

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TELEBRANDS CORP.,  
Petitioner,

v.

TINNUS ENTERPRISES, LLC,  
Patent Owner.

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Case PGR2015-00018  
Patent 9,051,066 B1

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Before PHILLIP J. KAUFFMAN, RICHARD E. RICE, and  
TIMOTHY J. GOODSON, *Administrative Patent Judges*.

RICE, *Administrative Patent Judge*.

DECISION  
Institution of Post-Grant Review  
37 C.F.R. § 42.208

## I. INTRODUCTION

Telebrands Corp. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) for post-grant review of claims 1–14 of U.S. Patent No. 9,051,066 B1 (Ex. 1001, “the ’066 Patent”). Tinnus Enterprises, LLC (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 324, which provides that a post-grant review may be instituted only if “the information presented in the petition . . . demonstrate[s] that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” We determine that the information presented in the Petition demonstrates that it is more likely than not that Petitioner would prevail in showing that the challenged claims, except claims 7 and 9, are unpatentable.<sup>1</sup> Pursuant to 35 U.S.C. § 324, we authorize a post-grant review to be instituted as to claims 1–6, 8, and 10–14 of the ’066 Patent.

### A. *Related Proceedings*

We are informed that Petitioner is named as a defendant in a federal district court case involving the ’066 Patent (*Tinnus Enterprises, LLC v. Telebrands Corp.*, Civil Action No. 6:15-cv-00551-RWS-JDL (E.D. Tex.)). Pet. 3; Prelim. Resp. 7.

### B. *The ’066 Patent*

The ’066 Patent, titled “System and Method for Filling Containers with Fluids,” issued from U.S. Application No. 14/492,487, filed Sept. 22,

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<sup>1</sup> Patent Owner has filed a statutory disclaimer under 35 U.S.C. § 253(a) in compliance with 37 C.F.R. § 1.321(a), disclaiming claims 7 and 9. *See* Prelim. Resp. 62; Ex. 2011; 37 C.F.R. § 42.207(e).

2014. Ex. 1001, at (54), (21), (22). The '066 Patent claims the benefit of U.S. Provisional Application No. 61/942,193, filed Feb. 20, 2014, and U.S. Provisional Application No. 61/937,083, filed Feb. 7, 2014 (collectively, “the Provisional Applications”). *Id.* at (60).

Figure 1 of the '066 Patent is reproduced below.

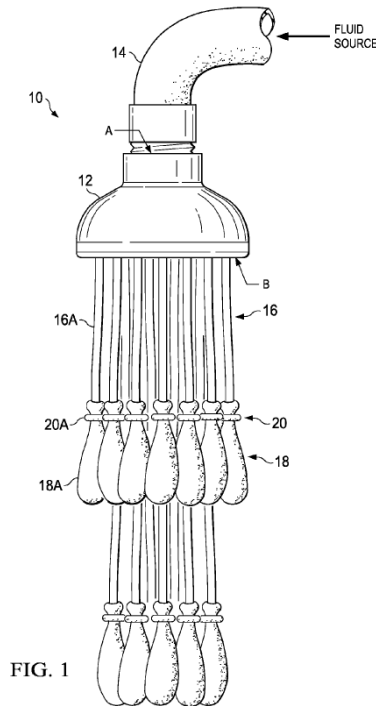


Figure 1 is a simplified diagram illustrating an example embodiment of a system for filling containers with fluids. *Id.* at 2:33–34. As shown in Figure 1, system 10 includes housing 12 removably attached to hose 14 at end A and to a plurality of hollow tubes 16 at end B. *Id.* at 2:35–37. A plurality of containers 18, such as water balloons, may be clamped to plurality of tubes 16 using elastic valves 20, which may comprise elastic fasteners such as O-rings. *Id.* at 2:51–59, 3:19–20. In one embodiment, housing 12 or tubes 16 may be shaken to detach filled containers 18 from tubes 16. *Id.* at 3:55–57. The elastic valves or fasteners may constrict the

necks of containers 18, sealing them, when the containers slide off tubes 16.  
*Id.* at 4:3–6.

*C. Illustrative Claim*

Claim 1, which is the sole independent claim, is illustrative of the claimed subject matter, and is reproduced below:

1. An apparatus comprising:
  - a housing comprising an opening at a first end, and a plurality of holes extending through a common face of the housing at a second end;
  - a plurality of flexible hollow tubes, each hollow tube attached to the housing at a respective one of the holes at the second end of the housing;
  - a plurality of containers, each container removably attached to a respective one of the hollow tubes; and
  - a plurality of elastic fasteners, each elastic fastener clamping a respective one of the plurality of containers to a corresponding hollow tube, and each elastic fastener configured to provide a connecting force that is not less than a weight of one of the containers when substantially filled with water, and to automatically seal its respective one of the plurality of containers upon detaching the container from its corresponding hollow tube, such that shaking the hollow tubes in a state in which the containers are substantially filled with water overcomes the connecting force and causes the containers to detach from the hollow tubes thereby causing the elastic fasteners to automatically seal the containers,
- wherein the apparatus is configured to fill the containers substantially simultaneously with a fluid.

*Id.* at 6:30–53.

