

Petition for *Inter Partes* Review of U.S. Patent No. 10,145,098

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VECTAIR SYSTEMS INC.

Petitioner

v.

FRESH PRODUCTS, INC.

Patent Owner

Case: not yet assigned

Patent No. 10,145,098

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,145,098**

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EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 10,145,098 to Brown et al. (“’098 Patent”)
1002	Prosecution File History of US 10,145,098
1003	Reserved
1004	Merriam-Webster Online Dictionary, Definition of “OPENING”, screen print of https://www.merriam-webster.com/dictionary/opening , accessed April 5, 2024
1005	Fresh Products 3WDS60SAP Wave 3D Urinal Deodorizer Screen, First Available May 10, 2013 (Publication – Amazon Sale Listing, https://www.amazon.com/Fresh-Products-3WDS60SAP-Deodorizer-Fragrance/dp/B00MX5A9ME/ref=sr_1_1?crid=2CL9U8NCPU5DM&dib=eyJ2IjojMSJ9.krJ4D4nCD80Wze_uhxiUIUI_eboiAlc2mFujJQ9DCXY.7N68cOdHtLxs63BsJVx3nLEbzTdTSH5SjG3gomDnXgA&dib_tag=se&keywords=fresh+products+3WDS60SAP+Wave+3D&qid=1713291600&srefix=fresh+products+3wds60sap+wave+3d%2Caps%2C154&sr=8-1, accessed April 5, 2024) Excerpt from Ex. 1005 for publication date of May 10, 2013 below: Product details Is Discontinued By Manufacturer : No Product Dimensions : 0.67 x 6.5 x 0.67 inches; 11.85 ounces Item model number : FRE-3WDS-F-010I060M-01-10PK Date First Available : May 10, 2013 Manufacturer : FRESH PRODUCTS ASIN : B00MX5A9ME Country of Origin : USA Best Sellers Rank: #68,766 in Industrial & Scientific (See Top 100 in Industrial & Scientific) #76 in Janitorial Deodorizers Customer Reviews: 4.4 ★★★★★ ~ 115 ratings (“FP 3WDS60SAP Wave 3D”)
1006	Fresh Products Wave 3D, First Available September 3, 2013, (Publication – Amazon Sale Listing, https://www.amazon.com/Fresh-Products-Wave-Freshener-Deodorizer/dp/B07NZT13XC/ref=sr_1_3?crid=2ZOGTIZKW1MIX&dib=eyJ2IjojMSJ9.rXwVv5SKjv4dCwJsU4wqDdC4Yagfa7eeQ4OXXRmEOMolFXjO5YwVY91mJHV6lVXWz6l026hrGtH1uOkJxKotkt4oPTH8hvxBMjXmsu9xX3H-6DVYSMxn_6ArvFv2RHvGKF1-7BCc2epekm26N4PuyMenXlHdk6TmTjIVppE-zQS3LQ9AF9rCzflnQD8-6ld22o2iggaVV4xoD9hp8L72K9wCRJcndAtl2GEwt3W9Ruc.H_xbW2qRoB4IAaPUNLJ-MZbQQaXsPLiCAePA-j_rjAM&dib_tag=se&keywords=fresh+products+wave+3d+urinal+deodorizer+screen+mango&qid=1713307164&srefix=fresh+products+wave+3D+mango+urinal+%2Caps%2C880&sr=8-3, accessed April 5, 2024), Excerpt from Ex. 1006 for publication date of September 3, 2013 below:

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	Product details Product Dimensions : 7 x 6.5 x 0.66 inches; 4.31 ounces Item model number : 3WDS-F-010I060M-04 Date First Available : September 3, 2013 Manufacturer : Fresh Products ASIN : B07NZT13XC Country of Origin : USA Best Sellers Rank: #1,915 in Industrial & Scientific (See Top 100 in Industrial & Scientific) #7 in Janitorial Deodorizers Customer Reviews: 4.5 ★★★★★ 210 ratings (“FP Wave 3D”)
1007	Cease and Desist Letter from Patent Owner, Fresh Products, asserting ‘098 Patent against Petitioner, dated November 7, 2023
1008	Big D Industries, Inc. Product Catalog, copyright 01/2013 (Big D Catalog)
1009	Big D Industries, Inc. ordering information and cut Sheet for “The Pearl 3D” copyright 09/2013 (Big D Pearl 3D)
1010	Perspective View and Elevational View Renderings of The Pearl 3D as shown in Ex. 1007 and Ex. 1009.
1011	U.S. Patent No. 8,007,707 to Brown et al. (“’707 Patent”)
1012	Korean Patent Publication No. 20-0395055 (“KR’055”)
1013	English Translation of Korean Patent Publication No. 20-0395055, published 2005-09-01 (“KR’055 English”)
1014	Fresh Products, January 2013 Catalog, printed publication including Wave 2.0 urinal deodorizer (“FP Catalog Wave 2.0”)
1015	Fresh Product October 17, 2013 website (freshproducts.com) advertisement for Wave 2.0, archived website from archives.org, https://web.archive.org/web/20131017043205/http://freshproducts.com/index.php/wave-2-0, accessed April 16, 2024 (“Wave 2.0”)
1016	Fresh Products Technical Specifications (Item Codes), screenshot of https://freshproducts.com/products/urinal-screens/wave-3d-urinal-screen/, accessed April 16, 2024.
1017	Vectair V-Screen urinal screen, publication dated March 13, 2013, European Cleaning Journal entry for V-Screen, screenshot of https://www.europeancleaningjournal.com/magazine/february-march-2013/product-review/vectair-vscreen-urinal-screen-range-expanded, accessed April 18, 2024.
1018	Vectair V-SCREEN information, printed publication, copyright 2012 showing and describing V-SCREEN urinal screen.

I. INTRODUCTION AND RELIEF REQUESTED (37 C.F.R. §42.22(a))

Vectair Systems Inc. (“Petitioner” or “Vectair”) hereby petitions for *inter partes* review of claims 1, 19 and 38 of U.S. Patent No. 10,145,098 to Brown (“’098 Patent”, “Exhibit 1001”) now assigned to Fresh Products Inc. (“PO”).

This Petition provides: **ground 1**: claims 1, 19 and 38 would have been anticipated under 35 U.S.C. §102 in view of FP 3WDS60SAP Wave 3D as evidenced by FP Wave 3D; **ground 2**: claims 1, 19 and 38 would have been obvious under 35 U.S.C. §103 in view of the Big D Catalog as evidenced by Big D Pearl 3D in further view of the ‘707 B1 and /or in further in view of Korean Patent Publication No. 20-0395055 (“KR’055 English”); **ground 3**: claims 1, 19 and 38 would have been obvious under 35 U.S.C. §103 in view of the FP Catalog Wave 2.0 as evidenced by Wave 2.0 in view of the ‘707 Patent.

II. OVERVIEW OF THE TECHNOLOGY

The technology relates to screens or mats for covering a drain, including restroom urinal screens. Ex. 1001, c1:13-15. Urinal screens are widely used as air fresheners and to prevent debris from being flushed down a urinal drain. A fragrance may be provided with the screens to help freshen the air in and around the urinal. *Id.*, c1:19-22.

It has been known to manufacture urinal screens for use in urinals in restrooms that are formed from a plastic material having an outer surface that is coated with a fragrant material. Although known air freshening articles such as this have long been effective, it is also known to use a plastic material loaded with a fragrance to produce such urinal screens. Ex. 1011, Abstract.

III. THE '098 PATENT

A. Overview

The '098 Patent is not directed to any new device. Such devices were well known and widely available prior to the filing date of the '098 patent. The claims recite no more than known prior art elements and/or obvious combinations of known prior-art elements. The '098 patent describes a frame having first and second faces, braces, interconnected cells or openings in a urinal screen, and posts on the urinal screen - each according to predictable and established functions.

The '098 patent is directed to solving well-known and unremarkable problems already recognized and solved in the prior art. The claims are directed to urinal screens, which “are widely used as *air fresheners* and *to prevent debris from being flushed down a urinal drain.*” Ex. 1001, c1:19-22, *emphasis* added. By utilizing a larger number of openings or a thin frame, the screen claimed purports to “reduce the overall weight of the urinal screen.” *Id.*, c3:42-49, c6:55-57. The '098 claims also purport to include spacing and positioning with respect to the frame and posts that “can reduce the likelihood that the openings 18 are clogged by debris” and “reduce splashing in the urinal by deflecting urine and other fluids.” *Id.*, c7:12-19.

B. Level of Ordinary Skill in the Art

The '098 patent claims priority to U.S. Provisional application Serial No. 62/075,827, filed November 5, 2014. Prior to November 5, 2014, urinal screens were “widely used as air fresheners and to prevent debris from being flushed down a urinal drain.” Ex. 1001, c1:19-22.

If the only facts of record pertaining to the level of skill in the art are found within the prior art of record, the court has held that an invention may be held to have been obvious without

a specific finding of a particular level of skill where the prior art itself reflects an appropriate level. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355, 59 USPQ2d 1795, 1797 (Fed. Cir. 2001).

The '098 Patent is silent as to certain steps of forming the urinal screen and the silence suggests that figuring out how to achieve the making of the urinal screens is within the ordinary skill in the art. *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1339, 2020 USPQ2d 10476 (Fed. Cir. 2020). The '707 Patent (also owned by PO) discloses that such air freshening urinal screens “can be formed by any suitable method, for example, by any of the methods known in the art for producing plastic articles, such as molding, stamping, casting, or extruding.” Ex. 1010, c5:58-61. This further indicates that designing and making of urinals screens is within the ordinary skill in the art.

Persons having ordinary skill in the art (“POSITA”) look to the common body of prior art and knowledge related to covers that can be placed over drains. In addition to preventing or reducing urinal “splashback” and odors, a long-standing and primary object of urinal screens is to prevent blocking of the urinal drain. Any POSITA would look to art that relates to the use of mats, screens, or liners that cover drainpipes (drains in kitchens, bathrooms, including drains in urinals, tubs, showers, sinks) and other ordinary drainpipes. All drainpipes will have one or more problems related to blockage, splash and odor.

C. Claim Construction

In an *inter partes* review, the claims shall be construed 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), including construing 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. 37 C.F.R. §42.100(b).

1. “Openings” (claims 1 and 38)

“Openings” is used with respect to recited structure, and the ‘098 Patent defines the plurality of “openings” in terms of other structures present, and as provided “through a thickness of the frame”. Ex. 1001, c4:4-5. “[T]he openings 18 can have various shapes, including, but not limited to, polygons (e.g., triangles, rectangles, pentagons, hexagons, etc.), ellipses, and/or some combination thereof.” *Id.* c4:35-37. The opening may be defined as “cells”, as “in FIGS. 2 and 3, one or more of the openings 18 (e.g., cells) can have a perimeter which includes a plurality of sides (e.g., braces) 42 and corners 46.” *Id.* c4:35-41. The Merriam-Webster dictionary defines the term “opening” as “something that is open: such as APERTURE”. Ex. 1004. In the context of the ‘098 patent and the ordinary and customary meaning of such claim as understood by POSITA, for purposes of this Petition, “openings” means aperture.

2. “Interconnected cells” (claim 19)

The term interconnected cells is mentioned in the ‘098 Patent as “openings 18 (e.g., cells)” (c4:64) and “solid cells 15, 19 and 20” are disclosed (c5:12-15). “[i]n FIGS. 2 and 3, one or more of the openings 18 (e.g., cells) can have a perimeter which includes a plurality of sides (e.g., braces) 42 and corners 46.” Ex. 1001, c4:63-65. The ‘098 patent also states: “each of the interconnected cells shares at least one side and at least one corner with another interconnected cell.” c3:37-40. In the context of the ‘098 patent and the ordinary and customary meaning of such claim as understood by POSITA, for purposes of this Petition, “interconnected cells” means more two openings that share at least one side or at least one corner.

3. “Braces” (claim 19)

The ‘098 Patent defines “braces” as the perimeter sides of the openings “As illustrated in FIGS. 2 and 3, one or more of the openings 18 (e.g., cells) can have a perimeter which includes a plurality of sides (e.g., braces) 42 and corners 46.” c4:63-65. In the context of the ‘098 patent and the ordinary and customary meaning of such claim as understood by POSITA, for purposes of this Petition, “brace” means a side of an opening.

IV. OVERVIEW OF THE PRIOR ART

The earliest priority date for the ‘098 Patent is based on the filing date of U.S. provisional patent application Serial No. 62/075,827, filed on November 5, 2014.

A. FP 3WDS60SAP Wave 3D (Ex. 1005) is a publication in the form of a publicly available advertisement, available online through Amazon.com, for Fresh Products 3WDS60SAP Wave 3D Urinal Deodorizer Screen. This publication is an advertisement for a product, the Wave 3D, identified by identification no. 3WDS60SAP, indicated on page 2 of FP 3WDS60SAP Wave 3D as the product being first available to the public on May 10, 2013. PO identifies in this publication an Item Model Number of FRE-3WDS-F-0101I060M-01, which is confirmed as a Wave 3D Urinal Screen of PO via PO’s website, Ex. 1018. The Wave 3D product, as evidenced by Ex. 1005 was publicly on-sale as of May 10, 2013, more than one year before the effective filing date of the ‘098 Patent. FP 3WDS60SAP Wave 3D is prior art under 35 USC 102(a).

