.1, we begin our analysis of this asserted ground of unpatentability with an overview of Schuster and then turn to the parties' contentions.

1. Schuster

Schuster relates to forming waves in wave-activated swim pools. Ex. 1005, 1:72–73. An air pressure source directly acts on separate portions of the water surface in wave-forming tanks to cause depression of the water and consequent formation of waves without requiring any mechanical apparatus immersed in the water. *Id.* at Abstract.

Figure 1, reproduced below, depicts a wave-actuated pool.

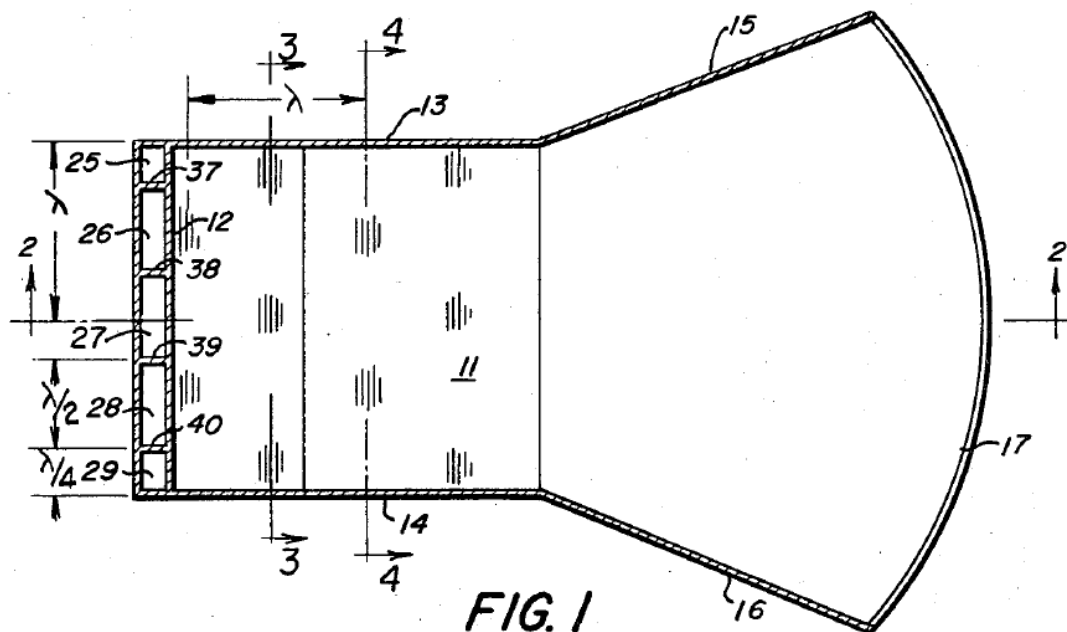


Figure 1 is a plan view of a wave-activated swim pool. Ex. 1001, 2:3–4.

Schuster teaches:

The fact that there are a plurality of wave-forming tanks 25–29 across the width of the deep end of the pool and the fact that there are an uneven number of these tanks plus the fact that these tanks are energized with air pressure alternately, establishes the synchronism of wave formation caused by water being forced out through the openings in the lower edge of these tanks and establishes the greater height of waves in the center of the deep end of the pool and lower waves along the pool rim.

Id. at 3:61–69.

The tanks cooperate with various valve mechanisms, as seen in Figure 9, reproduced below.

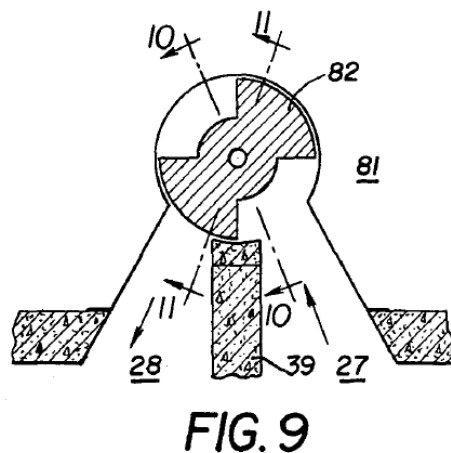


Figure 9 is a schematic diagram of an air pressure valve. Ex. 1001, 2:14–15.

