

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DECENT ESPRESSO INTERNATIONAL LTD.,

Petitioner,

v.

DUVALL ESPRESSO IP ENFORCEMENT, LLC,

Patent Owner

IPR2024-01483
Patent No. 11,576,524

PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

I.	INTRODUCTION AND BACKGROUND	1
A.	THE PETITION.....	1
B.	UNDERLYING LITIGATION	1
C.	THE '524 PATENT	2
II.	LEGAL STANDARD	7
III.	ANALYSIS	8
A.	LEVEL OF ORDINARY SKILL IN THE ART.....	8
B.	CLAIM CONSTRUCTION	9
1.	<i>“Another Solvent”</i>	10
2.	<i>“Communicatively Coupled”</i>	10
C.	GROUND 1: ASSERTED OBVIOUSNESS OF CLAIMS 1-5 BASED ON STARTZ IN VIEW OF ONE OR MORE OF THE KNOWLEDGE OF A POSITA, LAI, SANTI, PORZIO, AND/OR MAJER ...	11
1.	<i>Startz (Ex. 1003 and Ex. 1004)</i>	11
2.	<i>POSITA (Ex. 1002)</i>	15
3.	<i>Lai (Ex. 1007)</i>	15
4.	<i>Santi (Ex. 1005)</i>	17
5.	<i>Majer (Ex. 1008)</i>	19
6.	<i>Independent Claim 1</i>	20
7.	<i>Dependent Claims</i>	35
D.	GROUND 2: ASSERTED OBVIOUSNESS OF CLAIMS 6-10 BASED ON STARTZ IN VIEW OF ONE OR MORE OF THE KNOWLEDGE OF A POSITA, AAPA, LAI, SANTI, PORZIO, AND/OR MAJER	35
E.	GROUND 3: ASSERTED OBVIOUSNESS OF CLAIM 11 BASED ON STARTZ IN VIEW OF ONE OR MORE OF THE KNOWLEDGE OF A POSITA, UPSTON, LAI, SANTI, AND/OR MAJER	36
F.	GROUND 4: ASSERTED OBVIOUSNESS OF CLAIM 12 BASED ON STARTZ IN VIEW OF ONE OR MORE OF THE KNOWLEDGE OF A POSITA, AAPA, UPSTON, LAI, SANTI, PORZIO, AND/OR MAJER	36
IV.	RELIEF REQUESTED	37

I. INTRODUCTION AND BACKGROUND

A. THE PETITION

On September 25, 2024, the Petitioner filed its Petition in the above-referenced proceeding requesting *inter partes* review of (“IPR”) claims 1-12 of U.S. Patent No. 11,576,524 (Ex. 1001, “the ’524 Patent”). *See* Paper 1 (“Pet.”). Although the Petition references anticipation of the claimed invention and “five different primary prior art publications and patents” that purportedly render the claimed invention invalid, the Petition does not allege any § 102 challenges and only utilizes one primary reference¹. *See* Pet., at 6, 13.

B. UNDERLYING LITIGATION

As noted by Petitioner, the parties to this IPR are also involved in an underlying (and currently stayed) litigation, wherein said lawsuit was filed by Patent Owner in 2023 and from which Petitioner filed this Petition just short of the one-year deadline provided in 35 U.S.C. § 315(b). *See* Pet., at 76. Patent Owner is owned by a practicing entity, Duvall Espresso, Inc., a Delaware corporation operating out of Georgia under the name Duvall Espresso. *See* <https://www.duvallespresso.com/>. Ex. 2001, at ¶ 2. The president and principal owner of Duvall Espresso, Inc. is Gideon Duvall, who is also the sole inventor on the ’456 Patent. *Id.* at ¶¶ 1, 10.

¹ Ex. 1003 is the patent issuance from the application publication in Ex. 1004.

C. THE '524 PATENT

The '524 Patent was filed on September 14, 2020, entitled “a device and system for brewing infused beverages”, and has an effective filing date of August 16, 2012. Ex. 1001 (cover page). Ex. 2001, at ¶ 29. There are twelve total claims in the '524 Patent, with claim 1 being independent and claims 2-12 being dependent on claim 1. *Id.* One of the problems with known brewing systems was the lack of independent control over flow rate and temperature in a proactive manner to produce consistent brewed beverages. Ex. 1001, at 1:60–64, 2:37–41 (“[T]here is an apparent need for a brewing system that affords independent modulation of infusion pressure and flow rate enabling the user to optimize infused solution chemical composition and produce consistent beverages.”) (“As previously explained, there is an acute need for a brewing system that affords the brewer independent, dynamic variation of brewing variables of temperature, pressure and flow rate during the production of infused beverage.”); Ex. 2001, at ¶ 30.

To that end, the '524 Patent is directed toward a brewing assembly structure that is operable to dynamically and *independently* control the temperature of multiple solvents in the brewing assembly to a desired temperature before the solvent is introduced into the infusion chamber (i.e., an “infusion temperature”), while maintaining or controlling other desired brewing parameters. Ex. 1001, at 2:48–52, 2:59 (emphasis added); Ex. 2001, at ¶ 31. Said differently, the claimed invention

provides independent control of both solvent pumps for a proactive approach to temperature control in a brewing assembly. *Id.*

With reference to FIG. 2 of the '524 Patent (reproduced below) which is described as “a schematic diagram depicting an independently controlled beverage brewing system,” the claimed invention works to effectuate the same by providing two “independently controlled” solvent pumps 211, 212 forming part of the solvent flow management system 210 (“SFMS”) that “work in tandem to provide an additive flow rate that is equivalent to the total desired infusion flow rate in the brewing chamber 230”. Ex. 1001, at 6:62–64, 9:8–13; Ex. 2001, at ¶ 32. The assembly 100 is structurally configured such that each respective conduit from the pumps 211, 212 passes through a thermal modulator 221, 222 forming part of a solvent temperature management system 220 (“STMS”) in order to “dictate the solvent temperature range available for an infusion”. Ex. 1001, at 9:28; Ex. 2001, at ¶ 33. The system electronic controller 280 is specifically configured to provide for said independent control. Ex. 1001, at 9:17–20 (“The SFMS 210 may be independently controlled or coupled to control system 280, thereby modulating the pumps 211, 212 to achieve a required flow rate of solvents 201, 202 based on total desired flow rate of resulting solvent 203 and the desired infusion temperature as explained below.”), 10:61-63 (“[T]he control system 280 is used to independently and automatically modify flow rate, temperature, and pressure of the infusion.”); Ex. 2001, at ¶ 33.

