

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KOHLER CO.,
Petitioner,

v.

DELTA FAUCET CO.,
Patent Owner.

Case No. IPR2024-00700
U.S. Patent No. 10,393,363

PATENT OWNER'S DEMONSTRATIVES FOR ORAL ARGUMENT

Kohler Co.
v.
Delta Faucet Co.

Inter Partes Review

No. IPR2024-00700

U.S. Patent No. 10,393,363

Patent Owner's Oral Argument – July 10, 2025

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Key deficiencies of grounds

◆ Tseng

- ◆ Does not disclose “outer illumination surface” of independent claim 10
- ◆ Does not disclose “translucent material” for the second/third embodiments

◆ Tse

- ◆ Cover is not a “light pipe”
- ◆ Cover does not “surround the water outlet”
- ◆ Petitioner ignores “laterally intermediate the water outlet and the housing wall” of claims 8 and 22

Key deficiencies of grounds

◆ Tseng + Mizuno

- ◆ Tseng does not benefit from Mizuno's hydroelectric generator
- ◆ Mizuno's required components would not fit in Tseng

◆ Tseng + Schneider

- ◆ Combination would not have resulted in claimed features and worsens Tseng

◆ Tse + Carter

- ◆ Carter discloses a water jet for under-the-water use
- ◆ Combined structure would block Tse's light

◆ Objective Indicia Show Non-obviousness of Claims

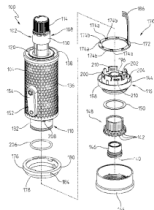
U.S. Patent No. 10,393,363


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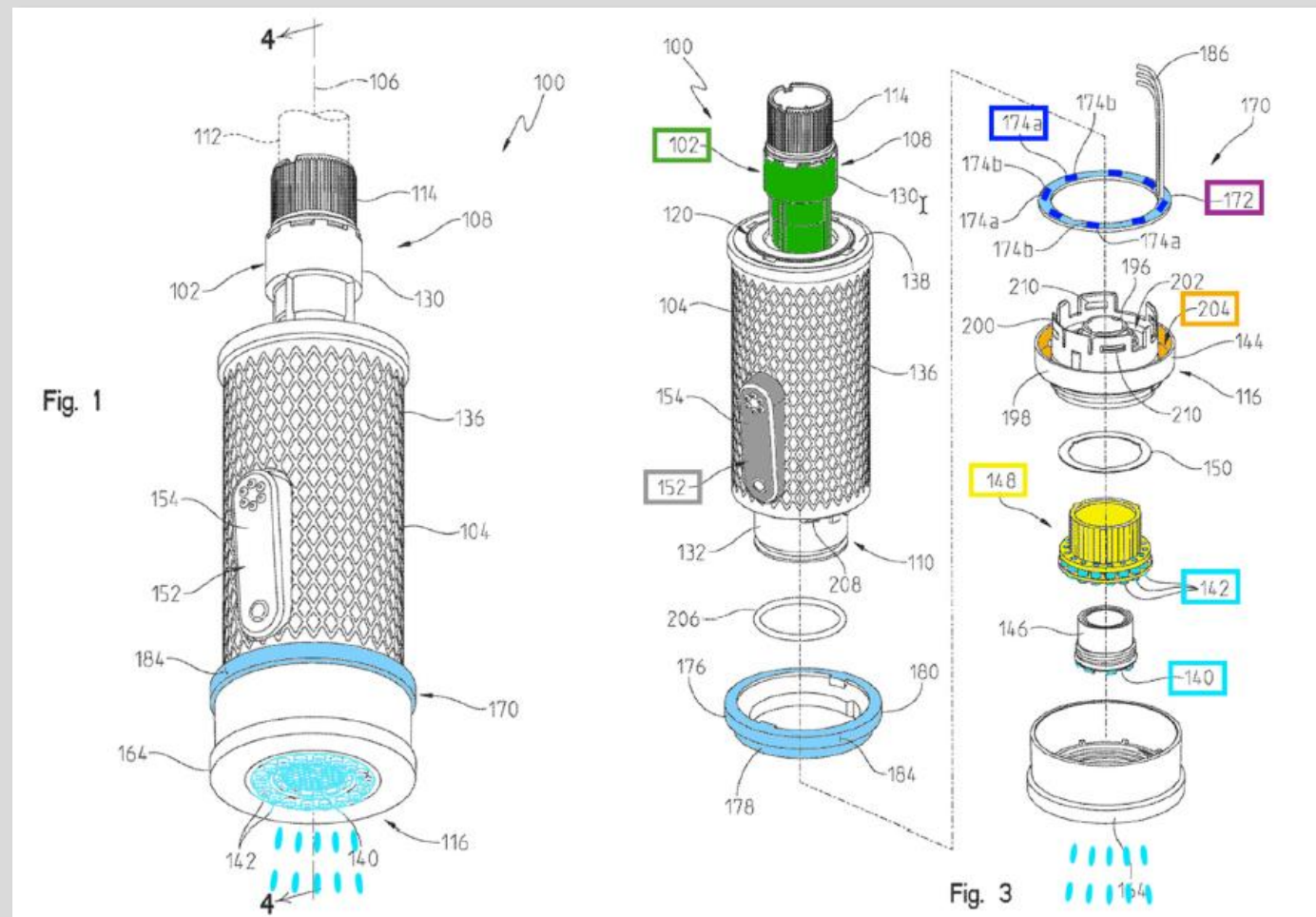
(12) United States Patent
Weaver et al.

(10) Patent No.: US 10,393,363 B2
(45) Date of Patent: Aug. 27, 2019

(54) ILLUMINATION DEVICE FOR A FLUID DELIVERY APPARATUS
(71) Applicant: Delta Faucet Company, Indianapolis, IN (US)
(72) Inventors: Casey S. Weaver, Carmel, IN (US); Martin Jennings Kimbrell, Wauconda, IL (US); Alisha Buescher, Jamestown, IN (US); Gerald R. Hayes, Lebanon, IN (US)
(73) Assignee: Delta Faucet Company, Indianapolis, IN (US)
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
(21) Appl. No.: 15/958,674
(22) Filed: Apr. 20, 2018
(65) Prior Publication Data
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Related U.S. Application Data
(60) Provisional application No. 62/490,008, filed on Apr. 25, 2017.
(51) Int. Cl.
 B05B 1/18 (2006.01)
 E03C 1/02 (2006.01)
 F21S 9/04 (2006.01)
 F21V 7/00 (2006.01)
 H05K 1/18 (2006.01)
(52) U.S. CL.
 CPC F21V 33/004 (2013.01); B05B 1/185 (2013.01); E03C 1/02 (2013.01); F21S 9/046 (2013.01); F21S 10/002 (2013.01); F21V 7/0066 (2013.01); F21V 23/0471 (2013.01); F21S 10/00 (2013.01); F21W 2131/30 (2016.08); H05K 1/181 (2013.01);
(58) Field of Classification Search
 CPC : F21V 33/004; F21V 7/0066; F21V 23/0464; F21V 23/0471; F21V 23/0442; F21S 9/046; F21S 10/002; F21S 10/00; E03C 1/02; B05B 1/185; F21V 21/0333; F21V 21/510; H05K 2201/10106; H05K 1/181; H05K 2201/10287; H05K 2201/10522; F21W 2131/30; A61L 2209/12
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 2,036,567 A 4/1936 Cannon
 2,105,632 A 1/1938 Berneseer
 (Continued)
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 CA 1135365 A 11/1982
 CN 2438270 Y 7/2001
 (Continued)
Primary Examiner — Joseph L. Williams
Assistant Examiner — Jose M. Diaz
(74) Attorney, Agent, or Firm — Faegre Baker Daniels LLP
(57) ABSTRACT
 A sprayhead for dispensing water includes a housing and an illumination device supported by the housing. The illumination device includes a plurality of light emitters supported by a substrate, and a translucent light pipe defining a closed loop to diffuse light outwardly from the light emitters.
24 Claims, 11 Drawing Sheets



Ex. 1001, Face



Ex. 1001, Figs. 1, 3

'363 Patent recognizes and solves faucet lighting problems

The present disclosure provides for an illumination device associated with a sprayhead that provides a light pipe illuminated by at least one light emitter. Illustratively, the sprayhead may comprise a pull-down sprayhead configured to be releasably coupled to a delivery spout of a faucet, or a pendant showerhead configured to be suspended downwardly from a ceiling in a shower stall.

Ex. 1001, 1:27-33

housing. The illumination device includes a substrate, a plurality of light emitters supported by the substrate, and a translucent light pipe defining a closed loop to diffuse light from the light emitters outwardly away from the housing. A hydro-generator may be in fluid communication with the waterway to provide electricity to the illumination device.

Ex. 1001, 1:40-45

'363 Patent – Claim 10

10. A pull-down sprayhead for a faucet, the sprayhead comprising:

- a housing defining a longitudinal axis extending between a proximal end and a distal end;

- a waterway received within the housing;

- a sprayface fluidly coupled to the waterway and defining a water outlet; and

- an illumination device supported by the housing, the illumination device including a substrate, a plurality of light emitters supported by the substrate, and a translucent light pipe including an outer illumination surface extending perpendicular to the longitudinal axis of the housing, the translucent light pipe defining a closed loop to diffuse light from the light emitters outwardly to the outer illumination surface.

'363 Patent – Claim 1

1. A sprayhead comprising:
a housing defining a longitudinal axis;
a waterway received within the housing;
a sprayface fluidly coupled to the waterway and supporting a water outlet; and
an illumination device supported by the housing, the illumination device including a substrate, a plurality of light emitters supported by the substrate, and a translucent light pipe defining a closed loop to diffuse light from the light emitters outwardly away from the housing.

'363 Patent – Claim 19

19. A pendant showerhead comprising:
a housing defining a longitudinal axis;
a waterway received within the housing;
a sprayface fluidly coupled to the waterway and including
a water outlet; and
an illumination device supported by the sprayface, the
illumination device including a substrate, a plurality of
light emitters supported by the substrate, and a trans-
lucent light pipe defining a closed loop surrounding the
water outlet to diffuse light from the light emitters
outwardly in a direction parallel to the longitudinal
axis.

Petitioner's Grounds

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1	1–5, 10, 12–16	103	Tseng ¹
2	9, 11	103	Tseng, Mizuno ²
3	17, 18	103	Tseng, Schneider ³
4	1, 6–9, 19–23	103	Tse ⁴
5	1, 6–9, 19–23	103	Tse, Carter ⁵
6	24	103	Tse, Spangler ⁶
7	24	103	Tse, Carter, Spangler

Institution Decision, 6

Petitioner's Grounds

Challenged Claims	Grounds	Asserted References
1	1, 4, 5	Tseng; Tse; Tse and Carter
2-5	1	Tseng
6-8	4, 5	Tse; Tse and Carter
9	2, 4, 5	Tseng and Mizuno; Tse; Tse and Carter
10	1	Tseng
11	2	Tseng and Mizuno
12-16	1	Tseng
17-18	3	Tseng and Schneider
19-23	4, 5	Tse; Tse and Carter
24	6	Tse (or Tse and Carter) and Spangler

Tseng ground is deficient

- ◆ Tseng does not disclose “outer illumination surface extending perpendicular to the longitudinal axis of the housing” (Claims 3, 10-18)
- ◆ Petitioner relies on multiple embodiments without proper obviousness analysis (Claims 1-5, 9, 10-18)

Tseng lacks claimed “outer illumination surface”

10. A pull-down sprayhead for a faucet, the sprayhead comprising:

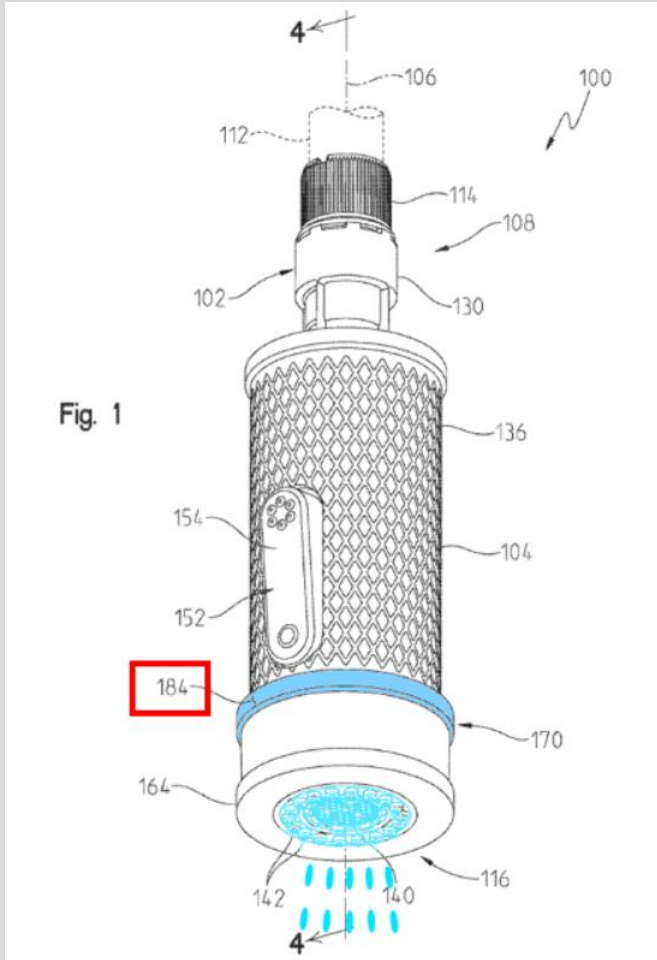
- a housing defining a longitudinal axis extending between a proximal end and a distal end;

- a waterway received within the housing;

- a sprayface fluidly coupled to the waterway and defining a water outlet; and

- an illumination device supported by the housing, the illumination device including a substrate, a plurality of light emitters supported by the substrate, and a translucent light pipe including an outer illumination surface extending perpendicular to the longitudinal axis of the housing, the translucent light pipe defining a closed loop to diffuse light from the light emitters outwardly to the outer illumination surface.

