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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FLUIDMASTER, INC.,
Petitioner,

v.

DANCO, INC.
Patent Owner.

Case No. IPR2024-00634
U.S. Patent No. 9,103,105 B2

PATENT OWNER'S PRELIMINARY RESPONSE

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I. INTRODUCTION

Pursuant to 37 C.F.R. § 42.107, Danco, Inc. (“Patent Owner”) submits this Preliminary Response to the Petition for *inter partes* review IPR2024-00634 (“the Petition” or “this IPR”) of U.S. Patent No. 9,103,105 (“the ’105 Patent”) filed by Fluidmaster, Inc. (“Fluidmaster” or “Petitioner”). This submission is timely under 35 U.S.C. § 313 and 37 C.F.R. § 42.107, as it is filed within three months of March 13, 2024, the mailing date of the Notice of Filing Date (Paper 3).

Petitioner asserts five grounds of rejection against Claims 1-24 of the ’105 Patent, relying upon three different primary references and a multitude of secondary references, several of which have already been considered by the Office. The Petition must be denied because all five grounds are fatally flawed for several reasons in view of the standards under 35 U.S.C. §§ 102, 103, 312(a)(3), 314(a), and 325(d) and the IPR practice rules for the Board.

First, the Board can and should exercise its discretion to deny institution of the Petition under 35 U.S.C. §§ 312(a)(3) and 314(a) as the Petition is deficient on its face under 37 C.F.R. § 42.104(b)(4) and § 42.104(b)(5). Specifically, Petitioner’s allegations are vague and incomplete such that the Petition fails to set forth a complete *prima facie* case of obviousness as to any claim. The most glaring example of this issue in the Petition are the reproductions of the figures from the cited references that Petitioner has materially relied upon to allegedly show where various

elements of Claims 1-24 of the '105 Patent are purportedly disclosed in the cited references. Many of the annotations and/or labels on these figures – which are necessary for Petitioner to meet its burden to show a complete *prima facie* case of obviousness as to any claim – are not viewable, cut off, or simply missing in the Petition provided to Patent Owner and the Board.

As but one example, on pages 25-27 of the Petition, Petitioner states that it “will be referring to the annotated figures from Guoxin and Ho provided below” to show how independent Claims 1 and 24 of the '105 Patent are obvious over Guoxin in view of Ho. But the referenced figures that follow (Figs. 3 and 5 from Guoxin and Figs. 2 and 5 from Ho) either contain incomplete annotations or, in many cases, no labels for the annotations are included at all. Nor is there any discussion corresponding to these annotations. As a result, the Petition alleges that certain features of Claims 1-24 are shown in the annotated figures, but the figures themselves fail to show where various claim elements are allegedly disclosed. For at least this reason alone, Petitioner has not met its burden of proof and the Petition should be denied. *See* 37 C.F.R. § 42.104(b)(5) (“The Board may exclude or give no weight to the evidence where a party has failed to state its relevance or to identify specific portions of the evidence that support the challenge.”).

Second, the Board can and should exercise its discretion to deny institution of the Petition under 35 U.S.C. § 325(d) because i) two of the references, namely,

Bjerke and Brown, were already considered by the Office, and ii) the two primary references (Guoxin and Brown) and one secondary reference (Ho) are the same or substantially the same as the art previously presented to and considered by the Office (namely, DeMarco). As such, the *Becton, Dickinson* factors, discussed in greater detail herein, weigh heavily against institution of the Petition.

Third, as but one example of how the references cited in the Petition are deficient in showing each and every feature of Claims 1-24, none of the cited references in the Petition teach “a toilet fill valve that comprises: a body comprising an extended portion, wherein the extended portion is *integrally molded* with the body, wherein the extended portion forms a bowl fill outlet port.” *See, e.g.*, EX1001, 9:60-10:20. Recognizing that Guoxin, Brown, and Ho do not expressly teach this limitation, Petitioner attempts to manufacture an argument that this limitation is taught by these references by interpreting this claim limitation in a way that reads the term “molded” out of the claim. Indeed, Petitioner argues that the term “integrally molded” should mean not only “molded together as a single structure,” but rather “molded separately and subsequently attached to one another to form a single structure.” Paper 1, 9.

Petitioner’s position is inconsistent with the specification of the ’105 Patent, where *molded* is explicitly described as an alternative embodiment to the “snapped or clamped” or “attached” embodiments. Petitioner’s transparent attempt to read the

term “molded” out of the term “integrally molded” is contradictory with the plain language of the claims, the specification, and case law in which the commonly used term “molded with” has been construed.

When this claim term is properly construed, it follows that the cited references – namely, Guoxin, Brown, and Ho – do not teach this claim limitation. While Petitioner identifies an extended portion allegedly disclosed in Ho, Petitioner does not identify the body portion, nor does Petitioner cite to any portion of Ho that teaches that “the extended portion is *integrally molded with the body*.” In fact, Petitioner has submitted no evidence that Ho teaches that the identified extended portion is integrally molded to the body because Ho – like the art cited during prosecution by the Office – is silent on this issue.

Petitioner’s attempt to argue that Brown is “integrally molded” is even more egregious and further illustrates this glaring deficiency in the Petition. Petitioner alleges that “Brown’s extended portion 23 is integral to the toilet fill valve *once attached via threaded opening 21 in view of Petitioner’s claim construction*.” Paper 1, 63. While an attachment via a threaded opening may be integral, it is not “integrally molded,” as required by all the claims of the ’105 Patent.

Finally, Petitioner asserts that the ’105 Patent is not entitled to its earliest priority date and, as a result, a parent application of the ’105 Patent is anticipatory prior art. Specifically, Petitioner appears to take the position that “bowl fill

restriction” is unsupported by the earliest priority date to which the ’105 Patent claims priority. Petitioner’s argument, however, relies on a material omission that the case law cited in the Petition are exceptions to the general rule that a disclosure of a species is sufficient to claim a genus.

When the disclosure of the ’105 Patent is properly viewed in light of the legal standards set forth in the omitted case law, Petitioner’s argument must fail. Indeed, there is a “general rule that disclosure of a species provides sufficient written description support for a later filed claim directed to the genus.” *Bilstad v. Wakalopulos*, 386 F.3d 1116, 1125 (Fed. Cir. 2004). Here, the specification of the ’105 Patent includes a “bowl fill valve,” which is a species of the genus “bowl fill restriction,” which is consistent with statements made by Patent Owner during prosecution. In mechanical cases, such as this one, a disclosure of a species is sufficient to claim a genus in a continuation application.

For at least the foregoing reasons, the Petition should be denied.

II. PETITIONER'S CHALLENGES TO THE CLAIMS

Petitioner’s challenge Claims 1-24 of the ’105 Patent based on the following five grounds:

Ground	Claims	Basis	Primary Reference	Secondary Reference(s)
1	1-3, 6, 8-15, and 20-24	103	Guoxin	Ho
2	4, 5, 7, and 16-19	103	Guoxin	Ho Bjerke

				Calmettes Hall Kimber ¹
3	1-3, 6, 8-15, and 20-24	103	Brown	Ho
4	4, 5, 7, and 16-19	103	Brown	Ho Bjerke Calmettes Hall Kimber
5	1-24	102	Schuster	None

Paper 1, 8. Petitioner’s grounds are based upon one or more of the following cited references:

- China Utility Model Number CN2447417Y to Guoxin published September 12, 2001 (EX1015, Certified Translation at EX1016, “Guoxin”).
- U.S. Patent No. 3,086,546 to Brown issued April 23, 1963 (EX1021, “Brown”).
- U.S. Patent No. 5,862,538 to Ho issued June 26, 1999 (EX1022, “Ho”).
- U.S. Patent No. 5,926,868 to Bjerke issued July 27, 1999 (EX1017, “Bjerke”).

¹ The Petition refers to Bjerke, Calmettes, Hall, and Kimber collectively as the “Quick Connection Art.”

- U.S. Patent No. 5,249,830 to Calmettes, et al. issued October 5, 1993 (EX1018, “Calmettes”).
- U.S. Patent No. 989,251 to Hall issued April 11, 1911 (EX1019, “Hall”).
- Canadian Patent No. 1,320,235 to Kimber granted and published July 13, 1993 (EX1020, “Kimber”).
- U.S. Patent No. 8,104,105 to Schuster et al. issued January 31, 2012 (EX1029, “Schuster”).

III. BACKGROUND OF SUBJECT MATTER AND PARTIES

Excessive water usage in toilets is a significant issue with serious implications. Traditional toilet fill valves often dispense more water than necessary to refill the toilet bowl after flushing. EX1001, 1:25-27. This results in a significant amount of water being wasted with each flush, contributing to overall water wastage in households and commercial buildings.

Wasting water has direct environmental consequences. Freshwater is a finite resource, and excessive usage strains local water sources, especially in regions prone to water scarcity. Moreover, the energy required to treat and transport water adds to the environmental footprint. Wasted water can translate to higher water bills for households and increased operational costs for businesses. This can strain household budgets and reduce the profitability of commercial establishments. As a result,

addressing excessive water usage in toilets is crucial for environmental sustainability, cost savings, and responsible resource management.

The '105 Patent describes a toilet fill valve system designed to address the issue of excessive water usage during flush cycles, thereby aiming to reduce water waste. *See generally* EX1001. Specifically, the '105 Patent describes a toilet fill valve that restricts or regulates the flow of water into the toilet bowl during a flush cycle to ensure only the required amount of water is used, preventing any unnecessary wastage. EX1001, 2:27-39. In some implementations, a manual adjustment handle is provided on the bowl fill valve, allowing users to control the flow rate and better control an amount of water used in a flush cycle. *Id.*

While prior bowl fill valves existed, they were often provided in a middle of a tube, which creates a “pressure head” within the tube. EX1001, 4:2-9. A pressure head refers to “the pressure exerted by a column of fluid on the bottom of a well. It is the depth of fluid that will exert an equivalent pressure.” EX2002, 1. In the context of toilet systems, the pressure head is a factor in determining the force with which water is delivered to flush the toilet bowl. The configuration of the toilet fill valve 100 described in the '105 Patent ensures that “a pressure head is not created in any portion of the tube 146 [and] prevents the tube 146 from working its way off of the bowl fill valve outlet 116 over time.” EX1001, 4:7-9. “By virtue of the fact that the bowl fill valve 100 is integrated within the toilet fill valve 100, a pressure head is

prevented from being created due to any potential pinching of the tube 146 or other similar adjustment mechanism.” *Id.* at 4:53-56.