Valve mechanism 81 is a turning or rotating valve having segmented plates 82, 83 turned sequentially to alternate positions 90° apart. *Id.*

at 5:19–22. Valve mechanism 81 cooperates with wave-forming tanks 27, 28. *Id.* at 5:22–23. Pressurized air is directed by segmented plates 82, 83 into tank 28 while air is permitted to escape from tank 27. *Id.* at 5:25–29.

When plates 82, 83 are rotated 90° the opposite condition will prevail—

pressurized air will be applied to tank 27 and exhausted from tank 28. *Id.* at 29–32.

2. *Claim 7*

Petitioner relies on Schuster’s valve mechanism 81 for teaching the two way valve recited in claim 7. Pet. 38–40. Petitioner argues Schuster’s valve mechanism 81 directs air into tank 28 or exhausts air from tank 28 depending on the position of segmented plates 82, 83. *Id.* at 39–40 (citing Ex. 1005, 5:17–32, Figs. 9–11; Ex. 1009 ¶ 104). Petitioner also argues “a POSITA would be motivated to use the valve mechanism 81 in the system disclosed by Raike and could do so with a simple substitution of valves and without undue experimentation.” *Id.* at 40. According to Petitioner, the combination of Raike and Schuster results in the subject matter of claim 7. Reply 18.

Patent Owner argues Petitioner’s reliance on Schuster does not cure the deficiencies of Raike with respect to independent claim 1. PO Resp. 39; Sur-reply 19. We agree with Patent Owner.

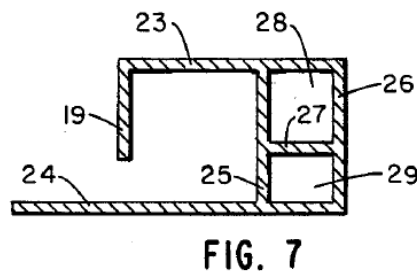
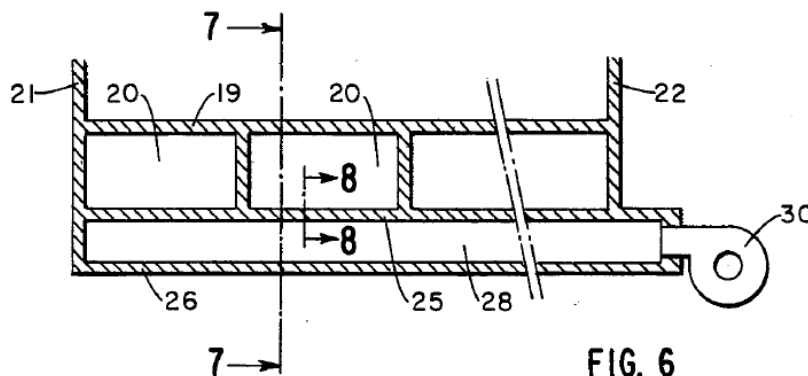
Claim 7 depends from independent claim 1. Ex. 1001, 8:18–19. As discussed above in section III.D.2, Petitioner has not persuaded us that Raike discloses or renders obvious the controller recited in limitation [1.C]. Petitioner does not rely on Schuster for the controller recited in independent claim 1, and instead relies on Schuster for teaching only the two way valve recited in claim 7. As Petitioner does not rely on Schuster to remedy this deficiency of Raike, Petitioner has not shown, by a preponderance of the evidence, that the combination of Raike and Schuster renders obvious the subject matter of dependent claim 7.

F. Anticipation and Obviousness Based on Bastenhof

Petitioner challenges claims 1–4, 6, 7, 10, and 13–15 under 35 U.S.C. § 102(b) and § 103(a), contending that Bastenhof anticipates and renders obvious the claimed subject matter. Pet. 40–51; Reply 18–26. Patent Owner asserts Petitioner has not shown, by a preponderance of the evidence, that Bastenhof anticipates or renders obvious the claimed subject matter. PO Resp. 40–60; Sur-reply 19–27. We begin our analysis of this asserted ground of unpatentability with an overview of Bastenhof and then discuss the parties' contentions for each of the claims.