Claim 10's “outer illumination surface” is side illumination surface



Ex. 1001, Fig. 1

*“outer illumination surface
extending perpendicular to the
longitudinal axis of the housing”*

tion device supported by the housing. The illumination device includes a substrate, a plurality of light emitters supported by the substrate, and a translucent light pipe including an outer illumination surface extending perpendicular to the longitudinal axis of the housing. The translucent light pipe defines a closed loop to diffuse light outwardly from the light emitters outwardly to the outer illumination surface.

Ex. 1001, 1:52-59

Claim 10's “outer illumination surface” is side illumination surface

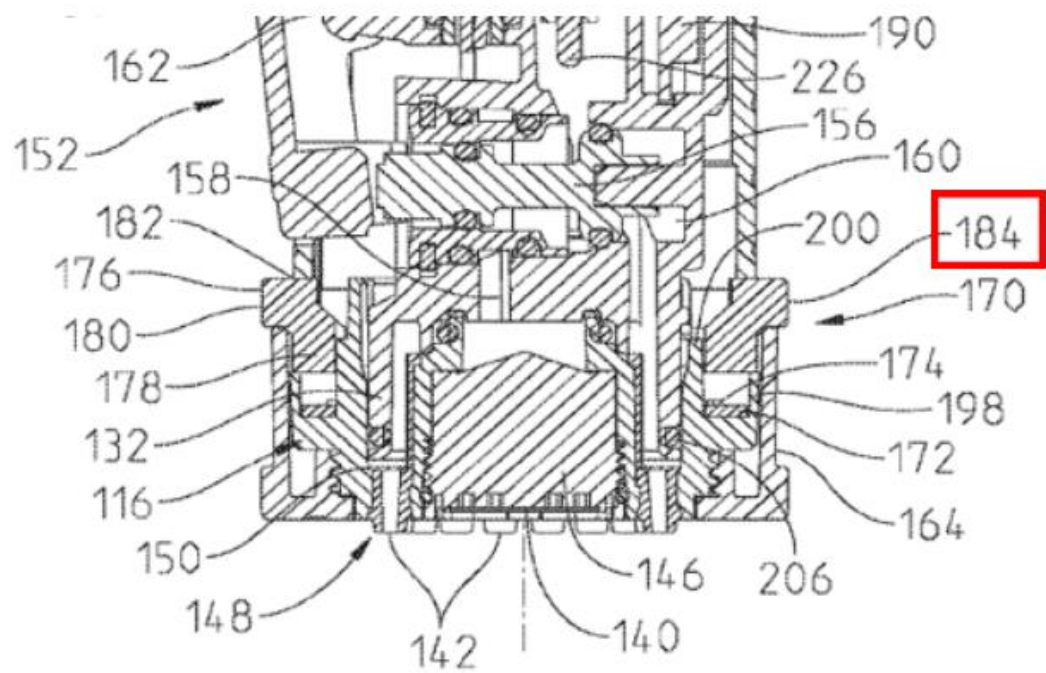


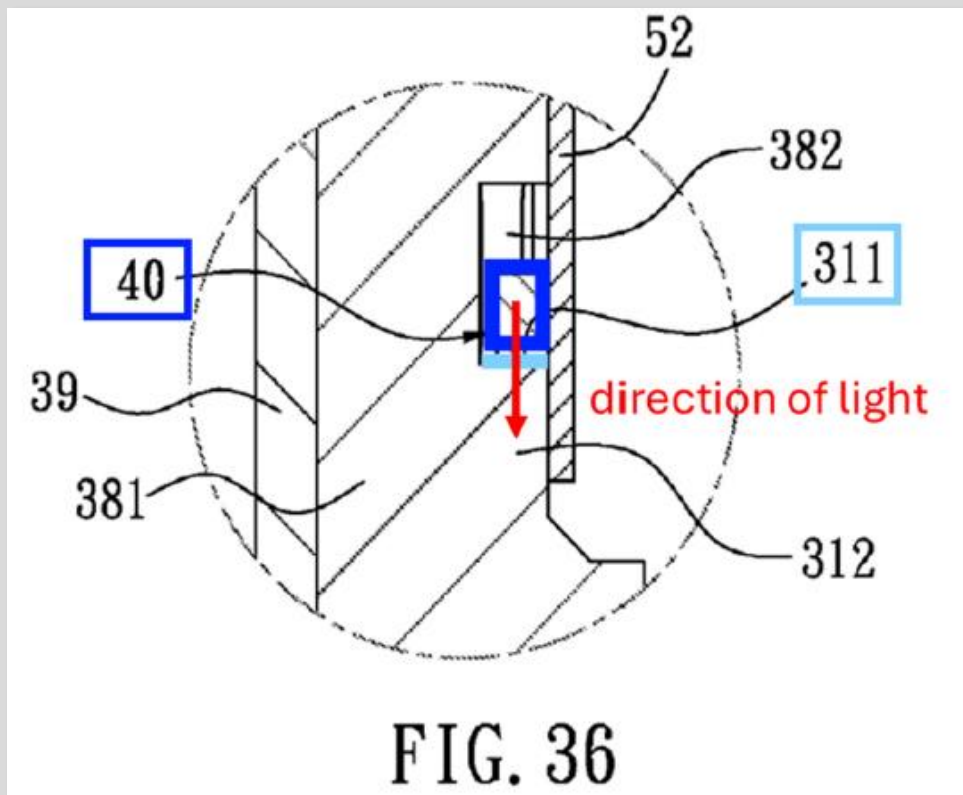
Fig. 4

axial direction. The proximal portion 180 extends radially outwardly from the distal portion 178 within a gap or opening 182 between the housing 104 and the cap 164 for transmitting light radially toward an outer illumination surface 184. The outer illumination surface 184 defines a closed loop and is positioned radially outside of the outer wall 136 of the housing 104.

Ex. 1001, 4:3-9

Ex. 1001, Fig. 4

Tseng directs light downward from LED 40 through input face 311 and through output face 313

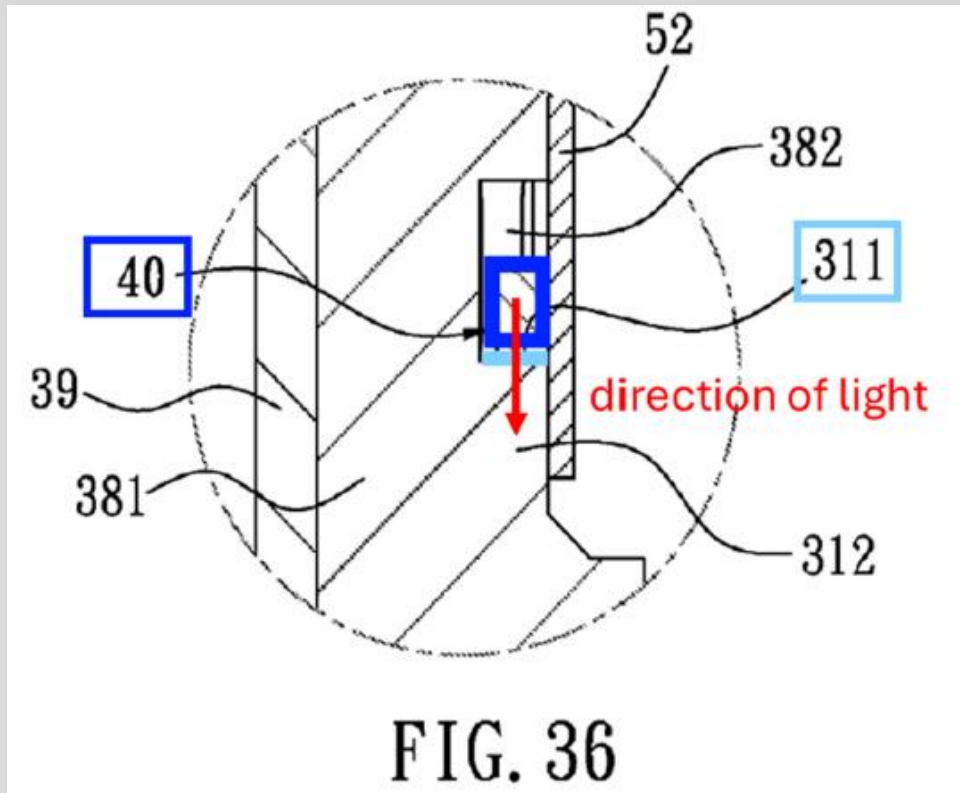


Ex. 1004, Fig. 36

[0097] a light conductor 38 formed in a sleeve shape to retain with a guiding member 39, wherein the light conductor 38 has an outer cliff 381, and the outer cliff 381 has plural indentations 382 arranged around a middle section thereof, wherein each indentation 382 has an input face 311 formed on a bottom end thereof, and the outer cliff 381 also has an output face 313 defined on a bottom end thereof. In addition, the outer cliff 381 among input faces 311 of the plural indentations 382 and the output face 313 forms a light transmission portion 312.

Ex. 1004 ¶ [0097]

Petitioner's expert Mr. Cook agrees the light enters downward through input face 311



Ex. 1004, Fig. 36

Q So the input face 311 is the surface where light enters, correct?

A Correct.

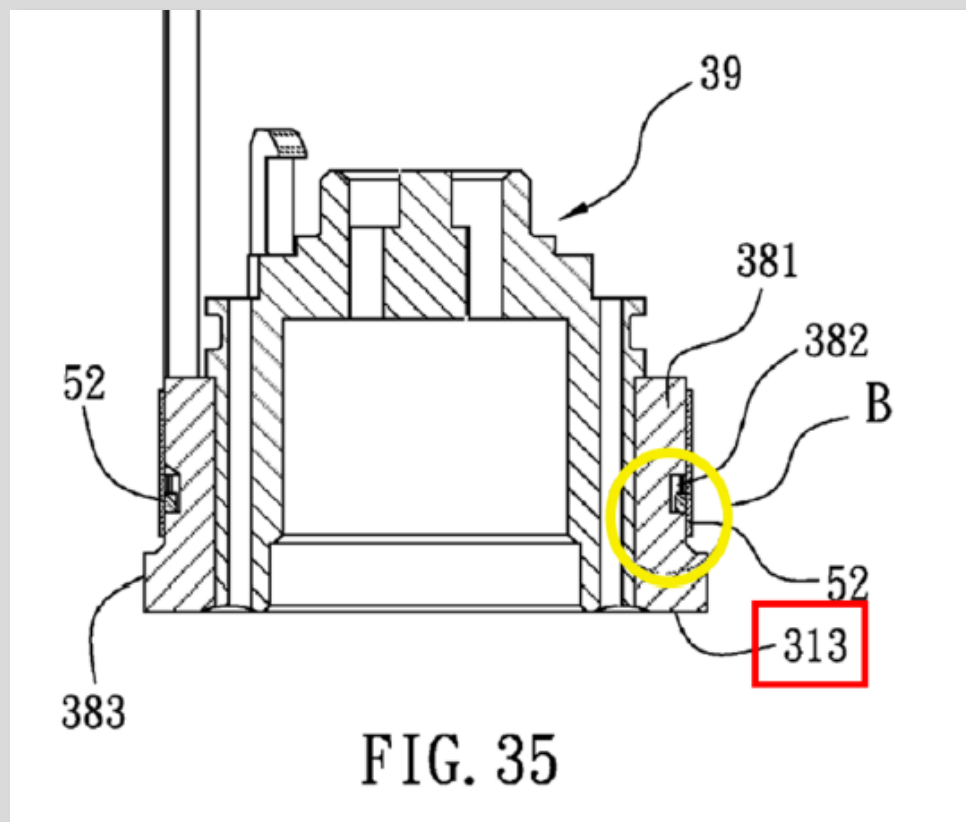
Ex. 2005, 78:2-4

Q Just so the record's clear, Tseng describes light transmitting from LED 40 downward, through input face 311, downward through output face 313, correct?