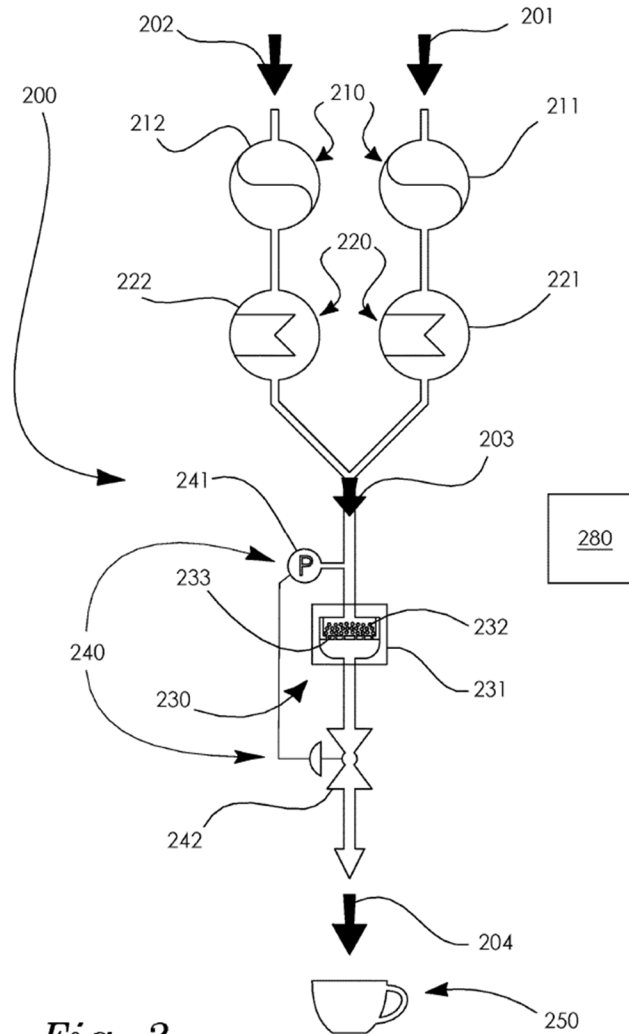


Fig. 2

The proactive approach to controlling flow rate and temperature is describe in the specification: “For example, if a user desires to perform the infusion between 20° C. and 100° C. then thermal modulator 221 may yield solvent 201 at a temperature of 20° C. or lower and thermal modulator 222 may yield solvent 202 at a temperature of 100° C. or higher.” Ex. 1001, at 9:29–33; Ex. 2001, at ¶ 34. The problem with simply mixing two fluids together in a high pressure infusion assembly is that other desired infusion brewing parameters, e.g., solvent flow rate, may be

problematically changed unintendedly. Ex. 1001, at 1:38–40; Ex. 2001, at ¶ 34. Thus, the claimed electronic controller/control system 280 communicatively coupled to the pumps 211, 212 and modulators 221, 222 so as to control the solvent flow pumped by each pump through the respective conduit and thermal modulator to get the desired infusion temperature while maintaining, for example, the desired flow rate. Ex. 1001, at 4:4–11, 10:60–66, 15:39–41, 16:20–22; Ex. 2001, at ¶ 34. The specification provides the following informative example.

For example, assuming a negligible thermal loss from the brewing chamber 230 and system conduits, if the user desires an infusion flow rate of 1 cc/sec and an infusion temperature of 90° C., the solvent 201 may be modulated to 100° C. and the solvent 202 may be modulated to 20° C. The pump 212 will flow solvent 202 at a rate of $\frac{1}{8}$ cc/sec and pump 211 will flow solvent 201 at a rate of $\frac{7}{8}$ cc/sec. In order to improve accuracy of the infusion temperature, the specific heat capacity and thermal conductivity of brewing chamber 230 and system conduits may be accounted for when determining solvents' 201, 202 flow rates. The STMS 220 may also be connected to the control system 280, which may modulate and/or monitor temperature of the respective solvents 201, 202, as necessary. Solvent temperatures and/or data from the STMS may be utilized by control system 280 to modulate the performance of the SFMS, thereby advantageously achieving a desired infusion temperature and infusion flow rate.

Ex. 1001, at 9:37–55. Specifically, the notice of allowance stated the following reasons, *inter alia*, for patentability for the '524 Patent:

While a mixing valve to accomplish a general adjustment of a water temperature is known in the broader art of valving/mixing liquids (See, e.g. 8,225,961) the inclusion of such a mixing valve and control is not seen to be warranted by the problems and desires faced in the brewing device area, nor would duplication of pumps to effect such a change be considered obvious in this context. It would not be a simple duplication of pumps for added effect-but a duplication to add a different function (mixing temperature adjustment pre-brew/infusion).

Also noted as similar, but ineffective to reject the claims at issue here, is Smeller (US 8,807,392) which includes a mixing head (44 “chamber”) with mixing blades 46 and sources of distinct fluids for processing together into a single beverage. For example, adding a coffee component to a vanilla flavoring component. This is not the addition and controllability of solvents to a brew process, and the mixability of different ingredients in proportionate control would not have motivated the adjustment of known beverage infusers to control temperature by mixing valve for the solvent, since the adjustment of temperature does not solve a problem in the prior art, and would not have suggested itself to that particular use as now claimed.

Ex. 1013, at 108–09.

II. LEGAL STANDARD

“In an [inter partes review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring inter partes review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioner must establish by a preponderance of the evidence that the challenged claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when of record, objective evidence of obviousness or non-obviousness, i.e., secondary considerations. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966)

III. ANALYSIS

A. LEVEL OF ORDINARY SKILL IN THE ART

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103(a) requires us to resolve the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The person of ordinary skill in the art (“POSITA”) is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *Id.* In a given case, one or more factors may predominate. *Id.* Patent Owner submits a person of ordinary skill in the art (“POSITA”) would be a mechanical or materials engineer, or other similar degree, having at least two to three years of experience in designing or development of espresso machines or, because Petitioner’s definition is so close to that of Patent Owner’s definition, that no express finding is necessary to find Petitioner has not met its burden to show with particularity that claim 1 is unpatentable. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *see also* Ex. 2001, at ¶ 26.

B. CLAIM CONSTRUCTION

Under *Phillips v. AWH Corp.*, claim terms are generally given their ordinary and customary meaning, as would be understood by a POSITA at the time of the invention and in view of the intrinsic evidence that consists of the language of the claims, the specification, and the prosecution history. 415 F.3d 1303, 1313–14 (Fed. Cir. 2005) (en banc). Extrinsic evidence, such as dictionary definitions, may also be useful when construing claim terms but said evidence should be considered in the context of the intrinsic evidence. *Id.* at 1317–19. Said another way, “while extrinsic evidence can shed useful light on the relevant art, . . . it is less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Id.* at 1317 (internal quotation marks omitted).

Patent Owner submits the plain meaning of the claim terms should be utilized, but submits that none of the asserted grounds disclose or render obvious the Challenged Claims under either the plain meaning of the claims or Petitioner’s constructions. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe only those terms that are in controversy, and only to the extent necessary to resolve the controversy.”). Reserving Patent Owner’s right to challenge Petitioner’s proposed claim constructions, Patent Owner asserts the two following terms should be construed as set defined by the intrinsic evidence of the ’524 Patent.