As a result of the various inventions disclosed in the ’105 Patent, Patent Owner has enjoyed considerable commercial success in the marketplace. After Patent Owner released its own products incorporating the claimed inventions in the ’105 Patent, Petitioner introduced various products that incorporate the claimed inventions to capitalize on Patent Owner’s inventions. Petitioner’s infringing actions have resulted in litigation between Patent Owner and Petitioner, including the case styled *Danco Inc. v. Fluidmaster Inc. et al.*, Case No. 8:23-cv-01156 (CDCA).

IV. OVERVIEW OF THE ’105 PATENT AND PATENT FAMILY

The ’105 Patent is one among a family of applications and patents filed by Patent Owner. Table I, below, identifies the entire family as of June 13, 2024 (“the Patent Family”), with the ’105 Patent emphasized in bold.

Patent App. No.	Filing Date	Status	Patent No.
10/798,606	03/11/2004	Patented	6,823,889
10/958,797	03/11/2004	Patented	7,743,436
12/786,904	10/05/2004	Patented	8,104,105
13/346,355	12/06/2010	Patented	8,650,671
14/164,424	06/11/2012	Patented	9,139,993
14/457,697	08/12/2014	Patented	9,103,105
14/856,901	09/17/2015	Patented	10,519,639
16/686,328	11/18/2019	Patented	10,934,698

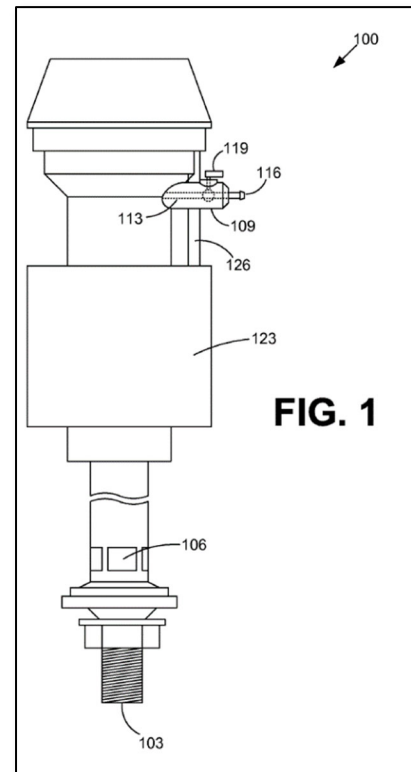
Table I: '105 Patent Family

The application for the '105 Patent was filed on August 12, 2014 (EX1001, INID 22),² as a continuation of U.S. Patent No. 9,139,993 (the "'993 Patent"). *Id.*, INID 63. The '993 Patent was filed as a continuation of U.S. Patent No. 8,650,671, which was a continuation of U.S. Patent No. 8,104,105, which was a continuation of U.S. Patent No. 7,743,436 (the "'436 Patent"), which was a continuation-in-part of U.S. Patent No. 6,823,889 (the "'889 Patent"). *Id.* The '105 Patent includes four (4) independent claims, including Claims 1, 9, 15, and 24, as discussed in more detail below. *Id.*, 9:61-67; 10:1-67; 11:1-41; and 12:1-39.

² References to bibliographic data of patents is made with reference to the Internationally agreed Numbers for the Identification of Data ("INID") codes on the first page.

A. Subject Matter of the '105 Patent

The '105 Patent is entitled “Toilet Fill Valve” and describes a toilet fill valve system designed to efficiently manage water flow during the flush cycle of a toilet. *Id.*, 1:23-29; 2:40-45. The system includes a toilet fill valve with a body that has an extended portion integrally molded with it, forming a bowl fill outlet port. *Id.*, 2:5-26. The valve is equipped with a water inlet to receive water from a supply source and a tank water outlet to provide a portion of the water to the toilet tank. *Id.*, 2:1-16. Additionally, the system features a bowl fill restriction that attaches directly to the extended portion of the valve body. *Id.*, 2:10-39. This restriction is designed to receive, regulate, and constrict the flow rate of a second portion of water during the flush cycle. *Id.* (“the flow of water is regulated so that enough water flows out of the bowl fill valve 109 to fill a toilet bowl without wasting any water down a drain.”).



The bowl fill restriction can be locked onto the integrally molded, extended portion of the toilet fill valve body using a protrusion that inserts into a recess in the valve. *Id.*, 2:17-26. This direct attachment method is intended to prevent the formation of a pressure head within the connecting tube. *Id.*, 4:1-9. Such pressure

heads can cause a tube, also part of the system, to become loose, disconnect, or leak over time. *Id.* The tube is designed to attach directly to the bowl fill restriction and direct the constricted flow of water to the toilet tank's overflow tube. *Id.*, 3:16-23.

The '105 Patent also outlines a method of operation for the toilet fill valve system. *See generally id.* It involves receiving water through the water inlet, providing a portion of this water to the toilet tank, and directing another portion to the bowl fill restriction. *Id.*, 2:1-16. The bowl fill restriction restricts the flow rate of this second portion of water, which is then provided to a tube that directs it to the toilet tank overflow tube. *Id.*, 2:27-39; 3:16-23. The method ensures that the water level in the toilet bowl reaches a predefined level at the end of the flush cycle, minimizing water wastage. *Id.*, 2:27-39.

The claims of the '105 Patent focus on the system's components, including the toilet fill valve with its integrally molded extended portion, the bowl fill restriction with its locking mechanism, and the tube for directing water to the overflow tube. *See generally id.* The system is designed to prevent water wastage by ensuring that the water level in the toilet bowl is adequately refilled without excess during the flush cycle, which can save consumers money on water bills or provide additional environment benefits through decreased water usage. *Id.*, 2:27-39. The direct attachment of the bowl fill restriction to the integrally molded extended

portion of the valve body and the prevention of pressure head formation in the tube are various advantages. *Id.*, 4:2-9.

B. Prosecution History of the '105 Patent

The application for the '105 Patent was rejected on January 5, 2015, in a Non-Final Office Action (the "Office Action"). EX1002, 62.

First, the Office Action rejected claims 4 and 7 as allegedly failing to comply with the written description requirement. *Id.*, 64-65. Specifically, the Office Action took the position that the "original disclosure fail[ed] to support the limitation 'the bowl fill restriction is configured to be clamped to the extended portion of the body' of [original] claim 4" and "the method of 'clamping the bowl fill restriction to the extended portion of [original] claim 17,' while alleging these were "considered as new matter." *Id.*

Based on the foregoing rejection, it is apparent that the Office evaluated the independent claims and the terms used therein. Moreover, it is evident that the Office evaluated the term "bowl fill restriction" as a subpart of the above-quoted phrases, without particularly rejecting the term "bowl fill restriction" itself. In other words, the Office clearly evaluated the term "bowl fill restriction" and did not consider such term to lack enablement or written support. Instead, the Office merely considered the *arrangements* of the bowl fill restriction, as originally claimed in claims 4 and 7, as allegedly constituting impermissible new matter. *Id.*

Second, the Office Action indicated that claims 1-20 as originally filed were rejected under 35 U.S.C. § 103 as allegedly being obvious over DeMarco in view of Gish. *Id.*, 65-66. The Office Action stated that, “DeMarco [is] silent as to the extended portion [being] integrally molded with the body of the toilet fill valve.” *Id.* The Office Action then goes on to allege that “Gish ... teaches an analogous toilet fill valve system where the extended portion ... is integrally molded with the toilet fill valve.” *Id.*

Patent Owner filed a response to the Office Action on March 5, 2015. *Id.*, 56. Patent Owner successfully argued that the arrangement of the bowl fill restriction, as claimed in claims 4 and 17, complied with § 112 without amending the claims by citing various portions of the specification. *See id.*, 41-44. Patent Owner specifically noted that “the specification describes a toilet fill valve, which is one example ... of a bowl fill restriction.” *Id.*

Next, Patent Owner successfully argued that the combination of DeMarco and Gish did not show or suggest “a protrusion that is configured to insert into a recess in the toilet fill valve to lock the striction to the extended portion of the body.” *Id.*, 44-53. Patent Owner also argued that claims 3 and 5 were further patentable over DeMarco and Gish. *Id.* The Office issued a Notice of Allowance thereafter on April 1, 2015. *Id.*, 7.

C. Written Support for “bowl fill restriction” in the ’105 Patent

The Petition states that “a POSITA would not have read the ’904 application to have disclosed a device other than a valve.” Paper 1, 85. The Petition thus alleges that “the earliest effective filing date of the ’105 [P]atent claims therefore would be at best January 27, 2014.” *Id.*, 85-86. Petitioners are incorrect. The claims of the ’105 Patent were fully supported as of the filing date of at least the 10/798,606 application that matured into the ’889 Patent on March 11, 2004. The earliest priority date of the ’105 Patent is March 11, 2004.

To satisfy the written description requirement, an application must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention at the time of filing. *Reiffin v. Microsoft Corp.*, 214 F.3d 1342, 1345 (Fed. Cir. 2000). “The function of the written description requirement is to ensure that the inventor had possession of the specific subject matter later claimed as of the filing date of the application relied on; how the specification accomplishes this is not material.” *In re Herschler*, 591 F.2d 693, 700 (CCPA 1979).

With respect to the term “bowl fill restriction,” the ’105 Patent discloses a “bowl fill valve” with a “bowl fill valve inlet 113” that is “operatively coupled to the water inlet 103.” EX1001, 2:27-39. “In this respect, when the toilet fill valve 100 is open and water flows from the water inlet 103 to the water outlets 106 and

into a toilet tank, an amount of water is also supplied to the bowl fill valve inlet 113 that flows through the bowl fill valve 109 and out the bowl fill valve outlet 116.” *Id.* The ’105 Patent continues, “the flow of water through the bowl fill valve 109 is *regulated*. In this manner, the flow of water is *regulated so that enough water flows out of the bowl fill valve 109 to fill a toilet bowl without wasting any water down a drain*.” *Id.* (emphasis added). Thus, the ’105 Patent clearly discloses *regulating* an amount of water supplied to a toilet bowl using a valve to avoid water loss or, in other words, *restricting* the flow of water such that “enough water flows out of the bowl fill valve 109 to fill a toilet bowl.”

