

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

IPR2024-01492
Patent No. 10,772,456

DECLARATION OF GIDEON DUVALL

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TABLE OF EXHIBITS

Exhibit	Description
2002	<i>Curriculum Vitae</i> of Gideon Duvall
2003	Statutory Disclaimer Filing Receipt

DECLARATION OF GIDEON DUVALL

I, Gideon Duvall, do hereby declare and say as follows:

I. INTRODUCTION

1. My name is Gideon Duvall, the president and principal owner of Espresso, Inc., a Delaware corporation that owns the current assignee and owner, Duvall Espresso IP Enforcement, LLC.

2. Duvall Espresso, Inc. is a practicing entity based out of Georgia, in that we manufacture and produce espresso machines, see, for example, our domain: <https://www.duvallespresso.com/>.

3. Duvall Espresso, Inc. was created in 2018, but I have been personally involved in the development, creation, manufacture, and/or production of coffee-related machines and innovations since at least 2008.

4. I am providing this declaration, however, as a technical expert to provide my opinion as to the assertions made by Petitioner Decent Espresso International Ltd. (“Petitioner”) in its Petition for Inter Partes Review (“IPR”) (Paper 1), assertions made by Petitioner’s purported expert, Mr. Ian Tinkler, and the validity of U.S. Patent No. 10,772,456 (“the ’456 Patent”).

5. This Declaration is based on information currently available to me and to the extent that additional information becomes available, I reserve the right to continue my investigation and study, and thus may expand or modify my opinions

as my investigation and study continues. I may also supplement my opinions in response to any additional information that becomes available to me, any matters raised by Petitioner and/or opinions rendered by Petitioner's expert(s), or in light of any relevant orders from the Administrative Law Judge.

6. My opinions are based on my years of education, research and experience, as well as my investigation and study of relevant materials.

7. While I have taken time away from the business, I am not being compensated for my time or opinions in this case.

II. QUALIFICATIONS

8. A true and correct copy of my *Curriculum Vitae* is attached hereto as Exhibit 2002 to support my education, research, skill, knowledge, and experience in the field of coffee-related machines and innovations, including the state of the art since at least 2008 and the creation, manufacture, and production of coffee-related machines.

9. I have been a named and/or sole inventor on patents related to technology unrelated to coffee-related machines since 2007 (e.g., U.S. Patent No. 7,985,394 entitled "System And Method For Manufacturing Carbon Nanotubes").

10. I am the sole inventor on the '456 Patent, and have been the sole inventor on many U.S. and foreign utility patents since at least 2008, all relating to coffee-related machines and innovations, including the following U.S. Patent Nos.

9,021,938 (entitled “System And Method For Brewing Beverages”), 9,867,491 (entitled “Device And System For Brewing Infused Beverages”), 10,258,187 (entitled “Device And System For Brewing Infused Beverages”), 10,292,523 (entitled “Controlled System For Brewing Infused Beverages”), 10,349,774 (entitled “Device And System For Creating Infused Beverages”), 11,266,265 (entitled “Device And System For Creating Infused Beverages”), 11,375,845 (entitled “Controlled System For Brewing Infused Beverages”), 11,576,524 (entitled “Device And System For Brewing Infused Beverages”), 11,957,271 (entitled “Method Of Generating A Desired Temperature Of An Infused Beverage Within A Brewing Assembly”), 12,150,585 (entitled “Controlled System And Method For Brewing Infused Beverages”).

11. Thus, I believe am qualified to render the opinions set forth herein.

III. MATERIALS CONSIDERED

12. The materials that I have considered and rely upon in preparing my Declaration and forming my opinions include all exhibits cited in this Declaration, Patent Owner’s Preliminary Response, and the Petition and all of its cited exhibits, including the Declaration of Ian Tinkler, the ’456 Patent, the file history for the ’456 Patent, and all of the relevant prior art.

13. I have further relied on my academic and personal/professional experience in reaching the opinions expressed in this Declaration.

IV. SCOPE OF OPINIONS

14. I set forth my opinions throughout this Declaration. It is my opinion that claims 1-9 of the '456 Patent are not obvious in view of any of the asserted references, alone or in combination, discussed herein.

V. LEGAL STANDARDS

15. For purposes of this Declaration, I use the legal principles below as a guide in formulating my opinions. I am not an attorney, and I am not offering any opinions regarding legal matters; however, I have personally been involved in the examination process for U.S. patents and have otherwise been informed by my counsel of the legal principles relevant to the issues herein and have the following understanding.

16. I understand that in deciding whether to issue a patent, the U.S. Patent and Trademark Office ("USPTO") examines the patent specification, its claims, and relevant prior art references to determine whether the patent application and its claims meet the requirements for patentability. I understand that if the USPTO then issues the patent, it has determined that the claims are valid. I understand that the law recognizes that the USPTO possesses special expertise to conduct such determinations, and that, as a result, each claim of a patent issued by the USPTO is presumed valid by law. This presumption of validity can be overcome only if the party seeking to invalidate a claim in a non-administrative proceeding like federal

court, proves invalidity by clear and convincing evidence, which I understand to mean evidence that convinces you that it is highly probable that the particular proposition is true. I understand that clear and convincing evidence is more than a preponderance of the evidence but less than beyond a reasonable doubt. I understand that the clear and convincing evidence standard applies to all aspects of an allegation of anticipation or obviousness, including the prior art status of the relevant reference(s).