1. *“Another Solvent”*

As exemplified by FIG. 2 of the '524 Patent, *supra*, the “another solvent” is a solvent disposed in a separate conduit spanning into the second solvent pump that is “separate from the solvent operably configured to be received within the first solvent pump.” Ex. 1001, 3:16–18; *see also id.* 17:61–62. Therefore, Patent Owner believes said term should be construed in the context as it is utilized in claim 1 and depicted in FIG. 2 as “a solvent disposed in a conduit before entering the second solvent pump that is separate from the solvent in a conduit entering the first solvent pump.”

2. *“Communicatively Coupled”*

This term appears in claim 1 with respect to the “electronic controller” being capable of independently controlling and connected to the first and second solvent pumps and the thermal modular so as “modulate the flow of the solvent through the first solvent pump and the at least one thermal modulator and the another solvent through the second solvent pump.” Ex. 1001, 18:15–20. As discussed in the specification, the SFMS is “independently controlled or coupled to control system 280, thereby modulating the pumps 211, 212 to achieve a required flow rate of solvents 201, 202 based on total desired flow rate of resulting solvent 203 and the desired infusion temperature as explained below.” Ex. 1001, at 9:17–20. Further, the “control system 380, which may be an operable equivalent to the control system 280 described and shown with reference to FIG. 2, is adapted to the brewing system 300

to be communicatively coupled to one or more devices in the system 300. The control system 380 may modulate the performance of the SFMS 310, the STMS 320, and the SPMS 340 to ensure that the user's specifications for an extraction manifested during the infusion or dispensing of the solvent 301a.” *Id.* at 13:30–38. Thus “communicatively coupled” should be defined as “connected so as to electronically control performance”.

C. GROUND 1: ASSERTED OBVIOUSNESS OF CLAIMS 1-5 BASED ON STARTZ² IN VIEW OF ONE OR MORE OF THE KNOWLEDGE OF A POSITA³, LAI⁴, SANTI⁵, PORZIO⁶, AND/OR MAJER⁷

Petitioner challenges claims 1-5 as unpatentable under 35 U.S.C. § 103(a) based on the combination of Startz and view of four secondary references and the testimony of its purported expert, Ian Tinkler. Pet., at 28–53.

1. *Startz (Ex. 1003 and Ex. 1004)*

Petitioner utilizes both the patent application publication and patent issuing from said publication as “Startz”, so, for brevity, Patent Owner will refer only to the Startz application publication reference (Ex. 1004). With reference below to FIG. 1 from Startz, said reference is solely focused on providing a “fully automatic coffee

² Startz, U.S. Patent No. 8,973,487 (Ex. 1003) and Startz, U.S. Patent Application Publication No. 2012/0291634 (Ex. 1004).

³ Declaration of Ian Tinkler (Ex. 1002)

⁴ Lai et al., U.S. Patent Application Publication No. 2012/0171332 (Ex. 1007)

⁵ Santi, U.S. Patent Application Publication No. 2014/00553734 (Ex. 1005)

⁶ Porzio et al., International Publication No. WO2011158131 (Ex. 1011)

⁷ Majer, International Publication No. WO2011151703 (Ex. 1008)

machine [1], comprising a main flow path [3] that leads through a heating device [2], and a bypass flow path [4] that circumvents the heating device [2]” to “provide a cost-efficient and accurate admixing of cold water.” Ex. 1004, ¶¶ 0002, Abstract; see also *id.* ¶ 0006 (“The invention is based on arranging a bypass flow pump in the bypass flow path of a beverage machine comprising a main flow path and a bypass flow path, and to accurately meter an admixing quantity of cold water via the bypass flow pump.”); Ex. 2001, at ¶ 35. Said another way, Startz’s pumping configuration (when two pumps are utilized) is unlike claim 1’s proactive independently controlled approach; rather, it is reactive, whereby both pumps, at best, work from the same flow meter data, to adjust flow. Ex. 1004, at ¶ 0019; Ex. 2001, at ¶ 36. More specifically, Startz discloses two “alternative positions” for circumventing the heating device 2, i.e., by passing the solvent through a bypass flow pump 8 or (as depicted in FIG. 1 with broken lines) passing the solvent through a “bypass 12, which circumvents the heating device 2 and the bypass flow pump 8, and in which a throttle device 13, particular a cover, is arranged.” *Id.* at ¶¶ 0015–16; Ex. 2001, at ¶ 36.

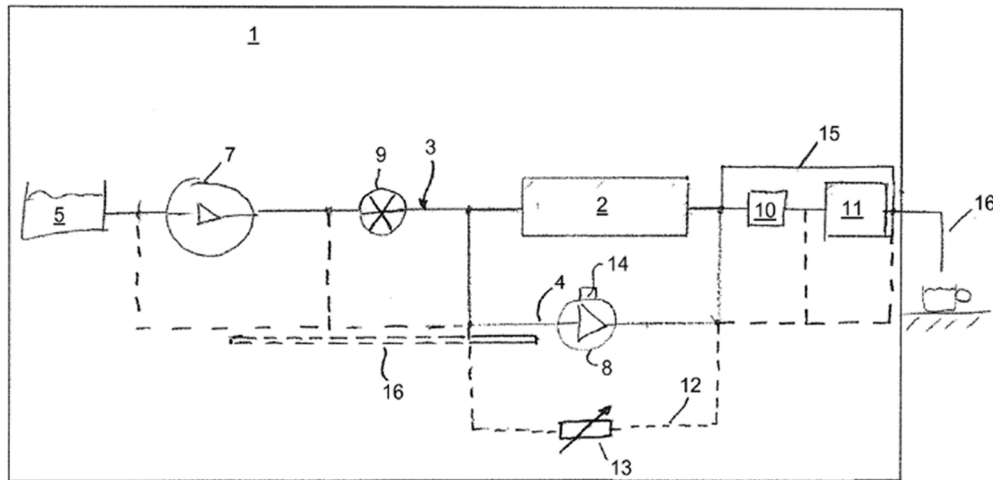


FIG. 1

Startz discloses the use of “a control device 14, which controls/regulates the bypass flow pump 8 as a function of a flow volume, a beverage temperature at the dispensing location 6 or a water temperature in the water tank 5.” Ex. 1004, at ¶ 0018; Ex. 2001, at ¶ 37. Startz also discloses the use of a heating device 16 for heating the bypass flow path 4 “to keep descaling liquid in motion in the heating device 2 by means of the bypass flow pump 8 and to thus improve a descaling result, in particular provided that the brewing valve 10 is not actuated thereby.” Ex. 1004, at ¶ 0020; *see also id.* at claim 9 (“The beverage machine of claim 1, further comprising a further heating device (16), by means of which the bypass flow path (4) can be heated at least area by area.”); Ex. 2001, at ¶ 37. Said another way, the heating device 16 is solely used to heat the bypass path area upstream of the bypass

flow pump 8 to circulate a heated liquid into the heating device 2 to prevent buildup, mineral deposits, etc. inside of the heating device 2 (i.e., descale it). *Id.*

Recirculation of water through heating device 2 for the purposes of descaling and preventing mineral deposits using recirculation flow path 4 along with heating device 16 and bypass flow pump 8 would not require any rate of flow data from a flow meter to be successfully achieved and would thus not describe an ability of recirculation pump 8 to flow fluid at a know rate without the use of a flow meter or other flow sensing device. Ex. 2001, at ¶ 38. Further, the heating device 16 in Startz is only taught to be utilized when pump 8 is operating, *not* pump 7, i.e., both pumps would not be operating (much less controlled electronically) as pump 8 takes heated solvent from the heating device 16 and circulates it in the circuit inside of the heating device 2 to descale it—if pump 8 was operating there would be no need to utilize the heater/pump 8 to descale. *Id.*; Ex. 1004, at ¶ 0020.