There is a “general rule that disclosure of a species provides sufficient written description support for a later filed claim directed to the genus.” *Bilstad* at 1125. Indeed, “[t]here is no categorical rule that a species cannot suffice to claim the genus.” *Hynix Semiconductor Inc. v. Rambus Inc.*, 645 F.3d 1336, 1352 (Fed. Cir. 2011). Here, the claim term at issue is a genus (i.e., “bowl fill restriction”) supported by the disclosure of a particular species (i.e., “bowl fill valve”). Patent Owner noted, in the prosecution history, that “the specification describes a toilet fill valve, which is one example ... of a bowl fill restriction.” EX1002, 41-44.

The Examiner came to this same conclusion during prosecution of the ’697 Application as the Examiner issued a written description rejection of claims 4 and 17, and agreed, after being presented with persuasive argument, that the subject

matter of claims 4 and 17, both of which including the term “bowl fill restriction” were sufficiently disclosed in the ’697 Application.

V. PERSON OF ORDINARY SKILL IN THE ART

A PHOSITA in the field to which the ’105 Patent is directed would have had at least a Bachelor of Science degree in mechanical engineering or a related field or, as a substitute, at least two years of work or research experience in the design or development of toilet products, parts, and accessories.

VI. CLAIM CONSTRUCTION

Beyond the constructions set forth below, Patent Owner reserves the right to offer constructions for other claim terms in other responses in this IPR.

A. “integrally molded”

Claims 1, 9, 15, and 24 recite the term “integrally molded,” which means “molded as a single complete unit.” Thus, contrary to the construction for this term advanced by Petitioner, “integrally molded” does not include items created as separate pieces and attached together later.

Here, all independent claims plainly state that “the extended portion is integrally molded *with* the body” (Claims 1, 15 & 24) or “the extended portion is integrally molded *with* the toilet fill valve.” (Claim 9). The claim construction advanced by Petitioner, and the interpretation thereof in view of the cited references, would read out the limitation “integrally molded with” from all independent claims,

which is improper. *See, e.g., Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1348 (Fed. Cir. 2012) (rejecting district court’s claim construction because it “effectively read[] the term ‘free’ out of the limitation”); *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 951 (Fed. Cir. 2006) (“rejecting proposed claim construction because effect ‘would be to read limitations...out of the claim’”).

Notably, courts that have construed the term “integrally molded” have construed this term to mean “molded as one piece.” *Traffix Devices, Inc. v. Bent Mfg. Co.*, No. SACV 03-1569 NS (ANx), 2005 U.S. Dist. LEXIS 51506, at *24 (C.D. Cal. Aug. 23, 2005). For example, in *Traffix Devices*, the district court reasoned that “[t]he telling aspect of this phrase is the use of the word ‘with’ in conjunction with the term ‘integrally molded.’ This combination eliminates the possibility that the handle and the body portion are each wholly but separately molded and makes clear that the Patent Owner intended for the handle to be molded as one piece with the body portion.” *Id.* Here, the claims state that “the extended portion is integrally molded *with* the body” or “integrally molded *with* the toilet fill valve.” The proposed construction advanced by Petitioner would read the term “integrally molded with” out of the claims.

Turning to the specification of the ’105 Patent, the language in the specification refers to the bowl fill valve 109 and the toilet fill valve 100 being integral with one another by stating, “the bowl fill valve 109 may be molded as a

portion of the toilet fill valve 100 **or** it may be snapped or clamped into place, **or** it may be attached to the toilet fill valve 100 in some other manner, etc.” The reference to “snapped or clamped into place” in the ’105 Patent refers to alternative embodiments as compared to the integrally molded embodiments, as readily apparent by use of the term “or.” *See, e.g., Norix Grp., Inc. v. Corr. Techs., Inc.*, No. 17-cv-07914, 2020 U.S. Dist. LEXIS 41000, at *20-21 (N.D. Ill. Mar. 10, 2020) (interpreting “integrally molded” as not being inclusive of items created as separate pieces and attached later).

Accordingly, the PTAB should construe “integrally molded” to mean “molded as a single complete unit.”

B. “bowl fill restriction”

The term “bowl fill restriction” means a device for regulating a flow rate of an amount of water flowing therethrough. “By virtue of the ... setting of ... the bowl fill valve 109, the flow of water through the bowl fill valve 109 is regulated. In this manner, the flow of water is regulated so that enough water flows out of the bowl fill valve 109 to fill a toilet bowl without wasting any water down a drain.” EX1001, 2:34-39.

Accordingly, the PTAB should construe “bowl fill restriction” to mean “a device for regulating a flow rate of an amount of water flowing therethrough.”

VII. OVERVIEW OF THE CITED REFERENCES

A. Guoxin

Guoxin is a Chinese utility model relating to a water supply switching device specifically designed for one-piece toilets that have insufficient water storage capacity in the tank, which provides sufficient water volume to thoroughly flush the toilet of waste. *See* Ex. 1016, 1:1-5. In stark contrast to the invention of the '105 Patent, which is directed to reducing the amount of water flowing into the toilet bowl, the water supply switching device of Guoxin aims to *increase the amount of* water flowing to the toilet bowl during the flush address the issue of *insufficient water* volume in single-unit toilets. *See id.* The device ensures that a portion of the water supply is directed straight into the toilet during flushing to compensate for any deficiency in the water volume, thereby ensuring a thorough flush. *Id.* As such, Guoxin is not directed to saving water by regulating or restricting the flow of water in the toilet bowl, but instead is directed to increasing the flow of water.

Guoxin is silent on whether the purported “extended portion” of the water inlet device 1 referenced in the Petition is integrally molded with the body of the water inlet device. Guoxin only states that to one side of the water inlet device, there is a switching mechanism 4 that is equipped with a valve seat with a slot to accommodate a switching valve. *Id.*, 2:5-10. This valve seat is designed with an inlet and an outlet for water flow, where the outlet is connected to a water supply pipeline

that is directed to the toilet to provide water supply to the toilet. *Id.* The switching valve has upper and lower annular surrounds with a smaller annular surround therebetween. *Id.*, 2:10-15. When the water in the toilet tank reaches a set level of height, the lower annular surround blocks between the water inlet and outlet, discontinuing the water supply to the toilet through the switching mechanism. *Id.*

B. Ho

Ho describes a toilet flushing device designed to be installed in a water supply tank featuring a diverter valve that directs high-pressure water to the rim flushing conduit of a toilet bowl during flushing. EX1022, Abstract. Like Guoxin, Ho aims to increase the amount of water directed to the toilet bowl, in stark contrast to the '105 Patent. The diverter valve includes a valve housing and a valve rod that moves in response to changes in water level in a water supply tank. *Id.*, Abstract. A longitudinal passage through the valve rod allows high-pressure water to flow to the water supply tank. *Id.*, 4:46-49.

The flushing device aims to address issues found in prior art, such as the fouling that can occur on the rotation axle of a flap in the diverter valve, which can lead to malfunctions. *Id.*, 2:8-11. The device includes a water supplying pipe connected to an external pressurized water source, a float-controlled valve to regulate water flow, a manually operated flush valve for discharging water, and the diverter valve means. *Id.*, 2:51-67. The diverter valve has a hollow housing, an inlet

pipe, a supply line to the rim flushing conduit, and a float member that moves the valve rod in response to water level changes, ensuring proper water flow during flushing and tank refilling. *Id.*, 3:12-17, 3:53-61. Like Guoxin, Ho is also silent on whether the purported “extended portion” of the water supplying pipe referenced in the Petition is integrally molded with the body of the water supplying pipe. Thus, Guoxin and Ho are cumulative to the art cited in prosecution, as will be discussed below.

C. Brown

Brown was already considered during the prosecution of the application for the '105 Patent. EX1002, 72 and 78. Brown is directed to reducing both noise and the amount of water wasted in toilet flush tanks equipped with a conventional ball cock valve assembly. EX1021, 1:9-15; 1:41-49. Brown discloses a device that can be attached to the existing valve assembly, which is responsible for controlling the flow of incoming water into the flush tank and toilet bowl. *Id.* Specifically, the device disclosed in Brown aims to diminish the turbulence and noise generated by water flowing through the fill tube into the tank and to minimize the excess water typically diverted through the overflow pipe into the toilet bowl, thereby preventing unnecessary water wastage. *Id.*

To diminish the turbulence and noise generated by water flowing through the fill tube into the tank, Brown discloses a series of flexible, elongated members, such

as solid rods or hollow tubes, that are inserted into the fill tube, extending almost its full length and resting on the tank's bottom. *Id.*, 2:52-67; 3:20-44; 4-45-63. These members help to reduce the turbulence and noise of the water as it flows into the tank by creating a more laminar flow and distributing the pressure drop along the tube's length. *Id.*, 3:35-44.

To minimize the excess water typically diverted through the overflow pipe into the toilet bowl, Brown discloses an externally threaded adaptor tube with a restricted opening or an adjustable metering valve connected to the overflow pipe, which effectively reduces the volume of water flowing into the toilet bowl during the refill process, thus conserving water. *Id.*, 3:45-72. While Guoxin and Ho are silent on the issue of whether there is an "extended portion" that is integrally molded with the body of the flush valve, Brown expressly teaches that adaptor tube (which is threaded or screwed into the flush valve) is not integrally molded and does not teach this limitation of the '105 Patent.

D. Quick Connection Art (Bjerke, Calmettes, Hall, and Kimber)

In an improper effort to combine a multitude of references into a single ground, the Petition coalesces four different patents in its reference to "Quick Connection Art," namely, Bjerke, Calmettes, Hall, and Kimber. Nonetheless, while Petitioner cites a multitude of reference from various applications, such as bathtubs, motor vehicles, and hoses, none of the Quick Connection Art teaches or suggests the

use of the disclosed couplings in connection with a fluid flow restrictor, such as a valve.

Bjerke was already considered during the prosecution of the application for the '105 Patent. EX1002, 72 and 78. Bjerke outlines a detachable bathtub shower system that can be swiftly connected to a bathtub faucet via a screw-threaded fitting. EX1017, 3:23-48. This system incorporates a backflow preventer with a quick connect/disconnect feature, allowing for easy attachment or removal. *Id.*, 3:5-22. The system is designed to be user-friendly, facilitating a shower-like experience for individuals who prefer to bathe while seated or reclining in a tub. *Id.*, 2:4-26.