17. I understand the first step in determining whether or not a patent claim is valid is to properly construe the claims. I also understand that the claims must be construed the same way in determining validity/invalidity and infringement/non infringement. I also understand that, as a general matter, a claim should not be limited to a preferred embodiment, but that in certain cases, the scope of the right to exclude may be limited by a narrow disclosure or by positions taken, such as by statements made during patent prosecution. I also understand the claims must be supported by the specification. Also, to the extent that a patent claims priority to an earlier filed application, the claims must be supported by the disclosure in that application. For terms that have not been construed I understand that they should be afforded their plain and ordinary meaning to one of ordinary skill in the art.

18. I further understand that a claimed invention is not patentable under 35 U.S.C. § 103 if the differences between the invention 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 the subject matter pertains. Obviousness, as I understand it, is based on the scope and content of the prior art, the differences between the prior art and the claim, the level of ordinary skill in the art, and secondary indicia of obviousness to the extent they exist.

19. I understand that whether there are any relevant differences between the prior art and the claimed invention is to be analyzed from the view of a person of ordinary skill in the art at the time of the invention. A person of ordinary skill in the art is a hypothetical person who is presumed to be aware of all of the relevant art at the time of the invention. The person of ordinary skill is not an automaton, and may be able to fit together the teachings of multiple patents employing ordinary creativity and the common sense that familiar items may have obvious uses in another context or beyond their primary purposes.

20. I understand that if a proposed combination of references does not teach or suggest or suggest all of the elements of a claim, the combination cannot render the claim obvious. I also understand that in order to combine prior art references to show obviousness, a person of ordinary skill in the art, without knowledge of the claimed invention, or without the use of improper hindsight, must have been motivated to combine the prior art by some suggestion or teaching in the prior art, the knowledge of one of skill in the art, or the nature of the problem to be solved.

21. An invention is obvious if a designer of ordinary skill in the art, facing the wide range of needs created by developments in the field, would have seen an obvious benefit to the solutions tried by the applicant. When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, it would be obvious to a person of ordinary skill to try the known options. If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique would have been obvious.

22. I understand that obviousness of a patent claim cannot properly be established through hindsight using a challenged patents specification/figures as a guide, and that elements from different prior art references, or different embodiments of a single prior art reference, cannot be selected to create the claimed invention using the invention itself as a roadmap. I understand that the claimed invention as a whole must be compared to the prior art as a whole, and courts must avoid aggregating pieces of prior art through hindsight that would not have been combined absent the inventors' insight.

23. I understand that in deciding obviousness, it is appropriate to consider whether some teaching, suggestion, or motivation would have led a person of ordinary skill in the art to combine the invalidating references. I also understand that it is appropriate to look to a variety of factors when evaluating reasons to combine

references in an obviousness analysis, and that it is important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. I understand that in determining whether a combination of prior art references renders a claim obvious, it may be helpful to consider whether there is some teaching, suggestion, or motivation to combine the references and a reasonable expectation of success in doing so. I understand, however, that the teaching, suggestion, or motivation to combine inquiry is not required and may not be relied upon in lieu of the obviousness analysis outlined above. I understand 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. I also understand that this is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.

24. I also understand that in evaluating whether patent claims are invalid as obvious, objective indicia of non-obviousness may be considered. Such objective indicia can include commercial success, long-felt but unsolved needs, copying, praise, unexpected results, industry acceptance, failure of others, and skepticism by experts.

VI. LEVEL OF ORDINARY SKILL IN THE ART

25. I understand that patent claims are to be interpreted from the viewpoint of one of ordinary skill in the relevant art. To determine the level of skill that would be “ordinary,” I understand that a person of ordinary skill (“POSITA”) must generally have the capability of understanding the general principles that are applicable to the pertinent art.

26. In my opinion, a POSITA would be a mechanical or materials engineer, or other similar degree, having at least two to three years of personal experience in designing or development of coffee machines. More work or practical experience may qualify one not having the requisite education as a POSITA art while a higher level of education could offset less experience.

27. My opinions set forth below would not change regardless of whether my proposed definition or Mr. Tinkler’s definition of a person of ordinary skill in the art is adopted.

VII. CLAIM CONSTRUCTION

28. I believe a plain and ordinary meaning should be given to the claim terms, but have reviewed the proposed constructions by Petitioner and believe an opinion concerning said terms are not needed to support a finding that Petitioner has failed to show the challenged claim 1 is obvious in light of the cited art.

VIII. U.S. PATENT NO. 10,772,456

29. The '456 Patent is entitled “a device and system for brewing infused beverages”, was filed on September 14, 2020, and has an effective filing date of August 16, 2012. Ex. 1001 (cover page). The '456 Patent has a total of 16 claims, wherein claims 1 and 11 are independent claims and claims 2-10 and 12-16 are dependent claims. Claim 10 was not challenged by Petitioner. I have filed a statutory disclaimer of claims 11-16, thereby making analysis of said claims unnecessary. *See* Ex. 2003.

30. Independent claim 1 (which was different in scope than claim 11) is directed toward a specially configured brewing assembly structure and system 300 designed to rapidly control temperature of solvents used to infuse a solute 333 in the brewing chamber. Ex. 1001, at 15:62–64 (“The STMS , 120 , 220, 320 is a system for providing rapidly variable, accurate and precise temperature solvent to the brewing chamber”).