To that end, Startz’s “invention deals with the problem of specifying an improved or at least an alternative embodiment for a beverage machine of the generic type that is characterized by a simple design solution, and that additionally provides reliable setting of an accurate mixing temperature.” Ex. 1004, at ¶ 0005; Ex. 2001, at ¶ 39. Startz’s invention is akin to the known devices described in the background section of the ’524 Patent, including deficiencies associated with said devices, i.e.:

Temperature control of infusion water is performed by utilizing a proportional mixing valve that is controlled by a controller to mix hot and cold water. While the aforementioned device may be capable of providing dynamic temperature and pressure control, it does so at the expense of the ability to regulate flow rate of the exiting infused beverage. The varying exiting flow rate disadvantageously creates inconsistent beverage output, which is costly for many retailers of beverages. The inconsistencies also are problematic for retailers and consumers, alike, as both the taste of the beverage and the amount of the beverage may change at each brewing cycle.

Ex. 1001, at 2:7–19; Ex. 2001, at 39.

2. *POSITA (Ex. 1002)*

Petitioner utilizes the declaration of Mr. Tinkler as a secondary reference and/or to conclude what a POSITA may or may not have done or what was “appropriate” to do. As set forth herein, a bulk of Mr. Tinkler’s statements are uncorroborated and conclusory and thus should be given little, if any, value in the obviousness analysis.

3. *Lai (Ex. 1007)*

Petitioner utilizes Lai as a secondary reference and said reference is directed toward a “beverage appliance” teaching a “pivotable receptacle” and a mechanism for reducing solute size within a container inserted within the receptacle. Ex. 1007, at Abstract; Ex. 2001, at ¶ 40. With reference to FIG. 60 of Lai, also teaches that a

solenoid controls a three-way valve 151 so the flow path is to the coffee spout 122 and “water is heated by the heater 136 and into the filter cup 10”, wherein “the water temperature is regulated throughout the brewing process” using a sensor 198. Ex. 1007, at ¶ 0098; Ex. 2001, at ¶ 40. The assembly also utilizes a “*sensor 194 that controls the heater 136*” so that a suitable temperature (or temperature range) for brewing is obtained.” Ex. 1007, at ¶ 0097; Ex. 2001, at ¶ 40. While a PCB 196 for the control panel on the beverage appliance is utilized, it merely takes information from the sensors in the appliance and if there is an adjustment to the heater 136 to regulate the heat generated by the heater 136, it would be through and by the sensor 194. Ex. 1007, at ¶ 0098; Ex. 2001, at ¶ 41.

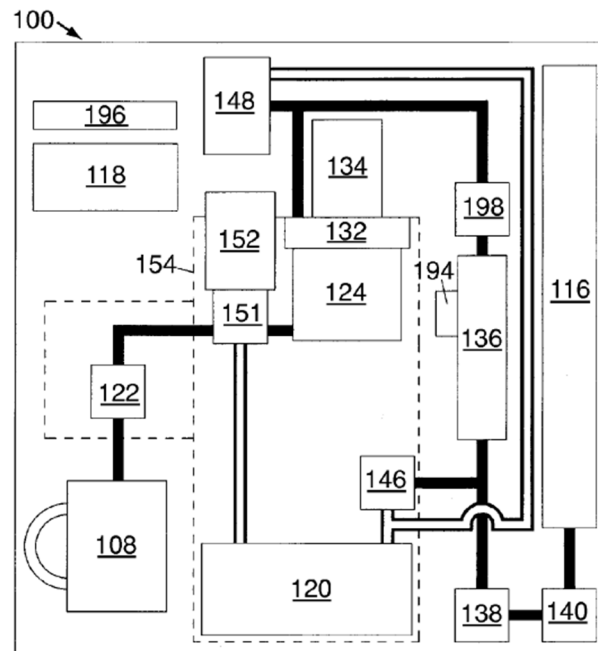


FIG. 60

The same teachings in Lai that are utilized by Petitioner (i.e., having an electronically controlled solvent flow and thermal modulation of said flow in a brewing process) were also disclosed in the '524 Patent, considered during the prosecution history, and still found not to affect the patentability or render claim 1 obvious based on the additional requirements in limitation 1[e] in combination with limitations 1[a] and 1[b], *infra. Compare* Ex. 1013, at 112 (citing Ex. 2003), *with* Ex. 2003, at 3:46–51 (“Referring again to FIGS. 1, in general the controller 40 monitors the pressure and temperature signals on the lines 38, 42 and the start brewing signal on the line 52 to control the pump 31, the tank heater 54 and various valves in the system.”); Ex. 2001, at ¶ 42.

4. *Santi (Ex. 1005)*

Petitioner also utilizes Santi as a secondary reference and said reference is directed toward a “beverage for producing hot beverages” that teaches, with reference to FIG. 1 immediately below, utilizing a “control means 80” with “a first actuator 10 for controlling the heating means 40.” Ex. 1005, at ¶ 0063; Ex. 2001, at ¶ 43. “The control means 80 are, moreover, operatively connected to the heating means 40 and to the pumping means 200 for continuous and combined control of the temperature and of the pressure during the operating phase of the dispensing means 100.” *Id.* As such, Santi’s disclosure of monitoring and continually controlling both the temperature and pressure (at the expense of other variables) is also akin to the

devices the '524 Patent describes as existing in its background section, including deficiencies associated with said devices, i.e., “brewing systems have been developed that seek to enable flavor modification through selective modulation of one or more brewing variables, [however,] modulation of one or more variables during an infusion results in unintended changes to other brewing variables. This lack of independent variable control makes the optimization and modification of infused beverages difficult”. Ex. 1001, at 1:33–42; Ex. 2001, at ¶ 44.