Calmettes describes a coupling device designed to securely connect the ends of two coaxial tubes, such as those found in motor vehicle cooling circuits or other industrial applications. EX1018, 1:21. The device features a locking mechanism that includes a longitudinally grooved outer tube and an inner tube with radially projecting bosses. *Id.*, 10:23; 3-30-47. A flexible locking tab, attached to the outer tube and positioned adjacent to the groove, contains apertures to receive the bosses. *Id.*, 3:67-68; 4:1-2; 10:10-20.

Hall pertains to a hose-coupling device that enables the quick and secure connection of adjacent hose sections without the use of traditional coupling threads. EX1019, 1:8-14. The coupling consists of mating sections, one with bayonet slots and the other with corresponding lugs designed to fit into these slots. *Id.*, 1:66-85. A

distinctive feature of this coupling is a spring-pressed sleeve or collar that slides over one of the hose sections and is equipped with locking plates that close the entrance to the bayonet slots once the lugs are inserted, thereby locking the hose sections together. *Id.*, 1:100-112. The design also includes a gasket to prevent leakage at the junction of the hose sections and mechanisms to limit the sliding collar's movement and to automatically lock it in place when extended. *Id.*, 1:86-99.

Kimber describes a coupling designed to create a sealed connection between two conduits, such as hoses and radiators in automobiles. EX1020, 1. The coupling consists of a tubular male fitting with an external conical portion and a tubular female fitting that snugly fits over the male fitting, featuring a complementary internal conical portion. *Id.*, 2. A seal is placed within one of these conical portions to ensure a tight seal between the male and female fittings once connected. *Id.* The design includes axially oriented guide means for proper angular alignment and relative axial movement of the fittings, as well as locking means that secure the fittings axially upon assembly. *Id.*, 3. This coupling allows for quick and easy connection and disconnection, which is particularly advantageous in automated assembly lines and maintenance scenarios. *Id.*, 8.

VIII. REASONS TO DENY THE PETITION UNDER 35 U.S.C. § 314(A) AND 325(D)

Institution of *inter partes* review is always discretionary. *See* 35 U.S.C. § 314(a) (“The Director may not authorize an inter partes review to be instituted unless

the Director determines that the information presented in the petition filed under section 311 . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”); *Oil States Energy Servs. LLC v. Greene’s Energy Grp., LLC*, 138 S. Ct. 1365, 1371 (2018) (“The Decision whether to institute inter partes review is committed to the Director’s discretion.”). Moreover, “Section 325(d) provides that the Director may elect not to institute a proceeding if the challenge to the patent is based on matters previously presented to the Office.” *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6, 7 (PTAB Feb. 13, 2020)(precedential).

For at least the following reasons, the Board should exercise its discretion under §§ 314(a) and 325(d) to deny the Petition.

A. The Petition is Facially Deficient and the Combination of References are Ambiguous

The Board should deny institution under 35 U.S.C. § 314(a) because the Petition is ambiguous, fails to identify evidence with particularity, and fails to account for how each claim is unpatentable as required under 35 U.S.C. § 312(a)(3)³

³ 35 U.S.C. § 312(a)(3) states that a petition may be considered only if “(3) the petition identifies, in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge”

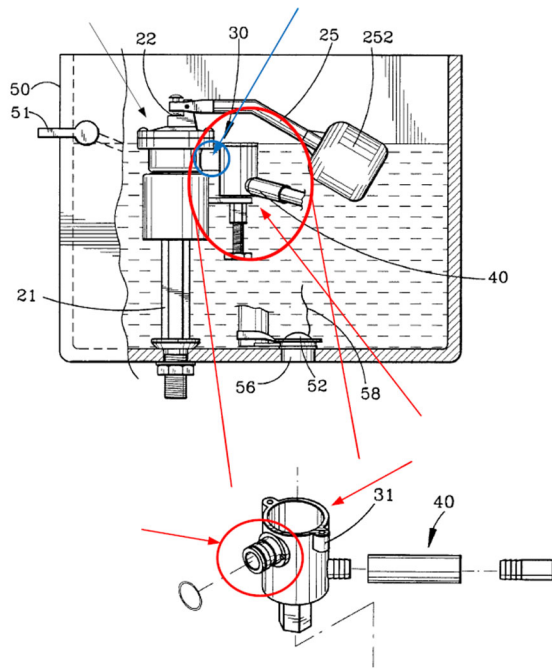
and 37 C.F.R. § 42.104(b).⁴ The Petition is deficient on its face under 37 C.F.R. § 42.104(b)(4) and § 42.104(b)(5).

Petitioner's allegations are vague and incomplete such that the Petition fails to set forth a complete *prima facie* case of obviousness as to any claim. The most glaring example of this issue in the Petition are the reproductions of the figures from the cited references that Petitioner has materially relied upon to allegedly show where various elements of Claims 1-24 of the '105 Patent are purportedly disclosed in the prior art. Many of the annotations and/or labels on these figures – which are necessary for Petitioner to meet its burden to show a complete *prima facie* case of obviousness as to any claim – are not viewable, cut off, or simply missing in the Petition provided to Patent Owner and the Board.

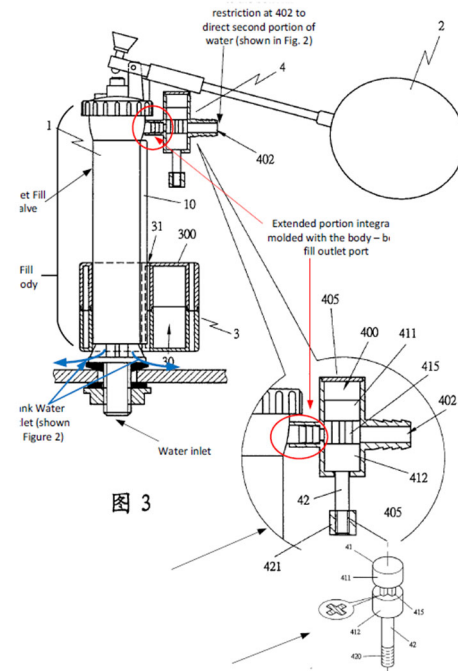
As but one example, on pages 25-27 of the Petition, Petitioner states that it “will be referring to the annotated figures from Guoxin and Ho provided below” to show how independent Claims 1 and 24 of the '105 Patent are obvious over Guoxin in view of Ho. But the referenced figures that follow (Figs. 3 and 5 from Guoxin and

⁴ 37 C.F.R. § 42.104(b) states that the Petition must identify how each “claim is unpatentable under the statutory grounds,” “where each element of the claim is found in the prior art patents or printed publications relied upon,” and “specific portions of the evidence that support the challenge.”

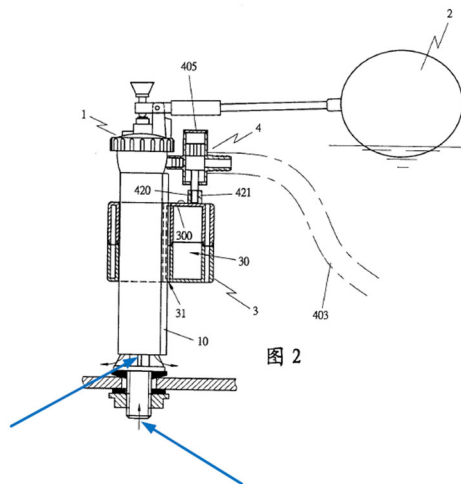
Figs. 2 and 5 from Ho), purportedly annotated, either contain incomplete annotations or, in many cases, no labels for the annotations are included at all. A few examples of these deficiencies are shown below.



No Annotations (Petition, 27)

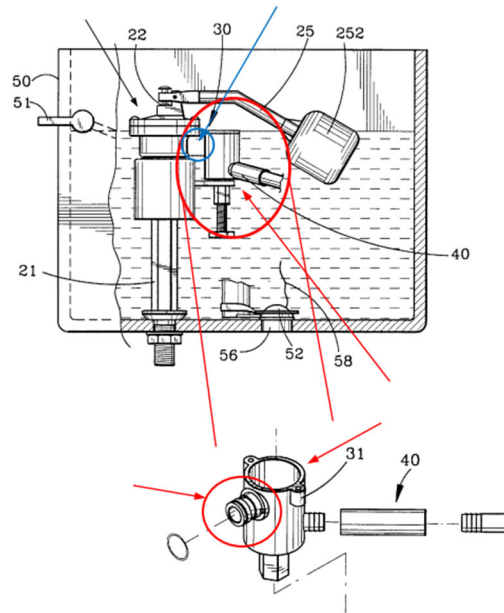


Cut-off and Missing Annotations
(Petition, 26)



No Annotations (Petition, 30, 42)

As yet another example, on pages 60-62 of the Petition, Petitioner again references various annotated figures from Ho to show the relevance of Ho to the challenged claims when combined with Brown. But, once again, Figures 2 and 5 of Ho contain no labels for the annotations at all, as shown below:



No Annotations

Petition, 62.

Moreover, there is no discussion corresponding to these annotations. As a result, the Petition alleges that certain features of Claims 1-24 are shown in the annotated figures, but the figures themselves fail to show where various claim elements are allegedly disclosed. For at least this reason alone, Petitioner has not met its burden of proof and the Petition should be denied. *See* 37 C.F.R. § 42.104(b)(5) (“The Board may exclude or give no weight to the evidence where a

party has failed to state its relevance or to identify specific portions of the evidence that support the challenge.”).⁵

Furthermore, the Grounds identified in the table on page 8 of the Petition are ambiguous, as Petitioner attempts to group a large swath of references, Bjerke, Calmettes, Hall, and Kimber, into a single group, referred to in the Petition as “Quick Connection Art.” Such combinations are vague because there are dozens of potential combinations including these references, and Petitioner’s attempt to merely consolidate them into a single ground puts an onus on Patent Owner to respond to each potential combination of references as it is not understood if each and every reference is to be combined together as a single ground, or if there are a multitude of differing combinations of grounds. As the Board has already noted:

⁵ While Petitioner’s expert declaration includes various figures which Patent Owner anticipates Petitioner will later rely on to support its glaring failure, these figures were not referenced in the Petition and any attempt to incorporate by reference such figures is impermissible. *See* 37 C.F.R. § 42.6; *see also* *3M Co. v. Evergreen Adhesives, Inc.*, 860 F. App’x 724 (Fed. Cir. 2021) (acknowledging that that arguments are not permitted to be incorporated by reference from one document into another document.).