*D. The Asserted References*

Petitioner relies upon the following references (Pet. 14–15):

Reference	Patent or Pub. No. or Description	Date	Exhibit No.
Cooper	US 5,826,803	Oct. 27, 1998	Ex. 1009
Saggio	US 2013/0118640 A1	May 16, 2013	Ex. 1010
Lee	US 2005/0004430 A1	Jan. 6, 2005	Ex. 1011
Harter	WO 2015/027187 A2	Feb. 26, 2015 (claiming priority to Aug. 23, 2013)	Ex. 1013
Berardi	US 8,479,776 B2	July 9, 2013	Ex. 1014
ZORBZ Replicator video	YouTube video showing prototype of ZORBZ Replicator	Aug. 19, 2014 <sup>2</sup>	Ex. 1012 and Ex. 1018 <sup>3</sup>

Petitioner also relies on the Declarations of Dr. Ken Kamrin (Ex. 1015), Dr. Greg Saggio (Ex. 1016), and Kendall Harter (Ex. 1017).

*E. The Asserted Grounds<sup>4</sup>*

Petitioner challenges claims 1–6, 8, and 10–14 of the '066 Patent on the following grounds (Pet. 14–15, 24–26):

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<sup>2</sup> This is the publication date asserted by Petitioner. *See* Pet. 34; Ex. 1012, 1; Ex. 1017 ¶ 25.

<sup>3</sup> Exhibit 1018 is the ZORBZ Replicator video; Ex. 1012 is a compilation of still frames from the video, with annotations (shown in red).

<sup>4</sup> Petitioner also challenges claims 7 and 9, but we need not address these claims in view of Patent Owner's disclaimers, as mentioned in footnote 1 above.

Reference(s)	Basis	Claims Challenged
	§ 112(a) <sup>5</sup>	1–6, 8, and 10–14
	§ 112(b)	1–6, 8, and 10–14
Cooper and Saggio	§ 103(a)	1–4, 8, and 14
Cooper, Saggio, and Berardi	§ 103(a)	11–13
Cooper, Saggio, and Lee	§ 103(a)	1–4, 8, and 14
Cooper, Saggio, Lee, and Berardi	§ 103(a)	11–13
Zorbz Replicator video and one of either Harter, Saggio, or Lee	§ 103(a)	1–4, 8, and 14
Zorbz Replicator video, Berardi, and one of either Harter, Saggio, or Lee <sup>6</sup>	§ 103(a)	11–13

## II. ANALYSIS

We turn now to Petitioner’s asserted grounds of unpatentability to determine whether Petitioner has met the threshold of 35 U.S.C. § 324 for instituting review.

### *A. Claim Construction*

As a first step in our analysis, we determine the meaning of the claims. In a post-grant review, the Board gives claim terms in an unexpired patent their broadest reasonable interpretation in light of the specification of

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<sup>5</sup> Although Petitioner cites only 35 U.S.C. § 112(b) in listing its grounds on page 14 of the Petition, Petitioner presents non-enablement arguments under 35 U.S.C. § 112(a) on pages 24–26 of the Petition.

<sup>6</sup> The omission of the ZORBZ Replicator video from this ground as listed on page 15 of the Petition is an obvious clerical error. *See* Pet. 77–78.

the patent in which they appear. 37 C.F.R. § 42.200(b); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278, 1279 (Fed. Cir. 2015). Under the broadest reasonable interpretation standard, and absent any special definition, claim terms are given their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art (“POSA”) in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner contends that a POSA “would have been a person having a general knowledge about and experience with expandable containers, including without limitation balloons, and at least an associate’s degree in science or engineering.” Pet. 15–16 (citing Ex. 1015 ¶¶ 10–13 and Ex. 1016 ¶¶ 10–13). At this stage of the proceeding, Patent Owner does not dispute Petitioner’s definition of a POSA. *See, e.g.*, Prelim. Resp. 40. For purposes of this Decision, we adopt Petitioner’s definition.

### *1. “elastic fastener”*

Petitioner contends that the claim term “elastic fastener,” which appears in independent claim 1, should be construed to mean an “elastic valve.” Pet. 17–18 (citing Ex. 1001, 2:55–57; Ex. 1015 ¶¶ 34–39). Patent Owner disagrees, arguing that as described in the Specification an elastic fastener is not an elastic valve, but rather may be a component of an elastic valve. Prelim. Resp. 20 (citing Ex. 1001, 2:57–59). Relying on dictionary definitions for “fasten” and “elastic,” Patent Owner contends that the term “elastic fastener” should be construed as “a resilient device that attaches two separate elements.” *Id.* at 20–21.

As the parties do not appear to dispute the meaning of “elastic,” for purposes of this Decision, we determine that the broadest reasonable interpretation consistent with the Specification of “elastic fastener” is its ordinary and customary meaning, i.e., an elastic element for attaching things together. We do not agree with Petitioner’s proposed construction of “fastener,” as meaning a valve, because it is not consistent with the ordinary and customary meaning of the term, and the Specification does not set forth a special definition.

2. “*not less than*”

Claim 1 recites that each elastic fastener is “configured to provide a connecting force that is *not less than* a weight of one of the containers when substantially filled with water.” Ex. 1001, 6:42–44 (emphasis added). Petitioner does not propose an express construction for “not less than,” but implicitly argues that this claim term means “greater than.” Pet. 25. Patent Owner responds, and we agree, that the ordinary meaning of “not less than” is “equal to or greater than,” and such meaning is consistent with the Specification. Prelim. Resp. 15 (citing Ex. 1001, 3:57–62).