A That is correct.

Ex. 2005, 81:16-20

In Tseng, the bottom end of the light conductor is the only output face

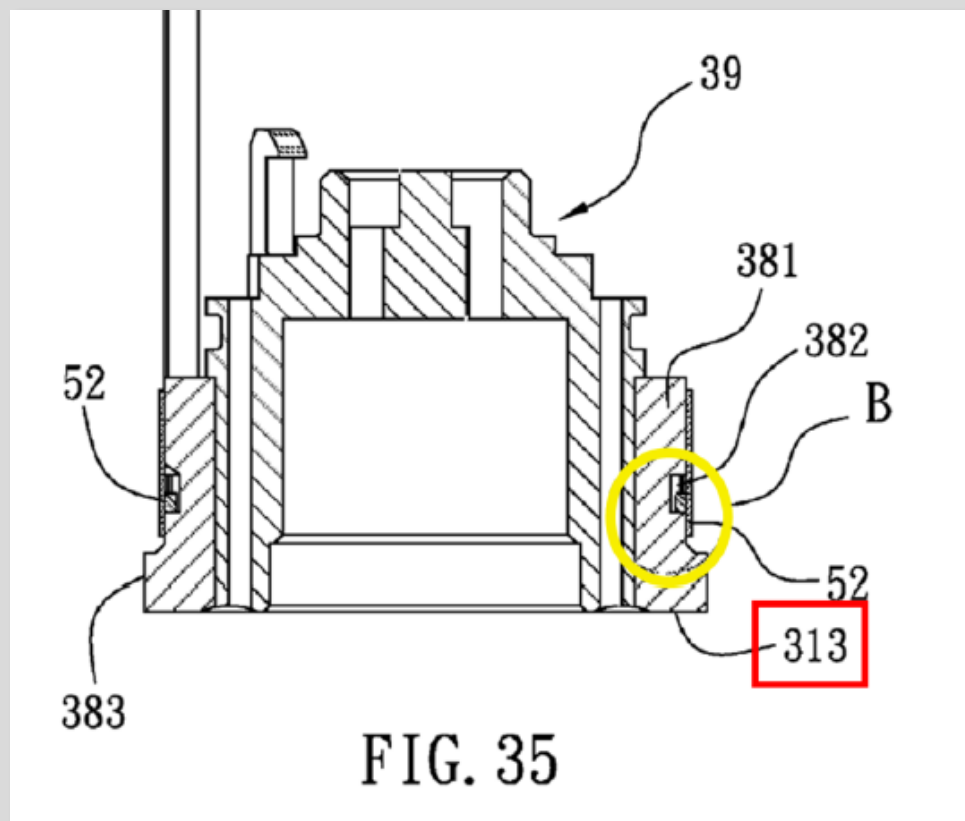


Ex. 1004, Fig. 35

[0097] a light conductor 38 formed in a sleeve shape to retain with a guiding member 39, wherein the light conductor 38 has an outer cliff 381, and the outer cliff 381 has plural indentations 382 arranged around a middle section thereof, wherein each indentation 382 has an input face 311 formed on a bottom end thereof, and the outer cliff 381 also has an output face 313 defined on a bottom end thereof. In addition, the outer cliff 381 among input faces 311 of the plural indentations 382 and the output face 313 forms a light transmission portion 312.

Ex. 1004 ¶ [0097]

Mr. Cook agrees Tseng's bottom surface is the only output face



Ex. 1004, Fig. 35

Q And the output face 313 is the surface where light exits, correct?

A Correct.

Ex. 2005, 81:5-7

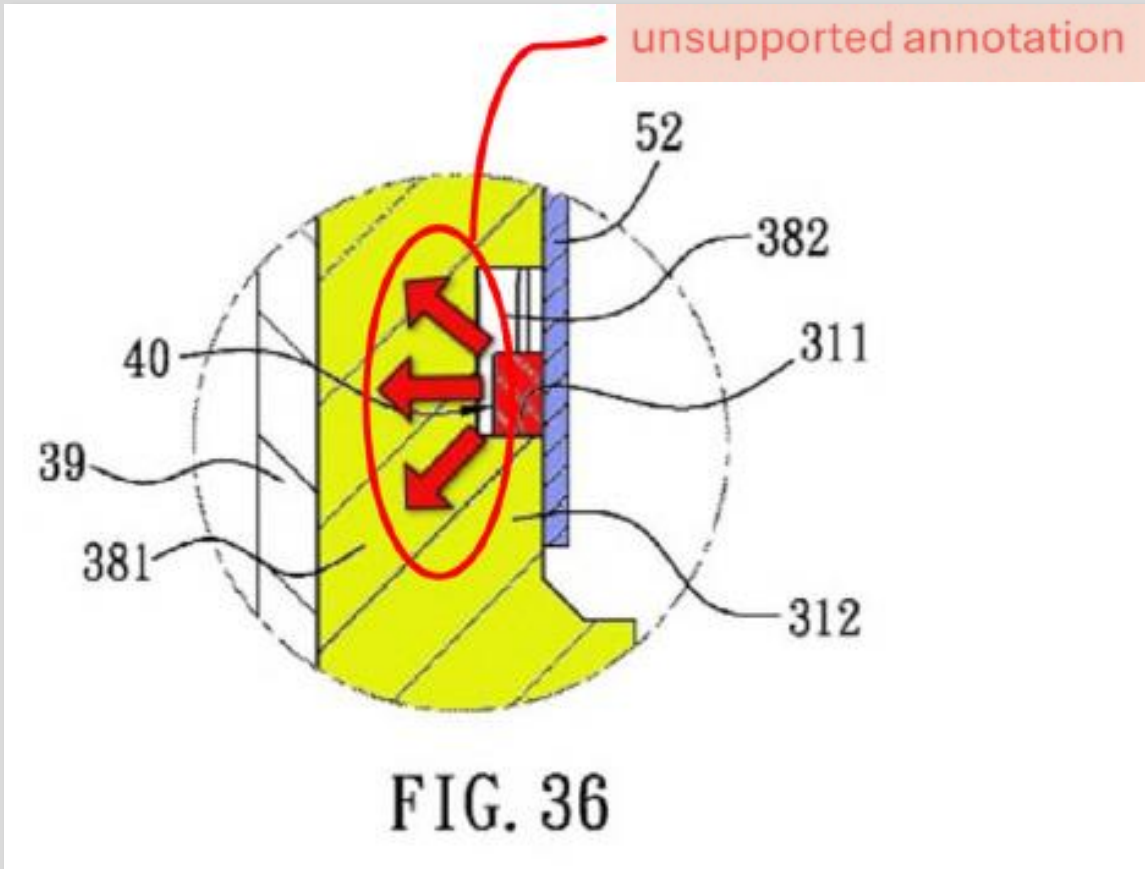
Q Other than the bottom surface of Figure 35, no other surfaces are marked as output face 313, correct?

MR. HERMAN: Objection. Form.

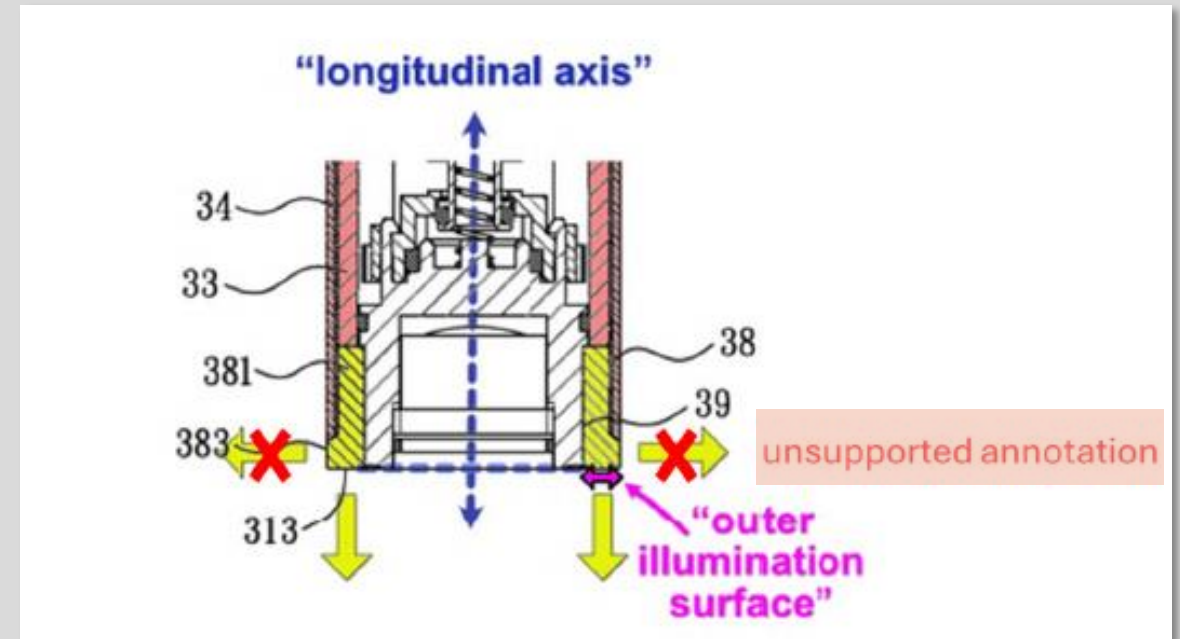
A That is correct, from what I see in Figures 35 and 36.

Ex. 2005, 81:22-82:5

Petitioner's interpretation of Tseng is not supported by either expert



Petition, 31



Petition, 36

Petitioner attempts to use Reply to backfill Petition

Tseng employs the same LEDs 40 in all its embodiments. Tseng, [0068], [0094], [0101]. In some embodiments, the LEDs face down, while in others they face inward. *E.g., id.*, Figs. 5, 12, 13 (facing downward), 35-36 (facing inward). To

Reply, 7

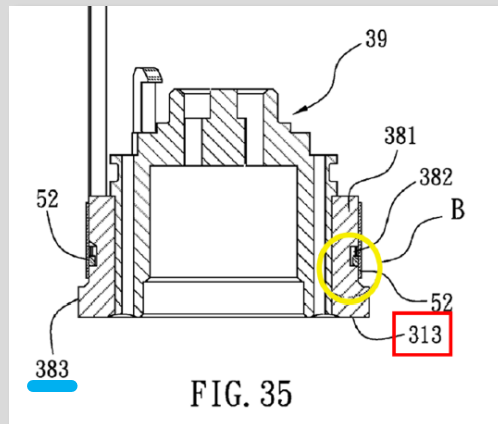
- ◆ The argument is meritless because LEDs in Figures 35 and 36 face downward toward the input face, as Mr. Cook conceded
- ◆ Petitioner did not have an expert declarant for the Reply—any new argument raised in the Reply is attorney argument

Petitioner attempts to use Reply to backfill Petition

wrong. Tseng labels 383 in a way that makes clear that it faces perpendicularly outward from its spray-head. Tseng, Fig. 32 (item number 383 points to a side surface). And it explains that the purpose of this component is to “enhance light

Reply, 7-8

◆ But “item number 383” is not an output face



Ex. 1004, Fig. 35

[0098] To enhance light transmission, the outer cliff 381 of the light conductor 38 has an annular protrusion 383 extending outwardly adjacent to the bottom end thereof to contact with a bottom end of an external sleeve 34.