...Petitioner's reliance on up to ten references connected by the conjunction "and/or" results in a multiplicity of grounds, none of which is presented with sufficient particularity. Even if we were to disregard the order of references and consider only the two-reference combinations encompassed by Petitioner's asserted ground, Petitioner's contention encompasses nine combinations with Bendel and another eight distinct combinations with Sartorius, for a total of seventeen possible combinations. Even that conservative interpretation of Petitioner's contention yields an unduly burdensome number of combinations.

Adaptics Ltd. v. Perfect Co., IPR2018-01596, Paper 20 (P.T.A.B. March 6, 2019); *see also, e.g., Biofrontera Inc. v. DUSA Pharms., Inc.*, IPR2018-01585, Paper 10 (P.T.A.B. Feb. 26, 2019) ("Although we do not look strictly at precise percentages of institutable grounds and/or claims, this case presents a clear instance where the benefits of holding a trial to resolve the challenges having a reasonable likelihood would be overwhelmed by the burden of addressing the challenges having no reasonable likelihood.").

Thus, due to the ambiguity and vagueness of the challenges set forth in the Petition, institution should be denied.

B. The Petition Relies on the Same or Substantially the Same References Already Presented to the Office

The Board should deny institution under 35 U.S.C. § 325(d) in view of the precedential decisions in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*,

IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017)(precedential) and *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Dec. Feb. 13, 2020)(precedential), because the Petition is based on patents or publications that are either the same or substantially the same as those previously presented to the Office.

The Board can consider a number of factors in exercising the discretion to deny institution of this IPR. *Becton, Dickinson* at 17-18. These factors include: (1) the similarities and material differences between the asserted art and the prior art involved during examination; (2) the cumulative nature of the asserted art and the prior art evaluated during examination; (3) the extent to which the asserted art was evaluated during examination; (4) the extent of the overlap between the arguments made during examination and the manner in which a petitioner relies on the prior art or a patent owner distinguishes the prior art; (5) whether a petitioner has pointed out sufficiently how the Examiner erred in evaluating the asserted prior art; and (6) the extent to which additional evidence and facts presented in the petition warrant reconsideration of the prior art or arguments. *Id.* As applied to the facts in this IPR, these factors weigh heavily against institution of the Petition.

In *Advanced Bionics*, the Board emphasized the following two-part framework in the analysis of the *Becton, Dickinson* factors: “(1) whether the same or substantially the same art previously was presented to the Office or whether the

same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.” *Advanced Bionics*, IPR2019-01469, Paper 6, 8. “If a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review.” *Id.*, 8-9.

As an initial matter, the Petition relies on at least two references that were previously considered by the Office – namely, Bjerke and Brown. EX1002, 72 and 78 (information disclosure statement acknowledging Bjerke and Brown references were cited and considered). Brown is relied upon in Petitioner’s Grounds 3 and 4 as a primary reference, and Bjerke is purportedly relied upon in Grounds 2 and 4 as a secondary reference as part of the Quick Connection Art. Paper 1, 8.

More importantly, however, the two primary references, Guoxin and Brown, and one secondary reference, Ho, are substantially the same as the art previously presented to the Office. During prosecution of the application that matured into the ’105 Patent, the Office rejected all pending claims under 35 U.S.C. § 103 as being unpatentable over DeMarco in view of Gish. EX1002, 65-66. In doing so, the Office emphasized that DeMarco is “silent as to the extended portion is integrally molded with the body of the toilet fill valve.” *Id.*, 66. Here, Guoxin, Brown, and Ho are the

same or substantially the same as DeMarco as to this key limitation, as all three references are completely silent as to whether the purported “extended portion” is integrally molded with the purported body of the toilet fill valve, which is required by all claims of the ’105 Patent.

Guoxin, the primary reference relied upon in Grounds 1-2, is a very short utility model patent published in China. Guoxin is completely silent on whether the purported “extended portion” of the water inlet device 1 referenced in the Petition is integrally molded with the body of the water inlet device. Guoxin merely states that to one side of the water inlet device, there is a switching mechanism 4 that is equipped with a valve seat 40 with a slot to accommodate a switching valve. *Id.*, 2:5-10. Guoxin discloses that the valve seat 40 has a water inlet 401 and outlet 402 but provides no disclosure – either written or in the figures – as to the whether the structure on the water inlet device to which the switching mechanism 4 connects is integrally molded with the body of the water inlet device. Indeed, Petitioner appears to concede this feature is not disclosed in Guoxin. *See* Paper 1, 22-23. Moreover, Guoxin relates to increasing the flow of water into the toilet bowl, as opposed to restricting the flow of water.

Ho, the secondary reference relied upon in Grounds 1-4, is directed to a toilet flushing device designed to be installed in a water supply tank, featuring a diverter valve that directs high-pressure water to the rim flushing conduit of a toilet bowl

during flushing. EX1022, Abstract. Ho is also silent on whether the purported “extended portion” of the water supplying pipe referenced in the Petition is integrally molded with the body of the water supplying pipe. Ho merely states that the device includes a water supplying pipe connected to an external pressurized water source, a float-controlled valve to regulate water flow, a manually operated flush valve for discharging water, and the diverter valve means. *Id.*, 2:51-67. There is nothing in the written description or figures of Ho that discloses whether the structure on the water supplying pipe to which the switching mechanism 4 connects is integrally molded with the body of the water supplying pipe.

While Guoxin and Ho are silent on the issue of whether there is an “extended portion” that is integrally molded with the body of the flush valve, Brown – the primary reference relied upon in Grounds 3-4, expressly teaches that adaptor tube (which is threaded or screwed into the flush valve) *is not integrally molded* and *does not* teach this limitation of the ’105 Patent. EX1021, 3:45-51. Indeed, Petitioner's attempt to argue that Brown is “integrally molded” is a glaring illustration of why the cited references are duplicative of the art previously considered by the Office.

Guoxin, Ho, and Brown – all lacking a teaching that the purported “extended portion” is integrally molded with the body of the toilet valve – suffer from the same glaring deficiency that was readily acknowledged by the Examiner with respect to the DeMarco reference during the prosecution of the ’105 Patent. Indeed, with

respect to this key limitation, there is no substantive difference between DeMarco and these three references. Accordingly, the facts, the *Becton, Dickinson* factors, and the *Advanced Bionics* framework weight in favor of the Board denying institution of the Petition under § 325(d).

IX. DETAILED REASONS FOR DENYING THE PETITION

The Director may not authorize an *inter partes* review to be instituted unless “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

Petitioner asserts four grounds for challenging claims of the ’105 Patent under 35 U.S.C. § 103 and one ground under 35 U.S.C. § 102. Here, there is no reasonable likelihood that Petitioner will prevail on any of its five alleged grounds.

A. Ground 1: Guoxin in view of Ho under 35 U.S.C. § 103

Petitioner’s first ground alleges that Guoxin in view of Ho renders obvious Claims 1-3, 6, 8-15, and 20-24. Paper 1, 22-52. For at least the reasons discussed below, Petitioner fails to establish a reasonable likelihood that that any of these claims are unpatentable.

1. The Cited Guoxin and Ho References Fail to Render Obvious Independent Claims 1, 9, 15, and 24

a) Guoxin and Ho do not disclose an extended portion integrally molded with the body

Guoxin and Ho do not teach or suggest “a toilet fill valve that comprises: a body comprising an extended portion, wherein the extended portion is *integrally*

molded with the body, wherein the extended portion forms a bowl fill outlet port.”

See, e.g., EX1001, 9:60-67. The Petition first contends that “Guoxin discloses a toilet fill valve having an extended portion that is integrally molded with the water inlet device 1, as shown in Figure 3 and the exploded view of Figure 4.” Paper 1, 28. However, Guoxin does not use the term “molded” or “integrally molded,” and Figures 3 and 4 do not, without more, disclose whether two components are integrally molded with one another. The Petition next contends that “Ho most clearly discloses an integrally molded extended portion on a toilet fill valve.” Paper 1, 28. But, once again, Ho does not use the term “molded,” “integrally molded,” or anything synonymous thereto, and Figures 3 and 5 do not, without more, disclose whether two components are integrally molded with one another. As such, Petitioner’s argument as to this key limitation is pure speculation and at best boils down to incomplete and missing annotations applied to Figures 3 and 4 of Guoxin and Figures 3 and 5 of Ho, alleging these components are purportedly “integrally molded.” *Id.*, 26-27.

At the outset, Patent Owner reiterates that the mapping of this limitation to the cited figures of Guoxin and Ho is purely speculative because the annotations in these critical figures are missing, supporting Patent Owner’s contention that the Petition is vague and ambiguous. The Petition instead relies on meaningless arrows and, because there are no annotations, Petitioner does not identify which components

of the cited references teach or suggest the various claim limitations. For instance, with respect to the “integrally molded with” limitation, the Petition does not identify a body in Guoxin or Ho, much less the specific components that teach “a body comprising an extended portion, wherein the extended portion is integrally molded with the body,” as required by the claims. Merely pointing to a figure and alleging that a limitation is shown is not sufficient to establish a *prima facie* case of obviousness.

Moreover, Petitioner cites no supporting references from the text of Guoxin or Ho, as neither reference uses the term “molded” or “integrally molded” (or any equivalent term or description) in a manner that would support Petitioner’s contention that Guoxin or Ho teach or suggest “a toilet fill valve that comprises: a body comprising an extended portion, wherein the extended portion is ***integrally molded with*** the body.” *See, e.g.*, EX1001, 9:60-10:20. In fact, Petitioner appears to readily concede that Guoxin does not teach or suggest this feature because, in the very next sentence, Petitioner switches over to discuss Ho. *Id.* (“To the extent PO incorrectly argues that the extended portion illustrated in Guoxin is not ‘integrally molded,’ Ho most clearly discloses an integrally molded extended portion on a toilet fill valve with a recess into which a bowl fill restriction device with a protrusion is inserted and locked into place.”).