Accordingly, for purposes of this Decision, we determine that the broadest reasonable interpretation consistent with the Specification of “not less than” is equal to or greater than.

3. “*container*”

Petitioner contends that the claim term “container,” which appears in each of the challenged claims, should be construed to mean “an object for holding a fluid that expands in response to fluid flow therein.” Pet. 17. Patent Owner responds that the Specification explicitly defines the term “container” as “an object that can hold something, such as fluids.” Prelim.



Resp. 25 (quoting Ex. 1001, 2:53–55). Nevertheless, Patent Owner proposes to construe “container” somewhat differently, as an object for holding a fluid.”

For purposes of this Decision, we determine that the special definition in the Patent is controlling. Accordingly, the broadest reasonable interpretation consistent with the Specification of “container” is an object that can hold something, such as fluids.

#### *4. Other claim terms*

At this stage of the proceeding, none of our determinations regarding Petitioner’s proposed grounds of unpatentability requires us to interpret expressly any other claim term. We, however, do discuss Patent Owner’s proposed construction of “substantially filled” *infra* in Section II.B.2.

### *B. Challenge under 35 U.S.C. § 112(a), (b)*

#### *1. Petitioner’s Contentions*

Petitioner contends that the claim term “substantially filled” as set forth in claim 1 is indefinite under 35 U.S.C. § 112(b). Pet. 20–24. Petitioner first focuses its arguments on the term “filled.” *Id.* at 21–23. Petitioner argues that “an expandable container can be considered ‘filled’ at any time prior to when the expandable container reaches its expansion limit and explodes.” *Id.* at 22 (citing Ex. 1015 ¶ 57). Petitioner also argues that the Specification “sets forth that the expandable containers are only ‘filled’ when an individual subjectively determines that a ‘desired size’ of a container has been reached.” *Id.* at 23 (citing Ex. 1001, 3:48–49; 4:60–62). Petitioner further argues that “[t]he lack of clarity of the term ‘filled’ is further enhanced by the modifier, ‘substantially,’ which is a term of degree.” *Id.* at 24. Petitioner concludes that “[t]he specification and prosecution

history do not provide objective boundaries for those of ordinary skill in the art for the term ‘filled,’ let alone the term ‘substantially filled.’” *Id.*

Additionally, Petitioner contends that the claim term “connecting force” is non-enabled and indefinite under 35 U.S.C. § 112(a), (b). *Id.* at 24–26. According to Petitioner, the term “connecting force” in claim 1 is “inconsistent with the basic laws of physics.” *Id.* at 25. Petitioner argues that “[i]f the true connecting force is not less than a weight of one of the containers, i.e., greater than the weight of the container, the connecting force would cause the container to move upwards on the hollow tube.” *Id.* at 25 (citing Ex. 1015 ¶ 73). Petitioner also argues:

Because the specification of the ‘066 Patent does not provide an objective boundary for when an expandable container is “substantially filled,” it follows that a person of ordinary skill in the art at the time of the invention of the ‘066 Patent would not be able to determine, with reasonable certainty, the amount of the connecting force that the elastic fastener is configured to provide.

*Id.* (citing Ex. 1015 ¶ 60).

## *2. Patent Owner’s Contentions*

Patent Owner relies on dictionary definitions for “substantially” and “filled” in arguing that “substantially filled” means “by and large holding as much as is conveniently contained.” Prelim. Resp. 18–20. Patent Owner contends that “claim 1 of the ‘066 Patent provides that the containers are substantially filled with water when the ‘water overcomes the connecting force and causes the containers to detach from the hollow tubes.”” *Id.* at 28–29 (citing Ex. 1001, 6:48–52). According to Patent Owner, “the claimed invention is capable of being used to fill various containers,” and “[o]ne of ordinary skill would understand that each of these different containers could

be filled with a different volume of fluid depending on the size, shape and characteristics of the container.” *Id.* at 30 (citing Ex. 1001, 3:19–40).

### 3. Analysis

As an initial matter, we are *not* persuaded by Petitioner’s non-enablement/indefiniteness argument that “the connecting force would cause the container to move upwards on the hollow tube” if “the true connecting force is not less than a weight of one of the containers, i.e., greater than the weight of the container.” *See* Pet. 25. Petitioner’s argument relies on an erroneous construction of “not less than” as meaning greater than. *See supra* Section II.A.2. Petitioner apparently does not contend, and in any event has not shown, that the connecting force would cause the container to move upwards on the hollow tube if the true connecting force were *equal* to a weight of one of the containers, as permitted by the claims and described in the Specification. *See* Ex. 1001, 3:60–62 (“[I]n a specific embodiment, the connecting force holding each container to its corresponding tube is exactly equal to the weight of the filled container.”). A POSA would have understood that an elastic fastener, such as an O-ring or rubber-band, could be configured to clamp a container to a flexible hollow tube with sufficient constrictive force to hold the container to the tube, i.e., to generate a friction force or connecting force equal to the weight of the container when the container is filled to a desired volumetric level.