Ex. 1004 ¶ [0098]

Board should not consider new arguments

- ◆ The Reply attempts to justify Petitioner's incorrect annotation
 - ◆ The arguments are meritless
- ◆ Regardless, the Board should not consider them



Henny Penny Corp. v. Frymaster LLC, 938 F.3d 1324, 1331 (Fed. Cir. 2019)

“The Board did not abuse its discretion in ... disregarding [Petitioner's] new theory first raised in reply.”

Petitioner misinterprets Delta's positions and ignores Tseng's disclosure

type of material diffuses and scatters light. Ex. 2003, ¶¶ 40-42. Thus, regardless of which way the LEDs face, at least some light will reach all of Tseng's various output faces. Ex. 1003, ¶¶ 174-175. Indeed, Patent Owner's expert agreed with this during

Reply, 7

- ◆ Tseng doesn't say anything about side illumination
- ◆ Tseng expressly says the bottom side is the output face
- ◆ Petitioner speculates—it wants to read Tseng that the light comes out from the side

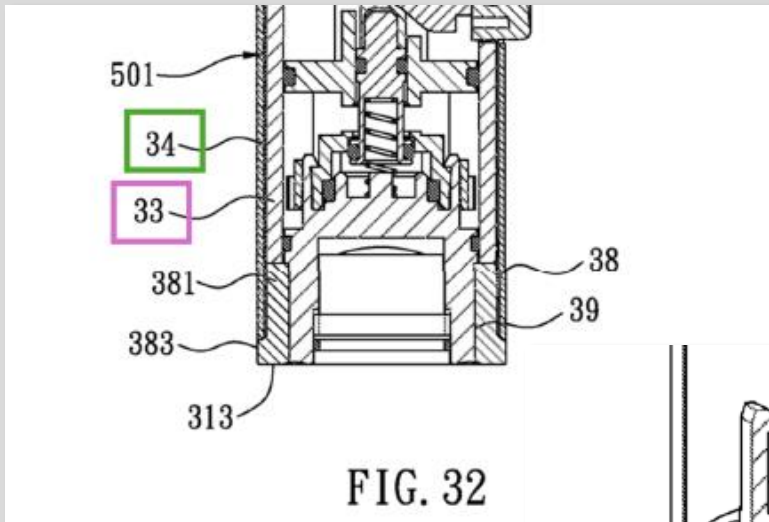
Petitioner misinterprets Delta's positions and ignores Tseng's disclosure

Patent Owner also proves Petitioner's point. Patent Owners explains that Tseng's ring 52 and sleeves 33/34 "would block light transmission in the perpendicular direction" out the sides of element 381. Response, 32. This is a *de facto* admission that in the light pipe, some light is in fact traveling in a perpendicular direction. Annular protrusion 383 is not so blocked, so light will be perpendicularly emitted from here.

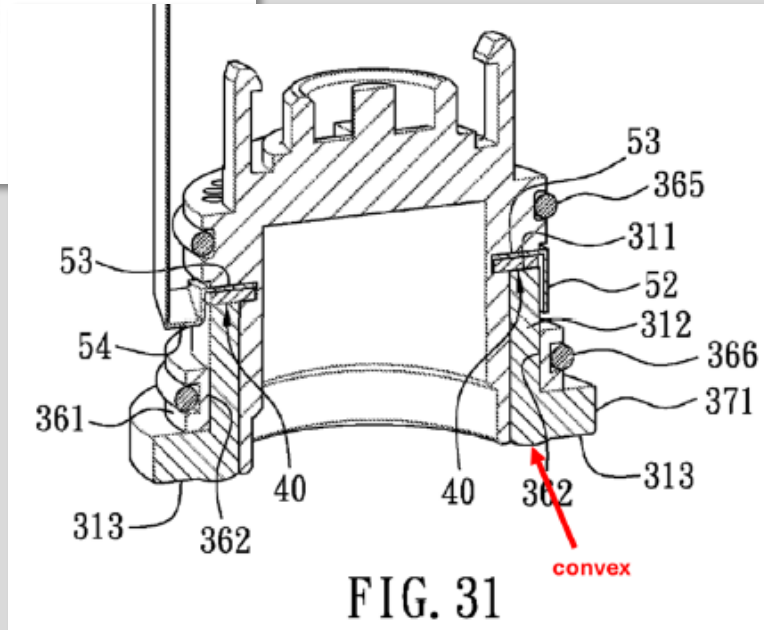
Reply, 7

◆ The Reply speculates without any expert support

Dr. Klopp already addressed Reply's arguments



Ex. 1004, Figs. 31, 32



- ◆ No meaningful light would reach the side of 383 to call it an “outer illumination surface.” Ex. 1015, 37:22-38:2
- ◆ “C-shaped ring 51 and sleeves 33 and 34 would limit the light—like a flashlight inside a tube.” Ex. 2003 ¶ 101
- ◆ A POSITA would have recognized Tseng’s output face is convex to focus the light to the downward direction. Ex. 2003 ¶ 106

Tseng ground is deficient

- ◇ Tseng does not disclose “outer illumination surface extending perpendicular to the longitudinal axis of the housing” (Claims 3, 10-18)
- ◇ Petitioner relies on multiple embodiments without proper obviousness analysis (Claims 1-5, 9, 10-18)

Petition relies *only* on the first embodiment for translucent material

- ◆ Petition stated that Tseng's light conductor is made of translucent material, citing only Tseng paragraph 70, the first embodiment. Petition, 15
- ◆ Mr. Cook agreed that he relied only on the first embodiment for translucent material.

Q And in support of your statement that Tseng's light conductor is made from translucent material, the only paragraph of Tseng that you rely on is paragraph 70; is that correct?

A That is correct, in this paragraph, yes.

Ex. 2005, 74:3-8

Petition relies on the second and third embodiments for the rest of claim limitations

- ◆ “This petition focuses on the second and third embodiments. ... Figures 30 and 37 provides two examples[.]” Petition, 15; Reply, 12
- ◆ As the Board acknowledged, light conductors are structured differently in each embodiment

Tseng discloses three embodiments in which the light conductors and circuit boards differ structurally. Figures 9 and 11–13, reproduced below, illustrate the light conductor and circuit board of the first embodiment:

Institution Decision, 9

Petition fails to establish a *prima facie* case of obviousness when combining different embodiments

- ◆ Petitioner could have articulated why a POSITA would combine Tseng's different embodiments; it chose not to



Apple Inc. v. Arigna Tech. LTD., IPR2022-01037, Paper 9, 20 (PTAB Dec. 2, 2022)

“[T]he [Petitioner] must articulate the basis on which it concludes” obviousness even when “[c]ombining two embodiments disclosed adjacent to each other” to avoid hindsight.



In re Stepan Co., 868 F.3d 1342, 1345-46 n.1 (Fed. Cir. 2017)

“[C]ombining [] embodiments from a single reference[] [needs] motivation to ... combin[e].”

Arendi S.A.R.L. v. Apple Inc., 832 F.3d 1355, 1362 (Fed. Cir. 2016)

“[R]eferences to ‘common sense’ ... cannot be used as a wholesale substitute for reasoned analysis and evidentiary support, especially when [] a limitation missing.”

Petition fails to establish a *prima facie* case of obviousness when combining different embodiments

- ◇ Dr. Klopp explained why a POSITA might not combine, based on Tseng's disclosure
 - ◇ Tseng's second and third embodiments are to illuminate an external object. Using translucent material is a suboptimal choice and is against Tseng's "advantage"—"brilliant illumination"

[0102] Accordingly, the pull-out faucet of the present invention has advantages as follows:

[0103] 1. The spray head 30 has brilliant illumination as being fixed on or pulled away from the pull-out faucet 1.

Ex. 1004 ¶¶ [0102]-[0103]

Petitioner's Reply contradicts Petition

and third spray-head embodiments render the claims obvious. The Petition did not combine embodiments. Tseng itself already explains that all its embodiments are to use translucent material to form its light conductor. Tseng also already explains that its various spray-heads operate similarly to generate, transmit, and emit light. This

Reply, 12

- ◆ The reply is simply wrong. Tseng never discloses its material for the second and third embodiments
- ◆ The Petition expressly said that it relies on the second and third embodiments—de facto admission of combination

Petitioner's legal support is also deficient

- ◇ Petitioner argues there is no requirement to articulate what the reference lacks when a “single reference [] teach[es] everything the claims require” (citing *Game and Tech.*). Reply, 12
- ◇ Petitioner argues a motivation is not required when the reference is not being modified (citing *Realtime Data*). Reply, 12



***Game and Tech. Co. v. Activision Blizzard Inc.*, 926 F.3d 1370, 1381 (Fed. Cir. 2019)**

Confirming “a patent can be obvious in light of a single prior art reference if it would have been obvious to modify that reference.”

But here, Petitioner modifies Tseng.



***Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1373 (Fed. Cir. 2019)**

“[T]he Board was not required to [find] a motivation to combine given its reliance on O'Brien alone.”

O'Brien discloses only one embodiment of “data compression apparatus 100.”

Mr. Cook's opinion is conclusory and a verbatim repetition of the Petition

Petition, 29-30	Ex. 1003, ¶¶163-164
Next, Tseng explains that its “light conductor” is “made of translucent material to guide lights.” (<i>Id.</i> , ¶0070; <i>see also id.</i> , ¶0072 (“light conductor” is a light “guiding member”).) Figures 30 and 37 provide two examples of how this “light conductor” can be structured[.]	Next, Tseng explains that its “light conductor” is “made of translucent material to guide lights.” (Ex. 1004, ¶0070.) Similarly, Tseng explains that its “light conductor” functions as a light “guiding member.” (<i>Id.</i> , ¶0072.) Figures 30 and 37, both reproduced below, provide two examples of how this “light conductor” can be structured[.]

POR, 20



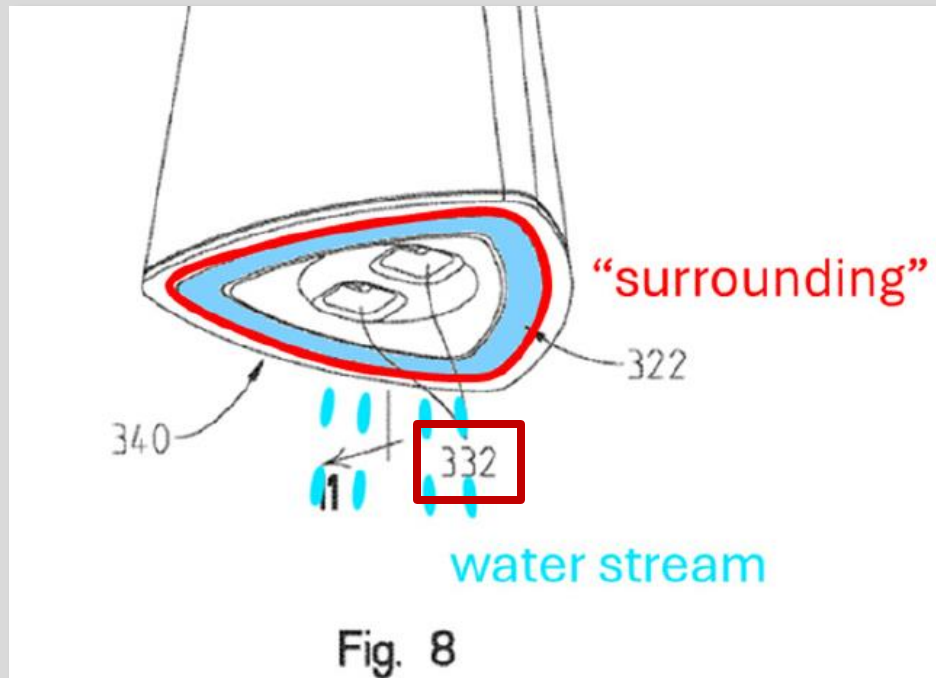
Xerox Corp. v. Bytemark, Inc., IPR2022-00624, Paper 9, 15 (PTAB Aug. 24, 2022)

Expert declaration that “merely repeats, verbatim, the conclusory assertion for which it is offered to support” without citing “any additional supporting evidence or provide any technical reasoning to support” is entitled to little weight.