Recognizing that Guoxin does not teach this limitation, Petitioner attempts to manufacture an argument that such feature is shown in Ho in such a way that reads the term “molded” out of the claim. Indeed, Petitioner argues that the term “integrally molded” should mean not only “molded together as a single structure,” but also “molded separately and subsequently attached to one another to form a single structure.” Paper 1, 9. Petitioner’s position is entirely inconsistent with the specification of the ’105 Patent, where *molded* is explicitly described as an alternative embodiment as compared to the “snapped or clamped” or “attached” embodiments. Specifically, the specification of the ’105 Patent states:

The bowl fill valve 109 is integral with the toilet fill valve 100. In this respect, the term “integral” refers to the fact that the bowl fill valve 109 and the toilet fill valve 100 comprise a single structure. In this respect, the bowl fill valve 109 may be included within the body of the toilet fill valve 100 as a portion of the toilet fill valve 100 in a single piece construction. *Specifically, the bowl fill valve 109 may be molded as a portion of the toilet fill valve 100 or it may be snapped or clamped into place, or it may be attached to the toilet fill valve 100 in some other manner, etc.*

EX1001, 2:17-26 (emphasis added). As such, Petitioner’s transparent attempt to read the term “molded” out of the term “integrally molded” is inconsistent with the plain language of the claims, the specification, and case law in which the term “integrally molded with” has been construed by various district courts.

When this claim term is properly construed, it is evident that the cited references – namely, Guoxin and Ho – do not teach this claim limitation. For example, at page 24, Petitioner reproduces excerpts of Figures 2 & 5 in Ho to contend that Ho teaches that an alleged extruded portion is integral with a body portion of a toilet fill valve. Paper 1, 24. However, while Petitioner identifies an extended portion allegedly disclosed in Ho, Petitioner does not identify the body, does not cite to any portion of Ho (whether in the figures or text) that teaches that “the extended portion is *integrally molded with the body*,” and generally provided incomplete or no annotations for much of their corresponding assertions when pointing to the figures in Ho. As such, Petitioner has failed to provide any evidence that Ho teaches that the identified extended portion is integrally molded to the body because Ho – like DeMarco – is silent on this issue.

Even if Petitioner had met this threshold burden of identifying a teaching of the “integrally molded” feature in either Guoxin or Ho, Petitioner’s alleged motivation to combine these references as purported, in which Guoxin is modified to include the protrusion and coupling of Ho, is lacking and fails to establish a *prima facie* case. Petitioner relies on the conclusory statement that “[i]t would have been obvious to integrally mold the extended portion of Guoxin with the inlet device taught as taught by Ho” to achieve the alleged benefits of “improving strength and integrity of the connection, and to make it easier to manufacture and assemble.”

Paper 1, 29. Petitioner's conclusions are based on a verbatim statement from Dr. Cameron. EX1004, ¶ 125. Such reliance fails to satisfy Petitioner's burden of providing an articulated reasoning, based on a rational underpinning, to show that a POSITA would have had reason to modify Guoxin (or Ho) and in such a way that all claim elements are disclosed or rendered obvious. *See In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) ("To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record to support the legal conclusion of obviousness."). The Petition's vague assertions purporting to state suitable motivations to combine references are not supported by substantial evidence. As a result, Petitioner fails to make the requisite showing of motivation to combine the Guoxin and Ho references.

When evaluating a combination of teachings, the Board must "determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418, 127 S. Ct. 1727 (2007 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011) ("[O]bviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.")).

[I]t is the petitioner’s burden to prove, by a preponderance of the evidence, that a person of ordinary skill in the art would have been motivated to combine the prior art references the petitioner is relying on in its obviousness grounds. *See* 35 U.S.C. § 316(e) (“In an inter partes review instituted under this chapter, the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.”)

Sun Pharm. Indus. v. Incyte Corp., No. 2019-2011, 2023 U.S. App. LEXIS 21990, at *7 (Fed. Cir. Aug. 22, 2023).

As the Federal Circuit has found, and as the Board has repeatedly emphasized, “[a] determination of obviousness cannot be reached where the record lacks ‘explanation as to how or why the references would be combined to produce the claimed invention.’” *See Hyundai Motor Co. v. Blitzsafe Texas, LLC*, Case IPR2016-01476, slip op. at 32 (PTAB Jan. 24, 2017) (Paper 12). Thus, a petitioner must “explain why a person of ordinary skill in the art would have combined elements from specific references in the way the claimed invention does.” *ActiveVideo Networks, Inc. v. Verizon Comms, Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012). The mere allegation that references are analogous art to the claimed invention will be insufficient for the Board to institute an obviousness ground. *See Shopkick Inc. v. Novitaz, Inc.*, Case IPR2015-00279, slip op. at 29–30 (PTAB May 29, 2015) (Paper 7).

Where Petitioner nakedly asserts that two references are analogous art, and as a result, should be combined, without an “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness,” such attempted reasoning is insufficient. *See KSR*, 550 U.S. at 418. It does not suffice to meet the motivation to combine requirement to recognize that two alternative arrangements were both known in the art. *Virtek Vision Int'l ULC v. Assembly Guidance Sys., Inc.*, 97 F.4th 882, 886 (Fed. Cir. 2024).

The only evidence submitted in support of Petitioner’s conclusory statements that a POSITA would be motivated to combine Guoxin and Ho consists of the declaration of Dr. Kimberly Cameron.

it would have been obvious to use the mating engagement of Ho to attach the extended portion of Guoxin’s toilet fill valve with switching mechanism 4 of Guoxin, as a simple substitution of one known coupling arrangement for another to obtain predictable results [citing Dr. Cameron’s declaration, EX1004 at ¶¶142-144].

However, Dr. Cameron’s declaration simply parrots Petitioner’s assertion as to motivation to combine, insofar as “it would have been obvious to use the mating engagement of Ho to attach the extended portion of Guoxin’s toilet fill valve with switching mechanism 4 of Guoxin, as a simple substitution of one known coupling arrangement for another to obtain predictable results.” Paper 1 at EX 1004, ¶142. Dr. Cameron fails to provide the required “substantial evidence” to underpin

Petitioner's assertions as to a motivation to combine references, as it is not "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Novartis AG v. Torrent Pharms. Ltd.*, 853 F.3d 1316, 1324 (Fed. Cir. 2017)).

Instead, the testimony relied upon by Petitioner is simply unsupported argument that "is entitled to little or no weight" in this proceeding. 37 C.F.R. § 42.65(a). Although Dr. Cameron references reliance on "common sense" in her declaration [*see* Paper 1 at EX1004, ¶¶ 71-72]:

[T]here was no argument about common sense in the petition or in Dr. [Cameron]'s declaration. There was no evidence that there are a finite number of identified, predictable solutions. There is no evidence of a design need or market pressure. In short, this case involves nothing other than an assertion that because [quick connect] systems were disclosed in a prior art reference and were therefore "known," that satisfies the motivation to combine analysis. That is an error as a matter of law. It does not suffice to simply be known. A reason for combining ***must*** exist.

Virtek Vision, 97 F.4th at 888. Simply put, Petitioner nowhere argues in its petition that it "would have been common sense ***to combine the references as claimed***. Nor did it offer any evidence regarding common sense." *Id.* (emphasis added). Moreover, Petitioner does not define what are the market forces that supply any motivation to combine.

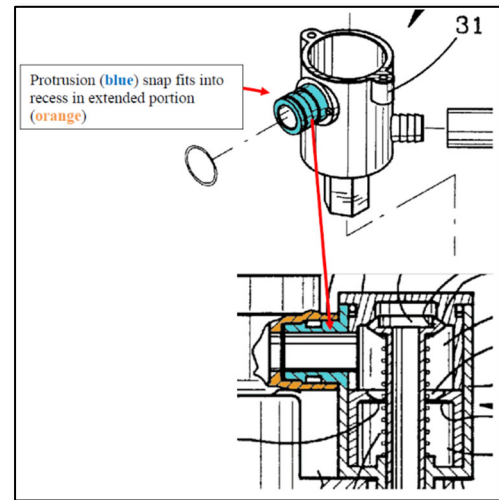
Like in *Virtek Vision*, Petitioner argues that the '105 Patent's claim elements are known in the prior art. "But this alone does not show a motivation to combine." *Id.*, citing KSR, 550 U.S. at 418 ("[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. [I]t 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."); *see also Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) ("[O]bviousness concerns whether a skilled artisan not only could have made but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention.").

b) Guoxin and Ho do not disclose a bowl fill restriction having a protrusion configured to insert into a recess in the toilet fill valve to lock the bowl fill restriction to the extended portion of the body

Claim 1 recites, "a toilet fill valve that comprises ... a body comprising an extended portion ... integrally molded with the body," where "the bowl fill restriction comprises a protrusion that is configured to insert into a recess in the toilet fill valve to lock the bowl fill restriction to the extended portion of the body." EX1001, 9:61-67; 10:1-16. While Petitioner attempts to blindly allege that Guoxin discloses these features, a quick inspection of Guoxin can conclude that it does not show a protrusion configured to insert into a recess in the toilet fill valve. Petitioner's

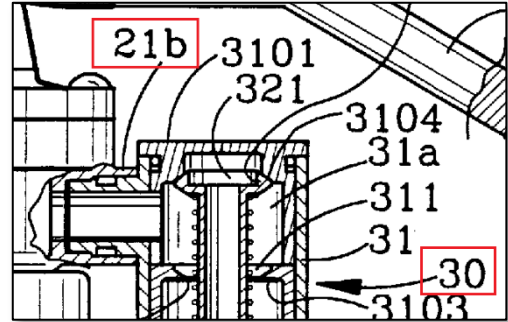
annotations are intentionally vague as Petitioner is unable to point to a recess of the toilet fill valve as such recess is not present.