Turning to Petitioner’s additional indefiniteness arguments, we are persuaded at this stage of the proceeding that the following claim language (referred to hereinafter as the “shake-to-detach” feature) is indefinite:

each elastic fastener configured to provide a connecting force that is not less than a weight of one of the containers when substantially filled with water, . . . *such that shaking the hollow*

*tubes in a state in which the containers are substantially filled with water overcomes the connecting force and causes the containers to detach from the hollow tubes.*

Ex. 1001, 6:41–50 (emphasis added). The standard for indefiniteness that we have applied in reaching this conclusion is whether the claim language is “cast in clear—as opposed to ambiguous, vague, indefinite—terms.” *In re Packard*, 751 F.3d 1307, 1313 (Fed. Cir. 2014); *see* Manual of Patent Examining Procedure (“MPEP”) § 2173.02(II) (Rev. 07.2015, Nov. 2015) (advising Examiners that the indefiniteness standard is whether “the language of the claim is such that a person of ordinary skill in the art could not interpret the metes and bounds of the claim so as to understand how to avoid infringement”) (citation omitted). We have analyzed the claim language in light of: (1) the ’066 Patent disclosure; (2) the teachings of the prior art; and (3) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. *See* MPEP § 2173.02(II).

On the current record, we are not persuaded that the Specification or prior art provides any objective standard for measuring the scope of “filled” or “substantially filled.” The Specification teaches that containers 18 may be considered “filled” when an individual user subjectively determines that a desired size or volume has been reached. Ex. 1001, 3:48–51; 4:6–9, 60–64. “In some embodiments, containers 18 may be marked with volumetric measurements, and fluid flow may be turned off when the fluid has filled containers 18 to a desired volume.” *Id.* at 4:6–9.

Further, the Specification provides no limit on the amount of “shaking” needed to detach a “filled” container. *Id.* at 3:52–55 (“[T]he

connecting force holding filled containers 18 to tubes 16 may be overcome by an upward acceleration on tubes 16, for example, when they are shaken.”); *id.* at 3:55–57 (“Thus, filled containers 18 may be detached by shaking housing 12 (or tubes 16) sufficiently vigorously to cause containers 18 to fall off from tubes 16.”); 4:60–63 (“When containers 18 have reached a desired size and/or they are filled with the desired volume of fluid, they may be removed from tubes 16. They can be removed . . . by shaking them off.”).

The force required to detach the containers varies based on numerous factors. For example, the force required to detach the containers varies based on the static friction force between the containers and tubes (which depends on the materials comprising the tubes and containers as well as the compressive elastic strength of the elastic fasteners) and the weight of the containers. *See id.* at 4:1–3.

Thus, the current record indicates that a container may be “filled” to any desired volumetric level and detached by “shaking” the housing or tube sufficiently vigorously to overcome the connecting force holding the container to the tube. As such, a POSA could not interpret the metes and bounds of the shake-to-detach feature so as to understand how to avoid infringement. Due to the ambiguity in both how much volume a container holds when it is “substantially filled” and how much “shaking” the hollow tubes must be subjected to, a skilled artisan would be unable to determine whether a given apparatus does or does not have the shake-to-detach feature required by the claims.

We are not persuaded by Patent Owner’s argument that “substantially filled” means “by and large holding as much as is conveniently contained.”

*See* Prelim. Resp. 18–20. As understood at this stage of the proceeding, Patent Owner’s argument is not supported by the teachings in the Specification, discussed above, and is not consistent with dependent claim 6, which recites: “The apparatus of claim 1, wherein each container comprises a volumetric measurement marking providing a visual reference *for filling the container to a desired volume.*” Ex. 1001, 6:65–67 (emphasis added). Rather, as Petitioner argues, the level to which a container is “filled” is subjective. *See id.* at 3:49, 4:8–9; Pet. 22–23.

Nor are we persuaded by Patent Owner’s argument that “the containers are substantially filled with water when the ‘water overcomes the connecting force and causes the containers to detach from the hollow tubes.’” Prelim. Resp. 28–29. Although the Specification describes an embodiment in which containers 18 “fall off under gravity” (Ex. 1001, 3:65–66), the shake-to-detach feature plainly requires “shaking” to detach the containers.

For these reasons, Petitioner has demonstrated a reasonable likelihood of prevailing under 35 U.S.C. § 112(b) with respect to its challenge to claims 1–6, 8, and 10–14 as unpatentable for indefiniteness.

### *C. Effective Filing Date of the ’066 Patent*

Petitioner contends that the effective filing date of claims 1–4, 8, and 11–14 is September 22, 2014, i.e., the actual filing date of the ’066 Patent, because the earlier-filed Provisional Applications purportedly do not provide written description support for the limitation “a plurality of *flexible* hollow tubes,” as recited in claim 1. Pet. 12; *see* 35 U.S.C. § 100(i)(1). Petitioner argues that the Provisional Applications “explicitly disclose that the tubes are made of ‘relatively rigid materials like metal, hard plastic, etc.’” (*id.* at

12, citing Ex. 1002, 5 and Ex. 1003, 5), and that “rigid” means deficient in or devoid of flexibility (*id.*). Relying on the Declaration of Dr. Kamrin, Petitioner asserts that “[o]ne skilled in the art would not understand the February 7, 2014 Provisional to teach that the tubes are flexible.” *Id.* (citing Ex. 1015 ¶ 19).