Tse ground is deficient

- ◆ Tse's cover does not “surround the water outlet” (Claims 19-24)
- ◆ Tse's cover is not a light pipe (Claims 1, 6-9, 19-24)
- ◆ Petitioner ignores “laterally intermediate the water outlet and the housing wall” (Claims 8 and 22)

The '363 patent's surrounding the water outlet means encircling all water openings/holes



Ex. 1001, Fig. 8

translucent light pipe or diffuser 346 is coupled to the substrate 342 and defines a closed loop laterally surrounding the water outlet openings 332. More particularly, the hous-

Ex. 1001, 6:3-5

Q In Figures 1 through 11 of the '363 patent, the '363 patent depicts water outlets completely surrounded by a light pipe, correct?

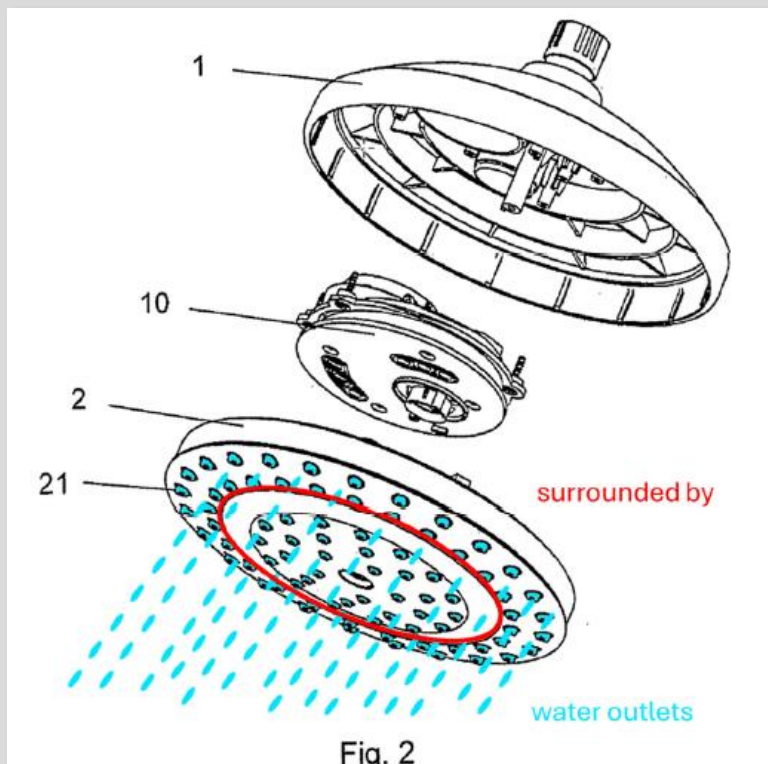
A That is correct.

Q The '363 patent does not depict any water outlets not completely surrounded by a light pipe, correct?

A That is correct.

Ex. 2005, 109:15-22

Tse does not disclose surrounding all water outlet openings/holes



Ex. 1005, Fig. 2

Q Tse's cover 23 does not completely surround every water outlet hole in Tse's perforated member 21, correct?

A Correct.

Q All of Tse's ten figures depict the same embodiment, correct?

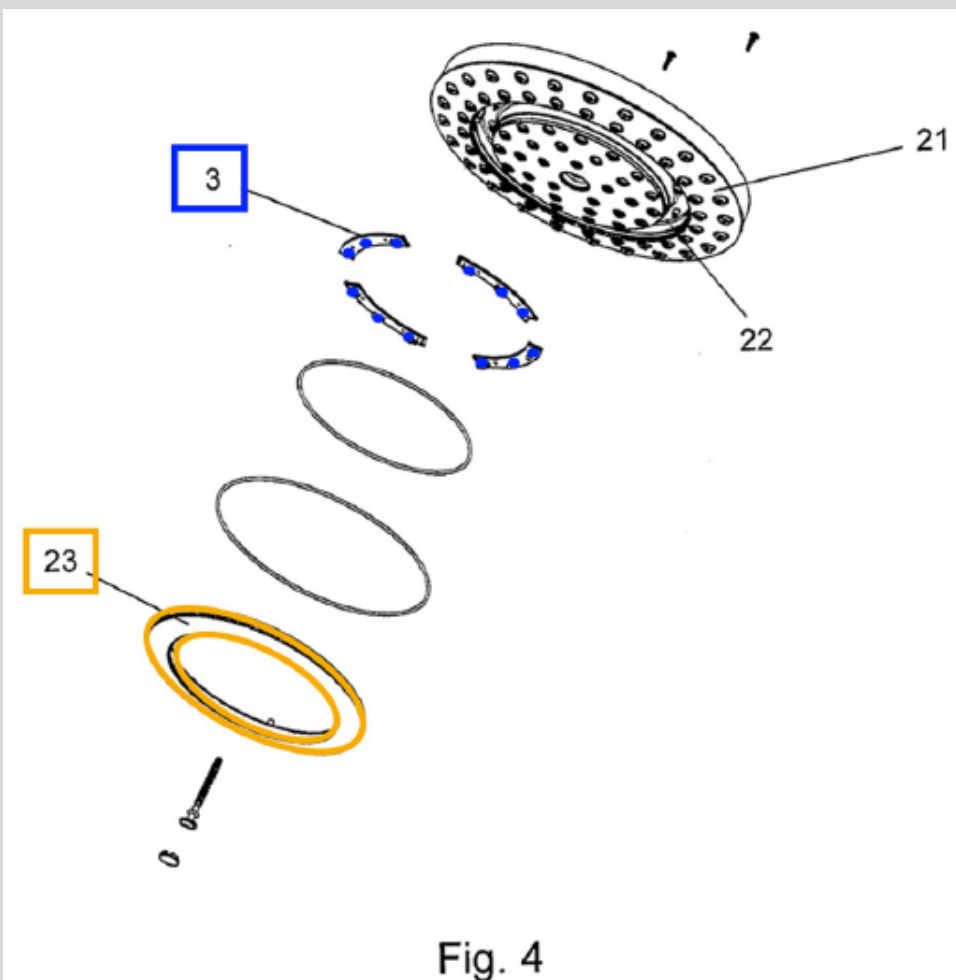
A Correct.

Ex. 2005, 148:18-21, 153:1-3

Tse ground is deficient

- ◆ Tse's cover does not "surround the water outlet" (Claims 19-24)
- ◆ Tse's cover is not a light pipe (Claims 1, 6-9, 19-24)
- ◆ Petitioner ignores "laterally intermediate the water outlet and the housing wall" (Claims 8 and 22)

Tse's cover is not a light pipe



Ex. 1005, Fig. 4

147. Moreover, a POSITA would readily see from the figures in Tse that the thickness-to-width aspect ratio of the cover is too thin to be an effective light pipe, and too thin to avoid hot spots and effectively diffuse light from the emitters. Mr.

Ex. 2003 ¶ 147

to make the point of connection watertight. The cover 23 of the groove 22 of the perforated member 21 is made of transparent or semi-transparent material so that the light emitted by the light emitting means 3 can be seen. In this

Ex. 1005, 6:27-29



*Lululemon USA Inc., v. Nike, Inc.,
IPR2024-00159, Paper 31, 21-23 (PTAB May 21, 2025)*

A POSITA can interpret patent drawings “for all they reasonably convey to one skilled in the art.”

Petitioner's analysis is flawed—can't have it both ways

◆ Implies Tse's cover would have to be thick

(*See id.*, ¶ 381.) A thicker cover with curved surfaces will produce more light diffusion than a thin, flat cover. (*See id.*, ¶ 382.) A POSITA would have considered the use of a thicker, curved cover to be nothing more than a routine design choice. (*See id.*, ¶ 383.) Forming the shower head with such a cover would

Petition, 64-65

◆ Implies Tse's cover would have to be thin

The top surface of Tse's "*light pipe*" (cover 23) sits flush with the surface of its "*sprayface*" (perforated member 21). (*See Ex. 1005, Figs. 1, 2, 7.*) Because of

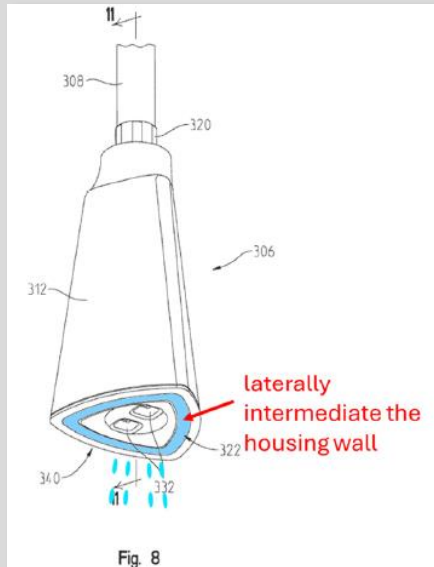
Petition, 68

Tse ground is deficient

- ◆ Tse's cover does not "surround the water outlet" (Claims 19-24)
- ◆ Tse's cover is not a light pipe (Claims 1, 6-9, 19-24)
- ◆ Petitioner ignores "laterally intermediate the water outlet and the housing wall" (Claims 8 and 22)

Petitioner ignores “laterally intermediate the water outlet and the housing wall” of claims 8 and 22

'363 Patent



Ex. 1001, Fig. 8

face *laterally intermediate the water outlet and the housing wall.*” A POSITA would have understood that for the light pipe to be “*laterally intermediate the water outlet and the housing wall,*” the light pipe would be at the outer edge of the sprayface, while still surrounding the water outlets. Ex. 1001, 6:5-9, Figure 8 (below left). Otherwise, “intermediate ... the housing wall” would be meaningless. Wasica

has meaning

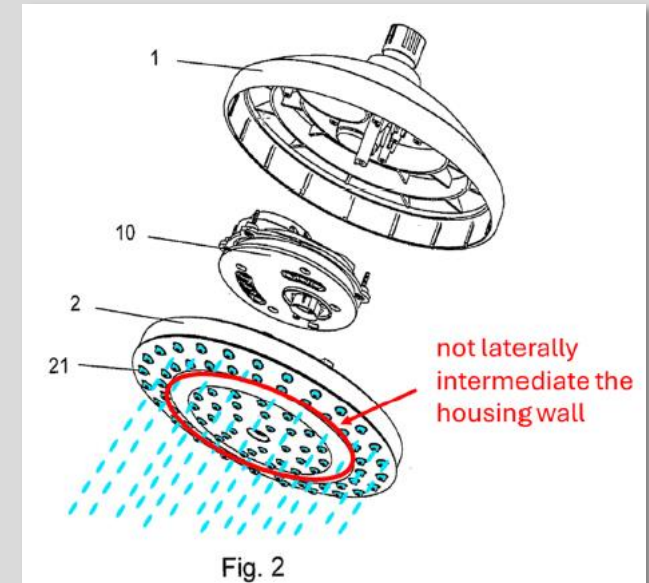
POR, 67

As explained above, Tse’s shower head includes a “housing” (the shower body) and “spray face” (perforated member 21). (See *supra* limitations [1-1] and [1-3].) Moreover, Tse’s “light pipe” (cover 23) is located “*laterally intermediate the housing and the spray face’s “water outlet”* (the holes through the central portion of the perforated member):

has no meaning

Petition, 67

Tse



Ex. 1005, Fig. 2

Tseng + Mizuno ground is deficient (Claims 9, 11)

- ◆ Tseng does not benefit from Mizuno's hydroelectric generator and associated components
- ◆ Mizuno's hydroelectric generator and associated components would not fit in Tseng's narrow faucet

Mizuno describes problems from adding a hydroelectric generator and solves by adding additional components

another faucet connected by the same piping, and when the feed-water pressure to the faucet provided with the LED illumination lamp and the hydroelectric generator is too high, excessive power is supplied to the LED illumination lamp causing various inconveniences such as malfunctions.

Ex. 1008 ¶ [0007]

[0008] When supplying power generated by the hydroelectric generator to the LED illumination lamp, it is conceivable to provide a voltage-stabilizing element on a supply path thereof to stabilize the

Ex. 1008 ¶ [0008]

illumination lamp. However, even then, when excessive power is generated in the hydroelectric generator, a large amount of heat is generated by the voltage-stabilizing element, and there is a risk

Ex. 1008 ¶ [0008]

Mr. Cook agrees with Delta that Mizuno's solution requires multiple components in addition to a hydroelectric generator

Q Mizuno describes that adding a hydroelectric generator, a voltage-stabilizing element, a metal component cooled by water flow, and a metal heat transfer part all would be required to allow stable operation of a faucet that includes a hydroelectric generator, correct?

MR. HERMAN: Objection. Form.

A I would say, in Mizuno's embodiment, yes.