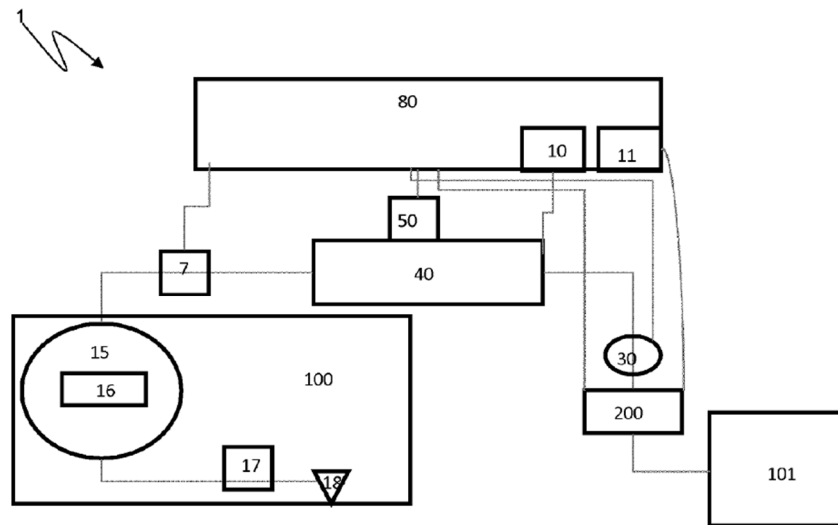


FIG. 1

Similar to Lai, the same teachings in Santi that are utilized by Petitioner (i.e., having an electronically controlled solvent flow and thermal modulation of said flow in a brewing process) were also disclosed in the '524 Patent, considered during the prosecution history, and still found not to affect the patentability or render claim 1 obvious based on the additional requirements in limitation 1[e] in combination with

limitations 1[a] and 1[b], *infra. Compare* Ex. 1013, at 112 (citing Ex. 2003), *with* Ex. 2003, at 3:46–51; Ex. 2001, at ¶ 45.

5. *Majer (Ex. 1008)*

Petitioner also utilizes Majer as a secondary reference and said reference is directed toward a “beverage dispensing machine” that utilizes two circuits in a brewing process, i.e., “circuit C1” where a “pump 4” takes water through a “heating means 5” to a “brewing means 2” and separate “circuit C2” where a “pump 4bis” takes water through a “heating means 5bis” to utilize with a steam-producing unit and air-intake.” Ex. 1008, at 10:11–17, 11:25–27, 20:4–15; see also *id.* at 10:18–20 (“To put it in other words, second circuit C2 is not provided with brewing means and is not involved with the extraction or brewing process that is carried out only in first 20 circuit C1.”); Ex. 2001, at ¶ 46. Majer discloses utilizing an “electronic controller 9” to control the pumps 4, 4bis but not associated with the brewing process because circuit 2 is not associated with said brewing process. *Id.* at ¶ 47. This type of system and process was also recognized in the examination of the ’524 Patent and found not to affect the patentability of the ’524 Patent. *See* Ex. 1013, at 108–09 (“This is not the addition and controllability of solvents to a brew process, and the mixability of different ingredients in proportionate control would not have motivated the adjustment of known beverage infusers to control temperature by mixing valve for the solvent, since the adjustment of temperature does not solve a problem in the prior

art, and would not have suggested itself to that particular use as now claimed.”) Ex.

2001, at ¶ 47.

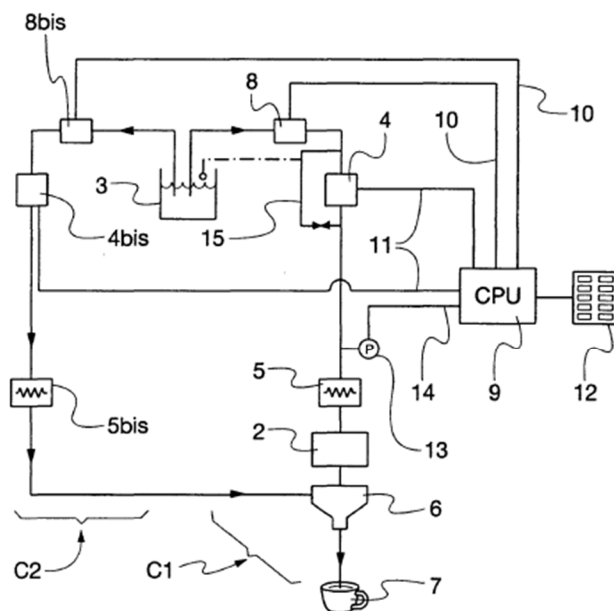


Fig. 1

6. Independent Claim 1

Claim 1 of the '524 Patent recites the following:

1. 1[pre] An infused beverage brewing assembly comprising:
 - 1[a] a solvent flow management system with a first solvent pump fluidly coupled to a first solvent conduit and operably configured to receive a solvent and induce the flow of the solvent therethrough and a second solvent pump fluidly coupled to a second solvent conduit and operably configured to receive another solvent, separate from the solvent operably configured to be received within the first solvent pump, and induce the flow of the another solvent therethrough;

1[b] a solvent temperature modulation system with at least one thermal modulator in fluid communication with the first solvent conduit, the first and second solvent conduits directly and fluidly coupled together to form a conduit joint downstream of the thermal modulator to form a resulting solvent conduit with a resulting solvent disposed therein at a resulting temperature and the at least one thermal modulator operably configured to thermally modulate the solvent disposed in the first solvent conduit to a raised temperature higher and different than the resulting temperature; and

1[c] a brewing chamber in fluid communication with the resulting solvent conduit and for housing a solute disposed to receive the resulting solvent to produce an infused beverage;

1[d] an outlet for discharging the infused beverage; and

1[e] an electronic controller communicatively coupled to the first and second solvent pumps and the at least one thermal modulator, and operably configured to modulate the flow of the solvent through the first solvent pump and the at least one thermal modulator and the another solvent through the second solvent pump.

While reserving Patent Owner's right to challenge Petitioner's other assertions in the Petition, Patent Owner submits the Petitioner's clear failure to show that the prior art teaches or renders obvious limitation 1[e] warrants denial of the Petition and that the Petitioner has failed to establish a reasonable likelihood that Petitioner would prevail in showing that claim 1 unpatentable. As admitted by Petitioner, "Startz does not explain his controller, sensors, or control mechanisms in

depth”. Pet., at 27. Petitioner separates its analysis of limitation 1[e] and each will be responded to below.

- a. The Prior Art does not teach or render obvious a brewing assembly having an electronic controller communicatively coupled to the first and second solvent pumps and the at least one thermal modulator

Petitioner argues, however, that Startz’s disclosure of its “control device (14)” for “control[ing]/regulat[ing] the bypass flow pump 8 as a function of a flow volume, a beverage temperature at the dispensing location 6 or a water temperature in the water tank” teaches limitation 1[e]. Pet., at 37.

To purportedly support the same, Petitioner reproduces a fragmented and mischaracterized cite from ¶ 0017, i.e., Petitioner states that “[g]enerally, the bypass flow pump 8 and/or the main flow pump 7 can be . . . a cost-efficient and at the same time an accurately controllable pump.” *Id.* at 37. What Petitioner strategically omits from said section is that Startz was not referring to the main flow pump being controlled by any electronic controller, much less the control device (14) in Startz. Ex. 2001, at ¶ 50. Rather, Startz was stating that a magnetic piston pump (out of a number of potential types of pumps) may be the most cost-efficient and accurate to configure or control. *Id.* Specifically, Startz states:

Generally, the bypass flow pump 8 and/or the main flow pump 7 can be embodied as vane-type pump, as gear type pump or as magnetic piston

pump, whereby in particular the latter alternative represents a cost-efficient and at the same time an accurately controllable pump.