B. FP Wave 3D (Ex. 1006) is a publication in the form of a publicly available advertisement, available online through Amazon.com, for Fresh Products Wave 3D urinal screen. The publication is an advertisement for the product, the FP Wave 3D, indicated on page 2 of FP Wave 3D as being first available for sale to the public on September 3, 2013. September 3,

2013, is more than one year before the effective filing date of the '098 Patent. FP Wave 3D is prior art under 35 U.S.C. 102(a).

Indeed, more than one year before the earliest priority date for the '098 patent, the product, the Wave 3D urinal screen, shown in FP 3WDS60SAP Wave 3D and FP Wave 3D, were on sale by PO.¹

C. Big D Catalog (Ex. 1008) is a publication produced by Big D Industries, dated for publication as January 2013. The Big D Catalog was distributed throughout the relevant industry as connected to sanitary products for restrooms. Customers, competitors, vendors and lay persons had access to the print and online versions of the Big D Catalog. Big D Catalog is prior art under 35 U.S.C. 102(a).

D. Big D Pearl 3D (Ex. 1009) is a publication produced and distributed by Big D Industries. The publication was made in September 2013. The Big D "Pearl 3D was distributed throughout the relevant industry as connected to sanitary products for restrooms. Customers, competitors, vendors and lay persons had access to the print and online versions of the Big D Pearl 3D. Big D Pearl 3D is prior art under 35 U.S.C. 102(a).

E. The Pearl 3D product (Ex. 1010) is a urinal screen sold by Big D Industries. The renderings in Ex. 1009 accurately reflect the Pearl 3D product as advertised in the Big D Catalog (Ex. 1007) and Big D Pearl 3D (Ex. 1008). The Pearl 3D product was publicly on sale in the U.S.

¹ The Wave 3D publications and product are material prior art, that appears to have been deliberately withheld by PO, Fresh Products, during prosecution of the '098 Patent. Had this reference in been disclosed to the USPTO during prosecution of the '098 Patent, the claims of the '098 Patent would not have been allowed by the PTO.

prior to the earliest effective filing date of the '098 patent and concurrently with the 2013 publication of the Big D Catalog. The Pearl 3D product is prior art under 35 U.S.C. 102(a).

F. U.S. Patent No. 8,007,707 B1 (“’707 Patent, Ex. 1011) is a U.S. Patent issued on August 30, 2011, from Application Serial No. 12/152,627, filed on May 15, 2008, titled “Method of manufacture air freshening article” (“’707 Patent”). The inventors named in the ’707 Patent, Douglas S. Brown and Jeffrey A. Smith assigned all right, title and interest in the ’707 Patent (Ex.1010) to Fresh Products, Inc. The ’707 Patent is prior art under 35 U.S.C. 102(a).

G. KR’055 (Ex. 1012), Korean Patent Publication No. 20-0395055, filed on June 8, 2015 and titled “Comb Type Drain Trap Filter” was granted and published on September 7, 2005, in Korean. KR’055 English is a computer translation of KR’055 from Korean into English (Ex. 1013). KR’055 is prior art under 35 U.S.C. 102(a).

H. FP Catalog Wave 2.0 (Ex. 1014)² is a publication produced by PO, Fresh Products, dated January 2013. This catalog was distributed throughout the relevant industry as connected to sanitary products for restrooms. Customers, competitors, vendors and lay persons had access to versions of the FP Catalog Wave 2.0 before the earliest effective filing date of the ’098 patent. FP Catalog Wave 2.0 is prior art under 35 U.S.C. 102(a).

² Both the FP Catalog Wave 2.0 and Wave 2.0 are material prior art that appear to have been deliberately withheld by PO during prosecution of the ’098 Patent; instead, the PO provided numerous prior art references of third parties including older and/or less material prior art of which PO was also aware. Had these references been disclosed, one or more of the claims of the ’098 Patent would not have been allowed by the PTO.

I. Wave 2.0 (Ex. 1015) is a true and correct reproduction of an archived website, freshproducts.com, obtained from Archive.org, showing the website of Patent Owner publicly available as of October 17, 2013. The Wave 2.0 is prior art under 35 U.S.C. 102(a).

J. Vectair V-Screen (Ex. 1017, 1018) publication showing the Vectair V-Screen publicly available as of March 13, 2013 and 2012 information publication. The V-Screen is prior art under 35 U.S.C. 102(a).

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

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001). MPEP § 2131.02.

It may be permissible to use multiple references in a 35 U.S.C. § 102 rejection, such as including additional references cited to (A) Prove the primary reference contains an “enabled disclosure;” (B) Explain the meaning of a term used in the primary reference; or (C) Show that a characteristic not disclosed in the reference is inherent. MPEP § 2131.01.

“Obviousness is a question of law that is resolved based on underlying factual determinations: (1) the prior art’s scope and content, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations.” *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966). “[t]he combination of familiar elements according to known methods is likely to be

obvious when it does no more than yield predictable results,” and “[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, 35 U.S.C. §103 likely bars its patentability.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416, 417 (2007). A prior art combination is obvious to try “[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.” *Id.* at 421.

When multiple references are used to render a claim obvious, a rationale to modify the teachings of those references must exist. See *B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582, (Fed. Cir. 1996). This rationale may be derived from the prior art reference itself, see *In re O’Farrell*, 853 F.2d 894, 902 (Fed. Cir. 1988), from a POSITA’s knowledge, or from the nature of the problem to be solved. See *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed. Cir. 1996).

Petitioner identifies how the prior art teaches or suggests each challenged claim element, as well as element-specific motivations as to why and how to combine the references.

VI. Ground 1: FP 3WDS60SAP Wave 3D, as evidenced by FP Wave 3D, anticipates claims 1, 19, and 38.

A. Overview of FP 3WDS60SAP Wave 3D and FP Wave 3D³

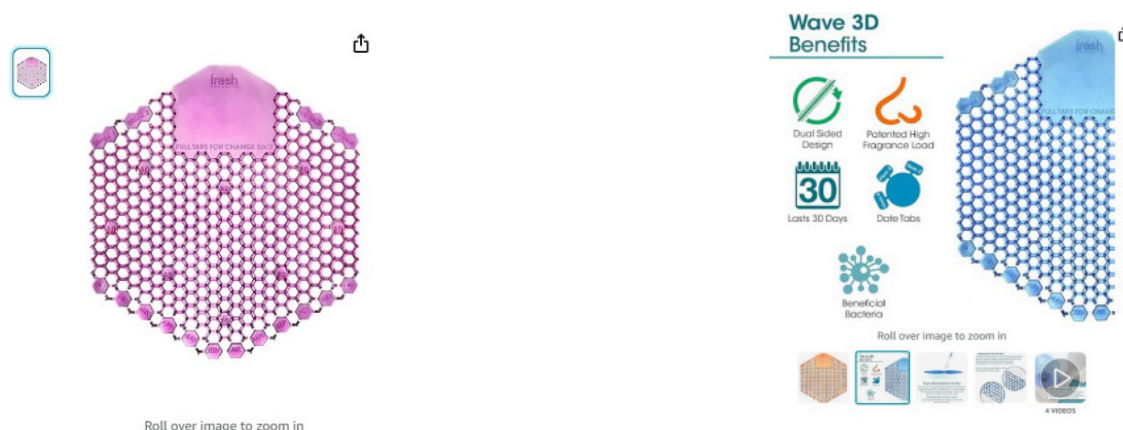
³ Both Exhibit 1005 and 1006 illustrate the Wave 3D screen manufactured by PO, the screens being provided in different colors/scents, but having substantially the same structure. FP Wave 3D is also a prior art reference supporting additional written detail of the urinal screen shown in

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FP 3WDS60SAP Wave 3D and FP Wave 3D each describe the “Wave 3D” urinal screen, also referred to as a “Urinal Deodorizer Screen”, as a dual sided urinal screen with a hex design for a plurality of openings and for covering a urinal drain. Ex. 1005, 1006. The Wave 3D product discloses each and every element of claims 1, 19 and 38. PO acknowledges that it sells urinal screens “under the mark WAVE 3D” (Ex. 1007). PO acknowledges that to protect the “technology incorporated in the WAVE 3D urinal screen, Fresh Products has secured numerous U.S. and non-U.S. utility patents covering the WAVE 3D product.” *Id.* One of these patents is the ‘098 Patent. The product asserted by PO and subject of the ‘098 Patent was publicly on sale by Patent Owner more than one year before the earliest effective filing date of the ‘098 Patent.

FP 3WDS60SAP Wave 3D. (Ex. 1005, p.1)

FP Wave 3D (Ex. 1006, p.10)



B. Claims 1, 19 and 38 are anticipated by FP Wave 3D.

1. Claim 1

Exhibit 1005. Ex. 1016 shows the Identification No. for the Wave 3D urinal screens in Ex. 1005 and 1006, match the Identification Nos. still used by Fresh Products for the same products.

The Wave 3D is identified as a “Urinal Deodorizer Screen” in both Ex. 1005 and Ex. 1006.

[VI.B.1.1] “a frame having:”

A urinal screen comprising a frame is disclosed in The Wave 3D as seen in the Ex. 1005, 1006 advertisements, which disclose a frame, where for example, “Date Tabs” are removably secured to the disclosed *frame*.

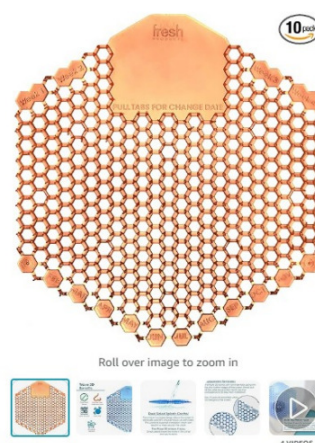
[VI.B.1.1.A] “a first face;”

A urinal screen having a frame with a first face is disclosed in Wave 3D product, described as “dual sided splash control” with “two-sided design”, indicating a first face. (Ex. 1006, p.1) The image of the Wave 3D urinal screen discloses *a first face of the frame*:

Ex. 1004, p.1



Ex. 1005, p.1



[VI.B.1.1.B] “a second face opposite the first face;”

The underside of the Wave 3D product is visible in the side view of the screen also shown in Ex. 1006, excerpt below. The FP Wave 3D is also described as providing “dual sided splash control” and having a “two-sided design” (Ex. 1006, p. 19, excerpt below) disclosing *a second face opposite the first face of the frame*:



[VI.B.1.2] “a plurality of openings extending through the frame between the first face and the second face;”

The plurality of openings are disclosed, the openings of the product are illustrated in the renderings in Ex. 1005, 1006 and are described provided in a “hex design”. (Ex. 1005, p.1).

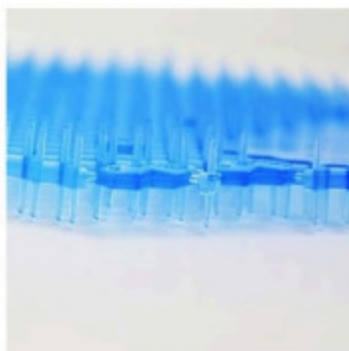
[VI.B.1.3] “a plurality of first posts extending from the first face of the frame; and”

The posts are shown extending from the first face of the frame of the product, in the FP Wave 3D, the *first posts extending from the first face of the frame*; and are disclosed. The blue posts on the first face are in contact with the liquid flow shown in the excerpted image in [VI.B.1.1.B] above. Element [VI.B.1.3] is disclosed.

[VI.B.1.4] “a plurality of second posts extending from the second face of the frame;”

The posts are shown extending from the second face of the frame opposite the first face of the frame in the FP Wave 3D. The Wave 3D product is also described as having a “two-sided design” (Ex. 1006). The second posts on the second face are adjacent dispersed liquid flow in the image shown above in [VI.B.1.1.B]. The *second posts extending from the second face of the*

frame are also disclosed as shown below in the image excerpted from Ex. 1006, below, which evidences the design of the Wave 3D urinal screen product as it existed when on-sale in 2013 per Ex. 1005, 1006:



Dual Sided Splash Control

The unique two-sided design allows the screen to eliminate 99% of splash back on both sides. This prevents incorrect installation which can result in a mess around the urinal. The Wave 3D makes it easy, simply place it over the drain in the urinal and you're done.

[VI.B.1.5] “*wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface;*”

Product dimensions are indicated as 0.67 x 6.5 x 0.67 inches and weighting 11.85 ounces (Ex. 1005) and in combination with photos of Wave 3D products in both Exhibits 1005, 1006 indicate that at least half of the surface area of the frame is occupied by the openings. Element [VI.B.1.5] is disclosed.

[VI.B.1.6] “*wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;*”

The Wave 3D product is described by “Wave 3D’s double-sided design, there is never an installation error”, and “simply place it over the drain in the urinal and you’re done” (Ex. 1005, p.2), see excerpt reproduced below:



In combination with additional disclosure in Ex. 1005 the posts of the opposing face point away from the surface on which the urinal screen is set. Element [VI.B.1.6] is disclosed.