1. Bastenhof

Bastenhof relates to a pneumatic wave generator for a surf pool, which is a swimming pool with artificial wave generation. Ex. 1006, 1:12–14. A wave generator is depicted in Figures 6 and 7, reproduced below.



Figures 6 and 7 depict a cross-sectional view and a vertical sectional view, respectively, of a wave generator. *Id.* at 3:7–11. The wave generator includes a plurality of wave generating chambers 20 that are defined between front wall 19, which extends from side wall 21 of the pool to opposing side wall 22, as well as from roof 23 of wave generating chambers 21 to a point spaced a distance from bottom 24 of the pool so that water can pass between front wall 19 and bottom 24. *Id.* at 4:20–27. Rear wall 25 of wave generating chambers 20 is spaced a distance from rear wall 26 of the pool to create an interspace therebetween, which is divided by horizontal plate 27 into two halves. *Id.* at 4:27–31. Top half 28 serves as an expiration duct, and lower half 29 serves as an aspiration duct. *Id.* at 4:31–32. Compressor 30 is connected to aspiration duct 29 for propelling air through aspiration duct 29 to wave generating chambers 20. *Id.* at 4:33–36.

Alternating aspiration and expiration of wave generating chambers 20 is effected by alternately opening and closing valves coupled together with each chamber. Ex. 1006, 4:51–54. The aspiration and expiration of wave generating chambers is effected in such a sequence to generate a desired wave form in the surf pool. *Id.* at 4:55–58. A computer control effects the sequence of aspiration and expiration and the rhythm in which this is effected by operating the systems of valves per chamber in that sequence and in that rhythm. *Id.* at 4:58–63.

A valve system is depicted in Figure 8, reproduced below.



Figure 8 depicts a vertical sectional view of the wave generator.

Ex. 1006, 3:12–13. Rear wall 25 of wave generating chamber 20 includes duct 31 between wave generating chamber 20 and expiration conduit 28. *Id.* at 5:3–5. Duct 31 can be shut off by valve cover 32, which is connected to servo cylinder 34 by cable 33. *Id.* at 5:5–7. Similarly, rear wall 25 includes duct 36 between wave generating chamber 20 and aspiration conduit 29. *Id.* at 5:7–9. Duct 36 can be shut off with valve cover 37, which is connected to servo cylinder 34 by cable 38. *Id.* at 5:9–11. Cylinder 34 operates valves 32, 37 so that when one valve is open, the other is closed. *Id.* at 5:11–13.

2. *Independent Claims 1 and 13*

Petitioner maps the limitations of independent claims 1 and 13 to Bastenhof's disclosure and argues that Bastenhof discloses and renders obvious every limitation of the independent claims. Pet. 41–45; Reply 18–25. Patent Owner maintains Bastenhof does not disclose or render obvious the controller recited in limitations [1.C] and [13.C] and the operation of the controller recited in limitations [1.D.1] and [13.D.1]. PO Resp. 40–56; Sur-reply 19–26.

For the controller recited in limitations [1.C] and [13.C], Petitioner relies on Bastenhof's computer control. Pet. 43–44 (citing Ex. 1006, 4:20–37, 55–63). Petitioner contends “Bastenhof confirms that the sequence of alternating aspiration and expiration of the wave generating chambers [20] can be effected, for example, electronically by means of computer control and that ‘[a]ny person skilled in the art knows how this can be realized.’” *Id.* at 44 (first alteration in original) (quoting Ex. 1006, 4:58–66.). Petitioner also contends “[a]t the time of Bastenhof, it was already well understood that each chamber is connected to a controller such that each chamber can be actuated independently of the other chambers to create waves independently of the release of water from the other chamber(s).” *Id.* (citing Ex. 1009 ¶ 109).