Ex. 2005, 122:3-11

44

Petition fails to meet its burden to articulate a POSITA would have succeeded in combining Tseng and Mizuno

- ◆ Petition asserts that Mizuno's hydro-generator would have been readily adapted to Tseng because Tseng's "chamber 321" is large

Ex. 1004, ¶ [0001]; *see also* Ex. 1003, ¶¶ 265-269.) Moreover, a POSITA would have recognized that the large internal "chamber 321" within Tseng's shower head could be readily adapted to accommodate Mizuno's hydro-generator. (*See id.*, ¶

Petition, 45

- ◆ Petition does not explain how to fit not just the hydro-electric generator, but all the required components Mizuno teaches

Tseng discloses the opposite—narrow space; Mr. Cook agrees

Tseng

[0108] 6. The circuit board **50** is a flexible printed circuit which is fixed in a narrow space easily. In other words, the circuit board **50** is fixed in the spray head **30** easily.

Ex. 1004 ¶ [0108]

Q So Tseng's faucet is a narrow space, right?

MR. HERMAN: Objection. Form.

Mr. Cook

A It appears to be narrow, yes.

Ex. 2005, 88:8-11

Mizuno's objective is incompatible with Tseng's objective

Tseng

[0009] The primary objective of the present invention is to provide a pull-out faucet which is assembled easily and quickly, decreases its production cost, avoids damage an electric wire in the pull-out faucet, and illuminates lights from a shower assembly.

Ex. 1004 ¶ [0009]

[0107] 5. The electric wire 60 is inserted along the tunnel 13 of the flexible pipe 10, so it is not broken easily. Preferably, the electric wire 60 is mounted in the flexible pipe 10 conveniently and securely.

Ex. 1004 ¶ [0107]

retains/protects wire

Mizuno

water passage. In this faucet, because power can be supplied to the LED illumination lamp by power generated by force of the faucet itself, there is no need to perform electrical wiring work for connecting the LED illumination lamp of the faucet to an external power source to supply power, and therefore, the problem of effort and time taken for construction can be solved. Furthermore, the problem of a

Ex. 1008 ¶ [0006]

removes wire

Mr. Cook agrees Tseng and Mizuno's objectives are incompatible

Mr. Cook regarding Tseng

Q So one of the advantages of Tseng is to preferably avoid damaging electric wire 60, right?

A Yes.

Ex. 2005, 89:1-3

Q So, one of Tseng's objectives is to protect electric wire 60.

Would you agree with that?

A I do.

Ex. 2005, 89:15-18

retains/protects wire

Mr. Cook regarding Mizuno

258. Again, because a hydro-generator would be located within Tseng's faucet, wire 60 could be eliminated. This would make Tseng's faucet easier to install: only plumbing work is required. It is no longer necessary for the installer to also make an electrical connection.

Ex. 1003 ¶ 258

Q Your opinion is that Mizuno allows eliminating the power wire from Tseng, correct?

A Correct.

Ex. 2005, 116:16-18

removes wire

Petitioner's Reply only signifies Petition's deficiencies

Meiresonne v. Google, Inc., 849 F.3d 1379, 1382 (Fed. Cir. 2017). While Tseng does note that its spray-head can include an “electric wire” (Tseng, [0009]), it does not say that such a wire is a required component. Instead, Tseng explains that its spray-

Reply, 13

- ◆ The Reply now argues Tseng does not say a wire is required
- ◆ Tseng's primary objective is to “avoi[d] damag[ing] an electric wire.” There must be a wire first to avoid damaging it

Petitioner's Reply only signifies Petition's deficiencies

The art says the opposite. Mizuno's hydro-generator is meant for use in all "[c]onventional[]" "types of faucets" found in "kitchens and washrooms." Mizuno, [0002]. This is what Tseng teaches: a "conventional" kitchen faucet. Tseng, [0002].

Reply, 15

- ◆ The Reply hangs on to the word "conventional," but does not respond to Tseng and Mizuno's conflicting disclosures
- ◆ Dr. Klopp merely agreed that Mizuno and Tseng are "conventional" faucets only "[a]t a high level," but concluded that a POSITA would not combine

Tseng + Schneider ground is deficient (Claims 17, 18)

- ◆ Petition fails to provide proper motivation to combine analysis
- ◆ The straightforward combination keeps both Tseng and Schneider's LEDs—requires less change
- ◆ Adding Schneider worsens Tseng's spacing and wiring issues

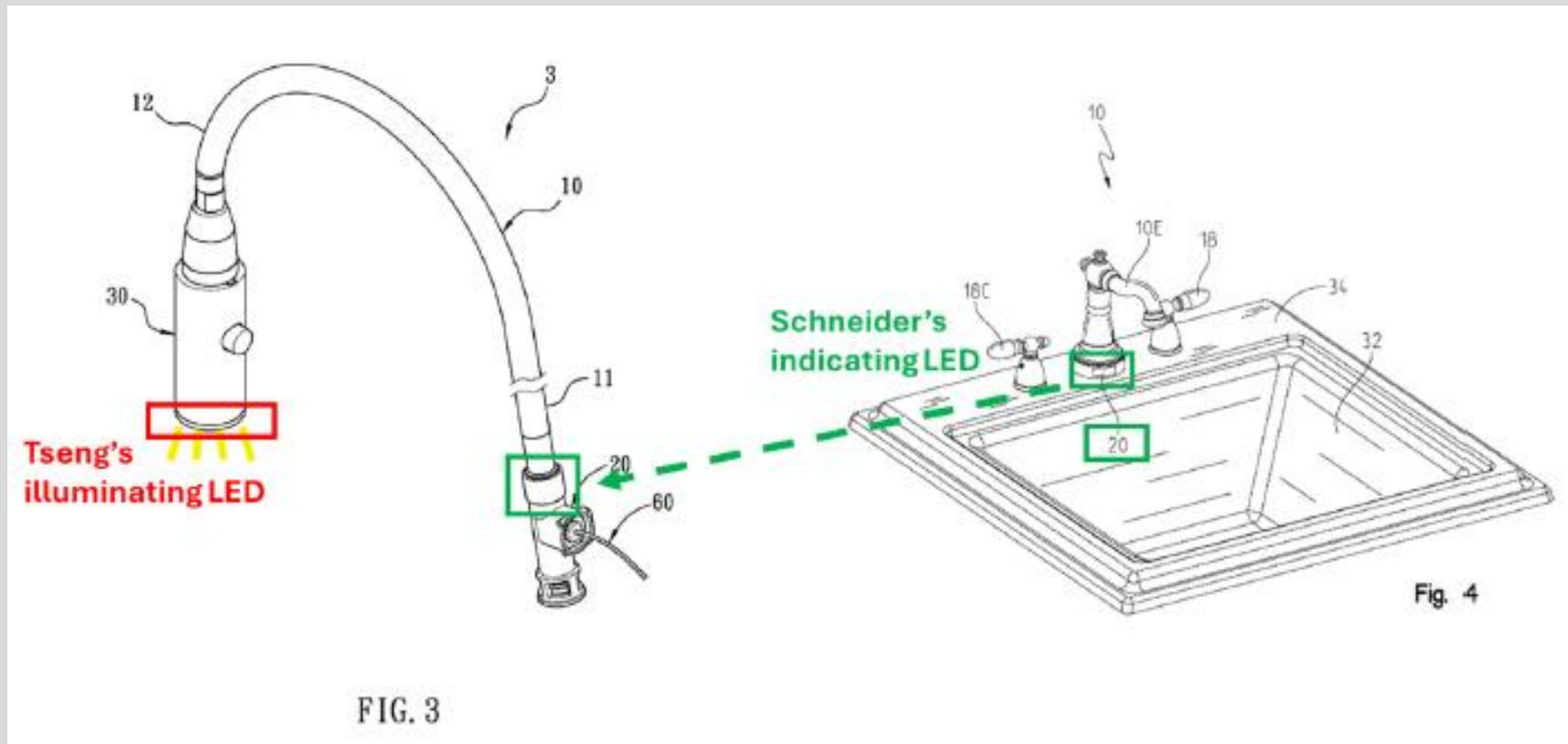
Petition fails to provide proper motivation to combine analysis

- ◇ Petition asserts conclusory arguments, parroted by Mr. Cook
 - ◇ *Compare* Petition, 51 *with* Ex. 1003 ¶¶ 298-303
- ◇ Petitioner's combination requires changing both references, in a way not suggested by either reference
 - ◇ Petition takes only the “backlight” of Schneider's display and applies to Tseng's sprayhead, a location different from where the display was—faucet base—in Schneider
 - ◇ Classic hindsight using the claim as a roadmap

The straightforward combination keeps both Tseng and Schneider's LEDs—requires less change

Tseng

Schneider



Ex. 1004, Fig. 3

Ex. 1009, Fig. 4

Adding Schneider worsens Tseng's spacing and wiring issues

Q So Tseng's faucet is a narrow space, right?

MR. HERMAN: Objection. Form.

A It appears to be narrow, yes.

spacing issue

Ex. 2005, 88:8-11

wiring issue

Ex. 1004, Figure 27. In addition, the added components would need to be connected to electrical power and to each other. Specifically, the additional wire connections would introduce additional risk of wire damage, which Tseng aims to avoid. These challenges, which a POSITA would recognize and find demotivating, are not

Ex. 2003 ¶ 141

54

Petitioner's Reply shows Petition's deficiencies

Tseng already include power supplies. Tseng is already designed to avoid wiring damage. And Schneider's temperature sensor and controller is designed to fit within—among other things—a kitchen spray-head. Tseng, [0009], [0030];

Reply, 7

- ❖ Schneider's components are designed to fit the “base,” as Mr. Cook agrees
- ❖ Tseng's does not have Schneider's components; the argument is irrelevant because Tseng avoids wiring damage with only Tseng's components

Q And Figure 4 of Schneider, element 20 is display unit 20, at the base of the faucet near the sink, correct?

A That is correct.

Ex. 2005, 131:15-18

Tse + Carter ground is deficient (Claims 1, 6-9, 19-24)

- ◆ Tse is directed to a showerhead
- ◆ Carter is directed to a water jet, “simple, rugged and well suited to the rigorous environment of recreational uses”
- ◆ Carter purports to solve high cost and low durability of prior art fixtures with a cost-effective “multi-shot molding or pre-mold/over-mold molding” technique
- ◆ Carter’s substrate—integrated with the light pipe—would obstruct the light path when placed in place of Tse’s cover

Petitioner's Reply Shows Petition's deficiencies

- ◆ The Reply cites “semi-clear plastic” for the first time
 - ◆ Signifies the Petition was deficient by relying on Carter’s “transparent” disclosure

Carter relates to “illuminated plumbing fixtures” that include “a molded in place integrated light pipe feature....” (Ex. 1006, ¶ [0003].) Specifically, in Carter an “[i]ntegrated light pipe” is “molded over (or encapsulates) a “substrate” and “lighting element” (like a “L.E.D.”). (*Id.*, ¶¶ [0008]-[0009].) “[V]arious forms for injection molding” such as “multi-shot molding or pre-mold/over-mold molding” can be employed. (*Id.*, ¶ [0008].) The light pipe is “transparent.” (*Id.*, Abstract, ¶ [0026].) Figure 4A provides an example of a “unidirectional lighting element

Petition, 70



Ariosa Diagnostics v. Verinata Health, Inc.,
805 F.3d 1359, 1367 (Fed. Cir. 2015)

“We see no error in the Board's rejection of [Petitioner]’s reliance, in its Reply submissions, on previously unidentified portions of a prior-art reference to make a meaningfully distinct contention”

Petitioner's Reply Shows Petition's deficiencies

very same field: it teaches “illuminated plumbing fixtures.” Carter, [0003]. While Carter does provide examples in the context of pools and spas, it also explains that its teachings have applicability to other “bathing and water related displays” and a “variety” of other “plumbing fixtures.” *Id.*, [0006]-[0007], [0026]; Ex. 1015, 44:21-

Reply, 21-22

- ◆ The Reply asserts Carter is analogous under “plumbing fixtures”
 - ◆ But remains silent to Delta’s explanation regarding Carter and Tse’s different objectives
- ◆ Not every reference is analogous under the general field, such as “plumbing fixtures”