[VI.B.1.7] *“wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;”*

As the Wave3D is described as “dual sided,” the image above shown in [VI.B.1.6] may show either the first face or the second posts forming the base, where the first or second posts point away from the surface on which the urinal screen is set. Element [VI.B.1.7] is disclosed.

[VI.B.1.8] *“wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least $\frac{1}{3}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame;”*

The first and second posts are shown as similar in height in the images of the product and is supported by written description of the “dual sided” nature of the screen and the indication of use to “simply place it over the drain in the urinal” together disclose the screen’s first and second face are substantially interchangeable and substantial similar, if not identical. The frame

therebetween is shown as at least 1/3 or less in height when compared to the posts. See excerpts from Ex. 1005:



Element [VI.B.1.8] is disclosed.

[VI.B.1.9] “*wherein at least one of the plurality of first posts extends from a perimeter around each of said plurality of openings; and*”

None of the posts obstruct the openings and as shown the posts sit on the perimeter of the openings such that the openings (apertures) remain. Element [VI.B.1.9] is disclosed.

[VI.B.1.10] “*wherein at least one of the plurality of second posts extends from a perimeter around each of said plurality of openings.*”

None of the posts obstruct the openings and as shown the posts sit on the perimeter of the openings such that the openings (apertures) remain. Wave 3D product is described as “dual sided” in Ex. 1005, 1006. Sides appear to be interchangeable given the indication there is no right side up and use indicates a user must “simply place it over the drain in the urinal.” Element [VI.B.1.10] is disclosed.

2. Claim 19

[VI.B.2P] “*A urinal screen comprising:*”

A urinal screen is disclosed in Ex. 1005, 1006, see element [VI.B.1P].

[VI.B.2.1] “*a frame having:*”

A frame is disclosed in the FP Wave 3D, see element [VI.B.1.1].

[VI.B.2.1.A] “*a first face;*”

A first face is disclosed in the FP Wave 3D, see element [VI.B.1.1.A].

[VI.B.2.1.B] “*a second face opposite the first face; and*”

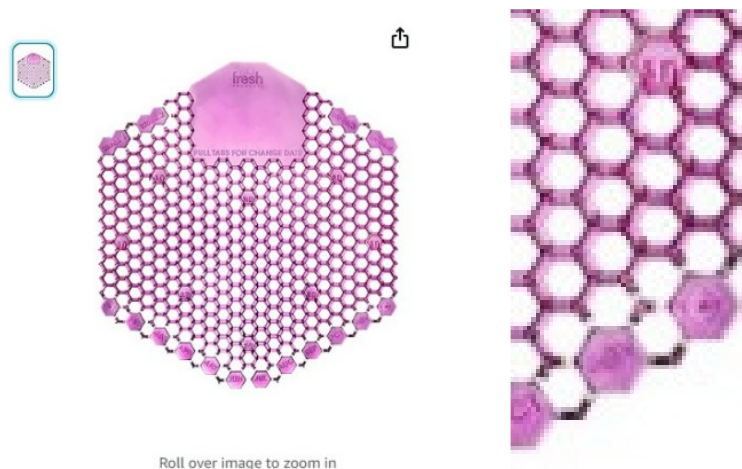
A second face opposite the first face is disclosed in the FP Wave 3D product, see element [VI.B.1.1.B].

[VI.B.2.2] *a plurality of interconnected cells at least partially defined by a plurality of braces that intersect at corners, the plurality of interconnected cells comprising at least a plurality of perimeter cells and a plurality of interior cells;*”

The plurality of interconnected cells at least partially defined by a plurality of braces that intersect at corners are disclosed in the Wave 3D product. The FP Wave 3D product is a “screen,” and the openings are illustrated in Ex. 1005, 1006 are also described as having a “hex design” which shows the interconnected cells in the images in Ex. 1005 and 1006.

[VI.B.2.3] *wherein the plurality of interior cells comprises a first cell, a second cell, and a third cell, said first cell and said second cell each partially defined by a first brace positioned between said first cell and said second cell, said second cell and said third cell each partially defined by a second brace positioned between said second cell and said third cell, and said first cell and said third cell each partially defined by a third brace positioned between said first cell and said third cell;*

Ex. 1005 and the blown-up view of the “hex design” illustrates a first, second and third cell where the hex design includes these cells each defined by “braces” (e.g., sides) where common braces are positioned between the respective cells. Element [VI.B.2.3] utilizes “structural elements” to recite the hex-design described in Ex. 1005 and shown in both Ex. 1005, 1006, excerpts below. Element [VI.B.2.3] is disclosed.



[VI.B.2.4] *“wherein each of the first brace, the second brace, and the third brace comprises a first end and a second end, and”*

Each brace – or side – having a first end and a second end is disclosed as the sides must have a start and end point. However, the first end and the second end of each brace are shown by corners in the “hex-design” of the urinal screen of both Ex. 1005 and 1006. Element [VI.B.2.4] is disclosed.

[VI.B.2.5.A] *“wherein: the first end of the first brace intersects at a corner with the two other braces;”*

The intersection of the first end of the first brace intersects at a corner with two other braces as shown by the “hex-design” and the “Y” formation of the braces at each junction or corner. Element [VI.B.2.5.A] describes the hex-design and is thus disclosed.

[VI.B.2.5.B] *“the first end of the second brace intersects at a corner with the two other braces; and”*

The first end of the second brace intersects at a corner with the two other braces is as shown by the “hex-design” and the “Y” formation of the braces at each junction or corner. Element [VI.B.2.5.B] describes the hex-design and is thus disclosed.

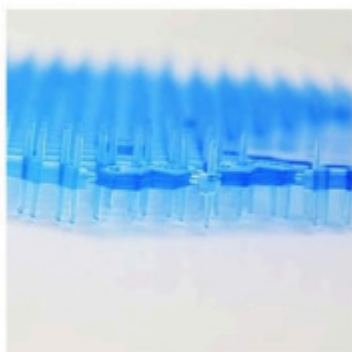
[VI.B.2.5.C] *the first end of the third brace intersects at a corner with the two other braces;*

The first end of the third brace intersects at a corner with the two other braces is as shown by the “hex-design” and the “Y” formation of the braces at each junction or corner. Element [VI.B.2.5.C] describes the hex-design and is thus disclosed.

[VI.B.2.6] *a plurality of first posts each connected to a brace or corner of the frame and extending from away from the first face of the frame, and”*

The first posts extend from the first face of the frame and are connected to a brace or corner of the frame and extend away from the first face of the frame. The interconnected cells are

open, allowing for the fluid to pass through the urinal screen. See Ex. 1005, 1006 (excerpts below) as the posts are positioned on the braces and corners of the frame and extend outwardly therefrom:



Dual Sided Splash Control

The unique two-sided design allows the screen to eliminate 99% of splash back on both sides. This prevents incorrect installation which can result in a mess around the urinal. The Wave 3D makes it easy, simply place it over the drain in the urinal and you're done.



Wave 3D Urinal Screens

Restrooms can create odors that linger and cause an unpleasant experience for your customers. Our urinal screens combat odors and protect the drain while reducing splash. Get our patented technology delivered right to your business.

[VI.B.2.7] “a plurality of second posts each connected to a brace or corner of the frame and extending away from the second face of the frame.”

The Wave 3D product is described by “Wave 3D’s double-sided design, there is never an installation error”, and “simply place it over the drain in the urinal and you’re done” (Ex. 1005):



Wave 3D Urinal Screens

Restrooms can create odors that linger and cause an unpleasant experience for your customers. Our urinal screens combat odors and protect the drain while reducing splash. Get our patented technology delivered right to your business.

In combination with additional disclosure in Ex. 1005, the posts of the opposing (second) face extend away from the second face of the frame. The respective posts are shown as extending away from the respective face. Element [VI.B.2.7] is disclosed.

3. Claim 38

[VI.B.3P] “*A urinal screen comprising:*”

A urinal screen is disclosed in the FP Wave 3D, see element [VI.B.1P].

[VI.B.3.1] “*a frame having:*”

A frame is disclosed in the FP Wave 3D, see element [VI.B.1.1].

[VI.B.3.1.A] “*a first face:*”

A first face is disclosed in the FP Wave 3D, see element [VI.B.1.1.A].

[VI.B.3.1.B] “*a second face opposite the first face; and*”

A second face opposite the first face is disclosed in the FP Wave 3D, see element [VI.B.1.1.B].

[VI.B.3.1.C] “*a plurality of openings extending through the frame between the first face and the second face;*

A plurality of openings extending through the frame between the first face and the second face is disclosed in the FP Wave 3D, see element [VI.B.1.1.C].

[VI.B.3.1.D] *a plurality of first posts extending from the first face of the frame; and*

A plurality of first posts extending from the first face of the frame is disclosed in the FP Wave 3D product, see element [VI.B.1.1.D].

[VI.B.3.1.E] “a plurality of second posts extending from the second face of the frame;”

A plurality of second posts extending from the second face of the frame is disclosed in the FP Wave 3D, see element [VI.B.1.1.E].

[VI.B.3.2] “wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;”

The Wave 3D is described by: “Wave 3D’s double-sided design, there is never an installation error”, and “simply place it over the drain in the urinal and you’re done” (Ex. 1005, p.2):



In combination with additional disclosure in Ex. 1005, the posts of the opposing face point away from the surface on which the urinal screen is set. Element [VI.B.3.2] is disclosed.

[VI.B.3.3] “wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;”

The Wave3D product is “dual sided,” the image above [VI.B.3.2] may show either the first face or the second posts forming the base, where the first or second posts point away from the surface on which the urinal screen is set. Element [VI.B.3.3] is disclosed.

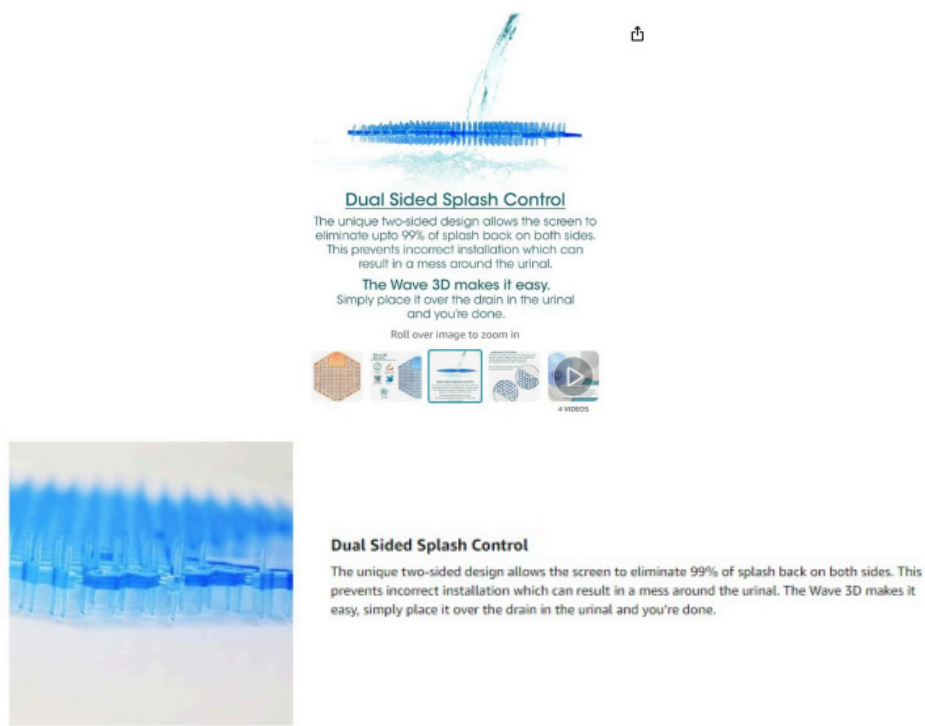
[VI.B.3.4] *“wherein a number of said plurality of first posts and a number of said plurality of second posts are positioned along a perimeter of at least some of the plurality of openings, so as to surround the at least some of the plurality of openings; and”*

None of the posts obstruct the openings and as shown the posts sit on the perimeter of the openings such that the openings remain as claimed – openings. As shown in Ex. 1005, fluids pass through the urinal screen indicating the openings are not obstructed and the posts are positioned on the perimeter of some of the openings. Again, the “Wave 3D” is described as “dual sided” in both Ex. 1004 and 1005. The sides appear to be interchangeable given the indication there is no right side up in “simply place it over the drain in the urinal.” Element [VI.B.3.4] is disclosed.

[VI.B.3.5] *“wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least $\frac{1}{4}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame, such that posts positioned between the frame and the surface upon which the urinal screen is set can reduce splashing on a user of the urinal by deflecting a flow of urine which passes through said plurality of openings.”*

The First and second posts are shown as similar in height in the images, and is supported by written description of the “dual sided” nature of the screen and the indication of use to “simply place it over the drain in the urinal” together indicate that the screen’s first and second face are substantially interchangeable and substantial similar if not identical. The frame

therebetween is shown as at least 1/4 or less in height when compared to the posts. See excerpts from Ex. 1005 below. Element [VI.B.3.5] is disclosed.



VII. Ground 2: Big D Catalog as evidenced by Pearl 3D in view of the ‘707 Patent and/or KR’055 renders claims 1, 19, and 38 obvious.