Patent Owner argues Bastenhof fails to disclose the recited controller, particularly its connection to the chambers being constructed to produce waves independently of the other chambers. PO Resp. 41–50. Patent Owner asserts the portion of Bastenhof that Petitioner relies on for the recited controller does not disclose how the computer control is connected to the chambers, much less a connection constructed to allow the release of water

from each chamber to create waves independently of the release of water from the other chambers, as recited in limitations [1.C] and [13.C]. *Id.* at 43. Patent Owner further asserts “Bastenhof merely describes the intake and expulsion of *air* from *one* chamber but does not describe any connection to multiple chambers capable of permitting the chambers *to release water* independently from the other chambers.” *Id.* at 43–44 (citing Ex. 2006 ¶¶ 97–98). Patent Owner also asserts that Petitioner fails to allege the recited controller is inherent in Bastenhof’s disclosure. *Id.* at 44. According to Patent Owner, Bastenhof’s computer control, which is connected to a plurality of chambers to introduce and release air from the chambers, is not necessarily constructed to allow the release of water from each chamber independently from the release of water from the other chambers (*id.* at 44–45 (citing Ex. 2006 ¶¶ 100–101)), and Raike provides an example of a controller connected to a plurality of chambers that does not allow each chamber to release water independently from the release of water from the other chambers (*id.* at 48).

In its Reply, Petitioner argues Patent Owner overlooks key passages from Bastenhof in arguing that Bastenhof does not disclose the recited controller. Reply 19. Petitioner contends that a POSITA would understand Bastenhof’s controller is connected to the plurality of chambers at least because Bastenhof discloses operating the chambers in a coordinated fashion which would not be possible without the controller being connected to the chambers. *Id.* at 19–21 (citing PO Resp. 49; Ex. 1006, 1:34–37, 45–48⁸,

⁸ For a quotation of Bastenhof’s object of the invention, Petitioner cites to “1:45–18” of Bastenhof. Reply 20. The quoted passage is at column 1, lines 45–48 of Bastenhof. Thus, we understand that Petitioner is citing to

4:55–65; Ex. 1016 ¶¶ 74–77). Petitioner also contends Bastenhof discloses the aspiration and expiration of air from multiple chambers, not just one chamber. *Id.* at 22 (citing PO Resp. 43; Ex. 1006, Abstract, 1:34–44, 3:18–25; Ex. 1016 ¶ 79). According to Petitioner, the valves in each chamber are identical, and the description of the valves for one chamber is not limited to only the valves for that chamber. *Id.* at 22–23 (citing Ex. 1016 ¶ 81).

In its Sur-reply, Patent Owner acknowledges Bastenhof discloses the aspiration and expiration of air from multiple chambers. Sur-reply 22. According to Patent Owner, the dispute is not whether Bastenhof discloses the aspiration and expiration of air from multiple chambers but rather whether Bastenhof discloses how each of the chambers are actuated relative to one another. *Id.*

We agree with Patent Owner that the issue is whether a POSITA would understand Bastenhof discloses a controller connected to the chambers so that each chamber to able to actuate the release of water from the chamber independently of the release of water from the other chambers, as limitations [1.C] and [13.C] require. For the recited controller, Petitioner relies on the electronic computer control of Bastenhof’s preferred embodiment, which is shown in Figures 6–8. Pet. 43–44 (citing Ex. 1006, 4:20–37, 55–66; Ex. 1009 ¶ 109). Bastenhof discloses the electronic computer control operates the aspiration and expiration of wave generating chambers 20 in a sequence and in a rhythm to generate a desired wave form in the surf pool. Ex. 1006, 4:51–66. Although Bastenhof discloses a

this passage of Bastenhof and that the citation to “1:45–18” includes a typographical error.

controller that allows for the aspiration and expiration of a plurality of chambers in a sequence and in a rhythm and, thus, the actuation of the release of water from the chambers in a sequence and a rhythm, Bastenhof is silent regarding the controller being able to actuate the release of water from the chambers relative to each other and, more particularly, to actuate of the release of water from each chamber independently of the release of water from the other chambers, as recited in limitations [1.C] and [13.C].

Dr. Stevick testifies that, at the time of Bastenhof, it was well understood that a control could be connected to wave generating chambers to independently actuate the chambers. Dr. Stevick's bases this testimony on Bastenhof's disclosure that the sequence and rhythm of aspiration and expiration can be effected electronically by means of computer control and that "[a]ny person skilled in the art knows how this can be realized." Ex. 1009, ¶ 109 (citing Ex. 1006, 4:58–66). Bastenhof, however, simply discloses that a POSITA would know how to use an electronic control to effect the aspiration and expiration of a plurality of chambers in a sequence and in a rhythm, and Bastenhof is silent regarding the sequence and rhythm resulting in the release of water from each chamber independently of the release of water from the other chambers. Given its lack of support, we afford little weight to Dr. Stevick's testimony that a POSITA would have known a control could be connected to wave generating chambers to independently actuate the chambers.