Objective indicia show non-obviousness of claims

Delta marks products with '363 patent; Reply does not rebut

LED Illuminated Pull Down Kitchen 	US10393363	LED Kitchen Pull Down Faucet 19935L-SPSD-DST
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LED Illuminated Waterway 	US10393363	LED Pendant Showerheads 57190-25-L 57190-CZ25-L 57190-BL25-L 57190-PN25-L 57190-SS25-L 57190-RB25-L 57140-25-L 57140-KS25-L 57140-CZ25-L 57140-BL25-L 57140-PN25-L 57140-SS25-L
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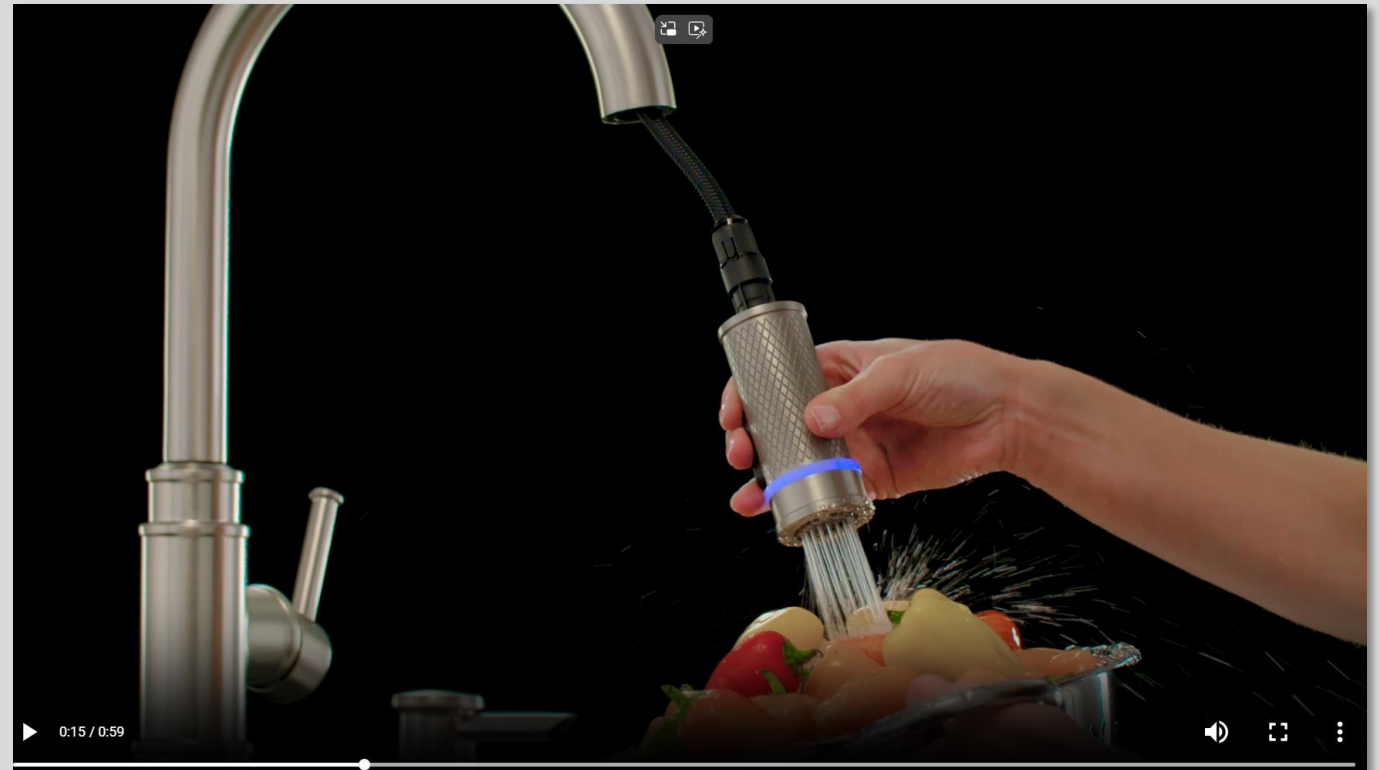
<https://www.deltafaucetcompany.com/patent>

Delta's Allentown kitchen faucet embodies the '363 patent



- TempSense® Indicator changes color as water temperature changes
- Color-changing display clearly shows when water is cold, warm or hot
- Water-powered, so there's no need for batteries or outlets

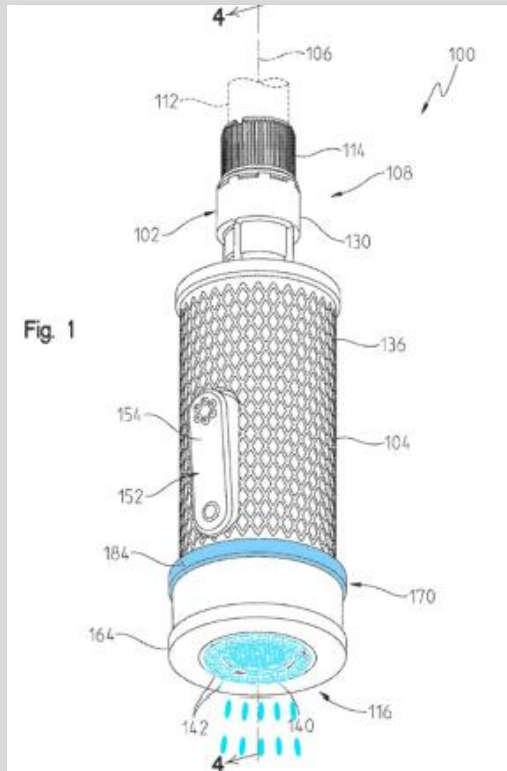
Ex. 2012, 1



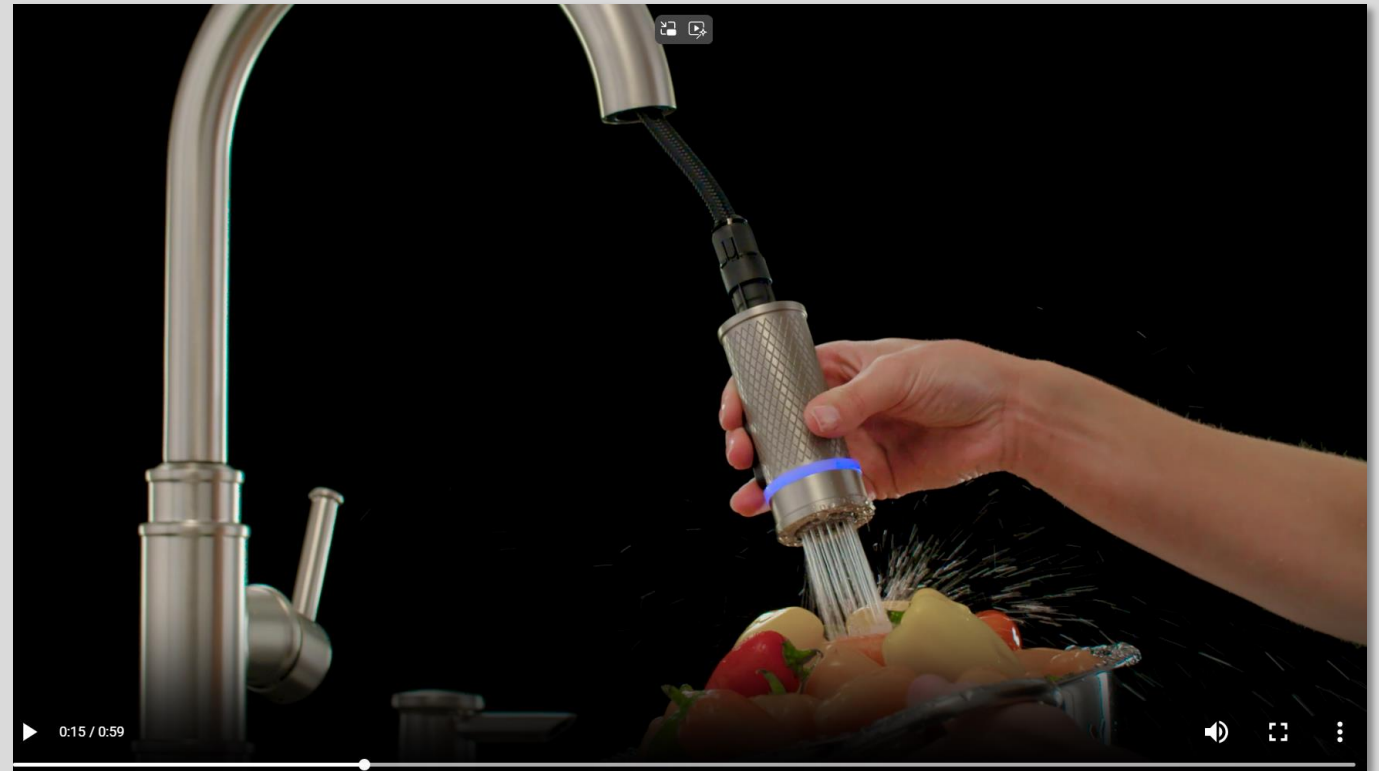
https://media.deltafaucet.com/elvis/Video/PROD/UCT_19935L-SPSD-DST.mp4