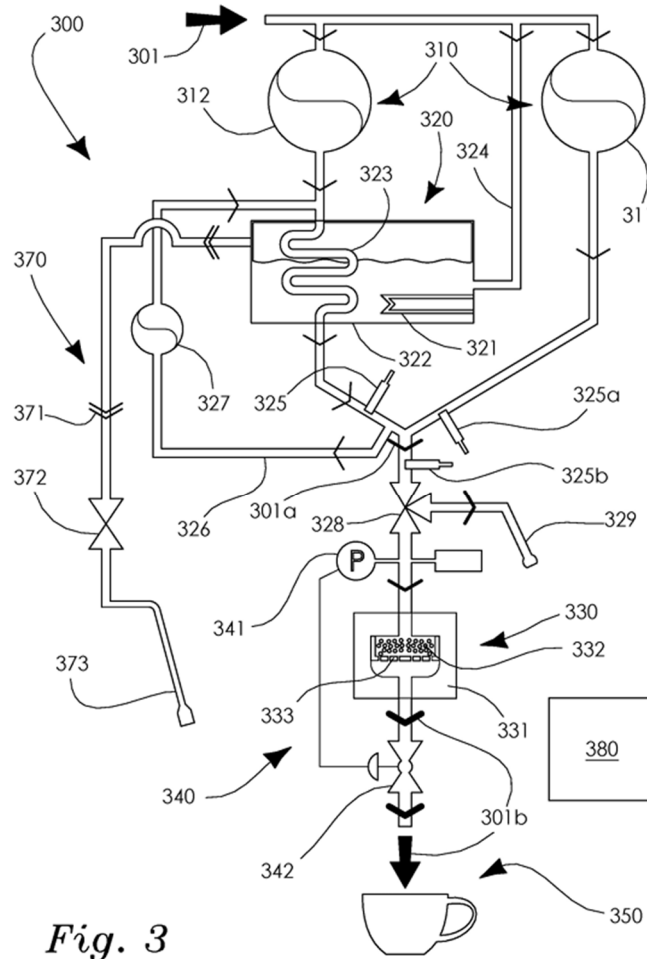


Fig. 3

31. Claim 1 requires a brewing assembly 300 that is operable to induce a flow of a solvent 301 and control the temperature of said solvent 301 in the brewing assembly to a desired temperature by heating one of two solvents (e.g., solvent disposed in the conduit downstream of pump 312) with a “solvent temperature modulation system” (“STMS”) 320 that is mixed with another solvent downstream (e.g., solvent disposed in the conduit downstream of pump 311) to create a singular “resulting solvent” 301a at a “resulting temperature” that is then heated to the desired temperature by utilizing a “resulting solvent valve” 328 configured to flow said

resulting solvent back through the STMS 320 through a solvent recirculation system 326 until the resulting temperature reaches the desired temperature. Ex. 1001, at 11:58–67, 12:27–36, 12:47–55.

32. ***Importantly***, claim 1 requires the resulting solvent valve 328 to have ***three positions or states*** in order to direct the resulting solvent until reaching the resulting temperature, i.e., the resulting valve has to have a ***closed state or position*** not allowing any resulting solvent through the resulting solvent valve 328 (e.g., for recirculation and heating), ***a first active state or position*** that directs resulting solvent through the resulting valve to a removal conduit 328 without passing said resulting solvent through the brewing chamber, and a ***second active state or position*** that directs resulting solvent through the resulting valve to the brewing chamber. Id. at 12:47–67 to 13:1–33. The claimed valve configuration enables the rapid temperature control described above without having to heat a comparatively larger fluid mass. *See* Ex. 1001, at 15:62–64.

IX. RELEVANT ASSERTED REFERENCES

33. With reference below to FIG. 1 from Coccia (Ex. 1006, the primary reference utilized by Petitioner and its purported expert), said reference is directed to a coffee machine for producing and dispensing coffee-based beverages with a specific structure and method associated with “controlling the dispensing pressure” and “regulat[ing] the flow rate of water output as a function of a detected dispensing

pressure valve”, wherein the “dispensing pressure” is the pressure of the solvent in the machine “supplied to the filter unit [31] which contains the ground coffee.” Ex. 1006, Abstract, at ¶ 0025.

34. More specifically, Coccia’s machine is addressing the issues with prior coffee machines having a hydraulic circuit that can increase pressure in the infusion chamber “without having to vary the temperature”, but that often exceed the desired dispensing pressure, leading to “adverse effects,” and those machines that may account for the infusion pressure, but do not account for the needed flow rate at the infusion chamber to avoid “excessive extraction”, or not enough extraction. *Id.* at ¶¶ 0011, 0020. These issues are principally caused because the coffee ground size and compaction is inconsistently generated from each brewing cycle, or “dispensing operation”, to the next. *Id.* at ¶¶ 0020, 0057.

35. Coccia states that “Applicant’s have observed that it would be advantageous in particular to be able to dispense the beverage in a controlled manner, and possibly to act on the water pressure in response to a variation in the grain size of the coffee.” *Id.* at ¶ 0022; *see also id.* at ¶ 0024 (discussing Coccia’s intent to “provide a coffee machine which makes it possible to control the whole cycle of pressurisation [sic] of the coffee during dispensing by acting on the value of the flow of water in order to enable a regulation of the preparation of the beverage”).