On the other hand, Dr. Garriss testifies that a POSITA would not necessarily understand Bastenhof's electronic computer control is constructed to actuate the release of water from each chamber independently from the release of water from the other chambers. Ex. 2006 ¶ 101. We

credit Dr. Garriss's testimony as it finds support in both Raike and Bastenhof. Like Bastenhof, Raike discloses a controller actuating the release of water from a plurality of chambers. Ex. 1004, 5:47–6:13, 6:28–36, 53–64, Figs. 3–5, 10. As we explain above in section III.D.2, Raike's controller actuates the release of water from pairs of chambers, not from each chamber individually of the other chambers. Furthermore, apart from the preferred embodiment, Bastenhof discloses another embodiment of a wave generator comprising a plurality of chambers, as shown in Figures 1–3. Ex. 1006, 3:16–25. Each chamber includes air inlet valve 8 for supplying compressed air to the chamber and air outlet valve 9 for the expiration of air from the chamber. *Id.* at 3:26–51. As shown in Figure 3, half of the chambers have air inlet valve 8 open and air outlet valve 9 closed to effect aspiration, and the other half of the chambers have air inlet valve 8 closed and air outlet valve 9 open to effect expiration. Thus, in this embodiment, Bastenhof discloses controlling a plurality of chambers to actuate the release of water from a group of chambers, not from each chamber independently of the other chambers.

In view of the foregoing, Petitioner has not persuaded us that a POSITA would understand Bastenhof's controller is connected to the chambers so that each chamber is able to actuate the release of water from the chamber independently of the release of water from the other chambers, as limitations [1.C] and [13.C] require. We are not persuaded Bastenhof discloses the controller recited in limitations [1.C] and [13.C], and Petitioner has not shown, by a preponderance of the evidence, that Bastenhof anticipates independent claims 1 and 13.

Petitioner also contends that Bastenhof renders obvious the controller recited in limitations [1.C] and [13.C]. Pet. 43–44. Petitioner, however, does not provide any further argument or evidence apart from this conclusory assertion. We are not persuaded that Bastenhof renders obvious the recited controller, and Petitioner has not shown, by a preponderance of the evidence, that Bastenhof renders obvious the subject matter of independent claims 1 and 13.

3. *Claims 2–4, 6, 7, 10, 14, and 15*

Claims 2–4, 6, 7, 10, 14, and 15 depend from independent claims 1 and 13. Ex. 1001, 7:55–8:2, 8:13–19, 41–49, 9:13–19. For the reasons discussed in section III.F.2, Petitioner has not persuaded us that Bastenhof discloses or renders obvious the controller recited in independent claims 1 and 13, and, thus, Petitioner has not shown, by a preponderance of the evidence, that Bastenhof anticipates or renders obvious the subject matter of dependent claims 2–4, 6, 7, 10, 14, and 15.

G. *Obviousness Based on Bastenhof and Raike*

Petitioner challenges claims 1, 5, 8, 9, 11–13, and 16–19 under 35 U.S.C. § 103(a), contending that the combined teachings of Bastenhof and Raike render obvious the claimed subject matter. Pet. 51–58; Reply 26–28. Patent Owner asserts Petitioner has not shown obviousness by a preponderance of the evidence. PO Resp. 60–66; Sur-reply 27–31.

Petitioner proposes to combine the teachings of Bastenhof and Raike to provide a controller that is capable of actuating the chambers in sequence to enable the creation of any wave pattern. Pet. 53–54. Petitioner contends a POSITA would have been motivated to combine the teachings of Raike and Bastenhof to result in the claimed invention because both references

seek to provide desirable waves and have a similar wave generator structure, including a plurality of chambers and a controller controlling a system of valves or valve assemblies to alternatively fill the one or more chambers with water and release water from the one or more chambers into the pool. *Id.* at 54 (citing Ex. 1009 ¶¶ 125–131). Petitioner also contends each of Bastenhof and Raike discloses and renders obvious every limitation of the claims 1, 5, 8, 9, 11–13, and 16–19. *Id.* at 54–57.