Ex. 1004, at ¶ 0017. Petitioner continues to mischaracterize Startz to suggest Startz discloses the connections and operability in limitation 1[e], namely that an electronic controller is communicatively coupled (i.e., connected so as to electronically control performance) to both pumps and a thermal modulated, but cites only to its purported expert for that conclusion. Pet., at 37–38 (“Startz discloses that both pumps can be controlled”) (citing to Ex. 1002, at 41); Ex. 2001, at ¶ 52. When referring ¶ 79, page 41, of Mr. Tinkler’s declaration, that conclusion is unsupported and the prior paragraphs only discuss Startz’s use of a control device 14 located physically on the bypass flow pump 8 and configured to “control/regulate[] the bypass flow pump as a function of a flow volume, a beverage temperature at the dispensing location 6 or a water temperature in the water tank 5.”

Therefore, Petitioner has not sufficiently shown Startz discloses limitation 1[e] and Mr. Tinkler’s conclusion should be given no weight. *See Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008) (“Failure to prove the matter as required by the applicable standard means that the party with the burden of persuasion loses on that point—thus, if the fact trier of the issue is left uncertain, the party with the burden loses.”); 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to

little or no weight.”); *see also Nobel Biocare Services AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1382 (Fed. Cir. 2018) (finding that the Board can reject arguments based on expert testimony that lacks specificity or detail).

And while Petitioner acknowledges Startz does not disclose any “electronic controller” (much less one that is communicatively coupled to the two pumps and thermal modulator as claimed by Patent Owner), Petitioner again tries to suggest the control device 14 in Startz may be modified to be electronic and that it would be “appropriate” to connect the control device 14 to another pump. Pet., at 38. A POSITA would not have been motivated to modify the “control device 14” in Startz to be electronic. Ex. 2001, at ¶ 53.

What Petitioner omits, however, is that said proposed modification is counter to the cost-efficient and structural configuration teachings in Startz. *See* Ex. 1004, at Abstract, ¶¶ 0007, 0017, 0022 (“On principle, such a bypass flow pump can also be produced in a ***more cost-efficient manner*** than a 2/2-way magnetic valve, for example, so that the solution according to the invention is ***also economical.***”); (“Thus a bypass pump (8) is arranged in the bypass flow path (4) to provide a ***cost-efficient*** and accurate admixing of cold water.”); (“[W]hereby in particular the latter alternative represents a ***cost-efficient*** and at the same time an accurately controllable pump.”); (“In the event that the bypass flow pump 4 is furthermore manufactured as a gear-type pump or as a vane-type pump or as a magnetic piston pump, a ***cost-***

efficient manufacture can furthermore be obtained as compared to magnetic valves.”) (emphasis added); Ex. 2001, at ¶ 53. More specifically, the structural configuration providing this “control device 14” is taught as being the actual pumping mechanism itself, not an electronic controller that is connected so as to electronically control performance. Startz states that “[d]ue to the low pressure difference in the main flow path 3 and in the bypass flow path 4, the admixing water quantity can be *controlled* in a highly accurate manner in the case of known pump characteristics, in particular *with the use of a gear-type pump or of a magnetic piston pump*.” Ex. 1004, at ¶ 0019 (emphasis added); Ex. 2001, at ¶ 54. Therefore, adding an electronic controller and configuring it to communicate and modify the performance of multiple other electronic devices is counter to the intent and structural configuration of Startz. *See id.*

Not only is the electronic controller/pumps communicatively coupled portion of limitation 1[e] not taught, the “appropriate[ness]” of the proposed modification or motivation to modify Startz’s control device 14 as claimed by the ’524 Patent is again not supported with any explicit or inherent teachings in Startz and is bolstered by unsupported and conclusory statements made by Mr. Tinkler in ¶ 80 of his declaration. *See* Pet., at 38 (citing to Ex. 1002, at 41). Thus, said conclusions should also be afforded no weight and the Board should find Petitioner has not sufficiently shown limitation 1[e] is disclosed or rendered obvious. *See* 37 C.F.R. § 42.65(a); see

also *In re Van Os*, 844 F.3d. 1359, at 1361–62 Fed. Cir. 2017) (reversing decision on obviousness there was no clear reasoning, rational underpinning, and explanation why modifying a reference would be “intuitive”—which is similar to suggesting combination or modification because it would have been “appropriate”).

Petitioner acknowledges Startz fails to disclose any electronic controller communicatively coupled to a thermal modulator or that the electronic controller is operably configured to modulate the flow of the solvent through the first solvent pump and the at least one thermal modulator and the another solvent through the second solvent pump as claimed in limitation 1[e], but asserts that Lai teaches “a heater communicatively connected to the electronic controller, along with the pump(s)” and that said teaching equates to a portion of limitation 1[e] because it purportedly discloses “a water temperature sensor 198 [that] detects a temperature of the water exiting the heater 136 and relays this temperature to the PCB 196 of the control panel 118. The heater power and pump rate may then be adjusted to keep the water temperature within the optimal range. The flow meter 140 also keeps track of the flow rate and relays this information to the PCB 196.” Pet., at 38 (citing Ex. 1007, at ¶ 0098); Ex. 2001, at ¶ 56.

There are a couple problems with Petitioner’s assertions. First, there is no disclosure in Lai of communicatively coupling the PCB to a single pump, much less multiple “pumps”. *Id.* This is yet again another mischaracterization by Petitioner.

Further, the above statement from Lai at most discloses that the PCB is communicatively coupled to the *temperature sensor* and *flow meter* and that when a particular temperature of water is sensed by the sensor 198, the heater and pump rate may be adjusted, i.e., it does not state what is adjusted, how it is adjusted, what is doing the adjustment, that the PCB is communicatively coupled to either the heater or a singular pump, or that the PCB carries out the claimed operability claimed by limitation 1[e]. Ex. 2001, at ¶ 56. In fact, what Petitioner leaves out from its quote of Lai is the very next sentence from its quote that suggests the pump adjusts by itself, i.e., “[t]owards the end of the brewing process, the pump 138 will stop first to let the heater 136 further heat the water to produce steam, as discussed above.” Ex. 1007, at ¶ 0098; Ex. 2001, at ¶ 56. Again, Petitioner attempts to use Mr. Tinkler to provide his understanding of Lai, but again his statements are based on the same quotes used in the Petition and are otherwise conclusory, uncorroborated, and should also be afforded no weight. Ex. 1002, at ¶ 81.

Petitioner also seems to assert (although it is not explicitly stated) that Santi purportedly teaches the electronic coupling of the of the electronic controller to two pumps and a thermal modulator. Pet., at 39. That assertion is also inaccurate. As stated above, Santi, at most, discloses an electronic controller (called a “control means 80”) communicatively coupled to a single pump (called a “pumping means 200”) and a single heater (called a “heating means 40”), which does not teach the

aforementioned claim limitation 1[e] and was teachings already identified by the '524 Patent and in the prosecution history as being in the prior art, deficient, and not rendering the invention in claim 1 obvious. *See supra* § III.3.C.4; Ex. 2001, at ¶ 57. Petitioner also cites to Mr. Tinkler's declaration without explanation, but again his statements are based on the same quotes used in the Petition and are otherwise conclusory, uncorroborated, and should also be afforded no weight. Pet., at 39 (citing Ex. 1002, at ¶ 82).