Patent Owner responds that the Provisional Applications do not state that the tubes “are rigid in some absolute sense, [but] merely that they are ‘relatively rigid.’” Prelim. Resp. 56. Patent Owner argues that “[t]he tubes could be ‘relatively rigid’ but still capable of bending or being bent.” *Id.* Patent Owner also argues that a POSA would understand from Figure 1 of the Provisional Applications that the tubes could be flexible “in order to bend and accommodate the changing size of the balloons as they filled.” *Id.* at 58. Patent Owner further argues: “If these tubes were not flexible, the balloons would have no room to expand, and the device would not provide its intended function.” *Id.*

Although we agree with Petitioner that “rigid” means deficient in or devoid of flexibility, we are persuaded by Patent Owner that the Provisional Applications adequately disclose the “flexible” tube limitation. Dr. Kamrin’s testimony is not persuasive on this point because it focuses on the meaning of “rigid,” rather than the term “relatively rigid” used in the Provisional Applications. Ex. 1015 ¶¶ 18–19.

As the term “relatively” means “somewhat,”<sup>7</sup> the term “relatively rigid” used in the Provisional Applications does not mean absolutely rigid,

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<sup>7</sup> See MERRIAM WEBSTER’S COLLEGIATE DICTIONARY 987 (10<sup>th</sup> ed. 1993) (Ex. 3001).

but rather means somewhat rigid. Indeed, the statement in the Provisional Applications that the tubes may be made of “relatively rigid materials” immediately follows a sentence stating that the containers “may be made of elastic materials, like rubber, silicone, etc.,” indicating that “relatively rigid” means rigid in comparison to elastic materials such as rubber. *See* Ex. 1002, 5; Ex. 1003, 5. We are persuaded that a material that is somewhat rigid as disclosed in the Provisional Applications is not absolutely deficient in or devoid of flexibility. The Provisional Applications thus disclose hollow tubes that are flexible to some degree, which is all the flexibility that claim 1 of the ’066 Patent requires. *See Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1369 (Fed. Cir. 2012) (agreeing with appellants’ argument that “flexible” means “capable of being flexed,” rather than “capable of being noticeably flexed with ease” as determined by the district court).

Accordingly, Petitioner has not persuaded us that the effective filing date of claims 1–4, 8, and 11–14 is September 22, 2014.

*D. Challenges under 35 U.S.C. § 103(a) Based in Part on ZORBZ Replicator Video*<sup>8</sup>

Petitioner contends that claims 1–4, 8, and 11–14 would have been obvious over the ZORBZ Replicator video and one or more of Harter, Saggio, Lee, or Berardi. *See supra* Section I.E. Petitioner asserts that the

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<sup>8</sup> We reach Petitioner’s obviousness grounds at this stage of the proceeding, for two reasons, despite determining that the challenged claims are unpatentable for indefiniteness. First, our indefiniteness determination is only preliminary at this stage of the proceeding. Second, the shake-to-detach feature determined to be indefinite is a functional limitation that would appear to be met by any prior art that also meets the structural limitations of the claims, as discussed *infra* in Section II.E.2.



ZORBZ Replicator video is prior art to the challenged claims because it was made available to the public on the Internet at least as early as August 19, 2014, and the effective filing date of the challenged claims is September 22, 2014. Pet. 62–63. As discussed above, however, Petitioner has failed to persuade us that the effective filing date of the challenged claims is September 22, 2014.

Accordingly, we conclude, on this record, that it is more likely than not that Petitioner would *not* prevail on the ground that claims 1–4, 8, and 11–14 would have been obvious over the ZORBZ Replicator video and one or more of Harter, Saggio, Lee, or Berardi.

*E. Challenges under 35 U.S.C. § 103(a) Based in Part on Cooper*

A claim is unpatentable for obviousness “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103.<sup>9</sup> A patent claim composed of several elements, however, is not proved obvious merely by demonstrating that each of its elements was known, independently, in the prior art. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). In analyzing the obviousness of a combination of prior art elements, it can be important to identify a reason that would have prompted one of skill in the art to combine the elements in the way the claimed invention does. *Id.* A precise teaching

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<sup>9</sup> Pub. L. No. 112-29, effective March 16, 2013, changed § 103. Because the earliest-possible effective filing date of the challenged claims is not prior to March 16, 2013, we have quoted the changed version of § 103.

directed to the specific subject matter of a challenged claim is not necessary to establish obviousness. *Id.* Rather, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* at 420. The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations, when in evidence. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Petitioner contends that claims 1–4, 8, and 11–14 would have been obvious over Cooper and one or more of Saggio, Lee, and Berardi. *See supra* Section I.E.

### *1. Overview of Prior Art*

Cooper discloses a lawn and garden sprinkler that may be attached by female connector nut 16 to a garden hose. Ex. 1009, 2:20–26, Fig. 1. The sprinkler includes manifold 11, which is supplied water through inlet 15, and multiple flexible tube assemblies 18. *Id.* at 2:22–34. Figure 4 of Cooper is reproduced below.