A. Overview of Big D Catalog, Pearl 3D, ‘707 Patent, and KR’055

The Big D Catalog and Big D Pearl 3D disclose various restroom deodorants including The Pearl 3D product, a urinal screen incorporating “a two-sided anti-splash texture” (Ex. 1008, p.15). The two-sided anti-splash texture of The Pearl 3D product shown in both Ex. 1008, 1009 is further illustrated in the perspective and elevational renderings of the Pearl 3D product provided in Ex. 1010.

The ‘707 Patent is directed to a deodorizing urinal screen having openings and notches on both faces of the urinal screen allowing the urinal screen to rest on a urinal surface with a

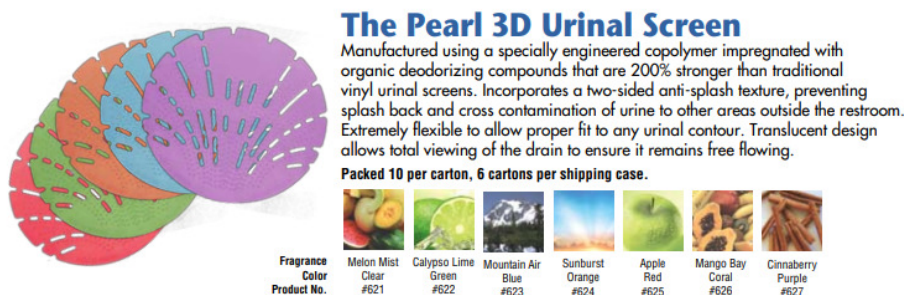
spacing between the urinal and the screen. The '707 patent is from the same field of endeavor as the '098 patent and is prior art of the same inventors and PO.

KR'055 is directed to a comb (or strainer) type drain trap filter. The filter can be installed in a bathroom and has a purpose of filtering out foreign substances before reaching the drain and the effect of blocking odors. (Ex. 1012, 1013, p.1-2). A number of fins are formed on the top and bottom of a perforated disk. At a minimum, KR'055 is pertinent to the problem(s) faced by the inventors of the '098 patent – odor reduction and screening of foreign objects from a restroom drain.

1. Claim 1

[VII.A.1.P] “A urinal screen comprising:”

Urinal screens were known to a POSITA. The Pearl 3D is a urinal screen.

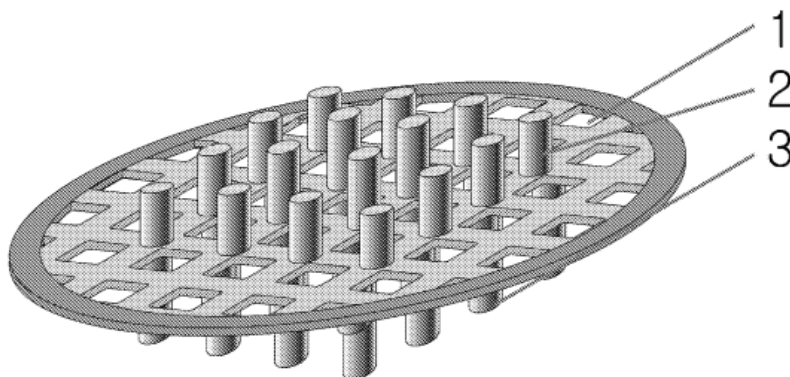


Ex. 1008, p.15.

The '707 patent is a deodorizer for a urinal. KR'055 is a filter for a drain including bathroom drains. (Ex. 1013, pg. 1)

[VII.A.1.1] “a frame having:”

A urinal screen comprising a frame is within the ordinary knowledge of a POSITA. Pearl 3D has a frame, shown in color with openings therein. KR'055 discloses a frame at “3”, see FIG. 1 (annotated) below:



Element [VII.A.1.1] was obvious to POSITA.

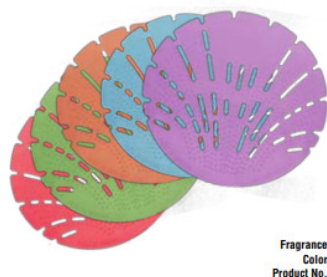
[VII.A.1.1.A] “*a first face;*”

A urinal screen having a frame with a first and second face is within the ordinary knowledge of a POSITA. Pearl 3D is a reversible urinal screen with each side having protruding posts that deflect urine and reduce splashing by a urine stream.

The Pearl 3D Urinal Screen

Manufactured using a specially engineered copolymer impregnated with organic deodorizing compounds that are 200% stronger than traditional vinyl urinal screens. Incorporates a two-sided anti-splash texture, preventing splash back and cross contamination of urine to other areas outside the restroom. Extremely flexible to allow proper fit to any urinal contour. Translucent design allows total viewing of the drain to ensure it remains free flowing.

The first face of the Pearl 3D is shown as the top-facing side as follows:



Ex. 1008, p.15.

[VII.A.1.1.B] “*a second face opposite the first face;*”

A urinal screen having a frame comprising opposing faces is within the ordinary knowledge of a POSITA. The Pearl 3D is identical on each side. Because it is 2-sided (see element [VII.A.1.1A] emphasizing the two-sided anti-splash texture), the second side (the underside of the screen in the foregoing pictures shown in the discussion of element [VII.A.1.1.A]) is a second face opposite the first face.

See also KR'055, which provides “fins” 2 and fins 3 on each face, including the second face opposite the first face.

[VII.A.1.2] *“a plurality of openings extending through the frame between the first face and the second face;”*

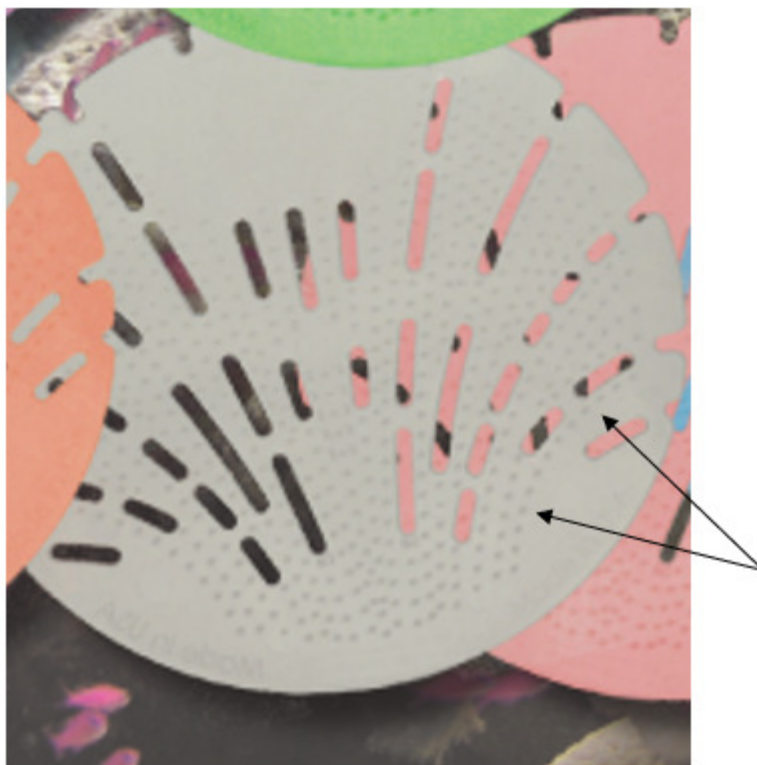
A urinal screen with a plurality of openings extending through the frame between the first face and the second face is within ordinary knowledge of POSITA. A “screen” has openings, a urinal screen must have openings for fluids to pass through the screen. The openings are further shown in the images from the Big D Catalog and the Big D Pearl 3D. The openings are shown by the cut outs in each urinal screen shown below in Ex. 1010.



KR'055 also provides openings between the fins 2 and fins 3 on each face as the device in KR'055 is “perforated.”

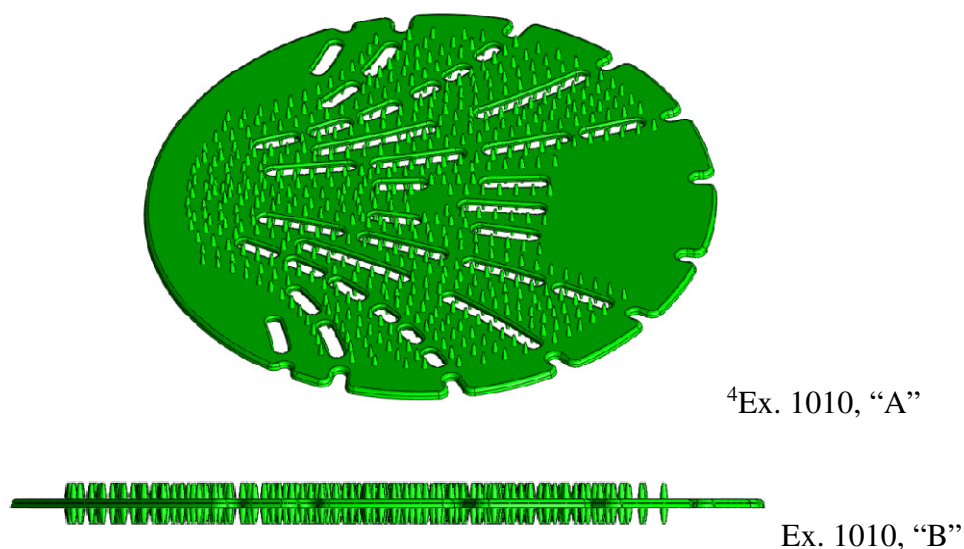
[VII.A.1.3] “a plurality of first posts extending from the first face of the frame;
and”

The plurality of first posts are shown in the image below, and comprise the “anti-splash texture (Ex. 1008, p.15). The posts are the protrusions shown most easily below in the exploded view of the image from Ex. 1009 (see arrows, annotations added).



Among the problems a urinal screen addresses are prevention of clogging and reduction of urine splash back. The use of posts to address these issues is well within the knowledge of a POSITA. The '707 patent states that these protrusions increase the surface area of the screen and break up a urinal stream, preventing or decreasing splashback. c2:53-60. It was well within the knowledge of a POSTA that the posts can vary in size, length, density, shape and location.

The following diagrams are representative of the Pearl 3D product as it is depicted in the product literature of Ex. 1008 and 1009 and as publicly available at the time of publication of Ex. 1008, 1009.



Element [VII.A.1.3] is within the ordinary knowledge of POSITA.

[VII.A.1.4] “*a plurality of second posts extending from the second face of the frame;*”

The Pearl 3D is identical on each side. Because it is 2-sided (see element [VII.A.1.1A]: two-sided anti-splash texture), the second side (underside of the screen in the foregoing pictures shown in [VII.A.1.1.A] discussion) is a second face also having the second posts extending therefrom. As shown in the diagrams above in [VII.A.1.3], the posts can be seen on both sides of the Pearl 3D.

⁴ The diagrams above, identified as Ex. 1010 as “A” and “B” are representative of the Pearl 3D product as it is depicted in the product literature. The Pearl 3D product is prior art to the ‘098 patent claims as the Pearl 3D was on sale prior to the earliest effective filing date of the ‘098 patent.

See also KR'055 as shown in [VII.A.1.1]. Fins 3 extend from the second (bottom) face of the device. With respect to the placement on the bottom of the screen, it is well known to POSITA that elevating a screen can prevent the screen from floating, and also allow for proper draining through drain holes. KR'055 uses posts on both sides or surfaces of the screen and states that the posts prevent odor as the fins (2,3) have the purpose of ensuring cooling by way of the evaporation of water, and the surface is increased to ensure that a great deal of water remains, and are placed at an interval similar to those of the perforations (1) in order to simplify cleaning to ensure that the filter does not become a hotbed of foul odor. Ex. 1013, p.2. Element [VII.A.1.4] is within the ordinary knowledge of POSITA.

[VII.A.1.5] *“wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface;”*

A urinal screen where the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface is within the ordinary knowledge of the POSITA. The '707 Patent discloses “The illustrated body 11 has a plurality of openings 12 formed therethrough. The body 11 may be formed having any desired number of such openings 12 or, alternatively, no openings 12 at all if desired. The openings 12 can have any desired size and shape and may be provided at any location or locations on the body 11.” Ex. 1010, c.2:30-35

The '707 Patent further states “The openings 12 and notches 13 permit the screen 10 to conform to the drain portion of the urinal to provide a good fit. Additionally, the openings 12 and notches 13 function to permit fluids through the screen 10 to the drain portion to prevent the screen 10 from floating above or about the drain portion. Prior art designs

without such notches and/or openings floated over the drain portion, thus permitting solids to enter the drain portion.” *Id.* at c2:45-52.

The ’707 patent discloses openings comprising at least half of a surface area of the frame and further indicates such element is desirable as the openings function to permit fluids through the screen and prior art designs without openings “floated over the drain portion, thus permitting solids to enter the drain.” Element [VII.A.1.5] is disclosed in the ’707 Patent, which is from the field of endeavor of the ’098 patent (urinal screen improvements).