The last of the secondary references is Majer, wherein Petitioner seems to assert (although it is again not explicitly stated) that Majer purportedly teaches the electronic coupling of the electronic controller to two pumps and a thermal modulator. Pet., at 40; Ex. 2001, at ¶ 58. Again, this is an incorrect assertion. As stated above, Majer at most discloses an electronic controller 9 that is connected to control two pumps (not a thermal modulator), wherein one of those pumps is not even part of the brewing cycle. *See supra* § III.C.5; Ex. 2001, at ¶ 58. Controlling a pump outside of the brewing cycle was also considered by the examiner in the '524 Patent and rejected as not being pertinent to the primary objective the '524 Patent was trying to accomplish, i.e., achieving the precise temperature and flow control in the brewing process for infusing the solute and optimizing beverage flavor. *See id.*; *see also* Ex. 1001, at 2:34–36; *id.* at 9:48–55. Petitioner also cites to Mr. Tinkler's declaration without explanation, but again his statements are based on the same

quotes used in the Petition and are otherwise conclusory, uncorroborated, and should also be afforded no weight. Pet., at 40 (citing Ex. 1002, at ¶ 83).

Perhaps even more problematic than failing to disclose any reference that teaches the complete limitation 1[e], Petitioner has completely failed to sufficiently explain why a POSITA would have taken the individual teachings and modify the structural configuration in Startz. Specifically, Petitioner makes the following conclusory statement (that is echoed by its purported expert Mr. Tinkler):

A POSA would have recognized that it would be obvious to combine Startz's machine with the electronic controller of any of Lai, Santi, and/or Majer, and that such electronic controller would be communicatively coupled to both the thermal modulator and the pumps.

Pet., at 40 (citing Ex. 1002, ¶ 84). Such conclusory and unexplained assertions should be given no weight and do not support an obviousness finding. *See Tech Licensing Corp.*, 545 F.3d at 1327.

To the extent Petitioner tries to somehow cure its clear deficiency by referring to its catchall “motivation to combine” section in Section H of the Petition, it too fails to provide the requisite factual underpinnings to support an obviousness finding. Pet., at 26–28; *In re Van Os*, 844 F.3d. at 1361–62. Specifically, this section states, in conclusory fashion, that each “identified prior patent/publication provides at least one enhancement in the form of control systems, sensors, and components

for enhancing precision, accuracy, and dynamic temperature control” and “that [it] would be within the knowledge of a POSA (in August 2012) incorporated various enhancements in the form of control systems, sensors, and components for enhancing precision, accuracy, and dynamic temperature control” without any explanation what the prior art enhancements are, how they relate to claim 1, how the assembly in Startz would have been modified to include or modified for these “enhancements”, or, perhaps most importantly, why a POSITA would have made said changes at all, much less in light of Startz’s teachings to provide a “cost-efficient” and “simple design solution” for mixing solvent flows. Pet., at 27–28; . As such, Petitioner has failed to carry its burden. *Tech Licensing Corp.*, 545 F.3d at 1327; *see also Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (“We agree with the district court that Toro provides no explanation or reasoning for concluding that one of skill in the art would have combined these particular references to produce the claimed invention. . . . [The District Court] recognized that a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art and that it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.”) (internal quotations omitted); *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1373 (Fed. Cir. 2008) (“[K]nowledge of a problem and

motivation to solve it are entirely different from motivation to combine particular references.”).

In addition the above deficiencies, Petitioner does not cite to any motivation to combine articulated in the prior art. Rather, the Petitioner appears to defer exclusively to Mr. Tinkler, which by Mr. Tinkler’s own admission, appears to lack the personal knowledge of the state of the art and clearly omits an important purpose/feature of the claimed invention, which is to also accurately control flow in addition to temperature of the solvent (i.e., in tandem) without modifying the others infusion parameters. *See supra* § I.C.; Pet., at 27 (stating that Mr. Tinkler’s himself did not design over 60 machines, but rather it was “the POSA working for him assisted with the design of 60 machines” and limiting the “problem” to just “precision, accuracy, and dynamic temperature control”); *see also* Ex. 2001, at ¶ 32.

- b. The Prior Art does not teach or render obvious the electronic controller operably configured to modulate the flow of the solvent through the first solvent pump and the at least one thermal modulator and the another solvent through the second solvent pump

Petitioner’s argument that this limitation 1[e] is taught by the prior art is piggybacked on the prior section, III.C.6.a. and, to do so, it mischaracterizes Startz as disclosing an electronic controller (when it does not). Pet., at 41 (“it [is] obvious that the electronic controller (14) in Startz would have been operably configured . .

.”). The Petitioner also cites to Majer for its disclosure of controlling two pumps, but fails to account for the fact that one of those pumps is located outside of the brewing cycle and that it does not control any equated thermal modulator. *See* Pet., at 41; *see also supra* § III.C.5; Ex. 2001, at ¶ 62. The Petitioner also cites to Santi and Lai for their disclosure of the ability to purportedly electronically control an equated pump and one equated thermal modulator in a brewing process, but fail to account for the fact the equated electronic controller does not control any additional pump in the brewing process to achieve the ’524 Patent’s objectives or, with respect to Lai, the equated electronic controller is not operably configured to control any pump or thermal modulator. *See* Pet., at 41; *see also supra* § III.C.3–4; Ex. 2001, at ¶ 62.

Lastly, Petitioner again refers to the testimony of Mr. Tinkler for his conclusion that a “POSA would have recognized that it would be obvious to combine the machine of Startz with the electronic controller of any of Lai, Santi, and/or Majer” to carry out said limitation 1[e]. Pet., at 41 (citing Ex. 1002, at ¶ 89). Just like the other requirements in limitation 1[e], Mr. Tinkler’s conclusion is baron of the required underlying facts and reasoning supporting such a conclusion, thereby requiring complete disregard for said conclusion. Ex. 1002, at ¶ 89; 37 C.F.R. § 42.65(a); *In re Van Os*, 844 F.3d. 1359, at 1361–62; *Tech Licensing Corp.*, 545 F.3d at 1327; *Metalcraft of Mayville, Inc.*, 848 F.3d at 1367; *Innogenetics, N.V.*, 512 F.3d at 1373.

Petitioner also asserts that “[a]lternatively, if conduit 4 was the first conduit, Startz’s further heating device 16 could be the at least one thermal modulator”. Pet., at 32. Taking such an interpretation, however, fails to teach the limitation 1[e] because the heating device 16 in Startz is only taught to be utilized when pump 8 is operating, *not* pump 7, i.e., both pumps would not be operating (much less controlled electronically) as pump 8 takes heated solvent from the heating device 16 and circulates it in the circuit inside of the heating device 2 to descale it—if pump 8 was operating there would be no need to utilize the heater/pump 8 to descale. Ex. 1004, at ¶ 0020; Ex. 2001, at ¶¶ 37–38.