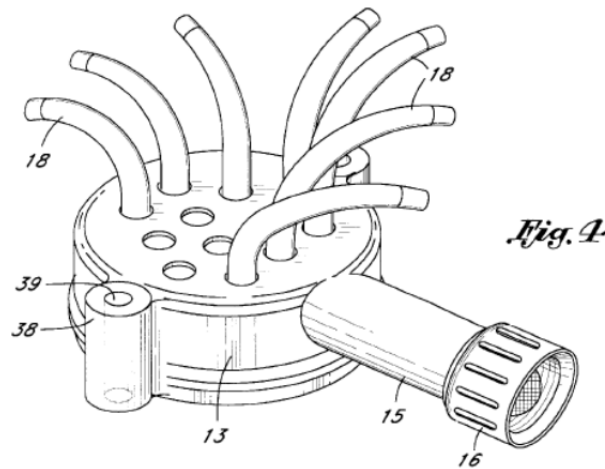


Figure 4 is a perspective view of Cooper's sprinkler. *Id.* at 2:8–9, 3:20–22. As shown in Figure 4, the “tubes may be bent . . . by the user into any desired curve.” *Id.* at 3:20–22.

Saggio discloses a system for filling a plurality of tie-less water balloons. Ex. 1010 ¶ 7. Saggio also discloses a tie-less water balloon including “a one-way valve . . . inside the balloon that allows water to enter the balloon but not escape it.” *Id.* Figures 5 and 7 of Saggio are reproduced below:

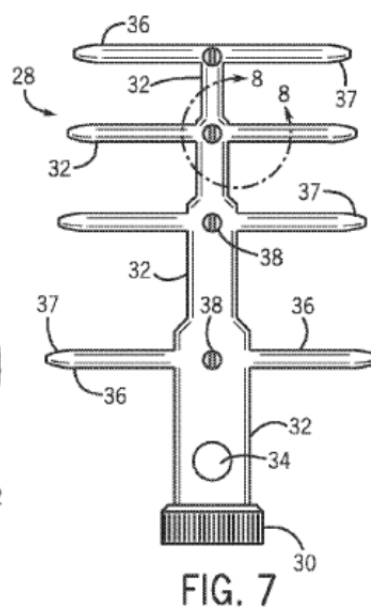
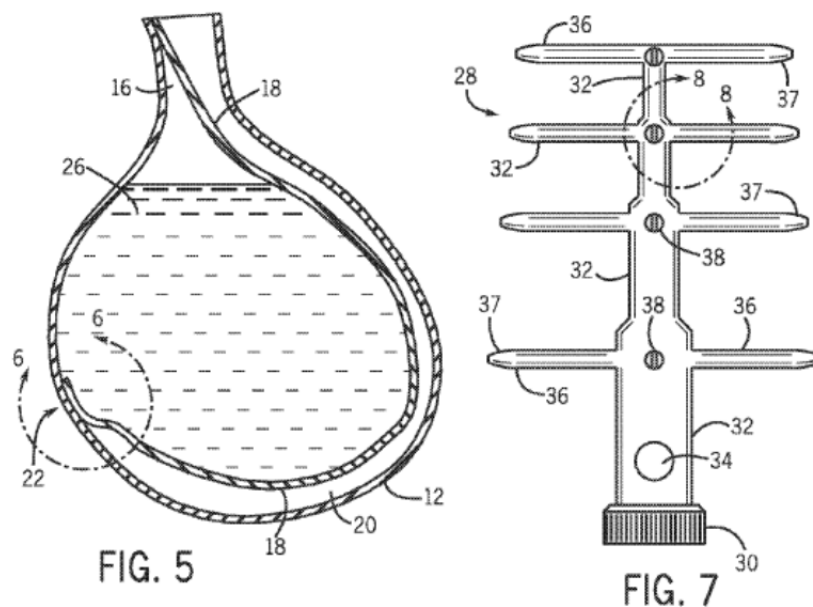


Figure 5 is a cross-sectional view showing Saggio's tie-less water balloon filled with water. *Id.* ¶ 13. Figure 7 is a front elevation view of a multi-balloon filling assembly. *Id.* ¶ 15.

As shown in Figure 7, the multi-balloon filling assembly includes water supply fitting 30, main conduit 32, lateral conduits 36, and plurality of conduit tips 37. *Id.* ¶ 22. The water supply fitting is adapted to connect to a hose. *Id.* ¶ 23. Conduit tips 37 are adapted to engage the necks of the balloons, such that a large number of balloons may be filled simultaneously. *Id.* ¶ 24.

As shown in Figure 5, the tie-less water balloon is filled with water 26 through one-way channel 20 formed by outer wall 12 and inner membrane 18. *Id.* ¶ 19. After filling, the water inside the balloon presses the distal end of inner membrane 18 against outer wall 12 to close channel 20 and to prevent the water from escaping. *Id.* ¶¶ 7, 19. As such, inner membrane 18 functions as a one-way valve.

Lee relates to an endoscopic balloon insertion device for treatment of obesity. Ex. 1011 ¶ 2. Lee's insertion device includes inner guide pipe 3 and outer guide pipe 4. *Id.* ¶ 31. "[A] rubber band 2 with a high elastic force surrounds the inner guide pipe 3 for stably binding an opening of the balloon when the balloon 1 is expanded." *Id.* ¶ 33. Figure 6 of Lee is reproduced below.