[VII.A.1.6] “*wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;*”

The Pearl 3D is two-sided and flexible to allow proper fit to any urinal contour. Ex. 1009. The posts rest on the urinal surface by way of the first (or second) posts and each of the second (or first) posts extend away from the surface on which the screen is set as shown in the images above in [VII.A.1.1] and [VII.A.1.2] and [VII.A.1.4]. Element [VII.A.1.6] is disclosed.

[VII.A.1.7] “*wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;*”

A POSITA understands that two sided indicates that either side of the urinals screen can be used. Ex. 1009. The posts rest on the urinal surface by way of the second (or first) posts and each of the first (or second) posts extend away from the surface on which the screen is set as shown in the images above in [VII.A.1.1] and [VII.A.1.2] and [VII.A.1.4]. Element [VII.A.1.7] is disclosed.

[VII.A.1.8] “*wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least $\frac{1}{3}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame;*”

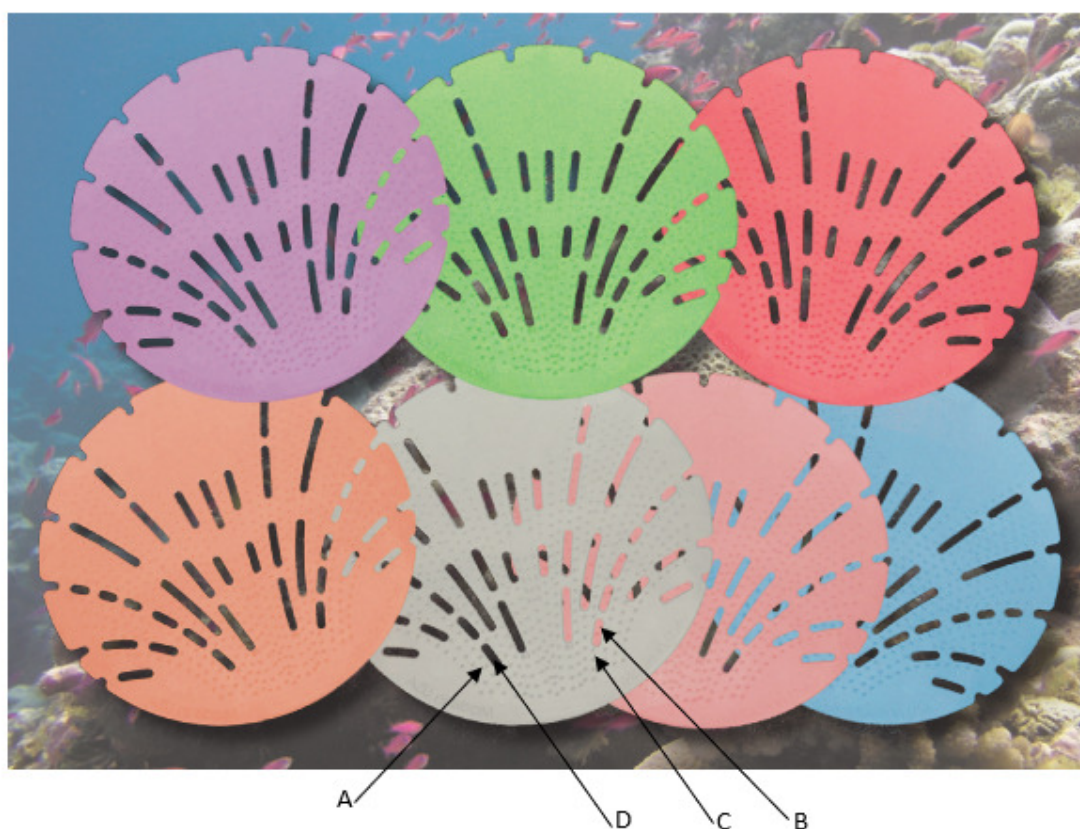
Element [VII.A.1.8] in combination with the preceding elements is within the ordinary knowledge of a POSITA. A POSITA seeing the Pearl 3D product and images in [VII.A.1.4]. would understand that when the Pearl 3D product is set on a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame may be positioned away from the surface by at least $\frac{1}{3}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame.

A POSITA understands that this is a function of the length of the posts in relation to the thickness of the screen, and that length of these posts is merely design choice. When the Pearl 3D is set on a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least $\frac{1}{4}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame. See [VII.A.1.3], a total thickness of the urinal screen has a ratio to the distance between the frame and the surface upon which the urinal screen is set when the urinal screen is resting upon ends of the first or second posts, respectively. The same applies to KR’055. The ratio is greater $\frac{1}{3}$.

A POSITA would also understand in view of these references that the placement, number *and lengths of the posts* are merely design choices. The ’707 Patent indicates that the size and shape of the screen body, openings, notches etc. are variable, and thus the length of the posts

protruding from the screen is variable. A POSITA would further understand that it is obvious to design a screen width and a length of posts for a urinal screen such that when the screen is set upon a surface in a urinal the spacing is optimized so that the urinal screen does not float off the drain. Ex. 1011, c2:35-40. Assuming arguendo there were minor differences between the claimed dimensions of the posts and the dimensions of the posts of Pearl 3D (or any of the other prior art), the claimed dimensions of the '098 patent would not perform any differently from the Pearl 3D product.

[VII.A.1.9] “*wherein at least one of the plurality of first posts extends from a perimeter around each of said plurality of openings; and*”



Arrows above annotating Ex. 1008, p.15 show posts (A, C) extending from a perimeter around each of said plurality of openings (B, D). Element [VII.A.1.9] is disclosed.

[VII.A.1.10] “*wherein at least one of the plurality of second posts extends from a perimeter around each of said plurality of openings.*”

Element [VII.A.1.10] is within the ordinary knowledge of a POSITA. The Pearl 3D is identical on each side. It is 2-sided (see [VII.A.1.1A], image “B” above), the second side (the underside of the screen, element [VII.A.1.9] discussion) is a second face with second posts extending from a perimeter around each of said plurality of openings.

2. Claim 19

[VII.A.2P] “*A urinal screen comprising:*”

Element [VII.A.2P] is disclosed in the Pearl 3D and within the ordinary knowledge of a POSITA, see element [VII.A.1P].

[VII.A.2.1] “*a frame having:*”

Element [VII.A.2.1] is disclosed in the Pearl 3D, see element [VII.A.1.1]

[VII.A.2.1.A] “*a first face;*”

Element [VII.A.2.1.A] is disclosed in the Pearl 3D, see element [VII.A.1.2.A]

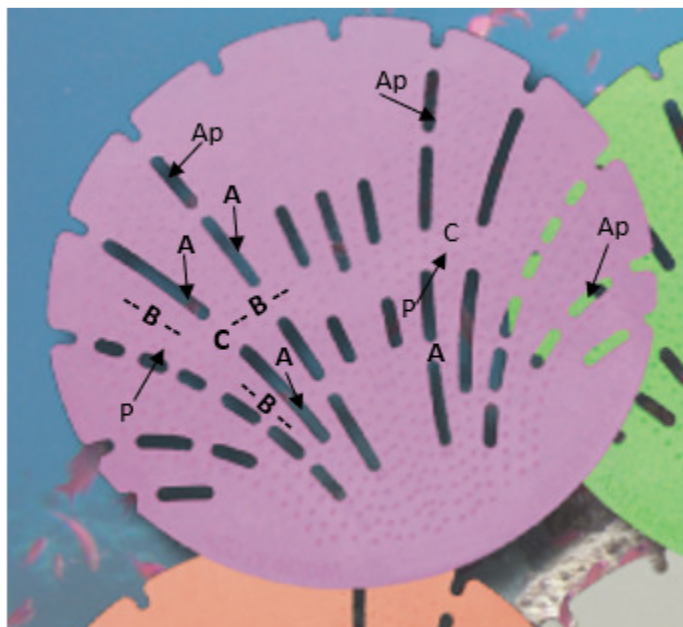
[VII.A.2.1.B] “*a second face opposite the first face; and*”

Element [VII.A.2.1.B] is disclosed in the Pearl 3D, see element [VII.A.1.2.B]

[VII.A.2.2] “*a plurality of interconnected cells at least partially defined by a plurality of braces that intersect at corners, the plurality of interconnected cells comprising at least a plurality of perimeter cells and a plurality of interior cells;*”

A urinal screen with a frame comprising opposing first and second faces and a plurality of interconnected cells defined by braces intersecting at corners is within the ordinary knowledge of a POSITA. In the annotation of the Pearl 3D excerpted from Ex. 1008, the Pearl 3D urinal screen has a plurality of interconnected cells (A) at least partially defined by a plurality of braces

(B) that intersect at corners (C). In the following annotated illustration, cells (A) are at least partially defined by a plurality of braces (B) that intersect at corners (C) and perimeter cells are shown by (Ap):



A POSITA understands the exact shape and intersection of braces defining the plurality of interconnected cells can be varied as a urinal screen “body 11 has a plurality of openings 12 formed therethrough. The body 11 may be formed having any desired number of such openings 12 or, alternatively, no openings 12 at all if desired. The openings 12 can have any desired size and shape and may be provided at any location or locations on the body 11.” Ex. 1010, c.2:30-35. When the openings have any desired shape, the braces (e.g., sides) of the cells change correspondingly.

The openings or cells (A) in KR’055 are defined by sides, or braces (B). See annotated FIG. 1, [VII.A.1.1].

[VII.A.2.3] *wherein the plurality of interior cells comprises a first cell, a second cell, and a third cell, said first cell and said second cell each partially defined by a first*

brace positioned between said first cell and said second cell, said second cell and said third cell each partially defined by a second brace positioned between said second cell and said third cell, and said first cell and said third cell each partially defined by a third brace positioned between said first cell and said third cell;”

Element [VII.A.2.3] in combination with the preceding elements is within the ordinary knowledge of a POSITA. First, second and third cells are noted by (A) in the annotation above. A POSITA would understand that the exact shape and intersection of braces defining the plurality of interconnected cells can be varied as described in Ex. 1011, [VII.A.2.2]. The braces B are further defined above.

A POSITA understands the exact shape and intersection of braces defining the plurality of interconnected cells can be varied as supported by the corresponding disclosure in Ex. 1011, see [VII.A.2.2] above.

[VII.A.2.4] *“wherein each of the first brace, the second brace, and the third brace comprises a first end and a second end, and”*

Element [VII.A.2.4] in combination with the preceding elements is within the ordinary knowledge of a POSITA. In the illustration above in [VII.A.2.2], braces (B) each comprise a first end and a second end. A POSITA would understand that the exact shape and intersection of braces having first and second ends defining the plurality of interconnected cells can be varied as disclosed in the ‘707 Patent discussed above in [VII.A.2.2].

[VII.A.2.5.A] *“wherein: the first end of the first brace intersects at a corner with the two other braces;”*

Element [VII.A.2.5.A] in combination with the preceding elements is within the ordinary knowledge of a POSITA. The intersection of the three brace B is at a corner C in the annotated

exhibit in [VII.A.2.2] above. A POSITA would understand that the exact shape and intersection of braces having first and second ends defining the plurality of interconnected cells can be varied. See Ex. 1011, [VII.A.2.2].

[VII.A.2.5.B] *“the first end of the second brace intersects at a corner with the two other braces; and”*

Element [VII.A.2.5.B] in combination with the preceding elements is within the ordinary knowledge of a POSITA. The intersection of the first end of the second brace B is at the corner C with two other braces (B) is shown in the image in [VII.A.2.2]. A POSITA would understand that the exact shape and intersection of braces having first and second ends defining the plurality of interconnected cells can be varied. See Ex. 1011, [VII.A.2.2].

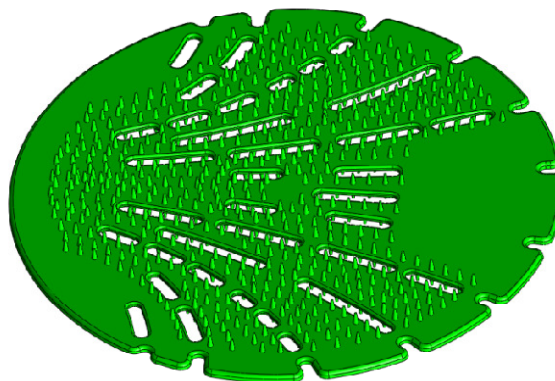
[VII.A.2.5.C] *the first end of the third brace intersects at a corner with the two other braces;*

Element [VII.A.2.5.C] in combination with the preceding elements is within the ordinary knowledge of a POSITA. See the intersection of the first end of the third brace B is at the corner C with two other braces (B) in the annotated image in [VII.A.2.2]. A POSITA would understand that the exact shape and intersection of braces having first and second ends defining the plurality of interconnected cells can be varied. Ex. 1011, [VII.A.2.2].

[VII.A.2.6] *a plurality of first posts each connected to a brace or corner of the frame and extending from away from the first face of the frame, and”*

Element [VII.A.2.6] is a combination with the preceding elements within the ordinary knowledge of a POSITA. The Pearl 3D Urinal Screen, as described in the Big D Catalog and Big D Pearl 3D (both product and catalog are prior art) is an example of a urinal screen that comprises a plurality of posts spread substantially across each of the opposing sides of the

screen. This includes the posts (P) connected to a brace (B) or corner (C) as shown in the annotated exhibit in [VII.A.2.2]. Also provided below is a rendering representative of the Pearl 3D product, showing the posts as connected to the braces and the corners.