61

Delta's Allentown kitchen faucet embodies the '363 patent



Ex. 1001, Fig. 1

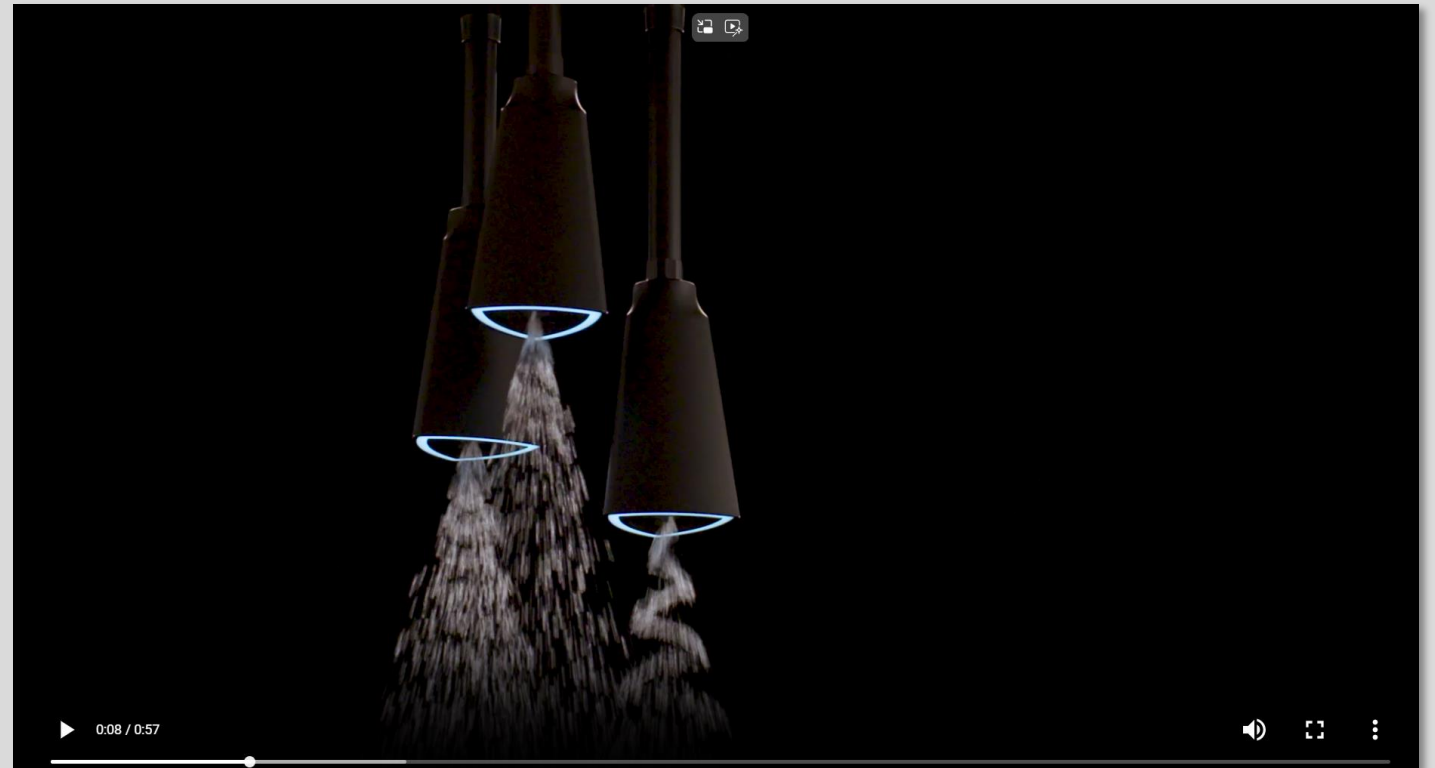


https://media.deltafaucet.com/elvis/Video/PROD/UCT_19935L-SPSD-DST.mp4

Delta's Pendant Raincan showerhead embodies the '363 patent

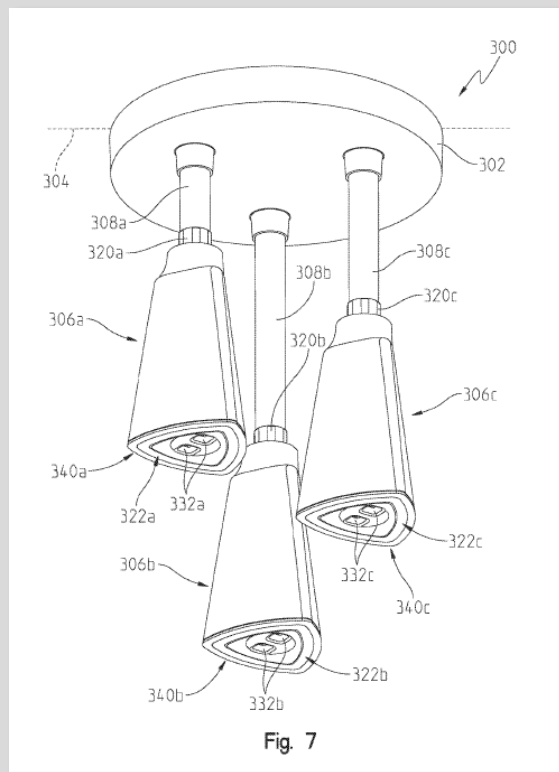


Ex. 2013, 1

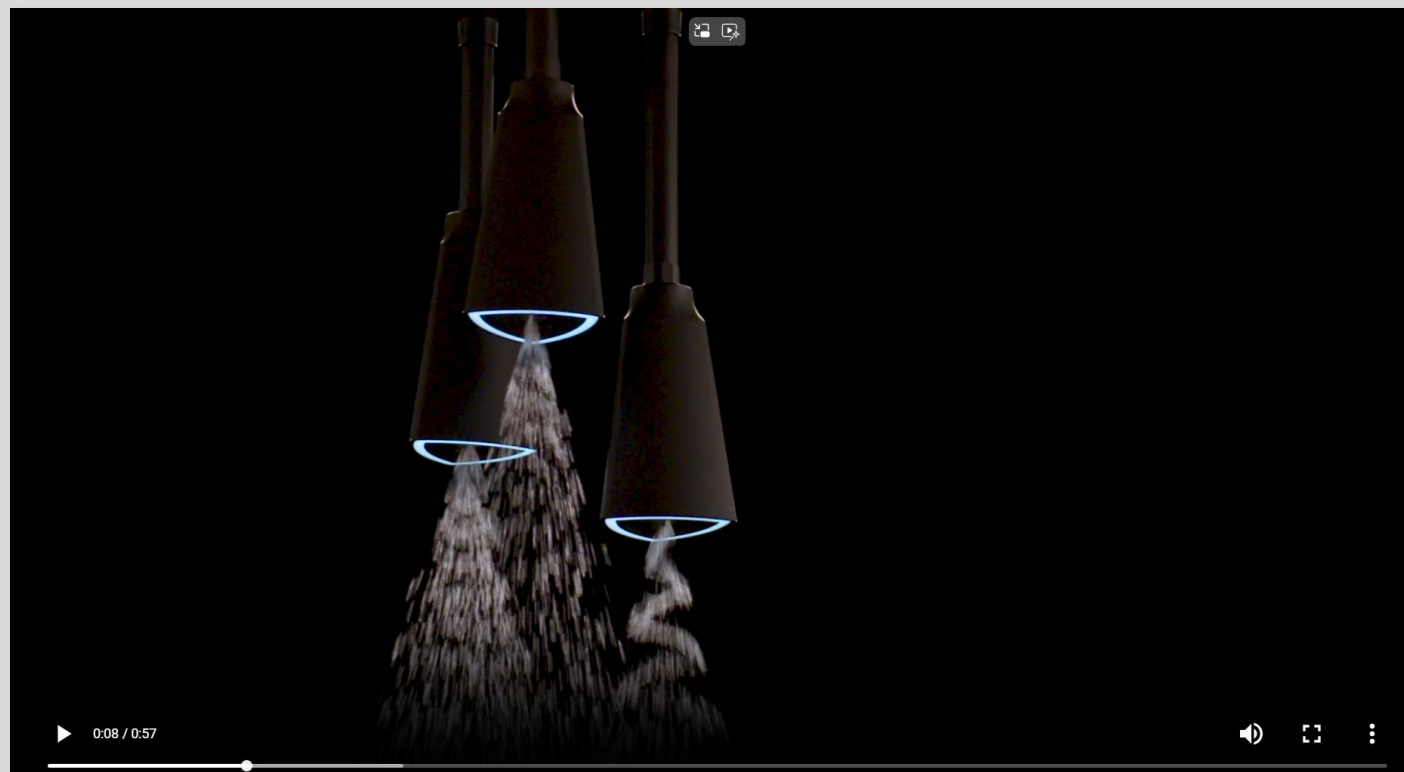


https://media.deltafaucet.com/elvis/Video/PROD/UCT_57140-25-L.mp4

Delta's Pendant Raincan showerhead embodies the '363 patent



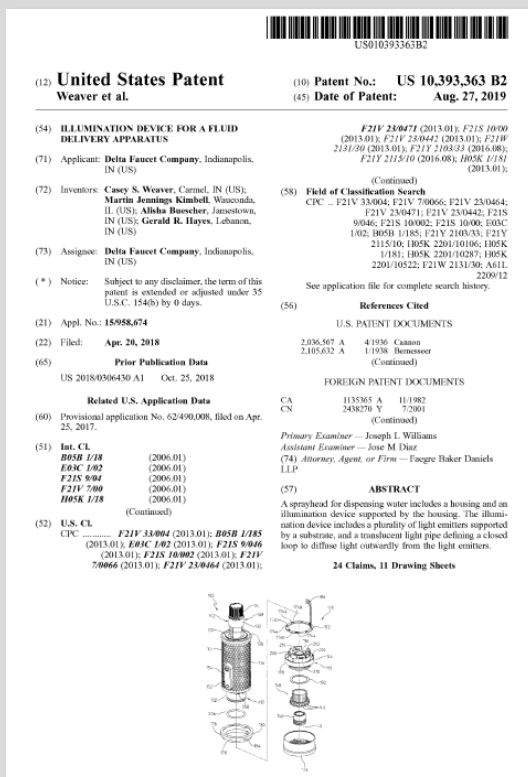
Ex. 1001, Fig. 7



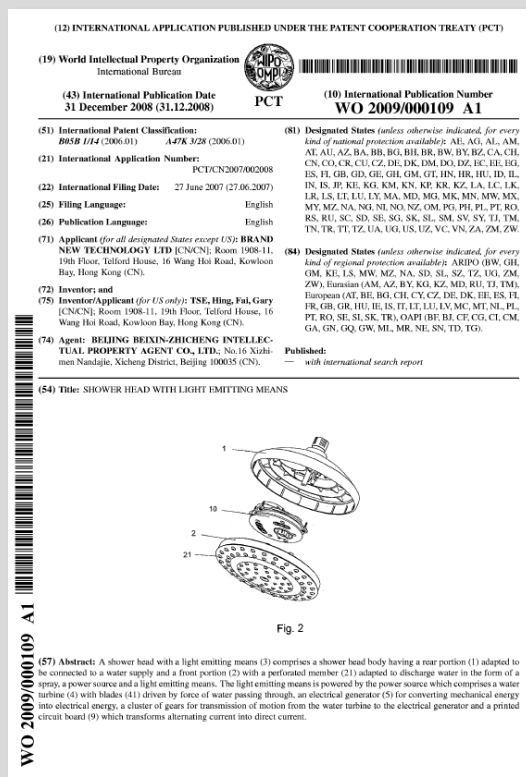
https://media.deltafaucet.com/elvis/Video/PROD/UCT_57140-25-L.mp4

Length of intervening time between Mizuno/Tse and the '363 patent supports non-obviousness

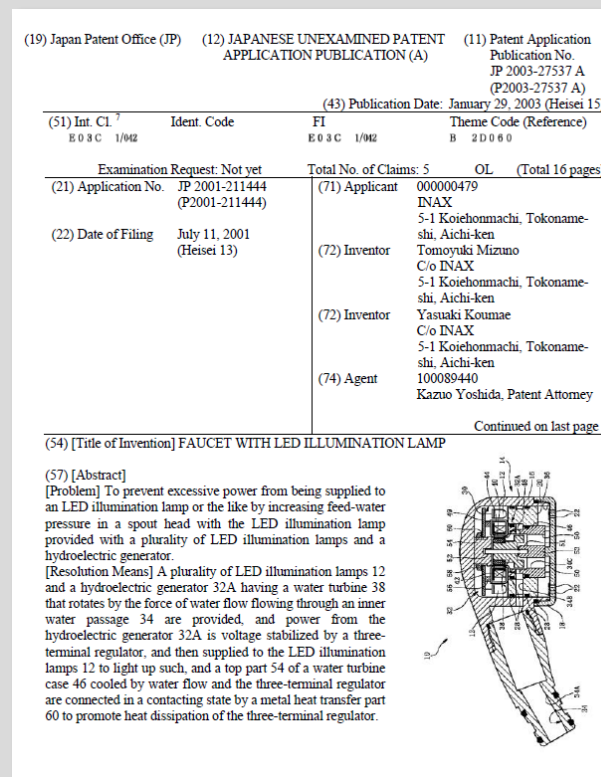
'363 Patent



Tse



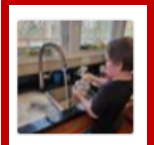
Mizuno



*Leo Pharm. Prods.,
Ltd. v. Rea*, 726 F.3d
1346, 1359 (Fed. Cir. 2013)

Holding that there was a long-felt but unsolved need during the 14-22 year gap between the prior art references

Customer reviews support non-obviousness

★★★★★
LED temperature light
Love new delta kitchen facet. The color coded temp LED light makes it safer to have my young boys help with the dishes. They can see how hot the water is without burning their little hands.
by BigFish
Apr 8, 2020
Recommended

DELTA
Customer review from deltafaucet.com

Response from Customer Solutions
Show

Ex. 2015, 3

★★★★★
Looks great in our kitchen, was very easy to install. Tempsense indicator is hydro powered, so
n...
Looks great in our kitchen, was very easy to install. Tempsense indicator is hydro powered, so no batteries needed. Great feature that even makes doing the dishes fun!
by Wrangler72
Mar 3, 2020
Verified Purchase
Recommended


Ex. 2015, 4



Nested Bean, Inc. v. Big Beings USA PTY Ltd., IPR2020-01234, Paper 34, 46-47 (PTAB Jan. 24, 2022)

Giving “limited weight” to “evidence of customer reviews from various retail websites,” even when the Board has “no way of knowing whether the people reviewing the products on these general websites actually purchased and used the product”



Person of Skill in the Art

Petitioner	Patent Owner
a degree in industrial design or an equivalent field,	(1) a degree in mechanical engineering , industrial design, or an equivalent field, including education in the field of optics ,
2 years of professional experience working with kitchen, bath, or other plumbing fixtures (or similar products), or an equivalent level of skill, knowledge, and experience. This POSITA would have been aware of and generally knowledgeable about the standard features and functionality of kitchen, bath, and other plumbing fixtures (or similar products).	(2) at least two years of professional experience designing or analyzing kitchen, bath, or other similar plumbing fixtures or consumer products, and
	(3) at least two years of professional experience designing or analyzing optical apparatus .

IPR2024-00700
U.S. Patent No. 10,393,363
Patent Owner's Demonstratives for Oral Argument

Dated: July 8, 2025

Respectfully submitted,

By: /Greg Israelsen/
R. Gregory Israelsen, Reg. No. 72,805

CERTIFICATE OF SERVICE

I hereby certify that, on July 8, 2025, I caused a true and correct copy of:

- Patent Owner's Demonstratives for Oral Argument

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