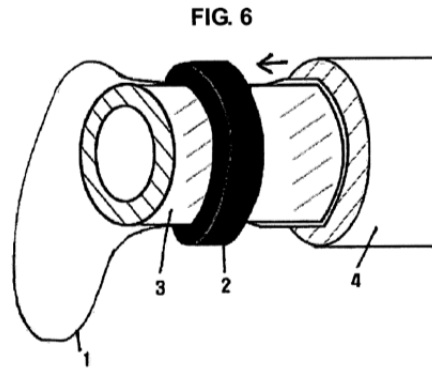


Figure 6 is a cross-sectional view illustrating a front end of inner guide pipe 3 and a movement of rubber band 2. *Id.* ¶¶ 24, 34. As illustrated in Figure 6, Lee discloses expanding the balloon through inner guide pipe 3 and then pushing out guide pipe 4 in the direction of the front end to move the rubber band and release it from the inner guide pipe. *Id.* ¶ 33.

“Therefore, the escaped rubber band seals and releases the balloon from the guide pipe for thereby inserting the balloon in the stomach in a state that the balloon is tied by the rubber band.” *Id.*

Berardi discloses a garden hose valve with an on/off lever, a threaded inlet coupler, and a threaded outlet coupler. Ex. 1014, 7:48–66, Figs. 8, 9.

## 2. Analysis

Petitioner first contends that claims 1–4, 8, and 14 would have been obvious over Cooper and Saggio, and that claims 11–13 would have been obvious over Cooper, Saggio, and Berardi. With respect to these challenges, Petitioner asserts that inner membrane 18 of Saggio’s tie-less water balloon is an “elastic fastener” as required by claim 1. Pet. 44. According to Petitioner, “[w]hen the water balloon is attached to a corresponding hollow tube of Cooper, the elastic internal membrane will press up against the

hollow tube, clamping the balloon to the hollow tube.” *Id.* (citing (Ex. 1016 ¶ 39).

Petitioner has not persuaded us, however, that inner membrane 18 attaches the balloon to the hollow tube, as required under our interpretation of “elastic fastener.” *See supra* II.A.1; Prelim. Resp. 48. In particular, Petitioner has not explained sufficiently why the inner membrane would press up against the hollow tube or, if it did, why the pressing of the inner membrane against the hollow tube would clamp or attach the balloon to the tube. As taught by Saggio, inner membrane 18 functions simply as a one-way valve. *See supra* Section II.E.1.

For these reasons, Petitioner has *not* demonstrated a reasonable likelihood of prevailing with respect to its challenges to claims 1–4, 8, and 14 as obvious over Cooper and Saggio and claims 11–13 as obvious over Cooper, Saggio, and Berardi.

Alternatively, Petitioner contends that claims 1–4, 8, and 14 would have been obvious over Cooper, Saggio, and Lee, and that claims 11–13 would have been obvious over Cooper, Saggio, Lee, and Berardi. As motivation to combine Cooper and Saggio, Petitioner points to Saggio’s teaching of filling multiple water balloons at one time. Pet. 43. Petitioner argues that it would have been obvious for a POSA “to removably attach the balloons of Saggio to the flexible tubes of Cooper.” *Id.* at 42. Petitioner further argues: “In designing an apparatus that can fill multiple water balloons at one time, one skilled in the art . . . would have thought to place water balloons at the end of a hose attachment apparatus that has multiple hollow tubes and dispenses water,” such as disclosed in Cooper. *Id.* at 43–44.

Petitioner additionally argues that it would have been obvious “to modify Cooper in view of Saggio by using the rubber band of Lee to clamp the containers on to corresponding hollow tubes and automatically seal the containers upon [detaching] the container from its corresponding hollow tube.” *Id.* at 57. Petitioner states: “It was well-known to those skilled in the art prior to the effective filing date of the ’066 Patent that a rubber band was capable of sealing a fluid within a balloon.” *Id.* at 56 (citing Ex. 1016 ¶ 75). Petitioner further argues that “while Lee teaches a system for use in treating obesity, Lee is analogous art to Saggio because both Saggio and Lee teach mechanisms for automatically sealing a balloon when a balloon is filled with fluid and detached from a hollow tube.” *Id.* at 57 (citing Ex. 1016 ¶ 77). Petitioner asserts that the combination of Cooper, Saggio, and Lee teaches all limitations of claims 1–4, 8, and 14. *Id.* at 55–60.

As to claims 11–13, Petitioner contends that it would have been obvious to connect Berardi’s valve to Cooper’s housing, so as to provide an on/off lever for controlling delivery of water. *Id.* at 54 (citing Ex. 1016 ¶ 116). Petitioner asserts that the combination of Cooper, Saggio, Lee, and Berardi teaches all limitations of claims 11–13. *Id.* at 52–54, 62.

In response, Patent Owner argues that it would not have been obvious to combine Cooper and Saggio because combining their teachings would add nothing “other than being able to pose the self-closing balloons in desired locations.” Prelim. Resp. 51. Patent Owner additionally argues that Lee is not analogous art to the claimed invention because it is directed to an endoscopic treatment for obesity. Prelim. Resp. 40–43.

On this record, we are persuaded by Petitioner that a POSA would have used Cooper’s sprinkler as a multi-balloon filling assembly as taught

by Cooper, i.e., would have attached balloons to the ends of the flexible tubes of Cooper's sprinkler such that multiple balloons could be filled at one time. *See KSR*, 550 U.S. at 416 ("The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results."). Further, we are persuaded, at this stage of the proceeding, that Lee is reasonably pertinent to a particular problem the inventor of the '066 Patent was trying to solve, i.e., a mechanism for clamping and sealing an inflatable container to a tube and, after filling the container with fluid, sealing the container automatically upon detachment of the container from the tube. Ex. 1001, 3:5–18; *see In re Klein*, 647 F.3d 1343, 1348 (Fed. Cir. 2011). On this record, we determine that Petitioner has provided adequate articulated reasoning with rational underpinning to support a legal conclusion of obviousness as to claims 1–4, 8, and 14 based on the combined teachings of Cooper, Saggio, and Lee. *See KSR*, 550 U.S. at 418.