Without conceding that Guoxin does not show the claimed connection of the claims, Petitioner in the very next breath goes on to allege that Ho has a protrusion, shown in blue, that snap fits into a recess in an extended portion. Paper 1, 34. However, Petitioner's argument plainly misinterprets the claimed connection. The alleged extended portion shown in orange, as annotated by Petitioner, is not an extended portion of a purported toilet fill valve, but is instead a



portion of diverter valve means 30. Ho explicitly states that, “Referring to FIGS. 1, 3, 4, 5 and 6, **the diverter valve means 30 ... includes** a hollow valve housing 31, **a transverse inlet pipe (21b)** which receives water from the water supplying pipe 21, and a transverse supply line 40 connected to and supplying water to the rim flushing rim conduit 54.” EX1022, 3:12-17 (emphasis added); *See e.g., id.*, Fig. 3 (annotated).

Petitioner appears to equate the “diverter valve means 30” to the “bowl fill restriction” of Claim 1. However, Petitioner then cites a component of the diverter valve means 30 as allegedly being a component of the toilet fill valve, a separate component claim in



Claim 1. Petitioner conveniently does not include the reference numerals of Fig. 3 of Ho that identify the orange component as the traverse inlet pipe 21b. Fig. 3 of Ho, reproduced above, clearly shows the diverter valve means 30 in a cross-section and the purported toilet fill valve as a shaded three-dimensional device. *See id.* Petitioner also does not identify a recess in the purported toilet fill valve, nor does it identify a toilet fill valve protrusion having a recess. *See id.* As such, Petitioner’s colored labeling of Ho is inconsistent with the detailed description of Ho and is an apparent attempt to pick-and-choose various components ad hoc in an effort to confuse the Board.

In any event, as neither Guoxin or Ho show or suggest this arrangement of Claims 1, 9, 15, and 24, Petitioner fails to establish a reasonable likelihood that that any of these claims are unpatentable.

B. Ground 2: Guoxin in view of Ho, in further view of Quick Connection Art under 35 U.S.C. § 103

Petitioner’s second ground alleges that Guoxin in view of Ho, “and further in view of the ‘Quick Connection Art’” renders obvious Claims 4, 5, 7, and 16-19.

Paper 1 at 52-59. For at least the reasons discussed below, Petitioner fails to establish a reasonable likelihood that that any of these claims are unpatentable in view of the referenced prior art.

1. The Cited Guoxin, Ho, and “Quick Connection Art” Fail to Render Obvious Dependent Claims 4, 5, 7, and 16-19.

Petitioner does not rely on the added combination of the “Quick Connection Art” for support of any of its assertions that the independent claims of the ‘105 Patent are unpatentable. The “Quick Connection Art” cited in the Petition actually consists of four separate prior art patent references that Petitioner generally references without any specificity as to distinctions among those patent references or a particular basis for how they could be interchangeably borrowed to combine with the Guoxin and Ho prior art references. Notably, Petitioner attempts to incorporate the additional compilation of the “Quick Connection Art” to challenge only dependent Claims 4, 5, 7, and 16-19 of the ‘105 Patent.⁶

C. Ground 3: Brown in view of Ho under 35 U.S.C. § 103

Petitioner’s third ground alleges that Brown in view of Ho renders obvious Claims 1-3, 6, 8-15, and 20-24. Paper 1 at 60-79. For at least the reasons discussed below, Petitioner fails to establish a reasonable likelihood that that any of these claims are unpatentable.

⁶ Claims 4 and 5 depend from Claim 1, and Claims 16-19 depend from Claim 15.

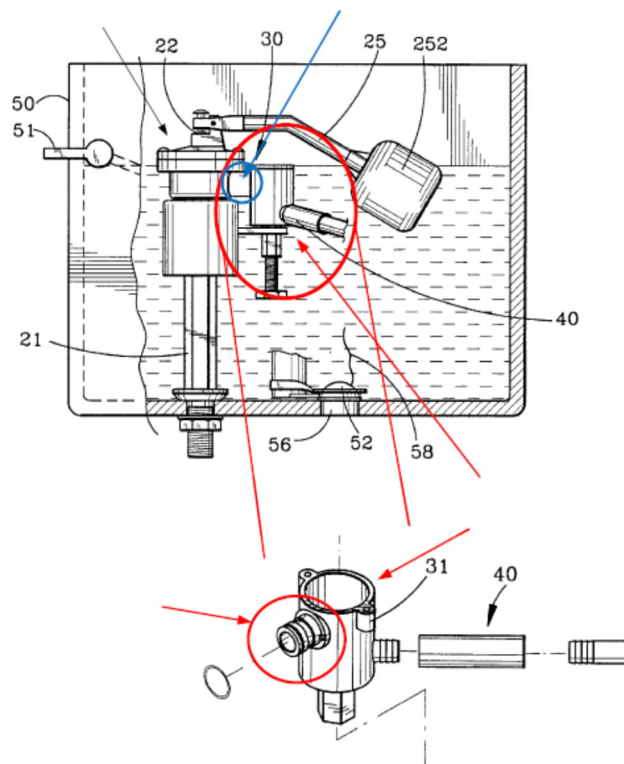
1. The Cited Brown and Ho References Fail to Render Obvious Independent Claims 1, 9, 15, and 24

Brown does not disclose “a toilet fill valve that comprises: a body comprising an extended portion, wherein the extended portion is integrally molded with the body, wherein the extended portion forms a bowl fill outlet port.” *See, e.g.*, EX1001, 9:60-10:20. Petitioner’s attempt to argue that Brown is “integrally molded” is even more egregious than its attempt to read Guoxin as “integrally molded,” as discussed above, and further illustrates this glaring deficiency in the Petition. Petitioner alleges that “Brown’s extended portion 23 is integral to the toilet fill valve once attached via threaded opening 21 in view of Petitioner’s claim construction.” Paper 1, 63.

Significantly, Brown expressly teaches that an adaptor tube (which is threaded or screwed into the flush valve) that is *not* integrally molded and, therefore, does not teach this limitation of the ’105 Patent. EX1021, 3:45-51. Indeed, Petitioner’s attempt to argue that Brown is “integrally molded” is a glaring illustration of why the cited Brown reference is duplicative of the art previously considered by the Office, specifically the DeMarco reference.

Likewise, Petitioner has submitted no evidence that Ho teaches that the identified extended portion is integrally molded to the body, because Ho is silent on this issue. Petitioner fails to show that either Brown or Ho, or the combination thereof, disclose an “extended portion [that] is integrally molded with the body,” as required by Claims 1 and 24. EX1001, 9:65 and 12:20.

First, and as with Petitioner's attempt to map the elements of Claims 1 and 24 to Guoxin and Ho, Petitioner's similar and equally deficient attempt to map the elements of Claims 1 and 24 to Brown and Ho is flawed and unsupported.⁷ The Petition's annotations of the figures upon which it relies are missing annotations, and include arbitrary arrows, circles, and ovals. *See* Paper 1, 62 (purporting to annotate Figures 2 and 5 of Ho):



⁷ Petitioner states that “Claim 15 is fundamentally nothing more than the method (steps) performed when assembling the system of claims 1 and 24.” Paper 1, 73.

Petitioner’s annotations or related discussion do not identify a body portion in either Brown or Ho that comprises an “extended portion” that is “integrally molded with the body.” Likewise, Petitioner provides no excerpts from the text of Brown or Ho showing that either reference uses the term “molded” or “integrally molded” (or equivalent term), to support its contentions that Brown or Ho disclose or render obvious “a toilet fill valve that comprises: a body comprising an extended portion, wherein the extended portion is integrally molded with the body, wherein the extended portion forms a bowl fill outlet port.” *See, e.g.*, EX1001, 9:60-10:20. To the contrary, Petitioner admits that “Brown’s extended portion 23 is integral to the toilet fill valve *once attached via threaded opening.*” Paper 1, 63. While an attachment via a threaded opening may be “integral,” it is not “integrally molded,” as required by all the claims of the ’105 Patent.

Brown simply does not expressly teach this limitation, leading Petitioner to attempt to buttress the deficiency of Brown with the Ho reference Petitioner’s faulty construction of the term “integrally molded” (where Petitioner argues that this claim phrase should mean not only “molded together as a single structure” but also “molded separately and subsequently attached to one another to form a single structure.”). *See* Paper 1, 9. However, and as shown above, Petitioner’s position is not consistent with the specification of the ’105 Patent, where molded is explicitly

described as an alternative embodiment as compared to the “snapped or clamped” or “attached” embodiments. *See* EX1001, 2:17-26 (emphasis added).

Under a proper claim construction, Brown and Ho do not teach this claim limitation. For example, at page 24, Petitioner reproduces two excerpts of figures in Ho to contend that Ho teaches that an alleged extruded portion is integral with a body portion of a toilet fill valve. Paper 1, 24. However, while Petitioner identifies an extended portion allegedly disclosed in Ho, Petitioner does not identify any portion of Ho that teaches that “the extended portion is integrally molded with the body.”

Moreover, it is improper for a petitioner to analyze and assert a first combination of references and then argue the same analysis applies to a second combination of references based on a different primary reference. *Sanofi-Aventis Deutschland GmbH v. Mylan Pharm. Inc.*, 66 F.4th 1373, 1379 (Fed. Cir. 2023), citing *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1379 (Fed. Cir. 2016). In *Magnum Oil*, the Petitioner analyzed and asserted a first combination of prior art references and argued that the “same analysis applies” to a second combination of prior art references based on a different primary reference. *Sanofi-Aventis*, 66 F.4th at 1372. The Federal Circuit held that “the Board erred because ‘[n]either the Board nor the petitioner explained why borrowing the rationale for combining the first set of references equally applies to the second set of references.’” *Id.* at 1378.

Here, Petitioner and its expert Dr. Cameron commit the same error. As just one example, they attempt to summarily equate “Guoxin in view of Ho” and “*any* known method of connecting two fluid channels to one another, such as *any* of those disclosed in the Quick Connection Art” with “Brown in view of Ho” and “*any* known method of connecting two fluid channels to one another, such as *any* of those disclosed in the Quick Connection Art.” *See* Paper 1, 53, 74, and 80 (emphasis added).⁸ Neither Petitioner nor Dr. Cameron provide any reason why a skilled artisan would use the reverse coupling arrangement between the bowl fill restriction and the toilet fill valve, as compared to the ’105 Patent, or have to rely upon the additional amalgamation of the “Quick Connection Art.” *See Virtek Vision*, 97 F.4th at 886-887. Instead, Petitioner’s articulated rationale is insufficiently conclusory and does not articulate why one would modify the prior art in the same manner.