The need to deflect or diffuse a stream of urine heading into a urinal is a well-known problem in the prior art, as is the use of a plurality of posts to address this problem. The screen of the '707 Patent also includes a plurality of vertical posts from the screen, the break up a urine stream.

The screen of KR'055 also includes a plurality of vertical posts (P) from the screen.

The prior art teaches a plurality of first posts each connected to a corner of the frame. To the extent that the frame comprises the braces in between openings of cells, the Pearl 3D has a frame comprising multiple corners, specifically, corners of rectangles of the frame. Moreover, the location of posts at frame corners is within the general knowledge of a POSITA -- a variety of references describe that posts can be placed in multiple locations on a screen, including at corners of the frame of the screen.

[VII.A.2.7] *“a plurality of second posts each connected to a brace or corner of the frame and extending away from the second face of the frame.”*

Element [VII.A.2.7] in combination with the preceding elements is within the ordinary knowledge of a POSITA. See [VII.A.2.6]. The Pearl 3D has two sides that are symmetrical, and the Pearl 3D further teaches a plurality of second posts each connected to a brace or corner of the frame and extending away from the second face of the frame. See Ex. 1010. A POSITA understands that the posts on the underside of the screen would separate the frame from the urinal so that urine and other fluids would not accumulate before going down the urinal drain and would also allow the urinal screen to have a longer useful life. A POSITA understands that the the Pearl 3D product has at least two second posts (in a comparable location to the two first posts of the top side) each connected to a brace and corner of the frame and extending away from the underside/second screen of the frame as Ex. 1009 states that the urinal screen has a “2 sided anti-splash texture; preventing splash back”.

3. Claim 38

[VII.A.3P] “*A urinal screen comprising:*”

See element [VII.A.1P]. Element [VII.A.3P] is disclosed.

[VII.A.3.1] “*a frame having:*”

See element [VII.A.1.1]. Element [VII.A.3.1] in combination with the preceding elements is within the ordinary knowledge of a POSITA.

[VII.A.3.1.A] “*a first face:*”

See element [VII.A.1.1. A]. Element [VII.A.3.1.A] in combination with the preceding elements is within the ordinary knowledge of a POSITA.

[VII.A.3.1.B] “*a second face opposite the first face; and*”

See element [VII.A.1.1.B]. Element [VII.A.3.1.B] in combination with the preceding elements is within the ordinary knowledge of a POSITA.

[VII.A.3.1.C] “*a plurality of openings extending through the frame between the first face and the second face;*

See element [VII.A.1.1.C]. Element [VII.A.3.1.C] in combination with the preceding elements is within the ordinary knowledge of a POSITA.

[VII.A.3.1.D] *a plurality of first posts extending from the first face of the frame; and”*

See element [VII.A.1.1.D]. Element [VII.A.3.1.D] in combination with the preceding elements is within the ordinary knowledge of a POSITA.

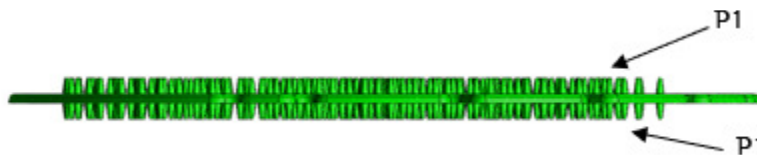
[VII.A.3.1.E] “*a plurality of second posts extending from the second face of the frame;”*

See element [VII.A.1.1.E]. Element [VII.A.3.1.E] in combination with the preceding elements is within the ordinary knowledge of a POSITA.

[VII.A.3.2] “*wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;”*

Element [VII.A.3.2] in combination with the preceding elements is within the ordinary knowledge of a POSITA, see generally [VII.A.1P], [VII.A.3.1.D], [VII.A.3.1.E]. A POSITA seeing the Pearl 3D’s two-sided nature as being a reversible urinal screen, with posts (each post having a tip/end) extending from each side of the urinal screen would understand that regardless of which side the urinal screen is placed into the urinal, the screen rests upon the ends of the plurality of posts across the screen, which form the base of the screen. The posts on the opposite side of the screen point away from the surface upon which the screen is set. A side view of Pearl 3D shows that on each side (annotated, below), there are a plurality of ends (of first posts (P1) on

one side, second posts (P2) on the other side). Depending on which side is set down, the screen rests on a base comprised of either the plurality of first posts, or the plurality of second posts. The posts on the opposite side from the base point away from the surface upon which the urinal screen is set.



[VII.A.3.3] “wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;

Element [VII.A.3.3] in combination with the preceding elements is within the ordinary knowledge of a POSITA. See generally [VII.A.3.2].

Because posts have the advantage of deflecting urine and eliminating urine splashing, a POSITA would be motivated to use posts on both sides of the “two-sided” urinal screen, the ends of the posts on the underside of the screen forming a base when set upon the urinal. A POSITA understands that deploying posts substantially across both sides of the screen would provide for the draining of fluids and promote a longer useful life for the screen.

[VII.A.3.4] “wherein a number of said plurality of first posts and a number of said plurality of second posts are positioned along a perimeter of at least some of the plurality of openings, so as to surround the at least some of the plurality of openings; and”

Element [VII.A.3.4] in combination with the preceding elements is within the ordinary knowledge of a POSITA. See generally [VII.A.1P], [VII.A.2.2], [VII.A.2.6], and [VII.A.2.7].

The Pearl 3D teaches a POSITA that the posts can be placed substantially across the side of a urinal screen in a manner that surrounds the perimeter of the openings, including at the corners of any one or more rectangular-shaped openings. See annotated diagram in [VII.A.3.2], the plurality of first posts (P1) (and plurality of the second posts (P2) on the underside) are positioned along a perimeter of most of the openings as to surround them.

[VII.A.3.5] *“wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least $\frac{1}{4}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame, such that posts positioned between the frame and the surface upon which the urinal screen is set can reduce splashing on a user of the urinal by deflecting a flow of urine which passes through said plurality of openings.”*

Element [VII.A.3.5] in combination with the preceding elements is within the ordinary knowledge of a POSITA. A POSITA seeing the Pearl 3D alone or in view of the ‘707 Patent and/or KR’055 patent would understand that when the Pearl 3D product is set on a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame may be positioned away from the surface by at least $\frac{1}{4}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame. See [VII.A.1.8], as the difference between [VII.A.1.8] and [VII.A.3.5] is a positioning away from the surface by $\frac{1}{3}$ of a thickness instead of $\frac{1}{4}$ of a thickness. The arguments set forth in [VII.A.1.8] are incorporated herein and the change from $\frac{1}{3}$ to $\frac{1}{8}$ is merely a design choice and/or obvious optimization.

VIII. Ground 3: FP Catalog Wave 2.0 as evidenced by FP Wave 2.0 in view of the '707 Patent and V-Screen renders claims 1, 19, and 38 obvious.

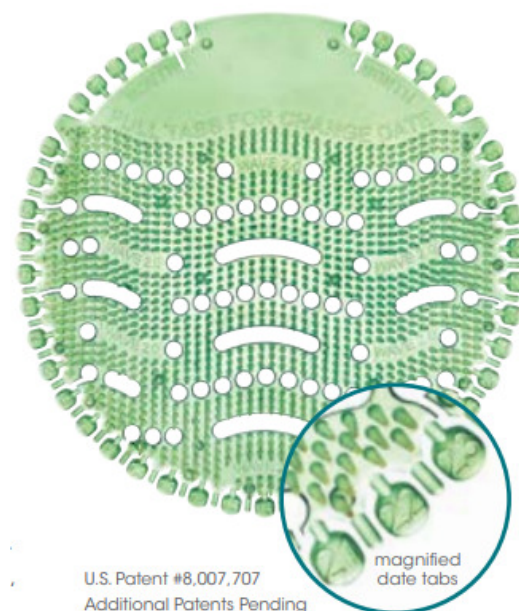
A. Overview of the FP Catalog Wave 2.0, FP Wave 2.0, '707 Patent, and V-Screen

FP Catalog Wave 2.0 and the Fresh Product October 17, 2013, website (freshproducts.com) advertisement for Wave 2.0 disclose and illustrate the Wave 2.0 product which is a urinal deodorizer for use in urinals, to cover or otherwise provide a screen for a urinal drain. The '707 Patent describes a method of manufacturing an air freshening article where the method is directed to producing a deodorizing urinal screen. (Ex. 1010, Abstract). The V-Screen is a flexible urinal screen having a plurality of openings, braces forming sides thereof, and protrusions around the openings.

1. Claim 1

[VIII.A.1.P] *“A urinal screen comprising:”*

Urinal screens were known to a POSITA. The “Wave 2.0” is a “urinal deodorizer”. Ex. 1014, p.7. The screen is a deodorizer indicated for waterless urinals and to help reduce the urine splash. The excerpt below from Ex. 1014 refers directly to the '707 Patent (Ex. 1011) and the Wave 2.0 product is marked with the '707 patent, thus a POSITA would combine the teachings of the FP Catalog Wave 2.0 with the '707 Patent. The V-Screen is a competitor urinal screen also obvious to combine.



[VIII.A.1.1] “*a frame having:*”

A urinal screen comprising a *frame* is within the ordinary knowledge of a POSITA. Wave 2.0 product of Ex. 1014 and 1015 has a frame.

[VIII.A.1.1.A] “*a first face;*”

A urinal screen having a frame with a first and second face is within the ordinary knowledge of a POSITA. The picture of Wave 2.0 reproduced in [VIII.A.1.P] above shows a top side of the body of the urinal deodorizing screen. This constitutes a first face.

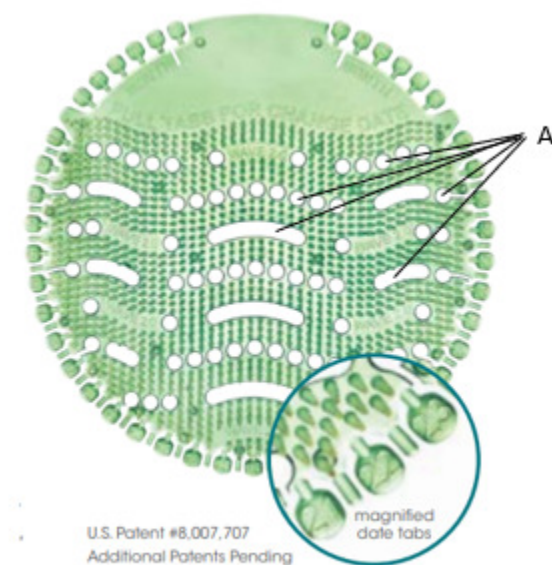
[VIII.A.1.1.B] “*a second face opposite the first face;*”

A urinal screen having a frame comprising opposing faces is within the ordinary knowledge of a POSITA. A POSITA would understand, based on the Wave 2.0 that the urinal screen has a second face opposite the first face. The underside of the Wave 2.0 is visible in the side view of the screen also shown in Ex. 1014, p.7 (below). Shorter posts are emanating from a second face opposite the first face:



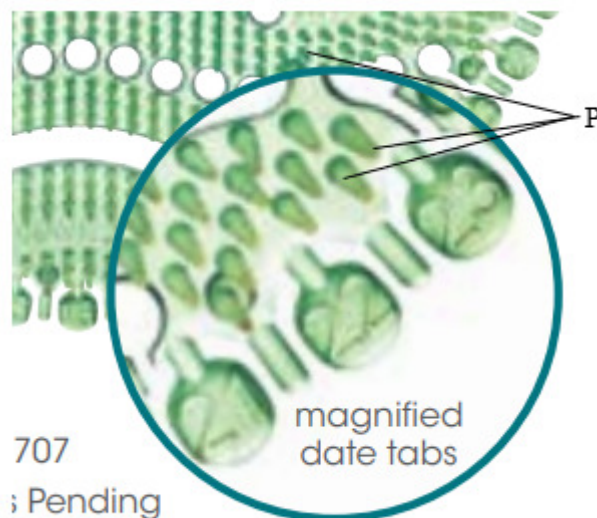
[VIII.A.1.2] “a plurality of openings extending through the frame between the first face and the second face;”

A urinal screen having *plurality of openings extending through the frame between the first face and the second face* is within the ordinary knowledge of a POSITA. The Wave 2.0 includes a plurality of openings (A), as shown in the annotated image from p.7 of Ex. 1014:



[VIII.A.1.3] “a plurality of first posts extending from the first face of the frame; and”

A urinal screen having *plurality of first posts extending from the first face of the frame* is within the ordinary knowledge of a POSITA. The Wave 2.0 includes a plurality of posts (P), as shown in the annotated call out image from Ex. 1014, p.7:



[VIII.A.1.4] “a plurality of second posts extending from the second face of the frame;”

A urinal screen having *plurality of second posts extending from the second face of the frame* is within the ordinary knowledge of a POSITA. See generally [VIII.A.1.1.B] and the Wave 2.0 including a plurality of second posts (P2), as shown in the annotated call out image from Ex. 1014, p.7:

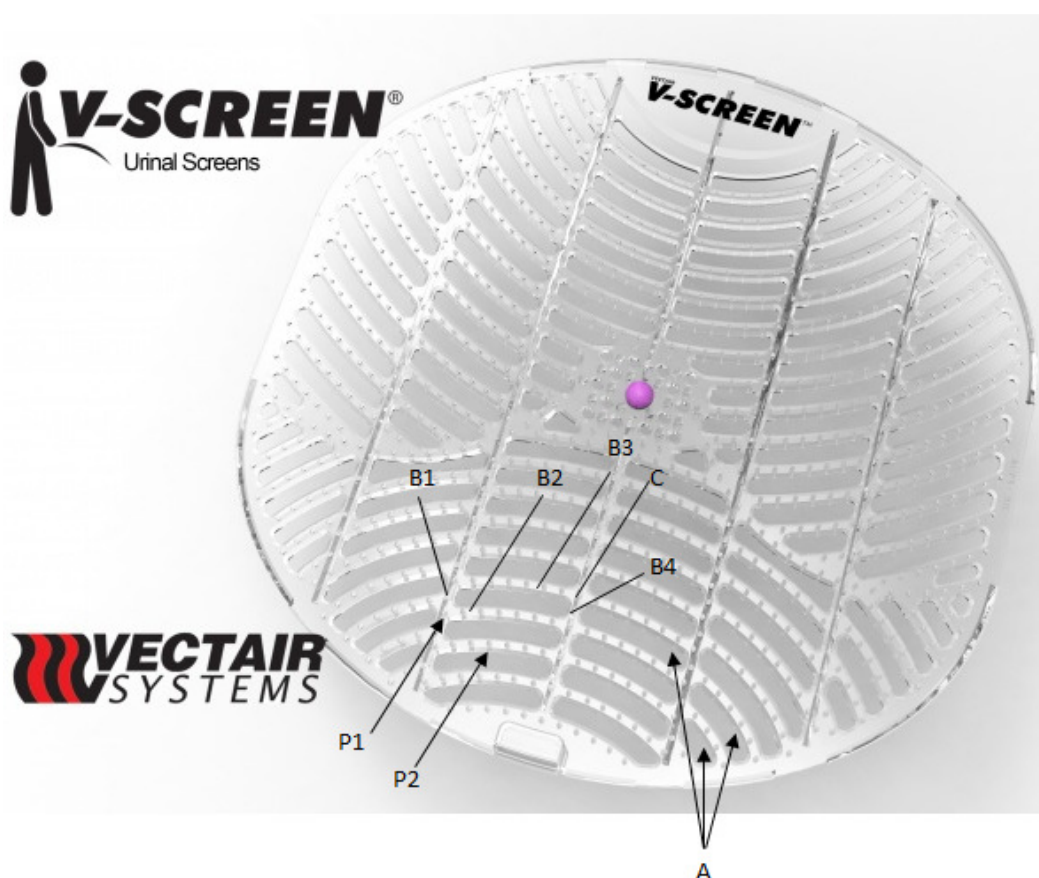


[VIII.A.1.5] “wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface;”

A urinal screen wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface is within the ordinary knowledge of the POSITA. The ‘707 Patent discloses “[T]he

illustrated body 11 has a plurality of openings 12 formed therethrough. The body 11 may be formed having any desired number of such openings 12 or, alternatively, no openings 12 at all if desired. The openings 12 can have any desired size and shape and may be provided at any location or locations on the body 11.” Ex. 1010, c.2:30-35.

Ex. 1017 excerpt below shows a urinal screen with a plurality of posts P1, P2 and plurality of openings A (as well as braces or sides B1-B4), where the openings occupy more than half of the surface areas of the frame.



The '707 Patent states “The openings 12 and notches 13 permit the screen 10 to conform to the drain portion of the urinal to provide a good fit. Additionally, the openings 12 and notches 13 function to permit fluids through the screen 10 to the drain portion to prevent the screen 10 from floating above or about the drain portion. Prior art designs

without such notches and/or openings floated over the drain portion, thus permitting solids to enter the drain portion.” *Id.* at c.2:45-52.

The ’707 patent discloses openings comprising at least half of a surface area of the frame and further indicates such element is desirable as the openings function to permit fluids through the screen and prior art designs without openings “floated over the drain portion, thus permitting solids to enter the drain.” Element [VIII.A.1.5] is disclosed in the ’707 Patent, which is from the field of endeavor of the ’098 patent (urinal screen improvements).

Element [VIII.A.1.4] is disclosed and made obvious.

[VIII.A.1.6] “*wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;*”

The Wave 2.0 shows two sides with posts. See [VIII.A.1.1.B] and [VIII.A.1.4]. The posts (P, P1) rest on the urinal surface by way of the first (or second) posts and each of the second (or first) posts extend away from the surface on which the screen is set as shown in the images above in [VIII.A.1.1.B] and [VIII.A.1.2], [VIII.A.1.4].

The Wave 2.0 side view shown in [VIII.A.1.4] indicates there are a plurality of ends (of first posts (P) on one side, second posts (P2) on the other side). Depending on which side is placed side down, the screen rests on a base comprised of either the plurality of first or second posts. The posts on the opposite side from the base point away from the surface upon which the urinal screen is set.

Posts have the advantage of deflecting urine and eliminating urine splashing, POSITA would be motivated to use posts on both sides of the urinal screen, the ends of the posts on the underside of the screen forming a base when set upon the urinal. A POSITA would further

understand that using posts spread substantially across both sides would promote the free flow of liquids to the drain and promote a longer life for the urinal screen.

[VIII.A.1.7] “*wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;*”

A POSITA understands that either side of the urinal deodorizer can be used. The posts (P, P1) rest on the urinal surface by way of the second (or first) posts and each of the first (or second) posts extend away from the surface on which the screen is set as shown in the images above in [VIII.A.1.1] and [VIII.A.1.2] and [VIII.A.1.4]. Element [VIII.A.1.7] is disclosed and/or made obvious.

[VIII.A.1.8] “*wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least $\frac{1}{3}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame;*”

A POSITA seeing the Wave 2.0 product (Ex. 1014, 1015) would understand that when the urinal screen is set on a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least $\frac{1}{3}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame. A POSITA would understand that this is a function of the length of the posts in relation to the thickness of the screen, and that these are merely design choices. For example, a side view of the Wave 2.0, referring to [VIII.A.1.4], shows that due to the “new and improved longer protrusions,” (1014, p.7) the frame is positioned away from the surface by at

least 1/3 of a thickness of the urinal screen as measured perpendicular to the first face of the frame.

A POSITA would understand that this is a function of the length of the posts in relation to the thickness of the screen. These are merely design choices. See [VIII.A.1.4], a total thickness of the urinal screen has a ratio to the distance between the frame and the surface upon which the urinal screen is set when the urinal screen is resting upon ends of the first or second posts, respectively. The ratio is greater than 1/3. The '707 Patent indicates that the size and shape of the screen body, openings, notches etc. are variable, and thus the length of the posts protruding from the screen is variable. A POSITA would further understand that it is obvious to design a screen width and a length of posts for a urinal screen with posts for spacing the screen from the surface to optimize spacing so that the urinal screen does not float off the drain. Ex. 1011, c2:35-40. Assuming *arguendo* there were minor differences between the claimed dimensions of the posts and the dimensions of the posts of the prior art, the claimed dimensions of the '098 patent would not perform any differently from the Pearl 3D product.

[VIII.A.1.9] *“wherein at least one of the plurality of first posts extends from a perimeter around each of said plurality of openings; and”*

At least one of the plurality of first posts extends from a perimeter around each of said plurality of openings in combination with the preceding elements is within the ordinary knowledge of a POSITA. See generally elements [VIII.A.1P], [VIII.A.1.1], [VIII.A.1.2], [VIII.A.1.3], [VIII.A.1.6], [VIII.A.1.7]. As shown in the annotated image [VIII.A.1.2], the Wave 2.0 uses first posts spread substantially across the first face, including posts positioned along a perimeter so as to surround at least some of the plurality of openings. Moreover as “[P]referably, the protrusions 14 are located substantially across the screen 10, thus increasing its surface area.

In contrast, flat surfaces reflect back the urine, leading to coated clothing and surrounding areas” (Ex. 1010, c2:57-60), the openings are so called apertures as they are unobstructed meaning that POSITA would understand that the posts must surround these openings.

See also Ex. 1017 and annotation in [VIII.A.1.5] as posts P1, P2 surround openings.

[VIII.A.1.10] “*wherein at least one of the plurality of second posts extends from a perimeter around each of said plurality of openings.*”

A urinal screen wherein at least one of the plurality of second posts extends from a perimeter around each of said plurality of openings is within the ordinary knowledge of a POSITA, see element [VIII.A.1.9]. In part, on the second side of the frame as shown in above in [VIII.A.1.4], the posts (P2) surround the openings and otherwise do not obstruct the openings. Element [VIII.A.1.9] is disclosed and made obvious.

2. Claim 19

[VIII.A.2P] “*A urinal screen comprising:*”

Element [VIII.A.2P] is disclosed in the Wave 2.0, the ‘707 Patent, and within the ordinary knowledge of a POSITA, see element [VIII.A.1P].

[VIII.A.2.1] “*a frame having:*”

Element [VIII.A.2.1] is disclosed in the Wave 2.0, see element [VIII.A.1.1]

[VIII.A.2.1.A] “*a first face;*”

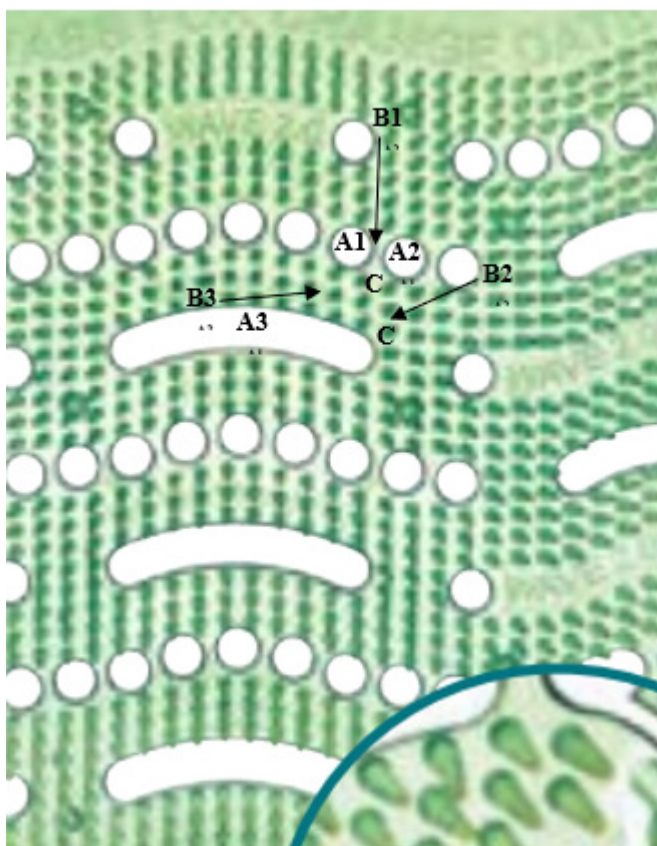
Element [VIII.A.2.1.A] is disclosed in the Wave 2.0, see element [VIII.A.1.2.A]

[VIII.A.2.1.B] “*a second face opposite the first face; and*”

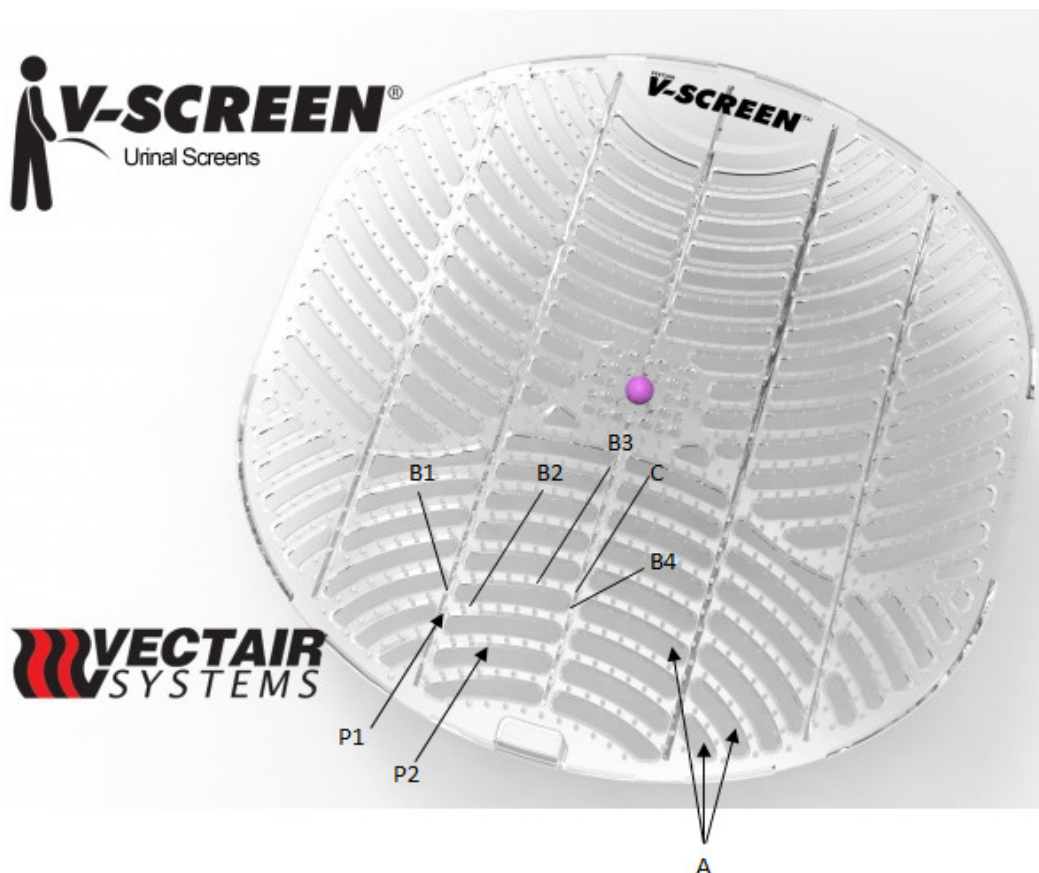
Element [VIII.A.2.1.B] is disclosed in the Wave 2.0, see element [VIII.A.1.2.B]

[VIII.A.2.2] *a plurality of interconnected cells at least partially defined by a plurality of braces that intersect at corners, the plurality of interconnected cells comprising at least a plurality of perimeter cells and a plurality of interior cells;*”

A urinal screen with a frame comprising opposing first and second faces and a plurality of interconnected cells defined by braces intersecting at corners is within the ordinary knowledge of a POSITA. For example, in a cutout of the Wave 2.0 liner taken from the product image on p. 7 of Ex. 1014, a POSITA can see a plurality of interconnected cells (annotations: A1, A2, A3) at least partially defined by braces (annotations: B1, B2, B3), where the braces intersect at corners.