Patent Owner also argues that the combination of Cooper, Saggio, and Lee does not teach the shake-to-detach feature. Prelim. Resp. 51–53. According to Patent Owner, "[Petitioner] has not pointed to a single instance in any prior art that discloses 'shaking the hollow tubes in a state in which the containers are substantially filled with water overcomes the connecting force and causes the containers to detach from [the] hollow tubes.'" Prelim. Resp. 52–53 (quoting Ex. 1001, 6:47–50); *see also id.* at 53 ("The technology presented by Lee would not inspire the shake-to-release process. Endoscopic surgical procedures would likely not involve shaking of any mechanism, which could be very harmful to the patient's interests."). As such, Patent Owner argues that, in order to satisfy the shake-to-detach



feature, the teachings of the prior art must disclose or suggest the recited *function*.

At this stage of the proceeding, we do not find this argument to be persuasive because the challenged claims are apparatus claims, which must be distinguished from the prior art in terms of *structure* rather than function. *See In re Schreiber*, 128 F.3d 1473, 1477–78 (Fed. Cir. 1997). A claim employing functional<sup>10</sup> terminology, such as claim 1 of the '066 Patent, covers any embodiment that meets the structural limitations of the claim and that is capable of performing the recited function. *See Swinehart*, 439 F.2d at 213 (“By its own literal terms a claim employing such [functional] language covers any and all embodiments which perform the recited function.”); *see also Schreiber*, 128 F.3d at 1477 (“It is well settled that the recitation of a new intended use for an old product does not make a claim to that old product patentable.”) (citations omitted).

Petitioner contends that the shake-to-detach feature is an inherent characteristic of the structure taught by the combination of Cooper, Saggio, and Lee. Pet. 57–59. Relying on testimony from Dr. Kamrin, Petitioner asserts that when the balloons in the combined structure are substantially filled with water, “one can remove the balloons from the hollow tubes by shaking the hollow tubes.” *Id.* at 59 (citing Ex. 1015 ¶ 95). In this regard, Dr. Kamrin testifies:

94. A different elastic fastener may produce a different average pressure P and thus produce a difference [sic]

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<sup>10</sup> A claim term is functional when it recites a feature “by what it does rather than by what it is” (e.g., as evidenced by its specific structure or specific ingredients). *In re Swinehart*, 439 F.2d 210, 212 (CCPA 1971).

connecting force. However, the principles of physics remain the same. That is, it was well known to those skilled in the art prior to the effective filing date of the '066 Patent that the connecting force ( $F_{\text{connecting}}$ ) can be overcome when the mass of the fluid in the balloon ( $M_{\text{fluid}}$ ) times effective gravity ( $g_{\text{effective}}$ ) is greater than or equal to the connecting force. Accordingly, when the mass of a substantially filled balloon ( $M_{\text{fluid}}$ ) times effective gravity ( $g_{\text{effective}}$ ) is less than the connecting force ( $F_{\text{connecting}}$ ), the balloon will remain on the tube.

95. Additionally, it remains true that when the balloons are substantially filled with a mass of fluid that does not overcome the connecting force, instead of increasing the mass of the fluid in the balloon, an individual can remove the balloons from the hollow tubes by shaking the hollow tubes, which increases the effective value of gravity ( $g_{\text{effective}}$ ) and overcomes the connecting force.

Ex. 1015 ¶¶ 94–95. On this record, we are persuaded that the combination of Cooper, Saggio, and Lee teaches the shake-to-detach feature.

Having considered the Petition, the Preliminary Response, and the evidence of record, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to its challenges to claims 1–4, 8, and 14 as obvious over the combination of Cooper, Saggio, and Lee, and claims 11–13 as obvious over the combination of Cooper, Saggio, Lee, and Berardi.

### III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has established a reasonable likelihood of prevailing under 35 U.S.C. § 103(a) on its challenges to claims 1–4, 8, and 14 as obvious over the combination of Cooper, Saggio, and Lee, and claims 11–13 as obvious over the combination

of Cooper, Saggio, Lee, and Berardi. Petitioner also has established a reasonable likelihood of prevailing under 35 U.S.C. § 112(b) with respect to its challenge to claims 1–6, 8, and 10–14 as unpatentable for indefiniteness. The Board has not made a final determination concerning patentability of any of the challenged claims.

#### IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that a post-grant review of claims 1–6, 8, and 11–14 of the '066 Patent is granted;

FURTHER ORDERED that pursuant to 35 U.S.C. § 324(a), a post-grant review of the '066 Patent is hereby instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 324(d) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; and

FURTHER ORDERED that the trial is limited to the following grounds: (1) claims 1–4, 8, and 14 as obvious over the combination of Cooper, Saggio, and Lee, (2) claims 11–13 as obvious over the combination of Cooper, Saggio, Lee, and Berardi, and (3) claims 1–6, 8, and 10–14 for indefiniteness.

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