Even assuming, *arguendo*, a POSITA would have been motivated to add an electronic controller in Startz to control the performance of both pumps 7, 8 and heating device 2, providing for the ability for said electronic controller to *independently* control each of those components, in particular the two pumps 7, 8 would also be counter to the teachings in Startz. Ex. 2001, at ¶ 36, 64–65. Specifically, as described above, Startz has a reactive (instead of proactive) pump configuration that reacts to a determined flow rate received from the flow meter 9 flow of solvent downstream of the pump 7, wherein Startz discloses the operability of those pumps 7, 8 (whether through a potential electronic controller or otherwise) being configured in a dependent relationship (instead of independent control as required the portion of limitation 1[e] having the electronic controller “operably

configured to modulate the flow of the solvent through the first solvent pump and the at least one thermal modulator and the another solvent through the second solvent pump”). Ex. 1004, at ¶¶ 0014, 0019; Ex. 2001, at ¶ 36, 64–65. Specifically, with reference again to FIG. 1 of Startz (reproduced below), Startz states that: “The mixing portion and thus the admixing quantity of the bypass flow pump 8 can be controlled accurately if the total rate of flow is known, which can be determined via the fluid flow meter 9, for example.” *Id.*

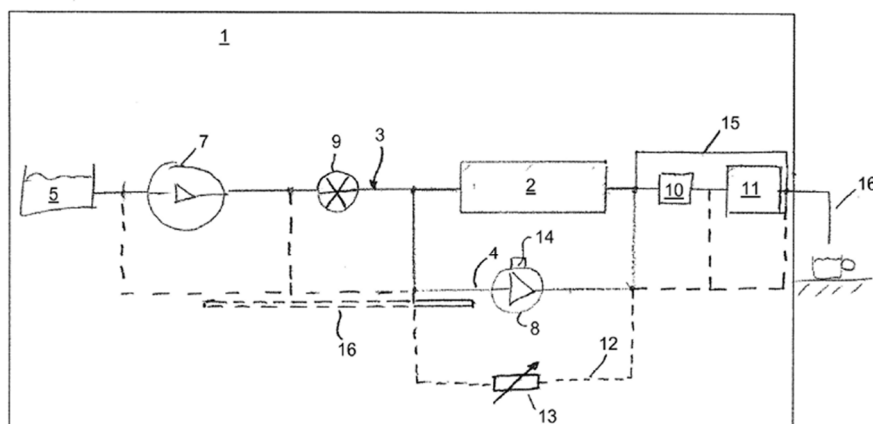


FIG. 1

Said another way, the location of the flow meter 9 downstream of the pump 7, but upstream of bypass pump 8, requires, according to Starz, the reactive approach of running pump 7, determining the overall flow rate from meter 9, and then pumping a quantity of solvent dependent on the flow from the pump 7. *Id.* Petitioner and its expert do not explain or account for said dependent mixing process articulated in Startz that runs counter to independent control in limitation 1[e], further buttressing

why a POSITA would not have been motivated to modify Startz or combine the components and operability alleged.

For the foregoing reasons, Patent Owner submits that Petitioner has not met its burden to show a reasonable likelihood it would prevail with respect to the contention that claim 1 is unpatentable over the combination of Startz in view of any of its secondary references or its purported expert.

7. *Dependent Claims*

Dependent claims 2-5 all depend on independent claim 1, so Patent Owner submits that Petitioner's challenges to dependent claims 2-5 are not rendered obvious for at least the deficiencies set forth above with respect to the challenged independent claim 1.

D. GROUND 2: ASSERTED OBVIOUSNESS OF CLAIMS 6-10 BASED ON STARTZ IN VIEW OF ONE OR MORE OF THE KNOWLEDGE OF A POSITA, AAPA, LAI, SANTI, PORZIO, AND/OR MAJER

Petitioner challenges claims 6-10 as unpatentable under 35 U.S.C. § 103(a) based on the combination of Startz and view of five secondary references and the testimony of its purported expert, Mr. Tinkler. Pet., at 53–66. Ground 2 suffers from the same deficiencies noted above in connection with Ground 1. *See supra* § III.C. Therefore, for the same reasons discussed above, Patent Owner submits that the information presented in the Petition fails to establish a reasonable likelihood that Petitioner would prevail in showing that claim 1 unpatentable.

E. GROUND 3: ASSERTED OBVIOUSNESS OF CLAIM 11 BASED ON STARTZ IN VIEW OF ONE OR MORE OF THE KNOWLEDGE OF A POSITA, UPSTON, LAI, SANTI, AND/OR MAJER

Petitioner challenges claim 11 as unpatentable under 35 U.S.C. § 103(a) based on the combination of Startz and view of four secondary references and the testimony of its purported expert, Mr. Tinkler. Pet., at 67–72. Ground 3 suffers from the same deficiencies noted above in connection with Ground 1. *See supra* § III.C. Therefore, for the same reasons discussed above, Patent Owner submits that the information presented in the Petition fails to establish a reasonable likelihood that Petitioner would prevail in showing that claim 1 unpatentable.

F. GROUND 4: ASSERTED OBVIOUSNESS OF CLAIM 12 BASED ON STARTZ IN VIEW OF ONE OR MORE OF THE KNOWLEDGE OF A POSITA, AAPA, UPSTON, LAI, SANTI, PORZIO, AND/OR MAJER

Petitioner challenges claim 12 as unpatentable under 35 U.S.C. § 103(a) based on the combination of Startz and view of six secondary references and the testimony of its purported expert, Mr. Tinkler. Pet., at 72–75. Ground 4 suffers from the same deficiencies noted above in connection with Ground 1. *See supra* § III.C. Therefore, for the same reasons discussed above, Patent Owner submits that the information presented in the Petition fails to establish a reasonable likelihood that Petitioner would prevail in showing that claim 1 unpatentable

IV. RELIEF REQUESTED

For the reasons set forth above, Patent Owner submits the information presented in the Petition fails to establish a reasonable likelihood that Petitioner would prevail in showing that claim 1 unpatentable and institution should be denied.

Respectfully submitted,

Dated: February 3, 2025

/Mark C. Johnson/

Mark C. Johnson
Counsel for Patent Owner
Reg. No. 69,349

JOHNSON | DALAL
111 N. Pine Island Road
Suite 105

Plantation, FL 33324

Tel: 954-507-4500

Fax: 954-507-4502

Email: MJ@JohnsonDalal.com

Service@JohnsonDalal.com

CERTIFICATION UNDER 37 C.F.R. 42.24(D)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response to Petition totals 8,426 which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1)).

Respectfully submitted,

/Mark C. Johnson/

Mark C. Johnson

Counsel for Patent Owner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), I hereby certify that the foregoing document and its supporting exhibits were served on February 3, 2025, via email to counsel for Petitioner, i.e., Perry S. Clegg (perry.clegg@johnsonmartinlaw.com), Matthew S. Nelles (matt.nelles@johnsonmartinlaw.com), and James David Johnson (david.johnson@johnsonmartinlaw.com).

Respectfully submitted,

/Mark C. Johnson/

Mark C. Johnson

Counsel for Patent Owner