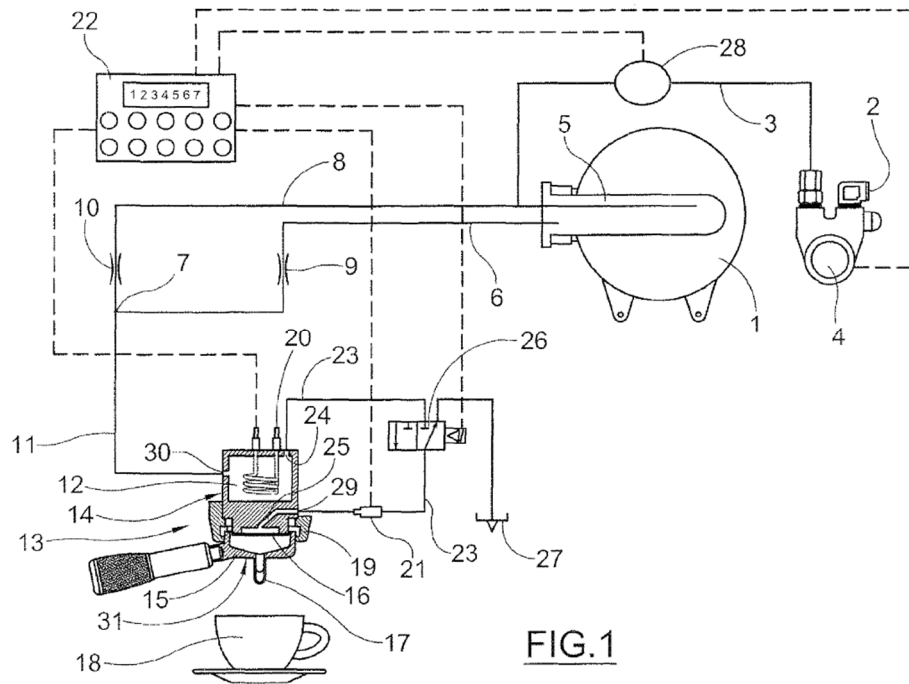
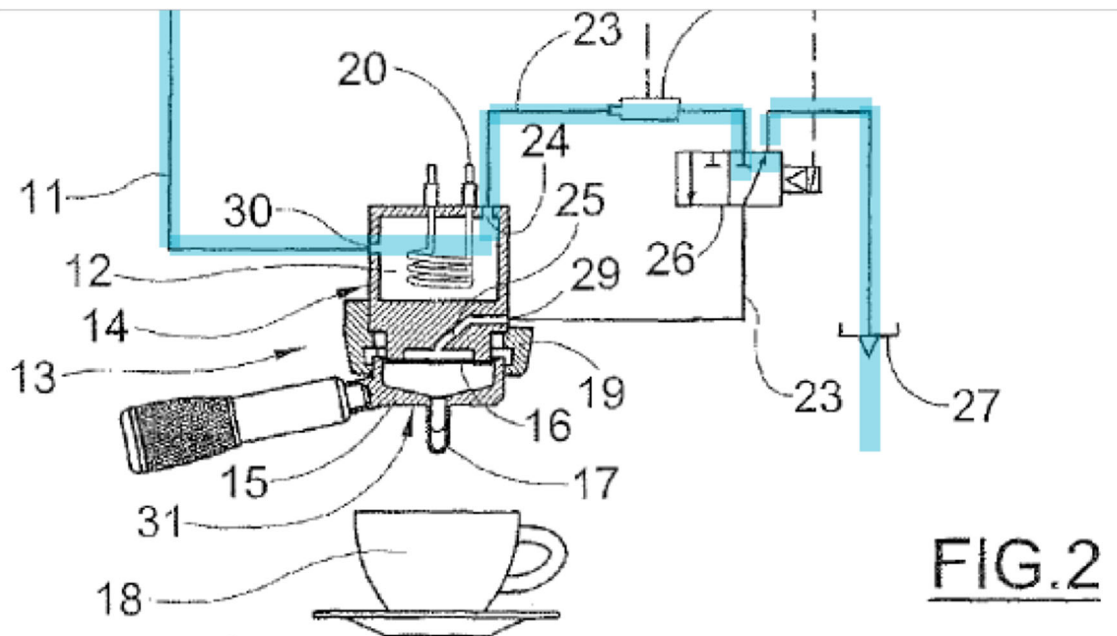