See also Ex. 1017 excerpt below shows a urinal screen with a plurality of posts P1, P2 and plurality of interconnected cells A which are defined by braces B and where the braces intersect at corners C.



[VIII.A.2.3] wherein the plurality of interior cells comprises a first cell, a second cell, and a third cell, said first cell and said second cell each partially defined by a first brace positioned between said first cell and said second cell, said second cell and said third cell each partially defined by a second brace positioned between said second cell and said third cell, and said first cell and said third cell each partially defined by a third brace positioned between said first cell and said third cell;”

Element [VIII.A.2.3] in combination with the preceding elements is within the ordinary knowledge of a POSITA. First, second and third cells are noted by (A1, A2, A3) in the annotation above [VIII.A.2.2]. A POSITA would understand that the exact shape and intersection of braces defining the plurality of interconnected cells can be varied as described in the ‘707 Patent noted above in [VIII.A.2.2]. The braces B1, B2, B3 are further defined above.

A POSITA would understand that the exact shape and intersection of braces defining the plurality of interconnected cells can be varied as supported by the corresponding disclosure of the ‘707 Patent identified in [VIII.A.2.2] above. A urinal screen according to [VIII.A.2.2] is within the ordinary knowledge of a POSITA.

[VIII.A.2.4] “*wherein each of the first brace, the second brace, and the third brace comprises a first end and a second end, and*”

Element [VIII.A.2.4] in combination with the preceding elements is within the ordinary knowledge of a POSITA. In the illustration above in [VIII.A.2.2], braces (B1, B2, B3) each comprise a first end and a second end. A POSITA would understand that the exact shape and intersection of braces having first and second ends defining the plurality of interconnected cells can be varied as disclosed in the ‘707 Patent discussed above in [VIII.A.2.2].

[VIII.A.2.5.A] “*wherein: the first end of the first brace intersects at a corner with the two other braces;*”

Element [VIII.A.2.5.A] in combination with the preceding elements is within the ordinary knowledge of a POSITA. The intersection of the three brace B is at a corner C in the annotated exhibit in [VIII.A.2.2] above. A POSITA would understand that the exact shape and intersection of braces having first and second ends defining the plurality of interconnected cells can be varied as disclosed in the ‘707 Patent discussed above in [VIII.A.2.2].

[VIII.A.2.5.B] “*the first end of the second brace intersects at a corner with the two other braces; and*”

Element [VIII.A.2.5.B] in combination with the preceding elements is within the ordinary knowledge of a POSITA. The intersection of the first end of the second brace B is at the corner C with two other braces (B) in the annotated exhibit in [VIII.A.2.2] above. The illustrations above

at [VIII.A.1.3] and [VIII.A.2.2] show a plurality of first posts each connected to a brace or corner of the frame and extending away from the first face of the frame. For example, the first posts are shown spread substantially across the first face. See also the '707 Patent indicating the protrusions 14 are located substantially across the screen 10, thus increasing its surface area. In contrast, flat surfaces reflect back the urine, leading to coated clothing and surrounding areas. Ex. 1011, c2:57-60. A POSITA would understand that the exact shape and intersection of braces having first and second ends defining the plurality of interconnected cells can be varied as disclosed in the '707 Patent discussed above in [VIII.A.2.2].

[VIII.A.2.5.C] *the first end of the third brace intersects at a corner with the two other braces;*

Element [VIII.A.2.5.C] in combination with the preceding elements is within the ordinary knowledge of a POSITA. The intersection of the first end of the third brace B3 is at the corner C with two other braces (B) in the annotated exhibit in [VIII.A.2.2] above. A POSITA would understand that the exact shape and intersection of braces having first and second ends defining the plurality of interconnected cells can be varied as disclosed in the '707 Patent discussed above in [VIII.A.2.2].

[VIII.A.2.6] *a plurality of first posts each connected to a brace or corner of the frame and extending from away from the first face of the frame, and"*

Element [VIII.A.2.6] in combination with the preceding elements is within the ordinary knowledge of a POSITA. The first posts are shown spread substantially across the first face, including at braces and at the corners marking the frame. The FP Catalog Wave 2.0 shows the image reproduced in [VIII.A.1.3] and [VIII.A.2.2], where the image in [VIII.A.1.4] contains a magnified image making the posts easier to discern: The side view of the Wave 2.0 in

[VIII.A.1.4] shows the first posts, each connected to a brace or corner of the frame. Because posts have the advantage of deflecting urine and eliminating urine splashing as noted in the ‘707 Patent, a POSITA would be motivated to utilize posts substantially across the screen, including at corners of the braces and corners of the frame.

[VIII.A.2.7] “*a plurality of second posts each connected to a brace or corner of the frame and extending away from the second face of the frame.*”

Element [VIII.A.2.7] in combination with the preceding elements is within the ordinary knowledge of a POSITA. The image reproduced in [VIII.A.1.4] shows a plurality of shorter posts (indicated by the arrows P2) connected to a brace or corner of the frame and extending away from the second face of the frame.

3. Claim 38

[VIII.A.3P] “*A urinal screen comprising:*”

This element in combination with the preceding elements is within the ordinary knowledge of a POSITA. See element [VIII.A.2P].

[VIII.A.3.1] “*a frame having:*”

This element in combination with the preceding elements is within the ordinary knowledge of a POSITA. See element [VIII.A.1.1].

[VIII.A.3.1.A] “*a first face:*”

This element in combination with the preceding elements is within the ordinary knowledge of a POSITA. See element [VIII.A.1.1.A].

[VIII.A.3.1.B] “*a second face opposite the first face; and*”

This element in combination with the preceding elements is within the ordinary knowledge of a POSITA. See element [VIX.A.1.1.B].

[VIII.A.3.1.C] “*a plurality of openings extending through the frame between the first face and the second face;*

This element in combination with the preceding elements is within the ordinary knowledge of a POSITA. See element [VIII.A.1.1.C].

[VIII.A.3.1.D] *a plurality of first posts extending from the first face of the frame; and”*

This element in combination with the preceding elements is within the ordinary knowledge of a POSITA. See element [VIII.A.1.1.D].

[VIII.A.3.1.E] “*a plurality of second posts extending from the second face of the frame;”*

This element in combination with the preceding elements is within the ordinary knowledge of a POSITA. See element [VIII.A.1.1.E].

[VIII.A.3.2] “*wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;”*

This element in combination with the preceding elements is within the ordinary knowledge of a POSITA. See generally [VIII.A.1P], [VIII.A.1.1], [VIII.A.1.4], [VIII.A.1.1.C], [VIII.A.1.1.D] and [VIII.A.1.1.E]. Depending on which side is placed side down, the screen rests on a base comprised of either the plurality of first or second posts. A POSITA would be motivated to use posts on both sides of the urinal screen, the ends of the posts on the underside of the screen forming a base when set upon the urinal.

[VIII.A.3.3] “*wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;*

Element [VIII.A.3.3] in combination with the preceding elements is within the ordinary knowledge of a POSITA. See generally element [VIII.A.3.2]. Posts have the advantage of deflecting urine and eliminating urine splashing, POSITA would be motivated to use posts on both sides of the urinal screen, the ends of the posts on the underside of the screen forming a base when set upon the urinal. A POSITA would further understand that deploying posts substantially across both sides of the screen would provide for the draining of fluids and promote a longer useful life for the screen.

[VIII.A.3.4] “*wherein a number of said plurality of first posts and a number of said plurality of second posts are positioned along a perimeter of at least some of the plurality of openings, so as to surround the at least some of the plurality of openings; and*”

Element [VIII.A.3.4] in combination with the preceding elements is within the ordinary knowledge of a POSITA. See generally elements [VIII.A.1P], [VIII.A.2.2], [VIII.A.2.6], and [VIII.A.2.7].

A POSITA would understand that the posts (protrusions) can be placed substantially across the side of a urinal screen in a manner that surrounds the perimeter of the openings, including at the corners of any more rectangular-shaped openings. See also [VIII.A.1.4].

[VIII.A.3.5] “*wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 1/4 of a*

thickness of the urinal screen as measured perpendicular to the first face of the frame, such that posts positioned between the frame and the surface upon which the urinal screen is set can reduce splashing on a user of the urinal by deflecting a flow of urine which passes through said plurality of openings.”

Element [VIII.A.3.5] in combination with the preceding elements is within the ordinary knowledge of a POSITA. A POSITA seeing the Wave 2.0 alone or in view of the ‘707 Patent would understand that when the Wave 2.0 product is set on a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame may be positioned away from the surface by at least $\frac{1}{4}$ of a thickness of the urinal screen as measured perpendicular to the first face of the frame. See [VIII.A.1.8]. A difference between [VIII.A.1.8] and [VIII.A.3.5] is a positioning away from the surface by $\frac{1}{3}$ of a thickness instead of $\frac{1}{4}$ of a thickness. The arguments set forth in [VIII.A.1.8] are incorporated herein, the change from $\frac{1}{3}$ to $\frac{1}{8}$ is merely a design choice and/or obvious optimization.

IX. CONCLUSION

For the above reasons, Petitioner respectfully requests institution of *Inter Partes Review* of claims 1, 19 and 38 of the ‘098 Patent on Grounds 1-3.

X. STANDING (37 C.F.R. § 42.104(a))

Petitioner certifies that (1) the ‘098 patent is available for *inter partes* review and (2) Petitioner, Vectair Systems Inc. is not barred or estopped from requesting *inter partes* review on the grounds identified in this petition. This petition is filed in accordance with 37 C.F.R. §42.106(a). Concurrently filed herewith is a Power of Attorney per §42.10(b), respectively. The required fee is paid via Deposit Acct. No. 23-1123. The Office is authorized to charge fee deficiencies and credit overpayments to Deposit Acct. No. 23-1123 (Customer ID No. 27367).

XI. MANDATORY NOTICES (37 C.F.R. §42.8(a)(1))

Pursuant to 37 C.F.R. §42.8, Petitioner provides the following mandatory disclosures.

A. Real Parties-In-Interest (37 C.F.R. §42.8(b)(1))

B. Related Matters (37 C.F.R. §42.8(b)(2))

No related matters are pending.

C. Designation of Lead and Back-Up Counsel (37 C.F.R. §42.8(b)(3))

Petitioner appoints Z. Peter Sawicki (Reg. No. 30,214) as its lead counsel and Amanda M. Prose (Reg. No. 72,345) as its back-up counsel, each at the following address: WESTMAN, CHAMPLIN & KOEHLER, P.A., 121 South 8th Street, Suite 1100, Minneapolis, MN 55402, phone number (612) 334-3222 and facsimile (612) 334-3312.

D. Service Information (37 C.F.R. §42.8(b)(4))

Petitioner consents to electronic service by email at:

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned PETITION FOR INTER PARTES REVIEW specified in 37 C.F.R. § 42.24 have 13,998 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24(a)(1)(i). This word count was prepared using Microsoft Word.

Respectfully submitted,

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Petition for *Inter Partes* Review of U.S. Patent No. 10,145,098

CERTIFICATION OF SERVICE

The undersigned hereby certifies that the foregoing PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,145,098, Petitioner's Power of Attorney, and all associated exhibits were served on April 19, 2024 on the following address via FedEx Express delivery service on the Patent Owner at the office correspondence address for the attorney of record for U.S. Patent 10,145,098:

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