Patent Owner argues that Petitioner’s proposed combination of Bastenhof and Raike would not have resulted in the claimed subject matter because neither Bastenhof nor Raike discloses the controller recited in the independent claims. PO Resp. 60. We agree with Patent Owner.

In its asserted obviousness based on Bastenhof and Raike, Petitioner argues Raike and Bastenhof each disclose the recited controller (Pet. 55), and Petitioner concludes that its proposed combination of Bastenhof and Raike would be capable of actuating the chambers in sequence (*id.* at 53–54). For the reasons set forth above in sections III.D.2 and III.F.2, we are not persuaded that Raike and Bastenhof disclose the recited controller, and we find unpersuasive Petitioner’s conclusory assertion that its proposed combination of Bastenhof and Raike would be capable of actuating the chambers in sequence. As Petitioner has not shown that its proposed combination would result in a controller connected to the chambers to actuate the release of water from the chamber independently of the release of water from the other chambers, as the independent claims 1 and 13 require, Petitioner has not shown, by a preponderance of the evidence, that Bastenhof and Raike render obvious the subject matter of independent claims 1 and 13, and claims 5, 8, 9, 11, 12, and 16–19 depending therefrom.

IV. PETITIONER’S MOTION TO EXCLUDE EVIDENCE

Petitioner seeks to exclude paragraphs 108–109 of Exhibit 2006, which is Dr. Garris’s declaration in support of Patent Owner’s Response. Mot. 1. According to Petitioner, in these paragraphs, Dr. Garris explains that releasing water from a plurality of chambers in unison, as opposed to sequentially, creates a wave effect substantially perpendicular to the chambers and that this wave effect is very common. *Id.* at 3–4. Petitioner contends Dr. Garris’s opinion regarding this wave effect is irrelevant, prejudicial, and confusing under Federal Rules of Evidence (“FRE”) 401–403. *Id.* at 4.

Petitioner also seeks to exclude Exhibit 2005, which includes feedback about Patent Owner’s PerfectSwell® wave-generation system. Mot. 1. Petitioner argues the information contained in this exhibit is impermissible hearsay and unduly prejudicial and should be excluded under FRE 106, 401–403, 701–703, 802, 901–902, and 1006. *Id.* at 1–2, 4–11.

Petitioner additionally seeks to exclude the references to Bastenhof II⁹ included in pages 45–48 of Patent Owner’s Response and paragraphs 102–119 of Dr. Garris’s declaration in support of Patent Owner’s Response. Mot. 2, 11. According to Petitioner, the references to Bastenhof II are prejudicial and confusing under FRE 401–403. *Id.* at 2, 11–12.

In this Decision, we do not rely on any of the evidence Petitioner seeks to exclude from this proceeding. We, therefore, dismiss as moot Petitioner’s Motion to Exclude Evidence.

⁹ Bastenhof, US 4,522,535, issued June 11, 1985 (“Bastenhof II”) (Ex. 2009).

V. CONCLUSION

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–6, 8–19	102(b)	Raike		1–6, 8–19
1–6, 8–19	103(a)	Raike		1–6, 8–19
7	103(a)	Raike, Schuster		7
1–4, 6, 7, 10, 13–15	102(b)	Bastenhof		1–4, 6, 7, 10, 13–15
1–4, 6, 7, 10, 13–15	103(a)	Bastenhof		1–4, 6, 7, 10, 13–15
1, 5, 8, 9, 11–13, 16–19	103(a)	Bastenhof, Raike		1, 5, 8, 9, 11–13, 16–19
Overall Outcome				1–19

VI. ORDER

In consideration of the foregoing, it is:

ORDERED that Petitioner has not proven, by a preponderance of the evidence, that claims 1–19 of the '263 patent are unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude Evidence is dismissed as moot; and

FURTHER ORDERED that, as this is a Final Written Decision, a party seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2022-01034
Patent 9,279,263 B2

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