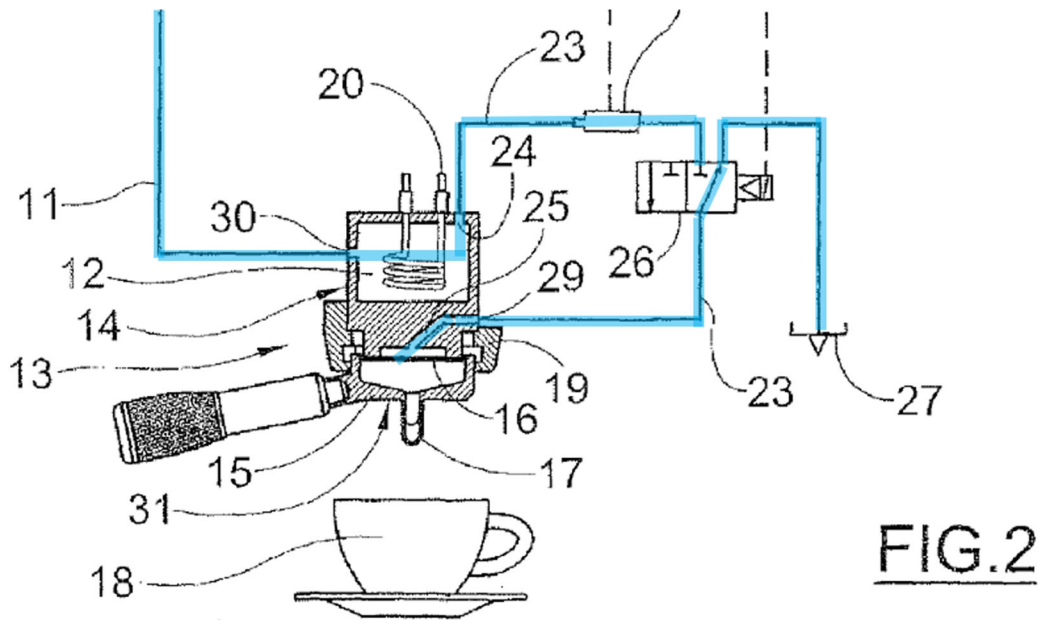
FIG.1

36. Therefore, Coccia discloses a hydraulic pump 4 that is configured to pump water through ducts 3, 6, 8, 11 until reaching a heating chamber 12 where the solvent (which may be preheated) is heated to the “dispensing temperature T2” before it is introduced into the filter unit 31 through ducts 23, 25. *Id.* at ¶¶ 0043–45. Separating the duct 23 and the “dispensing duct” 25 is an “electrovalve 26 which has *two* operating positions”, i.e., “one position, causes the water to be supplied to the filter holder and thus the formation of the beverage, and in the other position it discontinues the supply of the water and communicates with a discharge 27 external to the machine.” *Id.* at ¶ 0046 (emphasis added). ***Importantly, and in direct contradiction to Petitioner’s annotation on page 40 of its Petition,*** when the electrovalve 26 is in its “other position” where it “discontinues the supply of the

water and communicates with a discharge 27 external to the machine”, it does ***not*** direct “the flow of the resulting solvent to a removal conduit without passing the resulting solvent through the brewing chamber”, but rather takes resulting solvent through the resulting solvent out from the brewing chamber to depressurize. *Id.* A true and accurate comparison between Petitioner’s mischaracterization of Coccia and the actual flow (based on an annotated FIG. 2 from Coccia) is reproduced below. The use of valve 26 to supply brewing water to the filter holder and depressurization of the filter holder after the formation of the beverage is clearly described by Coccia and utilized on the vast majority of all modern espresso machines and should be known by a POSITA.



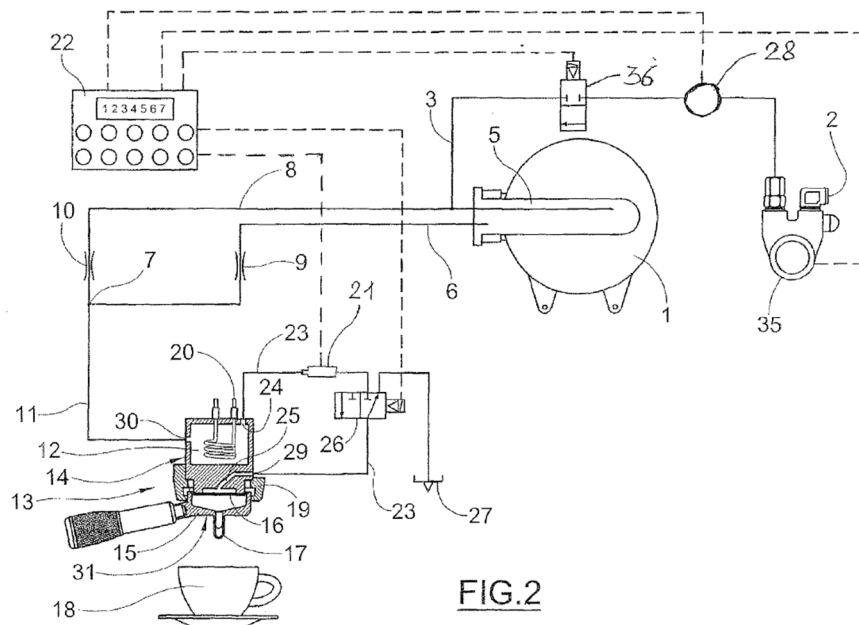
Petitioner’s Mischaracterization



Coccia's Actual Flow

37. In any given brewing cycle when the machine 13 in Coccia is “operating” (or in a “dispensing operation”), its device is configured to either (1) when the valve 26 in the position to direct the resulting solvent to the brewing chamber pump preheated or heated solvent directly to the dispensing duct 25 and vary the dispensing pressure and/or flow rate by changing the pump speed or, as shown in FIG. 2, modifying (*but never closing*) a flow regulation valve 36 upstream of the heating chamber 12 or (2) when the valve 26 in the other position (depicted and annotated immediately above) to direct the remaining resulting solvent from and through the brewing chamber to the duct 23 and out through the discharge 27. *Id.*; see also *id.* at ¶¶ 0057, 0074 (“The pump is, for example, actuated by a variable frequency electronic drive, whose frequency variation corresponds to a variation of