The relevant inquiry is “[would] an artisan of ordinary skill in the art at the time of the invention, confronted by the same problems as the inventor and with no

⁸ As noted above, the “Quick Connection Art” cited in the Petition actually consists of four separate prior art patent references that Petitioner generally references without any specificity as to distinctions among those patent references or a particular basis for how they could be interchangeably borrowed to combine with the Guoxin, Ho, and/or Brown prior art references.

knowledge of the claimed invention,[] have selected the various elements from the prior art and combined them in the manner claimed”). *Princeton Biochemicals, Inc. v. Beckman Coulter, Inc.*, 411 F.3d 1332, 1337 (Fed. Cir. 2005).

[T]he “motivation-suggestion-teaching” test asks not merely what the references disclose, but whether a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem facing the inventor, would have been led to make the combination recited in the claims.

Cross Med. Prods. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1321-24 (Fed. Cir. 2005). Consequently, Petitioner fails to establish a reasonable likelihood that a person of ordinary skill in the art would have been motivated to combine the discrete teachings of Brown and Ho in the same manner as Guoxin and Ho, separately or in addition to the “Quick Connection Art.”

2. The Cited Brown and Ho References Fail to Render Obvious Dependent Claims 2-3, 6, 8, 10-14, and 16-23

As with its proffered combination of Guoxin and Ho, Petitioner does not rely on the added combination of Ho with Brown for support of any of its assertions that the dependent claims of the ’105 Patent are unpatentable.

D. Ground 4: Brown in view of Ho, in further view of Quick Connection Art under 35 U.S.C. § 103

Petitioner’s fourth ground alleges that Brown in view of Ho, “and further in view of the ‘Quick Connection Art’” renders obvious Claims 4, 5, 7, and 16-19.

Paper 1 at 79-81. For at least the reasons discussed below, Petitioner fails to establish a reasonable likelihood that that any of these claims are unpatentable.

1. The Cited Brown, Ho, and “Quick Connection Art” Fail to Render Obvious Dependent Claims 4, 5, 7, and 16-19.

As with its proffered combination of Guoxin, Ho, and the “Quick Connection Art,” Petitioner does not rely on the added combination of the “Quick Connection Art” with Brown and Ho for support of any of its assertions that the independent claims of the ’105 Patent are unpatentable. Petitioner attempts to incorporate the additional compilation of the “Quick Connection Art” to challenge only dependent Claims 2-3, 6, 8, 10-14, and 16-23 of the ’105 Patent. Moreover, while Petitioner alleges that the Quick Connection Art discloses a multitude of well-known connectors in the art, Petitioner does not provide any motivation as to why a POSITA would modify the coupling mechanism of Brown or Ho to use the connectors of the Quick Connection Art, and such modification is not mere substitution.

E. Ground 5: Schuster under 35 U.S.C. § 102

Petitioner’s fifth ground alleges that Claims 1-24 are anticipated by Schuster at pages 67-70. Recognizing the weakness of Grounds 1-4, Petitioner attempts throw in every imaginable ground of institution alleging that the ’105 Patent is not entitled to its earliest priority date and, as a result, a parent application of the ’105 Patent (Schuster), is anticipatory prior art. *See* Paper 1, 82. Specifically, Petitioner appears to take the position that “bowl fill restriction” is unsupported by the earliest priority

date to which the '105 Patent claims priority. *Id.* Petitioner's argument quickly fails for a multitude of reasons, one of which being a material omission by Petitioner when citing controlling authority.

Patent Owner's priority claim satisfies the two basic requirements for a legitimate claim, namely, co-pendency and a disclosure that supports the claims. Petitioner does not question whether the first of those requirements is met. Petitioner attempts to challenge the second by obscuring the law in this regard, only citing cases referencing exceptions to a general rule, a material omission in its Petition. However, the actual contents of the applications in the priority chain explicitly disclose and claim the very type of genus that Petitioner wrongly asserts was not disclosed.

There is a "general rule that disclosure of a species provides sufficient written description support for a later filed claim directed to the genus." *Bilstad* at 1125. Moreover, "[t]here is no categorical rule that a species cannot suffice to claim the genus." *Hynix* at 1352. Here, the claim term at issue is a genus (i.e., "bowl fill restriction") supported by the disclosure of a particular species (i.e., "bowl fill valve").

In *Hynix*, the patents-at-issue included a continuation application in which a limitation—"narrow multiplexed bus"—was allegedly unsupported by the written description of the priority application to which they all claim priority because that

priority application only disclosed a “multiplexed bus.” The Federal Circuit held that there was adequate written description for a genus broader than the “multiplexed bus” based on the single species disclosed in the description. Most notably, the Federal Circuit here cautioned taking the approach taken by Petitioner by overtly stating that there is “no categorical rule that a species cannot suffice to claim the genus.” *Id.* The court in *Bilstad* explicitly identified at least two of Petitioner’s cases as *exceptions* to that rule and of limited applicability to situations like that before the Board in this case. *See id.*

Petitioner contends that “PO did not consider a fluid flow restrictor, or a fluid flow diverter, to be a valve.” Paper 1 at 85. Patent Owner, however, stated in the prosecution history that “the specification describes a toilet fill valve, which is one example ... of a bowl fill restriction.” EX1002, 41-44. A “valve” is defined as “any of numerous mechanical devices by which the flow of liquid...in bulk may be started, stopped, or regulated by a movable part that opens, shuts, or partially obstructs one or more ports or passageways.” EX2003, 1.

The record shows that the members of the genus are predictable as both fluid flow restrictors and fluid flow valves were both known. “In the mechanical world—a fairly predictable field—it is wholly conceivable” that disclosure of a species “may convey to one skilled in the art” that the inventors had possession of the genus. *Bilstad* at 1126 (internal citation omitted). Petitioner and its expert acknowledge that

regulators, restrictors, and valves were well known in the art at the time of the invention. EX1004, 34 (“toilet fill valves with various mechanisms to control the flow of water to the toilet bowl during a flush cycle were well known in the art.”).

The court in *Bilstad* explained that the question of whether there is written description support “requires consideration of whether the ... disclosure, as filed, reasonably conveys to a person skilled in the art that the inventor had possession of the claimed subject matter at the time of the earlier filing date.” *Id.* at 1123 (internal citation omitted).

In this regard, “unpredictability in the particular field may warrant closer scrutiny of whether disclosure of a species is sufficient to describe a genus.” *Id.* at 1125. According to the *Bilstad* decision, it is important to consider “[i]f the difference between members of the group is such that the person skilled in the art would not readily discern that other members of the genus would perform similarly to the disclosed members, i.e., if the art is unpredictable, then disclosure of more species is necessary to adequately show possession of the entire genus.” *Id.*

Here, the ’105 Patent is in the “mechanical world” like the claims at issue in *Bilstad*. Petitioner admits that “fluid flow restrictors or diverters were well-known.” Paper 1, 14 (“In addition to valves, other mechanisms for controlling water flow were also well-known.”); *see also id.*, 9-10 (“In plumbing applications, it is understood that flow restrictors are fixed devices and valves are adjustable

devices.”). Given the known restrictions and valves at the time of the priority filings mentioned above, and the fact that they all perform similarly by regulating an amount of water, the reasonable conclusion here is that a single species is adequate support for a genus claim.

In re Smythe, 480 F.2d 1376, 1383 (C.C.P.A. 1973) held that a disclosure of an invention involving air was sufficient written description support for a claim requiring a fluid, even though fluids can have many properties very different from air. The Court determined that, in context of the invention, fluids and air accomplished a common function. Similarly, here, the disclosure of a bowl fill valve is sufficient written description support for the genus of a bowl fill restriction as they accomplish a common function, and both were known in the art.

In *Lampi Corp. v. Am. Power Prods.*, 228 F.3d 1365 (Fed. Cir. 2000), a patent-at-issue involved claims in a continuation that were broader than the priority application description. Specifically, the later claims at issue encompassed non-identical half shells but the priority filing only disclosed identical half shells. The court held that it was significant that the half shells were “only a preferred embodiment” and referred to the “familiar principle of patent law that a claim need not be limited to a preferred embodiment” when finding that the broader claims were adequately supported. *Lampi Corp.*, at 1378. In the ’105 Patent the “bowl fill valve” is described as merely one embodiment and, as such, *Lampi* requires a similar

conclusion that Patent Owner's applications are not limited to a bowl fill valve and only a bowl fill valve. The bowl fill restriction genus of the challenged claims is adequately supported.

Like the cases described above, the bowl fill restriction genus of the challenged claims was adequately supported by the written description of each of the priority documents showing a bowl fill valve for regulating, which was understandable and predictable based on those disclosures in view of the state of the art showing various types of regulators, valves, and restrictions, and was possessed by the inventors at the time of the priority filing dates that encompass the bowl fill restriction at issue. Finally, it is noted that the Office clearly reviewed the claim term "bowl fill restriction" and found it to be supported, as the Office rejected claims 4 and 7, pertaining to the bowl fill restriction's ability to be clamped to the extended portion of the body, as allegedly lacking written description, but did not reject the term "bowl fill restriction" in any claim. EX1002, 64-65.

As demonstrated above, the '105 Patent is entitled to its earliest priority date of March 11, 2004. As a result, Schuster – published on January 31, 2012 – is not prior art to the '105 Patent. Therefore, Claims 1-24 of the '105 Patent cannot be anticipated by Schuster, and there is no reasonable likelihood that Petitioner will prevail on its fifth ground.

X. CONCLUSION

For at least the reasons discussed above, the Petition fails to establish a reasonable likelihood that Petitioners would prevail with respect to any challenged claim of the '105 Patent. Patent Owner's arguments are without prejudice or disclaimer. Patent Owner has not acquiesced to any allegations in the Petition and reserves the right to address Petitioners' contentions in this IPR.

Dated: June 13, 2024

Respectfully submitted,

/Kenneth A. Knox/

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CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. § 42.6(e), the undersigned certifies that on the 13th day of June 2024, a complete and entire copy of the foregoing Patent Owner's Preliminary Response, including the exhibits relied upon, was served on counsel of record for Petitioners, as follows:

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing Patent Owner's Preliminary Response, excluding the portions exempted under 37 C.F.R. § 42.24(b), contains 13999 words according to Microsoft Word's word count feature.

Dated: June 13, 2024

Respectfully submitted,

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