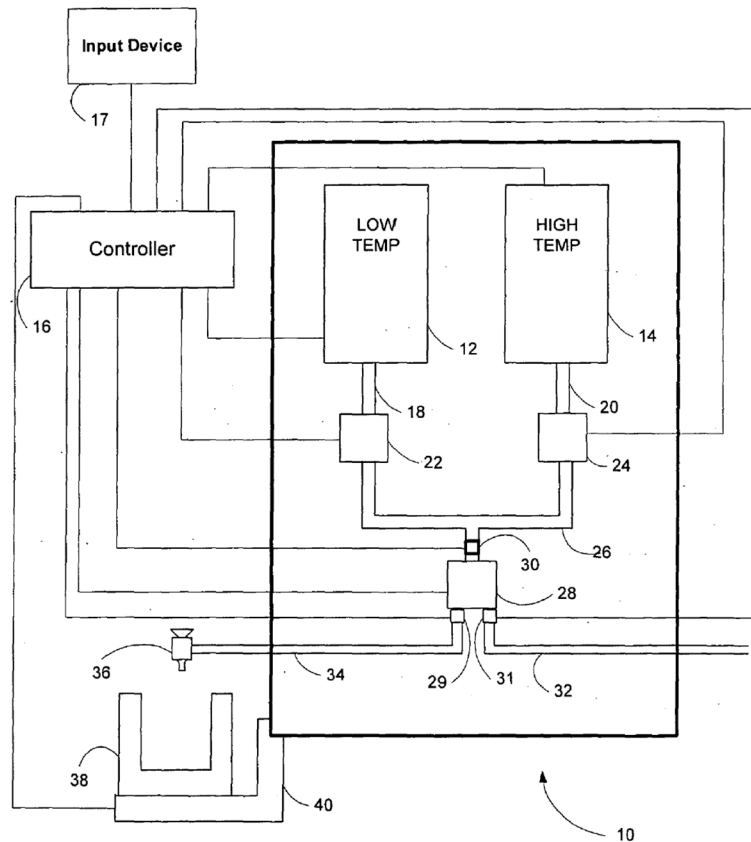
the speed of rotation of the pump. In this way it is possible to vary the flow of water supplied the pump to the duct 3 and therefore the water pressure. The quantity of water supplied to the hydraulic circuit corresponding to one dispensing operation, or in one dispensing step, depends on the type of coffee, for example 20 cm³ for an espresso coffee.”) (“[A] machine of this type, by monitoring the dispensing pressure, it is possible to adjust the value of the pressure when the coffee dispensing step is taking place by acting on the output of flow rate of water from the flow regulation valve 36.”). Said another way, to modify dispensing pressure in Coccia’s design, the embodiment in FIG. 1 may use a pump to modify flow rate, wherein the embodiments in FIGS. 2-4 (as illustrated below) utilize the flow regulation valve 36 to either add or remove resistance to the flow (i.e., there are no positions to direct flow—much less a “resulting solvent” flow).



38. With reference below to FIG. 1 from Anson (Ex. 1018, a secondary reference utilized by Petitioner and its purported expert), said reference is directed to “an apparatus 10 for dispensing hot water at a variety of volumes and at a variety of temperatures and volumes” as it “is desirable in restaurants and other institutional cooking establishments to have a source of hot water for various cooking purposes,” “preparation of hot chocolate, tea, coffee,” and “cleaning purposes”. Ex. 1018, at ¶¶ 0002, 0014. Anson effectuates the same by using a low temperature tank 12 fluidly coupled to a “first valve 22” and a “high temperature tank 14” fluidly coupled to a “second valve 24”, wherein said valves are electronically controlled to flow into “a common passage 26 where water is mixed” and into a “mixing valve 28.” Ex. 1018, at ¶ 0014.

39. The “[m]ixing valve 28 may be a single valve that selectively shuts off or permits flow to one of multiple outlets or may take the form of two valves, dispense valve 29, drain valve 31 which are coupled to and controllably operated by controller 16 to allow flow to only a desired outlet.” *Id.* Importantly, there is no disclosure in Anson of the “mixing valve 28” (whether singular or broken into two valves) being upstream of any brewing chamber.

FIG. 1



X. PETITIONER’S GROUNDS FOR CANCELLATION DO RENDER THE CHALLENGED CLAIMS INVALID BECAUSE CLAIM 1 IS NOT OBVIOUS OVER THE CITED ART

40. As supported above in section IX, the prior art cited by Petitioner and its purported expert does not teach or render obvious a brewing assembly as claimed by independent claim 1.

41. In particular, Petitioner equates both the “electrovalve 26” and the “flow regulation valve 36” to the “resulting solvent valve” to purportedly teach limitation 1[e]. Pet., at 35. Initially, the hydraulic variable-flow valve 36 in Coccia

is not downstream of any equated conduit joint and upstream of a brewing chamber, nor would it have been obvious utilizing Anson to make it such.

42. More specifically, claim 1 requires that any equated “resulting solvent valve” be disposed upstream of the brewing chamber and downstream of the conduit joint, which Coccia teaches it clearly is not (whether explicitly, implicitly, or inherently). Ex. 1001, at FIG. 2. Petitioner cites to Mr. Tinkler’s declaration stating that a POSITA “would have understood that valve 36 ***could be*** disposed upstream of the brewing chamber 31 and downstream of the conduit joint 7, based on Coccia.” Pet., at 36 (citing Ex. 1002, at ¶ 87) (emphasis added). This statement, however, is conclusory and there are no factual underpinnings or articulated reasoning explaining how, or more importantly why, a POSITA would make such a modification or why said flow regulation valve 36 is utilized by Coccia.

43. Further, Mr. Tinkler’s assertion that the flow regulation valve 36 would teach the limitation 1[e] is also inaccurate because said valve, as discussed above, is for (as its name provides) “flow regulation”, i.e., an inline flow restrictor. *See supra* § IX. Said another way, Coccia does not teach the flow regulation valve 36 configured to move or moving from one position to another as limitation 1[e] requires and any other interpretation demonstrates a lack of understanding of said limitation or the Coccia reference. *Id.* More specifically, a “flow regulation valve” simply adds or removes resistance to flow and does not change the direction of flow

from one conduit to another and thus has no relation to the resulting solvent valve configuration discussed in limitation of 1[e]. *See id.* Additionally, the configuration and functionality of the flow regulation valve 36 also has no effect on the configuration and functionality of valve 26 in Coccia's hydraulic circuit.

44. Petitioner and Mr. Tinkler also assert that because Coccia states that the “hydraulic variable-flow valve 36 is disposed along the hydraulic circuit which brings the hydraulic pump into fluid communication with the dispensing device 13” it could just simply be moved or located anywhere in the hydraulic circuit before the dispensing device 13. Pet., at 36 (citing Ex. 1002, at ¶ 87). What Petitioner and its purported expert strategically omit or fail to discuss, however, is that when the pump 4 is not used to control dispensing pressure (FIG. 1) during the “whole cycle of pressurisation [sic] of the coffee during dispensing”, the hydraulic variable-flow valve 36 is used to do so (FIGS. 2-4). Ex. 1006, at ¶¶ 0024, 0026, 0046, 0057, 0074. To that end, the purpose of the variable-flow valve 36 is to “control the pressure ***introduced into*** the supply duct 11” and “supply variable quantities of water to the at least one dispensing device”. *Id.* at ¶¶ 0026, 0071 (emphasis added).

45. Mischaracterizing or rewriting Coccia to suggest that the variable-flow valve 36 is downstream of the equated conduit joint 7 (i.e., ***in*** the supply duct instead of ***into*** the supply duct) would lead to the very same problems in the art Coccia was trying to address, i.e., generating very high pressures throughout the system until

reaching said valve 36 that jeopardize the structural integrity of seals and ducts in the hydraulic circuit. *Id.* at ¶¶ 0011, 0026, 0071 (emphasis added) (“It has nevertheless been observed that the use of a pressure above 10 bar may have adverse effects. Raising the pressure beyond a certain value makes it necessary in practice to grind the coffee very finely and thus to refine the filters with the result that the excessively fine grinding could ultimately cause the filter to become obstructed leading to problems of high stresses on the sealing members and ducts, thereby worsening the quality of the beverage.”). This is why in *all* of the figures in Coccia that depict the two ducts 6, 8 utilized to form a conduit joint 7, the hydraulic variable-flow valve 36 is *upstream* of said conduit joint 7 (along with the ducts 6, 8, boiler 1, and heat exchanger). Ex. 1006, at FIGS. 2–5.

46. Petitioner next asserts it just would have been obvious to modify Coccia’s system to do so using the teachings of Anson and Mr. Tinkler. Pet., at 38–39 (citing Ex. 1002, at ¶¶ 0089–91). This assertion should be rejected for multiple reasons. Petitioner equates the “mixing valve 28” in Anson to the “resulting solvent valve” in limitation 1[e]. As discussed above, Anson does not teach the mixing valve 28 (whether singular or broken into two valves) being upstream of any *brewing chamber*. See *supra* § III.C.3. Rather, the mixed water either goes to a dispense tube 34 when reaching the desired temperature and “directed out a dispensing device 36” (like a faucet) or a drain tube 32 (to be recycled, disposed, or used). *Id.* Petitioner’s

purported expert does nothing more than regurgitate the same portions from Anson cited by the Petition; therefore, because Anson does not teach said limitation, Petitioner's assertion fails. *See id.*

47. Even if Anson did somehow teach said portion of limitation 1[e], the Petitioner and its purported expert fail to articulate any reasoning or factual underpinning explaining how and why a POSITA would have made said changes, particularly considering Petitioner's assertions (that Patent Owner does not dispute) that Coccia already teaches a valve upstream of the brewing chamber and downstream of a conduit, i.e., the "electrovalve 26". Pet., at 35.

48. Said differently, Petitioner and its purported expert make no effort to explain why would a POSITA would add another valve in a redundant configuration/position within the hydraulic circuit. This is just one of the issues with proposing such a combination with Coccia and it goes unaddressed by Petitioner or its purported expert.

49. Furthermore, both the hydraulic variable-flow valve 36 and the electrovalve 26 in Coccia are not configured to operate as claimed by limitation 1[e] and it would not have been obvious to modify them as such.

50. More specifically, claim 1 requires that any equated "resulting solvent valve" also be "operably configured to selectively have a ***closed state*** inhibiting flow of the resulting solvent to the brewing chamber and an ***active state*** that includes a

first selective directional flow path directing the flow of the resulting solvent to a removal conduit without passing the resulting solvent through the brewing chamber and a *second selective directional flow path* directing the flow of the resulting solvent to the brewing chamber, thereby enabling resulting solvent delivered to the brewing chamber at a desired temperature.” Said differently, there are three positions required of a valve receiving the resulting solvent are: (1) closed position that does not allow resulting solvent to the brewing chamber, (2) an open position that just directs the resulting solvent to a removal conduit (for reheating) and also not to the brewing chamber, and (3) an open position that just directs the resulting solvent to the brewing chamber when the heated resulting solvent reaches the desired temperature.

51. This portion of limitation 1[e] is likely the biggest point of distinction between Coccia, as Coccia’s coffee machine was not designed to utilize any of its valves to direct a resulting solvent back through any equated STMS 320 until the resulting temperature of the resulting solvent reaches the desired temperature (like claim 1 of the 456 Patent). Rather, like many other known pressurized coffee assemblies, Coccia is utilizing the two-position valve to simply depressurize the group head/brewing chamber.

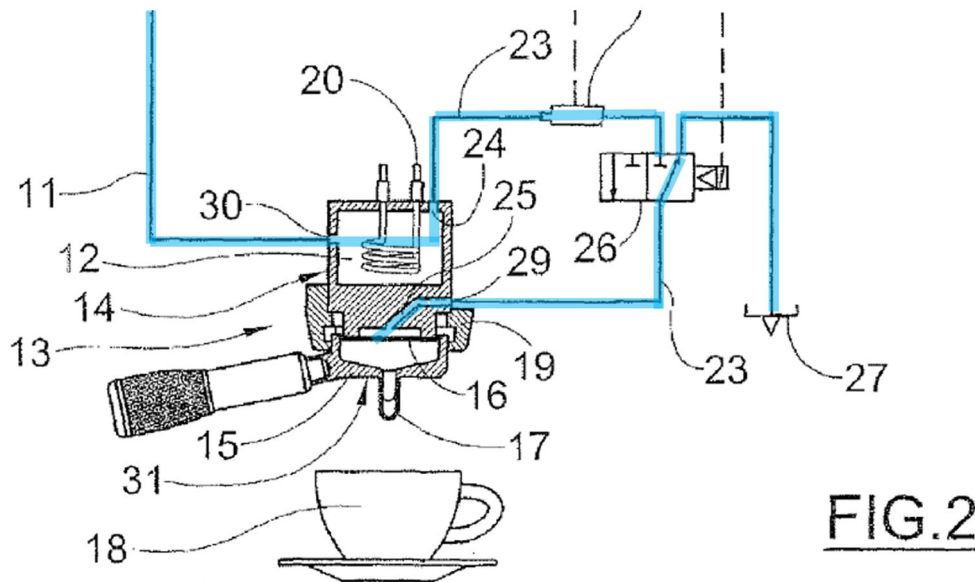
52. To purportedly teach that the hydraulic variable-flow valve 36 and the electrovalve 26 have a closed position that does not allow flow of resulting solvent

to the brewing chamber, the Petitioner cites to page 49 of Mr. Tinkler’s declaration and paragraphs 0086-87 of Coccia, stating that “Coccia states ‘the variable-flow valve 36 is actuated in order to supply a predetermined flow rate of water to the dispensing device...The control unit closes the opening of the valve when the quantity of water metered by the flow measurement device is equal to the quantity of water corresponding to one dispensing operation.’”. Pet., at 39. Noticeably absent from said quotation or Mr. Tinkler’s declaration is any reference or support for the electrovalve 26 being operably configured to be in a closed position.

53. As discussed above in section IX and as depicted in all of the figures, the electrovalve 26 in Coccia has only *two* operating positions, i.e., “one position, causes the water to be supplied to the filter holder and thus the formation of the beverage, and in the other position it discontinues the supply of the water and communicates with a discharge 27 external to the machine.” Ex. 1006, at ¶ 0046).

54. Coccia also does not teach the portion of limitation 1[e] demonstrating that the electrovalve 26 has a position that directs “the flow of the resulting solvent to a removal conduit without passing the resulting solvent through the brewing chamber”. *Id.* In an attempt to meet its burden, Petitioner mischaracterizes FIG. 2 of Coccia to explain how Coccia’s electrovalve 26 teaches said limitation, but it can be clearly seen that the actual flow provided for the other position of the electrovalve 26 (as depicted below) takes any equated “resulting solvent” from and through the

brewing chamber to the discharge conduit 27 to depressurize the brewing chamber/head. *Id.*



Coccia's Actual Flow

55. Patent Owner also submits a POSITA would not have been motivated to make said change because the valve being placed in the closed position serves no purpose with Coccia's teachings. *See id.* Further, Patent Owner also submits a POSITA would have modified the electrovalve 26 in Coccia because doing would require a reworking of the circuit and render the heating chamber 12/boiler 1 or dual conduit 6, 8 superfluous and not needed (i.e., new conduit would be required and that conduit would need to route the resulting solvent from the valve 26 to either the heating chamber 12 (rendering heat exchanger unneeded) or to the boiler 1 (rendering the heating chamber 12 unneeded)).

56. Petitioners' quotation from ¶¶ 86-87 of Coccia also does **not** disclose the hydraulic variable-flow valve 36 having a closed position that does not allow flow of resulting solvent to the brewing chamber; rather, it only discusses actuating the valve to adjusting the opening in the valve to control the dispensing pressure. Ex. 1006, ¶¶ 0086–87. As discussed above in section IX, the purpose of the hydraulic variable-flow valve 36 is to modify (but never close) the cross-section of the opening of the valve 36 to adjust dispensing pressure or flow rate in any given “dispensing operation”, at which the point the pump stops (thereby not requiring the need for the valve 36 to be closed). *See also* Ex. 1006, at ¶¶ 0074, 0086, 0106–07, claim 10.

57. The Petitioner also asserts both the hydraulic variable-flow valve 36 and the electrovalve 26 disclose the two open positions, but the Petitioner provides zero support with respect to said positions for the hydraulic variable-flow valve 36. Pet., at 40–42. Rather, the Petitioner simply states: “valve 36 open”, without anything more. And while the electrovalve 26 does teach two open positions, it does not teach any of said positions directing flow of any “resulting solvent to a removal conduit without passing the resulting solvent through the brewing chamber” as required by claim 1, nor does it teach the closed state or position of said valve 26. *See supra* § III.C.1; Ex. 2001, at ¶ . Rather, the other position of the electrovalve 26 is configured to direct any equated “resulting solvent” ***from and through*** the brewing chamber to the discharge conduit 27 to depressurize the brewing

chamber/head, thereby failing to teach or render obvious said portion of limitation 1[e]. *Id.*

XI. SUMMARY

In Summary, it is my opinion that Petitioner has failed to show claims 1-9 are unpatentable as obvious as explained above.

Dated: February 3, 2025


Gideon Duvall